



# Mathematical Reviews

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## Annual Index — 1989

## Author Index A — L

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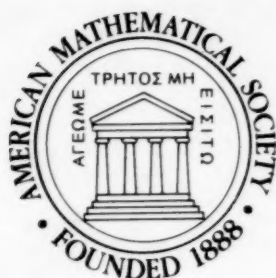
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## PREFACE

This annual index of Mathematical Reviews (MR) is included with each subscription and is also available separately. It is also called Volume 21 of the Index of Mathematical Papers (IMP). Volumes 6-9 of IMP are the annual indexes of MR for the years 1974-77 and are available as a set. The 1978 annual index was the first to be included with each subscription. There are cumulative author indexes to MR that cover 1940-59 (Vols. 1-20), 1960-64 (Vols. 21-28) and 1965-72 (Vols. 29-44), subject indexes for 1940-58 (Vols. 1-19) and 1959-72 (Vols. 20-44), and author and subject indexes for 1973-79 (Vols. 45-58) and 1980-84.

The classification scheme used in the present index is the 1980 Mathematics Subject Classification (1985 Revision). A copy of the revised version is printed in the back of the subject portion of this index.

The entries in the author, key and subject indexes are comprised of all items reviewed in MR during a given year and some items which will not be reviewed by MR but which have appeared in Current Mathematical Publications (CMP). A star (★) preceding a title indicates a book, or other item that is not a periodical, which is reviewed as a whole.

### Author index; separate key index

The entries in the author and key indexes give full bibliographic information. These entries are accompanied by review numbers and classification numbers; secondary classification numbers are given in parentheses. Entries are listed alphabetically by author; entries having several authors are listed in full under each author. Surnames consisting of more than one part (e.g., de Branges, van der Corput) are listed under the first capital letter. Collections of papers, proceedings, bibliographies, tables, etc. that are edited rather than authored are listed in the key index by title and by "key entry". For example, the publication entitled *Contributions to General Algebra* is listed under Contributions to General Algebra and is also listed under Conference: Contributions to General Algebra and under the location of the meeting. Some monographic series (e.g., Amer. Math. Soc. Transl. (2)) have entries under the series title in this index.

### Arrangement of entries in the author and key indexes

For a given heading (i.e., the primary name of an author, or a title), full entries are listed in order of nominal publication dates; the cross-references are in MR number order after the full entries. The arrangement of each entry is the same as in the heading of its review in MR. The general form for entries is as follows:

*Books, Monographs.* (Coauthors {if necessary}) Title. (Language of original {if necessary}) [English translation of title {if necessary}] Miscellaneous information {edition, editors, translators, series, etc.}. Publisher, city, date. Pagination. (Reviewer's name) Review number Primary classification (Secondary classifications {if necessary}).

*Journal article.* (Coauthors {if necessary}) Title of article {in English translation if the original title is not in English}. (Language of original {if necessary}). Summaries in languages other than the original {if necessary} Journal abbreviation {including series number if necessary} volume number(volume number in first series {if given}) (nominal date), issue number {if necessary}, first page-last page (imprint date). (Reviewer's name) Review number Primary classification (Secondary classifications {if necessary}).

The first three digits of the review number of an item refer to the MR issue in which the review is published and the last five digits refer to its position within that issue. The first two digits after the colon are the general subject classification of the item.

The phrase "EA 89m" after an MR number indicates that an MR erratum or addendum to the review appears at the end of the 89m issue.

### Subject index

The entries in the subject index are arranged in classification order. For a given classification, all entries with that classification as a primary appear first, with authored entries appearing before unauthored entries. These are followed by entries with that classification as a secondary. Again, authored entries appear before unauthored entries. Each section under a given classification is arranged in alphabetical order. For each entry, the author(s), title, language, translated title {if necessary} and the review number {if present} appear at the first author only. The entries for subsequent authors are cross-references to the first author. Complete bibliographic information is available in the annual author and key indexes as well as in the MR review.

### Cross-references

There are four kinds of cross-references in these indexes:

*Name variations.* An author's primary name is the variation of the name that MR has chosen on the basis of frequency and currency of usage. Items by a given author are usually listed under the author's primary name. In the author index, cross-references to the primary form are given from sufficiently distinct alternative forms of the author's name that have been used in items reviewed.

*Authors in other capacities.* In the author index, the names of persons associated with an item in a capacity other than that of author (e.g., editor, translator, subject of a biography, etc.) are also listed. In the subject index, such names appear in parentheses. In both indexes these items occur only as cross-references to complete listings.

*Key entries.* Cross-references for such entries as bibliographies, obituaries and references to special events are made to the authors of the papers in which these items appear, e.g. Bibliography: Gauss, Carl Friedrich *See* Bühler, Walter K., 89h:01057.

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### Transliteration

Since 1983, MR has used the Cyrillic transliteration in use by ANSI, LC, Zbl, ISI, and others. This is also the system used throughout this index for all items. A table listing the transliteration appears at the end of the author/key index.

### Names of Chinese authors

The name of a Chinese author appears in the index in Western form. For example, Hua Luo-geng will be listed as Hua, Luo Geng, as though the author's name were Luo Geng Hua. The pinyin transliteration is used for mainland Chinese authors and the Wade-Giles transliteration is used for Taiwanese authors.

In an undertaking of this size errors are inevitable, despite elaborate precautions and checks. The editors of Mathematical Reviews would be very glad to have their attention drawn to errors in this index and also in the earlier indexes.

# Mathematical Reviews

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- Aaberge, T.** A Gibbsian formulation of thermostatics. *Helv. Phys. Acta* **60** (1987), no. 8, 1052-1066. (Marek Elżanowski) **89h:80003** 80A05 (58F05, 80A10, 80A97)
- Equations of motion for continuum systems. *Internat. J. Theoret. Phys.* **26** (1987), no. 7, 697-706. (M. A. Grinfeld) **89f:73006** 73A05 (58F05, 73B05)
- Dynamics of electrically charged extended bodies: classical and quantum systems. *Internat. J. Theoret. Phys.* **26** (1987), no. 10, 991-1000. (M. I. Monastyrskii) **89m:78013** 78A99 (70G99, 81B99)
- Aaboe, Asger Hartvig** see From ancient omens to statistical mechanics, **89c:01002**; Bibliography: Aaboe, Asger Hartvig, **89h:01087** and Berggren, J. L., **89i:01061**
- Aaby, A. A.** (with Narayana, K. T.) Propositional temporal interval logic is PSPACE complete. *9th International Conference on Automated Deduction (Argonne, IL, 1988)*, 218-237, *Lecture Notes in Comput. Sci.*, 310, Springer, Berlin-New York, 1988. (see **89c:68004**) **68T15** (03B45, 03D15, 68Q15)
- Aalbersberg, Ushbrand Jan** (with Engelfriet, Joost; Rozenberg, Grzegorz) Restricting the complexity of regular DNL languages. *Graph grammars and their application to computer science (Warrenton, VA, 1986)*, 147-166, *Lecture Notes in Comput. Sci.*, 291, Springer, Berlin-New York, 1987. (see **89b:68009**) **68Q45** (05C20, 68Q15, 68Q50)
- (with Rozenberg, Grzegorz) Theory of traces. *Theoret. Comput. Sci.* **60** (1988), no. 1, 1-82. (Raymond Devillers) **89j:68042** 68Q10 (68-02, 68Q45, 68Q90)
- Aalen, Odd O.** Mixing distributions on a Markov chain. *Scand. J. Statist.* **14** (1987), no. 4, 281-289. (Antonin Lešanovský) **89d:60132** 60J27
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- Aamri, Mohamed** Quelques remarques sur le théorème du graphe fermé. (English summary) [Some remarks on the closed graph theorem] *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* **81** (1987), no. 1, 151-157. (T. Husain) **89d:46005** 46A30
- Ääremä, K.** (with Ääremä, R.; Tamman, T.) A representation of cluster-analysis: the approach using monotonic systems. (Russian summary) *Tartu Riikl. Ül. Toimetised No. 798* (1988), 37-50. (P. A. K. Covey-Crump) **89j:62077** 62H30
- Ääremä, R.** (with Ääremä, K.; Tamman, T.) A representation of cluster-analysis: the approach using monotonic systems. (Russian summary) *Tartu Riikl. Ül. Toimetised No. 798* (1988), 37-50. (P. A. K. Covey-Crump) **89j:62077** 62H30
- Aarnio, Aulis** On legal reasoning as practical reasoning. *Theoria (San Sebastián)* (2) 3 (1987/88), no. 7-9, 97-107. (Not in MR) **03B60**
- Aaronson, Jon** The intrinsic normalising constants of transformations preserving infinite measures. *J. Analyse Math.* **49** (1987), 239-270. (U. Krengel) **89g:28020** 28D05
- (with Gilat, David; Keane, Michael; de Valk, Vincent) An algebraic construction of a class of one-dependent processes. *Ann. Probab.* **17** (1989), no. 1, 128-143. (P. Laurie Davies) **89m:60084** 60G10 (28D05)
- Aarts, E.** Statistical cooling: a general approach to combinatorial optimization problems. *Mark Kac Seminar on Probability and Physics. Syllabus 1985-1987 (Amsterdam, 1985-1987)*, 29-31, *CWI Syllabi*, 17, Math. Centrum, Centrum Wisk. Inform., Amsterdam, 1988. (From the text) **89j:90208** 90C27
- (with Korst, Jan H. M.; van Laarhoven, P. J. M.) A quantitative analysis of the simulated annealing algorithm: a case study for the traveling salesman problem. *J. Statist. Phys.* **50** (1988), no. 1-2, 187-206. (Summary) **89d:90086** 90B10 (82-08, 82A99, 90C27)
- Aarts, J. M.** The structure of orbits in dynamical systems. *Fund. Math.* **129** (1988), no. 1, 39-58. (Lian-Fa He) **89k:54092** 54H20
- (with Martens, M.) Flows on one-dimensional spaces. *Fund. Math.* **131** (1988), no. 1, 53-67. (Michael Sears) **89k:54093** 54H20
- (with Frolík, Z.) Homeomorphisms of  $Q$  and the orbit classification of flows. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo (2) Suppl. No. 18* (1988), 15-25. (Karl Petersen) **89g:54089** 54H20
- Aasa, Annika** (with Holmström, Sören; Nilsson, Christina) An efficiency comparison of some representations of purely functional arrays. *BIT* **28** (1988), no. 3, 490-503. (Summary) **89i:68005** 68N05 (68P05)
- Aase, Knut K.** (with Guttorp, Peter) Estimation in models for security prices. *Scand. Actuar. J.* **1987**, no. 3-4, 211-224. (Not in MR) **90A09** (90A19)
- Contingent claims valuation when the security price is a combination of an Itô process and a random point process. *Stochastic Process. Appl.* **28** (1988), no. 2, 185-220. (Lorenzo Peccati) **89k:90015** 90A09
- Aasma, A.** Matrix transformations of summability fields. (Russian. English summary) *Tartu Riikl. Ül. Toimetised No. 770* (1987), 38-50. (Jozef Antoni) **89d:40005** 40D15
- Abad, Alberto J.** (with Docobo, José A.) The application of hierarchical relative coordinates to the analysis of the movement of subsystems of many-body problems. *Celestial Mech.* **41** (1987/88), no. 1-4, 333-342. (Fu Tong) **89g:70009** 70F10 (70F15)
- Abad, J.** (with Rodríguez-Trias, R.) Study of the BRS charge in the Polyakov string by the Kugo-Ojima method. *Internat. J. Modern Phys. A* **3** (1988), no. 4, 943-951. (Summary) **89f:81148** 81E99 (81E30)
- Abadie, J.** (with Salhi, Y.) Sur la dérivation numérique en optimisation. (English summary) [On numerical derivation in optimization] *RAIRO Rech. Opér.* **22** (1988), no. 1, 1-26. (Dietrich Braess) **89f:90129** 90C30 (65D25, 65H05, 65K05)
- Abad Montes, Francisco** (with González Carmona, Andrés) Moments of a controlled Markov branching process. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish) (Badajoz, 1986)*, 339-352, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89g:60255** 60J80
- Abaffy, J.** (with Galántai, Aurél; Spedicato, E.) The local convergence of ABS methods for nonlinear algebraic equations. *Numer. Math.* **51** (1987), no. 4, 429-439. (François Robert) **89c:65065** 65H10
- (with Galántai, Aurél) Conjugate direction methods for linear and nonlinear systems of algebraic conditions. *Numerical methods (Miskolc, 1986)*, 481-502, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (François Robert) **89c:65051** 65H10 (65F05, 90C30)
- Superlinear convergence theorem in the ABSg class of algorithms for nonlinear algebraic equations. *J. Optim. Theory Appl.* **59** (1988), no. 1, 39-43. (I. Norman Katz) **89i:65055** 65H10
- Abagyan, R. A.** (with Mazur, A. K.; Elyakov, G. B.) A new approach to modeling the structure and dynamics of biomacromolecules and their complexes. (Russian) *Dokl. Akad. Nauk SSSR* **304** (1989), no. 2, 456-460. (From the text) **89k:92090** 92A40 (92A05)
- Abaldullin, R. N.** Minimizing the usage cost of random-access memory. Investigations in applied mathematics, No. 5. *J. Soviet Math.* **42** (1988), no. 3, 1673-1676. (Not in MR) **68P20**
- Abatyl'danov, K. N.** Solution of optimization problems on permutations with a priority condition for the chosen subsets. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1987**, no. 3, 3-7. (Summary) **89c:90165** 90C27
- Abakumov, E. V.** (with Mekler, A. A.) Rearrangement of segments and a problem on the identification of symmetric spaces. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 2, 3-9, 82; translation in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 2, 1-10. (Yu. A. Brudnyi) **89m:46050** 46E30
- Abakumov, Yu. G.** Some properties of Chebyshev systems connected with continuability. (Russian) *Application of functional analysis, in approximation theory (Russian)*, 3-6, 142, *Kalinin. Gos. Univ., Kalinin*, 1984. (see **89c:00006**) **41A50**
- (with Banin, V. G.) The Voronovskaya theorem from a general point of view. (Russian) *Application of functional analysis in approximation theory (Russian)*, 4-6, *Kalinin. Gos. Univ., Kalinin*, 1987. (Wei-yi Su) **89f:41038** 41A65
- Abalakin, I. V.** (with Dorodnitsyn, L. V.; Elizandrova, T. G.) Direct numerical modeling of the Blasius problem. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1107-1113, 1283; translation in *Differential Equations* **24** (1988), no. 7, 701-706. (Summary) **89f:76057** 76J99 (76-08, 76N05, 76P05)
- Aballagh, M.** (with Djebbar, A.) Découverte d'un écrit mathématique d'al-Hassār (XIIe S.): le livre I du *Kāmil*. (English and Arabic summaries) [Discovery of a mathematical text of al-Hassār (12th C.): Book I of the *Kāmil*] *Historia Math.* **14** (1987), no. 2, 147-158. (Jan P. Hogendijk) **89b:01010** 01A30
- Abanin, A. V.** Universally representative Mittag-Leffler systems. (Russian) *Theory of functions and approximations, Part 2 (Russian)* (Saratov, 1984), 3-6, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) **30D10**
- Abarbanel, Henry D. I.** (with Rouhi, A.) Hamiltonian structures for smooth vector fields. *Phys. Lett. A* **124** (1987), no. 4-5, 281-286. (Gerard Thompson) **89a:58035** 58F05
- Abarbanel, Saul** (with Gottlieb, David) Information content in spectral calculations. *Progress and supercomputing in computational fluid dynamics (Jerusalem, 1984)*, 345-356, *Progr. Sci. Comput.*, 6, Birkhäuser Boston, Boston, MA, 1985. (Pietro Marzulli) **89b:65229** 65M99
- Abasov, T. M.** Determination of the saddle points of bilinear functions. (Russian) *Discrete mathematics and computer software (Russian)*, 3-9, *Azerbaidzhan. Gos. Univ., Baku*, 1986. (Quan Zheng) **89f:90198** 90D05 (49A27, 49A40)
- The determination of saddle points. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **43** (1987), no. 1, 15-18. (From the text) **89d:90156** 90C20 (49D07, 49D40)
- Duality in problems of the search for saddle points. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **43** (1987), no. 6, 8-12. (Ivan Singer) **89h:90175** 90C25 (90C30)
- Abatangelo, L. Maria** A group-theoretic characterization of Hermitian curves. (Italian. English summary) *Matematiche (Catania)* **39** (1984), no. 1-2, 101-110 (1988). (Giorgio Faina) **89d:51008** 51E20
- Collineation groups of spreads. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), B, 247-256. (J. W. P. Hirschfeld) **89f:51016** 51A40 (05B25, 20B25, 51E15)
- Abate, Joseph** (with Whitt, Ward) Transient behavior of the  $M/M/1$  queue via Laplace transforms. *Adv. in Appl. Probab.* **20** (1988), no. 1, 145-178. (Stig I. Rosenlund) **89c:60178** 60K25 (90B22)
- (with Whitt, Ward) The correlation functions of RBM and  $M/M/1$ . *Comm. Statist. Stochastic Models* **4** (1988), no. 2, 315-359. (R. Bergmann) **89g:60275** 60K25 (60J65, 90B22)
- (with Whitt, Ward) Simple spectral representations for the  $M/M/1$  queue. *Queueing Systems Theory Appl.* **3** (1988), no. 4, 321-345. (Erik A. van Doorn) **89m:60214** 60K25 (90B22)



- Abate, Marco** Automorphism groups of the classical domains. I. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 79 (1985), no. 1-4, 25-30 (1986). (Jean-Jacques Loeb) **89f:32059** 32M05
- Automorphism groups of the classical domains. II. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 79 (1985), no. 5, 127-131 (1986). (Jean-Jacques Loeb) **89f:32060** 32M05
- Orbit structure of noncompact Hermitian symmetric spaces. (Italian summary) *Rend. Circ. Mat. Palermo* (2) 36 (1987), no. 2, 241-280. (Jean-Jacques Loeb) **89i:32069** 32M15 (32E35, 53C35)
- Abbasov, N. T.** Projective spaces over an algebra of biquasialternions. (Russian) *Studies in geometry (Russian)*, 3-12, *Azerbaidzhan. Gos. Univ., Baku*, 1987. (J. Katerňák) **89f:53013** 53A20
- (with Alieva, M. G.) Symplectic spaces over the algebra of biquasialternions. (Russian) *Studies in geometry (Russian)*, 13-19, *Azerbaidzhan. Gos. Univ., Baku*, 1987. (V. Cruceanu) **89f:51091** 51N25 (53A40)
- (with Ragimova, Z. A.) Elliptic and hyperbolic spaces over an algebra of biquasialternions. (Russian) *Studies in geometry (Russian)*, 20-26, *Azerbaidzhan. Gos. Univ., Baku*, 1987. (J. Katerňák) **89f:53018** 53A35
- see also *Studies in geometry*, **89a:53004**
- Abbena, Elsa** An observation on almost Kähler manifolds. (Italian. English summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* 115 (1981), no. 5-6, 357-362 (1984). (Franco Tricuri) **89c:53048** 53C55 (53C15)
- (with Garbiero, Sergio) On some types of almost Hermitian homogeneous structures. (Italian summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* 120 (1986), no. 5-6, 145-152 (1987). (Y. Tashiro) **89c:53054** 53C15 (53C30)
- Abblas, J. B.** see *Mathematics in signal processing*, **89b:94004**
- Abbott, H. L.** (with Liu, Andy C. F.) On a problem of Erdős concerning property B. *Combinatorica* 7 (1987), no. 3, 215-219. (G. F. Clements) **89a:05006** 05A05
- (with Katchalski, M.) On the snake in the box problem. *J. Combin. Theory Ser. B* 45 (1988), no. 1, 13-24. (Chris Rodger) **89i:05173** 05C38 (05C35, 94B25)
- Abbott, J. A.** (with Bradford, R. J.; Davenport, James H.) Factorisation of polynomials: old ideas and recent results. *Trends in computer algebra (Bad Neuenahr, 1987)*, 81-91, *Lecture Notes in Comput. Sci.*, 296, Springer, Berlin-New York, 1988. (Joachim von zur Gathen) **89f:12001** 12-04 (11R09, 11Y05, 68Q40)
- (with Davenport, James H.) Another surprising property of 42. A remark on a paper by P. S. Wang: "Factoring multivariate polynomials over algebraic number fields" [Math. Comp. 30 (1976), no. 134, 324-336; MR 58 #27887a]. *Math. Comp.* 51 (1988), no. 184, 837-839. (T. M. Apostol) **89d:11009** 11R09 (12-04)
- Abbott, J. H.** (with Kythe, P. K.) Propagation and interference of waves in oscillatory heat conduction in composite media. *Riv. Mat. Univ. Parma* (4) 12 (1986), 227-236 (1987). (S. N. Murthy) **89c:80008** 80A20
- Abbott, L. F.** (with Traschen, I.; Xu, Rui-Ming) Integral constraints in general relativity. *Nuclear Phys. B* 296 (1988), no. 3, 710-716. (R. J. McKellar) **89b:83062** 83C99 (83C20)
- Abbott, P. C.** (with Maslen, E. N.) Coordinate systems and analytic expansions for three-body atomic wavefunctions. I. Partial summation for the Fock expansion in hyperspherical coordinates. *J. Phys. A* 20 (1987), no. 8, 2043-2075. (A. Ventura) **89g:8107a** 81G45
- (with Gottschalk, J. E.; Maslen, E. N.) Coordinate systems and analytic expansions for three-body atomic wavefunctions. II. Closed form wavefunction to second order in  $r$ . *J. Phys. A* 20 (1987), no. 8, 2077-2104. (A. Ventura) **89g:8107b** 81G45
- Abdoud, Elias** Q-admissibility of certain nonseparable groups. *Israel J. Math.* 59 (1987), no. 3, 272-282. (B. Heinrich Matzat) **89f:11154** 11R32 (11R21, 12E15, 16A39)
- Abdallimov, B.** The central limit theorem for U-statistics from weakly dependent variables. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1988, no. 2, 3-6, 83. (Werner Wolf) **89m:60044** 60F05
- Abd-Alla, A. N.** (with Maugin, Gérard A.) Linear and nonlinear surface waves on magnetostrictive crystals in a bias magnetic field. *Recent developments in surface acoustic waves (Nottingham, 1987)*, 36-46, Springer Ser. Wave Phenomena, 7, Springer, Berlin-New York, 1988. (see **89f:73001**) 73D15 (73R05)
- (with Maugin, Gérard A.) Perturbation solutions of magnetomechanical signal processing devices. *Trends in applications of mathematics to mechanics (Wassenaar, 1987)*, 44-52, Springer, Berlin-New York, 1988. (see **89g:58004**) 73R05
- Abdalla, Adil E. A.** A characterization of employment distortions in labor contracts with asymmetric information. *Econom. Lett.* 27 (1988), no. 1, 15-21. (Not in MR) 90A12 (90A09, 90A15)
- Abdalla, E.** (with Lima Santos, A.) Factorizable S-matrix for  $SO(D)/SO(2) \otimes SO(D-2)$  nonlinear  $\sigma$  models with fermions. *Modern Phys. Lett. A* 3 (1988), no. 3, 311-317. (Summary) **89a:81056** 81E13 (81E30)
- (with Lima Santos, A.) On the operator solution of the Liouville theory. *Modern Phys. Lett. A* 3 (1988), no. 16, 1579-1584. (Not in MR) 81E99 (81E15)
- (with Abdalla, M. C. B.; Forger, M.) Exact S-matrices for anomaly-free nonlinear sigma models on symmetric spaces. *Nuclear Phys. B* 297 (1988), no. 2, 374-400. (Enore Guadagnini) **89c:81098** 81E99 (22E70, 53C35, 58E20, 81E08, 81F15)
- (with Forger, M.; Jacques, Michel) Higher conservation laws for ten-dimensional supersymmetric Yang-Mills theories. *Nuclear Phys. B* 307 (1988), no. 1, 198-220. (Summary) **89b:81096** 81E13 (53C80, 81E30)
- (with Lima Santos, A.) Bound state solution of the Grassmannian nonlinear sigma model with fermions. *Phys. Lett. B* 206 (1988), no. 2, 281-284. (Enore Guadagnini) **89f:81092** 81E13 (81E15, 81E20)
- Abdalla, M. C. B.** (with Abdalla, E.; Forger, M.) Exact S-matrices for anomaly-free nonlinear sigma models on symmetric spaces. *Nuclear Phys. B* 297 (1988), no. 2, 374-400. (Enore Guadagnini) **89c:81098** 81E99 (22E70, 53C35, 58E20, 81E08, 81F15)
- Abdalla, M. Sebawe** (with Ramjit, Ursula A. T.) Quantum mechanics of the damped pulsating oscillator. *J. Math. Phys.* 30 (1989), no. 1, 60-65. (Kotik K. Lee) **89k:81208** 81K05 (81D30)
- Abdalla, S. M.** Decomposition of certain hyponormal operators. (Arabic summary) *Proc. Math. Phys. Soc. Egypt No. 60* (1985), 43-45 (1987). (Not in MR) 47R20
- Decomposition of quasnormal operators. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 30 (1987), 43-45. (Hong W. Kim) **89b:47034** 47R20
- **Abdallah, Mohand-Areski** see **Nait Abdallah, Mohand-Areski**
- Abdallaoui, G.** Probability of maintaining or attaining a structure in one step. *J. Appl. Probab.* 24 (1987), no. 4, 1006-1011. (Summary) **89f:60079** 60J20 (92A20)
- Abdel-aal, M. A.** (with El-Deen, M. I. Hossam) Asymptotic relationship between solutions of two systems of differential equations. *Proc. Pakistan Acad. Sci.* 24 (1987), no. 4, 349-360. (Walter Eberhard) **89d:34090** 34E05 (34C10)
- (with Zaghrout, Afaf A. S.; Ragab, A. A.; Ali, M.) On periodic solutions of autonomous systems. *Proc. Pakistan Acad. Sci.* 25 (1988), no. 3, 203-230. (T. G. Proctor) **89k:34067** 34C27 (34C20)
- Abdel-Akber, Ahmed** (with Hartley, Gilbert A.) Evaluation of boundary integrals for plate bending. *Internat. J. Numer. Methods Engrg.* 28 (1989), no. 1, 75-93. (Summary) **89j:73003** 73-08 (73K30)
- Abdel-All, N. H.** (with Soliman, M. A.) Three-dimensional line manifolds immersed in the space of constant curvature. (Arabic summary) *Bull. Fac. Sci. Assiut Univ. A* 16 (1987), no. 1, 195-203. (Hans Sachs) **89m:53025** 53A25 (53A20, 53A35)
- (with Soliman, M. A.) Differential geometry of families of planes in the elliptic space. *Bull. Fac. Sci. Assiut Univ. A* 16 (1987), no. 1, 259-270. (Hans Sachs) **89m:53029** 53A35 (53A25)
- (with Soliman, M. A.) Three-dimensional line manifolds immersed in the space of constant curvature. *Bull. Calcutta Math. Soc.* 80 (1988), no. 5, 317-322. (Josef Vala) **89m:53026** 53A25
- Abdel-Ghaffar, Khaled A. S.** On the existence of optimum cyclic burst correcting codes over  $GF(q)$ . *IEEE Trans. Inform. Theory* 34 (1988), no. 2, 329-332. (L. R. Vermani) **89g:94032** 94B15 (94B20)
- (with McEliece, Robert J.; van Tilborg, Henk C. A.) Two-dimensional burst identification codes and their use in burst correction. *IEEE Trans. Inform. Theory* 34 (1988), no. 3, 494-504. (Jacques Wolfmann) **89k:94070** 94B20
- Abd El-Hakeim, K. M.** (with Mashhour, A. S.; Allam, A. A.; Hasanein, I. A.) On strongly compactness. *Bull. Calcutta Math. Soc.* 79 (1987), no. 4, 243-248. (M. K. Vamanamurthy) **89g:54049** 54D10 (54D30)
- (with Mashhour, A. S.; Allam, A. A.) On fuzzy semicompact spaces. (Arabic summary) *Bull. Fac. Sci. Assiut Univ. A* 16 (1987), no. 1, 277-285. (Not in MR) 54A40 (03E72)
- Abdel-Hameed, M.** Correction: "Optimum replacement of a system subject to shocks" [J. Appl. Probab. 23 (1986), no. 1, 107-114; MR 87g:60077]. *J. Appl. Probab.* 25 (1988), no. 3, 647. (Editors) **89c:60176** 60K20 (90B25)
- Abd El Malek, Alfay** (with Eduque, Alberto) On the J-nucleus of a Mal'cev algebra. *Algebras Groups Geom.* 3 (1986), no. 4, 493-503. (Kiyosi Yamaguti) **89c:17040** 17D10
- Abd El-Monsef, M. E.** (with Kozae, A. M.)  $\beta$ -open sets and S-closed spaces. (Arabic summary) Third topological symposium (Assiut, 1985). *Bull. Fac. Sci. Assiut Univ. A* 14 (1985), no. 2, 129-140 (1986). (Jack R. Porter) **89a:54028** 54D25
- (with Geisa, A. N.; Mahmoud, R. A.)  $\beta$ -regular spaces. (Arabic summary) *Proc. Math. Phys. Soc. Egypt No. 60* (1985), 47-52 (1987). (Mohan L. Tikoo) **89f:54042** 54D15
- (with Mashhour, A. S.; Zeyada, F. M.) On perfect functions. (Arabic summary) *Proc. Math. Phys. Soc. Egypt No. 60* (1985), 53-64 (1987). (Mohan L. Tikoo) **89f:54028** 54C08
- (with Mashhour, A. S.; Farrag, A. S.) On the number of topologies on a finite set. (Arabic summary) *Delta J. Sci.* 10 (1986), no. 1, 41-65. (N. Hindman) **89c:54004** EA 89m 54A10 (05A15)
- (with Geisa, A. N.; Lashien, E. F.) Some weaker forms of regularity. (Arabic summary) *Delta J. Sci.* 10 (1986), no. 2, 465-475. (J. E. Vaughan) **89g:54001** 54A05 (54D99)
- (with Mashhour, A. S.; Ramadan, A. E.) Connectedness in fuzzy topological spaces. (Arabic summary) *Delta J. Sci.* 10 (1986), no. 2, 488-495. (O. Costinescu) **89g:54016** 54A40 (03E72)
- (with Mashhour, A. S.; Farrag, A. S.) Remarks on maximum cardinality for topologies on finite sets. (Arabic summary) *Delta J. Sci.* 10 (1986), no. 2, 496-512. (Andreas Blass) **89g:54003** 54A05 (04A20, 05A99)
- On S-irreducible spaces. (Arabic summary) *Delta J. Sci.* 10 (1986), no. 2, 513-519. (S. Gene Crossley) **89m:54040** 54D99 (54C10)
- Abdel-Salam, M.** (with Fetih, N.; El-Sayed, E. M.) The use of integral cycle switching for control of three-phase induction motors. (Russian summary) *Systems Sci.* 12 (1986), no. 1-2, 123-143 (1987). (Not in MR) 93C75 (93B50)
- Abdi, Wazir Hasan** On bibasic analogues of Ramanujan's results. *J. Math. Phys. Sci.* 22 (1988), no. 1, 79-86. (Peter Paule) **89i:05039** 05A30
- Abdi'din, M. M.** ★ Механика теории гравитации Эйнштейна. (Russian) [Mechanics of Einstein's theory of gravitation] "Nauka" Kazakh. SSR, Alma-Ata, 1988. 199 pp. ISBN 5-628-00027-2 (From the preface) **89m:83008** 83C10
- Abdiazarov, S.** A boundary value problem for an equation of even order with multiple characteristics. (Russian) *Equations of mixed type and free boundary value problems (Russian)*, 133-147, 252, "Fan", Tashkent, 1987. (Guang Chang Dong) **89c:35035** 35G30
- A nonlocal boundary value problem for a higher-order equation of parabolic type with nonclassical boundary conditions. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1987, no. 4, 3-7, 88. (V. N. Razzhevaikin) **89d:35079** 35K35
- Abdoo, J.** Neutral veto correspondences with a continuum of alternatives. *Internat. J. Game Theory* 17 (1988), no. 2, 135-164. (Anjan Mukherji) **89g:90014** 90A08 (90A07)
- Abdrakhmanov, M. A.** Estimates for the solution of an initial-boundary value problem for a system of equations of elliptic-parabolic type in Sobolev classes. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1988, no. 3, 3-7. (Bogdan Nowak) **89m:35150** 35M05 (35B45)
- Energy inequalities and theorems for the solvability of the first boundary value problem for a parabolic-elliptic system of two equations. (Russian) *Vestnik Akad. Nauk Kazakh. SSR* 1988, no. 9, 50-55. (Bogdan Nowak) **89m:35151** 35M05 (35B45)
- Abdrakhmanov, V. G.** (with Smolin, Yu. N.) Volterra-conjugate functional-differential equations. (Russian) *Boundary value problems (Russian)*, 85-93, 197, Perm. Politekh. Inst., Perm, 1983. (see **89c:00008**) 45D05 (34K05)
- Abduganiev, A. A.** A simplified scheme for constructing a Pontryagin alternating integral. (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 10, 3-4. (O. Lipovan) **89g:26007** 26A39 (49A45, 90D26)
- Abdulkhalikov, K. S.** Invariant lattices in Lie algebras of type  $A_{q-1}$ . (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1(259), 187-188; translated in *Russian Math. Surveys* 43 (1988), no. 1, 227-228. (K. Strambach) **89g:11054** 11H06 (17B20)

- Abdul-Al, Khaled I.** On asymptotic properties of an estimate of a functional of a probability density. *Punjab Univ. J. Math. (Lahore)* **20** (1987), 13-21. (Leslaw Gajek) **89f:62035** 62G05 (62E20)
- Estimation of the derivatives of probability function and mode for uniform mixing process. *Pakistan J. Statist.* **4** (1988), no. 1, 55-69. (Hung Trung Nguyen) **89f:62049** 62G05
- Abdullali, Salman** Zeta functions of Kuga fiber varieties. *Duke Math. J.* **57** (1988), no. 1, 333-345. (V. Kumar Murty) **89f:11048** 11G18 (11G40, 14G10, 14K15)
- Abdulleev, R. A.** (with Simonova, L. G.) Quadratic error of an unbiased estimate of the probability density of sufficient statistics of the normal distribution. Statistical methods of estimation and verification of hypotheses. *J. Soviet Math.* **41** (1988), no. 1, 805-809. (Jon Stene) **89f:62038** 62F10
- Abdul Hadi, Z.** (with Hengartner, W.) Univalent logharmonic mappings. (Russian and Polish summaries) Proceedings of the 9th Conference on Analytic Functions (Lublin, 1986). *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **40** (1986), 1-11 (1987). (From the introduction) **89f:30009** 30C45
- (with Hengartner, W.) Spirallike logharmonic mappings. *Complex Variables Theory Appl.* **9** (1987), no. 2-3, 121-130. (Carl P. McCarthy) **89a:30012** 30C55
- (with Bshouty, D.) Univalent functions in  $H \cdot \bar{H}(D)$ . *Trans. Amer. Math. Soc.* **305** (1988), no. 2, 841-849. (G. Schober) **89c:30045** 30C60
- Abdul Kader, N. A.** (with Hadid, S. B.) On the conditions for the nonoscillatory solutions of nonlinear higher order differential equations. *Progr. Math. (Varanasi)* **21** (1987), no. 1, 23-28. (Vincent Soltés) **89c:34067** 34C15 (34A34, 34C11)
- Abdulkarimov, L. Sh.** Determination of the right-hand sides of uniformly well-posed evolution equations. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 1, 33-36. (H. O. Fattorini) **89e:47059** 47D05 (34G10)
- Abdulkhasanov, A. A.** Mathematical modeling of the spread of communicable diseases. (Russian) *Investigations in degenerate differential equations and limit theorems of probability theory* (Russian), 95-96. Tashkent. Gos. Ped. Inst., Tashkent, 1985. (see **89g:60002**) 92A15
- Abdulla, Mukhibulla** (with Isachenko, A. N.) A polyhedron in a quadratic Boolean programming problem. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1988**, no. 3, 68-70, 79. (Summary) **89m:90110** 90C09 (50C20)
- Abdullaev, A. I.** Determination of the domain of feasibility of the consumer cost vector in the nondeterministic case. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **43** (1987), no. 12, 3-6 (1988). (Summary) **89d:90128** 90C05
- Abdullaev, A. R.** Nonlinear perturbations of a linear surjective operator. (Russian) *Boundary value problems* (Russian), 41-44, iv. Perm. Politekh. Inst., Perm, 1986. (see **89c:00009**) 47H15
- Abdullaev, A. S.** Some boundary value problems for a mixed parabolic-hyperbolic equation with two parallel lines of change of type. (Russian) *Equations of mixed type and free boundary value problems* (Russian), 71-82, 250. "Fan", Tashkent, 1987. (Summary) **89h:35230** 35M05
- Abdullaev, F. Kh.** (with Abdullaliev, A. A.) Interaction of solitons in two connected optic waveguides. (Russian) *Pis'ma Zh. Tekhn. Fiz.* **14** (1988), no. 11, 1041-1044. (Not in MR) **78A50**
- Abdullaev, F. Sh.** (with Grachev, N. I.; Evtushenko, Yu. G.) Optimization of stiff systems. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 230-235. "Nauka", Moscow, 1987. (From the text) **89c:49022** 49D25 (49B10)
- Abdullaev, I.** (with Kogan, L. A.) Finiteness of quadratic forms of Weil type. (Russian) *Dokl. Akad. Nauk UzSSR* **1986**, no. 3, 12-13. (Reinhard Bölling) **89g:11031** 11E20 (11E45)
- Abdullaev, S. K.** (with Vasil'ev, V. V.) Some classes of multidimensional singular integral equations over a half space in a weighted Hölder scale. (Russian) *Singular integral operators* (Russian), 3-15, 100. Azerbaidzhan. Gos. Univ., Baku, 1986. (N. K. Karapetyants) **89a:45013** 45E99 (45N05)
- Abdullaev, S. S.** (with Zaslavskii, G. M.) Dynamics and transverse drift of rays in moving inhomogeneous media. *Izv. Acad. Sci. USSR Atmospher. Ocean. Phys.* **23** (1987), no. 7, 542-547 (1988); translated from *Izv. Akad. Nauk SSSR Ser. Fiz. Atmosf. i Okeana* **23** (1987), no. 7 (Russian). (Summary) **89c:76087** 76Q05 (78A45, 86A05)
- Abdullaev, U. G.** (with Iskenderov, A. D.) Well-posedness of the problem of determining the unknown boundary of a domain in a self-similar regime. (Russian) *Zh. vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 7, 1108-1110, 1120. (Summary) **89h:35347** 35R35 (35K55)
- Abdullaev, Ya. Yu.** (with Dzhabrailov, A. D.) A limit theorem on the embedding of weighted spaces of functions with mixed derivatives. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **43** (1987), no. 11, 8-11 (1988). (Wojciech M. Zajączkowski) **89j:46032** 46E35
- Abdullaeva, R. A.** (with Babaev, R. M.) The order of approximation of singular integrals in the sense of the Hadamard finite part. (Russian) *Linear operators and their applications* (Russian), 18-22. Azerbaidzhan. Gos. Univ., Baku, 1986. (see **89c:00016**) 41A25 (42B20)
- Abdullah, Mokhtar B.** On  $W$ -estimators of a linear functional relationship. *Comm. Statist. Theory Methods* **18** (1989), no. 1, 287-314. (Not in MR) 62J05
- Abdullah, Saleh** Solvability of convolution equations in  $K'_\mu$ . *Hokkaido Math. J.* **17** (1988), no. 2, 197-209. (Gopi Ahuja) **89h:46061** 46F10
- On the spaces of convolution operators and multipliers in  $\mathcal{H}'_\mu$ . (Arabic summary) *J. Univ. Kuwait Sci.* **15** (1988), no. 2, 219-228. (Stevan Pilipović) **89m:46075** 46F05 (46F10, 47B38)
- wan Abdullah, Wan Ahmad Tajuddin** see **Wan Abdullah, Wan Ahmad Tajuddin**
- Abdullayev, S. S.** see **Abdullaev, A. S.**
- Abdulla-Zade, Kh. F.** Nizam ad-Din Birdzhandi's "Treatise on observational instruments". (Russian. Tajiki summary) *Izv. Akad. Nauk Tadzhik. SSR Otdel. Fiz.-Mat. Khim. i Geol. Nauk* **1986**, no. 3(101), 120-123 (1987). (E. S. Kennedy) **89c:01010** 01A30 (01A75)
- Kushiir Dzhibili's Book on the astrolabe. (Russian. Tajiki summary) *Izv. Akad. Nauk Tadzhik. SSR Otdel. Fiz.-Mat. Khim. i Geol. Nauk* **1986**, no. 4(102), 51-57 (1987). (E. S. Kennedy) **89g:01009** 01A30
- Abdullin, R. Z.** On the construction of lower bounds on the derivative of a vector Lyapunov function. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 9-16, 322. "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (A. Pelczar) **89i:34070** 34D20
- Abdulloev, Kh. O.** The dynamics of nonlinear equations and the formation of non-one-dimensional solitons. (Russian. Tajiki summary) *Izv. Akad. Nauk Tadzhik. SSR Otdel. Fiz.-Mat. Khim. i Geol. Nauk* **1986**, no. 4(102), 41-44 (1987). (Summary) **89d:35145** 35Q20
- Abdul-Wahab, Abdul-Amir A.** (with Zohdy, M. A.) Generalized linear transformations on the design of robust dynamic output feedback controllers. *Internat. J. Control* **48** (1988), no. 3, 1241-1266. (Summary) **89g:93035** 93B35 (93B17)
- (with Zohdy, M. A.) Eigenvalue clustering in subregions of the complex plane. *Internat. J. Control* **48** (1988), no. 6, 2527-2538. (Summary) **89f:93057** 93B60 (93B55, 93C35)
- Abdumalikov, A. A.** (with Abdullaev, F. Kh.) Interaction of solitons in two connected optic waveguides. (Russian) *Pis'ma Zh. Tekhn. Fiz.* **14** (1988), no. 11, 1041-1044. (Not in MR) **78A50**
- Abdurachman, Edil** (with David, H. T.) Cesàro limits of marked point processes on the line. *Comm. Statist. Stochastic Models* **4** (1988), no. 1, 77-98. (Alan F. Karr) **89i:60102** 60G55 (60K15)
- Abdurakhmanov, T.** Unbiased estimates for the ratio of missed defective parts from the results of a test with the smallest sample size. (Russian) *Investigations in degenerate differential equations and limit theorems of probability theory* (Russian), 58-71. Tashkent. Gos. Ped. Inst., Tashkent, 1985. (see **89g:60002**) 62N10
- Abdusamator, R. M.** (with Berkinblit, M. B.; Feldman, A. G.; Chernavskii, A. V.) Motility and intellect. (Russian) *Intellectual processes and their modeling* (Russian), 5-38, 394. "Nauka", Moscow, 1987. (see **89b:92032**) 92A09 (92A25)
- Abdushukurov, A. A.** (with Kim, L. V.) Cramér-Rao and Bhattacharyya lower bounds under random censoring of observations. (Russian) *Probability distributions and mathematical statistics* (Russian) (Fergana, 1983), 20-40, 487. "Fan", Tashkent, 1986. (Julia Volaufová) **89e:62029** 62F10
- Estimation of the probability density and intensity function in the Koziol-Green model of random censoring. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 3, 3-10, 96. (Wolfgang Wertz) **89b:62056** 62G05
- Abdusaitov, Kh.** On the existence of a Lyapunov-Krasovskii function for a second-order system. (Russian. Tajiki summary) *Izv. Akad. Nauk Tadzhik. SSR Otdel. Fiz.-Mat. Khim. i Geol. Nauk* **1986**, no. 4(102), 14-18 (1987). (Ji Bin Li) **89c:34048** 34D20 (58F10)
- On the problem of the stability of gradient systems. (Russian. English summary) *Aviromat. i Telemekh.* **1987**, no. 6, 3-6. (Jianxun He) **89c:34110** 34D05 (93A10)
- Abdusvaliev, A. O.** Asymptotic approximations of the solutions of boundary value problems for a system of linear ordinary differential equations with a small parameter multiplying one of the derivatives. (Russian) *Izv. Akad. Nauk Kirgiz. SSR* **1988**, no. 2, 12-15, 91. (Summary) **89j:34019** 34A45 (34B05, 34E15)
- Abe, Eiichi** (with Morita, Jun) Some Tits systems with affine Weyl groups in Chevalley groups over Dedekind domains. *J. Algebra* **115** (1988), no. 2, 450-465. (Naohisa Shimomura) **89e:20086** 20G25 (17B67, 19C20, 20G15, 20G30)
- Abe, Hitoshi** On meromorphic and univalent functions. *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 7, 247-249. (G. P. Bhargava) **89c:30033** 30C55 (30D30)
- Abe, Jair Minoru** A note on Curry algebras. *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* **16** (1987), no. 4, 151-158. (Ivo Düntsch) **89e:03113** 03G25
- Abe, Kanji** (with Itoh, Toshiaki) Hamiltonian-conserving discrete canonical equations based on variational difference quotients. *J. Comput. Phys.* **76** (1988), no. 1, 85-102. (Ram Krishan Sharma) **89j:70025** 70H05 (58F05, 70-08, 70F05)
- Abe, Kinetzu** (with Blair, D. E.) Ruled hypersurfaces of Euclidean space. *Rocky Mountain J. Math.* **17** (1987), no. 4, 697-708. (Thomas E. Cecil) **89d:53013** 53A07 (53C40)
- Abe, Mitsuko** (with Kubota, Hiroshi; Sakai, Norisuke) Loop corrections to the  $E_8 \times E_8$  heterotic string effective Lagrangian. *Nuclear Phys. B* **306** (1988), no. 2, 405-424. (C. Gauthier) **89f:81149** 81E99 (81E30, 83E30)
- (with Kubota, Hiroshi; Sakai, Norisuke) Loop corrections to the heterotic string effective Lagrangian. *Phys. Lett. B* **200** (1988), no. 4, 461-465. (Summary) **89h:81157a** 81E99 (81E30)
- (with Kubota, Hiroshi; Sakai, Norisuke) Addendum: "Loop corrections to the heterotic string effective Lagrangian". *Phys. Lett. B* **203** (1988), no. 4, 474. (Summary) **89h:81157b** 81E99 (81E30)
- (with Sakai, Norisuke) Coupling constant relations and effective Lagrangian in the type I superstring. *Progr. Theoret. Phys.* **80** (1988), no. 1, 162-173. (Summary) **89h:81229** 81E99 (81E30)
- Abe, Mitsuo** (with Ichinose, Shoichi; Nakanishi, Noboru) Kerr metric, de Donder condition and gravitational energy density. *Progr. Theoret. Phys.* **78** (1987), no. 5, 1186-1201. (Enric Verdaguer) **89c:83028** 83C30 (83C15)
- (with Nakanishi, Noboru) Complete gauge fixing in the new local supersymmetry of the vierbein formalism of Einstein gravity. *Progr. Theoret. Phys.* **79** (1988), no. 1, 227-239. (Summary) **89e:83032** 83C40 (81E99)
- (with Nakanishi, Noboru) BRS-invariant Lagrangian density in the new local supersymmetry of the vierbein formalism of Einstein gravity. *Progr. Theoret. Phys.* **79** (1988), no. 1, 240-249. (Summary) **89d:83034** 83C45 (81E20)
- Another supersymmetric extension of local Lorentz symmetry in the vierbein formalism of Einstein gravity. *Z. Phys. C* **41** (1989), no. 4, 637-643. (Mark D. Roberts) **89m:83090** 83E50 (83C40)
- Abe, Naoto** (with Uchida, Kenko; Shimemura, E.) Circle condition and stability margin of the optimal regulator for systems with delays. *Internat. J. Control* **46** (1987), no. 4, 1203-1212. (Summary) **89a:34090a** 34K35 (34K20, 93B50)
- (with Koike, Naoyuki; Yamaguchi, Seiichi) Congruence theorems for proper semi-Riemannian hypersurfaces in a real space form. *Yokohama Math. J.* **35** (1987), no. 1-2, 123-136. (Bang-ye Chen) **89a:53029** 53B30 (53B25)
- (with Uchida, Kenko; Shimemura, E.; Kubo, T.) Optimal regulator for linear systems with delays in state and control. Spectrum decomposition and prediction approach. *Analysis and optimization of systems* (Antibes, 1988), 32-43. *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Ivan Ginchev) **89i:34111** 34K35 (49D40, 93B50, 93B55)
- (with Uchida, Kenko; Shimemura, E.) Corrigendum: "Circle condition and stability margin of the optimal regulator for systems with delays". *Internat. J. Control* **47** (1988), no. 5, 1569. (Editors) **89a:34090b** 34K35 (34K20, 93B50)
- Geometry of certain first order differential operators and its applications to general connections. *Kodai Math. J.* **11** (1988), no. 2, 205-223. (Aurel Bejancu) **89i:53017**



- 53B15
- Abe, Otajide** Queuing with lane selection. *Nigerian J. Sci.* 16 (1982), no. 1-2, 371-384. (Summary) **89k:90065** 90B22
- Abe, Tomoji** (with Hasegawa, Izumi; Okuyama, Yukihiko; Sato, Kimitake) Totally umbilical submanifolds in Sasakian manifolds. *J. Hokkaido Univ. Ed. Sect. II A* 38 (1988), no. 2, 1-8. (Yoshiko Kubo) **89g:53078** 53C40 (53C25)
- (with Hasegawa, Izumi) Totally contact umbilical submanifolds in Sasakian manifolds. *J. Hokkaido Univ. Ed. Sect. II A* 39 (1988), no. 1, 1-8. (F. Urbano) **89m:53096** 53C40 (53C25)
- Abe, Yoshihiko** (with Ichikawa, Yoshi Hiko) A note on Alfvén solitons. Recent developments in soliton theory. *Progr. Theoret. Phys. Suppl. No. 94* (1988), 128-137. (Summary) **89k:35214** 35Q20 (76X05)
- Abe, Yoshihiro** (with Eda, Katsuya) Compact cardinals and abelian groups. *Tsukuba J. Math.* 11 (1987), no. 2, 353-360. (Manfred Dugas) **89g:20088** 20K20 (03E55, 20A15, 20K25)
- Weakly normal filters and the closed unbounded filter on  $P_\kappa \lambda$ . *Proc. Amer. Math. Soc.* 104 (1988), no. 4, 1226-1234. (Jan Tryba) **89e:03092**; **EA 89m** 03E55 (03E05)
- Abe, Yukitaka** Elliptic differential operators with respect to a subbundle of the tangent bundle. *Math. Rep. Toyama Univ.* 10 (1987), 107-126. (Stephan Rempel) **89c:58126** 58G15 (35S05)
- $(H, C)$ -groups with positive line bundles. *Nagoya Math. J.* 107 (1987), 1-11. (Jean-Jacques Loeb) **89a:32016** 32F10
- Holomorphic sections of line bundles over  $(H, C)$ -groups. *Manuscripta Math.* 60 (1988), no. 3, 379-385. (D. N. Akhiezer) **89g:32047** 32M05 (32L05)
- Abe, Yutaka** (with Sakurada, Kuninori; Ishida, Toshiyuki; Hashimoto, Isao; Miyamoto, Yutaka) On quasi-ranked vector spaces. I. *J. Hokkaido Univ. Ed. Sect. II A* 38 (1987), no. 1, 33-40. (R. Anantharaman) **89c:46006** 46A15
- Abeasis, Silvana** On a remarkable class of subvarieties of a symmetric variety. *Adv. in Math.* 71 (1988), no. 1, 113-129. (H. H. Andersen) **89k:14075** 14L30 (14L32, 14M17)
- Abecasis, C.** (with Foussats, A.; Zandron, O.) Diffeomorphically nonequivalent classes of solutions in gauge theories on group manifolds. (Italian and Russian summaries) *Nuovo Cimento A* (11) 98 (1987), no. 1, 85-98. (Agostino Prastaro) **89a:53084** 53C80 (58G37, 58G40, 81E13, 83E50)
- (with Foussats, A.; Zandron, O.) Diffeomorphically nonequivalent classes of solutions in gauge theories on group manifolds. *Internat. J. Modern Phys. A* 3 (1988), no. 10, 2303-2313. (Agostino Prastaro) **89m:53128** 53C80 (58A15, 81E20, 83E50)
- Abel, Eyad H.** (with Tits, André L.) Comment on: "Sufficient condition for the asymptotic stability of interval matrices" [Internat. J. Control 47 (1988), no. 6, 1973-1974; MR 89g:93079] by M. Mansour. *Internat. J. Control* 47 (1988), no. 6, 1975. (A. Göpfert) **89g:93080** 93D20 (93D99)
- A simple proof of stability on the center manifold for Hopf bifurcation. *SIAM Rev.* 30 (1988), no. 3, 487-491. (Dietrich Flockerzi) **89m:58148** 58F14 (34C25, 34D05)
- Abel, S. H.** On differential forms in Finsler bundles. *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 23-56, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Makoto Matsumoto) **89c:53051** 53C60 (58A10)
- Abel, John F.** (with White, Donald W.) Bibliography on finite elements and supercomputing. *Comm. Appl. Numer. Methods* 4 (1988), no. 2, 279-294. (Not in MR) 65-00 (00A15, 65N30)
- Abel, Peter** Stochastic linear programming with recourse under partial information. *Probability and Bayesian statistics (Jussieu, 1986)*, 1-6, *Plenum, New York-London*, 1987. (R. Jagannathan) **89a:90098** 90C15
- Abel, U.** A proof of Mikusiński's theorem on bounded moments with Bernstein polynomials. *Acta Math. Hungar.* 51 (1988), no. 3-4, 267-270. (R. P. Boas, Jr.) **89m:44016** 44A60
- Abelard, Pierre** *see* Jacobi, Klaus. (**89a:03004**)
- Abellanas, M.** Les "pinch-points" d'une projection générique d'une variété algébrique. [The "pinch-points" of a generic projection of an algebraic variety] *Géométrie algébrique et applications, II (La Rabida, 1984)*, 1-4, *Travaux en Cours*, 23, Hermann, Paris, 1987. (L. Picco Botta (Zbl 629:14010)) **89f:14009** 14E22
- Abels, Herbert** ★ Finite presentability of  $S$ -arithmetic groups. Compact presentability of solvable groups. Lecture Notes in Mathematics, 1261. *Springer-Verlag, Berlin-New York*, 1987. vi+178 pp. ISBN 3-540-17975-5 (T. N. Venkataramana) **89b:22017** 22E40 (11F06, 20H25)
- Abenov, M. M.** (with Kim, E. I.) Conditions for the solvability of a boundary value problem for a two-dimensional equation of heat conduction in a half strip. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1987, no. 3, 35-39. (Alexander Doktor) **89m:35095** 35K05
- (with Kim, E. I.) On a problem with an oblique derivative for a two-dimensional equation of heat conduction in a half strip. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1987, no. 5, 33-36. (Alexander Doktor) **89m:35096** 35K05
- Äberg, T.** (with Guo, D. S.) Quantum electrodynamical approach to multiphoton ionisation in the high-intensity  $H$  field. *J. Phys. A* 21 (1988), no. 24, 4577-4591. (Summary) **89j:81304** 81L05 (81G10)
- Abergel, Frédéric** (with Temam, Roger) Duality methods for nonqualified distributed control problems. *Control of partial differential equations (Santiago de Compostela, 1987)*, 67-72, *Lecture Notes in Control and Inform. Sci.*, 114, Springer, Berlin-New York, 1989. (see **89j:00028**) 49A55 (49B22, 93C20)
- Abeßer, Harald** Hineinreichende Optimalitätskriterien bei Steueraufgaben vom Mayer typ auf der Grundlage der Theorie der zweiten Variation. II. Eigenwertkriterium und Feldtheorie. [Sufficient optimality criteria in control problems of Mayer type based on the theory of the second variation. II. Eigenvalue criterion and field theory] *Differential equations and optimal control (Zagreb, 1985)*, 7-24, *Higher College Engrg., Zielona Góra*, 1986. (Marin Brokate) **89g:49026** 49B10 (49C05, 93B60)
- Abeysaratne, Rohan** (with Yang, Jae-Sung) Localized shear discontinuities near the tip of a mode I crack. *J. Elasticity* 17 (1987), no. 2, 93-112. (D. Durban) **89b:73033** 73M05
- (with Knowles, James K.) Nonelliptic elastic materials and the modeling of dissipative mechanical behavior: an example. *J. Elasticity* 18 (1987), no. 3, 227-278. (Summary) **89g:73022** 73G05 (73G99)
- Abgaryan, K. A.** On the problem of reducibility of linear systems. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 2, 265-268; translated in *Soviet Math. Dokl.* 37 (1988), no. 3, 632-635. (Miklós Farkas) **89f:34055** 34C20 (34D05)
- Abhyankar, Shreeram S.** ★ Enumerative combinatorics of Young tableaux. Monographs and Textbooks in Pure and Applied Mathematics, 115. *Marcel Dekker, Inc., New York*, 1988. xx+509 pp. ISBN 0-8247-7816-2 (Joseph Kung) **89e:05011** 05A15 (14M12, 15A15, 15A72)
- Good points of a hypersurface. *Adv. in Math.* 68 (1988), no. 2, 87-256. (Sherwood Washburn) **89e:14012** 14E15 (14B05)
- Abian, A.** A new proof of the fundamental theorem of algebra. *Caribbean J. Math.* 5 (1986), no. 1, 9-12. (Dingur Mal) **89e:30006** 30C15
- On the countability of a set of real numbers. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* 18 (1986), no. 2, 156-158. (Summary) **89a:04003** 04A20
- Systems of linear equations and model theory. *An. Univ. Timişoara Ser. Ştiinţ. Mat.* 25 (1987), no. 3, 3-14. (H. Dugald MacPherson) **89e:03045** 03C07 (03C60)
- (with Kemp, Paula A.) A fundamental property of inductive partially ordered sets. *J. Natur. Sci. Math.* 28 (1988), no. 1, 121-126. (Judith Roitman) **89e:06001** 06A10 (54D30, 54F05)
- (with Kemp, Paula A.) An everywhere defined unbounded invertible linear operator in a Hilbert space. *Nieuw Arch. Wisk.* (4) 6 (1988), no. 1-2, 43-45. (Seymour Goldberg) **89f:47001** 47A05
- (with Lihová, Judita) On the existence of compactification of partially ordered sets. (Serbo-Croatian summary) *Rad. Mat.* 4 (1988), no. 1, 5-13. (Marcel Ernő) **89f:06002** 06A10 (54D35)
- Abid, M.** Efficient solution of problems of steady flow of a viscous incompressible micropolar fluid for a ball. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruz. SSR* 126 (1987), no. 2, 273-275. (Editors) **89a:76010** 76A05
- Abi-Khuzam, Faruk** A new geometric inequality. *Elem. Math.* 43 (1988), no. 3, 75-78. (Murray S. Klamkin) **89f:51068** 51M05 (52A40)
- Abikoff, William** Kleinian groups—geometrically finite and geometrically perverse. *Geometry of group representations (Boulder, CO, 1987)*, 1-50, *Contemp. Math.*, 74, Amer. Math. Soc., Providence, RI, 1988. (V. V. Chueshev) **89j:30061** 30F10 (30F40, 32G15, 57S30)
- Ablor, V. A.** (with Pkhasy, S.) The evaluation of the Lebesgue function of Fourier-Jacobi double series. *Math. Balkanica (N.S.)* 2 (1988), no. 2-3, 208-209. (Not in MR) 42A10 (33A65, 41A50)
- Abisha, P. Jeyanthi** (with Subramanian, K. G.; Siromoney, Rani) A DOL-TOL public key cryptosystem. *Inform. Process. Lett.* 26 (1987), no. 2, 95-97. (James W. Snively, Jr.) **89k:68036** 68P25 (68Q45)
- Ablav, F. M.** The effect of the degree of isolation of a point of a section on the number of states of a probabilistic automaton. (Russian) *Mat. Zametki* 44 (1988), no. 3, 289-297, 410. (Juraj Hromkovič) **89m:68099** 68Q75
- Ablau, S. G.** A multi-element boundary value problem in a space of generalized functions. (Russian) *Trudy Sem. Kraev. Zadacham No. 23* (1987), 3-5. (Not in MR) 45G05 (46F, 47G05)
- Ablowitz, M. J.** Topics associated with nonlinear evolution equations and inverse scattering in multidimensions. *Solitons (Tiruchirappalli, 1987)*, 44-62, *Springer Ser. Nonlinear Dynamics*, Springer, Berlin-New York, 1988. (Vladimir Stefanov Gerdjikov) **89b:35272** 35Q20 (35Q15, 35R30, 35R35)
- Aboelhasem, G.** (with Khajepour, M. R. H.; Mansouri, R.) How to test the special theory of relativity on the rotating earth. *Phys. Lett. A* 132 (1988), no. 6-7, 310-312. (Jan Novotný) **89i:83001** 83A05 (83B05)
- Abolnikov, Lev** On some inventory control problems with state-dependent parameters. *J. Appl. Math. Simulation* 1 (1987), no. 2, 69-79. (Masafumi Sasaki) **89a:60235** 60K30 (60K15, 90B05, 90B22)
- Abouammoh, A. M.** On discrete  $\alpha$ -unimodality. *Statist. Neerlandica* 41 (1987), no. 4, 239-244. (R. Theodorescu) **89j:60027a** 60E05 (46A55)
- (with Ahmed, A. N.) The new better than used failure rate class of life distribution. *Adv. in Appl. Probab.* 20 (1988), no. 1, 237-240. (Ramesh C. Gupta) **89b:62203** 62N05
- (with Ahmed, A. N.) Acknowledgement: "The new better than used failure rate class of life distribution" [Adv. in Appl. Probab. 20 (1988), no. 1, 237-240; MR 89b:62203]. *Adv. in Appl. Probab.* 20 (1988), no. 4, 917. (Editors) **89k:62122** 62N05
- Correction to: "On discrete  $\alpha$ -unimodality". Discussion on statistics versus data-analysis. *Statist. Neerlandica* 42 (1988), no. 2, 141. (R. Theodorescu) **89j:60027b** 60E05 (46A55)
- On the criteria of the mean remaining life. *Statist. Probab. Lett.* 6 (1988), no. 4, 205-211. (A. P. Basu) **89a:62206** 62N05
- Abou El-Seoud, M. Samir** Numerische Lösung einer Klasse nichtlinearer elliptischer Randwertprobleme mit Hilfe eines monoton einschließend konvergenten Iterationsverfahrens. [Numerical solution of a class of nonlinear elliptic boundary value problems with the aid of a monotonically inclusive convergent iteration method] *Z. Angew. Math. Mech.* 68 (1988), no. 5, T369-T371. (Dietrich Braess) **89j:65065** 65N10
- Abou-Kandil, H.** (with Bertrand, P.) Government-private sector relations as a Stackelberg game. A degenerate case. *J. Econom. Dynamics Control* 11 (1987), no. 4, 513-517. (Summary) **89c:90128** 90D40
- (with Jódar, Lucas) Solution of coupled Riccati equations occurring in Nash games. *Analysis and optimization of systems (Antibes, 1988)*, 581-592, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89e:90236** 90D25 (49A45, 49D40, 93B17, 93B25)
- Abouzahra, M.** (with Lewin, L.; Xiao, Hong Nian) Polylogarithms in the field of omega (a root of a given cubic): functional equations and ladders. *Aequationes Math.* 33 (1987), no. 1, 23-45. (Bruce C. Berndt) **89j:30033** 30D05 (11M41, 39B20)
- (with Lewin, L.; Xiao, Hong Nian) Addendum: "Polylogarithms in the field of omega (a root of a given cubic): functional equations and ladders" [Aequationes Math. 33 (1987), no. 1, 23-45; MR 89j:30033]. *Aequationes Math.* 35 (1988), no. 2-3, 304. (Bruce C. Berndt) **89j:30034** 30D05 (11M41)
- Abou-Zied, Mostafa Mohamed** Existence of the wave operators for  $N$ -particle-Schrödinger operators. (Arabic summary) *Bull. Fac. Sci. Assiut Univ. A* 13 (1984), no. 1, 69-82. (Editors) **89c:35128** 35P25 (47F05, 81F99)
- Abu-Zahhad, Mohammed** (with Fahmy, Mamdouh F.; Sobhy, M. I.) Design of selective linear phase bandpass switched-capacitor filters with equiripple passband amplitude response. *IEEE Trans. Circuits and Systems* 35 (1988), no. 10, 1220-1229. (Not in MR) 94A12

- Abraham, B. (with de Gooijer, Jan G.; Gould, Ann; Robinson, Cecily) Methods for determining the order of an autoregressive-moving average process: a survey. (French summary) *Internat. Statist. Rev.* **53** (1985), no. 3, 301–329. (Summary) **89h:62150** 62M10
- (with Vijayan, Kaipillil) A statistic to check model adequacy in time series. *Comm. Statist. Theory Methods* **17** (1988), no. 12, 4271–4278. (Not in MR) **62M10**
- (with Thavaneswaran, A.) Estimation for nonlinear time series models using estimating equations. *J. Time Ser. Anal.* **9** (1988), no. 1, 99–108. (William D. Ray) **89c:62164** 62M10
- Abraham, D. B. Surface structures and phase transitions—exact results. *Phase transitions and critical phenomena*, Vol. 10, 1–74, Academic Press, London-New York, 1986. (H. N. V. Temperley) **89g:82019** 82A25 (82–02, 82A68, 82A69)
- Structure, phase transitions and dynamics of interfaces and surfaces. *J. Phys. A* **21** (1988), no. 8, 1741–1751. (Marek Napiórkowski) **89j:82016** 82A25 (82A68)
- (with Upton, P. J.) Interface at general orientation in a two-dimensional Ising model. *Phys. Rev. B* **37** (1988), no. 7, 3835–3837. (C. A. Hurst) **89c:82065** 82A68
- (with Newman, C. M.) Wetting in a three-dimensional system: an exact solution. *Phys. Rev. Lett.* **61** (1988), no. 17, 1969–1972. (From the text) **89m:82068** 82A68 (82A25)
- (with Upton, P. J.) Dynamics of Gaussian interface models. *Phys. Rev. B* **39** (1989), no. 1, 736–739. (Summary) **89i:82022** 82A25 (82A67, 82A68)
- Abraham, P. B. Wave propagation in media with time-dependent spatial inhomogeneities. *J. Acoust. Soc. Amer.* **83** (1988), no. 3, 896–903. (Summary) **89f:76067** 76Q05
- Abraham, R. (with Marsden, Jerrold E.; Ratiu, T.) ★ Manifolds, tensor analysis, and applications. Second edition. Applied Mathematical Sciences, 75. Springer-Verlag, New York-Berlin, 1988. x+654 pp. ISBN 0-387-96790-7 (Editors) **89f:58001** 58-01
- Abraham, Uri A. Note on Dilworth's theorem in the infinite case. *Order* **4** (1987), no. 2, 107–125. (E. C. Milner) **89g:06001** 06A10 (03E05, 03E10)
- Abrahams, Andrew M. (with Evans, Charles R.) Reading off gravitational radiation waveforms in numerical relativity calculations: matching to linearized gravity. *Phys. Rev. D* **37** (1988), no. 2, 318–332. (Summary) **89b:83008** 83-08 (83C25)
- Abrahams, I. D. Scattering of sound by a semi-infinite elastic plate with a soft backing; a matrix Wiener-Hopf problem. *IMA J. Appl. Math.* **37** (1986), no. 3, 227–245. (Summary) **89m:76056** 76Q05 (45E10, 73J05, 73J06)
- Acoustic scattering by a finite nonlinear elastic plate. I. Primary, secondary and combination resonances. *Proc. Roy. Soc. London Ser. A* **414** (1987), no. 1846, 237–253. (Summary) **89a:76045** 76Q05 (73D35, 73K12)
- Abrahamson, Jeff. Curves length-minimizing modulo  $v$  in  $\mathbb{R}^n$ . *Michigan Math. J.* **35** (1988), no. 2, 285–290. (Constantin Udriste) **89h:49036** 49F22 (49F10, 49F20)
- Abrahamson, Karl (with Adler, Andrew; Gelbart, Rachel; Higham, Lisa; Kirkpatrick, David) The bit complexity of randomized leader election on a ring. *SIAM J. Comput.* **18** (1989), no. 1, 12–29. (Cristian Calude) **89k:68038** 68Q10 (03D05, 68Q25)
- Abrahamson, Leif. Microlocal Lelong numbers of plurisubharmonic functions. *J. Reine Angew. Math.* **388** (1988), 116–128. (Eric Bedford) **89g:32025** 32F05 (32C30)
- Abramov, D. I. The reconstruction of the interaction potential from scattering data by means of nonlinear equations. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 3, 585–588; translated in *Soviet Phys. Dokl.* **33** (1988), no. 1, 38–40. (M. Victor Wickerhauser) **89h:81252** 81F99 (34B25, 35P99)
- Abramov, V. A. Stability of decompositions in a multiplicative scheme. (Russian) *Stability problems for stochastic models* (Russian) (Varna, 1985), 4–10, *Vsesoyuz. Nauch.-Issled. Inst. Sistem. Issled.*, Moscow, 1986. (R. Yanushkevichius) **89f:62005** 62E10
- General limit theorems in an  $M$ -scheme. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 3, 549–552. (Gábor J. Székely) **89a:60050** 60F05
- Abramov, V. I. Algebra of the fuzzy relations of a diagnostic database. (Russian) *Decision-making methods and systems. Applied problems in the analysis of solutions in technical systems* (Russian), 11–16, 145, *Rizhsk. Politekh. Inst.*, Riga, 1986. (see **89h:00001**) **68P15** (03E72)
- Abramov, V. M. Some new applications of an asymptotic theorem on the time of first approach of a rare event in a regenerative process. (Russian. Tajiki summary) *Izv. Akad. Nauk Tadzhik. SSR Otdel. Fiz.-Mat. Khim. i Geol. Nauk* **1986**, no. 4(102), 29–33 (1987). (Summary) **89e:60174** 60K10 (93E03)
- Abramov, Yu. Sh. Quasiconvexity of the values of some extremal problems generated by selfadjoint operators. (Russian) *Optimizatsiya* No. 40(57) (1987), 106–110, 160. (L. Mikolajczyk) **89k:90178** 90C48 (90C32)
- Abramova, N. T. see **Unity of scientific knowledge**, **89i:00039**
- Abramovich, Yu. A. Two results about the multiplicative representation of Riesz homomorphisms. *An. Univ. Craiova Mat. Fiz.-Chim.* **14** (1986), 17–21. (Peter Dodds) **89e:47053** 47B55 (46B30)
- Abramovich, Yu. I. (with Arov, D. Z.; Kachur, V. G.) Adaptive cancellation filters for stationary interference with a Toeplitz correlation matrix. *Soviet J. Comm. Tech. Electron.* **33** (1988), no. 4, 54–61; translated from *Radiotekhn. i Elektron.* **32** (1987), no. 12, 2525–2533 (Russian). (Not in MR) **94A05**
- Abramovich, Yuri A. see **Abramovich, Yu. A.**
- Abramovich, M. A. (with Carter, Brandon; Lasota, J. P.) Optical reference geometry for stationary and static dynamics. *Gen. Relativity Gravitation* **20** (1988), no. 11, 1173–1183. (Carl Brans) **89m:83009** 83C10 (83C20)
- Abramowski, S. (with Müller, Heinrich Augustinus) Collision avoidance for nonrigid objects. (German summary) *Z. Oper. Res.* **32** (1988), no. 3–4, 165–186. (Helmut Alt) **89h:68140** 68U05 (68Q10, 90B40, 90D26)
- Abrams, Peter The nonlinearity of competitive effects in models of competition for essential resources. *Theoret. Population Biol.* **32** (1987), no. 1, 50–65. (Summary) **89e:92031** 92A15
- The functional responses of adaptive consumers of two resources. *Theoret. Population Biol.* **32** (1987), no. 2, 262–288. (Joseph So) **89c:92076** 92A17 (90A30)
- Abramsky, Samson Observation equivalence as a testing equivalence. *Theoret. Comput. Sci.* **53** (1987), no. 2–3, 225–241. (Rocco De Nicola) **89f:68042** 68Q55 (68M15)
- Abramyan, L. A. (with Stepanyants, Yu. A.) The structure of two-dimensional solitons in the framework of the generalized Kadomtsev-Petviashvili equation. (Russian. English summary) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* **30** (1987), no. 10, 1175–1180. (Summary) **89c:58143** 58G35
- Abrarov, D. L. Topological obstructions to the integrability of Hamiltonian systems. (Russian) *Geometry, differential equations and mechanics* (Russian) (Moscow, 1985), 25–31, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (Editors) **89h:58051** 58F05 (58F07)
- Abreshin, V. N. (with Shkel', V. A.) A class of difference schemes for solving nonlinear equations of hyperbolic type. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 6, 3–9, 123. (Stanislav Burys) **89e:65105** 65N10
- (with Dzryuba, I. A.; Minchenkov, Yuri) Difference schemes for the method of variable directions for a system of Maxwell equations. (Russian) *Differentsial'nye Uravneniya i Primenen.* No. 43 (1988), 9–15. (Summary) **89h:65155** 65N05
- (with Egorov, Andrei; Shkel', V. A.) On the study of symmetric difference schemes for multidimensional parabolic equations in the case of anisotropic media. (Russian) *Differentsial'nye Uravneniya i Primenen.* No. 43 (1988), 16–21. (Summary) **89k:65117** 65N05
- (with Zhadaeva, N.) Difference schemes for problems of mathematical physics in a domain of arbitrary form. (Russian) *Differentsial'nye Uravneniya i Primenen.* No. 43 (1988), 22–30. (Summary) **89k:65118** 65N05
- Abreshkevich, A. G. (with Vinititskii, S. I.; Kaschier, M. S.; Puzynin, I. V.) Two-dimensional basis functions for the three-body problem in hyperspherical coordinates. *Soviet J. Nuclear Phys.* **48** (1988), no. 4, 602–608; translated from *Yadernaya Fiz.* **48** (1988), no. 4, 945–955 (Russian). (Summary) **89m:81200** 81G40
- Abreshkin, A. A. (with Yakubovich, E. I.) Two-dimensional vortices in an ideal fluid. (Russian) *Nonlinear waves* (Russian), 147–159, 395, "Nauka", Moscow, 1987. (Summary) **89e:76027** 76C05
- Abreshkin, V. A. Galois modules of group schemes of period  $p$  over the ring of Witt vectors. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **51** (1987), no. 4, 691–736, 910; translated in *Math. USSR-Izv.* **31** (1988), no. 1, 1–46. (L. N. Vaserstein) **89a:14062** 14L20 (11G10)
- Abresch, U. Lower curvature bounds, Toponogov's theorem, and bounded topology. II. *Ann. Sci. École Norm. Sup. (4)* **20** (1987), no. 3, 475–502. (Ji-Ping Sha) **89d:53080** 53C20 (53C21)
- de Abreu, Clovis Pompílio (with Barbosa, José Carlos; Perecin, Dilermando) Computational aspects of the parameter estimation of negative binomial distributions and distributions of Neyman type A by the minimum chi-squared method. (Portuguese. English summary) *Rev. Mat. Estatist.* **4/5** (1986/87), 31–43. (Not in MR) **62F10**
- Abreu, Dilip On the theory of infinitely repeated games with discounting. *Econometrica* **56** (1988), no. 2, 383–396. (Summary) **89b:90243** 90D13 (90D20)
- (with Rubinstein, Ariel) The structure of Nash equilibrium in repeated games with finite automata. *Econometrica* **56** (1988), no. 6, 1259–1281. (Roy Gardner) **89j:90275** 90D05
- Abreu, J. Mean value for the generalized gradient. (Spanish) *First conference on analysis* (Spanish) (Mérida, 1986), 252–260, *Univ. de los Andes, Mérida*, 1986. (Summary) **89e:26005** 26A24 (49A52)
- Abreu, José Luis (with Alonso y Coria, Alberto) On a condition for a Banach space to be a Hilbert space. (Spanish) *Research program of the XVIIIth national congress of the Mexican Mathematical Society* (Spanish) (Mérida, 1984), 1–7, *Aportaciones Mat.: Comm.*, 1, Soc. Mat. Mexicana, Mexico City, 1986. (Ioan Şerb) **89g:46045** 46C05 (46B05)
- pérez-Abreu, Víctor see **Pérez-Abreu, Víctor**
- de Abreu G., José Radial estimates of  $H^1$  functions and refinements of theorems of Montel and Ostrowski-Khinchin. (Spanish. English summary) *Acta Cient. Venezolana* **39** (1988), no. 1, 1–8. (José Javier Guadalupe Hernández) **89j:30042** 30D55 (42B20)
- de Abreu-García, José A. see **De Abreu-García, José A.**
- Abrosimov, A. V. Locally biholomorphic equivalence of smooth hypersurfaces in  $\mathbb{C}^2$ . (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 4, 777–781; translated in *Soviet Math. Dokl.* **37** (1988), no. 2, 434–438. (Harold P. Boas) **89g:32039** 32H99 (32F25)
- Abu-Amara, Hosame H. (with Loui, Michael C.) Memory requirements for agreement among unreliable asynchronous processes. *Advances in computing research*, Vol. 4, 163–183, *JAI, Greenwich, CT*, 1987. (Summary) **89c:68011** 68M15
- Abud, M. (with Ader, J. P.) The relationship between the gauged BRST symmetry and the ghost number symmetry. *Phys. Lett. B* **212** (1988), no. 3, 320–326. (Danny Birmingham) **89k:81068** 81E13
- Abudov, A. A. Essential selfadjointness and a theorem on the separability of the Sturm-Liouville equation with variable operator coefficients on the half axis. (Russian) *Spectral theory of operators and its applications*, No. 8 (Russian), 3–14, "Elm", Baku, 1987. (M. Tvrđý) **89f:47070** 47E05 (34B25, 34G10)
- Abū Ja'far, al-Khāzin see **abū Ja'far, Muḥammad ibn Ḥasan al-Ḥāzin**
- Abū Ja'far, Muḥammad ibn Ḥasan al-Ḥāzin see **abū Ja'far, Muḥammad ibn Ḥasan al-Ḥāzin**
- Abu-Khuzam, Hajar Commutativity results for rings. *Bull. Austral. Math. Soc.* **38** (1988), no. 2, 191–195. (Antonio Giambro) **89j:16047** 16A70
- Abuladze, A. A. ★ Задачи оптимального управления для систем, описываемых интегральными уравнениями. (Russian) [Optimal control problems for systems described by integral equations] With Georgian and English summaries. *Tbilis. Gos. Univ., Tbilisi*, 1988. 128 pp. (Claudia Simionescu) **89i:93066** 93C22 (47G05)
- Abuladze, I. O. The study of a semidiscrete additive scheme for a system of nonlinear parabolic equations. (Russian. English and Georgian summaries) *Tbilis. Gos. Univ. Inst. Prikl. Mat. Trudy* **25** (1988), 5–10, 273. (Not in MR) **65N99**
- Abulesz, E.-M. (with Lyberatos, G.) Periodic impulse-forcing of nonlinear systems: a new method. *Internat. J. Control* **48** (1988), no. 2, 469–480. (From the text) **89c:34069** 34C20 (34A34, 93C10)
- (with Lyberatos, G.) Novel approach for determining optimal treatment regimen for cancer chemotherapy. *Internat. J. Systems Sci.* **19** (1988), no. 8, 1483–1497. (Not in MR) **92A07** (92A09)
- Abu-Mostafa, Yaser S. Lower bound for connectivity in local-learning neural networks. *J. Complexity* **4** (1988), no. 3, 246–255. (Summary) **89h:92010** 92A09 (68T05)
- Random problems. *J. Complexity* **4** (1988), no. 4, 277–284. (Summary) **89k:68076** 68Q30 (03G05, 94A17)
- Abu-Muhamma, Yusuf (with Schober, G.) Harmonic mappings onto convex domains. *Canad. J. Math.* **39** (1987), no. 6, 1489–1530. (Walter Hengartner) **89c:30011** 30C45 (30C60, 30C75, 30D40, 53A10)
- Subordination and extreme points. *Complex Variables Theory Appl.* **9** (1987), no. 1, 91–100. (T. H. MacGregor) **89c:30055** 30C80



- (with Lyzzaik, Abdallah) A geometric criterion for decomposition and multivalence. *Math. Proc. Cambridge Philos. Soc.* 103 (1988), no. 3, 487–495. (Albert E. Livingston) **89m:30010** 30C45
- (with Schober, G.) Nonvanishing meromorphic univalent functions. *Proc. Amer. Math. Soc.* 104 (1988), no. 2, 487–492. (Yuk Leung) **89m:30038** 30C50
- Abundo, M.** A remark about topological and measure entropy for a class of maps of the interval  $[0, 1]$ . *Rend. Circ. Mat. Palermo* (2) 35 (1986), no. 3, 456–465 (1987). (Peter Walters) **89h:58107** 58F13 (28D20, 58F11)
- (with Rossi, Carla) Numerical simulation of a stochastic model for cancerous cells submitted to chemotherapy. *J. Math. Biol.* 27 (1989), no. 1, 81–90. (Summary) **89k:92006** 92A07
- Abu-Salih, M. S.** (with Ali Khan, M. S.) On solving a difference equation. *Univ. Nac. Tucumán Rev. Ser. A* 29 (1979), no. 1, 13–23 (1987). (Not in MR) **39A10**
- (with Ali Khan, M. S.; Husein, A.) Prediction intervals of order statistics for the mixture of two exponential distributions. *Aligarh J. Statist.* 7 (1987), 11–22. (Summary) **89a:62120** 62G30
- (with Shamseldin, A. A.) Bayesian estimation of  $P(X < Y)$  for a bivariate exponential distribution. (Arabic summary) *Arab Gulf J. Sci. Res. A. Math. Phys. Sci.* 6 (1988), no. 1, 17–26. (Summary) **89e:62038** 62F15 (62F10, 62N05)
- (with Ali, Mohamed Akkas; Titi, S. K.) A method of selecting the levels of regressor variables in lognormal regression model. *Comm. Statist. Theory Methods* 17 (1988), no. 6, 1741–1761. (N. Gaffke) **89j:62099** 62K05
- (with Qader, M. A.; Ali, Mohamed Akkas) Approximate fiducial bounds of reliability of a series system. *J. Inform. Optim. Sci.* 9 (1988), no. 1, 65–72. (S. N. Alam) **89d:62101** 62N05 (62A30, 90B25)
- (with Ali, Mohamed Akkas; Yousef, M. A. Q.) On some shrinkage techniques for estimating the parameters of exponential distribution. *J. Inform. Optim. Sci.* 9 (1988), no. 2, 207–214. (Title) **89j:62039** 62F10
- Abu-Sayem, Sadi** On prime  $R$ -submodules. *Univ. Nac. Tucumán Rev. Ser. A* 29 (1979), no. 1, 121–136 (1987). (Liam O'Carroll) **89i:13013** 13C13 (13A17)
- (with Ikeda, Masatoshi) On the higher derivations of commutative [commutative] rings. *Math. J. Okayama Univ.* 29 (1987), 83–90 (1988). (Andrzej Nowicki) **89d:13019** 13N05 (12H05, 13B10)
- Abusev, R. A.** Classification of multidimensional normal aggregates with the help of potential functions. Statistical methods. *J. Soviet Math.* 40 (1988), no. 2, 157–161. (A. D. Gordon) **89k:62080** 62H30
- Abutaleb, Ahmed S.** An adaptive filter for noise cancelling. *IEEE Trans. Circuits and Systems* 35 (1988), no. 10, 1201–1209. (Not in MR) **93E11** (93C40, 94A05)
- Abu-Zeid, O.** On the existence of joint probability distributions for arbitrary incompatible observables in quantum mechanics. *Phys. Lett. A* 125 (1987), no. 4, 162–164. (M. J. Maczyński) **89a:81009** 81B10 (47B15, 60B99)
- Abzalimov, R. R.** (with Zuparov, T. M.) Weak convergence of empirical processes of weakly dependent random vectors. (Russian) *Probabilistic models and mathematical statistics (Russian)*, 33–43, 174, "Fan", Tashkent, 1987. (Sándor Csörgő) **89m:60078** 60F17
- Abzianidze, D. V.** (with Andreev, N. V.) A problem of the optimization of the broaching process in pipe rolling production. (Russian) *Adapt. Sistemy Avtomat. Upravleniya* No. 16 (1988), 117–122, iv. (Not in MR) **93C75** (90B30, 93C40)
- Accardi, Luigi** (with Cabrera, Javier; Watson, Geoffrey S.) Some stationary Markov processes in discrete time for unit vectors. (Italian summary) *Metron* 45 (1987), no. 1–2, 115–133. (P. E. Jupp) **89f:60073** 60J05 (62H99)
- (with Parthasarathy, Kalyanapuram Rangachari) A martingale characterization of canonical commutation and anticommutation relations. *J. Funct. Anal.* 77 (1988), no. 1, 211–231. (David Applebaum) **89e:81057** 81D05 (46L50, 60G44, 60H05, 60J65)
- (with Schürmann, Michael; von Waldenfels, Wilhelm) Quantum independent increment processes on superalgebras. *Math. Z.* 198 (1988), no. 4, 451–477. (David Applebaum) **89h:46092** 46L50 (16A03, 60G05, 81C20)
- see also **Quantum probability and applications**, **89i:81004**
- Acciaro, V.** (with Nayak, Amiya Ranjan; Santoro, Nicola) On the fault-tolerance of reconfigurable VLSI systolic arrays. Eighteenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1988). *Congr. Numer.* 68 (1989), 197–210. (see **89m:00009**) **68Q35**
- Accloty, A. J.** An unusual cosmological solution in the context of higher-derivative gravity. (Italian and Russian summaries) *Nuovo Cimento B* (11) 100 (1987), no. 6, 703–707. (Summary) **89m:83071** 83D05
- (with Matsas, G. E. A.) Are there causal vacuum solutions with the symmetries of the Gödel universe in higher-derivative gravity? *Phys. Rev. D* (3) 38 (1988), no. 4, 1083–1086. (Carl Brans) **89j:83056** 83D05 (83C20)
- Acerbi, Emilio** (with Fusco, Nicola) An approximation lemma for  $W^{1,p}$  functions. *Material instabilities in continuum mechanics* (Edinburgh, 1985–1986), 1–5, Oxford Sci. Publ., Oxford Univ. Press, New York, 1988. (W. P. Ziemer) **89m:46060** 46E35 (26B35)
- Homogenization and periodic structures with holes. *Material instabilities in continuum mechanics* (Edinburgh, 1985–1986), 7–9, Oxford Sci. Publ., Oxford Univ. Press, New York, 1988. (see **89f:73005**) **73C40** (49A50)
- Aceiro, Juan José** The theory of semantic games: two approaches. (Spanish. English summary) *Theoria (San Sebastián)* (2) 2 (1987), no. 5–6, 427–459. (Summary) **89b:03050** 03B65
- Aceito, Luca** (with De Nicola, Rocco; Fantechi, Alessandro) Testing equivalences for event structures. *Mathematical models for the semantics of parallelism* (Rome, 1986), 1–20, Lecture Notes in Comput. Sci., 280, Springer, Berlin-New York, 1987. (Summary) **89a:68142** 68Q55 (68Q10)
- Aceves, A.** (with Moloney, J. V.; Newell, A. C.) Mathematical modeling of beam reflection, transmission and trapping at nonlinear optical interfaces. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 101–105. (see **89d:00007**) **78A35** (35Q20)
- Acha, José L.** (with Torres, Francisco) Explicit expressions for the parameter  $\sigma$  in two-pair cascaded realization of digital transfer functions. *IEEE Trans. Circuits and Systems* 35 (1988), no. 10, 1342–1343. (Not in MR) **93B15** (93A20)
- Achache, A.** How to fuzzify a closure space. *J. Math. Anal. Appl.* 130 (1988), no. 2, 538–544. (Summary) **89a:06014** 06A15 (03E72)
- achmad-Achar, E.** see **Nahmad-Achar, E.**
- Achard, Jean-Luc** (with Canot, Edouard) Formulation intégrro-différentielle pour les écoulements transitoires d'un fluide isovolume et visqueux. (English summary) [Integro-differential formulation of a time-dependent incompressible viscous flow problem] *J. Méc. Théor. Appl.* 7 (1988), no. 5, 645–682. (Paul G. Schmidt) **89m:76025** 76D05
- Achari, J.** (with Patil, S. T.) A note on fixed point theorem in 2-metric spaces. *Math. Ed. (Siwan)* 22 (1988), no. 1, 23–24. (From the text) **89g:54104** 54H25
- Acharya, B. Devadas** (with Sampathkumar, E.) Graphoidal covers and graphoidal covering number of a graph. *Indian J. Pure Appl. Math.* 18 (1987), no. 10, 882–890. (L. W. Beineke) **89a:05094** 05C38 (05C70)
- Acharya, B. P.** (with Pattnaik, T. N.) A modification of the Birkhoff-Young rule for numerical quadrature of analytic functions. *J. Orissa Math. Soc.* 3 (1984), no. 1, 1–5. (Not in MR) **65D30**
- Acharya, Sankarshan** A generalized econometric model and tests of a signalling hypothesis with two discrete signals. *J. Finance* 43 (1988), no. 2, 413–429. (Summary) **89d:90066** 90A19 (62P20)
- Achcar, Jorge A.** (with Diniz, Carlos Alberto R.) Comparison of two treatments with censored and transformed survival data for an extreme value distribution. (Portuguese. English summary) *Rev. Mat. Estatist.* 4/5 (1986/87), 45–55. (Not in MR) **62G10**
- (with Bolfarine, Heleno) Predictive densities in survival analysis with a generalized gamma regression model. *Rebrape* 2 (1988), no. 1, 23–31. (Not in MR) **62N05**
- Achenbach, J. D.** (with Kechter, G. E.; Xu, Yong Lin) Off-boundary approach to the boundary element method. *Comput. Methods Appl. Mech. Engrg.* 70 (1988), no. 2, 191–201. (Summary) **89g:73002** 73-08 (73-04, 73D25)
- Achil'diev, A. I.** Determination of an eigenfunction for a second-order ordinary differential equation by means of smoothing elements. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* 30 (1987), no. 6, 333–336. (Jan Bochenek) **89f:34029** 34B25 (34A50)
- Achong, A.** An extension of Wilson's theorem. *J. Combin. Inform. System Sci.* 9 (1984), no. 2, 79–80. (Summary) **89f:11012** 11A07
- Achúcarro, A.** (with Evans, J. M.; Townsend, P. K.; Wiltshire, D. L.) Super  $p$ -branes. *Phys. Lett. B* 198 (1987), no. 4, 441–446. (Summary) **89f:83082** 83E15 (81E30, 83E30, 83E50)
- Achuthan, P.** (with Müller-Kirsten, H. J. W.) Asymptotic expansions, converging factors and Padé approximants. *J. Math. Phys. Sci.* 21 (1987), no. 6, 631–651. (A. Haimovici) **89e:65024** 65D20 (41A25)
- (with Sundar, S.) A new application of the extended Euclidean algorithm for matrix Padé approximants. *Comput. Math. Appl.* 16 (1988), no. 4, 287–296. (Summary) **89g:65016** 65D20
- (with Ponnuswamy, S.) Simultaneous expansion and inversion of the Cauer continued fractions of certain transfer functions. *Internat. J. Control* 48 (1988), no. 2, 499–511. (Not in MR) **93B99** (41A21)
- Acker, Andrew** On the geometric form of Bernoulli configurations. *Math. Methods Appl. Sci.* 10 (1988), no. 1, 1–14. (D. E. Tepper) **89b:35014** 35B50 (30C85, 31C99)
- Acker, Constantin Corneliu C.** (with Acker, Constantin L.) On the position of the pole of acceleration. (Romanian. French summary) *Stud. Cerc. Mat.* 40 (1988), no. 2, 111–117. (Gh. Silas) **89k:70004** 70B10
- (with Acker, Constantin L.) The position of the pole of accelerations in usual particular motions. (Romanian. French summary) *Stud. Cerc. Mat.* 40 (1988), no. 4, 279–287. (N. D. Sengupta) **89m:70006** 70E15
- Acker, Constantin L.** (with Acker, Constantin Corneliu C.) On the position of the pole of acceleration. (Romanian. French summary) *Stud. Cerc. Mat.* 40 (1988), no. 2, 111–117. (Gh. Silas) **89k:70004** 70B10
- (with Acker, Constantin Corneliu C.) The position of the pole of accelerations in usual particular motions. (Romanian. French summary) *Stud. Cerc. Mat.* 40 (1988), no. 4, 279–287. (N. D. Sengupta) **89m:70006** 70E15
- Ackermann, J. E.** Design of robust controllers by multimodel methods. *Modelling, identification and robust control* (Stockholm, 1985), 415–429, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:93040** 93B50 (93C40)
- (with Barmish, B. Ross) Robust Schur stability of a polytope of polynomials. *IEEE Trans. Automat. Control* 33 (1988), no. 10, 984–986. (Mohamed Mansour) **89m:93073** 93D99 (30C15)
- Acketa, Dragan M.** A construction of nonsimple matroids on at most 8 elements. *J. Combin. Inform. System Sci.* 9 (1984), no. 2, 121–132. (Laura Bertani) **89f:05051; 89a:05B35**
- A construction of all the nonisomorphic nonsimple matroids on 9 elements. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 17 (1987), no. 1, 269–290. (Jiří Tůma) **89e:05058** 05B35
- On binary paving matroids. *Discrete Math.* 70 (1988), no. 1, 109–110. (Laura Bertani) **89d:05050** 05B35
- de Acosta, A.** A decoupling inequality for multilinear functions of stable vectors. *Probab. Math. Statist.* 8 (1987), 71–76. (Terry R. McConnell) **89h:60004** 60B11 (60E15)
- Large deviations for vector-valued functionals of a Markov chain: lower bounds. *Ann. Probab.* 16 (1988), no. 3, 925–960. (Esa Nummelin) **89i:60060** 60F10 (60J05)
- Acosta, Allan J.** (with d'Agostino, Luca; Brennen, Christopher E.) Linearized dynamics of two-dimensional bubbly and cavitating flows over slender surfaces. *J. Fluid Mech.* 192 (1988), 485–509. (Summary) **89m:76065** 76T05 (76B10)
- Acosta, María D.** (with Payá-Albert, Rafael) Denseness of operators whose second adjoints attain their numerical radii. *Proc. Amer. Math. Soc.* 105 (1989), no. 1, 97–101. (John Duncan) **89f:47008** 47A12 (46B20, 47D15)
- Acquistapace, Francesca** Hauptvermutung sous-analytique. [Subanalytic Hauptvermutung] *Séminaire sur la géométrie algébrique réelle, Tome I, II, 1–13, Publ. Math. Univ. Paris VII, 24, Univ. Paris VII, Paris, 1986. (Jésus M. Ruiz) **89c:32018** 32B20 (32B25)*
- (with Broglia, Fabrizio) Essential coverings for stratified sets with only isolated singularities. *Boll. Un. Mat. Ital. A* (7) 1 (1987), no. 3, 359–362. (Er Jian Xiao) **89c:32017** 32B15 (57N80)
- Acquistapace, Paolo** (with Terreni, Brunello) A unified approach to abstract linear nonautonomous parabolic equations. *Rend. Sem. Mat. Univ. Padova* 78 (1987), 47–107. (E. Barvinek) **89c:34099** 34G10 (35K22, 47D05, 58D25)
- Actor, Alfred** More on zeta-function regularization of high-temperature expansions. *Fortschr. Phys.* 35 (1987), no. 12, 793–829. (Charles Nash) **89h:81127** 81E15
- Conventional zeta-function derivation of high-temperature expansions. *J. Phys. A* 20 (1987), no. 15, 5351–5360. (Derek Raine) **89d:82024** 82A15 (81E15, 83E15)

- One-loop Feynman diagram zeta functions for toroidal spacetime. *Classical Quantum Gravity* 5 (1988), no. 11, 1415–1433. (Enric Verdaguer) **89k:81097** 81E20 (81C30, 81E15, 83C47, 83E15)
- Aceña-Ortega, Osvaldo** A definition of finite cardinals in an arbitrary topos. (Spanish) Seminar and workshop on category theory and applications (Bogotá, 1983). *Rev. Colombiana Mat.* 20 (1986), no. 3–4, 79–104. (Ioan Tofan) **89g:18004** 18B25 (03G30)
- Aceñol, J.** On history, applications and theory of functional equations. *Functional equations: history, applications and theory*, 3–12, *Math. Appl., Reidel, Dordrecht-Boston, MA*, 1984. (K. Lajkó) **89i:01043** 01A60 (39B05)
- Some recent results on information measures, a new generalization and some “real life” interpretations of the “old” and new measures. *Functional equations: history, applications and theory*, 175–189, *Math. Appl., Reidel, Dordrecht-Boston, MA*, 1984. (Pl. Kannappan) **89g:94014** 94A17 (39C05, 94–02)
- On the general form of the laws of science without dimensional constants. (Italian summary) *Rend. Sem. Mat. Fis. Milano* 55 (1985), 23–35 (1988). (B. Crstici) **89d:00021** 00A73 (00A25, 39B30)
- Characterizing information measures: approaching the end of an era. *Uncertainty in knowledge-based systems (Paris, 1986)*, 359–384, *Lecture Notes in Comput. Sci.*, 286, Springer, Berlin-New York, 1987. (Răzvan Andonici) **89d:94024** 94A17
- Scale-invariant equal sacrifice in taxation and conditional functional equations. *Aequationes Math.* 32 (1987), no. 2–3, 336–349. (S. N. Afriat) **89e:90073** 90A99 (39B99)
- see also **Functional equations: history, applications and theory**, **89b:39002**
- Aceul, Peter** ★ Non-well-founded sets. With a foreword by Jon Barwise [K. Jon Barwise]. CSLI Lecture Notes, 14. Stanford University, Center for the Study of Language and Information, Stanford, CA, 1988. xx+137 pp. ISBN 0-937073-22-9 (Alena Vencovská) **89j:03039** 03E30 (03E65, 03E70)
- Adachi, Kenzō** Continuation of bounded holomorphic functions from certain subvarieties to weakly pseudoconvex domains. *Pacific J. Math.* 130 (1987), no. 1, 1–8. (Hideaki Kazama) **89a:32017** 32F15
- $H^p$  estimates for extensions of holomorphic functions on convex domains. *Sci. Bull. Fac. Ed. Nagasaki Univ.* No. 38 (1987), 3–7. (Adib A. Fadlalla) **89a:32013** 32D15
- Extension of holomorphic functions from subvarieties to convex domains. *Sci. Bull. Fac. Ed. Nagasaki Univ.* No. 39 (1988), 15–20. (Jan Wiegierinck) **89k:32027** 32D15 (32F15)
- Adachi, Norio** History of congruent numbers. (Japanese) *Sūgaku* 39 (1987), no. 2, 173–179. (Editors) **89j:11022** 11D41 (01A60, 11–03)
- The Diophantine equation  $x^2 + y^2 = z^2$  connected with Fermat’s last theorem. *Tokyo J. Math.* 11 (1988), no. 1, 85–94. (Takeo Miyoshi) **89j:11023** 11D41
- Adachi, Saburo** (with Uno, Toru) Inverse scattering method for one-dimensional inhomogeneous layered media. *IEEE Trans. Antennas and Propagation* 35 (1987), no. 12, 1456–1466. (Summary) **89a:78004** 78A40
- Adachi, Satoshi** (with Hasegawa, Hiroshi) Quadratic Zeeman spectra for the hydrogen atom by means of semiclassical quantization. *J. Phys. Soc. Japan* 57 (1988), no. 1, 80–87. (Summary) **89b:81252** 81G45 (58F27, 81D07)
- Adachi, Toshiaki** Meromorphic extension of  $L$ -functions of Anosov flows and profinite graphs. *Kumamoto J. Math.* 1 (1988), 9–24. (H. R. Gluck) **89j:58105** 58F17 (30D30, 34C35)
- Distribution of closed geodesics with a preassigned homology class in a negatively curved manifold. *Nagoya Math. J.* 110 (1988), 1–14. (Midori Goto) **89k:58061** 58E10 (53C22, 58F15, 58F17)
- Adachi, H.** (with Moloney, J. V.; McLaughlin, D. W.; Newell, A. C.) Fixed points and chaotic dynamics of an infinite-dimensional map. *Chaos, noise and fractals (Como, 1986)*, 137–186, *Malvern Phys. Ser.*, 3, Hilger, Bristol, 1987. (Introduction) **89g:58134** 58F13 (81K05)
- Adali, S.** (with Bruch, J. C., Jr.; Sadek, Ibrahim S.; Sloss, J. M.) Feedback control of a vibrating beam by stiffening action. *Mech. Res. Comm.* 15 (1988), no. 1, 21–29. (Edward Jezierski) **89e:93124** 93C20 (93B50, 93C75)
- (with Sadek, Ibrahim S.; Sloss, J. M.; Bruch, J. C., Jr.) Distributed control of layered orthotropic plates with damping. *Optimal Control Appl. Methods* 9 (1988), no. 1, 1–17. (Russell D. Rupp) **89d:49001** 49A22 (35L75, 49B22, 73K10, 90C31, 93C75)
- (with Sloss, J. M.; Sadek, Ibrahim S.; Bruch, J. C., Jr.) Boundary feedback control of a vibrating beam subject to a displacement constraint. *Optimal Control Appl. Methods* 10 (1989), no. 1, 81–87. (Summary) **89m:93041** 93C20 (73K12)
- Adam, András** On simplicity-critical Moore automata. *I. Acta Math. Hungar.* 52 (1988), no. 1–2, 165–174. (Ranjana Chaudhuri) **89i:68098** 68Q70
- Adam, Gh.** Alternative formulation of the extended Clenshaw-Curtis quadrature rules for oscillating integrals. *Rev. Roumaine Phys.* 32 (1987), no. 8, 813–826. (Anton Hut’a) **89c:65027** 65D32 (65D20, 65V05)
- Adam, Jean-Michel** Syllogisme et enthymème: de la logique au texte publicitaire. [Syllogism and enthymème: from logic to advertising copy] *Pensée naturelle, logique et langage*, 231–241, *Univ. Neuchâtel, Neuchâtel*, 1987. (see **89b:03005**) 03B65
- Adam, John A.** Integral invariants and complex eigenvalue bounds. *Appl. Math. Lett.* 1 (1988), no. 3, 203–206. (Not in MR) 34C20 (76W05)
- A mathematical model of tumor growth by diffusion. *Mathematical modelling in science and technology (St. Louis, MO, 1987)*. *Math. Comput. Modelling* 11 (1988), 455–456. (see **89d:00007**) 92A15 (92A07)
- Adamchuk, A. S.** Excitation of a resonator by a charge that periodically intersects its wall. (Russian) *Differential and integral equations and complex analysis (Russian)*, 3–13, i, *Kalmytsk. Gos. Univ., Elista*, 1986. (A. S. Silbergleit) **89m:78005** 78A30
- Adamczyk, T.** (with Burczyński, T.) Boundary element method for shape design synthesis of elastic structures. *Boundary elements VII, Vol. I, II (Como, 1985)*, 12.93–12.106, *Comput. Mech., Southampton*, 1985. (see **89f:65003**) 65R20 (73K25)
- Adamek, Jiří** (with Nelson, Evelyn M.) Absolutely definable varieties of continuous algebras. *Algebra Universalis* 24 (1987), no. 3, 267–278. (James W. Lea, Jr.) **89c:08008** 08B99
- How complete are categories of algebras? *Bull. Austral. Math. Soc.* 36 (1987), no. 3, 389–409. (Walter Tholen) **89a:18010** 18C15 (18A35)
- (with Nelson, Evelyn M.; Jung, A.; Reiterman, Jan; Tarlecki, A.) Comparison of subset systems. *Comment. Math. Univ. Carolin.* 29 (1988), no. 1, 169–177. (James W. Lea, Jr.) **89g:06016** 06A23
- (with Mekler, Alan H.; Nelson, Evelyn M.; Reiterman, Jan) On the logic of continuous algebras. *Notre Dame J. Formal Logic* 29 (1988), no. 3, 365–380. (S. Comer) **89h:03041** 03B60 (03C05, 03G25, 08A99)
- (with Rosický, J.) Intersections of reflective subcategories. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 710–712. (Csaba Némethi) **89e:18003** 18A40 (18B30, 54B30)
- Adamenko, G. M.** Random search subalgorithms in structural adaptation procedures. (Russian) *Random search problems*, 11 (Russian), 35–43, 211, “Zinatne”, Riga, 1988. (see **89a:00023**) 90C30 (52A99)
- Adamenko, O. A.** Existence of a stationary solution of a difference stochastic equation in a Hilbert space. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 29 (1987), 3–9, 117. (Yu. S. Mishura) **89h:60099** 60H25 (39A10)
- Adamović, Dušan D.** (with Kečkić, Jovan D.) On general solutions of linear differential equations. *Publ. Inst. Math. (Beograd) (N.S.)* 42(56) (1987), 47–56. (Vladimir Vlček) **89d:34012** 34A30
- Adamovich, V. A.** (with Degermendzi, A. G.; Terskov, I. A.) The effect of growth controlling factor autostabilization and of interaction in a community. (Russian) *Dokl. Akad. Nauk SSSR* 295 (1987), no. 5, 1236–1239. (From the text) **89i:92050** 92A17
- Adamowicz, Zofia** Parameter-free induction, the Matiyasevich theorem and  $BL_1$ . *Logic colloquium '86 (Hull, 1986)*, 1–8, *Stud. Logic Found. Math.*, 124, North-Holland, Amsterdam-New York, 1988. (Roman Murawski) **89b:03098** 03F30
- A recursion-theoretic characterization of instances of  $BL_n$  provable in  $\Pi_{n+1}(N)$ . *Fund. Math.* 129 (1988), no. 3, 231–236. (Christian Bennet) **89i:03110** 03F30
- Adams, Carlisle M.** (with Meijer, Henk) Security-related comments regarding McEliece’s public-key cryptosystem. *Advances in cryptology—CRYPTO '87 (Santa Barbara, CA, 1987)*, 224–228, *Lecture Notes in Comput. Sci.*, 293, Springer, Berlin-New York, 1988. (see **89b:68005**) 94A60 (94B05)
- Adams, Colin C.** Augmented alternating link complements are hyperbolic. *Low-dimensional topology and Kleinian groups (Coventry/Durham, 1984)*, 115–130, *London Math. Soc. Lecture Note Ser.*, 112, Cambridge Univ. Press, Cambridge-New York, 1986. (W. Heil (Zbl 632:57008)) **89c:57003** 57M25 (57N10)
- Volumes of  $N$ -cusped hyperbolic 3-manifolds. *J. London Math. Soc.* (2) 38 (1988), no. 3, 555–565. (Robert Brooks) **89k:22020** 22E40 (57N10)
- Tangles and the Gromov invariant. *Proc. Amer. Math. Soc.* 106 (1989), no. 1, 269–271. (Hugh Reynolds Morton) **89k:57004** 57M25
- Adams, David R.** A sharp inequality of J. Moser for higher order derivatives. *Ann. of Math.* (2) 128 (1988), no. 2, 385–398. (H. Triebel) **89i:46034** 46E35 (26D10)
- Weighted capacity and the Choquet integral. *Proc. Amer. Math. Soc.* 102 (1988), no. 4, 879–887. (Takahide Kurokawa) **89j:31007** 31B15 (35J99)
- Adams, Ernst Wilhelm** (with Cordes, D.) Test for uniform boundedness for dynamic problems admitting parameter and combination resonance. *Computational arithmetic*, 115–132, *Teubner, Stuttgart*, 1987. (Walter G. Kelley) **89c:34003** 34A10 (34A30, 34A34, 34C11, 65L05)
- (with Cordes, D.; Lohner, Rudolf Josef) Enclosure of solutions of ordinary initial value problems and applications. *Discretization in differential equations and enclosures (Weissig, 1986)*, 9–28, *Math. Res.*, 36, Akademie-Verlag, Berlin, 1987. (Ekkehard Wagenführer) **89i:65068** 65L05 (65G10)
- see also **Discretization in differential equations and enclosures**, **89a:65005**
- Adams, J. F.** 2-tori in  $Eg$ . *Math. Ann.* 278 (1987), no. 1–4, 29–39. (M. Mimura) **89b:22010** 22E15 (57T99)
- Adams, Jeffrey** (with Johnson, Joseph F.) Endoscopic groups and packets of nontempered representations. *Compositio Math.* 64 (1987), no. 3, 271–309. (Dan Barbasch) **89h:22022** 22E45 (11F70, 11F72, 22E50)
- Adams, John W.** (with Medlin, Gregory W.; Leondes, Cornelius T.) Lagrange multiplier approach to the design of FIR filters for multirate applications. *IEEE Trans. Circuits and Systems* 35 (1988), no. 10, 1210–1219. (Summary) **89g:94009** 94A12 (49D29, 94A05)
- Adams, Joseph** (with Balas, Egon; Zawack, D. J.) The shifting bottleneck procedure for job shop scheduling. Focused issue on heuristics. *Management Sci.* 34 (1988), no. 3, 391–401. (Summary) **89h:90100** 90B35
- Adams, M. E.** (with Priestley, H. A.) De Morgan algebras are universal. *Discrete Math.* 66 (1987), no. 1–2, 1–13. (Anna Romanowska) **89d:06016** 06D30
- Principal congruences in De Morgan algebras. *Proc. Edinburgh Math. Soc.* (2) 30 (1987), no. 3, 415–421. (H. A. Priestley) **89a:06030** 06D30 (06B10, 06D05)
- Adams, M. R.** (with Harnad, J.; Previateo, E.) Isospectral Hamiltonian flows in finite and infinite dimensions. I. Generalized Moser systems and moment maps into loop algebras. *Comm. Math. Phys.* 117 (1988), no. 3, 451–500. (Jair Koiller) **89k:58112** 58F07 (14H40, 58F05, 70H05)
- Adams, R. A.** Reduced Sobolev inequalities. *Canad. Math. Bull.* 31 (1988), no. 2, 159–167. (H. Wallin) **89f:46066** 46E35
- Adams, Scot** An equivalence relation that is not freely generated. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 565–566. (Jean Moulin Ollagnier) **89d:28014** 28D15 (28C10)
- Adamski, Wolfgang** Characterization of complete spaces by measures that integrate every function of a given vector lattice. *Atti Sem. Mat. Fis. Univ. Modena* 35 (1987), no. 1, 9–20. (W. A. J. Luxemburg) **89a:46055** 46E05 (28C05, 28C15)
- melik-Adamyany, P. E.** see **Melik-Adamyany, P. E.**
- Adamyany, V. G.** A synthetic method for constructing and investigating third-order curves with singular points. (Russian) *Geometric models and algorithms (Russian)*, 46–53, 84, *Leningrad. Inzh.-Stroitel. Inst., Leningrad*, 1986. (Jerzy Kaczmarek) **89f:51016** 51M15
- Adamyany, V. M.** Some limit relations for multidimensional positive-definite Toeplitz matrices. (Russian) *Funktsional. Anal. i Prilozhen.* 22 (1988), no. 1, 55–56; translated in *Functional Anal. Appl.* 22 (1988), no. 1, 44–45. (D. Sarason) **89d:47041** 47B35 (15A48)
- Adati, Tyuzi** An almost  $r$ -paracontact Riemannian manifold and an almost product Riemannian manifold. *Tensor (N.S.)* 43 (1986), no. 3, 239–247. (Luis A. Cordero) **89b:53056** 53C15
- Several tensor fields in para-Sasakian manifolds. II. *TRU Math.* 22 (1986), no. 1, 13–17. (José A. Oubiña) **89g:53071** 53C25
- Adda, Ph.** Contrôlabilité des systèmes bilinéaires généraux et homogènes dans  $\mathbb{R}^2$ . (English summary) [Controllability of general and homogeneous bilinear systems in  $\mathbb{R}^2$ ] *Analysis and optimization of systems (Antibes, 1988)*, 205–214, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89f:93005** 93B05 (26E35, 49E15)



- Added, Hélène** see **Added-Pourcin, Hélène**
- Added, Stéphane** (with **Added-Pourcin, Hélène**) Equations of Langmuir turbulence and nonlinear Schrödinger equation: smoothness and approximation. *J. Funct. Anal.* **79** (1988), no. 1, 183–210. (Nakao Hayashi) **89b:35273** 35Q20 (76F99, 76X05)
- Added-Pourcin, Hélène** (with **Added, Stéphane**) Equations of Langmuir turbulence and nonlinear Schrödinger equation: smoothness and approximation. *J. Funct. Anal.* **79** (1988), no. 1, 183–210. (Nakao Hayashi) **89b:35273** 35Q20 (76F99, 76X05)
- Addicott, John F.** (with **Freedman, H. I.**; **Rai, Bindhyachal**) Obligate mutualism with a predator: stability and persistence of three-species models. *Theoret. Population Biol.* **32** (1987), no. 2, 157–175. (Prajnesha) **89c:92057** 92A15
- Adegboye, O. S.** A classification rule whose probability of misclassification is independent of the variance. *Austral. J. Statist.* **29** (1987), no. 2, 208–213. (Mir Maswood Ali) **89c:62074** 62H30
- Adelard of Bath** see **Adelard of Bath, 89c:01017**; **Gibson, Margaret, (89c:01017)**; **Drew, Alison, (89c:01017)**; **Evans, Dafydd, (89c:01017)**; **Burnett, Charles, (89c:01017)**; (Not in MR); **Pouille, Emmanuel, (89c:01017)**; **Burnett, Charles, (89c:01017)** and (Not in MR)
- Adel'son-Vefskii, G. M.** (with **Kuznetsov, O. P.**) ★ Дискретная математика для инженера. (Russian) [Discrete mathematics for the engineer] 2nd edition. *Energoatomizdat, Moscow*, 1988. 480 pp. ISBN 5-263-01563-7 (Roman Swiniarski) **89b:00002** 00A05 (00-01, 05-01, 68-01, 90-01)
- Adem, Alejandro** (with **Browder, William**) The free rank of symmetry of  $(S^n)^k$ . *Invent. Math.* **92** (1988), no. 2, 431–440. (M.-C. Ku) **89c:57034** 57S25 (57S17)
- Adem, José** Classification of low-dimensional orthogonal pairings. *Bol. Soc. Mat. Mexicana* (2) **31** (1986), no. 1, 1–27. (Kee Yuen Lam) **89j:11034** 11E39
- Adenpoju, J. A.** On the effectiveness of basic sets of two complex variables in polycylinders. *Complex analysis and applications '85* (Varna, 1985), 5–13, *Bulg. Acad. Sci., Sofia*, 1986. (J. Gopala-Krishna (Zbl 641:32002)) **89j:32001** 32A05
- A note on the effectiveness of product set of basic sets of polynomials of two complex variables in Faber regions. *Caribbean J. Math.* **5** (1986), no. 1, 1–7. (A. K. Agarwal) **89f:32003** 32A05
- Adler, J. P.** (with **Willet, J. C.**) Beltrami parametrization and gauged BRST symmetry for the free bosonic string. *Phys. Lett. B* **200** (1988), no. 3, 285–291. (Marc Henneaux) **89c:81132** 81E99 (81E30)
- (with **Abud, M.**) The relationship between the gauged BRST symmetry and the ghost number symmetry. *Phys. Lett. B* **212** (1988), no. 3, 320–326. (Danny Birmingham) **89k:81068** 81E13
- (with **Bouda, A.**; **Willet, J. C.**) Perturbative BRST current algebra anomalies for the free bosonic string. *Phys. Lett. B* **215** (1988), no. 1, 111–118. (Summary) **89j:81076** 81D15 (17B65, 58D30, 81E30)
- Adewumi, H. O.** (with **Ojo, M. O.**) Error bounds for the normal and the  $t$ -approximation to the generalized logistic distribution. (French and Italian summaries) *Statistica (Bologna)* **47** (1987), no. 3, 453–463. (Mir Maswood Ali) **89c:62036** 62E15 (60E99)
- Adeye, J. Olu-Oluwa** Characterisation of real interpolation spaces between the domain of the Laplace operator and  $L_p(\Omega)$ ;  $\Omega$  polygonal and applications. *J. Math. Pures Appl.* (9) **67** (1988), no. 3, 263–290. (H. Triebel) **89k:46045** 46E35 (35B65, 46M35, 47F05)
- Adhami, Reza** (with **Polge, Robert J.**) Fast Fourier transformation based on number-theoretic transforms. *J. Franklin Inst.* **325** (1988), no. 5, 547–557. (Summary) **89f:65137** 65R10 (94A11)
- Adhikari, R.** (with **Dutt, Ranabir**; **Varshni, Y. P.**) On the averaging of energy eigenvalues in the supersymmetric WKB method. *Phys. Lett. A* **131** (1988), no. 4–5, 217–221. (Summary) **89b:81032** 81C12
- Adhikari, S. D.** (with **Balasubramanian, Ramachandran**; **Sankaranarayanan, Ayadurai**) On an error term related to the greatest divisor of  $n$ , which is prime to  $k$ . *Indian J. Pure Appl. Math.* **19** (1988), no. 9, 830–841. (E. J. Scourfield) **89m:11089** 11N37
- Adhikary, Arun Kumar** (with **Chaudhuri, Arijit**; **Vijayan, Kaipillil**) Optimum sampling strategies for randomized response trials. (French summary) With discussion by P. K. Sen, S. M. Tam and M. E. Thompson, and a reply by the authors. *Internat. Statist. Rev.* **52** (1984), no. 2, 115–125. (Summary) **89b:62008** 62D05
- Adhikary, Basudeb** On a class of arrays leading to factorial fractions. II. *Calcutta Statist. Assoc. Bull.* **35** (1986), no. 139–140, 133–148. (Masahide Kuwada) **89b:62163** 62K15 (05B15)
- (with **Chatterjee, S. K.**) Professor R. C. Bose: 1901–1987. *Calcutta Statist. Assoc. Bull.* **36** (1987), no. 143–144, 109–124. (Editors) **89f:01060** 01A70
- (with **Das, Premadhis**) Construction of grouped arrays. *Calcutta Statist. Assoc. Bull.* **36** (1987), no. 143–144, 153–164. (Dibyen Majumdar) **89i:62128** 62K15 (05B15)
- Adiga, Chandrashekar** (with **Bhargava, Srinivasamurthy**) On two elliptic  $\theta$ -function identities stated by Srinivasa Ramanujan. *Internat. J. Math. Ed. Sci. Tech.* **18** (1987), no. 2, 318–320. (Summary) **89b:33001** 33A25
- (with **Bhargava, Srinivasamurthy**; **Somashekar, D. D.**) On certain continued fractions related to  $y\Phi_2$  basic hypergeometric functions. *J. Math. Phys. Sci.* **21** (1987), no. 6, 613–629. (Mourad E. H. Ismail) **89f:40002** 40A15 (33A30)
- Adilov, G. R.** The aggregability of large systems. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **7** (1986), no. 5, 131–134 (1987). (A. A. Pervozvanskii) **89b:93007** 93A15 (90A15, 90A17)
- Adimoolam, C.** Calabi-Yau manifolds. *Recent developments in theoretical physics (Kotayam, 1986)*, 283–304, *World Sci. Publishing, Singapore*, 1987. (J. S. Joel) **89f:32054** 32J15 (14J30, 32C10, 53C55, 83E30)
- Adjamagbo, Kossivi** Synthèse de la théorie du déterminant sur un anneau finement filtré. [Synthesis of the theory of determinants over finely filtered rings] *Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliarin (Paris, 1986)*, 1–27, *Lecture Notes in Math.*, 1296, Springer, Berlin-New York, 1987. (Arno van den Essen) **89k:16003** 16A03 (16A08, 16A54, 32C38, 58G07)
- Sur l'effectivité du lemme du vecteur cyclique. (English summary) [Effectiveness of the cyclic vector lemma] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 13, 543–546. (Hernando Enrique Sierra-Morales) **89f:20006** 12H05 (11Y16, 32C38)
- Adjerid, Slimane** (with **Flaherty, Joseph E.**) Second-order finite element approximations and a posteriori error estimation for two-dimensional parabolic systems. *Numer. Math.* **53** (1988), no. 1–2, 183–198. (Summary) **89i:65110** 65N30 (65L60)
- (with **Flaherty, Joseph E.**) A local refinement finite-element method for two-dimensional parabolic systems. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 5, 792–811. (Summary)
- 89g:65136** 65N30
- Adke, S. R.** (with **Murphree, E. S.**) Efficient sequential estimation for compound Poisson processes. *Comm. Statist. Theory Methods* **17** (1988), no. 2, 443–460. (Wolfgang Winkler) **89c:62107** 62L12 (62M15)
- (with **Deshmukh, S. R.**) Limit distribution of a high order Markov chain. *J. Roy. Statist. Soc. Ser. B* **50** (1988), no. 1, 105–108. (Bernard Ycart) **89k:60090** 60J10
- Adlakha, V. G.** (with **Kulkarni, V. G.**) Markov and Markov-regenerative PERT networks. *Oper. Res.* **34** (1986), no. 5, 769–781 (1987). (J. Černý) **89a:90060** 90B15 (60J27)
- Adlandsvik, Bjørn** Joins and higher secant varieties. *Math. Scand.* **61** (1987), no. 2, 213–222. (Gary P. Kennedy) **89j:14030** 14N05 (14E22, 14J40)
- Adler, André** (with **Rosalsky, Andrew**) On the strong law of large numbers for normed weighted sums of i.i.d. random variables. *Stochastic Anal. Appl.* **5** (1987), no. 4, 467–483. (V. K. Rohatgi) **89a:60075** 60F15
- On the law of the iterated logarithm for nonidentically distributed random variables. *Stochastic Anal. Appl.* **6** (1988), no. 2, 117–127. (R. J. Tomkins) **89c:60064** 60F15 (60G50)
- Adler, Andrew** (with **Abrahamson, Karl**; **Gelbart, Rachel**; **Higham, Lisa**; **Kirkpatrick, David**) The bit complexity of randomized leader election on a ring. *SIAM J. Comput.* **18** (1989), no. 1, 12–29. (Cristian Calude) **89k:68038** 68Q10 (03D05, 68Q25)
- Adler, Ilan** (with **Karp, Richard M.**; **Shamir, Ron**) A simple variant solving an  $m \times d$  linear program in  $O(\min(m^2, d^2))$  expected number of pivot steps. *J. Complexity* **3** (1987), no. 4, 372–387. (M. Bastian (Zbl 641:65054)) **89m:90094** 90C05 (65K05, 68Q25)
- Admizt-Adler, J.** see **Lomnitz-Adler, J.**
- Adler, Jack** (with **Herbert, D. M.**) Addendum: "A criticality criterion for thermal explosions in well-stirred systems with reactant consumption" [JMA J. Appl. Math. **35** (1985), no. 1, 55–70; MR 87c:80019]. *JMA J. Appl. Math.* **36** (1986), no. 3, 307. (Editors) **89m:80008** 80A25
- The minimum local temperature disturbance for ignition in a slab. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1852, 245–254. (Summary) **89g:80008** 80A25
- Adler, Joan** (with **Palmer, R. G.**; **Meyer, Horst**) Transmission of order in some unusual dilute systems. *Phys. Rev. Lett.* **58** (1987), no. 9, 882–885. (Summary) **89a:82036** 82A68 (82-04)
- (with **Aharony, Amnon**) Diffusion percolation. I. Infinite time limit and bootstrap percolation. *J. Phys. A* **21** (1988), no. 6, 1387–1404. (R. T. Smythe) **89m:82043** 82A43 (60K35, 82-04)
- Adler, Mark** (with **van Moerbeke, Pierre**) The intersection of four quadrics in  $P^6$ , abelian surfaces and their moduli. *Math. Ann.* **279** (1987), no. 1, 25–85. (Jean-Pierre Francoise) **89f:14033** 14J10 (14D20, 14H40, 58F07, 70H05)
- (with **van Moerbeke, Pierre**) The Kowalewski and Hénon-Heiles motions as Manakov geodesic flows on  $SO(4)$ —a two-dimensional family of Lax pairs. *Comm. Math. Phys.* **113** (1988), no. 4, 659–700. (Tudor S. Ratiu) **89b:58085** 58F07 (58F17, 70E10, 70H05)
- Adler, Nevenka** (with **Kovacic-Beck, L.**) The correlation between physical properties and topological indices of  $n$ -alkanes. *Graph theory and topology in chemistry (Athens, Ga., 1987)*, 194–200, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (Summary) **89c:92093** 92A40 (81G55)
- Adler, Stephen L.** Quaternionic Gaussian multiple integrals. *Quantum field theory and quantum statistics, Vol. 1*, 601–623, Hilger, Bristol, 1987. (Takashi Miura) **89f:81150** 81E99 (81C35)
- Overrelaxation algorithms for lattice field theories. *Phys. Rev. D* (3) **37** (1988), no. 2, 458–471. (Claus Montonen) **89f:81142** 81E25 (81-08)
- Scattering and decay theory for quaternionic quantum mechanics, and the structure of induced  $T$  nonconservation. *Phys. Rev. D* (3) **37** (1988), no. 12, 3654–3662. (Marc Henneaux) **89j:81243** 81F99
- Adler, Yu. P.** see **Efron, Bradley, 89d:62003** and **Vuchkov, I. et al., 89f:62058**
- Adnadjević, Dušan** Dimension of fuzzy spaces. *Fuzzy Sets and Systems* **26** (1988), no. 1, 85–92. (Summary) **89c:54011** 54A40 (03E72)
- Adnan, Saad** Über eine Bemerkung von Glauber. [On a comment of Glauber] *Arch. Math. (Basel)* **49** (1987), no. 3, 187–188. (E. M. Palčhik) **89a:20018** 20D15 (20D20)
- Adolphson, Alan** (with **Sperber, Steven**) Twisted Kloosterman sums and  $p$ -adic Bessel functions. II. Newton polygons and analytic continuation. *Amer. J. Math.* **109** (1987), no. 4, 723–764. (Daniel Barsky) **89b:11101** 11T21 (11G20, 12H25)
- (with **Sperber, Steven**)  $p$ -adic estimates for exponential sums and the theorem of Chevalley-Waring. *Ann. Sci. École Norm. Sup.* (4) **20** (1987), no. 4, 545–556. (S. A. Stepanov) **89d:11112** 11T21 (11E95, 11G25, 11L40, 11S85)
- (with **Sperber, Steven**) Newton polyhedra and the degree of the  $L$ -function associated to an exponential sum. *Invent. Math.* **88** (1987), no. 3, 555–569. (T. Ono) **89d:11064** 11L03 (14G15)
- Adomaitis, K. V.** A problem of G. Weiss. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Sarator, 1984), 6–8, *Sarator. Gos. Univ., Sarator*, 1986. (see **89j:00036**) 42A50 (42B30)
- Adomian, George A.** ★ Стохастические системы. (Russian) [Stochastic systems] Translated from the English and with a preface by N. G. Volkov. With a foreword by Richard Bellman. "Mir", Moscow, 1987. 376 pp. (Editors) **89b:93002** 93-02 (60Hxx, 93E03, 93E25)
- Wave propagation in nonlinear media. *Appl. Math. Comput.* **24** (1987), no. 4, 311–332. (Summary) **89a:35040** 35B99 (35C99, 73D99)
- Analytic solutions for nonlinear equations. *Appl. Math. Comput.* **26** (1988), no. 1, 77–88. (Rouben Rostamian) **89d:34010** 34A25 (34A34, 34F05, 35C99, 60H15)
- Application of decomposition to convection-diffusion equations. *Appl. Math. Lett.* **1** (1988), no. 1, 7–9. (Not in MR) 35K57
- Elliptic equations and decomposition. *Comput. Math. Appl.* **15** (1988), no. 1, 65–67. (M. K. Kadalbajoo) **89c:65137** 65N99
- Corrigenda and comment on: "A general approach to solution of partial differential equation systems" [Comput. Math. Appl. **13** (1987), no. 9–11, 741–747; MR 88i:35002b]. Hyperbolic partial differential equations. V. *Comput. Math. Appl.* **15** (1988), no. 6–8, 711. (Editors) **89f:35013** 35A25 (35C99)
- Solving the nonlinear equations of physics. The mathematics of systems and computations (Atlanta, GA, 1986). *Comput. Math. Appl.* **16** (1988), no. 10–11, 903–914. (Summary) **89k:65153** 65P05 (35C99)

- (with Rach, R.) Evaluation of integrals by decomposition. *J. Comput. Appl. Math.* **23** (1988), no. 1, 99–101. (Summary) **89c:65081** 65L05
- Propagation in dissipative or dispersive media. *J. Comput. Appl. Math.* **23** (1988), no. 3, 395–396. (From the text) **89k:35258** 35R99 (35A25)
- A review of the decomposition method in applied mathematics. *J. Math. Anal. Appl.* **135** (1988), no. 2, 501–544. (Summary) **89j:00046** 00A69 (34A45, 34F05, 47H15, 49D27, 70K99, 70L05)
- A general approach for complex systems. *Kybernetes* **17** (1988), no. 1, 49–59. (Editors) **89c:00055** 00A71 (93A10)
- (with Rach, R.; Elrod, M.) The decomposition method applied to stiff systems. *Math. Comput. Simulation* **30** (1988), no. 3, 271–276. (Summary) **89c:65066** 65L05 (34A50)
- An adaptation of the decomposition method for asymptotic solutions. *Math. Comput. Simulation* **30** (1988), no. 4, 325–329. (R. R. Gold) **89j:34085** 34E99 (34C20, 35C99)
- A new approach to Burgers' equation. *Phys. D* **31** (1988), no. 1, 65–69. (Editors) **89h:35274** 35Q20 (35A25, 76D99, 76F99)
- Application of decomposition to hyperbolic, parabolic, and elliptic partial differential equations. *Internat. J. Math. Math. Sci.* **12** (1989), no. 1, 137–143. (Summary) **89k:35010** 35A25 (35C99)
- Adorf, H.-M.** (with Murtagh, F.) Clustering based on neural network processing. *COMP. STAT. 1988* (Copenhagen, 1988), 239–244, *Physica, Heidelberg*, 1988. (Introduction) **89m:92009** 92A09 (68T10, 90B10)
- Adu, David I.** The number of certain dendrites of order three. *Geom. Dedicata* **27** (1988), no. 2, 227–240. (L. E. Ward, Jr.) **89f:54067** 54F50 (20M20)
- Adrián, S. I.** (with Razborov, A. A.) Periodic groups and Lie algebras. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 2(254), 3–68, 287. (E. I. Khukhro) **89i:20033** 20D15 (17B30, 20F40, 20F50)
- Ad'yutov, M. M.** (with Lepin, L. A.) Self-similar solutions of the nonlinear heat equation with distributed parameters in the case of constant heat conduction. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 1, 14–24, 156; translated in *U.S.S.R. Comput. Math. and Math. Phys.* **28** (1988), no. 1, 8–15. (Summary) **89c:80007** 80A20 (35K05)
- Adzhemyan, L. Ts.** (with Vasil'ev, A. N.; Gnatch, M.) A turbulent dynamo as the spontaneous breakdown of symmetry. (Russian. English summary) *Teoret. Mat. Fiz.* **72** (1987), no. 3, 369–383. (Summary) **89d:76017** 76E25 (76W05, 81E99, 82A25)
- (with Vasil'ev, A. N.; Gnatch, M.) The renormalization group approach in turbulence theory: renormalization and critical dimensions of composite operators of the energy-momentum tensor. (Russian. English summary) *Teoret. Mat. Fiz.* **74** (1988), no. 2, 180–191; translated in *Theoret. and Math. Phys.* **74** (1988), no. 2, 115–123. (Summary) **89c:76071** 76F99 (82A25)
- Adzhubeli, L. T.** Solution of an estimation problem for an equation of oscillations with pointwise measurements. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* **4** (1985), 83–87, 104. (Not in MR) **93B30**
- (with Kudin, G. I.) Solution of a problem of estimating the state of a rod by the averaging method. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* **5** (1986), 36–39, 96. (Summary) **89k:73046** 73K12 (34C29, 93B30)
- (with Danilov, V. Ya.; Kudin, G. I.) Some problems in the control and estimation of oscillatory distributed systems with a small parameter. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* **6** (1987), 85–89, 117. (Not in MR) **93C20**
- Ae, Tadashi** (with Matsumoto, Hiroshi; Cunha, Wagner Chiepa; Yamashita, Masafumi) Time complexity of response time estimation of multichannel communication networks. *Systems Comput. Japan* **19** (1988), no. 11, 25–32. (Not in MR) **68M10** (90B10)
- Aepinus, Franz Ulrich** see **Dhombres, Jean**, **89g:01028**
- Aeppli, Dorothee** see **Polya, George**, **89f:05013**
- Aerts, Diederik** A possible explanation for the probabilities of quantum mechanics and example of a macroscopic system that violates Bell inequalities. *Recent developments in quantum logic* (Cologne, 1984), 235–249, *Grundlagen Exakt. Naturwiss.*, **6**, Bibliographisches Inst., Mannheim, 1985. (see **89h:81008**) **81B05**
- Aertsen, A. M. H. J.** (with Johannesma, P. I. M.) Conservation and dissipation in neurodynamics. *Physics of cognitive processes* (Amalfi, 1986), 228–257, *World Sci. Publishing, Singapore*, 1987. (Brian D. Sleeman) **89a:92023** 92A09
- (with Palm, G.; Gerstein, G. L.) On the significance of correlations among neuronal spike trains. *Biol. Cybernet.* **59** (1988), no. 1, 1–11. (Summary) **89d:92035** 92A09
- Aeyels, Dirk** Local and global stabilizability for nonlinear systems. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 93–105, *North-Holland, Amsterdam-New York*, 1986. (A. Barraud) **89d:93077** 93D15 (93C10, 93C60)
- Afanasyev, B. A.** Systems with hidden servicing under conditions of a heavy load. I. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 1, 78–86; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 4, 75–83, 221 (Russian). (Summary) **89d:60168** 60K25 (90B22)
- Afanasyev, G. N.** Analytic expressions for some useful sums and integrals containing Legendre functions. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (Järnala, 1985), 198–205, "Nauka", Moscow, 1986. (see **89d:81002**) **33A45**
- (with Asanov, R. A.) An exact solution of the relativistic two-body problem in a Poincaré approach. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (Järnala, 1985), 337–346, "Nauka", Moscow, 1986. (see **89d:81002**) **70H40**
- Uniqueness of wave functions and scattering in multiply connected spaces. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (Järnala, 1985), 391–399, "Nauka", Moscow, 1986. (see **89d:81002**) **81F05**
- (with Asanov, R. A.) One exact solution of the relativistic two-body problem in the Poincaré approach. *Group-theoretic methods in physics*, Vol. 1 (Yurmala, 1985), 673–681, *VNU Sci. Press, Utrecht*, 1986. (Kishin Mariwalla) **89c:70036** 70H40
- Closed analytic expressions for some useful sums and integrals involving Legendre functions. *Group-theoretic methods in physics*, Vol. 1 (Yurmala, 1985), 699–706, *VNU Sci. Press, Utrecht*, 1986. (S. L. Kalla) **89d:33014** 33A45 (78A25)
- The scattering of charged particles on the toroidal solenoid. *J. Phys. A* **21** (1988), no. 9, 2095–2110. (Summary) **89f:81246** 81G10 (81B99)
- On the alternative interpretation of the Aharonov-Bohm effect. (Italian and Russian summaries) *Nuovo Cimento A* (11) **99** (1988), no. 5, 647–660. (C. S. Sharma) **89j:81017** 81B99
- Afanasyev, K. N.** Ancient metrology and architecture. (Russian) *Istor.-Astronom. Issled.* **20** (1988), 194–201. (Summary) **89j:01006** 01A10
- Afanasyev, S. A.** (with Gribkov, D. A.; Kuznetsov, Yu. I.) Investigation of processes in a nonautonomous autostochastic system. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **29** (1988), no. 6, 16–20, 113. (Summary) **89k:58166** 58F13 (94C05)
- Afanasyev, V. B.** (with Dumer, I. L.) Tabular decoding of Reed-Solomon codes. (Russian) *Noise-resistant coding and computer reliability* (Russian), 18–23, 189, "Nauka", Moscow, 1987. (From the text) **89c:94015** 94B35 (94B05)
- (with Grushko, I. I.) Rapid Fourier transform algorithms for the fields GF(2<sup>m</sup>). (Russian) *Noise-resistant coding and computer reliability* (Russian), 33–55, 190, "Nauka", Moscow, 1987. (Manfred Tasche) **89f:40033** 94A11 (94B35)
- Afanasyev, V. I.** Mean value of a function of a random walk up to the time of first entrance into the half-line. (Russian) *Mat. Zametki* **42** (1987), no. 6, 895–901, 912. (N. H. Bingham) **89c:60077** 60J15
- Afanasyeva, L. G.** On the ergodicity of an open queueing network. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 4, 777–781. (W. Szczotka) **89c:60179** 60K25 (90B15, 90B22)
- Afanasyev, G. N.** see **Afanasyev, G. N.**
- Afanasyev, B. A.** see **Afanasyev, B. A.**
- Afendilov, A. L.** (with Babenko, K. I.) The transition to turbulence in flows of viscous incompressible fluids. (Russian) *Mechanics and scientific-technological progress* (Russian), 49–66, 285, "Nauka", Moscow, 1987. (Summary) **89f:76031** 76D05 (58F11, 58F12, 76F99)
- (with Babenko, K. I.) Attractors of the Navier-Stokes system and their connection with turbulence. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 82, 33 pp. (J. S. Joel) **89f:58085** 58F12 (35Q10, 76D05, 76F99)
- Some remarks on the loss of stability of flows of a viscous incompressible fluid. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 44, 28 pp. (Summary) **89f:76055** 76E30 (58F14)
- (with Volevich, L. R.; Voskresenskii, G. P.; Gelfand, I. M.; Zabrodin, A. V.; Lokutsievskii, O. V.; Oleinik, O. A.; Tikhomirov, V. M.; Chentsov, N. N.) Konstantin Ivanovich Babenko. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 2(260), 115–123; translated in *Russian Math. Surveys* **43** (1988), no. 2, 139–151. (Editors) **89k:01027** 01A70
- (with Babenko, K. I.) Hopf bifurcation in some problems with symmetry. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 1, 14–19; translated in *Soviet Math. Dokl.* **37** (1988), no. 3, 600–605. (W. S. Loud) **89k:58204** 58F14 (34C25)
- Afendikova, N. G.** Numerical solution of a singular integral equation of the first kind with a multiple integral with Hilbert kernels. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 3, 3–8, 85; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 3, 1–8. (Ján Pekár) **89c:65148** 65R20
- Affentranger, Fernando** Generalization of a formula of C. Buchta about the convex hull of random points. *Elem. Math.* **43** (1988), no. 2, 39–45. (Richard A. Vitale) **89g:52003a** 52A22 (60D05)
- Remarks on the note: "Generalization of a formula of C. Buchta about the convex hull of random points". *Elem. Math.* **43** (1988), no. 5, 151–152. (Richard A. Vitale) **89g:52003b** 52A22 (60D05)
- Pairs of nonintersecting random flats. *Probab. Theory Related Fields* **79** (1988), no. 1, 47–49. (Herbert Ziesold) **89h:60021** 60D05 (52A22)
- Affleck, Ian** (with Marston, J. Brad) Symplectic Landau-Ginzburg fixed points and the localization problem. *Nuclear Phys. B* **290** (1987), no. 1, 137–155. (C. Eugene Wayne) **89a:82029** 82A57 (81C35, 82A25)
- (with Haldane, F. D. M.) Critical theory of quantum spin chains. *Phys. Rev. B* (3) **36** (1987), no. 10, 5291–5300. (Claus Montonen) **89a:82011** 82A25 (81E08, 81E40, 82A15)
- (with Kennedy, Tom; Lieb, Elliott H.; Tasaki, Hal) Valence bond ground states in isotropic quantum antiferromagnets. *Comm. Math. Phys.* **115** (1988), no. 3, 477–528. (Claus Montonen) **89d:82025** 82A15 (82A68)
- Afferbach, Lothar** (with Wenzel, Klaus) Normal random numbers lying on spirals and clubs. *Statist. Hefte* **29** (1988), no. 3, 237–244. (Summary) **89k:65005** 65C10
- Afifogoev, Yu. A.** (with Pavlenko, Yu. G.; Zelenskii, S. I.) Construction of short-wave asymptotics by the method of successive diagonalizations. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **29** (1988), no. 5, 29–35, 97. (Summary) **89k:81034** 81C15 (34E20, 58F05)
- Afraimovich, V. S.** (with Arnol'd, V. I.; Il'yashenko, Yu. S.; Shil'nikov, L. P.) Bifurcation theory. (Russian) *Current problems in mathematics. Fundamental directions*, Vol. 5 (Russian), 5–218, i, *Itogi Nauki i Tekhniki*, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow, 1986. (see **89a:58088**) **58F14**
- The Lyapunov dimension of invariant sets in a model of an active medium. (Russian) *Methods of qualitative theory of differential equations* (Russian), 19–29, 210, *Gorkov. Gos. Univ., Gorki*, 1986. (János Tóth) **89g:58124** 58F13 (39A10, 92A09)
- (with Pesin, Ya. B.) Dimension of Lorenz type attractors. *Mathematical physics reviews*, Vol. 6, 169–241, *Soviet Sci. Rev. Sect. C: Math. Phys. Rev.*, **6**, Harwood Academic Publ., Chur, 1987. (Hermann Haase) **89m:58129** 58F12 (28D20, 58F13)
- (with Vozovoi, L. P.) A mechanism for generating a two-dimensional torus during the loss of stability in the equilibrium state. (Russian) *Dokl. Akad. Nauk SSSR* **302** (1988), no. 4, 823–826; translated in *Soviet Phys. Dokl.* **33** (1988), no. 10, 720–722. (Not in MR) **76E15** (58F14)
- Afriat, S. N.** ★ Logic of choice and economic theory. *The Clarendon Press, Oxford University Press, New York*, 1987. xiv+577 pp. ISBN 0-19-828461-6 (Hans Keiding) **89c:90004** 90Axx
- Afsar, S. M.** On the geometric means of product of entire functions. *Ranchi Univ. Math. J.* **17** (1986), 79–86 (1987). (J. Gopala Krishna) **89d:30033** 30D20
- Aftabzadeh, A. R.** (with Wiener, Joseph) Differential inequalities for delay differential equations with piecewise constant argument. *Appl. Math. Comput.* **24** (1987), no. 3, 183–194. (Nicola Luca) **89b:34029** 34A40 (34K05)
- (with Huang, Yong Kang; Wiener, Joseph) Bounded solutions for differential equations with reflection of the argument. *J. Math. Anal. Appl.* **135** (1988), no. 1, 31–37. (Erwin Kozakiewicz) **89k:34119** 34K15 (34C11)
- Afuwape, Anthony Uyi** Convergence of the solutions for the equation  $x^{(n)} + a \ddot{x} + b \dot{x} + g(\dot{x}) + h(x) = p(t, x, \dot{x}, \ddot{x})$ . *Internat. J. Math. Math. Sci.* **11** (1988), no. 4, 727–733. (Jan Andres) **89b:34071** 34D20 (34C10)



- On the existence of a limiting regime in the sense of Demidovic for a certain fourth-order nonlinear differential equation. *J. Math. Anal. Appl.* **129** (1988), no. 2, 389–393. (Hassan El-Owaify) **89a:34016** 34A34 (34C11)
- Agadzhanov, A. N.** Functional properties of infinite-order Sobolev spaces. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 3, 521–524; translated in *Soviet Math. Dokl.* **38** (1989), no. 1, 88–92. (S. G. Samko) **89m:46061** 46E35
- Agashev, G. N.** Weighted Sobolev spaces of infinite order and one of their applications. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **7** (1986), no. 5, 22–27 (1987). (Jiri Rákosník) **89i:46035** 46E35 (35J99, 35R50)
- Agashev, M. A.** The saturation class of modified typical Zygmund means of Fourier-Legendre series. (Russian) *Operators and their applications* (Russian), 3–4, Leningrad. Gos. Ped. Inst., Leningrad, 1985. (see **89f:00013**) 41A58 (33A65, 42C10)
- Agasheva, R. G.** Integrals of motion in supersymmetric quantum mechanics. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (Jämsä, 1985), 185–190, "Nauka", Moscow, 1986. (see **89d:81001**) 81C99
- Agakhov, N. Kh.** Properties of the solutions of conjugation problems for some irregular equations. (Russian) *Mat. Zametki* **42** (1987), no. 2, 235–243, 344. (V. V. Kovrizhkin) **89a:35219** 35R05 (35B99)
- Agalarov, D. G.** (with Ismailov, V. I.; Aliiev, V. T.) Error estimates for the numerical solution of a problem of the propagation of visco-nonlinear elastic waves. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 5, 58–62 (1988). (Summary) **89k:73030** 73F15
- Agasović, I.** (with Mikić, A.) Homogenization of stationary flow of miscible fluids in a domain with a grained boundary. *SIAM J. Math. Anal.* **19** (1988), no. 2, 287–294. (Alberto Valli) **89f:35029** 35B25 (35Q10, 76S05)
- Agapov, V. K.** (with Kuznetsov, Yuri Alekseevich) On some versions of the domain decomposition method. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* **3** (1988), no. 4, 245–265. (Włodzimierz Proskurowski) **89b:65170** 65N30 (65F99)
- Agard, Stephen** (with Fehlmann, Richard) An addendum: "On the extremality and unique extremality of affine mappings in space" [*Ann. Acad. Sci. Fenn. Ser. A I Math.* **11** (1986), no. 1, 87–110; MR **87h:30042**]. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **12** (1987), no. 2, 299–301. (From the text) **89f:30035** 30C60 (30C70)
- Mostow rigidity on the line: a survey. *Holomorphic functions and moduli, Vol. II* (Berkeley, CA, 1986), 1–12, *Math. Sci. Res. Inst. Publ.*, **11**, Springer, New York-Berlin, 1988. (Y. Kusunoki) **89b:30059** 30F35 (22E40)
- Agarwal, Ashok Kumar**<sup>1</sup> (with Andrews, G. E.) On Asai's polynomials related to the twisting operators of finite classical groups. *J. Ramanujan Math. Soc.* **1** (1986), no. 1–2, 16–45. (G. E. Wall) **89m:20051** 20G40 (11F22, 11F27)
- (with Subbarao, M. V.) Further theorems of the Rogers-Ramanujan type theorems. *Canad. Math. Bull.* **31** (1988), no. 2, 210–214. (Peter Paule) **89j:11095** 11P57 (05A19, 11P68)
- Combinatorial proofs of some enumeration identities. *Indian J. Pure Appl. Math.* **19** (1988), no. 4, 313–318. (Ira Gessel) **89b:05020** 05A17
- (with Mullen, Gary L.) Partitions with " $d(a)$  copies of  $a$ ". *J. Combin. Theory Ser. A* **48** (1988), no. 1, 120–135. (Joseph Kung) **89d:05014** 05A17 (05A15, 11P65)
- Rogers-Ramanujan identities for  $n$ -color partitions. *J. Number Theory* **28** (1988), no. 3, 299–305. (George E. Andrews) **89j:11080** 11P68 (05A19, 11P57)
- Agarwal, Ashwani Kumar** (with Prakash, Satya; Shah, Sangeeta) Nondominated solutions of cost-time trade-off transportation and assignment problems. *Optsearch* **25** (1988), no. 2, 126–131. (Summary) **89e:90139** 90C08
- Agarwal, G. S.** Wigner-function description of quantum noise in interferometers. Special issue on squeezed light. *J. Modern Opt.* **34** (1987), no. 6–7, 909–921. (see **89m:81213a**) **81K05** (81C25)
- Agarwal, Krishna K.** (with Benstock, Joseph D.; Berndt, Donald J.) Graph embedding in SYNCHER2, an expert system for organic synthesis discovery. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1–3, 45–63. (Summary) **89e:92095** 92A40 (05C10, 68R10)
- Agarwal, Manju** (with Shukla, J. B.; Misra, O. P.; Gakkhar, S.) Effects of ecological and environmental gradients on coexistence of interacting species. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 907–909. (see **89d:00007**) **92A17**
- Agarwal, R. P.** see **Agarwal, Ratan P.**
- Agarwal, R. S.** (with Pande, H. D.) On projective recurrent Finsler spaces. *Acta Cienc. Indica Math.* **12** (1986), no. 1, 48–54. (M. Anastasiei [Zbl 623:53015]) **89g:53038** 53B40
- Agarwal, Ratan P.** Ramanujan and theta functions. *Srinivasa Ramanujan* (1887–1920), 52–65, Macmillan India, Madras, 1988. (see **89m:01070**) **11F27** (01A60, 11P55)
- Agarwal, Ravi Prakash** On the right focal point boundary value problems for linear ordinary differential equations. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **79** (1985), no. 6, 172–177 (1986). (From the text) **89d:34027** 34B05
- (with Chow, Y. M.) Initial-value methods for computing eigenvalues of two point boundary value problem. *Arch. Math. (Brno)* **23** (1987), no. 1, 1–8. (A. G. Baskakov) **89e:34040** 34B25
- (with Usmani, Riaz A.) On the numerical solution of two-point discrete boundary value problems. *Appl. Math. Comput.* **25** (1988), no. 3, 247–264. (V. Pereyra) **89j:65058** 65L10 (65Q05)
- Boundary value problems for second order differential equations of Sobolev type. *Comput. Math. Appl.* **15** (1988), no. 2, 107–118. (Pietro Marzulli) **89d:34031** 34B15 (34A50, 65L10)
- Monotone convergence of iterative methods for  $(n, p)$  and  $(p, n)$  boundary value problems. *J. Comput. Appl. Math.* **21** (1988), no. 2, 223–230. (A. Cojii) **89g:65096** 65L10
- (with Usmani, Riaz A.) Monotone convergence of iterative methods for right focal point boundary value problems. *J. Math. Anal. Appl.* **130** (1988), no. 2, 451–459. (Zai-Feng Song) **89d:34030** 34B15
- Comparison results for multidimensional difference equations. *J. Math. Anal. Appl.* **135** (1988), no. 2, 476–487. (Evangelos Ifantia) **89k:39001** 39A10
- On fourth order boundary value problems arising in beam analysis. *Differential Integral Equations* **2** (1989), no. 1, 91–110. (Long-Yi Tsai) **89k:34038** 34B27 (34A50, 34B15, 73K05)
- Agase, S. B.** (with Krishna, S. V.) Ordinary and measure differential equations using fixed point theorems in lattice normed spaces. *J. Math. Phys. Sci.* **19** (1985), no. 3, 255–265. (A. S. Potapov) **89a:34072** 34G20 (47H07, 47H15)
- Existence and stability of mild solutions of semilinear differential equations in locally convex spaces. *Yokohama Math. J.* **35** (1987), no. 1–2, 33–45. (James T. Sandefur) **89b:34146** 34G20 (35Q99, 47A99, 47D05, 47H09)
- Agathoklis, P.** The Lyapunov equation for  $n$ -dimensional discrete systems. *IEEE Trans. Circuits and Systems* **35** (1988), no. 4, 448–451. (Not in MR) **93D05** (93C55)
- Lower bounds for the stability margin of discrete two-dimensional systems based on the two-dimensional Lyapunov equation. *IEEE Trans. Circuits and Systems* **35** (1988), no. 6, 745–749. (Summary) **89d:93070** 93D05 (93C55)
- (with Sreeram, V.) Model reduction using balanced realizations with improved low frequency behaviour. *Systems Control Lett.* **12** (1989), no. 1, 33–38. (Summary) **89i:93039** 93B15
- el-Agawany, M.** see **El-Agawany, M.**
- Agayan, G. M.** The linear programming problem with element-wise specification of errors in the initial data. (Russian) *Dokl. Akad. Nauk SSSR* **291** (1986), no. 2, 265–269. (Jürgen Köhler) **89b:90119** 90C05 (90C31)
- Agayan, S. S.** (with Egiazaryan, K. O.) A new class of transformations in the theory of the processing of discrete signals. (Russian. English summary) Problems of computer science (Budapest, 1987). *Tanulmányok—MTA Számítéstechn. Automat. Kutató Int. Budapest* **No. 202** (1987), 7–23. (B. D. Donevski) **89i:94064** 94A11 (42C05)
- Agazaryan, S. V.** Hypercomplex structures in linear geo-two-odular manifolds over  $\mathbb{R}$ . (Russian) *Webs and quasigrassmannians* (Russian), 135–140, Kalinin. Gos. Univ., Kalinin, 1988. (M. A. Akivis) **89k:53014** 53A40 (53C05)
- Agazzi, Evandro** ★ Philosophie, science, métaphysique. (French) [Philosophy, science, metaphysics] *Éditions Universitaires Fribourg Suisse, Fribourg*, 1987. vi+88 pp. ISBN 2-8271-0361-3 (Roman Murawski) **89e:00015** 00A25
- Agbeko, N. K.** Some reverse maximal inequalities for supermartingales. *Ann. Univ. Sci. Budapest. Sect. Comput.* **6** (1985), 49–52 (1987). (Roger L. Jones) **89e:60091** 60G42
- Aggeev, A. A.** (with Beresnev, V. L.) Algorithms for the minimization of certain classes of polynomials of Boolean variables. (Russian) *Trudy Inst. Mat. Novosibirsk* **10** (1988), *Modeli i Metody Optim.*, 5–17, 264. (S. Rudeanu) **89c:90108** 90C09
- Aggeev, O. N.** Dynamical systems with a Lebesgue component of even multiplicity in the spectrum. (Russian) *Mat. Sb. (N.S.)* **136(178)** (1988), no. 3, 307–319, 430. (Zuo Ling Zhou) **89b:28021** 28D05 (58F11, 58F19)
- Aggeev, S. M.** Projective objects and coverings of a category of  $G$ -spaces. (Russian) *Topological structures and their mappings* (Russian), 5–14, i, Latv. Gos. Univ., Riga, 1987. (Michael M. Zarichnyi) **89c:54024** 54B30 (18B30, 54H15)
- Aggarwal, Alak** (with Chazelle, Bernard; Guibas, Leonidas J.; O'Dúnlaing, Colm; Yap, Chee-Keng) Parallel computational geometry. *Algorithmica* **3** (1988), no. 3, 293–327. (Franz Aurenhammer) **89b:68141** 68U05 (68Q10, 68Q25)
- (with Anderson, Richard John) A random  $\mathcal{H}^2$  algorithm for depth first search. *Combinatorica* **8** (1988), no. 1, 1–12. (William Gasarch) **89m:68054** 68Q25 (05C35, 68Q15, 68R10)
- Aggarwal, M. L.** (with Shamsuddin, M. D.) Construction of row-column confounded symmetrical factorial designs. (Italian summary) *Metron* **45** (1987), no. 1–2, 5–19. (Summary) **89b:62164** 62K15 (05B30)
- Aggarwal, S. P.** (with Aylawadi, D. R.) Optimal ordering policy under varying price and promotional effort. *Internat. J. Management Systems* **4** (1988), no. 3, 145–151. (Not in MR) **90B05**
- (with Jaggi, C. K.) Optimum inventory level with partial backlogging. *J. Inform. Optim. Sci.* **9** (1988), no. 3, 437–444. (Summary) **89b:90076** 90B05
- (with Jaggi, C. K.) Ordering policy for decaying inventory. *Internat. J. Systems Sci.* **20** (1989), no. 1, 151–155. (Not in MR) **90B05**
- Aggarwal, Satish K.** (with Gupta, D. P.) Positive values of inhomogeneous quaternary quadratic forms of type (3, 1). *Acta Cienc. Indica Math.* **13** (1987), no. 3, 162–169. (Madhu Raka) **89i:11072** 11H55
- (with Gupta, D. P.) Positive values of inhomogeneous quadratic forms of signature  $-2, 1$ . *Number Theory* **29** (1988), no. 2, 138–165. (Mary E. Flahive) **89i:11089** 11H55 (11E25, 11H50)
- Aggarwala, B. D.** (with Sezgin, M.; Ariel, P. D.) Electrically driven flows in MHD with mixed electromagnetic boundary conditions. (German and Russian summaries) *Z. Angew. Math. Mech.* **68** (1988), no. 7, 267–280. (Ram Babu Mishra) **89j:76089** 76W05
- (with Ariel, P. D.) Modified boundary integral method for pressure driven MHD duct flow. *Internat. J. Math. Math. Sci.* **12** (1989), no. 1, 159–174. (Summary) **89k:76099** 76W05 (76–08)
- Aghdam, A. M.** Square subgroup of an abelian group. *Acta Sci. Math. (Szeged)* **51** (1987), no. 3–4, 343–348. (P. L. Sperry) **89f:20061** 20K27
- Aghaklov, A. V.** (with Kuzhir, P. G.) Time evolution of a non-steady-state quantum system on a finite interval of time. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **32** (1988), no. 5, 409–412, 476. (Summary) **89f:81062** 81C99
- Agladze, K. I.** (with Panfilov, A. V.; Rudenko, A. N.) Nonstationary rotation of spiral waves: three-dimensional effect. *Phys. D* **29** (1988), no. 3, 409–415. (Summary) **89b:92010** 92A08 (92A40)
- Agliano, P.** (with Nation, J. B.) Lattices of pseudovarieties. *J. Austral. Math. Soc. Ser. A* **46** (1989), no. 2, 177–183. (Sheila Oates-Williams) **89i:08013** 08C99 (08B15)
- Agmon, Shmuel** On the spectral theory of the Laplacian on noncompact hyperbolic manifolds. *Journées "Équations aux dérivées partielles" (Saint Jean de Monts, 1987)*, Exp. No. XVII, 16 pp., École Polytech., Palaiseau, 1987. (A. B. Venkov) **89c:58128** 58G25 (11F72, 35P05)
- Agnes, Corrado** (with Rasetti, Mario) Complexity, undecidability and chaos: a class of dynamical systems with fractal orbits. *Chaos and complexity* (Torino, 1987), 3–25, *World Sci. Publishing, Singapore*, 1988. (Guy Jumarie) **89k:58167** 58F13
- Agnesi, Maria Gaetana** see **Kennedy, Hubert**, (89b:01071)
- Agodi, A.** (with Castorina, P.; Consoli, M.) Renormalization group equations and the continuum limit of some renormalizable quantum field theories. *Phys. Lett. B* **202** (1988), no. 1, 127–130. (Summary) **89a:81080** 81E15

- Agogino, Alice M. (with Rege, Ashutosh) Topological framework for representing and solving probabilistic inference problems in expert systems. *IEEE Trans. Systems Man Cybernet.* 18 (1988), no. 3, 402-414. (Witold Pedrycz) **89c:68138** 68T20 (68Q25)
- Agoh, Takashi On Bernoulli numbers. I. *C. R. Math. Rep. Acad. Sci. Canada* 10 (1988), no. 1, 7-12. (Reijo Ervial) **89c:11034** 11B68 (05A19, 11R18)
- On Bernoulli and Euler numbers. *Manuscripta Math.* 61 (1988), no. 1, 1-10. (Wells Johnson) **89c:11030** 11B68 (11S40)
- Agop, M. Les lois de la variation de la masse avec le temps. La corrélation masse-distance. (English summary) [The laws of mass variation in time, and the mass-distance correlation] *Rev. Roumaine Sci. Tech. Sér. Méc. Appl.* 33 (1988), no. 1, 33-37. (Introduction) **89E:70038** 70P05
- Agortz, C. J. (with Ayeni, R. O.; Okoya, S. S.) On the dissipation layer of radial bearings. *Internat. J. Math. Math. Sci.* 11 (1988), no. 2, 403-404. (Summary) **89c:76040** 76D08
- Agoshkov, V. I. (with Marchuk, G. I.) ★ Сопряженные операторы и алгоритмы возмущения в нелинейных задачах. Принципы построения сопряженных операторов. (Russian) [Conjugate operators and perturbation algorithms in nonlinear problems. Principles for constructing conjugate operators] Translated in Soviet J. Numer. Anal. Math. Modelling 3 (1988), no. 1, 21-46. Preprint [Preprint], 131. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1986. 44 pp. (Mihai Turinici) **89b:65145** 65J15 (47H17)
- (with Marchuk, G. I.) ★ Сопряженные операторы и алгоритмы возмущения в нелинейных задачах. Алгоритмы возмущения. (Russian) [Conjugate operators and perturbation algorithms in nonlinear problems. Perturbation algorithms] Translated in Soviet J. Numer. Anal. Math. Modelling 3 (1988), no. 2, 115-135. Preprint [Preprint], 132. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1986. 47 pp. (Ya. I. Afber) **89c:65077** 65J15 (47H17)
- (with Lobarev, I. V.) ★ Применение вариационных принципов к решению уравнения переноса. (Russian) [Application of variational principles to the solution of a transport equation] Preprint [Preprint], 148. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1987. 20 pp. (Summary) **89d:82149** 82A70 (45L10, 85-08, 85A25)
- see also Baiocchi, Claudio, **89m:49012**
- Agostinelli, Cataldo see Writings in mathematical physics in honor of the ninetieth birthday of Cataldo Agostinelli, **89c:00045**; Dianzani, Mario Umberto, **89c:01072**; Galletto, Dionigi, **89c:01075** and Pignatelli, Antonio, **89c:01100**
- d'Agostino, Luca (with Brennen, Christopher E.; Acosta, Allan J.) Linearized dynamics of two-dimensional bubbly and cavitating flows over slender surfaces. *J. Fluid Mech.* 192 (1988), 485-509. (Summary) **89m:76065** 76T05 (76B10)
- (with Brennen, Christopher E.) Linearized dynamics of spherical bubble clouds. *J. Fluid Mech.* 199 (1989), 155-176. (Not in MR) 76T05
- de Agostino, S. see De Agostino, S.
- Agrach, A. A. Quadratic mappings in geometric control theory. (Russian) *Problems in geometry*, Vol. 20 (Russian), 111-205. *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (P. Brunovsky) **89m:49071** 49E30 (58E25, 93B27)
- (with Garmkeldize, R. V.) Calculation of the Euler characteristic of the intersections of real quadrics. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 1, 11-14; translated in *Soviet Math. Dokl.* 37 (1988), no. 2, 297-300. (V. M. Kharlamov) **89b:14019** 14F45 (14N99, 57R20, 58F21)
- Homology of the intersections of real quadrics. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 5, 1033-1036; translated in *Soviet Math. Dokl.* 37 (1988), no. 2, 493-496. (V. M. Kharlamov) **89b:14020** 14F45 (14N99, 57R20)
- Agranovich, P. Z. (with Logvinenko, V. N.) Two-term asymptotic expansions of entire functions and of Dzhirbashyan canonical products of integral order in a half-plane. (Russian) *Mathematical physics, functional analysis (Russian)*, 94-99, 146, "Naukova Dumka", Kiev, 1986. (E. Rieksig) **89c:30104** 30E15 (30D20, 31C05)
- (with Logvinenko, V. N.) The polynomial asymptotic representation of a subharmonic function. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1987, no. 11, 3-5, 83. (Summary) **89c:31001** 31A05
- Agranovskii, M. L. (with Semenov, A. M.) Holomorphy on a unitary-invariant family of curves in  $C^n$ . (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 1, 192-196, 225; translated in *Siberian Math. J.* 29 (1988), no. 1, 149-152. (Valentin Napalkov) **89c:32025** 32D05 (32D15)
- Agrawal, B. D. (with Prasad, Jagadamba; Bhattacharya, K. M. Alpana) Certain theorems on trilateral generating relations. *Math. Student* 49 (1981), no. 2-4, 113-115 (1985). (B. M. Agrawal) **89b:33020** 33A99
- (with Mukherjee, Sanchita) A multivariate polynomial system and its characterizations. *Math. Soc. I* (1985), 81-91 (1986). (Harold Exton) **89b:33002** 33A30
- (with Mukherjee, Sanchita) Unification through a multivariate polynomial system. *Math. Soc. I* (1986), 181-186 (1987). (Harold Exton) **89d:33005** 33A30
- (with Mukherjee, Sanchita)  $n$ th-differential formulae for a multivariate polynomial system. *Bull. Calcutta Math. Soc.* 80 (1988), no. 1, 20-29. (S. D. Bajpai) **89j:33001** 33A30
- Agrawal, M. C. (with Jain, Nirmal) Predictive estimation in double sampling procedures. *Amer. Statist.* 42 (1988), no. 3, 184-186. (Not in MR) 62D05
- Agrawal, Om P. (with Salinas, Norberto) Sharp kernels and canonical subspaces (revised). *Amer. J. Math.* 110 (1988), no. 1, 23-47. (Raúl E. Curto) **89c:47026** 47B35 (32A07, 32A35, 46E20, 46J15, 47B20, 47B38)
- Agrawal, Purshottam Narain (with Kasana, Harvir S.) On sharp estimates and linear combinations of modified Bernstein polynomials. *Bull. Soc. Math. Belg. Sér. B* 40 (1988), no. 1, 61-71. (M. W. Müller) **89j:41024** 41A25 (41A10, 41A36)
- Agrawal, Rajeev (with Hegde, Manjunath V.; Teneketzis, Demosthenis) Asymptotically efficient adaptive allocation rules for the multiarmed bandit problem with switching cost. *IEEE Trans. Automat. Control* 33 (1988), no. 10, 899-906. (John C. Gittins) **89k:62105** 62L05 (90C40)
- (with Teneketzis, Demosthenis; Anantharam, Venkatachalam) Asymptotically efficient adaptive allocation schemes for controlled i.i.d. processes: finite parameter space. *IEEE Trans. Automat. Control* 34 (1989), no. 3, 258-267. (Summary) **89m:90092** 90B99 (93E25)
- Agrawal, S. C. see Agrawal, Suresh Chandra
- Agrawal, S. M. (with Gupta, Kailash Chandra) Unified theorems involving  $H$ -function transform and Meijer-Bessel function transform. *Proc. Indian Acad. Sci. Math. Sci.* 96 (1987), no. 2, 125-130. (P. Anandani) **89c:44006** 44A20 (33A30, 44A55)
- (with Gupta, Kailash Chandra) Some unified theorems involving  $H$ -function transforms. *Ganita Sandesh* 2 (1988), no. 1, 11-16. (H. M. Srivastava) **89m:33009** 33A35 (44A20)
- Agrawal, Suresh Chandra (with Saini, Jagdish) Thermal instability of viscous couette flow. *Math. Student* 47 (1979), no. 2-4, 339-351 (1985). (Not in MR) 76E15
- Agren, G. I. Models for forestry. *Economic-ecological modeling*, 87-99, *Stud. Regional Sci. Urban Econom.*, 16, North-Holland, Amsterdam-New York, 1987. (see **89d:90076**) 90A30 (92A17)
- Agren, Olov An analytical solution of the linearized Vlasov equation for nearly rigid displacements. *Plasma Phys. Control. Fusion* 31 (1989), no. 1, 35-55. (Summary) **89m:76073** 76X05 (76E25, 76W05)
- Agrest, M. M. Generalization of some relations for Bessel integral functions. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 126 (1987), no. 2, 241-244. (R. G. Langebartel) **89c:33011** 33A40
- (with Chachibaya, Ts. Sh.) Asymptotic representations of some classes of special functions that depend on two variables. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 3, 60-63, 85; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 3, 82-87. (E. Rieksig) **89c:33009** 33A40 (41A60)
- (with Chachibaya, Ts. Sh.) Expansions for Bessel exponential-integral functions and related functions. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 4, 3-12; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 4, 1-13. (R. G. Langebartel) **89k:33008** 33A40
- Agresti, Alan (with Chuang, Christy) Model-based Bayesian methods for estimating cell proportions in cross-classification tables having ordered categories. *Comput. Statist. Data Anal.* 7 (1989), no. 3, 245-258. (Not in MR) 62H17
- Agrippa, Cornelius see Molland, A. George, **89c:01021**
- Agui, M. (with Yamanaka, K.) A stochastic model of branching of plant trees. *Science on form (Sakura)*, 91-94, *Reidel, Dordrecht-Boston, MA*, 1987. (see **89c:82013**) 92A09
- Field theory of pattern identification. *Phys. Rev. A* 37 (1988), no. 11, 4415-4418. (Summary) **89c:92063** 92A25 (81E99, 92A09, 92A27)
- Agudo Martín, F. (with Fernández Rodríguez, Rosa M.) On the class of varieties that are topoi. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 1-6, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89c:18005** 18B25
- Aguda, Baltazar D. (with Clarke, Bruce L.) Dynamic elements of chaos in the Willamowski-Rössler network. *J. Chem. Phys.* 89 (1988), no. 12, 7428-7434. (Wei-Min Liu) **89j:92019** 92A09 (34C35, 58F13)
- Agui, Takeshi (with Choi, Hyung Jin; Nakajima, Masayuki) A method of license plate extraction using a fast pyramid hierarchical Hough transformation. *Systems Comput. Japan* 19 (1988), no. 8, 69-76. (Not in MR) 68T10
- de Aguiar, F. S. (with Bosco, F. A.; Goulart Rosa, S., Jr.) Yang-Lee zeros of the Ising model on the closed Cayley tree. *Phys. Lett. A* 127 (1988), no. 4, 194-198. (Summary) **89a:82037** 82A68 (82A25)
- de Aguiar, M. A. M. (with Malta, C. P.; Baranger, M.; Davies, K. T. R.) Bifurcations of periodic trajectories in nonintegrable Hamiltonian systems with two degrees of freedom: numerical and analytical results. *Ann. Physics* 180 (1987), no. 2, 167-205. (Jair Koiller) **89b:58175** 58F22 (34A50, 58F05, 65M99, 70-08, 70H05)
- Aguilar, Gerardo P. (with Arroyo, María José; Signoret, Carlos J. E.) A torsion-theoretic generalization of fully bounded Noetherian rings. *Comm. Algebra* 17 (1989), no. 1, 149-164. (M. Teply) **89i:16024** 16A63
- Aguilar, M. A. (with Pastor, Guillermo) On maps cobordant to embeddings. *Bol. Soc. Mat. Mexicana* (2) 31 (1986), no. 2, 61-67. (R. E. Stong) **89f:57049** 57R90
- (with Pastor, Guillermo) On immersions of  $N$ -manifolds in codimension  $N-1$ . *J. Austral. Math. Soc. Ser. A* 45 (1988), no. 2, 184-186. (R. E. Stong) **89c:57043** 57R42
- see also *Proceedings: Congress of the Mexican Mathematical Society*, **89c:00010**
- Aguilar, Marco Angel (with Brunner, H.) Collocation methods for second-order Volterra integro-differential equations. *Appl. Numer. Math.* 4 (1988), no. 6, 455-470. (H. Brunner) **89m:65111** 65R20
- Aguilar-Martín, J. (with Alsina, C.) Characterizations of some rescaling functions. *Inform. Process. Lett.* 28 (1988), no. 3, 127-132. (B. Crstici) **89m:39013** 39B20
- Aguilera, N. E. (with Caffarelli, Luis A.) Regularity results for discrete solutions of second order elliptic problems in the finite element method. *Calcolo* 23 (1986), no. 4, 327-353 (1987). (H. D. Mittelmann) **89b:65171** 65N30 (35J25, 39A12)
- (with Caffarelli, Luis A.; Spruck, Joel) An optimization problem in heat conduction. *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* 14 (1987), no. 3, 355-387 (1988). (Constantin Vărsan) **89b:49016** 49B21 (35K05, 93C20)
- gonzález-Aguilera, Víctor see González-Aguilera, Víctor
- Aguinagáide, J. M. (with No, M.) A new method for the optimization of dimensions of structures modelled by finite elements. (Spanish. English summary) *Rev. Internac. Métod. Numér. Calc. Disen. Ingr.* 4 (1988), no. 3, 275-295. (Summary) **89k:73051** 73K40 (73K25)
- Aguirre, Freddy (with Conca, Carlos) Eigenfrequencies of a tube bundle immersed in a fluid. *Appl. Math. Optim.* 18 (1988), no. 1, 1-38. (Charles J. Amick) **89b:35024** 35J05 (35P05, 35Q20, 76D05)
- Aguirre, J. (with Escobedo, M.) A Cauchy problem for  $u_t - \Delta u = u^p$  with  $0 < p < 1$ . Asymptotic behaviour of solutions. (French summary) *Ann. Fac. Sci. Toulouse Math. (5)* 8 (1986/87), no. 2, 175-203. (Zi Qian Yan) **89d:35080** 35K55 (35B40)
- facenda Aguirre, José Antonio see Facenda Aguirre, José Antonio
- negrín Aguirre, Juan Ramón see Negrín Aguirre, Juan Ramón
- Aguirre, M. (with Krause, Jorge)  $SL(3, \mathbb{R})$  as the group of symmetry transformations for all one-dimensional linear systems. *J. Math. Phys.* 29 (1988), no. 1, 9-15. (M. I. Monastyrskii) **89b:58184** 58F35 (22E05, 34A30)
- (with Krause, Jorge) Finite point transformations and linearisation of  $\tilde{x} = f(t, x)$ . *J. Phys. A* 21 (1988), no. 13, 2841-2845. (János Karsai) **89i:34043** 34C20 (58F37)
- Aguirregabiria, J. M. (with Etxebarria, J. R.) Electromagnetic angular momentum radiated by two-point charges. *J. Math. Phys.* 29 (1988), no. 8, 1832-1836. (L. G. Chambers) **89f:78015** 78A35 (70F99, 70H40)
- Ahac, Alan A. (with Buoni, John J.; Olesky, D. D.) Stable  $LU$  factorization of  $H$ -matrices. *Linear Algebra Appl.* 99 (1988), 97-110. (François Robert) **89a:65044** 65F05 (65G05)
- Ahamed, Syed V. (with Miller, Michael J.) ★ Digital transmission systems and networks. Vol. 1. Principles. Electrical Engineering, Communications and Signal Processing Series,



9. *Computer Science Press, Rockville, MD, 1987. xx+274 pp. ISBN 0-88175-094-8* (Wiktor Kulesza) **89c:94002a** 94-01 (94A12, 94C30)
- (with Miller, Michael J.) ★ Digital transmission systems and networks. Vol. II. Applications. Electrical Engineering, Communications and Signal Processing Series, 10. *Computer Science Press, Rockville, MD, 1988. xviii+366 pp. ISBN 0-88175-176-6* (Wiktor Kulesza) **89c:94002b** 94-01 (94A12, 94C30)
- Aharoni, Ron** Matchings in  $n$ -partite  $n$ -graphs. *Graphs Combin.* **1** (1985), no. 4, 303–304. (Gui Zhen Liu) **89g:05082** 05C70 (05C65)
- Menger's theorem for countable graphs. *J. Combin. Theory Ser. B* **43** (1987), no. 3, 303–313. (Thomas Andreae) **89a:05098** 05C40 (05C38)
- (with Erdős, Paul; Linial, Nathan) Optima of dual integer linear programs. *Combinatorica* **8** (1988), no. 1, 13–20. (Joachim Piehler) **89f:00093** 90C10
- Matchings in infinite graphs. *J. Combin. Theory Ser. B* **44** (1988), no. 1, 87–125. (Karsten Steffens) **89f:05132** 05C70 (04A20)
- Aharony, Amnon** (with Harris, A. Brooks; Meir, Yigal) Diffusion on percolating clusters. *Phys. Rev. B* (3) **36** (1987), no. 16, 8752–8764. (Summary) **89c:82044** 82A43
- (with Oxaal, U.; Murat, M.; Meir, Yigal; Boger, F.; Feder, Jens; Jossang, T.) Growth and viscous fingers on percolating porous media. *Random fluctuations and pattern growth* (Cargèse, 1988), 83–86. *NATO Adv. Sci. Inst. Ser. E: Appl. Sci.*, 157, Kluwer Acad. Publ., Dordrecht, 1988. (see **89j:00034**) **82A43** (76S05)
- (with Adler, Joan) Diffusion percolation. I. Infinite time limit and bootstrap percolation. *J. Phys. A* **21** (1988), no. 6, 1387–1404. (R. T. Smythe) **89m:82043** 82A43 (60K35, 82-04)
- (with Furberg, Liv; Feder, Jens; Jossang, T.) Dynamics of invasion percolation. *Phys. Rev. Lett.* **61** (1988), no. 18, 2117–2120. (Summary) **89i:82050** 82A43
- (with Harris, A. Brooks) Flory approximant for self-avoiding walks on fractals. *J. Statist. Phys.* **54** (1989), no. 3-4, 1091–1097. (Summary) **89m:82050** 82A51 (82A41)
- (with Meir, Yigal; Harris, A. Brooks) Percolation in negative field and lattice animals. *Phys. Rev. B* (3) **39** (1989), no. 1, 649–656. (Summary) **89k:82058** 82A43 (82A25, 82A67)
- Ahern, Patrick** (with Bruna, Joaquim) On holomorphic functions in the ball with absolutely continuous boundary values. *Duke Math. J.* **56** (1988), no. 1, 129–142. (A. B. Aleksandrov) **89h:32012** 32A40
- (with Rudin, Walter) Paley-type gap theorems for  $H^p$ -functions on the ball. *Indiana Univ. Math. J.* **37** (1988), no. 2, 255–275. (Algirdas Zabulionis) **89k:32007** 32A35
- Exceptional sets for holomorphic Sobolev functions. *Michigan Math. J.* **35** (1988), no. 1, 29–41. (Joaquim Bruna) **89j:32007** 32A35 (32A40, 42B30)
- Ahlbrandt, Calvin D.** (with Hooker, John W.) Recursive solutions of symmetric three term recurrence relations. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 3–42, *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (Summary) **89g:39007** 39A12 (15A24, 39A10, 39A70)
- (with Hooker, John W.) Riccati matrix difference equations and disconjugacy of discrete linear systems. *SIAM J. Math. Anal.* **19** (1988), no. 5, 1183–1197. (Bernd Aulbach) **89m:39001** 39A10 (15A06, 34C10, 39A12)
- (with Ridenhour, Jerry; Thompson, Russell C.) Oscillation of superlinear matrix differential equations. *Proc. Amer. Math. Soc.* **105** (1989), no. 1, 141–148. (S. Ahmad) **89f:34043** 34C10
- Ahlbrandt, Gisela** Almost strongly minimal totally categorical theories. *Logic colloquium '85* (Orsay, 1985), 17–31, *Stud. Logic Found. Math.*, 122, North-Holland, Amsterdam-New York, 1987. (Charles Steinhorn) **89c:03056** 03C45
- (with Baldwin, John T.) Categoricity and generalized model completeness. *Arch. Math. Logic* **27** (1988), no. 1, 1–4. (G. Cherlin) **89h:03055** 03C35
- Ahlen, Anders** (with Sternal, Mikael) Correspondences between input estimation and feedforward control. *Internat. J. Control* **48** (1988), no. 4, 1723–1734. (Not in MR) **93E10**
- Ahlfield, David P.** (with Mulvey, John M.; Dembo, Ron S.; Zenios, Stavros A.) Nonlinear programming on generalized networks. *ACM Trans. Math. Software* **13** (1987), no. 4, 350–367. (Summary) **89b:90218** 90C35 (90C30)
- Ahlfors, Lars** (with Carleson, Lennart) Arne Beurling in memoriam. *Acta Math.* **161** (1988), no. 1-2, 1–9. (Editors) **89i:01053** 01A70
- Ahlquist, J. E.** Application of fuzzy implication to probe nonsymmetric relations. II. Fuzzy Sets and Systems **25** (1988), no. 1, 87–95. (Summary) **89a:03100** 03E72
- Principal component analysis of vector-valued functions of four dimensions. *Math. Comput. Modelling* **10** (1988), no. 3, 175–182. (Summary) **89b:62122** 62H25
- Ahlsweide, Rudolf** (with Csiszar, I.) Hypothesis testing with communication constraints. *IEEE Trans. Inform. Theory* **32** (1986), no. 4, 533–542. (E. A. Haroutunian) **89a:94008** 94A15 (62B10)
- (with Wegener, Ingo) ★ Search problems. Translated from the German by Jean E. Wotschke. Wiley-Interscience Series in Discrete Mathematics and Optimization. A Wiley-Interscience Publication. John Wiley & Sons, Ltd., Chichester, 1987. xii+284 pp. ISBN 0-471-90825-8 (Editors) **89c:68019** 68P10 (62L15, 68-02, 90B10, 90D35, 94A15)
- (with Mörs, Michael) Inequalities for code pairs. *European J. Combin.* **9** (1988), no. 2, 175–181. (Ian Blake) **89c:05005** 05A05
- Ahmad, Abrar** (with Yadav, N. S.) A note on semiring. *Math. Ed. (Siwan)* **22** (1988), no. 1, 12–13. (J. R. Mosher) **89g:16049** 16A78
- Ahmad, B.** (with Chaudhry, Muhammad Anwar) On BCI-algebras satisfying  $x * (x * y) = y$ . *J. Natur. Sci. Math.* **28** (1988), no. 1, 153–156. (Editors) **89d:06017** 06D99 (03G25)
- (with Hayat, Khalid, M.) Some theorems of BCK-algebras. *J. Natur. Sci. Math.* **28** (1988), no. 1, 161–163. (Summary) **89d:06018** 06D99 (03G25)
- (with Chaudhry, Muhammad Anwar; Bhatti, Shaban A.) On kernels and annihilators in BCK-algebras. *Math. Japon.* **33** (1988), no. 3, 339–343. (Marek Palasiński) **89i:06019** 06D99 (03G25)
- (with Chaudhry, Muhammad Anwar) On a class of BCI-algebras. *Math. Japon.* **33** (1988), no. 6, 827–830. (Summary) **89j:06010** 06D99 (03G25)
- Ahmad, Faiz A.** A subclass of starlike functions. *Honam Math. J.* **9** (1987), no. 1, 71–76. (G. P. Bhargava) **89c:30019** 30C45
- An integral operator that maps a subclass of starlike functions into itself. (Serbo-Croatian summary) *Mat. Vesnik* **39** (1987), no. 4, 361–365. (G. P. Bhargava) **89j:30010** 30C45
- Jakubowski starlike integral operator. *J. Natur. Sci. Math.* **28** (1988), no. 1, 157–160. (Evelyn M. Silvia) **89k:30010** 30C45
- Ahmad, Hiasat** (with Andraos, Sweidan) A new efficient memoryless residue to binary converter. *IEEE Trans. Circuits and Systems* **35** (1988), no. 11, 1441–1444. (Not in MR) **94C05**
- Ahmad, Khader H.** Stability relative to a set and to the whole space revisited. *Appl. Math. Comput.* **24** (1987), no. 2, 91–99. (P. Seibert) **89c:54082** 54H20 (34D20, 58F10)
- (with Elaydi, Saber) Nearly periodic dynamical systems. *Appl. Anal.* **27** (1988), no. 4, 243–251. (W. R. Utz) **89d:54029** 54H20
- Some theorems on the structure of Liapunov stable motions. (Arabic summary) *J. Univ. Kuwait Sci.* **15** (1988), no. 1, 15–20. (L. Janos) **89c:54083** 54H20
- Ahmad, Khalil** (with Jain, Pawan Kumar) Schauder decomposition and best approximation in Banach spaces. *Portugal. Math.* **44** (1987), no. 1, 25–39. (R. H. Lohman) **89a:46033** 46B15 (41A65)
- Ahmad, Manzoor** (with Singh, Radhey S.) Modified nonparametric kernel estimates of a regression function and their consistencies with rates. *Ann. Inst. Statist. Math.* **39** (1987), no. 3, 549–562. (M. Hušková) **89c:62048** 62G05 (62J02)
- Ahmad, Munir** (with Ahsan, J.; Ahmad, R.) Probability algebras: a review with some statistical application. *Pakistan J. Statist.* **3** (1987), no. 2, 77–114. (Beloslav Riečan) **89b:60012** 60A05 (28A60, 62B99)
- (with Kazi, M. H.) On exact and asymptotic moments of inverse of mean of a normal population. *Punjab Univ. J. Math. (Lahore)* **20** (1987), 63–70. (Javad Behboodian) **89f:62021** 62F10
- Ahmad, R.** (with Ahsan, J.; Ahmad, Munir) Probability algebras: a review with some statistical application. *Pakistan J. Statist.* **3** (1987), no. 2, 77–114. (Beloslav Riečan) **89b:60012** 60A05 (28A60, 62B99)
- Ahmad, S. Hasanuddin** The exact distributions of quotients from Pareto population. *Riaz J. Karachi Math. Assoc.* **9** (1987), 1–4. (Not in MR) **62E15**
- Ahmad, Shair** Convergence and ultimate bounds of solutions of the nonautonomous Volterra-Lotka competition equations. *J. Math. Anal. Appl.* **127** (1987), no. 2, 377–387. (L. E. Bobisud) **89a:92032** 92A15 (34C11, 34E05)
- On almost periodic solutions of the competing species problems. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 855–861. (George Karakostas) **89f:92055** 92A17 (34C27)
- Ahmad, Z. U.** (with Mursaleen) Köthe-Toeplitz duals of some new sequence spaces and their matrix maps. *Publ. Inst. Math. (Beograd) (N.S.)* **42** (56) (1987), 57–61. (K. Chandrasekhara Rao) **89c:46006** 46A45 (40H05)
- (with Mursaleen) An application of Banach limits. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 244–246. (James Magee) **89c:40004** 40C05 (46A45)
- Ahmad, Goodarz** Almost-sure stability of a class of distributed parameter systems subjected to random excitations. *Dynamics Stability Systems* **2** (1987), no. 1, 1–17. (R. Subramanian) **89i:93118** 93E15 (35R60)
- (with Orabi, I. I.) Equivalence of single-term Wiener-Hermite and equivalent linearization techniques. *J. Sound Vibration* **118** (1987), no. 2, 307–311. (From the introduction) **89a:70025** 70L05
- (with Orabi, I. I.) Response of the Duffing oscillator to a non-Gaussian random excitation. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 3, 740–743. (Andrzej Tylikowski) **89m:70062** 70L05
- Ahmad, M.** (with Erfani, S.; Ramachandran, Venkat) The general biquadratic transformation of polynomials. *IEEE Trans. Circuits and Systems* **35** (1988), no. 12, 1547–1549. (Not in MR) **94A12** (30C10)
- (with Erfani, S.; Ramachandran, Venkat) An explicit formula for the general bilinear transformation of polynomials with its application. *J. Franklin Inst.* **325** (1988), no. 3, 385–391. (Mihail Voicu) **89c:93047** 93B25 (15A23, 93B15, 93B17)
- Ahmed, A. N.** (with Alzaid, A.; Al-Osh, M.) On the NBAFR (NWAFR) class of life distributions. *Statist. Hefte* **28** (1987), no. 3, 203–216. (Summary) **89k:62123** 62N05 (62F03)
- (with Abouammoh, A. M.) The new better than used failure rate class of life distribution. *Adv. in Appl. Probab.* **20** (1988), no. 1, 237–240. (Ramesh C. Gupta) **89b:62203** 62N05
- (with Abouammoh, A. M.) Acknowledgement: "The new better than used failure rate class of life distribution" [Adv. in Appl. Probab. **20** (1988), no. 1, 237–240; MR **89b:62203**]. *Adv. in Appl. Probab.* **20** (1988), no. 4, 917. (Editors) **89k:62122** 62N05
- Preservation properties for the mean residual life ordering. *Statist. Hefte* **29** (1988), no. 2, 143–150. (S. N. Alam) **89i:62161** 62N05
- Ahmed, Elsayed Mohamed** Two-dimensional percolation and classical string theory. *Internat. J. Theoret. Phys.* **27** (1988), no. 12, 1457–1460. (Summary) **89d:82048** 82A43 (81E30, 81E40)
- (with Tawani, A.) Conformal mapping and the random site problem. *Phys. Lett. A* **129** (1988), no. 3, 151–152. (Summary) **89d:82080** 82A43
- Interacting superstrings at finite temperature. *Phys. Rev. Lett.* **60** (1988), no. 8, 684–685. (Summary) **89a:81106** 81E99 (81E30)
- Ahmed, I. R.** (0, 1, 4) lacunary interpolation by splines. *Ann. Univ. Sci. Budapest. Sect. Comput.* **6** (1985), 125–129 (1987). (Len Bos) **89g:41008** 41A15 (41A05)
- Ahmed, Mainuddin** Electromagnetic perturbation of the NUT-de Sitter spacetime. *Classical Quantum Gravity* **5** (1988), no. 3, 463–468. (Basilis C. Xanthopoulos) **89d:83015** 83C15 (83C25)
- A gravitational field in the Plebański spacetime. *Gen. Relativity Gravitation* **20** (1988), no. 2, 97–101. (R. Beig) **89a:83009** 83C15 (83C10)
- Ahmed, Mohamed Hassan** (with Plummer, J.; Lasdon, L. S.) Solving a large nonlinear programming problem on a vector processing computer. *Ann. Oper. Res.* **14** (1988), no. 1-4, 291–304. (Summary) **89h:90212** 90C30 (90-04)
- Ahmed, Mostaf U.** A theorem on continuous transformation near-rings. (Bengali summary) *Chittagong Univ. Stud. Part II Sci.* **10** (1986), no. 1-2, 49–51. (J. R. Clay) **89k:16065** 16A76
- Ahmed, N. U.** Abstract stochastic evolution equations and related control and stability problems. *Control problems for systems described by partial differential equations and applications* (Gainesville, Fla., 1986), 107–120, *Lecture Notes in Control and Inform. Sci.*, 97, Springer, Berlin-New York, 1987. (O. Ibadapo-Obe) **89g:93106** 93E20 (49A27, 49A60, 93C25, 93D15)
- Identification of linear operators in differential equations on Banach space. *Operator methods for optimal control problems* (New Orleans, La., 1986), 1–30, *Lecture Notes in Pure and Appl. Math.*, 108, Dekker, New York, 1987. (Eitelbert N. Chukwu) **89a:93017** 93B30 (47A50, 49A51, 93B28, 93C25)
- ★ Elements of finite-dimensional systems and control theory. Pitman Monographs and Surveys in Pure and Applied Mathematics, 37. Longman Scientific & Technical, Harlow;

- John Wiley & Sons, Inc., New York, 1988. xiv+421 pp. ISBN 0-582-01373-9 (Roman Swiniarski) **89f:93001** 93-01
- ★ Optimization and identification of systems governed by evolution equations on Banach space. Pitman Research Notes in Mathematics Series, 184. Longman Scientific & Technical, Harlow; copublished in the United States with John Wiley & Sons, Inc., New York, 1988. vi+187 pp. ISBN 0-582-03447-7 (Roman Swiniarski) **89m:93021** 93B30 (47A50, 47D05, 47Hxx, 93-02, 93C25, 93E12, 93E25)
  - (with Li, Peng) On exponential stability of infinite-dimensional linear systems with bounded or unbounded perturbations. *Appl. Anal.* **30** (1988), no. 1-3, 175-187. (Cheng Zhi Li) **89k:93172** 93D15 (93B35, 93C25)
  - (with Dabbous, T. E.; Lee, Y. W.) Dynamic routing for computer queueing networks. *Internat. J. Systems Sci.* **19** (1988), no. 6, 967-977. (Summary) **89g:90106** 90B22 (90B15)
  - (with Biswas, Saroj K.) Optimal control of large space structures governed by a coupled system of ordinary and partial differential equations. *Math. Control Signals Systems* **2** (1989), no. 1, 1-18. (J. P. Babary) **89m:70067** 70Q05 (49B10, 49B22, 73K99, 93C20)
  - Ahmed, Naseer (with Ghori, Q. K.) Applicability of Hamilton-Jacobi method to nonlinear nonholonomic systems. *Appl. Math. Mech. (English Ed.)* **9** (1988), no. 10, 937-952; translated from *Appl. Math. Mech.* **9** (1988), no. 10, 879-892 (Chinese. English summary). (B. Vujanović) **89m:70033** 70H20 (70F25)
  - Ahmed, S. E. (with Malik, H. J.; Balakrishnan, N.) Recurrence relations and identities for moments of order statistics. I. Arbitrary continuous distribution. *Comm. Statist. Theory Methods* **17** (1988), no. 8, 2623-2655. (S. Panthapakesan) **89j:62070** 62G30 (62E15)
  - Ahmed, Shafique (with Giordano, Carla; Laforgia, Andrea) Approximations for the zeros of the derivative of Bessel functions. *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **118** (1984), no. 5-6, 217-225. (M. E. Muldoon) **89c:33012** 33A40
  - Ahmed, Shams Uddin (with Finke, G.) Network flow methods for the asymmetric traveling salesman problem. Sixteenth Manitoba conference on numerical mathematics and computing (Winnipeg, Man., 1986). *Congr. Numer.* **57** (1987), 223-234. (Colin J. H. McDiarmid) **89b:90075** 90B10 (90B35, 90C35)
  - Ahmed, Sk. Shamim (with Dey, Santi Sekhar) The circle-polygon paradox in the light of the boundary-element method. *Comput. & Structures* **29** (1988), no. 5, 919-922. (Summary) **89c:73026** 73K10 (73K30)
  - Ahn, Byoung Jin (with Park, Sung Hyun) On simultaneous considerations of variable selection and detection of influential cases. *J. Korean Statist. Soc.* **16** (1987), no. 1, 10-20. (Summary) **89a:62154** 62J05
  - Ahn, Chang Mo (with Thompson, Howard E.) Jump-diffusion processes and the term structure of interest rates. *J. Finance* **43** (1988), no. 1, 155-174. (Summary) **89a:90020** 90A09
  - Ahn, Jae Moon (with Chang, Kun Soo; Chang, Joo Sup) Notes on the analytic Yeh-Feynman integrable functionals. *Rocky Mountain J. Math.* **18** (1988), no. 1, 157-165. (A. Badrikian) **89f:28035** 28C20
  - Ahn, Sang (with Cooper, Colin; Cornuejols, Gerard; Frieze, A. M.) Probabilistic analysis of a relaxation for the  $k$ -median problem. *Math. Oper. Res.* **13** (1988), no. 1, 1-31. (Alexander H. G. Rinnooy Kan) **89c:90048** 90B10 (90C05, 90C35)
  - Ahn, Sung K. (with Reinsel, Gregory C.) Nested reduced-rank autoregressive models for multiple time series. *J. Amer. Statist. Assoc.* **83** (1988), no. 403, 849-856. (Not in MR) **62M10**
  - Ahrens, Heinz (with Bellmann, Klaus) Professor Dr. phil. habil. Dr. rer. nat. h.c. Erna Weber zum 90. Geburtstag. [Prof. Erna Weber on her 90th birthday] *Biometrical J.* **29** (1987), no. 8, 891-893. (Editors) **89c:01040** 01A70
  - Ahrens, J. H. How to avoid logarithms in comparisons with uniform random variables. (German summary) *Computing* **41** (1989), no. 1-2, 163-166. (Summary) **89k:65006** 65C10
  - Ahrens, T. Group-theoretic derivation of equations for massive and massless spin-one and spin-one-half fields. (Italian and Russian summaries) *Nuovo Cimento A* **111** **98** (1987), no. 1, 25-39. (A. O. Barut) **89b:81087** 81D25
  - Ahsan, J. (with Ahmad, Munir; Ahmad, R.) Probability algebras: a review with some statistical application. *I. Pakistan J. Statist.* **3** (1987), no. 2, 77-114. (Beloslav Riečan) **89b:60012** 60A05 (28A60, 62B99)
  - Monoids characterized by their quasi-injective  $S$ -systems. *Semigroup Forum* **36** (1987), no. 3, 285-292. (William R. Nico) **89c:20101** 20M50 (20M20)
  - Rings characterized by their torsion cyclic modules. *Houston J. Math.* **14** (1988), no. 3, 291-303. (M. Teply) **89m:16050** 16A63 (13C12, 16A52)
  - (with Saifullah, K.) Completely quasi-projective monoids. *Semigroup Forum* **38** (1989), no. 1, 123-126. (J. K. Luedeman) **89g:20102** 20M50
  - Ahsanullah, M. A note on the characterization of the normal distribution. *Biometrical J.* **29** (1987), no. 7, 885-888. (Truc Nguyen) **89f:62006** 62E10
  - Ahsanullah, T. M. G. On fuzzy neighborhood groups. *J. Math. Anal. Appl.* **130** (1988), no. 1, 237-251. (Zike Deng) **89c:54012** 54A40 (03E72, 22A99)
  - Ahson, S. I. (with Prasad, R.; Mahalanabis, A. K.) Decentralized observer for interconnected systems. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1201-1211. (Pramod Kumar Sharma) **89j:93012** 93B07 (93A15, 93C55)
  - Ahués, Mario (with Chatelin, Françoise; Telias, M.) Computing a set of eigenvalues. *Methods of functional analysis in approximation theory (Bombay, 1985)*, 325-336. *Internat. Schriftenreihe Numer. Math.*, **76**, Birkhäuser, Basel-Boston, MA, 1986. (Ludwig Elsner) **89c:65044** 65F15 (15A18)
  - A note on refining eigenelements of symmetric matrices. *Appl. Math. Lett.* **1** (1988), no. 4, 317-320. (Shao Kuan Li) **89k:65034** 65F15 (65F10)
  - Ahuja, D. L. (with Kumar, Praneesh) On estimating regression coefficient unbiasedly. *Cahiers Centre Etudes Rech. Opér.* **30** (1988), no. 1, 69-72. (Not in MR) **62D05**
  - Ahuja, Om P. (with Jain, Pawan Kumar) On the spiral-likeness of rational functions. *Rend. Circ. Mat. Palermo* (2) **35** (1986), no. 3, 376-385 (1987). (Herb Silverman) **89b:30007** 30C45
  - (with Silverman, Herb) Extreme points of families of univalent functions with fixed second coefficient. *Colloq. Math.* **54** (1987), no. 1, 127-137. (O. P. Juneja) **89b:30006** 30C45
  - (with Srivastava, Hari M.; Owa, Shigeyoshi) A new class of analytic functions associated with the Ruscheweyh derivatives. *Proc. Japan Acad. Ser. A Math. Sci.* **64** (1988), no. 1, 17-20. (K. S. Padmanabhan) **89j:30023** 30C45
  - Ahumada, Guido Fonctions périodiques et formule des traces de Selberg sur les arbres. (English summary) [Periodic functions and the Selberg trace formula for trees] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 16, 709-712. (Joe Repka) **89d:11103** 11R39 (05C25, 11F70, 11F72, 22E45, 22E50)
  - Ahna, T. (with Kolk, E.) Summability by scalar matrices in abstract spaces. (Russian. English summary) *Tartu Riikl. Ü. Toimetised No. 770* (1987), 97-104. (A. Alexiewicz) **89c:40007** 40C05 (46A35)
  - Alba, Akira Relative efficiencies of reduction machines. *Keio Sci. Tech. Rep.* **39** (1986), no. 1, 24 pp. (Summary) **89c:68041** 68Q25 (03B40, 68Q55)
  - Albarrá, Tsunehiro (with Murakami, Kenji; Izumida, Masanori) Two-stepped association procedure and its application to reduction of memory areas of associative memory. *Electron. Comm. Japan. Part I Comm.* **68** (1985), no. 8, 20-28. (Summary) **89g:92021** 92A09
  - Alboudi, Mohammed Une condition nécessaire et suffisante pour l'existence et la localisation des cycles limites de l'équation  $(1) \dot{x} + x = ef(x, \dot{x})$ . [A necessary and sufficient condition for the existence and localization of the limit cycles of the equation  $(1) \dot{x} + x = ef(x, \dot{x})$ ] *Cahiers Math.* **1988**, no. 1, 1-5. (Not in MR) **34C05** (34E15)
  - Alcardi, M. (with Davoli, F.; Minciardi, R.) Correction to: "Decentralized optimal control of Markov chains with a common past information set" [IEEE Trans. Automat. Control **32** (1987), no. 11, 1028-1031]. *IEEE Trans. Automat. Control* **33** (1988), no. 9, 891-892. (Not in MR) **93E20**
  - Alchellburg, P. C. (with Embacher, F.) Lightlike contractions in curved spacetime. *Gravitation and geometry*, 21-35, *Monographs Textbooks Phys. Sci.*, **4**, Bibliopolis, Naples, 1987. (Niky Kamran) **89d:83045** 83C50 (83C30, 83E50)
  - (with Embacher, F.) Supergravity solitons. I. General framework. *Phys. Rev. D* (3) **37** (1988), no. 2, 338-347. (Paul Howe) **89g:83051a** 83E50
  - (with Embacher, F.) Supergravity solitons. II. The free case. *Phys. Rev. D* (3) **37** (1988), no. 4, 911-917. (Paul Howe) **89g:83051b** 83E50
  - Aida, Misako (with Hosoya, Haruo; Uchiyama, Atsuko; Kadota, Misa; Chida, Kanako; Yamaguchi, Tamie) Tables of the nonadjacent number, topological index, and characteristic polynomials of heptahex graphs. *Natur. Sci. Rep. Ochanomizu Univ.* **37** (1986), no. 2, 133-168. (N. Trinajstić) **89d:20979** 92A40 (05C99)
  - Aidarkhanov, M. B. (with Amiraliev, E. N.; Mukhamedgaliev, A. F.) On the synthesis of rules of classification algorithms. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1988**, no. 1, 3-6. (Not in MR) **68T10**
  - An approach to the analysis of initial data in pattern recognition problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 11, 1750-1754, 1760. (Summary) **89j:92087** 92A27 (68T10)
  - Aida-zade, K. R. Optimal control of evolution processes. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **7** (1986), no. 5, 109-115 (1987). (Russell D. Rupp) **89b:49033** 49B22
  - Aidinay, A. K. A  $T$ -family extremal problem in Hamming space. (Russian summary) With the Russian original. *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **17** (1988), no. 1, 33-36, P1-P4. (Patrick Solé) **89c:94019** 94B99 (05B20)
  - Aidosov, E. Zh. On a relation between the modulus of continuity and best approximations of a function in the Haar system in different metrics. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1987**, no. 5, 3-7. (A. B. Pevnyi) **89h:41012** 41A10 (41A50)
  - Aidu, E. A. I. Approach and guidance. An algorithm for mean-square approximation of a line. (Russian) *Algorithms for processing experimental data (Russian)*, 23-30, 182, "Nauka", Moscow, 1986. (Summary) **89m:65017** 65D15 (41A50, 68T10)
  - Aiello, Luigi see Foundations of logic and functional programming. **89c:68005**
  - Aiena, Pietro Riesz multipliers on  $L_1(G)$ . *Arch. Math. (Basel)* **50** (1988), no. 5, 459-462. (William M. Self) **89f:43005** 43A22 (43A05, 47B05, 47B38)
  - An internal characterization of isessential operators. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 625-626. (S. N. Krachkovskii) **89c:47023** 47B05
  - Alifantis, Elias (with Kuttler, Kenneth) Existence and uniqueness in nonclassical diffusion. *Quart. Appl. Math.* **45** (1987), no. 3, 549-560. (Mariosrosaria Padula) **89m:73006** 73B03 (80A20)
  - (with Unger, D. J.) Completeness of solutions in the double porosity theory. *Acta Mech.* **75** (1988), no. 1-4, 269-274. (Summary) **89j:73093** 73N99 (76S05)
  - (with Kuttler, Kenneth) Quasilinear evolution equations in nonclassical diffusion. *SIAM J. Math. Anal.* **19** (1988), no. 1, 110-120. (Sadakazu Aizawa) **89i:35118** 35Q20 (35K60, 73B05, 76R50)
  - Aigner, Dennis J. (with Balestra, Pietro) Optimal experimental design for error components models. *Econometrica* **56** (1988), no. 4, 955-971. (Rahul Mukerjee) **89i:62121** 62K05 (62J10)
  - Aigner, M. ★ Combinatorial search. Wiley-Teubner Series in Computer Science. John Wiley & Sons, Ltd., Chichester; B. G. Teubner, Stuttgart, 1988. 368 pp. ISBN 0-471-92142-4 (Ingo Wegener) **89k:68021** 68P10 (05-01, 05-02, 68-01, 90B40, 90C27, 94A13)
  - (with Griener, D.) Hook-free colorings and a problem of Hanson. *Combinatorica* **8** (1988), no. 2, 143-148. (J. R. Griggs) **89m:05001** 05A05
  - (with Triesch, E.) Searching for an edge in a graph. *J. Graph Theory* **12** (1988), no. 1, 45-57. (Summary) **89b:05030** 05C35 (68Q25)
  - Alhara, S.-I. (with Sunahara, Y.) Identification of an infinite-dimensional parameter for stochastic diffusion equations. *SIAM J. Control Optim.* **26** (1988), no. 5, 1062-1075. (Keigo Watanabe) **89i:93103** 93E10 (93C25, 93E12)
  - Albie, V. U. (with Evans, G. A.) The tanh transformation for double integrals with singularities—a progressive rule. *J. Comput. Appl. Math.* **24** (1988), no. 3, 349-354. (Summary) **89i:65025** 65D32
  - Aikou, Tadashi (with Nagano, Tetsuya) On collinear changes of Finsler connections. *Rep. Fac. Sci. Kagoshima Univ. Math. Phys. Chem.* **20** (1987), 51-55. (L. Tamásy) **89g:53036** 53B40
  - Some remarks on conformal changes of generalized Finsler metrics. *Rep. Fac. Sci. Kagoshima Univ. Math. Phys. Chem.* **20** (1987), 57-61. (L. Tamásy) **89g:53029** 53B40
  - Ailon, A. (with Langholz, G.) A study of controllability and time-optimal control of a robot model with drive train compliances and actuator dynamics. *IEEE Trans. Automat. Control* **33** (1988), no. 9, 852-856. (Not in MR) **93C75** (93B05)



- (with Segev, Reuven) Driving a linear constant system by a piecewise constant control. *Internat. J. Control* 47 (1988), no. 3, 815–825. (Summary) **89b:49055** 49E15 (49B36, 93B05)
- Aimar, Hugo** Elliptic and parabolic BMO and Harnack's inequality. *Trans. Amer. Math. Soc.* 306 (1988), no. 1, 265–276. (Summary) **89j:35014** 35B05 (35Jxx, 35Kxx, 42B99)
- Airault, H.** (with Malliavin, Paul) Intégration géométrique sur l'espace de Wiener. (English summary) [Geometric integration on the Wiener space] *Bull. Sci. Math.* (2) 112 (1988), no. 1, 3–52. (D. W. Stroock) **89f:60072** 60H99 (58C35, 58G32, 60J65)
- mac an Airchinnigh, Mícheál** see **Mac an Airchinnigh, Mícheál**
- Aisagaliyev, S. A.** (with Dzholdasbekov, U. A.) On the investigation of the dynamics of the control of robots. Stabilization of motion. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1987, no. 1, 71–75. (É. G. Al'brekht) **89a:49031** 49D07 (70B15, 70Q05, 93B40)
- Controllability of nonlinear control systems. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1987, no. 3, 7–10. (Summary) **89d:49041** 49E15 (93B05, 93C10)
- Controllability and absolute stability of controllable systems. (Russian) *Vestnik Akad. Nauk Kazakh. SSR* 1988, no. 3, 41–44. (Zdzisław Wyderka) **89c:93153** 93D05 (49E15, 93B05, 93D15)
- Aisbett, Janet** Cyclic audit of a multichannel system. *Appl. Math. Comput.* 25 (1988), no. 1, part I, 11–28. (Summary) **89f:60105** 60K25 (90B22)
- Aitkin, K. G.** Stability of a dynamic automatic control system. (Russian) *Differential equations and applied problems* (Russian), 158–159, xv, *Tu'sk. Politekhn. Inst., Tula*, 1985. (see **89g:00008**) 93D20
- Aissani, D.** Estimation quantitative de la norme de déviation de l'opérateur de transition d'un système  $M/G/1$ . (English summary) [Quantitative estimate of the deviation norm of the transition operator of an  $M/G/1$  system] *Cahiers Math.* 1987, no. 2, 125–133. (J. Teghem, Jr.) **89m:60215** 60K25 (90B22)
- Aitchison, I. J. R.** Berry phases, magnetic monopoles, and Wess-Zumino terms or how the skyrmion got its spin. *Acta Phys. Polon. B* 18 (1987), no. 3, 207–235. (Summary) **89c:81070** 81E13 (81D07, 81G20)
- Aitchison, Iain R.** (with Silver, Daniel S.) On certain fibred ribbon disc pairs. *Trans. Amer. Math. Soc.* 306 (1988), no. 2, 329–351. (Dončo Dimovski) **89f:57004** 57M25 (57N13, 57Q45, 57R65)
- Aitchison, P. W.** (with Kroiman, N. G. D.) A new tearing method for finite element analysis. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 109–116. (Summary) **89g:65054** 65F30 (65N30)
- Alt-Kaci, Hassan** An algebraic semantics approach to the effective resolution of type equations. *Theoret. Comput. Sci.* 45 (1986), no. 3, 293–351. (Summary) **89c:68073** 68Q55 (68P05, 68Q50, 68T30)
- Altken, Alexander Craig** see **Tee, G. J.**, **89a:01086**
- Alton, Eric J.** The application of the infinitesimal calculus to some physical problems by Leibniz and his friends. 300 *Jahre Nova methodus von G. W. Leibniz* (1684–1984) (Noordwijkerhout, 1984), 133–143, *Studia Leibnitiana Sonderheft*, 14, Steiner, Wiesbaden, 1986. (Jeremy Gray) **89m:01031** 01A45
- Editorial. *Ann. of Sci.* 45 (1988), no. 5, 447–450. (Editors) **89h:01020** 01A45
- Altomonte, Leona** Basis representations in large-scale linear programming software. *Acta Polytech. Scand. Math. Comput. Sci. Ser. No. 50* (1988), 60 pp. (Summary) **89g:90139** 90C05
- Alvarez, E. Ya.** A frequency criterion for the stability of nonlinear sampled-data systems. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 3, 18–24; translated in *Avtomat. Remote Control* 49 (1988), no. 3, part 1, 279–282. (Summary) **89c:34053** 34D25 (34C29, 93C57)
- Alvazyan, S. A.** see **Davison, Mark L.**, **89b:62130**
- nguyen Ai Viet** see **Nguyen Ai Viet**
- Alyagark, S. Rao** Nonmonetary steady states in stationary overlapping generations models with long lived agents and discounting: multiplicity, optimality, and consumption smoothing. *J. Econom. Theory* 45 (1988), no. 1, 102–127. (Summary) **89g:90077** 90A17 (90A10)
- Equilibrium existence in an overlapping generations model with altruistic preferences. *J. Econom. Theory* 47 (1989), no. 1, 130–152. (Summary) **89h:90027** 90A14
- Can there be short-period deterministic cycles when people are long lived? *Quart. J. Econom.* 104 (1989), no. 1, 163–185. (Not in MR) 90A16
- Alyama, Reiko** (with Kwon, Jung-Hwan; Nakagawa, Hisao) Indefinite complex submanifolds of an indefinite complex space form. *J. Ramanujan Math. Soc.* 2 (1987), no. 1, 43–67. (Alfonso Romero) **89h:53111** 53C40 (53C25, 53C50)
- (with Ikawa, Toshihiko; Kwon, Jung-Hwan; Nakagawa, Hisao) Complex hypersurfaces in an indefinite complex space form. *Tokyo J. Math.* 10 (1987), no. 2, 349–361. (Alfonso Romero) **89c:53035** 53C40 (53C50)
- Alzawa, Kunio** (with Nakamura, Akira; Lindenmayer, Aristid) Map OL systems with markers. *Graph-grammars and their application to computer science* (Warrenton, VA, 1986), 479–495, *Lecture Notes in Comput. Sci.*, 291, Springer, Berlin-New York, 1987. (see **89h:68009**) 68Q43
- Alzawa, Sadakazu** (with Tomita, Yoshiohito) On unbounded viscosity solutions of a semilinear second order elliptic equation. *Funkcial. Ekvac.* 31 (1988), no. 1, 147–160. (M. Biroli) **89f:35023** 35B25 (35J60)
- Atzenberg, L. A.** Extrapolation of functions that are holomorphic in a product of half-planes or strips. Analytic continuation of the spectrum. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 4, 3–11, 222; translated in *Siberian Math. J.* 29 (1988), no. 4, 513–521. (J. Siciak) **89k:32033** 32E30 (30D55, 30E10)
- (with Tarkhanov, N. N.) An abstract Carleman formula. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 6, 1292–1296; translated in *Soviet Math. Dokl.* 37 (1988), no. 1, 235–238. (Wolfgang Rüprich) **89i:35052** 35J45
- An analogue of Kotel'nikov's theorem for nonuniform readings. Extrapolation and interpolation of the amplitude of the Fourier spectrum of finite signals. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 2, 338–341; translated in *Soviet Phys. Dokl.* 33 (1988), no. 5, 334–336. (Wiktor Kulesza) **89h:44002** 94A12 (94A11)
- Aizengendler, P. G.** Methods of post-bifurcation analysis in systems with a small vector parameter. (Russian) *Functional analysis*, No. 26 (Russian), 3–15, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1986. (Ulrich Kosel) **89f:58029** 58E07
- Aizenman, Michael** Rigorous studies of critical behavior. II. *Statistical physics and dynamical systems* (Köszeg, 1984), 453–481, *Progr. Phys.*, 10, Birkhäuser Boston, Boston, MA, 1985. (Introduction) **89a:82003** 82A05 (82A25)
- General results in percolation theory. *Probabilistic methods in mathematical physics* (Katata/Kyoto, 1985), 1–22, *Academic Press*, Boston, MA, 1987. (R. T. Smythe) **89d:82081** 82A43 (60K35, 82–02, 82A25)
- (with Kesten, Harry; Newman, C. M.) Uniqueness of the infinite cluster and continuity of connectivity functions for short and long range percolation. *Comm. Math. Phys.* 111 (1987), no. 4, 505–531. (G. R. Grimmett) **89b:82060** 82A43 (60K35, 82A05)
- (with Barsky, David J.; Fernández, Roberto) The phase transition in a general class of Ising-type models is sharp. *J. Statist. Phys.* 47 (1987), no. 3–4, 343–374. (Alan D. Sokal) **89f:82013** 82A25 (81E25, 82A43, 82A68)
- (with Chayes, J. T.; Chayes, L.; Newman, C. M.) Discontinuity of the magnetization in one-dimensional  $1/x - y^2$  Ising and Potts models. *J. Statist. Phys.* 50 (1988), no. 1–2, 1–40. (Mary Lunn) **89f:82072** 82A68 (82A25)
- (with Fernández, Roberto) Critical exponents for long-range interactions. *Lett. Math. Phys.* 16 (1988), no. 1, 39–49. (Koichiro Matsuno) **89h:82041** 82A68 (82A15, 92A25)
- Aizenstadt, V. V.** (with Malyahev, V. A.) Spin interaction with an ideal Fermi gas. *J. Statist. Phys.* 48 (1987), no. 1–2, 51–68. (Julio Alcántara-Bode) **89c:82005** 82A05 (82A68)
- Aizerman, M. A.** (with Gusev, L. A.; Petrov, Sergei Vsevolodovich; Smirnova, I. M.; Tenenbaum, L. A.) Dynamic approach to analysis of structures described by graphs (foundations of graph-dynamics). *Topics in the general theory of structures*, 69–136, *Theory Decis. Lib. Ser. D. Syst. Theory Knowledge Engrg. Probl. Solving, Reidel, Dordrecht-Boston, MA*, 1987. (Milan Mares) **89i:90007** 90A08 (05C99, 90C39)
- (with Litvakov, B. M.) Some generalizations of the theory of choice of variants (principles of the theory of pseudocriteria). (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 3, 92–105; translated in *Avtomat. Remote Control* 49 (1988), no. 3, part 2, 337–347. (Andrzej Wiecek) **89f:90003** 90A05 (03E72)
- see also **Topics in the general theory of structures**, **89d:90001**; **Logical dependencies and systems decomposition analysis**, **89j:68033** and **Investigations in the theory of structures**, **89i:00005**
- Aizicovici, Sergiu** Asymptotic properties of solutions of time-dependent Volterra integral equations. *J. Math. Anal. Appl.* 131 (1988), no. 2, 421–440. (P. M. Anselone) **89g:45006** 45D05 (45N05, 47H15)
- Ajala, Samuel Omoloye** Smooth structures on sphere bundles over spheres. *Internat. J. Math. Math. Sci.* 11 (1988), no. 4, 701–711. (R. De Sapo) **89b:57026** 57R55
- Ajanapar, Pimom** Field quantization for pure and mixed states and its classical limit. *J. Math. Phys.* 29 (1988), no. 8, 1862–1865. (A. O. Barut) **89j:81152** 81E99 (81C35)
- prabhu-Ajgaonkar, S. G.** see **Prabhu-Ajgaonkar, S. G.**
- Ajithkumar, C. M.** (with Sabir, M.) Derivation of monopole solutions by Hirota's method. *J. Phys. A* 21 (1988), no. 8, 1883–1888. (Mark R. Temple-Raston) **89g:81040** 81E13 (35Q20, 58F07)
- Ajmoné Marsan, Marco** (with Benedetto, Sergio; Albertengo, Guido; Giachin, Egidio) Combined coding and modulation: theory and applications. *IEEE Trans. Inform. Theory* 34 (1988), no. 2, 223–236. (Shunsuke Ihara) **89f:94012** 94A40 (94A14, 94A29)
- Ajne, Björn** (with Palmgren, Björn) Interview with Harald Bohman. *Scand. Actuar. J.* 1987, no. 1–2, 1–3. (Editors) **89a:01049** 01A70 (90A09)
- Ajtai, Miklós** (with Gurevich, Yuri) Monotone versus positive. *J. Assoc. Comput. Mach.* 34 (1987), no. 4, 1004–1015. (Ingo Wegener) **89a:68068** 68Q15 (03C13, 03C40, 03D15, 03G05)
- (with Kechris, Alexander S.) The set of continuous functions with everywhere convergent Fourier series. *Trans. Amer. Math. Soc.* 302 (1987), no. 1, 207–221. (Edward Zofor) **89b:40005** 04A15 (26A21, 42A20)
- Akabei, R. P.** (with Patel, L. K.; Dave, U. K.) Radiating Demiański-type metrics and the Einstein-Maxwell fields. *J. Austral. Math. Soc. Ser. B* 30 (1988), no. 1, 120–126. (W. B. Bonnor) **89f:83028** 83C15 (83C50)
- Akai, Masafumi** (with Takeuchi, Kei) On the bound of the asymptotic distribution of estimators when the maximum order of consistency depends on the parameter. *Publ. Inst. Statist. Univ. Paris* 31 (1986), no. 1, 1–16. (Zhi-Dong Bai) **89a:62073** 62F11 (62E20, 62M10)
- (with Takeuchi, Kei) The lower bound for the variance of unbiased estimators for one-directional family of distributions. *Ann. Inst. Statist. Math.* 39 (1987), no. 3, 593–610. (Javad Behboodani) **89b:62065** 62F10
- (with Hirakawa, Fumiko; Takeuchi, Kei) Second and third order asymptotic completeness of the class of estimators. *Probability theory and mathematical statistics* (Kyoto, 1986), 11–27, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (A. L. Rukhin) **89d:62030** 62F12
- Akai, Toyoki** Further generalization of Stein estimators. *Keio Sci. Tech. Rep.* 40 (1987), no. 4, 41–54. (Lionel Weiss) **89f:62049** 62H12 (62C15)
- Akama, Hachiro** An extension of the Fourier convolution theorem in terms of Poisson brackets. *Phys. A* 149 (1988), no. 3, 631–637. (Summary) **89c:78018** 78A99 (42A38, 42A85)
- Akama, Seiki** Constructive predicate logic with strong negation and model theory. *Notre Dame J. Formal Logic* 29 (1988), no. 1, 18–27. (Charles F. Kielkopf) **89c:03026** 03B60 (03C90)
- Akamatsu, Norio** Topological patterns of synchronization in the biological oscillator. *Systems Comput. Japan* 18 (1987), no. 4, 86–100. (Summary) **89a:92014** 92A09 (58F15, 58F40)
- (with Sakou, Nobuaki; Craigin, Robert) Fast direct interpolation for computer graphics applications. *Systems Comput. Japan* 19 (1988), no. 3, 98–111. (Summary) **89b:65028** 65D05
- Akamatsu, Toyohiro** On some classes of nonhyperbolic second order partial differential operators. *Osaka J. Math.* 25 (1988), no. 1, 71–104. (A. I. Atanasov) **89h:35077** 35H05 (35A99)
- Akamu, Ali N.** (with Haddad, Richard A.) A new orthogonal transform for signal coding. *IEEE Trans. Acoust. Speech Signal Process.* 36 (1988), no. 9, 1404–1411. (B. D. Donevski) **89i:94005** 94A11
- Akashi, Shigeo** Operator theoretical treatments of  $\epsilon$ -entropy of a Gaussian process per unit time. *Rep. Math. Phys.* 24 (1986), no. 3, 343–349. (Ronald F. Fox) **89i:82018** 82A15

- (46L50, 60G15)
- Akashi, Wilson Yoshihiro** Equivalence theorems and coincidence degree for multivalued mappings. *Osaka J. Math.* 25 (1988), no. 1, 33–47. (From the text) **89m:47057** 47H15 (35J65)
- Akbar, S. A.** (with Ramkaran; Chaturvedi, Ajit) Sequential estimation of a linear function of  $k$ -normal means. *J. Indian Soc. Agricultural Statist.* 38 (1986), no. 3, 395–402. (Paul Cabilio) **89j:62112** 62L12
- Akbarov, M. K.** Asymptotic behavior of the sums of Fourier coefficients of cusp forms. (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 9, 10–11. (From the text) **89c:11067** 11F30
- Akbarov, Mahmud** (with Sabirov, Sh. O.) Sufficient conditions for the differentiability of the realizations of random fields. (Russian) *Investigations in degenerate differential equations and limit theorems of probability theory* (Russian), 30–36, Tashkent. Gos. Ped. Inst., Tashkent, 1985. (See **89g:60002**) 60G60
- Akbarov, S. A.** (with Toponogov, V. A.) A theorem on the congruence of the angles of a triangle for a class of Riemannian manifolds. (Russian) *Trudy Inst. Mat. (Novosibirsk)* 9 (1987), Issled. Geom. "v tselom" i Mat. Anal., 16–25, 206. (J. D. Zund) **89b:53038** 53B21 (53A99)
- Akbar-Zadeh, Hassan** (with Couty, Raymond) Transformations projectives des variétés munies d'une connexion métrique. (English summary) [Projective transformations of manifolds equipped with a metric connection] *Ann. Mat. Pura Appl.* (4) 148 (1987), 251–275. (Jean Wouafou Kampa) **89d:53056** 53C05 (53C21)
- Transformations holomorphiquement projectives des variétés hermitiennes et kählériennes. (English summary) [Holomorphically projective transformations of Hermitian and Kähler manifolds] *J. Math. Pures Appl.* (9) 67 (1988), no. 3, 237–261. (Raymond Couty) **89k:53060** 53C55
- Akbulatov, N. A.** The length of a queue in an  $M_2/G_2/1$  system with a certain kind of service discipline with no interruption. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* 1987, no. 3, 50–53, 70. (Walter Warmuth) **89c:60180** 60K25 (90B22)
- Akbulatov, S.** (with King, Henry Churchill) Polynomial equations of immersed surfaces. *Pacific J. Math.* 131 (1988), no. 2, 209–217. (A. Tognoli) **89c:57028** 57R19 (14G30)
- Constructing a fake 4-manifold by Gluck construction to a standard 4-manifold. *Topology* 27 (1988), no. 2, 239–243. (Martin Scharlemann) **89j:57014** 57Q25 (57Q15, 57Q45)
- Akça, Haydar** On the oscillatory type solution of  $y'' = f(x, y, y', y'')$  and a linear multistep method for the numerical solution. *Pure Appl. Math. Sci.* 27 (1988), no. 1–2, 1–8. (A. M. Galperin) **89d:34066** 34C10 (34A30, 34A50, 65L99)
- Akçakaya, H. Reşit** (with Ginzburg, Lev R.; Slice, D.; Slobodkin, L. B.) Balanced growth rates vs. balanced accelerations as causes of ecological equilibria. *Biomathematics and related computational problems* (Naples, 1987), 165–175, Kluwer Acad. Publ., Dordrecht, 1988. (See **89f:92002**) 92A17
- (with Ginzburg, Lev R.; Kim, Junhyong) Evolution of community structure: competition. *J. Theoret. Biol.* 133 (1988), no. 4, 513–523. (Summary) **89j:92063** 92A17
- Akçoglu, M. A.** (with Krenkel, Ulrich) Nonlinear models of diffusion on a finite space. *Probab. Theory Related Fields* 76 (1987), no. 4, 411–420. (Ray C. Shifflet) **89b:60167** 60J25 (47H09)
- (with Sucheston, Louis) Convergence presque partout de procédés alternants. (English summary) [Pointwise convergence of alternating sequences] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 6, 271–272. (Anzelm Iwanik) **89c:47044** 47B38 (47A35)
- Alternating sequences with nonpositive operators. *Proc. Amer. Math. Soc.* 104 (1988), no. 4, 1124–1130. (Charm Huen Kan) **89i:47013** 47A35 (28D05, 47B38)
- Akdag, Herman** (with Bouchon, Bernadette) Optimality of right leaning trees. *Coding theory and applications* (Cachan, 1986), 76–85, Lecture Notes in Comput. Sci., 311, Springer, Berlin-New York, 1988. (Ding Zhu Du) **89i:5094** 05C05 (90B50)
- Akduman, Ibrahim** (with İdemem, Mithat) Some geometrical inverse problems connected with two-dimensional static fields. *SIAM J. Appl. Math.* 48 (1988), no. 3, 703–718. (Erich Miersemann) **89h:35338** 35R30 (30C20, 35J25, 35R35)
- Akella, R.** Real time part dispatch in flexible assembly test and manufacturing systems. *Operations research models in flexible manufacturing systems* (Udine, 1987), 1–73, CISM Courses and Lectures, 306, Springer, Vienna, 1989. (See **89k:90062**) 90B30
- Akers, Sheldon B.** (with Krishnamurthy, Balakrishnan) A group-theoretic model for symmetric interconnection networks. *IEEE Trans. Comput.* 38 (1989), no. 4, 555–566. (Summary) **89k:68115** 68R10 (20F32, 68M10, 68Q35)
- Akgül, Mustafa** A sequential dual simplex algorithm for the linear assignment problem. *Oper. Res. Lett.* 7 (1988), no. 3, 155–158. (Summary) **89i:90104** 90C11 (05C99)
- Akhadov, R. A.** Asymptotic approximation of multiply differentiable functions of two variables by some general families of integral operators. (Russian) *Special problems in function theory, No. III* (Russian), 19–30, "Elm", Baku, 1986. (V. V. Zhuk) **89i:41027** 41A35
- Akhatov, I. Sh.** (with Gazizov, R. K.; İbragimov, N. Kh.) Quasilocat symmetries of equations in mathematical physics. (Russian) *Mathematical modeling* (Russian), 22–56, 280, "Nauka", Moscow, 1987. (B. G. Konopelchenko) **89h:58211** 58G35 (35A30, 35Q20)
- (with Gazizov, R. K.; İbragimov, N. Kh.) Fundamental types of invariant equations in one-dimensional gas dynamics. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 49, 26 pp. (Summary) **89i:58145** 58G35 (35L65, 58G37, 76N15)
- Abdel-Akher, Ahmed** See **Abdel-Akher, Ahmed**
- Akhiev, S. S.** A theorem on homeomorphisms and the  $\theta$ -fundamental solution for a nonlocal hyperbolic problem. (Russian) *Applied problems in functional analysis* (Russian), 6–13, 114, *Azerbaidzhan. Gos. Univ., Baku*, 1986. (Summary) **89b:35080** 35L20
- Akhiezer, D. N.** Modality and complexity of the actions of reductive groups. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 2(260), 129–130; translated in *Russian Math. Surveys* 43 (1988), no. 2, 157–158. (V. L. Popov (translated from RZhMat 1988:11 A537)) **89k:14076** 14L30
- On the notion of rank of a spherical homogeneous space. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 5(263), 175–176. (Zi-Xin Hou) **89k:32060** 32M10 (14M17)
- see also **Grauert, Hans**; **89j:32009**
- Akhiezer, N. I.** ★ The calculus of variations. Translated from the Russian by Michael E. Alferieff. *Harwood Academic Publishers, Chur*, 1988. vi+280 pp. ISBN 3-7186-4805-9 (Editors) **89c:49001** 49-01
- ★ Lectures on integral transforms. Translated from the Russian by H. H. McFaden. *Translations of Mathematical Monographs*, 70. American Mathematical Society, Providence, RI, 1988. vi+108 pp. ISBN 0-8218-4524-1 (Editors) **89i:44001** 44-01
- Akhiezer, T. A.** Convergence of the trajectories of dynamical systems generated by nonexpanding mappings. (Russian) *Vestnik Kharkov. Gos. Univ. No. 298 Mat. Mekh. i Voprosy Upravl.* (1987), 84–90. (P. S. Milojević) **89h:34059** 34G20 (34C11, 34C35, 47H09, 92A15)
- Iterative processes that are connected with nonexpansive mappings. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 50 (1988), 17–20, i. (From the text) **89k:47087** 47H10 (47H17, 65J15)
- Akhlaghi, M. R.** (with Chak, A. M.; Sharma, Ambikeshwar) (0, 2, 3) interpolation on the zeros of  $\pi_n(x)$ . *Approx. Theory Appl.* 4 (1988), no. 2, 55–74. (Len Bos) **89i:41004** 41A05
- Akhmadiev, M. G.** Direct methods for solving a singular integro-differential equation. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 3, 482–488, 548–549; translated in *Differential Equations* 24 (1988), no. 3, 345–350. (Cor van der Mee) **89c:45005** 45E05 (45L05, 65R20)
- Akhmadkulov, A.** On the problem of constructing complex adjoint lines from arcs of circles and straight segments. (Russian) *Voprosy Vychisl. i Prikl. Mat. (Tashkent)* No. 80 (1986), 90–98, 138–139. (Gr. Stanilov) **89g:51018** 51M15 (90-04, 90C27)
- Akhmatov, M. M.** (with Oskolkov, A. P.; Cotsiolis, Athanase) The equations of motion of linear viscoelastic fluids and the equations of filtration of fluids with delay. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 163 (1987), Kraev. Zadachi Mat. Fiz. i Smezhn. Vopr. Teor. Funktsii 19, 132–137, 189. (From the introduction) **89f:35188** 35Q20 (76A10, 76S05)
- Akhmediev, N. N.** (with Eleonskii, V. M.; Kulagin, N. E.) An example of a dynamical system connected with the nonlinear Schrödinger equation. (Russian) *Methods of qualitative theory of differential equations* (Russian), 30–35, 210–211, *Gorkov. Gos. Univ., Gorki*, 1986. (From the text) **89g:58083** 58F07 (35Q20)
- (with Eleonskii, V. M.; Kulagin, N. E.) First-order exact solutions of the nonlinear Schrödinger equation. (Russian. English summary) *Teoret. Mat. Fiz.* 72 (1987), no. 2, 183–196. (V. G. Samoilenko) **89h:35275** 35Q20 (58F07)
- Akhmedov, F. G.** Saddle points of the Lagrange function. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 7 (1986), no. 5, 104–108 (1987). (Summary) **89d:90160** 90C25
- Akhmedov, F. T.** (with Mamedov, M. D.) A criterion for the composition of elements into a hierarchical structure. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* 43 (1987), no. 11, 12–15 (1988). (Not in MR) 93A13
- Akhmedov, R.** Boundary value problems for the equation  $2\partial\bar{\partial}w - (\lambda \exp(in\phi) + b(z))\bar{w} = 0$ . (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* 30 (1987), no. 12, 764–766 (1988). (Ai Nong Fang) **89k:35073** 35J55 (30E25, 30G20, 35Q15)
- Akhmedov, Saidamir Akhmedovich** On the uniqueness of an  $n$ -sheeted linear quasiconformal mapping with two pairs of characteristics onto a bounded simply connected domain with a Lyapunov boundary. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1986, no. 3, 3–8, 85. (Summary) **89c:30046** 30C60
- On the uniqueness of a linear quasiconformal mapping with two pairs of characteristics on multiply connected domains. II. (Russian) *Equations of mixed type and free boundary value problems* (Russian), 221–238, 254, "Fan", Tashkent, 1987. (P. Caraman) **89c:30047** 30C60
- Akhmedov, Sh. A.** Uniqueness of the continuation of generalized solutions of infinite order defined in a neighborhood of two characteristic subspaces. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* 30 (1987), no. 9, 541–544 (1988). (Bogdan Nowak) **89k:35050** 35E20 (35D99)
- A property of functionals defined on an  $n$ -dimensional complex space of infinitely differentiable functions. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* 30 (1987), no. 10, 611–614 (1988). (W. Kecs) **89f:46089** 46F10 (46E10)
- Akhmedov, T. G.** (with İbragimov, I. I.) The domain of convergence of a Laurent-Dirichlet series with complex exponents [Reviewed in RZhMat 1978:3 B186]. (Russian) *Special problems in function theory* (Russian), 31–45, "Elm", Baku, 1977. (See **89f:30003**) 30B50
- Akhmedov, T. I.** (with Kolotenko, G. A.) Modeling of dominant systems of space-time connections of the brain by Erlang's law. (Russian) *Problems of bionics*, No. 40 (Russian), 89–97, iv, "Vishcha Shkola", Kharkov, 1988. (Summary) **89h:92023** 92A09 (00A71, 90B22)
- Akhmedov, V. V.** The order of strong approximation by Fourier-Chebyshev-Hermite sums. (Russian) *Approximation by generalized analytic and spherical functions* (Russian), 47–54, *Azerbaidzhan. Gos. Univ., Baku*, 1983. (See **89b:41001**) 41A10 (42A10)
- Order of approximation by Voronoi means of Fourier-Hermite series. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 22–24, *Saratov. Gos. Univ., Saratov*, 1986. (See **89j:00036**) 42A10 (41A30)
- Akhmedova, N. G.** Existence of solutions of a nonlinear problem of the theory of a stratified heavy fluid. (Russian) *Linear operators and their applications* (Russian), 15–17, *Azerbaidzhan. Gos. Univ., Baku*, 1986. (From the text) **89f:76021** 76B15 (34B15, 76V05)
- Akhmerov, R. R.** On structure of a set of solutions of Dirichlet boundary value problem for stationary one-dimensional forward-backward parabolic equation. *Nonlinear Anal.* 11 (1987), no. 11, 1303–1316. (J. P. G. Ewer) **89a:35105** 35K55 (34B15, 35B99)
- (with Kurbatov, V. G.) Exponential dichotomy and stability of neutral type equations. *J. Differential Equations* 76 (1988), no. 1, 1–25. (Pedro Martinez-Amores) **89i:34102** 34K20
- Akhmetgaleev, I. I.** (with Khasanov, A. Yu.) A method of almost Euler matrices for determining the first integrals of nonlinear systems. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 92–98, 324, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (See **89c:00040**) 34A10 (34A34)
- Akhmetov, M. U.** (with Perestyuk, N. A.) Periodic solutions of systems of differential equations with impulse actions on surfaces. (Russian) *Application of asymptotic methods in the theory of nonlinear differential equations* (Russian), 11–17, i, *Akad. Nauk Ukrain. SSR, Kiev*, 1987. (Nicolae Lungu) **89f:34056** 34C25 (34C40, 93C57)
- Almost periodic solutions of integro-differential equations with impulse action. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 8(42) (1987), 5–9, 92. (M. Tvrdý) **89f:45013** 45J05 (34C27, 45M10, 93C57)
- (with Perestyuk, N. A.) Almost periodic solutions of nonlinear sampled-data systems. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 1, 3–6, 85. (Tomasz Kapitaniak) **89d:34079** 34C27 (34C11, 93C57)



- (with Perestyuk, N. A.) On motion with impulse action on a surface. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1988**, no. 1, 11–14. (J. Gregor) **89h:34066** 34C40 (34A10, 34C25, 93C57)
- Recurrent and almost periodic solutions of nonautonomous sampled-data systems. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1988**, no. 3, 8–10. (Not in MR) **89c:34271** (93C57)
- Akhmetzyanov, A. V.** (with Meerov, M. V.; Cherepakhin, A. V.) Modelling of nonstationary flows in closed-loop systems of oil and gas pipelines. *Control Theory Adv. Tech.* **4** (1988), no. 1, 137–152. (Not in MR) **90B10** (90B10, 93A10)
- Akhmadze, T. I.** Uniform convergence and  $(C, \alpha)$ -summability of trigonometric Fourier series. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **128** (1987), no. 2, 249–252. (Not in MR) **42A20** (42A24)
- Akhtar, Munir** Two-factor central composite design robust to a single missing observation. *Punjab Univ. J. Math. (Lahore)* **20** (1987), 23–32. (Summary) **89d:62077** 62K15
- Akhun, T.** see **Ahun, T.**
- Akhundor, A. Ya.** An inverse problem for a system of parabolic equations. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 3, 520–521, 550. (I. Ljoczky-Królikiewicz) **89k:35247** 35R30 (35K50)
- Akhundor, I. R.** Multiple completeness and multiple expansion in a system of eigen- and associated elements of polynomial pencils. (Russian) *Spectral theory of operators and its applications*, No. 8 (Russian), 246–256, “*Elm*”, Baku, 1987. (T. Ya. Azizov) **89g:47020** 47A56 (47A70)
- Akhundor, I. S.** Distribution of the maximum of normalized sums. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 2, 99–102, 134. (R. J. Tomkins) **89c:60021** 60F03 (60G50)
- Aki, Siguo** On nonparametric tests for symmetry. *Ann. Inst. Statist. Math.* **39** (1987), no. 3, 457–472. (K. C. Chanda) **89i:62069** 62G10 (62E20)
- (with Hirano, Katsumi) Properties of the extended distributions of order  $k$ . *Statist. Probab. Lett.* **6** (1987), no. 2, 67–69. (A. N. Philippou) **89c:60014** 60E05 (62E15)
- Akian, Marianne** Résolution numérique d'équations d'Hamilton-Jacobi-Bellman au moyen d'algorithmes multigrilles et d'itérations sur les politiques. (English summary) [Numerical solution of Hamilton-Jacobi-Bellman equations by means of multigrid algorithms and policy iterations] *Analysis and optimization of systems (Antibes, 1988)*, 629–640, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Pierre-Louis Lions) **89i:93122** 93E20 (49C20, 65N99, 90C39, 93B40)
- Akiba, Shigeo** Totally geodesic orbits of the isotropy subgroups of compact Riemannian symmetric spaces. *Sci. Rep. Yokohama Nat. Univ. Sect. I Math. Phys. Chem.* No. 35 (1988), 11–14. (G. Tsagas) **89m:53084** 53C35
- Akilov, G. P.** (with Kolesnikov, E. V.; Kusraev, A. G.) On the order-continuous extension of a positive operator. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 5, 24–35, 237; translated in *Siberian Math. J.* **29** (1988), no. 5, 707–716. (Yu. A. Abramovich) **89m:47033** 47B55 (28B15, 46G10)
- (with Kolesnikov, E. V.; Kusraev, A. G.) Lebesgue extension of a positive operator. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 3, 521–524; translated in *Soviet Math. Dokl.* **37** (1988), no. 1, 88–91. (Constantin Niclescu) **89e:47054** 47B55
- see also **Aleksandrov, A. D.** et al. **89b:01031**
- Akimaru, Haruo** (with Ikeda, Tatsuhiko; Takahashi, Haruhisa) Optimum design of alternative routing systems with partial overflow scheme. *Electron. Comm. Japan. Part I Comm.* **69** (1986), no. 2, 85–91. (Summary) **89h:90093** 90B15 (68M10)
- (with Takahashi, Haruhisa) A formula for mean queue length of  $G_1/G_2/G_1/G_2/1$  preemptive-resume priority queues. *Electron. Comm. Japan. Part I Comm.* **70** (1987), no. 3, 11–19. (Ralph L. Disney) **89i:60193** 60K25 (90B22)
- (with Kuribayashi, Hiroshi; Inoue, Takeshi) Approximate evaluation for mixed delay and loss systems with renewal and Poisson inputs. *IEEE Trans. Comm.* **36** (1988), no. 7, 850–854. (Summary) **89d:90099** 90B22
- Akimenko, A. M.** General solution of a system of power equations in a braid group. (Russian) *Algebraic problems in the theory of groups and semigroups (Russian)*, 118–128, *Tul'sk. Gos. Ped. Inst., Tula*, 1986. (R. Stöhr) **89e:20072** 20F36 (20F10)
- Akimoto, Yoshihisa** (with Ono, Tomoaki) A space curve of genus 7 and degree 8 whose normal bundle is semistable. *TRU Math.* **22** (1986), no. 1, 31–37. (Rosa M. Miro-Roig) **89e:14035** 14H45 (14H50)
- Akimov, A. B.** (with Iskenderov, B. A.) Radiation principles for the Helmholtz equation in a layer with boundary conditions of Zarembo type. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **43** (1987), no. 1, 8–11. (D. G. Natroshvili) **89i:35034** 35J05
- Akimov, A. P.** (with Shafranskii, V. V.) Planning in flexible manufacturing systems. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 3, 26–36; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 4, 178–189, 222 (Russian). (Not in MR) **90B30**
- Akimov, V. P.** (with Sergeev, V. M.) Determination of preferences on the basis of post-game analysis of events. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 1, 156–162; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 2, 188–199, 224 (Russian). (Summary) **89e:90010** 90A06 (62F15, 90D40)
- Akimovich, V. A.** A class of Banach function spaces. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 7, 3–7, 82. (Aleksandr Mekler) **89a:46062** 46E30
- Akin, Ethan** (with Lacker, H. Michael) How do the ovaries count? Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1–2, 305–332. (Raphael Zahler) **89j:92016** 92A07 (58F99)
- Akin, Kase** (with Buchsbaum, David A.) Characteristic-free realizations of the Giambelli and Jacobi-Trudi determinantal identities. *Algebra and topology 1986 (Taejón, 1986)*, 1–61, *Korea Inst. Tech., Taejón*, 1987. (Piotr Pragacz) **89i:20065** 20G05
- Representations of  $GL(n)$  and Schur algebras. *Commutative algebra and combinatorics (Kyoto, 1985)*, 1–8, *Adv. Stud. Pure Math.*, 11, North-Holland, Amsterdam-New York, 1987. (Piotr Pragacz) **89k:20055** 20G05 (13D25, 17B10, 22E45)
- On complexes relating the Jacobi-Trudi identity with the Bernstein-Gelfand-Gelfand resolution. *J. Algebra* **117** (1988), no. 2, 494–503. (Stephen Donkin) **89i:22030** 22E47 (20G05, 20G20, 22E45)
- Akin, Omer** The integral representation of the positive solutions of the generalized Weinstein equation on a quarter-space. *SIAM J. Math. Anal.* **19** (1988), no. 6, 1348–1354. (Ü. Kuran) **89k:31005** 31B10 (35C15)
- Akin-Ojo, R.** Statistical mechanics with homogeneous first-degree Lagrangians. *Internat. J. Theoret. Phys.* **27** (1988), no. 8, 1023–1042. (C. S. Sharma) **89h:82001** 82A05 (82A30)
- Akinshin, V. D.** (with Makarov, A. I.; Seleznev, V. D.; Sharipov, F. M.) Rarefied gas flow in a plane channel of finite length in a wide range of Knudsen numbers. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* **1988**, no. 1, 105–111, 171; translated in *J. Appl. Mech. Tech. Phys.* **29** (1988), no. 1, 97–103. (Summary) **89g:76037** 76P05 (82A40)
- Akis, Vladimir N.** Quasi-retractions and the fixed point property. *Fixed point theory and its applications (Berkeley, CA, 1986)*, 1–10, *Contemp. Math.*, 72, Amer. Math. Soc., Providence, RI, 1988. (K. Sieklucki) **89j:54049** 54H25 (54C08, 54C15)
- Almost continuous extensions. *Houston J. Math.* **14** (1988), no. 1, 1–8. (Janina Ewert) **89h:54006** 54C08 (54C20)
- The axiom of choice and almost continuity. *Topology Appl.* **29** (1988), no. 2, 141–150. (Eldon J. Vought) **89g:54031** 54C15 (54C08, 54F40, 54G05)
- Akishin, P. G.** (with Akopyan, V. P.; Zhidkov, E. P.) ★ Решение двумерного уравнения Гельмгольца методом граничных интегральных уравнений. (Russian) [Solution of the two-dimensional Helmholtz equation by the method of boundary integral equations] With an English summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R11-87-738. *Joint Inst. Nuclear Res., Dubna*, 1987. 17 pp. (Summary) **89a:65181** 65N99
- Aktivis, M. A.** On multidimensional strongly parabolic surfaces. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 5, 3–10, 87. (Summary) **89g:53016** 53A20 (53C40)
- On some relations between the tensors of curvature and torsion of a multidimensional three-web. (Russian) *Webs and quasigroups (Russian)*, 23–32, *Kalinin. Gos. Univ., Kalinin*, 1988. (Vladislav Goldberg) **89g:53019** 53A60
- (with Galin, G. Ya.; Kirichenko, V. F.; Morozova, E. A.; Novikov, S. P.; Fedenko, A. S.) Anatoli Mikhailovich Vasil'ev. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 4(262), 159–160; translated in *Russian Math. Surveys* **43** (1988), no. 4, 191–193. (Editors) **89m:01073** 01A70
- Akiyama, Hiroshi** Geometric aspects of Malliavin's calculus on vector bundles. *J. Math. Kyoto Univ.* **26** (1986), no. 4, 673–696. (P. E. Jupp) **89a:58117** 58G32 (58C35, 58G11, 60H07)
- Akiyama, J.** see *Proceedings: Conference on Graph Theory and Applications*, **89j:05007a** and **89j:05007b**
- Akiyama, Kenji** On certain permutation groups. *Bull. Centra. Res. Inst. Fukuoka Univ.* No. 104 (1988), 53–55. (Mohammad-Reza Darafsheh) **89d:20005** 20B20 (20B10)
- 4-fold transitive permutation group in which the stabilizer of four points has a semiregular Sylow 3-subgroup fixing exactly four points. *Fukuoka Univ. Sci. Rep.* **18** (1988), no. 1, 1–13. (Mohammad-Reza Darafsheh) **89d:20004** 20B20 (20B10)
- Akiyama, Shigeki** (with Hiramatsu, Toyokazu) On some dimension formula for automorphic forms of weight one. III. *Nagoya Math. J.* **111** (1988), 157–163. (K.-B. Gundlach) **89k:11028** 11F11
- Akiyama, Shinji** (with Koga, Shinji) Instability of quasi-linear hyperbolic systems: the Hamiltonian dynamical system approach. *Progr. Theoret. Phys.* **79** (1988), no. 5, 991–996. (Alan Jeffrey) **89m:35148** 35L99 (35B35, 58F05, 58F27)
- Akkalainen, L. E.** (with Sviridyuk, G. A.) On a problem for a degenerate parabolic equation. (Russian) *Functional analysis*, No. 26 (Russian), 16–23, *Ulyanovsk. Gos. Ped. Inst., Ulyanovsk*, 1986. (A. S. Berdyshev) **89f:35115** 35K65
- Akkar, Mohamed** (with El Azhari, M.; Oudadess, M.) Théorèmes de structure sur certains algèbres de Fréchet. (English summary) [Structure theorems for some Fréchet algebras] *Ann. Sci. Math. Québec* **11** (1987), no. 2, 245–252. (Athanasios Kyriazis) **89e:46054** 46J05 (46A06, 46H05)
- (with El Azhari, M.; Oudadess, M.) On an expression of the spectrum in  $BP^*$ -algebras. *Period. Math. Hungar.* **19** (1988), no. 1, 65–67. (Abdullah H. Al-Moajil) **89k:46069** 46J20 (46H99, 46K99)
- Akkellin, S. V.** (with Kobylinskii, N. A.; Martynov, E. S.; Shelest, V. P.) Dual dynamics of constituent interchange in soft and hard hadronic processes. *Soviet J. Nuclear Phys.* **46** (1987), no. 5, 917–920 (1988); translated from *Yadernaya Fiz.* **46** (1987), no. 5, 1545–1551 (Russian). (Summary) **89f:81236** 81F20
- Akl, Selim G.** (with Meijer, Henk) Optimal computation of prefix sums on a binary tree of processors. *Internat. J. Parallel Programming* **16** (1987), no. 2, 127–136. (Summary) **89a:68105** 68Q25 (68Q10)
- Akopyan, G. S.** (with Aleksandryan, R. A.) Completeness of a system of eigenvector polynomials of a linear pencil of differential operators in ellipsoid domains. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* **86** (1988), no. 4, 147–152. (A. M. Nagornij) **89m:35165** 35P10 (47F05)
- Akopyan, G. O.** Estimates for solutions of a class of nonhypoelliptic equations. (Russian. Armenian summary) *Mathematics*, No. 4 (Russian), 33–44, *Erevan. Univ., Erevan*, 1986. (Genowefa Majcher) **89m:35032** 35B45
- Akopyan, G. S.** Initial-boundary value problems for degenerate equations of S. L. Sobolev type. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1986**, no. 1(161), 20–26. (A. M. Nagornij) **89d:35120** 35M05 (35J70)
- (with Karakhanyan, M. I.) Some spectral properties of normal operators in a Banach space. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1986**, no. 3(163), 3–10. (T. Ya. Azizov) **89f:47032** 47B15
- Akopyan, S. A.** (with Khachatryan, I. O.) Quasi-analytic classes of functions that are representable by integrals with Mittag-Leffler kernels. (Russian. English and Armenian summaries) (Russian) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **23** (1988), no. 3, 199–215, 302; translated in *Soviet J. Contemporary Math. Anal.* **23** (1988), no. 3, 1–19. (W. H. J. Fuchs) **89m:30075** 30D60 (30G10)
- Akopyan, V. P.** (with Akishin, P. G.; Zhidkov, E. P.) ★ Решение двумерного уравнения Гельмгольца методом граничных интегральных уравнений. (Russian) [Solution of the two-dimensional Helmholtz equation by the method of boundary integral equations] With an English summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R11-87-738. *Joint Inst. Nuclear Res., Dubna*, 1987. 17 pp. (Summary) **89a:65181** 65N99
- Akopyants, A. Kh.** Interpretive graphs and their properties. (Russian) *Algebra and discrete mathematics (Russian)*, 54–61, iii, *Kalmytsk. Gos. Univ., Elista*, 1985. (Ioan Tomescu) **89k:05101** 05C99 (05C38)

- Akperova, S. N.** (with Novruzov, A. A.) Some qualitative properties of the solutions of second-order degenerate elliptic equations. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 3, 47–54 (1988). (Günter Berger) **89i:35132** 35170 (35B65)
- Akram, M.** Recursive transformation matrices for linear dynamic system models. *Comput. Statist. Data Anal.* **6** (1988), no. 2, 119–127. (Gy. Terdik) **89c:62147** 62M10 (93B10, 93B17)
- Akritas, Alkiviadis G.** A simple proof of the validity of the reduced prs algorithm. (German summary) *Computing* **38** (1987), no. 4, 369–372. (Kevin S. McCurley) **89e:12001** 12-04 (01A55, 11Y05, 12E05, 68Q40)
- A new method for computing polynomial greatest common divisors and polynomial remainder sequences. *Numer. Math.* **52** (1988), no. 2, 119–127. (Heinrich Rolletschek) **89e:68062** 68Q40 (12-04, 12D05, 68Q25)
- Akritas, Michael G.** Rank tests with interval-censored data. *Ann. Statist.* **16** (1988), no. 4, 1490–1502. (J. V. Deshpande) **89j:20606** 62G10
- Pearson-type goodness-of-fit tests: the univariate case. *J. Amer. Statist. Assoc.* **83** (1988), no. 401, 222–230. (P. W. Mielke, Jr.) **89h:62077** 62G10
- An asymptotic derivation of Neyman's  $C(\alpha)$  test. *Statist. Probab. Lett.* **6** (1988), no. 5, 363–367. (Tapas K. Chandra) **89g:62033** 62F05
- Aksentov, V. L.** (with Bobeth, M.; Plakida, N. M.) Nonergodic behavior in the Ising model with a transverse field. (Russian. English summary) *Theoret. Mat. Fiz.* **76** (1988), no. 1, 47–57; translated in *Theoret. and Math. Phys.* **76** (1988), no. 1, 696–703. (M. Lawrence Glasser) **89i:82081** 82A68 (82A25)
- Aksenov, L. A.** (with Avkhadiyev, F. G.; Elizarov, A. M.) Sufficient conditions for the finite-valence of analytic functions, and their applications. (Russian) *Mathematical analysis, Vol. 25* (Russian), 3–121, 200, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (Z. Lewandowski) **89c:30022** 30C45 (30C55, 30E25)
- Aksiev, A. Z.** (with Bykov, Ya. V.) Oscillation properties of the solutions of a class of partial difference equations. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 289–301, 344–345, "Ilim", Frunze, 1987. (L. M. Kuks) **89i:39001** 39A10 (39A12)
- (with Bykov, Ya. V.) ★ Колеблемость решений некоторых классов уравнений в конечных разностях. (Russian) [Oscillation of the solutions of some classes of finite difference equations] "Ilim", Frunze, 1988. 185 pp. ISBN 5-8355-0022-X (Stanislaw Kus) **89i:39002** 39A10 (34A10, 39A70, 47H15)
- Aksomaitis, A.** A nonuniform estimate for the rate of convergence in a transfer theorem for extreme values. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 2, 219–223. (W. Dziubdziela) **89a:60051** 60F05 (62G30)
- The nonuniform rate of convergence in the max scheme limit theorem. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **28** (1988), no. 2, 211–215. (Włodzimierz Bryć) **89j:60033** 60F05
- Aksoy, Asuman Güven** The radius of the essential spectrum. *J. Math. Anal. Appl.* **128** (1987), no. 1, 101–107. (Summary) **89c:47004** 47A10
- Aktosun, Tuncay** Potentials which cause the same scattering at all energies in one dimension. *Phys. Rev. Lett.* **58** (1987), no. 21, 2159–2161. (Summary) **89f:81223** 81F05 (34A30, 34B25)
- Exact solutions of the Schrödinger equation and the nonuniqueness of inverse scattering on the line. *Inverse Problems* **4** (1988), no. 2, 347–352. (Pierre C. Sabatier) **89f:81232** 81F05 (34B25)
- Akulenko, L. D.** ★ Асимптотические методы оптимального управления. (Russian) [Asymptotic methods for optimal control] "Nauka", Moscow, 1987. 366 pp. (Ivan Ginchev) **89b:49002** 49-02 (34C29, 34E25, 49B10, 49E25, 93B50)
- (with Mikhailov, S. A.) Analysis of the equations of the dynamics of an elastic manipulator with electromechanical drives. (Russian) *Foundations of kinematics, dynamics, and control of manipulation-robots, Part 1* (Schwerin, 1986), 13–26, *Rep. MECH.* **87-3**, Akad. Wiss. DDR, Karl-Marx-Stadt, 1987. (From the introduction) **89a:70002** 70B15
- Averaging in a quasilinear system with a strongly varying frequency. *J. Appl. Math. Mech.* **51** (1987), no. 2, 189–196 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 2, 244–252 (Russian). (Fu Tong) **89g:70021** 70K99 (34C29)
- Akulov, G. V.** (with Girkov, V. L.) Theorems of the law of large numbers type for functionals of the products of independent random matrices. (Russian) *Theory of random processes*, No. 15 (Russian), 16–19, 117, "Naukova Dumka", Kiev, 1987. (Summary) **89a:60097** 60F99
- Akulov, V. P.** (with Sorokin, D. P.; Bandos, I. A.) Particle mechanics in harmonic superspace. *Modern Phys. Lett. A* **3** (1988), no. 17, 1633–1645. (Summary) **89k:81123** 81E99 (81D07)
- (with Bandos, I. A.; Sorokin, D. P.) Particle in harmonic  $N = 2$  superspace. *Soviet J. Nuclear Phys.* **47** (1988), no. 4, 724–729; translated from *Yadernaya Fiz.* **47** (1988), no. 4, 1136–1146 (Russian). (Summary) **89i:81064** 81E13 (81G20)
- Akutsu, Yasuhiro** (with Iba, Yukito; Kaneko, Kunihiko) Phase transitions in 2-dimensional stochastic cellular automata. *Science on form (Sakura)*, 103–111, *Reidel, Dordrecht-Boston, MA*, 1987. (see **89g:82013**) **82A25** (58F08, 68Q80)
- (with Wadati, Miki) Knot invariants and the critical statistical systems. *J. Phys. Soc. Japan* **56** (1987), no. 3, 839–842. (Louis H. Kauffman) **89g:82084** 82A69 (57M25)
- (with Olmedilla, Eugenio; Wadati, Miki) Yang-Baxter relations for spin models and fermion models. *J. Phys. Soc. Japan* **56** (1987), no. 7, 2298–2308. (Summary) **89f:82097** 82A69
- (with Wadati, Miki) Exactly solvable models and new link polynomials. I.  $N$ -state vertex models. *J. Phys. Soc. Japan* **56** (1987), no. 9, 3039–3051. (Louis H. Kauffman) **89g:82085** 82A69 (20F36, 57M25)
- (with Deguchi, Tetsuo; Wadati, Miki) Exactly solvable models and new link polynomials. II. Link polynomials for closed 3-braids. *J. Phys. Soc. Japan* **56** (1987), no. 10, 3464–3479. (Louis H. Kauffman) **89g:82086** 82A69 (57M25)
- (with Wadati, Miki) Knots, links, braids and exactly solvable models in statistical mechanics. *Comm. Math. Phys.* **117** (1988), no. 2, 243–259. (V. G. Turaev) **89k:57005** 57M25 (82A69)
- (with Deguchi, Tetsuo; Wadati, Miki) Exactly solvable models and new link polynomials. III. Two-variable topological invariants. *J. Phys. Soc. Japan* **57** (1988), no. 3, 757–776. (Louis H. Kauffman) **89j:82082** 82A69 (57M25)
- Akyer, Kh.** A boundary value problem for third-order equations of mixed type. (Russian. English summary) *Izv. Akad. Nauk Turkmen. SSR Ser. Fiz.-Tekhn. Khim. Geol. Nauk* **1988**, no. 4, 11–18. (A. S. Berdyshev) **89k:35156** 35M05
- Akyildiz, I. F.** Product form approximations for queueing networks with multiple servers and blocking. *IEEE Trans. Comput.* **38** (1989), no. 1, 99–114. (Not in MR) **68M20** (60K25, 90B22)
- Akylas, T. R.** (with Toplosky, N.) Nonlinear stability of rotating pipe flow. *Applied mathematics, fluid mechanics, astrophysics* (Cambridge, MA, 1987), 96–107, *World Sci. Publishing, Singapore*, 1988. (see **89f:76002**) **76-04** (76E30, 76U05)
- abdul-Al, Khaled I.** see **Abdul-Al, Khaled I.**
- Alabiso, C.** (with Casartelli, M.) Complexity and relaxation in nonlinear chains and in a model of radiant cavity. *Chaos and complexity* (Torino, 1987), 93–98, *World Sci. Publishing, Singapore*, 1988. (From the text) **89k:58079** 58F05 (79K50, 82A99)
- Alacoue, C.** (with Ruelle, P.; Thiran, E.; Versteegen, D.; Weyers, J.) Quantum amplitudes on  $p$ -adic fields. *Phys. Lett. B* **211** (1988), no. 1–2, 59–62. (Summary) **89h:81058** 81C99 (81E99)
- Alad'ev, V. Z.** Recent results on the theory of homogeneous structures. *Trends, techniques, and problems in theoretical computer science* (Smolenice, 1986), 110–128, *Lecture Notes in Comput. Sci.* **281**, Springer, Berlin-New York, 1987. (From the introduction) **89c:68077** 68Q80 (92A05)
- A solution of the Steinhaus's combinatorial problem. *Appl. Math. Lett.* **1** (1988), no. 1, 11–12. (Not in MR) **05A99**
- An algebraical system for polynomial representation of  $k$ -valued logical functions. *Appl. Math. Lett.* **1** (1988), no. 3, 207–209. (Not in MR) **68M99**
- Survey on some theoretical results and applicability aspects in parallel computation modelling. (Russian summary) *J. New Generation Comput. Systems* **1** (1988), no. 4, 307–317. (Not in MR) **68Q10** (68-02, 68Q80)
- Aladzhiev, Maier E.** A nonparametric method for determining informative features in pattern recognition. (Bulgarian. English and Russian summaries) *Bioautomatika* **3** (1986), 39–44. (Summary) **89d:68075** 68T10 (62G05, 62H25)
- Alagar, V. S.** (with Srinivasan, N.; Opatrný, J.) Bigedot graphs. *Graphs Combin.* **4** (1988), no. 4, 379–392. (Koduvayur R. Parthasarathy) **89m:05074** 05C38 (05C45, 05C75)
- (with Srinivasan, N.) Criticality concepts in geodetic blocks. *J. Math. Phys. Sci.* **22** (1988), no. 2, 241–250. (M. E. Watkins) **89b:05113** 05C38
- Alakoz, G. M.** (with Baryutina, T. L.; Voľpert, L. A.) Implementation of digital signal processing devices in array-programmable homogeneous media. (Russian) *Methods and means of transforming information*, No. 8 (Russian), 38–60, 145, "Zinatne", Riga, 1988. (see **89g:94002**) **68Q35** (94A05)
- masood-ul-Alam, A. K. M.** see **Masood-ul-Alam, A. K. M.**
- Alam, S. N.** (with Rizvi, S. G. A.) Estimation of scale parameter of generalized gamma distribution. *Aligarh J. Statist.* **7** (1987), 31–35. (Summary) **89a:62064** 62F10 (62F15)
- Alameddine, A. F.** On a characterization of a class of outerplanar graphs. (Arabic summary) *Arabian J. Sci. Engrg.* **13** (1988), no. 1, 97–102. (Peter J. Slater) **89c:05059** 05C75
- Fibonacci graphs—a characterization. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), C, 17–24. (Robert F. Tichy) **89d:05146** 05C75
- el Alami, Jamila** see **El Alami, Jamila**
- el Alami, Nouredine** see **El Alami, Nouredine**
- Al-Andalus, Muhammad Ibn al-Raqqam** see **al-Andalus, Muhammad Ibn al-Raqqam**
- Alanen, Lilli** On Descartes' argument for dualism and the distinction between different kinds of beings. *The logic of being*, 223–248, *Synthese Hist. Lib.*, **28**, Reidel, Dordrecht-Boston, MA, 1986. (see **89a:03004**) **01A45** (03-03, 03A05)
- Alankus, Taylan** The statistical solutions for turbulent transport with molecular diffusion in terms of space-time characteristic functionals. *Phys. Lett. A* **133** (1988), no. 7–8, 359–363. (Summary) **89f:76062** 76F99 (82A99)
- Al-Anzy, J. M.** (with Suraweera, F.) Analysis of a modified address calculation sorting algorithm. *Comput. J.* **31** (1988), no. 6, 561–563. (Summary) **89i:68016** 68P10
- el kacimi-Alaoui, A.** see **El Kacimi-Alaoui, A.**
- Al-Aqeel, Adnan S. H.** Integrability conditions of a structure satisfying  $f^3 - f = 0$ . (Arabic summary) *Arab Gulf J. Sci. Res. A. Math. Phys. Sci.* **6** (1988), no. 2, 163–171. (Lovejoy S. K. Das) **89j:53032** 53C15
- Globally framed para  $f$ -structure manifolds. (Spanish summary) *Rev. Téc. Fac. Ingr. Univ. Zulia* **11** (1988), no. 1, 47–52. (V. C. Gupta) **89j:53033** 53C15
- Alarcón, E.** (with Reverter, A.; Gonzalez, A.) Indicators and estimators in  $p$ -adaptive boundary elements. *Boundary elements VII, Vol. I, II* (Como, 1985), 12.41–12.53, *Comput. Mech., Southampton*, 1985. (see **89f:65003**) **65N30**
- Alart, P.** Algorithmes de calcul de  $\bar{x} = \text{prox}_f y$ . [Algorithms for computing  $\bar{x} = \text{prox}_f y$ ] *Séminaire d'analyse convexe, Vol. 14* (Montpellier, 1984), *Exp. No.* **17**, 43 pp., *Univ. Sci. Tech. Languedoc, Montpellier*, 1984. (From the introduction) **89i:65067** 65K10 (26B25, 49A50, 90C25)
- Alas, O. T.** On the number of compact subsets in topological groups. *Comment. Math. Univ. Carolin.* **28** (1987), no. 3, 565–568. (Douglass I. Grant) **89c:22005** 22A10 (54A25)
- Alastuey, Angel** Mean field kinetic theory of a classical electron gas in a periodic potential. **II.** Qualitative analysis of the mean-field solution in one dimension. *J. Statist. Phys.* **49** (1987), no. 3–4, 685–724. (Summary) **89h:82027** 82A45 (82A40)
- (with Cléroutin, Jean; Hansen, Jean-Pierre) Mean field kinetic theory of a classical electron gas in a periodic potential. **III.** The high-temperature limit in two dimensions. *J. Statist. Phys.* **52** (1988), no. 1–2, 395–421. (Summary) **89h:82028** 82A45 (82A40)
- Alavi, Yousef** (with Boals, A. J.; Chartrand, G.; Erdős, Paul; Oellermann, O. R.) The ascending subgraph decomposition problem. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 7–14. (H. Joseph Straight) **89d:05136** 05C70
- (with Malde, Paresch J.; Schwenk, Allen J.; Erdős, Paul) The vertex independence sequence of a graph is not constrained. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 15–23. (Prabir Das) **89e:05181** 05C99
- Alayilgözü, Ayse** A finite element code for thin plate dynamics. *Math. Comput. Simulation* **30** (1988), no. 5, 429–440. (Not in MR) **73-04** (73-08)
- Albach, Horst** (with Franke, Bernd; Werhahn, Michael) Bemerkungen zur Theorie der Investitionsketten. [Remarks on the theory of investment chains] *Ökonomie und Mathematik*, 375–380, Springer, Berlin-New York, 1987. (Summary) **89m:90013** 90A09



- Albahadilly, F. N.** (with Ringland, John; Schell, Mark) Mixed-mode oscillations in an electrochemical system. I. A Farey sequence which does not occur on a torus. *J. Chem. Phys.* **90** (1989), no. 2, 813–821. (Summary) **89k:58001** 58-04 (58F40, 80-05, 80A30)
- (with Schell, Mark) Mixed-mode oscillations in an electrochemical system. II. A periodic-chaotic sequence. *J. Chem. Phys.* **90** (1989), no. 2, 822–828. (Summary) **89k:58002** 58-04 (58F40, 80-05, 80A30)
- puerto Albaredo, Justo** see **Puerto Albaredo, Justo**
- Albanese, C.** (with Fröhlich, Jörg) Periodic solutions of some infinite-dimensional Hamiltonian systems associated with nonlinear partial differential equations. I. *Comm. Math. Phys.* **116** (1988), no. 3, 475–502. (Piero de Mottoni) **89i:35114** 35Q20 (35B10, 35B32, 58F05, 58F14, 81D99, 82A99)
- (with Fröhlich, Jörg; Spencer, Thomas Crawford) Periodic solutions of some infinite-dimensional Hamiltonian systems associated with nonlinear partial difference equations. II. *Comm. Math. Phys.* **119** (1988), no. 4, 677–699. (Piero de Mottoni) **89k:35192** 35Q20 (34G20, 35R15)
- Albano, A. M.** (with Muench, J.; Schwartz, C.; Mees, A. I.; Rapp, P. E.) Singular-value decomposition and the Grassberger-Proccaccia algorithm. *Phys. Rev. A* (3) **38** (1988), no. 6, 3017–3026. (Summary) **89k:58108** 58F13 (62M10, 90A20)
- Al-Bassam, M. A.** On fractional analysis and its applications. *Modern analysis and its applications* (New Delhi, 1983), 269–307, Prentice-Hall of India, New Delhi, 1986. (M. E. Muldoon) **89d:26008** 26A33 (33A99, 34A25, 35C99)
- On generalized power series and generalized operational calculus and its application. *Nonlinear analysis*, 51–88, World Sci. Publishing, Singapore, 1987. (B. P. Parasher) **89d:44004** 44A15
- Some applications of generalized calculus to differential and integro-differential equations. *Mathematical analysis and its applications* (Kuwait, 1985), 61–76, KFAS Proc. Ser., 3, Pergamon, Oxford-Elmsford, NY, 1988. (R. Bittner) **89k:26005** 26A33
- Alber, H.-D.** Untersuchung von Gleichungen der mathematischen Physik mit der Methode der geometrischen Optik am Beispiel der konischen Refraktion. [Investigation of equations of mathematical physics using the method of geometrical optics on the example of conical refraction] *Z. Angew. Math. Mech.* **68** (1988), no. 4, T5–T12. (J. A. Bennett) **89g:78017** 78A40
- Albers, Donald J.** (with Reid, Constance) An interview with Lipman Bers. *College Math. J.* **18** (1987), no. 4, 266–290. (C. Earle) **89g:01043** 01A70 (30F40, 32G15)
- (with Reid, Constance) An interview with Mary Ellen Rudin. *College Math. J.* **19** (1988), no. 2, 114–137. (Richard L. Francis) **89h:01052** 01A70 (01A65)
- Albers, Willem** Rank tests for regression and  $k$ -sample rank tests under random censorship. *Statist. Probab. Lett.* **6** (1988), no. 5, 315–319. (S. Rao Jammalamadaka) **89c:62077** 62G10
- Albert, C.** (with Molino, P.) \* Pseudogroupes de Lie transitifs. II. (French) [Transitive Lie pseudogroups. II] Théorèmes d'intégrabilité. [Integrability theorems] Travaux en Cours [Works in Progress], 19. Hermann, Paris, 1987. viii+135 pp. ISBN 2-7056-6055-0 (P. Libermann) **89k:58005** 58-02 (53C10, 58H05)
- Albert, David** A quantum-mechanical automaton. *Philos. Sci.* **54** (1987), no. 4, 577–585. (Jeffrey Bub) **89d:81004** 81B05
- (with Loewer, Barry) Interpreting the many worlds interpretation. *Synthese* **77** (1988), no. 2, 195–213. (Dennis Dieks) **89m:81007** 81B05
- (with Loewer, Barry) Two no-collapse interpretations of quantum theory. *Noûs* **23** (1989), no. 2, 169–186. (Lawrence Sklar) **89m:81008** 81B05
- Albert, J. P.** (with Bona, Jerry L.; Henry, D. B.) Sufficient conditions for stability of solitary-wave solutions of model equations for long waves. *Phys. D* **24** (1987), no. 1–3, 343–366. (Summary) **89a:35166** 35Q20
- Albert, James H.** Estimation of a Poisson mean using discrete mixtures of conjugate priors. *Comm. Statist. Theory Methods* **17** (1988), no. 1, 245–261. (Not in MR) **62F15**
- Albert, M. H.** A preservation theorem for  $\epsilon$ -structures with applications. *J. Symbolic Logic* **52** (1987), no. 3, 779–785. (Bienvenido F. Nebres) **89a:03066** 03C40 (08A99)
- (with Kelly, G. M.) The closure of a class of colimits. *J. Pure Appl. Algebra* **51** (1988), no. 1–2, 1–17. (Walter Tholen) **89g:18003a** 18A35 (18A30, 18D15)
- (with Burris, S.) Bounded obstructions, model companions and amalgamation bases. *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 2, 109–115. (Milan Grulović) **89c:03059** 03C52 (03C07)
- see also Kelly, G. M., **89g:18003b**
- Albert, Paul S.** (with Zeger, Scott L.; Liang, Kung-Yee) Models for longitudinal data: a generalized estimating equation approach. (French summary) *Biometrics* **44** (1988), no. 4, 1049–1060. (Not in MR) **62P10**
- payá-Albert, Rafael** see **Payá-Albert, Rafael**
- Albertengo, Guido** (with Benedetto, Sergio; Ajmone Marsan, Marco; Giachin, Egidio) Combined coding and modulation: theory and applications. *IEEE Trans. Inform. Theory* **34** (1988), no. 2, 223–236. (Shunsuke Ihara) **89f:94012** 94A40 (94A14, 94A29)
- Alberti, Peter M.** The  $n$ -tuple problem over normal states on certain  $W^*$ -algebras. *Proceedings of the conference on ergodic theory and related topics, II* (Göteborg, 1986), 7–11, Teubner-Texte Math., 94, Teubner, Leipzig, 1987. (A. A. Lodkin) **89j:46066** 46L30
- A note on stochastic operators on  $L^1$ -spaces and convex functions. *J. Math. Anal. Appl.* **130** (1988), no. 2, 556–563. (Anzelm Iwanik) **89c:47041** 47B38
- Albertini, Francesca** (with Runggaldier, Wolfgang J.) Logarithmic transformations for discrete-time, finite-horizon stochastic control problems. *Appl. Math. Optim.* **18** (1988), no. 2, 143–161. (Zbigniew Nahorski) **89m:49044** 49B60 (93B17, 93C55, 93E20)
- Alberts, G.** see **By its very nature they may not neglect pure mathematics, 89h:01099**
- Albertson, Michael O.** Finding Hamiltonian cycles in Ore graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 25–27. (Arthur M. Hobbs) **89k:05053** 05C38 (05C45)
- (with Hutchinson, Joan P.) \* Discrete mathematics with algorithms. *John Wiley & Sons, Inc., New York*, 1988. xiv+546 pp. ISBN 0-471-84902-2 (D. A. Klarner) **89i:05001** 05-01 (68Q25)
- Alberici, José** (with Taormina, Anne; van Baal, P.) Relating Kac-Moody, Virasoro and Krichever-Novikov algebras. *Comm. Math. Phys.* **120** (1988), no. 2, 249–260. (Andrew Pressley) **89m:17038** 17B67 (32G15, 58F07, 58G35, 81E40)
- Alberverio, S.** Some points of interaction between stochastic analysis and quantum theory. *Stochastic differential systems* (Bad Honnef, 1985), 1–26, Lecture Notes in Control and Inform. Sci., 78, Springer, Berlin-New York, 1986. (Introduction) **89k:81041** 81C20 (58C35, 58D30)
- Some personal remarks on nonstandard analysis in probability theory and mathematical physics. *VIIIth international congress on mathematical physics* (Marseille, 1986), 409–420, World Sci. Publishing, Singapore, 1987. (Frank Wattenberg) **89h:03117** 03H10 (00A05, 00A69, 60J99, 81E99, 82A99)
- (with Gesztesy, F.; Hoegh-Krohn, R.; Holden, Helge) Point interactions in two dimensions: basic properties, approximations and applications to solid state physics. *J. Reine Angew. Math.* **380** (1987), 87–107. (Arne Jensen) **89d:81026** 81C10 (35P25, 35Q20, 47F05)
- Applications of nonstandard analysis in mathematical physics. *Nonstandard analysis and its applications* (Hull, 1986), 182–220, London Math. Soc. Stud. Texts, 10, Cambridge Univ. Press, Cambridge-New York, 1988. (see **89m:03060**) **03H10** (81E08, 82A51)
- (with Hoegh-Krohn, R.; Holden, Helge) Stochastic multiplicative measures, generalized Markov semigroups, and group-valued stochastic processes and fields. *J. Funct. Anal.* **78** (1988), no. 1, 154–184. (Summary) **89k:60055** 60G20 (46N05, 47D05, 60H99, 60J30)
- (with Hoegh-Krohn, R.) Construction of interacting local relativistic quantum fields in four spacetime dimensions. *Phys. Lett. B* **200** (1988), no. 1–2, 108–114. (Gerhard C. Hegerfeldt) **89f:81089a** 81E08
- (with Hoegh-Krohn, R.) Erratum: "Construction of interacting local relativistic quantum fields in four spacetime dimensions". *Phys. Lett. B* **202** (1988), no. 4, 620. (Gerhard C. Hegerfeldt) **89f:81089b** 81E08
- see also *Stochastic processes in physics and engineering, 89a:00025*
- Albinet, G.** see *Propagation in systems far from equilibrium, 89f:76003*
- Al-Birdzhandi, Nizam ad-Din** see **al-Birdzhandi, Nizam ad-Din**
- Al-Birūnī, Abū'l-Rayhān** see **al-Birūnī, Abū'l-Rayhān**
- Albis González, Víctor Samuel** (with Arboleda, Luis C.) Newton's Principia in Latin America. *Historia Math.* **15** (1988), no. 4, 376–379. (Editors) **89j:01027** 01A50
- Albias, J. B.** Lyapunov stability of electro-magneto-elastic systems. *Trends in applications of mathematics to mechanics* (Wassenaar, 1987), 108–118, Springer, Berlin-New York, 1988. (see **89g:58004**) **73R05**
- Albores, F. Kh.** (with Bocharov, P. P.) A single-server service system of finite capacity with distributions of phase type and absolute priority. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 12, 93–103. (Summary) **89b:60206** 60K25 (90B22)
- pérez carrillo de Albornoz, Ma. Luisa** see **Pérez Carrillo de Albornoz, Ma. Luisa**
- Albrecht, E.** (with Eschmeier, Jörg; Neumann, Michael M.) Some topics in the theory of decomposable operators. *Advances in invariant subspaces and other results of operator theory* (Timisoara and Hercules, 1984), 15–34, Oper. Theory. Adv. Appl., 17, Birkhäuser, Basel-Boston, MA, 1986. (F.-H. Vasilescu) **89c:47046** 47B40 (47B47)
- (with Chevreau, B.) Invariant subspaces for  $l^p$ -operators having Bishop's property ( $\beta$ ) on a large part of their spectrum. *J. Operator Theory* **18** (1987), no. 2, 339–372. (B. Nagy) **89h:47007** 47A15 (47A10, 47B99)
- Albrecht, Matthias** (with Näther, Wolfgang) Fuzzy model fitting based on the truth of the model. (German and Russian summaries) *Some applications of fuzzy set theory in data analysis*, 78–97, Freiberger Forschungshefte D, 187, Deutscher Verlag für Grundstoffindustrie, Leipzig, 1988. (Summary) **89c:62007** 62B10 (03E72, 62A99)
- (with Näther, Wolfgang) On a cardinality-based method for fuzzy model fitting. (German and Russian summaries) *Some applications of fuzzy set theory in data analysis*, 98–105, Freiberger Forschungshefte D, 187, Deutscher Verlag für Grundstoffindustrie, Leipzig, 1988. (Summary) **89c:62008** 62B10 (03E72)
- Albrecht, Ulrich** Abelian groups with self-injective endomorphism rings. *Comm. Algebra* **15** (1987), no. 12, 2451–2471. (K. M. Rangaswamy (Zbl 629:20027)) **89a:20061** 20K30 (16A52, 16A65)
- The structure of generalized rank one groups. *Houston J. Math.* **14** (1988), no. 3, 305–317. (John D. O'Neill) **89m:20063** 20K30
- Faithful abelian groups of infinite rank. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 21–26. (P. L. Sperry) **89e:20058** 20K20 (20K30)
- (with Goeters, H. P.) A dual to Baer's lemma. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 817–826. (P. L. Sperry) **89m:20066** 20K40
- Albrecht, E. G.** Optimal strategies for approach and evasion. (Russian) *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 9–14, 'Angel Kanchev' Tech. Univ., Ruse, 1987. (Bolesław Tolwiński) **89a:90180** 90D26 (49A45, 49E15)
- (with Samoilova, T. I.) Extremal aiming in game-theoretic guidance problems when the domains of control depend on the phase coordinates. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 302–308, 328, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Zdzisław Wyderka) **89k:90195** 90D25 (49A40, 49A45, 49E10)
- Albright, S. Christian** (with Soni, Ashok Kumar) Markovian multi-echelon repairable inventory system. *Naval Res. Logist.* **35** (1988), no. 1, 49–61. (William D. Ray) **89a:90053** 90B05 (90B25)
- An approximation to the stationary distribution of a multiechelon repairable-item inventory system with finite sources and repair channels. *Naval Res. Logist.* **36** (1989), no. 2, 179–195. (Summary) **89m:90053** 90B05
- Albrycht, J.** see *Proceedings: Symposium on Interval & Fuzzy Mathematics, 89h:03006*
- Albu, Adrian C.** Connexions continues dans les fibres principales. [Continuous connections in principal fibrations] *An. Univ. Timisoara Ser. Stiint. Mat.* **25** (1987), no. 1, 1–18. (Jean Wuofa Kanga) **89a:53035** 53C05 (55R05)
- Al-Budaiwi, Aisha** (with Mazhar, S. M.) A note on a theorem of Ermakov. *Portugal. Math.* **44** (1987), no. 2, 213–219. (S. Aljančić) **89a:42007** 42A10
- Albul, A. V.** A method for solving minimax control problems. (Russian) *Investigations in differential equations and mathematical analysis* (Russian), 3–14, 170, "Shtiintsa", Kishinev, 1988. (Dō Van Lu'ua) **89h:49011** 49A55 (49B40)
- díaz Alcalá, Juan Carlos** see **Díaz Alcalá, Juan Carlos**
- Alcalá-Cuesta, Fernando** (with Gómez-Tato, A.; Macías, Enrique) The Godbillon homology. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 7–10, Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89k:57057** 57R30 (55U15, 57R32)
- (with Gómez-Tato, A.; Macías, Enrique) Homotopy for nonnilpotent minimal algebras. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference*

- on Mathematics, Vol. 2 (Spanish) (Badajoz, 1986), 173-178, Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (J. Aguade) **89i:55008** 55P62
- de Alcantara, Luiz Paulo (with da Costa, Newton C. A.) The scientific work of A. I. Arruda. *Methods and applications of mathematical logic (Campinas, 1985)*, 1-15, *Contemp. Math.*, 59, Amer. Math. Soc., Providence, RI, 1988. (Editors) **89c:01052** 01A70 (03-03)
- Alcaraz, Antonio (with Fernandez Andrés, Manuel) Polynomial structures of kind  $(h, k)$ . *Bull. Math. Soc. Sci. Math. R. S. Roumanie (N.S.)* **30(78)** (1986), no. 4, 295-299. (C. S. Houh) **89a:53039** 53C10 (53C15)
- Alcaraz, Francisco C. (with Barber, Michael N.; Batchelor, M. T.; Baxter, Rodney James; Quispel, G. R. W.) Surface exponents of the quantum  $XXZ$ , Ashkin-Teller and Potts models. *J. Phys. A* **20** (1987), no. 18, 6397-6409. (Summary) **89b:82100** 82A68 (82-04, 82A69)
- (with Barber, Michael N.; Batchelor, M. T.) Conformal invariance, the  $XXZ$  chain and the operator content of two-dimensional critical systems. *Ann. Physics* **182** (1988), no. 2, 280-343. (Roland Koberle) **89f:82073** 82A68 (81E40, 82A15, 82A67)
- (with Baake, Michael; Grimm, U.; Rittenberg, V.) Operator content of the  $XXZ$  chain. *J. Phys. A* **21** (1988), no. 3, L117-L120. (Muthiah Daniel) **89b:82101** 82A68
- (with Martins, Márcio J.) Conformal anomaly and critical exponents of the spin-1 Takhtajan-Babujian model. *J. Phys. A* **21** (1988), no. 7, L381-L387. (Summary) **89c:82003** 82A25 (81E99, 82A68)
- (with Martins, Márcio J.) Conformal invariance and critical exponents of the Takhtajan-Babujian models. *J. Phys. A* **21** (1988), no. 23, 4397-4413. (Summary) **89m:82069** 82A68 (81E13, 81E25)
- Alcázar-Fernández, J. (with Figueras-Vidal, A. R.; Pérez-Borralló, J. M.; Ruiz-Mezcua, B.) Using a priori information and  $L_1$ -norm minimization in Cadzow's and Prony's line spectral analysis methods. *Mathematics in signal processing (Bath, 1985)*, 121-131, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see **89b:94004**) 94A14
- Alchourrón, Carlos E. (with Martino, Antonio A.) Logic without truth. (Spanish) *Theoria (San Sebastián)* (2) **3** (1987/88), no. 7-9, 7-43. (Not in MR) 03A05 (03B45)
- Alda, Václav Boolean embeddings and hidden variables. (Russian and Czech summaries) *Časopis Pěst. Mat.* **112** (1987), no. 3, 284-295. (M. J. Mączyński) **89c:81022** 81B10 (06C10)
- (with Vrbová, Pavla) A remark on  $C^*$ -algebras. *Czechoslovak Math. J.* **37(112)** (1987), no. 4, 509-511. (Robert S. Doran) **89b:46118** 46K05 (46L05)
- Aldaya, V. (with de Azcárraga, J. A.) Group manifold approach to analytical mechanics and constraints. *Constraint's theory and relativistic dynamics (Florence/Arcetri, 1986)*, 26-56, *World Sci. Publishing, Singapore*, 1987. (P. G. L. Leach) **89c:58039** 58F05 (70H05)
- (with Navarro-Salas, Jose) Formal group laws for affine Kac-Moody groups and group quantization. *Comm. Math. Phys.* **113** (1987), no. 3, 375-387. (Véronique Hussin) **89b:22026** 22E65 (17B67, 58D05, 81D07)
- Aldazabal, Gerardo (with Bonini, M.; Iengo, R.; Núñez, Carmen) Intrinsic normal-ordered vertex operators from the multiloop  $N$ -tachyon amplitude. *Phys. Lett. B* **199** (1987), no. 1, 41-48. (Summary) **89b:81158** 81E99 (81E30)
- Aldeen, I. K. (with Khalid, L. H.) Comparison of numerical methods in the solution of eigenvalue problems. (Arabic summary) *Arab J. Math.* **6** (1985), no. 1-2, 21-34. (K. Najjar) **89m:65071** 65L10 (34B25, 65L15)
- Alderton, I. W. Splitting and conjoining objects in monotopological categories. *Topology Appl.* **29** (1988), no. 3, 223-235. (Jifí Adamek) **89k:18015** 18D15 (18A99)
- Aldous, David (with Shepp, L. A.) The least variable phase type distribution is Erlang. *Comm. Statist. Stochastic Models* **3** (1987), no. 3, 467-473. (Summary) **89b:60115** 60J27 (90B22)
- Aldred, R. E. L. Cycles through seven vertices avoiding one edge in 3-connected cubic graphs. Fourteenth Australasian conference on combinatorial mathematics and computing (Dunedin, 1986). *Ars Combin.* **23** (1987), B, 79-86. (From the text) **89d:05115** 05C38
- (with Holton, D. A.) Cycles through five edges in 3-connected cubic graphs. *Graphs Combin.* **3** (1987), no. 4, 299-311. (Hans-Joachim Walther) **89c:05049** 05C38
- (with Godsil, C. D.) Distance-regular antipodal covering graphs. *J. Combin. Theory Ser. B* **45** (1988), no. 2, 127-134. (J. Sheehan) **89i:05221** 05C75 (05B05)
- (with Bau, Sheng; Holton, D. A.; Royle, Gordon F.) An 11-vertex theorem for 3-connected cubic graphs. *J. Graph Theory* **12** (1988), no. 4, 561-570. (Charles H. C. Little) **89k:05054** 05C38
- Aldrovandi, R. (with Pereira, J. G.) On the quantization of Poincaré and de Sitter gauge models. *J. Math. Phys.* **29** (1988), no. 6, 1472-1476. (David McMullan) **89i:81065** 81E13 (81D07, 83C45, 83D05)
- (with Kraenkel, R. A.) On exterior variational calculus. *J. Phys. A* **21** (1988), no. 6, 1329-1339. (Constantin Udriste) **89g:49056** 49F05 (58A10, 58E30, 81E99)
- Alefeld, G. Rigorous error bounds for singular values of a matrix using the precise scalar product. *Computerarithmetics*, 9-30, Teubner, Stuttgart, 1987. (Gh. Adam) **89b:65087** 65F15 (65G10)
- Über die Konvergenzordnung des Intervall-Newton-Verfahrens. (English summary) [On the order of convergence of the interval-Newton-method] *Computing* **39** (1987), no. 4, 363-369. (J. Albrecht) **89b:65114** 65G10 (65Hxx)
- Berechenbare Fehlerschranken für ein Eigenpaar beim verallgemeinerten Eigenwertproblem. (English and Russian summaries) [Computable error bounds for an eigenpair in the generalized eigenvalue problem] *Z. Angew. Math. Mech.* **68** (1988), no. 3, 131-184. (Summary) **89b:65088** 65F15 (65G05, 65G10)
- Alelnikova, Z. M. (with Zabello, L. E.) Necessary conditions for the optimality of singular controls in discrete systems with delay and distributed control. (Russian) *Vestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 5, 119. (Not in MR) 49E30
- Alekhnov, A. G. The Riemann homogeneous boundary value problem with an infinite index of arbitrary power order. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **32** (1988), no. 2, 112-115, 187-188. (Guo Chun Wen) **89k:30039** 30E25
- Aleksakhin, Yu. I. Relativistic dynamics of space-charge laminar flow: general description and nonlinear wave solutions. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations (Budapest, 1987)*, 753-756, János Bolyai Math. Soc., Budapest, 1987. (Thomas O. Phillips) **89c:76124** 76X05 (76Y05, 78A35)
- Aleksandrov, A. B. Inner functions: results, methods, problems. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 699-707, Amer. Math. Soc., Providence, RI, 1987. (Burglind Jöricke) **89c:32015** 32A40 (32H35)
- Multiplicity of boundary values of inner functions. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **22** (1987), no. 5, 490-503, 515. (D. Sarason) **89c:30058** 30D50 (30D40, 30D55, 46J15, 47B38)
- Aleksandrov, A. D. ★ Основания геометрии. (Russian) [Foundations of geometry] "Nauka", Moscow, 1987. 288 pp. (B. Klotzke) **89b:51001** 51-01
- (with Demidov, S. S.; Grigor'yan, A. T.; Matvietskaya, G. P.; Sirazhdinov, S. S.; Yushkevich, A. P.) Boris A. Rozenfeld: on the 70th anniversary of his birth. *Historia Math.* **15** (1988), no. 1, 1-8. (Editors) **89c:01041** 01A70
- (with Vershik, A. M.; Ivanov, Vladimir Veniaminovich; Kusraev, A. G.; Kutateladze, S. S.; Makarov, B. M.; Reshetnyak, Yu. G.; Khavin, V. P.) Gleb Pavlovich Akilov. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 1(259), 181-182; translated in *Russian Math. Surveys* **43** (1988), no. 1, 221-223. (Editors) **89b:01031** 01A70
- (with Reshetnyak, Yu. G.) Rotation of a curve in an  $n$ -dimensional Euclidean space. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 1, 3-22, 222; translated in *Siberian Math. J.* **29** (1988), no. 1, 1-16. (Elena Macovei) **89c:53019** 53A55 (53A04)
- see also Zalgaller, V. A. et al., **89c:01087**
- Aleksandrov, A. G. Euler-homogeneous singularities and logarithmic differential forms. *Ann. Global Anal. Geom.* **4** (1986), no. 2, 225-242. (D. Barlet (Zbl 632:32007)) **89i:32022** 32C40 (32G11)
- Finite-frequency criteria for the stability of systems with indeterminate parameters. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 7, 26-38; translated in *Avtomat. Remote Control* **49** (1988), no. 7, part 1, 838-847. (Ewa Bednarczuk) **89m:93061** 93D10
- The de Rham complex of nonisolated singularities. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 2, 59-60; translated in *Functional Anal. Appl.* **22** (1988), no. 2, 131-133. (V. Oproiu) **89b:58021** 58C27 (32B30, 32C40)
- Aleksandrov, A. Yu. On the existence of asymptotic recurrent solutions of differential equations. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astron.* **1988**, vyp. 4, 92-93, 115. (Not in MR) 34E05 (34C25)
- Aleksandrov, E. L. Spectral properties of convolution and close-to-convolution operators. (Russian) *Functional analysis*, No. 26 (Russian), 24-34, *Ulyanovsk. Gos. Ped. Inst., Ulyanovsk*, 1986. (N. K. Karapetyants) **89c:47031** 47B38 (46F10, 47G05)
- Aleksandrov, G. A. (with Armand, A. D.; Belotelov, N. V.; Vedyushkin, M. A.; Vilkova, L. P.; Voinov, A. A.; Denisenko, E. A.; Krapivin, V. F.; Logofet, D. O.; Ovsyannikov, L. L.; Pak, S. B.; Pasekov, V. P.; Pisarenko, N. F.; Razzhevskii, V. N.; Sarancha, D. A.; Svirzhev, Yu. M.; Semenov, M. A.; Tarko, A. M.; Fesenko, S. V.; Shmidt, D. A.) ★ Математические модели экосистем. (Russian) [Mathematical models of ecosystems] Экологические и демографические последствия ядерной войны. [Ecological and demographic consequences of a nuclear war] Edited with and a foreword by A. A. Dorodnitsyn. "Nauka", Moscow, 1986. 176 pp. (Summary) **89a:92054** 92A17
- (with Plichko, A. N.) The connections between strong  $M$ -bases and equivalent locally uniformly convex norms in Banach spaces. (Russian) *C. R. Acad. Bulgare Sci.* **40** (1987), no. 2, 15-16. (Mikhail Ostrovskii) **89b:46014** 46B15
- (with Babev, V. D.) Banach spaces not isomorphic to weakly midpoint locally uniformly rotund spaces. *C. R. Acad. Bulgare Sci.* **41** (1988), no. 2, 29-32. (J. Reif) **89d:46015** 46B20
- Spaces of continuous functions isomorphic to a locally uniformly rotund Banach space. *C. R. Acad. Bulgare Sci.* **41** (1988), no. 8, 9-12. (W. Govaerts) **89b:46017** 46B20 (46E15)
- Aleksandrov, I. A. L. de Branges' proof of the I. M. Milin conjecture and the L. Bieberbach conjecture. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 2, 7-20, 223. (P. L. Duren) **89c:30040** 30C50 (01A60)
- Aleksandrov, N. E. D. Affinor structures on vector bundles. III. (Russian) *Spaces over algebras, and some problems in the theory of nets (Russian)*, 94-112, *Bashkir. Gos. Ped. Inst., Ufa*, 1985. (see **89f:00017**) 53C05
- (with Aleksandrova, E. V.) Some investigations concerning two-dimensional and three-dimensional surfaces in a four-dimensional space. (Russian) *Spaces over algebras, and some problems in the theory of nets (Russian)*, 112-122, *Bashkir. Gos. Ped. Inst., Ufa*, 1985. (see **89f:00017**) 53A07
- Aleksandrov, P. S. see Hewitt, Edwin, **89c:01055**
- Aleksandrov, V. A. On domains uniquely defined by the relative metrics of their boundaries. (Russian) *Trudy Inst. Mat. (Novosibirsk)* **7** (1987), Issled. Geom. Mat. Anal., 5-19, 199. (I. G. Nikolaev) **89c:30048** 30C60 (53C45)
- Aleksandrov, V. M. see Aleksandrov, Vladimir Mikhailovich
- Aleksandrov, Viktor Mikhailovich Asymptotic methods in a problem of the interaction of a rigid cover plate and an elastic strip. (Russian) *Asymptotic methods (Russian)*, 176-189, 385, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Summary) **89c:73020** 73C40
- (with Grishin, S. A.) State of stress and strain of a small neighbourhood of the apex of a wedge for a physical nonlinearity and different boundary conditions. *J. Appl. Math. Mech.* **51** (1987), no. 4, 509-515 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 4, 653-661 (Russian). (Summary) **89j:73019** 73C45 (73E99, 73M05)
- Contact problems in tribology. (Russian) *Mechanics and scientific-technological progress, Vol. 3 (Russian)*, 170-180, 271, "Nauka", Moscow, 1988. (see **89j:73002**) 73T05 (73E99, 76D08)
- (with Bronovets, M. A.; Kovalenko, E. V.) Planar contact problems for a linearly deformable foundation with a thin reinforcing covering. (Russian) *Prikl. Mekh.* **24** (1988), no. 8, 60-67, 133; translated in *Soviet Appl. Mech.* **24** (1988), no. 8, 781-787. (Not in MR) 73T05
- Aleksandrov, Vladimir Mikhailovich Solution of optimal control problems on the basis of the quasi-optimal control method. (Russian) *Trudy Inst. Mat. (Novosibirsk)* **10** (1988), Modeli i Metody Optim., 18-54, 264. (Summary) **89c:93081** 93B50 (49E15, 65K10, 93B40, 93C05)
- Aleksandrova, D. A. (with Kotzev, J. N.) Space color groups with a one-color lattice and their application in the analysis of phase transitions. (Russian) *Group-theoretic methods in physics, Vol. 1 (Russian) (Jarmala, 1985)*, 689-695, "Nauka", Moscow, 1986. (see **89d:81001**) 82A25 (20H15)
- Aleksandrova, E. V. (with Aleksandrov, N. D.) Some investigations concerning two-dimensional and three-dimensional surfaces in a four-dimensional space. (Russian) *Spaces over algebras, and some problems in the theory of nets (Russian)*, 112-122, *Bashkir. Gos. Ped. Inst., Ufa*, 1985. (see **89f:00017**) 53A07



- Aleksandrovich, A. I.** (with Rodionov, A. Yu.) A study of anisotropic and thermoelastic problems using methods of complex analysis. (Russian) *Problems in the mechanics of a rigid and a deformable body* (Russian), 74-84, "Nauka", Moscow, 1987. (see **89g:70002**) 73C03 (73C30, 73U05)
- Aleksandryan, R. A.** (with Akonyan, G. S.) Completeness of a system of eigenvector polynomials of a linear pencil of differential operators in ellipsoid domains. (Russian. Armenian summary) *Akad. Nauk Armyn. SSR Dokl.* **86** (1988), no. 4, 147-152. (A. M. Nagornij) **89m:35165** 35P10 (47F05)
- see also **Obituary: Aleksandryan, R. A.**, **89h:01093**
- Aleksandrychev, I. P.** (with Markelov, Yu. I.; Porodnov, B. T.; Seleznev, V. D.) Nonisothermal motion of gases in a channel with incomplete accommodation on the walls. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* **1988**, no. 1, 96-105, 171; translated in *J. Appl. Mech. Tech. Phys.* **29** (1988), no. 1, 89-96. (Summary) **89f:76063** 76P05 (82A40)
- Aleksanyan, A. A.** On the complexity of the representation of symmetric subsets of an  $n$ -dimensional unit cube by a set of linear equations. (Russian. Armenian summary) *Akad. Nauk Armyn. SSR Dokl.* **84** (1987), no. 5, 195-197. (N. L. Manev) **89a:15001** 15A06 (05B40)
- Alekseenko, M. A.** (with Kaspritskaya, M. F.; Stranka, A. I.) A method for solving the fundamental cluster problem. (Russian) *Issled. Operatsii i ASU No. 31* (1988), 62-68, 113. (Victor S. Grinberg) **89j:68116** 68R05 (62H30)
- Alekseenko, S. N.** On vanishing viscosity in a linearized problem of the flow of an incompressible fluid. (Russian) *Studies in integro-differential equations*, No. 19 (Russian), 288-304, 320, "Ilim", Frunze, 1986. (C. Fetecău) **89c:76045** 76D05
- The effect of boundary properties on the solutions of a linearized Navier-Stokes system under degeneration with respect to viscosity. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 232-237, 343, "Ilim", Frunze, 1987. (Summary) **89f:35163** 35Q10
- Alekseev, A. A.** ★ Обратная спектральная задача для уравнения Штурма-Лиувилля с коэффициентом, известным на полуинтервале. (Russian) [The inverse spectral problem for the Sturm-Liouville equation with a coefficient that is known on a semi-interval] Preprint [Preprint], 86-658. *Akad. Nauk SSSR Sibsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1986. 27 pp. (G. Yu. Tamanyan) **89f:34030** 34B25 (34A55)
- Alekseev, A. S.** (with Lavren'ev, M. M.; Romanov, V. G.; Romanov, M. E.) Theoretical and numerical questions in seismic tomography. (Russian) *Mathematical modeling in geophysics* (Russian), 35-50, 131, "Nauka" Sibsk. Otdel., Novosibirsk, 1988. (see **89h:86005**) **86A15** 73D50
- Alekseev, A. Yu.** (with Madajczyk, J.; Faddeev, L. D.; Shatashvili, S. L.) Derivation of an anomalous commutator in the formalism of a functional integral. (Russian. English summary) *Teoret. Mat. Fiz.* **73** (1987), no. 2, 187-190. (Ziemowit Popowicz) **89g:81041** 81E13 (58D30)
- Alekseev, B. V.** (with Ustyugov, S. A.) Numerical solution of generalized equations of gas dynamics. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 2, 286-289, 304. (V. D. Glushenkov) **89g:65110** 65M05
- Alekseev, F. F.** (with Bilchenko, G. G.; Borodin, V. M.) A method for constructing Lyapunov functions. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 45-52, 322, "Nauka" Sibsk. Otdel., Novosibirsk, 1987. (see **89c:00040**) 34D20
- Alekseev, S. A.** see **Statics and dynamics of flexible systems**, **89h:73002**
- Alekseev, V. A.** Perturbation algorithms in the investigation of the behavior of the invariants of the vortex equation. Numerical experiments. (Russian) *Conjugate equations and perturbation theory in problems of mathematical physics* (Russian), 85-115, *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1985. (E. G. D'yakov) **89b:65230** 65M99
- ★ Сходимость полуявной схемы Кранка-Николсона для уравнения баротропного вихря. (Russian) [Convergence of a semi-implicit Crank-Nicolson scheme for the equation of a barotropic vortex] Preprint [Preprint], 151. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1987. 20 pp. (Murli M. Gupta) **89b:65240** 65N10 (76-08, 76C99)
- Alekseev, V. B.** Stepwise bilinear algorithms and recognition of completeness in  $k$ -valued logics. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 7, 19-27; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 7, 31-42. (Jerzy Kotas) **89m:03016** 03B50
- Alekseev, V. G.** Nonparametric estimates for curves and regression surfaces. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 7, 81-87; translated in *Avtomat. Remote Control* **49** (1988), no. 7, part 1, 882-887. (Vladimir Katkovnik) **89k:62050** 62G05
- On the problem of the isolation of a trend of a homogeneous random field. (Russian) *Teor. Veroyatnost. i Mat. Statist. No. 38* (1988), 3-9, 133. (Lutz Peter Klotz) **89c:62113** 62M09
- Alekseev, V. M.** (with Tikhomirov, V. M.; Fomin, S. V.) ★ Optimal control. Translated from the Russian by V. M. Volosov. Contemporary Soviet Mathematics. Consultants Bureau, New York, 1987. xiv+309 pp. ISBN 0-306-10996-4 (Leszek Zaremba) **89c:49002** 49-01 (93-01)
- Alekseev, V. N.** Tangent spaces to determinants. (Russian) *The birational geometry of algebraic varieties* (Russian), 9-14, 98-99, Yarosl. Gos. Ped. Inst., Yaroslavl', 1983. (Summary) **89j:14029** 14M12
- Alekseeva, E. F.** (with Stefanyuk, V. L.) A general-purpose adaptive LISP system. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 3, 85-90; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 5, 173-178, 223 (Russian). (Not in MR) **88T25**
- Alekseeva, L. A.** Boundary integral equations for an elastic half plane with an opening under dynamic loads on its contour. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1987**, no. 3, 57-62. (Summary) **89c:73019** 73C35 (73D30)
- Short-wave asymptotics and the asymptotics of a remote source field in an elastic half-plane. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1988**, no. 5, 74-80. (Summary) **89k:73019** 73D15 (73D25)
- Aleksevskaia, T. V.** (with Gelfand, I. M.; Zelevinskii, A. V.) Distribution of real hyperplanes and the partition function connected with it. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 6, 1289-1293; translated in *Soviet Math. Dokl.* **36** (1988), no. 3, 589-593. (Summary) **89m:05014** 05A99 (32C40, 32C42)
- Aleksevskaia, D. V.** Homogeneous Einstein metrics. *Differential geometry and its applications, communications* (Brno, 1986), 1-21, Univ. J. E. Purkyně, Brno, 1987. (Wolfgang Ziller) **89c:53070** 53C25 (53C30)
- Maximally homogeneous  $G$ -structures and filtered Lie algebras. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 3, 521-525; translated in *Soviet Math. Dokl.* **37** (1988), no. 2, 381-384. (Gheorghe Munteanu) **89d:53066** 53C10 (17B55, 58H10)
- Alekseyeva, Ye. F.** see **Alekseeva, E. F.**
- Aleksidze, M. A.** ★ Приближенные методы решения прямых и обратных задач гравиметрии. (Russian) [Approximate methods for solving direct and inverse problems of gravimetry] "Nauka", Moscow, 1987. 335 pp. (Jiri Nedoma) **89k:86008** 86A30 (31B20, 35R30, 65P05, 86-02)
- Aleksiev, D. P.** Yet another investigation of autonomous systems in semi-even phase spaces for a given class of nonlinearity. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prirozhna Mat.* **22** (1986), no. 3, 93-100 (1987). (G. V. Khmelevskaya-Plotnikova) **89c:34071** 34C25 (34A34)
- d'Alembert, Jean le Rond** see **Paty, Michel**, (**89m:01050**)
- Alemu, Yismaw** On zeros of diagonal forms over  $p$ -adic fields. *Acta Arith.* **48** (1987), no. 3, 261-273. (O. H. Körner) **89c:11061** 11E95 (11E76, 11P05)
- Aleshkov, Yu. Z.** Penetration of waves into the harbor of a port with arbitrarily arranged breakwaters. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1988**, vyp. 1, 28-32, 117; translated in *Vestnik Leningrad Univ. Math.* **21** (1988), no. 1, 39-44. (Summary) **89c:76018** 76B15
- Aleksevičienė, Aldona** Probabilities of large deviations in approximation by the Poisson law. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **28** (1988), no. 1, 3-13; translated in *Lithuanian Math. J.* **28** (1988), no. 1, 1-8. (S. A. Book) **89g:60091** 60F10
- Alessandrini, Giovanni** Critical points of solutions of elliptic equations in two variables. *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* **14** (1987), no. 2, 229-256 (1988). (C. A. Swanson) **89c:35040** 35J25 (35B05)
- Stable determination of conductivity by boundary measurements. *Appl. Anal.* **27** (1988), no. 1-3, 153-172. (Rolando Magnanini) **89f:35195** 35R30 (35J25)
- The length of level lines of solutions of elliptic equations in the plane. *Arch. Rational Mech. Anal.* **102** (1988), no. 2, 183-191. (Yong Geng Gu) **89i:35045** 35J15
- (with Vessella, Sergio) Local behaviour of solutions to parabolic equations. *Comm. Partial Differential Equations* **13** (1988), no. 9, 1041-1058. (Neil A. Watson) **89h:35140** 35K10 (35B05)
- Alessandrini, Lucia** (with Andreatta, Marco) A resolution of the sheaf of germs of real pluriharmonic functions. *Proceedings of the conference on algebraic geometry* (Berlin, 1985), 6-13, Teubner-Texte Math., 92, Teubner, Leipzig, 1986. (Carmen Sessa) **89c:58003** 58A14 (32C35)
- Alexahin, Yu. I.** see **Aleksakhin, Yu. I.**
- Alexander, Donald L.** The oligopoly solution tested. *Econom. Lett.* **28** (1988), no. 4, 361-364. (Not in MR) **90A12**
- Alexander, H.** Polynomial hulls and linear measure. *Complex analysis, II* (College Park, Md., 1985-86), 1-11, *Lecture Notes in Math.*, 1276, Springer, Berlin-New York, 1987. (Sergey Ivashkovich) **89b:32021** 32E20
- The polynomial hull of a rectifiable curve in  $\mathbb{C}^n$ . *Amer. J. Math.* **110** (1988), no. 4, 629-640. (Thomas Bloom) **89m:32030** 32E20 (32C25)
- (with Wermer, J.) Envelopes of holomorphy and polynomial hulls. *Math. Ann.* **281** (1988), no. 1, 13-22. (Franc Forstneric) **89i:32026** 32D10 (32E20)
- Alexander, J. C.** (with Parry, William) Discerning fat baker's transformations. *Dynamical systems* (College Park, MD, 1986-87), 1-6, *Lecture Notes in Math.*, 1342, Springer, Berlin-New York, 1988. (Pawel Gora) **89m:28025** 28D05 (28D20, 58F11)
- (with Verjovsky, Alberto) First integrals for singular holomorphic foliations with leaves of bounded volume. *Holomorphic dynamics* (Mexico, 1986), 1-10, *Lecture Notes in Math.*, 1345, Springer, Berlin-New York, 1988. (M. Kalka) **89j:57020** 57R30 (32L99, 58F18)
- (with Maddocks, J. H.) On the maneuvering of vehicles. *SIAM J. Appl. Math.* **48** (1988), no. 1, 38-51. (Summary) **89a:70005** 70B99
- see also **Dynamical systems**, **89g:58061**
- Alexander, J. Iwan D.** (with McFadden, G. B.; Coriell, S. R.) Hydrodynamic and free boundary instabilities during crystal growth: the effect of a plane stagnation flow. *Comm. Pure Appl. Math.* **41** (1988), no. 5, 683-706. (D. A. Nield) **89f:76042** 76E15 (80A20)
- Alexander, James Ernest** Singularités imposées en position générale à une hypersurface projective. [Singularities that may be imposed in general position on a projective hypersurface] *Compositio Math.* **68** (1988), no. 3, 305-354. (L. Bădescu) **89k:14085** 14M07 (14F05)
- Alexander, John Ralph** Zonoid theory and Hilbert's fourth problem. *Geom. Dedicata* **28** (1988), no. 2, 199-211. (P. R. Goodey) **89m:53127** 53C70 (52A20, 53C05)
- Alexander, Kevin A.** (with Tyson, John J.; Manoranjan, V. S.; Murray, James D.) Spiral waves of cyclic AMP in a model of slime mold aggregation. *Phys. D* **34** (1989), no. 1-2, 193-207. (Summary) **89k:92022** 92A09
- Alexander, Ralph A.** (with Barrett, Gerald V.; Alliger, George M.; Carson, Kenneth P.) Towards a general model of nonrandom sampling and the impact on population correlation: generalizations of Berkson's fallacy and restriction of range. *British J. Math. Statist. Psych.* **39** (1986), no. 1, 90-105. (Title) **89h:62173** 62P15
- Alexander, S. A.** (with Klein, D. J.) Organic polyradicals, high-spin hydrocarbons, and organic ferromagnets. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 404-419, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (see **89b:92038**) **92A40** (05C99, 82A55)
- Alexander, Shlomo** (with Olami, Z.) Nonsymmorphic icosahedral space groups and their realization by tetrahedrally coordinated quasicrystals. *Phys. Rev. B* **39** (1989), no. 3, 1478-1487. (Summary) **89m:82064** 82A60 (20H15)
- Alexander, Winsor E.** Spatial domain filters for image processing. *Statistical image processing and graphics* (Luray, Va., 1983), 43-57, *Statist. Textbooks Monographs*, 72, Dekker, New York, 1986. (Hideaki Sakai) **89b:93104** 93E11 (94A05)
- Alexanderson, Gerald L.** (with Lange, Lester H.) Obituary: George Polya. With comments. *Bull. London Math. Soc.* **19** (1987), no. 6, 559-608. (D. J. Struik) **89d:01054** EA **89m** 01A70
- Award for distinguished service to Professor Murray Klamkim. *Amer. Math. Monthly* **95** (1988), no. 1, 1-4. (Not in MR) **01A70**
- (with Wetzel, John E.) Simplicial cross-polytopic  $d$ -arrangements. *Geom. Dedicata* **27** (1988), no. 1, 77-86. (L. M. Kelly) **89f:52010** 52A25 (51M20)
- theon of Alexandria see **Theon of Alexandria**

- Alexandrov, G. A. see Aleksandrov, G. A.
- Alexandrova, D. A. (with Kotzev, J. N.) Full tables of colour space groups with colour-preserving translations. *Acta Cryst. Sect. A* 44 (1988), no. 6, 1082-1096. (Vojtěch Kopský) 89k:20070 20H15 (82A25, 82A60)
- Alexandru, Victor (with Popescu, Nicolae) Sur une classe de prolongements à  $K(X)$  d'une valuation sur un corps  $K$ . [On a class of extensions to  $K(X)$  of a valuation over a field  $K$ ] *Rev. Roumaine Math. Pures Appl.* 33 (1988), no. 5, 393-400. (Antonio José Engler) 89h:12015 12J20 (12F20)
- Alexi, Werner (with Chor, Benny; Goldreich, Oded; Schnorr, C.-P.) RSA and Rabin functions: certain parts are as hard as the whole. Special issue on cryptography. *SIAM J. Comput.* 17 (1988), no. 2, 194-209. (Melvin M. Sweet) 89j:11120 11Y11 (11T71, 11Y16, 68P25, 68Q15, 94A60)
- Alexis, Roger Search for sequences with zero autocorrelation. (French summary) *Coding theory and applications (Cachan, 1986)*, 159-172, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (J. C. Hwang) 89j:94036 94B50
- Al-Ezeh, H. The pure spectrum of a PF-ring. *Comment. Math. Univ. St. Paul.* 37 (1988), no. 2, 179-183. (Liam O'Carroll) 89k:13002 13A17 (13C10, 13C11)
- Two properties of the power series ring. *Internat. J. Math. Math. Sci.* 11 (1988), no. 1, 9-13. (Paul M. Eakin) 89a:13023 13F25
- Al-Farabi, Abu Naṣr Muḥammad ibn Muḥammad ibn Tarkhān see al-Fārabi, Abū Naṣr Muḥammad ibn Muḥammad ibn Tarkhān
- Al-Fargani see al-Fargani
- Alfaro, M. see Alfaro, Manuel
- Alfaro, M. Pilar (with Vigil, Luis) Solution of a problem of P. Turán on zeros of orthogonal polynomials on the unit circle. *J. Approx. Theory* 53 (1988), no. 2, 195-197. (Walter Van Assche) 89f:42020 42C05 (30C15)
- Alfaro, Manuel see Orthogonal polynomials and their applications, 89f:00027
- Alfeld, Peter A case study of multivariate piecewise polynomials. *Geometric modeling*, 149-159, *SIAM, Philadelphia, PA*, 1987. (see 89b:65010) 65D15
- (with Piper, B.; Schumaker, L. L.) Spaces of bivariate splines on triangulations with holes. Proceedings of China-U.S. Joint Conference on Approximation Theory (Hangzhou, 1985). *Approx. Theory Appl.* 3 (1987), no. 4, 1-10. (Rong Qing Jia) 89h:41018 41A15 (41A63, 65D07)
- Alferieff, Michael E. see Akhiezer, N. I. 89e:49001
- Alfonso X see Astronomia Alphonsi Regis, 89m:01026; Bossong, Georg, 89m:01026; Samsó, Julio, 89m:01026; Vernet Ginés, Juan, 89m:01026; North, J. D., 89m:01026; Pouille, Emmanuel, 89m:01026; Casanovas, Juan, 89m:01026; Gingerich, Owen, 89m:01026; Viladrich, Mercè, 89m:01026; Mancha, José Luis, 89m:01026; Puig, Roser, 89m:01026 and Comes, Mercè, 89m:01026
- Alfonso X of Castille see Pouille, Emmanuel, 89h:01018
- Alford, M. G. Q-clouds. *Nuclear Phys. B* 298 (1988), no. 2, 323-332. (Introduction) 89c:81099 81E99
- Al-Fuhaid, A. S. (with Bahnasawi, Ahmed A.; Mahmoud, Magdi S.) Linear feedback approach to the stabilisation of uncertain discrete systems. *Proc. IEE-D* 136 (1989), no. 1, 47-52. (Summary) 89i:93085 93D15 (49D40, 93C55)
- Algoet, Paul H. (with Cover, Thomas M.) Asymptotic optimality and asymptotic equipartition properties of log-optimum investment. *Ann. Probab.* 16 (1988), no. 2, 876-898. (Lorenzo Peccati) 89h:90025 90A09 (93C55, 94A15)
- (with Cover, Thomas M.) A sandwich proof of the Shannon-McMillan-Breiman theorem. *Ann. Probab.* 16 (1988), no. 2, 899-909. (Summary) 89h:94011 94A17 (28D20, 60F15)
- Al-Hammer, A. H. A. (with Anwar, Mohamed Naim Yehia) Numerical solution of multidimensional Stefan problem. *Mathematical analysis and its applications (Kuwait, 1985)*, 229-241, *KFAS Proc. Ser.*, 3, Pergamon, Oxford-Elmsford, NY, 1988. (P. Rochus) 89c:65138 65N99
- Al-Hassan, Q. (with Poore, A. B.) The expanded Lagrangian system for constrained optimization problems. *SIAM J. Control Optim.* 26 (1988), no. 2, 417-427. (K. Schittkowski) 89c:90186 90C30 (65K10)
- Al-Hassār see al-Hassār
- Al-Hawaj, A. Y. (with Khaliq, A. Q. M.) A third order finite-difference method for two-dimensional parabolic equations. *Mathematical analysis and its applications (Kuwait, 1985)*, 281-288, *KFAS Proc. Ser.*, 3, Pergamon, Oxford-Elmsford, NY, 1988. (A. O. Gardner) 89c:65103 65N05
- Al-Hussaini, Ata N. (with Elliott, Robert J.) Comments on some estimates for the empirical distribution. *Rev. Roumaine Math. Pures Appl.* 33 (1988), no. 8, 679-683. (Margaret P. Gessaman) 89i:62052 62G05
- Ali, Agha Iqbal (with Kennington, Jeff; Shetty, Bala) The equal flow problem. *European J. Oper. Res.* 36 (1988), no. 1, 107-115. (Summary) 89c:90078 90B10
- (with Huang, Chung Hsing) Graphical-structure-based models for routing problems. *Internat. J. Systems Sci.* 19 (1988), no. 9, 1667-1686. (Summary) 89h:90079 90B10 (00A71)
- Ali, Asif (with Zaman, F. D.; Asghar, Saleem) An extended variational principle for a composite plate. *Math. Rep. Toyama Univ.* 10 (1987), 127-131. (From the introduction) 89a:35066 35J35 (73K20)
- Ali, Dewan Muslim Quasifuzzy regular spaces. *Math. Soc.* 2 (1986), 103-107 (1987). (Run Sheng Yang) 89c:54009 54A40 (03E72)
- (with Srivastava, Arun Kumar<sup>2</sup>) On fuzzy connectedness. *Fuzzy Sets and Systems* 28 (1988), no. 2, 203-208. (Zike Deng) 89m:54005 54A40 (03E72)
- Ali, Jamaludin Md. Another proof of Napoleon's triangle theorem. (Malay summary) *Menemur Mat.* 10 (1988), no. 1, 34-38. (H. W. Guggenheimer) 89f:51069 51M05 (01A50)
- Ali, K. (with Mishra, M. N.; Nayak, N. N.) Real zeros of a random polynomial. *J. Orissa Math. Soc.* 5 (1986), no. 2, 97-103. (Ken-ichi Yoshihara) 89k:60067 60G99
- Ali, M. (with Zaghrout, Afaf A. S.; Ragab, A. A.; Abdel-sal, M. A.) On periodic solutions of autonomous systems. *Proc. Pakistan Acad. Sci.* 25 (1988), no. 3, 203-230. (T. G. Proctor) 89k:34067 34C27 (34C20)
- Ali, M. A. see Ali, Mohammed Abdulla
- Ali, M. K. (with Gumbs, Godfrey) Dynamical maps, Cantor spectra, and localization for Fibonacci and related quasiperiodic lattices. *Phys. Rev. Lett.* 60 (1988), no. 11, 1081-1084. (Summary) 89c:58104 58F27
- Ali, Mohamed Akkas (with Abu-Salih, M. S.; Titi, S. K.) A method of selecting the levels of regressor variables in lognormal regression model. *Comm. Statist. Theory Methods* 17 (1988), no. 6, 1741-1761. (N. Gafke) 89j:62099 62K05
- (with Abu-Salih, M. S.; Qader, M. A.) Approximate fiducial bounds of reliability of a series system. *J. Inform. Optim. Sci.* 9 (1988), no. 1, 65-72. (S. N. Alam) 89c:62101 62N05 (62A30, 90B25)
- (with Abu-Salih, M. S.; Yousef, M. A. Q.) On some shrinkage techniques for estimating the parameters of exponential distribution. *J. Inform. Optim. Sci.* 9 (1988), no. 2, 207-214. (Title) 89j:62039 62F10
- Ali, Mohammed Abdulla (with Takhar, H. S.; Soundalgekar, V. M.) Effect of radial temperature gradient on the stability of flow in an annulus with constant heat flux at the inner cylinder: wide-gap problem. *J. Franklin Inst.* 325 (1988), no. 5, 609-619. (Summary) 89c:76048 76E15 (76D05, 76U05)
- Ali, S. M. (with Burge, R. E.) New automatic techniques for smoothing and segmenting SAR images. (French and German summaries) *Signal Process.* 14 (1988), no. 4, 335-346. (Not in MR) 93E14 (94A13)
- Ali, S. Twareque Functional analytic methods in stochastic quantum mechanics. Functional integration with emphasis on the Feynman integral (Sherbrooke, PQ, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* No. 17 (1987), 11-46 (1988). (U. Cattaneo) 89i:81029 81C25 (46N05, 81C20)
- (with Brooke, James; Busch, Paul; Gagnon, René; Schroeck, Franklin E., Jr.) Current conservation as a geometric property of space-time. (French summary) *Canad. J. Phys.* 66 (1988), no. 3, 238-244. (R. M. Kadobyan'skii) 89j:81043 81C20
- Ali, Shahid (with Deshmukh, Sharief; Husain, S. I.) Submersions of CR-submanifolds of a Kähler manifold. *Indian J. Pure Appl. Math.* 19 (1988), no. 12, 1185-1205. (Aurel Bejancu) 89m:53094 53C40
- Alibadi, M. H. (with Hall, W. S.; Phemister, T. G.) Taylor expansions in the boundary element method for Neumann problems. *Boundary elements VII, Vol. I, II (Como, 1985)*, 12.31-12.39, *Comput. Mech., Southampton*, 1985. (see 89f:65003) 65R20
- Alilaga, J. (with Negri, Martin Ricardo; Otero, D.; Plastino, A.; Proto, A. N.) Temporal evolution in an effective Hilbert subspace. *Phys. Rev. A* (3) 36 (1987), no. 7, 3427-3440. (Gioseppina Epifanio) 89k:81047 81C99
- (with Otero, D.; Plastino, A.; Proto, A. N.) Quantum thermodynamics and information theory. *Phys. Rev. A* (3) 38 (1988), no. 2, 918-929. (T. W. Barrett) 89f:82029 82A35 (81B99, 94A17)
- Aliakbarov, S. M. Stability of the solutions of a multi-extremal problem. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* 30 (1987), no. 4, 199-202. (M. Mañás) 89d:90210 90C31
- Alieki, Robert (with Lendi, K.) ★ Quantum dynamical semigroups and applications. *Lecture Notes in Physics*, 286, Springer-Verlag, Berlin-New York, 1987. viii+196 pp. ISBN 3-540-18276-4 (A. Barchielli) 89b:81002 81-02 (46L55, 46L60, 47D05, 81K05, 82A15)
- (with Makowiec, Danuta) Functional integrals for parabolic differential equations. II. Time-dependent generators. *J. Phys. A* 20 (1987), no. 5, 1075-1080. (Introduction) 89f:35094 35K15 (35C15, 81C10)
- (with Rudnicki, Sławomir; Sadowski, Sławomir) Symmetry properties of product states for the system of  $N$   $n$ -level atoms. *J. Math. Phys.* 29 (1988), no. 5, 1158-1162. (Suresh V. Lawande) 89f:81283 81K05
- (with Rudnicki, Sławomir; Sadowski, Sławomir) A model of spontaneous emission for randomly distributed fluorescence centers. *Phys. Lett. A* 133 (1988), no. 6, 272-274. (Summary) 89i:81158 81K05
- Alidema, R. I. Frequency conditions for the entry into a sliding state of nonlinear systems with discontinuous characteristics. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 3, 510-511, 550. (Summary) 89a:34060 34D25
- The entrance of solutions of nonautonomous operator equations in sliding regime (conditions). (Russian) *Publ. Inst. Math. (Beograd) (N.S.)* 41(55) (1987), 79-82. (D. Izyumova) 89c:34049a 34D20 (34C10)
- Errata: "The entrance of solutions of nonautonomous operator equations in sliding regime (conditions)". (Russian) *Publ. Inst. Math. (Beograd) (N.S.)* 42(56) (1987), 174. (D. Izyumova) 89c:34049b 34D20 (34C10)
- Global stability of connected pendula. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 2, 265-270; translated in *Soviet Math. Dokl.* 36 (1988), no. 3, 437-442. (From the introduction) 89c:70043 70K20 (34D20, 70K15)
- Al-Idrissi, Abū 'Abdallāh Muḥammad al-Sharīf see al-Idrissi, Abū 'Abdallāh Muḥammad al-Sharīf
- Aldridis, Mustafa M. Linear programming model for the optimal control of a queueing network. *Internat. J. Systems Sci.* 18 (1987), no. 6, 1079-1089. (S. Kalpakam) 89b:90086 90B22 (60K25, 90C05, 93C30, 93C75)
- Aliev, A. A. Two approximate algorithms for solving integer linear programming problems with Boolean variables. (Russian) *Discrete mathematics and computer software (Russian)*, 10-18, *Azerbaijdzhan. Gos. Univ., Baku*, 1986. (see 89b:00011) 90C10
- Aliev, A. B. A one-sided problem for a class of quasilinear hyperbolic operators. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 1, 37-42. (O. Vejvoda) 89c:35104 35L85 (35R45)
- Variational inequalities for quasilinear operators of hyperbolic type. (Russian) *Mat. Zametki* 42 (1987), no. 3, 369-380, 475. (R. G. Airapetyan) 89c:35113 35L85 (35L70, 49A29)
- Unilateral problems for quasilinear hyperbolic operators in function spaces. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 2, 271-275; translated in *Soviet Math. Dokl.* 36 (1988), no. 3, 443-446. (R. G. Airapetyan) 89b:35101 35L85 (35L70, 49A29)
- Global solvability of one-sided problems for quasilinear operators of hyperbolic type. (Russian) *Dokl. Akad. Nauk SSSR* 296 (1988), no. 5, 1033-1036; translated in *Soviet Math. Dokl.* 37 (1988), no. 1, 176-179. (Tie Hu Qin) 89c:35098 35L70 (35L85, 45K05)
- Aliev, A. I. (with Domshlak, Yu. I.) Oscillation properties of solutions of first-order differential equations with retarded argument and with coefficients that do not preserve the sign. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 4, 19-24 (1988). (Binggen Zhang) 89i:34095 34K15
- (with Domshlak, Yu. I.) On oscillatory properties of the first order differential equations with one or two retarded arguments. *Hiroshima Math. J.* 18 (1988), no. 1, 31-46. (J. Jarník) 89d:34110 34K15 (34C15)



- Alliev, A. N. (with Galtsov, D. V.) Energetics of magnetized black holes: effective ergospheres and superradiance. *Astrophys. and Space Sci.* 143 (1988), no. 2, 301-316. (Piotr Bizio) **89h:83011** 83C15 (83C47)
- Alliev, F. A. see Alliev, Fikret Akhmadali oglu
- Alliev, Fakhraddin Abbas oglu (with Maksudov, F. G.) A quasilinear hyperbolic equation. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 6, 1312-1315; translated in *Soviet Math. Dokl.* 37 (1988), no. 3, 821-823. (A. O. Oganessian) **89h:35216** 35L70 (34G20)
- Alliev, Fikret Akhmadali oglu (with Borydyug, B. A.; Larin, V. B.) Frequency methods for solving matrix algebraic Riccati equations. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 8(42) (1987), 1-5, 92. (K. Seitz) **89h:93018** 93B25
- (with Borydyug, B. A.; Larin, V. B.) Frequency methods of solving matrix algebraic Riccati equations. *Soviet J. Comput. Systems Sci.* 25 (1987), no. 6, 154-161 (1988); translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 3, 169-175, 222 (Russian). (O. A. Sebakhy) **89d:93026** 93B25
- Alliev, I. A. Inequalities of Bernstein type in terms of indicator diagrams of entire functions of several variables. (Russian) *Special problems in function theory, No. III* (Russian), 3-11, "Elm", Baku, 1986. (L. I. Ronkin) **89d:32005** 32A15
- (with Shahev, M. F.) A multidimensional analogue of a theorem of Cartwright. (Russian) *Special problems in function theory, No. III* (Russian), 12-18, "Elm", Baku, 1986. (A. Smajdor) **89d:32006** 32A15
- Convex compacta as characteristics of growth in different inequalities in the theory of functions of several variables. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 8-11, Saratov. Gos. Univ., Saratov, 1986. (see **89j:00036**) 41A17
- Riesz transforms generated by a generalized translation operator. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 1, 7-13. (N. K. Karapetyants) **89g:47032** 47B38
- Alliev, I. V. (with Gerasimov, B. P.; Iskander-Zade, F. A.; Popov, Yu. P.) Mathematical modeling of a peristaltic pump. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 55, 22 pp. (Not in MR) **92A09**
- Alliev, N. Ya. Some cases of mappings of surfaces of Euclidean spaces. (Russian) *Studies in geometry* (Russian), 27-41, Azerbaidzhan. Gos. Univ., Baku, 1987. (A. Kh. Khakimov) **89j:53005** 53A07
- Alliev, R. A. (with Panakhov, A. A.; Mamedova, G. A.) Identification of a fuzzy model of industrial production. (Russian) *Decision-making methods and systems. Applied problems in the analysis of solutions in technical systems* (Russian), 36-40, 146, Rizhsk. Politekh. Inst., Riga, 1986. (see **89h:00001**) 90B30 (03E72)
- (with Tserkovnyi, A. E.) Coordination of the functioning of a robotized section in a fuzzy environment. (Russian) *Decision-making methods and systems. Applied problems in the analysis of solutions in technical systems* (Russian), 45-49, 147, Rizhsk. Politekh. Inst., Riga, 1986. (see **89h:00001**) 03E72
- (with Tserkovnyi, A. E.) Representation of knowledge in intelligent robots on the basis of fuzzy sets. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 6, 1292-1295; translated in *Soviet Math. Dokl.* 37 (1988), no. 2, 541-544. (Costică Cazacu) **89h:68138** 68T30 (03E72)
- Alliev, Rafiu M. Some extremal problems for quadrature formulas. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* 43 (1987), no. 6, 3-7. (J. Albricht) **89d:41038** 41A55
- Alliev, S. A. (with Shurenkov, V. M.) Asymptotics of Galton-Watson processes that are close to critical processes. (Russian) *Acad. Asymptotic problems in the theory of random processes* (Russian), 5-6, 113, *Russ. Acad. Sci. Ukrain. SSR Inst. Math.*, Kiev, 1987. (P. Jagers) **89e:60163** 60J80
- Alliev, Sh. Sufficient conditions for the existence of a node for a class of stochastic integro-differential equations of Itô type. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 10-14, 335, "Ilim", Frunze, 1987. (Constantin Tudor) **89e:60123** 60H99
- Alliev, T. G. (with Tamrazov, P. M.) Contour-solid theorems for meromorphic functions allowing for zeros and nonunivalence. (Russian) *Ukrain. Mat. Zh.* 39 (1987), no. 6, 683-690, 813. (Summary) **89c:30073** 30D30 (30E99)
- Alliev, V. T. (with Agalarov, D. G.; Ismailov, V. I.) Error estimates for the numerical solution of a problem of the propagation of visco-nonlinear elastic waves. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 5, 58-62 (1988). (Summary) **89h:73030** 73F15
- Alliev, Z. S. (with Makhmudov, A. P.) On a nonlinear analogue of the implicit method in the theory of perturbations of an isolated eigenvalue. (Russian) *Dokl. Akad. Nauk SSSR* 295 (1987), no. 6, 1306-1309; translated in *Soviet Math. Dokl.* 36 (1988), no. 1, 189-192. (B. V. Loginov) **89d:47087** 47H15 (58C15, 58C40, 65H15, 65J15)
- Alliev, M. G. (with Abbasov, N. T.) Symplectic spaces over the algebra of biquasialternations. (Russian) *Studies in geometry* (Russian), 13-19, Azerbaidzhan. Gos. Univ., Baku, 1987. (V. Cruceanu) **89f:51091** 51N25 (53A40)
- Alifanov, O. M. Derivation of formulas for the gradient of the error in the iterative solution of inverse problems of heat conduction. I. Determination of the gradient in terms of the Green's function. *J. Engrg. Phys.* 52 (1987), no. 3, 352-359; translated from *Inzh.-Fiz. Zh.* 52 (1987), no. 3, 476-485 (Russian). (From the text) **89h:80005** 80A20 (80-08)
- (with Rumyantsev, S. V.) Formulas for the discrepancy gradient in the iterative solution of inverse heat-conduction problems. II. Determining the gradient in terms of a conjugate variable. *J. Engrg. Phys.* 52 (1987), no. 4, 489-495; translated from *Inzh.-Fiz. Zh.* 52 (1987), no. 4, 668-675 (Russian). (L. N. Tao) **89h:80006** 80A20
- (with Rumyantsev, S. V.) Application of iterative regularization for the solution of incorrect inverse problems. *J. Engrg. Phys.* 53 (1987), no. 5, 1335-1342 (1988); translated from *Inzh.-Fiz. Zh.* 53 (1987), no. 5, 843-851 (Russian). (S. L. Kallia) **89h:80002** 80A20
- Alilikos, Nicholas D. (with Hess, Peter) On stabilization of discrete monotone dynamical systems. *Israel J. Math.* 59 (1987), no. 2, 185-194. (Sadakazu Aizawa) **89h:47083** 47H07 (46B30, 47H09)
- (with Simpson, Henry C.) A variational approach for a class of singular perturbation problems and applications. *Proc. Roy. Soc. Edinburgh Sect. A* 107 (1987), no. 1-2, 27-42. (Summary) **89f:35024** 35B25 (49A29)
- (with Bates, Peter W.) On the singular limit in a phase field model of phase transitions. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* 5 (1988), no. 2, 141-178. (Frederick A. Howes) **89h:35109** 35J60 (35B25, 35K35, 82A25)
- (with Bates, Peter W.) An invariance principle for a class of monotone systems and application to degenerate parabolic equations. *Nonlinear Partial Differential Equations Conference* (Salt Lake City, UT, 1986). *Rocky Mountain J. Math.* 18 (1988), no. 2, 215-224. (Joachim Naumann) **89h:35040** 35B40 (35K55, 47H20)
- Ali Khan, M. S. (with Abu-Salih, M. S.) On solving a difference equation. *Univ. Nac. Tucumán Rev. Ser. A* 29 (1979), no. 1, 13-23 (1987). (Not in MR) **39A10**
- (with Abu-Salih, M. S.; Husein, A.) Prediction intervals of order statistics for the mixture of two exponential distributions. *Aligarh J. Statist.* 7 (1987), 11-22. (Summary) **89a:62120** 62G30
- Alkhanova, R. I. (with Atakishieva, R. Kh.) A class of variational inequalities with infinite-order operators with variable coefficients. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 4, 25-30 (1988). (Shuzi Zhou) **89m:35221** 35R50 (35J85, 49A29)
- Alikulov, T. A. Asymptotic reduction of the order of a system of second-order linear differential equations with a small parameter multiplying the derivative. (Russian) *Some problems in the theory of asymptotic methods in nonlinear mechanics* (Russian), 14-20, i, *Akad. Nauk Ukrain. SSR, Inst. Mat.*, Kiev, 1986. (F. Neuman) **89e:34070** 34C20 (34A05, 34A30, 34E05)
- (with Shkil, N. I.) On the construction of solutions of systems of second-order linear differential equations with a small parameter multiplying the derivative. (Russian) *Application of asymptotic methods in the theory of nonlinear differential equations* (Russian), 104-108, vi, *Akad. Nauk Ukrain. SSR, Kiev*, 1987. (Zhivko S. Athanassov) **89d:34016** 34A30 (34A05, 34C20, 34E15)
- Alimov, A. L. A method of data compression for digital correcting of readings of a measuring system. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 7, 981-991, 1117. (Summary) **89f:65017** 65D10 (00A69, 92A05, 94A15)
- Alimov, Sh. A. (with Khalmukhamedov, A. R.) Uniform summability of spectral expansions of continuous functions in  $L_2$ . (Russian) *Equations of mixed type and free boundary value problems* (Russian), 147-156, 252-253, "Fan", Tashkent, 1987. (P. Szeptycki) **89j:35095** 35P10 (35J10)
- (with Bitsadze, A. V.; Dorodnitsyn, A. A.; Erugin, N. P.; Moiseev, E. I.; Samarskii, A. A.; Tikhonov, A. N.) Vladimir Aleksandrovich Il'in (on the occasion of his 60th birthday). (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 5, 739-750. (Editors) **89h:01053** 01A70
- Alimov, Yu. I. see *Nonlinear problems in generalized functions*, **89j:00019**
- Alimović, Branka P. (with Krgović, Dragica N.) On lattices of some congruences on regular semigroups. *Proceedings of the Conference "Algebra and Logic"*, Cetinje 1986, 1-6, *Univ. Novi Sad, Novi Sad*, 1987. (Francis Pastijn) **89c:20087** 20M10 (06B10, 20M17)
- Alinhac, S. Interaction d'ondes simples pour des équations complètement non-linéaires. [Simple wave interaction for completely nonlinear equations] *Hyperbolic equations* (Padua, 1985), 3-10, *Pitman Res. Notes Math. Ser.*, 158, Longman Sci. Tech., Harlow, 1987. (Pascal Laubin) **89a:35139** 35L75 (35A20, 35S05)
- Existence d'ondes de rarefaction pour des écoulements isentropiques. [Existence of rarefaction waves for isentropic flows] *Séminaire sur les équations aux dérivées partielles* 1986-1987, Exp. No. XVI, 16 pp., *École Polytech., Palaiseau*, 1987. (Manuel Milla Miranda) **89h:35089** 35L67
- Interaction d'ondes simples pour des équations complètement non-linéaires. [Simple wave interaction for completely nonlinear systems] *Ann. Sci. École Norm. Sup.* (4) 21 (1988), no. 1, 91-132. (Manuel Milla Miranda) **89h:35220** 35L75 (35A20)
- Alipov, N. V. Design of optimal polychotomous questionnaires for conjecturing the number with wrong answers. (Russian) *Problems of bionics*, No. 38 (Russian), 108-117, iv, "Vishcha Shkola", Kharkov, 1987. (G. O. H. Katona) **89d:94035** 94A50 (68P99)
- Aliprantis, C. D. (with Brown, Donald J.; Burkinshaw, O.) Edgeworth equilibria. *Econometrica* 55 (1987), no. 5, 1109-1137. (Walter Trockel) **89c:90025** 90A14 (46N05)
- (with Brown, Donald J.; Burkinshaw, O.) Edgeworth equilibria in production economies. *J. Econom. Theory* 43 (1987), no. 2, 252-291. (Diethard Pallaschke) **89i:90016** 90A14 (46N05)
- (with Burkinshaw, O.) The fundamental theorems of welfare economics without proper preferences. *J. Math. Econom.* 17 (1988), no. 1, 41-54. (Nicholas C. Yannellis) **89c:90047** 90A14 (46N05)
- Alisaukas, Sigita. Dual bases, generating functions and the symmetry of analytic inversion. (Russian) *Group-theoretic methods in physics, Vol. 2* (Russian) (*Jurmala*, 1985), 68-76, "Nauka", Moscow, 1986. (see **89d:81002**) 22E70 (22E45, 81C40)
- Aliseichik, P. A. The maximal length of a basis in  $P_n$ . (Russian) *Logical-algebraic constructions* (Russian), 6-12, *Kalinin. Gos. Univ., Kalinin*, 1987. (Piotr Wojtylak) **89c:03042** 03B50
- Alisaukas, S. I. see Alisaukas, Sigita
- Aliz, Alix, Miguel A. see Sanz Alix, Miguel A.
- Allyer, F. A. see Alliev, Fikret Akhmadali oglu
- Alj, A. (with Breton, M.; Haurie, A.) Sequential Stackelberg equilibria in two-person games. *J. Optim. Theory Appl.* 59 (1988), no. 1, 71-97. (G. P. Papavasiliopoulos) **89j:90278** 90D05 (90D15, 93A13)
- Al-Jarrah, Radwan. The Pontryagin maximum principle for distributed parameter systems. *Mathematical analysis and systems theory, III*, 27-45, *DM*, 86-5, Karl Marx Univ. Econom., Budapest, 1986. (S. Bhargava) **89e:49015** 49B22 (35R99, 93C20)
- Volterra type operators over abstract domains. (Arabic summary) *Arab J. Math.* 7 (1986), no. 1-2, 19-32. (Summary) **89d:45003** 45D05 (45N05, 47B38, 47G05)
- Al-Jarrah, Radwan. On the Hermite interpolation of entire functions. *Math. Japon.* 33 (1988), no. 2, 167-174. (D. S. Lubinsky) **89g:30070** 30E10 (41A05, 42C05)
- Alkan, Ahmet. Nonexistence of stable threesome matchings. *Math. Social Sci.* 16 (1988), no. 2, 207-209. (Fouad T. Aleskerov) **89m:90006** 90A06
- Al-Karaji, Abū Bakr Muḥammad ibn al-Ḥusain see al-Karaji, Abū Bakr Muḥammad ibn al-Ḥusain
- Al-Khatat, Husain. Initial-value analysis of continuous orthotropic plates. *Comput. Methods Appl. Mech. Engrg.* 69 (1988), no. 2, 153-165. (Summary) **89c:73046** 73K10 (73K30)
- Afkhamov, R. R. A problem of the terminal control of composite systems. (Russian) *Methods for solving boundary value problems in applied mechanics and control* (Russian), 8-12, 80, *Tashkent. Gos. Univ., Tashkent*, 1985. (see **89c:00022**) 93B50
- Al-Kharafi, A. A. (with Evans, David J.) A finite element approach to nonlinear transient problems. *Mathematical analysis and its applications* (Kuwait, 1985), 211-228, *KFAS*

- Proc. Ser.*, 3, Pergamon, Oxford-Elmsford, NY, 1988. (Beny Neta) **89f:65116** 65N30
- Alkhutov, Yu. A. (with Mamedov, I. T.) The class of elliptic equations with the Wiener criterion of regularity of boundary points. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 3, 22–29 (1988). (P. Lindqvist) **89k:35097** 35J67 (31B25, 35J25)
- Removable singularities of solutions of parabolic equations. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 1 (259), 189–190; translated in *Russian Math. Surveys* **43** (1988), no. 1, 229–230. (From the text) **89e:35028** 35B65 (35K25)
- Al-Kühf, see al-Kühf, Abu Sahl Wajjan ibn Rustam
- Al-Kühf, Abu Sahl Wajjan ibn Rustam see al-Kühf, Abu Sahl Wajjan ibn Rustam
- Abdel-All, N. H. see Abdel-All, N. H.
- Abd-Alla, A. N. see Abd-Alla, A. N.
- Alladi, Krishnaswami An introduction to multiplicative number theory. *Workshop on Mathematics of Computer Algorithms (Madras, 1986)*, A.1, 8 pp., *I.M.S. Rep.*, 111, *Inst. Math. Sci., Madras*, 1986. (T. M. Apostol) **89i:1110a** 11N99
- Multiplicative arithmetic functions. *Workshop on Mathematics of Computer Algorithms (Madras, 1986)*, A.2, 9 pp., *I.M.S. Rep.*, 111, *Inst. Math. Sci., Madras*, 1986. (T. M. Apostol) **89i:1110b** 11N99
- The Riemann zeta function and analytic methods. *Workshop on Mathematics of Computer Algorithms (Madras, 1986)*, A.3, 10 pp., *I.M.S. Rep.*, 111, *Inst. Math. Sci., Madras*, 1986. (T. M. Apostol) **89i:1110c** 11N99
- Prime factors. *Workshop on Mathematics of Computer Algorithms (Madras, 1986)*, A.4, 9 pp., *I.M.S. Rep.*, 111, *Inst. Math. Sci., Madras*, 1986. (T. M. Apostol) **89i:1110d** 11N99
- An Erdős-Kac theorem for integers without large prime factors. *Acta Arith.* **49** (1987), no. 1, 81–105. (E. J. Scourfield) **89b:11077** 11N60 (11N25)
- Multiplicative functions and Brun's sieve. *Acta Arith.* **51** (1988), no. 3, 201–219. (Douglas Hensley) **89m:11088** 11N35
- Allain, C. (with Cloitre, M.) Spatial spectrum of a general family of self-similar arrays. *Phys. Rev. A* (3) **36** (1987), no. 12, 5751–5757. (Hanna Nencka) **89k:82086** 82A68 (28A75, 78A45, 82A99)
- Allain, Genevieve (with Colli, Pierluigi) A mathematical study of a muscle contraction model in which the fibre is a resource of elements. *Adv. in Appl. Math.* **9** (1988), no. 1, 104–126. (Mario Primicerio) **89h:92011** 92A09 (35L60, 92A06)
- Allais, Maurice The general theory of random choices in relation to the invariant cardinal utility function and the specific probability function. The  $(U, \theta)$  model: a general overview. *Risk, decision and rationality (Aix-en-Provence, 1986)*, 231–289, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston, MA*, 1988. (Summary) **89k:90019** 90A10 (90A05, 90A08)
- A new neo-Bernoulli theory: the Machina theory. A critical analysis. *Risk, decision and rationality (Aix-en-Provence, 1986)*, 345–403, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston, MA*, 1988. (F. J. Giron) **89d:90029** 90A10
- see also Markets, capital and uncertainty, **89f:90002**; Manier, Bertrand R., (89f:90002); de Monthrial, Thierry, (89f:90002); Malinvaud, Edmond, (89f:90002) and Bibliography: Allais, Maurice, (Not in MR)
- Allakhverdiev, B. P. (with Maksudov, F. G.) Spectral analysis of polynomial operator pencils with a continuous-point spectrum. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **43** (1987), no. 1, 3–7. (T. Ya. Azizov) **89f:47023** 47A56 (47A10)
- Allakhverdiev, Dz. E. (with Dzhaharade, R. M.) Abstract separation of variables. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 2, 269–271; translated in *Soviet Math. Dokl.* **37** (1988), no. 3, 636–638. (D. Przeworska-Rolewicz) **89b:47014** 47A50 (47A70)
- Allam, A. A. (with Mashhour, A. S.; Hasanein, I. A.; Abd El-Hakeim, K. M.) On strongly compactness. *Bull. Calcutta Math. Soc.* **79** (1987), no. 4, 243–248. (M. K. Vamana-murthy) **89g:54049** 54D10 (54D30)
- (with Mashhour, A. S.; Abd El-Hakeim, K. M.) On fuzzy semicompact spaces. (Arabic summary) *Bull. Fac. Sci. Assiut Univ.* **16** (1987), no. 1, 277–285. (Not in MR) **54A40** (03E72)
- (with Zahran, A. M.; Hasanein, I. A.) On almost continuous,  $S$ -continuous and set connected mappings. *Indian J. Pure Appl. Math.* **18** (1987), no. 11, 991–996. (Shantha Bose) **89d:54005** 54C10 (54C08)
- Allan, Frances Elizabeth see Field, J. B. F. et al., **89m:01088**
- Allan, G. R. (with O'Farrell, Anthony G.; Ransford, T. J.) A Tauberian theorem arising in operator theory. *Bull. London Math. Soc.* **19** (1987), no. 6, 537–545. (Sandy Grabiner) **89c:47003** 47A10 (30B30, 40E05, 46H30, 46J05)
- Allan, Robert (with Domke, Gayla S.; Hedetniemi, S. T.; Laskar, R.) Generalized packings and coverings of graphs. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **62** (1988), 259–270. (J. W. Moon) **89i:05212** 05C70
- Allard, André L'époque d'Adelard et les chiffres arabes dans les manuscrits latins d'arithmétique. [The era of Adelard and Arabic numerals in Latin arithmetic manuscripts] *Adelard of Bath*, 37–43, *Warburg Inst. Surveys Texts, XIV, Warburg Inst., London*, 1987. (see **89c:01017**) 01A35
- Allard, Jacques (with Errico, Darrel; Reed, William J.) Irreversible investment and optimal forest exploitation. *Natur. Resource Modeling* **2** (1988), no. 4, 581–597. (Not in MR) **90A30**
- Allard, William K. Notes on the theory of varifolds. (French summary) *Théorie des variétés minimales et applications* (Palaiseau, 1983–1984). *Astérisque No. 154-155* (1987), 8, 73–93, 349–350 (1988). (see **89g:58052**) 49F22 (58E15)
- Allen, Bruce Stochastic gravity-wave background in inflationary-universe models. *Phys. Rev. D* (3) **37** (1988), no. 8, 2078–2085. (Summary) **89b:83097** 83F05
- (with Pathinayake, Chandra; Vilenkin, Alexander) Massless scalar and antisymmetric tensor fields in de Sitter space. *Phys. Rev. D* (3) **37** (1988), no. 10, 2872–2877. (Summary) **89b:81160** 81E20 (83C47)
- Allen, Myron B., III (with Herrera, I.; Pinder, G. F.) Numerical modeling in science and engineering. A Wiley-Interscience Publication. John Wiley & Sons, Inc., New York, 1988. xii+418 pp. ISBN 0-471-80635-8 (G. W. Hedstrom) **89g:65002** 65-01 (00A69, 00A71)
- Allen, P. J. (with Hobby, C.) A characterization of units in  $ZS_n$ . *Comm. Algebra* **16** (1988), no. 7, 1479–1505. (S. K. Sehgal) **89g:20005** 20C05 (16A26)
- Allen, Sture see Possible worlds in humanities, arts and sciences, **89j:00033**
- Allen, Theodore J. The Dirac propagator from pseudoclassical mechanics. *Phys. Lett. B* **214** (1988), no. 1, 87–90. (Summary) **89i:81036** 81C25
- Allende Alonso, Sira M. (with Bouza Herrera, Carlos N.) Optimization criteria for multivariate strata construction. *Approximation and optimization (Havana, 1987)*, 227–233, *Lecture Notes in Math.*, 1354, Springer, Berlin-New York, 1988. (see **89k:41001**) 62D05
- Allevi, Elisabetta A class of (+)-inverse semirings. (Italian. English summary) *Istit. Lombardo Accad. Sci. Lett. Rend. A* **119** (1985), 89–107 (1987). (M. Stefanescu) **89b:16047** 16A78 (16A76)
- Some congruences on (+)-conventional semirings. (Italian. English summary) *Istit. Lombardo Accad. Sci. Lett. Rend. A* **120** (1986), 3–16 (1987). (M. Stefanescu) **89b:16048** 16A78 (16A76)
- Allgower, E. L. (with Chien, Cheng Sheng) Continuation and local perturbation for multiple bifurcations. *SIAM J. Sci. Statist. Comput.* **7** (1986), no. 4, 1265–1281. (Summary) **89a:65095** 65J15 (58C15, 58E07)
- (with Böhmer, Klaus) Resolving singular nonlinear equations. *Nonlinear Partial Differential Equations Conference (Salt Lake City, UT, 1986)*. *Rocky Mountain J. Math.* **18** (1988), no. 2, 225–268. (Hubertus Th. Jongen) **89h:58040** 58E07 (47H15, 58C27)
- Alliger, George M. (with Alexander, Ralph A.; Barrett, Gerald V.; Carson, Kenneth P.) Towards a general model of nonrandom sampling and the impact on population correlation: generalizations of Berkson's fallacy and restriction of range. *British J. Math. Statist. Psych.* **39** (1986), no. 1, 90–105. (Title) **89h:62173** 62P15
- Alligood, Kathleen T. (with Yorke, E. D.; Yorke, James A.) Why period-doubling cascades occur: periodic orbit creation followed by stability shedding. *Phys. D* **28** (1987), no. 1–2, 197–205. (Russell B. Walker) **89b:58145** 58F14 (58F13)
- Alline, Stefano On certain independence systems. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **2** (1988), no. 2, 279–291. (Jiri Tuma) **89i:05076** 05B35
- Alling, Norman L. Neumann-complete formal power series fields. *C. R. Math. Rep. Acad. Sci. Canada* **9** (1987), no. 5, 247–252. (Niel Shell) **89a:12018** 12J99
- Allison, B. N. Tensor products of composition algebras, Albert forms and some exceptional simple Lie algebras. *Trans. Amer. Math. Soc.* **306** (1988), no. 2, 667–695. (Hyo C. Myung) **89c:17004** 17A75 (11E04, 17B25, 17B70)
- Allison, Dean Energy conditions in standard static spacetimes. *Gen. Relativity Gravitation* **20** (1988), no. 2, 115–122. (J. K. Beem) **89d:53110** 53C50 (53C60, 83C75)
- Geodesic completeness in static space-times. *Geom. Dedicata* **26** (1988), no. 1, 85–97. (Martin A. Magid) **89h:53123** 53C50
- Allouch, D. (with Weil, Juergen W.; Hocquemiller, J.; Mézard, A.; Vaillant, J.-C.; Delorme, C.; Lavit, Christine; Raoult, J.-C.) ★ Rozpracovaná řešení úloh z vyšší algebry. (Czech) [Worked-out solutions for exercises in higher algebra] Translated from the French and with a preface by Ladislav Beran. *Academia [Publishing House of the Czechoslovak Academy of Sciences]*, Prague, 1987. 653 pp. (Editors) **89i:00014** 00A07 (00A05)
- Allouch, Jean-Paul (with Peyrière, Jacques) Sur une formule de récurrence sur les traces de produits de matrices associées à certaines substitutions. (English summary) [On a recursion relation for traces of products of  $2 \times 2$  matrices generated by certain substitution rules] *C. R. Acad. Sci. Paris Sér. II Mé. Phys. Chim. Sci. Univ. Sci. Terre* **302** (1986), no. 18, 1135–1136. (George P. Barker) **89k:15007** 15A15 (20B99, 82A99)
- (with Cohen, Henri; Mendes France, M.; Shallit, Jeffrey) De nouveaux curieux produits infinis. [Some new curious infinite products] *Acta Arith.* **49** (1987), no. 2, 141–153. (R. G. Stoneham) **89f:11022** 11A63
- (with Deshouillers, Jean-Marc) Répartition de la suite des puissances d'une série formelle algébrique. (English summary) [Distribution of the sequence of powers of a formal algebraic series] *Colloque de Théorie Analytique des Nombres "Jean Coquet" (Marseille, 1985)*, 37–47, *Publ. Math. Orsay*, 88-02, *Univ. Paris XI, Orsay*, 1988. (Marie-José Bertin) **89i:11088** 11K36 (11K38, 11K55)
- Tours de Hanoi et automates finis. [Towers of Hanoi and finite automata] *Groupe de travail en théorie analytique et élémentaire des nombres, 1986–1987*, 1–3, *Publ. Math. Orsay*, 88-01, *Univ. Paris XI, Orsay*, 1988. (see **89b:11004**) 11Y16 (11A63, 68Q20)
- (with Randé, Bernard; Thimonier, Loys) Fonctions génératrices transcendentes à coefficients engendrés par automates. (English summary) [Transcendental generating functions with coefficients generated by automata] *STACS 88 (Bordeaux, 1988)*, 170–183, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (Summary) **89c:68079** 68Q99 (11J81, 11K31, 68Q05, 68Q45)
- Sur le développement en fraction continue de certaines séries formelles. (English summary) [On the continued fraction expansion of some formal power series] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 12, 631–633. (W. H. Mills) **89m:11067** 11J70
- Automates finis, arithmétique et systèmes dynamiques. (English summary) [Finite automata, arithmetic and dynamical systems] *Rev. Mat. Ipl.* **9** (1988), no. 2, 1–8. (Summary) **89f:11027** 11B37 (11K31, 68Q70)
- Allston, J. L. (with Buskens, R. W.; Stanton, R. G.) Seventeen quadruples on seventeen points. *J. Combin. Math. Combin. Comput.* **3** (1988), 97–104. (Derek Smith) **89c:05027** 05B05
- (with Buskens, R. W.; Stanton, R. G.) An examination of the nonisomorphic solutions to a problem in covering designs on fifteen points. *J. Combin. Math. Combin. Comput.* **4** (1988), 189–206. (W. H. Mills) **89m:05038** 05B40
- Allton, C. R. (with Hamer, C. J.) The  $(1 + 1)D(2)$  model: a finite lattice analysis. *J. Phys. A* **21** (1988), no. 10, 2417–2429. (Summary) **89g:82020** 82A25 (82-04, 82A68)
- Allwright, J. C. Positive semidefinite matrices: characterization via conical hulls and least-squares solution of a matrix equation. *SIAM J. Control Optim.* **26** (1988), no. 3, 537–556. (François Robert) **89c:65034** 65F05 (15A57, 90C25)
- Al-Madi, Azmi K. On translitivity of absolute weighted mean methods. *Bull. Calcutta Math. Soc.* **79** (1987), no. 4, 235–241. (B. Kuttner) **89c:40007** 40G99
- On translitivity of the product of Nörlund-weighted mean summability methods. *Punjab Univ. J. Math. (Lahore)* **20** (1987), 33–42. (B. Kuttner) **89c:40005** 40C05
- On translitivity of absolute Rogosinski-Bernstein summability methods. *Internat. J. Math. Math. Sci.* **11** (1988), no. 3, 517–521. (Shri Nivas Bhatt) **89j:40004** 40F05 (40G99)
- Al-Mahmood, M. (with Hamdy, H. I.; Son, M.-S.) On the distribution of bivariate  $F$ -variable. *Comput. Statist. Data Anal.* **6** (1988), no. 2, 157–164. (Not in MR) **62E15**
- Almamedov, M. S. (with Aslanov, A. A.; Isaev, G. A.) Tensor determinants that are connected with multiparameter spectral problems. (Russian) *Izv. Vyssh. Uchebn. Zaved.*



- Mat. 1987, no. 11, 3–8, 87. (L. Rodman) **89d:47081** 47B99 (47A70)
- Spectrum of a fourth-order linear integro-differential operator. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 3, 525–529; translated in *Soviet Math. Dokl.* **37** (1988), no. 2, 385–389. (D. Bainov) **89d:47075** 47G05 (45J05)
- Al-Ma'mūn** see **al-Ma'mūn**
- Almazov, M.** (with Kulich, G. L.) On the asymptotic behavior of the unstable solution of an inhomogeneous stochastic diffusion equation. (Russian) *Theory of random processes*, No. 15 (Russian), 3–10, 117, "Naukova Dumka", Kiev, 1987. (G. A. Sokhadze) **89c:60066** 60H10
- Finding the explicit form of the transition density of the solution of a stochastic diffusion equation with a piecewise constant drift coefficient. (Russian) *Vychisl. Prikl. Mat. (Kiev)* **61** (1987), 99–105, 132. (J. M. Stoyanov) **89d:60100** 60H10 (60J35)
- Behavior of the solution of a stochastic diffusion equation under unbounded growth of the drift coefficient on a finite segment. (Russian) *Teor. Veroyatnost. i Mat. Statist.* **39** (1988), 3–4, 125. (Ralf Manthey) **89g:60181** 60H10 (60J60)
- osorio de Almeida, A. M.** see **Ozorio de Almeida, A. M.**
- Almeida, D. F.** (with Sharma, C. S.) Semilinear operators. *J. Math. Phys.* **29** (1988), no. 11, 2411–2420. (J. Dancs) **89g:47099** 47H12 (47A05)
- d'Almeida, Filomena Dias** (with Rodrigues, Maria João) Is the iterative refinement of eigenlements an expensive technique? Proceedings of the 2nd international conference on computational and applied mathematics (Leuven, 1986). *J. Comput. Appl. Math.* **20** (1987), Special Issue, 159–166. (M. Z. Nashed) **89b:65134** 65J10 (49G05, 65R20)
- Almeida, Jorge** Overlapping of words in rational languages. *Combinatorics on words (Waterloo, Ont., 1982)*, 119–131, Academic Press, Toronto, ON, 1983. (Juhani Karhumäki) **89a:68171** 68R05 (20M35, 68Q45)
- Residually finite congruences and quasiregular subsets in uniform algebras. (Portuguese) *Proceedings of the Second Meeting of Portuguese Algebraists (Portuguese) (Porto, 1987)*, 11–31, Univ. Porto, Porto, 1987. (Manfred Armbrust) **89f:08004** 08A30 (08B20, 22A30)
- On pseudovarieties of monoids. *Semigroups, theory and applications (Oberwolfach, 1986)*, 11–17, Lecture Notes in Math., 1320, Springer, Berlin-New York, 1988. (Francis Pastijn) **89c:20004** 20M07
- A notion of branching rank for semilattices with descending chain condition. *Order* **4** (1988), no. 4, 397–409. (W. Wiley Williams) **89e:06004** 06A12
- Some pseudovariety joins involving the pseudovariety of finite groups. *Semigroup Forum* **37** (1988), no. 1, 53–57. (P. R. Jones) **89c:20084** 20M07 (08B15)
- On power varieties of semigroups. *J. Algebra* **120** (1989), no. 1, 1–17. (G. Pollák) **89j:20062** 20M07 (20M35)
- see also *Proceedings: Meeting of Portuguese Algebraists*, **89a:00020**
- Almeida, P.** Noncommutative Poincaré complex. *Geometry Seminars, 1987–1988 (Italian) (Bologna, 1987–1988)*, 19–39, Univ. Stud. Bologna, Bologna, 1988. (Akira Asada) **89a:58006** 58A10 (22E05)
- de Almeida, Rita M. C.** (with Iglesias, J. R.) Towards statistical mechanics of a 2D random cellular structure. *J. Phys. A* **21** (1988), no. 16, 3365–3377. (Summary) **89i:82112** 82A99 (82A30, 82A65, 92A05)
- de Almeida da Silva, M. A.** (with Barcelos-Neto, J.; Braga, N. R. F.) Canonical quantization of the  $\sigma$ -model with torsion in superspace. *Z. Phys. C* **38** (1988), no. 4, 619–622. (C. Gauthier) **89f:81126** 81E20 (58E20, 81D07, 81G20)
- Almgren, F.** Applications of multiple-valued functions. *Geometric modeling*, 43–54, SIAM, Philadelphia, PA, 1987. (see **89b:65010**) **65D10** (49A50, 49F10, 58E12)
- Basic techniques of geometric measure theory. (French summary) *Théorie des variétés minimales et applications (Palaiseau, 1983–1984)*. *Astérisque* **No. 154** (1987), 11, 267–306, 352 (1988). (see **89g:58052**) **49F20**
- Spherical symmetrization. Proceedings of the International Workshop on Integral Functionals in the Calculus of Variations (Trieste, 1985). *Rend. Circ. Mat. Palermo (2) Suppl.* **No. 15** (1987), 11–25. (J. E. Brothers) **89b:49037** 49F22
- Al-Minawi, Hala** Extreme points and convexity of balls in a class of function spaces. *Math. Rep. Toyama Univ.* **10** (1987), 63–74. (W. H. Ruckle) **89a:46063** 46E30
- Almirantis, Y.** (with Nicolis, G.) Morphogenesis in an asymmetric medium. *Bull. Math. Biol.* **49** (1987), no. 5, 519–530. (Summary) **89a:92003** 92A05
- Almkvist, Gert** (with Berndt, Bruce) Gauss, Landen, Ramanujan, the arithmetic-geometric mean, ellipses,  $\pi$ , and the *Ladies diary*. *Amer. Math. Monthly* **95** (1988), no. 7, 585–608. (R. A. Askey) **89j:01028** 01A50 (01A55, 01A60, 33A25)
- Almorox, Antonio López** Graded manifolds and supergauge theories. *Differential geometry and its applications, communications (Brno, 1986)*, 23–32, Univ. J. E. Purkyně, Brno, 1987. (Roberto Cianci) **89c:58012** 58A50 (53C08, 81E13, 83E50)
- Almoyan, R. G.** (with Mardzhanyan, G. G.; Safaryan, A. G.; Martirosyan, G. A.) Comparative analysis of Pontryagin's maximum principle with the gradient method in the optimization of the process of paraffin synthesis of allylacetate. (Russian. Armenian summary) *Izv. Akad. Nauk Armyan. SSR Ser. Tekhn. Nauk* **41** (1988), no. 2, 35–39, 49. (Summary) **89f:92074** 92A40 (49B22, 49D07)
- Alnader, N. G.** (with Chakraborty, Keropé B.) Factorizations of finite simple groups. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 2, 9. (M. E. Harris) **89b:20055** 20D40
- Al-Naqash, Abd Isahq Ibrahim b. Yahya** see **Al-Naqash, Abd Isahq Ibrahim b. Yahya**
- Al-Nowalhi, Ali** see **al-Nowalhi, Ali**
- Alon, Noga** Asynchronous threshold networks. *Graphs Combin.* **1** (1985), no. 4, 305–310. (Summary) **89e:90079** 90B10 (05C99, 94C15)
- Decomposition of the complete  $r$ -graph into complete  $r$ -partite  $r$ -graphs. *Graphs Combin.* **2** (1986), no. 2, 95–100. (G. W. Peck) **89e:05151** 05C70
- (with Galil, Zvi; Milman, Vitali D.) Better expanders and superconcentrators. *J. Algorithms* **8** (1987), no. 3, 337–347. (Summary) **89f:68023** 68Q20 (05C75, 68R10)
- (with Kleitman, D. J.; Thomassen, Carsten; Saks, M. E.; Seymour, Paul D.) Subgraphs of large connectivity and chromatic number in graphs of large chromatic number. *J. Graph Theory* **11** (1987), no. 3, 367–371. (Introduction) **89e:05131** 05C40 (05C15)
- (with Trotter, W. T.; West, Douglas B.) Regressions and monotone chains. II. The poset of integer intervals. *Order* **4** (1987), no. 2, 155–164. (Joseph Neggers) **89c:06002** 06A10 (05A99)
- Sums of subsequences modulo prime powers. *Discrete Math.* **71** (1988), no. 1, 87–88. (Paula A. Kemp) **89e:11014** 11B50
- (with Bregman, Z.) Every  $k$ -uniform  $k$ -regular hypergraph is 2-colorable. *Graphs Combin.* **4** (1988), no. 4, 303–305. (R. H. Schelp) **89g:05053** 05C65 (05C15)
- (with Bergmann, E. E.; Coppersmith, Don; Odlyzko, A. M.) Balancing sets of vectors. *IEEE Trans. Inform. Theory* **34** (1988), no. 1, 128–130. (K. Seitz) **89i:94034** 94B05 (94A12)
- The linear arboricity of graphs. *Israel J. Math.* **62** (1988), no. 3, 311–325. (Pavel Tomasta) **89m:05086** 05C70
- (with Scheinerman, Edward R.) Degrees of freedom versus dimension for containment orders. *Order* **5** (1988), no. 1, 11–16. (V. Novák) **89g:06002** 06A10
- (with Azar, Y.) The average complexity of deterministic and randomized parallel comparison-sorting algorithms. *SIAM J. Comput.* **17** (1988), no. 6, 1178–1192. (Ingo Wegener) **89k:68022** 68P10 (68Q25)
- (with Azar, Y.) Sorting, approximate sorting, and searching in rounds. *SIAM J. Discrete Math.* **1** (1988), no. 3, 269–280. (Ian Parberry) **89m:68030** 68Q10 (68P10)
- Alonso, Alberto** A counterexample on the continuity of conditional expectations. *J. Math. Anal. Appl.* **129** (1988), no. 1, 1–5. (M. M. Rao) **89b:60118** 60G42 (28A20, 60A10, 60F15)
- valiño Alonso, Baldomero** see **Valiño Alonso, Baldomero**
- peral Alonso, I.** see **Peral Alonso, I.**
- Alonso, Javier** see **Alonso Romero, Javier**
- hermida Alonso, José Ángel** see **Hermida Alonso, José Ángel**
- Alonso, L.** (with Pérez, J. M.; Villar, E.) Composition rules for a binary tree with respect to a block diagram of a sampled system. (Spanish) *Rev. Inform. Automat.* **21** (1988), no. 2, 33–47. (Not in MR) **93C57**
- (with Pérez, J. M.; Villar, E.) Composition rules for a binary tree with respect to a block diagram of a sampled system. II. (Spanish) *Rev. Inform. Automat.* **21** (1988), no. 3, 47–53. (Not in MR) **93C57**
- Alonso, Rodrigo** (with Arias, Rodrigo; Zamorano, Nelson) Kerr-Schild generalized metrics. *SILARG, VI (Rio de Janeiro, 1987)*, 125–134, World Sci. Publishing, Singapore, 1988. (A. H. Taub) **89f:83016** 83C15
- allende Alonso, Sira M.** see **Allende Alonso, Sira M.**
- Alonso Romero, Javier** (with Benítez, Carlos) The Joly's construction: a common property of some generalized orthogonalities. *Bull. Soc. Math. Belg. Sér. B* **39** (1987), no. 3, 277–285. (J. Strommer) **89a:51032** 51F20
- Alonso Tarrío, Leovigildo M.** A cardinality theorem for fibers. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish) (Badajoz, 1986)*, 11–16, Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (Tomás Sánchez-Giralda) **89i:14008** 14E22 (13B15)
- Alonso y Coria, Alberto** (with Abreu, José Luis) On a condition for a Banach space to be a Hilbert space. (Spanish) *Research program of the XVIIIth national congress of the Mexican Mathematical Society (Spanish) (Mérida, 1984)*, 1–7, Aportaciones Mat.: Comun., 1, Soc. Mat. Mexicana, Mexico City, 1986. (Ioan Şerb) **89g:46045** 46C05 (46B05)
- Al-Osh, M.** (with Alzaid, A.) First-order integer-valued autoregressive (INAR(1)) process. *J. Time Ser. Anal.* **8** (1987), no. 3, 261–275. (M. Arató) **89a:62191** 62M10
- (with Alzaid, A.; Ahmed, A. N.) On the NBAFR (NWAFR) class of life distributions. *Statist. Hefte* **28** (1987), no. 3, 203–216. (Summary) **89k:62123** 62N05 (62F03)
- (with Alzaid, A.) First-order integer-valued autoregressive (INAR(1)) process: distributional and regression properties. *Statist. Neerlandica* **42** (1988), no. 1, 53–61. (Summary) **89f:62014** 62M10
- Alpay, Daniel** (with Dym, Harry) On applications of reproducing kernel spaces to the Schur algorithm and rational  $J$  unitary factorization. *I. Schur methods in operator theory and signal processing*, 89–159, *Oper. Theory. Adv. Appl.*, 18, Birkhäuser, Basel-Boston, MA, 1986. (Heinz Langer) **89g:46051** 46E20 (15A23, 30D50, 46D05, 47B38)
- Some Krein spaces of analytic functions and an inverse scattering problem. *Michigan Math. J.* **34** (1987), no. 3, 349–359. (J. Rovnyak) **89a:47013** 47A45 (46D05, 46E20, 47B50)
- Alpay, Şafak** A note on direct limits. (Turkish summary) *İstanbul Üniv. Fen Fak. Mecm. Ser. A* **43** (1978), 39–48 (1987). (C. D. Aliprantis) **89g:46010** 46A40 (46M15)
- On majorization of collectively compact operators. (Turkish summary) *J. Karadeniz Univ. Fac. Arts Sci. Ser. Math.-Phys.* **8** (1985), 25–29. (Manfred Wolff) **89b:47055** 47B55 (46A40)
- Alperin, J. L.** Cohomology is representation theory. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 3–11, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (P. Donovan) **89b:20031** 20C20 (20J06)
- Weights for finite groups. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 369–379, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Jorn B. Olsson) **89b:20015** 20C20
- Loewy structure of permutation modules for  $p$ -groups. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 154, 129–133. (Reiner Staszewski) **89f:20005** 20C05 (16A26)
- Alperin, Roger** (with Bass, Hyman) Length functions of group actions on  $A$ -trees. *Combinatorial group theory and topology (Alta, Utah, 1984)*, 265–378, *Ann. of Math. Stud.*, 111, Princeton Univ. Press, Princeton, NJ, 1987. (A. H. M. Hoare) **89c:20057** 20F32 (57M99)
- An elementary account of Selberg's lemma. *Enseign. Math.* (2) **33** (1987), no. 3–4, 269–273. (A. E. Zaleskii) **89f:20051** 20H20
- Alpern, Steve** (with Prasad, V. S.) End behaviour and ergodicity for homeomorphisms of manifolds with finitely many ends. *Canad. J. Math.* **39** (1987), no. 2, 473–491. (Peter Walters) **89a:28013** 28D05 (58F11)
- (with Prasad, V. S.) Weak mixing manifold homeomorphisms preserving an infinite measure. *Canad. J. Math.* **39** (1987), no. 6, 1475–1488. (Peter Walters) **89a:28014** 28D05 (58F11)
- (with Choksi, J. R.; Prasad, V. S.) Conjugates of infinite measure preserving transformations. *Canad. J. Math.* **40** (1988), no. 3, 742–749. (Nathaniel Friedman) **89m:28026** 28D05 (58F11)
- (with Prasad, V. S.) Dynamics induced on the ends of a noncompact manifold. *Ergodic Theory Dynamical Systems* **8** (1988), no. 1, 1–15. (Pawel Gora) **89e:58069** 58F11 (28D05)
- Area-preserving homeomorphisms of the open disk without fixed points. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 624–626. (Helga Schirmer) **89e:55003** 55M20 (28A99, 54H25, 57N05, 58C30)
- Game with repeated decisions. *SIAM J. Control Optim.* **26** (1988), no. 2, 468–477. (Sylvain Sorin) **89e:90222** 90D10

- (with Gal, Shmuel) A mixed-strategy minimax theorem without compactness. *SIAM J. Control Optim.* **26** (1988), no. 6, 1357–1361. (Milan Mares) **89j:90185** 90D05 (90D13)
- Alperstein, Hanna** Optimal pricing policy for the service facility offering a set of priority prices. *Management Sci.* **34** (1988), no. 5, 666–671. (Summary) **89a:90038** 90A12 (90B22)
- Al-Rahmani, Hamed M.** (with Franklin, Gene F.) Linear periodic systems: eigenvalue assignment using discrete periodic feedback. *IEEE Trans. Automat. Control* **34** (1989), no. 1, 99–103. (Arno Linnemann) **89j:93052** 93B60 (49D50, 93C05)
- Al-Rashed, A. M.** (with Hemdan, H. T.) Solution of the generalized cube and octahedron functional equations. *Utilitas Math.* **33** (1988), 123–135. (Hiroshi Haruki) **89f:39009** 39B40
- Al-Rawwash, Hussein** (with Marden, John I.) Dominating inadmissible tests in exponential family models. *Statistical decision theory and related topics, IV, Vol. 2* (West Lafayette, Ind., 1986), 225–237, Springer, New York-Berlin, 1988. (Constantine Gatsonis) **89h:62035** 62F03 (62C15)
- Al-Razi, Fakhr al-Din Muhammad ibn 'Umar** see **al-Razi, Fakhr al-Din Muhammad ibn 'Umar**
- Al-Saad, A.** (with Bann, I. M.) Ideal-preserving Lorentzian connections. *J. Math. Phys.* **28** (1987), no. 8, 1883–1885. (Guido Karrer) **89c:53046** 53C50 (53A50, 81E20)
- Al-Sadah, Fayed S. H.** (with Khaliq, A. Q. M.; Bashir, M.) Finite difference analysis for Navier-Stokes and energy equations of Couette-Poiseuille flow. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 71–81, North-Holland, Amsterdam-New York, 1988. (see **89b:00021**) 76-08 (76D05, 80A20)
- Al-Sagoff, Ushid M.** (with Franklin, Gene F.) Model reduction via balanced realizations: an extension and frequency weighting techniques. *IEEE Trans. Automat. Control* **33** (1988), no. 7, 687–692. (Not in MR) **93B15**
- Al-Salman, Salman A.** (with Al-Thukair, Fawzi A.) On finite (2, 3, 6) groups. *Math. Japon.* **33** (1988), no. 1, 1–15. (Koichiro Harada) **89b:20057** 20D99
- Al-Saqabi, Bader** (with Kalla, S. L.; Conde, Salvador) Some results related to radiation-field problems. *Hadronic J.* **10** (1987), no. 4, 221–230. (Wolfgang Bühring) **89d:78023** 78A40 (33A30)
- Alseda i Soler, Lluís** (with Llibre, Jaume; Mañosas, Francesc; Misiurewicz, Michał) Lower bounds of the topological entropy for continuous maps of the circle of degree one. *Nonlinearity* **1** (1988), no. 3, 463–479. (Lúcia Helena Vilas Bôas Mendes) **89m:58119** 58F11 (58F22, 58F25)
- Alshamali, J. G.** (with Hadid, S. B.) Liapunov stability of differential equations of noninteger order. (Arabic summary) *Arab J. Math.* **7** (1986), no. 1–2, 5–17. (B. M. Garay) **89g:34069** 34D20 (26A33, 34C11)
- Alshanskii, L. A.** Some varieties of representations of semigroups. (Russian) *Ural. Gos. Univ. Mat. Zap.* **14** (1987), no. 2 Issled. Algebr. Sist. po Svoist. ikh Podstiz., 4–15, i. (Dragan Blagojević) **89g:20098** 20M30
- (with Vovsi, S. M.) Identities of triangular products of representations of semigroups. (Russian) *Lav. Mat. Ezhegodnik* **No. 31** (1988), 95–102, 252. (B. Pondělíček) **89d:20053** 20M30
- Alsina, C.** The esthetics and usefulness of functional equations. *Functional equations: history, applications and theory*, 13–15, Math. Appl., Reidel, Dordrecht-Boston, MA, 1984. (see **89b:39002**) 00A69
- Truncations of distribution functions. *Functional equations: history, applications and theory*, 161–165, Math. Appl., Reidel, Dordrecht-Boston, MA, 1984. (Claudia Klüppelberg) **89g:60058** 60E99 (39B99)
- (with Trillas, E.) Additive homogeneity of logical connectives for membership functions. *Analysis of fuzzy information, Vol. 1*, 179–183, CRC, Boca Raton, FL, 1987. (Siegfried Gottwald) **89a:03056** 03B52 (03E72)
- (with Schweizer, B.) Mixtures are not derivable. *Found. Phys. Lett.* **1** (1988), no. 2, 171–174. (Lin-Cheng Zhao) **89i:60039** 60E99
- On a functional equation characterizing two binary operations on the space of membership functions. *Mathematics and fuzziness, Part 1* (Palma, 1985). *Fuzzy Sets and Systems* **27** (1988), no. 1, 5–9. (Summary) **89d:03050** 03E72
- The solution of the functional equation:  $\tau(aF(j-b), aG(j-c)) = \tau(F, G)(j-b-c)$ . (Serbo-Croatian summary) *Glas. Mat. Ser. III* **23** (43) (1988), no. 1, 41–44. (Summary) **89m:39016** 39B70 (39B30, 60E99)
- (with Aguilar-Martin, J.) Characterizations of some rescaling functions. *Inform. Process. Lett.* **28** (1988), no. 3, 127–132. (B. Crstici) **89m:39013** 39B20
- (with Ger, R.) On associative copulas uniformly close. *Internat. J. Math. Math. Sci.* **11** (1988), no. 3, 439–448. (P. Dragila) **89f:39008** 39B30 (62E15)
- (with Tomás, M. S.) Smooth convex  $t$ -norms do not exist. *Proc. Amer. Math. Soc.* **102** (1988), no. 2, 317–320. (B. Schweizer) **89c:39010** 39B05 (26A51)
- Al-Sirehy, Fatma S.** (with Ghanim, M. H.) Topological modification of a fuzzy closure space. *Fuzzy Sets and Systems* **27** (1988), no. 2, 211–215. (O. Costinescu) **89j:54006** 54A40 (03E72)
- Alsmeyer, Gerold** Second-order approximations for certain stopped sums in extended renewal theory. *Adv. in Appl. Probab.* **20** (1988), no. 2, 391–410. (M. B. Woodroofe) **89d:60156** 60K05 (60F05)
- Alson, P.** Minimax properties for linear estimators of the location parameter of a linear model. *Statistics* **19** (1988), no. 2, 163–171. (Khursheed Alam) **89d:62054** 62J05 (62C20)
- Alspach, B.** Hamilton cycles in metacircular graphs with prime power cardinal blocks. *Graph theory in memory of G. A. Dirac* (Sandbjerg, 1985), 7–16, Ann. Discrete Math., 41, North-Holland, Amsterdam-New York, 1989. (David Riley Witte) **89m:05080** 05C45
- Alspach, Dale E.** Complemented translation-invariant subspaces. *Functional analysis* (Austin, TX, 1986–87), 112–125, Lecture Notes in Math., 1332, Springer, Berlin-New York, 1988. (Joseph Max Rosenblatt) **89k:46040** 46E30 (43A15, 47A15, 47B38)
- (with Odell, Edward) Averaging weakly null sequences. *Functional analysis* (Austin, TX, 1986–87), 126–144, Lecture Notes in Math., 1332, Springer, Berlin-New York, 1988. (G. Schechtman) **89j:46014** 46B15
- Alster, K.** On spaces whose product with every Lindelöf space is Lindelöf. *Colloq. Math.* **54** (1987), no. 2, 171–178. (Ilija Kovačević) **89i:54031** 54D20
- On the product of a perfect paracompact space and a countable product of scattered paracompact spaces. *Fund. Math.* **127** (1987), no. 3, 241–246. (C. W. Patty) **89f:54044** 54D18
- On the class of all spaces of weight not greater than  $\omega_1$  whose Cartesian product with every Lindelöf space is Lindelöf. *Fund. Math.* **129** (1988), no. 2, 133–140. (Dimitrina Stavrova) **89i:54030** 54D20
- Alstrom, Preben** (with Trunfio, Paul; Stanley, H. E.) Self-organized criticality: the origin of fractal growth. *Random fluctuations and pattern growth* (Cargèse, 1988), 340–342, NATO Adv. Sci. Inst. Ser. E: Appl. Sci., 157, Kluwer Acad. Publ., Dordrecht, 1988. (see **89j:00034**) 82A57 (76E15, 82A25)
- (with Christiansen, Bo; Levinsen, Mogens T.) Nonchaotic transition from quasiperiodicity to complete phase locking. *Phys. Rev. Lett.* **61** (1988), no. 15, 1679–1682. (Summary) **89i:58073** 58F13 (58F27, 92A09)
- Al-Suifi, Abu T-Husayn** see **al-Suifi, Abu T-Husayn**
- Alt, Helmut** (with Mehlhorn, Kurt; Wagener, Hubert; Welzl, Emo) Congruence, similarity, and symmetries of geometric objects. Third ACM Symposium on Computational Geometry (Waterloo, Ont., 1987). *Discrete Comput. Geom.* **3** (1988), no. 3, 237–256. (Michael Kallay) **89d:68083** 68U05 (51-04)
- Comparing the combinatorial complexities of arithmetic functions. *J. Assoc. Comput. Mach.* **35** (1988), no. 2, 447–460. (Hans F. de Groote) **89g:68034** 68Q40 (68Q25)
- (with Welzl, Emo) Visibility graphs and obstacle-avoiding shortest paths. (German summary) *Z. Oper. Res.* **32** (1988), no. 3–4, 145–164. (Jean-Claude Spohner) **89k:68141** 68U05 (05C35, 68Q20, 68Q25, 90B10)
- Alt, Jean-Christian** La loi des grands nombres de Prokhorov dans les espaces de type  $p$ . (English summary) [Prokhorov's law of large numbers in type- $p$  spaces] *Ann. Inst. H. Poincaré Probab. Statist.* **23** (1987), no. 4, 561–574. (Jerzy Szulga) **89f:60007** 60B12 (60F15)
- Sur le comportement asymptotique presque sur des sommes de variables aléatoires à valeurs vectorielles. (English summary) [On the asymptotic behavior in the almost sure sense of sums of vector-valued random variables] *Ann. Sci. Univ. Clermont-Ferrand II Probab. Appl.* **No. 6** (1987), 3–24. (S. A. Chobanyan) **89a:60021** 60B12
- Alt, René** Un algorithme simple et efficace de calcul de valeurs propres. (English summary) [An efficient and simple algorithm for computation of eigenvalues] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 10, 437–440. (Summary) **89b:65009** 65F15
- Alt, Wolfgang** Modelling of motility in biological systems. *ICIAM '87: Proceedings of the First International Conference on Industrial and Applied Mathematics* (Paris, 1987), 15–30, SIAM, Philadelphia, PA, 1988. (Summary) **89m:92010** 92A09 (92-02)
- ruiz-Altiba, M.** see **Ruiz-Altiba, M.**
- Altas, I.** (with Manohar, R.; Stephenson, J. W.) Adaptive mesh generation using quadratures. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **62** (1988), 37–45. (Summary) **89g:65108** 65L50 (65N50)
- Altenbach, J.** (with Scholz, E.) Local mesh refinements and macro transition elements in stress analysis. *The mathematics of finite elements and applications, VI* (Uxbridge, 1987), 123–135, Academic Press, London-New York, 1988. (see **89c:65004**) 73K25 (65N30, 65N50)
- Altevogt, P.** (with Rieger, B.) Chiral anomalies in  $N = 1$  supersymmetric Yang-Mills theories in  $d = 2$  dimensions. (Italian summary) *Nuovo Cimento A* **111** 97 (1987), no. 3, 451–459. (W. Cox) **89b:81109** 81E13
- Althoen, S. C.** (with Hansen, Kristina; Kugler, L. D.) C-associative algebras of dimension 4 over  $\mathbb{R}$ . *Algebras Groups Geom.* **3** (1986), no. 3, 329–360. (Irvin Roy Hentzel) **89c:17011** 17A99 (17D99)
- (with Hansen, Kristina; Kugler, L. D.) Four-dimensional real algebras satisfying two C-associative conditions. *Algebras Groups Geom.* **4** (1987), no. 4, 395–419. (Arie H. Boers) **89f:17001** 17A30 (17A35)
- (with Bumcrot, Robert J.) ★ Introduction to discrete mathematics. The Prindle, Weber & Schmidt Series in Mathematics. *PWS-KENT Publishing Co., Boston, MA*, 1988. xiv+346 pp. ISBN 0-534-91504-3 (Mukhai S. Krishnamoorthy) **89e:05001** 05-01 (00A05, 68-01, 94C15)
- Althöfer, I.** On optimal realizations of finite metric spaces by graphs. *Discrete Comput. Geom.* **3** (1988), no. 2, 103–122. (J. M. S. Simões-Pereira) **89a:05123** 05C99 (54E35)
- Nim games with arbitrary periodic moving orders. *Internat. J. Game Theory* **17** (1988), no. 3, 165–175. (G. A. Heuer) **89j:90276** 90D05 (90D12)
- Al-Thukair, Fawzi A.** (with Zaguia, Nejib) Greedy linear extensions for minimizing bumps. *Order* **4** (1987), no. 1, 55–63. (Summary) **89c:06002** 06A10 (68Q25)
- (with Al-Salman, Salman A.) On finite (2, 3, 6) groups. *Math. Japon.* **33** (1988), no. 1, 1–15. (Koichiro Harada) **89b:20057** 20D99
- Altinkemer, Kemal** (with Gavish, Bezalel) Heuristics with constant error guarantees for the design of tree networks. Focussed issue on heuristics. *Management Sci.* **34** (1988), no. 3, 331–341. (Summary) **89b:90071** 90B10
- Altintas, Osman** A subclass of analytic functions. *Yokohama Math. J.* **35** (1987), no. 1–2, 71–73. (Mauricio Alves) **89c:30020** 30C45
- (with Owa, Shigeyoshi; Fukui, Seiichi) Notes on certain subclass of close-to-convex functions. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 2, 125–130. (R. S. L. Srivastava) **89g:30024** 30C45
- Altioh, Tayfur** Queues with group arrivals and exhaustive service discipline. *Queueing Systems Theory Appl.* **2** (1987), no. 4, 307–320. (Micha Yadin) **89d:60169** 60K25 (90B22)
- Altman, Mieczyslaw** Global linearization iterative methods and nonlinear partial differential equations. III. *Nonlinear analysis, 23–49, World Sci. Publishing, Singapore*, 1987. (Nicolae H. Pavel) **89f:47090** 47H15 (35A35, 35L99, 58C15, 65J15)
- Altman, N. S.** Bit-wise behavior of random number generators. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 5, 941–949. (Georgehe Barbu) **89i:65006** 65C10
- Altman, Tom** (with Chrobak, Marek; Truszczyński, Mirosław) Generating  $k$ -combinations from a family of sets. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **61** (1988), 211–220. (Helmut Prodinger) **89i:05002** 05A05 (68R05)
- Altman, Jürgen** On the digital implementation of the rotation-invariant Fourier-Mellin transform. (German and Russian summaries) *J. Inform. Process. Cybernet.* **23** (1987), no. 1, 13–36. (Vítězslav Veselý (Zbl 627:68073)) **89c:65138** 65R10 (44A30, 93B17)
- Altman, S. L.** Improper double groups and the bases for the representations of  $O(3)$ . *J. Phys. A* **20** (1987), no. 14, 4587–4593. (Raj Wilson) **89c:22039** 22E70 (81C40)
- Altner, Günter** see **World as an open system, 89m:92006**
- Altschüler, D.** (with Lacki, J.; Zaugg, Ph.) The affine Weyl group and modular invariant partition functions. *Phys. Lett. B* **205** (1988), no. 2–3, 281–284. (Summary) **89c:17014**



- 17B10 (17B67, 81E30, 81E40)
- Altschuler, Martin D.** (with Censor, Yair; Powlis, William D.) On the use of Cimmino's simultaneous projections method for computing a solution of the inverse problem in radiation therapy treatment planning. *Inverse Problems* 4 (1988), no. 3, 607-623. (Not in MR) 78A60 (92A07)
- Altschuler, B. L.** (with Kravtsov, V. E.; Lerner, I. V.) Statistics of mesoscopic fluctuations and scaling theory. *Localizations in disordered systems* (Bad Schandau, 1986), 7-17, Teubner-Texte Phys., 16, Teubner, Leipzig, 1988. (see 89f:82003) 82A57
- (with Prigodin, V. N.) Dynamical properties of a finite-one-dimensional conductor. *JETP Lett.* 47 (1988), no. 1, 43-47; translated from *Pisma Zh. Eksp. Teoret. Fiz.* 47 (1988), no. 1, 36-40 (Russian). (Summary) 89c:82011 82A55 (82A57)
- Alufahai, Imohimi C.** Bernoulli maps of a Lebesgue space. *Canad. Math. Bull.* 31 (1988), no. 1, 26-31. (B. Kamiński) 89c:28024 28D05 (58F11)
- Alustiza, J. A.** see **Martin-Alustiza, J. A.**
- Alvarez, José** (with Metiu, Horia) The evolution of the wave function in a curve crossing problem computed by a fast Fourier transform method. *J. Chem. Phys.* 88 (1988), no. 8, 4957-4966. (Summary) 89b:81009 81-08 (65T05)
- Alvarez, Carlos** see **Alvarez Jimenez, Carlos**
- Alvarez, Enrique** World function dynamics in generalized spacetimes. *Phys. Lett. B* 210 (1988), no. 1-2, 73-75. (Carl Brans) 89f:83057 83D05 (53C80)
- Alvarez, Gabriel** Coupling-constant behavior of the resonances of the cubic anharmonic oscillator. *Phys. Rev. A* (3) 37 (1988), no. 11, 4079-4083. (Summary) 89c:34034 34C15 (34B25, 34E05, 81C05)
- Álvarez, Josefine** (with Milman, Mario) Vector valued inequalities for strongly singular Calderón-Zygmund operators. *Rev. Mat. Iberoamericana* 2 (1986), no. 4, 405-426. (Gerald B. Folland) 89d:42025 42B20 (47G05)
- (with Milman, Mario) Spaces of Carleson measures: duality and interpolation. *Ark. Mat.* 25 (1987), no. 2, 155-174. (Gerald B. Folland) 89a:46064 46E30 (42B25, 46E27, 46M35)
- (with Milman, Mario) Interpolation of tent spaces and applications. *Function spaces and applications* (Lund, 1986), 11-21, *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (Richard Rochberg) 89f:46025 46E15 (46E05, 46M35)
- (with Durán, R.)  $L^p$  continuity of pseudo-differential operators with discontinuous symbol. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 165-168. (C. Carton-Lebrun) 89f:42026 42B20 (42B10, 47B05)
- Alvarez, O.** see **Blyth, Colin R.** (Not in MR)
- Alvarez, Orlando** (with Windy, P.) The geometrical meaning of currents in string theory. *Mathematical aspects of string theory* (San Diego, Calif., 1986), 76-94, *Adv. Ser. Math. Phys.*, 1, World Sci. Publishing, Singapore, 1987. (see 89m:81001) 81E99 (32G13, 58A25, 58D99, 81E30)
- Álvarez, Teresa** Closed  $A$ -Fredholm operators. (Spanish) *Publ. Sec. Mat. Univ. Autònoma Barcelona* 30 (1986), no. 1, 59-64. (P. Aiena) 89f:47018 47A53 (47D30)
- State diagram for operators with null space or conull space in an ideal of Banach spaces. *Publ. Sec. Mat. Univ. Autònoma Barcelona* 30 (1986), no. 1, 85-90. (P. Aiena) 89f:47019 47A05 (47D30)
- (with González, Manuel; Onieva, Victor M.) Some procedures for generating space ideals. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 50-55, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (W. Żelazny) 89f:46020 46B99 (46B25)
- (with González, Manuel; Onieva, Victor M.) Totally incomparable Banach spaces and three-space Banach space ideals. *Math. Nachr.* 131 (1987), 83-88. (Andreas Defant) 89a:46034 46B20 (46M99, 47D30)
- A note on generalized Tauberian operators. *Quaestiones Math.* 10 (1987), no. 4, 377-390. (Peter Harmand) 89a:47059 47B99 (46B99, 47D30)
- Factoring Rosenthal operators. *Publ. Mat.* 32 (1988), no. 1, 87-89. (Mikhail Ostrovskii) 89g:47021 47A68 (46B20, 47B05)
- $H$ -ultrabornological spaces. *Quaestiones Math.* 11 (1988), no. 2, 201-212. (Branislav Mirković) 89g:46004 46A09
- Alvarez-Estrada, R. F.** Quantum electrodynamics at high temperature. I. One spatial dimension. *Fortschr. Phys.* 36 (1988), no. 3, 145-162. (Editors) 89f:81287 81L05 (81E13)
- Quantum electrodynamics at high temperature. II. Three spatial dimensions. *Fortschr. Phys.* 36 (1988), no. 3, 163-200. (Editors) 89f:81288 81L05 (81E13)
- Alvarez-Gaumé, L.** Geometrical methods in the quantum theory of fields and strings. *Unification of fundamental interactions* (Marstrand, 1986), 26-33, *Royal Swedish Acad. Sci., Stockholm*, 1987. (see 89f:81005) 81E99 (58G25, 58G40, 81E30, 83E30)
- (with Della Pietra, Stephen; Della Pietra, Vincent) The chiral determinant and the eta invariant. *Comm. Math. Phys.* 109 (1987), no. 4, 691-700. (Akira Asada) 89b:58217 58G25 (58G10, 81E20)
- Operator methods in string theory. *Differential geometrical methods in theoretical physics* (Como, 1987), 129-144, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 250, Kluwer Acad. Publ., Dordrecht, 1988. (Olaf Lechtenfeld) 89b:81124 81E99 (81-02, 81E30)
- (with Gómez, César; Moore, Gregory W.; Vafa, Cumrun) Strings in the operator formalism. *Nuclear Phys. B* 303 (1988), no. 3, 455-521. (Olaf Lechtenfeld) 89b:81171 81E99 (81E30, 81E40)
- (with Nelson, Philip C.; Gómez, César; Sierra, Germán; Vafa, Cumrun) Fermionic strings in the operator formalism. *Nuclear Phys. B* 311 (1988/89), no. 2, 333-400. (Olaf Lechtenfeld) 89m:81126 81E99 (58F05, 58G40, 81E30, 81E40)
- Alvarez Jimenez, Carlos** On the possibilities of an equivalence for the foundations of arithmetic. (Spanish. English summary) *Theoria* (San Sebastián) 2 (1987), no. 5-6, 345-364. (E. Mendelson) 89a:03005 03A05 (01A55, 03-03, 03B30)
- Alvarez López, Jesús A.** A finiteness theorem for the spectral sequence of a Riemannian foliation. *Illinois J. Math.* 33 (1989), no. 1, 79-92. (Jean Wouafu Kamga) 89m:53050 53C12 (57R30, 58H05)
- casas Alvero, E.** see **Casas Alvero, E.**
- Alves, E. H.** (with de Araujo, A. L.; Guerzoni, J. A. D.) Some relations between modal and paraconsistent logic. *J. Non-Classical Logic* 4 (1987), no. 2, 33-44. (Wojciech Dziuk) 89c:03049 03B60 (03B45)
- Alves, M. S.** (with Barcelos-Neto, J.) Conformal transformation, gauge fields and trace anomaly. *Classical Quantum Gravity* 5 (1988), no. 2, 377-384. (Zhong Qi Ma) 89b:81110 81E13 (81E40)
- Alves, N. A.** (with Drigo Filho, E.) The factorisation method and supersymmetry. *J. Phys. A* 21 (1988), no. 15, 3215-3225. (Yusuke Kato) 89f:81021 81C05 (81D05)
- Alves de Barros, Abdénago** Complete nonorientable minimal surfaces in  $\mathbb{R}^3$  with finite total curvature (nonorientable complete minimal immersion/total curvature). *An. Acad. Brasil. Ciênc.* 59 (1987), no. 3, 141-143 (1988). (J. H. Rubinstein) 89b:53017 53A10
- Alvis, Dean** Families of irreducible characters of Weyl groups. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 13-22, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Toshiyuki Tanisaki) 89c:20059 20G05 (20C15)
- Alvoni, E.** An algorithm for time series decomposition using state-space models with singular transition matrix. *COMPSTAT 1988* (Copenhagen, 1988), 369-374, *Physica, Heidelberg*, 1988. (see 89f:62004) 62M10
- Alwan, F. H.** (with Naoum, A. G.; Mahmood, A.) On projective and flat modules. (Arabic summary) *Arab J. Math.* 7 (1986), no. 1-2, 41-53. (Gennady Lyubeznik) 89f:13015 13C10 (13C11)
- Alwash, M. A.** On a differential equation in population genetics. (Arabic summary) *Arab J. Math.* 6 (1985), no. 1-2, 63-72. (Alan R. Hausrath) 89g:92024 92A10 (34C25)
- (with Lloyd, N. G.) Periodic solutions of a quartic nonautonomous equation. *Nonlinear Anal.* 11 (1987), no. 7, 809-820. (Chike Obi) 89b:34093 34C25
- de Alwis, S. P.** (with Grisar, Marcus T.; Mezincescu, Luca) Quantization and unitarity in antisymmetric tensor gauge theories. *Nuclear Phys. B* 303 (1988), no. 1, 57-76. (Summary) 89g:81042 81E13 (81E30)
- (with Ohta, Nobuyoshi) Gauge fixing in fully gauge-invariant field theory of closed bosonic and Neveu-Schwarz strings. *Phys. Lett. B* 200 (1988), no. 4, 466-470. (Summary) 89a:81057 81E13 (81E30)
- Aly, Emad-Eldin A. A.** Strong approximations of quadratic sums of uniform spacings. (French summary) *Canad. J. Statist.* 16 (1988), no. 2, 201-207. (Rashid Ahmad) 89c:62022 62E20
- (with Öztürk, Aydın) Hodges-Lehmann quantile-quantile plots. *Comput. Statist. Data Anal.* 6 (1988), no. 2, 99-108. (Summary) 89a:62119 62G25
- (with Öztürk, Aydın) A modified one-sample Q-Q plot and a test for normality. *J. Statist. Comput. Simulation* 29 (1988), no. 1, 1-15. (Not in MR) 62G25
- Aly, G.** (with Badr, A.; Binder, Z.) Multi-model control of MIMO systems: location and control algorithms. *Internat. J. Systems Sci.* 19 (1988), no. 9, 1687-1698. (Not in MR) 93C05 (00A71, 93C55)
- Aly, J. J.** Some properties of the solutions of a nonlinear boundary value problem for a force-free field in an infinite region of space. I. Energy estimates. *Astronom. and Astrophys.* 203 (1988), no. 1, 183-188. (Summary) 89f:85003 85A30 (76Y05)
- (with Amari, T.) Interaction between a line current and a two-dimensional constant- $\alpha$  force-free field: an analytical model for quiescent prominences. *Astronom. and Astrophys.* 208 (1989), no. 1-2, 261-270. (Summary) 89f:76086 76W05 (76E20, 76E25, 76X05, 85A30)
- Aly, Z. M.** (with Zaghrout, Afaf A. S.) On Liapunov stability. *Proc. Pakistan Acad. Sci.* 25 (1988), no. 2, 133-142. (L. Hatvani) 89b:34083 34D20
- Alyakrinskii, A. A.** (with Tsikh, A. K.) Cohomology of rational differential forms of degree  $n$  in the space  $C^n$ . (Russian) *Mat. Zametki* 43 (1988), no. 4, 522-532, 575; translated in *Math. Notes* 43 (1988), no. 3-4, 301-307. (P. E. Newstead) 89d:32022 32C35 (14F40)
- Alymbaev, A. T.** Periodic solutions of a system of autonomous nonlinear integro-differential equations with infinite delay. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 15-23, 335, "Ilim", Frunze, 1987. (Summary) 89c:45008 45J05 (45M99)
- Alymkulov, K.** On the theory of the creation of periodic solutions, from the loop of the separatrix of the saddle, of singularly perturbed systems. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 108-119, 339, "Ilim", Frunze, 1987. (Zhu Jun Jing) 89b:34036 34C25 (34E15, 58F14, 58F22)
- On the theory of the model Lighthill equation in the analytic case. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 120-132, 339, "Ilim", Frunze, 1987. (Summary) 89d:34011 34A25 (34A10)
- Alyushina, L. A.** Euler polygonal lines for Itô equations with monotone coefficients. (Russian) *Teor. Veroyatnost. i Primenen.* 32 (1987), no. 2, 367-373. (I. Gyöngy) 89c:60067 60H10
- (with Krylov, N. V.) Passage to the limit in Itô stochastic equations. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 1, 3-13; translated in *Theory Probab. Appl.* 33 (1988), no. 1, 1-10. (Yu. S. Mishura) 89b:60095 60H10
- Alyushkevich, V. B.** (with Sot-skov, Yu. N.) Stability of the optimal orientation of the edges of a mixed graph. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 32 (1988), no. 2, 108-111, 187. (O. Pokorná) 89c:05048 05C35 (05C38, 90B10)
- Alzaid, A.** (with Al-Osh, M.) First-order integer-valued autoregressive (INAR(1)) process. *J. Time Ser. Anal.* 8 (1987), no. 3, 261-275. (M. Arató) 89b:62191 62M10
- (with Ahmed, A. N.; Al-Osh, M.) On the NBAFR (NWAFR) class of life distributions. *Statist. Hefte* 28 (1987), no. 3, 203-216. (Summary) 89f:62123 62N05 (62F03)
- (with Lau, Ka-Sing; Rao, C.; Calyampuli Radhakrishna; Shanbhag, D. N.) Solution of Deny convolution equation restricted to a half line via a random walk approach. *J. Multivariate Anal.* 24 (1988), no. 2, 309-329. (P. Laurie Davies) 89b:60161 60J15 (62E10)
- (with Al-Osh, M.) First-order integer-valued autoregressive (INAR(1)) process: distributional and regression properties. *Statist. Neerlandica* 42 (1988), no. 1, 53-61. (Summary) 89f:62074 62M10
- Alzati, A.** (with Ottaviani, Giorgio Maria) Small codimension subvarieties of  $\mathbb{P}^n$ . (Italian summary) *Boll. Un. Mat. Ital. A* (7) 2 (1988), no. 1, 81-89. (Mathias Peterzell) 89c:14074 14M07 (14F07)
- Alzer, Horst** Über Mittelwerte, die zwischen dem geometrischen und dem logarithmischen Mittel zweier Zahlen liegen. [On means which lie between the geometric and the logarithmic mean of two numbers] *Anz. Österreich. Akad. Wiss. Math.-Natur. Kl.* 123 (1986), 5-9 (1987). (L. Losonczy) 89c:26037 26D20
- Über eine einparametrische Familie von Mittelwerten. [On a one-parameter family of means] *Bayer. Akad. Wiss. Math.-Natur. Kl. Sitzungsber.* 1987, 1-9 (1988). (R. P. Boas, Jr.) 89m:26030 26D15
- Verschärfung einer Ungleichung von Ky Fan. [Sharpening of an inequality of Ky Fan] *Aequationes Math.* 36 (1988), no. 2-3, 246-250. (Peter Bullen) 89f:26014 26D15
- Über Lehrers Mittelwertfamilie. [On Lehrer's family of mean values] *Elem. Math.* 43 (1988), no. 2, 50-54. (G. A. Heuer) 89b:26032 26D15 (26A51, 26B25, 26D20)



- Alziary de Roquefort, Thierry (with Le Que, Patrick) Sur l'existence de solutions périodiques multiples aux équations de Boussinesq. (English summary) [On the existence of multiple periodic solutions of the Boussinesq equations] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **306** (1988), no. 11, 681–687. (Summary) **89c:76061** 76E15
- Amahashi, Atsushi On factors with all degrees odd. *Graphs Combin.* **1** (1985), no. 2, 111–114. (H. Joseph Straight) **89c:05152** 05C70 (90B10)
- Aman, J. E. (with Rebouças, M. J.) Computer-aided study of a class of Riemannian space-times. *J. Math. Phys.* **28** (1987), no. 4, 888–892. (Summary) **89a:83022** 83C15 (83-04, 83C20)
- Amann, Anton Jauch-Piron states in  $W^*$ -algebraic quantum mechanics. *J. Math. Phys.* **28** (1987), no. 10, 2384–2389. (Gottfried T. Rüttimann) **89a:46128** 46L30 (46L60, 81B10)
- Integrable ergodic  $W^*$  systems. *J. Phys. A* **20** (1987), no. 16, L1039–L1045. (David Applebaum) **89c:46085** 46L55 (46L60, 81B05, 82A15)
- Chirality as a classical observable in algebraic quantum mechanics. *Fractals, quasiscrystals, chaos, knots and algebraic quantum mechanics* (Maratea, 1987), 305–325, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 235, Kluwer Acad. Publ., Dordrecht, 1988. (Camillo Trapani) **89j:81284** 81G55 (46L60, 81C99, 82A15)
- see also *Fractals, quasiscrystals, chaos, knots and algebraic quantum mechanics*, **89c:00037**
- Amann, Erwin Permanence in population dynamics. *Dynamical systems and environmental models* (Eisenach, 1986), 58–66, *Math. Ecol., Akademie-Verlag, Berlin*, 1987. (Norihiko Adachi) **89f:92031** 92A15
- Amann, Herbert Parabolic evolution equations and nonlinear boundary conditions. *J. Differential Equations* **72** (1988), no. 2, 201–269. (Lumin Jiang) **89c:35066** 35K22 (34G20, 35K40, 47H17)
- Dynamic theory of quasilinear parabolic equations. I. Abstract evolution equations. *Nonlinear Anal.* **12** (1988), no. 9, 895–919. (Lumin Jiang) **89j:35072** 35K60 (34G20, 35K22, 47H20, 58D25)
- Amann, Kazuo (with Iwata, Keiji) A Euclidean algorithm on  $M_n(\Delta)$ . *Bull. Fac. Gen. Ed. Gifu Univ.* **23** (1987), 25–29 (1988). (C. R. Fletcher) **89c:16031** 16A42 (12E05, 13F07, 16A18)
- The Dirichlet problem for degenerate elliptic 2-dimensional Monge-Ampère equation. *Bull. Austral. Math. Soc.* **37** (1988), no. 3, 389–410. (Friedrich Sauvigny) **89h:35115a** 35J65 (35J70, 58C15)
- Corrigendum: "The Dirichlet problem for degenerate elliptic 2-dimensional Monge-Ampère equation". *Bull. Austral. Math. Soc.* **38** (1988), no. 3, 479–480. (Friedrich Sauvigny) **89h:35115b** 35J65 (35J70, 58C15)
- The global hypoellipticity of degenerate elliptic-parabolic operators. *J. Math. Soc. Japan* **40** (1988), no. 2, 181–204. (Maria Mascarello Rodino) **89d:35033** 35H05 (35J15, 35K10)
- Amanov, A. K. Asymptotic properties of nonparametric estimates for the marginal probability density for asymptotically noncorrelated observations. (Russian) *Dokl. Akad. Nauk UzSSR* **1987**, no. 12, 5–7. (Not in MR) **62G20**
- Amanov, D. (with Salakhitdinov, M. S.) The Poincaré-Tricomi problem for an equation of mixed type with discontinuous coefficients. (Russian) *Equations of mixed type and free boundary value problems* (Russian), 3–38, 249, "Fan", Tashkent, 1987. (Summary) **89c:35119** 35M05
- Amante, Paolo On Chebyshev polynomials. (Italian) *Atti Accad. Sci. Lett. Arti Palermo Ser. (5)* **3** (1982/83), 531–555 (1985). (K. S. Kölbig (Zbl 592:33010)) **89b:41008** 41A10
- Amar, Eric Estimations, par noyaux, des solutions de l'équation  $\bar{\partial}u = f$ . (English summary) [Estimates using kernels of the solutions of the equation  $\bar{\partial}u = f$ ] *Complex analysis, II* (College Park, Md., 1985–86), 12–24, *Lecture Notes in Math.*, 1276, Springer, Berlin-New York, 1987. (Makhlof Derridj) **89c:32009** 32A25 (32E35, 32F20)
- Geometric regularity versus functional regularity. *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* **14** (1987), no. 2, 277–283 (1988). (John M. Lee) **89c:32041** 32F15 (32A40)
- ben Amar, M. see Ben Amar, M.
- abu-Amara, Hosame H. see Abu-Amara, Hosame H.
- Amari, Shun-ichi Data compression and statistical inference. *Electron. Comm. Japan. Part I Comm.* **70** (1987), no. 11, 16–24. (Summary) **89k:62006** 62B10 (94A17)
- Mathematical methods of neurodynamics and self-organization. *Biomathematics and related computational problems* (Naples, 1987), 3–11, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89j:92010** 92A09
- (with Kumon, Masayuki) Estimation in the presence of infinitely many nuisance parameters—geometry of estimating functions. *Ann. Statist.* **16** (1988), no. 3, 1044–1068. (M. Hušková) **89c:62037** 62F10
- Amari, T. (with Aly, J. J.) Interaction between a line current and a two-dimensional constant- $\alpha$  force-free field: an analytical model for quiescent prominences. *Astronom. and Astrophys.* **208** (1989), no. 1-2, 261–270. (Summary) **89j:76086** 76W05 (76E20, 76E25, 76X05, 85A30)
- Amati, D. (with Konishi, Kenichi; Meurice, Y.; Rossi, G. C.; Veneziano, G.) Nonperturbative aspects in supersymmetric gauge theories. *Phys. Rep.* **162** (1988), no. 4, 169–248. (Hans D. Dahmen) **89j:81094** 81E13 (81E15, 81G20)
- Amati, G. (with Fattorosi-Barnaba, M.) Modal operators with probabilistic interpretations. *I. Studia Logica* **46** (1987), no. 4, 383–393. (Tomáš Havránek) **89g:03031** 03B48 (03B45)
- Amato, David A. A generalized Kaplan-Meier estimator for heterogeneous populations. *Comm. Statist. Theory Methods* **17** (1988), no. 1, 263–286. (Mir Masoom Ali) **89c:62126** 62N05 (62P10)
- Amato, Roberto Some regularity results for a class of second-order quasilinear parabolic systems. (Italian. English summary) *Matematiche (Catania)* **39** (1984), no. 1-2, 133–142 (1988). (Genowefa Majcher) **89g:35049** 35K55 (35B65)
- Amaya, Jorge A differential equations approach to function minimization. *Rev. Mat. Apl.* **9** (1987), no. 1, 1–7. (Giles Auchmuty) **89b:49048** 49D10 (65K10, 90C30)
- Ambagaspitiya, R. S. (with Balakrishnan, N.) Relationships among moments of order statistics in samples from two related outlier models and some applications. *Comm. Statist. Theory Methods* **17** (1988), no. 7, 2327–2341. (Not in MR) **62G30**
- Ambartsyan, S. A. ★ Теория анизотропных пластин. (Russian) [The theory of anisotropic plates] Прочность, устойчивость и колебания. [Strength, stability and oscillations] Second edition. "Nauka", Moscow, 1987. 360 pp. (L. P. Lebedev) **89b:73028** 73K10 (35J99, 73K12, 73L10, 73R05)
- Amberg, Bernhard Products of groups with finite rank. *Arch. Math. (Basel)* **49** (1987), no. 5, 369–375. (Mohammad Reza R. Moghaddam) **89a:20038** 20F16
- (with Franciosi, Silvana; de Giovanni, Francesco) On trifactorized soluble minimax groups. *Arch. Math. (Basel)* **51** (1988), no. 1, 13–19. (O. H. Kegel) **89c:20061** 20F19
- (with Franciosi, Silvana; de Giovanni, Francesco) Groups with a nilpotent triple factorization. *Bull. Austral. Math. Soc.* **37** (1988), no. 1, 69–79. (D. I. Zaitsev) **89c:20062** 20F19
- (with Franciosi, Silvana; de Giovanni, Francesco) Groups with a supersoluble triple factorization. *J. Algebra* **117** (1988), no. 1, 136–148. (J. Wiegold) **89c:20059** 20F19 (20E34)
- Ambika, G. (with Babu Joseph, K.) On the  $f$ - $\alpha$  spectrum of one-hump maps. *J. Phys. A* **21** (1988), no. 20, 3963–3968. (From the text) **89k:58168** 58F13 (26A18)
- Ambjørn, Jan (with Durhuus, Bergfinnur; Fröhlich, Jörg; Jónsson, Thórhur) Regularized strings with extrinsic curvature. *Nuclear Phys. B* **290** (1987), no. 4, 480–506. (Claus Montonen) **89b:81164** 81E25 (81E30, 81G25, 82A05)
- (with Durhuus, Bergfinnur; Jónsson, Thórhur) Statistical mechanics of paths with curvature-dependent action. *J. Phys. A* **21** (1988), no. 4, 981–1000. (A. Comtet) **89f:82040** 82A42 (60J15, 81E30, 82A41, 82A68)
- Ambos-Spies, Klaus Polynomial time degrees of NP-sets. *Trends in theoretical computer science* (Udine, 1984), 95–142, *Principles Comput. Sci. Ser.*, 12, Computer Sci. Press, Rockville, MD, 1988. (see **89m:68002**) **68Q15** (03D15)
- Ambrogio, Elisabetta A relation between the class and the order of a  $K3$  surface. (Italian. English summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **120** (1986), no. 5-6, 157–159 (1987). (Antonio Lanteri) **89i:14034** 14J28
- Ambroladze, A. U. Simultaneous approximations of the root and logarithm. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 3, 64–66, 111–112. (Kh. I. Kuchmins'ka) **89c:30093** 30E10 (41A21)
- Ambrosio, Antonio (with Coti Zelati, Vittorio) Critical points with lack of compactness and singular dynamical systems. *Ann. Mat. Pura Appl. (4)* **149** (1987), 237–259. (Michel Willem) **89c:58023** 58E05 (34C35, 58F22)
- (with Coti Zelati, Vittorio) Solutions périodiques sans collision pour une classe de potentiels de type keplerien. (English summary) [Noncollision periodic orbits for a class of Keplerian potentials] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 19, 813–815. (Andrea Milani) **89h:70004** 70F05 (34C25, 70M05)
- Variational problems in nonlinear analysis. *Boll. Un. Mat. Ital. A* (7) **2** (1988), no. 2, 169–188. (Jean Mawhin) **89h:58037** 58E05 (35J60, 49F15)
- (with Coti Zelati, Vittorio) Oscillations non linéaires pour des problèmes de la mécanique céleste. (English summary) [Nonlinear oscillations for a class of problems arising in celestial mechanics] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 11, 569–571. (Summary) **89i:70036** 70K99 (58F05, 58F22, 70F05, 70F15)
- (with Turner, R. E. L.) Some discontinuous variational problems. *Differential Integral Equations* **1** (1988), no. 3, 341–349. (J. V. A. Gonçalves) **89c:35052** 35J65 (58E30, 76X05)
- see also *Mathematical economics*, **89c:90004**
- Ambrosiano, J. (with McDonald, B. E.) Similarity solution for low Mach number spherical shocks. *J. Acoust. Soc. Amer.* **84** (1988), no. 4, 1497–1503. (Summary) **89c:76033** 76L05
- Ambrosio, Luigi New results on the lower semicontinuity of some integral functionals. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **79** (1985), no. 5, 82–89 (1986). (Jacqueline Morgan) **89g:49018** 49A50
- New lower semicontinuity results for integral functionals. (Italian summary) *Rend. Accad. Naz. Sci. XL Mem. Mat. (5)* **11** (1987), no. 1, 1–42. (P. Lindqvist) **89c:49010** 49A50
- (with Buttazzo, Giuseppe) Weak lower semicontinuous envelope of functionals defined on a space of measures. (Italian summary) *Ann. Mat. Pura Appl. (4)* **150** (1988), 311–339. (Tadeusz Pruszek) **89f:49012** 49A50 (46E27, 46G10)
- Ambroz, Luděk The use of pseudo-inverse matrices in cross-impact methods. (Czech. English summary) *Ekonom.-Mat. Obzor* **23** (1987), no. 4, 445–460. (Summary) **89c:65067** 65F20
- Amel'kin, V. A. Generalized problems of the enumeration of monotone sequences of the first kind. (Russian) *Mathematical models for the representation of information and data processing problems* (Russian), 80–95, *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1986. (Konrad Engel) **89g:05008** 05A15
- Amel'kin, V. V. (with Zhavnerchik, V. E.) Periodic solutions of the Liénard equation. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 10, 1659–1662, 1835; translated in *Differential Equations* **24** (1988), no. 10, 1085–1088. (A. Somolinos) **89k:34058** 34C25 (34C05, 58F22)
- Amemiya, Yassuo (with Anderson, T. W.) The asymptotic normal distribution of estimators in factor analysis under general conditions. *Ann. Statist.* **16** (1988), no. 2, 759–771. (Masashi Okamoto) **89g:62086** 62H25 (62H12)
- Amenola, G. (with Manes, A.) A particular class of second-order nonlinear differential equations. (Italian. English summary) *Riv. Mat. Univ. Parma* (4) **13** (1987), 51–59 (1988). (József Banaś) **89m:34013** 34A34
- A particular solution of the thermoelasticity of incompressible solids. (Italian. English summary) *Atti Sem. Mat. Fis. Univ. Modena* **36** (1988), no. 1, 45–56. (Summary) **89c:73040** 73U05
- The equations of the thermoelasticity of incompressible solids. (Italian. English summary) *Boll. Un. Mat. Ital. A* (7) **2** (1988), no. 2, 251–259. (Stan Chiriță) **89f:73073** 73U05
- Amer, Mustafa Amin (with Eissa, H. H.) On the solution of eigenvalue problems in the Hilbert space. (Arabic summary) *Delta J. Sci.* **10** (1986), no. 2, 520–534. (Lucas Jódar) **89g:65073** 65J10 (49G20)
- America, Pierre (with de Bakker, J. W.) Designing equivalent semantic models for process creation. *Mathematical models for the semantics of parallelism* (Rome, 1986), 21–80, *Lecture Notes in Comput. Sci.*, 280, Springer, Berlin-New York, 1987. (Summary) **89a:68143** 68Q55 (68Q10)
- Amerio, Luigi On the connection between elastic rebound and support phenomena for a vibrating string. (Italian. English summary) *Rend. Accad. Naz. Sci. XL Mem. Mat. (5)* **11** (1987), no. 1, 43–52. (Summary) **89c:73045** 73K03 (34C20)
- Ames, William F. (with Lee, Ding) Current development in the numerical treatment of ocean acoustic propagation. *Appl. Numer. Math.* **3** (1987), no. 1-2, 25–47. (Summary) **89c:76005** 76-08 (76Q05)
- (with Donato, A.) On the evolution of weak discontinuities in a state characterized by invariant solutions. *Internat. J. Non-Linear Mech.* **23** (1988), no. 2, 167–174. (G. A. Narioli) **89k:35141** 35L67 (35A30, 35L60, 73D40, 76L05)

- Amice, Y. (with Bertin, M.-J.; Bertrandias, F.; Decomps-Guilloux, Annette; Dress, F.; Grandet, M.; Mendès France, M.; Rauzy, Gérard) Charles Pisot. (French) *Acta Arith.* **51** (1988), no. 1, 1-4. (Editors) **89i:01054** 01A70
- see also Study Group: Ultrametric Analysis. **89i:11003**
- Amici, O. (with Farinola, A.) Pseudconnection and pseudoderivation forms of a pseudconnection. (Italian. English summary) *Rend. Mat. (7)* **5** (1985), no. 3-4, 203-215 (1988). (V. Cruceanu) **89j:53023** 53C05 (53C10)
- (with Casciaro, Biagio) The local version of the Ambrose-Cartan-Hicks theorem for Finsler connection. *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces (Braşov, 1986)*, 25-36, *Soc. Ştiinţe Mat. R.S. România, Bucharest, 1986*. (Mihai Anastasie) **89f:53102** 53C60 (53C80, 83D05)
- (with Casciaro, Biagio; Hashiguchi, Masao) On Finsler metrics associated with a Lagrangian. *Rep. Fac. Sci. Kagoshima Univ. Math. Phys. Chem. No. 20* (1987), 33-41. (H. Rund) **89g:53030** 53B40 (58F05)
- (with Casciaro, Biagio; Dragomir, Sorin) On the cohomology of Finsler manifolds. *Topics in differential geometry, Vol. I, II (Debreceen, 1984)*, 57-82, *Colloq. Math. Soc. János Bolyai, 46, North-Holland, Amsterdam-New York, 1988*. (L. Tamásy) **89e:53101**; **EA 89m** 53C60 (58A12)
- Amick, Charles J. On Leray's problem of steady Navier-Stokes flow past a body in the plane. *Acta Math.* **161** (1988), no. 1-2, 71-130. (Denis Serre) **89m:35175** 35Q10 (76D05)
- (with Franek, L. E.) The uniqueness of a family of steady vortex rings. *Arch. Rational Mech. Anal.* **100** (1988), no. 3, 207-241. (A. Elcrat) **89c:76042** 76C05
- (with Turner, R. E. L.) A global branch of steady vortex rings. *J. Reine Angew. Math.* **384** (1988), 1-23. (Maria J. Esteban) **89c:35134** 35Q20 (58E07, 76C05)
- (with Kirchgässner, Klaus) A theory of solitary water-waves in the presence of surface tension. *Arch. Rational Mech. Anal.* **105** (1989), no. 1, 1-49. (Alan Jeffrey) **89k:76020** 76B25 (35Q20)
- Amiel, M. (with Peyrin, F.; Goutte, R.) Description d'un algorithme de reconstruction de volume à partir de projections coniques par déconvolution tri-dimensionnelle. (English summary) [Description of a three-dimensional deconvolution reconstruction algorithm from cone beam projections] *Traitement Signal* **5** (1988), no. 4, 223-233. (Not in MR) **68U10** (92A07, 94A12)
- montesinos Amilibia, Angel see Montesinos Amilibia, Angel
- Amin, A. T. (with Siegrist, K. T.; Slater, P. J.) Pair-connected reliability of a tree and its distance degree sequences. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 29-42. (Takao Nishizeki) **89h:68118** 68R10 (05C05, 68M15, 68Q25, 90B10, 90B25)
- (with Siegrist, K. T.; Slater, P. J.) Exact formulas for reliability measures for various classes of graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 43-52. (Andrzej Ruciński) **89e:05179** 05C80
- Amin, M. H. (with Hassan, M. M.) Time-optimal output regulators for linear multivariable discrete-time systems. I. Right invertible decouplable systems. *Internat. J. Control* **46** (1987), no. 3, 865-879. (Summary) **89k:93049** 93B25 (93C55)
- (with Hassan, M. M.) Time-optimal output regulators for linear multivariable discrete-time systems. II. All classes of right-invertible systems. *Internat. J. Control* **46** (1987), no. 4, 1411-1428. (Summary) **89k:93050** 93B25 (93C05, 93C55)
- (with Elabdalla, A. M.) Parametrization of a class of deadbeat controllers via the theory of decoupling. *IEEE Trans. Automat. Control* **33** (1988), no. 12, 1185-1188. (Not in MR) **49D27** (93C55)
- (with Hassan, M. M.) Determination of invariant zeros and zero directions of the system  $S(A, B, C, E)$ . *Internat. J. Control* **47** (1988), no. 4, 1011-1041. (Summary) **89k:93099** 93B55 (93B40, 93C05, 93C35)
- (with Elabdalla, A. M.) Minimum-gain minimum-time deadbeat controllers. *Systems Control Lett.* **11** (1988), no. 3, 213-219. (Summary) **89m:93054** 93C55 (93C05)
- Amin, R. (with Edmunds, J.) Confidence limits of identified frequency responses of multivariable systems. *Internat. J. Control* **48** (1988), no. 1, 117-128. (Not in MR) **93B30** (93C35)
- (with Reynolds, Marion R., Jr.; Arnold, Jesse C.; Nachlas, Joel A.)  $\overline{X}$  charts with variable sampling intervals. *Technometrics* **30** (1988), no. 2, 181-192. (Not in MR) **62N10**
- Aminov, A. B. (with Sirazetdinov, T. K.; Surkin, N. R.) A method for constructing a set of Lyapunov functions for investigating the stability of nonlinear systems. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems (Irkutsk, 1985)* (Russian), 64-71, 323, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Josef Diblík) **89g:34077** 34D20 (34A34)
- (with Sirazetdinov, T. K.; Surkin, N. R.) Application of the method of Lyapunov functions to the parametric synthesis of stable systems under large initial perturbations. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems (Irkutsk, 1985)* (Russian), 156-164, 325, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (From the introduction) **89e:93184** 93B50 (34D20, 93D20)
- Aminov, Yu. A. ★ Дифференциальная геометрия и топология кривых. (Russian) [Differential geometry and the topology of curves] "Nauka", Moscow, 1987. 160 pp. (J. D. Zund) **89c:53001** 53A04 (53-01)
- Closed curves that are trigonometric polynomials in the arc length. (Russian) *Trudy Inst. Mat. (Novosibirsk)* **9** (1987), Issled. Geom. "v tselom" i Mat. Anal., 25-34, 206. (J. Szabados) **89d:53002** 53A04 (42A05)
- Surfaces in  $E^4$  with sign-constant Gaussian torsion. (Russian) *Ukrain. Geom. Sb. No. 31* (1988), 3-14. (Z. Nádeník) **89m:53005** 53A05 (53C42)
- Aminova, A. V. Projective-group symmetries of Friedmann universes and of their multidimensional generalizations—symmetries of ordinary  $h$ -spaces of type  $\{I(1 \cdots 1)\}$ . (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 12, 66-68, 79. (Andrzej Trautman) **89c:83031** 83C40 (53B30)
- Integration of a first-order covariant differential equation and of geodesic mappings of Riemannian spaces of arbitrary signature and dimension. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 1, 3-13, 86; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 1, 1-13. (V. G. Kopp) **89h:53102** 53C22
- Amir, Amihod The Martian chronicles or To build a tense system. *CC AI 3* (1986), no. 1-2, 59-83. (N. B. Cocchiarella) **89h:68123** 68T01 (03B45, 68Q55)
- Expressive completeness failure in branching time structures. *J. Comput. System Sci.* **34** (1987), no. 1, 27-42. (H. Andréka) **89a:30226** 03B45 (03B70, 68Q55, 68Q60)
- (with Gasarch, William) Polynomial terse sets. *Inform. and Comput.* **77** (1988), no. 1, 37-56. (Lane Hemachandra) **89c:68032** 68Q15 (03D15)
- Amir, D. Characterizations of inner product spaces. *Séminaire d'Analyse Fonctionnelle 1984/1985*, 77-93, *Publ. Math. Univ. Paris VII*, 26, Univ. Paris VII, Paris, 1986. (K. Sundaresan) **89m:46032** 46C05 (46B20)
- Amiran, Edoh Caustics and evolutes for convex planar domains. *J. Differential Geom.* **28** (1988), no. 2, 345-357. (Jean-Jacques Gervais) **89j:58064** 58F11 (52A10, 53A04, 58C27)
- Amirat, Cherif (with Chirlian, Paul M.) Effective bandwidth of 2-D functions that can be expressed as a linear combination of orthogonal functions. *IEEE Trans. Circuits and Systems* **36** (1989), no. 3, 452-454. (Not in MR) **94A11**
- Amir-Azizi, Siamak (with Hey, Anthony J. G.; Morris, T. R.) Quantum fractals. *Complex Systems* **1** (1987), no. 5, 923-938. (Summary) **89c:81045** 81C35 (81-04)
- Amirgaliev, E. N. (with Aidarkhanov, M. B.; Mukhamedgaliev, A. F.) On the synthesis of results of classification algorithms. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat. Nauk.* **1988**, no. 1, 3-6. (Not in MR) **68T10**
- Amirkhanova, S. G. (with Zhurbenko, L. N.) Stability of the solution of an inverse boundary value problem with a parameter  $x$  for a first-order elliptic system. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 10, 59-61, 74. (Gottfried Anger) **89d:35178** 35R30 (30C60, 35J55)
- Amir-Moez, Ali R. Vector geometry of spheres. *Texas J. Sci.* **40** (1988), no. 1, 43-48. (G. D. Chakerian) **89d:51036** 51N20
- Amiro, I. Ya. (with Zarutskii, V. A.; Revutskii, V. N.; Skosarenko, Yu. V.; Telalov, A. I.; Fialko, S. Yu.) ★ Колебания ребристых оболочек вращения. (Russian) [Vibrations of ribbed shells of revolution] "Naukova Dumka", Kiev, 1988. 172 pp. ISBN 5-12-009319-1 (Summary) **89h:73034** 73L20 (73-08, 73K25)
- Amirouche, F. M. L. (with Jia, T.) Pseudotriangular decomposition method for constrained multibody systems using Kane's equations. *J. Guidance Control Dynamics* **11** (1988), no. 1, 39-46. (Summary) **89i:70004** 70-08 (70B15, 70E99, 70F20, 70F25)
- (with Jia, T.; Ider, S. K.) A recursive Householder transformation for complex dynamical systems with constraints. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 3, 729-734. (Summary) **89g:70003** 70-08 (70B15, 70E99)
- (with Ider, S. K.) Coordinate reduction in the dynamics of constrained multibody systems—a new approach. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 4, 899-904. (Summary) **89m:70003** 70B15 (15A21, 70-04, 70F20, 70F25)
- Amirov, A. Kh. ★ О существовании и единственности решения одной обратной задачи для кинетического уравнения. (Russian) [Existence and uniqueness of the solution of an inverse problem for the kinetic equation] Препринт [Preprint], 692. *Akad. Nauk SSSR Sibirsk. Otdel. Vychisl. Tsentr, Novosibirsk*, 1986. 20 pp. (Summary) **89c:35151** 35R30 (76P05)
- The solvability of inverse problems for a second-order equation. (Russian) *Questions of well-posedness and methods for the investigation of inverse problems (Russian)*, 3-19, 157, *Akad. Nauk SSSR Sibirsk. Otdel. Vychisl. Tsentr, Novosibirsk*, 1986. (L. von Wolfersdorf) **89h:35331** 35R30 (35L15)
- Uniqueness of the solution of an inverse problem for the kinetic equation. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 5, 3-5, 226. (Gottfried Anger) **89d:35179** 35R30 (35Q20)
- On a problem on the solvability of inverse problems. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 6, 3-11, 217. (Gottfried Anger) **89d:35180** 35R30 (35L20)
- Amit, Daniel J. Neural networks—achievements, prospects, difficulties. *The physics of structure formation (Tübingen, 1986)*, 2-21, *Springer Ser. Synergetics*, 37, Springer, Berlin-New York, 1987. (see **89h:58064**) **92A09**
- (with Treves, A.) Metastable states in asymmetrically diluted Hopfield networks. *J. Phys. A* **21** (1988), no. 14, 3155-3169. (Summary) **89i:82074** 82A57
- Neural networks counting chimes. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 7, 2141-2145. (Summary) **89a:92015** 92A09 (92A27)
- (with Perez Vicente, Conrado J.) Optimised network for sparsely coded patterns. *J. Phys. A* **22** (1989), no. 5, 559-569. (Summary) **89m:92028** 92A09 (58F40, 92A25)
- Amman, Hans M. (with Jager, Henk) Constrained control algorithm for nonlinear control problems. *Internat. J. Systems Sci.* **19** (1988), no. 9, 1781-1793. (Summary) **89h:93027** 93C10 (90A16, 93C55)
- Ammann, Larry (with Van Ness, John) A routine for converting regression algorithms into corresponding orthogonal regression algorithms. *ACM Trans. Math. Software* **14** (1988), no. 1, 76-87. (Not in MR) **65U05**
- Ammar, A. A. (with El-Owaidy, H.) On predator-prey-mutualism model. *Tamkang J. Math.* **18** (1987), no. 2, 65-82. (Wei-Min Liu) **89b:92025** 92A15
- (with El-Owaidy, H.) Stable oscillations in a predator-prey model with time lag. *J. Math. Anal. Appl.* **130** (1988), no. 1, 191-199. (John H. Swart) **89c:92054** 92A15 (34C05, 34C15)
- (with El-Owaidy, H.; Elleithy, O. A.) Stability in mammillary compartmental systems. *Indian J. Pure Appl. Math.* **20** (1989), no. 2, 104-110. (Summary) **89k:92016** 92A09
- Ammar, Gregory S. (with Gragg, William B.) The implementation and use of the generalized Schur algorithm. *Computational and combinatorial methods in systems theory (Stockholm, 1985)*, 265-279, *North-Holland, Amsterdam-New York*, 1986. (Mihail Voicu) **89h:65112** 65F99 (15A48, 15A57, 93B25, 93B40)
- Geometric aspects of Hessenberg matrices. *Differential geometry: the interface between pure and applied mathematics (San Antonio, Tex., 1986)*, 1-21, *Contemp. Math.*, 68, *Amer. Math. Soc., Providence, RI*, 1987. (M. M. Konstantinov) **89c:15027** 15A57 (65F99, 93B27)
- (with Gragg, William B.) Superfast solution of real positive definite Toeplitz systems. *SIAM Conference on Linear Algebra in Signals, Systems, and Control (Boston, Mass., 1986)*. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 1, 61-76. (Summary) **89b:65065** 65F05 (65T05)
- Ammar, Salwa Determining the "best" decision in the presence of imprecise information. *Fuzzy Sets and Systems* **29** (1989), no. 3, 293-302. (Summary) **89k:03060** 03E72 (92A25)
- Ammicht, Egbert (with Weinacht, R. J.) Fundamental solutions for axially symmetric floating bodies. *Mixed type equations*, 22-34, *Teubner-Texte Math.*, 90, Teubner, Leipzig,



1986. (Megumi Saigo) **89b:35102** 35M05
- Ammons, Jane C.** (with Platzman, Loren K.; Bartholdi, John J., III) A simple and efficient algorithm to compute tail probabilities from transforms. *Oper. Res.* **36** (1988), no. 1, 137-144. (Summary) **89b:60036** 60E10 (68Q25)
- Amores, A. M.** On the  $b$ -completion of certain quotient spaces. *Lett. Math. Phys.* **15** (1988), no. 4, 341-343. (G. P. Pokhariyal) **89m:53059** 53C20 (53C05)
- Amorim, A. E. A.** (with Leal Ferreira, P.) Perihelium shifts in central potentials. *An. Acad. Brasil. Ciênc.* **60** (1988), no. 1, 13-18. (Summary) **89j:70010** 70F05
- Amoroso, Francesco** On the transcendence type of the classical numbers. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 4, 1077-1089. (W. W. Adams) **89c:11108** 11J82
- On the distribution of complex numbers according to their transcendence types. (Italian summary) *Ann. Mat. Pura Appl.* (4) **151** (1988), 359-368. (Vichian Laohakosol) **89i:11078** 11J82 (11J81, 11J83, 11K55)
- Amosov, A. A.** (with Zlotnik, A. A.) A family of difference schemes for equations of one-dimensional magnetostatic dynamics: properties and error estimates "in the large". (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 6, 1295-1299; translated in *Soviet Math. Dokl.* **37** (1988), no. 2, 545-549. (Corneliu Berbente) **89g:65111** 65M05 (65N05, 76-08, 76W05)
- (with Zlotnik, A. A.) Generalized solutions "in the large" of equations of the one-dimensional motion of a viscous barotropic gas. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 6, 1303-1307; translated in *Soviet Math. Dokl.* **37** (1988), no. 2, 554-558. (Introduction) **89g:76036** 76N15
- (with Zlotnik, A. A.) Generalized solutions "in the large" of the equations of the one-dimensional motion of a viscous heat-conducting gas. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 1, 11-15; translated in *Soviet Math. Dokl.* **38** (1989), no. 1, 1-5. (Summary) **89k:35193** 35Q20 (35D10, 76N15)
- Amosov, B. A.** An algorithm for the approximate solution of integral equations in the theory of diffraction. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 7, 22-29 (1988); translated from *Radiotekhn. i Elektron.* **32** (1987), no. 3, 490-497 (Russian). (Summary) **89j:78001** 78-08
- On the theory of pseudodifferential operators on the circle. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 3(261), 169-170; translated in *Russian Math. Surveys* **43** (1988), no. 3, 197-198. (S. Z. Levendorskii) **89m:47043** 47G05 (35S05, 58G15)
- Amosova, N. N.** (with Gillert, H.; Küchler, U.; Maksimov, Yu. D.) ★ Bedienungstheorie. (German) [Queuing theory] Eine Einführung. [An introduction] Mathematisch-Naturwissenschaftliche Bibliothek [Mathematical-Scientific Library], 71. BSB B. G. Teubner Verlagsgesellschaft, Leipzig, 1986. 254 pp. ISBN 3-322-00309-4 (Lennart Råde) **89a:60207** 60K25 (90B22)
- A limit theorem for lattice distributions. (Russian) *Rings and modules. Limit theorems of probability theory*, no. 2 (Russian), 124-130, 215, Leningrad. Univ., Leningrad, 1988. (W. Dziubdziela) **89i:60042** 60F05
- Amrakhov, Sh. G.** On necessary conditions for optimality on an infinite time interval. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1987**, no. 4, 35-41, 73. (Stavros A. Belbas) **89b:49022** 49B10 (49E10)
- On the theory of optimal control in an infinite time interval. (Russian) *Dokl. Akad. Nauk SSSR* **303** (1988), no. 6, 1289-1292; translated in *Soviet Math. Dokl.* **38** (1989), no. 3, 646-649. (Not in MR) **49B10**
- Amrein, W. O.** (with Cibils, M. B.; Sinha, K. B.) Configuration space properties of the  $S$ -matrix and time delay in potential scattering. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **47** (1987), no. 4, 367-382. (Xue-Ping Wang) **89d:35135** 35P25 (47F05, 81F05)
- (with Berthier, Anne-Marie; Georgescu, V.) Weighted estimates for differential operators with operator-valued coefficients. (French summary) *Bull. Soc. Math. France* **115** (1987), no. 3, 291-307. (Summary) **89n:34066** 34G10 (47E05)
- Amrhein, Carl G.** (with MacKinnon, Ross D.) Towards a behavioral model of a spatial labor market. *Transformations through space and time* (Hansholm, 1985), 247-272, *NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci.*, 29, Nijhoff, Dordrecht, 1986. (see **89e:90072**) **92A20** (90A30)
- Amritkar, R. E.** (with Gangal, A. D.; Gupta, Neelima) Dimensional characterization of sets with partial scaling symmetry. *Phys. Rev. A* (3) **36** (1987), no. 6, 2850-2861. (Frederick R. Marotto) **89h:28007** 28A75 (26A30, 58F11, 58F13, 82A99)
- (with Gupta, Neelima) Inverse problem for multifractals: extension to logarithmic and additive corrections. *Phys. Rev. Lett.* **60** (1988), no. 4, 245-248. (Summary) **89b:82137** 82A99 (26A18, 58F13)
- Amrouche, Chérif** (with Girault, Vivette) Une méthode d'approximation mixte des équations des fluides non newtoniens de troisième grade. (English summary) [Mixed approximations of the equations of non-Newtonian fluids of grade three] *Numer. Math.* **53** (1988), no. 3, 315-349. (C. Wayne Mastin) **89b:65210** 65P05 (76-08, 76A05)
- Iommi Amunátegui, G.** see Iommi Amunátegui, G.
- Amur, Krishna** (with Venkataramana, R. S.) On pseudo-surfaces of revolution and geometric meaning of a differential equation. *J. Math. Phys. Sci.* **22** (1988), no. 1, 147-159. (Wolfgang Kühnel) **89d:53005** 53A05
- (with Venkataramana, R. S.) Irrational Euclidean vectorfields on hypersurfaces of a Euclidean space. *Pure Appl. Math. Sci.* **27** (1988), no. 1-2, 89-104. (P. Stavre) **89f:53005** 53A07 (53A45)
- vo kim An' ser' vo Kim An'**
- An, Chang Yong** On uniform stabilization of nonlinear control systems with delay. (Korean. English summary) *Su-hak* **1988**, no. 2, 48-54. (Not in MR) **93D05** (34K35)
- An, Guozhong** A note on the cluster variation method. *J. Statist. Phys.* **52** (1988), no. 3-4, 727-734. (A. G. Schlijper) **89b:82081** 82A67 (06A10)
- An, Hong Zhi** (with Gao, Hong Ye) Two limit theorems on ARIMA models. *Acta Math. Appl. Sinica (English Ser.)* **4** (1988), no. 2, 154-164. (Jifí Anděl) **89g:60064** 60F05 (62M10)
- (with Dai, Zong Duo) Mean and variance of longest runs. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 1, 8-10. (Not in MR) **60C05** (60E99)
- An, Hyeon Keon** (with Zemanian, A. H.) Finite-difference analysis of borehole flows involving domain contractions around three-dimensional anomalies. *Appl. Math. Comput.* **26** (1988), no. 1, 45-75. (Summary) **89b:86002** 86A20
- An, Jian Bei** (with Tang, Xiang Pu) The structure of unitary groups over  $X_0$ - $\Phi$  surjective rings. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B **8** (1987), no. 3, 381. *Chinese Ann. Math. Ser. A* **8** (1987), no. 2, 155-171. (Chong Guang Cao) **89a:20050** 20G35
- (with Tang, Xiang Pu) Isomorphisms of unitary groups over  $X_0$ - $\Phi$ -surjective rings. (Chinese. English summary) *Dongbei Shuxue* **3** (1987), no. 3, 339-349. (Zhe-xian Wan) **89m:20049** 20G35
- An, You Shan** A metric on the Heisenberg group  $H_n$ . (Chinese) *Lanzhou Daxue Xuebao* **23** (1987), no. 4, 146-150. (Not in MR) **32M10** (32F25, 53C20)
- Anacker, Steven E.** The reconstruction of separable graphs with 2-connected trunks that are series-parallel networks. *Discrete Math.* **70** (1988), no. 3, 257-275. (Koduvayur R. Parthasarathy) **89k:05077** 05C60
- Anagnostakis, Christopher** How to divide the ecliptic on an astrolabe. *From ancient omens to statistical mechanics*, 133-144, *Acta Hist. Sci. Nat. Med.*, 39, Univ. Lib. Copenhagen, Copenhagen, 1987. (E. S. Kennedy) **89m:01015** 01A30
- Anagnostatos, G. S.** Magic numbers in small clusters of mixed rare gases. *Phys. Lett. A* **133** (1988), no. 7-8, 419-424. (Summary) **89m:52018** 52A45 (82A60, 92A40)
- Anakwa, W. K. N.** (with Swamy, M. N. S.) Equivalent cascade versions of observer-based controllers for SISO and MIMO linear systems. *Internat. J. Systems Sci.* **19** (1988), no. 6, 1021-1029. (Not in MR) **93B50** (93A20, 93B35)
- Anandani, J.** Geometric angles in quantum and classical physics. *Phys. Lett. A* **129** (1988), no. 4, 201-207. (Martin C. Gutzwiller) **89i:81040** 81C99 (53C80, 57S99, 58F40, 70G30)
- Nonadiabatic nonabelian geometric phase. *Phys. Lett. A* **133** (1988), no. 4-5, 171-175. (Summary) **89m:81062** 81C99 (53C80)
- Anandani, P.** (with Ronghe, Ashok Kumar) Integration of Fox's  $H$ -function with respect to a parameter. (Hindi. English summary) *Vijnana Parishad Anusandhan Patrika* **30** (1987), no. 1, 13-16. (C. L. Koul) **89e:33006** 33A35
- Anane, Aomar** Simplicité et isolation de la première valeur propre du  $p$ -laplacien avec poids. (English summary) [Simplicity and isolation of the first eigenvalue of the  $p$ -Laplacian with weight] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 16, 725-728. (Gerd Grubb) **89e:35124** 35P30 (35J65)
- Ananthakrishna, G.** (with Balakrishnan, Radha; Hao, Bai Lin) Errata: "Spatially chaotic spin patterns in a field-perturbed Heisenberg chain" [Phys. Lett. A **121** (1987), no. 8-9, 407-410; MR **88e:82029**]. *Phys. Lett. A* **124** (1987), no. 9, 526. (Editors) **89f:82074** 82A68
- Anantha Krishniah, U.** (with Manohar, R.; Iyengar, Satteluri R. K.) High order difference methods for linear variable coefficient parabolic equation. *J. Comput. Phys.* **77** (1988), no. 2, 513-523. (Summary) **89g:65132** 65N10
- Anantharam, Venkatchalam** (with Varaiya, P.; Walrand, Jean) Asymptotically efficient allocation rules for the multiarmed bandit problem with multiple plays. I. I.I.D. rewards. *IEEE Trans. Automat. Control* **32** (1987), no. 11, 968-976. (Masami Kurano) **89b:62140** 62L15 (90C40)
- (with Varaiya, P.; Walrand, Jean) Asymptotically efficient allocation rules for the multiarmed bandit problem with multiple plays. II. Markovian rewards. *IEEE Trans. Automat. Control* **32** (1987), no. 11, 977-982. (Masami Kurano) **89b:62141** 62L15 (90C40)
- Probabilistic proof of the interchangeability of  $-M/1$  queues in series. *Queueing Systems Theory Appl.* **2** (1987), no. 4, 387-392. (C. E. M. Pearce) **89f:60181** 60K25 (90B15, 90B22)
- (with Varaiya, P.) Asymptotically efficient rules in multiarmed bandit problems. *Modelling and adaptive control* (Sopron, 1986), 1-9, *Lecture Notes in Control and Inform. Sci.*, 105, Springer, Berlin-New York, 1988. (Chandra M. Gulati) **89m:62090** 62L05 (90C40)
- Modelling the flow of coalescing data streams through a processor. *J. Appl. Probab.* **25** (1988), no. 1, 184-193. (John P. Lehoczy) **89d:60170** 60K25 (90B15, 90B22)
- (with Agrawal, Rajeev; Teneketzis, Demosthenis) Asymptotically efficient adaptive allocation schemes for controlled i.i.d. processes: finite parameter space. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 258-267. (Summary) **89m:90092** 90B99 (93E25)
- Anantharaman, R.** (with Garg, K. M.) Errata: "Some topological properties of vector measures and their integral maps" [J. Austral. Math. Soc. Ser. A **23** (1977), no. 4, 453-466; MR **58** #6144]. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 3, 371. (Editors) **89e:28022** 28B05 (46G10)
- Anantharaman-Delaroche, Claire** Systèmes dynamiques non commutatifs et moyennabilité. [Noncommutative dynamical systems and amenability] *Math. Ann.* **279** (1987), no. 2, 297-315. (Elliott C. Gootman) **89f:46127** 46L55 (22D25, 22D40, 43A07, 43A35)
- On Connes' property  $T$  for von Neumann algebras. *Math. Japon.* **32** (1987), no. 3, 337-355. (Yasuo Watatani) **89h:46086** 46L10 (16A99, 22D25)
- Anapol'skii, L. Yu.** (with Lyamzin, O. Yu.) On the dynamics of a two-machine power system. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985), 216-237, 326, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (From the introduction) **89f:34071** 34D20
- see also Method of Lyapunov functions in the analysis of the dynamics of systems, **89c:00040** and Problems in the qualitative theory of differential equations, **89j:34002**
- Anas, Alex** (with Feng, Cheng Min) Invariance of expected utilities in logit models. *Econom. Lett.* **27** (1988), no. 1, 41-45. (Summary) **89g:90032** 90A10
- Anastasiei, M.** Models of Finsler and Lagrange geometry. *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces* (Braşov, 1986), 43-56, *Soc. Ştiinţe Mat. R.S. România, Bucharest*, 1986. (Masao Hashiguchi) **89c:53020** 53B40 (53C60)
- (with Miron, Radu) Invariant theory of subspaces in generalized Lagrange spaces. *Progr. Math. (Varanasi)* **21** (1987), no. 2, 59-74. (Sándor Bácsó) **89j:53020** 53B40
- Anastassova, K. I.** A generalization of an ill-posed problem for a nonlinear equation of neutral type. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 1, 67-77 (1987). (Summary) **89c:34106a** 34K05 (34A55)
- Generalization of an ill-posed problem for a nonlinear equation of neutral type. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 1, 79-88 (1987). (Summary) **89c:34106b** 34A55 (34K05)
- Reconstruction of the initial function for a nonlinear equation of neutral type. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 2, 51-58 (1987). (Not in MR) **34K05** (34A55)
- Anastasselou, Eleni G.** A formal comparison of the Delves-Lyness and Burniston-Siewert methods for locating the zeros of analytic functions. *IMA J. Numer. Anal.* **6** (1986), no. 3,



- 337-341. (Summary) **89i:65030** 65E05 (30C15, 65H05)
- Anastassiou, George A. Multidimensional quantitative results for probability measures approximating the unit measure. *Approx. Theory Appl.* 2 (1986), no. 4, 93-103. (Sheldon Eisenberg) **89a:41030** 41A36 (47B55)
- A comparison between the Lipschitz and Prohorov metrics. *Bull. Soc. Math. Grèce (N.S.)* 28 (1987), part A, 1-5. (Detlef Plachky) **89e:60008** 60B05 (28C15)
- On the degree of weak convergence of a sequence of finite measures to the unit measure under convexity. *J. Approx. Theory* 51 (1987), no. 4, 333-349. (Summary) **89g:28007** 28A33 (41A36)
- Ansel, Fredric D. An alternative proof of M. Brown's theorem on inverse sequences of near homeomorphisms. *Geometric topology and shape theory* (Dubrovnik, 1986), 1-2, *Lecture Notes in Math.*, 1283, Springer, Berlin-New York, 1987. (J. Mioduszewski) **89d:54003** 54B25
- Neighborhoods of points in codimension-one submanifolds lie in codimension-one spheres. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1315-1316. (Gerard A. Venema) **89e:57013** 57N35
- Anchikov, A. M. (with Daishev, R. A.) Generation of static solutions of a self-consistent system of Einstein-Maxwell equations. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 31 (1988), no. 2, 98-102; translated in *Soviet Phys. J.* 31 (1988), no. 2, 167-171. (Kishore Marathe) **89i:83012** 83C15
- Ancker, C. J., Jr. (with Gafarian, A. V.) Erratum: "The validity of assumptions underlying current uses of Lanchester attrition rates" [*Naval Res. Logist.* 34 (1987), no. 4, 505-533; MR 88f:90216]. *Naval Res. Logist.* 35 (1988), no. 5, 534. (Editors) **89h:90281** 90D35
- Ancochea-Bermúdez, José María (with Goze, M.) Classification des algèbres de Lie filiformes de dimension 8. [Classification of filiform Lie algebras of dimension 8] *Arch. Math. (Basel)* 50 (1988), no. 6, 511-525. (Roger Carles) **89h:17010** 17B30
- Ancona, Alano Positive harmonic functions and hyperbolicity. *Potential theory—surveys and problems* (Prague, 1987), 1-23, *Lecture Notes in Math.*, 1344, Springer, Berlin-New York, 1988. (see **89m:31001**) 31C20 (31C12, 31C35)
- Ancona, Vincenzo Quelques propriétés des espaces 1-convexes. [Some properties of 1-convex spaces] *Journées Complexes* 85 (Nancy, 1985), 1-5, *Inst. Élie Cartan*, 10, Univ. Nancy, Nancy, 1986. (From the text) **89c:32038** 32F10
- Vanishing and nonvanishing theorems for numerically effective line bundles on complex spaces. *Ann. Mat. Pura Appl.* (4) 149 (1987), 153-164. (Yujiro Kawamata) **89h:32058** 32L20 (14E30, 14J10)
- Embedding of a 1-convex space in an algebraic 1-convex space. (Italian. English summary) *Boll. Un. Mat. Ital. A* (7) 1 (1987), no. 3, 397-400. (Claudio Rea) **89c:32039** 32F10
- (with Gaveau, Bernard) Annulation de la cohomologie pour des fibrés à courbure de signe variable sur une variété kählérienne. (English summary) [Vanishing of cohomology for bundles whose curvature has variable sign on a Kähler manifold] *Ann. Mat. Pura Appl.* (4) 151 (1988), 97-107. (S. Dimiev) **89m:32050** 32L15 (32L20, 53C55)
- Andalafte, Edward Z. (with Freese, Raymond W.; Diminnie, Charles R.) Angle bisectors in normed linear spaces. *Math. Nachr.* 131 (1987), 167-173. (K. Sundaresan) **89c:46032** 46B99 (46C99)
- (with Freese, Raymond W.) Characterization of inner product spaces in  $V$ - and  $L$ -spaces. *J. Geom.* 33 (1988), no. 1-2, 3-10. (Grattan P. Murphy) **89m:51027** 51K05 (46C99, 54E40)
- al-Andalust, Muhammad Ibn al-Raqqām ★ Risāla fī 'ilm al-jīāl. (Arabic) [Treatise on the science of shadows] With a Spanish translation. Edited, translated and with commentary by Joan Carandell. Universidad de Barcelona. Instituto "Millas Vallicrosa" de Historia de la Ciencia Árabe, Barcelona, 1988. 323 pp. ISBN 84-600-5360-1 (E. S. Kennedy) **89k:01007** 01A30
- Anděl, Jiří On linear processes with given moments. *J. Time Ser. Anal.* 8 (1987), no. 4, 373-378. (Summary) **89h:62147** 62M10 (62E10)
- Periodic autoregression with exogenous variables and equal variances. *Probability theory and mathematical statistics with applications* (Visehrad, 1985), 237-245, *Reidel, Dordrecht-Boston, MA*, 1988. (Bert M. Steece) **89i:62141** 62M10
- On AR(1) processes with exponential white noise. *Comm. Statist. Theory Methods* 17 (1988), no. 5, 1481-1495. (J. R. M. Hosking) **89i:62142** 62M10
- (with Gómez, María) Two-dimensional long memory models. *Kybernetika* (Prague) 24 (1988), no. 1, 1-16. (Rudolf Pedro Mentz) **89e:62115** 62M10
- (with Zvára, Karel) Tables for AR(1) processes with exponential white noise. *Kybernetika* (Prague) 24 (1988), no. 5, 372-377. (Summary) **89i:62143** 62M10 (62Q05)
- Anders, B. Differential equations for growth functions. *Systems Anal. Modelling Simulation* 5 (1988), no. 1, 59-78. (Stanislaw Sedziwy) **89h:92040** 92A15 (92A17)
- Andersen, Henning Haahr Modular representations of algebraic groups. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 23-36, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (James E. Humphreys) **89b:20082** 20G05 (20G10)
- Extensions of simple modules for finite Chevalley groups. *J. Algebra* 111 (1987), no. 2, 388-403. (Leonard Chastkofsky) **89b:20089** 20G10
- Why Gerd Faltings got the Fields medal. (Danish. English summary) *Normat* 35 (1987), no. 3, 89-97, 128. (Editors) **89e:01050** 01A70 (11D41)
- Andersen, K. F. Weighted norm inequalities for Bochner-Riesz spherical summation multipliers. *Proc. Amer. Math. Soc.* 103 (1988), no. 1, 165-171. (G. V. Welland) **89i:42025** 42B15 (42B20, 44A15)
- (with Sawyer, Eric T.) Weighted norm inequalities for the Riemann-Liouville and Weyl fractional integral operators. *Trans. Amer. Math. Soc.* 308 (1988), no. 2, 547-558. (Wo-Sang Young) **89h:26006** 26A33 (26D10, 42B25, 47G05)
- Andersen, K. Munk (with Sandqvist, A.) Liénard equations with bounded trajectories in the Liénard plane. *J. Math. Anal. Appl.* 135 (1988), no. 1, 244-267. (A. A. Martynyuk) **89m:34072** 34D30 (58F12, 58F21, 70K99)
- Andersen, Kirsti The method of indivisibles: changing understandings. 300 Jahre Nova methodus von G. W. Leibniz (1684-1984) (Noordwijkerhout, 1984), 14-25, *Studia Leibnitiana Sonderheft*, 14, Steiner, Wiesbaden, 1986. (D. W. Bressler) **89m:01032** 01A45
- Ancient roots of linear perspective. *From ancient omens to statistical mechanics*, 75-89, *Acta Hist. Sci. Nat. Med.*, 39, Univ. Lib. Copenhagen, Copenhagen, 1987. (C. R. Fletcher) **89i:01003** 01A20 (01A40)
- The central projection in one of Ptolemy's map constructions. *Centaurus* 30 (1987), no. 2, 106-113. (George Abraham) **89b:01008** 01A20
- Andersen, L. D. (with Hilton, A. J. W.) The existence of symmetric Latin squares with one prescribed symbol in each row and column. *Combinatorial design theory*, 1-26, *North-Holland Math. Stud.*, 149, North-Holland, Amsterdam-New York, 1987. (Katherine Heinrich) **89a:05035** 05B15
- (with Fleischner, Herbert; Jackson, Bill) Removable edges in cyclically 4-edge-connected cubic graphs. *Graphs Combin.* 4 (1988), no. 1, 1-21. (H. Joseph Straight) **89c:05060** 05C75
- see also *Graph theory in memory of G. A. Dirac*, **89g:05004**
- Andersen, Niels Trille (with Dobric, V.) The central limit theorem for stochastic processes. II. *J. Theoret. Probab.* 1 (1988), no. 3, 287-303. (Evarist Giné) **89h:60010** 60B12 (60F05, 60F17)
- (with Giné, Evarist; Ossander, Mina; Zinn, Joel) The central limit theorem and the law of iterated logarithm for empirical processes under local conditions. *Probab. Theory Related Fields* 77 (1988), no. 2, 271-305. (R. M. Dudley) **89g:60009** 60B12 (60F05, 60F15)
- (with Giné, Evarist; Zinn, Joel) The central limit theorem for empirical processes under local conditions: the case of Radon infinitely divisible limits without Gaussian component. *Trans. Amer. Math. Soc.* 308 (1988), no. 2, 603-635. (Sándor Csörgö) **89d:60059** 60F17 (60F05)
- Andersen, Per Kragh see Ramlau-Hansen, Henrik, (Not in MR)
- Anderson, Arlen Nontrivial homotopy and tunneling by topological instantons. *Phys. Rev. D* (3) 37 (1988), no. 4, 1030-1035. (Summary) **89d:81057** 81E13 (58D30)
- Anderson, B. A. A fast method for sequencing low order nonabelian groups. *Combinatorial design theory*, 27-41, *North-Holland Math. Stud.*, 149, North-Holland, Amsterdam-New York, 1987. (R. A. Bailey) **89f:20033** 20D60 (05A15)
- Anderson, B. D. O. (with Dasgupta, Soura; Kaye, R. John) Identification of physical parameters in structured systems. *Automatica—J. IFAC* 24 (1988), no. 2, 217-225. (J. P. Babary) **89i:93030** 93B30
- (with Skelton, Robert E.) The generation of all  $q$ -Markov covers. *IEEE Trans. Circuits and Systems* 35 (1988), no. 4, 375-384. (Not in MR) 93B10 (93B15, 93B20)
- (with Green, Michael B.) Hilbert transform and gain/phase error bounds for rational functions. *IEEE Trans. Circuits and Systems* 35 (1988), no. 5, 528-535. (Summary) **89i:94005** 94A11 (44A15)
- (with Kraus, F.; Jury, E. I.; Mansour, M.) On the robustness of low-order Schur polynomials. *IEEE Trans. Circuits and Systems* 35 (1988), no. 5, 570-577. (Ye-Hwa Chen) **89g:93085** 93D99 (26C05, 93B35)
- (with Sethares, W. A.; Mareels, I. M. Y.; Johnson, C. Richard, Jr.; Bitmead, Robert R.) Excitation conditions for signed regressor least mean squares adaptation. *IEEE Trans. Circuits and Systems* 35 (1988), no. 6, 613-624. (Not in MR) 94A11 (94A05)
- (with Kraus, F.; Mansour, M.) Robust Schur polynomial stability and Kharitonov's theorem. *Internat. J. Control* 47 (1988), no. 5, 1213-1225. (Anthony Uyi Afuwape) **89i:93099** 93D99 (30C15)
- Anderson, Charles Lloyd Gamma variates of fractional shape as functionals of a homogeneous multidimensional Poisson process. *Comm. Statist. Simulation Comput.* 17 (1988), no. 3, 781-787. (Moshe Shaked) **89i:62021** 62E15 (65C10)
- Anderson, D. D. (with Pascual, Joaquin) Regular ideals in commutative rings, sublattices of regular ideals, and Prüfer rings. *J. Algebra* 111 (1987), no. 2, 404-426. (David F. Anderson) **89a:13001** 13A15 (06C05, 13A18, 13F05)
- Nonfinitely generated ideals in valuation domains. *Tamkang J. Math.* 18 (1987), no. 2, 49-52. (Ira J. Papick) **89a:13002** 13A15 (13A18, 13F05)
- (with Nakkar, H. M.) Associated and weakly associated prime elements and primary decomposition in lattice modules. *Algebra Universalis* 25 (1988), no. 2, 196-209. (Michael E. Dettelsen) **89g:06034** 06F10
- An existence theorem for non-Euclidean PIDs. *Comm. Algebra* 16 (1988), no. 6, 1221-1229. (John David) **89c:13025** 13F10 (13F07)
- Star-operations induced by overrings. *Comm. Algebra* 16 (1988), no. 12, 2535-2553. (David F. Anderson) **89i:13032** 13G05 (13A99, 13F05)
- (with Dobbs, David E.) Flatness, LCM-stability, and related module-theoretic properties. *J. Algebra* 112 (1988), no. 1, 139-150. (Sarah Glaz) **89a:13011** 13C05
- (with Anderson, David F.) Some remarks on star operations and the class group. *J. Pure Appl. Algebra* 51 (1988), no. 1-2, 27-33. (Alain Bouvier) **89i:13024** 13F05 (13A15, 13A18, 13B20)
- (with Mahaney, L. A.) On primary factorizations. *J. Pure Appl. Algebra* 54 (1988), no. 2-3, 141-154. (R. K. Markanda) **89h:13004** 13A17 (13A15)
- Anderson, Dale A. Equidistribution schemes, Poisson generators, and adaptive grids. *Appl. Math. Comput.* 24 (1987), no. 3, 211-227. (Stanly L. Steinberg) **89b:65223** 65M50 (65N50)
- Anderson, David F. A general theory of class groups. *Comm. Algebra* 16 (1988), no. 4, 805-847. (Alain Bouvier) **89i:13023** 13F05 (13A15, 13A18, 13B20)
- (with Bouvier, Alain; Dobbs, David E.; Fontana, Marco; Kabbaj, Salah) On Jaffard domains. *Exposition. Math.* 6 (1988), no. 2, 145-175. (J. W. Brewer) **89c:13014** 13C15
- The Picard group of a monoid domain. *J. Algebra* 115 (1988), no. 2, 342-351. (Daniel D. Anderson) **89i:13020** 13G05 (13B25)
- (with Anderson, D. D.) Some remarks on star operations and the class group. *J. Pure Appl. Algebra* 51 (1988), no. 1-2, 27-33. (Alain Bouvier) **89i:13024** 13F05 (13A15, 13A18, 13B20)
- (with Ryckaert, Alain) The class group of  $D + M$ . *J. Pure Appl. Algebra* 52 (1988), no. 3, 199-212. (Salah Kabbaj) **89h:13008** 13B20 (13A15, 13A18)
- (with Dobbs, David E.; Kabbaj, Salah; Mulay, S. B.) Universally catenarian domains of  $D + M$  type. *Proc. Amer. Math. Soc.* 104 (1988), no. 2, 378-384. (Alain Bouvier) **89i:13014** 13C15 (13G05)
- Anderson, David Hezekiah (with McWilliams, Joseph G.; Roller, Towanna) The unilateral circulation compartmental model. *Math. Biosci.* 89 (1988), no. 2, 183-208. (P. Bertrand) **89h:92003** 92A05 (92A09, 93B30, 93B60)
- Anderson, Douglas R. (with Munkholm, Hans J.) ★ Boundedly controlled topology. Foundations of algebraic topology and simple homotopy theory. *Lecture Notes in Mathematics*, 1323, Springer-Verlag, Berlin-New York, 1988. xii+309 pp. ISBN 3-540-19397-9 (Frank Quinn) **89h:57029** 57R80 (57Q10)

- Anderson, Erling B. Amendment to discussion of paper by L. A. Goodman: "Some useful extensions of the usual correspondence analysis approach and the usual log-linear models approach in the analysis of contingency tables" [Internat. Statist. Rev. 54 (1986), no. 3, 243-309]. *Internat. Statist. Rev.* 55 (1987), no. 2, 229. (Not in MR) 62H17
- Anderson, G. D. (with Frame, J. S.) Numerical estimates for a Grötsch ring constant. *Constr. Approx.* 4 (1988), no. 3, 223-242. (M. K. Vamanamurthy) 89i:30017 30C60
- (with Vamanamurthy, M. K.; Vuorinen, M.) Distortion functions for plane quasiconformal mappings. *Israel J. Math.* 62 (1988), no. 1, 1-16. (J. G. Krzyż) 89f:30036 30C60 (33A20, 33A70)
- (with Vamanamurthy, M. K.) Hölder continuity of quasiconformal mappings of the unit ball. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 227-230. (Matti Vuorinen) 89k:30017 30C60
- (with Vamanamurthy, M. K.) The transfinite moduli of condensers in space. *Tôhoku Math. J. (2)* 40 (1988), no. 1, 1-25. (J. Siciak) 89d:31011 31B15 (30C60, 31B05)
- (with Vamanamurthy, M. K.; Vuorinen, M.) Sharp distortion theorems for quasiconformal mappings. *Trans. Amer. Math. Soc.* 305 (1988), no. 1, 95-111. (Gaven J. Martin) 89c:30049 30C60 (30C75)
- Anderson, G. L. *see* Anderson, Gary L.
- Anderson, Gary *see* Anderson, Gary Stanley
- Anderson, Gary L. (with Tadjbakhsh, I. G.) Stabilization of Ziegler's pendulum by means of the method of vibrational control. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 787-843, ARO Rep., 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Vadim Komkov) 89f:70040 70Q05 (34D25, 34H05, 70K20, 93D10)
- Anderson, Gary Stanley A procedure for differentiating perfect-foresight-model reduced-form coefficients. *J. Econom. Dynamics Control* 11 (1987), no. 4, 465-481. (Not in MR) 62P20 (90A)
- Anderson, Greg W. The hyperadelic gamma function: a précis. *Galois representations and arithmetic algebraic geometry* (Kyoto, 1985/Tokyo, 1986), 1-19, *Adv. Stud. Pure Math.*, 12, North-Holland, Amsterdam-New York, 1987. (Editors) 89m:11115 11S80 (11G20, 14G10)
- Torsion points on Fermat Jacobians, roots of circular units and relative singular homology. *Duke Math. J.* 54 (1987), no. 2, 501-561. (Yasutaka Ihara) 89g:14012 14G25 (11G35, 11R18, 14F35)
- (with Ihara, Yasutaka) Pro- $l$  branched coverings of  $P^1$  and higher circular  $l$ -units. *Ann. of Math. (2)* 128 (1988), no. 2, 271-293. (David Goss) 89f:14023 14H25 (11G20, 14H30)
- (with Moore, Gregory W.) Rationality in conformal field theory. *Comm. Math. Phys.* 117 (1988), no. 3, 441-450. (K. Schoutens) 89j:81153 81E99 (17B99, 81E40)
- The hyperadelic gamma function. *Invent. Math.* 95 (1989), no. 1, 63-131. (Gerd Faltings) 89j:11118 11S80 (11G20)
- Anderson, Ian ★ Combinatorics of finite sets. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1987. xvi+250 pp. ISBN 0-19-853367-5 (D. J. Kleitman) 89b:05001 05-01 (05A05)
- An Erdős-Ko-Rado theorem for multisets. *Discrete Math.* 69 (1988), no. 1, 1-9. (J. E. Graver) 89b:05024 05A20
- Anderson, J. L. *see* Anderson, James L.
- Anderson, J. M. *see* Anderson, James Milne
- Anderson, J. S. (with Hosseini-Hashemi, S.) Orthogonality and normalization of torsional modes of vibration of solid elastic spheres. *J. Sound Vibration* 121 (1988), no. 3, 511-524. (Summary) 89c:73027 73D30
- Anderson, James H. (with Gouda, Mohamed G.) Atomic semantics of nonatomic programs. *Inform. Process. Lett.* 28 (1988), no. 2, 99-103. (Not in MR) 68Q55 (68Q10)
- Anderson, James L. (with Hobill, D. W.) Matched analytic-numerical solutions of wave equations. *Dynamical spacetimes and numerical relativity* (Philadelphia, PA, 1985), 389-410, Cambridge Univ. Press, Cambridge-New York, 1986. (Philippe-A. Dionne) 89g:83005 83C05 (83-08)
- (with Spiegel, E. A.) Line formation in a relativistically expanding atmosphere. *Gravitation and geometry*, 37-54, *Monographs Textbooks Phys. Sci.*, 4, Bibliopolis, Naples, 1987. (Gh. Procopiu) 89e:85006 85A30
- *see also* González-Gascón, Francisco, 89h:58171
- Anderson, James Milne (with Hinkkanen, A.; Lesley, F. David) On theorems of Jackson and Bernstein type in the complex plane. *Constr. Approx.* 4 (1988), no. 3, 307-319. (Z. Rubinstein) 89d:30044 30E10 (41A10, 41A27)
- (with Clunie, J. G.; Rosenblum, M.; Rovnyak, J.) Some problems of best approximation with constraints. *J. Approx. Theory* 52 (1988), no. 1, 82-106. (Marco P. Baronti) 89j:41038 41A50 (41A65, 46C99, 47A99, 49D15)
- (with Pitt, L. D.) The boundary behavior of Bloch functions and univalent functions. *Michigan Math. J.* 35 (1988), no. 2, 313-320. (D. A. Storvick) 89m:30067 30D40
- Anderson, James R. (with Peterson, Carsten) Neural networks and NP-complete optimization problems: a performance study on the graph bisection problem. *Complex Systems* 2 (1988), no. 1, 59-89. (Summary) 89d:90176 90C27 (68Q25, 68R10, 92A09)
- Anderson, John E. (with Evans, Mark) UMBBS: a blackboard development system for an educational environment. Eighteenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1988). *Congr. Numer.* 69 (1989), 167-188. (see 89m:00010) 68T20
- Anderson, John T. Finitely generated algebras and algebras of solutions to partial differential equations. *Pacific J. Math.* 133 (1988), no. 1, 1-12. (Jan Janas) 89d:46055 46J15 (35A99)
- Anderson, Kevin K. A note on cumulative shock models. *J. Appl. Probab.* 25 (1988), no. 1, 220-223. (Summary) 89k:60023 60F05 (60K10)
- (with Athreya, K. B.) A strong renewal theorem for generalized renewal functions in the infinite mean case. *Probab. Theory Related Fields* 77 (1988), no. 4, 471-479. (E. Omeij) 89d:60157 60K05
- Anderson, Malcolm R. (with Lemos, Jose P. S.) Viscous shear in the Kerr metric. *Monthly Notices Roy. Astron. Soc.* 233 (1988), no. 2, 489-502. (Piotr Bizoń) 89f:83065 83C55
- Anderson, Mark Manifolds and Stiefel-Whitney classes. *Proc. Amer. Math. Soc.* 105 (1989), no. 1, 209-214. (R. E. Stong) 89e:57028 57R75
- Anderson, Marlow (with Harary, Frank) Achievement and avoidance games for generating abelian groups. *Internat. J. Game Theory* 16 (1987), no. 4, 321-325. (Harold Reiter) 89a:90189 90D42 (20K01)
- Anderson, Michael T.  $L^2$  harmonic forms on complete Riemannian manifolds. *Geometry and analysis on manifolds* (Katata/Kyoto, 1987), 1-19, *Lecture Notes in Math.*, 1339, Springer, Berlin-New York, 1988. (József Dodziuk) 89j:58004 58A14 (53C21, 58G25)
- Anderson, Mitch One parameter submonoids in locally compact differentiable monoids. *Proc. Amer. Math. Soc.* 106 (1989), no. 1, 261-268. (Jimmie D. Lawson) 89d:22002 22A15
- Anderson, Norman (with Arthurs, A. M.) Canonical and duality transformations for the electromagnetic field. *Internat. J. Electron.* 65 (1988), no. 1, 91-96. (Summary) 89f:78006 78A25
- Anderson, Oliver D. (with de Gooijer, Jan G.) Sampled autocovariance and autocorrelation results for linear time processes. *Comm. Statist. Simulation Comput.* 17 (1988), no. 2, 489-513. (Summary) 89e:62116 62M10
- Anderson, R. F. *see* Anderson, Robert Frank
- Anderson, R. J. *see* Anderson, Richard John
- Anderson, Richard John (with Mayr, Ernst) Parallelism and greedy algorithms. *Advances in computing research*, Vol. 4, 17-38, JAI, Greenwich, CT, 1987. (Aravinda Prasad Sistla) 89j:68057 68Q20 (05C35, 68Q10, 68Q25, 90B10, 90C35)
- A parallel algorithm for the maximal path problem. *Combinatorica* 7 (1987), no. 4, 315-326. (Joseph Ja'Ja') 89e:68042 68Q25 (05C38, 68R10, 90B10)
- (with Aggarwal, Alok) A random  $\mathcal{A}^*$  algorithm for depth first search. *Combinatorica* 8 (1988), no. 1, 1-12. (William Gasarch) 89m:68054 68Q25 (05C35, 68Q15, 68R10)
- Anderson, Robert Frank Replacement with nonconstant operating cost. *SIAM J. Control Optim.* 26 (1988), no. 5, 1076-1098. (Peter Purdue) 89k:90070 90B25 (60G40, 93E20)
- Anderson, Robert M. Notions of core convergence. *Contributions to mathematical economics*, 25-46, North-Holland, Amsterdam-New York, 1986. (C. D. Aliprantis) 89b:90039 90A14
- Gap-minimizing prices and quadratic core convergence. *J. Math. Econom.* 16 (1987), no. 1, 1-15. (Beth Allen) 89a:90041 90A14 (90A06)
- The second welfare theorem with nonconvex preferences. With an appendix by Anderson and Andreu Mas-Colell. *Econometrica* 56 (1988), no. 2, 361-382. (Jacob Paroush) 89e:90048 90A14 (90A06)
- Anderson, Roy Malcolm (with Blythe, S. P.) Distributed incubation and infectious periods in models of the transmission dynamics of the human immunodeficiency virus (HIV). *IMA J. Math. Appl. Med. Biol.* 5 (1988), no. 1, 1-19. (Summary) 89a:92034 92A15
- (with Blythe, S. P.) Variable infectiousness in HIV transmission models. *IMA J. Math. Appl. Med. Biol.* 5 (1988), no. 3, 181-200. (Summary) 89i:92034 92A15 (92A07)
- (with Blythe, S. P.) Heterogeneous sexual activity models of HIV transmission in male homosexual populations. *IMA J. Math. Appl. Med. Biol.* 5 (1988), no. 4, 237-260. (Not in MR) 92A15
- The epidemiology of HIV infection: variable incubation plus infectious periods and heterogeneity in sexual activity. With discussion. *J. Roy. Statist. Soc. Ser. A* 151 (1988), no. 1, 66-98. (Not in MR) 92A15
- Anderson, Simon P. (with de Palma, André; Thisse, Jacques-François) A representative consumer theory of the logit model. *Internat. Econom. Rev.* 29 (1988), no. 3, 461-466. (Joseph D. Cole) 89m:90020 90A10 (62P20, 90A05, 90A19)
- Anderson, Stephen L. Bounded point evaluations for nonminimal measures. *J. Funct. Anal.* 71 (1987), no. 1, 198-205. (Olli Martio) 89h:31002 31A15
- Anderson, Steven P. (with Gorman, Arthur D.) Caustics associated with the asymptotic solution of the diffusion equation. *Quart. Appl. Math.* 45 (1987), no. 4, 783-787. (Michiel Bertsch) 89f:35102 35K55 (35C20, 58G16)
- Anderson, T. W. (with Amemiya, Yasuo) The asymptotic normal distribution of estimators in factor analysis under general conditions. *Ann. Statist.* 16 (1988), no. 2, 759-771. (Masashi Okamoto) 89g:62086 62H25 (62H12)
- *see also* Sargan, John Denis, 89h:62184a and 89h:62184b
- Anderson, Tim (with Kaarli, K.; Wiegandt, R.) On left strong radicals of near-rings. *Proc. Edinburgh Math. Soc. (2)* 31 (1988), no. 3, 447-456. (Günter Pilz) 89i:16032 16A76
- Anderson, W. N. (with Trapp, G. E.) The harmonic and geometric mean of vectors. *Linear and Multilinear Algebra* 22 (1987), no. 2, 199-210. (M. C. Chaki) 89g:15002 15A03 (26D15)
- (with Mays, Michael E.; Morley, T. D.; Trapp, G. E.) The contraharmonic mean of HSD matrices. *SIAM J. Algebraic Discrete Methods* 8 (1987), no. 4, 674-682. (T. Ando) 89b:47030 47A60 (15A48)
- (with Trapp, G. E.) Network matrix operations for vectors and quaternions. *Linear algebra in signals, systems, and control* (Boston, MA, 1986), 3-10, *SIAM, Philadelphia, PA*, 1988. (T. Ando) 89k:15046 15A99 (94C99)
- Andersson, R. S. *see* Special program on inverse problems, 89m:65008
- Andersson, Å. E. (with Kuenne, R. E.) Regional economic dynamics. *Handbook of regional and urban economics*, Vol. 1, 201-253, *Handbooks in Economics*, 7, North-Holland, Amsterdam-New York, 1986. (see 89m:90047) 90A14 (90A11, 90A17)
- (with Casti, J.; Christiansen, P. L.; Karlqvist, A.) Emerging paradigms in applied mathematical modelling—an introduction. Special issue on emerging paradigms in applied mathematical modelling. *J. Comput. Appl. Math.* 22 (1988), no. 2-3, 143-181. (David Yeung) 89j:92001 92-01 (58F40, 90A16, 93A10)
- *see also* Special issue: Emerging paradigms in applied mathematical modelling, 89c:00028
- Andersson, Börje (with Storåkers, Bertil) Nonlinear plate theory applied to delamination in composites. *J. Mech. Phys. Solids* 36 (1988), no. 6, 689-718. (Jiri Nedoma) 89m:73025 73K10 (73C50, 73C60, 73K20)
- Andersson, H. I. (with Eliasson, Peter; Rizzi, Arthur) Time-marching method to solve steady incompressible Navier-Stokes equations for laminar and turbulent flow. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 105-114, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see 89j:35007) 76-08 (76D05)
- Andersson, Lars Åke Momenta and reduction for general relativity. *J. Geom. Phys.* 4 (1987), no. 3, 289-314. (Judith M. Arms) 89m:58032 58D30 (58D05, 83C05, 83C30)
- Invariant Lagrangian subspaces. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1113-1119. (L. Rodman) 89h:47051 47B50 (47A15, 58F05, 58G15)
- Andersson, Lars-Erik (with Elfving, Tommy) An algorithm for constrained interpolation. *SIAM J. Sci. Statist. Comput.* 8 (1987), no. 6, 1012-1025. (Summary) 89f:65012 65D05 (65D07)



- Inverse eigenvalue problems with discontinuous coefficients. *Inverse Problems* 4 (1988), no. 2, 353–397. (Jan Bochenek) **89p:34015** 34A55 (34B25)
- On the determination of a function from spherical averages. *SIAM J. Math. Anal.* 19 (1988), no. 1, 214–232. (Eric Todd Quinto) **89a:44005** 44A15 (76Q05)
- Andersson, Mats** (with Passare, Mikael) A shortcut to weighted representation formulas for holomorphic functions. *Ark. Mat.* 26 (1988), no. 1, 1–12. (Bo Berndtsson) **89i:32003** 32A25
- Andersson, Steen A.** (with Perlman, Michael D.) Group-invariant analogues of Hadamard's inequality. *Linear Algebra Appl.* 110 (1988), 91–116. (George P. Barker) **89i:15028** 15A57 (15A15)
- Andikyan, M. A.** The tensors of torsion and curvature of a three-web on a tangent bundle. (Russian) *Webs and quasigroups (Russian)*, 119–124, *Kalinin. Gos. Univ., Kalinin*, 1988. (Vladislav Goldberg) **89f:53025** 53A60 (53B05)
- Andjel, Enrique D.** A correlation inequality for the symmetric exclusion process. *Ann. Probab.* 16 (1988), no. 2, 717–721. (T. M. Liggett) **89d:60192** 60K35
- A zero or one law for one-dimensional random walks in random environments. *Ann. Probab.* 16 (1988), no. 2, 722–729. (F. L. Spitzer) **89e:60198** 60K35 (60J15)
- The contact process in high dimensions. *Ann. Probab.* 16 (1988), no. 3, 1174–1183. (Richard Holley) **89j:60131** 60K35
- Andler, Martin** Relationships of divisibility between local  $L$ -functions associated to representations of complex reductive groups. *Noncommutative harmonic analysis and Lie groups (Marseille-Luminy, 1985)*, 1–14, *Lecture Notes in Math.*, 1243, Springer, Berlin-New York, 1987. (Joe Reepka) **89c:11171** 11S37 (11F67, 11F70, 22E30, 22E46)
- École Normale Supérieure: interview of Michel Broué. [École Normale Supérieure: interview with Michel Broué] *Gaz. Math. No.* 32 (1987), 47–53. (Editors) **89a:01092** 01A73
- see also Interview with three members of Nicolas Bourbaki, **89c:01039**
- Ando, Hideo** (with Fukuhara, Kenzo) Homotopy products and duality. *Mem. College Ed. Akita Univ. Natur. Sci. No.* 38 (1988), 1–31. (John McCleary) **89j:55015** 55Q15 (55Q25)
- Ando, Shigeru** Real arithmetic versions of simultaneous iteration methods for polynomial root finding. *Japan J. Appl. Math.* 6 (1989), no. 1, 67–76. (Summary) **89m:65049** 65H05 (58F08)
- Ando, Shiro** (with Nagasaka, Kenji) Symmetric recursive sequences mod  $m$ . *Applications of Fibonacci numbers (San Jose, CA, 1986)*, 17–28, *Kluwer Acad. Publ., Dordrecht*, 1988. (G. Turnwald) **89i:11029** 11B50 (11B37)
- A triangular array with hexagon property, dual to Pascal's triangle. *Applications of Fibonacci numbers (San Jose, CA, 1986)*, 61–67, *Kluwer Acad. Publ., Dordrecht*, 1988. (Konrad Engel) **89i:05007** 05A10 (05A19)
- Ando, Tsuyoshi** (with Bunce, John W.) The geometric mean, operator inequalities, and the Weylstone bridge. *Linear Algebra Appl.* 97 (1987), 77–91. (George E. Trapp) **89a:47022** 47A62 (47B55, 47D20, 94C05)
- (with Horn, Roger A.; Johnson, Charles Royal) The singular values of a Hadamard product: a basic inequality. *Linear and Multilinear Algebra* 21 (1987), no. 4, 345–365. (M. Pearl) **89g:15018** 15A45
- (with Bhatia, Rajendra) Eigenvalue inequalities associated with the Cartesian decomposition. *Linear and Multilinear Algebra* 22 (1987), no. 2, 133–147. (Lajos László) **89c:15022** 15A42 (15A57, 15A60)
- On some operator inequalities. *Math. Ann.* 279 (1987), no. 1, 157–159. (Chandler Davis) **89c:47019** 47A60
- ★ Matrix quadratic equations. *Hokkaido University, Research Institute of Applied Electricity, Division of Applied Mathematics, Sapporo*, 1988. vi+97 pp. (Harald K. Wimmer) **89i:15019** 15A24 (15-02, 93B25)
- Ando, Yoshifumi** Erratum to: "On the elimination of Morin singularities" [J. Math. Soc. Japan 37 (1985), no. 3, 471–487; MR 87h:58018]. *J. Math. Soc. Japan* 39 (1987), no. 3, 537. (Editors) **89b:58031** 58C27 (57R45)
- Andon, F. I.** (with Polyachenko, B. E.; Gun'ko, O. L.) Optimization of computations in multiprocessor computer complexes. (Russian) *Design and development of program packages (Russian)*, 4–9, i, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (Summary) **89f:65155** 65W05
- Andonov, R. A.** Finding facets of the knapsack polytope which cut off a given point. *C. R. Acad. Bulgare Sci.* 40 (1987), no. 8, 41–44. (From the text) **89j:90176** 90C08
- A method for construction of strongest cuts and generation of minimal covers for 0-1 linear programming problems. *Math. Balkanica (N.S.)* 2 (1988), no. 1, 32–43. (Summary) **89h:90154** 90C09 (90C10)
- Andotra, Janak Singh** (with Deo, Satya) On completely finitistic spaces. *Bull. Calcutta Math. Soc.* 80 (1988), no. 3, 173–177. (Kōichi Tsuda) **89k:54022** 54B17 (54F45)
- Andradas, C.** (with Bröcker, L.; Ruiz, Jesús M.) Minimal generation of basic open semianalytic sets. *Invent. Math.* 92 (1988), no. 2, 409–430. (Michel Coste) **89f:32016** 32C05 (11E10, 14G30, 32B20)
- prado de Andrade, A. F.** see Prado de Andrade, A. F.
- Andrade, Doherty** The Carleson-Hunt theorem. (Portuguese) *Bol. Soc. Paran. Mat.* (2) 9 (1988), no. 1, 43–57. (Not in MR) **42A20** (42-01)
- The Pick formula. (Portuguese) *Bol. Soc. Paran. Mat.* (2) 9 (1988), no. 1, 119–126. (H. W. Guggenheimer) **89i:52019** 52A43
- soto-Andrade, Jorge** see Soto-Andrade, Jorge
- Andraos, Sweidan** (with Ahmad, Hiasat) A new efficient memoryless residue to binary converter. *IEEE Trans. Circuits and Systems* 35 (1988), no. 11, 1441–1444. (Not in MR) **94C05**
- André, Johannes** Über Kennzeichnungen endlicher Gruppenräume. [On characterizations of finite group spaces] *Arch. Math. (Basel)* 49 (1987), no. 2, 127–133. (R. Fritsch) **89f:51010b** 51A15 (20B25)
- Über schiefaffine Räume der Ordnung 2. [On skew-affine spaces of order 2] *Resultate Math.* 12 (1987), no. 3–4, 241–251. (R. Fritsch) **89f:51010c** 51A15
- Endliche nichtkommutative Geometrie. [Finite noncommutative geometry] *Ann. Univ. Sarav. Ser. Math.* 2 (1988), no. 1, 136 pp. (W. Benz) **89m:51004** 51A05 (51E99)
- André, Michel** Reg ouvert et complexe cotangent. (English summary) [The open set Reg and the cotangent complex] *Manuscripta Math.* 60 (1988), no. 2, 171–183. (W. V. Vasconcelos) **89b:13027** 13D10
- André, Yves** Quatre descriptions des groupes de Galois différentiels. [Four descriptions of differential Galois groups] *Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliavin* (Paris, 1986), 28–41, *Lecture Notes in Math.*, 1296, Springer, Berlin-New York, 1987. (F. Baldassarri) **89e:12012** 12H05 (14C99, 18E10)
- Andreadakis, S.** (with Raptis, E.; Varso, D.) A characterization of residually finite HNN-extensions of finitely generated abelian groups. *Arch. Math. (Basel)* 50 (1988), no. 6, 495–501. (David Meier) **89g:20046** 20E06 (20E26)
- Andreas, Thomas** A remark on perfect Gaussian elimination of symmetric matrices. *European J. Combin.* 9 (1988), no. 6, 547–549. (Larry Bascenipier) **89k:05066** 05C50 (15A05)
- Andreatta, Giovanni** Shortest path models in stochastic networks. *Stochastics in combinatorial optimization (Udine, 1986)*, 178–186, *World Sci. Publishing, Singapore*, 1987. (Summary) **89j:90113** 90B15
- (with Romeo, Luciano) Stochastic shortest paths with recourse. *Networks* 18 (1988), no. 3, 193–204. (Summary) **89e:90093** 90B15 (68Q25)
- see also Stochastics in combinatorial optimization, **89e:90130**
- Andreatta, Marco** (with Alessandrini, Lucia) A resolution of the sheaf of germs of real pluriharmonic functions. *Proceedings of the conference on algebraic geometry (Berlin, 1985)*, 6–13, *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (Carmen Sessa) **89e:58003** 58A14 (32C35)
- Andreescu, D.** (with Radó, F.; Vălcău, D.) Mappings of  $E^n$  into  $E^m$  preserving two distances. *Seminar on geometry (Cluj-Napoca, 1986)*, 9–22, *Preprint*, 86-10, Univ. "Babeş-Bolyai", Cluj-Napoca, 1986. (W. Benz) **89m:51021** 51F20 (51K05)
- Andreev, A. A.** (with Shindin, I. P.) On the well-posedness of boundary value problems for a partial differential equation with deviating argument. (Russian) *Analytical methods in the theory of differential and integral equations (Russian)*, 3–6, *Kuibyshev. Gos. Univ., Kuibyshev*, 1987. (Reinhard Redlinger) **89h:35324** 35R10
- (with Kholodov, A. S.) A supersonic three-dimensional flow past blunt bodies that takes interference into account. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 29 (1989), no. 1, 142–147, 160. (Not in MR) **76-08** (76J10)
- Andreev, A. E.** Design of schemes of functional elements in complete monotone bases. (Russian) *Mathematical problems in cybernetics, No. 1 (Russian)*, 114–139, "Nauka", Moscow, 1988. (János Demetrovics) **89m:94025** 94C10 (03G05)
- Andreev, A. F.** Conditions for a semicenter of a system of class  $C^2$  with 1-jet  $y\partial/\partial x$  at the singular point  $0 = (0, 0)$ . (Russian) *Partial differential equations (Russian)*, 46–50, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Jun Ping Chen) **89j:34038** 34C05 (58F21)
- (with Bitsadze, A. V.; Erugin, N. P.; Zubov, V. I.; Izobov, N. A.; Il'in, V. A.; Kiguradze, I. T.; Krasovskii, N. N.; Kudryavtsev, L. D.; Millionshchikov, V. M.; Pliss, V. A.; Samarskii, A. A.; Sibirskii, K. S.; Tikhonov, A. N.) Yurii Stanislavovich Bogdanov. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 6, 1091–1097; translated in *Differential Equations* 24 (1988), no. 6, 692–699. (Editors) **89i:01055** 01A70
- Andreev, Aleksandr Sergeevich** Investigation of partial asymptotic stability and instability based on the limiting equations. *J. Appl. Math. Mech.* 51 (1987), no. 2, 196–201 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 2, 253–259 (Russian). (Alexander Kanevskii) **89i:34072** 34D20
- Andreev, Andrei St.** (with Zhidkov, E. P.; Popov, Vasil Atanasov) The Gibbs effect for spline interpolation and for the numerical solution of integral equations by the spline-collocation method. (Russian) *Serdica* 12 (1986), no. 4, 315–320 (1987). (Gheorghe Micula) **89e:65015** 65D07 (65R20)
- (with Kyurkchiev, Nikolai V.) Two-sided methods for solving a polynomial equation. *Math. Balkanica (N.S.)* 1 (1987), no. 1, 72–82. (W. C. Rheinboldt) **89a:65078** 65H05
- (with Kyurkchiev, Nikolai V.) Two-sided analog of the Chebyshev's method. *C. R. Acad. Bulgare Sci.* 41 (1988), no. 4, 17–19. (Moody T. Chu) **89g:65064** 65H05
- (with Atanasova, L.; Kyurkchiev, Nikolai V.) Recurrently generated iterative functions for the approximate solution of algebraic equations. (Russian) *Serdica* 14 (1988), no. 3, 271–277. (Summary) **89h:65073** 65H05
- Andreev, B. A.** On the geometry of the differentiable mapping  $f: P_m \rightarrow \hat{P}_n$  ( $m > n$ ). (Russian) *Differentsial'naya Geom. Mnogoobraz. Figur* No. 18 (1987), 5–9, 135. (Vladislav Goldberg) **89e:53011** 53A20
- Andreev, N. V.** (with Abzianidze, D. V.) A problem of the optimization of the broaching process in pipe rolling production. (Russian) *Adapt. Sistemy Avtomat. Upravleniya* No. 16 (1988), 117–122, iv. (Not in MR) **93C75** (90B30, 93C40)
- Andreev, O. D.** (with Tseytlin, A. A.) Two-loop beta function in the open string sigma model and equivalence with string effective equations of motion. *Modern Phys. Lett. A* 3 (1988), no. 14, 1349–1359. (Summary) **89i:81077** 81E15 (81E30)
- (with Tseytlin, A. A.) Partition-function representation for the open superstring effective action: cancellation of Möbius infinities and derivative corrections to Born-Infeld Lagrangian. *Nuclear Phys. B* 311 (1988/89), no. 1, 205–252. (Summary) **89k:81125** 81E99 (81E30)
- (with Tseytlin, A. A.) Generating functional for scattering amplitudes and the effective action in the open superstring theory. *Phys. Lett. B* 207 (1988), no. 2, 157–163. (Sorin Marculescu) **89f:81151** 81E99 (81E30, 83E30)
- Andreev, O. P.** (with Ermolaev, A. I.; Tsvirkun, A. D.) The design of systems based on mixed-integer models of optimization. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 10, 111–118; translated in *Avtomat. Remote Control* 49 (1988), no. 10, part 2, 1341–1346. (Summary) **89k:90121** 90C11
- Andreev, V. A.** Supersymmetric generalized Toda lattices. (Russian) *Group-theoretic methods in physics, Vol. 1 (Russian) (Jurmala, 1985)*, 439–452, "Nauka", Moscow, 1986. (see **89d:81001**) **58F07** (70G99)
- Bäcklund transformations of Toda lattices. (Russian. English summary) *Teoret. Mat. Fiz.* 75 (1988), no. 3, 340–352; translated in *Theoret. and Math. Phys.* 75 (1988), no. 3, 567–575. (Summary) **89h:58073** 58F07
- (with Lerner, P. B.) Supersymmetry in the Jaynes-Cummings model. *Phys. Lett. A* 134 (1989), no. 8–9, 507–511. (Summary) **89k:81209** 81K05
- Andreev, V. B.** On the analysis of a difference scheme for the Laplace equation in a singularly perturbed domain. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 10, 1527–1535, 1598. (Yu Cheng Su) **89b:65245** 65N15
- Andreev, V. K.** On the stability of nonstationary capillary motion. *BAIL IV (Novosibirsk, 1986)*, 194–198, *Boole Press Conf. Ser.*, 8, Boole, Dun Laoghaire, 1986. (Moses A. Boudourides) **89d:76020** 76E99 (35R35, 76B45)
- (with Rodionov, A. A.) Group analysis of equations of plane flows of an ideal fluid in Lagrangian coordinates. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 6, 1358–1361;



- translated in *Soviet Phys. Dokl.* **33** (1988), no. 2, 105–107. (Editors) **89j:76038** 76C99 (35A30, 58G35)
- Andreeva, E. A.** Optimal control of systems with retarded argument. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 11, 30–39. (Jozef Komorník) **89h:34064** 34K15 (49B10, 49C20)
- Andrei, Neculai** ★ Sparse systems. Digraph approach of large-scale linear systems theory. With a foreword by Constantin V. Negoita. ISR Interdisciplinary Systems Research, 90. Verlag TÜV Rheinland GmbH, Cologne, 1985. viii+255 pp. ISBN 3-88585-237-3 (T. K. Serazetdinov) **89e:93007** 93A15 (05C20, 93-02, 93C05)
- Application of sparse matrix techniques in GRG algorithm for very large-scale nonlinear programming. *Rev. Roumaine Sci. Tech. Sér. Electrotech. Energét.* **32** (1987), no. 4, 457–464. (Not in MR) 90C30
- Andrian, Căzacu, Cabria** The centenary of the birth of Simion Stoilow (1887–1961). *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 10, 863–864. (Editors) **89e:01042** 01A70
- Interior transformations between Klein surfaces. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 1-2, 21–26. (Yu. B. Zelinskii) **89g:30084** 30G15 (30F99, 57N05)
- see also Boboc, N. **89j:01059**
- Andrichenko, N. K.** Markov models for redundant systems with an unreliable switch. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 55, 17–41. (V. Nosko (RZhMat 1988:4 V435)) **89g:60267** 60K10
- Andreini, Alessandra** (with Bacciotti, Andrea; Stefani, Gianna) On the stabilizability of homogeneous control systems. *Analysis and optimization of systems (Antibes, 1988)*, 239–248, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89c:00031**) 93D15
- (with Bacciotti, Andrea; Stefani, Gianna) Global stabilizability of homogeneous vector fields of odd degree. *Systems Control Lett.* **10** (1988), no. 4, 251–256. (Adam Lozowski) **89h:93044** 93D15 (58F10, 93B05)
- Andréka, Hajnal Rózsa Péter** (1905–1977). *Women of mathematics*, 171–174, Greenwood, Westport, CT, 1987. (see **89b:01071**) 01A70
- On taking subalgebras of relativized relation algebras. *Algebra Universalis* **25** (1988), no. 1, 96–100. (S. Comer) **89g:03092** 03G15 (08A30)
- (with Craig, William Lane; Némethi, L.) A system of logic for partial functions under existence-dependent Kleene equality. *J. Symbolic Logic* **53** (1988), no. 3, 834–839. (Stephen L. Bloom) **89i:03055** 03C05 (03D20, 08B05)
- Andreotti, Aldo** ★ Selecta di opere. Vol. I. (Italian) [Selected works. Vol. I] Geometria algebrica. [Algebraic geometry] With a biography of Aldo Andreotti by Edoardo Vesentini. *Scuola Normale Superiore, Pisa*, 1982. 427 pp. (Harold P. Boas) **89i:01136** 01A75 (14-03)
- see also Marchionna, Ermanno, **89a:01072**
- Andreu, Elias** (with Dassios, George; Polyzos, Demosthenes) Korn's constant for a spherical shell. *Quart. Appl. Math.* **46** (1988), no. 3, 583–591. (Cornelius O. Horgan) **89j:73014** 73C20 (49G05, 73L20)
- gouli-Andreu, Florence** see Gouli-Andreu, Florence
- Andrés, A.** see Martín Andrés, A.
- Andrés, Ján** Asymptotic properties of the solutions of a third-order differential equation with an oscillating function. (Russian) *Linear operators and their applications (Russian)*, 109–111, *Azerbaijdzhan. Gos. Univ., Baku*, 1986. (see **89c:00016**) 34E05 (34C11)
- Boundedness results of solutions to the equation  $x''' + ax'' + g(x)x' + h(x) = p(t)$  without the hypothesis  $h(x) \operatorname{sgn} x \geq 0$  for  $|x| > R$ . (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **80** (1986), no. 7-12, 533–539 (1987). (C. A. Swanson) **89m:34043** 34C11
- On local  $\omega$ -cycles to certain third order nonlinear differential equations. *Fasc. Math.* **17** (1987), 49–54. (Afaf A. Saleh Zaghrout) **89h:34011** 34A34 (34A10, 34C25)
- Dichotomies for solutions of a certain third order nonlinear differential equation, which is not from the class D. *Fasc. Math.* **17** (1987), 55–62. (William B. Day) **89d:34088** 34E05 (34C10, 34C11)
- de Andrés, Luis C.** (with de León, Manuel) Almost complex structures of tangent bundles of odd order. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 17–26, *Publ. Dep. Mat. Univ. Extremadura*, 18, *Univ. Extremadura, Badajoz*, 1987. (Luis A. Cordero) **89k:53036** 53C15 (53C05)
- (with Fernández, Marisa; Mencía, José J.; Rozas, Juan I.) Four-dimensional compact locally conformal Kähler solvmanifolds. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **2** (1988), no. 3, 377–382. (Manuel De León) **89m:53117** 53C55 (53C15, 53C30)
- fernandez Andrés, Manuel** see Fernandez Andrés, Manuel
- Andres, Yan** see Andres, Ján
- antonino Andréu, José A.** see Antonino Andréu, José A.
- Andrew, Alan L.** Correction of finite element eigenvalues for problems with natural or periodic boundary conditions. *BIT* **28** (1988), no. 2, 254–269. (L. Greenberg) **89h:65197** 65L15 (65L60)
- Correction of finite difference eigenvalues of periodic Sturm-Liouville problems. *J. Austral. Math. Soc. Ser. B* **30** (1989), no. 4, 460–469. (Summary) **89k:65101** 65L15
- Andrews, D. M.** (with David, H. A.) Closed adaptive sequential paired-comparison selection procedures. *J. Statist. Comput. Simulation* **27** (1987), no. 2, 127–141. (Françoise Garcia-Brouayre) **89m:62092** 62L10
- Andrews, Donald W. K.** Chi-square diagnostic tests for econometric models. Introduction and applications. *J. Econometrics* **37** (1988), no. 1, 135–156. (H. T. Amundsen) **89e:62187** 62P20 (62F03)
- (with Fair, Ray C.) Inference in nonlinear econometric models with structural change. *Rev. Econom. Stud.* **55** (1988), no. 4, 615–639. (Manfred Kraft) **89m:62114** 62P20 (62J02)
- Andrews, G. E.** (with Agarwal, Ashok Kumar<sup>1</sup>) On Asai's polynomials related to the twisting operators of finite classical groups. *J. Ramanujan Math. Soc.* **1** (1986), no. 1-2, 16–45. (G. E. Wall) **89m:20051** 20G40 (11F22, 11F27)
- (with Baxter, Rodney James; Bressoud, D. M.; Burge, W. H.; Forrester, P. J.; Viennot, Gérard) Partitions with prescribed hook differences. *European J. Combin.* **8** (1987), no. 4, 341–350. (Peter Paule) **89g:05014** 05A30 (82A69)
- Rogers-Ramanujan identities for two-color partitions. *Indian J. Math.* **29** (1987), no. 2, 117–125. (D. H. Lehmer) **89a:05018** 05A19 (05A17, 33A35)
- (with Forrester, P. J.) Height probabilities in solid-on-solid models. II. *J. Phys. A* **20** (1987), no. 13, 4465–4481. (Paul A. Pearce) **89h:82092** 82A67 (82A68, 82A69)
- The Rogers-Ramanujan identities without Jacobi's triple product. *Rocky Mountain J. Math.* **17** (1987), no. 4, 659–672. (L. Bruce Richmond) **89d:11088** 11P57 (05A17)
- Ramanujan's fifth order mock theta functions as constant terms. *Ramanujan revisited (Urbana-Champaign, Ill., 1987)*, 47–56, *Academic Press, Boston, MA*, 1988. (Bruce C. Berndt) **89f:33023** 33A70
- Ramanujan: prodigy and hero of mathematics. *Srinivasa Ramanujan (1887–1920)*, 27–31, *Macmillan India, Madras*, 1988. (see **89m:01070**) 01A70
- Application of SCRATCHPAD to problems in special functions and combinatorics. *Trends in computer algebra (Bad Neuenahr, 1987)*, 158–166, *Lecture Notes in Comput. Sci.*, 296, Springer, Berlin-New York, 1988. (Peter J. Forrester) **89c:05010** 05A19
- (with Garvan, F. G.) Dyson's crank of a partition. *Bull. Amer. Math. Soc. (N.S.)* **18** (1988), no. 2, 167–171. (M. S. Cheema) **89b:11079** 11P65 (05A17)
- (with Dyson, Freeman J.; Hickerson, Dean) Partitions and indefinite quadratic forms. *Invent. Math.* **91** (1988), no. 3, 391–407. (S. W. Graham) **89i:11071** 11F35 (11F27, 11P72)
- (with Goulden, I. P.; Jackson, D. M.) Generalizations of Cauchy's summation theorem for Schur functions. *Trans. Amer. Math. Soc.* **310** (1988), no. 2, 805–820. (Philip Hanlon) **89m:05009** 05A19 (05B15)
- see also Ramanujan revisited, **89c:11001** and Ramanujan, Srinivasa, **89j:01078**
- Andrews, L. C.** (with Vajravelu, K.; Mohapatra, Ram Narayan) Exact solutions of the unsteady hydrodynamic and hydromagnetic flows past an infinite plate. *Acta Mech.* **74** (1988), no. 1-4, 185–193. (Summary) **89i:76046** 76D10 (76W05)
- Andrews, P. L.** (with Waltz, R. E.) Direct solution for the power spectrum of the Lorenz attractor. *Phys. Fluids* **31** (1988), no. 11, 3168–3170. (Summary) **89i:58074** 58F13 (76F99)
- Andrews, Peter** see Andrews, Peter Gordon
- Andrews, Peter B.** Typed  $\lambda$ -calculus and automated mathematics. *Mathematical logic and theoretical computer science (College Park, Md., 1984–1985)*, 1–14, *Lecture Notes in Pure and Appl. Math.*, 106, Dekker, New York, 1987. (From the summary) **89c:03019** 03B40 (03B15, 03B35)
- Andrews, Peter Gordon** The classification of surfaces. *Amer. Math. Monthly* **95** (1988), no. 9, 861–867. (Roger Fenn) **89k:57024** 57N05
- Andreyev, A. S.** see Andreev, Aleksandr Sergeevich
- Andriankin, E. I.** (with Andruschenko, V. A.; Kholin, N. N.) Numerical methods for solving three-dimensional time-dependent problems of the dynamics of elastoplastic media. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 11, 1711–1718, 1759. (Summary) **89k:73027** 73E50 (73-08, 73D05, 73D99)
- Andrianov, A. A.** (with Borisov, N. V.; Ioffe, M. V.) Scattering theory for the supersymmetric Hamiltonian, and supersymmetry of nuclear interactions. (Russian. English summary) *Teoret. Mat. Fiz.* **72** (1987), no. 1, 97–111. (Horia Scutaru) **89a:81160** 81F15 (81G20)
- (with Ioffe, M. V.) Pauli fermions as components of  $D = 2$  supersymmetrical quantum mechanics. *Phys. Lett. B* **205** (1988), no. 4, 507–510. (Summary) **89c:81191** 81G10 (81C99)
- Andrianov, Anatolii Nikolaevich** Spherical theta-series. (Russian) *Mat. Sb. (N.S.)* **134** (176) (1987), no. 3, 291–305, 447; translated in *Math. USSR-Sb.* **62** (1989), no. 2, 289–304. (K.-B. Gundlach) **89b:11044** 11F41 (11F27)
- Andrianov, I. V.** (with Starushenko, G. A.) Solution of dynamic problems for punctured constructions by the averaging method. (Russian) *Dynamic systems*, No. 6 (Russian), 72–76, 124, “*Vishcha Shkola*”, Kiev, 1987. (see **89a:00004**) 34C29
- (with Bulanova, N. S.) Application of the method of Padé approximants for estimating the domain of applicability of the small parameter method. (Russian) *Vychisl. Prikl. Mat. (Kiev)* **62** (1987), 31–34, 130. (Summary) **89c:65092** 65L99
- (with Kholod, E. G.) Some exact solutions in the theory of flexible plates. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* **1988**, no. 2, 131–133, 167; translated in *J. Appl. Mech. Tech. Phys.* **29** (1988), no. 2, 284–286. (S. Matsiyak) **89g:73029** 73K10
- (with Sedin, W.) Composition of simplified equations of nonlinear dynamics of plates and shallow shells on the basis of homogenisation method. *Z. Angew. Math. Mech.* **68** (1988), no. 11, 573–575. (Not in MR) 73K12 (73L15)
- Andrianova, Maria A.** see Gorbator, V. A. **89i:00002**
- Andrica, Dorin** The refinement of some geometric inequalities. *Seminar on geometry (Cluj-Napoca, 1986)*, 71–76, *Preprint*, 86-10, *Univ. “Babeş-Bolyai”, Cluj-Napoca*, 1986. (Murray S. Klamkin) **89a:51042** 51M05 (51M25)
- (with Buzescu, Şerban) Relatively dense universal sequences for the class of continuous periodic functions of period T. *Anal. Numér. Théor. Approx.* **16** (1987), no. 1, 1–9. (J. A. Haight) **89i:11084** 11K06
- (with Pečarić, Josip E.) Abstract Jensen's inequality for convex functions and applications. *Mathematica (Cluj)* **29** (52) (1987), no. 1, 61–65. (J. Horváth) **89k:26009** 26B25 (26D15, 26D20, 46A55)
- (with Badea, C.) Grüss' inequality for positive linear functionals. *Period. Math. Hungar.* **19** (1988), no. 2, 155–167. (V. B. Headley) **89d:26018** 26D15
- Andrienko, V. A.** Cesàro summability of orthogonal series. (Russian) *Theory of functions and approximations, Part 1 (Russian)* (Saratov, 1984), 85–91, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00035**) 42C05 (40G05)
- Andrievskaya, A. M.** (with Konforovich, A. G.) ★ История развития математики. (Russian) [History of the development of mathematics] Translated from the Ukrainian. “*Vishcha Shkola*”, Kiev, 1988. 95 pp. (J. S. Joel) **89c:01001** 01-01
- Andrievskii, V. V.** Uniform convergence of Bieberbach polynomials in domains with a piecewise-quasiconformal boundary. (Russian) *Theory of functions and approximations, Part 2 (Russian)* (Saratov, 1984), 12–14, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) 30E10
- Constructive description of classes of harmonic functions with singularities on a quasiconformal arc. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 1, 3–7, 132; translated in *Ukrainian Math. J.* **40** (1988), no. 1, 1–4. (W. H. J. Fuchs) **89d:31001** 31A05 (41A30)
- Andrijević, Dimitrije** On the topology generated by preopen sets. (Serbo-Croatian summary) *Mat. Vesnik* **39** (1987), no. 4, 367–376. (J. M. Aarts) **89e:54001** 54A05 (54A10)
- A note on preopen sets. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* **18** (1988), 195–201. (M. K. Vamanamurthy) **89g:54004** 54A10

- Andriyanov, V. L. An application of boundary value problems in the theory of analytic functions. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 14-17, Saratov. Gos. Univ., Saratov, 1986. (see 89j:00036) 30E25
- Andriyanova, N. A. On the existence and uniqueness of the solution of a problem with shift for the Euler-Poisson-Darboux equation of hyperbolic type with negative parameters. (Russian) *Differential equations and mathematical physics* (Russian), 123-126, *Kulbyshev. Gos. Ped. Inst., Kuybyshev*, 1985. (see 89f:35006) 35L80 (35Q05)
- Andronikof, E. Sur les filtrations de Cohen-Macaulay des modules microdifférentiels. [On Cohen-Macaulay filtrations of microdifferential modules] *J. Math. Pures Appl.* (9) 66 (1987), no. 4, 369-384. (Teresa Monteiro-Fernandes) 89d:58119 58G07 (16A03, 32C38)
- Andropov, V. M. Analytical methods of analyzing the functioning of the distributed multi-microprocessor systems. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 6, 89-92 (1988); translated from *Avtomatika* 1987, no. 6, 83-86, 97 (Russian). (Hans Daduna) 89m:60216 60K25 (68M20, 90B22)
- Andrusov, S. M. (with Gluzman, B. Yu.; Oslov, V. A.) Methods for the program realization of algorithms for searching for the shortest distances on a graph in a transportation automatic control system. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 9, 158-165. (I. A. Kliker) 89f:05105 05C38 (05C35, 68R10, 90B20, 90C27)
- Andruk, G. V. (with Nikitenko, S. S.) Spline representation of information on natural tests of dynamic objects in multiprocessor systems. (Russian) *Data processing in multiprocessor distributed computer systems* (Russian), 30-34, ii-iii, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (Summary) 89e:65167 65W05
- Andrunkievich, V. A. (with Erugin, N. P.; Vulpe, N. I.) Konstantin Sergeevich Sibirskii (on the occasion of his 60th birthday). (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 3, 371-375. (Editors) 89k:01028 01A70
- (with Ryabukhin, Yu. M.) Primitivity and quasiregularity with respect to the right ideals of a ring. (Russian) *Dokl. Akad. Nauk SSSR* 296 (1987), no. 4, 777-780; translated in *Soviet Math. Dokl.* 36 (1988), no. 2, 305-308. (Authors' review (translated from *RZhMat* 1988:3 A302)) 89g:16012 16A20 (16A21)
- (with Ryabukhin, Yu. M.) Quasiregularity and primitivity with respect to right ideals of a ring. (Russian) *Mat. Sb. (N.S.)* 134(176) (1987), no. 4, 451-471, 575; translated in *Math. USSR-Sb.* 62 (1989), no. 2, 445-464. (Iuliu Crivei) 89e:16013 16A20
- see also Arnsator, V. I. et al. 89b:01033 and Birthdays: Andrunkievich, V. A., 89e:01092
- Andrushevich, V. V. (with Kveselava, A. D.; Kukuliev, G. Yu.) Collective behavior processes in problems of the distribution of a multidimensional resource. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 3, 62-70; translated in *Avtomat. Remote Control* 49 (1988), no. 3, part 1, 314-319. (Summary) 89f:90031 90A16
- Andruschenko, V. A. (with Andriankin, E. I.; Kholin, N. N.) Numerical methods for solving three-dimensional time-dependent problems of the dynamics of elastoplastic media. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 11, 1711-1718, 1759. (Summary) 89k:73027 73E05 (73-08, 73D05, 73D99)
- Andrushevskii, N. M. (with Shchedrin, B. M.; Malinovskii, T. I.) The ambiguity problem of vector-set interpretation. *Acta Cryst. Sect. A* 44 (1988), no. 4, 422-425. (Summary) 89e:20090 20H15 (82A60)
- Andrushevskii, I. E. (with Shishkin, G. V.) Separation of variables in the Dirac equation in general relativity. III. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I* 1986, no. 2, 5-10. (Summary) 89a:83007 83C10
- (with Shishkin, G. V.) Separation of variables in the Dirac equation in general relativity. IV. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* 1986, no. 3, 3-7, 75. (Summary) 89a:83008 83C10
- Andruszkiewicz, R. R. Finiteness conditions induced by properties of maximal commutative subalgebras. *Arch. Math. (Basel)* 40 (1987), no. 4, 303-307. (From the text) 89a:16019 16A33
- (with Puczyłowski, Edmund R.) On filial rings. *Portugal. Math.* 45 (1988), no. 2, 139-149. (R. L. Kruse) 89j:16032 16A45
- Andrzejczak, Grzegorz. More characteristic invariants of foliated bundles. *Differential geometry* (Warsaw, 1979), 9-22, *Banach Center Publ.*, 12, PWN, Warsaw, 1984. (Claude Roger) 89j:57024 57R32 (53C12)
- Characteristic classes of foliations preserved by a transverse  $k$ -field. *Differential geometry* (Warsaw, 1979), 23-27, *Banach Center Publ.*, 12, PWN, Warsaw, 1984. (Claude Roger) 89j:57025 57R32 (53C12)
- see also *Differential geometry*, 89d:53001
- Andrzejczak, Karol J. Some properties of multistate BW-systems. *Serdica* 13 (1987), no. 4, 341-346. (Bent Natvig) 89e:62127 62N05 (90B25)
- Anellis, Irving H. Lattice structures, maximal rectangular neural nets, and appearances: the algebraic expansion model of the intentional logic  $L(I)$ . *Comm. Cognition* 18 (1985), no. 4, 399-413. (Robert M. Baer) 89b:03042 03B60 (68T30)
- Sof'ja Aleksandrovna Janovskaja (1896-1966). *Women of mathematics*, 80-85, *Greenwood, Westport, CT*, 1987. (see 89b:01071) 01A70
- The heritage of S. A. Janovskaja. *Hist. Philos. Logic* 8 (1987), no. 1, 45-56. (Editors) 89c:01043 01A70 (03-03)
- Russell's earliest interpretation of Cantorian set theory, 1896-1900. *Philos. Math.* (2) 2 (1987), no. 1, 1-31. (John W. Dawson, Jr.) 89f:01031 01A55 (03-03, 03A05, 04-03)
- Russell and Engels: two approaches to a Hegelian philosophy of mathematics. *Philos. Math.* (2) 2 (1987), no. 2, 151-179. (Roman Murawski) 89e:00016 00A25 (01A55, 03A05)
- Some unpublished papers of Jean van Heijenoort. *Historia Math.* 15 (1988), no. 3, 270-274. (Editors) 89b:01054 01A70
- Aneva, B. L. (with Boshilov, P.; Stoyanov, D. T.) On the classical mechanics of a nonrelativistic superparticle. *J. Phys. A* 20 (1987), no. 16, 5723-5728. (Roger Picken) 89c:81060 81D07 (70H05, 81C99)
- (with Stoyanov, D. T.) Nonrelativistic supersymmetry. *Group theoretical methods in physics* (Varna, 1987), 91-96, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (see 89g:81001) 81C40
- Anfinson, Cynthia J. (with Luk, Franklin T.) A linear algebraic model of algorithm-based fault tolerance. *IEEE Trans. Comput.* 37 (1988), no. 12, 1599-1604. (Michitaka Kameyama) 89k:94055 94B05 (68P25, 94A13)
- Ang, D. D. see Dáng Dinh Áng
- Angel, Y. C. On the reduction of elastodynamic crack problems to singular integral equations. *Internat. J. Engrg. Sci.* 26 (1988), no. 7, 757-764. (K. N. Srivastava) 89j:73021 73D15 (73D10, 73M05)
- Angelis, J. (with Zung, E.) Simulation of finite-dimensional linear dynamical systems using zero-order holds and numerical-stabilization methods. *Comput. Math. Appl.* 16 (1988), no. 4, 307-320. (T. Kaczorek) 89g:93027 93B25 (65L99)
- de Angelis, Gian Fabrizio see De Angelis, Gian Fabrizio
- Angel, J. S. (with Olmstead, W. E.) Singularly perturbed Volterra integral equations. II. *SIAM J. Appl. Math.* 47 (1987), no. 6, 1150-1162. (Christopher T. H. Baker) 89a:45002 45D05 (45J05)
- Angelopoulos, Evghenios. Algèbres de Lie  $\mathfrak{g}$  satisfaisant  $[\mathfrak{g}, \mathfrak{g}] = \mathfrak{g}$ ,  $\text{Der } \mathfrak{g} = \text{ad } \mathfrak{g}$ . (English summary) [Lie algebras  $\mathfrak{g}$  satisfying  $[\mathfrak{g}, \mathfrak{g}] = \mathfrak{g}$ ,  $\text{Der } \mathfrak{g} = \text{ad } \mathfrak{g}$ ] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 13, 523-525. (Robert E. Beck) 89k:17020 17B20 (17B05, 17B10)
- Angelos, J. R. (with Schmidt, Darrell) The prevalence of strong uniqueness in  $L^1$ . *Acta Math. Hungar.* 52 (1988), no. 1-2, 83-90. (Günther Nürnberger) 89j:41048 41A65 (41A50, 41A52, 46B25)
- Angelov, R. On the wrapping effect. *C. R. Acad. Bulgare Sci.* 40 (1987), no. 8, 29-32. (G. Alefeld) 89b:65164 65L05 (65G10)
- Angelov, V. G. On the nonlinear contractions in Frechet  $L$ -spaces. (Russian and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 21 (1985), no. 1, 71-76 (1986). (S. Buryšek) 89c:47065 47H10
- A converse to a contraction mapping theorem in uniform spaces. *Nonlinear Anal.* 12 (1988), no. 10, 989-996. (Heinrich Steinlein) 89k:54101 54H25 (47H10)
- Angelova, D. C. (with Bainov, D. D.) Oscillatory properties of the solutions of a class of epidemiological equations. *C. R. Acad. Bulgare Sci.* 40 (1987), no. 10, 19-22. (H. W. Hethcote) 89e:92033 92A15 (45G10)
- (with Bainov, D. D.) Oscillatory and asymptotic behaviour of the solutions of first-order functional-differential equations. *IMA J. Appl. Math.* 39 (1987), no. 1, 75-89. (G. Ladas) 89m:34088 34K15 (34K25)
- (with Bainov, D. D.) Necessary and sufficient conditions for the existence of nonoscillatory solutions and oscillation of all solutions of second order functional-differential equations. *Serdica* 13 (1987), no. 4, 347-360. (Bhagat Singh) 89b:34158 34K15 (34C10)
- (with Bainov, D. D.) On the behaviour of the solutions of Volterra second order integro-differential equations. *Quart. J. Math. Oxford Ser. (2)* 39 (1988), no. 155, 255-268. (Elaidi Hanebaly) 89k:45008 45J05 (45D05, 45M05)
- Angelova, M. N. (with Dirli, R.; Kasperkovitz, P.; Kotzev, J. N.; Aroyo, M. I.) The symmetry of the group representations and the reduction of the multiplicity problem. *Group-theoretic methods in physics, Vol. 1* (Russian) (*Jarmala*, 1985), 583-590, "Nauka", Moscow, 1986. (see 89d:81001) 22E70 (20C35, 22E40)
- (with Aroyo, M. I.; Kotzev, J. N.) On the Wigner-Eckart theorem and coupled tensor operators for corepresentations of Shubnikov groups. *Group-theoretic methods in physics, Vol. 1* (Russian) (*Jarmala*, 1985), 603-608, "Nauka", Moscow, 1986. (see 89d:81001) 81C40 (20C35, 82A60)
- (with Dirli, R.; Kasperkovitz, P.; Kotzev, J. N.; Aroyo, M. I.) The symmetry of group representations and the reduction of the multiplicity problem. *Group theoretical methods in physics, Vol. II* (*Jarmala*, 1985), 409-417, *VNU Sci. Press, Utrecht*, 1986. (Nigel B. Backhouse) 89e:20014 20C15 (81C40)
- Angenent, S. B. (with Clément, Ph.; Heijmans, H. J. A. M.; van Duijn, C. J.; de Pagter, B.) ★ One-parameter semigroups. *CWI Monographs*, 5, North-Holland Publishing Co., Amsterdam-New York, 1987. x+312 pp. ISBN 0-444-70284-9 (R. J. Nagel) 89b:47058 47D05 (34Gxx, 47B55, 47H20)
- The shadowing lemma for elliptic PDE. *Dynamics of infinite-dimensional systems* (Lisbon, 1986), 7-22, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 37, Springer, Berlin-New York, 1987. (Pierre-Louis Lions) 89b:58165 58F15 (35J60, 58F40)
- The periodic orbits of an area preserving twist map. *Comm. Math. Phys.* 115 (1988), no. 3, 353-374. (Helmut Rüssmann) 89f:58118 58F22 (58F05)
- The zero set of a solution of a parabolic equation. *J. Reine Angew. Math.* 390 (1988), 79-96. (Patricio Aviles) 89j:35015 35B05 (35K55)
- Local existence and regularity for a class of degenerate parabolic equations. *Math. Ann.* 280 (1988), no. 3, 465-482. (H. J. Kuiper) 89c:35072 35K55 (35B65, 35K65)
- Analyticity of the interface of the porous media equation after the waiting time. *Proc. Amer. Math. Soc.* 102 (1988), no. 2, 329-336. (Summary) 89f:35103 35K55 (76S05)
- (with Fiedler, Berndt) The dynamics of rotating waves in scalar reaction diffusion equations. *Trans. Amer. Math. Soc.* 307 (1988), no. 2, 545-568. (Peter A. Clarkson) 89b:35158 35K57 (58F12)
- Anger, Frank D. (with Lee, Chung-Yee; Hwang, Jing Jang; Chow, Yuan-Chieh) Multiprocessor scheduling with interprocessor communication delays. *Oper. Res. Lett.* 7 (1988), no. 3, 141-147. (Summary) 89g:90130 90B35
- Angermann, L. Die Grundgleichungen der inneren Elektronik—ein Evolutionsproblem im Banach-Raum. (English and Russian summaries) [The basic equations of inner electronics—an evolution problem in Banach space] *Z. Anal. Anwendungen* 6 (1987), no. 4, 321-330. (Rainer Picard) 89c:35147 35Q99 (34G20)
- Angles d'Auriac, J. C. (with Rammal, R.) On kinetic Ising models in one dimension. *J. Phys. A* 21 (1988), no. 3, 763-768. (Koichiro Matsuno) 89h:82042 82A68
- Anglin, W. S. Using Pythagorean triangles to approximate angles. *Amer. Math. Monthly* 95 (1988), no. 6, 540-541. (From the text) 89c:11040 11D09 (51M05)
- Anglin, Dana. Learning regular sets from queries and counterexamples. *Inform. and Comput.* 75 (1987), no. 2, 87-106. (Reinhard Klette) 89b:68125 68T05 (03D05, 68Q25)
- Angus, John E. Inferences on the lognormal mean for complete samples. *Comm. Statist. Simulation Comput.* 17 (1988), no. 4, 1307-1331. (Not in MR) 62F03
- Angwin, Denise L. (with Kaufman, Howard) Image restoration using reduced order models. (French and German summaries) *Multidimensional signal processing, Part II* (Noordwijkerhout, 1987). *Signal Process.* 16 (1989), no. 1, 21-28. (see 89j:94003) 94A12 (68U10)
- phan Anh Anh see Pham Kỳ Anh
- Anh, V. V. Addendum: "On  $\beta$ -convexity of certain starlike univalent functions" [Rev. Roumaine Math. Pures Appl. 24 (1979), no. 10, 1413-1424; MR 81b:30019] by Anh and P. D. Tuan. *Rev. Roumaine Math. Pures Appl.* 33 (1988), no. 1-2, 1-6. (R. McLaughlin) 89g:30017 30C45 (30C55)
- nguyen Anh Ky see Nguyen Anh Ky
- ngô Anh Tú see Ngô Anh Tú
- Ani, Wafa (with Maugin, Gérard A.) One-dimensional nonlinear motions in electroelastic solids: characteristics and shock waves. *Z. Angew. Math. Phys.* 39 (1988), no. 3, 277-298.



- (Summary) **89d:73048** 73R05
- Anichini, Giuseppe** What is the probability of having the same birthday? (Italian) *Archimede* **40** (1988), no. 1, 19–29. (Not in MR) **00A08** (00A69)
- Anichini, S. A.** Some dimension classes in the Blackwell theorem for distributions that have an atomic or a singular component. (Russian) *Stability problems for stochastic models* (Russian) (Varna, 1985), 11–17, *Vsesoyuz. Nauch.-Issled. Inst. Sistem. Issled., Moscow*, 1986. (Stefan P. Niculescu) **89b:60201** 60K05
- Rate of convergence estimates in Blackwell's theorem. *Stability problems of stochastic models*. *J. Soviet Math.* **40** (1988), no. 4, 449–453. (Lajos Horváth) **89i:60172** 60K05
- Anick, David J.** Generic algebras and CW complexes. *Algebraic topology and algebraic K-theory* (Princeton, N.J., 1983), 247–321, *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (Frederick Cohen) **89a:55011** 55P35 (16A62, 55U99)
- On the computational complexity of rational homotopy. *Homotopy theory* (Durham, 1985), 1–5, *London Math. Soc. Lecture Note Ser.*, 117, Cambridge Univ. Press, Cambridge-New York, 1987. (Introduction) **89d:55028** 55P62 (68Q15)
- Inert sets and the Lie algebra associated to a group. *J. Algebra* **111** (1987), no. 1, 154–165. (A.I. Valitskas) **89d:20031** 20F40 (16A03, 17B60, 20J05)
- Recent progress in Hilbert and Poincaré series. *Algebraic topology—rational homotopy* (Louvain-la-Neuve, 1986), 1–25, *Lecture Notes in Math.*, 1318, Springer, Berlin-New York, 1988. (Yves Félix) **89f:55009** 55P62 (13H99, 16A03, 55P35)
- The computation of rational homotopy groups is  $\#P$ -hard. *Computers in geometry and topology* (Chicago, IL, 1986), 1–56, *Lecture Notes in Pure and Appl. Math.*, 114, Dekker, New York, 1989. (Yves Félix) **89m:55006** 55P62 (55-04, 55Q05, 68Q15)
- Aniculașel, G.** (with Popa, Cătălin) Hamilton-Jacobi equations and synthesis of optimal bilinear controls in Hilbert spaces. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 3, 779–793. (I. Capuzzo Dolcetta) **89b:49046** 49C15 (35Q20, 49C20, 93B50, 93C25)
- Thickness optimization problem. *Optimization* **19** (1988), no. 6, 861–873. (Emmanuel Nicholas Barron) **89k:49005** 49A29 (49B22, 49C20, 73K40, 93C20)
- Anikanov, V. A.** (with Zakharov, Aleksei Vasilievich) Electromagnetic and gravitational perturbations in an ultrarelativistic plasma in an isotropic universe. (Russian) *Gravitatsiya i Teor. Otnositel'nosti* No. 24 (1987), 107–114. (Andrzej Trautman) **89e:83094** 83F05 (76X05, 83C55)
- Anikonov, D. S.** Solution of a problem of tomography in the presence of a special type of source. (Russian) *Linear and nonlinear problems in computer tomography* (Russian), 3–10, *Akad. Nauk SSSR Sibsk. Otdel. Vychisl. Tsentr, Novosibirsk*, 1985. (Victor Kotov) **89a:92007** 92A07 (44A15, 92-08)
- Quasiresolution of a problem of numerical differentiation type. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1987**, no. 3, 10–14. (A. Coțiu) **89i:65019** 65D25
- Examples of the nonuniqueness of the solution of a problem of integral geometry. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 1, 15–17; translated in *Soviet Math. Dokl.* **37** (1988), no. 2, 301–303. (R. G. Mukhometov) **89f:53129** 53C65
- Anikonov, Yu. E.** (with Bubnov, B. A.) Existence and uniqueness of the solution of an inverse problem for a parabolic equation. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 4, 777–779; translated in *Soviet Math. Dokl.* **37** (1988), no. 1, 130–132. (Gottfried Anger) **89f:35196** 35R30 (35K20)
- (with Bubnov, B. A.) Inverse problems of transport theory. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 5, 1037–1040; translated in *Soviet Math. Dokl.* **37** (1988), no. 2, 497–500. (Janusz Mika) **89i:82105** 82A70 (35Q20, 35R30, 45K05, 85A25)
- Anile, A. M.** Similarity solutions of the Einstein equations of cosmological interest. (Italian. English summary) *Rend. Sem. Mat. Fis. Milano* **55** (1985), 147–151 (1988). (M. C. Chaki) **89b:83031** 83C20 (83C15)
- (with Moschetti, G.; Bogoyavlenskii, O. I.) Some solutions of Einstein's equations with shock waves. *J. Math. Phys.* **28** (1987), no. 12, 2942–2948. (K. S. Bhamra) **89b:83018** 83C15 (83C55, 83F05)
- (with Muscato, Orazio) Magnetofluiddynamic simple waves in special relativity. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **48** (1988), no. 1, 1–16. (L. Debnath) **89d:76031** 76W05 (76Y05)
- (with Russo, Giovanni) Generalized wavefront expansion. II. The propagation of step shocks. *Wave Motion* **10** (1988), no. 1, 3–18. (E. G. Broadbent) **89a:76042** 76L05
- Anily, S.** (with Federgruen, Avi) Simulated annealing methods with general acceptance probabilities. *J. Appl. Probab.* **24** (1987), no. 3, 657–667. (Brian Conolly) **89h:90183** 90C27 (82A99)
- (with Federgruen, Avi) Ergodicity in parametric nonstationary Markov chains: an application to simulated annealing methods. *Oper. Res.* **35** (1987), no. 6, 867–874. (Eleonor Ciurea) **89g:90102** 90B15
- Anisichenko, V. S.** ★ Dynamical chaos—basic concepts. With German, French, Spanish and Russian summaries. With a foreword by Werner Ebeling. Teubner-Texte zur Physik [Teubner Texts in Physics], 14. *BSB B. G. Teubner Verlagsgesellschaft, Leipzig*, 1987. 172 pp. ISBN 3-322-00505-4 (Holger Kantz) **89g:58058** 58Fxx (58-01, 58F13)
- (with Safonova, M. A.) Mechanisms for breakdown of the invariant curve in model mapping of a plane. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 11, 1–8; translated from *Radiotekhn. i Elektron.* **32** (1987), no. 6, 1207–1216 (Russian). (From the introduction) **89k:58169** 58F13 (34C15)
- (with Postnov, D. E.) The effect of the capture of the base frequency of chaotic oscillators of synchronous strange attractors. (Russian) *Pis'ma Zh. Tekhn. Fiz.* **14** (1988), no. 6, 569–573. (Not in MR) **88F13**
- (with Herzog, H.) Noise-induced chaos in a system with homoclinic points. *Z. Angew. Math. Mech.* **68** (1988), no. 7, 317–318. (From the text) **89h:58109** 58F13 (58F14)
- Anishetty, R.** (with Basu, Rahul; Sharatchandra, H. S.) A general property of spontaneously broken SUSY theories. *Internat. J. Modern Phys. A* **3** (1988), no. 4, 875–877. (Summary) **89f:81152** 81E99 (81D20)
- Anisimov, A. V.** (with Oleshchuk, V. A.) Church-Rosser systems with respect to formal languages. (Russian. English summary) *Kibernetika* (Kiev) **1987**, no. 5, 19–25, 37, 134. (Sergey G. Vorobyov) **89f:68037** 68Q50 (03D03, 68Q45)
- (with Oleshchuk, V. A.) Algorithms for information processing in high-speed computer systems. (Russian) *Models and systems of information processing*, No. 7 (Russian), 3–8, 107, “*Vyscha Shkola*”, Kiev, 1988. (See **89j:68011**) 68Q10 (68T15)
- Anisimov, P. A.** (with Marichuk, M. N.) ★ Системы оперативного управления дискретными производствами. (Russian) [Systems for the operative control of discrete productions] “*Shtiintsa*”, Kishinev, 1984. 176 pp. (Summary) **89h:68013** 68N15 (68Q45, 68U30, 90B30)
- Anisimov, V. V.** (with Preobrazhenskaya, I. V.) Estimation of the parameters of observations at random times of a Poisson flow with switchings. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 59 (1986), 98–105, 135. (Uwe Küchler) **89a:62187** 62M05
- Ergodic theorems and closeness estimates for asymptotically connected Markov processes. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 35, 14–27. (Summary) **89d:60116** 60J05 (60J25)
- (with Petrenko, O. R.) Recurrent adaptive optimization of controllable Markov systems. (Russian. English and Georgian summaries) *Tbilis. Gos. Univ. Inst. Prikl. Mat. Trudy* **20** (1987), 5–20, 120. (Heinz-Uwe Künle) **89f:90182** 90C40 (93E20)
- Limit theorems for switching processes. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 37 (1987), 3–7, 134. (Gh. Oprisan) **89f:60020** 60F05 (60K99)
- (with Pushkin, S. G.) Limit theorems and estimates for closeness for summation schemes on Markov chains. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 37 (1987), 7–16, 134. (Serban Grigorescu) **89h:60157** 60J10 (60F05)
- ★ Случайные процессы с дискретной компонентой. (Russian) [Random processes with a discrete component] *Предельные теоремы. [Limit theorems] “Vishcha Shkola”*, Kiev, 1988. 184 pp. ISBN 5-11-000369-6 (Gh. Oprisan) **89m:60003** 60-02 (60F05, 60J05, 60K99)
- Functional limit theorems for nonhomogeneous Markov chains. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 39 (1988), 5–11, 125. (Gh. Oprisan) **89g:60118** EA **89m** 60F17 (60J05)
- Anisimova, L. N.** (with Gorev, P. V.; Koldanov, A. P.) The construction of consistent estimates. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 4, 84–89; translated from *Radiotekhn. i Elektron.* **31** (1986), no. 12, 2421–2425 (Russian). (L. L. Campbell) **89a:94009** 94A15 (62F10)
- Anisut, Mira-Cristiana** A surjectivity theorem for Lipschitz mappings. *Seminar on Fixed Point Theory*, 9–16, Preprint, 88-3, Univ. “Babeş-Bolyai”, Cluj-Napoca, 1988. (V. Šeda) **89m:47047** 47H09 (34B15)
- Anisuyutin, B. M.** (with Meirmanov, A. M.) Two-dimensional self-similar solutions of a one-phase Stefan problem. (Russian) *Dinamika Sploshn. Sredy* No. 78 (1986), 10–20, 154. (Summary) **89f:35214** 35R35 (35K05, 80A20)
- Aniszczak, Bohdan** (with Frankiewicz, Ryszard; Plewik, Szymon) Remarks on  $(s)$ - and Ramsey-measurable functions. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 7-8, 479–485. (B. K. Lahiri) **89f:28009** 28A20 (54H05)
- Remarks on  $\sigma$ -algebra of  $(s)$ -measurable sets. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 9-10, 561–563. (Polychronis J. Xenikakis) **89h:28001** 28A05 (54H05)
- (with Burzyk, J.; Kamiński, A.) Borel and monotone hierarchies and extension of Rényi probability spaces. *Colloq. Math.* **51** (1987), 9–25. (A. I. Dale) **89k:60004** 60A05 (28A05)
- Anita, Sebastian** Approximating linear optimal control problems via Trotter formula. *Nonlinear Anal.* **12** (1988), no. 4, 375–388. (V. Popescu) **89k:93077** 93B40 (47D05, 49C20, 65K10, 93C25)
- dos Anjos, Adairto G.** See Dos Anjos, Adairto G.
- Anker, Jean-Philippe** La forme exacte de l'estimation fondamentale de Harish-Chandra. (English summary) [The exact form of Harish-Chandra's fundamental estimate] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 9, 371–374. (E. P. van den Ban (Zbl 636:22005)) **89f:22016** 22E30 (22E46, 43A90)
- Anki Reddy, K. C.** (with Sai Prasad, B.) Fixed point theorems in 2-metric spaces. *J. Sci. Res.* **9** (1987), no. 1, 47–50. (Schie Park) **89f:54102** 54H25
- Anlauf, Joachim K.** (with Opper, Manfred; Diederich, Sigurd) Statistical mechanics of learning in neural network models. *Chaos and complexity* (Torino, 1987), 219–223, *World Sci. Publishing, Singapore*, 1988. (Summary) **89m:92026** 92A09 (68Q80, 82A57, 92A27)
- Annauurov, B. B.** (with Orazov, M. B.) A problem on the thermoelastic oscillations of a body and the nonselfadjoint quadratic pencils connected with it. (Russian) *Izv. Akad. Nauk Turkmen. SSR Ser. Fiz.-Tekhn. Khim. Geol. Nauk* **1988**, no. 2, 3–11. (From the introduction) **89f:73009** 73C25 (35Q20, 47F05, 73D99)
- Anné, Colette** Spectre du laplacien et écrasement d'anses. (English summary) [Spectrum of the Laplacian and collapsing of handles] *Ann. Sci. École Norm. Sup. (4)* **20** (1987), no. 2, 271–280. (G. V. Rozenblyum) **89m:58200** 58G25
- Annegarn, H. J.** (with Wei, Chau Chin; Yang, Ying Chuan; Yeh, Ren-Jye; Wang, Chia Yu) Lie algebra of a derivative nonlinear Schrödinger equation. *Group-theoretical methods in physics* (Varna, 1987), 282–288, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (Summary) **89k:58258** 58F35 (17B65, 35Q20)
- Annin, B. D.** Development of methods for solving elastoplastic problems. (Russian) *Mechanics and scientific-technological progress*, Vol. 3 (Russian), 123–135, 270, “*Nauka*”, Moscow, 1988. (See **89j:73002**) 73E99
- Annina, M. B.** Uniqueness of the solution of an integral equation of the first kind. (Russian) *Questions of well-posedness and methods for the investigation of inverse problems* (Russian), 41–46, 158, *Akad. Nauk SSSR Sibsk. Otdel. Vychisl. Tsentr, Novosibirsk*, 1986. (M. Tvrdý) **89g:45001** 45A05 (30D20)
- Anokhin, A. V.** Linear functional-differential equations with generalized perturbations. (Russian) *Boundary value problems* (Russian), 11–13, 191, *Perm. Politekh. Inst., Perm*, 1983. (See **89c:00008**) 34K05 (34A10)
- A linear operator in the space of piecewise absolutely continuous functions. (Russian) *Boundary value problems* (Russian), 13–15, 152–153, *Perm. Politekh. Inst., Perm*, 1984. (See **89b:00008**) 47B38
- Anorina, L. A.**  $\epsilon$ -sufficiency in a problem of the characterization of a normal distribution. (Russian) *Asymptotic methods in mathematical statistics* (Russian), 13–17, 158, “*Fan*”, Tashkent, 1987. (R. Yanushkevichius) **89f:62007** 62E10
- Anoshchenko, O. A.** The inverse scattering problem for the Schrödinger equation with a potential that has periodic asymptotics. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 47 (1987), 59–67. (R. C. Gilbert) **89b:34053** 34B25 (34A55, 35J10, 47E05)
- Anosov, D. V.** (with Bronshtein, I. U.; Aranson, S. Kh.; Grines, V. Z.) Smooth dynamical systems [Current problems in mathematics. Fundamental directions, Vol. 1, 151–242, *Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform.*, Moscow, 1985; MR 87e:58060]. Translated from the Russian by E. R. Dawson and D. O'Shea. *Dynamical systems*, I, 149–233, *Encyclopaedia Math. Sci.*, 1, Springer, Berlin-New York, 1988. (See **89g:58060**) 58Fxx (34C35)



- The work of L. S. Pontryagin on function theory and functional analysis. (Russian) Probability theory, function theory, mechanics (Russian). *Trudy Mat. Inst. Steklov.* **182** (1988), 245–249. (Editors) **89i:01056** 01A70
- On the behavior of trajectories, in the Euclidean or Lobachevskii plane, covering the trajectory of flows on closed surfaces. II. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **52** (1988), no. 3, 451–478, 670; translated in *Math. USSR-Izv.* **32** (1989), no. 3, 449–474. (I. Vaisman) **89i:58125** 58F25
- see also **Dynamical systems**, **89g:58060**
- Ansari, Amir Ali** (with Kowalski, Jacek M.; Prueitt, Paul S.; Dawes, Robert L.; Gross, Gunther) On synchronization and phase locking in strongly coupled systems of planar rotators. *Complex Systems* **2** (1988), no. 4, 441–462. (Summary) **89j:70038** 70K99 (58F40, 70K20, 82A99, 92A05)
- Ansari, Amir Ali** (with Lal, K. B.) On wave solutions of coupled electromagnetic and zero-rest-mass scalar fields in a generalized Peres space-time. (Turkish summary) *Istanbul Üniv. Fen Fak. Mecm. Ser. A* **43** (1978), 69–75 (1987). (Norbert Noutchegueme) **89j:83012** 83C15
- (with Srivastava, J. K.) Köthe-Toeplitz duals and pre-duals of generalized Iyer's sequence spaces. *J. Indian Math. Soc. (N.S.)* **49** (1985), no. 3–4, 209–218 (1987). (W. H. Ruckle) **89j:46010** 46A45
- Ansari, Mannan Ahmad** (with Mishra, Ram Babu) Some properties of transverse magnetogasdynamic flows. *Math. Student* **47** (1979), no. 2–4, 298–304 (1985). (Not in MR) **76W05**
- Ansari, Mohammad A.** Perturbations of the unilateral shift and transitive operator algebras. *Proc. Amer. Math. Soc.* **101** (1987), no. 3, 455–461. (F. Gilfeather) **89a:47062** 47C05 (47B37, 47D25)
- Weak-star generators of  $Z^n$ ,  $n \geq 1$ , and transitive operator algebras. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 131–136. (Richard Rochberg) **89b:46075** 46J15 (30H05, 47B35)
- Ansari, Rashid** (with Cetin, A. Enis) Convolution-based framework for signal recovery and applications. *J. Opt. Soc. Amer. A* **5** (1988), no. 8, 1193–1200. (B. D. Donevski) **89i:94008** 94A12 (42A38, 94A11)
- Anselme, Francis J.** see **Discussion: Mosteller, Frederick-Tukey, John W.**, **89k:01044**
- Ansel, Denis** (with Fresnel, Christophe; Le Roux, Marie-Noëlle) Résolution numérique d'un problème d'interdiffusion. (English summary) [Convergence of a numerical method to the solution of an interdiffusion problem] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 3, 143–146. (Summary) **89j:65302** 65P05
- Anselone, P. M.** (with Lei, Jin Gan) Nonlinear operator approximation theory based on semi-regular convergence. *Acta Math. Sci. (English Ed.)* **6** (1986), no. 2, 121–132. (Livia D'Apuzzo) **89d:47138** 47H17 (65J15)
- Anselmi, J. M.** Locally determining sequences for analytic functions. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* **80** (1986), no. 1–2, 197–199. (Summary) **89a:32006** 32B05 (46G20)
- Ansoorge, Rainer** see **Discretization in differential equations and enclosures**, **89a:65005**
- Anstee, R. P.** (with Farber, Martin) On bridged graphs and cop-win graphs. *J. Combin. Theory Ser. B* **44** (1988), no. 1, 22–28. (Summary) **89b:05053** 05C99 (90D42)
- Anstreicher, Kurt M.** Linear programming and the Newton barrier flow. *Math. Programming* **41** (1988), no. 3 (Ser. A), 367–373. (Hubertus Th. Jongen) **89b:90139** 90C05 (58F40, 63K05, 90C30, 90C31)
- Antanoshkin, A. N.** (with Sarayev, V. N.) The method of changing probabilities. (Russian) *Random search problems*, 11 (Russian), 26–34, 211, "Zinatne", Riga, 1988. (Summary) **89e:90143** 90C09
- Antonovskii, L. K.** Dynamics of the interphase boundary under the action of capillary forces. Quasistationary plane-parallel motion. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* **1988**, no. 3, 90–94, 165; translated in *J. Appl. Mech. Tech. Phys.* **29** (1988), no. 3, 396–399. (Summary) **89j:76089** 76T05 (76E99)
- Antelmann, Horst** see **Diesdonné, Jean**, **89b:58001** and **89b:58002**
- Antes, Heinz** ★ *Anwendungen der Methode der Randelemente in der Elastodynamik und der Fluidodynamik.* (German) [Applications of the method of boundary elements in elastodynamics and in fluid dynamics] *Mathematische Methoden in der Technik* [Mathematical Methods in Technology], 9. B. G. Teubner, Stuttgart, 1988, 195 pp. ISBN 3-519-02626-0 (From the preface) **89k:73002** 73-08 (73D99, 73K30, 73K99, 76-08, 76N10, 76Q05)
- Anthony, K.-H.** Entropy and dynamical stability—a method due to Lagrange-formalism and applied to thermodynamics of irreversible processes. *Trends in applications of mathematics to mechanics* (Wassenaar, 1987), 297–320. Springer, Berlin-New York, 1988. (P. A. Goodinson) **89k:80007** 80A10 (82A35)
- Antille, André** (with Milasevic, Philip) A confidence interval for the slope of a truncated regression. *Probab. Theory Related Fields* **78** (1988), no. 1, 63–72. (Arup Bose) **89i:62053** 62G05 (62J05)
- Antipin, A. S.** Nongradient methods for the optimization of saddle functions. (Russian) *Voprosy Kibernet.* (Moscow) No. 136 (1988), 4–13. (R. Serban) **89f:90130** 90C30
- Antipov, Yu. A.** (with Popov, G. Ya.; Yatsko, S. I.) Solution of the problem of stress concentration around intersecting defects by using the Riemann problem with an infinite index. *J. Appl. Math. Mech.* **51** (1987), no. 3, 357–365 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 3, 458–467 (Russian). (Summary) **89h:73015** 73C45 (30E25, 31A25, 45E99, 73C03, 73M05)
- Antman, Stuart S.** (with Negrón-Marrero, Pablo V.) The remarkable nature of radially symmetric equilibrium states of aeolotropic nonlinearly elastic bodies. *J. Elasticity* **18** (1987), no. 2, 131–164. (Cornelius O. Horgan) **89e:73023** 73C50 (34C11, 58E07, 73G05)
- (with Malek-Madani, Reza) Travelling waves in nonlinearly viscoelastic media and shock structure in elastic media. *Quart. Appl. Math.* **46** (1988), no. 1, 77–93. (Gary R. Nicklason) **89h:73017** 73D15 (35L67, 73D40, 73F99)
- A zero-dimensional shock. *Quart. Appl. Math.* **46** (1988), no. 3, 569–581. (J. R. Ockendon) **89i:34027** 34C05 (70K05, 70K99, 73F99)
- Antoch, Jaromír** Variable selection in linear model based on trimmed least squares estimator. *Statistical data analysis based on the  $L_1$ -norm and related methods* (Neuchâtel, 1987), 231–245. North-Holland, Amsterdam-New York, 1987. (Summary) **89d:62055** 62J05 (62F35)
- Antoine, J.-P.** (with Piette, B.) Classical nonlinear  $\sigma$  models on Grassmann manifolds of compact or noncompact type. *J. Math. Phys.* **28** (1987), no. 11, 2753–2762. (Summary) **89g:58053** 58E20 (58G37, 81E13)
- (with Gesztesy, F.; Shabani, J.) Exactly solvable models of sphere interactions in quantum mechanics. *J. Phys. A* **20** (1987), no. 12, 3687–3712. (Helge Holden) **89d:81027** 81C10 (35J10)
- (with Jacques, Michel) Corrigendum: "Classical Yang-Mills fields with noncompact symmetry and an arbitrary compact gauge group" [Classical Quantum Gravity **4** (1987), no. 1, 181–194; MR 88i:53058]. *Classical Quantum Gravity* **5** (1988), no. 11, 1513. (Editors) **89h:53071** 53C05 (22E70, 53C80, 58G35, 81E13)
- (with Piette, B.) Solutions of Euclidean  $\sigma$  models on noncompact Grassmann manifolds. *J. Math. Phys.* **29** (1988), no. 7, 1687–1697. (Enore Guadagnini) **89f:81127** 81E20 (53C80, 58E20, 81E13)
- (with Lambert, Dominique; Sepulchre, J.-A.) Classical Yang-Mills fields with conformal invariance: from exact solutions to qualitative analysis. *Classical Quantum Gravity* **6** (1989), no. 3, 295–310. (Edward Malec) **89m:53129** 53C80 (34E15, 58G35, 81E13)
- Anton, Anatol** (with Kidd, Richard; Ardini, James) Evolution of the modern photon. *Amer. J. Phys.* **57** (1989), no. 1, 27–35. (From the summary) **89j:81002** 81-03 (01A60, 78A02, 81B99)
- Antona, Ettore** Determination of the eigenvalues and eigenvectors of operators with complete systems of eigenvectors. (Italian. English summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **117** (1983), no. 4–6, 307–316 (1986). (Summary) **89h:49038** 49G10 (35P10, 47A70)
- Displacement and force configurations having static characteristic propagation in discretized structures. (Italian summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **119** (1985), no. 5–6, 145–164 (1986). (Title) **89d:73040** 73K99
- Antochik, V. S.** Construction of a dynamic controller for a linear control system. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 6, 923–929, 1098; translated in *Differential Equations* **24** (1988), no. 6, 591–596. (Mikolaj Buslowicz) **89j:93088** 93D15 (93C05)
- Antonelli, P. L.** (with Skowronski, Janislaw M.) Differential offensive-defensive games between plants and herbivores. *IMA J. Math. Appl. Med. Biol.* **3** (1986), no. 4, 319–340. (Summary) **89a:92055** 92A17 (90D40)
- (with Seymour, R. M.) Entropy production in stochastic Riemannian geometries with applications to chemical ecology. *Adv. in Appl. Math.* **8** (1987), no. 3, 254–280. (P. E. Jupp) **89h:58228** 58G32 (92A17)
- (with Seymour, R. M.) Nonlinear filtering of myxomatosis based on hormonal control of flea reproduction by the rabbit. *Stochastic Anal. Appl.* **5** (1987), no. 3, 245–265. (Summary) **89a:92016** 92A09 (92A15, 93E11)
- (with Seymour, R. M.) A model of myxomatosis based on hormonal control of rabbit-flea reproduction. *IMA J. Math. Appl. Med. Biol.* **5** (1988), no. 1, 65–80. (Summary) **89a:92033** 92A15
- (with Skowronski, Janislaw M.) Adaptive identification of environmental stress for the management of plant growth. *Math. Comput. Modelling* **10** (1988), no. 1, 27–35. (Roger V. Jean) **89b:92023** 92A15 (90D40, 90D45)
- A curved space forward Cauchy problem for chemical ecology on the Great Barrier Reef. *Stochastic Anal. Appl.* **6** (1988), no. 3, 231–246. (Mauro Piccioni) **89k:92044** 92A15 (60J70)
- (with Bradbury, R.; Buck, Rosalie Giovanna; Reichelt, R.; Elliott, Robert J.) Nonlinear prediction of crown-of-thorns outbreaks on the Great Barrier Reef. *Stochastic Anal. Appl.* **6** (1988), no. 4, 349–363. (Miguel Angel Canela) **89m:92041** 92A15 (60G25)
- Antonevich, A. B.** The symbol of a functional-pseudodifferential operator on a compact manifold. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 4, 70–71; translated in *Functional Anal. Appl.* **22** (1988), no. 4, 313–315. (Georgi E. Karadzhov) **89k:58280** 58G15 (47G05)
- Antoniadis, Anestis** Parametric estimation for the mean of a Gaussian process by the method of sieves. *J. Multivariate Anal.* **26** (1988), no. 1, 1–15. (Benjamin Goldys) **89j:62134** 62M99 (62F10)
- Antoniadis, I.** (with Bachas, C.) 4d fermionic superstrings with arbitrary twists. *Nuclear Phys. B* **298** (1988), no. 3, 586–612. (Sergey Merkulov) **89d:81085** 81E99 (81E30)
- (with Ditsas, P.; Floratos, E. G. F.; Iliopoulos, J.) New realizations of the Virasoro algebra as membrane symmetries. *Nuclear Phys. B* **300** (1988), no. 4, 522–549–558. (Summary) **89i:17012** 17B65 (58D30, 81E30)
- (with Ellis, Jonathan Richard; Hagelin, J. S.; Nanopoulos, D. V.) Cut model-building with fermionic four-dimensional strings. *Phys. Lett. B* **205** (1988), no. 4, 459–465. (Summary) **89k:81190** 81G20 (81E30)
- Antoniadis, J. A.** (with Kohnen, Winfried) Congruences between cusp forms and Eisenstein series of half-integral weight. *Abh. Math. Sem. Univ. Hamburg* **57** (1987), 157–164. (Marvin I. Knopp) **89d:11038** 11F33 (11F37)
- Antonian, S.** see **Antonyan, S. A.**
- Antonian, S. A.** see **Antonyan, S. A.**
- Antoniano, E.** (with Gitler, S.; Ucci, J.; Zvengrowski, P.) On the  $K$ -theory and parallelizability of projective Stiefel manifolds. *Bol. Soc. Mat. Mexicana* (2) **31** (1986), no. 1, 29–46. (Norredine Mohammed) **89g:57058** 57T15 (55N15, 55R50, 55S25, 55T99)
- giuliano Antonini, Rita** see **Giuliano Antonini, Rita**
- Antonino, José A.** see **Antonio André, José A.**
- Antonio André, José A.** (with Romaguera, Salvador) Segments and sets  $L(f)$  for functions in the Bloch space  $\mathcal{B}_0$ . (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* **81** (1987), no. 3, 509–512. (Joaquim Bruna) **89j:30048** 30D60
- Antonio, John K.** (with Tsai, Wei K.; Huang, Garng; Tsai, Wei T.) Distributed iterative aggregation algorithms for box-constrained minimization problems and optimal routing in data networks. *IEEE Trans. Automat. Control* **34** (1989), no. 1, 34–46. (Summary) **89k:65079** 65K99 (49D07, 90C35, 94A05, 94C99)
- Antonio André, José A.** (with Romaguera, Salvador)  $L(f)$ -sets for Bloch functions of several complex variables. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 1* (Spanish) (Badajoz, 1986), 406–412, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (M. Hervé) **89i:32002** 32A17
- Antonou, A.** (with Manivannan, K.; Eswaran, C.) Design of low-sensitivity universal wave digital biquads. *IEEE Trans. Circuits and Systems* **36** (1989), no. 1, 108–113. (Not in MR) **94C05**
- Antonou, G. E.** (with Paraskevopoulos, P. N.; Varoufakis, S. J.) Minimal state-space realization of factorable 2-D transfer functions. *IEEE Trans. Circuits and Systems* **35** (1988), no. 8, 1055–1058. (Summary) **89e:93033** 93B15

- Antonishin, I. O.** Linear integral equations with asymptotically almost-periodic solutions. (Russian) *Some problems in the theory of asymptotic methods in nonlinear mechanics* (Russian), 21–25, i, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1986. (Summary) **89a:45024** 45M05 (45A05, 45M10)
- Solution of the Cauchy problem for a system of integro-differential equations. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 7(41) (1987), 60–63, 80. (József Banás) **89f:45007** 45F10 (45J05)
- Antonov, N. A.** (with Kamupingene, A. H.) Generalized Hermitian representations of the Lie superalgebra  $sl(1, 3)$ . (Russian summary) *Bulgar. J. Phys.* **14** (1987), no. 5, 397–406. (Ronald C. King) **89i:17007** 17A70
- Antonov, N. V.** Quantization of the Yang-Mills field in the gauge  $A_0 = 0$ . (Russian. English summary) *Teoret. Mat. Fiz.* **72** (1987), no. 3, 384–393. (Summary) **89b:81111** 81E13
- Scaling function for the velocity correlator in the theory of isotropic developed turbulence. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **164** (1987), *Differentsial'naya Geom. Gruppy Li i Mekh.* IX, 3–9, 196. (Summary) **89e:76050** 76F05 (82A99)
- Antonov, P. Ts.** (with Demirev, G. D.) The design of codes for detecting two-dimensional error packages in parallel-sequential discrete channels. (Bulgarian. English and Russian summaries) *Avtomat. Izchisl. Tekhn. Avtomat. Sistemi* **1988**, no. 11, 2, 3, 4, 14–16. (Not in MR) **94A13**
- Antonov, S. N.** A class of limit distributions. (Russian) *Probability distributions and mathematical statistics* (Russian) (Fergana, 1983), 40–48, 488, "Fan", Tashkent, 1986. (Gerd Christoph) **89f:60015** 60E05
- Antonova, L. V.** Real hypersurfaces in the  $n$ -dimensional double Euclidean spaces  $R_n(e)$ . (Russian) *The geometry of imbedded manifolds* (Russian), 9–13, 123, *Moskov. Gos. Ped. Inst., Moscow*, 1986. (V. T. Fomenko) **89a:53020** 53A40 (53A07)
- Antoniowicz, Marek** (with Fordy, Allan) Coupled KdV equations with multi-Hamiltonian structures. *Phys. D* **28** (1987), no. 3, 345–357. (Malcolm Adams) **89f:58066** 58F07 (35Q20)
- (with Fordy, Allan) Coupled Harry Dym equations with multi-Hamiltonian structures. *J. Phys. A* **21** (1988), no. 5, L269–L275. (Randolph J. Schilling) **89h:58074** 58F07 (35Q20, 58F05, 58F19)
- Antontsev, S. N.** ★ Локализация решений вырождающихся уравнений механики сплошной среды. (Russian) [Localization of solutions of degenerate equations of continuum mechanics] *Akad. Nauk SSSR Sibirsk. Otdel. Inst. Gidrodinamiki, Novosibirsk*, 1986. 109 pp. (Victor A. Galaktionov) **89h:35259** 35Qxx (35J60, 35K55, 35M05, 76–02, 76N15, 76S05, 76T05)
- Antonucci, Salvatore** A generalization of  $T$ -graphs, and quasistrong regularity. (Italian. English summary) *Riv. Mat. Univ. Parma* (4) **13** (1987), 395–400 (1988). (Bruno D'Amore) **89k:05086** 05C75
- Antonyan, A. A.** The convergence of some semimartingales. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 5(257), 207–208. (From the text) **89c:60062** 60G44
- Convergence of square integrable semimartingales. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 6(258), 177–178. (Not in MR) **60F05** (60G44)
- Antonyan, S. A.** (with Mardesic, S.) Equivariant shape. *Fund. Math.* **127** (1987), no. 3, 213–224. (Jerzy Dydak) **89k:55011** 55P55
- Equivariant embeddings into  $G$ -ARs. (Serbo-Croatian summary) *Glas. Mat. Ser. III* **22**(42) (1987), no. 2, 503–533. (Dušan Repovš) **89k:54041** 54C55 (54H99)
- $G$ -ANR-resolutions and  $G$ -shapes for  $G$ -pairs. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **128** (1987), no. 3, 473–476 (1988). (S. Mardesic) **89k:57073** 57S10 (54B25, 54C55, 57S99)
- Retraction properties of an orbit space. (Russian) *Mat. Sb. (N.S.)* **137**(179) (1988), no. 3, 300–318, 432. (A. Shostak) **89k:54042** 54C55 (54H15)
- ter-Antonyan, V. M.** see Ter-Antonyan, V. M.
- Antonyuk, A. A.** (with Danilin, Yu. M.) The use of conjugate directions in methods of quasi-Newton type. (Russian) *Methods for the investigation of extremal problems* (Russian), 20–24, ii, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. (Summary) **89f:90131** 90C30 (65K05)
- (with Mikhalevich, V. S.; Redkovskii, N. N.) Minimization methods for smooth nonconvex functions. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 4, 6–12, 25, 134; translated in *Cybernetics* **24** (1988), no. 4, 395–403. (Krzysztof C. Kiwiol) **89k:90144** 90C30
- Antoranz, J. C.** (with Rubio, M. A.; de la Torre, M.; Velarde, Manuel G.) Digital and analog approach to intermittencies and  $1/f$  noise in a nonlinear Helmholtz oscillator. *Computational systems—natural and artificial* (Schloss Elmau, 1987), 196–201, *Springer Ser. Synergetics*, 38, *Springer, Berlin-New York*, 1987. (From the introduction) **89b:70013** 70K50 (58F13, 58F40, 92A27)
- Antosik, P.** (with Burzyk, J.) Sequential conditions for barrelledness and bornology. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 7–8, 457–459. (Carl L. DeVito) **89d:46001** 46A05 (46A07, 46A09)
- On iterated and double limits. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 1–10, *R & E Res. Exp. Math.*, 16, *Heldermann, Berlin*, 1988. (A. Alexiewicz) **89m:46011** 46A99 (54A20)
- Antoulas, A. C.** On the structure of matrix formal power series and the realization problem in linear systems. *Modelling, identification and robust control* (Stockholm, 1985), 487–488, *North-Holland, Amsterdam-New York*, 1986. (See **89b:93008**) **93B15** (93B20, 93C05)
- A summary of parametrization results on the rational interpolation problem. *Analysis and optimization of systems* (Antibes, 1988), 1064–1068, *Lecture Notes in Control and Inform. Sci.*, 111, *Springer, Berlin-New York*, 1988. (See **89c:00031**) **41A05**
- Rational interpolation and the Euclidean algorithm. *Linear Algebra Appl.* **108** (1988), 157–171. (D. C. Gilles) **89i:41019** 41A20
- Antreich, Kurt J.** (with Leibner, Peter; Pörnbacher, Fritz) Nominal design of integrated circuits on circuit level by an interactive improvement method. *IEEE Trans. Circuits and Systems* **35** (1988), no. 12, 1501–1511. (D. Stanomir) **89k:94081** 94C05
- Antsy, S. M.** (with Marshak, V. D.; Chupin, V. G.) A model of the process of the composition of local decisions, taking cooperation into account. (Russian) *Optimizatsiya* No. 41(58) (1987), 102–113. (Not in MR) **90A08** (90A05)
- Antunes, C. H.** (with Climaco, J. C. N.) Erratum: "TRIMAP—an interactive tricriteria linear programming package" [*Found. Control Engrg.* **12** (1987), no. 3, 101–119; MR **88m:90133**]. *Found. Control Engrg.* **13** (1988), no. 1, 53–54. (Editors) **89h:90220** 90C31 (90C05)
- Antyufeev, V. S.** (with Nazaratiev, M. A.) Solution of some inverse atmospheric optics problems by the Monte Carlo method. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* **3** (1988), no. 2, 77–97. (John Adam) **89e:86009** 86A35 (65C05, 85A25)
- Anwar, Mohamed Naim Yehia** (with Al-Hammer, A. H. A.) Numerical solution of multidimensional Stefan problem. *Mathematical analysis and its applications* (Kuwait, 1985), 229–241, *KFAS Proc. Ser.*, 3, *Pergamon, Oxford-Elmsford, NY*, 1988. (P. Rochus) **89e:65138** 65N99
- (with El Tarazi, Mouhamed Nabih) Asynchronous algorithms for heat conduction in composite media. *Mathematical analysis and its applications* (Kuwait, 1985), 337–348, *KFAS Proc. Ser.*, 3, *Pergamon, Oxford-Elmsford, NY*, 1988. (Summary) **89e:80001** 80–08 (80A20)
- (with Sherief, H. H.) Boundary integral equation formulation of generalized thermoelasticity in a Laplace-transform domain. *Appl. Math. Modelling* **12** (1988), no. 2, 161–166. (Summary) **89a:73060** 73U05 (65N99, 73–08)
- Anwar Chaudhary, Muhammad** see Chaudhry, Muhammad Anwar
- Anyanwu, Donatus U.** (with Nwoke, Christian) Uniform approximations for the natural modes and frequencies of spindle-shaped acoustical resonators. *J. Math. Anal. Appl.* **134** (1988), no. 2, 396–407. (Charles J. Amick) **89i:35035** 35J05 (76Q05)
- Anyutin, A. P.** (with Borovikov, V. A.) Evolution of localized disturbances of a stratified fluid with variable Brunt-Väisälä frequency. *J. Appl. Math. Mech.* **50** (1986), no. 5, 670–674 (1987); translated from *Prikl. Mat. Mekh.* **50** (1986), no. 5, 863–867 (Russian). (A. Pozzi) **89e:76081** 76Y05
- Anzellotti, Gabriele** Elasticity with unilateral constraints on the stress. *Proceedings of the International Workshop on Integral Functionals in the Calculus of Variations* (Trieste, 1985). *Rend. Circ. Mat. Palermo* (2) *Suppl.* No. 15 (1987), 135–141. (P. Villaggio) **89f:73019** 73C60 (35J85, 73C20)
- (with Giaquinta, Mariano) Convex functionals and partial regularity. *Arch. Rational Mech. Anal.* **102** (1988), no. 3, 243–272. (Harold Parks) **89d:49013** 49A50 (35D10, 49A36, 58E15)
- Anzer, U.** (with Lister, G. G.; Boerner, G.) Numerical simulations of accretion onto rotating, magnetic neutron stars. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 427–438, *North-Holland, Amsterdam-New York*, 1988. (Summary) **89d:85001** 85–08 (85A30)
- al-Anzy, J. M.** see Al-Anzy, J. M.
- Aoki, Kazunori** (with Mugibayashi, Nobumichi) Cellular automata and chaos in  $N$ -equivalent switching elements. *Science on form* (Sakura, 1985), 113–120, *Reidel, Dordrecht-Boston, MA*, 1987. (See **89g:82013**) **58F13** (58F40, 68Q80)
- Aoki, Kenichi** Gene-culture waves of advance. *J. Math. Biol.* **25** (1987), no. 5, 453–464. (Summary) **89a:92030** 92A12
- Aoki, Kenichiro** Heat kernels and super determinants of Laplace operators on super Riemann surfaces. *Comm. Math. Phys.* **117** (1988), no. 3, 405–429. (Jouko Mickelsson) **89j:58129** 58G11 (58A50, 81E40)
- Aoki, Masanoo** (with Havenner, Arthur) An instrumental variables interpretation of linear systems theory estimation. *J. Econom. Dynamics Control* **12** (1988), no. 1, 49–54. (Not in MR) **62P20** (62M10)
- see also *Economic time series with random walk and other nonstationary components*, **89f:62004**
- Aoki, Nobuo** Expanding maps of solenoids. *Monatsh. Math.* **105** (1988), no. 1, 1–34. (Katarina Jankova) **89e:58087** 58F15 (54H20)
- see also *Dynamical systems and applications*, **89f:58048**
- Aoki, Shigeru** (with Sano, Shigeru; Kato, Suehiro) A note on connection formulas for invariant eigendistributions on certain semisimple symmetric spaces. *Bull. Inst. Vocat. Train.* **1985**, no. 14, 99–108. (Jacques Faraut) **89a:43014** 43A85 (22E30, 22E45)
- Aoki, Sinya** Chiral gauge theories on a lattice. *Phys. Rev. Lett.* **60** (1988), no. 21, 2109–2112. (Summary) **89c:81089** 81E25 (81E13)
- Aoki, Takashi** (with Tajima, Shinichi) On a generalization of Bochner's tube theorem for generic CR-submanifolds. *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 8, 302–303. (Tosiaki Kori) **89d:32034** 32D20 (32F99, 58G07)
- (with Ohta, Hirobumi; Nikiforuk, P. N.) Spillover prevention and control of flexible structures using modal filters. *Control Theory Adv. Tech.* **4** (1988), no. 1, 15–35. (Not in MR) **93C75** (93B40, 93C20)
- Aomoto, Kazuhiko** Vanishing of certain 1-form attached to a configuration. *Tokyo J. Math.* **9** (1986), no. 2, 453–455. (From the introduction) **89f:32021** 32C40 (58A10)
- Formal integrable system attached to the statistical model of two-dimensional vortices. *Probabilistic methods in mathematical physics* (Katata/Kyoto, 1985), 23–29, *Academic Press, Boston, MA*, 1987. (V. A. Golubeva) **89m:58085** 58F07 (76C05, 82A99)
- On the complex Selberg integral. *Quart. J. Math. Oxford Ser. (2)* **38** (1987), no. 152, 385–399. (V. S. Retakh) **89g:32004** 32A25 (58A12)
- (with Kato, Yoshifumi) Green functions and spectra on free products of cyclic groups. (French summary) *Ann. Inst. Fourier (Grenoble)* **38** (1988), no. 1, 59–86. (G. V. Rozenblum) **89m:58201** 58G25 (20E06, 47B39, 58G05)
- Aouf, M. K.** (with Yonis, Y. M.) A generalization of alpha-close-to-convex functions of order beta. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 1, 107–117. (M. Reade) **89f:30017** 30C45
- On subclasses of univalent functions with negative coefficients. III. *Bull. Soc. Roy. Sci. Liège* **56** (1987), no. 5–6, 465–473. (O. P. Ahuja) **89e:30012** 30C45
- Coefficient results for some classes of meromorphic functions. *J. Natur. Sci. Math.* **27** (1987), no. 2, 81–97. (Albert Schild) **89c:30041** 30C50 (30C45)
- (with Nasr, M. A.) Functions of bounded boundary rotation with complex order. *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 7, 623–629. (K. S. Padmanabhan) **89e:30021** 30C45
- Certain classes of  $p$ -valent functions with negative coefficients. II. *Indian J. Pure Appl. Math.* **19** (1988), no. 8, 761–767. (Herb Silverman) **89j:30011** 30C45
- Coefficient estimates for some classes of  $p$ -valent functions. *Internat. J. Math. Math. Sci.* **11** (1988), no. 1, 47–54. (K. S. Padmanabhan) **89d:30017** 30C50 (30C45)
- On a class of  $p$ -valent close-to-convex functions of order  $\beta$  and type  $\alpha$ . *Internat. J. Math. Math. Sci.* **11** (1988), no. 2, 259–266. (O. P. Ahuja) **89h:30015** 30C45 (30C50)



- On the coefficients of some classes of starlike and convex functions of complex order. *J. Natur. Sci. Math.* **28** (1988), no. 1, 107–120. (K. S. Padmanabhan) **89i:30016** 30C50 (30C45)
- A generalization of functions with real part bounded in the mean on the unit disc. *Math. Japon.* **33** (1988), no. 2, 175–182. (N. K. Thakare) **89b:30016** 30C45 (30C50, 30D50)
- On convex class of starlike functions. *Math. Japon.* **33** (1988), no. 2, 183–194. (Evelyn M. Silvia) **89g:30018** 30C45
- (with Obradović, Milutin; Owa, Shigeyoshi) A characterization of the class of starlike functions of complex order. *Zb. Rad. No. 2* (1988), 41–46. (O. P. Juneja) **89m:30027** 30C45 (30C80)
- Aoyama, Hideaki** OSp(1, 1|4) BRST-symmetry for string field with the world-sheet metric. *Nuclear Phys. B* **299** (1988), no. 2, 379–388. (Summary) **89a:81107** 81E99 (81E30)
- OSp(2, 2|4) for open-string fields. *Phys. Rev. D* (3) **37** (1988), no. 12, 3616–3621. (Summary) **89h:81159** 81E99 (81E20, 81E30)
- (with Odagaki, T.) Hyperinflation in periodic and quasiperiodic chains. *Phys. Rev. Lett.* **61** (1988), no. 7, 775–778. (Summary) **89d:82104** 82A57
- (with Odagaki, T.) Self-similarities in one-dimensional periodic and quasiperiodic systems. *Phys. Rev. B* (3) **39** (1989), no. 1, 475–487. (Summary) **89k:82079** 82A60 (78A45, 81H20)
- Aoyama, Kiwamu** (with Kadota, Noriya) A note on built-upness. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **42** (1988), no. 2, 159–165. (Sergei N. Artemov) **89m:03053** 03F15 (03D55)
- Aoyama, S.** (with Hong Tuan, R.) Conformally invariant U(1)-gauge theory in two dimensions. *Phys. Lett. B* **202** (1988), no. 1, 63–66. (Summary) **89b:81112** 81E13 (81E20, 81E30)
- Nonlinear realization of the Virasoro-Kac-Moody algebras and the anomalies. *Phys. Lett. B* **207** (1988), no. 2, 130–134. (Robert Coquereaux) **89h:22039** 22E65 (17B65, 58B25, 81E30, 83E30)
- Apakov, Yu. P.** (with Dzhruev, T. D.; Sopuev, A.) Boundary value problems for a parabolic-hyperbolic equation with a characteristic line of change of type. (Russian) *Equations of mixed type and free boundary value problems (Russian)*, 56–65, 250, "Fan", Tashkent, 1987. (Summary) **89b:35109** 35M05
- Apanasov, B. N.** Thurston's bends and geometric deformations of conformal structures. *Complex analysis and applications '85 (Varna, 1985)*, 14–28, *Bulgar. Acad. Sci. Sofia*, 1986. (Subhashis Nag) **89c:32057** 32G07 (20H10, 22E40, 30F40, 32G15, 57N15)
- The effect of dimension 4 in Aleksandrov's problem of filling a space by polyhedra. *Ann. Global Anal. Geom.* **4** (1986), no. 2, 243–261. (William Goldman) **89d:52029** 52A45 (22E40, 30F40, 51M10)
- (with Tetenov, A. V.) Nontrivial cobordisms with geometrically finite hyperbolic structures. *J. Differential Geom.* **28** (1988), no. 3, 407–422. (William Dunbar) **89k:57033** 57N13 (57M30, 57R80)
- Apanovich, V. N.** A condition for external approximations by finite elements of generalized solutions of boundary value problems in mechanics. (Russian) *Teoret. i Prikl. Mekh. (Minsk)* No. 14 (1987), 47–54, iii. (Summary) **89b:65256** 65N30 (73-08)
- A method of constructing finite elements for external approximations of boundary value problems. (Russian) *Teoret. i Prikl. Mekh. (Minsk)* No. 15 (1988), 66–72. (Not in MR) 70-08
- Apanovich, Yu. V.** (with Lyumkis, E. D.) Application of difference schemes on Dirichlet cells for solving problems of heat-mass exchange with phase transitions. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1113–1121, 1283; translated in *Differential Equations* **24** (1988), no. 7, 706–713. (Not in MR) 80A20 (65P05, 80-08)
- (with Lyumkis, E. D.) Difference schemes for Navier-Stokes equations on a grid of Dirichlet cells. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 3, 390–399, 478. (Summary) **89f:76004** 76-08 (65M05, 76D05)
- Aparicio Bernardo, Emiliano** Generalization of the theorem of L. G. Schnirelman. *J. Analyse Math.* **48** (1987), 217–224. (M. Lachance) **89a:41004** 41A10 (41A50)
- see also Markushevich, A. I., **89f:30001** and **89f:30002**
- Aparinov, V. A.** (with Belotserkovskii, S. M.; Lifanov, I. K.; Mikhailov, A. A.) Calculation of nonstationary aerodynamic characteristics of bodies in the case of separated flow. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 10, 1558–1566, 1599. (Summary) **89k:76023** 76B99 (76-08, 76G99)
- Aparitsin, A. S.** Discretization methods for the regularization of some integral equations of the first kind. (Russian) *Methods of numerical analysis and optimization (Russian)*, 263–297, 304, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (P. Uba) **89a:65196** 65R20 (45L10)
- Apel'tsin, V. F.** (with Yakovleva, S. A.) Numerical analytic preparation for a generalization of a method of representations. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1121–1127, 1283; translated in *Differential Equations* **24** (1988), no. 7, 714–718. (Summary) **89j:65083** 65P05
- Apikyan, S. A.** (with Zamolodchikov, Aleksandr B.) Conformal blocks, related to conformally invariant Ramond states of a free scalar field. *Soviet Phys. JETP* **65** (1987), no. 1, 19–24; translated from *Zh. Eksper. Teoret. Fiz.* **92** (1987), no. 1, 34–45 (Russian). (Omar Foda) **89h:81160** 81E99 (81E40)
- Apkarian, Pierre R.** Structured stability robustness improvement by eigenspace techniques: a hybrid methodology. *J. Guidance Control Dynamics* **12** (1989), no. 2, 162–168. (Not in MR) 93D99 (93B60)
- Aplievich, J. D.** (with Morris, Kirsten Anna) Controller parameterization and recursive design using implicit systems. *Linear algebra in signals, systems, and control (Boston, MA, 1986)*, 287–299, SIAM, Philadelphia, PA, 1988. (Wei Bing Gao) **89i:93044** 93B50 (93C05)
- Apollonius of Perga** see Di Stefano, Maria Elena, **89a:01006**; Saito, Ken, **89m:01010** and Dorofeeva, A. V., **89m:01085**
- Apostel, Leo** Le néo-connexionisme et la théorie de l'argumentation. [Neoconnectionism and the theory of argumentation] *Pensée naturelle, logique et langage*, 31–45, Univ. Neuchâtel, Neuchâtel, 1987. (see **89b:03005**) 00A25
- Apostol, Constantin** On a spectral equivalence of operators. *Topics in operator theory*, 15–35, *Oper. Theory: Adv. Appl.*, 32, Birkhäuser, Basel-Boston, MA, 1988. (Kenneth R. Davidson) **89h:47015** 47A50 (47B40)
- (with Davidson, Kenneth R.) Isomorphisms modulo the compact operators of nest algebras II. *Duke Math. J.* **56** (1988), no. 1, 101–127. (Stephen Power) **89g:47058** 47D25 (46L99)
- see also *Topics in operator theory*, **89b:47005**; Herrero, Domingo A., **89g:01053** and *Bibliography: Apostol, Constantin*, **89g:01054**
- Apostol, Tom M.** Binary vectors with prescribed subsets of consecutive ones. *J. Combin. Theory Ser. A* **47** (1988), no. 2, 176–190. (Konrad Engel) **89b:05010** 05A15
- Apostolatos, N.** (with Vlassopoulos, V.) Abschätzung von Produkten gitterpositiver Matrizen und optimale Vorhersage stochastischer Quellen. (English summary) [Approximation of products of grid-positive matrices and optimal prediction of stochastic sources] *Computing* **40** (1988), no. 4, 301–313. (Christian Posthoff) **89k:68107** 68Q75
- Apostolico, Alberto** (with Hambrusch, Susanne E.) Finding maximum cliques on circular-arc graphs. *Inform. Process. Lett.* **26** (1987), no. 4, 209–215. (Narsingh Deo) **89a:68094** 68Q25 (05C35, 68Q20, 68R10)
- (with Iliopoulos, Costas S.; Landau, Gad M.; Schieber, Baruch; Vishkin, Uzi) Parallel construction of a suffix tree with applications. *Algorithmica* **3** (1988), no. 3, 347–365. (Do Long Van) **89i:68053** 68Q25
- theohari-Apostolidi, Th.** see Theohari-Apostolidi, Th.
- Apostolopoulos, Theodore K.** Resource sharing among  $N$  conflicting queues—queue size distribution and response measures. *Math. Balkanica (N.S.)* **2** (1988), no. 1, 44–53. (Not in MR) 90B22
- Apostolova, L. N.** (with Dimiev, S. G.)  $\bar{\partial}$ -type equations on almost complex manifolds. *Differential equations and applications, I, II (Russian)* (Ruse, 1985), 507–510, "Angel Kanchev" Tech. Univ., Ruse, 1987. (P. Dolbeault) **89a:32018** 32F20 (58A15)
- Apostolova, M. P.** (with Petrov, L. K.) Special cases of hypersurfaces in  $P_4$  obtained by stereographic projection of a quadric onto a plane and a collineation. I. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Plovdivska Mat.* **22** (1986), no. 4, 159–173 (1987). (J. Čizmar) **89f:51093** 51N35 (14N05)
- Apostolyuk, A. S.** (with Bobrov, B. F.; Borydyuk, B. A.; Gradetkii, A. V.; Larin, V. B.; Sazonov, Yu. G.; Solov'ev, V. S.) Optimization of the de Prouy method for the identification of linear dynamical systems. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 66, 64 pp. (Not in MR) 93B30 (93B40)
- Apoyan, G. T.** An estimate for the parameter of a nondifferentiable drift coefficient. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1986**, no. 1 (161), 33–42. (Friedrich Liese) **89c:62143** 62M09 (60H10)
- (with Kutovants, Yu. A.) On compensator estimation of inhomogeneous Poisson process. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **16** (1987), no. 2, 135–142. (Summary) **89g:62144** 62M07 (62C20)
- Appalarasimham, V.** Magnetic variants of the space group  $Pnma$ . *J. Math. Phys. Sci.* **21** (1987), no. 5, 445–455. (Vojtěch Kopský) **89c:20078** 20H15 (82A60)
- Appel, Martin J.** (with Wierman, John C.) On the absence of infinite AB percolation clusters in bipartite graphs. *J. Phys. A* **20** (1987), no. 9, 2527–2531. (G. R. Grimmett) **89b:82061** 82A43 (60K35)
- (with Wierman, John C.) Infinite AB percolation clusters exist on the triangular lattice. *J. Phys. A* **20** (1987), no. 9, 2533–2537. (G. R. Grimmett) **89b:82062** 82A43 (60K35)
- Appelbaum, E.** (with Katz, Eliakim) Portfolio diversification and taxation. *Econom. Lett.* **26** (1988), no. 2, 189–195. (Not in MR) 90A09 (90A10)
- Appell, J.** Noncompactness measures in ideal spaces. (Italian. English summary) *Istit. Lombardo Accad. Sci. Lett. Rend. A* **119** (1985), 157–174 (1987). (P. Szeptycki) **89c:46042** 46E30 (47H09)
- (with Zabrejko, P. P.) On the degeneration of the class of differentiable superposition operators in function spaces. *Analysis* **7** (1987), no. 3–4, 305–312. (J. Kolomý) **89c:47082** 47H99 (46E30)
- Appelquist, Thomas** (with Nash, Daniel; Wighardhana, L. C. R.) Critical behavior in  $(2+1)$ -dimensional QED. *Phys. Rev. Lett.* **60** (1988), no. 25, 2575–2578. (Summary) **89c:81225** 81L05 (81E15)
- Appert, Antoine** A follow up to the article: "On the best primitive term in topology" [in *Proceedings of the Seminar on the History of Mathematics*, 3, 63–67, Inst. Henri Poincaré, Paris, 1982; MR 84f:54002]. (French) *Cahiers du Séminaire d'Histoire des Mathématiques*, 10, 231–232, Univ. Paris VI, Paris, 1989. (see **89j:01001**) 54A05
- Appert, K.** (with Succi, S.; Vlacik, J.; Villard, L.) Finite elements applied to plasma waves. *Finite elements in physics (Lausanne, 1986)*, 335–349, North-Holland, Amsterdam-New York, 1987. (Jan Mandel) **89f:65117** 65N30 (76-08, 76X05)
- Apprato, D.** (with Arcangeli, R.; Manzanilla, R.) Sur la construction de surfaces de classe  $C^k$  à partir d'un grand nombre de données de Lagrange. (English summary) [On the construction of  $C^k$ -surfaces starting from a large number of Lagrange data] *RAIRO Model. Math. Anal. Numér.* **21** (1987), no. 4, 529–555. (G. Opfer) **89e:65016** 65D10
- (with López de Silanes, M. C.) Estimations de l'erreur d'approximation sur un domaine borné de  $\mathbb{R}^n$  par  $D^m$ -splines d'interpolation et d'ajustement discrètes. (English summary) [Approximation error estimates on a bounded domain in  $\mathbb{R}^n$  for interpolating and smoothing discrete  $D^m$ -splines] *Numer. Math.* **53** (1988), no. 3, 367–376. (D. Zwick) **89g:41009** 41A15 (41A65, 65D07)
- Apresyan, L. A.** A case of the applicability of the radiative transfer equation to a one-dimensional scattering problem. (Russian) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* **31** (1988), no. 2, 245–247. (Cor van der Meer) **89i:82106** 82A70 (85A25)
- Apt, Krzysztof R.** (with Bougé, Luc; Clermont, Ph.) Two normal form theorems for CSP programs. *Inform. Process. Lett.* **26** (1987), no. 4, 165–171. (Dirk Janssens) **89k:68039** 68Q10
- Proving correctness of concurrent programs: a quick introduction. *Trends in theoretical computer science (Udine, 1984)*, 305–345, *Principles Comput. Sci. Ser.*, 12, Computer Sci. Press, Rockville, MD, 1988. (see **89m:68002**) 68Q60 (03B70, 68Q10)
- Apte, V. S.** New minimal order design algorithm for linear multivariable systems. *Internat. J. Systems Sci.* **19** (1988), no. 12, 2543–2554. (Summary) **89k:93078** 93B40 (93C05, 93C35)
- Aptekarev, A. I.** Forced motions of a one-sided Langmuir chain. (Russian) *Theory of functions and approximations, Part 2 (Russian)* (Saratov, 1984), 17–21, Saratov. Gos. Univ., Saratov, 1986. (see **89j:00036**) 34A35 (82A99)
- (with Kalyagin, V. A.) Analytic properties of two-dimensional continued  $P$ -fraction expansions with periodic coefficients and their simultaneous Padé-Hermite approximants. *Rational approximation and applications in mathematics and physics (Lancut, 1985)*, 145–160, *Lecture Notes in Math.*, 1237, Springer, Berlin-New York, 1987. (Guillermo López Lagomasino) **89c:30006** 30B70 (30E15, 41A21)



- Asymptotic behavior of polynomials of simultaneous orthogonality and of a system of extremal problems for analytic functions. (Russian. English and French summaries) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 168, 29 pp. (Summary) **89c:30010** 30C10 (30C75, 33A99)
- (with Kozlov, V. V.; Oleviskii, A. M.; Potapov, M. K.; Uflyanov, P. L.; Shidlovskii, A. B.) In memory of Evgenii Mikhailovich Nikishin. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1987, no. 6, 88–91. (Editors) **89b:01032** 01A70
- Asymptotics of orthogonal polynomials with matrix coefficients. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 71, 28 pp. (Summary) **89j:33009** 33A65 (41A60)
- (with Volevich, L. R.) The finite element method in a problem of subsonic potential flows of compressible gas around bodies. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 74, 26 pp. (Summary) **89k:76002** 76-08 (35L65, 76G99, 76N15)
- (with Volevich, L. R.) Calculation of axially symmetric potential subsonic flows by means of higher-order finite elements. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 101, 27 pp. (Summary) **89m:76049** 76G99 (76-08)
- (with Volevich, L. R.) Calculation of subsonic potential flow around smooth and pointed profiles by means of higher-order finite elements. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 103, 25 pp. (Summary) **89i:76065** 76G99 (76-08)
- Asymptotics of polynomials of simultaneous orthogonality in the Angelescu case. (Russian) *Mat. Sb. (N.S.)* 136(178) (1988), no. 1, 56–84. (Hans-Jürgen Glaeske) **89g:42038** 42C05 (41A60)
- Apter, Arthur W. On a problem inspired by determinacy. *Israel J. Math.* 61 (1988), no. 3, 256–270. (John K. Truss) **89i:03095** 03E35 (03E60)
- al-Aqeel, Adnan S. H. see Al-Aqeel, Adnan S. H.
- Aquilano, C. (with Barbuti, R.; Bocchetti, P.; Martelli, Maurizio) Negation as failure. Completeness of the query evaluation process for Horn clause programs with recursive definitions. *J. Automat. Reason.* 2 (1986), no. 2, 155–170. (Summary) **89j:68145** 68T25 (03B70)
- Aquinas, Thomas see Weidemann, Hermann, (89a:03004) and Knuuttila, Simo, (89a:03004)
- Ara, Pere Stable range of aleph-nought-continuous regular rings. *Ring theory (Granada, 1986)*, 1–7, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (K. R. Goodearl) **89j:16019** 16A30 (16A52, 16A54)
- Centers of maximal quotient rings. *Arch. Math. (Basel)* 50 (1988), no. 4, 342–347. (R. Raphael) **89f:16006** 16A08
- el Arabawy, I. F. see El Arabawy, I. F.
- Arad, Zvi Table algebras and applications to finite group theory. *Proceedings of the Israel Mathematical Union Conference (Tel Aviv, 1987)*, 15–18, Tel Aviv Univ., Tel Aviv, 1987. (P. P. Pálfi) **89b:20005** 20C05 (20C15)
- (with Fisman, Elsa) On products of irreducible characters and conjugacy classes of finite groups in complementary sets. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 11–23, *Proc. Sympos. Pure Math.*, 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Olaf Manz) **89a:20006** 20C15
- (with Lennox, John) A note on a finite subset of a group closed under multiplication of distinct elements. *Arch. Math. (Basel)* 50 (1988), no. 4, 300–301. (S. Moran) **89g:20002** 20A99
- (with Fisman, Elsa) About products of irreducible characters and products of conjugacy classes in finite groups. *J. Algebra* 114 (1988), no. 2, 466–476. (Olaf Manz) **89c:20017** 20C15 (20D99)
- Aragane, Kenichi (with Tabata, Hiroyoshi) Syntactical characterizations of universal Horn classes with CEP. II. *Proceedings of the 11th Symposium on Semigroups (Kyoto, 1987)*, 67–71, *Reikichi Yoshida, Matsubara*, 1987. (see **89a:20001**) 03C05 (08B05)
- Aragão de Carvalho, C. A. (with Rothe, K. D.) Wilson loops in bosonized two-dimensional QCD. *Phys. Rev. D* (3) 36 (1987), no. 6, 1897–1904. (Bergfinnur Durhuus) **89f:81243** 81G05 (81E13)
- Aragone, C. (with Deser, S.; Yang, Zhu) Massive higher spin from dimensional reduction of gauge fields. *Ann. Physics* 179 (1987), no. 1, 76–96. (Alexander W. Smith) **89j:83067** 83E15 (81E20)
- (with Deser, S.; Ferrara, S.) Anti-Higgs effect in two-dimensional gauge theories. *Classical Quantum Gravity* 4 (1987), no. 4, 1003–1010. (Elio Abdalla) **89b:81113** 81E13 (81G20, 83E50)
- Stringy characteristics of effective gravity. *SILARG, VI (Rio de Janeiro, 1987)*, 60–69, *World Sci. Publishing, Singapore*, 1988. (Summary) **89d:83035** 83C45 (81E30, 81G25, 83E30)
- Arai, Asao On dimensional reduction of functional measures. *J. Funct. Anal.* 77 (1988), no. 2, 372–402. (Sergio Albeverio) **89j:28002** 28C20 (60H99, 81C35, 81E05)
- Supersymmetric embedding of a model of a quantum harmonic oscillator interacting with infinitely many bosons. *J. Math. Phys.* 30 (1989), no. 2, 512–520. (B. Spence) **89m:81189** 81G20
- Arai, Hitoshi Harmonic analysis on negatively curved manifolds. I. *Proc. Japan Acad. Ser. A Math. Sci.* 63 (1987), no. 7, 239–242. (Michael T. Anderson) **89d:58130** 58G30 (42B30, 53C20)
- Bounded projections onto holomorphic Hardy spaces on planar domains. *Tôhoku Math. J. (2)* 39 (1987), no. 4, 533–542. (M. Hasumi) **89c:30060** 30D55 (46E20, 47B38)
- Arai, Kenzo (with Shimoda, Seiro) Evolution of evaporating black holes. *Astrophys. and Space Sci.* 150 (1988), no. 1, 53–58. (Piotr Bizon) **89m:83044** 83C47 (83C75)
- Arai, Masao<sup>2</sup> (with Fujiwara, Takeo; Tokihiro, Tetsuji; Kohmoto, Mahito) Localized states and self-similar states of electrons on a two-dimensional Penrose lattice. *Phys. Rev. B* (3) 37 (1988), no. 6, 2797–2804. (Hanna Nencka) **89d:81214** 82A68
- (with Tokihiro, Tetsuji; Fujiwara, Takeo; Kohmoto, Mahito) Strictly localized states on a two-dimensional Penrose lattice. *Phys. Rev. B* (3) 38 (1988), no. 3, 1621–1626. (P. Rudra) **89g:82052** 82A60 (52A45)
- (with Tokihiro, Tetsuji; Fujiwara, Takeo) Exact eigenstates on a two-dimensional Penrose lattice and their fractal dimensions. *Phys. Rev. B* (3) 38 (1988), no. 9, 5981–5987. (Summary) **89k:82080** 82A60 (81H99)
- Arai, Toshiyasu A consistency proof of a system including Feferman's ID<sub>2</sub> by Takeuti's reduction method. *Tsukuba J. Math.* 11 (1987), no. 2, 227–239. (Carlo Cellucci) **89f:03055** 03F30
- Arak, Taiwo A class of Markov fields with finite range. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 994–999, Amer. Math. Soc., Providence, RI, 1987. (B. S. Nakhapetyan) **89b:60079** 60G60
- Arakawa, Kouichi (with Maeno, Masahiro) Bosonization of superstring. *Progr. Theoret. Phys.* 77 (1987), no. 1, 145–158. (From the introduction) **89a:81108** 81E99 (81E30)
- Arakawa, Tsuneo Dirichlet series  $\sum_{n=1}^{\infty} \cot \pi n/\alpha$ , Dedekind sums, and Hecke L-functions for real quadratic fields. *Comment. Math. Univ. St. Paul.* 37 (1988), no. 2, 209–235. (James Lee Hafner) **89i:11124** 11R42 (11F20, 11F66, 11M41)
- Arakelian, A. H. (with Voskanian, M. R.) The spline transform and its application in the problems of signals' digital treatment. *Numerical methods and approximation theory, III (Nis, 1987)*, 105–110, *Univ. Nis, Nis*, 1988. (A. Bultheel) **89j:92010** 92A07 (41A15, 65D30, 92-08, 94A12)
- Arakelyan, A. A. Application of an algebra of binary relations to a core and to the decision of nonreflexive relations. (Russian. Armenian summary) *Mathematics*, No. 5 (Russian), 106–123, *Erevan Univ., Erevan*, 1986. (O. N. Bondareva) **89b:90254** 90D35
- Arakelyan, M. Z. (with Karapetyan, G. A.) Theorems of Liouville and of Phragmén-Lindelöf type for semi-elliptic equations with general initial conditions. (Russian. Armenian summary) *Mathematics*, No. 4 (Russian), 81–92, *Erevan Univ., Erevan*, 1986. (Peter R. Popivanov) **89b:35021** 35B05 (35H05, 35J99)
- Arakelyan, T. A. (with Savvidi, G. K.) Cocycles of area-preserving diffeomorphisms and anomalies in the theory of relativistic surfaces. *Phys. Lett. B* 214 (1988), no. 3, 350–356. (Summary) **89j:81154** 81E99 (53C80, 58D99, 81E30)
- Araki, Huzihiro On pseudo-unitary representations. *Czechoslovak J. Phys. B* 37 (1987), no. 3, 278–284. (Hans Plesner Jakobsen) **89b:22008** 22D12 (18G15, 46L99, 81C40)
- Araki, Kiyomichi Sampling and recovery formula in finite Hankel transform based on the minimum-norm principle. *Electron. Comm. Japan. Part I Comm.* 69 (1986), no. 8, 28–36. (L. L. Campbell) **89b:94003** 94A12 (65R10)
- Araki, Mituhiko (with Hagiwara, Tomomichi) Design of a stable state feedback controller based on the multirate sampling of the plant output. *IEEE Trans. Automat. Control* 33 (1988), no. 9, 812–819. (Summary) **89c:93091** 93B50 (93B55)
- (with Hagiwara, Tomomichi) On preservation of strong stabilizability under sampling. *IEEE Trans. Automat. Control* 33 (1988), no. 11, 1080–1082. (B. G. Pachpatte) **89i:93079** 93C57 (93D15)
- (with Hagiwara, Tomomichi) Controllability indices of sampled-data systems. *Internat. J. Systems Sci.* 19 (1988), no. 12, 2449–2457. (Patrio Colaneri) **89m:93007** 93B05 (93C57)
- Araki, Shiro Equivariant Whitehead groups and G-expansion categories. *Homotopy theory and related topics (Kyoto, 1984)*, 1–25, *Adv. Stud. Pure Math.*, 9, North-Holland, Amsterdam-New York, 1987. (From the introduction) **89c:55024** 55P91 (57Q10)
- (with Kawakubo, Katsuo) Equivariant s-cobordism theorems. *J. Math. Soc. Japan* 40 (1988), no. 2, 349–367. (R. E. Stong) **89f:57048** 57R80 (57R85)
- Araksyan, V. V. A model of implementing dialog procedures in interactive systems. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 2, 89–97; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 5, 19–28, 220 (Russian). (Summary) **89i:68119** 68T99 (68N99)
- Aralbay, T. Z. (with Nazimov, A. B.; Galimov, R. E.) Peculiarities of the computer decomposition of a group code for calculating the routes of a server. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* 30 (1987), no. 5, 282–285. (Not in MR) 90B22 (94B60)
- Aramaki, Junichi On the asymptotic behaviors of the spectrum of quasi-elliptic pseudodifferential operators on  $\mathbb{R}^n$ . *Tokyo J. Math.* 10 (1987), no. 2, 481–505. (S. Z. Levendorskii) **89d:35132** 35P20 (35Q99, 47G05)
- On an extension of the Ikehara Tauberian theorem. *Pacific J. Math.* 133 (1988), no. 1, 13–30. (V. Ivrii) **89b:47026** 47A60 (11M45, 35P20, 47A10, 58G25)
- Aramaki, Selya (with Kase, Hiromi; Morita, Katsusada) Stochastic quantization and chiral anomalies. *Progr. Theoret. Phys.* 78 (1987), no. 3, 654–674. (Summary) **89a:81109a** 81E99 (81C20)
- (with Kase, Hiromi; Morita, Katsusada) Errata: "Stochastic quantization and chiral anomalies". *Progr. Theoret. Phys.* 79 (1988), no. 1, 250. (Editors) **89a:81109b** 81E99 (81C20)
- Aramyan, R. G. Stochastic approximation of convex bodies. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* 22 (1987), no. 5, 427–438, 514. (W. J. Firey) **89c:52007** 52A22 (60D05)
- Aranson, I. S. (with Rabinovich, M. I.) Renormalization group description of spatial turbulence development. (Russian. English summary) *Conference "Renormalization Group—86" (Russian) (Dubna, 1986)*, 169–183, 397, 407, *Joint Inst. Nuclear Res., Dubna*, 1987. (see **89a:81002**) 76F99 (81E15)
- Aranson, S. Kh. Generic properties of structurally unstable vector fields on closed surfaces. (Russian) *Methods of qualitative theory of differential equations (Russian)*, 4–18, 210, *Gorkov. Gos. Univ., Gorki*, 1986. (Vladislav S. Medvedev) **89m:58175** 58F25 (34C35, 58F10)
- On generic bifurcations of diffeomorphisms of a circle. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 3, 388–394, 546. (Georgii Osipenko) **89a:58067** 58F13 (34C35, 58C25, 58F14)
- (with Anosov, D. V.; Bronshtein, I. U.; Grines, V. Z.) Smooth dynamical systems [Current problems in mathematics. Fundamental directions, Vol. 1, 151–242, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow, 1985; MR 87e:58060]. Translated from the Russian by E. R. Dawson and D. O'Shea. *Dynamical systems*, I, 149–233, *Encyclopaedia Math. Sci.*, 1, Springer, Berlin-New York, 1988. (see **89g:58060**) 58Fxx (34C35)
- Nondensity of fields of finite degree of structural instability in a space of structurally unstable vector fields on closed two-dimensional manifolds. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1(259), 191–192; translated in *Russian Math. Surveys* 43 (1988), no. 1, 231–232. (Hans G. Bothe) **89i:58061** 58F10
- Arany, Ilona An algorithm for getting a minimum cut-set of a graph. *System modelling and optimization (Budapest, 1985)*, 17–24, *Lecture Notes in Control and Inform. Sci.*, 84, Springer, Berlin-New York, 1986. (Introduction) **89a:90087** 90B10 (05C35)
- Arapostathis, Aristotle (with Nam, Kwanghee) A model reference adaptive control scheme for pure-feedback nonlinear systems. *IEEE Trans. Automat. Control* 33 (1988), no. 9, 803–811. (Günter Kern) **89g:93058** 93C40 (93B10, 93B50)
- (with Sernik, Enrique) Remarks on the periodic orbits of the matrix Riccati equation. *Internat. J. Control* 48 (1988), no. 3, 949–959. (Summary) **89g:34055** 34C25 (49D50, 58F22, 93B60)

- (with Yong, Jiong Min) Stabilization of discrete-time linear systems with a time delay in the feedback loop. *Internat. J. Control* **48** (1988), no. 4, 1475–1485. (Summary) **89g:93076** 93D15 (34K35, 93C55)
- Arapovic, Miroslav** Some results on reduced rings. (Serbo-Croatian summary) *Rad. Mat.* **3** (1987), no. 2, 301–306. (James A. Huckaba) **89f:13001** 13A15 (13B30)
- Arapura, Donu** Hodge theory with local coefficients and fundamental groups of varieties. *Bull. Amer. Math. Soc. (N.S.)* **20** (1989), no. 2, 169–172. (Richard M. Hain) **89k:14034** 14F35 (14C30, 32G20, 32J25)
- (with Jaffe, David B.) On Kodaira vanishing for singular varieties. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 911–916. (L. Bădescu) **89h:14013** 14F15 (14F05, 32L20)
- Arason, Jón Kr.** (with Elman, Richard; Jacob, Bill) Rigid elements, valuations, and realization of Witt rings. *J. Algebra* **110** (1987), no. 2, 449–467. (Ron Brown) **89a:11041** 11E81 (11E04)
- (with Fein, B.; Schacher, M.; Sonn, J.) Cyclic extensions of  $K(\sqrt{-1})/K$ . *Trans. Amer. Math. Soc.* **313** (1989), no. 2, 843–851. (Richard Massy) **89j:12005** 12F10 (11R20)
- Arasu, K. T.** Validity of Lander's conjecture for  $k = 3$  and  $k \leq 500$ . *J. Combin. Math. Combin. Comput.* **2** (1987), 73–76. (Dieter Jungnickel) **89h:05049** 05B10
- More missing entries in Lander's table could be filled. *Arch. Math. (Basel)* **51** (1988), no. 2, 188–192. (Siu Lun Ma) **89i:05055** 05B10
- Another variation of Wilbrink's theorem. *Arch. Math.* **107**–109. (R. A. Bailey) **89m:05020** 05B10
- (with Stewart, D. L.) Certain implications of the multiplier conjecture. *J. Combin. Math. Combin. Comput.* **3** (1988), 207–211. (Dieter Jungnickel) **89i:05056** 05B10
- Aratyn, Henrik** (with Ingemannson, Randall; Niemi, Antti J.) Covariant canonical superstrings. *Modern Phys. Lett. A* **2** (1987), no. 12, 957–965. (B. Spence) **89h:81172** 81E99 (81E30)
- (with Ingemannson, Randall; Niemi, Antti J.)  $OSp(1, 1/2)$  and Parisi-Sourlas supersymmetry for closed strings. *Phys. Lett. B* **195** (1987), no. 2, 149–154. (Enore Guadagnini) **89a:81110** 81E99 (81E30, 81G20, 83E30)
- (with Ingemannson, Randall; Niemi, Antti J.) Parisi-Sourlas fermions from Ramond superstring. *Phys. Lett. B* **195** (1987), no. 2, 155–159. (Enore Guadagnini) **89a:81111** 81E99 (81E30, 81G20, 83E30)
- (with Ingemannson, Randall; Niemi, Antti J.) Interacting field theory of relativistic point particles. *Phys. Rev. Lett.* **58** (1987), no. 10, 965–968. (V. B. Serebrennikov) **89c:81100** 81E99 (81E30, 81G25)
- (with Ingemannson, Randall) Abelianising the Virasoro operators. *Classical Quantum Gravity* **5** (1988), no. 12, L213–L219. (Summary) **89j:58025** 58F05 (17B65, 81E13, 81E30)
- (with Ingemannson, Randall) Algebraic approach to the geometry of the (super-) string model. *Nuclear Phys. B* **299** (1988), no. 3, 507–547. (Roger Brooks) **89f:81153** 81E99 (81E30, 81E30)
- (with Ingemannson, Randall) Geometric interpretation of the string vertex operator. *Phys. Rev. Lett.* **61** (1988), no. 18, 2050–2053. (Robert Marnelius) **89m:81127** 81E99 (53C80, 81E13, 81E30)
- Araújo, A. ser Araújo, Aloisio Pessoa**
- de Araújo, A. L. (with Alves, E. H.; Gueronzi, J. A. D.) Some relations between modal and paraconsistent logic. *J. Non-Classical Logic* **4** (1987), no. 2, 33–44. (Wojciech Dziuk) **89c:03049** 03B60 (03B45)
- Araújo, Aloisio Pessoa** The nonexistence of smooth demand in general Banach spaces. *J. Math. Econom.* **17** (1988), no. 4, 309–319. (C. D. Aliprantis) **89m:90027** 90A14 (46N05)
- de Araújo, M. E. (with Skea, James E. F.) The automorphism groups for Bianchi universe models and computer-aided invariant classification of metrics. *Classical Quantum Gravity* **5** (1988), no. 4, 537–550. (Colin B. G. McIntosh) **89g:83010** 83C15 (83-04, 83C40)
- (with Skea, James E. F.) Automorphisms in action: spatially homogeneous Einstein-Maxwell plane waves. *Classical Quantum Gravity* **5** (1988), no. 8, 1073–1096. (Nora Brétón Béz) **89f:83050** 83C40 (83-04, 83C20, 83C50)
- Aravena, J. L.** (with Porter, W. A.) State representations for  $m$ -D systems with generalized causality structures. *Math. Systems Theory* **20** (1987), no. 2-3, 155–168. (K. B. Datta) **89c:93024** 93B20
- Arvind, P. K.** Temporal order in  $(1 + 1)$ -dimensional relativity. *Amer. J. Phys.* **56** (1988), no. 3, 258–262. (P. C. Vaidya) **89c:83005** 83A05
- Arazy, J.** (with Fisher, S.; Peetre, Jaak) Möbius invariant spaces of analytic functions. *Complex analysis, I (College Park, Md., 1985–86)*, 10–22. *Lecture Notes in Math.*, 1275, Springer, Berlin-New York, 1987. (From the introduction) **89a:46059** 46E20 (30H05, 46M35)
- An application of infinite-dimensional holomorphy to the geometry of Banach spaces. *Geometrical aspects of functional analysis* (1985/86), 122–150. *Lecture Notes in Math.*, 1267, Springer, Berlin-New York, 1987. (Martin Schottenloher) **89g:46022** 46B20 (32H99, 32M10, 46G20)
- (with Fisher, S.) Rigid and zero reducing linear transformations. *J. Math. Anal. Appl.* **130** (1988), no. 2, 552–555. (Pamela Gorkin) **89c:46068** 46J10 (47B38)
- Arbarello, E.** On the Picard group of the moduli space of algebraic curves. (Italian summary) Conference on algebraic varieties of small dimension (Turin, 1985). *Rend. Sem. Mat. Univ. Politec. Torino* **1986**, Special Issue, 131–136 (1987). (Ciro Ciliberto) **89i:14029** 14H10 (14C22)
- Fay's trisecant formula and a characterization of Jacobian varieties. *Algebraic geometry, Bowdoin, 1985 (Brunswick, Maine, 1985)*, 49–61. *Proc. Sympos. Pure Math.*, 46, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Olivier Debarre) **89b:14060** 14K25 (14H40, 58F07)
- Periods of abelian integrals, theta functions, and differential equations of KdV type. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 623–627. *Amer. Math. Soc., Providence, RI, 1987.* (Emma Previero) **89g:14019** 14H40 (14K25, 35Q20, 58F07)
- (with De Concini, C.; Kac, Victor G.; Procesi, C.) Moduli spaces of curves and representation theory. *Comm. Math. Phys.* **117** (1988), no. 1, 1–36. (Yukihiko Namikawa) **89i:14019** 14H15 (17B65, 22E65, 32G15, 58F07, 81E40)
- Arbarello, E.** (with Aravena, J. L.) *see* Fandiño Arbeláez, Ramón E.
- Arbénz, Peter** (with Gander, Walter; Golub, Gene H.) Restricted rank modification of the symmetric eigenvalue problem: theoretical considerations. *Linear Algebra Appl.* **104** (1988), 75–95. (V. S. Zajączkowski) **89h:65052** 65F15 (15A18)
- (with Golub, Gene H.) On the spectral decomposition of Hermitian matrices modified by low rank perturbations with applications. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 1, 40–58. (Moody T. Chu) **89c:15028** 15A57 (15A18, 65F15)
- Arbia, Giuseppe** Problems in the estimation of the spatial autocorrelation function arising from the form of the weights matrix. *Transformations through space and time (Hansholm, 1985)*, 295–308. *NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci.*, 29, Nijhoff, Dordrecht, 1986. (see **89c:90072**) 62M10 (62P20, 90A20)
- Arbib, Claudio** A polynomial characterization of some graph partitioning problems. *Inform. Process. Lett.* **26** (1988), no. 5, 223–230. (Satoru Miyano) **89c:68043** 68Q25 (05C70, 68R10)
- (with Lucertini, M.; Nicolò, F.) Optimization models for flexible manufacturing systems. *Operations research models in flexible manufacturing systems (Udine, 1987)*, 75–89. *CISM Courses and Lectures*, 306, Springer, Vienna, 1989. (see **89k:90082**) 90B30
- Arbib, Michael A.** ★ Brains, machines, and mathematics. Second edition. *Springer-Verlag, New York-Berlin*, 1987. xvi+202 pp. ISBN 0-387-965



- 81B99)
- Arditi, Roger** (with Dacorogna, Bernard) Optimal foraging in nonpatchy habitats. II. Unbounded one-dimensional habitat. *SIAM J. Appl. Math.* **47** (1987), no. 4, 800–821. (T. G. Hallam) **89c:92077** 92A17 (49B21, 92A15)
- Arditi, A.** (with De Gregorio, S.; Lamberti, L.; Ricciardi, P.) Dynamics of a lake ecosystem. *Biomathematics and related computational problems* (Naples, 1987), 111–119, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89i:92051** 92A17
- Arecchi, F. T.** Shil'nikov chaos in lasers. *Chaos and complexity* (Torino, 1987), 121–141, *World Sci. Publishing, Singapore*, 1988. (Summary) **89c:58110** 58F13 (82A35, 82A99)
- Arede, T.** A class of solvable nonlinear filters. *Stochastics* **23** (1988), no. 3, 377–389. (Onésimo Hernández Lerma) **89j:93112** 93E11 (60G35)
- Aref, H.** (with Eckhardt, Bruno) Integrable and chaotic motions of four vortices. II. Collision dynamics of vortex pairs. *Philos. Trans. Roy. Soc. London Ser. A* **326** (1988), no. 1593, 655–696. (Summary) **89k:58178** 58F13 (70K50, 76C05)
- (with Tryggvason, Grétar) Model of Rayleigh-Taylor instability. *Phys. Rev. Lett.* **62** (1989), no. 7, 749–752. (Summary) **89k:76047** 76E10 (76–08)
- Arefev, V. N.** On the smoothness of the solutions of second-order parabolic equations with discontinuous coefficients. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 5, 11–19, 87. (Jan Gonczewicz) **89g:35044** 35K20 (35B30, 35R05)
- Arefeva, I. Ya.** (with Volovich, I. V.; Dragović, B. G.) Spontaneous reduction in multidimensional ( $D = 10, 11$ ) theories of supergravity with arbitrary signature. (Russian. English summary) *Teoret. Mat. Fiz.* **70** (1987), no. 3, 422–431. (Summary) **89c:83049** 83E50 (81G25, 83E15)
- (with Medvedev, P. B.) Field theory of interacting open superstrings in fermionic ghost representation. *Nuclear Phys. B* **310** (1988), no. 1, 101–126. (Summary) **89k:81126** 81E99 (81E30)
- (with Dragović, B. G.; Volovich, I. V.) On the  $p$ -adic summability of the anharmonic oscillator. *Phys. Lett. B* **200** (1988), no. 4, 512–514. (Edward R. Vrscaj) **89h:81037** 81C15 (11Q25)
- (with Medvedev, P. B.) Truncation, picture-changing operation and spacetime supersymmetry in Neveu-Schwarz-Ramond string field theory. *Phys. Lett. B* **202** (1988), no. 4, 510–514. (Tsou Sheung Tsun) **89j:81155** 81E99 (81E30)
- (with Medvedev, P. B.) Anomalies in Witten's field theory of the NSR string. *Phys. Lett. B* **212** (1988), no. 3, 299–308. (George Siopsis) **89h:81128** 81E99 (81E30)
- Arefin, I. G.** Stabilization of the programmed motions of a manipulation robot on the basis of the recurrent form of the equations of motion. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 2, 97–98, 134. (Summary) **89a:70003** 70B15 (70Q05)
- Arenas, Angela** The concept of  $k$ -level for positive integers. *Publ. Sec. Mat. Univ. Autònoma Barcelona* **30** (1986), no. 1, 41–48. (K. Thanigasalam) **89c:11149** 11P05 (11A99)
- On positive integers representable as a sum of three squares. *Journées arithmétiques de Besançon* (Besançon, 1985). *Astérisque* No. 147-148 (1987), 259–263, 344. (J. Wolfskill) **89a:11034** 11E25 (11R32)
- (with Bayer, Pilar) Arithmetic behaviour of the sums of three squares. *J. Number Theory* **27** (1987), no. 3, 273–284. (J. S. Hsia) **89c:11053** 11E20 (11E12, 11E25, 11E36, 11F30)
- On integral representations by quadratic forms. *Linear and Multilinear Algebra* **22** (1987), no. 2, 149–160. (Craig Cordes) **89g:15032** 15A63 (11E12, 11N45, 15A75)
- Arenbaev, N. K.** A local theorem for a negative-binomial distribution. (Russian) *Some problems in functional analysis, differential equations and their applications* (Russian), 3–8, 107, *Kazakh. Gos. Univ., Alma-Ata*, 1985. (see **89a:00016**) 60F05
- Arendt, Wolfgang** Vector-valued Laplace transforms and Cauchy problems. *Israel J. Math.* **59** (1987), no. 3, 327–352. (J. A. Goldstein) **89a:47064** 47D05 (34G10, 47A50, 49A10)
- (with Schwarz, Hans-Ulrich) Ideale regulärer Operatoren und Kompaktheit positiver Operatoren zwischen Banachverbänden. [Ideals of regular operators and compactness of positive operators between Banach lattices] *Math. Nachr.* **131** (1987), 7–18. (W. A. J. Luxemburg) **89g:47048** 47B55 (46B30, 47B05, 47D15, 47D30)
- (with Batty, C. J. K.) Tauberian theorems and stability of one-parameter semigroups. *Trans. Amer. Math. Soc.* **306** (1988), no. 2, 837–852. (S. Kantorovitz) **89g:47053** 47D05 (34G10)
- Arens, Richard** On a theorem of Gleason, Kahane and Żelazko. *Studia Math.* **87** (1987), no. 2, 193–196. (Pamela Gorkin) **89c:46069** 46J10
- Areshkin, G. Ya.** Functional operators and families of set functions. (Russian) *Functional analysis*, No. 26 (Russian), 35–41, *Ufyanovsk. Gos. Ped. Inst., Ufyanovsk*, 1986. (Yu. A. Abramovich) **89d:47057** 47B38
- Argac, Nurcan** (with Kaya, Arif; Kisir, Alev)  $(\sigma, \tau)$ -derivations in prime rings. *Math. J. Okayama Univ.* **29** (1987), 173–177 (1988). (Andrzej Nowicki) **89f:16046** 16A70 (16A72)
- Argoul, F.** (with Arneodo, A.; Richetti, P.; Roux, J. C.) The Belousov-Zhabotinskii reaction: a paradigm for theoretical studies of dynamical systems. *Dynamical systems and environmental models* (Eisenach, 1986), 122–131, *Math. Ecol., Akademie-Verlag, Berlin*, 1987. (János Tóth) **89d:92089** 92A40 (58F13, 80A30)
- (with Arneodo, A.; Richetti, P.) A three-dimensional dissipative map modeling type-II intermittency. *J. Physique* **49** (1988), no. 5, 767–775. (Summary) **89g:58125** 58F13 (76F99)
- (with Arneodo, A.; Grasseau, G.) Fractal dimensions and  $f(\alpha)$  spectrum for strange attractors. *Z. Angew. Math. Mech.* **68** (1988), no. 10, 519–522. (Introduction) **89k:58170** 58F13
- (with Arneodo, A.; Elezgaray, J.; Grasseau, G.; Murenzi, R.) Wavelet transform of fractal aggregates. *Phys. Lett. A* **135** (1989), no. 6–7, 327–336. (Summary) **89k:82069** 82A57 (42C05)
- Argoun, M. B.** see Xu, Shi Jie, **89m:93078**
- Argyros, I. K.** An iterative solution of the polynomial equation in Banach space. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 4, 403–410. (Not in MR) **47H17** (46G99, 58C15)
- On some theorems of Mishra, Ćirić and Iseki. (Serbo-Croatian summary) *Mat. Vesnik* **39** (1987), no. 4, 377–380. (Summary) **89c:54083** 54H25
- An improved condition for solving multilinear equations. *Punjab Univ. J. Math. (Lahore)* **20** (1987), 43–46. (Summary) **89c:47075** 47H15
- A note on [the] quadratic equation in Banach space. *Punjab Univ. J. Math. (Lahore)* **20** (1987), 47–50. (Not in MR) **47H15**
- Survey on the ideals of the space of bounded linear operators on a separable Hilbert space. *Rev. Acad. Cienc. Zaragoza* (2) **42** (1987), 24–43. (From the text) **89g:47059** 47D25 (46M05, 47B10)
- On a class of nonlinear equations. *Tamkang J. Math.* **18** (1987), no. 2, 19–25. (Ramendra Krishna Bose) **89f:47091** 47H15 (47H10, 47H17)
- Quadratic finite rank operator equations and applications. *Tamkang J. Math.* **18** (1987), no. 4, 47–55. (Nicole Brilouët-Belluot) **89k:47100** 47H15
- On a class of nonlinear integral equations arising in neutron transport. *Aequationes Math.* **36** (1988), no. 1, 99–111. (H. E. Gollwitzer) **89m:47058** 47H15 (45G10, 82A70)
- Newton-like methods under mild differentiability conditions with error analysis. *Bull. Austral. Math. Soc.* **37** (1988), no. 1, 131–147. (A. V. Dzishkariani) **89k:65142** 65J15 (47H17)
- Argyros, Spiros A.** (with Benyamini, Yoav) Universal WCG Banach spaces and universal Eberlein compacts. *Israel J. Math.* **58** (1987), no. 3, 305–320. (James Hagler) **89d:46016** 46B20 (04A30, 54A25)
- (with Odell, Edward; Rosenthal, Haskell P.) On certain convex subsets of  $c_0$ . *Functional analysis* (Austin, TX, 1986–87), 80–111, *Lecture Notes in Math.*, 1332, *Springer, Berlin-New York*, 1988. (Walter Schachermayer) **89k:46030** 46B22 (52A07)
- Arhangel'skii, A. V.** see Arkhangel'skii, A. V.
- Arhangel'skii, A. V.** see Arkhangel'skii, A. V.
- lev-Ari, H.** see Lev-Ari, H.
- d'Ari, R.** (with Thomas, René; Richelle, J.) Itération dirigée vers un point fixe ou un type de point fixe donné. (English summary) [Directed iteration to a fixed point or a given type of fixed point] *Acad. Roy. Belg. Bull. Cl. Sci. (5)* **73** (1987), no. 2, 62–83. (Dietrich Flockerzi) **89f:65058** 65H05 (58F08, 58F14)
- Ariaratnam, S. T.** (with Sri Namachchivaya, N.) Stochastically perturbed Hopf bifurcation. *Internat. J. Non-Linear Mech.* **22** (1987), no. 5, 363–372. (Gh. Silas) **89k:70050** 70L05 (34F05, 58F14)
- (with Xie, W.-C.) Effect of derivative process on the almost-sure asymptotic stability of second-order linear stochastic systems. *Dynamics Stability Systems* **3** (1988), no. 1–2, 69–78. (Kiyomasa Narita) **89m:93087** 93E15 (34F05, 60H10)
- (with Xie, W.-C.) Stochastic sample stability of oscillatory systems. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 2, 458–460. (Andrzej Tylikowski) **89m:70057** 70L05
- (with Grigoriu, M.) Response of linear systems to polynomials of Gaussian processes. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 4, 905–910. (Kazimierz Sobczyk) **89m:70058** 70L05
- fernández Arias, Arturo** see Fernández Arias, Arturo
- gómez Arias, Jorge** see Gómez Arias, Jorge
- Arias, M.** (with Ortega, Rafael) A periodic problem in which nonlinearity increases linearly in one direction. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 56–63, *Publ. Dep. Mat. Univ. Extremadura*, 18, *Univ. Extremadura, Badajoz*, 1987. (Pedro Martínez-Amores) **89j:34022** 34B15 (34C25)
- Arias, Rodrigo** (with Alonso, Rodrigo; Zamorano, Nelson) Kerr-Schild generalized metrics. *SILARG, VI (Rio de Janeiro, 1987)*, 125–134, *World Sci. Publishing, Singapore*, 1988. (A. H. Taub) **89f:83016** 83C15
- Arias de Reyna Martínez, Juan** A generalized mean-value theorem. *Monatsh. Math.* **106** (1988), no. 2, 95–97. (William M. Self) **89m:26001** 26A06 (55M99, 55P10)
- A real valued homomorphism on algebras of differentiable functions. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1054–1058. (Athanasios Kyriazis) **89g:46088** 46J15 (46G20)
- Arias de Velasco, Luis** (with Ortiz, Javier) Vector distributions and polynomial modifications. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 369–374, *Publ. Dep. Mat. Univ. Extremadura*, 18, *Univ. Extremadura, Badajoz*, 1987. (Summary) **89k:42026** 42C05
- Ariel, P. D.** (with Sezgin, M.; Aggarwala, B. D.) Electrically driven flows in MHD with mixed electromagnetic boundary conditions. (German and Russian summaries) *Z. Angew. Math. Mech.* **68** (1988), no. 7, 267–280. (Ram Babu Mishra) **89f:76089** 76W05
- (with Aggarwala, B. D.) Modified boundary integral method for pressure driven MHD duct flow. *Internat. J. Math. Math. Sci.* **12** (1989), no. 1, 159–174. (Summary) **89k:76099** 76W05 (76–08)
- Arievich, O. N.** (with Stoyan, V. A.) Optimal estimation of solutions of linear differential equations. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 6 (1987), 82–85, 116. (Summary) **89k:93069** 93B30 (34A99)
- Arik, M.** (with Neyzi, Fahrūnisa) Grassmannian  $\sigma$ -models and strings. *J. Math. Phys.* **29** (1988), no. 3, 594–598. (Danny Birmingham) **89f:81154** 81E99 (85E20, 81E30, 81E40, 83E30)
- (with Dereli, T.) Euler-form actions and the vanishing of the cosmological constant. *Phys. Rev. Lett.* **62** (1989), no. 1, 5–7. (L. M. Sokolowski) **89j:83068** 83E15 (53C80)
- Arikan, Erdal** An upper bound on the cutoff rate of sequential decoding. *IEEE Trans. Inform. Theory* **34** (1988), no. 1, 55–63. (Ram Aurar) **89k:94012** 94B35
- Sequential decoding for multiple access channels. *IEEE Trans. Inform. Theory* **34** (1988), no. 2, 246–259. (Petr Némec) **89g:94027** 94B35 (94A40)
- Arik, Susumu** On the representations of the Weyl groups of type  $D$  corresponding to the zero weights of the representations of  $SO(2n, \mathbb{C})$ . *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 327–342, *Proc. Sympos. Pure Math.*, 47, Part 2, *Amer. Math. Soc., Providence, RI*, 1987. (Tuong Ton That) **89k:22022** 22E45 (20C15, 20G20)
- Arima, A.** (with Bentz, W.; Liu, L. G.) Chiral symmetry in nuclear matter. *Ann. Physics* **188** (1988), no. 1, 61–119. (Summary) **89j:81269** 81G35
- Arima, Satoshi** (with Yamawaki, Noriaki) Actions of theta groups for theta divisors on Jacobian surfaces. *Bull. Sci. Engrg. Res. Lab. Waseda Univ.* No. 118 (1987), 60–62. (Tsutomu Sekiguchi) **89f:14025a** 14H40 (14K10)
- (with Yamawaki, Noriaki) Errata: "Actions of theta groups for theta divisors on Jacobian surfaces". *Bull. Sci. Engrg. Res. Lab. Waseda Univ.* No. 119 (1987), 72. (Tsutomu Sekiguchi) **89f:14025b** 14H40 (14K10)
- Arimitsu, T.** (with Umezawa, H.; Yamanaka, Y.) Canonical formalism of dissipative fields in thermo field dynamics. *J. Math. Phys.* **28** (1987), no. 11, 2741–2752. (Summary) **89g:81064a** 81E99 (82A15)
- (with Umezawa, H.; Yamanaka, Y.) Erratum: "Canonical formalism of dissipative fields in the thermo field dynamics". *J. Math. Phys.* **29** (1988), no. 6, 1518. (Summary)



- 89g:81064b** 81E99 (82A15)  
— (with Guida, M.; Umezawa, H.) Dissipative quantum field theory. Thermo field dynamics. *Phys. A* **148** (1988), no. 1-2, 1-26. (Robert Alici) **89f:81155** 81E99 (81E15)  
— (with Umezawa, H.; Yamanaka, Y.; Papastamatiou, N. J.) Spontaneous creation of dissipation in thermo field dynamics and its examples. *Phys. A* **148** (1988), no. 1-2, 27-45. (J. A. Helayël-Neto) **89g:81065** 81E99  
— Kinetic equations within the formalism of nonequilibrium thermo field dynamics. *Phys. A* **148** (1988), no. 3, 427-455. (Robert Alici) **89i:81102** 81E99 (81H99, 81K05, 82A35, 82A40, 82A97)
- Arimitsu, Y.** (with Nishioka, K.) Exact plane stress solution for some simple cases in anisotropic elasticity. (German and Russian summaries) *Z. Angew. Math. Mech.* **68** (1988), no. 3, 139-145. (Summary) **89c:73049** 73K10 (73C30)
- Arimoto, Akio** Approximation of the finite prediction for a weakly stationary process. *Ann. Probab.* **16** (1988), no. 1, 355-360. (Rodrigo Arocena) **89b:60112** 60G25 (62M20)
- Arlin, E. I.** see **Arlin, Eileen**
- Arlin, E.** Adaptive orthogonal curvilinear coordinates. *Numerical methods for fluid dynamics, III* (Oxford, 1988), 353-359, *Inst. Math. Appl. Conf. Ser. New Ser.*, 17, Oxford Univ. Press, New York, 1988. (see **89j:76004**) 76-08 (65P05)
- Arlino, Miguel A.** A theorem on unconditional Schauder decompositions of  $l_p$  ( $0 < p \leq 1$ ). *Rend. Mat.* (7) **5** (1985), no. 3-4, 217-227 (1988). (N. Popa) **89m:46028** 46B25 (46B15)  
— (with Eldeeb, Raouf; Peck, N. T.) The Lorentz sequence spaces  $d(w, p)$  where  $w$  is increasing. *Math. Ann.* **282** (1988), no. 2, 259-266. (Christian Samuel) **89i:46010** 46A45 (46E30)  
— On shrinking bases in  $p$ -Banach spaces. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 1, 127-132. (Manjul Gupta) **89a:46020** 46A35 (46B15)
- Arlino, Ovide** (with Hanebaly, Elaidi) Solutions presque périodiques de:  $(dx/dt) + \|x\|^{\alpha}x = h(t)$  ( $\alpha \geq 0$ ) sur les espaces de Banach. (English summary) [Almost-periodic solutions of  $(dx/dt) + \|x\|^{\alpha}x = h(t)$  ( $\alpha \geq 0$ ) in Banach spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 16, 707-710. (Summary) **89c:34037** 34C20 (34C27)  
— (with Bourad, Fawzi; Hassani, Nacer) Un résultat sur le comportement asymptotique des solutions de systèmes dynamiques monotones. (English summary) [On the asymptotic behaviour of the solutions of certain order-preserving dynamical systems] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 7, 311-315. (E. Lami Dozo) **89c:47109** 47H20 (34K15)  
— (with Kimmel, Marek) On active linear compartments. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 1189-1194. (see **89d:00007**) 92A09
- Arlin, Eileen** see **Kacnelson, L.** **89m:01093**
- el-Ariny, A. K. H.** see **El-Ariny, A. K. H.**
- Arluka, Shigekatsu** Padé-type approximants in multivariables. *Appl. Numer. Math.* **3** (1987), no. 6, 497-511. (G. Opfer) **89f:65022** 65D15
- Aris, R.** (with McKarnin, M. A.; Schmidt, L. D.) Autonomous bifurcations of a simple bimolecular surface-reaction model. *Proc. Roy. Soc. London Ser. A* **415** (1988), no. 1849, 363-387. (Yoram Schiffmann) **89d:92100** 92A40 (34C05, 34C35, 58F14)
- Aristotle** see **Vita, Vincenzo** **89g:01006**; **White, Michael J.** **89g:01007**; **Krischer, Tilman** **89h:01006**; **Copernicus, Nicolaus** **89m:01027**; **Dancy, Russell M.** **(89a:03004)** and **Hilittika, Jaakko** **(89a:03004)**
- Arivarigann, G.** (with Kalpakam, S.) A continuous review inventory system with semi-Markovian demands. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 1172-1177. (see **89d:00007**) 90B05
- Ariyawansa, K. A.** On selecting an extreme value distribution. (German summary) *J. Oper. Res. 32* (1988), no. 2, 95-100. (Thomas J. Santner) **89d:62006** 62A25 (62F10)
- Ariyoshi, Hirotsu** (with Higashiyama, Youichi) A method for reducing the number of product terms in a symbolic reliability expression. *Electron. Comm. Japan. Part I Comm.* **70** (1987), no. 9, 50-58. (Not in MR) 90B25
- Arizono, Ituo** (with Ohia, Hiroshi; Nishiyama, Noriyuki) Information-theoretic approach to classifying operators in conveyor systems. *Internat. J. Systems Sci.* **20** (1989), no. 2, 181-189. (Not in MR) 94A17
- Arjas, E.** (with Haara, P.) A logistic regression model for hazard: asymptotic results. *Scand. J. Statist.* **14** (1987), no. 1, 1-18. (Eric V. Slud) **89c:62207** 62N05 (62E20, 62M09, 62P10)  
— (with Haara, P.) A note on the asymptotic normality in the Cox regression model. *Ann. Statist.* **16** (1988), no. 3, 1133-1140. (Wilfried Grossmann) **89f:62159** 62M99 (62J02)  
— (with Yashin, A. I.) A note on random intensities and conditional survival functions. *J. Appl. Probab.* **25** (1988), no. 3, 630-635. (John P. Lehoczyk) **89h:60074** 60G44 (62M99)  
— (with Haara, P.) A note on the exponentiality of total hazards before failure. *J. Multivariate Anal.* **26** (1988), no. 2, 207-218. (M. M. Siddiqui) **89m:60115** 60G55 (62N05, 90B25)
- Arkad'ev, V. A.** (with Pogrebkov, A. K.; Polivanov, M. K.) Closed string-like solutions of the Davey-Stewartson equation. *Inverse Problems* **5** (1989), no. 1, L1-L6. (From the text) **89k:58113** 58F07 (35Q20)
- Arkeryd, Lelf** The nonlinear Boltzmann equation far from equilibrium. *Nonstandard analysis and its applications* (Hull, 1986), 321-340, *London Math. Soc. Stud. Texts*, 10, Cambridge Univ. Press, Cambridge-New York, 1988. (see **89m:03060**) 82A40 (03H10)  
— Existence theorems for certain kinetic equations and large data. *Arch. Rational Mech. Anal.* **103** (1988), no. 2, 139-149. (Luigia Arlotti) **89h:82014** 82A40 (35Q20, 45K05, 76P05)  
— Stability in  $L^1$  for the spatially homogeneous Boltzmann equation. *Arch. Rational Mech. Anal.* **103** (1988), no. 2, 151-167. (Carlo Cercignani) **89h:82015** 82A40 (76P05)
- Arkhangelskii, A. N.** Lower bounds for the probabilities of large deviations in the multidimensional case. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 2, 407-412. (S. A. Book) **89b:60067** 60F10 (60B11)
- Arkhangelskii, A. V.** Some new directions in the theory of continuous mappings. (Russian. English summary) *Continuous functions on topological spaces* (Russian), 5-35, i, ix, *Lav. Gos. Univ. Riga*, 1986. (Summary) **89c:54026** 54C05 (54A25)  
— Algebraic objects generated by a topological structure. (Russian) *Algebra. Topology. Geometry*, Vol. 25 (Russian), 141-198, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (M. I. Kabenyuk) **89c:22001** 22A05 (54C35)  
— A survey of  $C_p$ -theory. Proceedings of the first Soviet-Japan joint symposium of topology (Tokyo, 1986). *Questions Answers Gen. Topology* **5** (1987), no. 1, 1-109. (M. Hulek) **89c:54031**; **EA 89m** 54C40 (54-02, 54A25)
- Topological homogeneity. Topological groups and their continuous images. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 2(254), 69-105, 287. (Vesko Valov) **89b:54004** 54-02 (22A05, 54C99, 54D30, 54E99)  
— (with Shapirovskii, B. E.) The structure of monolithic spaces. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 4, 72-74, 103. (Hao Xuan Zhou) **89a:54005** 54A25 (03E50, 54D30)  
— (with Fedorchuk, V. V.) Basic concepts and constructions of general topology. (Russian) *Current problems in mathematics. Fundamental directions*, Vol. 17 (Russian), 5-110, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (see **89m:54001**) 54-01  
— Some results and problems in  $C_p(X)$ -theory. *General topology and its relations to modern analysis and algebra*, VI (Prague, 1986), 11-31, *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (A. I. Bashkurov) **89m:54022** 54C40 (54C99)  
— Continuous images of Lindelöf  $\Sigma$ -groups. (Russian) *Dokl. Akad. Nauk SSSR* **295** (1987), no. 6, 1289-1292; translated in *Soviet Math. Dokl.* **36** (1988), no. 1, 169-173. (Hao Xuan Zhou) **89a:54012** 54C05 (03E50, 22A05, 54H10)  
— (with Shakhmatov, D. B.) Pointwise approximation of arbitrary functions by countable families of continuous functions. (Russian. English summary) *Trudy Sem. Petrovsk.* **No. 13** (1988), 206-227, 259. (A. I. Vasil'ev) **89m:41023** 41A65 (54C05, 54C30, 54D99)
- Arkhangelskii, K. V.** (with Gorskho, P. V.) Conditional identities in the algebra of regular languages. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 10, 67-69, 88. (Summary) **89a:68117** 68Q45  
— (with Gorskho, P. V.) On refinement of the concept of a multitape automaton. (Russian. English summary) *Kibernetika (Kiev)* **1987**, no. 6, 20-25, 133. (Summary) **89b:68047** 68Q70
- Arkhipov, A. A.** The causality principle in the problem of simultaneous reduction in quantum field theory. (Russian. English summary) *Theoret. Mat. Fiz.* **74** (1988), no. 1, 69-81; translated in *Theoret. and Math. Phys.* **74** (1988), no. 1, 48-57. (Claus Montonen) **89i:81054** 81D10 (81E08)
- Arkhipov, G. I.** (with Karatsuba, A. A.; Chubarikov, V. N.) ★ Теория кратных тригонометрических сумм. (Russian) [Theory of multiple trigonometric sums] *"Nauka", Moscow*, 1987. 368 pp. (Matti Jutila (Zbl 638:10037)) **89h:11050** 11L03 (11L15)  
— (with Chubarikov, V. N.) On some summation formulas. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 5, 29-32, 104. (Aleksandar Ivić) **89a:11008** 11A25 (11L03, 40A25)  
— (with Oskolkov, K. I.) A special trigonometric series and its applications. (Russian) *Mat. Sb. (N.S.)* **134(176)** (1987), no. 2, 147-157, 287; translated in *Math. USSR-Sb.* **62** (1989), no. 1, 145-155. (S. Aljančić) **89a:42010** 42A16 (42A20)
- Arkhipova, A. A.** (with Ural'tseva, N. N.) Regularity of the solutions of variational inequalities with convex constraints on the boundary of the domain for nonlinear operators with a diagonal principal part. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 3, 13-19, 127. (Rudolf Švarc) **89f:35088** 35J85 (49A29)
- Arkhotik, G. M.** A linear total differential equation of Euler type. (Russian) *Vestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 5, 122. (Not in MR) 58A15 (34A30)
- Arkin, Joseph** (with Bergum, Gerald) More on the problem of Diophantus. *Applications of Fibonacci numbers* (San Jose, CA, 1986), 177-181, *Kluwer Acad. Publ., Dordrecht*, 1988. (Md. Fazlee Hossain) **89f:11010** 11A05
- Arkowitz, Martin** Formal differential graded algebras and homomorphisms. *J. Pure Appl. Algebra* **51** (1988), no. 1-2, 35-52. (Daniel Tanré) **89h:55021** 55P62
- Arkun, Yaman** Relative sensitivity: a dynamic closed-loop interaction measure and design tool. *AIChE J.* **34** (1988), no. 4, 672-675. (Not in MR) 93B35  
— (with Calvet, Jean-Paul) Feedforward and feedback linearization of nonlinear systems with disturbances. *Internat. J. Control* **48** (1988), no. 4, 1551-1559. (Not in MR) 93B17 (93C10)
- Arléty, Dominique** On the algebraic  $K$ -theory of  $Z$ . *J. Pure Appl. Algebra* **51** (1988), no. 1-2, 53-64. (Charles Weibel) **89j:18019** 18F25 (19D55, 20J05)
- Arlinskii, Yu. M.** A class of contractions in Hilbert space. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 6, 691-696, 813. (Ioana Ciorănescu) **89d:47086** 47D05 (47B99)  
— Positive spaces of boundary values and sectorial extensions of a nonnegative symmetric operator. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 1, 8-14, 132; translated in *Ukrainian Math. J.* **40** (1988), no. 1, 5-10. (E. R. Tsekanovskii) **89i:47041** 47B25 (47A20)
- Arlotti, L.** On the linear transport equation for rigid spheres. *Transport Theory Statist. Phys.* **17** (1988), no. 2-3, 271-281. (François Golse) **89k:82047** 82A40 (35Q20, 45K05, 47D05, 82A70)
- Armand, A. D.** (with Aleksandrov, G. A.; Belotelov, N. V.; Vedyushkin, M. A.; Vilkova, L. P.; Voinov, A. A.; Denisenko, E. A.; Krapivin, V. F.; Logofet, D. O.; Ovsyannikov, L. L.; Pak, S. B.; Pasekov, V. P.; Pisarenko, N. F.; Razzhevaikin, V. N.; Sarancha, D. A.; Svirezhev, Yu. M.; Semenov, M. K.; Tarko, A. M.; Fesenko, S. V.; Shmidt, D. A.) ★ Математические модели экосистем. (Russian) [Mathematical models of ecosystems] Экологические и демографические последствия ядерной войны. [Ecological and demographic consequences of a nuclear war] Edited and with a foreword by A. A. Dorodnitsyn. "Nauka", Moscow, 1986. 176 pp. (Summary) **89a:92054** 92A17
- Armbruster, D.** (with Dangelmayr, G.) Corank-two bifurcations for the Brusselator with nonflux boundary conditions. *Dynamics Stability Systems* **1** (1986), no. 3, 187-200. (Pascal Chossat) **89a:58079** 58F14 (80A32)  
— (with Rand, Richard H.) ★ Perturbation methods, bifurcation theory and computer algebra. Applied Mathematical Sciences, 65. Springer-Verlag, New York-Berlin, 1987. x+243 pp. ISBN 0-387-96589-0 (N. D. Kazarinoff) **89a:58083** 58F14 (34C20, 58-04, 65L99)  
— (with Guckenheimer, John; Holmes, Philip) Heteroclinic cycles and modulated travelling waves in systems with  $O(2)$  symmetry. *Phys. D* **29** (1988), no. 3, 257-282. (A. Vanderbauwhede) **89h:58136** 58F14 (58C27, 76E30)
- Armendariz, Efraim P.** On infinite periodic rings. *Math. Scand.* **59** (1986), no. 1, 5-8. (H. E. Bell (Zbl 613:16009)) **89a:16032** 16A48 (16A30, 16A32)  
— (with Koo, Hyung Keun; Park, Jae Keol) Isomorphic Ore extensions. *Comm. Algebra* **15** (1987), no. 12, 2633-2652. (P. Wauters) **89c:16005** 16A05  
— (with Koo, Hyung Keun; Park, Jae Keol) Jacobson rings with a polynomial identity. *Comm. Algebra* **16** (1988), no. 4, 651-665. (Søren Jøndrup) **89a:16023** 16A38 (16A20,

- 16A27)  
 — (with Hajarnavis, C. R.) On prime ideals in hereditary PI-rings. *J. Algebra* **116** (1988), no. 2, 502–505. (Søren Jøndrup) **89i:16026** 16A38 (16A14, 16A34, 16A55)  
 Armentrout, Steve see Bing, R. H. **89i:01100**  
 Armfield, S. W. (with Fletcher, C. A. J.) Symbolic analysis of the reduced incompressible Navier-Stokes equations. *Comm. Appl. Numer. Methods* **4** (1988), no. 2, 219–226. (John C. Strikwerda) **89i:76045** 76D10  
 Arminger, Gerhard Fallacies and paradoxes caused by heterogeneity. *Paradoxical effects of social behavior*, 323–336, *Physica, Heidelberg*, 1986. (see **89d:90019**) 90A20  
 Arminjon, Paul (with Dervieux, Alain; Fozouli, Loula; Steve, Herve; Stoufflet, Bruno) Nonoscillatory schemes for multidimensional Euler calculations with unstructured grids. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 1–10, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 76–08  
 Armitage, D. H. On growth and decay of harmonic functions. *Proc. Roy. Irish Acad. Sect. A* **87** (1987), no. 2, 107–116. (N. V. Rao) **89g:31004** 31B05 (31B10)  
 — (with Goldstein, Myron) Quadrature and harmonic  $L^1$ -approximation in annuli. *Trans. Amer. Math. Soc.* **312** (1989), no. 1, 141–154. (Ü. Kuran) **89k:31004** 31B05 (41A30)  
 Armitage, P. The search for optimality in clinical trials. (French summary) *Internat. Statist. Rev.* **53** (1985), no. 1, 15–24. (Per Kragh Andersen) **89i:62172** 62P10 (62L10, 92A07)  
 — see also Barnard, G. A. et al. **89i:62173**  
 Armistead, K. (with Yeomans, J. M.) A series approach to wetting and layering transitions. I. Potts models. *J. Phys. A* **20** (1987), no. 16, 5635–5655. (Summary) **89d:82036a** 82A25  
 — (with Yeomans, J. M.) A series approach to wetting and layering transitions. II. Solid-on-solid models. *J. Phys. A* **21** (1988), no. 1, 159–171. (Summary) **89d:82036b** 82A25  
 — (with Yeomans, J. M.) A series approach to wetting and layering transitions. III. The chiral clock model. *J. Phys. A* **21** (1988), no. 1, 173–195. (Summary) **89d:82036c** 82A25  
 Armstrong, A. H. see Schmid, Erich W. et al. **89j:65005**  
 Armstrong, M. A. A presentation for a group of automorphisms of a simplicial complex. *Glasgow Math. J.* **30** (1988), no. 3, 331–337. (Kenneth S. Brown) **89m:20030** 20F05 (57S99)  
 Armstrong, Robert A. The effects of disturbance patch size on species coexistence. *J. Theoret. Biol.* **133** (1988), no. 2, 169–184. (Not in MR) **92A15**  
 Armstrong, Sheena Structure of concordant semigroups. *J. Algebra* **118** (1988), no. 1, 205–260. (H.-J. Hoehnke) **89k:20088** 20M10 (20L17, 20M17, 20M30)  
 Armstrong, Thomas E. Strong singularity, disjointness, and strong finite additivity of finitely additive measures. *J. Math. Anal. Appl.* **131** (1988), no. 2, 565–587. (Pedro Jiménez Guerra) **89h:28005** 28A12 (46G99, 54D30)  
 Arnab, R. Variance estimation in multi-stage sampling. *Austral. J. Statist.* **30** (1988), no. 1, 107–110. (Not in MR) **62D05**  
 — On a use of stratified sampling in optimal estimation. *Metrika* **35** (1988), no. 3–4, 233–239. (S. Gabler) **89k:62009** 62D05  
 Arnal, D. (with Cortet, J.-C.) Déformations algébriques sur le dual  $g^*$  d'une algèbre de Lie. [Algebraic deformations on the dual  $g^*$  of a Lie algebra] *Actes du colloque Jean Braconnier* (Lyon, 1986), 147–162, *Publ. Dép. Math. Nouvelle Sér. B*, 87-1, Univ. Claude-Bernard, Lyon, 1987. (Alberto Medina) **89a:17019** 17B65 (58F06)  
 Arnaud, Bertrand Carré symétrique d'une forme primitive. (English summary) [The symmetric square of a primitive form] *Manuscripta Math.* **60** (1988), no. 2, 145–170. (Rolf Berndt) **89h:11019** 11F66 (11F11, 30F35)  
 Arnaud, Michel (with Thirriot, Claude) Expressions récurrentes des moments successifs des fonctions de répartition des longueurs de séquences sèches ou pluvieuses régies par un processus de Markov d'ordre supérieur. (English summary) [Recurrence expressions for successive moments of distribution functions of dry or wet runs following an upper-order Markov chain] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **307** (1988), no. 4, 361–366. (Summary) **89j:86011** 86A99 (60J99)  
 Arnaudies, Jean-Marie (with Frayse, Henri)  $\otimes$  Cours de mathématiques. 2. (French) [Course in mathematics. 2] Analyse. [Analysis] Dunod Université: Ouvrages de Base. [Dunod University: Basic Works] *Dunod, Paris*, 1988. viii+680 pp. ISBN 2-04-016501-0 (Alain Baillet) **89g:00001** 00A05 (26–01)  
 Arnaudova, Ekaterina Ya. (with Dimiev, S. G.; Petrov, K. P.) Potentials of the fundamental 2-form of the almost complex cylindrical Heisenberg group. *Complex analysis and applications '85* (Varna, 1985), 47–60, *Bulgar. Acad. Sci., Sofia*, 1986. (Ion Mihai) **89b:53057** 53C15  
 Arnautov, V. I. Extension of the ring topology of a  $\sigma$ -bounded field to a simple transcendental extension of it. (Russian) *Mat. Sb. (N.S.)* **133(175)** (1987), no. 3, 275–292, 415; translated in *Math. USSR-Sb.* **61** (1988), no. 2, 271–287. (Witold Własiński) **89a:12019** 12J99  
 — (with Kostrikin, Aleksei Ivanovich; Platonov, V. P.; Ryabukhin, Yu. M.; Skornyakov, L. A.) Vladimir Aleksandrovich Andronakievich (on the occasion of his seventieth birthday). (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 1(259), 219–220; translated in *Russian Math. Surveys* **43** (1988), no. 1, 261–263. (Editors) **89b:01033** 01A70  
 Arnborg, Stefan (with Tiden, Erik) Unification problems with one-sided distributivity. Rewriting techniques and applications (Dijon, 1985). *J. Symbolic Comput.* **3** (1987), no. 1–2, 183–202. (Denis Lugiez) **89a:68141** 68Q00 (03B35, 03C05, 03D35, 68Q20, 68T15)  
 — see also Tiden, Erik. **89c:03020**  
 Arndt, Klaus (with Sulanke, H.) A conservation law for queueing systems with batch arrivals. (German and Russian summaries) *J. Inform. Process. Cybernet.* **23** (1987), no. 6, 289–293. (Noël Veraverbeke) **89m:60244** 60K25 (90B22)  
 Arneodo, A. (with Argoul, F.; Richetti, P.; Roux, J. C.) The Belousov-Zhabotinskii reaction: a paradigm for the theoretical studies of dynamical systems. *Dynamical systems and environmental models* (Eisenach, 1986), 122–131, *Math. Ecol., Akademie-Verlag, Berlin*, 1987. (János Tóth) **89d:92089** 92A40 (58F13, 80A30)  
 — (with Argoul, F.; Richetti, P.) A three-dimensional dissipative map modeling type-II intermittency. *J. Physique* **49** (1988), no. 5, 767–775. (Summary) **89g:58125** 58F13 (76F99)  
 — (with Grasseau, G.; Holschneider, Matthias) Wavelet transform of multifractals. *Phys. Rev. Lett.* **61** (1988), no. 20, 2281–2284. (Summary) **89i:58075** 58F13 (28A75, 58F08)  
 — (with Argoul, F.; Grasseau, G.) Fractal dimensions and  $f(\alpha)$  spectrum for strange attractors. *Z. Angew. Math. Mech.* **68** (1988), no. 10, 519–522. (Introduction) **89k:58170** 58F13  
 — (with Argoul, F.; Elezgaray, J.; Grasseau, G.; Murenzi, R.) Wavelet transform of fractal aggregates. *Phys. Lett. A* **135** (1989), no. 6–7, 327–336. (Summary) **89k:82069** 82A57 (42C05)  
 Arney, David C. (with Biswas, Rupak; Flaherty, Joseph E.) A posteriori error estimation of adaptive finite difference schemes for hyperbolic systems. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 437–457, *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Summary) **89d:65088** 65M15  
 — Resources in the history of mathematics at the United States Military Academy. *Historia Math.* **15** (1988), no. 4, 368–369. (Editors) **89j:01074** 01A73  
 Arnold, Barry C. (with Robertson, Christopher A.; Yeh, Hsiao-Chen) Some properties of a Pareto-type distribution. *Sankhyā Ser. A* **48** (1986), no. 3, 404–408. (Javad Behboodiani) **89h:62030** 62E15 (62E10)  
 —  $\star$  Majorization and the Lorenz order: a brief introduction. *Lecture Notes in Statistics*, 43, Springer-Verlag, Berlin-New York, 1987. vi+122 pp. ISBN 3-540-96592-0 (Yosef Rinott) **89a:60046** 60E15 (62H05, 90A07, 90A10)  
 — Bounds on the expected maximum. *Comm. Statist. Theory Methods* **17** (1988), no. 7, 2135–2150. (Summary) **89e:62016** 62E10 (62G30)  
 — (with Strauss, David) Bivariate distributions with exponential conditionals. *J. Amer. Statist. Assoc.* **83** (1988), no. 402, 522–527. (Not in MR) **62E15**  
 — (with Yeh, Hsiao-Chen; Robertson, Christopher A.) Pareto processes. *J. Appl. Probab.* **25** (1988), no. 2, 291–301. (Tata Subba Rao) **89i:62156** 62M10  
 — (with Zahedi, Hassan) On multivariate mean remaining life functions. *J. Multivariate Anal.* **25** (1988), no. 1, 1–9. (Ramesh C. Gupta) **89c:62171** 62N05  
 — (with Pourahmadi, Mohsen) Conditional characterizations of multivariate distributions. *Metrika* **35** (1988), no. 2, 99–108. (Truc Nguyen) **89j:62022** 62E10 (62H05)  
 — (with Brockett, Patrick L.) Variance bounds using a theorem of Pólya. *Statist. Probab. Lett.* **6** (1988), no. 5, 321–326. (Yung L. Tong) **89c:60030** 60E15 (62G30)  
 Arnold, Bernd J. Das Kontinuitätsprogramm zwischen Cantor und der Nonstandard-analysis. (English and French summaries) [The continuity program between Cantor and nonstandard analysis] *Historia Math.* **15** (1988), no. 3, 250–263. (Peter M. Simons) **89h:01039** 01A60 (03–03, 03H05)  
 Arnold, Bernhard F. Approximately optimum two-stage sampling plans. *Metrika* **32** (1985), no. 5, 293–313. (Summary) **89j:62136** 62N10  
 —  $\star$  Minimax-Prüfpläne für die Prozeßkontrolle. (German) [Minimax sampling inspection for process control] Arbeiten zur Angewandten Statistik [Papers on Applied Statistics], 28, Physica-Verlag, Heidelberg, 1987. vi+263 pp. ISBN 3-7908-0363-4 (V. Abel (translated from Zbl 598:62130)) **89i:90069** 90B30 (62N10, 90A11)  
 Arnold, D. N. (with Noon, P. J.) Boundary integral equations of the first kind for the heat equation. *Boundary elements IX*, Vol. 3 (Stuttgart, 1987), 213–229, *Comput. Mech., Southampton*, 1987. (J. D. P. Donnelly) **89j:80006** 80A20 (45B05, 80–08)  
 — (with Falk, Richard S.) A new mixed formulation for elasticity. *Numer. Math.* **53** (1988), no. 1–2, 13–30. (N. Gass) **89f:73020** 73C60 (65N05, 73–08, 73C35, 73K25)  
 Arnold, David M. (with Richman, Fred) Subgroups of finite direct sums of valued cyclic groups. *J. Algebra* **114** (1988), no. 1, 1–15. (Luigi Salce) **89b:20112** 20K01 (20K05, 20K15)  
 — (with Vinsonhaler, C.) Invariants for a class of torsion-free abelian groups. *Proc. Amer. Math. Soc.* **105** (1989), no. 2, 293–300. (L. Procházka) **89a:20076** 20K15  
 Arnold, Günter see Netz, H. **89h:00009**  
 Arnold, Hans-Joachim Affine Relative. [Affine relatives] *Resultate Math.* **12** (1987), no. 1–2, 1–26. (J. André (Zbl 629:51004)) **89f:51004** 51A05 (51A25)  
 Arnold, Jesse C. (with Reynolds, Marion R., Jr.; Amin, R.; Nachlas, Joel A.)  $\bar{X}$  charts with variable sampling intervals. *Technometrics* **30** (1988), no. 2, 181–192. (Not in MR) **62N10**  
 Arnold, Randolph Eine Übertragung des Satzes von Bonnet auf Regelflächen im einfach isotropen Raum. (English summary) [A transfer of Bonnet's theorem to ruled surfaces in the simply isotropic space] *Monatsh. Math.* **106** (1988), no. 2, 99–105. (K. Strubecker) **89i:53014** 53A40 (53A25)  
 Arnold, V. I. (with Afraimovich, V. S.; Il'yashenko, Yu. S.; Shi'nikov, L. P.) Bifurcation theory. (Russian) *Current problems in mathematics. Fundamental directions*, Vol. 5 (Russian), 5–218, i, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1986. (see **89a:58088**) 58F14  
 — Catastrophe theory. (Russian) *Current problems in mathematics. Fundamental directions*, Vol. 5 (Russian), 219–277, i, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1986. (see **89a:58088**) 58C28 (58F14)  
 — The asymptotic Hopf invariant and its applications. *Selected translations. Selecta Math. Soviet.* **5** (1986), no. 4, 327–345. (Ya. M. Eliashberg) **89m:58053** 58E30 (22E65, 55Q25, 58D99, 76A05, 76W05)  
 — The first steps of symplectic topology. (Russian) *Uspekhi Mat. Nauk* **41** (1986), no. 6(252), 3–18, 229. (Jean-Claude Sikorav) **89d:58034** 58F05 (53C57, 57R50)  
 — Contact structure, relaxation oscillations and singular points of implicit differential equations. (Russian) *Geometry and the theory of singularities in nonlinear equations* (Russian), 3–8, 182, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1987. (Alois Klič) **89f:58121** 58F30 (34C05, 34C15, 58C27, 58F05)  
 — (with Vishik, M. I.; Egorov, Yuri Vladimirovich; Kalashnikov, A. S.; Novikov, S. P.; Sobolev, S. L.) Ol'ga Arsen'evna Oleinik (on the occasion of her sixtieth birthday). (Russian) *Trudy Sem. Petrovsk. No. 12* (1987), 3–21. (Editors) **89b:01034** 01A70  
 — Remarks on Poisson structures on a plane and on other powers of volume elements. (Russian) *English summary* *Trudy Sem. Petrovsk. No. 12* (1987), 37–46, 242. (Alan Weinstein) **89c:58040** 58F05 (58C27)  
 — (with Gusein-Zade, S. M.; Varchenko, A. N.)  $\star$  Singularities of differentiable maps. Vol. II. Monodromy and asymptotics of integrals. Translated from the Russian by Hugh Porteous. Translation revised by the authors and James Montaldi. *Monographs in Mathematics*, 83, Birkhäuser Boston, Inc., Boston, MA, 1988. viii+492 pp. ISBN 0-8176-3185-2 (Editors) **89g:58024** 58C27 (32B30, 32C40, 32G11)  
 —  $\star$  Geometrical methods in the theory of ordinary differential equations. Translated from the Russian by Joseph Szűcs [József M. Szűcs]. Second edition. *Grundlehren der Mathematischen Wissenschaften [Fundamental Principles of Mathematical Science]*, 250, Springer-Verlag, New York-Berlin, 1988. xiv+351 pp. ISBN 0-387-96649-8 (Editors) **89b:58049** 58Fxx (34Cxx, 70H05, 70K30, 70K99)



- (with Il'yashenko, Yu. S.) Ordinary differential equations [Current problems in mathematics. Fundamental directions, Vol. 1, 7–149, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow, 1985; MR 87c:34049]. Translated from the Russian by E. R. Dawson and D. O'Shea. *Dynamical systems*, 1, 1–148, *Encyclopaedia Math. Sci.*, 1, Springer, Berlin-New York, 1988. (see 89g:58060) 34Cxx (58Fxx)
- (with Barkov, L. M.; Belyaev, S. T.; Dimov, G. I.; Kadomtsev, B. B.; Kruglyakov, E. P.; Meshkov, I. N.; Rytov, D. D.; Sidorov, V. A.; Skriniskii, A. N.) Boris Valerianovich Chirikov (on his sixtieth birthday). *Soviet Phys. Uspekhi* 31 (1988), no. 7, 682–683 (1989); translated from *Uspekhi Fiz. Nauk* 155 (1988), no. 3, 543–544 (Russian). (Not in MR) 01A70
- see also Griffiths, Phillip A., 89b:58016; Dynamical systems, 89g:58060 and Bruce, James William, 89b:58023
- Arnoldus, Henk F. (with Jelski, Daniel; George, Thomas F.) Confinement and redistribution of charges and currents on a surface by external fields. *J. Math. Phys.* 28 (1987), no. 5, 1069–1074. (Sergei M. Zverev) 89d:78025 78A45
- Arnon, Dennis S. (with McCallum, Scott) A polynomial-time algorithm for the topological type of a real algebraic curve. *J. Symbolic Comput.* 5 (1988), no. 1–2, 213–236. (Hale F. Trotter) 89k:12005 12D99 (12–04, 14–04, 14G30, 68Q20)
- A bibliography of quantifier elimination for real closed fields. *J. Symbolic Comput.* 5 (1988), no. 1–2, 267–274. (From the introduction) 89g:12003 12D15 (00A15, 03C10, 03C60, 12L12)
- Arocha Pérez, Jorge Luis Computational complexity of existence problems for matchings in graphs. (Spanish. English summary) *Investigación Oper.* 8 (1987), no. 1, 43–51. (Summary) 89a:68095 68Q25 (03C70, 68R10)
- Arocha Reyes, José Luis ★ Lo maravilloso y trascendental de la cuadratura del círculo. (Spanish) [The marvelous and transcendental in the quadrature of the circle] Nuevas soluciones a viejos problemas. [New solutions to old problems] Colecciones Ciencias Físico-químicas y Matemáticas [Physicochemical and Mathematical Sciences Collection], VI. Universidad Central de Venezuela, Ediciones de la Biblioteca, Caracas, 1987. 178 pp. ISBN 980-00-0144-1 (H. W. Guggenheimer) 89d:51027 51M05
- Arodé, H. (with Ruijgrok, Th. W.) On a classical limit of the Dirac equation with an external electromagnetic field. I. Proper-time evolution, Lorentz covariant expectation values and classical equations of motion. *Acta Phys. Polon. B* 19 (1988), no. 2, 99–140. (Claude Itzykson) 89d:81119 81G10 (35Q20, 70H40, 81D25)
- Lagrangian and Hamiltonian formulations of dynamics of classical particles with spin and colour. *Acta Phys. Polon. B* 19 (1988), no. 6, 697–708. (Martine J. Perrin) 89k:70038 70H99 (58F40, 81E13, 81G25)
- Arohska, Mariya At. (with Bainov, D. D.; Ve'ov, V. M.) Boundary value problem for a singularly perturbed system of linear differential equations with impulses. *Proc. Edinburgh Math. Soc.* (2) 31 (1988), no. 1, 107–126. (V. Sree Hari Rao) 89f:34023 34B05 (34E15, 93C57)
- Aron, Joan L. Acquired immunity dependent upon exposure in an SIRS epidemic model. *Math. Biosci.* 88 (1988), no. 1, 37–47. (H. W. Hethcote) 89d:92049 92A15
- Mathematical modeling of immunity to malaria. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* 90 (1988), no. 1–2, 385–396. (Summary) 89f:92032 92A15 (92A07)
- Aron, M. A note on undistorted states of isotropic elastic solids. *J. Elasticity* 19 (1988), no. 2, 179–187. (Summary) 89g:73021 73G05
- Aron, Richard M. (with Globevnik, Josip) Interpolation by analytic functions on  $\mathbb{C}_0$ . *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 2, 295–302. (Klaus-Dieter Bierstedt) 89j:46047 46G20 (32K99, 46J15)
- (with Gómez Gil, Javier; Llavora, José G.) Homomorphisms between algebras of differentiable functions in infinite dimensions. *Michigan Math. J.* 35 (1988), no. 2, 163–178. (Klaus-Dieter Bierstedt) 89j:46048 46G20 (46J15)
- see also Pursell, Lyle E., 89b:46065
- Aronov, Irina (with Chen, Goong; Chen, Chiang-Pu) A boundary element method based on Cauchy integrals for some linear quadratic boundary control problems on a circle. *Optimal Control Appl. Methods* 9 (1988), no. 1, 93–100. (Elvira Mascolo) 89c:49014 49B22 (49D40)
- Aronovitz, J. A. (with Nelson, David R.) Universal features of polymer shapes. (French summary) *J. Physique* 47 (1986), no. 9, 1445–1456. (Summary) 89a:82023 82A51
- Aronson, D. G. (with Vázquez, Juan Luis) The porous medium equation as a finite-speed approximation to a Hamilton-Jacobi equation. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* 4 (1987), no. 3, 203–230. (Antonio Fasano) 89a:35117 35K65 (35B40, 35R35)
- (with Vázquez, Juan Luis) Eventual  $C^\infty$ -regularity and concavity for flows in one-dimensional porous media. *Arch. Rational Mech. Anal.* 99 (1987), no. 4, 329–348. (Summary) 89d:35081 35K55 (35B65)
- (with Doedel, E. J.; Othmer, Hans G.) An analytical and numerical study of the bifurcations in a system of linearly-coupled oscillators. *Phys. D* 25 (1987), no. 1–3, 20–104. (Summary) 89d:58091 58F14 (34C15, 34C25, 58–04, 58F13, 70K99, 92A09)
- (with Doedel, E. J.; Othmer, Hans G.) The dynamics of coupled current-biased Josephson junctions. I. *IEEE Trans. Circuits and Systems* 35 (1988), no. 7, 810–817. (Summary) 89f:58099 58F14 (94C05)
- Aronson, Jerrold L. The Bayesians and the raven paradox. *Noûs* 23 (1989), no. 2, 221–240. (Philip L. Quinn) 89m:03004 03A05 (03B48)
- Aronson, Gannar On certain  $p$ -harmonic functions in the plane. *Manuscripta Math.* 61 (1988), no. 1, 79–101. (Walter Hengartner) 89k:31003 31A35 (35J60)
- Arora, Arun Kumar (with Koul, C. L.) Applications of fractional calculus. *Ganita Sandesh* 1 (1987), no. 1–2, 11–14. (M. E. Muldoon) 89i:33007 33A35 (26A33)
- Arora, Ashok K. (with Goel, Sudhir K.) Characterization of semisimple BCK-algebras. *Math. Japon.* 32 (1987), no. 6, 879–887. (Martin W. Bunder) 89a:06031 06D99 (03G25)
- (with Goel, Sudhir K.; Rodriguez, Dennis M.) Special integration techniques for trigonometric integrals. *Amer. Math. Monthly* 95 (1988), no. 2, 126–130. (G. A. Heuer) 89e:26004 26A06
- (with Goel, Sudhir K.) BCK-algebras with maximal condition. *Math. Japon.* 33 (1988), no. 3, 353–359. (From the introduction) 89f:06022 06D99 (03G25)
- Arora, J. S. (with Cardoso, J. B.) Variational method for design sensitivity analysis in nonlinear structural mechanics. *AIAA J.* 26 (1988), no. 5, 595–603. (Summary) 89e:73031 73K40
- Arora, Radha Krishnan (with Gupta, M. N.) More comments on: "Distributed termination detection algorithm for distributed computations" [Arora, Gupta and S. P. Rana, Inform. Process. Lett. 22 (1986), no. 6, 311–314; R. B. Tan, G. Tel and J. van Leeuwen, ibid. 23 (1986), no. 3, 163; MR 87j:68034ab]. *Inform. Process. Lett.* 29 (1988), no. 1, 53–55. (Editors) 89j:68043 68Q10
- Arora, S. C. On unitary  $p$ -dilations of operators. *J. Orissa Math. Soc.* 3 (1984), no. 1, 7–13. (Not in MR) 47A20
- (with Thukral, J. K.)  $M^*$ -paranormal operators. (Serbo-Croatian summary) *Glas. Mat. Ser. III* 22(42) (1987), no. 1, 123–129. (Shao Zhong Yan) 89e:47029 47B20
- Arosio, A. Abstract linear hyperbolic equations. *Hyperbolic equations* (Padua, 1985), 237–245, *Pitman Res. Notes Math. Ser.*, 158, Longman Sci. Tech., Harlow, 1987. (Mazen Mohamed Shahin) 89a:34067 34G10 (35L99, 47A50, 47H15)
- ben Arous, G. see Ben Arous, G.
- Aroutunian, E. A. see Arutyunyan, E. A.
- Aroutunian, M. E. see Arutyunyan, M. E.
- Arøv, D. Z. Regular and singular  $J$ -inner matrix functions and corresponding extrapolation problems. (Russian) *Funktsional. Anal. i Prilozhen.* 22 (1988), no. 1, 57–59; translated in *Functional Anal. Appl.* 22 (1988), no. 1, 46–48. (D. Sarason) 89d:47082 47B99 (30E05, 30G30, 47A56)
- (with Abramovich, Yu. I.; Kachur, V. G.) Adaptive cancellation filters for stationary interference with a Toeplitz correlation matrix. *Soviet J. Comm. Tech. Electron.* 33 (1988), no. 4, 54–61; translated from *Radiotekhn. i Elektron.* 32 (1987), no. 12, 2525–2533 (Russian). (Not in MR) 94A05
- Arovas, Daniel P. (with Auerbach, Asa; Haldane, F. D. M.) Extended Heisenberg models of antiferromagnetism: analogies to the fractional quantum Hall effect. *Phys. Rev. Lett.* 60 (1988), no. 6, 531–534. (Summary) 89c:82066 82A68
- Aroyan, É. P. Real linear functionals on semigroups. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1984, no. 2(156), 11–15. (Not in MR) 22A20
- Arroyo, M. I. (with Dirl, R.; Kasperkovitz, P.; Kotzev, J. N.; Angelova, M. N.) The symmetry of the group representations and the reduction of the multiplicity problem. *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jämsä, 1985), 583–590, "Nauka", Moscow, 1986. (see 89d:81001) 22E70 (20C35, 22E40)
- (with Angelova, M. N.; Kotzev, J. N.) On the Wigner-Eckart theorem and coupled tensor operators for corepresentations of Shubnikov groups. *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jämsä, 1985), 603–608, "Nauka", Moscow, 1986. (see 89d:81001) 81C40 (20C35, 82A60)
- (with Dirl, R.; Kasperkovitz, P.; Kotzev, J. N.; Angelova, M. N.) The symmetry of group representations and the reduction of the multiplicity problem. *Group theoretical methods in physics*, Vol. II (Yurmala, 1985), 409–417, *VNU Sci. Press, Utrecht*, 1986. (Nigel B. Backhouse) 89e:20014 20C15 (81C40)
- (with Dirl, R.; Kasperkovitz, P.; Kotzev, J. N.; Davies, B. L.) Generating relations for reducing matrices. III. Kronecker products. *J. Math. Phys.* 28 (1987), no. 9, 1947–1971. (John J. Sullivan) 89c:20028 20C35 (81C40)
- (with Kotzev, J. N.; Peev, M. K.; Dirl, R.; Kasperkovitz, P.) Generating relations for reducing matrices. IV. Subduced representations. *J. Math. Phys.* 30 (1989), no. 1, 9–17. (John J. Sullivan) 89m:20014 20C35 (22E65, 81C40)
- Arques, D. Relations fonctionnelles et dénombrement des hypercartes planaires pointées. (English summary) [Functional relations and enumeration of rooted planar hypermaps] *Combinatoire énumérative* (Montreal, Que., 1985/Quebec, Que., 1985), 5–26, *Lecture Notes in Math.*, 1234, Springer, Berlin-New York, 1986. (T. R. S. Walsh) 89b:05101 05C30 (05C65)
- (with François, J.; Guichet, M. T.; Guichet, P.) Comparison of algorithms controlling concurrent access to a database: a combinatorial approach. Thirteenth International Colloquium on Automata, Languages and Programming (Rennes, 1986). *Theoret. Comput. Sci.* 58 (1988), no. 1–3, 3–16. (Summary) 89b:68027 68P20 (68Q25)
- Arratia, R. (with Morris, Pricilla; Waterman, Michael S.) Stochastic Scrabble: large deviations for sequences with scores. *J. Appl. Probab.* 25 (1988), no. 1, 106–119. (J. Steinbach) 89b:60042 60F10 (60F15, 60J10)
- (with Gordon, Louis I.) Tutorial on large deviations for the binomial distribution. *Bull. Math. Biol.* 51 (1989), no. 1, 125–131. (Summary) 89j:62028 62E15
- Arrau, J. L. (with Moreira dos Santos, Nathan) Actions of  $\mathbb{R}^n$  on closed manifolds. *Topology Appl.* 29 (1988), no. 1, 41–54. (Robert Roussarie) 89f:57057 57S20 (57R30, 58A10)
- Arrighi, Gino Some indirect Latin versions of Euclid's *Elements*. (Italian. German summary) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) 11 (1987), no. 1, 155–159. (H. L. L. Busard) 89d:01013 01A35
- Arro, I. An algorithm for the reduced calculation of the discrete cosine Fourier transform. (Russian) *Eesti NSV Tead. Akad. Toimetised Füüs.-Mat.* 37 (1988), no. 2, 238–240, 256. (Not in MR) 94A11 (65T05, 94A14)
- Arrow, Kenneth J. (with Raynaud, Hervé) ★ Social choice and multicriterion decision-making. *MIT Press, Cambridge, MA-London*, 1986. x+127 pp. ISBN 0-262-01087-9 (Roland Durier) 89j:90015 90A08 (90A05, 90B50)
- see also Bibliography: Arrow, Kenneth Joseph, 89c:01089; Lives of the laureates, 89d:01074; Biography: Arrow, Kenneth Joseph, 89e:01048a; 89e:01048b and 89e:01048c; González-Arroyo, A. see González-Arroyo, A.
- fernández y fernández-Arroyo, Fidel José see Fernández y Fernández-Arroyo, Fidel José
- Arroyo, María José (with Aguilar, Gerardo P.; Signoret, Carlos J. E.) A torsion-theoretic generalization of fully bounded Noetherian rings. *Comm. Algebra* 17 (1989), no. 1, 149–164. (M. Teply) 89i:16024 16A63
- Arruda, A. I. see da Costa, Newton C. A., 89c:01052
- Arscott, F. M. (with Darai, A.) A potential problem arising from the strip-punch problem in elasticity. *J. Engrg. Math.* 22 (1988), no. 3, 203–223. (Summary) 89e:73038 73T05 (73C35)
- Arsenault, Guy (with Jacques, Michel; Saint-Aubin, Yvan) The symmetry group of the Euclidean  $CP^n$  model as the invariance group of two bilinear forms. *Group theoretical methods in physics* (Varna, 1987), 507–512, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (Allan M. Din) 89k:22038 22E70 (58E20, 58G35, 81E13)
- (with Jacques, Michel; Saint-Aubin, Yvan) Collapse and exponentiation of infinite symmetry algebras of Euclidean projective and Grassmannian  $\sigma$  models. *J. Math. Phys.* 29



- (1988), no. 6, 1465–1471. (Thomas P. Branson) **89k:58298** 58G35 (17B65, 53C80, 58E20, 81E99)
- (with Jacques, Michel; Saint-Aubin, Yvan) SL( $n+1, \mathbb{C}$ ) strata and orbits in the solution space of Euclidean  $CP^n$  models. (French summary) *Lett. Math. Phys.* **15** (1988), no. 1, 65–73. (Allan M. Din) **89b:81114** 81E13 (22E45, 53C80, 58D30, 58E20)
- Arsene, Gr.** (with Ceaușescu, Zoia; Constantinescu, T.) Multiplicative properties in the structure of contractions. *Operator theory and systems* (Amsterdam, 1985), 9–22, *Oper. Theory: Adv. Appl.*, 19, Birkhäuser, Basel-Boston, MA, 1986. (E. Durszt) **89a:47025** 47A65 (47A20)
- (with Ceaușescu, Zoia; Constantinescu, T.) Schur analysis of some completion problems. *Linear Algebra Appl.* **109** (1988), 1–35. (Joseph A. Ball) **89k:47010** 47A20 (15A48, 30E05, 93C50)
- see also Special classes of linear operators and other topics, **89b:47003**
- Arsen'ev, A. A.** The Vlasov limit of correlation functions of the grand canonical ensemble. (Russian. English summary) *Teoret. Mat. Fiz.* **72** (1987), no. 3, 477–480. (Summary) **89b:82010** 82A05
- (with Buryak, O. E.) On a connection between the solution of the Boltzmann equation and the solution of the Landau-Fokker-Planck equation. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 67, 22 pp. (Summary) **89j:82033** 82A40
- Approximation of the Boltzmann equation by stochastic equations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 4, 560–567, 623. (Włodzimierz Smolenski) **89g:82038** 82A40 (45K05, 60H10, 82A31)
- Arsenin, V. Ya.** (with Tikhonov, A. N.; Timonov, A. A.) ★ Математические задачи компьютерной томографии. (Russian) [Mathematical problems in computer tomography] Проблемы Науки и Технического Прогресса. [Problems of Science and Technological Progress] "Nauka", Moscow, 1987. 160 pp. (L. A. Shepp) **89i:44008** 44A15 (00A69, 65R10, 92A07)
- (with Timonov, A. A.) Mathematical modeling in computer tomography. (Russian) *Mathematical modeling* (Russian), 3–21, 280, "Nauka", Moscow, 1987. (Summary) **89d:92007** 92A07
- (with Kriksin, Yu. A.; Timonov, A. A.) Some methods for the local regularization of linear ill-posed problems. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 109, 24 pp. (Summary) **89a:65089** 65J10 (45L10, 47A50)
- (with Tikhonov, A. N.; Rubashov, I. B.; Glasko, V. B.; Kriksin, Yu. A.; Stepanov, V. V.; Timonov, A. A.) Mathematical design of an NMR-tomograph. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 134, 24 pp. (Summary) **89a:92012** 92A07
- Arsenovic, Milos** The symbols of a Fréchet algebra of pseudodifferential operators on a polycylinder. *Integral Equations Operator Theory* **11** (1988), no. 1, 1–9. (Vladimir Georgiev) **89h:47072** 47G05 (47C05, 58G15)
- Arsham, H.** Nonparametric reliability estimation based on a few ordered observations. *Austral. J. Statist.* **30** (1988), no. 1, 67–77. (G. K. Bhattacharyya) **89i:62162** 62N05 (62G05)
- (with Dianich, D.) Consumer buying behavior and optimal advertising strategy: the quadratic profit function case. *Comput. Oper. Res.* **15** (1988), no. 4, 299–310. (Summary) **89g:90008** 90A06 (90A16)
- Arshansky, R. I.** (with Horwitz, L. P.) Solutions of the quantum relativistic two-body bound state problem with invariant direct action potentials. *Phys. Lett. A* **128** (1988), no. 3–4, 123–128. (R. M. Dreizler) **89c:81027** 81C05
- (with Horwitz, L. P.) Covariant phase shift analysis for relativistic potential scattering. *Phys. Lett. A* **131** (1988), no. 4–5, 222–226. (W. O. Amrein) **89j:81233** 81F05
- Arshinskii, L. V.** (with Borisyuk, M. N.) Extremal problems in quadrupole wing theory. (Russian) *Asymptotic methods* (Russian), 267–295, 386, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Summary) **89c:76025** 76B05
- Arslanagić, Š. Z.** Some improvements for triangle inequalities. (Serbo-Croatian summary) *Punime Mat.* No. 2 (1987), 3–8. (H. W. Guggenheimer) **89b:51027** 51M05 (52A40)
- d'Arsonval, Arsène** see Borell, Merriley, (89c:01002)
- Arsove, Maynard** (with Leutwiler, Heinz) Excessive elements in harmonic semigroups. *Funct. Approx. Comment. Math.* **17** (1987), 31–36. (Gunter Ritter) **89c:31007** 31D05 (06F05, 47B99, 47D05)
- Arst, H.** (with Soomer, V.) Numerical integration of the heat equation on uniform grids for determining the daily change in temperature of the surface layer of a sea. (Russian. English summary) *Tartu Riikl. Ül. Toimetised* No. 762 (1987), 77–82. (V. D. Glushenkov) **89a:65131** 65M05 (86A05)
- Arzu, G.** (with Pascu, M.) The existence and the asymptotic completeness of wave operators associated to some elliptic pseudodifferential operators. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 6, 483–493. (Stephan Rempel) **89k:35174** 35P25 (35J99, 35S05, 47G05)
- Artalejo, Mario** see Rodríguez Artalejo, Mario
- Artamkin, I. V.** On the deformation of sheaves. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **52** (1988), no. 3, 660–665, 672; translated in *Math. USSR-Izv.* **32** (1989), no. 3, 663–668. (Alexey N. Rudakov) **89g:14004** 14D15 (14F05)
- Artamonov, I. M.** Structurally condensed  $r$ -schedules for a production sector. (Russian) *Mat. Issled.* No. 104 Program. Obespech. Vychisl. Kompleks. (1988), 37–41, 143. (Summary) **89h:90121** 90B35
- Artamonov, V. A.** Projective modules over nilpotent Lie algebras. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 3–4, 122. (Summary) **89c:17009** 17B30 (17B35, 17B50, 19A49)
- Arteaga, Kh. R.** (with Norden, A. P.) Mathematical principles for the classification of energy states. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 2, 9–14, 82; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 2, 11–18. (V. Oproiu) **89d:53043** 53B50 (53B50)
- Arteca, Gustavo A.** (with Fernández, Francisco M.; Castro, Eduardo A.) Critical parameters from power series expansions. *J. Math. Chem.* **1** (1987), no. 3, 267–280. (Summary) **89a:82012** 82A25
- (with Mezey, Paul G.) Shape characterization of some molecular model surfaces. *J. Comput. Chem.* **9** (1988), no. 5, 554–563. (Summary) **89c:92059** 92A40 (55P55, 81G55)
- (with Mezey, Paul G.) Approximate eigenvalues of parameter-dependent systems from boundaries of level sets. *J. Math. Phys.* **29** (1988), no. 1, 119–127. (K. V. Bhagwat) **89d:81017** 81C05
- Artem'ev, S. S.** (with Averina, T. A.) ★ Некоторые вопросы построения и использования численных методов для решения систем стохастических дифференциальных уравнений. (Russian) [Some problems of the construction and use of numerical methods for solving systems of stochastic differential equations] Пленум [Preprint], 728. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1987. 33 pp. (Summary) **89c:65141** 65U05 (60H10)
- (with Averina, T. A.) Numerical solution of systems of stochastic differential equations. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* **3** (1988), no. 4, 267–285. (M. Sambandham) **89k:65166** 65U05 (60H10, 65L99)
- Artem'ev, Yu. I.** (with Tyukhtin, V. S.; Urmantsev, Yu. A.; Larin, Yu. S.; Dalin, V. Ya.; Sharapov, I. P.; Malikov, A. V.; Koptsik, V. A.; Zamorzaev, A. M.; Didyk, Yu. K.; Petukhov, S. V.) ★ Система. Симметрия. Гармония. (Russian) [System. Symmetry. Harmony] "Mysl", Moscow, 1988. 318 pp. ISBN 5-244-00190-6 (V. Ya. Kreinovich) **89f:00045** 00A69 (00A25, 20H15, 92A05, 93A05)
- Artemi, Cristian** (with Balaban, Alexandru T.) Mathematical modeling of polymers. I. Enumeration of nonredundant (irreducible) repeating sequences in stereoregular polymers, elastomers, or in binary copolymers. *Match* No. 22 (1987), 3–32. (N. Trinajstić) **89a:92078** 92A40 (05A15)
- (with Balaban, Alexandru T.) Mathematical modeling of polymers. II. Irreducible sequences in  $n$ -ary copolymers. *Match* No. 22 (1987), 33–66. (N. Trinajstić) **89a:92079** 92A40 (05A15)
- (with Balaban, Alexandru T.; Tomescu, Ioan) Algebraic expressions for Kekulé structure counts of nonbranched regularly cata-condensed benzenoid hydrocarbons. *Match* No. 22 (1987), 77–100. (Summary) **89c:92060** 92A40 (05A15)
- (with Balaban, Alexandru T.) Erratum: "Mathematical modeling of polymers. II. Irreducible sequences in  $n$ -ary copolymers" [Match No. 22 (1987), 33–66; MR 89a:92079]. *Match* No. 23 (1988), 349. (Editors) **89j:92094** 92A40 (05A15)
- Artemov, S. N.** Degrees of unsolvability of extensions of arithmetic by true propositions. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 2(260), 127–128; translated in *Russian Math. Surveys* **43** (1988), no. 2, 159–160. (Editors) **89b:03068** 03D25 (03F30, 03F40)
- (with Dzhabardze, G. K.) Effective predicate logics of provability. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 3, 521–523; translated in *Soviet Math. Dokl.* **36** (1988), no. 3, 478–480. (R. A. Di Paola) **89i:03111** 03F30 (03B45, 03F40)
- Logics having provability interpretations. (Russian) *Voprosy Kibernet. (Moscow)* No. 134 (1988), 5–22. (Summary) **89d:03011** 03B45 (03F40)
- Arthur, James** The local behaviour of weighted orbital integrals. *Duke Math. J.* **56** (1988), no. 2, 223–293. (Stephen Gelbart) **89d:22036** 22E50 (22E45)
- The invariant trace formula. I. Local theory. *J. Amer. Math. Soc.* **1** (1988), no. 2, 323–383. (A. B. Venkov) **89c:22029** 22E55 (11F70, 11F72)
- The invariant trace formula. II. Global theory. *J. Amer. Math. Soc.* **1** (1988), no. 3, 501–554. (A. B. Venkov) **89j:22039** 22E55 (11F72)
- Arthur, W. Brian** (with Ermol'ev, Yu. M.; Kaniiovskii, Yu. M.) Strong laws for a class of path-dependent stochastic processes with applications. *Stochastic optimization* (Kiev, 1984), 287–300, *Lecture Notes in Control and Inform. Sci.*, 81, Springer, Berlin-New York, 1986. (Gh. Oprea) **89a:60076** 60F15 (60C05)
- (with Ermol'ev, Yu. M.; Kaniiovskii, Yu. M.) ★ Предельные теоремы для долей шаров в обобщенной схеме урны с шарами  $N$  цветов, добавляемыми порциями случайного объема. (Russian) [Limit theorems for fractions of balls in a generalized urn scheme with balls of  $N$  colors that can be supplemented with portions of random size] Пленум [Preprint], 87–8. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. 25 pp. (Summary) **89d:60060** 60F17 (60C05, 60F15)
- (with Ermol'ev, Yu. M.; Kaniiovskii, Yu. M.) Adaptive growth processes that can be modeled by urn schemes. (Russian. English summary) *Kibernetika (Kiev)* **1987**, no. 6, 49–57, 134. (Lyuben R. Mutafchiev) **89d:60011** 60C05 (60F05, 60F15)
- Arturs, A. M.** (with Anderson, Norman) Canonical and duality transformations for the electromagnetic field. *Internat. J. Electron.* **65** (1988), no. 1, 91–96. (Summary) **89f:78006** 78A25
- Arturs, E.** (with Goodman, M. S.) Quantum correlations: a generalized Heisenberg uncertainty relation. *Phys. Rev. Lett.* **60** (1988), no. 24, 2447–2449. (A. Barchielli) **89i:81007** 81B05
- Artico, Giuliano** (with Moresco, Roberto)  $\alpha^*$ -compactness of the fuzzy unit interval. *Fuzzy Sets and Systems* **25** (1988), no. 2, 243–249. (Zike Deng) **89c:54013** 54A40 (03E72)
- (with Moresco, Roberto) Uniform properties of normal and compact fuzzy topological spaces. *J. Math. Anal. Appl.* **132** (1988), no. 2, 514–519. (Zike Deng) **89f:54009** 54A40 (03E72)
- (with Moresco, Roberto) On the structure of fuzzes. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 2, 235–251. (T. Thiruvikraman) **89i:03101** 03E72 (54A40)
- Articolo, G. A.** Convolutions of Sturm-Liouville transforms. The semi-infinite Mellin transforms. *J. Math. Phys.* **21** (1987), no. 5, 423–444. (Hans-Jürgen Glaeske) **89b:44001** 44A15 (34B25)
- Artis, Theodore** On certain classes of distributions. *Colloq. Math.* **53** (1987), no. 2, 315–321. (Introduction) **89g:60048** 60E07 (60E10)
- Artin, M.** Néron models. *Arithmetic geometry* (Storrs, Conn., 1984), 213–230, Springer, New York-Berlin, 1986. (see **89b:14029**) 11G10
- Lipman's proof of resolution of singularities for surfaces. *Arithmetic geometry* (Storrs, Conn., 1984), 267–287, Springer, New York-Berlin, 1986. (see **89b:14029**) 14J17 (14E15)
- Artmann, Benno** (with Gerecke, W.; Spalt, Detlef D.) Transzendenzbeweis für  $e$  gestern und heute. [Proof of the transcendence of  $e$  yesterday and today] *Math. Semesterber.* **34** (1987), no. 2, 187–219. (P. Bundschuh) **89a:11073** 11J81 (00A25)
- A simple proof for the simplicity of  $A_5$ . *Amer. Math. Monthly* **95** (1988), no. 4, 344–349. (Ulrich Dempwolff) **89c:20034** 20D06 (51M20)
- Artobolevskii, I. I.** ★ Теория механизмов и машин. (Russian) [The theory of mechanisms and machines] Fourth edition. With a foreword by A. P. Bessonov, A. N. Bogolyubov and N. I. Levitskii. With a chapter by Bessonov. "Nauka", Moscow, 1988. 640 pp. ISBN 5-02-013810-X (Editors) **89m:70002** 70B15 (70-01)
- Artola, Michel** Nonlinear diffusion equations in heterogeneous media. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 747–750. (see **89d:00007**) 35K55 (80A15)
- see also Dautray, Robert, **89m:00001**; **89m:00002**; **89m:00003a** and **89m:00003b**
- Artola, Miguel** (with Majda, A.) Nonlinear development of acoustical instabilities in supersonic jets. *Phys. D* **31** (1988), no. 3, 285–317. (Summary) **89f:76051** 76E30 (76J99)

- Artstein, Zvi** (with Priky, Karel) Carathéodory selections and the Scorza Dragoni property. *J. Math. Anal. Appl.* 127 (1987), no. 2, 540–547. (Andrzej Fryszkowski) **89a:49014** 49A50 (26E25, 28B20)
- (with Wets, Roger J.-B.) Approximating the integral of a multifunction. *J. Multivariate Anal.* 24 (1988), no. 2, 285–308. (Erwin Klein) **89d:28008** 28B20 (49A99, 54C60, 90C15)
- Artur, V. B.** *see* Artur, V. Brian
- Artus, Patrick** (with Muet, Pierre-Alain) Investissement, contraintes de débouchés d'emploi et contraintes financières: estimation d'un modèle à plusieurs régimes. [Investment, job opening constraints and financial constraints: estimation of a multiregime model] With comments by Robert Eisner. *Macrodynamique et déséquilibres*, 211–244, *Economica*, Paris, 1987. (see **89d:90065** 90A09 (90A17))
- Artus, Roberto** Logarithmic strange sets. *J. Phys. A* 21 (1988), no. 19, L923–L927. (Summary) **89i:82113** 82A99 (58F08, 58F13, 82A25)
- (with Cvitanović, Predrag; Kenny, Brian G.) Phase transitions on strange irrational sets. *Phys. Rev. A* (3) 39 (1989), no. 1, 268–281. (Summary) **89k:28003** 28A75 (11K55, 58F13, 82A25)
- Artukhbaev, A.** Classification of the points of a surface in a Galilei space. (Russian) *Investigations in the theory of surfaces in manifolds with curvature of constant sign* (Russian), 3–7, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Vladislav Goldberg) **89f:53019** 53A35
- A full angle around the vertex of a cone in a Galilei space. (Russian) *Mat. Zametki* 43 (1988), no. 5, 657–662, 703; translated in *Math. Notes* 43 (1988), no. 5–6, 379–382. (Jerzy Kaczmarek) **89m:51037** 51N10 (52A15)
- Artukhbaev, V. L.** (with Kondrat'ev, V. N.; Shalyto, A. A.) Realization of Boolean functions by arithmetic polynomials. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 4, 138–147; translated in *Avtomat. Remote Control* 49 (1988), no. 4, part 2, 508–515. (Korolian Gilezan) **89i:94055** 94C10 (03G05, 06E30)
- Artyushenko, M. V.** Calculations of the orbits of groups of transformations of dynamical systems. (Russian) *Kibernet. i Vychisl. Tekhn.* No. 75 (1987), 74–77, 97. (Summary) **89d:58112** 58F37 (58-04)
- Control of the kinematic parameters of motion of a rigid body on the basis of visual information. (Russian) *Kibernet. i Vychisl. Tekhn.* No. 77 (1988), 56–62, 110. (Not in MR) 93C75 (70E15, 70Q05)
- Artyushin, L. M.** Search for optimal laws for the change of controlling forces in problems of the control of dynamical systems. (Russian) *Prikl. Mekh.* 24 (1988), no. 3, 98–104, 135; translated in *Soviet Appl. Mech.* 24 (1988), no. 3, 295–300. (Summary) **89c:30882** 93B50
- (with Pavlov, V. V.; Romashevskii, A. I.) Control of coordinated motion of complex mechanical systems. *Soviet J. Automat. Inform. Sci.* 21 (1988), no. 1, 44–49; translated from *Avtomatika* 1988, no. 1, 46–51, 96 (Russian. English summary). (Not in MR) 93A15
- ben-Artzi, Asher** *see* Ben-Artzi, Asher
- Artzner, Ph.** *see* Fuchs, Almé, **89b:62069**
- Arty, Rafael** Net of rationality in a Minkowski plane. *Combinatorics '86* (Trento, 1986), 1–6, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (Nicolas Percy) **89f:51028** 51B20
- A geometrically motivated presentation for AG(2, 3). *J. Geom.* 31 (1988), no. 1–2, 1–5. (Franco Eugeni) **89f:51036** 51E15 (20B25)
- Asaturo Aruffo, Ada** *see* Bottaro Aruffo, Ada
- Arumugam, G.** (with Pironneau, O.) Towards a multipurpose optimal shape design computer code. *Boundary control and boundary variations* (Nice, 1986), 1–17, *Lecture Notes in Comput. Sci.*, 100, Springer, Berlin-New York, 1988. (see **89b:93006** 49F10 (93C20))
- Arumhanjerdial, Raja** (with Laohakosol, Vichian; Kongsakorn, Kannika) Newton's series, factorial series and partial sums as solutions of linear difference equations. *Bull. Inst. Math. Acad. Sinica* 16 (1988), no. 1, 83–91. (Stanislaw Kus) **89b:39004** 39A10 (34A25)
- Arutyunov, A. V.** (with Ber, G. Z.; Tynyanski, N. T.) A numerical method of solving complete-dimensional optimal-control problems. *Soviet J. Comput. Systems Sci.* 25 (1987), no. 6, 147–154 (1988); translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 3, 163–169, 222 (Russian). (Summary) **89b:93054** 93B40
- First-order necessary conditions in a problem of optimal control with phase constraints. (Russian. English and Georgian summaries) *Tbilis. Gos. Univ. Inst. Prikl. Mat. Trudy* 27 (1988), 46–59, 182. (Dariusz Zagrodny) **89j:49022** 49B99 (93C30)
- Arutyunov, S. K.** Design of nonlinear structurally stable control systems (an adaptive modeling method). (Russian) *Information science, control, computer technology*, No. 1 (Russian), 133–165, "Mashinstroenie", Moscow, 1987. (Andrzej W. Olbrot) **89k:93084** 93B50 (49D27, 93C10)
- Arutyunyan, E. A.** (with Arutyunyan, M. E.) E-capacity upper bound for a channel with random parameter. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* 17 (1988), no. 2, 99–105. (Andrea Sgarro) **89g:94021** 94A40 (94A24)
- Asymptotically optimal discrimination between hypotheses concerning a Markov chain. (Russian) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* 23 (1988), no. 1, 76–80, 104; translated in *Soviet J. Contemporary Math. Anal.* 23 (1988), no. 1, 75–79. (O. A. Voyna) **89h:60106** 60J10
- Arutyunyan, M. E.** Bounds on the E-capacity of compound channels. (Russian. English and Armenian summaries) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1987, no. 3 (166), 22–29 (1988). (Summary) **89c:94026** 94A40
- (with Arutyunyan, E. A.) E-capacity upper bound for a channel with random parameter. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* 17 (1988), no. 2, 99–105. (Andrea Sgarro) **89g:94021** 94A40 (94A24)
- Arutyunyan, N. Kh.** (with Drozdov, A. D.; Kolmanovskii, V. B.) Stability of viscoelastic bodies and of elements of constructions. (Russian. English summary) *Mechanics of a solid deformable body*, Vol. 19 (Russian), 3–77, 187, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (Summary) **89a:73034** 73F20 (73H99)
- (with Radaev, Yu. N.) Elastoplastic torsion of prismatic rods. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 3, 563–566. (From the introduction) **89a:73038** 73K05 (35J99, 73E99)
- *see also* Mechanics and scientific-technological progress, **89j:73002**
- Arutyunyan, S. Kh.** (with Grushko, P. Ya.; Evtushik, L. E.; Lumiste, Ülo) Differential-algebraic methods for geometric investigations in the work of A. M. Vasil'ev and his scientific school. (Russian) *Problems in geometry*, Vol. 20 (Russian), 3–34, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (I. Vaisman) **89k:01029** 01A70 (53-03, 53C10, 58H05)
- Arutyunyan, T. N.** The canonical Dirac operator with a partially given spectrum. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1986, no. 1 (161), 11–19. (Zoran Kadelburg) **89a:34029** 34B25 (47E05, 81C05)
- ter-Arutyunyan-Savvidi, N. G.** *see* Ter-Arutyunyan-Savvidi, N. G.
- Arvan, Lanny** Symmetric equilibrium with random entry. *Math. Social Sci.* 16 (1988), no. 3, 289–303. (Summary) **89m:90028** 90A14
- Arvas, Ercument** (with Sarkar, Tapan K.; Yang, Xiaopu) A limited survey of various conjugate gradient methods for solving complex matrix equations arising in electromagnetic wave interactions. *Wave Motion* 10 (1988), no. 6, 527–546. (Summary) **89j:78005** 78-08
- Arwini, Ali S.** Weak uniformities on topological ordered groups. (Arabic summary) *Libyan J. Sci.* 13 (1984), 67–68. (Bernard L. Madison) **89a:54034** 54E15 (06F15)
- Arya, S. P.** (with Bhamini, M. P.) Some generalizations of pairwise Urysohn spaces. *Indian J. Pure Appl. Math.* 18 (1987), no. 12, 1088–1093. (M. K. Vamanamurthy) **89b:54027** 54D10 (54E55)
- (with Singal, M. K.) The open cover sum theorem. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 509–518, *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (R. Hodel) **89i:40009** 54B25
- (with Nour, T. M.) Separation axioms for bitopological spaces. *Indian J. Pure Appl. Math.* 19 (1988), no. 1, 42–50. (C. W. Patty) **89d:54018** 54E55 (54D10)
- Äryabhata** *see* Kak, Subhash, **89f:11165** and van der Waerden, B. L., **89g:01016**
- Aryal, Mukunda** (with Everett, Allen E.) Comment on "Monopoles on strings" [Phys. Rev. Lett. 55 (1985), no. 22, 2398–2400; MR 87a:81092] by M. Hindmarsh and T. W. B. Kibble. With a reply by Hindmarsh and Kibble. *Phys. Rev. Lett.* 57 (1986), no. 5, 646–647. (Editors) **89a:81070** 81E13 (53C80)
- (with Vilenkin, Alexander) The fractal dimension of the inflationary universe. *Phys. Lett. B* 199 (1987), no. 3, 351–357. (Markku Lehto) **89d:83079** 83F05
- Arzola Ruiz, José** The selection of proposals: formulation, properties, method of solution. (Spanish. English summary) *Investigación Oper.* 5 (1984), no. 3, 3–14. (Summary) **89i:90061** 90C27
- A new approach to the problem of the coordination of direction in discrete hierarchical systems. (Spanish. English summary) *Investigación Oper.* 5 (1984), no. 3, 15–26. (Summary) **89i:92064** 92A25 (93A13, 93C55)
- Asaad, Mohamed** On abelian subgroups of finite p-groups. (Arabic summary) *Proc. Math. Phys. Soc. Egypt* No. 59 (1985), 173–176 (1987). (Summary) **89c:20040** 20D15 (20E07)
- On the solvability and supersolvability of finite groups. (Arabic summary) *Proc. Math. Phys. Soc. Egypt* No. 60 (1985), 37–41 (1987). (H. Bechtel) **89d:20016** 20D10 (20F16)
- Simple groups all of whose second maximal subgroups are (A)-groups. *Arch. Math. (Basel)* 50 (1988), no. 1, 5–10. (M. E. Harris) **89b:20058** 20D99
- On the solvability of finite groups. *Arch. Math. (Basel)* 51 (1988), no. 4, 289–293. (Hartmut Laue) **89i:20031** 20D10
- Asada, Akira** Nonabelian de Rham theory. *Prospects of mathematical science* (Tokyo, 1986), 13–40, *World Sci. Publishing, Singapore*, 1988. (Stig I. Andersson) **89m:58005** 58A12 (53C80, 55N30, 81E30)
- Nonabelian de Rham theories. *Topics in differential geometry*, Vol. I, II (Debrecen, 1984), 83–115, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Stig I. Andersson) **89f:58004** 58A12 (53C05, 53C65, 55N30, 58G05)
- Asada, K.** (with Sato, Hidenori) Laplace transform transient analysis of a nonlinear system. *J. Sound Vibration* 121 (1988), no. 3, 473–479. (Summary) **89a:70023** 70K40
- Asada, Mamoru** (with Kaneko, Masanobu) On the automorphism group of some pro-fundamental groups. *Galois representations and arithmetic algebraic geometry* (Kyoto, 1985/Tokyo, 1986), 137–159, *Adv. Stud. Pure Math.*, 12, North-Holland, Amsterdam-New York, 1987. (Helmut Koch) **89b:20053** 20F28 (20E18)
- On the action of the Frobenius automorphism on the pro-fundamental group. *Math. Z.* 199 (1988), no. 1, 15–28. (H.-G. Rüdiger) **89k:14019** 14E20 (11G20, 11R58, 14H05)
- Asadov, Sh. M.** Conditions for the convergence of Lagrange interpolation polynomials. (Russian) *Approximation by generalized analytic and spherical functions* (Russian), 78–84, *Azerbaidzhan. Gos. Univ., Baku*, 1983. (see **89b:41001** 41A05)
- Asadulla, Syed** Even perfect numbers and their Euler's function. *Internat. J. Math. Math. Sci.* 10 (1987), no. 2, 409–412. (Anthony A. Gioia) **89i:11009** 11A25
- Asadzadeh, Mohammad**  $L_2$ -error estimates for the discrete ordinates method for three-dimensional neutron transport. *Transport Theory Statist. Phys.* 17 (1988), no. 1, 1–24. (Paul Nelson) **89k:82111** 82A70 (45K05, 65N10)
- Asai, Kiyoji** (with Tsutsui, Shigeyoshi) System deadlock prevention design in real-time computer systems. *Bull. Univ. Osaka Prefect. Ser. A* 34 (1985), no. 2, 219–229 (1986). (Not in MR) 68R10
- (with Ichihashi, H.; Tanaka, Hideo) Fuzzy integrals based on pseudo-additions and multiplications. *J. Math. Anal. Appl.* 130 (1988), no. 2, 354–364. (Introduction) **89m:28039** 28E10 (03E72)
- Asai, Teruaki** Twisting operators on the space of class functions of finite special linear groups. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 99–148, *Proc. Sympos. Pure Math.*, 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Jorge Soto-Andrade) **89f:20046** 20G05
- Asakawa, Hidekazu** On the difference of two subdifferential operators. *TRU Math.* 23 (1987), no. 1, 61–95. (Vladimir L. Levin) **89m:47059** 47H15 (46G99, 49A52, 58C20, 90C25)
- Restriction of maximal monotone operator to closed linear subspace. *TRU Math.* 23 (1987), no. 1, 97–116. (M. Joshi) **89k:47083** 47H07 (47H15)
- Asam, Lillian** Translation-invariant linear forms on  $\mathcal{E}'(G)$  and non-Liouville tuples on  $G$ . *J. Funct. Anal.* 78 (1988), no. 1, 1–12. (Antoni Wawrzyniec) **89c:46044** 46F05 (43A40)
- Asanosh, F.** *see* Li, Tsun Hseng S., **89g:93068** and Rotella, F., **89j:93085**
- Asano, Choochiro** (with Ichimura, Minoru) Runs and ties test applicable to finite discrete sequences. *Math. Japon.* 32 (1987), no. 4, 583–597. (A. L. Nagar) **89b:65022** 65C10
- Asano, Hiroshi** (with Kaneyuki, Soji) On compact generalized Jordan triple systems of the second kind. *Tokyo J. Math.* 11 (1988), no. 1, 105–118. (Erhard Neher) **89k:17010** 17A40 (17B70, 17C20)
- Asano, Kiyoshi** On the incompressible limit of the compressible Euler equation. *Japan J. Appl. Math.* 4 (1987), no. 3, 455–488. (Alberto Valli) **89d:76021** 76N10 (35Q10)



- A note on the Nash-Moser implicit function theorem. *Proc. Japan Acad. Ser. A Math. Sci.* **64** (1988), no. 5, 139–142. (Marian Fabian) **89j:58032** 5P15
- (with Ukai, Seiji) On the asymptotic properties of fluid dynamical equation systems. (Japanese) *Sūgaku* **40** (1988), no. 2, 115–134. (Yusuke Kato) **89j:76072** 76P05 (35Q10, 76D05, 76N10, 82A40)
- Asano, Takao** (with Edahiro, Masato; Tanaka, Katsuhiko; Hoshino, Takashi) A bucketing algorithm for the orthogonal segment intersection search problem and its practical efficiency. *Computational geometry (Waterloo, ON, 1987). Algorithmica* **4** (1989), no. 1, 61–76. (Summary) **89m:68132** 68U05 (68Q25)
- Asanov, A.** A commutative algebra with generalized invertible elements and a system of equations on it. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 39–52, 337, "Ilim", Frunze, 1987. (Lajos László) **89c:15003** 15A03 (15A06)
- Asanov, G. S.** (with Ponomarenko, S. P.; Roy, Sisir) Finslerian multi-dimensionality, associated gauge fields, and stochastic space-time. *Fortschr. Phys.* **36** (1988), no. 9, 679–706. (H. Rund) **89j:53059** 53C80 (53C60, 81E13)
- Asanov, R. A.** (with Afanas'ev, G. N.) An exact solution of the relativistic two-body problem in a Poincaré approach. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jūrmala*, 1985), 337–346, "Nauka", Moscow, 1986. (see **89d:81002**) 70H40
- (with Afanas'ev, G. N.) One exact solution of the relativistic two-body problem in the Poincaré approach. *Group theoretical methods in physics*, Vol. 1 (*Jūrmala*, 1985), 673–681, VNU Sci. Press, Utrecht, 1986. (Kishin Mariwalla) **89c:70036** 70H40
- Asanuma, Teruo** Fibre rings and polynomial rings. *Commutative algebra and combinatorics* (Kyoto, 1985), 9–11, *Adv. Stud. Pure Math.*, 11, North-Holland, Amsterdam-New York, 1987. (Joe Yanik) **89f:13030** 13F20 (13B25)
- Asar, A. O.** An elementary proof of Hartley's lemma. (Turkish summary) *J. Pure Appl. Sci.* **18** (1985), no. 2, 165–170 (1986). (D. I. Zaitsev) **89g:20066** 20F50
- Asarin, E. A.** Some properties of finite sequences that are  $\Delta$ -random in the sense of Kolmogorov. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 3, 556–558. (M. I. Dekhtyar) **89j:68074** 68Q30 (03D20, 68Q25)
- Asatryan, A. A.** (with Kravtsov, Yu. A.) Localization of complex rays using Gaussian windows, and the limits of the applicability of complex geometric optics. (Russian. English summary) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* **31** (1988), no. 9, 1053–1058; translated in *Radiophys. and Quantum Electronics* **31** (1988), no. 9, 746–750. (Summary) **89j:78010** 78A05 (58C27)
- Asaubayev, K. Sh.** (with Popkov, Yu. S.; Ashimov, A. A.) ★ Статистическая теория автоматических систем с динамической частотно-импульсной модуляцией. (Russian) [Statistical theory of automatic systems with dynamic frequency-impulse modulation] Теоретические Основы Технической Кибернетики. [Theoretical Foundations of Engineering Cybernetics] "Nauka", Moscow, 1988. 255 pp. ISBN 5-02-013896-7 (From the preface) **89c:93226** 93E20 (93C22, 93C75, 93E44, 94A14)
- Ascanzi, M.-G.** The restricted tangent bundle of a rational curve in  $\mathbb{P}^2$ . *Comm. Algebra* **16** (1988), no. 11, 2193–2208. (Zhi Jie Chen) **89i:14023** 14H45 (14F05)
- Asch, Peter** (with Quandt, Richard E.) Betting bias in "exotic" bets. *Econom. Lett.* **28** (1988), no. 3, 215–219. (Summary) **89j:90299** 90D15 (90A05, 90D40)
- Aschbacher, Michael** ★ Finite group theory. Cambridge Studies in Advanced Mathematics, 10. Cambridge University Press, Cambridge-New York, 1986. x+274 pp. ISBN 0-521-30341-9 (Stephen D. Smith) **89b:20M01** 20-01 (20B05, 20C05, 20D05)
- (with Baldi, Pierre; Baum, Eric; Wilson, R. M.) Embeddings of ultrametric spaces in finite-dimensional structures. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 4, 564–577. (E. Pessa) **89d:54020** 54E99 (94C15)
- Some multilinear forms with large isometry groups. Geometries and groups (Noordwijkerhout, 1986). *Geom. Dedicata* **25** (1988), no. 1–3, 417–465. (Ulrich Dempwolff) **89c:20067** 20G40
- The 27-dimensional module for  $E_6$ . *II. J. London Math. Soc.* (2) **37** (1988), no. 2, 275–293. (Gernot Stroth) **89a:20041** 20F29 (20G15)
- Ascher, U.** (with Osborne, M. R.) A note on solving nonlinear equations and the natural criterion function. *J. Optim. Theory Appl.* **55** (1987), no. 1, 147–152. (Pierre Loridan) **89a:90118** 90C30 (49D15, 65H10)
- Ascoli, E. P.** (with Dandy, D. S.; Leal, L. G.) On distortion functions for the strong constraint method of numerically generating orthogonal coordinate grids. *J. Comput. Phys.* **72** (1987), no. 2, 513–519. (Stanly L. Steinberg) **89b:65147** 65M50 (65N50)
- Asseev, S. M.** Approximation of semicontinuous multivalued mappings. (Russian) *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 19–22, "Angel Kanchev" Tech. Univ., Ruse, 1987. (Vadim Z. Tsalyuk) **89b:49015** 49A50
- Asel'derov, Z. M.** ★ Представление графов в операции над ними. (Russian) [Representation of graphs and operations on them] Препринт [Preprint], 87–49. *Akad. Nauk Ukrain. SSR, Inst. Kibernet.*, Kiev, 1987. 15 pp. (Larry Basenšpiller) **89d:05159** 05C99
- Asel'derova, I. M.** Optimal coding of some arithmetic graphs. (Russian) *Theory of optimal decisions* (Russian), 47–54, iv, *Akad. Nauk Ukrain. SSR, Inst. Kibernet.*, Kiev, 1987. (B. Zelinka) **89b:05110** 05C38 (68R10, 90B05)
- Asensio Mayor, J.** (with Gómez Pardo, J. L.) Relative splitting properties with applications to endomorphism rings. *Comm. Algebra* **16** (1988), no. 11, 2259–2281. (M. Teply) **89g:16036** 16A63 (16A50, 16A65, 18A40)
- (with Martínez Hernández, J.) Flat envelopes in commutative rings. *Israel J. Math.* **62** (1988), no. 1, 123–128. (W. V. Vasconcelos) **89i:13016** 13D05 (16A50)
- Asfar, K.** (with Moustafa, K. A.; Dries, F.) Modelling and identification of offshore towers with general damping. *Internat. J. Systems Sci.* **19** (1988), no. 11, 2367–2379. (Summary) **89j:93114** 93E12 (00A71)
- (with Nayfeh, Ali Hasan) Nonstationary parametric oscillations. *J. Sound Vibration* **124** (1988), no. 3, 529–537. (Summary) **89f:70032** 70K30 (70K40)
- Asgekar, G. G.** (with Patwardhan, C. G.) General relativistic aspects of ferromagneto-fluid. *Gen. Relativity Gravitation* **20** (1988), no. 3, 289–296. (Ilija Lukačević) **89b:83058** 83C55
- Asghar, Saleem** (with Zaman, F. D.; Ali, Asif) An extended variational principle for a composite plate. *Math. Rep. Toyama Univ.* **10** (1987), 127–131. (From the introduction) **89a:35066** 35J35 (73K20)
- Ash, Avner** Nonminimal modular symbols for  $GL(n)$ . *Invent. Math.* **91** (1988), no. 3, 483–491. (Joachim Schwermer) **89c:11089** 11F75 (11E32, 11F55, 22E40)
- Ash, C. J.** Errata to "Recursive labelling systems and stability of recursive structures in hyperarithmetical degrees" [Trans. Amer. Math. Soc. **298** (1986), no. 2, 497–514; MR 87j:03060]. *Trans. Amer. Math. Soc.* **310** (1988), no. 2, 851. (Editors) **89c:03069** 03D30 (03C57, 03C75, 03D45)
- Ash, Peter** (with Bolker, Ethan; Crapo, Henry; Whiteley, Walter) Convex polyhedra, Dirichlet tessellations, and spider webs. *Shaping space* (Northampton, Mass., 1984), 231–250, *Design Sci. Collect.*, Birkhäuser Boston, Boston, MA, 1988. (see **89b:52016**) 52A45 (52A25)
- Ashbaugh, Mark S.** (with Benguria, Rafael) On the ratio of the first two eigenvalues of Schrödinger operators with positive potentials. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 16–25, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Summary) **89a:35151** 35P15 (35J10)
- (with Benguria, Rafael) Log-concavity of the ground state of Schrödinger operators: a new proof of the Baumgartner-Grosse-Martin inequality. *Phys. Lett. A* **131** (1988), no. 4–5, 273–276. (Yusuke Kato) **89i:81012** 81C05 (81F05)
- (with Benguria, Rafael) Optimal lower bound for the gap between the first two eigenvalues of one-dimensional Schrödinger operators with symmetric single-well potentials. *Proc. Amer. Math. Soc.* **105** (1989), no. 2, 419–424. (André Hautot) **89f:81028** 81C05 (34B25)
- Ashby, F. Gregory** Counting and timing models in psychophysics and the conjoint Weber's law. *J. Math. Psych.* **31** (1987), no. 4, 419–428. (L. E. H. Trainor) **89c:20089** 92A27 (62M10, 62M20, 92A09)
- Ashby, Neil** (with Shahid-Saleh, Bahman) Relativistic effects in local inertial frames including parametrized-post-Newtonian effects. *Phys. Rev. D* (3) **38** (1988), no. 6, 1645–1657. (Summary) **89i:83028** 83C25
- Ashchepkov, L. T.** ★ Оптимальное управление разрывными системами. (Russian) [Optimal control of discontinuous systems] "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. 227 pp. (Péter Tallós) **89a:49016** 49A52 (49B10, 90C48)
- Asheim, Geir B.** Rawlsian intergenerational justice as a Markov-perfect equilibrium in a resource technology. *Rev. Econom. Stud.* **55** (1988), no. 3, 469–483. (Su Sheng Wang) **89b:90011** 90A06 (90A07, 90A16, 90D45)
- ben-Asher, Joseph** see Ben-Asher, Joseph
- Asher, Nicholas M.** (with Kamp, Johan A. W.) The knower's paradox and representational theories of attitudes. *Theoretical aspects of reasoning about knowledge* (Monterey, Calif., 1986), 131–147, *Morgan Kaufmann, Palo Alto, CA*, 1986. (Summary) **89a:3027** 03B45
- Asherova, R. M.** (with Smirnov, Yu. F.) Some group-theoretic aspects of a symplectic collective model of heavy nuclei. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jūrmala*, 1985), 554–563, "Nauka", Moscow, 1986. (see **89d:81002**) 81G50
- se-Ashi, Yutaka** see Se-Ashi, Yutaka
- Ashimov, A. A.** (with Popkov, Yu. S.; Asaubayev, K. Sh.) ★ Статистическая теория автоматических систем с динамической частотно-импульсной модуляцией. (Russian) [Statistical theory of automatic systems with dynamic frequency-impulse modulation] Теоретические Основы Технической Кибернетики. [Theoretical Foundations of Engineering Cybernetics] "Nauka", Moscow, 1988. 255 pp. ISBN 5-02-013896-7 (From the preface) **89c:93226** 93E20 (93C22, 93C75, 93E44, 94A14)
- Ashirov, S.** (with Kurbanmamedov, N.) Investigation of the solution of a class of integral equations of Volterra type. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 9, 3–8, 81. (Š. Schwabik) **89c:45002** 45D05 (45G10)
- (with Mamedov, Ya. D.) An integral equation of Volterra type. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 4, 510–515, 544; translated in *Ukrainian Math. J.* **40** (1988), no. 4, 438–442. (P. Talpalaru) **89i:45003** 45D05
- Ashley, N.** Simplicial  $T$ -complexes and crossed complexes: a nonabelian version of a theorem of Dold and Kan. With a preface by Ronald Brown. *Dissertationes Math. (Rozprawy Mat.)* **265** (1988), 61 pp. (Timothy Porter) **89k:55028** 55Q99 (18G30, 18G55, 20L15, 55U10)
- Ashordiya, M. T.** An initial value problem for systems of generalized ordinary differential equations. (Russian) *Boundary value problems* (Russian), 63–68, 157, *Perm. Politekh. Inst., Perm*, 1984. (see **89b:00008**) 34K05
- On the unique solvability of the Cauchy problem for a system of generalized ordinary differential equations. (Russian) *Boundary value problems* (Russian), 65–70, vi, *Perm. Politekh. Inst., Perm*, 1986. (see **89c:00009**) 34A20
- The Cauchy problem for a system of generalized ordinary differential equations. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **22** (1987), 5–41, 232. (M. Tvrdý) **89g:34001** 34A10 (34A34, 39A10)
- Asfour, S. K.** Multicensored sampling in mixed Weibull distribution. *IAPQR Trans.* **12** (1987), no. 2, 51–56. (Summary) **89d:62102** 62N05 (62F10)
- Ashraf, Mohd.** (with Quadri, Murtaza A.; Khan, Moharram A.) A commutativity theorem for semi-prime rings. *Math. Student* **50** (1982), no. 1–4, 264–267 (1987). (A. Yaqub) **89m:16064** 16A70 (16A12)
- (with Quadri, Murtaza A.) A condition for the commutativity of rings. *Kyungpook Math. J.* **27** (1987), no. 2, 187–189. (Evangelos Psomopoulos) **89i:16028** 16A70
- (with Quadri, Murtaza A.) Some polynomial identities and commutativity of semiprime rings. *Tamkang J. Math.* **18** (1987), no. 4, 19–22. (Hazar Abu-Khuzam) **89j:16048** 16A70
- (with Quadri, Murtaza A.; Zelinsky, Daniel) Some polynomial identities that imply commutativity for rings. *Amer. Math. Monthly* **95** (1988), no. 4, 336–339. (A. Yaqub) **89c:16045** 16A70
- (with Quadri, Murtaza A.) On commutativity of associative rings. *Bull. Austral. Math. Soc.* **38** (1988), no. 2, 267–271. (A. Yaqub) **89k:16060** 16A70
- (with Quadri, Murtaza A.) Commutativity of generalized Boolean rings. *Publ. Math. Debrecen* **35** (1988), no. 1–2, 73–75. (Howard E. Bell) **89f:16049** 16A70 (06E20)
- Ashrafi, J. A.** (with Southern, B. W.) Density of states and dynamic scaling on the Vicsek snowflake fractal. *J. Phys. A* **21** (1988), no. 10, 2431–2440. (Preben Alström) **89k:82087** 82A68 (82A25)
- (with Stinchcombe, R. B.) Exact decimation approach to the Green's functions of the Fibonacci-chain quasicrystal. *Phys. Rev. B* (3) **37** (1988), no. 10, part B, 5723–5729. (Summary) **89b:82089** 82A60 (82A25)
- (with Stinchcombe, R. B.) Dynamic structure factor for the Fibonacci-chain quasicrystal. *Phys. Rev. B* (3) **39** (1989), no. 4, 2670–2677. (Summary) **89m:82060** 82A60 (82A57)
- Ashtekar, Abhay** ★ Asymptotic quantization. Monographs and Textbooks in Physical Science. Lecture Notes, 2. Bibliopolis, Naples, 1987. xii+108 pp. ISBN 88-7088-143-1 (Adam Helfer) **89c:83033** 83C45 (81E08, 81E13, 83C30)



- Einstein constraints in the Yang-Mills form. *Constraint's theory and relativistic dynamics* (Florence/Arcturi, 1986), 66–77, World Sci. Publishing, Singapore, 1987. (K. P. Tod) **89e:83007** 83C05 (81E13)
- (with Mazur, Pawel O.; Torre, C. G.) BRST structure of general relativity in terms of new variables. *Phys. Rev. D* (3) **36** (1987), no. 10, 2955–2962. (K. P. Tod) **89a:83034** 83C45
- A 3 + 1 formulation of Einstein self-duality. *Mathematics and general relativity* (Santa Cruz, CA, 1986), 39–53, *Contemp. Math.*, 71, Amer. Math. Soc., Providence, RI, 1988. (K. P. Tod) **89i:83006** 83C05 (83C45, 83C60)
- CP-violation in quantum gravity? *New perspectives in canonical gravity*, 223–233, *Monographs Textbooks Phys. Sci. Lecture Notes*, 5, Bibliopolis, Naples, 1988. (see **89m:83003**) 83C45
- (with Jacobson, Ted; Smolin, Lee) A new characterization of half-flat solutions to Einstein's equation. *Comm. Math. Phys.* **115** (1988), no. 4, 631–648. (Lionel J. Mason) **89f:83010** 83C05 (83C60)
- Ashurst, W. T. (with Lundgren, T. S.) Area-varying waves on curved vortex tubes with application to vortex breakdown. *J. Fluid Mech.* **200** (1989), 283–307. (Summary) **89m:76022** 76C05 (76E30)
- Ashvinkumar Intuitionist solution of the continuum hypothesis problem. *Vikram Math. J.* **6** (1985/86), 32–41. (Wim Veldman) **89h:03107** 03F55
- el-Ashwah, Rabha Md. see El-Ashwah, Rabha Md.
- Ashyralyev, A. A purely implicit difference scheme of second order of approximation for parabolic equations. (Russian. English summary) *Izv. Akad. Nauk Turkmen. SSR Ser. Fiz.-Tekhn. Khim. Geol. Nauk* **1987**, no. 4, 3–13. (Summary) **89g:65112** 65M05
- Atlé, M. D. (with Kovačević-Vujčić, V. V.) An implementation of a semi-definite programming method to Chebyshev approximation problems. *Numerical methods and approximation theory, III* (Niš, 1987), 111–119, *Univ. Niš, Niš*, 1988. (G. Di Pillo) **89m:49060** 49D39 (41A50, 65K05, 90C05)
- (with Kovačević-Vujčić, V. V.) An interior semi-infinite programming method. *J. Optim. Theory Appl.* **59** (1988), no. 3, 353–367. (R. Tichatschke) **89i:90095** 90C05 (49D39, 65K05)
- Asimov, A. A scheme for the arrangement of particles in cells. (Russian) *Investigations in degenerate differential equations and limit theorems of probability theory* (Russian), 27–29, *Tashkent. Gos. Ped. Inst., Tashkent*, 1985. (see **89g:60002**) 60C05 (60F05)
- (with Formanov, Sh. K.) A limit theorem for a decomposable statistic in a random allocation scheme. (Russian) *Probability distributions and mathematical statistics* (Russian) (Fergana, 1983), 435–447, 499, "Fan", Tashkent, 1986. (Lyuben R. Mutafchiev) **89d:60013** 60C05 (60F05)
- Askey, Richard Ramanujan's  ${}_1\psi_1$  and formal Laurent series. *Indian J. Math.* **29** (1987), no. 2, 101–105. (Bruce C. Berndt) **89c:33002** 33A30 (30A10, 30B50)
- How can mathematicians and mathematical historians help each other? *History and philosophy of modern mathematics* (Minneapolis, MN, 1985), 201–217, *Minnesota Stud. Philos. Sci., XI*, Univ. Minnesota Press, Minneapolis, MN, 1988. (D. J. Struik) **89i:01146** 01A99 (00A25, 33A30, 33A35)
- Beta integrals in Ramanujan's papers, his unpublished work and further examples. *Ramanujan revisited* (Urbana-Champaign, Ill., 1987), 561–590, *Academic Press, Boston, MA*, 1988. (M. E. Muldoon) **89i:01044** 01A60 (33–03, 33A15)
- Ramanujan and important formulae. *Srinivasa Ramanujan* (1887–1920), 32–41, *Macmillan India, Madras*, 1988. (see **89m:01070**) 33A30 (01A60, 01A70)
- see also *Ramanujan revisited*, **89c:11001**
- Askharov, S. N. (with Karapetyants, N. K.; Yakubov, A. Ya.) Discrete equations of convolution type with power nonlinearity. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 3, 521–524; translated in *Soviet Math. Dokl.* **36** (1988), no. 2, 273–276. (William L. Perry) **89a:45010** 45E10 (39A12)
- Aslanov, A. A. (with Alamedov, M. S.; Isaev, G. A.) Tensor determinants that are connected with multiparameter spectral problems. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 11, 3–8, 87. (L. Rodman) **89d:47081** 47B99 (47A70)
- Aslanov, G. I. The Green function and the spectrum of higher-order operator-differential equations with general boundary conditions. (Russian) *Differential equations and applied problems* (Russian), 137–145, xiv, *Tul'sk. Politekh. Inst., Tula*, 1985. (see **89g:00008**) 34G10
- On the asymptotic distribution of eigenvalues of operator-differential equations of order  $2n$ . (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 3, 9–15 (1988). (Not in MR) **34B25** (34G10, 47E05)
- Aslanov, M. A. (with Musaev, K. M.) Mean approximation of generalized analytic functions. (Russian) *Special problems in function theory, No. III* (Russian), 133–147, "Elm", Baku, 1986. (Guo Chun Wen) **89g:30087** 30G20 (30E10)
- Aslanski, M. S. (with Chimev, K. N.) A class of functions of seven variables. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 1, 159–166 (1987). (Summary) **89f:04001** 04A05
- Structural properties of the graphs of some types of functions. (Russian summary) *Proceedings of the joint Bulgarian-Hungarian workshop on mathematical cybernetics and data processing ("Gyulechitsa"), Bulgaria, 1985. Tanulmányok—MTA Széchenyi. Automat. Kutató Int. Budapest* **No. 182** (1986), 77–88. (Summary) **89b:26015** 26B35
- (with Chimev, K. N.; Gyudzenov, I. D.; Shtrakov, Slavcho V.) Separable and dominating sets of variables for functions. *Mathematics and mathematical education* (Bulgarian) (Sunny Beach (SP'nceh Bryag), 1987), 61–71, *Bulg. Acad. Sci., Sofia*, 1987. (see **89c:00038**) 03B50
- Aslanyan, V. M. (with Morozov, V. F.; Mamasakhlisov, E. Sh.) Dimensions of polypeptide chains at helix-coil transition. Microscopic theory. (Russian. English and Armenian summaries) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1987**, no. 3(166), 51–54 (1988). (Summary) **89d:92019** 92A09 (92A12)
- Asmar, Nakhle (with Hewitt, Edwin) Marcel Riesz's theorem on conjugate Fourier series and its descendants. *Proceedings of the analysis conference, Singapore 1986*, 1–56, *North-Holland Math. Stud.*, 150, North-Holland, Amsterdam-New York, 1988. (Burglind Jörcke) **89h:43007** 43A22 (01A60, 42A50, 43A25)
- Asmolik, V. A. (with Prosyanoi, A. A.) Locally two-dimensional difference schemes for three-dimensional quasilinear hyperbolic equations. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **31** (1987), no. 5, 401–404, 475. (Summary) **89b:65202** 65M05
- Asmus, S. V. An error estimate for spline interpolation. (Russian) *Topological structures and their mappings* (Russian), 15–26, i, *Lav. Gos. Univ., Riga*, 1987. (A. B. Bakushinskii) **89c:65066** 65J05 (41A05, 41A15, 65D07)
- Assmusen, Søren (with Johansen, Helle) Über eine Stetigkeitsfrage betreffend das Bedienungssystem  $GI/GI/s$ . (English and Russian summaries) [On a robustness problem for the  $GI/GI/s$  queue] *Elektron. Informationsverarb. Kybernet.* **22** (1986), no. 10–11, 565–570. (Brian Conolly) **89j:60122** 60K25 (90B22)
- ★ Applied probability and queues. *Wiley Series in Probability and Mathematical Statistics: Applied Probability and Statistics*. John Wiley & Sons, Ltd., Chichester, 1987. x+318 pp. ISBN 0-471-91173-9 (Douglas P. Kennedy) **89a:60208** 60K25 (90B15, 90B22)
- The heavy traffic limit of a class of Markovian queueing models. *Oper. Res. Lett.* **6** (1987), no. 6, 301–306. (Summary) **89g:60276** 60K25 (90B22)
- (with Thorisson, Hermann) Large deviation results for time-dependent queue length distributions. *Comm. Statist. Stochastic Models* **4** (1988), no. 1, 99–116. (Noël Veraverbeke) **89e:60182** 60K25 (60F10)
- Aso, Hiroto (with Inagaki, Yasuyoshi) Formal description of systolic algorithms and an analysis of the information flow. *Systems Comput. Japan* **19** (1988), no. 6, 14–24. (Ondrej Šykora) **89m:68101** 68Q80 (68Q35)
- Aso, Kazutoshi A note on the projection curves of geodesics on the tangent and tangent sphere bundle. *Math. Rep. Toyama Univ.* **11** (1988), 179–185. (H. Rund) **89m:53070** 53C22 (53C25)
- Asorey, Manuel (with Falceto, Fernando) Geometric regularization of Yang-Mills theory. *Phys. Lett. B* **206** (1988), no. 3, 485–490. (Summary) **89e:81086** 81E13 (58D15, 58G40, 81E15)
- Aspinwall, P. S. (with Greene, Brian R.; Kirklín, Kelley H.; Miron, Paul) Searching for three-generation Calabi-Yau manifolds. *Nuclear Phys. B* **294** (1987), no. 1, 193–222. (Pankaj Topiwala) **89e:53071** 53C25 (14J30, 32G13, 32J99, 81E99, 83E30)
- Aspray, William The mathematical reception of the modern computer: John von Neumann and the Institute for Advanced Study computer. *Studies in the history of mathematics*, 166–194, *MAA Stud. Math.*, 26, Math. Assoc. America, Washington, DC, 1987. (see **89h:01002**) 01A60 (68–03)
- The emergence of Princeton as a world center for mathematical research, 1896–1939. *History and philosophy of modern mathematics* (Minneapolis, MN, 1985), 346–366, *Minnesota Stud. Philos. Sci., XI*, Univ. Minnesota Press, Minneapolis, MN, 1988. (J. Dieudonné) **89f:01087** 01A73 (01A60)
- see also *History and philosophy of modern mathematics*, **89b:00023**
- d'Aspremont, Claude Axioms for social welfare orderings. *Social goals and social organization*, 19–76, *Cambridge Univ. Press, Cambridge-New York*, 1985. (Roy Gardner) **89a:90026** 90A10 (90A08)
- Asratyan, A. S. (with Kostochka, A.; Mirumyan, A. N.) A criterion for the unique colorability of edges of bipartite multigraphs. (Russian) *Metody Diskret. Analiz.* **No. 45** (1987), 3–20, 95. (O. V. Borodin) **89f:05072** 05C15
- Assad, M. J. D. (with de Lima, J. A. Sales) General and unified solution for perfect fluid homogeneous and isotropic cosmological models. *Gen. Relativity Gravitation* **20** (1988), no. 6, 527–538. (A. H. Taub) **89f:83034** 83C20 (83C15)
- Assad, Nadim A. On some nonself nonlinear contractions. *Math. Japon.* **33** (1988), no. 1, 17–26. (Ljubomir Čirić) **89b:54049** 54H25
- On some nonself mappings in Banach spaces. *Math. Japon.* **33** (1988), no. 4, 501–515. (I. A. Rus) **89d:47105** 47H10 (54H25)
- Assadi, Amir H. Some local-global results in finite transformation groups. *Bull. Amer. Math. Soc. (N.S.)* **19** (1988), no. 2, 455–458. (H.-T. Ku) **89g:57053** 57S17 (55N91, 55U15)
- Assaf, David (with Shanthikumar, J. George) Optimal group maintenance policies with continuous and periodic inspections. *Management Sci.* **33** (1987), no. 11, 1440–1452. (C. Mohan) **89g:90113** 90B25
- (with Zamir, Shmuel) Continuous and discrete search for one of many objects. *Oper. Res. Lett.* **6** (1987), no. 5, 205–209. (John G. Wilson) **89g:90135** 90B40
- A dynamic sampling approach for detecting a change in distribution. *Ann. Statist.* **16** (1988), no. 1, 236–253. (S. N. Alam) **89h:62162** 62N10 (60J65)
- (with Takas, Michael; Klass, Michael J.) A diffusion model for optimal portfolio selection in the presence of brokerage fees. *Math. Oper. Res.* **13** (1988), no. 2, 277–294. (Thomas W. Epps) **89d:90028** 90A09 (93E20)
- Assani, I. Inégalités maximales et propriétés ergodiques ponctuelles. [Maximal inequalities and point ergodic properties] *Séminaire d'Analyse Fonctionnelle 1985/1986/1987*, 205–218, *Publ. Math. Univ. Paris VII*, 28, Univ. Paris VII, Paris, 1988. (D. L. Burkholder) **89f:47012** 47A35 (47B38)
- Alternating procedures in uniformly smooth Banach spaces. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1131–1133. (R. J. Nagel) **89f:47013** 47A35 (46B20)
- Assar, Ali-Reza On Mackey's subgroup theorem. *Rep. Math. Phys.* **24** (1986), no. 1, 57–64. (Robert R. Kallman) **89e:22008** 22D10
- el-Assar, S. see El-Assar, S.
- van Assche, Walter see Van Assche, Walter
- Assem, Ibrahim (with Iwanaga, Yasuo) On a class of representation-finite QF-3 algebras. *Tsukuba J. Math.* **11** (1987), no. 2, 199–217. (Yutaka Kawada) **89b:16014** 16A36 (16A46, 16A64)
- (with Skowroński, Andrzej) Tame and exhaustive repetitive algebras. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 6, 249–253. (Otto Kerner) **89m:16055** 16A64 (16A36, 16A46)
- (with Skowroński, Andrzej) Algebras with cycle-finite derived categories. *Math. Ann.* **280** (1988), no. 3, 441–463. (Dieter Happel and William Crawley-Boevey) **89f:16023b** 16A46 (16A64, 18E30)
- (with Skowroński, Andrzej) On some classes of simply connected algebras. *Proc. London Math. Soc.* (3) **56** (1988), no. 3, 417–450. (William Crawley-Boevey and Dieter Happel) **89f:16023a** 16A46 (16A64)
- Asser, Günter Zur Robinson-Charakterisierung der einstelligen primitiv rekursiven Wortfunktionen. [On the Robinson characterization of primitive recursive word functions of one variable] *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 4, 317–322. (Robert M. Baer) **89h:03070** 03D20
- Assimakopoulos, Nikitas Two-stage service system. *Indust. Math.* **37** (1987), no. 2, 171–193 (1988). (Summary) **89a:60209** 60K25 (90B22)

- A waiting system with two stages. *Appl. Math. Comput.* **27** (1988), no. 2, 173–190. (Erik A. van Doorn) **89c:60183** 60K25 (90B22)
- Distributed decision making in cybernetic systems. *Found. Control Engrg.* **13** (1988), no. 1, 3–13. (Not in MR) **93A13** (68Q90, 90B50, 94C15)
- Assmus, E. F., Jr. Biplanes in planes. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **60** (1987), 279–294. (E. J. F. Primrose) **89d:51009** 51E20 (05B25)
- Astafiev, N. N. Regularization of a dual convex programming problem in a class of infinite linear programs. (Russian) 19. *Jahrestagung "Mathematische Optimierung"* (Sellin, 1987), 1–4. *Seminarberichte*, 90, Humboldt Univ., Berlin, 1987. (see **89b:90003**) 90C25
- Dual regularization of a problem of semi-infinite linear programming (application to problems of convex programming). (Russian) *Conflicting models for optimization (Russian)*, 4–11, 94, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1987. (S. Zlobec) **89g:90206** 90C31 (90C05, 90C25)
- (with Erëmin, I. I.; Mazurov, V. D.) Systems of linear inequalities in mathematical programming and pattern recognition. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 3, 288–297, 405; translated in *Ukrainian Math. J.* **40** (1988), no. 3, 243–251. (Stefan Tigan) **89i:90058** 90C25 (68T10)
- Astafeva, L. K. A problem with free boundaries for the Lavrent'ev-Bitsadze equation in polar coordinates. (Russian) *Differential equations and mathematical physics (Russian)*, 118–122, *Kulbyshv. Gos. Ped. Inst., Kuybyshev*, 1985. (see **89f:35006**) 35R35 (35M05)
- Astakhov, A. D. The methodological foundations of the organization of computational and information processes. (Russian) *Systems research (Russian)*, 199–222, "Nauka", Moscow, 1987. (V. Ya. Kreinovich) **89d:68002** 68N05
- Astakhov, N. D. (with Jaime Chavez, M.) ★ Некоторые задачи составления плана работ и алгоритмы их решения. (Russian) [Some problems on job scheduling and algorithms for their solution] Сообщения по Прикладной Математике. [Reports in Applied Mathematics] *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1988, 28 pp. (Knut Richter) **89k:90083** 90B35 (90C10)
- (with Kaliev, E. Zh.) A dynamic problem of water resource distribution and the modification of successive calculation algorithms for its solution. (Russian, Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1988**, no. 1, 7–11. (R. Petrović) **89g:90137** 90B99 (93C55)
- Astakhov, V. V. (with Bezruchko, B. P.; Ponomarenko, V. I.; Seleznev, E. P.) Quasihomogeneous stochastic motions and their break-up in a system of coupled nonlinear oscillators. (Russian) *Vyssh. Uchebn. Zaved. Radiofiz.* **31** (1988), no. 5, 627–630. (Not in MR) 58F13
- Astala, Kari Self-similar zippers. *Holomorphic functions and moduli*, Vol. I (Berkeley, CA, 1986), 61–73, *Math. Sci. Res. Inst. Publ.*, 10, Springer, New York-Berlin, 1988. (A. Hinkkanen) **89i:30018** 30C60
- Astaneh, A. A. An inequality concerning the Chebyshev ball of a bounded subset in a Hilbert space. *Bull. Iranian Math. Soc.* **14** (1987), no. 1, 1–9. (Pier Luigi Papini) **89f:46045**; EA **89m** 46C05 (47H09)
- Astesiano, Egidio (with Giovanni, Alessandro; Reggio, Gianna) Generalized bisimulation in relational specifications. *STACS 88 (Bordeaux, 1988)*, 207–226, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (see **89b:68011**) 68Q10 (68Q55)
- Astey, L. (with Gitler, S.; Micha, E.; Pastor, Guillermo) On Chern classes of stably fibre homotopic trivial bundles. *Glasgow Math. J.* **30** (1988), no. 2, 213–214. (J. F. Adams) **89f:55018** 55R40
- (with Greenberg, Peter; Micha, E.; Pastor, Guillermo) Some fibred cobordism groups are not finitely generated. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 327–328. (R. E. Stong) **89f:57050** 57R90
- Astola, Jaakko see Lobstein, Antoine, **89g:94038**
- Aston, P. J. (with Whiteman, J. R.) Analysis of two-way snap of shells of revolution. *Internat. J. Engrg. Sci.* **26** (1988), no. 7, 687–702. (D. Durban) **89k:73033** 73H05 (73K15, 73K25)
- Astrakhanev, V. V. see Astrakhantsev, V. V.
- Astrakhantsev, G. P. (with Rukhovets, L. A.) A discrete hydrothermodynamic model of climatic circulation of a deep lake. (Russian) *Computational processes and systems*, No. 4 (Russian), 135–178, "Nauka", Moscow, 1986. (From the introduction) **89g:86001** 86A05
- Astrakhantsev, V. V. A characteristic property of simple Lie algebras. *Topics in differential geometry*, Vol. I, II (Debrecen, 1984), 117–130, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Yong Zheng Zhang) **89c:17012** 17B05
- Astroh, Michael The explicative sense of formal logic. Some remarks on the semantical basis of Gentzen-calculi. *Logique et Anal. (N.S.)* **30** (1987), no. 117–118, 3–29. (Summary) **89a:03006** 03A05
- Åström, K. J. see Johnson, M. A., (Not in MR)
- Astrovskii, A. I. A method for solving an observation-estimation problem in linear nonstationary systems. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 6, 929–935, 1098; translated in *Differential Equations* **24** (1988), no. 6, 597–602. (Zbigniew Emirsajlow) **89g:93007** 93B07 (93B10, 93C05, 93C15)
- A method for constructing information sets in linear nonstationary observation systems. (Russian, English summary) *Dokl. Akad. Nauk BSSR* **32** (1988), no. 9, 773–776, 859. (Jerzy Klamka) **89k:93020** 93B07 (93B10, 93C05, 93C60)
- Asunción Beitia, Maria see Beitia, Maria Asunción
- Asveld, Peter R. J. Another family of Fibonacci-like sequences. *Fibonacci Quart.* **25** (1987), no. 4, 361–364. (G. Philippou (Zbl 634:10013)) **89h:11008** 11B39 (39A10)
- pham van At see Pham Van At
- Atabekyan, V. S. Simple and free periodic groups. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 6, 76–78. (D. I. Zaitsev) **89g:20067** 20F50 (20E32)
- Atadzhanov, B. A. An integral of Cauchy type for quasianalytic functions on closed Riemann surfaces. (Russian) *Dokl. Akad. Nauk UzSSR* **1987**, no. 12, 9–11. (Not in MR) 30E20 (30E25, 30Fxx)
- Ataev, A. E. (with Kovalkov, A. V.) ★ Эрмитовы сплайны при ограничениях типа неравенств. (Russian) [Hermitian splines with constraints of inequality type] Препринт [Preprint], 720, *Akad. Nauk SSSR Sibsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1987, 13 pp. (Introduction) **89d:65010** 65D07
- Atakhodzhiev, M. A. (with Egamberdiev, O. M.) Continuation of the solution of an abstract bicolor equation. (Russian) *Equations of mixed type and free boundary value problems (Russian)*, 201–208, 254, "Fan", Tashkent, 1987. (Enrico Obrecht) **89c:35148** 35R20 (34G10, 35K25)
- Atakishiev, N. M. (with Suslov, S. K.) Representations of the Lorentz group SO(3, 1) and Hahn polynomials. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (Jämsala, 1985), 158–163, "Nauka", Moscow, 1986. (see **89d:81002**) 22F43 (33A75)
- (with Mir-Kasimov, R. M.) SL(2, R) coefficients of the transformation between the reductions SO(2) and SO(1, 1). (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (Jämsala, 1985), 163–168, "Nauka", Moscow, 1986. (see **89d:81002**) 22E45 (81C40)
- (with Suslov, S. K.) Representations of SO(3, 1) and the Hahn polynomials. *Group theoretical methods in physics*, Vol. I (Yurmala, 1985), 523–530, VNU Sci. Press, Utrecht, 1986. (A. M. Gavrilik) **89d:22011** 22E46 (33A75)
- (with Rustamov, K. A.; Radzhabov, B. A.; Badalov, V. G.) Symmetry properties of the equations of quantum nonrelativistic and relativistic oscillators. (Russian, English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 1, 89–96. (M. I. Monastyrskii) **89h:81082** 81D15 (17B65)
- Atakishieva, R. Kh. (with Alikhanova, R. L.) A class of variational inequalities with infinite-order operators with variable coefficients. (Russian, English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 4, 25–30 (1988). (Shuzi Zhou) **89m:35221** 35R50 (35J85, 49A29)
- Atakishiyev, N. M. see Atakishiev, N. M.
- Atalla, M. A. An approximate method for solving stochastic differential equations. (Russian) *Asymptotic problems in the theory of random processes (Russian)*, 15–22, 113, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (J. M. Stoyanov) **89g:60182** 60H10
- Atallah, Mikhail J. (with Manacher, Glenn K.; Urrutia, Jorge) Finding a minimum independent dominating set in a permutation graph. *Discrete Appl. Math.* **21** (1988), no. 3, 177–183. (O. D'Antona) **89j:05042** 05C35 (05C99, 68Q25, 68R10)
- (with Kosaraju, S. Rao) Efficient solutions to some transportation problems with applications to minimizing robot arm travel. *SIAM J. Comput.* **17** (1988), no. 5, 849–869. (Summary) **89i:68054** 68Q25 (68U05)
- Atanador, E. R. An inverse boundary value problem for a third-order partial differential equation. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 177–186, 341, "Ilim", Frunze, 1987. (Summary) **89f:35197** 35R30 (35L75)
- (with Mamayusupov, O. Sh.) Some inverse problems for a fourth-order equation with mixed derivatives. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 187–193, 341–342, "Ilim", Frunze, 1987. (Summary) **89f:35198** 35R30
- Atamator, A. S. (with Kaverin, S. V.) Branching random processes with unbounded migration of particles. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 1, 22–27, 92. (P. Jagers) **89c:60167** 60J80
- Atanacković, Teodor M. (with Strauss, Alvin M.) Stability of Pflüger's column with imperfections. *Z. Angew. Math. Phys.* **38** (1987), no. 6, 839–855. (T. J. Mahar) **89c:73037** 73H05 (34B25, 58E07)
- Atanasiu, Dragu Le problème des moments sur des compacts de  $\mathbb{R}^S$  dans le cas où  $S$  est un semi-groupe abélien avec zéro. (English summary) [The moment problem on some compacts of  $\mathbb{R}^S$  in the case where  $S$  is a commutative semigroup with zero] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 20, 861–864. (J. P. R. Christensen) **89a:44015** 44A60 (43A35)
- Sur les fonctions complètement définies positives. (English summary) [On completely positive definite functions] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 6, 221–223. (F. H. Szafraniec) **89i:43006** 43A35 (44A60)
- Atanasiu, Gheorghe Connexions semi-symétriques sur l'espace total d'un fibré vectoriel. (English summary) [Semisymmetric connections on the total space of a vector bundle] *Mem. Sec. Științ. Acad. Repub. Soc. România Ser. IV* **8** (1985), no. 1, 33–41 (1987). (V. Cruceanu) **89f:53042** 53C05 (55R25)
- The Kawaguchi method of determination of the metrical connections in a Cartan space. (French summary) *Mem. Sec. Științ. Acad. Repub. Soc. România Ser. IV* **8** (1985), no. 1, 43–55 (1987). (L. Tamásy) **89h:53062** 53B40
- Remarkable Finsler connections on the total space of a vector bundle. *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces (Brașov, 1986)*, 57–81, Soc. Științe Mat. R.S. România, Bucharest, 1986. (Aurel Bejancu) **89c:53052** 53C60
- (with Stoica, E.) Almost Hermitian structures on the total space of a vector bundle. *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces (Brașov, 1986)*, 83–90, Soc. Științe Mat. R.S. România, Bucharest, 1986. (Georgi Ganchev) **89d:53072** 53C15 (53C05)
- (with Klepp, Francisc C.) About the generalized Lagrange-Weyl-Otsuki spaces. (Romanian summary) *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces (Brașov, 1986)*, 177–183, Soc. Științe Mat. R.S. România, Bucharest, 1986. (H. Rund) **89d:53037** 53B15 (53B40)
- The existence of the distinguished semisymmetrical and quarter-symmetrical connections on the total space of a vector bundle. *Bul. Univ. Brașov Ser. C* **28** (1986), 7–16 (1987). (Sándor Bácsó) **89a:53023** 53B15
- (with Hashiguchi, Masao) Semi-symmetric Miron connections in dual Finsler spaces. *Rep. Fac. Sci. Kagoshima Univ. Math. Phys. Chem.* **No. 20** (1987), 43–49. (S. Watanabe) **89i:53021** 53B40
- The uniqueness of the canonical metrical Finsler connection on a vector bundle. *Tensor (N.S.)* **44** (1987), no. 1, 46–62. (Sándor Bácsó) **89b:53106** 53C60
- see also *Proceedings: Seminar on Finsler and Lagrange Spaces*, **89b:53064**
- Atanasov, V. A. (with Lilov, L. K.) Stabilizability of steady motions of systems with pseudocyclic coordinates. (Russian) *Prikl. Mat. Mekh.* **52** (1988), no. 5, 713–718. (Summary) **89k:70052** 70Q05 (70E99, 70F20, 70K20, 93D15)
- Atanasova, L. (with Kyurkchiev, Nikolai V.; Dyukanova, Teodora A.) Two methods for solving polynomial equations with higher rate of convergence. (Bulgarian, English summary) *Mathematics and mathematical education (Bulgarian) (Sunny Beach (Sl'neche Bryag), 1987)*, 482–486, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89c:65050** 65H05
- (with Kyurkchiev, Nikolai V.; Andreev, Andrei St.) Recurrently generated iterative functions for the approximate solution of algebraic equations. (Russian) *Serdica* **14** (1988), no. 3, 271–277. (Summary) **89h:65073** 65H05
- Atanassov, Krassimir T. On the generalized arithmetical and geometrical progressions. *Bull. Number Theory Related Topics* **10** (1986), no. 1, 8–18. (J. B. Roberts) **89e:11009** 11B25 (11B33)



- (with Vasilev, Mladen V.) An extremal problem. III. *Bull. Number Theory Related Topics* 10 (1986), no. 1, 19–25. (D. A. Klarner) **89a:11015** 11B65
- Notes on the harmonic series. *Bull. Number Theory Related Topics* 10 (1986), no. 2, 10–20. (From the text) **89m:05010** 05A19
- (with Stoeva, Stefka P.) Intuitionistic fuzzy programs. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics* (Poznań, 1986), 13–16, Wydawn. Politech. Poznań, Poznań, 1987. (Summary) **89d:03051** 03E72 (03B70)
- Generalized index matrices. *C. R. Acad. Bulgare Sci.* 40 (1987), no. 11, 15–18. (J. K. Luedeman) **89c:20095** 20M20 (15A51)
- Two operators on intuitionistic fuzzy sets. *C. R. Acad. Bulgare Sci.* 41 (1988), no. 5, 35–38. (Editors) **89g:03078** 03E72
- Atanassov, R. D.** (with Tsoukrovski, U. V.) Some properties of a class of logarithmically completely monotonic functions. *C. R. Acad. Bulgare Sci.* 41 (1988), no. 2, 21–23. (Yu. V. Trubnikov) **89c:26023** 26A48
- Athanasiadis, Christodoulos** (with Kiriaki, Kiriakie) Low-frequency electromagnetic scattering theory for a dielectric. *Bull. Soc. Math. Grèce (N.S.)* 27 (1986), 47–59. (From the summary) **89b:78012** 78A45
- (with Kiriaki, Kiriakie) Electromagnetic scattering theory for a dielectric with a perfect conductor core in low-frequencies. *Math. Balkanica (N.S.)* 2 (1988), no. 1, 64–77. (I. M. Longman) **89j:78028** 78A45
- Athanasopoulos, Konstantin** (with Strantzalos, Polychronis) On minimal sets in 2-manifolds. *J. Reine Angew. Math.* 388 (1988), 206–211. (W. R. Utz) **89f:54073** 54H20 (58F12, 58F22)
- Athanasoulis, Gerassimos A.** (with Kossioris, George T.) Series expansions of solutions of plane elliptic partial differential equations in domains of arbitrary shape. *Appl. Anal.* 27 (1988), no. 4, 253–269. (E. Kreyszig) **89c:35031** 35C10 (35C15, 35J99)
- Athanasov, Zhivko S.** Boundedness of solutions of certain second order differential equations. *Ann. Differential Equations* 2 (1986), no. 2, 227–240. (A. C. Garibaldi) **89c:34079** 34C11 (34C15)
- Athavale, Ameer** On joint hyponormality of operators. *Proc. Amer. Math. Soc.* 103 (1988), no. 2, 417–423. (Peng Fan) **89c:47033** 47B20
- Athorne, Chris** (with Fordy, Allan) Integrable equations in  $(2 + 1)$  dimensions associated with symmetric and homogeneous spaces. *J. Math. Phys.* 28 (1987), no. 9, 2018–2024. (Summary) **89a:58049** 58F07
- Athreya, K. B.** On the maximum sequence in a critical branching process. *Ann. Probab.* 16 (1988), no. 2, 502–507. (Søren Asmussen) **89f:60098** 60J80 (60G42)
- Hitting times of decreasing sets for regenerative processes. *J. Appl. Probab.* 25 (1988), no. 1, 89–96. (J. G. Basterfield) **89f:60103** 60K15
- (with Anderson, Kevin K.) A strong renewal theorem for generalized renewal functions in the infinite mean case. *Probab. Theory Related Fields* 77 (1988), no. 4, 471–479. (E. Omev) **89d:60157** 60K05
- (with Kilemann, W.; Koch, Giorgio) On sequential construction of solutions of stochastic differential equations with jump terms. *Systems Control Lett.* 10 (1988), no. 2, 141–146. (Philip Protter) **89g:60197** 60H20 (60J25, 60J75)
- Atick, Joseph J.** (with Rabin, Jeffrey M.; Sen, Ashoke) An ambiguity in fermionic string perturbation theory. *Nuclear Phys. B* 299 (1988), no. 2, 279–294. (Enore Guadagnini) **89f:81156** 81E99 (14H15, 32G15, 81E30, 83E30)
- (with Moore, Gregory W.; Sen, Ashoke) Some global issues in string perturbation theory. *Nuclear Phys. B* 308 (1988), no. 1, 1–101. (Olaf Lechtenfeld) **89j:81156** 81E99 (32G15, 81E30)
- Atik, Y.** A boundary value problem for heat and mass transfer in porous media. *Mathematical analysis and its applications* (Kuwait, 1985), 77–100, *KFAS Proc. Ser.*, 3, Pergamon, Oxford-Elmsford, NY, 1988. (Yanis C. Yortsos) **89k:76087** 76S05 (35Q20, 76T05, 80A20)
- Atilgan, Taskin** (with Leonard, Tom) On the application of AIC to bivariate density estimation, nonparametric regression and discrimination. *Multivariate statistical modeling and data analysis* (Harrisonburg, Va., 1986), 1–16, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston, MA*, 1987. (Summary) **89a:62086** 62G05
- Atiyah, Michael** On the work of Simon Donaldson. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 3–6, *Amer. Math. Soc., Providence, RI*, 1987. (Editors) **89d:01055** 01A70 (57–03)
- The logarithm of the Dedekind  $\eta$ -function. *Math. Ann.* 278 (1987), no. 1–4, 335–380. (Friedbert Prüfer) **89h:58177** 58G10 (11F20)
- (with Hitchin, Nigel) ★ The geometry and dynamics of magnetic monopoles. M. B. Porter Lectures. *Princeton University Press, Princeton, NJ*, 1988. viii+134 pp. ISBN 0-691-08480-7 (G. M. Khenkin) **89k:53067** 53C80 (32L10, 53C05, 58E15, 58F07, 58G30, 81E13)
- New invariants of 3- and 4-dimensional manifolds. *The mathematical heritage of Hermann Weyl* (Durham, NC, 1987), 285–299, *Proc. Sympos. Pure Math.*, 48, *Amer. Math. Soc., Providence, RI*, 1988. (Pankaj Topiwala) **89m:57034** 57R55 (58E15, 58F05, 81E13)
- see also *New developments in the theory and application of solitons*, **89a:00034**
- Atkins, Derek R.** (with Iyogun, Paul O.) Periodic versus “can-order” policies for coordinated multi-item inventory systems. *Management Sci.* 34 (1988), no. 6, 791–796. (Not in MR) 90B05
- Atkins, P. W.** Time and dispersal: the second law. *The nature of time*, 80–98, *Blackwell, Oxford*, 1988. (see **89m:83002**) 83F05
- Atkinson, A. B.** Income maintenance and social insurance. *Handbook of public economics, Vol. II*, 779–908, *Handbooks in Economics*, 4, North-Holland, Amsterdam-New York, 1987. (see **89m:9002b**) 90A10
- Atkinson, A. C.** Directions in diagnostic regression analysis. *Rebrap* 1 (1987), no. 1, 23–57. (Summary) **89a:62155** 62J05
- Recent developments in the methods of optimum and related experimental designs. (French summary) *Internat. Statist. Rev.* 56 (1988), no. 2, 99–115. (Summary) **89g:62123** 62K05 (62K10)
- (with Donev, A. N.) An adjustment algorithm for the construction of exact D-optimum experimental designs. *Technometrics* 30 (1988), no. 4, 429–433. (Not in MR) 62K05
- Atkinson, Colin** Steady temperature fields associated with a moving rod in a medium with nonlinear thermal conductivity. *Internat. J. Engrg. Sci.* 26 (1988), no. 10, 1071–1085. (Summary) **89j:80007** 80A20
- (with Bastero, C.) Incipient yielding at a debond crack tip under mixed mode loading. *Internat. J. Fracture* 38 (1988), no. 3, 193–206. (Summary) **89j:73065** 73M05 (73E99)
- Atkinson, D.** (with Hulsebos, A.; Johnson, P. W.) Chiral symmetry breakdown. III. Delbourgo's gauge technique. *J. Math. Phys.* 28 (1987), no. 12, 2994–2998. (C. Cronström) **89d:81118** 81G05 (81F20)
- (with Johnson, P. W.; Stam, K.) Chiral symmetry breaking beyond the Landau gauge. *Phys. Lett. B* 201 (1988), no. 1, 105–107. (Summary) **89a:81058** 81E13 (81E15)
- (with Johnson, P. W.) Chiral-symmetry breaking in QCD. I. The infrared domain. *Phys. Rev. D* (3) 37 (1988), no. 8, 2290–2295. (Summary) **89f:81244a** 81G05 (81D20)
- (with Johnson, P. W.) Chiral-symmetry breaking in QCD. II. Running coupling constant. *Phys. Rev. D* (3) 37 (1988), no. 8, 2296–2299. (Summary) **89f:81244b** 81G05 (81–08, 81D20)
- Atkinson, Frederick V.** (with Zhang, Shu Nian) Asymptotic behavior of solutions of linear delay equations. *Acta Math. Sinica (N.S.)* 3 (1987), no. 4, 289–300. (Jian Hong Wu) **89c:34083** 34K25 (34A30)
- (with Peletier, L. A.) Elliptic equations with nearly critical growth. *J. Differential Equations* 70 (1987), no. 3, 349–365. (E. S. Noussair) **89c:35054** 35J65 (35B05)
- (with Peletier, L. A.; Serrin, J.) Ground states for the prescribed mean curvature equation: the supercritical case. *Nonlinear diffusion equations and their equilibrium states, I* (Berkeley, CA, 1986), 51–74, *Math. Sci. Res. Inst. Publ.*, 12, Springer, New York-Berlin, 1988. (Dennis M. DeTurck) **89j:35051** 35J60 (53A10, 58E15, 58G30)
- (with Peletier, L. A.) Large solutions of elliptic equations involving critical exponents. *Asymptotic Anal.* 1 (1988), no. 2, 139–160. (Summary) **89i:35004** 35B05 (35J60)
- (with Brézis, Haim; Peletier, L. A.) Solutions d'équations elliptiques avec exposant de Sobolev critique qui changent de signe. (English summary) [Nodal solutions of elliptic equations with critical Sobolev exponents] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 16, 711–714. (J.-P. Gossez) **89k:35088** 35J65 (35B40)
- On the order of magnitude of Titchmarsh-Weyl functions. *Differential Integral Equations* 1 (1988), no. 1, 79–96. (J. V. Baxley) **89d:34043** 34B20
- (with Everitt, W. N.; Zettl, A.) Regularization of a Sturm-Liouville problem with an interior singularity using quasiderivatives. *Differential Integral Equations* 1 (1988), no. 2, 213–221. (József Banaś) **89b:34054** 34B25
- (with Peletier, L. A.) On nonexistence of ground states. *Quart. J. Math. Oxford Ser. (2)* 39 (1988), no. 153, 1–20. (Sui Sun Cheng) **89b:34007** 34A15 (34C10, 34C11, 35B05, 35J60)
- Atkinson, Kendall E.** (with Graham, I. G.) An iterative variant of the Nyström method for boundary integral equations on nonsmooth boundaries. *The mathematics of finite elements and applications, VI* (Uxbridge, 1987), 297–303, *Academic Press, London-New York*, 1988. (see **89c:65004**) 65R20
- Atkinson, Michael D.** Selecting subsets of the correct density. Proceedings of the seventeenth Southeastern international conference on combinatorics, graph theory, and computing (Boca Raton, Fla., 1986). *Congr. Numer.* 53 (1986), 15–22. (Summary) **89a:68202** 68U05 (52–04, 68Q25)
- (with Santoro, Nicola) A practical algorithm for Boolean matrix multiplication. *Inform. Process. Lett.* 29 (1988), no. 1, 37–38. (Summary) **89j:68065** 68Q25
- (with Ng, D. T. H.) On the width of an orientation of a tree. *Order* 5 (1988), no. 1, 33–43. (Christoph Meinel) **89i:06001** 06A10 (05C05, 68Q20, 68Q25, 68R10)
- Atsuri, S. N.** (with Im, S.; Watanabe, O.) Observations on phenomenological plasticity theories and constitutive modelling of finite deformation elastoplasticity based upon an internal time concept. *Constitutive models of deformation* (Blacksburg, VA, 1986), 85–108, *SIAM, Philadelphia, PA*, 1987. (Summary) **89k:73025** 73E05 (73B05, 73E25, 73G20)
- Atmasespacher, H.** (with Scheingraber, H.) A fundamental link between system theory and statistical mechanics. *Found. Phys.* 17 (1987), no. 9, 939–963. (T. W. Barrett) **89a:93004** 93A10 (82A99, 94A17)
- Atre, M. V.** (with Balachandran, A. P.; Govindarajan, T. R.) Massless spinning particles in all dimensions and novel magnetic monopoles. *Internat. J. Modern Phys. A* 2 (1987), no. 2, 453–483. (A. O. Barut) **89a:81049** 81D99 (81G10)
- Atsuyama, Kenji** The connection between the symmetric space  $E_6/S_6(16)$  and projective planes. *Kodai Math. J.* 11 (1988), no. 3, 403–424. (Hermann Hahl) **89m:53085** 53C35 (17B20, 51B99, 51H05)
- van Atta, C. W.** see *Van Atta, C. W.*
- Atten, Michel** La nomination de H. Poincaré à la chaire de physique mathématique et calcul des probabilités de la Sorbonne. [The nomination of H. Poincaré to the chair of mathematical physics and probability at the Sorbonne] *Cahiers du séminaire d'histoire des mathématiques*, 9, 221–230, *Univ. Paris VI, Paris*, 1988. (P. Bockstaele) **89a:01051** 01A70 (01A73)
- Attia, F. A.** The control of a finite dam with penalty cost function: Wiener process input. *Stochastic Process. Appl.* 25 (1987), no. 2, 289–299. (S. Kalpakam) **89c:60197** 60K30 (60J65)
- Attia, M. T.** (with Haggag, M. H.; Machali, H. M.; El-Labany, S.) Chandrasekhar's  $X$ - and  $Y$ -functions. *Astrophys. and Space Sci.* 149 (1988), no. 1, 13–18. (Summary) **89i:85002** 85A25 (33A70)
- Attiya, Hagit** (with Mansour, Y.) Language complexity on the synchronous anonymous ring. *Theoret. Comput. Sci.* 53 (1987), no. 2–3, 169–185. (Sam M. Kim) **89b:68031** 68Q25 (68M10, 68Q45)
- Attouch, H.** (with Buttazzo, Giuseppe) Homogenization of reinforced periodic one-dimensional structures. *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* 14 (1987), no. 3, 465–484 (1988). (Dietrich Göhde) **89i:35012** 35B25 (73K20, 78A30)
- (with Picard, Colette) Comportement limite de problèmes de transmission unilatéraux à travers des grilles de forme quelconque. (English summary) [Limit behavior of unilateral transmission problems through meshes of any form] *Rend. Sem. Mat. Univ. Politec. Torino* 45 (1987), no. 1, 71–85 (1988). (Summary) **89a:49019** 49A50 (35B40, 49A29)
- (with Bouchitté, Guy; El Mabrouk, Mongi) Formulations variationnelles pour des équations elliptiques semi-linéaires avec second membre mesure. (English summary) [Variational formulations of semilinear elliptic equations involving measures] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 4, 161–164. (Summary) **89c:35055** 35J65 (35J85, 49A29)
- (with Wets, Roger J.-B.) Another isometry for the Legendre-Fenchel transform. *J. Math. Anal. Appl.* 131 (1988), no. 2, 404–411. (Asen L. Dontchev) **89a:44002** 44A15 (49A50, 49A55, 49B27)



- Aubakirov, T. U.** The properties of monotonicity and stability of population processes and their application for an error estimate for the Wilkinson method. (Russian) *Vestnik Akad. Nauk Kazakh. SSR* 1987, no. 10, 77-80. (Antonin Lešanovský) **89g:60227** 60J27 (60K25)
- Auberson, G.** On the reconstruction of a unitary matrix from its moduli. Existence of continuous ambiguities. *Phys. Lett. B* 216 (1989), no. 1-2, 167-171. (George P. Barker) **89m:15014** 15A57 (81G25)
- Aubert, Anne-Marie** Correspondance de Howe et sous-groupes parahoriques. (English summary) [Howe's correspondence and parahoric subgroups] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 9, 431-434. (Editors) **89k:22032** 22E50
- Aubert, G.** On a counterexample of a rank 1 convex function which is not polyconvex in the case  $N = 2$ . *Proc. Roy. Soc. Edinburgh Sect. A* 106 (1987), no. 3-4, 237-240. (Summary) **89f:26016** 26B25
- Aubert, Karl Egil** see Number theory, trace formulas and discrete groups. **89m:11003**
- d'Aubigny, G.** A toolkit for multidimensional scaling of dissimilarity data. *Data analysis and informatics, V (Versailles, 1987)*, 3-16, North-Holland, Amsterdam-New York, 1988. (Summary) **89j:62076** 62H25
- Aubin, Jean-Pierre** (with Ekeland, Ivar) ★ Прикладный нелинейный анализ. (Russian) [Applied nonlinear analysis] Translated from the English by B. S. Darkhovskii and G. G. Magaril-Ilyayev. With a preface by V. M. Tikhomirov. "Mir", Moscow, 1988. 512 pp. ISBN 5-03-000917-5 (Editors) **89g:58001** 58-01 (49-02)
- ★ Нелинейный анализ и его экономические приложения. (Russian) [Nonlinear analysis and its applications to economics] Translated from the French by L. G. Gurin. Translation edited and with a foreword by N. S. Kukushkin. "Mir", Moscow, 1988. 264 pp. ISBN 5-03-000959-0 (Editors) **89k:90001** 90-01 (49A29, 49A50, 49E10, 90Axx)
- Viability tubes. *Modelling and adaptive control (Sopron, 1986)*, 27-47, *Lecture Notes in Control and Inform. Sci.*, 105, Springer, Berlin-New York, 1988. (J. Jarník) **89g:34016** 34A60
- (with Frankowska, H.) Observabilité des systèmes sous incertitude. (English summary) [Observability of systems under uncertainty] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 9, 413-416. (G. Anichini) **89e:93022** 93B07 (34A60, 93C40)
- Equations qualitatives aux confluentes. (English summary) [Qualitative equations: the confluence case] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 12, 679-682. (Summary) **89j:68127** 68T01
- (with Sigmund, K.) Permanence and viability. Special issue on emerging paradigms in applied mathematical modelling. *J. Comput. Appl. Math.* 22 (1988), no. 2-3, 203-209. (L. E. Bobisud) **89h:92058** 92A17 (92A15, 93A10)
- Aubin, Thierry** Métrique d'Einstein-Kähler. [Kähler-Einstein metrics] *Géométrie différentielle (Paris, 1986)*, 1-10, *Travaux en Cours*, 33, Hermann, Paris, 1988. (Akito Futaki) **89e:53073** 53C25 (32J15, 32L99, 53C55, 58G30)
- saint-Aubin, Yvan** see Saint-Aubin, Yvan
- Auby, Denis** (with Guennouni, Tajeddine) Réponse homogénéisée en temps de structures sous chargements cycliques. (English summary) [Time-homogenized response of structures under cyclic loadings] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* 303 (1986), no. 20, 1765-1768. (Summary) **89j:73092** 73M10 (35C20, 73F30)
- (with Crépel, J. M.) Hybrid formulation for the Green function in stratified media: application to wave scattering against lateral heterogeneities. *Advanced boundary element methods (San Antonio, Tex., 1987)*, 9-17, Springer, Berlin-New York, 1988. (see **89b:65009**) 73D25
- Aubry, Marc** (with Lemaire, Jean-Michel) Homotopies d'algèbres de Lie et de leurs algèbres enveloppantes. [Homotopies of Lie algebras and their enveloping algebras] *Algebraic topology—rational homotopy (Louvain-la-Neuve, 1986)*, 26-30, *Lecture Notes in Math.*, 1318, Springer, Berlin-New York, 1988. (Daniel Tanré) **89k:55018** 55P62 (17B35, 18D15, 55U40)
- Aubry, Serge** (with Axel, Françoise) Polarisation and transition by breaking of analyticity in a one-dimensional model for incommensurate structures in an electric field. *J. Phys. A* 20 (1987), no. 14, 4873-4889. (Summary) **89a:82024** 82A57 (82A25, 82A68)
- Auchmuty, Giles** Variational principles for operator equations and initial value problems. *Nonlinear Anal.* 12 (1988), no. 5, 531-564. (M. Biroli) **89d:47130** 47H15 (34A10, 35Qxx, 49A29, 49A50)
- Variational principles for eigenvalues of nonsymmetric matrices. *SIAM J. Matrix Anal. Appl.* 10 (1989), no. 1, 105-117. (Jan Bochenek) **89m:49081** 49G05 (15A18, 65F15)
- Audich, Sunil** (with Goyal, S. P.) Certain inequalities for the Kampé de Fériet function. *Indian J. Pure Appl. Math.* 18 (1987), no. 11, 1006-1010. (S. L. Kalla) **89b:33003** 33A30
- Certain transformation formulas for the  $H$ -function of several variables. *Pure Appl. Math. Sci.* 26 (1987), no. 1-2, 65-74. (R. K. Raina) **89d:33010** 33A35
- Audin, Michèle** ★ Cobordismes d'immersions lagrangiennes et legendriennes. (French) [Cobordisms of Lagrangian and Legendre immersions] *Travaux en Cours [Works in Progress]*, 20, Hermann, Paris, 1987. xvi+203 pp. ISBN 2-7056-6056-9 (Alan Weinstein) **89c:58033** 58F05 (57R90, 58G15)
- Classes caractéristiques lagrangiennes. [Lagrangian characteristic classes] *Algebraic topology, Barcelona, 1986*, 1-16, *Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (I. Vaisman) **89a:58036** 58F05 (57R20)
- Cobordisms of Lagrangian immersions into the cotangent bundle of a manifold. (Russian) Translated from the French by V. A. Vasil'ev. *Funktsional. Anal. i Prilozhen.* 21 (1987), no. 3, 61-64, 96. (Alan Weinstein) **89f:58050** 58F05 (57R90)
- Fibrés normaux d'immersions en dimension double, points doubles d'immersions lagrangiennes et plongements totalement réels. [Normal bundles of immersions in double the dimension, double points of Lagrangian immersions and totally real embeddings] *Comment. Math. Helv.* 63 (1988), no. 4, 593-623. (Ya. M. Eliashberg) **89m:57032** 57R42 (53C57, 57R40, 58F05)
- Audit, Ph.** Transfer matrix approach to the three-dimensional Ising model. *J. Phys. A* 20 (1987), no. 8, 2187-2197. (Summary) **89f:82075** 82A68
- Audretsch, Jürgen** see Schrödinger, Erwin. **89j:01079**
- Aud, M. S.** The structure of the permutation modules for transitive  $p$ -groups of degree  $p^2$ . *J. Algebra* 117 (1988), no. 1, 227-239. (Michael Klemm) **89g:20019** 20C20 (20B05)
- Auerbach, Alan J.** The theory of excess burden and optimal taxation. *Handbook of public economics, Vol. 1*, 61-127, *Handbooks in Econ.*, 4, North-Holland, Amsterdam-New York, 1985. (see **89m:90002a**) 90A10
- see also Handbook: Public economics. **89m:90002a** and **89m:90002b**
- Auerbach, Assa** (with Arov, Daniel P.; Haldane, F. D. M.) Extended Heisenberg models of antiferromagnetism: analogies to the fractional quantum Hall effect. *Phys. Rev. Lett.* 60 (1988), no. 6, 531-534. (Summary) **89c:82066** 82A68
- Auger, Ivan E.** (with Lawrence, Charles E.) Algorithms for the optimal identification of segment neighborhoods. *Bull. Math. Biol.* 51 (1989), no. 1, 39-54. (Summary) **89m:92011** 92A09 (92A12)
- Auger, Pierre M.** Cellular aging rates and biochemical reaction rates. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 164-169. (see **89d:00007**) 92A09
- Augustin, J.** (with Baláz, S.; Sturdik, E.) Subcellular distribution of compounds in biosystems. *Bull. Math. Biol.* 50 (1988), no. 4, 367-378. (Summary) **89f:92011** 92A08 (92A09)
- d'Auouard, Marcel** The stability of the resonance set for a problem with jumping nonlinearity. *Proc. Roy. Soc. Edinburgh Sect. A* 107 (1987), no. 3-4, 201-212. (D. E. Edmunds) **89h:35110** 35J60
- Aulaskari, Rauno** Criteria for automorphic functions to belong to  $\mathcal{H}_0(\Gamma)$  and  $N_0(\Gamma)$ . *Complex analysis and applications '85 (Varna, 1985)*, 61-69, *Bulgar. Acad. Sci., Sofia*, 1986. (Peter J. Nicholls) **89a:30036** 30F35 (11F03)
- (with Lappan, Peter) The uniform continuity of the modulus of rotation automorphic functions. *Ann. Acad. Sci. Fenn. Ser. A I Math.* 12 (1987), no. 2, 279-285. (Ch. Pommerenke) **89f:30069** 30F35 (30D45)
- (with Lappan, Peter) A criterion for a rotation automorphic function to be normal. *Bull. Inst. Math. Acad. Sinica* 15 (1987), no. 1, 73-79. (Carlos A. Berenstein) **89g:30083** 30F35
- (with Lappan, Peter) An integral criterion for normal functions. *Proc. Amer. Math. Soc.* 103 (1988), no. 2, 438-440. (George L. Csordas) **89h:30050** 30D45
- Aulin, Arvid** Cybernetic causality. III. The qualitative theory of self-steering and social development. *Math. Social Sci.* 14 (1987), no. 2, 101-140. (Summary) **89a:92066** 92A20
- Aull, C. E.** Some embeddings related to  $C^*$ -embeddings. *J. Austral. Math. Soc. Ser. A* 44 (1988), no. 1, 88-104. (Mohan L. Tikoo) **89e:54030** 54C25 (54C45, 54D15)
- (with Sawyer, J. O.) The pseudocompact extension  $\alpha$ . *Proc. Amer. Math. Soc.* 102 (1988), no. 4, 1057-1064. (Summary) **89k:54039** 54C45 (54D30)
- Some consequences of some results of Knaster and Kuratowski. *Questions Answers Gen. Topology* 6 (1988), no. 1, 21-27. (Ilija Kovačević) **89e:54035** 54D05
- Aumann, Günter** Inequalities for curves of constant breadth. *J. Geom.* 31 (1988), no. 1-2, 6-21. (G. T. Sallee) **89d:52002** 52A10
- Aumann, Robert J.** Value, symmetry, and equal treatment: a comment on A. J. Scafuri and N. C. Yannelis: "Nonsymmetric cardinal value allocations" [Econometrica 52 (1984), no. 6, 1365-1368; MR 85m:90003]. *Econometrica* 55 (1987), no. 6, 1461-1464. (From the text) **89h:90027** 90A10 (90D12)
- see also Harsanyi, John C. **89j:90285**
- Aupetit, Bernard** (with Baribeau, Line) Sous-harmonicité de l'angle spectral. (English summary) [Subharmonicity of the spectral angle] *C. R. Math. Rep. Acad. Sci. Canada* 10 (1988), no. 1, 51-56. (Robin Harte) **89e:47005** 47A10 (46H30, 47A60)
- (with Zemánek, Jaroslav) Uniformly regular families of commuting operators. *J. Funct. Anal.* 78 (1988), no. 1, 24-30. (Robin Harte) **89e:47015** 47A56 (47A53)
- An improvement of Kaplansky's lemma on locally algebraic operators. *Studia Math.* 88 (1988), no. 3, 275-278. (Robin Harte) **89d:47002** 47A05
- Aurela, A. M.** Electric fields in stationary ion flows in symmetric geometries. *Phys. Rev. A* (3) 39 (1989), no. 3, 1561-1562. (Summary) **89k:78012** 78A35
- Aurell, Erik** On the metric properties of the Feigenbaum attractor. *J. Statist. Phys.* 47 (1987), no. 3-4, 439-458. (Arkady S. Pikovsky) **89h:58124** 58F12 (58F08)
- Errata: "On the metric properties of the Feigenbaum attractor" [J. Statist. Phys. 47 (1987), no. 3-4, 439-458; MR 89b:58124]. *J. Statist. Phys.* 49 (1987), no. 5-6, 1261. (Editors) **89h:58125** 58F12 (58F08)
- Aurenhammer, F.** On-line sorting of twisted sequences in linear time. *BIT* 28 (1988), no. 2, 194-204. (Summary) **89b:68020** 68P10 (68U05)
- (with Imai, Hiroshi) Geometric relations among Voronoi diagrams. *Geom. Dedicata* 27 (1988), no. 1, 65-75. (Herbert Edelsbrunner) **89h:51026** 51K99 (11H06, 51M20, 52A25)
- Linear combinations from power domains. *Geom. Dedicata* 28 (1988), no. 1, 45-52. (W. J. Firey) **89k:52011** 52A37
- Improved algorithms for discs and balls using power diagrams. *J. Algorithms* 9 (1988), no. 2, 151-161. (Jean-Claude Spehner) **89b:68142** 68U05 (68Q20, 68Q25)
- Aurich, R.** (with Steiner, F.) On the periodic orbits of a strongly chaotic system. *Phys. D* 32 (1988), no. 3, 451-460. (Summary) **89h:58171** 58F13 (81C99)
- (with Sieber, M.; Steiner, F.) Quantum chaos of the Hadamard-Gutzwiller model. *Phys. Rev. Lett.* 61 (1988), no. 5, 483-487. (Summary) **89h:81059** 81C99 (58F13)
- Ausiello, Giorgio** Directed hypergraphs: data structures and applications (extended abstract). *CAAP '88 (Nancy, 1988)*, 295-303, *Lecture Notes in Comput. Sci.*, 299, Springer, Berlin-New York, 1988. (see **89c:68003**) 68R10 (05C20, 05C65, 68P05)
- see also Conference: Database Theory. **89f:68024**
- Auslander, Joseph** ★ Minimal flows and their extensions. North-Holland Mathematics Studies, 153. *Notas de Matemática [Mathematical Notes]*, 122. North-Holland Publishing Co., Amsterdam-New York, 1988. xii+265 pp. ISBN 0-444-70453-1 (M. Rees) **89m:54050** 54H20
- (with Markley, Nelson) Minimal flows of finite almost periodic rank. *Ergodic Theory Dynamical Systems* 8 (1988), no. 2, 155-172. (Robert Ellis) **89j:54040** 54H20
- Auslander, L.** (with Johnson, Rodney W.; Vulus, M.) Evaluating finite Fourier transforms that respect group symmetries. *Acta Cryst. Sect. A* 44 (1988), no. 4, 467-478. (Summary) **89h:65228** 65T05 (82A60)
- Auslander, Maurice** The what, where, and why of almost split sequences. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 338-345, *Amer. Math. Soc., Providence, RI*, 1987. (Dieter Hapelt) **89f:16039** 16A64 (13H10, 14B05)
- (with Reiten, Idun) Almost split sequences for  $\mathbb{Z}$ -graded rings. *Singularities, representation of algebras, and vector bundles (Lambrecht, 1985)*, 232-243, *Lecture Notes in Math.*, 1273, Springer, Berlin-New York, 1987. (Alfred G. Wiedemann) **89h:13031** 13E15 (13C13, 14B05, 16A03)
- (with Reiten, Idun) Almost split sequences in dimension two. *Adv. in Math.* 66 (1987), no. 1, 88-118. (Hagen Meltzer) **89a:16039** 16A64

- (with Green, E. L.) Trace quotient modules. *Illinois J. Math.* **32** (1988), no. 3, 534–556. (Hector A. Merklen) **89g:16038** 16A64
- (with Reiten, Idun) Almost split sequences for abelian group graded rings. *J. Algebra* **114** (1988), no. 1, 29–39. (Wolfgang Grötz) **89d:16049** 16A90
- (with Reiten, Idun) Grothendieck groups of algebras with nilpotent annihilators. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1022–1024. (L. N. Vaserstein) **89e:13015** 13D15 (19A49)
- Auslander, A. A.** (with Crouzeix, J.-P.; Fedit, P.) Penalty-proximal methods in convex programming. *J. Optim. Theory Appl.* **55** (1987), no. 1, 1–21. (S. Zlobec) **89d:90161** 90C25 (49D30, 65K05)
- (with Crouzeix, J.-P.) Global regularity theorems. *Math. Oper. Res.* **13** (1988), no. 2, 243–253. (Jacques A. Ferland) **89g:90167** 90C25
- Autsbert, Jean-Michel** (with Boasson, Luc; Sénizergues, Gérard) Groups and NTS languages. *J. Comput. System Sci.* **35** (1987), no. 2, 243–267. (Klaus Madlener) **89a:68114** 68Q45 (20F10, 68Q50)
- Authelin, Jean-René** (with Villiermaux, Jacques; Schweich, Daniel) Le "peigne du diable", un modèle d'interface fractale bidimensionnelle. (English summary) [The "devil's comb", a model for a two-dimensional fractal interface] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers Sci. Terre* **304** (1987), no. 8, 307–310. (Summary) **89j:82086** 82A70 (58F13, 92A40)
- Authier, Marc** see **Dautray, Robert**, **89m:00001** and **89m:00002**
- Au-Yang, H.** (with Perk, Jacques H. H.; McCoy, Barry M.; Tang, Shuang; Yan, Mu Lin) Commuting transfer matrices in the chiral Potts models: solutions of star-triangle equations with genus  $> 1$ . *Phys. Lett. A* **123** (1987), no. 5, 219–223. (Paul A. Pearce) **89g:82061** 82A68 (58F40, 82A69)
- (with Baxter, Rodney James; Perk, Jacques H. H.) New solutions of the star-triangle relations for the chiral Potts model. *Phys. Lett. A* **128** (1988), no. 3–4, 138–142. (Paul A. Pearce) **89g:82062** 82A68 (82A69)
- Auzinger, D.** (with Wacker, H.) First steps to an on-line control for pusher type reheating furnaces. *Advances in mathematical optimization*, 9–19, *Math. Res.* **45**, Akademie-Verlag, Berlin, 1988. (see **89b:90117**) 93C75
- Auzinger, Winfried** A quantitative discrete  $H^2$ -regularity estimate for the Shortley-Weller scheme in convex domains. *Numer. Math.* **52** (1988), no. 5, 523–537. (Jiří Hřebíček) **89g:65152** 65N99
- Avadhanulu, M. B.** (with Reddy, D. R. K.; Venkateswarlu, R.) A static conformally-flat vacuum model in self-creation cosmology. *Astrophys. and Space Sci.* **141** (1988), no. 1, 181–184. (Carl Brans) **89e:83061** 83D05
- Avakian, R. M.** see **Avakyan, R. M.**
- Avakov, E. R.** The maximum principle for abnormal optimal control problems. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 6, 1289–1292; translated in *Soviet Math. Dokl.* **37** (1988), no. 1, 231–234. (Dō Van Luū) **89i:49012** 49B10
- Avakyan, R. M.** (with Grigorian, L. Sh.) The gravitation theory in bimetric formulation. *Astrophys. and Space Sci.* **146** (1988), no. 1, 183–193. (Summary) **89e:83052** 83D05
- Avallshvili, N. M.** (with Kharatishvili, G. L.; Tadmudze, T. A.) Differentiable mappings in optimal problems with delays. (Russian) *Current problems in mathematical physics, Vol. I* (Russian) (Tbilisi, 1987), 394–398, 496, *Tbilis. Gos. Univ., Tbilisi*, 1987. (see **89j:00030**) 34K35 (49A51)
- The maximum principle for an optimal control problem with variable structure and discontinuous and initial conditions in the presence of variable delays. (Russian. English summary) *Trudy Inst. Sistem Upravleniya Akad. Nauk Gruz. SSR* **25** (1987), no. 1, 25–30. (Summary) **89d:34122** 34K35 (49B10)
- (with Gabisoniya, V. E.) A problem of the control of a complex of operations. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **129** (1988), no. 1, 49–52. (Not in MR) 93A15 (49B10)
- Avan, J.** (with de Vega, H. J.) Conformally covariant approach to the integrability of SDYM: linear systems,  $\beta$ -planes, infinitesimal Bäcklund transformations and infinite-dimensional algebras. *Internat. J. Modern Phys. A* **3** (1988), no. 5, 1263–1299. (R. S. Ward) **89b:58219** 58G40 (53C80, 58F07, 81E13)
- (with Nijhoff, Frank W.; Maillet, Jean-Michel) Spinorial linear system for self-dual Yang-Mills equations. *Phys. Lett. B* **211** (1988), no. 3, 329–334. (R. S. Ward) **89g:81043** 81E13 (58F07, 58G40)
- Avanissian, Vargain** Fonctions analytiques liées aux polynômes orthogonaux classiques. (English summary) [Analytic functionals associated to classical orthogonal polynomials] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 5, 177–180. (Summary) **89i:46044** 46F10 (32A15, 33A65)
- Avca, Yusuf** Univalent meromorphic functions with a fixed pole and a fixed residue. (Turkish summary) *İstanbul Tek. Üniv. Bil. Dö.* **40** (1987), no. 1, 25–30. (Kent Pearce) **89c:30021** 30C45 (30C50)
- Avdeias, G.** (with de Pillis, J.; Hadjidimos, A.; Neumann, Michael) A guide to the acceleration of iterative methods whose iteration matrix is nonnegative and convergent. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 3, 329–342. (L. W. Ehrlich) **89g:65028** 65F10
- Avdišahić, Muharem** On the strong convergence of trigonometric series of a special type. (Serbo-Croatian summary) *Rad. Mat.* **3** (1987), no. 2, 317–324. (Walter R. Bloom) **89g:42017** 42A32 (42A20, 42A24)
- Note on approximation in locally compact abelian groups. *Funct. Approx. Comment. Math.* **16** (1988), 191–195. (W. J. Kotzé) **89i:41026** 41A30
- Avdonin, N. A.** see **Avdonin, N.**
- Avdonin, S. A.** (with Gorshkova, O. Ya.) Controllability of multidimensional parabolic systems with delay. (Russian) *Mathematical physics* (Russian), 95–99, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Jerzy Sztajnic) **89e:93014** 93B05 (35R10, 93C20)
- (with Gorshkova, O. Ya.) On the controllability of parabolic systems with delay in the highest derivative. (Russian) *Partial differential equations* (Russian), 113–118, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Summary) **89i:93007** 93B05 (34K35, 49E15, 93C20)
- Avdonin, N.** see **Applied problems in mathematical physics**, **89e:00003**
- Avdzhanyan, A. S.** Uniform limit boundedness of the solutions of a third-order nonlinear differential equation. (Russian) *Qualitative and approximate methods for investigating operator equations* (Russian), 128–131, 145, *Yaroslav. Gos. Univ., Yaroslavl*, 1986. (Vincent Soltés) **89b:34080** 34C11 (34A34)
- Avellaneda, Marco** (with Lin, Fang Hua) Fonctions quasi affines et minimisation de  $f|\nabla u|^p$ . (English summary) [Null-Lagrangians and the minimization of  $f|\nabla u|^p$ ] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 8, 355–358. (Helmut Kaul) **89e:58036** 58E20 (49A21)
- Avellis, Giovanna** (with Borzacchini, L.) Reconstruction theory for  $g$ -graphs. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), A, 173–177. (William L. Kocay) **89f:05125** 05C60 (05C99)
- Avetisgaard, Carol** Women in mathematics: the silent minority. *Math. Intelligencer* **10** (1988), no. 4, 32–34. (K. E. Hirst) **89j:01081** 01A80
- Aven, P. O.** (with Muchnik, I. B.; Oslov, A. A.) ★ Функциональное шкалирование. (Russian) [Functional scaling] "Nauka", Moscow, 1988. 182 pp. ISBN 5-02-006597-8 (Summary) **89m:68025** 68P99 (62H25, 68-02)
- Avendano, R. E.** (with Krupnik, N. Ya.) A local principle for calculating quotient norms of singular integral operators. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 2, 57–58; translated in *Functional Anal. Appl.* **22** (1988), no. 2, 130–131. (L. Jentsch) **89h:47073** 47G05 (45E05, 47A30)
- Averina, T. A.** (with Artem'ev, S. S.) ★ Некоторые вопросы построения и использования численных методов для решения систем стохастических дифференциальных уравнений. (Russian) [Some problems of the construction and use of numerical methods for solving systems of stochastic differential equations] Препринт [Preprint], 728. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1987. 33 pp. (Summary) **89e:65141** 65U05 (60H10)
- (with Artem'ev, S. S.) Numerical solution of systems of stochastic differential equations. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* **3** (1988), no. 4, 267–285. (M. Sambandham) **89k:65166** 65U05 (60H10, 65L99)
- Averna, D.** (with Fiacca, A.) Some results on theorems of G. Scorza Dragoni and L. Tibaldo in abstract spaces. (Italian. English summary) *Riv. Mat. Univ. Parma* (4) **12** (1986), 217–225 (1987). (Cristina Maria Di Bari) **89a:26017** 26B05 (49A50)
- Averochkin, V. A.** (with Veranov, P. Ye.; Tokolov, V. S.) A recursive filter which maximizes the output signal-to-noise ratio. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 8, 115–118; translated from *Radioelekhn. i Elektron.* **32** (1987), no. 4, 766–769 (Russian). (Summary) **89c:94005** 94A05
- Avetisyan, A. E.** Integral transform of growing functions with kernel  $E_p(z; \mu)$  and a theorem of Wiener-Paley type. (Russian. Armenian summary) *Eravan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1986**, no. 3(163), 11–19. (N. K. Karapetyants) **89e:30069** 30E20 (30D15)
- Avetisyan, Ruben Avetisovich** (with Oganesyan, S. M.) The generalized D-property of trigonometric series. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* **84** (1987), no. 2, 56–60. (T. I. Akhobadze) **89d:42015** 42A28
- Avez, André** Opérateur de Koopman opérant sur les espaces de Sobolev. (English summary) [A Koopman operator acting on Sobolev spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 5, 239–241. (M. P. Heble) **89f:58081** 58F11 (47A35)
- Avgerinos, Evgenios P.** (with Papageorgiou, Nikolaos S.) Random nonlinear evolution inclusions in reflexive Banach spaces. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 293–299. (Shi Sheng Zhang) **89i:60132** 60H25 (35K99, 35R60, 47H20)
- Avignon, M.** (with Spronken, G.) The one-dimensional dimerised spin- $\frac{1}{2}$  XY chain with arbitrary boundary conditions and related unitary and nonunitary models. *J. Phys. A* **22** (1989), no. 1, 135–138. (Summary) **89k:82106** 82A68 (17B65, 81E40, 82A25)
- Avi-Itzhak, Benjamin** (with Halfin, Shlomo) Response times in  $M/M/1$  time-sharing schemes with limited number of service positions. *J. Appl. Probab.* **25** (1988), no. 3, 579–595. (Summary) **89e:90121** 90B35 (60K25, 90B22)
- Aviles, Patricia** (with Giga, Yoshikazu) A mathematical problem related to the physical theory of liquid crystal configurations. *Miniconference on geometry and partial differential equations*, 2 (Canberra, 1986), 1–16, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 12, *Austral. Nat. Univ., Canberra*, 1987. (J. E. Brothers) **89c:49005** 49A21 (49B21, 82A57)
- (with McOwen, Robert C.) Complete conformal metrics with negative scalar curvature in compact Riemannian manifolds. *Duke Math. J.* **56** (1988), no. 2, 395–398. (Dennis M. DeTurck) **89b:58224** 58G30 (35J60, 53A30, 53C21)
- (with McOwen, Robert C.) Conformal deformation to constant negative scalar curvature on noncompact Riemannian manifolds. *J. Differential Geom.* **27** (1988), no. 2, 225–239. (Dennis M. DeTurck) **89b:58225** 58G30 (35J60, 53A30, 53C21)
- Avram, I.** On the inflation, deflation and self-similarity of binary sequences. Application: a one-dimensional diatomic quasicrystal. *J. Phys. A* **20** (1987), no. 5, 1025–1043. (M. Mendès France) **89a:82038** 82A68 (11B75, 11J72)
- Corrigendum: "On the inflation, deflation and self-similarity of binary sequences. Application: a one-dimensional diatomic quasicrystal" [*J. Phys. A* **20** (1987), no. 5, 1025–1043; MR **89a:82038**]. *J. Phys. A* **20** (1987), no. 16, 5743. (Editors) **89g:82053** 82A60
- Aviz, David** (with Doskas, Mike) Algorithms for high-dimensional stabbing problems. *Theoretical foundations of computer graphics and CAD* (Il Ciocco, 1987), 199–210, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 40, Springer, Berlin-New York, 1988. (see **89a:68011**) 68U05
- (with Wenger, Raphael) Polyhedral line transversals in space. Third ACM Symposium on Computational Geometry (Waterloo, Ont., 1987). *Discrete Comput. Geom.* **3** (1988), no. 3, 257–265. (Summary) **89i:68120** 68U05 (52-04, 68Q25)
- (with Lai, C. W.) The probabilistic analysis of a heuristic for the assignment problem. *SIAM J. Comput.* **17** (1988), no. 4, 732–741. (Karl Weber) **89f:68066** 68Q25 (90C10)
- Avshal, Y.** Compact nucleus in Livsic open-system theory: factorization of the S-matrix. *Phys. Rev. A* (3) **38** (1988), no. 2, 584–590. (Gordon Feldman) **89j:81268** 81G35 (47A45)
- Arkhadiev, F. G.** (with Aksent'ev, L. A.; Elizarov, A. M.) Sufficient conditions for the finite-valence of analytic functions, and their applications. (Russian) *Mathematical analysis*, Vol. 25 (Russian), 3–121, 20, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform.*, Moscow, 1987. (Z. Lewandowski) **89c:30022** 30C45 (30C55, 30E25)
- Avnaim, Francis** (with Boissonnat, Jean Daniel) Polygon placement under translation and rotation. *STACS 88 (Bordeaux, 1988)*, 322–333, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (see **89b:68011**) 68U05
- Avram, Florin** Weak convergence of the variations, iterated integrals and Doléans-Dade exponentials of sequences of semimartingales. *Ann. Probab.* **16** (1988), no. 1, 246–250. (Yu. S. Mishura) **89e:60097** 60G48 (60F17, 60H05)
- Avram, N. M.** (with Drăgănescu, Gh. E.) Coherent states for an harmonic damped oscillator associated to the  $O(2, 1)$  group. *An. Univ. Timișoara Științ. Fiz.* **24** (1986), 45–51. (A. O. Barut) **89a:81047** 81D30 (22E60, 22E70)



- Avramenko, L. G.** (with Bordyug, B. A.; Larin, V. B.) On weakly nonlinear measurable systems. (Russian) *Application of asymptotic methods in the theory of nonlinear differential equations* (Russian), 5-10, i, *Akad. Nauk Ukrain. SSR, Kiev*, 1987. (Summary) **89c:93023** 93B07 (70E99, 93C10)
- (with Bordyug, B. A.; Larin, V. B.) Problems on the determination of the orientation of a rigid body. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 59, 48 pp. (Summary) **89c:70027** 70Q05 (70-04, 70E15)
- Avramescu, A.** The Einstein-Bohr debate. I. The background. *Microphysical reality and quantum formalism*, Vol. 1, 2 (Urbino, 1985), 299-308, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89m:01058** 01A60 (81-03)
- Avramov, Luchezar L.** (with Kustin, Andrew R.; Miller, Matthew) Poincaré series of modules over local rings of small embedding codimension or small linking number. *J. Algebra* **118** (1988), no. 1, 162-204. (Jürgen Herzog) **89k:13013** 13C99 (13D99, 13H15)
- see also Algebra—some current trends, **89h:00002**
- Avratoglou, Charalampos P.** (with Voulgaris, Nicholas C.) A class E tuned amplifier configuration with finite DC-feed inductance and no capacitance in parallel with switch. *IEEE Trans. Circuits and Systems* **35** (1988), no. 4, 416-422. (Not in MR) **94C05**
- Avriel, Mordecai** (with Diewert, Walter E.; Schaible, Siegfried; Zang, Israel) ★ Generalized convexity. *Mathematical Concepts and Methods in Science and Engineering*, 36. *Plenum Press, New York-London*, 1988. x+332 pp. ISBN 0-306-42656-0 (Jean-Pierre Crouzeix) **89c:90155** 90C25 (26B25, 90A10, 90A11, 90C32)
- Avrin, Joel D.** Energy decay of underdamped nonlinear wave equations. *Houston J. Math.* **13** (1987), no. 4, 455-464. (Lumin Jiang) **89b:35091** 35L70 (35B40, 35R20)
- Convergence of the strongly damped nonlinear Klein-Gordon equation in  $\mathbb{R}^n$  with radial symmetry. *Proc. Roy. Soc. Edinburgh Sect. A* **107** (1987), no. 1-2, 169-174. (Sadakazu Aizawa) **89g:35069** 35L70 (35Q20)
- Global existence for a model of electrophoretic separation. *SIAM J. Math. Anal.* **19** (1988), no. 3, 520-527. (Howard A. Levine) **89g:35050** 35K55 (78A35)
- Arnon, Arnon** A constructive analysis of RM. *J. Symbolic Logic* **52** (1987), no. 4, 939-951. (Stephen Read) **89d:03012** 03B45
- Avron, J. E.** (with Zia, R. K. P.; Taylor, Jean E.) The sumtup construction: crystals in a corner. *J. Statist. Phys.* **50** (1988), no. 3-4, 727-736. (E. E. Tareeva) **89g:82058** 82A60
- (with Sadun, L.; Segert, J.; Simon, Barry) Topological invariants in Fermi systems with time-reversal invariance. *Phys. Rev. Lett.* **61** (1988), no. 12, 1329-1332. (Summary) **89f:81063** 81C99 (57R20, 81E13)
- Avsarkisyan, G. S.** Quasipolynomial forms of the functions of  $k$ -valued logic. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 3, 104-105, 134. (Wiesław Dziobiak) **89j:03017** 03B50 (94C99)
- Recurrent polynomial forms of partial Boolean functions. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 1, 115-119; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 4, 131-135, 222 (Russian). (Not in MR) **94C10** (03G05, 06E30)
- Avudainayagam, A.** (with Jothiram, B.) A circle theorem for plane Stokes flows. *Quart. J. Mech. Appl. Math.* **41** (1988), no. 3, 383-393. (A. M. J. Davis) **89j:76038** 76D07
- Avula, Xavier J. R.** see *Mathematical modelling in science and technology*, **89d:00007**
- Awad, Adnan M.** (with Shayib, Mohammed A.; Dawagreh, Ahmad M.) Large sample prediction intervals for a future sample mean: a comparative study. *J. Statist. Comput. Simulation* **24** (1986), no. 3-4, 255-270. (S. Jeyaratnam) **89k:62048** 62F99 (62E25)
- (with Azzam, M.; Hussein, D.) Sup-entropy of degree  $\alpha$ . (Arabic summary) *Arabian J. Sci. Engrg.* **12** (1987), no. 4, 473-480. (Ram Autar) **89a:94010** 94A17
- $\beta$ -informational sufficient partition. *IMA J. Math. Control Inform.* **5** (1988), no. 1, 1-10. (N. S. Kambo) **89c:94020** 94A17
- Application to an informational test. *IMA J. Math. Control Inform.* **5** (1988), no. 3, 233-242. (Inder Jeet Taneja) **89g:94015** 94A17
- Awada, M. A.** (with Chamseddine, A. H.) Superstring and graded Grassmannians. *Phys. Lett. B* **206** (1988), no. 3, 437-443. (Sergey Merkulov) **89f:81157** 81E99 (58A50, 58B25, 58F07, 81E30)
- Awami, Mohamed A.** (with Verschoren, A.) Filtered sheaves and their localizations. *Comm. Algebra* **15** (1987), no. 11, 2391-2416. (Freddy M. J. Van Oystaeyen) **89f:54025** 54B40 (14F05, 16A99)
- (with Van Oystaeyen, F.) On filtered rings with Noetherian associated graded rings. *Ring theory (Granada, 1986)*, 8-27, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (Arno van den Essen) **89g:16001** 16A03 (16A33)
- (with Van den Bergh, Michel; Van Oystaeyen, F.) Note on derivations of graded rings and classification of differential polynomial rings. *Deuxième Contact Franco-Belge en Algèbre (Faulx-les-Tombes, 1987)*. *Bull. Soc. Math. Belg. Sér. A* **40** (1988), no. 2, 175-183. (Piotr Grzeszczuk) **89m:16002** 16A03 (12H05, 16A05)
- Awartani, Marwan M.** The fixed remainder property for self homeomorphisms of Elsa continua. *Proceedings of the 1986 Topology Conference (Lafayette, LA, 1986)*. *Topology Proc.* **11** (1986), no. 2, 225-238. (Michel Smith) **89g:54073** 54F20 (54F15)
- Awasthi, C. P.** (with Gupta, V. C.) Integrability conditions of an  $F(K, K-2)$ -structure satisfying  $F^k + F^{k-2} = 0$  ( $K = \text{odd}$ ). *Publ. Math. Debrecen* **34** (1987), no. 3-4, 251-257. (Pedro Martinez Gadea) **89c:53053** 53C15
- Awerbuch, B.** (with Israeli, A.; Shiloach, Y.) Finding Euler circuits in logarithmic parallel time. *Advances in computing research*, Vol. 4, 69-78, *JAI, Greenwich, CT*, 1987. (Norbert Blum) **89f:68015** 68Q05 (05C45, 68Q25, 68R10, 90B10)
- Awrejcewicz, J.** Determination of the limits of the unstable zones of the unstationary nonlinear mechanical systems. *Internat. J. Non-Linear Mech.* **23** (1988), no. 1, 87-94. (Vimal Singh) **89c:70044** 70K20
- An analytical method for detecting Hopf bifurcation solutions in nonstationary nonlinear systems. *J. Sound Vibration* **129** (1989), no. 1, 175-178. (Simos Ichiarglou) **89m:70039** 70K10 (70K40)
- Awтар, R.** Jordan derivations and Jordan homomorphisms on prime rings of characteristic 2. *Acta Math. Hungar.* **51** (1988), no. 1-2, 61-63. (Charles Lanski) **89d:16044** 16A72 (16A12)
- Axel, Françoise** (with Aubry, Serge) Polarisation and transition by breaking of analyticity in a one-dimensional model for incommensurate structures in an electric field. *J. Phys. A* **20** (1987), no. 14, 4873-4889. (Summary) **89a:82024** 82A57 (82A25, 82A68)
- (with Peyrière, Jacques) États étendus dans une chaîne à désordre contrôlé. (English summary) [Extended states in a chain with controlled disorder] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers Sci. Terre* **306** (1988), no. 3, 179-182. (Summary) **89m:82041** 82A42 (11K31, 58F13, 82A99)
- Axelrad, E. L.** (with Emmerling, F. A.) Vector and tensor form of intrinsic shell-theory relations. *Internat. J. Non-Linear Mech.* **23** (1988), no. 1, 9-23. (Summary) **89a:73052** 73L05
- Axelsson, O.** A restarted version of a generalized preconditioned conjugate gradient method. *Comm. Appl. Numer. Methods* **4** (1988), no. 4, 521-530. (Summary) **89d:65033** 65F10
- Axenides, Minos** (with Sahian, Alex M.; Coleman, Sidney) Some nonabelian Q-balls. *Nuclear Phys. B* **297** (1988), no. 3, 498-514. (M. Martinis) **89m:81192** 81G20 (81E99)
- (with Ellis, Stephen D.; Kounnas, Costas) Universal behavior of  $D$ -dimensional superstring models. *Phys. Rev. D* **37** (1988), no. 10, 2964-2976. (Summary) **89c:81101** 81E99 (81E30, 83E30)
- Axler, Sheldon** (with Bourdon, Paul) Finite-codimensional invariant subspaces of Bergman spaces. *Trans. Amer. Math. Soc.* **306** (1988), no. 2, 805-817. (D. N. Clark) **89f:46051** 46E15 (32A10, 32H20, 46L15, 47B38)
- Axäster, Sven** A sequential lot sizing heuristic with optimal average performance. *Management Sci.* **34** (1988), no. 11, 1324-1332. (Not in MR) **90B30**
- Ayabe, Shuka** (with Ki, U-Hang; Yamaguchi, Seiichi) On conformal Killing and special Killing  $p$ -forms in Riemannian manifolds with boundary. *J. Ramanujan Math. Soc.* **2** (1987), no. 1, 17-41. (J. R. Vanstone) **89j:53045** 53C21 (53C65)
- Ayaki, Kenichiro** (with Matsumoto, Takashi; Chua, Leon O.) Reality of chaos in the double scroll circuit: a computer-assisted proof. *IEEE Trans. Circuits and Systems* **35** (1988), no. 7, 909-925. (François Aribaud) **89h:58125** 58F13 (65H99, 94C05)
- Ayala Gómez, Rafael** (with Domínguez Murillo, Eladio; Quintero, A.) A geometric proof of Hurewicz's theorem. *An. Stiint. Univ. "Al. I. Cuza" Iași Sec. I a Mat. (N.S.)* **33** (1987), no. 3, 255-258. (Jack Weinstein) **89m:55003** 55N22 (55Q05)
- (with Quintero, A.) A note on contractible open homology manifolds. *Rev. Acad. Cienc. Zaragoza* **42** (1987), 5-10. (Nigel Martin) **89f:57026** 57N15 (57Q15)
- (with Quintero, A.; Mitchell, W. J. R.) Triangulating and recognising PL homology manifolds. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 3, 497-504. (Frank Quinn) **89h:57015** 57Q15
- (with Domínguez Murillo, Eladio; Quintero, A.) Exponential law for uniformly continuous proper maps. *Publ. Mat.* **32** (1988), no. 1, 123-127. (Donald W. Kahn) **89c:54027** 54C35
- Ayanoglu, Ender** (with Gray, Robert M.) The design of joint source and channel trellis waveform coders. *IEEE Trans. Inform. Theory* **33** (1987), no. 6, 855-865. (Andrea Sgarro) **89b:94021** 94A40 (94A29, 94A34)
- Aydinian, H. K.** see *Aidinyan, A. K.*
- ben-Ayed, Omar** see *Ben-Ayed, Omar*
- Ayeni, R. O.** (with Okoya, S. S.; Agorzie, C. J.) On the dissipation layer of radial bearings. *Internat. J. Math. Math. Sci.* **11** (1988), no. 2, 403-404. (Summary) **89c:76040** 76D08
- Ayers, K.** see *Brandenburg, Franz-J.*, **89d:68039**
- Aygaline, P.** (with Barbouche, M.; Staroswiecki, M.) Building rules from contingency tables. *Data analysis and informatics, V (Versailles, 1987)*, 175-182, *North-Holland, Amsterdam-New York*, 1988. (See **89g:62009**) **62H17** (62-07)
- Aykanat, Cerdet** (with Özgüner, Füsün; Ercal, Fikret; Sadayappan, Ponnuswamy) Iterative algorithms for solution of large sparse systems of linear equations on hypercubes. *IEEE Trans. Comput.* **37** (1988), no. 12, 1554-1568. (Summary) **89k:65050** 65F50 (65F10, 68Q10, 68U20)
- Aykin, Turgut** On the location of hub facilities. *Transportation Sci.* **22** (1988), no. 2, 155-157. (Summary) **89h:90072** 90B10 (90C08)
- Aylward, D. R.** (with Aggarwal, S. P.) Optimal ordering policy under varying price and promotional effort. *Internat. J. Management Systems* **4** (1988), no. 3, 145-151. (Not in MR) **90B05**
- Aymerich, Giuseppe** Variational aspects of some mathematical models in biology. (Italian) *Atti Sem. Mat. Fis. Univ. Modena* **34** (1985/86), no. 2, 385-394 (1987). (S. K. Chatterjee) **89b:92028** 92A17
- Ayoub, Ayoub B.** The harmonic triangle and the beta function. *Math. Mag.* **60** (1987), no. 4, 223-225. (G. L. Alexanderson) **89i:85008** 05A10 (33A15)
- Ayoub, G.** (with Ojanguren, M.) The Witt group of a real surface. *Vector bundles on algebraic varieties (Bombay, 1984)*, 445-463, *Tata Inst. Fund. Res. Stud. Math.*, 11, *Tata Inst. Fund. Res., Bombay*, 1987. (From the introduction) **89c:14035** 14G30 (11E81, 19G12)
- Ayupov, Sh. A.** ★ Классификация и представление упорядоченных Jordanовых алгебр. (Russian) [Classification and representation of ordered Jordan algebras] "Fan", Tashkent, 1986. 124 pp. (Khristo N. Boyadzhiev) **89b:46083** 46L70 (17C65, 46H70, 46L50)
- Isometries of nonassociative  $L_p$ -spaces. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 5, 8-12, 109. (D. Petz) **89g:46100** 46L50 (46L70)
- Ayupova, N. B.** Formulas in problems of the determination of sources. (Russian) *Questions of well-posedness and methods for the investigation of inverse problems* (Russian), 47-57, 158, *Akad. Nauk SSSR Sibirsk. Otdel. Vychisl. Tsentr, Novosibirsk*, 1986. (Gottfried Anger) **89h:35332** 35R30 (35G05)
- Ayyaswamy, S. K.** A characterization of the supports of right introversion invariant means. *Bull. Calcutta Math. Soc.* **79** (1987), no. 2, 67-70. (H. Kharaghani) **89m:43001** 43A07
- Azad, H.** Homogeneous affine bundles. *Comm. Algebra* **16** (1988), no. 8, 1599-1603. (A. L. Onishchik) **89j:20048** 20G15 (32M10)
- Azaiz, J.-M.** Design of experiments for studying intergenotypic competition. *J. Roy. Statist. Soc. Ser. B* **49** (1987), no. 3, 334-345. (William I. Notz) **89b:62159** 62K10 (92A12)
- Conditions pour la convergence du nombre de franchissements vers le temps local. Application aux processus gaussiens et stables. (English summary) [Conditions for convergence of the numbers of crossings to the local time. Application to stable Gaussian processes] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 19, 787-790. (Simeon M. Berman) **89h:60063** 60G17 (60G15, 60J55)
- Azakov, S. I.** The large  $N$  limit in the group  $U(N)$  of one-plaquette models. (Russian) *Group-theoretic methods in physics, Vol. 1 (Russian) (Jarmala, 1985)*, 308-316, "Nauka", Moscow, 1986. (See **89d:81001**) **81E13** (81E25)
- Group integrals in the lattice QCD with Susskind fermions. *J. Phys. A* **21** (1988), no. 13, L677-L680. (Summary) **89f:81006** 81-08 (81E25)



- Azamov, A. A.** On an alternative for pursuit-evasion games in an infinite time interval. *J. Appl. Math. Mech.* **50** (1986), no. 4, 428–432 (1987); translated from *Pril. Mat. Mekh.* **50** (1986), no. 4, 561–566 (Russian). (Summary) **89h:90276** 90D26 (49A45)
- Semistability and duality in the theory of the Pontryagin alternating integral. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 2, 265–268; translated in *Soviet Math. Dokl.* **37** (1988), no. 2, 355–359. (Witold Rzymowski) **89e:90235** 90D25 (49A45, 90D26)
- Azar, Michel** (with Thompson, W. B.) Magnetic confinement of cosmic clouds. *Astrophys. and Space Sci.* **144** (1988), no. 1–2, 587–614. (John Adam) **89g:85002** 85A30 (76W05)
- Azar, V.** (with Alon, Noga) The average complexity of deterministic and randomized parallel comparison-sorting algorithms. *SIAM J. Comput.* **17** (1988), no. 6, 1178–1192. (Ingo Wegener) **89k:68022** 68P10 (68Q25)
- (with Alon, Noga) Sorting, approximate sorting, and searching in rounds. *SIAM J. Discrete Math.* **1** (1988), no. 3, 269–280. (Ian Parberry) **89m:68030** 68Q10 (68P10)
- Azarenok, A. S.** (with Krikan, V. S.) A clique in an  $n$ -partite graph and optimal orientations of functional blocks of integral schemes. (Russian. English summary) *Vestnik Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 2, 8–15, 123. (Miro Křivánek) **89h:68059** 68Q25 (03C35, 68Q15, 68Q35)
- Azarova, S. V.** (with Kovalenko, A. N.) Choice of nodes for multidimensional interpolation in problems of the optimal design of mechanical systems. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1988**, vyp. 2, 109–111, 134; translated in *Vestnik Leningrad Univ. Math.* **21** (1988), no. 2, 87–89. (Summary) **89i:41009** 41A05 (65D05, 73C40, 73K30)
- Azaria, P.** (with Giacomini, H. J.) An exactly soluble two-dimensional Ising model with magnetic field. *J. Phys. A* **21** (1988), no. 19, L935–L940. (Paul A. Pearce) **89m:82070** 82A68 (82A67, 82A69)
- Azarina, Yu. V.** Meromorphic solutions of the equation  $w(z+1) = R[w(z)]$ . (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* **48** (1987), 26–32. (Shlomo Strelitz) **89c:30060** 30D05 (31A10)
- Azarov, A. I.** (with Monastyrnyi, P. I.; Shibut, A. S.) Invariant embedding for singularly perturbed boundary value problems with a parameter. (Russian. English summary) *Vestnik Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 1, 20–26, 123. (G. S. Tabidze) **89h:65123** 65L10 (34B05, 34E15)
- Azhelev, N. V.** (with Maksimov, V. P.) On the problem of reducible functional-differential equations. (Russian) *Boundary value problems (Russian)*, 3–6, 191, *Perm. Politekh. Inst., Perm*, 1983. (see **89c:00008**) **34K05**
- (with Maksimov, V. P.; Khudiyakov, S. P.) On the problem of the regularizability of equations. (Russian) *Boundary value problems (Russian)*, 3–8, 152, *Perm. Politekh. Inst., Perm*, 1984. (see **89c:00008**) **34K10**
- The Perm seminar and the development of the theory of functional-differential equations. (Russian) *Functional-differential equations (Russian)*, 3–12, i, *Perm. Politekh. Inst., Perm*, 1985. (Summary) **89a:01090** 01A72 (34–03, 34K05)
- (with Berezanskii, L. M.; Simonov, P. M.) A theorem on the stability of linear equations with aftereffect. (Russian) *Boundary value problems (Russian)*, 3–6, i, *Perm. Politekh. Inst., Perm*, 1986. (see **89c:00009**) **34K20** (34A30)
- see also *Boundary value problems*, **89c:00008**, **89c:00008** and **89c:00009**
- de Azcárraga, J. A.** (with Aldaya, V.) Group manifold approach to analytical mechanics and constraints. *Constraint's theory and relativistic dynamics (Florence/Arcetri, 1986)*, 26–56, *World Sci. Publishing, Singapore*, 1987. (P. G. L. Leach) **89e:58039** 58F05 (70H05)
- (with Lukierski, J.) Superfield algebraic structures with Grassmann-valued structure constants. *Group theoretical methods in physics (Varna, 1987)*, 97–103, *Lecture Notes in Phys.*, **313**, Springer, Berlin-New York, 1988. (see **89g:81001**) **81D15** (17A70, 58G35, 81E99)
- (with Lukierski, J.; Vindel, P.) Covariant operator formalism for quantized superfields. *Fortschr. Phys.* **36** (1988), no. 6, 453–478. (Roberto Cianci) **89m:81129** 81E99
- (with Lukierski, J.) Superalgebras with Grassmann-algebra-valued structure constants from superfields. *J. Math. Phys.* **29** (1988), no. 4, 797–801. (Anargyros Fellouris) **89f:22026** 22E65 (17B70, 81E99)
- (with Zakrzewski, W. J.)  $D = 1$  chiral supersymmetry with a central charge. *Z. Phys. C* **37** (1988), no. 3, 381–387. (Summary) **89a:81112** 81E99
- Azeoli, V.** Vacuum structure in nonabelian compact  $SU(N)$  gauge theories. *Phys. Lett. B* **203** (1988), no. 4, 423–424. (Olivier Piguet) **89g:81060** 81E25 (81D20, 81E13, 81G05)
- Zárate Azcuna, María José** see Zárate Azcuna, María José
- Asé, D.** Caractérisation de la convergence au sens de Mosco en terme d'approximations inf-convolutives. (English summary) [Characterization of convergence in the sense of Mosco in terms of inf-convolutional approximations] *Ann. Fac. Sci. Toulouse Math. (5)* **8** (1986/87), no. 3, 293–314. (Lionel Thibault) **89k:90127** 90C25 (26B25, 46N05, 49A50, 90C48)
- An inversion theorem for set-valued maps. *Bull. Austral. Math. Soc.* **37** (1988), no. 3, 411–414. (Stefan Mirica) **89h:58019** 58C06 (26E25, 47H99, 58C15)
- An example of stability for the minima of a sequence of DC functions: homogenization for a class of nonlinear Sturm-Liouville problems. *Math. Programming* **41** (1988), no. 2 (Ser. A), 127–140. (Carlo Sbordone) **89j:49003** 49A50 (34B25, 47E05, 49A55)
- Azéna, J.** see Seminar: Probability Theory, **89c:60005**; **89d:60001** and **89d:60002**
- Azencott, Robert** Image analysis and Markov fields. *ICTAM '87: Proceedings of the First International Conference on Industrial and Applied Mathematics (Paris, 1987)*, 53–61, SIAM, Philadelphia, PA, 1988. (see **89g:00015**) **68U10**
- Azenhas, Olga** Extensions of modules and matrix products. (Portuguese. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2* (Spanish) (Badajoz, 1986), 27–34, *Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz*, 1987. (Summary) **89k:15026** 15A33 (16A64)
- Azevedo, Assis** Operations preserving homomorphisms on the class of finite semigroups DS. (Portuguese) *Proceedings of the Second Meeting of Portuguese Algebraists (Portuguese)* (Porto, 1987), 33–43, *Univ. Porto, Porto*, 1987. (Summary) **89e:20100** 20M07 (20M05)
- Azevedo, J. L. T.** (with Durst, F.; Pereira, J. C. F.) Comparison of strongly implicit procedures for the solution of the fluid flow equations in finite difference form. *Appl. Math. Modelling* **12** (1988), no. 1, 51–62. (Summary) **89h:65241** 65N10
- el Azhari, M.** see El Azhari, M.
- Azhotkin, V. D.** On the problem of the concept of normal curvature in pseudo-Finsler geometry. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **165** (1987), *Mat. Vopr. Teor. Rasprostranen. Voln* **17**, 5–8, 189. (S. S. Singh) **89d:53046** 53B40
- (with Babich, V. M.) The propagation of Love waves along the surface of an anisotropic body of arbitrary shape. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **165** (1987), *Mat. Vopr. Teor. Rasprostranen. Voln* **17**, 8–14, 189. (Summary) **89a:73016** 73D20 (73C30)
- Azimov, A. Ya.** Duality in discrete multicriterial dynamic problems. (Russian) *Applied problems in functional analysis (Russian)*, 3–5, 114, *Azerbaij. Gos. Univ., Baku*, 1986. (Summary) **89h:90203** 90C31
- Duality in multicriterial optimal control problems. (Russian. English summary) *Optimization* **19** (1988), no. 2, 197–214. (Dinh Thé Luc) **89g:90207** 90C31 (49A55)
- Azimova, G. M.** (with Guseinov, I. M.) Direct and inverse problems of scattering theory for a system of first-order difference equations. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 3, 3–8 (1988). (From the introduction) **89g:39008** 39A12 (47A40, 47B39)
- Aziz, A. K.** (with Stephens, A. B.; Suri, Manil) Numerical methods for reaction-diffusion problems with nondifferentiable kinetics. *Numer. Math.* **53** (1988), no. 1–2, 1–11. (Ian Gladwell) **89e:65116** 65N30 (80–08, 80A30)
- Aziz, Abdul** On composite polynomials whose zeros are in a half-plane. *Bull. Austral. Math. Soc.* **36** (1987), no. 3, 449–460. (Wolfgang Gawronski) **89k:30004** 30C15
- (with Dawood, Q. M.) Inequalities for a polynomial and its derivative. *J. Approx. Theory* **54** (1988), no. 3, 306–313. (D. A. Brannan) **89m:30009** 30C10
- Inequalities for the polar derivative of a polynomial. *J. Approx. Theory* **55** (1988), no. 2, 183–193. (Thomas McCoy) **89m:30010** 30C10
- A new proof and a generalization of a theorem of de Bruijn. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 345–350. (N. K. Govil) **89k:30002** 30A10 (26C05, 30C10)
- amir-Azizi, Siamak** see Amir-Azizi, Siamak
- Azizov, G.** (with Valeev, K. G.) Asymptotic character of special solutions of a system of linear differential equations with retarded argument. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 6, 9–13, 73. (Yu. L. Maistro) **89f:34112** 34K25
- Azharov, T. A.** (with Gurvich, T. L.) Sharpening of a theorem of Yu. V. Prokhorov on the asymptotic behavior of the binomial distribution. (Russian) *Probability distributions and mathematical statistics (Russian)* (Fergana, 1983), 4–19, 487, “Fan”, Tashkent, 1986. (Zheng Yan Lin) **89h:60047** 60F05 (60E99)
- (with Tursunov, R. T.) Rate of convergence in the invariance principle for random sums in triangular arrays. (Russian) *Asymptotic methods in mathematical statistics (Russian)*, 3–13, 158, “Fan”, Tashkent, 1987. (O. K. Zakusilo) **89h:60084** 60F17
- (with Pillai, R. N.) Characterization of a semi- $\alpha$ -Laplacian distribution. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 6, 15–17, 73. (M. Riedel) **89e:60032** 60E05 (62E10)
- Azmi, Zaki Ahmed** (with El Din Younis, Mohamed Alaa) The application of fuzzy matrices and digraphs in network analysis. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics (Poznań, 1986)*, 17–23, *Wydawn. Politech. Poznani., Poznań*, 1987. (Summary) **89f:05085** 05C20 (03E72, 90B10)
- Aznar García, Enrique R.** (with Lirola Térez, Antonio) Abelian groupoids and extensions of monoids. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2* (Spanish) (Badajoz, 1986), 35–42, *Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz*, 1987. (Summary) **89g:20103** 20M50 (18G50)
- garcía Azorero, J. P.** see García Azorero, J. P.
- Azorakii, V. V.** (with Volik, V. G.) Two problems for a third-order hyperbolic equation. (Russian) *Differential equations and mathematical physics (Russian)*, 3–5, *Kuibyshev. Gos. Ped. Inst., Kuibyshev*, 1985. (see **89f:35006**) **35L80**
- Azuhata, Takashi** On the calculation of a system of fundamental units of an algebraic number field. *Proceedings of the international conference on class numbers and fundamental units of algebraic number fields (Katata, 1986)*, 17–31, *Nagoya Univ., Nagoya*, 1986. (Johannes Buchmann) **89a:11111** 11R27 (11R16, 11Y40)
- On the fundamental units and the class numbers of real quadratic fields. II. *Tokyo J. Math.* **10** (1987), no. 2, 259–270. (Constantine Klirorys) **89g:11104** 11R27 (11R11, 11R29)
- On the calculation of a system of fundamental units of an algebraic number field. *TRU Math.* **23** (1987), no. 1, 33–56. (Takeo Funakura) **89d:11095** 11R27 (11Y40)
- Azumaya, Goro** Finite splitness and finite projectivity. *J. Algebra* **106** (1987), no. 1, 114–134. (L. Bican (Zbl 607:16017)) **89a:16034** 16A50 (16A52)
- Azzam, M.** (with Awad, Adnan M.; Hussein, D.) Sup-entropy of degree  $\alpha$ . (Arabic summary) *Arabian J. Sci. Engrg.* **12** (1987), no. 4, 473–480. (Ram Autar) **89a:94010** 94A17
- Azzimondi, P.** (with Scaravelli, C.) Cauchy sequences and unique fixed point theorems in  $H$ -spaces. (Italian. English summary) *Riv. Mat. Univ. Parma* (4) **13** (1987), 229–240 (1988). (Livia D'Apuzzo) **89m:54056** 54H25
- Azzouz, Abdennasser** (with Hasler, Martin J.) Uniqueness of the asymptotic behaviour of autonomous and nonautonomous, switched and nonswitched, linear and nonlinear systems of dimension 2. *Internat. J. Circuit Theory Appl.* **16** (1988), no. 2, 191–226. (E. J. Barbeau) **89d:34083** 34D20 (34C05, 34E99, 93D05, 94C05)

## -B-

- Baacke, J.** (with Schenk, A.) Casimir energy and baryon number for small hedgehogs. *Z. Phys. C* **37** (1988), no. 3, 389–394. (Yisong Yang) **89a:81059** 81E13 (81G05)
- Baader, Franz** Unification in varieties of idempotent semigroups. *Semigroup Forum* **36** (1987), no. 2, 127–145. (Graham T. Clarke) **89b:20126** 20M07 (68T15)
- A note on unification type zero. *Inform. Process. Lett.* **27** (1988), no. 2, 91–93. (Mukka S. Krishnamoorthy) **89a:68188** 68T15 (03B35)
- Baake, Michael** Branching rules for unitary representations of Virasoro and super-Virasoro algebras at  $c = 1$ . *J. Math. Phys.* **29** (1988), no. 8, 1753–1757. (Ronald C. King)

- 89i:17013** 17B65 (17A70, 17B67, 81D15, 82A25)  
— (with Alcaraz, Francisco C.; Grimm, U.; Rittenberg, V.) Operator content of the  $XXZ$  chain. *J. Phys. A* **21** (1988), no. 3, L117–L120. (Muthiah Daniel) **89b:82101** 82A68
- van Baal, P.** (with Koller, Jeffrey) QCD on a torus, and electric flux energies from tunneling. *Ann. Physics* **174** (1987), no. 2, 299–371. (Summary) **89b:81239** 81G05 (81–04, 81G10)
- (with Alberty, José; Taormina, Anne) Relating Kac-Moody, Virasoro and Krichever-Novikov algebras. *Comm. Math. Phys.* **120** (1988), no. 2, 249–260. (Andrew Pressley) **89m:17038** 17B67 (32G15, 58F07, 58G35, 81E40)
- The small-volume expansion of gauge theories coupled to massless fermions. *Nuclear Phys. B* **307** (1988), no. 2, 274–290. (Summary) **89k:81069a** 81E13 (81G20)
- Erratum to: “The small volume expansion of gauge theories coupled to massless fermions”. *Nuclear Phys. B* **312** (1989), no. 3, 752. (Editors) **89k:81069b** 81E13 (81G20)
- Baake, Betal E.** The Kac-Moody algebra and the chiral Wess-Zumino-Witten Hamiltonian. *Conformal field theory, anomalies and superstrings* (Singapore, 1987), 487–515, *World Sci. Publishing, Singapore*, 1988. (Jouko Mickelsson) **89k:81070** 81E13 (17B67, 58F07)
- Character functions of  $SU(3)$ . *J. Phys. A* **21** (1988), no. 11, 2651–2656. (M. A. Rashid) **89j:22014** 22E30 (58G11)
- The Kac-Moody and Virasoro commutation equations. *Nuclear Phys. B* **295** (1988), no. 2, FS21, 188–198. (Elias Kiritsis) **89i:81062** 81D15 (17B65, 17B67, 81E40)
- see also *Conformal field theory, anomalies and superstrings*, **89c:81004**
- Baars, Jan** (with de Groot, Joost; van Mill, Jan) A theorem on function spaces. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 1020–1024. (Mohan L. Tikoo) **89h:54009** 54C35 (54A25)
- Baart, M. L.** (with McLeod, R. J. Y.) Quadratic transformations of triangular finite elements in two dimensions. *IMA J. Numer. Anal.* **6** (1986), no. 4, 475–487. (Summary) **89h:65172** 65N30
- Baartmans, Alphonse** (with Kim, Jin Bai; Sahadin, Nor Shakila) Determinant theory for fuzzy matrices. *Fuzzy Sets and Systems* **29** (1989), no. 3, 349–356. (Summary) **89k:15048** 15A99 (03E72)
- Bansanzhuv, M.** (with Shagdar, L.) Statistical inference with dependent observations. (Russian) *Asymptotic methods in mathematical statistics* (Russian), 120–130, 161, “Fan”, Tashkent, 1987. (J. A. Melamed) **89i:62027** 62F12
- Baayen, P. C.** (with Nuis, J.) In memoriam A. van Wijngaarden, Director Mathematical Centre 1961–1980. *CWI Newslett.* No. 14 (1987), 3–6. (Editors) **89b:01035** 01A70
- (with Nuis, J.) In memoriam A. van Wijngaarden 1916–1987. *Nieuw Arch. Wisk.* (4) **6** (1988), no. 3, 269–282. (Editors) **89m:01074** 01A70
- okb el-Bab, A. S.** see **Okb El-Bab, A. S.**
- Baba, Kensuke** (with Miyamoto, Kiyoshi) Determination of sphere sized distribution from chord length square (CLS) distribution. *Science on form* (Sakura, 1985), 129–135, *Reidel, Dordrecht-Boston, MA*, 1987. (see **89g:82013**) 82A65 (60D05)
- Pictorial demonstration of stereological principles. *Science on form* (Sakura, 1985), 569–577, *Reidel, Dordrecht-Boston, MA*, 1987. (see **89g:82013**) 60D05 (92A07)
- Baba, Norio** ★ New topics in learning automata theory and applications. *Lecture Notes in Control and Information Sciences*, 71. *Springer-Verlag, Berlin-New York*, 1985. viii+131 pp. ISBN 3-540-15613-5 (K. G. Subramanian) **89g:68060** 68T05 (68–02, 68Q75)
- Baba, Yoshitomo** Note on almost  $M$ -injectives. *Proceedings of the 21st Symposium on Ring Theory* (Hiroaki, 1988), 59–63, *Okayama Univ., Okayama*, 1989. (see **89k:16001**) 16A52
- Babadzhanyan, R. G.** (with Rabinovich, V. S.) Factorization of almost periodic operator functions. (Russian) *Differential and integral equations and complex analysis* (Russian), 13–22, i, *Kalmytsk. Gos. Univ., Elista*, 1986. (Yu. D. Latushkin) **89i:47034** 47A68 (47B35)
- Babaev, Arif Allgeidarovich** (with Musaev, B. I.) An approximate solution of a complete linear singular integral equation with a Hilbert kernel. (Russian) *Mat. Zametki* **41** (1987), no. 5, 693–709, 765. (Martin Costabel) **89g:45025** 45L10 (39A12, 65R20)
- Babaev, Dz. A.** (with Nasibov, E. N.) An interactive approach to the solution of fuzzy integer linear programming problems. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 1, 113–118. (Summary) **89d:90145** 90C10 (03E72)
- Babaev, M.-B. A.** Estimates and methods for determining the exact value of the best approximation of functions of several variables by superpositions of functions of a smaller number of variables [Reviewed in *RZhMat* 1978:3 B88]. (Russian) *Special problems in function theory* (Russian), 3–23, “*Elm*”, Baku, 1977. (see **89f:30003**) 41A50
- Direct theorems for the approximation of functions of several variables by sums of functions of a smaller number of variables [Reviewed in *RZhMat* 1982:12 B135]. (Russian) *Special problems in function theory*, No. 2 (Russian), 3–30, “*Elm*”, Baku, 1980. (see **89f:30004**) 41A30
- One-sided approximation of a function of several variables by the products of functions of a smaller number of variables. (Russian) *Special problems in function theory*, No. III (Russian), 31–50, “*Elm*”, Baku, 1986. (V. V. Zhuk) **89m:41015** 41A30
- Estimates for best approximation by quasipolynomials. (Russian) *Theory of functions and approximations*, Part 1 (Russian) (Sarator, 1984), 91–98, *Sarator. Gos. Univ., Sarator*, 1986. (see **89j:00035**) 41A10
- Babaev, R. D.** Generation of test problems on covering and partition. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 9, 1349–1359, 1438. (R. D. Babaev (Zbl 641:90055)) **89j:90187** 90C10
- Babaev, R. M.** (with Abdullaeva, R. A.) The order of approximation of singular integrals in the sense of the Hadamard finite part. (Russian) *Linear operators and their applications* (Russian), 18–22, *Azerbaidzhan. Gos. Univ., Baku*, 1986. (see **89c:00016**) 41A25 (42B20)
- Approximation of a hypersingular integral with weight over an interval. (Russian) *Theory of functions and approximations*, Part 2 (Russian) (Sarator, 1984), 24–28, *Sarator. Gos. Univ., Sarator*, 1986. (see **89j:00036**) 45G05
- Baba-Hamed, Ch.** (with Bobo, S.; Benhabib, Kety) Technique des régionalisations: un petit essai sur l'exponentielle. [The regionalization method: a brief essay on the exponential] *Cahiers Math.* **1987**, no. 1, 39–52. (H. Gonshor) **89e:03115** 03H05 (26E35)
- Babal, László** Random oracles separate PSPACE from the polynomial-time hierarchy. *Inform. Process. Lett.* **26** (1987), no. 1, 51–53. (Summary) **89k:68046** 68Q15 (03D15)
- A short proof of the nonuniform Ray-Chaudhuri-Wilson inequality. *Combinatorica* **8** (1988), no. 1, 133–135. (G. F. Clements) **89f:05005** 05A05 (05A17, 05A20, 05C35)
- (with Just, Bettina; Meyer auf der Heide, Friedhelm) On the limits of computations with the floor function. *Inform. and Comput.* **78** (1988), no. 2, 99–107. (Bruno Codenotti) **89h:68053** 68Q20
- (with Seress, Ákos) On the diameter of Cayley graphs of the symmetric group. *J. Combin. Theory Ser. A* **49** (1988), no. 1, 175–179. (David Riley Witte) **89i:05141** 05C25 (05C35)
- Babakhanian, Arl** (with Hironaka, Heisuke) On the complex Grassmann manifold. *Illinois J. Math.* **33** (1989), no. 1, 170–179. (D. N. Akhiezer) **89m:14028** 14M15 (32C10, 32M10, 57R99)
- Babania, A. S.** (with Girkov, V. L.) A  $G_2$ -estimate for the solutions of empirical systems of linear algebraic equations. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 39 (1988), 29–33, 126. (Ralf Manthey) **89k:62072** 62H12 (60F17, 60H25)
- Babayan, R. R.** (with Gorbakov, Yu. V.; Polonnikov, D. E.) Analysis of the fundamental characteristics of operational amplifiers with differential input and sampled-data stabilization. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 8, 181–188; translated in *Avtomat. Remote Control* **49** (1988), no. 8, part 2, 1103–1108. (Not in MR) **94C05**
- Baba-Zade, M. A.** An singular integral in moduli of smoothness. (Russian) *Theory of functions and approximations*, Part 2 (Russian) (Sarator, 1984), 28–32, *Sarator. Gos. Univ., Sarator*, 1986. (see **89j:00036**) 45P05 (45G05)
- Babbage, Charles** see **Lindgren, Michael**, **89g:01038**
- Babcsányi, I.** Generalized power quasitautomata. *Papers on automata and languages*, VIII, 33–44, *DM*, 86–3, *Karl Marx Univ. Econom., Budapest*, 1986. (K. G. Preeva) **89d:68057** 68Q70 (20M35)
- A characterization of cyclic Mealy-automata. *Papers on automata and languages*, IX, 19–46, *DM*, 87–2, *Karl Marx Univ. Econom., Budapest*, 1987. (Heinrich Seidel) **89i:68109** 68Q70 (20M35)
- Babeau, André** De quelques utilisations possibles des comptes patrimoniaux des ménages en comptabilité nationale: une application aux ménages américains. [On some possible uses of household property accounts in national accounting: an application to American households] *Marchés, capital et incertitude*, 105–125, *Économica, Paris*, 1986. (see **89f:90002**) 90A30
- Babelon, O.** (with Langouche, F.) Supersymmetric sinh-Gordon and Liouville theories on the lattice. *Nuclear Phys. B* **290** (1987), no. 4, 603–623. (Claus Montonen) **89e:81100** 81E25 (58F07, 81E08)
- Extended conformal algebra and the Yang-Baxter equation. *Phys. Lett. B* **215** (1988), no. 3, 523–529. (From the introduction) **89i:17014** 17B65 (58F07, 58G35, 81E40)
- Babenko, A. G.** An extremal problem for nonnegative trigonometric polynomials. (Russian) *Theory of functions and approximations*, Part 2 (Russian) (Sarator, 1984), 32–34, *Sarator. Gos. Univ., Sarator*, 1986. (see **89j:00036**) 42A05 (12E10)
- A Jackson inequality in the space  $L^2$ . (Russian) *Approximation in concrete and abstract Banach spaces* (Russian), 4–14, 123, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1987. (J. Szabados) **89f:41020** 41A17 (41A44)
- A Jackson inequality for mean-square approximations of periodic functions by trigonometric polynomials on a uniform net. (Russian) *Mat. Zametki* **43** (1988), no. 4, 460–473, 573; translated in *Math. Notes* **43** (1988), no. 3–4, 264–272. (E. O. Zeif) **89h:42004** 42A10
- Babenko, I. K.** Asymptotic volume of tori and the geometry of convex bodies. (Russian) *Mat. Zametki* **44** (1988), no. 2, 177–190, 286; translated in *Math. Notes* **44** (1988), no. 1–2, 579–586. (Marek Lassak) **89m:52015** 52A40 (52A20)
- Babenko, K. I.** On maximum principle for the Euler-Tricomi equation. *Mixed type equations*, 35–46, *Teubner-Texte Math.*, 90, *Teubner, Leipzig*, 1986. (Megumi Saigo) **89b:35103** 35M05
- (with Afendikov, A. L.) The transition to turbulence in flows of viscous incompressible fluids. (Russian) *Mechanics and scientific-technological progress* (Russian), 49–66, 285, “*Nauka*”, Moscow, 1987. (Summary) **89f:76031** 76D05 (58F11, 58F12, 76F99)
- (with Afendikov, A. L.) Attractors of the Navier-Stokes system and their connection with turbulence. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 82, 33 pp. (J. S. Joel) **89f:58085** 58F12 (35Q10, 76D05, 76F99)
- (with Afendikov, A. L.) Hopf bifurcation in some problems with symmetry. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 1, 14–19; translated in *Soviet Math. Dokl.* **37** (1988), no. 3, 600–605. (W. S. Loud) **89k:58204** 58F14 (34C25)
- see also **Afendikov, A. L. et al.**, **89k:01027**
- Babenko, V. F.** (with Kofanov, V. A.) Sign-constant polynomials that deviate least from zero in the spaces  $L_{p,\Omega}$ . (Russian) *Theory of functions and approximations*, Part 2 (Russian) (Sarator, 1984), 34–36, *Sarator. Gos. Univ., Sarator*, 1986. (see **89j:00036**) 41A50
- Comparison theorems and inequalities of Bernstein type. (Russian) *Approximation theory and related problems in analysis and topology* (Russian), 4–8, i, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Wiesław Pleśniak) **89e:41016** 41A17 (26D05, 41A15, 42A05)
- (with Polyakov, O. V.) Sharp estimates for some characteristics of classes of periodic functions. (Russian) *Approximation theory and related problems in analysis and topology* (Russian), 9–14, i, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) **89d:42021** 42A99
- Approximations, widths and optimal quadrature formulae for classes of periodic functions with rearrangement invariant sets of derivatives. (Russian summary) *Anal. Math.* **13** (1987), no. 4, 281–306. (R. Smarzewski) **89e:41020** 41A25 (41A46, 41A55, 42A10)
- Approximation of convolution classes. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 5, 6–21, 226. (Vítězslav Veselý) **89g:42003** 42A10 (41A15, 41A29, 41A30, 47B38)
- Approximation of classes of functions defined by means of the modulus of continuity. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 6, 1296–1299; translated in *Soviet Math. Dokl.* **37** (1988), no. 1, 239–241. (J. Albrecht) **89h:41052** 41A46 (41A30, 41A65)
- Approximate calculation of scalar products. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 1, 15–21, 132; translated in *Ukrainian Math. J.* **40** (1988), no. 1, 11–16. (A. B. Németh) **89i:46075** 46E99 (46C99, 65D32)
- Babev, V. D.** Direct products of symmetrically locally uniformly convex spaces. (Russian) *C. R. Acad. Bulgare Sci.* **40** (1987), no. 9, 25–27. (Yu. A. Brudnyi) **89c:46009** 46A40 (46B30, 46E40, 46M99)
- Characterization of the denting points of direct products of normed spaces. (Russian) *C. R. Acad. Bulgare Sci.* **40** (1987), no. 10, 11–14. (Mikhail Ostrovskii) **89i:46015** 46B20



- (46E40)  
— (with Aleksandrov, G. A.) Banach spaces not isomorphic to weakly midpoint locally uniformly rotund spaces. *C. R. Acad. Bulgare. Sci.* **41** (1988), no. 2, 29–32. (J. Reif) **89a:46015** 46B20
- Babić, D.** (with Graovac, Ante; Kovačević, K.) Simple estimates of the total and the reference pi-electron energy of conjugated hydrocarbons. *Graph theory and topology in chemistry (Athens, Ga., 1987)*, 448–457, *Stud. Phys. Theoret. Chem.*, **51**, Elsevier, Amsterdam-New York, 1987. (Summary) **89c:81212** 81G55
- Babich, S. Yu.** (with Glukhov, Yu. P.; Guz, A. N.) On the solution of a problem on the action of a moving load on a two-layer semispace with initial stresses. (Russian) *Prikl. Mekh.* **24** (1988), no. 8, 55–60, 132; translated in *Soviet Appl. Mech.* **24** (1988), no. 8, 775–780. (Summary) **89f:73027** 73D99 (73C03, 73K12)
- Babich, V. M.** (with Mikhlin, S. G.; Ural'tseva, N. N.) Vladimir Ivanovich Smirnov (on the 100th anniversary of his birth). (Russian) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 3, 3–12. (Editors) **89c:01047** 01A70
- Application of Finsler geometry to the geometric optics of inhomogeneous anisotropic media. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 3, 19–23, 127. (Summary) **89h:78001** 78A10 (53B40)
- (with Azhokhin, V. D.) The propagation of Love waves along the surface of an anisotropic body of arbitrary shape. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **165** (1987), Mat. Vopr. Teor. Rasprostranen. Voln **17**, 8–14, 189. (Summary) **89a:73016** 73D20 (73C30)
- Asymptotic methods in the theory of elastic waves. (Russian) *Mathematical modeling in geophysics (Russian)*, 7–13, 131, "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (see **89h:66005**) 73D25 (35C20, 73D99)
- Babichenko, A. S.** (with Shabad, A. E.) Summation of infrared singularities of the electron propagator at finite temperature. *Quantum field theory and quantum statistics*, Vol. 1, 481–497, Hilger, Bristol, 1987. (Gordon Feldman) **89h:81279** 81L05
- Babikov, G. V.** Some problems of linear algebra and linear programming over partially ordered rings. (Russian) *Conflicting models for optimization (Russian)*, 12–20, 94, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1987. (Svatopluk Poljak) **89h:90254** 90C48
- Babits, A. V.** (with Vishik, M. I.) Uniform asymptotic behavior of solutions of quasilinear evolution equations that contain a small parameter. (Russian) *Current problems in mathematical physics*, Vol. 1 (Russian) (Tbilisi, 1987), 143–150, 477, *Tbilisi. Gos. Univ., Tbilisi*, 1987. (see **89j:00030**) 35B40 (35B25, 47H15, 47H20, 58D25, 58F12)
- (with Vishik, M. I.) Variation of the index of instability on stationary curves of elliptic equations that depend on a parameter. (Russian. English summary) *Trudy Sem. Petrovsk.* **No. 12** (1987), 47–58, 242. (V. S. Rabinovich) **89j:35061** 35K55 (35J60, 47H15, 58G99)
- On the connection between the analytic properties of operator functions and the smoothness of the solutions of degenerate differential equations. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 1, 60–61; translated in *Functional Anal. Appl.* **22** (1988), no. 1, 48–50. (B. Hellwig) **89e:35029** 35B65
- (with Vishik, M. I.) The behavior as  $t \rightarrow +\infty$  of solutions of nonlinear evolution equations depending on a parameter. (Russian) *Dokl. Akad. Nauk SSSR* **295** (1987), no. 4, 786–790; translated in *Soviet Math. Dokl.* **36** (1988), no. 1, 113–117. (From the introduction) **89h:47090** 47H20 (35K22, 58F12)
- (with Vishik, M. I.) Spectral and stabilized asymptotic behavior of the solutions of nonlinear evolution equations. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 5(263), 99–132, 239. (Piotr Biler) **89h:58048** 58D25 (35B40, 35K55, 47H15, 76D05)
- Babkov, O. K.** Degeneration of special algebraic extensions of algebras over a field of characteristic zero. (Russian) *Mat. Issled.* **No. 105** *Moduli, Algebra, Topol.* (1988), 8–12, 194. (L. G. Makar-Limanov) **89i:17005** 17A05
- Babloyantz, A.** (with Destexhe, A.) The Creutzfeldt-Jakob disease in the hierarchy of chaotic attractors. *From chemical to biological organization*, 307–316, *Springer Ser. Synergetics*, **39**, Springer, Berlin-New York, 1988. (see **89g:92002**) 92A07 (58F13)
- (with Destexhe, A.) Is the normal heart a periodic oscillator? *Biol. Cybernet.* **58** (1988), no. 3, 203–211. (Raphael Zahler) **89d:92008** 92A07 (58F13)
- Baboolal, D.** Local connectedness of the Stone-Čech compactification. *Canad. Math. Bull.* **31** (1988), no. 2, 236–240. (Allan Calder) **89e:54036** 54D05 (54D35, 54E15)
- Babu, A. C.** (with Panda, B. B.) Extensions of some fixed point theorems of Rhoades, Ćirić, Maiti and Pal. *Publ. Inst. Math. (Beograd) (N.S.)* **42(56)** (1987), 97–105. (T. L. Hicks) **89f:47083** 47H10 (54H25)
- Babu, A. J. G.** (with Ram, Balasubramanian; Karwan, Mark H.) Aggregation of constraints in integer programming. *European J. Oper. Res.* **35** (1988), no. 2, 216–227. (B. Jeromin) **89f:90102** 90C10 (65K10)
- Babu, Guttu Jogesh** Estimation of density quantile function. *Sankhya Ser. A* **48** (1986), no. 2, 142–149. (Paul Deheuvels) **89h:62057** 62G05 (62G20)
- A note on comparison of conditional means. *J. Statist. Plann. Inference* **19** (1988), no. 2, 253–259. (Thomas W. Sager) **89f:62054** 62G05 (62F12)
- Babu, Ram** see **Mishra, Ram Babu**
- Babu Joseph, K.** A chaos primer. *Recent developments in theoretical physics (Kottayam, 1986)*, 305–322, *World Sci. Publishing, Singapore*, 1987. (Summary) **89m:58134** 58F13
- Solitons and some other special solutions in field theory. *Solitons (Tiruchirappalli, 1987)*, 308–320, *Springer Ser. Nonlinear Dynamics*, Springer, Berlin-New York, 1988. (Alexander W. Smith) **89m:81088** 81E13
- (with Ambika, G.) On the  $f$ - $\alpha$  spectrum of one-hump maps. *J. Phys. A* **21** (1988), no. 20, 3963–3968. (From the text) **89h:58168** 58F13 (26A18)
- (with Sabir, M.) Reformulation of Einstein gravity as a flat space gauge theory. *Modern Phys. Lett. A* **3** (1988), no. 5, 497–509. (Yu. N. Obukhov) **89e:83008** 83C05 (83D05)
- Babul, Arif** (with Piran, Tsvi; Spergel, David N.) Bosonic superconducting cosmic strings. I. Classical field theory solutions. *Phys. Lett. B* **202** (1988), no. 3, 307–314. (Summary) **89h:83098** 83F05 (81E30, 81G25)
- (with Piran, Tsvi; Spergel, David N.) Superconducting cosmic strings. II. Spacetime curvature. *Phys. Lett. B* **209** (1988), no. 4, 477–484. (Summary) **89j:83091** 83F05 (81E30)
- Baburina, Yu. S.** Solution in closed form of Fredholm equations of the second kind with a closed contour of integration. (Russian) *Analytical methods in the theory of differential and integral equations (Russian)*, 7–19, *Kuibyshev. Gos. Univ., Kuibyshev*, 1987. (Peter Junghanns) **89i:45001** 45B05 (45E05)
- Babushkina, L. V.** (with Kerimov, M. K.; Nikitin, A. I.) Algorithms for the calculation of Bessel functions of half-integer indices with complex arguments. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 10, 1449–1460, 1597. (Walter Gautschi) **89m:65022a** 65D20 (65-04)
- (with Kerimov, M. K.; Nikitin, A. I.) Algorithms for calculating spherical Bessel functions in the complex domain. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 12, 1779–1788, 1918. (Walter Gautschi) **89m:65022b** 65D20 (65-04)
- Babutka, I.** Information-based numerical practice. *J. Complexity* **3** (1987), no. 3, 331–346. (S. Dubuc) **89f:65056** 65G99 (65D32, 65L50, 65M60)
- Recent progress in the  $p$  and  $h$ - $p$  versions of the finite element method. *Numerical analysis 1987 (Dundee, 1987)*, 1–17, *Pitman Res. Notes Math. Ser.*, **170**, Longman Sci. Tech., Harlow, 1988. (Manfred Dobrowski) **89g:65137** 65N30
- (with Suri, Manil) The  $p$ -version of the finite element method for constraint boundary conditions. *Math. Comp.* **51** (1988), no. 183, 1–13. (A. O. Garder) **89k:65131** 65N30
- (with Guo, Ben Qi) Regularity of the solution of elliptic problems with piecewise analytic data. I. Boundary value problems for linear elliptic equation of second order. *SIAM J. Math. Anal.* **19** (1988), no. 1, 172–203. (Neil M. Wigley) **89a:35039** 35B65 (35J25, 65N99)
- (with Jensen, Soren S.) Dimensional reduction for nonlinear boundary value problems. *SIAM J. Numer. Anal.* **25** (1988), no. 3, 644–669. (Russell C. Thompson) **89m:65101** 65N30 (73-08, 73K25)
- (with Guo, Ben Qi) The  $h$ - $p$  version of the finite element method for domains with curved boundaries. *SIAM J. Numer. Anal.* **25** (1988), no. 4, 837–861. (I. Norman Katz) **89i:65111** 65N30
- (with Scapolla, Terenzio) Benchmark computation and performance evaluation for a rhombic plate bending problem. *Internat. J. Numer. Methods Engrg.* **28** (1989), no. 1, 155–179. (Summary) **89j:73071** 73K25 (73K10)
- (with Osborn, J. E.) Finite element-Galerkin approximation of the eigenvalues and eigenvectors of selfadjoint problems. *Math. Comp.* **52** (1989), no. 186, 275–297. (Randall J. LeVeque) **89k:65132** 65N30 (65N25)
- fernández-Baca, David** see **Fernández-Baca, David**
- Bala, Martin** On magic and consecutive labelings for the special classes of plane graphs. *Utilitas Math.* **32** (1987), 59–65. (Ko-Wei Lih) **89h:05147** 05C99
- Baccella, Giuseppe** von Neumann regularity of  $V$ -rings with Artinian primitive factor rings. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 747–749. (Pere Menal) **89j:16020** 16A30
- Baccelli, F.** (with Fayolle, G.) Analysis of models reducible to a class of diffusion processes in the positive quarter plane. *SIAM J. Appl. Math.* **47** (1987), no. 6, 1367–1385. (Walter A. Rosenkrantz) **89h:60168** 60I25 (60J70, 60K25, 90B15, 90B22)
- (with Courcoubetis, C. A.; Reiman, Martin I.) Construction of the stationary regime of queues with locking. *Stochastic Process. Appl.* **26** (1987), no. 2, 257–265. (M. Dal Cin) **89g:60277** 60K25 (68M20)
- (with Makowski, Armand M.) Letter to the editor: "Stability and bounds for single server queues in random environment" [Comm. Statist. Stochastic Models **2** (1986), no. 2, 281–291; MR 87m:60206]. *Comm. Statist. Stochastic Models* **4** (1988), no. 3, 553. (Editors) **89i:60178** 60K25 (60G55, 90B22)
- Baccin, Naida Anna** see **Zabarella, Jacopo**, **89f:01021**
- Bacciotti, Andrea** (with Kaloutsidis, N.; Tsiniis, J.) Topological dynamics of control systems. *Theory and applications of nonlinear control systems (Stockholm, 1985)*, 483–496, *North-Holland, Amsterdam-New York*, 1986. (Summary) **89k:93006** 93A10 (49E15, 54H20)
- (with Andreini, Alessandra; Stefani, Gianna) On the stabilizability of homogeneous control systems. *Analysis and optimization of systems (Antibes, 1988)*, 239–248, *Lecture Notes in Control and Inform. Sci.*, **111**, Springer, Berlin-New York, 1988. (see **89c:00031**) 93D15
- The local stabilizability problem for nonlinear systems. *IMA J. Math. Control Inform.* **5** (1988), no. 1, 27–39. (Hong Xing Zhou) **89d:93078** 93D15 (93C10, 93C15)
- (with Andreini, Alessandra; Stefani, Gianna) Global stabilizability of homogeneous vector fields of odd degree. *Systems Control Lett.* **10** (1988), no. 4, 251–256. (Adam Losowicki) **89h:93044** 93D15 (58F10, 93B05)
- Bach, Alexander** (with Plachky, D.; Thomsen, W.) A characterization of identifiability of mixtures of distributions. *Mathematical statistics and probability theory*, Vol. A (Bad Tatzmannsdorf, 1986), 15–21, *Reidel, Dordrecht-Boston, MA-London*, 1987. (F. W. Steutel) **89g:60128** 60G05 (62E10, 62F99)
- The concept of indistinguishable particles in classical and quantum physics. *Found. Phys.* **18** (1988), no. 6, 639–649. (S. Gudder) **89f:81019** 81B10 (81C20)
- Quanta and coherent states. *Lett. Math. Phys.* **15** (1988), no. 1, 75–79. (Brian DeFazio) **89h:81087** 81D30 (81K05)
- Integral representations for indistinguishable classical particles: Brillouin statistics. *Phys. Lett. A* **129** (1988), no. 8–9, 440–442. (S. Gudder) **89f:81020** 81B10
- On the statistics of nonclassical photon states. *Phys. Lett. A* **134** (1989), no. 7, 405–408. (Summary) **89j:81295** 81K05 (81C20)
- Bach, Edward** (with Furuta, Takayuki) Order preserving operator inequalities. *J. Operator Theory* **19** (1988), no. 2, 341–346. (T. Ando) **89i:47025** 47A60 (47B15)
- Bach, Eric** How to generate factored random numbers. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 179–193. (Claus-Peter Schnorr) **89e:11082** 11Y16 (11Y11, 68Q25)
- (with Shallit, Jeffrey) Factoring with cyclotomic polynomials. *Math. Comp.* **52** (1989), no. 185, 201–219. (Kevin S. McCurley) **89k:11127** 11Y05 (12-04, 68Q40)
- Bachas, C.** (with Huberman, B. A.) Complexity and ultradiffusion. *J. Phys. A* **20** (1987), no. 14, 4995–5014. (Hanna Nencka) **89b:82011** 82A05 (05C05)
- (with Antoniadis, I.) 4d fermionic superstrings with arbitrary twists. *Nuclear Phys. B* **298** (1988), no. 3, 586–612. (Sergey Merkulov) **89d:81085** 81E99 (81E30)
- Bachelot, Alain** Convergence dans  $L^p(\mathbb{R}^{n+1})$  de la solution de l'équation de Klein-Gordon vers celle de l'équation des ondes. (English summary) [Convergence in  $L^p(\mathbb{R}^{n+1})$  of the solution of the Klein-Gordon equation to the solution of the wave equation] *Ann. Fac. Sci. Toulouse Math. (5)* **8** (1986/87), no. 1, 37–60. (Sadakazu Aizawa) **89b:35092** 35L70 (35Q20)
- Solutions globales des systèmes de Dirac-Klein-Gordon. [Global solutions of Dirac-Klein-Gordon systems] *Journées "Équations aux dérivées partielles" (Saint Jean*



- de Monts, 1987). *Exp. No. XV*, 10 pp., École Polytech., Palaiseau, 1987. (Gustavo Perla Menzala) **89b:81029** 81C05 (35B40, 35L70, 35Q20)
- (with Petkov, V. M.) Existence des opérateurs d'ondes pour les systèmes hyperboliques avec un potentiel périodique en temps. (English summary) [Existence of wave operators for hyperbolic systems with a time-periodic potential] *Ann. Inst. H. Poincaré Phys. Théor.* **47** (1987), no. 4, 383–428. (Gustavo Perla Menzala) **89c:35121** 35P25 (35L99)
- Bachem, A. (with Euler, Reinhardt) Recent trends in combinatorial optimization. I. (Chinese) Translated from the English by Jia Yu Shao. *Chinese J. Oper. Res.* **5** (1986), no. 2, 18–28. (Yixun Lin) **89m:90129** 90C27 (05B35, 68Q15, 68Q25, 90C10)
- (with Euler, Reinhardt) Recent trends in combinatorial optimization. II. (Chinese) Translated from the English by Zhe Min Wang and Guo Hua Wei. *Chinese J. Oper. Res.* **6** (1987), no. 1, 21–35, 14. (Yixun Lin) **89m:90130** 90C27 (05B35, 68Q15, 68Q25, 90C10)
- (with Kern, Walter) On sticky matroids. *Discrete Math.* **69** (1988), no. 1, 11–18. (Daniel Turzik) **89c:05059** 05B35
- (with Wanka, Alfred) Separation theorems for oriented matroids. *Discrete Math.* **70** (1988), no. 3, 303–310. (Jiří Tůma) **89j:05025** 05B35
- Bachmair, Leo (with Dershowitz, Nachum) Critical pair criteria for completion. *J. Symbolic Comput.* **6** (1988), no. 1, 1–18. (Jürgen Dassow) **89j:68087** 68Q50 (68Q40)
- Bachmuth, S. (with Baumslag, Gilbert; Dyer, J.; Mochizuki, H. Y.) Automorphism groups of two generator metabelian groups. *J. London Math. Soc.* (2) **36** (1987), no. 3, 393–406. (Ya. G. Berkovich) **89a:20040** 20F28
- Bachurina, M. D. (with Shirokov, A. M.) ★ Основы теории комплектования. (Russian) [Fundamentals of the theory of completion] “Nauka i Tekhnika”, Minsk, 1987. 192 pp. (M. M. Syslo) **89i:90093** 90C50 (05C99, 90B30, 93A10)
- Back, Kerry Structure of consumption sets and existence of equilibria in infinite-dimensional spaces. *J. Math. Econom.* **17** (1988), no. 1, 89–99. (C. D. Aliprantis) **89g:90053** 90A14
- Convergence of Lagrange multipliers and dual variables for convex optimization problems. *Math. Oper. Res.* **13** (1988), no. 1, 74–79. (Pierre Loridan) **89d:90211** 90C31 (49D29, 90C25)
- Backus, George Isotropic probability measures in infinite-dimensional spaces. *Proc. Nat. Acad. Sci. U.S.A.* **84** (1987), no. 24, 8755–8757. (Summary) **89a:60037** 60E05 (86A60)
- Addendum: “Isotropic probability measures in infinite-dimensional spaces” [Proc. Nat. Acad. Sci. U.S.A. **84** (1987), no. 24, 8755–8757; MR **89a:60037**]. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 18, 6581. (Editors) **89m:60031** 60E05 (86A60)
- Bacon, Barton J. (with Schmidt, David K.) Multivariable frequency-weighted order reduction. *J. Guidance Control Dynamics* **12** (1989), no. 1, 97–107. (Not in MR) **93B17**
- Bacon, D. W. (with Tade, M. O.; Bayoumi, M. M.) Self-tuning controller design for systems with arbitrary time delays. I. Theoretical development. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1095–1115. (Summary) **89f:93024** 93C30 (93B50, 93C40)
- (with Tade, M. O.; Bayoumi, M. M.) Self-tuning controller design for systems with arbitrary time delays. II. Algorithms and simulation examples. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1117–1141. (Summary) **89f:93025** 93C30 (93B50, 93C40)
- Bacon, John Four modal modelings. *J. Philos. Logic* **17** (1988), no. 2, 91–114. (Jerzy Kotas) **89i:03031** 03B45
- Bacon, Roger see Lindberg, David C., **89c:01011**
- Bacry, H. Zeros of polynomials and generalized Chebyshev polynomials. *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jurnal*, 1985), 239–249, “Nauka”, Moscow, 1986. (see **89d:81002**) 33A75 (30C15, 33A65)
- Zeros of polynomials and generalized Chebyshev polynomials. *Group theoretical methods in physics*, Vol. 1 (*Jurnal*, 1985), 481–494, VNU Sci. Press, Utrecht, 1986. (N. K. Thakare) **89b:33015** 33A65 (30C15)
- (with Michel, L.; Zak, Joshua) Symmetry and classification of energy bands in crystals. *Group theoretical methods in physics* (Varna, 1987), 291–308, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (Summary) **89j:81288** 81H20 (22E45)
- Bácsó, S. A note on geodesic mappings of Finsler spaces. *Topics in differential geometry*, Vol. I, II (Debrecen, 1984), 131–136, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (S. Watanabe) **89b:53043** 53B40
- Badalov, I. S. (with Mashrabbaev, A.) Life spans of a Bellman-Harris branching process with immigration. (Russian) *Probability distributions and mathematical statistics* (Russian) (*Fergana*, 1983), 60–82, 488–489, “Fan”, Tashkent, 1986. (E. Seneta) **89d:60150** 60J80
- (with Mashrabbaev, A.) Asymptotic behavior of the probability of extinction of branching processes with immigration. (Russian) *Asymptotic methods in mathematical statistics* (Russian), 17–34, 158, “Fan”, Tashkent, 1987. (E. Seneta) **89c:60097** 60J80
- Properties of a statistical estimate for the Perron root of the matrix of mathematical expectations of a multitype Galton-Watson branching process. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 4, 8–14, 88. (J. M. Stoyanov) **89b:62182** 62M05 (60J80)
- (with Ganikhodzhayev, A. N.) Some generalizations of limit theorems for branching processes with decreasing immigration. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 6, 3–8, 73. (Summary) **89k:60123** 60J80
- (with Salakhitdinov, R. M.) Estimates for the rate of convergence in limit theorems for branching processes with decreasing immigration. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 1, 3–8, 92. (N. H. Bingham) **89g:60256** 60J80
- Badalov, F. B. (with Eshmatov, Kh.; Yusupov, M.) On certain methods of solving systems of integrodifferential equations encountered in viscoelasticity problems. *J. Appl. Math. Mech.* **51** (1987), no. 5, 683–686 (1989); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 5, 867–871 (Russian). (Not in MR) **73F15** (45J05)
- (with Khashimov, Zh.) ★ Решение неоднородных и нелинейных краевых задач теории пластин и оболочек методом сведения к задачам Коши. (Russian) [Solution of nonhomogeneous and nonlinear boundary value problems in the theory of plates and shells by the method of reduction to Cauchy problems] “Fan”, Tashkent, 1988. 124 pp. ISBN 5-648-00001-4 (Vadim Komkov) **89k:73044** 73K10 (73-08, 73F99, 73K05, 73K15, 73K40, 73L99)
- (with Khuzhayarov, N. Yu.) A method for the exact solution of integro-differential equations of dynamic problems of the linear theory of viscoelasticity. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 1, 71–75; translated in *Soviet Phys. Dokl.* **33** (1988), no. 3, 229–231. (G. F. Miller) **89i:65138** 65R20 (45J05, 73F15)
- Badalov, V. G. (with Rustamov, K. A.; Atakishiev, N. M.; Radzhabov, B. A.) Symmetry properties of the equations of quantum nonrelativistic and relativistic oscillators. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 1, 89–96. (M. I. Monastyrskii) **89b:81082** 81D15 (17B65)
- Badalyan, A. M. (with Konyukhova, N. B.; Parisilii, B. S.) The spectrum of states in Yang-Mills quantum mechanics. *Soviet J. Nuclear Phys.* **45** (1987), no. 6, 1094–1101; translated from *Yadernaya Fiz.* **46** (1987), no. 7, 1768–1779 (Russian). (Summary) **89c:81048** 81C99
- Badalyan, G. V. (with Edigaryan, V. M.) On the problem of the inversion of a transformation of convolution type. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1985**, no. 1 (158), 3–12. (Not in MR) **44A35**
- (with Edigaryan, V. M.) On the problem of the best approximation of  $k$ -multiply differentiable functions by polynomials in a Müntz system in a space. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1986**, no. 1 (161), 3–10. (A. B. Pevnyi) **89b:41009** 41A10
- Badard, R. Extending lattice structures. *J. Math. Anal. Appl.* **136** (1988), no. 1, 314–324. (Osma Kaleva) **89k:03061** 03E72 (06B99)
- Badawi, Faris A. (with Lindquist, Anders) A stochastic realization approach to the discrete-time Mayne-Fraser smoothing formula. *Frequency domain and state space methods for linear systems* (Stockholm, 1985), 251–262, North-Holland, Amsterdam-New York, 1986. (Zbigniew Nahorski) **89d:93110** 93B14 (93B15, 93C50, 93C55, 93E03, 93E10)
- Stochastic realizations of a discrete-time nonstationary process. *Internat. J. Control* **48** (1988), no. 4, 1439–1454. (B. G. Pachpatte) **89j:93016** 93B15 (93C55, 93E03)
- el Badawy Yehia, S. see El Badawy Yehia, S.
- Baddley, A. J. (with Jensen, E. B.; Gundersen, H. J. G.; Sundberg, R.) Recent trends in stereology. (French summary) *Internat. Statist. Rev.* **53** (1985), no. 1, 99–108. (Summary) **89f:62053** 62H99
- Baddour, R. E. (with Song, S.) Nonpotential wave-current field. *Appl. Math. Notes* **12** (1987), no. 3-4, 1–11. (Alan Jeffrey) **89g:76021** 76B99 (76C99)
- Badea, C. The irrationality of certain infinite products. *Studia Univ. Babeş-Bolyai Math.* **31** (1986), no. 3, 3–8. (S. V. Kotov) **89b:11061** 11J72
- (with Badea, Ion) On the order of simultaneous approximation of bivariate functions by Bernstein operators. *Anal. Numer. Theor. Approx.* **16** (1987), no. 1, 11–17. (Joseph M. Lambert) **89c:41017** 41A28 (41A10)
- (with Andrica, Dorin) Grüss' inequality for positive linear functionals. *Period. Math. Hungar.* **19** (1988), no. 2, 155–167. (V. B. Headley) **89d:26018** 26D15
- Badea, Ion (with Badea, C.) On the order of simultaneous approximation of bivariate functions by Bernstein operators. *Anal. Numer. Theor. Approx.* **16** (1987), no. 1, 11–17. (Joseph M. Lambert) **89c:41017** 41A28 (41A10)
- Badea, Ovidiu Un problème aux limites pour l'équation Poisson. (Romanian summary) [A boundary value problem for the Poisson equation] *Bul. Univ. Braşov Ser. C* **29** (1987), 1–6 (1988). (Summary) **89c:76042** 76D99
- Bader, Laura On generalized André planes. (Italian. English summary) *Rend. Circ. Mat. Palermo* (2) **35** (1986), no. 3, 448–455 (1987). (Giovanni Ferrero) **89c:51012** 51J20 (16A76, 51A40)
- On the flocks of the quadratic cone. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **2** (1988), no. 3, 371–375. (Stanley E. Payne) **89m:51018** 51E25
- Some new examples of flocks of  $Q^2(3, q)$ . *Geom. Dedicata* **27** (1988), no. 2, 213–218. (J. C. Fisher) **89i:51012** 51E20 (51A35)
- Baderko, E. A. A method of potential theory in boundary value problems for  $2m$ -parabolic equations in a semibounded domain with a nonsmooth lateral boundary. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 1, 3–9, 180; translated in *Differential Equations* **24** (1988), no. 1, 1–5. (Summary) **89c:35068** 35K35
- el Badia, A. see El Badia, A.
- burgués i Badia, Josep Ma. see Burgués i Badia, Josep Ma.
- Badii, Larry see Knight, J. H., **89a:44002**
- Badii, M. An existence and uniqueness theorem for nonlinear autonomous neutral functional differential equations. (Italian summary) *Rend. Mat.* (7) **5** (1985), no. 3-4, 375–386 (1988). (J. Jarník) **89k:34117** 34K05 (34A10, 34K30, 47H20)
- (with Díaz Díaz, Jesús Ildefonso; Tesei, Alberto) Existence and attractivity results for a class of degenerate functional-parabolic problems. *Rend. Sem. Mat. Univ. Padova* **78** (1987), 109–124. (Hans Engler) **89b:35325** 35R10 (35K60, 35R35, 45K05)
- Badii, R. (with Politi, A.) Phase-transitions in hyperbolic dynamical systems. *Chaos and complexity* (Torino, 1987), 42–48, *World Sci. Publishing, Singapore*, 1988. (Joan Farmer Guetti) **89k:82006** 82A05 (58F05, 58F13, 58F15)
- (with Politi, A.; Grassberger, P.) On the geometric structure of nonhyperbolic attractors. *J. Phys. A* **21** (1988), no. 15, L763–L769. (Summary) **89k:58194** 58F13 (58F12)
- (with Grassberger, P.; Politi, A.) Scaling laws for invariant measures on hyperbolic and nonhyperbolic attractors. *J. Statist. Phys.* **51** (1988), no. 1-2, 135–178. (Holger Kantz) **89i:58070** 58F12 (58F13)
- Badinelli, Ralph D. (with Schwarz, Leroy B.) Backorders optimization in a one-warehouse  $N$ -identical retailer distribution system. *Naval Res. Logist.* **35** (1988), no. 5, 427–440. (Summary) **89g:90083** 90B05
- Badkov, V. M. Approximate properties of Fourier sums in orthogonal polynomials. (Russian) *Theory of functions and approximations, Part 1* (Russian) (Saratov, 1984), 98–103, *Saratov. Gos. Univ. Saratov*, 1986. (see **89j:00035**) 42C05
- Generalization of a theorem of I. A. Ibragimov and V. N. Solov. (Russian) *Approximation in concrete and abstract Banach spaces* (Russian), 15–30, 123, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1987. (I. Szalay) **89m:42009** 42A99
- Two-sided estimates for the Lebesgue function and the remainder of a Fourier series with respect to orthogonal polynomials. (Russian) *Approximation in concrete and abstract Banach spaces* (Russian), 31–45, 123, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1987. (Dharm P. Gupta) **89b:42035** 42C15 (41A10)
- Systems of orthogonal polynomials expressed in explicit form in terms of Jacobi polynomials. (Russian) *Mat. Zametki* **42** (1987), no. 5, 650–659, 761. (Dharm P. Gupta) **89g:42039** 42C05 (33A65)
- Badmaev, V. M. (with Polivenko, V. K.) Sufficient conditions for convergence in the Liénard equation. (Russian) *Differential and integral equations and complex analysis*

- (Russian), 23-30, i, *Kalmytsk. Gos. Univ., Elista*, 1986. (O. A. Kastritsa) **89k:34075** 34D20 (34C20)
- Badr, A.** (with Aly, G.; Binder, Z.) Multi-model control of MIMO systems: location and control algorithms. *Internat. J. Systems Sci.* **19** (1988), no. 9, 1687-1698. (Not in MR) **93C05** (00A71, 93C55)
- Badr, R. I.** (with Hassan, M. F.; Bernussou, J.; Bilal, A. Y.) Time-domain robustness and performance optimisation of linear quadratic control problems. *Proc. IEEE-D* **135** (1988), no. 4, 223-231. (Andrzej Świerniak) **89j:93043** 93B50 (49B50, 93B35, 93D15)
- Badra, Abdallah** Sous-catégories pleines d'une catégorie dérivée filtrée. [Full subcategories of a filtered derived category] *Ann. Sci. Univ. Clermont-Ferrand II Math.* **24** (1987), 105-139. (Steven E. Landsburg) **89k:18018** 18E30 (18E35)
- Badran, Yahya** Preference ranking of discrete multiattribute instances. *European J. Oper. Res.* **34** (1988), no. 3, 308-315. (Summary) **89b:90011** 90A06 (90B50)
- Badratinova, L. G.** (with Kuznetsov, V. V.; Petrova, A. G.; Pukhnachev, V. V.) Free-boundary problems that model the process of fluid-phase epitaxy in triple solutions. (Russian) *Dinamika Sploshn. Sredy* **78** (1986), 137-141, 159. (Summary) **89g:35119** 35R35 (76R50)
- Badriev, I. B.** (with Karchevskii, M. M.) ★ Методы двойственности в прикладных задачах. (Russian) [Duality methods in applied problems] Общая теория. [General theory] *Kazan. Gos. Univ., Kazan'*, 1987. 148 pp. (Dinh Thé Luc) **89d:49015** 49A55 (46N05, 47Hxx, 49A50, 90-01)
- Badurek, G.** see Matter wave interferometry, **89c:81003**
- Bae, Jong Sig** (with Jeon, Jong Woo; Chung, Han Young) Chances of Simpson's paradox. *J. Korean Statist. Soc.* **16** (1987), no. 2, 117-127. (Not in MR) **62H17**
- Bae, Jong Sook** (with Park, Jong An) A surjectivity theorem for a nonlinear operator with Altman's directional contractions. *Bull. Korean Math. Soc.* **24** (1987), no. 2, 131-134. (J. Daneš) **89b:47106** 47H99 (58C15)
- Baeckler, Peter** see Baeckler, Peter
- Bachmann, P. L.** (with Shepherd, M. S.; Flaherty, Joseph E.) Adaptive analysis for automated finite element modeling. *The mathematics of finite elements and applications, VI (Uxbridge, 1987)*, 521-532, *Academic Press, London-New York*, 1988. (see **89c:65004**) **65N30** (65N30, 65V05)
- Baek, Jeong-Seon** Maximum principles for functionals associated with semilinear elliptic and parabolic problems. *Honam Math. J.* **9** (1987), no. 1, 51-56. (W. Allegretto) **89c:35022** 35B50 (35J60, 35K55)
- Baeckler, Peter** (with McCrea, J. Dermott; Gürses, Metin) A Kerr-like solution of the Poincaré gauge field equations. (Italian summary) *Nuovo Cimento B* **111** **99** (1987), no. 2, 171-177. (Dieter Lorenz-Petzel) **89b:83072** 83D05
- (with Hecht, Ralf; Hehl, Friedrich W.; Shirafuji, Takeshi) Mass and spin of exact solutions of the Poincaré gauge theory. *Progr. Theoret. Phys.* **78** (1987), no. 1, 16-21. (P. K. Smerz) **89b:83068** 83D05 (81E13)
- (with Seitz, Mario; Winkelmann, Volker) Cylindrically symmetric solutions of self-consistently coupled Dirac fields in gauge theories of gravity. *Classical Quantum Gravity* **5** (1988), no. 3, 479-490. (Yu. N. Obukhov) **89c:83041** 83D05 (81E99, 83E99)
- (with Gürses, Metin; Hehl, Friedrich W.) A new method to solve the field equations of Poincaré gauge theories. *Classical Quantum Gravity* **5** (1988), no. 7, L105-L112. (P. K. Smerz) **89f:83073** 83D05 (81E13)
- (with Gürses, Metin; Hehl, Friedrich W.; McCrea, J. Dermott) The exterior gravitational field of a charged spinning source in the Poincaré gauge theory: a Kerr-Newman metric with dynamic torsion. *Phys. Lett. A* **128** (1988), no. 5, 245-250. (M. Carmeli) **89f:83074** 83D05
- de Baenst-Vandenbroucke, A.** see Bernoulli, Daniel, **89b:01074**
- Baer, Dagmar** Tilting sheaves in representation theory of algebras. *Manuscripta Math.* **60** (1988), no. 3, 323-347. (Michael M. Kapranov) **89c:14017** 14F05 (16A64)
- Baer, Reinhold** see Zermelo, Ernst, **89f:01083**
- de Baere, W.** see De Baere, W.
- Baernstein, Albert, II** Dubinin's symmetrization theorem. *Complex analysis, I (College Park, Md., 1985-86)*, 23-30, *Lecture Notes in Math.*, 1275, *Springer, Berlin-New York*, 1987. (Matti Esén) **89g:30041** 30C85 (31A15)
- On the harmonic measure of slit domains. *Complex Variables Theory Appl.* **9** (1987), no. 2-3, 131-142. (N. G. Makarov) **89b:30037** 30C85 (30C75, 31A15)
- Baert, Patrick** (with De Schampheleire, Jan) Autopoiesis, self-organisation and symbolic interactionism: some convergences. *Kybernetes* **17** (1988), no. 1, 60-69. (Editors) **89i:92062** 92A20
- Baeten, J. C. M.** (with Bergstra, J. A.; Klop, Jan Willem) On the consistency of Koomen's fair abstraction rule. *Theoret. Comput. Sci.* **51** (1987), no. 1-2, 129-176. (From the introduction) **89m:68031** 68Q10
- (with Bergstra, J. A.) Global renaming operators in concrete process algebra. *Inform. and Comput.* **78** (1988), no. 3, 205-245. (Dirk Janssens) **89m:68032** 68Q10
- Baer, A. V.** Solution of the inverse Lamb problem with an unknown source. (Russian) *Numerical methods for solving inverse problems of mathematical physics (Moscow, 1988)*, 5-9, 261, *Moskov. Gos. Univ., Moscow*, 1988. (Summary) **89i:35126** 35R30 (73D50)
- On the solution of an inverse problem of the scattering of a plane wave by a multilayered inhomogeneous medium. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 2, 328-333; translated in *Soviet Phys. Dokl.* **33** (1988), no. 1, 26-28. (From the introduction) **89c:73014** 73D50 (35Q20, 35R30, 86A15)
- A method for solving an inverse scattering problem for the wave equation. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 1, 25-33, 156; translated in *U.S.S.R. Comput. Math. and Math. Phys.* **28** (1988), no. 1, 15-21. (A. A. Alekseev) **89g:35060** 35L05 (35P25, 35R30)
- Baer, John C.** Is life improbable? *Found. Phys.* **19** (1989), no. 1, 91-95. (Summary) **89m:81025** 81B99
- bréton Baer, Nora** see Bréton Baer, Nora
- Baev, N. G.** A survey on stochastic graphs. (Russian) *Proceedings of the All-Union seminar on discrete mathematics and its applications (Moscow, 1984)*, 28-32, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (Zbigniew Palka) **89a:05115** 05C80
- Bagai, Ishi** (with Kusum, Kalpana) A new class of distribution free procedures for testing homogeneity of scale parameters against ordered alternatives. *Comm. Statist. Theory Methods* **17** (1988), no. 5, 1365-1376. (Subhash C. Kochhar) **89j:62066** 62G10
- Bagby, Thomas** (with Gauthier, Paul M.) Approximation by harmonic functions on closed subsets of Riemann surfaces. *J. Analyse Math.* **51** (1988), 259-284. (Helmut Köditz) **89j:30064** 30F15 (30E10)
- A Runge theorem for harmonic functions on closed subsets of Riemann surfaces. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 160-164. (Helmut Köditz) **89c:30111** 30F15 (30E10)
- Bagchi, Arunabha** (with Mazumdar, Ravi) A finitely additive white noise approach to filtering for two-parameter diffusion processes. *Theory and applications of nonlinear control systems (Stockholm, 1985)*, 379-386, *North-Holland, Amsterdam-New York*, 1986. (see **89b:93010**) **93E11**
- Bagchi, Bhaskar** Recurrence in topological dynamics and the Riemann hypothesis. *Acta Math. Hungar.* **50** (1987), no. 3-4, 227-240. (F. Schweiger) **89b:11072** 11M26 (54H20, 58F25)
- (with Narasimha Sastry, N. S.) Codes associated with generalized polygons. *Geom. Dedicata* **27** (1988), no. 1, 1-8. (Vikram Jha) **89b:51018** 51E30 (05B25, 94B05, 94B25)
- (with Narasimha Sastry, N. S.) One-step completely orthogonalizable codes from generalized quadrangles. *Inform. and Comput.* **77** (1988), no. 2, 123-130. (Summary) **89d:94038** 94B05 (05B25, 51E25)
- No extendable biplane of order nine. *J. Combin. Theory Ser. A* **49** (1988), no. 1, 1-12. (Vikram Jha) **89c:05043** 05B05 (05C75, 94B05)
- Bagchi, Bijan** (with Lahiri, Anuradha; Roy, Prodyot Kumar) Supersymmetry in atomic physics and the radial problem. *J. Phys. A* **20** (1987), no. 12, 3825-3832. (Adriaan Tip) **89c:81207** 81G40 (81D20)
- Bagchi, Biman** (with Rice, Stuart A.) On the stability of the infinite-dimensional fluid of hard hyperspheres: a statistical mechanical estimate of the density of closest packing of simple hypercubic lattices in spaces of large dimensionality. *J. Chem. Phys.* **88** (1988), no. 2, 1177-1184. (Summary) **89b:82068** 82A50 (82A25)
- Bagchi, Sunanda** On the optimalities of the MBGDs under mixed effects model. *Comm. Statist. Theory Methods* **16** (1987), no. 12, 3565-3576. (S. K. Tharthare) **89c:62092** 62K05
- A class of nonbinary unequally replicated E-optimal designs. *Metrika* **35** (1988), no. 1, 1-12. (A. Hedayat) **89g:62124** 62K05 (05B05, 62K10)
- Bagdov, A. G.** (with Movsisyan, L. A.) Nonlinear waves in a cylindrical shell that contains a fluid with admixtures. (Russian. Armenian summary) *Izv. Akad. Nauk Armyan. SSR Ser. Mekh.* **40** (1987), no. 6, 14-21, 65. (Summary) **89c:73042** 73J06 (76Z05)
- el Bagdouri, M.** see El Bagdouri, M.
- Bagmihl, Frederick** An aleph hypothesis, and its consequences for beths, sums of beths, and infinite products of alephs. *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 4, 331-336. (L. Bukovský) **89j:04001** 04A10
- Bagewadi, C. S.** (with Ravi, B.) On Kaehlerian concircular  $n$ -symmetric and  $n$ -recurrent manifolds. *Acta Cienc. Indica Math.* **13** (1987), no. 4, 207-211. (Veselka Mikhova) **89f:53061** 53C15 (53C55)
- (with Prasanna Kumar, K. N.) On the geometry of field lines in plasma flows. *Bull. Calcutta Math. Soc.* **80** (1988), no. 1, 47-57. (D. ter Haar) **89f:82047** 82A45 (53B50, 76X05)
- Bagga, K. S.** (with Beineke, L. W.; Lipman, M. J.; Pippert, R. E.) On the edge-integrity of graphs. *Fifteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987)*. *Congr. Numer.* **60** (1987), 141-144. (R. C. Entringer) **89g:05069** 05C40
- (with Beineke, L. W.; Chartrand, G.; Oellermann, O. R.) Variations on a theorem of Petersen. *Period. Math. Hungar.* **19** (1988), no. 3, 241-247. (Seymour Schuster) **89i:05208** 05C70
- see also Conference: Graph Theory, **89j:05005** and **89j:05006**
- Bagga, P. C.** (with Kalra, K. R.) Minimization of waiting cost in  $n \times m$  permutation flowshop scheduling with precedence constraints. *Indian J. Management Systems* **3** (1987), no. 3, 127-132. (Summary) **89j:90149** 90B35
- (with Kalra, K. R.; Bansal, S. P.) Equivalent job for block of jobs in  $n \times 2$  flowshop scheduling with setup times separated. *Internat. J. Management Systems* **4** (1988), no. 3, 169-176. (Summary) **89i:90086** 90B35
- Bagger, J. A.** (with Wess, Julius) Gauging the supersymmetric sigma model with a Goldstone field. *Phys. Lett. B* **199** (1987), no. 2, 243-246. (Enore Guadagnini) **89a:81060** 81E13 (81G20)
- Strings without string. *Proceedings of the Johns Hopkins Workshop on Current Problems in Particle Theory. 11. Frontiers in Particle Theory*, 145-171, *World Sci. Publishing, Singapore*, 1988. (Ömer Öguz) **89b:81161** 81E99 (81E30)
- (with Gal'perin, A. S.; Ivanov, Evgenii Alekseevich; Ogievetskii, V. I.) Gauging  $N = 2$  sigma models in harmonic superspace. *Nuclear Phys. B* **303** (1988), no. 3, 522-542. (Sergey Merkulov) **89b:81097** 81E13 (81E20, 81G20, 83E30)
- (with Nemeschansky, Dennis; Yankielowicz, Shimon) Virasoro algebras with central charge  $c > 1$ . *Phys. Rev. Lett.* **60** (1988), no. 5, 389-392. (Vladimir K. Dobrev) **89b:17034** 17B67 (17B65, 81E40, 81E99)
- (with Nemeschansky, Dennis; Zuber, J.-B.) Minimal model correlation functions on the torus. *Phys. Lett. B* **216** (1989), no. 3-4, 320-324. (Summary) **89m:81130** 81E99 (17B65, 58H10, 81E40, 82A68)
- Baggeroer, A. B.** (with Kuperman, W. A.; Schmidt, Henrik) Performance bounds on array processing for source localization using full wave modeling of signal and noise fields. *Computational acoustics, Vol. 2 (New Haven, Conn., 1986)*, 299-319, *North-Holland, Amsterdam-New York*, 1988. (Summary) **89b:76018** 76Q05
- Baggett, L. W.** (with Carey, A. L.; Moran, William; Ramsay, Arlan) Nonmonomial representations of abelian groups with multipliers (announcement). *Miniconference on harmonic analysis and operator algebras (Canberra, 1987)*, 1-5, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 15, *Austral. Nat. Univ., Canberra*, 1987. (see **89b:00009**) **22D12**
- On circle-valued cocycles of an ergodic measure-preserving transformation. *Israel J. Math.* **61** (1988), no. 1, 29-38. (Nathaniel Friedman) **89b:28021** 28D05
- (with Merrill, Kathy D.) Equivalence of cocycles under an irrational rotation. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1050-1053. (G. R. Goodson) **89b:28022b** 28D05 (42A05, 58F11)
- On functions that are trivial cocycles for a set of irrationals. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1212-1215. (G. R. Goodson) **89b:28022a** 28D05 (42A05, 58F11)
- Baghat, Ahmed** (with Soliman, Hisham M.) Minimum sensitivity pole placer. *Dynamics Stability Systems* **3** (1988), no. 1-2, 51-56. (Kemin Zhou) **89k:93075** 93B35 (93B55)



- Baginov, I. P.** (with Gurman, V. I.; Baturin, V. A.; Moskalenko, A. I.; Bobryshev, A. G.; Butin, A. A.; Danilina, E. V.; Derenko, N. V.; Dushin, K. B.; Dykhta, V. A.; Kolokol'nikova, G. A.; Konstantinov, G. N.; Mel'nik, V. V.; Nikiforova, L. N.; Ovsyanikova, N. A.; Rasina, I. V.; Rozenraukh, D. M.; Urbanovich, D. E.; Fedorova, E. Yu.) ★ Методы улучшения в вычислительном эксперименте. (Russian) [Methods of improving [control] in numerical experiments] "Nauka" Sibirsk. Otdel, Novosibirsk, 1988. 184 pp. ISBN 5-02-028573-0 (Asen L. Dontchev) 89b:65099 65Kxx (49Dxx, 93B40)
- Baginski, Czesław** On sets of elements of the same order in the alternating group  $A_n$ . *Publ. Math. Debrecen* 34 (1987), no. 3-4, 313-315. (J. L. Brenner) 89b:20019 20B35
- The isomorphism question for modular group algebras of metacyclic  $p$ -groups. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 39-42. (Wolfgang Willems) 89i:20016 20C05 (16A26)
- Baginski, Frank E.** Axisymmetric and nonaxisymmetric buckled states of a shallow spherical cap. *Quart. Appl. Math.* 46 (1988), no. 2, 331-351. (R. Kodnár) 89j:73054 73H05 (35B32, 58E07, 73L99)
- Bagirov, E. B.** Lower bounds for "tails" of distributions of cubic forms of normally distributed random variables. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 4, 764-769. (Slobodanka Janković) 89m:60037 60E15
- Bagirov, L. A.** A class of higher-order elliptic equations that degenerate on part of the boundary. (Russian) *Sibirsk. Mat. Zh.* 28 (1987), no. 6, 12-25, 217. (Ya. A. Roitberg) 89c:35064 35J70
- Bagirova, N. Kh.** Asymptotic behavior of the solution of a singularly perturbed optimal control problem. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 7 (1986), no. 5, 28-32 (1987). (V. A. Sobolev) 89d:34106 34H05 (34E15, 49D40)
- Asymptotic expansion of the solution of a singularly perturbed Bolza variational problem. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 9 (1988), no. 1, 40-44. (From the text) 89m:49055 49D29 (34B05, 34E05, 49B10)
- Bagiyar, R. A.** On quasipolynomials of L. V. Kantorovich type. (Russian) *Optimizatsiya* No. 40(57) (1987), 64-69, 160. (Len Bos) 89j:41001 41A05
- Bagley, R. W.** (with Wu, T. S.; Yang, Jeong Sheng) Compactly generated subgroups and open subgroups of locally compact groups. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 969-976. (M. Rajagopalan) 89c:22005 22D05
- Bagnoli, F.** (with Ciliberto, S.; Francescato, A.; Livi, R.; Ruffo, Stefano) Cellular automaton model for a fluid experiment. *Chaos and Complexity* (Torino, 1987), 318-327, *World Sci. Publishing, Singapore*, 1988. (see 89g:58144) 76E15 (68U20, 76-05, 76-08)
- Bagrov, V. G.** (with Obukhov, V. V.; Osetrin, K. E.) Stäckel spaces of an electrovacuum of type (1, 1). (Russian) *Gravitatsiya i Teor. Otnositel'nosti* No. 24 (1987), 3-11. (Jan Novotný) 89f:83035 83C20 (83C50)
- (with Evseevich, A. A.; Obukhov, V. V.; Osetrin, K. E.) Stäckel spaces in an electrovacuum with isotropic complete sets. Integration of field equations for metrics that generalize spaces of type (1, 1). (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 30 (1987), no. 12, 17-20. (Vitaly N. Mel'nikov) 89i:83025 83C20
- (with Obukhov, V. V.; Osetrin, K. E.) Classification of null-Stäckel electrovac metrics with cosmological constant. *Gen. Relativity Gravitation* 20 (1988), no. 11, 1141-1154. (Nora Bretón Báez) 89m:83011 83C15 (83C20, 83C50)
- (with Obukhov, V. V.; Osetrin, K. E.) Stäckel electrovacuum spaces with isotropic complete sets of type (1, 1). (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 31 (1988), no. 10, 79-83; translated in *Soviet Phys. J.* 31 (1988), no. 10, 837-840. (Jan Novotný) 89k:83025 83C20 (83C50)
- (with Belov, V. V.) Destruction time of given accuracy of quasiclassical trajectory-coherent states. (Russian. English summary) *Teoret. Mat. Fiz.* 74 (1988), no. 2, 316-319; translated in *Theoret. and Math. Phys.* 74 (1988), no. 2, 211-213. (Henryk Arodź) 89f:81029 81C05 (81D30)
- Bagwell, Kyle** (with Ramey, Garey) Advertising and limit pricing. *Rand J. Econom.* 19 (1988), no. 1, 59-71. (Summary) 89c:90049 90A14
- Bahar, Leon Y.** (with Trench, William F.) First integrals for equations with nonlinearities of the Emden-Fowler type. *Internat. J. Non-Linear Mech.* 22 (1987), no. 3, 217-226. (Silvio Nocilla) 89d:34007 34A10 (34A34, 70K99)
- (with Kwatny, Harry G.) Some qualitative aspects of power system dynamics. *Dynamical systems approaches to nonlinear problems in systems and circuits* (Henniker, NH, 1986), 175-196, *SIAM, Philadelphia, PA*, 1988. (Henryk Żoładek) 89m:34074 34D99 (58C27, 58F14, 94C05)
- Bahnasawi, Ahmed A.** (with Mahmoud, Magdi S.) Some properties of absolutely stable discrete time systems. *Control Theory Adv. Tech.* 4 (1988), no. 2, 243-250. (Summary) 89c:93175 93D20 (93C55)
- (with Mahmoud, Magdi S.) Asymptotic stability for a class of linear discrete systems with bounded uncertainties. *IEEE Trans. Automat. Control* 33 (1988), no. 6, 572-575. (Not in MR) 93D20 (93C05, 93C40, 93C55)
- (with Mahmoud, Magdi S.) Stabilization of discrete adaptive systems with bounded disturbances. *Internat. J. Systems Sci.* 19 (1988), no. 11, 2185-2194. (Mihail Voicu) 89k:93187 93D99 (34D10, 93C40, 93C55)
- (with Al-Fuhaid, A. S.; Mahmoud, Magdi S.) Linear feedback approach to the stabilization of uncertain discrete systems. *Proc. IEEE-D* 136 (1989), no. 1, 47-52. (Summary) 89i:93085 93D15 (49D40, 93C55)
- Bahouri, H.** (with Dehman, B.) Propagation du front d'onde  $C^p$  pour des équations non linéaires. [Propagation of the  $C^p$  wave front for nonlinear equations] *J. Math. Pures Appl.* (9) 67 (1988), no. 2, 115-130. (Peter R. Popivanov) 89i:35138 35S99 (35A27, 35L60, 35L67)
- Bahr, Randall K.** (with Bucklew, James A.) Minimax estimation of continuous time deterministic signals in colored noise. *Stochastic Process. Appl.* 27 (1987), no. 1, 97-120. (Věra Lánská) 89i:93104 93E10 (60G35, 62M20)
- Bahri, Abbas** (with Coron, J.-M.) Équation de Yamabe sur un ouvert non contractile. (English and Italian summaries) [The Yamabe equation on a noncontractible open set] *Rend. Istit. Mat. Univ. Trieste* 18 (1986), no. 1, 1-15. (Sadakazu Aizawa) 89a:35081 35J65
- Pseudo-orbits of contact forms. *Periodic solutions of Hamiltonian systems and related topics* (Il Ciocco, 1986), 11-56, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 209, Reidel, Dordrecht-Boston, MA, 1987. (From the text) 89a:58037 58F05 (53C37, 58A10)
- Superlinear elliptic equations. *Séminaire sur les équations aux dérivées partielles* 1986-1987, Exp. No. XXI, 27 pp., École Polytech., Palaiseau, 1987. (Milan Kučera) 89a:58023 58E05 (35J65, 58G25)
- Critical points at infinity in the variational calculus. *Partial differential equations (Rio de Janeiro, 1986)*, 1-29, *Lecture Notes in Math.*, 1324, Springer, Berlin-New York, 1988. (Wei Yue Ding) 89k:58052 58E05
- (with Coron, J.-M.) On a nonlinear elliptic equation involving the critical Sobolev exponent: the effect of the topology of the domain. *Comm. Pure Appl. Math.* 41 (1988), no. 3, 253-294. (J. V. A. Gonçalves) 89c:35053 35J65 (58E05, 58G30)
- Bahri, Z.** (with Kumar, B. V. K. Vijaya) Generalized synthetic discriminant functions. *J. Opt. Soc. Amer. A* 5 (1988), no. 4, 562-571. (Summary) 89c:94006 94A13
- Bakhturin, Yuri** see Bakhturin, Yu. A.
- Bai, Do Sam** (with Kim, Myung Soo; Jang, Joong Soon) Efficient sequential estimation in a compound Poisson process. *J. Korean Statist. Soc.* 15 (1986), no. 2, 87-96. (René Flavigny) 89a:62181 62L12 (62M05)
- Bai, Er Wei** (with Mason, J. E.; Fu, L.-C.; Bodson, M.; Sastry, S. Shankar) Analysis of adaptive identifiers in the presence of unmodeled dynamics: averaging and tuned parameters. *IEEE Trans. Automat. Control* 33 (1988), no. 10, 969-976. (Jan Bialasiewicz) 89i:93032 93B30 (49D07, 93C40, 93D25)
- Adaptive regulation of discrete time systems by switching control. *Systems Control Lett.* 11 (1988), no. 2, 129-133. (Summary) 89c:93156 93D10 (93C40, 93C55)
- Bai, Shi** (with Salam, Fathi M. A.) Disturbance-generated bifurcation in a prototype adaptive system with  $e_1$ -modification law. *IEEE Trans. Automat. Control* 33 (1988), no. 10, 979-984. (R. Haber) 89m:93046 93C40 (58F14)
- (with Salam, Fathi M. A.) Complicated dynamics of a prototype continuous-time adaptive control system. *IEEE Trans. Circuits and Systems* 35 (1988), no. 7, 842-849. (François Aribaud) 89h:93035 93C40 (58F14, 93C60)
- Bai, Yu Lan** (with Chen, Shu Tao) The problem of interchanging the order for doubly iterated generalized integrals. (Chinese) *Natur. Sci. J. Harbin Normal Univ.* 3 (1987), no. 3, 13-18. (Not in MR) 26B15
- Bai, Yu Shan** The 0.618 iterative method for solving nonlinear equations. (Chinese. English summary) *Dongbei Shida Xuebao* 1987, no. 4, 15-21. (T. Y. Li) 89h:65074 65H05
- Bai, Z. D.** see Bai, Zhi Dong
- Bai, Zhao Jun** Numerical treatment of restricted Gauss-Markov model. *Comm. Statist. Simulation Comput.* 17 (1988), no. 2, 569-579. (S. Jeyaratnam) 89j:62082 62J05
- Note on the quadratic convergence of Kogbetliantz's algorithm for computing the singular value decomposition. *Linear Algebra Appl.* 104 (1988), 131-140. (William W. Hager) 89k:65035 65F15
- Bai, Zheng Gao** Minimal submanifolds in a Riemannian manifold of constant curvature. (Chinese) An English summary appears in *Chinese Ann. Math. Ser. B* 8 (1987), no. 3, 388. *Chinese Ann. Math. Ser. A* 8 (1987), no. 3, 362-367. (C.-C. Hsiung) 89a:53059 53C40 (53C65)
- Minimal submanifolds in a Riemannian manifold of quasicontant curvature. A Chinese summary appears in *Chinese Ann. Math. Ser. A* 9 (1988), no. 1, 102-103. *Chinese Ann. Math. Ser. B* 9 (1988), no. 1, 32-37. (Yang Lian Pan) 89g:53090 53C42
- Bai, Zhi Dong** (with Yin, Yong Quan) Convergence to the semicircle law. *Ann. Probab.* 16 (1988), no. 2, 863-875. (Jack W. Silverstein) 89c:60049 60F99 (62E20)
- (with Silverstein, Jack W.; Yin, Yong Quan) A note on the largest eigenvalue of a large-dimensional sample covariance matrix. *J. Multivariate Anal.* 26 (1988), no. 2, 166-168. (Kumar Joag-Dev) 89i:62083 62H05
- (with Yin, Yong Quan; Krishnaiah, P. R.) On the limit of the largest eigenvalue of the large-dimensional sample covariance matrix. *Probab. Theory Related Fields* 78 (1988), no. 4, 509-521. (Sándor Csörgő) 89g:60117 60F15 (62H99)
- A theorem of Feller revisited. *Ann. Probab.* 17 (1989), no. 1, 385-395. (Thomas Mikosch) 89m:60069 60F15 (60G42, 60G50)
- Balaranova, A. S.** On Fourier-Walsh series. (Russian) *Some problems in functional analysis, differential equations and their applications* (Russian), 8-15, 107-108, *Kazakh. Gos. Univ., Alma-Ata*, 1985. (see 89a:00016) 42C10
- Balashov, S. P.** see Federer, Herbert, 89f:49034
- Baica, Malvina** Pythagorean triangles of equal areas. *Internat. J. Math. Math. Sci.* 11 (1988), no. 4, 769-780. (Hellmuth Stachel) 89i:11034 11D09 (11B99)
- Baidakov, A. N.** A priori estimates for Hölder norms of solutions of quasilinear  $B$ -elliptic equations. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 11, 1923-1930, 2021. (Jana D. Madjarova) 89b:35041 35J60 (35B45, 46E35)
- Balder, A.** (with Churchill, R. C.) The Campbell-Hausdorff group and a polar decomposition of graded algebra automorphisms. *Pacific J. Math.* 131 (1988), no. 2, 219-235. (Summary) 89k:17039 17B70 (16A03, 58F99)
- (with Churchill, R. C.) Uniqueness and nonuniqueness of normal forms for vector fields. *Proc. Roy. Soc. Edinburgh Sect. A* 108 (1988), no. 1-2, 27-33. (Carmen Chicone) 89e:58109 58F99 (58F05, 58F35)
- Baidosov, V. A.** An evasion problem and disjunctive pencils in an abstract dynamic game. (Russian) *Design of an optimal control in game systems* (Russian), 16-24, 121, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1986. (Ivan Ginchev) 89a:90181 90D26 (93C30)
- (with Lenskii, S. V.) An optimization mathematical model for the maturation of the immune response of an organism taking into account the auto-immune component. (Russian) *Mathematical models in medicine and biology* (Russian), 3-9, 68, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1986. (Summary) 89a:92008 92A07 (92A09)
- Mappings that are conjugate to multivalued mappings and their application to generalized dynamic games. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 5, 1033-1036; translated in *Soviet Math. Dokl.* 36 (1988), no. 3, 549-552. (O. Hájek) 89g:90268 90D99 (28B20, 49A50, 93A10)
- Baier, R.** (with Lang, C. B.; Reusch, H.-J.) The renormalization flow in the adjoint SU(2) lattice Higgs model. *Nuclear Phys. B* 305 (1988), no. 3 FS23, 396-416. (Not in MR) 81E25 (81-04)
- Baig, M.** Determination of the phase structure of the four-dimensional coupled gauge-Higgs Potts model. *Phys. Lett. B* 207 (1988), no. 3, 300-304. (Summary) 89d:82003 82-04 (81E25, 82A68)
- Baigent, Nick** Twitching weak dictators. *Z. Nationalökonom.* 47 (1987), no. 4, 407-411. (From the introduction) 89h:90019 90A08



- Baigrie, Brian S.** Kepler's laws of planetary motion, before and after Newton's *Principia*: an essay on the transformation of scientific problems. *Stud. Hist. Philos. Sci.* **18** (1987), no. 2, 177-208. (A. G. Molland) **89c:01017** 01A45
- Balk, K. H.** (with Miller, Leslie L.) A method for testing equivalence of heterogeneous relational databases. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **60** (1987), 93-104. (Summary) **89d:68008** 68P15
- Balkousis, Ch.** (with Koufogiorgos, Th.) Pairs of metrics on manifolds. *An. Stiint. Univ. "Al. I. Cuza" Iasi Sect. I a Mat. (N.S.)* **33** (1987), no. 1, 59-62. (Udai Pratap Singh) **89b:53104** 53C25
- (with Koufogiorgos, Th.) Integral inequalities for ovals in Euclidean space. *Mathe-matika* **34** (1987), no. 1, 77-81. (Joseph H. G. Fu) **89b:53097** 53C45 (53C65)
- Balkov, V. A.** (with Gazizov, R. K.; Ibragimov, N. Kh.) Formal symmetries and Bäcklund transforms. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 226, 28 pp. (Summary) **89c:58120** 58G35 (35A30, 35Q20, 58G37)
- (with Gazizov, R. K.; Ibragimov, N. Kh.) Approximate group analysis of the equation  $u_{tt} - (f(u)u_x)_x + \varepsilon p(u)u_t = 0$ . (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 68, 27 pp. (Summary) **89b:35015a** 35A30 (22E05, 35L70, 58G35)
- (with Gazizov, R. K.; Ibragimov, N. Kh.) Approximate group analysis of the nonlinear equation  $u_{tt} - (f(u)u_x)_x + \varepsilon p(u)u_t = 0$ . (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1127-1138, 1283; translated in *Differential Equations* **24** (1988), no. 7, 719-728. (Summary) **89b:35015b** 35A30 (22E05, 35L70, 58G35)
- (with Gazizov, R. K.; Ibragimov, N. Kh.) Approximate symmetries. (Russian) *Mat. Sb. (N.S.)* **136(178)** (1988), no. 4, 435-450, 590. (J. Chrastina) **89b:35013** 35A30 (35Q20, 58G35)
- Balkuziev, K. B.** Spectral problems. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 1, 9-16, 180; translated in *Differential Equations* **24** (1988), no. 1, 6-11. (Jan Bochenek) **89b:34055** 34B25 (46E35, 47E05)
- On a multidimensional system of equations of composite type with degeneracy. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 1, 19-22; translated in *Soviet Math. Dokl.* **37** (1988), no. 3, 606-609. (A. M. Nagornij) **89b:35231** 35M05
- Balar, Barbara A.** Quality issues in measurement. (French summary) *Internat. Statist. Rev.* **53** (1985), no. 2, 123-139. (Summary) **89c:92092** 92A90 (92-02)
- Bailey, C. D.** Comment on: "Rayleigh's principle via least action" [J. Sound Vibration **113** (1987), no. 2, 395-399; MR **88c:70016**] and other papers by Dr. John G. Papastavridis. *J. Sound Vibration* **118** (1987), no. 2, 371-377. (Editors) **89c:70034** 70H30
- Bailey, David H.** Extra high speed matrix multiplication on the Cray-2. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 3, 603-607. (Not in MR) **89F30** (65G05, 65W05)
- Bailey, Norman T. J.** Simplified modelling of the population dynamics of HIV/AIDS. *J. Roy. Statist. Soc. Ser. A* **151** (1988), no. 1, 31-34. (Not in MR) **62P10**
- Bailey, Paul B.** (with Chen, Peter J.) On the local and global behavior of weak shocks and induced discontinuities in a class of materials with internal state variables. *Rend. Circ. Mat. Palermo (2)* **36** (1987), no. 1, 5-26. (L. Debnath) **89c:73017** 73D40 (73F99)
- Bailey, R. A.** Restricted randomization versus blocking. (French summary) *Internat. Statist. Rev.* **53** (1985), no. 2, 171-182. (Summary) **89c:62097** 62K10
- (with Speed, T. P.) Factorial dispersion models. (French summary) *Internat. Statist. Rev.* **55** (1987), no. 3, 261-277. (Summary) **89m:62072** 62J10
- (with Praeger, Cheryl E.) Directed terraces for direct product groups. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), A, 73-76. (Johannes Simons) **89c:20041** 20D60 (05B15)
- Semi-Latin squares. *J. Statist. Plann. Inference* **18** (1988), no. 3, 299-312. (E. Seiden) **89b:62160** 62K10 (05B15)
- see also Tjur, Tue, **89b:62123**
- Bailhache, Patrice** Valeur actuelle de l'acoustique musicale de Helmholtz. (English summary) [The current value of Helmholtz' musical acoustics] *Rev. Histoire Sci.* **39** (1986), no. 4, 301-324. (T. W. Barrett) **89j:01037** 01A55 (92-03, 92A27)
- Bailin, David** (with Love, Alex; Thomas, Steven) Generalised GSO projections for Z-orbifold heterotic string compactifications with "Wilson lines". *Modern Phys. Lett. A* **3** (1988), no. 2, 167-178. (Paul Howe) **89d:83060** 83E15 (53C80, 81E30, 83E30)
- (with Love, Alex; Thomas, Steven) Orbifold compactified superstring models with tetrahedral and octahedral point groups. *Nuclear Phys. B* **298** (1988), no. 1, 75-91. (C. Gauthier) **89a:81167** 81G20 (53C80, 81E30, 83E15, 83E30)
- (with Love, Alex) Four-dimensional heterotic string models with SU(5) and SO(10) grand unification. *Phys. Lett. B* **207** (1988), no. 2, 151-156. (Summary) **89c:81194** 81G20 (81E30)
- (with Dunbar, David C.; Love, Alex) Four-dimensional heterotic string models with rank  $\leq 6$  observable gauge group. *Phys. Lett. B* **212** (1988), no. 1, 23-27. (Summary) **89i:81145** 81G20 (81E30)
- (with Dunbar, David C.; Love, Alex) Yukawa couplings in four-dimensional fermionic string models. *Phys. Lett. B* **219** (1989), no. 1, 76-82. (Not in MR) **81E99** (81E30)
- Bailin, Sidney C.** A normalization theorem for set theory. *J. Symbolic Logic* **53** (1988), no. 3, 673-695. (Henry Africk) **89m:03052** 03F05 (03B35, 03E30)
- Baillie, Alain** see Capérak, Philippe, **89c:62069**
- Baillieul, J.** (with Levi, Mark) Rotational elastic dynamics. *Phys. D* **27** (1987), no. 1-2, 43-62. (J. E. Marsden) **89a:70009** 70E15 (73K05)
- Bailion, Jean-Bernard** Nonexpansive mapping and hyperconvex spaces. *Fixed point theory and its applications* (Berkeley, CA, 1986), 11-19, *Contemp. Math.*, **72**, Amer. Math. Soc., Providence, RI, 1988. (Heinrich Steinlein) **89b:46068** 54E40 (54H25)
- Baily, Walter L., Jr.** Reciprocity laws for special values of Hilbert modular functions. *Algebra and topology* (Taefjón, 1986), 62-139, *Korea Inst. Tech., Taejón*, 1987. (K.-B. Gundlach) **89j:11049** 11F41 (11G18, 32N05)
- Bailyev, K. N.** (with Lyashenko, I. N.) A scheme of increased order of accuracy for the Sturm-Liouville problem. (Russian) *Vychisl. Prikl. Mat. (Kiev)* **61** (1987), 3-8, 129. (Summary) **89b:65160** 65K10
- Baimagambetov, U.** Investigation of the propagation of SH-waves in a layered cubic anisotropic elastic system. (Russian) *Mathematical physics* (Russian), 20-23, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (V. T. Golovchan) **89j:73032** 73D25 (73C30, 73D10)
- Baimenov, B.** Boundary value problems for a parabolic-hyperbolic equation. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 3, 3-6, 88. (A. M. Nakhushev) **89j:35091** 35M05
- Baimov, Sh. K.** (with Kerimov, A. M.) Some properties of a boundary value problem with a small parameter. (Russian) *Applied problems in functional analysis* (Russian), 14-19, 115, *Azerbaidzhan. Gos. Univ., Baku*, 1986. (Summary) **89b:35025** 35J05 (35C99)
- (with Mustafae, K. F.) Localization of the eigenvalues of some boundary value problems. (Russian) *Applied problems in functional analysis* (Russian), 20-28, 114-115, *Azerbaidzhan. Gos. Univ., Baku*, 1986. (Summary) **89b:35034** 35J25 (49G15)
- Baimurzaeva, Zh.** Inverse problems of nonlinear programming. (Russian) *Current problems in mathematical physics and computer software* (Russian), 11-19, *Univ. Druzbyh Narodov, Moscow*, 1986. (L. V. Vasil'ev) **89b:90257** 90C99 (90C30)
- Bain, Lee J.** (with Samaranyake, V. A.) A confidence interval for treatment component-of-variance with applications to differences in means of two exponential distributions. *J. Statist. Comput. Simulation* **29** (1988), no. 4, 317-332. (Not in MR) **62F05** (62J05)
- (with Shiu, Wei Kei; Engelhardt, Max) Test of equal gamma-distribution means with unknown and unequal shape parameters. *Technometrics* **30** (1988), no. 2, 169-174. (Summary) **89c:62047** 62F03 (62F25)
- Baines, M. J.** Moving element methods for time dependent problems. *Numerical methods for fluid dynamics, III* (Oxford, 1988), 513-518, *Inst. Math. Appl. Conf. Ser. New Ser.*, **17**, Oxford Univ. Press, New York, 1988. (see **89j:76004**) **65N30** (76-08)
- Recent developments in moving finite element methods. *The mathematics of finite elements and applications, VI* (Uxbridge, 1987), 387-396, *Academic Press, London-New York*, 1988. (see **89c:65004**) **65M60** (65M50)
- see also *Numerical methods for fluid dynamics*, **89j:76004**
- Bainov, D. D.** (with Milusheva, S. D.) Justification of the averaging method for multipoint boundary value problems for a class of functional-differential equations with "maxima". (Russian. English and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 2, 35-42 (1987). (Summary) **89c:34076** 34C29 (34B10, 34K10)
- (with Milusheva, S. D.) Justification of partial-multiplicative averaging for functional-differential equations with maxima. (Russian. English and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 2, 43-50 (1987). (Not in MR) **34C29**
- (with Simeonov, P. S.) Asymptotic equivalence of a linear and nonlinear system with impulse effect. *Riv. Mat. Univ. Parma (4)* **12** (1986), 1-8 (1987). (Ye-Hwa Chen) **89b:34023** 34A30 (34A34, 93C57)
- (with Milusheva, S. D.) Application of the averaging method for a class of nonlinear integro-differential equations with impulses. (Russian) *Application of asymptotic methods in the theory of nonlinear differential equations* (Russian), 18-28, i, *Akad. Nauk Ukrain. SSR, Kiev*, 1987. (Josef Diblík) **89b:34061** 34C29 (45J05)
- (with Zabreiko, P. P.; Kostadinov, St. I.) Stability of linear equations with impulse effect. *An. Stiint. Univ. "Al. I. Cuza" Iasi Sect. I a Mat. (N.S.)* **33** (1987), no. 2, 113-118. (Snezana Khristova) **89b:34120** 34D20 (34G10, 93C57)
- (with Milusheva, S. D.) Justification of the averaging method for a system of functional-differential equations with variable structure and impulses. *An. Stiint. Univ. "Al. I. Cuza" Iasi Sect. I a Mat. (N.S.)* **33** (1987), no. 3, 203-217. (A. A. Martynuk) **89m:34053** 34C29 (34K05, 93C57)
- (with Simeonov, P. S.) Asymptotic equivalence of ordinary and operator-differential equations. *Bull. Austral. Math. Soc.* **35** (1987), no. 3, 415-425. (A. D. Wood) **89d:34120** 34K25 (47H15)
- (with Simeonov, P. S.) Differentiability of solutions of systems with impulse effect with respect to initial data and parameter. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 2, 251-269. (B. G. Pachpatte) **89c:34007** 34A10 (93C57)
- (with Simeonov, P. S.) On an integral inequality for piecewise continuous functions. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 1, 19-20. (B. Crstici) **89a:26032** 26D15
- (with Kostadinov, St. I.) Exponential stability of the solutions of linear homogeneous differential equations with impulse effect in a Banach space. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 2, 29-30. (A. Corduneanu) **89b:34142** 34G10 (34D20, 93C57)
- (with Ronkov, A. B.) Nonlinear integral inequalities and equations of Volterra type for functions defined in partially ordered spaces. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 4, 13-15. (C. Corduneanu) **89c:45014** 45G10
- (with Simeonov, P. S.) Orbital stability of the periodic solutions of autonomous systems with impulse effect. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 7, 33-34. (Abel R. Castro Figueroa) **89j:34074** 34D30 (34C25, 93C57)
- (with Angelova, D. C.) Oscillatory properties of the solutions of a class of epidemiological equations. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 10, 19-22. (H. W. Hethcote) **89c:92033** 92A15 (45G10)
- (with Khristova, S. G.) Numeric-analytic method for finding the periodic solutions of nonlinear differential-difference equations with impulses. (German summary) *Computing* **38** (1987), no. 4, 363-368. (Summary) **89m:65110** 65Q05
- (with Angelova, D. C.) Oscillatory and asymptotic behaviour of the solutions of first-order functional-differential equations. *IMA J. Appl. Math.* **39** (1987), no. 1, 75-89. (G. Ladas) **89m:34088** 34K15 (34K25)
- (with Simeonov, P. S.) On an integral inequality for piecewise continuous functions. *J. Math. Phys. Sci.* **21** (1987), no. 4, 315-323. (L. Losonczi) **89c:26031** 26D10 (34Cxx, 34Exx, 93C57)
- (with Khristova, S. G.) Numeric-analytic method for finding the solution of a boundary-value problem for a system of differential equations with impulses. *Math. Rep. Toyama Univ.* **10** (1987), 1-22. (A. Coşiu) **89a:65119** 65L10
- (with Dishliev, A. B.) Differentiability on a parameter and initial condition of the solution of a system of differential equations with impulses. *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **196** (1987), no. 1-3, 69-96. (József Banás) **89c:34004** 34A10 (93C57)
- (with Dishliev, A. B.) Continuous dependence on the initial condition of the solution of a system of differential equations with variable structure and with impulses. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 6, 923-936. (B. G. Pachpatte) **89c:34004** 34A10 (93C57)
- (with Myshkis, A. D.; Zakhariev, Andrei) Sufficient conditions for the existence of bounded nonoscillating solutions of functional-differential equation of neutral type. *Rend. Mat. Appl. (7)* **7** (1987), no. 3-4, 353-359 (1988). (Summary) **89m:34089** 34K15
- (with Khristova, S. G.) The method of the small parameter in the theory of differential equations with impulse effect. *Riv. Mat. Univ. Parma (4)* **13** (1987), 91-100 (1988). (József Banás) **89b:34122** 34K15 (34C25, 93C57)

- (with Angelova, D. C.) Necessary and sufficient conditions for the existence of nonoscillatory solutions and oscillation of all solutions of second order functional-differential equations. *Serdica* 13 (1987), no. 4, 347–360. (Bhagat Singh) **89b:34158** 34K15 (34C10)
- (with Kostadinov, St. I.; Zakhariev, Andrei) On an application of Fredholm's alternative for nonlinear abstract integral equations. *An. Stiint. Univ. "Al. I. Cuza" Iași Sec. I a Mat. (N.S.)* 34 (1988), no. 1, 25–30. (Donald Kershaw) **89f:45017** 45N05 (45D05, 47H15)
- (with Khristova, S. G.) Bounded solutions of systems of differential equations with impulses. *Ann. Polon. Math.* 48 (1988), no. 2, 191–206. (Hong Xing Zhou) **89i:34041** 34C11 (93C57)
- (with Simeonov, P. S.) Integral and differential inequalities for a class of piecewise-continuous functions. (Russian) *Ann. Polon. Math.* 48 (1988), no. 2, 207–216. (Summary) **89e:93147** 93C57 (34A40)
- (with Mishev, D. P.) Oscillation of the solutions of parabolic differential equations of neutral type. *Appl. Math. Comput.* 28 (1988), no. 2, 97–111. (Summary) **89h:35025** 35B05 (35K10, 35R10)
- (with Myshkis, A. D.; Zakhariev, Andrei) Oscillatory properties of the solutions of linear equations of neutral type. *Bull. Austral. Math. Soc.* 38 (1988), no. 2, 255–261. (József Terjéki) **89m:34090** 34K15
- (with Kostadinov, St. I.; Zakhariev, Andrei) Abstract Volterra type integral equations. *Bull. Inst. Math. Acad. Sinica* 16 (1988), no. 1, 93–104. (A. Corduneanu) **89e:45011** 45N05 (45D05, 47H99)
- (with Kostadinov, St. I.; Myshkis, A. D.) Bounded and periodic solutions of differential equations with impulse effect in a Banach space. *Differential Integral Equations* 1 (1988), no. 2, 223–230. (V. Popescu) **89b:34147** 34G20 (34C11, 34C25, 93C57)
- (with Dishliev, A. B.) Continuous dependence of the solution of a system of differential equations with impulses on the initial condition and a parameter in the presence of beating. *Internat. J. Systems Sci.* 19 (1988), no. 5, 669–682. (Summary) **89b:93074** 93C57 (34A10, 34A34)
- (with Simeonov, P. S.) Perturbation theorems for systems with impulse effect. *Internat. J. Systems Sci.* 19 (1988), no. 7, 1213–1223. (Wiktor Kulesza) **89g:34066** 34D10 (93C57)
- (with Simeonov, P. S.) Orbital stability of periodic solutions of autonomous systems with impulse effect. *Internat. J. Systems Sci.* 19 (1988), no. 12, 2561–2585. (Shi Bai) **89k:34085** 34D30 (34C25, 93C57)
- (with Zabreiko, P. P.; Kostadinov, St. I.) Stability of the general exponent of nonlinear impulsive differential equations in a Banach space. *Internat. J. Theoret. Phys.* 27 (1988), no. 3, 373–380. (Curtis C. Travis) **89c:34067** 34G20 (34D05, 34D10, 93C57)
- (with Zabreiko, P. P.; Kostadinov, St. I.) Characteristic exponents of impulsive differential equations in a Banach space. *Internat. J. Theoret. Phys.* 27 (1988), no. 6, 731–743. (Mihail Voicu) **89f:34087** 34G10 (34D05, 93C57)
- (with Kulev, G. K.) Strong stability of impulsive systems. *Internat. J. Theoret. Phys.* 27 (1988), no. 6, 745–755. (O. S. Chernikova) **89i:93080** 93C57 (34A40, 34D20)
- (with Khristova, S. G.) Monotone-iterative method for solving the periodic problem for systems of impulsive differential equations. *Internat. J. Theoret. Phys.* 27 (1988), no. 6, 757–766. (Patrizio Colaneri) **89j:93075** 93C57 (34C25)
- (with Kostadinov, St. I.; Zabreiko, P. P.)  $L_p$ -equivalence of impulsive equations. *Internat. J. Theoret. Phys.* 27 (1988), no. 11, 1411–1424. (Wan Zhuang) **89m:34083** 34G20 (47H15, 93C57)
- (with Kulev, G. K.) Second method of Lyapunov and comparison principle for systems with impulse effect. *J. Comput. Appl. Math.* 23 (1988), no. 3, 305–321. (O. S. Chernikova) **89k:93144** 93C57 (34A40, 34C11, 34D20)
- (with Simeonov, P. S.) Exponential stability of the solutions of the initial-value problem for systems with impulse effect. *J. Comput. Appl. Math.* 23 (1988), no. 3, 353–365. (O. S. Chernikova) **89m:34070** 34D20 (93C57)
- (with Dishliev, A. B.) Continuous dependence of the solution of a system of differential equations with impulses on the impulse hypersurfaces. *J. Math. Anal. Appl.* 135 (1988), no. 2, 369–382. (O. S. Chernikova) **89m:34003** 34A10 (93C57)
- (with Simeonov, P. S.) On the asymptotic equivalence of systems with impulse effect. *J. Math. Anal. Appl.* 135 (1988), no. 2, 591–610. (M. Švec) **89m:34078** 34E05 (34E10, 93C57)
- (with Simeonov, P. S.) Stability of the solutions of singularly perturbed systems with impulse effect. *J. Math. Anal. Appl.* 136 (1988), no. 2, 575–588. (Zoran Gajic) **89k:34074** 34D15 (93C57)
- (with Arola, Mariya At.; Vel'ov, V. M.) Boundary value problem for a singularly perturbed system of linear differential equations with impulses. *Proc. Edinburgh Math. Soc.* (2) 31 (1988), no. 1, 107–126. (V. Sree Hari Rao) **89f:34023** 34B05 (34E15, 93C57)
- (with Simeonov, P. S.) Asymptotic equivalence of a linear and nonlinear system with impulse effect. *Proc. Edinburgh Math. Soc.* (2) 31 (1988), no. 1, 157–163. (Khashayar Khorasani) **89d:34018** 34A34 (34A30, 34E99, 93C57)
- (with Simeonov, P. S.) Differentiability of solutions of systems with impulse effect with respect to initial data and parameter. *Proc. Edinburgh Math. Soc.* (2) 31 (1988), no. 3, 353–368. (Krishnan Balachandran) **89j:34007** 34A10 (93C57)
- (with Angelova, D. C.) On the behaviour of the solutions of Volterra second order integro-differential equations. *Quart. J. Math. Oxford Ser. (2)* 39 (1988), no. 155, 255–268. (Elaidi Hanebaly) **89d:45008** 45J05 (45D05, 45M05)
- (with Khristova, S. G.; Hu, Shou Chuan; Lakshmikantham, V.) Periodic boundary value problems for systems of first order impulsive differential equations. *Differential Integral Equations* 2 (1989), no. 1, 37–43. (M. K. Grammatikopoulos) **89h:93038** 93C57 (34A40, 34B15, 34C25)
- Balocchi, Claudio** (with Capelo, António) ★ Вариационные и квазивариационные неравенства. (Russian) [Variational and quasivariational inequalities] Приложения к задачам со свободной границей. [Applications to free boundary problems] Translated from the English by V. I. Agoshkov, E. E. Ovchinnikov and V. P. Shutyayev. Translation edited and with a preface by Agoshkov. "Nauka", Moscow, 1988. 448 pp. ISBN 5-02-013766-9 (Editors) **89m:49012** 49A29 (35R35, 46N05)
- Bair, J.** Un problème de dualité en programmation quasi-concave. (English summary) [A duality problem in quasiconcave programming] *Optimization* 19 (1988), no. 4, 461–466. (Christian Michelot) **89g:90182** 90C30 (90A14, 90C50)
- Bair, Lowell** (with Ifrah, Georges) **89f:01006**
- Bairagya, S. N.** (with Bainsab, A. P.) On structure of generalised open sets. *Bull. Calcutta Math. Soc.* 79 (1987), no. 2, 81–88. (S. Purisch) **89e:54002** 54A05 (54A10)
- Bairamogly, M.** The regularized trace of a differential operator of order  $2n$  with an unbounded operator coefficient. (Russian) *Spectral theory of operators and its applications*, No. 8 (Russian), 15–40, "Elm", Baku, 1987. (Zoran Kadelburg) **89h:47067** 47E05 (34B25, 34G10, 47A10, 47A55)
- (with Gashimov, I. F.) Discreteness of the spectrum of a one-term operator-differential equation of even order. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 1, 19–25. (G. Yu. Tamanyan) **89h:47068** 47E05 (34B25)
- Asymptotics of the number of negative eigenvalues, with respect to a small parameter, of the Sturm-Liouville operator equation. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 2, 30–35. (Not in MR) **89b:47E05**
- (with Kurbanova, R. D.) Asymptotic formulas for the sum of powers of negative eigenvalues of an abstract Sturm-Liouville operator with a singularity at zero. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 3, 16–21 (1988). (Jörg-Uwe Löbus) **89h:34018** 34B25 (34G10, 47E05)
- Bairamov, E. M.** (with Maksudov, F. G.) Selfadjoint dilation of a second-order dissipative difference operator on the half axis and description of the zero sets of the characteristic function. (Russian) *Spectral theory of operators and its applications*, No. 8 (Russian), 150–176, "Elm", Baku, 1987. (Aurelian Gheondea) **89d:47071** 47B39 (47A20, 47B44)
- Bairamov, O. B.** A problem of search for an optimal algorithm. (Russian) *Some algorithms for the planning of computations in deterministic real-time systems* (Russian), 38–46, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1987. (see **89e:68058**) 90B10 (68Q25)
- Bairamov, R. R.** A linear equation. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 5, 8–10 (1988). (From the text) **89b:47027** 47A62
- Baird, K. A.** Some influences upon the young Isaac Newton. *Notes and Records Roy. Soc. London* 41 (1987), no. 2, 169–179. (Kristian Peder Moesgaard) **89b:01036** 01A70 (01A45)
- Baird, Paul** Bernstein theorems for harmonic morphisms. *Miniconference on geometry and partial differential equations*, 2 (Canberra, 1986), 17–23, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 12, Austral. Nat. Univ., Canberra, 1987. (Helmut Kaul) **89a:58032** 58E20
- Baisakalov, I. B.** Optimal control of a stochastic system under conditions of uncertainty. (Russian) *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 23–26, "Angel Kanchev" Tech. Univ., Ruse, 1987. (Jozsef Komornik) **89e:49008** 49A60 (49A10, 93C05, 93E05, 93E20)
- Baishya, M. C.** (with Chakrabarti, C. G.) Stochastic linearization approach to some nonlinear processes. *Bull. Calcutta Math. Soc.* 79 (1987), no. 3, 127–133. (Yoram Schiffmann) **89j:92020** 92A09 (34F05, 60H10, 92A40)
- Bainsab, A. P.** (with Bairagya, S. N.) On structure of generalised open sets. *Bull. Calcutta Math. Soc.* 79 (1987), no. 2, 81–88. (S. Purisch) **89e:54002** 54A05 (54A10)
- (with Samanta, A.) Fixed point theorems for set valued mappings. *Bull. Calcutta Math. Soc.* 79 (1987), no. 4, 207–214. (Livia D'Apuzzo) **89e:54098** 54H25 (54C60)
- (with Jas, Monoranjan) Positive definiteness in quasi-proximity spaces and fixed point theorems. *Bull. Calcutta Math. Soc.* 80 (1988), no. 3, 153–160. (Sehie Park) **89g:54097** 54H25 (54E05)
- Baizae, S.** (with Makhmudov, Sh. R.) The Noethericity and index of ordinary differential operators with bounded coefficients. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* 30 (1987), no. 2, 71–74. (L. J. Grimm) **89e:34009** 34A20 (47E05)
- (with Mukhamadiev, E. M.) The Noethericity and index of first-order elliptic operators in the plane. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* 30 (1987), no. 4, 206–210. (Guo Chun Wen) **89i:35053** 35J45 (47F05)
- Bairzumano, A. A.** (with Kabulov, A. V.) A method for determining the maximal compatible subsystems of a system of Boolean equations. (Russian) *Voprosy Vychisl. i Prikl. Mat. (Tashkent)* No. 80 (1986), 27–33, 135–136. (Jürgen Dassow) **89i:94057** 94C10 (68Q15)
- Bajaj, A. K.** Nonlinear dynamics of tubes carrying a pulsatile flow. *Dynamics Stability Systems* 2 (1987), no. 1, 19–41. (H. W. Vayo) **89h:92006** 92A06 (34C25, 58F14, 73J06, 76Z05, 92A07)
- Bifurcations in flow-induced oscillations in tubes carrying a fluid. *Dynamical systems approaches to nonlinear problems in systems and circuits* (Henniker, NH, 1986), 333–351, *SIAM, Philadelphia, PA*, 1988. (Summary) **89j:73058** 73J06 (58F14, 70K30, 73H10, 73J10)
- (with Heimann, M. S.; Sherman, P. J.) Periodic motions and bifurcations in dynamics of an inclined impact pair. *J. Sound Vibration* 124 (1988), no. 1, 55–78. (Summary) **89g:70016** 70K40 (58F14, 70K20, 70K50)
- (with Streit, D. A.; Krougrill, C. M.) Combination parametric resonance leading to periodic and chaotic response in two-degree-of-freedom systems with quadratic nonlinearities. *J. Sound Vibration* 124 (1988), no. 2, 297–314. (Summary) **89d:70024** 70K30 (58F13, 70B15, 70K50)
- Bajaj, Chandrjit** Geometric optimization and the polynomial hierarchy. *Theoret. Comput. Sci.* 54 (1987), no. 1, 87–102. (Klaus W. Wagner) **89c:68033** 68Q15 (03D15, 90C27)
- The algebraic degree of geometric optimization problems. *Discrete Comput. Geom.* 3 (1988), no. 2, 177–191. (Stefan Tişan) **89c:90110** 90C99 (90B10)
- (with Li, Ming) Geometric optimization and  $D^P$ -completeness. *Discrete Comput. Geom.* 4 (1989), no. 1, 3–13. (Ding Zhu Du) **89m:90131** 90C27 (03D15, 68Q15)
- Bajic, Vladimir B.** BIBO stability of a class of linear time-variable semi-state systems and application in the analysis of RLC electrical networks. *COMPEL* 6 (1987), no. 3, 129–135. (Summary) **89k:93177** 93D25 (93C05, 94C05)
- Generic stability and boundedness of semistate systems. *IMA J. Math. Control Inform.* 5 (1988), no. 2, 103–115. (Summary) **89e:93130** 93C30 (49E20, 93D99)
- Equations of perturbed motions and stability of state and semi-state systems. *Internat. J. Control* 47 (1988), no. 6, 1849–1860. (Summary) **89d:34081** 34D10 (34A08, 93C30)
- (with Milić, M. M.) Corrigendum: "Extended stability of motion of semistate systems" [Internat. J. Control 46 (1987), no. 6, 2183–2197; MR 88m:93114]. *Internat. J. Control* 49 (1989), no. 1, 383. (Editors) **89k:93154** 93D05 (93C30, 94C05)
- Corrigendum: "Lyapunov function candidates for semi-state systems" [Internat. J. Control 46 (1987), no. 6, 2171–2181; MR 88m:93113]. *Internat. J. Control* 49 (1989), no. 1, 383. (Editors) **89k:93155** 93D05 (93C30, 94C05)



- Bajkowski, J.** (with Müller, Peter C.) Lyapunov exponents and fractal dimension in nonlinear mechanical systems. *Z. Angew. Math. Mech.* **68** (1988), no. 4, T49-T53. (Fu Tong) **89j:58075** 58F13 (70K40, 70K50)
- Bajorski, Piotr** (with Ledwina, Teresa) Large deviations and Bahadur efficiency of some rank tests of independence. *Mathematical statistics and probability theory, Vol. B (Bad Tatzmannsdorf, 1986)*, 11-23, *Reidel, Dordrecht-Boston, MA-London, 1987*. (Summary) **89h:62078** 62G10 (60F10)
- Bajraktarević, M.** Sur certaines solutions continues d'une équation fonctionnelle. (English and Serbo-Croatian summaries) [Some continuous solutions of a functional equation] *Glas. Mat. Ser. III* **22**(42) (1987), no. 1, 53-67. (Summary) **89d:39008** 39B30 (47H15)
- Bak, Per** (with Tang, Chao; Wiesenfeld, Kurt) Scale invariant spatial and temporal fluctuations in complex systems. *Random fluctuations and pattern growth (Cargèse, 1988)*, 329-335, *NATO Adv. Sci. Inst. Ser. E: Appl. Sci.*, 157, *Kluwer Acad. Publ., Dordrecht, 1988*. (see **89j:60034**) **88F13** (82A41, 82A99)
- (with Tang, Chao) Mean field theory of self-organized critical phenomena. New directions in statistical mechanics (Santa Barbara, CA, 1987). *J. Statist. Phys.* **51** (1988), no. 5-6, 797-802. (Summary) **89j:82022** 82A25
- (with Tang, Chao; Wiesenfeld, Kurt) Self-organized criticality. *Phys. Rev. A* (3) **38** (1988), no. 1, 364-374. (Summary) **89g:58126** 58F13 (82A25, 92A05)
- Bak, Thor A.** (with Lu, Bing Lin) Kinetics of copolymerisation and gelation. *J. Phys. A* **20** (1987), no. 18, 6531-6541. (Summary) **89h:82078** 82A51
- Bakaez, A. V.** (with Ermilov, A. N.; Kurbatov, A. M.) A frozen Potts model on a Cayley tree. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 3, 603-606; translated in *Soviet Phys. Dokl.* **33** (1988), no. 3, 190-191. (Feodor Smirnov) **89g:82063** 82A68
- Bakal, A. S.** Evolutionary stability and adiabatic invariants. (Russian) *Asymptotic methods in mathematical physics (Russian)*, 13-18, 299, "Naukova Dumka", Kiev, 1988. (D. Bainov) **89k:70032** 70H05 (34C29, 34C45)
- Bakan, G. M.** (with Volosov, V. V.) On the solution of the problem of the design of a system of programmed control when the noise in the channel of measurement is bounded in modulus. (Russian) *Kibernet. i Vychisl. Tekhn.* No. 75 (1987), 90-93, 97. (V. Popescu) **89d:93041** 93B50 (93B35, 93C55)
- Bakas, I.** (with Kakas, A. C.) Quantum mechanics of nonlinear systems. *J. Phys. A* **20** (1987), no. 12, 3713-3725. (Lionel J. Mason) **89a:81028** 81C25 (81D07)
- (with McMullan, D.) Group theoretical quantization on loop spaces and the Sugawara construction. *Phys. Lett. B* **199** (1987), no. 3, 417-421. (Summary) **89h:81079** 81D15 (22E65, 58D25, 81E30, 81E99)
- Conformal invariance, the KdV equation and coadjoint orbits of the Virasoro algebra. *Nuclear Phys. B* **302** (1988), no. 2, 189-203. (Jouko Mickelsson) **89k:81054** 81D15 (17B65, 22E65, 58B20, 58D05, 58F35, 81E30)
- Remarks on the quantization of conformal fields. *Phys. Lett. B* **201** (1988), no. 4, 459-465. (Mauro Bregola) **89e:81133** 81E99 (14H15, 17B65, 58F07, 81E30)
- Bakasov, A. A.** On phase transition in the Dicke model with two-photon interaction. (Russian) *Dokl. Akad. Nauk SSSR* **294** (1987), no. 5, 1082-1086. (K. Wódkiewicz) **89c:82012** 82A25 (81K05)
- Physical reasons for Lyapunov stability of the radiation regime of a previously inverted system. *Phys. Lett. A* **130** (1988), no. 8-9, 461-466. (Summary) **89m:81210** 81K05
- Bakelman, Ilya J.** Geometric concepts and methods in nonlinear elliptic Euler-Lagrange equations. *Nonlinear diffusion equations and their equilibrium states, I (Berkeley, CA, 1986)*, 75-107, *Math. Sci. Res. Inst. Publ.*, 12, *Springer, New York-Berlin, 1988*. (Helmut Kaul) **89j:58016** 58E15 (35J99, 49B21, 58G30)
- Boundary value problems for  $n$ -dimensional Monge-Ampère equations and  $n$ -dimensional plasticity equations. *I. Nonlinear partial differential equations and their applications. Collège de France seminar, Vol. VIII (Paris, 1984-1985)*, 1-46, *Pitman Res. Notes Math. Ser.*, 165, *Longman Sci. Tech., Harlow, 1988*. (John Urbas) **89i:35055** 35J60 (58G30, 73E99)
- Bakenrot, V. Yu.** (with Chefranov, A. G.) On the quality of list dispatchers. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 3, 118-119, 135. (Not in MR) **90B35** (68M20)
- Baker, Alan** (with Stewart, C. L.) On effective approximations to cubic irrationals. *New advances in transcendence theory (Durham, 1986)*, 1-24, *Cambridge Univ. Press, Cambridge-New York, 1988*. (Jeffrey D. Vaaler) **89m:11065** 11J68 (11D25, 11J82, 11J86)
- see also *New advances in transcendence theory*, **89f:11091**
- Baker, Andrew** Combinatorial and arithmetic identities based on formal group laws. *Algebraic topology, Barcelona, 1986*, 17-34, *Lecture Notes in Math.*, 1298, *Springer, Berlin-New York, 1987*. (Douglas C. Ravenel) **89f:55012** 55Q45 (05A19, 11B68, 14L05, 55N22, 55T15)
- On the detection of some elements in the image of the double transfer using  $K(2)$ -theory. *Math. Z.* **197** (1988), no. 3, 439-454. (Lionel Schwartz) **89c:55019** 55T15
- Baker, Bernadette Marie** (with Randić, M.) Isospectral multitrees. *J. Math. Chem.* **2** (1988), no. 3, 249-265. (Summary) **89g:92089** 92A40 (05C05)
- Baker, Brenda S.** (with Grosse, Eric; Rafferty, Conor S.) Nonobscure triangulation of polygons. *Discrete Comput. Geom.* **3** (1988), no. 2, 147-168. (Bernd Graw) **89c:52001** 52-04 (68U05)
- Baker, C. A.** (with Lane, N. D.; Lorimer, J. W.) A construction for topological non-Desarguesian affine Hjelmslev planes. *Arch. Math. (Basel)* **50** (1988), no. 1, 83-92. (Günter Törner) **89a:51013** 51C05 (51H10)
- Baker, C. R.** (with Gualtierotti, A. F.) Likelihood ratios and signal detection for non-Gaussian processes. *Stochastic processes in underwater acoustics (Brighton, 1985)*, 154-180, *Lecture Notes in Control and Inform. Sci.*, 85, *Springer, Berlin-New York, 1986*. (From the introduction) **89d:94017** 94A13 (60G35)
- Capacity of the mismatched Gaussian channel. *IEEE Trans. Inform. Theory* **33** (1987), no. 6, 802-812. (Inder Jeet Taneja) **89c:94027** 94A40
- Baker, Christopher T. H.** (with van der Houwen, P. J.; Sommeijer, B. P.) On the stability of predictor-corrector methods for parabolic equations with delay. *IMA J. Numer. Anal.* **6** (1986), no. 1, 1-23. (Summary) **89g:65026** 65N99
- Baker, Daniel R.** Exact solutions to some minimum-time problems and their behavior near inequality state constraints. *IEEE Trans. Automat. Control* **34** (1989), no. 1, 103-106. (Summary) **89i:49013** 49B10
- Baker, George A., Jr.** (with Johnson, James Daniel) Four-dimensional boson field theory. III. Nontriviality. *J. Math. Phys.* **28** (1987), no. 5, 1146-1158. (Summary) **89g:81038** 81E08 (81-04, 81E25)
- Baker, I. N.** Wandering domains for maps of the punctured plane. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **12** (1987), no. 2, 191-198. (L. S. O. Liverpool) **89g:30046** 30D05 (58F08)
- (with Erĭmenko, A.) A problem on Julia sets. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **12** (1987), no. 2, 229-236. (L. S. O. Liverpool) **89g:30047** 30D05 (58F08)
- Baker, J. Eddie** see Tarnai, Tibor, **89f:51086**
- Baker, John A.** (with Radó, F.) Pexider's equation and aggregation of allocations. *Aequationes Math.* **32** (1987), no. 2-3, 227-239. (Introduction) **89i:39014** 39B30 (90A05, 90C31)
- Baker, Mark D.** The virtual  $Z$ -representability of certain 3-manifold groups. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 996-998. (Denis Sijve) **89k:57001** 57M10 (57M25)
- Baker, P. C.** (with Poots, G.; Rodgers, G. G.) Ice accretion on cables of various cross sections. *IMA J. Appl. Math.* **36** (1986), no. 1, 11-28. (Summary) **89k:76041** 76D99 (76-04, 76T05, 80A99)
- Baker, R. C.** Square-free points on ellipsoids. *Acta Arith.* **50** (1988), no. 3, 215-219. (Ekkhard Krätzel) **89k:11093** 11P21
- (with Brüder, Jörg) On pairs of additive cubic equations. *J. Reine Angew. Math.* **391** (1988), 157-180. (D. R. Heath-Brown) **89i:11036** 11D25 (11D72, 11P55)
- Baker, R. D.** (with Ebert, G. L.) A nonlinear flock in the Minkowski plane of order 11. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 75-81. (Norman L. Johnson) **89h:51017** 51E25 (05B25, 51E20)
- (with Ebert, G. L.) A new class of translation planes. *Combinatorics '86 (Trento, 1986)*, 7-20, *Ann. Discrete Math.*, 37, *North-Holland, Amsterdam-New York, 1988*. (Vikram Jha) **89d:51010** 51E20 (51A40)
- (with Ebert, G. L.) Construction of two-dimensional flag-transitive planes. *Geom. Dedicata* **27** (1988), no. 1, 9-14. (P. B. Kirkpatrick) **89f:51017** 51A40 (51E15)
- (with Ebert, G. L.; Weida, R.) Another look at Bruen chains. *J. Combin. Theory Ser. A* **48** (1988), no. 1, 77-90. (T. G. Ostrom) **89c:51002** 51A40 (05B25, 51A35, 51E15)
- (with Ebert, G. L.) Nests of size  $q-1$  and another family of translation planes. *J. London Math. Soc.* (2) **38** (1988), no. 2, 341-355. (Ferenc Wettl) **89k:51003** 51A40 (51E20)
- Baker, Stuart G.** (with Laird, Nan M.) Regression analysis for categorical variables with outcome subject to nonignorable nonresponse. *J. Amer. Statist. Assoc.* **83** (1988), no. 401, 62-69. (Not in MR) **62J05**
- Baker-Jarvis, James** (with Inguva, Ramarao) Principle of maximum entropy and inverse scattering problems. *Maximum entropy and Bayesian methods in applied statistics (Calgary, Alta., 1984)*, 300-315, *Cambridge Univ. Press, Cambridge-New York, 1986*. (Introduction) **89a:81162** 81F99 (35Q99, 78A45)
- Solution to boundary value problems using the method of maximum entropy. *J. Math. Phys.* **30** (1989), no. 2, 302-306. (Summary) **89k:65094** 65L10 (34A50, 34B05, 65J99)
- Bakhar'kov, A. A.** Stability of circular motion in the relativistic theory of gravitation. (Russian. English summary) *Vestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 5, 92-96, 128. (Not in MR) **83C10**
- Bakhmutova, I. V.** (with Mes'kov, V. S.; Samokhvalov, K. F.) Theories, measurements and theories of measurements. (Russian) *Vychisl. Sistemy* No. 118 *Mashin. Anal. Slozhn. Strukt.* (1986), 47-80, 152. (Summary) **89g:03010** 03B30 (00A25, 00A69, 92A25)
- Bakhovets, E. B.** On a connection between integer-valued Markov measures and measures with independent values. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 6, 696-701, 813. (I. Cuculescu) **89g:60171** 60G57
- Bakhshetsyan, A. V.** Means for centered systems of functions. (Russian) *Acta Math. Hungar.* **51** (1988), no. 3-4, 307-321. (R. P. Boas, Jr.) **89k:42023** 42C05 (33A70, 42C10)
- Bakhtin, I. A.** The method of monotone approximations in the theory of nonlinear equations with extremal operators. (Russian) *Functional analysis*, No. 26 (Russian), 42-51, *Ulyanovsk. Gos. Ped. Inst., Ulyanovsk, 1986*. (S. Buryšek) **89d:47139** 47H17 (47H07, 65J15)
- Bakhtin, V. I.** The topological normal forms of metamorphoses of caustics of the series  $D_9$ . (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 4, 58-61, 103. (Donald O'Shea) **89j:58009** 58C27 (32B30, 32C40)
- Bakhturin, Yu. A.**  $Pf$ -envelopes of finite-dimensional Lie algebras. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 12-14, 122. (Summary) **89d:17011** 17B35 (16A42)
- (with Budkin, A. I.; Volokov, M. V.; et al.) ★ Многообразие алгебраических систем. (Russian) [Varieties of algebraic systems] Препринт [Preprint], 158, *Akad. Nauk SSSR Sibirsk. Otdel. Vychisl. Tsentr, Novosibirsk, 1986*, 43 pp. (Editors) **89c:17001** 17-02 (08-02, 16-02)
- (with O'fshanskii, A. Yu.) Identities. (Russian) *Current problems in mathematics. Fundamental directions*, Vol. 18 (Russian), 117-240, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow, 1988*. (R. S. Pierce) **89j:08001** 08-02 (00A05, 16-02, 17B99, 20-02)
- On degrees of irreducible representations of Lie superalgebras. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 1, 19-24. (Anargyros Fellouris) **89d:17026** 17B70
- Bakhurskii, A. G.** (with Maistrenko, Yu. L.) Asymptotic periodicity of solutions of an initial-boundary value problem with a nonlinearity in the interior of the domain of definition. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1988**, no. 16, 46 pp. (Summary) **89j:35020** 35B15 (35L99)
- Bakhrvalov, N. S.** (with Kobel'kov, G. M.; Noskov, Yu. V.) ★ О практическом вычислении значений ортогональных многочленов непрерывного и дискретного аргумента. (Russian) [Practical calculation of the values of orthogonal polynomials of a continuous or discrete argument] Препринт [Preprint], 158, *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow, 1987*, 28 pp. (Walter Gautschi) **89h:65052** 65D20 (33A65, 42C05)
- (with Zhidkov, N. P.; Kobel'kov, G. M.) ★ Численные методы. (Russian) [Numerical methods] "Nauka", Moscow, 1987, 599 pp. (A. Haimovici) **89d:65001** 65-01
- (with Panasenko, G. P.; Štáras, Artūras; Ėglit, M. E.) Numerically asymptotic methods. (Russian) *Asymptotic methods in mathematical physics (Russian)*, 18-28, 299, "Naukova Dumka", Kiev, 1988. (see **89g:00006**) **35C20** (65P05)
- (with Kobel'kov, G. M.) Efficient numerical methods for solving problems in hydrodynamics. (Russian) *Current problems in applied mathematics and in mathematical physics (Russian)*, 200-208, "Nauka", Moscow, 1988. (see **89j:00008**) **76-08** (65P05)
- Bakiev, M. N.** (with Dzhumadil'daev, A. S.) Kernel spaces for the Witt algebra. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 4(262), 199-200; translated in *Russian Math. Surveys*



- 43 (1988), no. 4, 203-204. (J. S. Joel) **89k:17032** 17B50 (17B55)
- Bakirov, N. K.** Extrema of the distribution of the statistic  $S^2$ . (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 1, 184-188; translated in *Theory Probab. Appl.* 33 (1988), no. 1, 171-175. (N. Leonenko) **89i:60034** 60E15 (62E15)
- Observations that are unequal in accuracy in the Behrens-Fisher problem. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 166 (1988), Issled. po Mat. Statist. 8, 6-8, 186. (Friedrich Liese) **89k:62027** 62F03 (62E15)
- Bakirov, V. L.** (with Tsybakov, B. S.) Analysis of the stability of a network with packet switching and its application to the construction of a unified approach to synchronous and asynchronous radio networks with the Aloha algorithm. (Russian) *Problemy Peredachi Informatsii* 24 (1988), no. 2, 70-85; translated in *Problems Inform. Transmission* 24 (1988), no. 2, 139-151. (D. Stanomir) **89g:94053** 94C15
- Bakirova, M. I.** (with Dimova-Borshukova, Stefka; Dorodnitsyn, V. A.; Kurdyumov, S. P.; Samarskii, A. A.; Svirshchevskii, S. R.) Invariant solutions of the heat equation that describe the directed propagation of combustion and spiral waves in a nonlinear medium. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 2, 346-350; translated in *Soviet Phys. Dokl.* 33 (1988), no. 3, 187-189. (Ya Zhe Chen) **89i:35076** 35K55 (35A25, 35B40, 80A20)
- Bakke, Øyvind** Sufficient conditions for modules with the same two first terms in their minimal projective resolutions to be isomorphic. *Comm. Algebra* 16 (1988), no. 3, 437-442. (Dieter Happel) **89b:16017** 16A46 (16A64)
- Bakke, V. L.** (with Jackiewicz, Zdzisław) Stability of numerical methods for Volterra integro-differential equations of convolution type. (German and Russian summaries) *Z. Angew. Math. Mech.* 68 (1988), no. 2, 89-100. (Summary) **89a:65197** 65R20 (45D05, 45J05)
- de Bakker, J. W.** (with America, Pierre) Designing equivalent semantic models for process creation. *Mathematical models for the semantics of parallelism* (Rome, 1986), 21-80, *Lecture Notes in Comput. Sci.* 280, Springer, Berlin-New York, 1987. (Summary) **89a:68143** 68Q55 (68Q10)
- (with Meyer, J.-J. Ch.) Order and metric in the stream semantics of elemental concurrency. *Acta Inform.* 24 (1987), no. 5, 491-511. (Manfred Broy) **89a:68144** 68Q55 (68Q10, 68Q90)
- (with Meyer, J.-J. Ch.; Olderog, E.-R.; Zucker, J. I.) Transition systems, metric spaces and ready sets in the semantics of uniform concurrency. 17th Annual ACM Symposium on the Theory of Computing (Providence, RI, 1985). *J. Comput. System Sci.* 36 (1988), no. 2, 158-224. (Hideki Yamasaki) **89i:68034** 68Q10 (68Q55, 68Q90)
- see also Conference: *Parallel Architectures and Languages—Europe*, **89j:68053**
- Bakkesa Swamy, K. E.** (with Nagaraj, M.) Bundle of Hamiltonian metrics on an almost quaternion real manifold. *J. Ramanujan Math. Soc.* 2 (1987), no. 2, 165-171. (Paolo Piccinini) **89i:53053** 53C15
- Baklan, V. V.** (with Shkvarchenko, T. V.) A probabilistic model for transportation flow. (Russian) *Theory of random processes*, No. 16 (Russian), 5-7, 108, "Naukova Dumka", Kiev, 1988. (Summary) **89b:90096** 90B20 (60K30)
- Bakri, Talal M.** Generalized Bezoutians and invariant subspaces. *IEEE Trans. Automat. Control* 33 (1988), no. 9, 880-883. (Not in MR) **93B25** (15A72)
- Bakry, Dominique** Transformations de Riesz pour les semi-groupes symétriques. I. Étude de la dimension 1. [Riesz transforms for symmetric semigroups. I. Study of dimension 1] *Séminaire de probabilités, XIX, 1983/84*, 130-144, *Lecture Notes in Math.*, 1123, Springer, Berlin-New York, 1985. (R. Johnson (Zbl 561:42010)) **89h:42022** 42B25 (42B20, 47B38, 47D05, 60G46, 60J35)
- Transformations de Riesz pour les semi-groupes symétriques. II. Étude sous la condition  $\Gamma_2 \geq 0$ . [Riesz transforms for symmetric semigroups. II. Study under the condition  $\Gamma_2 \geq 0$ ] *Séminaire de probabilités, XIX, 1983/84*, 145-174, *Lecture Notes in Math.*, 1123, Springer, Berlin-New York, 1985. (R. Johnson (Zbl 561:42011)) **89h:42023** 42B25 (42B20, 47B38, 47D05)
- Une remarque sur les inégalités de Littlewood-Paley sous l'hypothèse  $\Gamma_2 \geq 0$ . [A remark on Littlewood-Paley inequalities under the condition  $\Gamma_2 \geq 0$ ] *Séminaire de probabilités, XIX, 1983/84*, 175, *Lecture Notes in Math.*, 1123, Springer, Berlin-New York, 1985. (R. Johnson (Zbl 561:42012)) **89h:42025** 42B25 (42B20, 47B38, 47D05, 60G40, 60J35)
- (with Emery, Michel) Propaganda for  $\Gamma_2$ . From local times to global geometry, control and physics (Coventry, 1984/85), 39-46, *Pitman Res. Notes Math. Ser.*, 150, Longman Sci. Tech., Harlow, 1986. (Heinz Langer) **89b:60182** 60J60 (47D05, 58D15, 58G32, 60J35)
- Correction: "Riesz transforms for symmetric semigroups. II. Study under the condition  $\Gamma_2 \geq 0$ " [in *Séminaire de probabilités, XIX, 1983/84*, 145-174, *Lecture Notes in Math.*, 1123, Springer, Berlin, 1985; MR 89h:42023]. (French) *Séminaire de Probabilités, XX, 1984/85*, 614, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (Editors) **89h:42024** 42B25 (42B20, 47B38, 47D05)
- Étude des transformations de Riesz dans les variétés riemanniennes à courbure de Ricci minorée. [A study of Riesz transforms in Riemannian manifolds with minorized Ricci curvature] *Séminaire de Probabilités, XXI, 137-172*, *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (Yu. E. Gliklikh) **89h:58208** 58G30 (58G99)
- Bakry, S. H.** (with Shatila, M.) PASCAL functions for the generation of random numbers. *Comput. Math. Appl.* 15 (1988), no. 11, 969-973. (Not in MR) **65C10**
- Bakalary, Jerry K.** (with Hauke, Jan) Partial orderings of matrices referring to singular values or eigenvalues. *Linear Algebra Appl.* 96 (1987), 17-26. (R. Kala) **89a:15007** 15A18 (11E99)
- (with Puri, P. D.) Criteria for the validity of Fisher's condition for balanced block designs. *J. Statist. Plann. Inference* 18 (1988), no. 1, 119-123. (A. Hedayat) **89d:62072** 62K10 (05B05)
- Bakshi, H. C.** (with Bhandopadhyaya, Lakshmi; Puri, M. C.) Multi-index transportation problem with mixed type of axial constraints. *J. Inform. Optim. Sci.* 9 (1988), no. 1, 113-132. (M. Vlach) **89i:90051** 90C08
- Bakštya, G.** (with Paulauskas, Vyntas) On the approximation of distributions of sums of independent Banach-space-valued random elements with infinitely divisible laws. (Russian) *Dokl. Akad. Nauk SSSR* 293 (1987), no. 5, 1036-1038. (Hô Dàng Phức) **89c:60011** 60B12 (60B10, 60B11, 60E07)
- (with Paulauskas, Vyntas) Convergence of distributions of sums of Banach-space-valued random elements with infinitely divisible laws. II. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* 27 (1987), no. 2, 224-235. (Jerzy Szulga) **89a:60009** 60B10 (46G10)
- Bakule, Labomir** (with Lunze, J.) Decentralized design of feedback control for large-scale systems. *Kybernetika (Prague) Suppl.* 24 (1988), no. 3-6, 97 pp. (Asen L. Dontchev) **89k:93002** 93-02 (93A15, 93B50)
- Bakuradze, M. R.** (with Nadiradze, R. G.) Cohomological realizations of two-valued formal groups and their applications. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 128 (1987), no. 1, 21-24. (P. S. Landweber) **89i:55013** 55N22
- Bakuradze, R. Sh.** (with Stankevich, I. V.) Some properties of operators that commute with the Sturm-Liouville operator. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 131 (1988), no. 1, 25-28. (From the text) **89m:47041** 47E05 (34B25)
- Bakurov, V. G.** The method of the inverse problem for the three-dimensional theory of three-wave resonant interaction. (Russian. English summary) *Teoret. Mat. Fiz.* 76 (1988), no. 1, 18-30; translated in *Theoret. and Math. Phys.* 76 (1988), no. 1, 676-685. (From the introduction) **89m:58086** 58F07 (35P25, 35Q15, 76X05)
- Bakushinskii, A. B.** (with Goncharskii, A. V.; Stepanova, L. D.) Iterative regularizable algorithms for solving three-dimensional inverse problems of gravimetry. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* 1988, no. 5, 105-107. (Not in MR) **86A20** (86-08)
- (with Goncharskii, A. V.; Levitan, S. Yu.) Fast linear iterative algorithms for the restoration of images. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 6, 933-937, 959. (Gabriel Dimitriu) **89j:65087** 65R10 (65T05, 92A07)
- Bakut, P. A.** see Pefin, Jan, **89b:81269**
- Bala, Renu** (with Ram, Babu) On the degree of approximation of a class of functions by means of Fourier series. *Tamkang J. Math.* 18 (1987), no. 2, 11-17. (H. P. Dikshit) **89d:42011** 42A24 (40C05)
- Balaban, Alexandru T.** Numerical modelling of chemical structures: local graph invariants, and topological indices. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 159-176, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (N. Trinajstić) **89b:92078** 92A40 (05C99)
- (with Randić, M.; Klein, D. J.; Katović, V.; Oakland, D. O.; Seitz, W. A.) Symmetry properties of chemical graphs. X. Rearrangement of axially distorted octahedra. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 266-284, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (N. Trinajstić) **89g:92088** 92A40 (05C99)
- (with Artemi, Cristian) Mathematical modeling of polymers. I. Enumeration of nonredundant (irreducible) repeating sequences in stereoregular polymers, elastomers, or in binary copolymers. *Match No. 22* (1987), 3-32. (N. Trinajstić) **89a:92078** 92A40 (05A15)
- (with Artemi, Cristian) Mathematical modeling of polymers. II. Irreducible sequences in n-ary copolymers. *Match No. 22* (1987), 33-66. (N. Trinajstić) **89a:92079** 92A40 (05A15)
- (with Artemi, Cristian; Tomescu, Ioan) Algebraic expressions for Kekulé structure counts of nonbranched regularly cata-condensed benzenoid hydrocarbons. *Match No. 22* (1987), 77-100. (Summary) **89e:92060** 92A40 (05A15)
- (with Brunvoll, J.; Cioslowski, Jerzy; Cyvin, B. N.; Cyvin, S. J.; Gutman, I.; He, Wen Chen; He, Wen Jie; Knop, J. V.; Kovačević, M.; Müller, W. R.; Szymanski, K.; Tolić, Ratko; Trinajstić, N.) Enumeration of benzenoid and coronoid hydrocarbons. *Z. Naturforsch. A* 42 (1987), no. 8, 863-870. (Summary) **89d:92090** 92A40 (05A15)
- (with Tomescu, Ioan) Alternating 6-cycles in perfect matchings of graphs representing condensed benzenoid hydrocarbons. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* 19 (1988), no. 1-3, 5-16. (N. Trinajstić) **89e:92075** 92A40 (05C70)
- (with Artemi, Cristian) Erratum: "Mathematical modeling of polymers. II. Irreducible sequences in n-ary copolymers" [Match No. 22 (1987), 33-66; MR 89a:92079]. *Match No. 23* (1988), 349. (Editors) **89j:92094** 92A40 (05A15)
- Balaban, Tadeusz** Ultraviolet stability problems in quantum field theories. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 1259-1262, *Amer. Math. Soc., Providence, RI*, 1987. (C. A. Hurst) **89d:81054** 81E08 (81-02, 81E13, 81E15)
- (with Imbrie, John Z.; Jaffe, Arthur) Effective action and cluster properties of the abelian Higgs model. *Comm. Math. Phys.* 114 (1988), no. 2, 257-315. (Alan D. Sokal) **89e:81077** 81E08 (81E13, 81E25, 82A25)
- Renormalization group approach to lattice gauge field theories. II. Cluster expansions. *Comm. Math. Phys.* 116 (1988), no. 1, 1-22. (Claus Montonen) **89h:81150** 81E25 (81E08, 81E15)
- Balabane, Mikhaël** (with Cazenave, Thierry; Douady, A.; Merle, F.) Existence d'états excités pour une équation de Dirac non linéaire. (English summary) [Existence of excited states for a nonlinear Dirac equation] *C. R. Acad. Sci. Paris Ser. I Math.* 306 (1988), no. 3, 117-120. (Gustavo Perla Menzala) **89e:81022** 81C10 (35Q20)
- Balabushkin, A. N.** (with Gul'ko, F. B.) Prediction of the extreme values of the phase coordinates of stochastic systems. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 6, 70-77; translated in *Automat. Remote Control* 49 (1988), no. 6, part 1, 743-748. (Summary) **89e:93216** 93E20 (93E03)
- Balacra, Constantin** (with Burstein, Gabriel; Nicu, Mihail D.) Simplicial differential geometric theory for language cortical dynamics. *Fuzzy Sets and Systems* 23 (1987), no. 3, 303-313. (Marta C. Bunge) **89c:58004** 58A05 (03E72, 51K10, 92A09)
- Balachandran, A. P.** (with Atré, M. V.; Govindarajan, T. R.) Massless spinning particles in all dimensions and novel magnetic monopoles. *Internat. J. Modern Phys. A* 2 (1987), no. 2, 453-483. (A. O. Barut) **89a:81049** 81D99 (81G10)
- Wess-Zumino terms and quantum symmetries: a review. *Conformal field theory, anomalies and superstrings* (Singapore, 1987), 91-173, *World Sci. Publishing, Singapore*, 1988. (Summary) **89h:81098** 81E13 (58G40, 81E99)
- Balachandran, Krishnan** (with Balasubramanian, G.; Thandapani, E.) Some interesting elementary algebraic problems in Ramanujan's *Notebooks*. *Math. Ed.* 4 (1987), no. 2, 95-97. (Don Redmond) **89j:01046** 01A60 (11-03)
- Controllability of nonlinear systems with implicit derivative. *IMA J. Math. Control Inform.* 5 (1988), no. 2, 77-83. (Jerzy Sztajnic) **89f:34114** 34K35 (93B05, 93C22)
- (with Thandapani, E.; Balasubramanian, G.) Some series solutions of the Duffing equation. *Indian J. Pure Appl. Math.* 19 (1988), no. 5, 429-432. (Stanislaw Kus) **89f:34009** 34A25 (70K25)
- (with Palanisamy, K. R.; Ramaswamy, R. S.) Effect of time delay on system performance via single term Walsh series approach. *Internat. J. Systems Sci.* 19 (1988), no. 8,

- 1635-1644. (Summary) **89d:34128** 34K35 (93C05)
- (with Thandapani, E.; Balasubramanian, G.) Series solutions of some nonlinear differential equations. *J. Comput. Appl. Math.* **23** (1988), no. 1, 103-107. (A. J. Rodrigues) **89k:65093** 65L05
  - (with Thandapani, E.; Balasubramanian, G.) Approximate solutions of a nonlinear differential equation. *J. Comput. Appl. Math.* **24** (1988), no. 3, 399-402. (Yubo Chen) **89m:34019** 34A45 (34A25)
  - Controllability of a class of perturbed nonlinear systems. *Kybernetika (Prague)* **24** (1988), no. 1, 61-64. (Jerzy Klamka) **89e:93015** 93B05 (49E15, 93C10, 93C15)
  - (with Palanisamy, K. R.) Analysis of time-varying singular systems via single-term Walsh-series approach. *Proc. IEEE-D* **135** (1988), no. 6, 461-462. (Not in MR) **93C30**
  - Balachandran, V. K.** (with Rema, P. S.; Satyanarayana Murthy, P. V.) Non-Archimedean valuation on rational composition algebras. *J. Math. Phys. Sci.* **22** (1988), no. 1, 101-130. (Holger P. Petersson) **89d:17029** 17D05 (12E15, 17A35, 17A75)
  - Baladez, V. Kh.** Shape theory for fibrations. (Russian. English and Georgian summaries) *Sovetsk. Akad. Nauk Gruzin. SSR* **129** (1988), no. 2, 269-272. (S. Mardešić) **89k:55015** 55P55 (54C55, 55R05)
  - Balcer, M. K.** Solvability of differential equations of arbitrary order with unbounded operator coefficients. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 5, 16-20 (1988). (József Banaś) **89k:34109** 34G20 (35G30, 47H15)
  - (with Yakubov, S. Ya.) The well-posedness of a mixed problem for some classes of equations that are well-posed in the sense of Petrovskii. (Russian) *Mat. Zametki* **42** (1987), no. 4, 527-536, 622. (Genowefa Majcher) **89k:35053** 35G15 (35K99, 35R25)
  - Higher-order evolution equations of parabolic type. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **44** (1988), no. 2, 7-10. (Enrico Obrecht) **89k:34110** 34G20 (34G10, 35K22)
  - Balaganskii, V. S.** On the connection between approximation and geometric properties of sets. (Russian) *Approximation in concrete and abstract Banach spaces (Russian)*, 46-53, 124, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1987. (Ioan Şerb) **89g:46023** 46B20 (41A65)
  - Balagondar, P. M.** (with Maslowe, S. A.; Melkonian, S.) The propagation of finite-amplitude waves in a model boundary layer. *Stud. Appl. Math.* **76** (1987), no. 2, 169-185. (E. G. Broadbent) **89k:76014** 76B15
  - Balaji, V.** (with Clark, Terry L.) Scale selection in locally forced convective fields and the initiation of deep cumulus. *J. Atmospheric Sci.* **45** (1988), no. 21, 3188-3211. (From the summary) **89k:86009** 86A35
  - Balakirskii, V. B.** Sequential decoding of linear convolutional codes. (Russian) *Problemy Peredachi Informatsii* **23** (1987), no. 4, 41-48. (Petr Němec) **89e:94038** 94B10 (94B35)
  - Balakliets, V. A.** (ODF)-spaces and their properties. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 1, 13-16, 92. (Branislav Mirković) **89g:46003** 46A05
  - Balakrishnan, A. V.** On a class of stochastic differential equations which do not satisfy Lipschitz conditions. *Stochastic differential systems (Bad Honnef, 1985)*, 27-35, *Lecture Notes in Control and Inform. Sci.*, **78**, Springer, Berlin-New York, 1986. (D. Kannan) **89b:60136** 60H10 (34F05, 60G35, 60H20)
  - Теория фильтрации Калмана. (Russian) [Kalman filtering theory] Translated from the English by S. M. Zuev. Translation edited and with a preface by A. A. Novikov. "Mir", Moscow, 1988, 169 pp. ISBN 5-03-000971-X (Editors) **89j:93113** 93E11
  - Control of flexible flight structures. *Analyse mathématique et applications*, 23-38, *Gauthier-Villars, Paris*, 1988. (Zong Ji Chen) **89j:93089** 93D15 (73K99, 93C20, 93C75, 93E20)
  - Stability enhancement of flexible structures by nonlinear boundary-feedback control. *Boundary control and boundary variations (Nice, 1986)*, 18-37, *Lecture Notes in Comput. Sci.*, **100**, Springer, Berlin-New York, 1988. (John Maroulas) **89k:93045** 93D15
  - A random Schrödinger equation: white noise model. *Differential Integral Equations* **1** (1988), no. 1, 49-70. (Werner Kohler) **89a:60147** 60H15 (35R60, 78A40)
  - Balakrishnan, Anantaram** LP extreme points and cuts for the fixed-charge network design problem. *Math. Programming* **39** (1987), no. 3, 263-284. (Summary) **89a:90054** 90B10 (05C35)
  - Balakrishnan, Janaki** (with Biswas, S. N.; Goyal, Ashok; Soni, S. K.) Chiral anomaly for parafermions from stochastic quantization. *Phys. Rev. D* (3) **37** (1988), no. 2, 571-573. (M. A. Namazie) **89h:81162** 81E99 (81C20, 81E13)
  - Balakrishnan, N.** (with Tiku, M. L.; Tan, W. Y.) **★** Robust inference. Statistics: Textbooks and Monographs, **71**, Marcel Dekker, Inc., New York, 1986. x+321 pp. ISBN 0-8247-7532-5 (M. Samania) **89g:62053** 62F35
  - (with Puthenpura, S.) Best linear unbiased estimators of location and scale parameters of the half logistic distribution. *J. Statist. Comput. Simulation* **25** (1986), no. 3-4, 193-204. (Not in MR) **62F10**
  - (with Malik, H. J.; Puthenpura, S.) Best linear unbiased estimation of location and scale parameters of the log-logistic distribution. *Comm. Statist. Theory Methods* **16** (1987), no. 12, 3477-3495. (J. A. Melamed) **89f:62022** 62F10
  - Recurrence relations for order statistics from  $n$  independent and non-identically distributed random variables. *Ann. Inst. Statist. Math.* **40** (1988), no. 2, 273-277. (M. Huková) **89i:62078** 62G30
  - Bayesian insight into a robust two-sample  $t$ -test based on asymmetric censored samples. *Biometrical J.* **30** (1988), no. 4, 425-439. (Not in MR) **62F03**
  - (with Tan, W. Y.) Bayesian insight into a robust test for linear contrast based on asymmetric censored samples. *Biometrical J.* **30** (1988), no. 5, 517-532. (Not in MR) **62F15**
  - (with Leung, M. Y.) Means, variances and covariances of order statistics, BLUEs for the type I generalized logistic distribution, and some applications. *Comm. Statist. Simulation Comput.* **17** (1988), no. 1, 51-84. (Not in MR) **62Q05**
  - (with Tiku, M. L.) Robust Hotelling-type  $T^2$  statistics based on the modified maximum likelihood estimators. *Comm. Statist. Theory Methods* **17** (1988), no. 6, 1789-1810. (Summary) **89c:62096** 62H15 (62F35)
  - Relations and identities for the moments of order statistics from a sample containing a single outlier. *Comm. Statist. Theory Methods* **17** (1988), no. 7, 2173-2190. (Kuo Tung Lin) **89i:62079** 62G30
  - (with Ambagaspitiya, R. S.) Relationships among moments of order statistics in samples from two related outlier models and some applications. *Comm. Statist. Theory Methods* **17** (1988), no. 7, 2327-2341. (Not in MR) **62G30**
  - (with Tan, W. Y.) Bayesian approach to robust procedures based on censored samples. *Comm. Statist. Theory Methods* **17** (1988), no. 7, 2403-2418. (Not in MR) **62F35**
  - (with Malik, H. J.; Ahmed, S. E.) Recurrence relations and identities for moments of order statistics. I. Arbitrary continuous distribution. *Comm. Statist. Theory Methods* **17** (1988), no. 8, 2623-2655. (S. Panchapakesan) **89j:62070** 62G30 (62E15)
  - (with Tiku, M. L.) Generalization of the robust bivariate  $T^2$  statistic to multivariate populations. *Comm. Statist. Theory Methods* **17** (1988), no. 11, 3899-3911. (Not in MR) **62H15**
  - (with Tiku, M. L.) Robust classification procedures based on dichotomous and continuous variables. *J. Classification* **5** (1988), no. 1, 53-80. (Z. Šidák) **89e:62075** 62H30
  - (with Kocherlakota, S.; Kocherlakota, K.) Robustness of the double discriminant function in nonnormal situations. *South African Statist. J.* **22** (1988), no. 1, 15-43. (Not in MR) **62H30**
  - Balakrishnan, Radha** (with Ananthakrishna, G.; Hao, Bai Lin) Errata: "Spatially chaotic spin patterns in a field-perturbed Heisenberg chain" [Phys. Lett. A **121** (1987), no. 8-9, 407-410; MR **88e:82029**]. *Phys. Lett. A* **124** (1987), no. 9, 526. (Editors) **89f:82074** 82A48
  - Balakrishnan, Rangaswami** (with Ranganathan, K.) Conformal neighbourhood hypergraphs. *J. Combin. Inform. System Sci.* **9** (1984), no. 3, 151-154. (Ioan Tomescu) **89g:05081** 05C65
  - see also Proceedings: Ramanujan Centennial Conference, **89m:00012**
  - Balakrishnan, S. N.** (with Speyer, Jason L.) Assumed density filter with application to homing missile guidance. *J. Guidance Control Dynamics* **12** (1989), no. 1, 4-12. (Claudia Simionescu) **89k:93193** 93E10 (93E05, 93E11)
  - Balakrishnan, U.** Laurent expansion of Dirichlet series. II. *Monatsh. Math.* **103** (1987), no. 1, 1-5. (G. P. Kapoor) **89a:30001** 30B50 (11M41, 11M51)
  - Balakrishnan, Venkataraman** Topological defects in condensed matter. *Recent developments in theoretical physics (Kottayam, 1986)*, 135-148, *World Sci. Publishing, Singapore*, 1987. (Koichiro Matsuno) **89j:82064** 82A57 (82A99)
  - (with Chaturvedi, S.) Persistent diffusion on a line. *Phys. A* **148** (1988), no. 3, 581-596. (Philip J. Feinsilver) **89k:60093** 60J15 (82A41)
  - (with Van den Broeck, C.; Hanggi, P.) First-passage times of non-Markovian processes: the case of a reflecting boundary. *Phys. Rev. A* (3) **38** (1988), no. 8, 4213-4222. (Cheng Xuñ Wu) **89m:82024** 82A31 (34F05, 60H10, 60J60)
  - Balakumar, S.** (with Martin, Clyde Franklin) Two-point boundary value problems and the matrix Riccati equations. *Operator methods for optimal control problems (New Orleans, La., 1986)*, 31-56, *Lecture Notes in Pure and Appl. Math.*, **108**, Dekker, New York, 1987. (P. W. Eloe) **89b:34036** 34B05
  - Balan, Trandafir T.** The polar of a super-additive norm. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 8, 651-654. (J. Bognár) **89j:46021** 46D05 (46B99)
  - Balan, Vladimir** Invariants of the  $H$ -projective transformations of linear  $F$ -connections. *Bull. Math. Soc. Sci. Math. R. S. Roumanie (N.S.)* **31** (79) (1987), no. 3, 195-203. (Sin-Leng Tan) **89g:53021** 53B10 (53C05)
  - Balandin, V. V.** (with MacGillivray, H. L.) Mixtures, myths and kurtosis. *Comm. Statist. Simulation Comput.* **17** (1988), no. 3, 789-802. (Not in MR) **62E10**
  - Balandin, V. V.** On a problem of stability under small random perturbations. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1987**, no. 3, 63-65, 70-71. (A. Devinatz) **89j:60137** 60H10
  - Balanov, Z. I.** Finite coverings of an  $n$ -dimensional sphere and a theorem of Lyusternik. (Russian) *Topological structures and their mappings (Russian)*, 27-33, ii, *Lav. Gos. Univ., Riga*, 1987. (Yu. B. Zelinskii) **89h:54027** 54H15 (55M30)
  - On Krasnosel'skii's comparison principle in infinite-dimensional spaces for compact groups. (Russian) *Lav. Mat. Ezhegodnik* No. 31 (1988), 207-215, 255-256. (Jacob Pejsachowicz) **89g:47092** 47H99 (47H10)
  - Balantekin, A. R.** (with Schmitt, H. A.; Barrett, B. R.) Coherent states for the harmonic oscillator representations of the orthosymplectic supergroup  $OSP(1/2N, \mathbb{R})$ . *J. Math. Phys.* **29** (1988), no. 7, 1634-1639. (R. Delbourgo) **89e:22032** 22E65 (81D30)
  - (with Schmitt, H. A.; Halse, P.; Barrett, B. R.) Orthosymplectic supersymmetry complementary to combined Bose-Fermi seniority algebras. *Phys. Lett. B* **210** (1988), no. 1-2, 1-4. (Summary) **89j:81263** 81G30
  - (with Fricke, S. H.; Hatchell, P. J.; Uzer, T.) Uniform semiclassical approximation to supersymmetric quantum mechanics. *Phys. Rev. A* (3) **37** (1988), no. 8, 2797-2804. (Summary) **89e:81051** 81C99
  - Balas, Egon** The assignable subgraph polytope of a directed graph. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **60** (1987), 35-42. (Joseph B. Klerlein) **89e:05094** 05C20 (05C38)
  - (with Adams, Joseph; Zawack, D. J.) The shifting bottleneck procedure for job shop scheduling. Focussed issue on heuristics. *Management Sci.* **34** (1988), no. 3, 391-401. (Summary) **89b:90100** 90B35
  - On the convex hull of the union of certain polyhedra. *Oper. Res. Lett.* **7** (1988), no. 6, 279-283. (M. Mañas) **89k:52007** 52A25 (90C10)
  - Balas, Mark J.** Finite-dimensional controllers for linear distributed parameter systems: exponential stability using residual mode filters. *J. Math. Anal. Appl.* **133** (1988), no. 2, 283-296. (Enrique Zuazua) **89e:93171** 93D20 (93C05, 93C20, 93C25)
  - Balashchenko, V. V.** Induced connections on homogeneous 3-cyclic spaces of linear Lie groups. (Russian) *Differentsial'naya Geom. Mnogooobraz. Figur* No. 18 (1987), 10-13, 135. (Adrian C. Albu) **89e:53041** 53C05 (53C15)
  - Balashova, G. S.** On the continuation of infinitely differentiable functions. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **51** (1987), no. 6, 1292-1308, 1359; translated in *Math. USSR-Izv.* **31** (1988), no. 3, 603-620. (Wiesław Pleśniak) **89e:26039** 26E10 (46E35)
  - Balashova, S. D.** (with Osipov, N. M.) Some methods for finding eigenvalues of selfadjoint operators. (Russian) *Methods for solving nonlinear problems, and data processing (Russian)*, 4-8, 104, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1986. (see **89f:00011**) **47A70** (65J10)
  - (with Plakslit, Z. T.) Projection-iteration methods for solving problems of minimization with constraints. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 64 (1988), 3-8, 147. (R. Tichatschke) **89m:65059** 65K05 (49D07, 90C48)



- Balasko, Yves** The class of aggregate excess demand functions. *Contributions to mathematical economics*, 47–56, North-Holland, Amsterdam-New York, 1986. (P. Kischka) **89d:90041** 90A14 (55M99, 90A12)
- (with Shell, Karl) Lump-sum taxes and transfers: public debt in the overlapping-generations model. *Equilibrium analysis*, 121–153, Cambridge Univ. Press, Cambridge-New York, 1986. (Marwan Simaan) **89c:90038** 90A16 (90A05, 90A17)
- ★ Foundations of the theory of general equilibrium. *Economic Theory, Econometrics, and Mathematical Economics*. Academic Press, Inc., Boston, MA, 1988. xiv+285 pp. ISBN 0-12-076975-1 (Carmen Pagliari) **89d:90042** 90A14 (90-02)
- Balasubrahmanyam, N.** see **Balasubramanian, N.**
- Balasubramanian, G.** Characterisations of nearly Lindelöf spaces. *Acta Cienc. Indica Math.* **13** (1987), no. 4, 226–229. (Sheldon W. Davis) **89f:54047** 54D20 (54D10)
- (with Thandapani, E.; Balachandran, Krishnan) Some interesting elementary algebraic problems in Ramanujan's *Notebooks*. *Math. Ed.* **4** (1987), no. 2, 95–97. (Don Redmond) **89j:01046** 01A60 (11-03)
- (with Balachandran, Krishnan; Thandapani, E.) Some series solutions of the Duffing equation. *Indian J. Pure Appl. Math.* **19** (1988), no. 5, 429–432. (Stanislaw Kus) **89f:34009** 34A25 (70K25)
- (with Thandapani, E.; Balachandran, Krishnan) Series solutions of some nonlinear differential equations. *J. Comput. Appl. Math.* **23** (1988), no. 1, 103–107. (A. J. Rodrigues) **89k:65093** 65L05
- (with Balachandran, Krishnan; Thandapani, E.) Approximate solutions of a nonlinear differential equation. *J. Comput. Appl. Math.* **24** (1988), no. 3, 399–402. (Yubo Chen) **89m:34019** 34A45 (34A25)
- Impartible spaces. *Math. Ed. (Siwan)* **22** (1988), no. 2, 44–46. (Mohan L. Tikoo) **89f:54040** 54D05
- Balasubramanian, K.** Computational graph theory. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 514–528, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (T. R. S. Walsh) **89g:92074** 92A40 (05-04, 05C15, 68R10, 92A07)
- (with Liu, Xiaoyu) Computer generation of spectra of graphs: applications to  $C_{60}$  clusters and other systems. *J. Comput. Chem.* **9** (1988), no. 4, 406–415. (Not in MR) **92A40**
- Tree pruning and lattice statistics on Bethe lattices. *J. Math. Chem.* **2** (1988), no. 1, 69–82. (David E. Miller) **89g:92075** 92A40 (05C05, 82A67)
- (with Liu, Xiaoyu) Computer generation of edge groups and edge colorings of graphs. *J. Comput. Chem.* **10** (1989), no. 1, 1–13. (Summary) **89m:92065** 92A40 (05-04, 05C15)
- Balasubramanian, N.** (with Sivaramakrishnan, R.) Friendly-pairs of multiplicative functions. *Fibonacci Quart.* **25** (1987), no. 4, 320–321. (J. Herzog (Zbl 624:10005)) **89i:11006** 11A25
- Balasubramanian, Ramachandran** Number theory and primality testing. *Workshop on Mathematics of Computer Algorithms* (Madras, 1986), A.5, 29 pp., *I.M.S. Rep.*, 111, Inst. Math. Sci., Madras, 1986. (Eric Bach) **89i:11140** 11Y11 (11A51)
- On the frequency of Titchmarsh's phenomenon for  $\zeta(s)$ . IV. *Hardy-Ramanujan J.* **9** (1986), 1–10. (O. H. Körner) **89k:11074** 11M06
- A note on a result of Erdős, Sárközy and Sós. *Acta Arith.* **49** (1987), no. 1, 45–53. (V. C. Harris) **89c:11023** 11B34 (11P65)
- The circle method and its implications. *Srinivasa Ramanujan centenary 1987. J. Indian Inst. Sci.* **1987**, Special Issue, 39–44. (Lawrence Somer) **89a:01038** 01A60 (11-03, 11P55)
- (with Ramachandra, K.) On the number of integers  $n$  such that  $nd(n) \leq x$ . *Acta Arith.* **49** (1988), no. 4, 313–322. (Shigeru Kanemitsu) **89h:11061** 11N45 (11N37)
- (with Ramachandra, K.; Subbarao, M. V.) On the error function in the asymptotic formula for the counting function of  $k$ -full numbers. *Acta Arith.* **50** (1988), no. 2, 107–118. (Z. Krizhyus) **89g:11077** 11N25
- (with Ramachandra, K.) On the frequency of Titchmarsh's phenomenon for  $\zeta(s)$ . V. *Ark. Mat.* **26** (1988), no. 1, 13–20. (O. H. Körner) **89k:11075** 11M06
- (with Adhikari, S. D.; Sankaranarayanan, Ayyadurai) On an error term related to the greatest divisor of  $n$ , which is prime to  $k$ . *Indian J. Pure Appl. Math.* **19** (1988), no. 9, 830–841. (E. J. Scourfield) **89m:11089** 11N37
- On the additive completion of squares. *J. Number Theory* **29** (1988), no. 1, 10–12. (H. L. Abbott) **89g:11018** 11B75
- Balasundaram, S.** (with Bhattacharyya, Pijush Kanti) A mixed finite-element method for fourth-order elliptic problems with variable coefficients. *J. Comput. Appl. Math.* **22** (1988), no. 1, 1–24. (John Stephenson) **89i:65112** 65N30 (73K10, 73K25)
- Baldé, S.** (with Sturdivant, E.; Augustin, J.) Subcellular distribution of compounds in biosystems. *Bull. Math. Biol.* **50** (1988), no. 4, 367–378. (Summary) **89f:92011** 92A08 (92A09)
- Balazard, Michel** Sur certaines fonctions additives. [On certain additive functions] *Groupe de travail en théorie analytique et élémentaire des nombres*, 1986–1987, 4–14, *Publ. Math. Orsay*, 88-01, Univ. Paris XI, Orsay, 1988. (Adolf Hildebrand) **89g:11062** 11N37 (11K65)
- (with Delange, Hubert; Nicolas, J.-L.) Sur le nombre de facteurs premiers des entiers. (English summary) [On the number of prime factors of integers] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 13, 511–514. (A. Perelli) **89f:11122** 11N05
- Baldás, István** Random number generation on personal computers. (Hungarian) *Mat. Lapok* **33** (1982/86), no. 1-3, 123–141. (István Déak) **89k:65007** 65C10
- Baldás, M.** (with Goldner, Gavrilă) Monotone enclosure for Cauchy problem. *Seminar on mathematical analysis*, 91–100, Preprint, 87-7, Univ. " Babeş-Bolyai", Cluj-Napoca, 1987. (A. A. Fonarev) **89e:47093** 47H17 (65J15, 65L05)
- On the approximate solution of operator equations in Hilbert spaces. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* **32** (1987), no. 1, 18–23. (Boro Döring) **89j:65046** 65J15
- Balazs, N. L.** (with Balian, Roger) Equiprobability, inference, and entropy in quantum theory. *Ann. Physics* **179** (1987), no. 1, 97–144. (T. W. Barrett) **89b:81027** 81B99 (82A99)
- (with Schmit, C.; Voros, A.) Spectral fluctuations and zeta functions. *J. Statist. Phys.* **46** (1987), no. 5-6, 1067–1090. (Martin C. Gutzwiller) **89b:58171** 58F19 (58G25, 81C10)
- (with Wycoff, David) Multiple time scales analysis for the Kramers-Chandrasekhar equation. *Phys. A* **146** (1987), no. 1-2, 175–200. (B. H. Lavenda) **89g:82031a** 82A31 (34C29, 82A35)
- (with Wycoff, David) Multiple time scales analysis for the Kramers-Chandrasekhar equation with a weak magnetic field. *Phys. A* **146** (1987), no. 1-2, 201–218. (B. H. Lavenda) **89g:82031b** 82A31 (34C29, 82A35)
- (with Wycoff, David) Separation of fast and slow variables for a linear system by the method of multiple time scales. *Phys. A* **146** (1987), no. 1-2, 219–241. (B. H. Lavenda) **89g:82031c** 82A31 (34C20, 34C29, 82A35)
- (with Wycoff, David) Separation of fast and slow variables for a linear system with time-dependent coefficients. *Phys. A* **146** (1987), no. 1-2, 242–254. (B. H. Lavenda) **89b:82038** 82A30
- Balazsyk, T. N.** (with Ostianu, N. M.) Mapping of the manifold  $T^2(M_n)$  onto an associated manifold of projective-differential structure. (Russian) *Webs and quasigroups* (Russian), 102–108, Kalinin. Gos. Univ., Kalinin, 1988. (Vladislav Goldberg) **89f:53015** 53A20 (53B10)
- Balbás, A.** (with Jiménez Guerra, Pedro) Representation of operators by bilinear integrals. *Czechoslovak Math. J.* **37** (112) (1987), no. 4, 551–558. (R. Rao Chivukula) **89c:47052** 47B99 (46G10)
- (with Jiménez Guerra, Pedro) A Radon-Nikodým theorem for a bilinear integral in locally convex spaces. *Math. Japon.* **32** (1987), no. 6, 863–870. (Z. Lipecti) **89f:46096** 46G10 (28B05)
- Balbás de la Corte, A.** The relation between strongly regular Radon measures and  $\sigma$ -finite measures. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* **81** (1987), no. 1, 223–228. (Pedro Jiménez Guerra) **89f:28032** 28C15
- Balberg, I.** Nonuniversal behavior of the cluster properties in continuum systems. *Phys. Rev. B* **3** (37) (1988), no. 4, 2391–2394. (Summary) **89a:82001** 82-04 (82A43, 82A70)
- Balbi, Marlene Teixeira** Topological vector spaces over topological division rings: barrelled, bornological and quasinormed spaces. *Portugal. Math.* **44** (1987), no. 4, 393–415. (T. Hussain) **89i:46078** 46F05 (46A30)
- Balbinot, Roberto** Black-hole space-times and the semiclassical Einstein equations. (Italian and Russian summaries) *Nuovo Cimento B* **11** (100) (1987), no. 3, 361–370. (A. D. Popova) **89i:83040** 83C47
- (with Barletta, Antonio) Switching off black hole evaporation? *Classical Quantum Gravity* **5** (1988), no. 1, L11–L13. (Derek Raine) **89g:83029** 83C47
- (with Barletta, Antonio) Behaviour of a test field in a vacuum bubble space-time. (Italian and Russian summaries) *Nuovo Cimento B* **11** (102) (1988), no. 2, 179–193. (Derek Raine) **89m:83045** 83C47 (81E20)
- Balcár, Bohuslav** (with Štěpánek, Petr) ★ Teorie množin. (Czech) [Set theory] *Academia [Publishing House of the Czechoslovak Academy of Sciences], Prague*, 1986. 413 pp. (Eva Hartová) **89a:04001** 04-01
- (with Kaláček, Pavel; Williams, Scott W.) On the multiple Birkhoff recurrence theorem in dynamics. *Comment. Math. Univ. Carolin.* **28** (1987), no. 4, 607–612. (L. Janos) **89a:54048** 54H20
- Balcázar, José L.** (with Díaz, Josep; Gabarró, J.) On characterizations of the class PSPACE/poly. *Theoret. Comput. Sci.* **52** (1987), no. 3, 251–267. (G. Wechsung) **89c:68034** 68Q15 (03D15)
- (with Russo, D.) Immunity and simplicity in relativizations of probabilistic complexity classes. (French summary) *RAIRO Inform. Théor. Appl.* **22** (1988), no. 2, 227–244. (Andreas Brandstädt) **89i:03077** 03D15 (68Q15)
- Balcerzak, Marek** Some Bernstein-type construction and its applications. (Polish summary) *Acta Univ. Lodz. Folia Math.* **2** (1987), 3–8. (Summary) **89g:04004** 04A15 (54H99)
- A classification of  $\sigma$ -ideals in Polish groups. *Demonstratio Math.* **20** (1987), no. 1-2, 77–88 (1988). (J. C. Oxtoby) **89e:54076** 54H05 (22B05)
- The decomposition property of  $\sigma$ -ideals. II. (Serbo-Croatian summary) *Rad. Mat.* **3** (1987), no. 2, 261–266. (Summary) **89a:28001** 28A05 (04A15)
- Balcerzyk, Stanisław** Simple proofs of some plethysm formulas. *Comment. Math. Prace Mat.* **27** (1987), no. 1, 1–5. (A. O. Morris) **89b:20040** 20C32 (22E45)
- see also **Serre, Jean-Pierre**, **89k:20001**
- Balchen, Jens G.** (with Lie, Bernt; Solberg, Ingar) Internal decoupling in nonlinear process control. *MIC—Modeling Identification Control* **9** (1988), no. 3, 137–148. (Not in MR) **49D27** (93C10)
- horvatic-Baldasar, K.** see **Horvatic-Baldasar, K.**
- Baldassarri, F.** Comparaison entre la cohomologie algébrique et la cohomologie  $p$ -adique rigide à coefficients dans un module différentiel. II. Cas des singularités régulières à plusieurs variables. [Comparison between algebraic cohomology and rigid  $p$ -adic cohomology with coefficients in a differential module. II. The case of regular multivariate singularities] *Math. Ann.* **280** (1988), no. 3, 417–439. (Thomas Zink) **89h:14018** 14F40 (12H25, 14G20, 32K10)
- Balder, Erik J.** Necessary and sufficient conditions for  $L_1$ -strong-weak lower semicontinuity of integral functionals. *Nonlinear Anal.* **11** (1987), no. 12, 1399–1404. (Andrzej Fryszkowski) **89b:49016** 49A50
- On infinite-horizon lower closure results for optimal control. *Ann. Mat. Pura Appl.* (4) **151** (1988), 239–246. (V. Popescu) **89j:49004** 49A50 (93C15, 93C25)
- Baldessari, Bruno** Intrinsic inference model for finite populations of dependent random vectors. (Italian summary) *Metron* **45** (1987), no. 1-2, 169–186. (Sudh C. Gupta) **89d:62011** 62D05
- Baldi, Paolo** An introduction to the theory of large deviations. (Italian summary) *Rend. Sem. Mat. Fis. Milano* **56** (1986), 65–79 (1988). (Jean Deshayes) **89k:60039** 60F10
- (with Chaleyat-Maurel, M.) Sur l'équivalent du module de continuité des processus de diffusion. [On the equivalent of the modulus of continuity of diffusion processes] *Séminaire de Probabilités, XXI*, 404–427, *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (Rémi Léandre) **89e:60147** 60J60 (60G17)
- (with Chaleyat-Maurel, M.) An extension of Venttsel-Freidlin estimates. *Stochastic analysis and related topics* (Silivri, 1986), 305–327, *Lecture Notes in Math.*, 1316, Springer, Berlin-New York, 1988. (V. Mackevičius) **89i:60121** 60H10 (34F05, 58F30, 60F10, 60J60)
- Large deviations and stochastic homogenization. *Ann. Mat. Pura Appl.* (4) **151** (1988), 161–177. (V. K. Rohatgi) **89m:60060** 60F10 (46G12, 60F17)
- Baldi, Pierre** (with Venkatesh, Santosh S.) Number of stable points for spin-glasses and neural networks of higher orders. *Phys. Rev. Lett.* **58** (1987), no. 9, 913–916. (Summary) **89a:82025** 82A57 (92A09)
- (with Aschbacher, Michael; Baum, Eric; Wilson, R. M.) Embeddings of ultrametric spaces in finite-dimensional structures. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 4, 564–577. (E. Pessa) **89d:54020** 54E99 (94C15)



- (with Heiligenberg, W.) How sensory maps could enhance resolution through ordered arrangements of broadly tuned receivers. *Biol. Cybernet.* **59** (1988), no. 4-5, 313-318. (Summary) **89k:92075** 92A18 (92A27)
- Neural networks, orientations of the hypercube, and algebraic threshold functions. *IEEE Trans. Inform. Theory* **34** (1988), no. 3, 523-530. (Eric Cornelis) **89h:68115** 68Q90 (68M10, 94C99)
- Group actions and learning for a family of automata. *J. Comput. System Sci.* **36** (1988), no. 1, 1-15. (Jerzy W. Grzymala-Busse) **89f:68055** 68T05 (68Q80, 92A09)
- Neural networks, acyclic orientations of the hypercube, and sets of orthogonal vectors. *SIAM J. Discrete Math.* **1** (1988), no. 1, 1-13. (Jerzy W. Grzymala-Busse) **89j:92021** 92A09 (05C99, 68Q75, 68Q80)
- Baldin, Yuri I.** (with Mercuri, Francesco) Codimension two nonorientable submanifolds with nonnegative curvature. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 918-920. (Renato Tribuzy) **89h:53112** 53C40
- Balding, David** Diffusion-reaction in one dimension. *J. Appl. Probab.* **25** (1988), no. 4, 733-743. (Peter Donnelly) **89i:60194** 60K35 (60J20, 60J70)
- Baldisserti, Natalia** Nets of conics in a plane over a field of characteristic 2. (Italian. English summary) *Rend. Mat. (7)* **5** (1985), no. 3-4, 355-365 (1988). (J. W. P. Hirschfeld) **89k:14091** 14N05 (14J26)
- Baldoni Silva, M. W.** (with Knapp, Anthony W.) Indefinite intertwining operators. II. *Symposia Mathematica*, Vol. XXIX (Cortona, 1984), 1-46, *Sympos. Math.*, 29, Academic Press, New York-London, 1987. (D. Miličević) **89i:22023** 22E46
- Baldursson, Friðrik Már** Singular stochastic control and optimal stopping. *Stochastics* **21** (1987), no. 1, 1-40. (Bohdan Masłowski) **89d:93114** 93E20
- Baldwin, John T.** (with Samhan, Marouf A.) On the definability of  $P_3(A)$ . *Algebra Universalis* **23** (1986), no. 3, 254-261. (Heinrich Werner) **89h:08009** 08C10 (03C30, 08B25)
- (with Harrington, Leo) Trivial pursuit: remarks on the main gap. Stability in model theory (Trento, 1984). *Ann. Pure Appl. Logic* **34** (1987), no. 3, 209-230. (Steven Buechler) **89h:03055** 03C45
- ★ Fundamentals of stability theory. Perspectives in Mathematical Logic. Springer-Verlag, Berlin-New York, 1988. xiv+447 pp. ISBN 3-540-15298-9 (John B. Goode) **89k:03002** 03-02 (03C45)
- (with Ahlbrandt, Gisela) Categoricity and generalized model completeness. *Arch. Math. Logic* **27** (1988), no. 1, 1-4. (G. Cherlin) **89h:03055** 03C35
- Baldwin, P. R.** Soft billiard systems. *Phys. D* **29** (1988), no. 3, 321-342. (Dieter H. Mayer) **89h:58096** 58F11 (58F05, 58F14, 82A05)
- Baldwin, Paul** Errata: "Uniform asymptotic approximations to solutions of the Orr-Sommerfeld equation for the asymptotic suction boundary layer profile" [Proc. Roy. Soc. London Ser. A **399** (1985), no. 1817, 321-365; MR 87a:76055]. *Proc. Roy. Soc. London Ser. A* **419** (1988), no. 1857, 379. (Editors) **89i:76048** 76E05 (76D10)
- Baldwin, Stewart** (with Smith, Michel) On a possible property of far points of  $\beta[0, \infty)$ . Proceedings of the 1986 Topology Conference (Lafayette, LA, 1986). *Topology Proc.* **11** (1986), no. 2, 239-245. (Tsugunori Nogura) **89f:54048** 54D35 (03E35, 54A35, 54F15)
- Generalizations of a theorem of Sarkovskii on orbits of continuous real-valued functions. *Discrete Math.* **67** (1987), no. 2, 111-127. (Louis Block) **89c:58057** 58F08 (54H20)
- Balek, V.** (with Melek, M.; Petrák, M.) Description of spinning particle in general relativity using commuting spin variables. *Czechoslovak J. Phys. B* **37** (1987), no. 12, 1321-1339. (Elisa Udeschini-Brinis) **89h:83051** 83C47 (81G10)
- Bales, L. A.** (with Karakashian, Ohannes A.; Serbin, S. M.) On the  $A_0$ -acceptability of rational approximations to the exponential function with only real poles. *BIT* **28** (1988), no. 1, 70-79. (Syvert P. Norsett) **89f:65080** 65L07 (65D20)
- Error estimates for single step fully discrete approximations for nonlinear second order hyperbolic equations. Hyperbolic partial differential equations. V. *Comput. Math. Appl.* **15** (1988), no. 6-8, 535-553. (Rolf Rannacher) **89h:65146** 65M15 (65G05, 65M60)
- (with Douglas, Vasilios A.) Coarse methods for nonlinear second-order hyperbolic equations. *Math. Comp.* **52** (1989), no. 186, 299-319, S15-S33. (B. M. Herbst) **89i:65113** 65M60
- Balestra, M.** (with Hughes, Thomas J. R.; Franca, Leopoldo P.) A new finite element formulation for computational fluid dynamics. V. Circumventing the Babuška-Brezzi condition: a stable Petrov-Galerkin formulation of the Stokes problem accommodating equal-order interpolations. *Comput. Methods Appl. Mech. Engrg.* **59** (1986), no. 1, 85-99. (Summary) **89j:76015d** 76-08 (35Q10, 65N30, 76D07)
- (with Hughes, Thomas J. R.; Franca, Leopoldo P.) Errata: "A new finite element formulation for computational fluid dynamics. V. Circumventing the Babuška-Brezzi condition: a stable Petrov-Galerkin formulation of the Stokes problem accommodating equal-order interpolations". *Comput. Methods Appl. Mech. Engrg.* **62** (1987), no. 1, 111. (Editors) **89j:76015e** 76-08 (35Q10, 65N30, 76D07)
- Balestra, Pietro** (with Kmenta, Jan) Missing measurements in a regression problem with no auxiliary relations. *Innovations in quantitative economics: essays in honor of Robert L. Basmann*, 289-300, *Adv. Econometrics*, 5, JAI, Greenwich, CT, 1986. (Summary) **89a:62162** 62J05 (62P20)
- (with Varadarajan-Krishnakumar, Jayalakshmi) Full information estimations of a system of simultaneous equations with error component structure. *Econometric Theory* **3** (1987), no. 2, 223-246. (Jacob Paroush) **89d:62110** 62P20
- (with Aigner, Dennis J.) Optimal experimental design for error components models. *Econometrica* **56** (1988), no. 4, 955-971. (Rahul Mukerjee) **89i:62121** 62K05 (62J10)
- Bali, Raj** (with Jain, Deepak Raj) A gravitationally nondegenerate cosmological model with expanding and shearing viscous fluid in general relativity. *Astrophys. and Space Sci.* **139** (1987), no. 1, 175-181. (Jorge A. Pullin) **89a:83010** 83C15
- (with Singh, Ghan Shyam; Tyagi, Atul) Some inhomogeneous cosmological models of plane symmetry with electromagnetic field. *Astrophys. and Space Sci.* **139** (1987), no. 2, 365-372. (S. Kichenassamy) **89d:83016** 83C15 (83F05)
- (with Jain, Deepak Raj) Some expanding and shearing viscous fluid cosmological models in general relativity. *Astrophys. and Space Sci.* **141** (1988), no. 2, 207-216. (Dieter Lorenz-Petold) **89d:83017** 83C15 (83C55)
- (with Tyagi, Atul) Stiff magnetofluid cosmological model. *Internat. J. Theoret. Phys.* **27** (1988), no. 5, 627-633. (L. K. Patel) **89e:83085** 83F05 (83C15)
- Balian, Roger** (with Balazs, N. L.) Equiprobability, inference, and entropy in quantum theory. *Ann. Physics* **179** (1987), no. 1, 97-144. (T. W. Barrett) **89h:81027** 81B99 (82A99)
- (with Vénéroni, Marcel) Static and dynamic variational principles for expectation values of observables. *Ann. Physics* **187** (1988), no. 1, 29-78. (Claudia Simionescu) **89m:49082** 49H05 (70H30)
- (with Schaeffer, Richard) Les dimensions fractales de la distribution des galaxies dans l'univers. (English summary) [Fractal dimensions of the galaxy distribution in the universe] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **306** (1988), no. 11, 689-693. (Summary) **89d:85011** 85A99
- Balibrea Gallego, Francisco** Kernels of measures and kernels of summability. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 64-71, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Richard Becker) **89m:28009** 28A50 (28C99)
- (with Iniesta Moreno, Miguela) Toeplitz summability of independent random variables. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 353-358, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89g:60101** 60F15
- Balicki, Jerzy** Optimization of the topological structure of a computer network. (Polish. English and Russian summaries) *Postępy Cybernet.* **10** (1987), no. 4, 121-128. (Summary) **89c:90080** 90B10 (68M10)
- Balinska, Krystyna T.** (with Quintas, Louis V.) Random graph models for physical systems. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 349-361, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (Zbigniew Palka) **89f:05145** 05C80 (92A40)
- Balinskii, A. A.** Classification of simple Lie superalgebras of Virasoro, Neveu-Schwarz and Ramond type. (Russian) *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 4, 62-63. (Zi-Xin Hou) **89c:17009** 17A70 (17B70)
- Balinskii, A. I.** The Bezout mapping and the connection between the methods of Hermite and Schur in the theory of stability of polynomials. (Russian) *Mat. Metody i Fiz.-Mekh. Polya* **26** (1987), 10-13, 106. (Mihail Voicu) **89h:93093** 93D20 (12D99, 15A99)
- Balint, A.** (with Balint, Stefan; Negru, Viorel; Simiantu, T.) An approach of the region of attraction by the region of convergence of the series of the optimal Liapunov function. *An. Univ. Timisoara Ser. Stiint. Mat.* **25** (1987), no. 3, 15-30. (Not in MR) **34D20**
- Balint, Stefan** (with Schlett, Zeno) A mathematical model for growing filaments with small diameter cross section in vacuum. *An. Univ. Timisoara Ser. Stiint. Mat.* **25** (1987), no. 1, 19-31. (Hans Sachs) **89h:80003** 80A20 (34D20, 82A60)
- (with Negru, Viorel; Balint, A.; Simiantu, T.) An approach of the region of attraction by the region of convergence of the series of the optimal Liapunov function. *An. Univ. Timisoara Ser. Stiint. Mat.* **25** (1987), no. 3, 15-30. (Not in MR) **34D20**
- Balitskaya, E. O.** (with Zolotukhina, L. A.) On the representation of a density by an Edgeworth series. *Biometrika* **75** (1988), no. 1, 185-187. (Not in MR) **62E20**
- (with Zolotukhina, L. A.) Asymptotic properties of estimators for the parameters of a Weibull distribution. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **166** (1988), Issled. po Mat. Statist. **8**, 9-16, 186. (I. N. Volodin) **89m:62029** 62F12
- Balk, A. M.** (with Zakharov, V. E.) Stability of weak turbulence: Kolmogorov spectra. *Plasma theory and nonlinear and turbulent processes in physics*, Vol. 1, 2 (Kiev, 1987), 359-376, *World Sci. Publishing*, Singapore, 1988. (Dieter H. Mayer) **89i:76100** 76X05 (76F99, 76W05)
- Balk, M. B.** (with Boltysanskii, V. G.) ★ Геометрия масс. (Russian) [The geometry of masses] Библиотека "Квант" [Library "Kvant"], 61. "Nauka", Moscow, 1987. 160 pp. (W. J. Firey) **89g:51020** 51N20 (01A05, 70C99)
- Balk, P. I.** An attempt at the automatization of the solution of theoretical problems of gravimetry in parametric classes of interpretation. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1987**, no. 10, 41-57. (Summary) **89c:86004** 86A20 (65V05)
- Balkan, V. V.** (with Makarova, K. P.; Damjan, F. L.) Groups of motions of three-dimensional locally Lobachevskian manifolds. (Russian) *Mat. Issled.* **103** *Voprosy Diskret. Geom.* (1988), 151-163, 177. (Andrey V. Tetenov) **89m:53082** 53C30 (22E40, 53A30, 57N15)
- Balkema, A. A.** (with de Haan, L.) Almost sure continuity of stable moving average processes with index less than one. *Ann. Probab.* **16** (1988), no. 1, 333-343. (Summary) **89h:60117** 60J30 (60G17)
- Balkhanov, V. A.** ★ Философско-методологические основы математизации знания. (Russian) [Philosophical-methodological foundations of the mathematization of knowledge] *Buryat. Knizhn. Izdat., Ulan-Ude*, 1986. 175 pp. (V. Ya. Kreinovich) **89h:00034** 00A25 (03A05, 92A05)
- Balkhi, Zaid T.** The generalized linear search problem, existence of optimal search paths. *J. Oper. Res. Soc. Japan* **30** (1987), no. 4, 399-421. (Kurt Marti) **89d:90123** 90B40
- Ball, Clifford A.** Estimation bias induced by discrete security prices. *J. Finance* **43** (1988), no. 4, 841-865. (Summary) **89g:90025** 90A09 (90A12)
- Ball, Frank** (with Donnelly, Peter) Interparticle correlation in death processes with application to variability in compartmental models. *Adv. in Appl. Probab.* **19** (1987), no. 4, 755-766. (Peter Purdue) **89c:60081** 60J20 (60K35, 92A15)
- (with Sansom, Mark) Aggregated Markov processes incorporating time interval omission. *Adv. in Appl. Probab.* **20** (1988), no. 3, 546-572. (Ross P. Kindermann) **89g:60269** 60K15 (60J27)
- (with Donnelly, Peter) A unified approach to variability in compartmental models. (French summary) *Biometrics* **44** (1988), no. 3, 685-694. (Summary) **89g:62029** 62E15
- Ball, J. K.** (with Wood, D. W.; Turnbull, R. W.) Algebraic approximations to the locus of partition function zeros. *J. Phys. A* **20** (1987), no. 11, 3495-3521. (Paul A. Pearce) **89d:82120** 82A67 (82A68)
- Ball, J. M.** (with Carr, Jack) Coagulation-fragmentation dynamics. *Dynamics of infinite-dimensional systems* (Lisbon, 1986), 23-30, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 37, Springer, Berlin-New York, 1987. (Renuka Datta) **89j:82091** 82A99
- (with James, Richard Dana) Fine phase mixtures as minimizers of energy. *Arch. Rational Mech. Anal.* **100** (1987), no. 1, 13-52. (Renuka Datta) **89c:80005** 80A15 (58E30, 73B30)
- Loss of the constraint in convex variational problems. *Analyse mathématique et applications*, 39-53, *Gauthier-Villars*, Paris, 1988. (J. E. Rubio) **89j:49041** 49H05 (49B27, 76B99, 82A05)
- (with Carr, Jack) Asymptotic behaviour of solutions to the Becker-Döring equations for arbitrary initial data. *Proc. Roy. Soc. Edinburgh Sect. A* **108** (1988), no. 1-2, 109-116. (Vojislav Maric) **89h:82064** 82A99 (34E05)

- see also *Material instabilities in continuum mechanics*, 89f:73005
- Ball, Joseph A.** (with Ran, A. C. M.) Hankel norm approximation of a rational matrix function in terms of its realization. *Modelling, identification and robust control* (Stockholm, 1985), 285–296, North-Holland, Amsterdam-New York, 1986. (see 89b:93008) 93B28 (93B15)
- (with Helton, J. William; Johnson, Charles Royal; Palmer, John N.) ★ Operator theory, analytic functions, matrices, and electrical engineering. CBMS Regional Conference Series in Mathematics, 68. Published for the Conference Board of the Mathematical Sciences, Washington, DC; by the American Mathematical Society, Providence, RI, 1987. xvi+134 pp. ISBN 0-8218-0718-8 (T. Ando) 89f:47001 47-02 (46J15, 46N05, 47A15, 47A68, 47B50, 93B25, 93B28)
- (with Foias, Ciprian; Helton, J. William; Tannenbaum, Allen) On a local nonlinear commutant lifting theorem. *Indiana Univ. Math. J.* 36 (1987), no. 3, 693–709. (E. R. Tsekanovskii) 89a:47010 47A20 (47B35, 93B28)
- (with Helton, J. William; Sung, Chen Han) Nonlinear solutions of Nevanlinna-Pick interpolation problems. *Michigan Math. J.* 34 (1987), no. 3, 375–389. (E. R. Tsekanovskii) 89e:47043 47B38 (30E05, 32A10, 47A20, 47H99)
- (with Helton, J. William) Shift invariant manifolds and nonlinear analytic function theory. *Integral Equations Operator Theory* 11 (1988), no. 5, 615–725. (Allen Tannenbaum) 89m:58018 58B99 (30H05)
- Ball, Keith** Some remarks on the geometry of convex sets. *Geometric aspects of functional analysis* (1986/87), 224–231, *Lecture Notes in Math.*, 1317, Springer, Berlin-New York, 1988. (G. D. Chakerian) 89h:52009 52A40
- Logarithmically concave functions and sections of convex sets in  $\mathbb{R}^n$ . *Studia Math.* 88 (1988), no. 1, 69–84. (W. J. Firey) 89e:52002 52A20 (26B25)
- Ball, Michael O.** (with Dror, M.; Golden, B.) A computational comparison of algorithms for the inventory routing problem. *Ann. Oper. Res.* 4 (1985), no. 1–4, 3–23. (Summary) 89b:90074 90B10 (90B05, 90B35)
- (with Taverna, R.) Sensitivity analysis for the matching problem and its use in solving matching problems with a single side constraint. *Ann. Oper. Res.* 4 (1985), no. 1–4, 25–56. (Summary) 89b:90219 90C35 (90C10)
- (with Ramesh, Aparna; Colbourn, Charles J.) Bounds for all-terminal reliability in planar networks. *Random graphs '85* (Poznań, 1985), 261–273, North-Holland Math. Stud., 144, North-Holland, Amsterdam-New York, 1987. (A. T. Amin) 89c:68012 68M15 (05C80, 68M10, 68R10, 90B10, 94C15)
- (with Provan, J. Scott) Efficient recognition of matroid and 2-monotonic systems. *Applications of discrete mathematics* (Clemson, SC, 1986), 122–134, SIAM, Philadelphia, PA, 1988. (Dragan M. Acetka) 89m:68064 68Q25 (05B35, 68R05)
- (with Magazine, Michael J.) Sequencing of insertions in printed circuit board assembly. *Oper. Res.* 36 (1988), no. 2, 192–201. (Not in MR) 90B35
- (with Provan, J. Scott) Disjoint products and efficient computation of reliability. *Oper. Res.* 36 (1988), no. 5, 703–715. (R. Petrovic) 89k:90071 90B25
- Ball, R. C.** (with Blunt, M. J.) A family of exponents from a fractal model of viscous fingering and DLA. *J. Phys. A* 20 (1987), no. 17, 5961–5969. (Summary) 89c:76100 76S05 (82A99)
- Ball, R. N.** (with Hager, A. W.) Archimedean kernel distinguishing extensions of Archimedean  $\ell$ -groups with weak unit. *Indian J. Math.* 29 (1987), no. 3, 351–368 (1988). (Michael Darnel) 89m:06022 06F20
- (with Shortt, Rae Michael; Dougherty, D. J.) Decomposition theorems for measures. *J. Math. Anal. Appl.* 128 (1987), no. 2, 561–580. (M. P. Eršov) 89a:28004 28A12 (15A51, 28A35)
- Balla, Katalin** (with Vicssek, M.) On the reduction of Holt's problem to a finite interval. *Numer. Math.* 51 (1987), no. 3, 291–302. (From the introduction) 89g:65097a 65L10
- An error estimate for the approximate solution of some singular ordinary differential equations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 10, 1489–1503, 1597. (E. S. Chichkin) 89d:65082 65L99
- Error estimation for a class of singular, matrix differential equations of Riccati type. *Numerical methods* (Miskolc, 1986), 239–247, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (Summary) 89b:65165 65L05 (65L10)
- (with Vicssek, M.) Erratum: "On the reduction of Holt's problem to a finite interval". *Numer. Math.* 52 (1988), no. 4, 479. (From the introduction) 89g:65097b 65L10
- Ballatori, Enzo** Generalizing Fisher's exact test. (Italian summary) *Metron* 45 (1987), no. 3–4, 99–114. (Not in MR) 62H17
- Ballerini, Rocco** (with Resnick, Sidney) Records in the presence of a linear trend. *Adv. in Appl. Probab.* 19 (1987), no. 4, 801–828. (Charles M. Goldie) 89a:60242 60K99 (60F05, 60F15, 62M10)
- (with Resnick, Sidney) Embedding sequences of successive maxima in extremal processes, with applications. *J. Appl. Probab.* 24 (1987), no. 4, 827–837. (Charles M. Goldie) 89a:60241 60K99 (60F15, 60F17, 62M10)
- The minimum of a unit-release reservoir with Markovian inputs. *J. Math. Anal. Appl.* 129 (1988), no. 2, 443–456. (Autorreferat [Zbl 635:60103]) 89k:60152 60K30
- Ballesteros, J.** (with Sánchez, P. J. M.) A graph-based method for PLA folding. (Spanish) *Rev. Inform. Automat.* 21 (1988), no. 3, 40–46. (Summary) 89k:68078 68Q35 (05C50, 68R10)
- Ballet, B.** (with Dessagnes, Nicole) Anneaux de polynômes sur un anneau de Mori. [Polynomial rings over a Mori ring] *Portugal. Math.* 45 (1988), no. 1, 13–24. (Liam O'Carroll) 89h:13024 13F20 (13B30, 13F05)
- Balli, Raffaele** Degenerate generalized precessions of a rigid body in a Newtonian field. (Italian. French summary) *Rend. Mat. Appl.* (7) 7 (1987), no. 3–4, 411–418 (1988). (Summary) 89k:70008 70E15
- Ballico, Edoardo** (with Ellia, Philippe) Postulation of general canonical curves in  $\mathbb{P}^N$ ,  $N \geq 4$ . *Boll. Un. Mat. Ital. D* (6) 5 (1986), no. 1, 103–133 (1987). (Luca Chiantini) 89b:14046 14H45
- On the postulation of disjoint rational curves in a projective space. (Italian summary) *Rend. Sem. Mat. Univ. Politec. Torino* 44 (1986), no. 2, 207–249 (1987). (A. Hirschowitz) 89a:14037 14H45 (14H50)
- (with Ellia, Philippe) A program for space curves. Conference on algebraic varieties of small dimension (Turin, 1985). *Rend. Sem. Mat. Univ. Politec. Torino* 1986, Special Issue, 25–42 (1987). (Sebastià Xambó Descamps) 89e:14031 14H45 (14H50)
- (with Struppa, Daniele) Minimal degree solutions for the Bezout equation. *Kybernetika* (Prague) 23 (1987), no. 5, 360–364. (P. Abellanas) 89b:93039 93B25 (12E12)
- (with Ellia, Philippe) Bonnes petites composantes des schémas de Hilbert de courbes lisses de  $\mathbb{P}^n$ . (English summary) [Good components of Hilbert schemes of smooth curves in  $\mathbb{P}^n$ ] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 4, 187–190. (R. F. Lax) 89c:14038 14H10 (14C05)
- On the index of regularity of nonspecial space curves. *Geom. Dedicata* 27 (1988), no. 2, 179–190. (Jean D'Almeida) 89g:14021 14H45 (14H50)
- On globally generated vector bundles on surfaces with  $c_2 = 1$ . *Geom. Dedicata* 27 (1988), no. 3, 319–324. (Jean-Marc Drezet) 89j:14008 14F05 (32J25, 32L05)
- (with Beltrametti, Mauro) On 2-spannedness for the adjunction mapping. *Manuscripta Math.* 61 (1988), no. 4, 447–458. (Antonio Lanteri) 89i:14003 14C20 (14E25)
- On the projections of canonical curves. *Nederl. Akad. Wetensch. Indag. Math.* 50 (1988), no. 2, 101–109. (H. Lange) 89i:14017 14H10 (30F20)
- (with Ellia, Philippe) On space curves with maximal genus in the range  $A$ . *Rev. Roumaine Math. Pures Appl.* 33 (1988), no. 3, 165–174. (Jean D'Almeida) 89d:14042 14H45 (14H50)
- On smooth curves with multisection lines. *Rev. Roumaine Math. Pures Appl.* 33 (1988), no. 4, 265–274. (Mei Chu Chang) 89j:14022 14H45
- Ballmann, J.** (with Staat, M.) Fundamental aspects of numerical methods for the propagation of multi-dimensional nonlinear waves in solids. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 574–588, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see 89j:35007) 73-08 (73C50, 73D99)
- (with Westenberger, H.) The homogeneous homotopic compression or expansion—a test case for analyzing Sod's operator-splitting. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 678–687, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see 89j:35007) 76-05 (76N15)
- see also *Nonlinear hyperbolic equations—theory, computation methods, and applications*, 89j:35007
- Ballmann, Werner** Manifolds of nonpositive sectional curvature and manifolds without conjugate points. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 484–490, *Amer. Math. Soc.*, Providence, RI, 1987. (Viktor Schroeder) 89d:53081 53C20 (53C35, 58F17)
- Balmer, L.** (with Douce, J. L.) Frequency response estimates using short data blocks. (Russian summary) *Systems Sci.* 12 (1986), no. 3, 21–30 (1987). (Not in MR) 93E10
- Balog, A.** (with Friedlander, J. B.; Pintz, János) Large prime factors of integers in an arithmetic progression. *Studia Sci. Math. Hungar.* 22 (1987), no. 1–4, 175–188. (Gerald Tenenbaum) 89c:11144 11N25 (11L05, 11N35)
- (with Friedlander, J. B.) Simultaneous Diophantine approximation using primes. *Bull. London Math. Soc.* 20 (1988), no. 4, 289–292. (F. Beukers) 89h:11031 11J13
- Balog, J.** (with Forgács, P.; Horváth, Z.; Vecsernyés, P.) Lattice classification of the four-dimensional heterotic strings. *Phys. Lett. B* 197 (1987), no. 3, 395–399. (Richard H. Capps) 89b:81245 81G20 (06B99, 81E30)
- Balogh, Zoltán** (with Bennett, H. R.) Total paracompactness of real GO-spaces. *Proc. Amer. Math. Soc.* 101 (1987), no. 4, 753–760. (D. J. Lutzer) 89a:54042 54F05 (54D18)
- (with Dow, A.; Fremlin, David H.; Nyikos, P. J.) Countable tightness and proper forcing. *Bull. Amer. Math. Soc. (N.S.)* 19 (1988), no. 1, 295–298. (Andreas Blass) 89c:03088 03E35 (03E55, 03E75, 54A35, 54D55)
- On two problems concerning Baire sets in normal spaces. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 939–945. (A. I. Bashkurov) 89k:54040 54C50 (54A35, 54D45)
- Locally compact, countably paracompact spaces in the constructible universe. *Topology Appl.* 30 (1988), no. 1, 19–26. (W. Stephen Watson) 89m:54030 54D18 (03E35, 03E45, 54A35, 54D45)
- On compact Hausdorff spaces of countable tightness. *Proc. Amer. Math. Soc.* 105 (1989), no. 3, 755–764. (Krzysztof Ciesielski) 89b:03088 03E35 (54A35, 54D30)
- Balogun, Bola O.** On the primitivity of group rings of amalgamated free products. *Proc. Amer. Math. Soc.* 106 (1989), no. 1, 43–47. (D. A. R. Wallace) 89m:16019 16A27 (20C07)
- Balossino, N.** (with Favella, L.; Reineri, M. T.) Electrical excitation propagation front in the cardiac muscle. *Biomathematics and related computational problems* (Naples, 1987), 649–658, *Kluwer Acad. Publ.*, Dordrecht, 1988. (Summary) 89i:92015 92A09
- Balsamo, J. Whitney** (with Packard, Andy) A maximum modulus theorem for linear fractional transformations. *Systems Control Lett.* 11 (1988), no. 5, 365–367. (Not in MR) 93B17 (15, 93B25)
- Balsara, N. P.** (with Nauman, E. B.) Spatially local minimizers of the Landau-Ginzburg functional. *Quart. Appl. Math.* 46 (1988), no. 2, 375–379. (Koichiro Matsuno) 89g:82017 82A15
- Balsev, W.** (with Jurkat, W. B.; Lutz, D. A.) On the reduction of connection problems for differential equations with an irregular singular point to ones with only regular singularities. II. *SIAM J. Math. Anal.* 19 (1988), no. 2, 398–443. (Günter Frank) 89d:34008 34A20 (34A25, 34C20)
- Balslev, Erik** Bounds on many-body resonances. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* 47 (1987), no. 2, 185–198. (Hitoshi Kitada) 89b:81229 81F05 (81C10)
- (with Skibsted, Erik) Resonance functions of two-body Schrödinger operators. *Journées "Equations aux Dérivées Partielles"* (Saint Jean de Monts, 1988), Exp. No. XIV, 12 pp., *École Polytech., Palaiseau*, 1988. (see 89g:35002) 35J10 (81F05)
- Balsters, Herman** Lambda calculus extended with segments. *Mathematical logic and theoretical computer science* (College Park, Md., 1984–1985), 15–27, *Lecture Notes in Pure and Appl. Math.*, 106, Dekker, New York, 1987. (From the introduction) 89g:03015 03B40
- Baltag, I. A.** ★ Методы построения дискретных групп преобразований симметрии пространства Минковского. (Russian) [Methods for constructing discrete groups of symmetry transformations of a Minkowski space] "Shiitsa", Kishinev, 1987. 196 pp. (Marjorie Senecal) 89j:51011 51F15 (20H15)
- Baltag, V. A.** Qualitative investigation of a differential system with an algebraic integral. (Russian) *Mat. Issled.* No. 99 *Dinam. Sistemy Uravn. Mat. Fiz.* (1988), 3–18, 170. (A. Ya. Narmanov) 89g:34036 34C05 (58F21)
- Baltaitis, Yu. V.** (with Zhuchenko, S. P.; Zhuchenko, A. P.; Kostyuk, G. Ya.; Nesterenko, B. B.) Principles for constructing a mathematical model for the peristalsis of the small



- intestine. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 64, 52 pp. (Summary) **89j:92020** 92A09 (92A06)
- (with Zhuchenko, S. P.; Zhuchenko, A. P.; Kostyuk, G. Ya.; Nesterenko, B. B.) Investigation of peristaltic processes using a mathematical model. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 67, 28 pp. (Summary) **89j:92021** 92A09 (92A06)
- Baltin, R.** Differential force law and related integral theorems for a system of  $N$  identical interacting particles. I. General geometries. *J. Chem. Phys.* **88** (1988), no. 11, 6962–6969. (A. Ventura) **89j:81272** 81G45 (81H99, 92A40)
- Differential force law and related integral theorems for a system of  $N$  identical interacting particles. II. Spherical symmetry. *J. Chem. Phys.* **88** (1988), no. 11, 6970–6976. (A. Ventura) **89j:81273** 81G45 (81H99, 92A40)
- Baltirinas, A.** An estimate for the approximation of nonergodic Markov chains. (Russian. German and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 4, 619–623. (V. V. Anisimov) **89f:60074** EA **89m** 60J10
- An estimate for the remainder term in the limit theorem of renewal theory. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **28** (1988), no. 2, 216–223. (Werner Wolf) **89m:60045** 60F05 (60K05)
- Baltirinas, Jonas** (with Rudzkiene, V.) Nonparametric estimation of nonlinear autoregression processes. I. Statistical properties of estimates. (Russian. Lithuanian summary) *Trudy Akad. Nauk Litovsk. SSR Ser. B* **1987**, no. 3(160), 97–108. (D. M. Sudakov) **89a:62087** 62G05 (62M10, 93E10)
- (with Nakutis, E.; Slezas, Vincas) Identification of nonlinear stochastic autoregressive-moving average processes in a class of parametric models. (Russian. Lithuanian summary) *Trudy Akad. Nauk Litovsk. SSR Ser. B* **1987**, no. 6(163), 107–116. (Summary) **89c:62148** 62M10 (93E12)
- Baltans, Avikam** (with Sharir, M.) On the shortest paths between two convex polyhedra. *J. Assoc. Comput. Mach.* **35** (1988), no. 2, 267–287. (Franz Aurenhammer) **89g:68065** 68U05 (52-04, 90B10)
- Balzer, W.** (with Dawe, C. M.) Structure and comparison of genetic theories. I. Classical genetics. *British J. Philos. Sci.* **37** (1986), no. 1, 55–69. (C. Ulises Moulines) **89b:03016** 03B30 (92A10)
- (with Dawe, C. M.) Structure and comparison of genetic theories. II. The reduction of character-factor genetics to molecular genetics. *British J. Philos. Sci.* **37** (1986), no. 2, 177–191. (C. Ulises Moulines) **89b:03017** 03B30 (92A10)
- Bambah, R. P.** see Fejes Tóth, G., **89m:11063**
- Bamberg, G.** (with Coenenberg, Adolf Gerhard) ★ Betriebswirtschaftliche Entscheidungslehre. (German) [Decision theory in industrial management] Fourth edition. WiSo-Kurzlehrbücher. Reihe Betriebswirtschaft. [WiSo Short Textbooks. Series Economics] Verlag Franz Vahlen, Munich, 1985. viii+264 pp. ISBN 3-8006-1140-6 (Eric Van Damme) **89b:90001** 90A05 (90A06, 90A07, 90D45)
- (with Baur, Franz) Commodity futures markets and the level of production. *Ökonomie und Mathematik*, 381–395, Springer, Berlin-New York, 1987. (Summary) **89k:90025** 90A11 (90A14)
- (with Richter, W. F.) Decision-theoretic analysis of envisaged income tax reforms for FRG and USA. Multi-attribute decision making via O.R.-based expert systems (Passau, 1986). *Ann. Oper. Res.* **16** (1988), no. 1–4, 107–116. (see **89k:00007**) 90A10
- Bamberger, A.** (with Starling, Felipe) Integro-differential formulation and boundary element method resolution of an acoustic scattering problem. *Boundary elements IX*, Vol. 3 (Stuttgart, 1987), 35–52, Comput. Mech., Southampton, 1987. (F. Ursell) **89j:76073** 76Q05 (76-08)
- (with Joly, Patrick; Kern, Michel) Mathematical and computational aspects of the determination of elastic surface waves along cylindrical cavities of general cross section. *Recent developments in surface acoustic waves* (Nottingham, 1987), 270–281, Springer Ser. Wave Phenomena, 7, Springer, Berlin-New York, 1988. (Summary) **89k:73021** 73D20 (35P99, 47F05, 76Q05, 78A50)
- (with Joly, Patrick; Kern, Michel; Nicoletti, L.; Quiblier, J.) Low frequency propagation of elastic waves in a fluid-filled borehole. *Recent developments in surface acoustic waves* (Nottingham, 1987), 282–290, Springer Ser. Wave Phenomena, 7, Springer, Berlin-New York, 1988. (see **89j:73001**) 76Q05 (73J06)
- (with Engquist, Björn; Halpern, Laurence; Joly, Patrick) Parabolic wave equation approximations in heterogeneous media. *SIAM J. Appl. Math.* **48** (1988), no. 1, 99–128. (Rishi Ram Sharma) **89b:35225** 35L99 (65P05, 73D99, 76Q05, 86A05, 86A15)
- (with Engquist, Björn; Halpern, Laurence; Joly, Patrick) Higher order paraxial wave equation approximations in heterogeneous media. *SIAM J. Appl. Math.* **48** (1988), no. 1, 129–154. (Rishi Ram Sharma) **89b:35226** 35L99 (65P05, 73D99, 76Q05, 86A05, 86A15)
- Bambusi, D.** The Yang-Mills field reduced to a metric of a three-dimensional space. (Italian and Russian summaries) *Nuovo Cimento A* (11) **97** (1987), no. 6, 783–800. (Enore Guadagnini) **89b:81115** 81E13 (81E20, 83E15)
- Bamigbola, O. M.** (with Ibejigba, M. A.; Onumanyi, P.) Higher order Chebyshev basis functions for two-point boundary value problems. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 2, 313–327. (Summary) **89b:65124** 65L10
- Bamón, R.** see Dynamical systems, **89c:58002**
- Bampi, Franco** (with Fusco, Domenico) Nonlinear wave analysis of a hyperbolic model for heat conduction. *Atti Sem. Mat. Fis. Univ. Modena* **36** (1988), no. 1, 197–209. (John Albert) **89k:35194** 35Q20 (35L60, 73B30, 80A20)
- (with Zordan, C.) Dependence of the wave-front speeds on the propagation direction. (Italian summary) *Z. Angew. Math. Phys.* **39** (1988), no. 5, 756–761. (Michael Renardy) **89k:35132** 35L40 (35A30, 35B30)
- van den Ban, Erik P.** Invariant differential operators on a semisimple symmetric space and finite multiplicities in a Plancherel formula. *Ark. Mat.* **25** (1987), no. 2, 175–187. (Roberto J. Miatello) **89g:22019** 22E46 (22E30, 43A85)
- (with Schlichtkrull, Henrik) Asymptotic expansions and boundary values of eigenfunctions on Riemannian symmetric spaces. *J. Reine Angew. Math.* **380** (1987), 108–165. (Mogens Flensted-Jensen) **89g:43010** 43A85 (22E45, 58G20)
- Asymptotic behaviour of matrix coefficients related to reductive symmetric spaces. *Nederl. Akad. Wetensch. Indag. Math.* **49** (1987), no. 3, 225–249. (V. S. Varadarajan) **89c:22025** 22E46 (22E30, 43A85, 46N05)
- (with Delorme, Patrick) Quelques propriétés des représentations sphériques pour les espaces symétriques réductifs. (English summary) [Some properties of spherical representations for reductive symmetric spaces] *J. Funct. Anal.* **80** (1988), no. 2, 284–307. (Mitsuo Sugiura) **89j:22025** 22E45 (22E30)
- see also Delorme, Patrick, **89c:22026**
- Bán, Ján** Martingale convergence theorem in quantum logics. (Russian summary) *Math. Slovaca* **37** (1987), no. 4, 313–322. (S. Gudder) **89a:81010** 81B10 (06C15, 60G48)
- Banach, Zbigniew** On the fundamentals of extended thermodynamics (ET) of a one-dimensional rarefied gas. *J. Statist. Phys.* **48** (1987), no. 3–4, 813–837. (M. Carrasi) **89c:82029** 82A40 (76P05)
- Banakh, T. O.** (with Zarichnyi, M. M.) Compactifications of the iterated hyperspace functor. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 10, 3–6, 74. (M. Hušek) **89f:54018** 54B20 (54D35)
- Banaś, Józef** On the superposition operator and integrable solutions of some functional equations. *Nonlinear Anal.* **12** (1988), no. 8, 777–784. (Ricardo Torrejón) **89h:47096** 47H15 (39B20)
- Banaschewski, B.** Injectivity and modelling in the Blass topos. *J. Pure Appl. Algebra* **49** (1987), no. 1–2, 1–10. (M. Barr) **89a:18006** 18B25 (03E25, 03G30, 18G05)
- (with Brümmer, G. C. L.) Stably continuous frames. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 1, 7–19. (Jiří Rosický) **89c:54059** 54E35 (06D99, 18B30)
- (with Bruns, G.) The fundamental duality of partially ordered sets. *Order* **5** (1988), no. 1, 61–74. (Jiří Rosický) **89g:06003** 06A10
- Banasik, Jacek** Some contribution to the geometry of normed linear spaces. *Math. Nachr.* **139** (1988), 175–184. (K. Sundaresan) **89k:46021** 46B20 (46C05)
- Banaszczyk, Maria Zofia** On a connection between vector fields and local one-parameter groups of local transformations in differential spaces. (Polish summary) *Acta Univ. Lodz. Folia Math.* No. 2 (1987), 9–13. (P. G. Walczak) **89b:58020** 58A40 (57R25)
- Banaszuk, A.** (with Kociński, M.; Przyłuski, K. M.) Remarks on controllability of implicit linear discrete-time systems. *Systems Control Lett.* **10** (1988), no. 1, 67–70. (Joseph D. Cole) **89c:93008** 93B05 (93C05, 93C55)
- Banati, M.** (with Benkirane, R.; Line, A.; Masbarnat, L.) Modèle de l'écoulement gaz-liquide stratifié à interface ondulée. [Model of stratified gas-liquid flow with undulatory interface] *Computer methods and water resources*, Vol. 5 (Rabat, 1988), 175–190, Comput. Mech., Southampton, 1988. (see **89g:76003d**) 76T05 (76-08)
- Banchoff, T. F.** Visualizing two-dimensional phenomena in four-dimensional space: a computer graphics approach. *Statistical image processing and graphics* (Luray, Va., 1983), 187–202, *Statist. Textbooks Monographs*, 72, Dekker, New York, 1986. (H. W. Guggenheimer) **89a:58001** 53-04 (53-04, 57-04, 65S05)
- Torus decompositions of regular polytopes in 4-space. *Shaping space* (Northampton, Mass., 1984), 221–230, *Design Sci. Collect.*, Birkhäuser Boston, Boston, MA, 1988. (see **89b:52016**) 52A25
- see also ECM/87. Educational computing in mathematics, **89f:00024**
- Bancillon, François** (with Korth, Henry F.; Kim, Won) On long-duration CAD transactions. *Inform. Sci.* **46** (1988), no. 1–2, 73–107. (Summary) **89b:68156** 68U99 (68P15)
- Bancora-Imbert, M. C.** (with Chow, P. L.; Menaldi, José-Luis) On the numerical approximation of an optimal correction problem. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 6, 970–991. (George Yin) **89i:93127** 93E25 (49D25, 65K10, 93E20)
- Band, Lawrence E.** (with Wood, Eric F.) Strategies for large-scale, distributed hydrologic simulation. *Appl. Math. Comput.* **27** (1988), no. 1, 23–37. (Not in MR) 92A17
- Banda, Silva S.** (with Yousouf, Ajmal; McQuade, Timothy E.) (M, N)-approximation: a system simplification method. *Internat. J. Control* **48** (1988), no. 5, 1851–1865. (Not in MR) 93B99
- (with Yeh, Hsi-Han; Lynch, P. J.; McQuade, Timothy E.) Loop-transfer recovery via Hardy-space optimization. *J. Guidance Control Dynamics* **11** (1988), no. 1, 86–90. (Not in MR) 49D40
- Bandeloni, Giuseppe** Nonpolynomial Yang-Mills local cohomology. *J. Math. Phys.* **28** (1987), no. 11, 2775–2780. (Bo-Yu Hou) **89b:81099** 81E13 (17B65, 32L10, 58G40)
- Bandelt, Hans-Jürgen** (with Wilkeit, Elke) Dwarf, brick, and triangulation of the torus. *Discrete Math.* **67** (1987), no. 1, 1–14. (Henry Martyn Mulder) **89c:05061** 05C75
- (with van de Vel, Marcel) A fixed cube theorem for median graphs. *Discrete Math.* **67** (1987), no. 2, 129–137. (Jarmila Hedlíková) **89f:05149** 05C99
- Bandemer, Hans** (with Hulsch, Friedrich; Lehmann, Arndt) A watershed algorithm adapted to functions on grids. (German and Russian summaries) *Elektron. Informationsverarb. Kybernet.* **22** (1986), no. 10–11, 553–564. (Răzvan Andonice) **89g:68066** 68U05 (68T10)
- Specifying inaccuracy and uncertainty in evaluating functional relationships. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics* (Poznań, 1986), 25–31, Wydawn. Politech. Poznań, Poznań, 1987. (G. P. Bhattacharjee) **89g:65060** 65G10 (03E72, 62J99, 65R99)
- (with Otto, Matthias) Methods to compare functions and some applications in analytical chemistry. (German and Russian summaries) *Some applications of fuzzy set theory in data analysis*, 27–38, *Freiberger Forschungshäfte D*, 187, Deutscher Verlag für Grundstoffindustrie, Leipzig, 1988. (Summary) **89d:03052** 03E72 (92A40)
- (with Schmerling, Siegfried) A method of local approximation of a functional relationship from fuzzy observations. (German and Russian summaries) *Some applications of fuzzy set theory in data analysis*, 39–45, *Freiberger Forschungshäfte D*, 187, Deutscher Verlag für Grundstoffindustrie, Leipzig, 1988. (Summary) **89d:62053** 62J02 (62A99)
- (with Kudra, Matthias) Some methods of evaluating functional relationships from fuzzy observations. (German and Russian summaries) *Some applications of fuzzy set theory in data analysis*, 46–61, *Freiberger Forschungshäfte D*, 187, Deutscher Verlag für Grundstoffindustrie, Leipzig, 1988. (Summary) **89c:62003** 62-07 (03E72, 62A99, 62B10)
- (with Näther, Wolfgang) Fuzzy analogues to partial-least-squares techniques in multivariate data analysis. (German and Russian summaries) *Some applications of fuzzy set theory in data analysis*, 62–77, *Freiberger Forschungshäfte D*, 187, Deutscher Verlag für Grundstoffindustrie, Leipzig, 1988. (see **89b:62006**) 62-07 (03E72, 62H99, 62J99)
- (with Kraut, Andre) On a fuzzy-theory-based computer-aided particle shape description. *Fuzzy Sets and Systems* **27** (1988), no. 2, 105–113. (Not in MR) 68U10 (03E72)
- (with Näther, Wolfgang) Fuzzy projection pursuits. *Fuzzy Sets and Systems* **27** (1988), no. 2, 141–147. (A. D. Gordon) **89j:62005** 62-07 (03E72)
- see also Some applications of fuzzy set theory in data analysis, **89b:62006**
- Bandle, C.** (with Stakgold, I.) Reaction-diffusion and dead cores. *Free boundary problems: application and theory*, Vol. IV (Mauboussin, 1984), 436–448, *Res. Notes in Math.*, 121,



- Pitman, Boston, MA-London, 1985. (From the introduction) **89g:80011** 80A32 (35K57, 35R35)
- (with Brauner, Claude-Michel) Singular perturbation method in a parabolic problem with free boundary. *BAIL IV (Novosibirsk, 1986)*, 7–14, *Boole Press Conf. Ser.*, 8, Boole, Dain Laoghaire, 1986. (Summary) **89f:35025** 35B25 (35K55, 35R35, 80A32)
  - (with Coffman, Charles V.; Marcus, Moshe M.) Nonlinear elliptic problems in annular domains. *J. Differential Equations* **69** (1987), no. 3, 322–345. (Ester Giarrusso) **89a:35082** 35J65 (35B05)
  - (with Peletier, L. A.) Nonlinear elliptic problems with critical exponent in shrinking annuli. *Math. Ann.* **280** (1988), no. 1, 1–19. (Tadeusz Prusko) **89h:35116** 35J65 (34B15)
  - Bandler, Wyllis (with Oh, Kyung Whan) Properties of fuzzy implication operators. *Internat. J. Approx. Reason.* **1** (1987), no. 3, 273–285. (Janusz Kacprzyk) **89j:03020** 03B52 (03B50, 94D05)
  - (with Kohout, Ladislav J.) On the general theory of relational morphisms. *Internat. J. Gen. Systems* **13** (1987), no. 1, 47–66. (Gérard Lopez) **89d:04001** 04A05 (08A02, 68T30)
  - Bandlow, Ingo On the origin of new compact spaces in forcing models. *Math. Nachr.* **139** (1988), 185–191. (Judith Roitman) **89k:03057** 03E40 (54D30)
  - Bando, Masako (with Kugo, Taichiro; Yamawaki, Koichi) Nonlinear realization and hidden local symmetries. *Phys. Rep.* **164** (1988), no. 4–5, 217–314. (Summary) **89d:81121** 81G20 (81E13, 83E50)
  - Bando, Shigetoshi (with Mabuchi, Toshiki) Uniqueness of Einstein Kähler metrics modulo connected group actions. *Algebraic geometry, Sendai, 1985*, 11–40, *Adv. Stud. Pure Math.*, 10, North-Holland, Amsterdam-New York, 1987. (Yusuke Sakane) **89c:53029** 53C25 (32C10, 32J99, 32M05, 53C55, 58E20)
  - (with Sato, Hajime) Hill's equation, isomonodromy deformation and characteristic classes. *A fete of topology*, 259–290, *Academic Press, Boston, MA*, 1988. (Victor Bangert) **89m:58076** 58F05 (34B30, 57R19, 58D25, 58F07)
  - (with Kobayashi, Ryoichi) Ricci-flat Kähler metrics on affine algebraic manifolds. *Geometry and analysis on manifolds (Katata/Kyoto, 1987)*, 20–31, *Lecture Notes in Math.*, 1339, Springer, Berlin-New York, 1988. (K. T. Hahn) **89k:32055** 32J99 (14C20, 32C05, 53C55)
  - Bandopadhyaya, Lakshminisree (with Bakshi, H. C.; Puri, M. C.) Multi-index transportation problem with mixed type of axial constraints. *J. Inform. Optim. Sci.* **9** (1988), no. 1, 113–132. (M. Vlach) **89i:90051** 90C08
  - Bandos, I. A. (with Akulov, V. P.; Sorokin, D. P.) Particle mechanics in harmonic superspace. *Modern Phys. Lett. A* **3** (1988), no. 17, 1633–1645. (Summary) **89k:81123** 81E99 (81D07)
  - (with Akulov, V. P.; Sorokin, D. P.) Particle in harmonic  $N = 2$  superspace. *Soviet J. Nuclear Phys.* **47** (1988), no. 4, 724–729; translated from *Yadernaya Fiz.* **47** (1988), no. 4, 1136–1146 (Russian). (Summary) **89i:81064** 81E13 (81G20)
  - Bandi, Christoph Fractals in dynamical systems. *Proceedings of the conference on ergodic theory and related topics, II (Georgenhof, 1986)*, 12–23, *Teubner-Texte Math.*, 94, Teubner, Leipzig, 1987. (Nima Geffen) **89e:58108** 58F40 (00A05, 00A69, 28A75, 54C99, 58F13)
  - Estimates for the Hausdorff dimension of hyperspaces. *General topology and its relations to modern analysis and algebra, VI (Prague, 1986)*, 33–42, *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (Günter Lettl) **89e:54016** 54B20 (54F45)
  - Bandy, C. Are dust particles necessary for rain? *Texas J. Sci.* **40** (1988), no. 1, 101–105. (Summary) **89b:86003** 86A35
  - Bandy, D. K. (with Lugiatto, L. A.; Wang, Kai Ge; Narducci, L. M.; Oppo, G. L.; Pernigo, M. A.; Tredice, J. R.; Prati, F.) Cooperative frequency locking and spatial structures in lasers. *Neural and synergetic computers (Schloss Elmau, 1988)*, 252–262, *Springer Ser. Synergetics*, 42, Springer, Berlin-New York, 1988. (see **89i:92026**) **81K05** (78A60)
  - Bandopadhyay, B. (with Lamba, S. S.; Gorez, R.) New reduction technique by step error minimization for multivariable systems. *Internat. J. Systems Sci.* **19** (1988), no. 6, 999–1009. (Vimal Singh) **89e:93042** 93B17 (93C05, 93C35, 93C60)
  - Bandopadhyay, Chhanda (with Banerjee, N. D.) On some generalization of  $T_1$ -continuous functions. *Bull. Calcutta Math. Soc.* **79** (1987), no. 3, 180–186. (Ernest P. Lane) **89m:54015a** 54C05 (54C08)
  - (with Banerjee, N. D.) Errata: "On some generalization of  $T_1$ -continuous functions". *Bull. Calcutta Math. Soc.* **79** (1987), no. 4, 265. (Ernest P. Lane) **89m:54015b** 54C05 (54C08)
  - Bandopadhyay, Pratul (with Ghosh, Pradip) Stochastic field theory at finite temperature, supersymmetry, and Witten index. *Ann. Physics* **179** (1987), no. 1, 1–19. (Helmut Rumpf) **89e:81034** 81C20 (81E99, 82A15)
  - (with Ghosh, Pradip) Stochastic field theory and finite-temperature supersymmetry. *J. Math. Phys.* **29** (1988), no. 5, 1236–1240. (N. D. Sengupta) **89d:82030** 82A15 (82A31)
  - Bandopadhyay, Subhansu (with Saha, Banani) Realization of Petri nets: a system theoretic approach. *Internat. J. Systems Sci.* **19** (1988), no. 11, 2407–2417. (Zbigniew Nahorski) **89m:93013** 93B15 (68Q90, 93B30)
  - Bandopadhyay, Subir (with Sen Gupta, Abhijit; Sen, Arunabha) Complexity of the diagnosability problem for a general model of diagnosable systems. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1235–1243. (Summary) **89h:90115** 90B25
  - Bandopadhyay, Taradas Extension of an order on a set to the power set: some further observations. *Math. Social Sci.* **15** (1988), no. 1, 81–85. (Rubin Saposnik) **89d:90012** 90A06 (06A10)
  - Revealed preference theory, ordering and the axiom of sequential path independence. *Rev. Econom. Stud.* **55** (1988), no. 2, 343–351. (Bhaskar Dutta) **89g:90069** 90A06 (90A05)
  - Banek, Tadeusz (with Gedymin, Olgierd) Stochastic production-inventory control problem with random demand. (Russian and Polish summaries) *Control Cybernet.* **16** (1987), no. 3–4, 85–90 (1988). (Not in MR) **90B05** (49C20, 93B50, 93E20)
  - Filtering of some nonlinear diffusions satisfying the general Beneš condition. *Systems Control Lett.* **11** (1988), no. 4, 333–339. (Zhen Hua Wang) **89k:93201** 93E11 (62M05)
  - Banerjee, Asit Kumar (with Ribeiro, M. B.; Santos, N. O.) Anisotropic viscous-fluid cosmological model. *Astrophys. and Space Sci.* **136** (1987), no. 2, 331–336. (Summary) **89g:83011** 83C15
  - (with Sanyal, Abhik Kumar) Irrotational Bianchi V viscous fluid cosmology with heat flux. *Gen. Relativity Gravitation* **20** (1988), no. 2, 103–113. (W. M. Baker) **89b:83032** 83C20 (83C55)
  - Banerjee, G. K. (with Mukherjee, M. N.) A note on QHC and interiorly QHC bitopological spaces. *An. Stiint. Univ. "Al. I. Cuza" Iași Sect. I a Mat. (N.S.)* **33** (1987), no. 2, 93–98. (Mila Mršević) **89b:54039** 54E55
  - On pairwise almost strongly  $\theta$ -continuous mappings. *Bull. Calcutta Math. Soc.* **79** (1987), no. 5, 314–320. (C. W. Patty) **89i:54041** 54E55 (54C10)
  - (with Mukherjee, M. N.) Pairwise semiregularization and submaximality of a bitopological space. *An. Stiint. Univ. "Al. I. Cuza" Iași Sect. I a Mat. (N.S.)* **34** (1988), no. 1, 19–24. (C. W. Patty) **89k:54072** 54E55
  - Banerjee, Mihir B. (with Gupta, J. R.; Subbiah, M.) On reducing Howard's semicircle for homogeneous shear flows. *J. Math. Anal. Appl.* **130** (1988), no. 2, 398–402. (C. F. Chan Man Fong) **89a:76030** 76E05
  - Banerjee, N. D. (with Bandyopadhyay, Chhanda) On some generalization of  $T_1$ -continuous functions. *Bull. Calcutta Math. Soc.* **79** (1987), no. 3, 180–186. (Ernest P. Lane) **89m:54015a** 54C05 (54C08)
  - (with Bandyopadhyay, Chhanda) Errata: "On some generalization of  $T_1$ -continuous functions". *Bull. Calcutta Math. Soc.* **79** (1987), no. 4, 265. (Ernest P. Lane) **89m:54015b** 54C05 (54C08)
  - Banerjee, P. P. (with Cao, Guanghui) Periodic and aperiodic solitary wave solutions of the nonlinear Klein-Gordon equation without dispersion. *J. Phys. A* **21** (1988), no. 1, 55–71. (John Albert) **89h:35276** 35Q20 (35L70, 81C05)
  - (with Cao, Guanghui) Interaction of baseband and envelope solitary wave solutions of the nonlinear Klein-Gordon equation with dispersion. *Wave Motion* **10** (1988), no. 4, 323–331. (Summary) **89g:65155** 65P05 (35L70, 35Q20)
  - Banerjee, Prasanta K. (with Henry, Donald P., Jr.) A new boundary element formulation for two- and three-dimensional thermoelasticity using particular integrals. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 9, 2061–2077. (Summaries) **89g:73004a** 73-08 (73C25)
  - (with Henry, Donald P., Jr.) A new BEM formulation for two- and three-dimensional elastoplasticity using particular integrals. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 9, 2079–2096. (Summary) **89g:73004b** 73-08 (73E99)
  - Banerjee, Prithviraj (with West, Douglas B.) On the construction of communication networks satisfying bounded fan-in of service ports. *IEEE Trans. Comput.* **37** (1988), no. 9, 1148–1151. (Summary) **89h:68122** 68R10 (68M10, 90B10)
  - Banerjee, R. S. Comment on: "Equivalence between the Thirring model and a derivative-coupling model" [Phys. Rev. D (3) **34** (1986), no. 12, 3916–3919; MR 88a:81101] by M. Gomes and A. J. Da Silva. *Phys. Rev. D* (3) **37** (1988), no. 12, 3778–3782. (Herbert Neuberger) **89k:81065** 81E08
  - Banerjee, S. K. see Banerjee, Shyamal Kumar
  - Banerjee, Salil K. (with Das, Jyoti) An alternative characterisation of the spectrum of a selfadjoint operator associated with certain fourth-order formally selfadjoint ordinary differential expression. *Indian J. Math.* **30** (1988), no. 1, 1–8. (J. B. Butler, Jr.) **89d:34046** 34B25 (34B27, 47E05)
  - Banerjee, Sanjoy (with Smerka, P.) The dynamics of periodically driven bubble clouds. *Phys. Fluids* **31** (1988), no. 12, 3519–3531. (Summary) **89f:76092** 76T05 (76D33, 76Q05)
  - Banerjee, Shyamal Kumar (with Roy, S. R.) Some cylindrically-symmetric cosmological models in general relativity representing viscous fluid and perfect fluid with heat conduction. *Astrophys. and Space Sci.* **150** (1988), no. 2, 213–222. (Jan Novotný) **89k:83020** 83C15 (83C55)
  - Banerjee, Snigdha (with Kageyama, Sanpei; Bhagwandas) Some constructions of two-associate class PBIB designs. *Ann. Inst. Statist. Math.* **39** (1987), no. 3, 671–679. (Kishan Lal Sharma) **89e:62098** 62K10
  - Banerjee, Uday Approximation of eigenvalues of differential equations with nonsmooth coefficients. (French summary) *RAIRO Model. Math. Anal. Numér.* **22** (1988), no. 1, 29–51. (L. Greenberg) **89c:65089** 65L15 (65L60)
  - Banerjee, Utpal (with Wolfe, Michael) Data dependence and its application to parallel processing. *Internat. J. Parallel Programming* **16** (1987), no. 2, 137–178. (Not in MR) **68Q10** (68N05)
  - hà duy Bang see Hà Duy Bang
  - Bang, Seung-Jin Eigenvalues of the Laplacian on a geodesic ball in the  $n$ -sphere. *Chinese J. Math.* **15** (1987), no. 4, 237–245. (Carolyn Gordon) **89h:58191** 58G25 (35P15, 35C20)
  - Bang, Theger Niels Erik Nørund in memoriam. *Acta Math.* **161** (1988), no. 1–2, 11–22. (Editors) **89i:01057** 01A70
  - Bange, David W. (with Barkauskas, Anthony E.; Host, Linda H.; Slater, P. J.) Efficient near-domination of grid graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 83–92. (B. Zelinka) **89d:05104** 05C35
  - (with Barkauskas, Anthony E.; Slater, P. J.) Efficient dominating sets in graphs. *Applications of discrete mathematics (Clemson, SC, 1986)*, 189–199, *SIAM, Philadelphia, PA*, 1988. (B. Zelinka) **89k:05080** 05C70 (05C35)
  - (with Barkauskas, Anthony E.; Host, Linda H.) Some consequences of the Harary-Palmer similarity property for total graphs. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **62** (1988), 53–63. (Peter J. Slater) **89k:05078** 05C60
  - Bangert, V. The existence of gaps in minimal foliations. *Aequationes Math.* **34** (1987), no. 2–3, 153–166. (Constantin Udriste) **89c:58026** 58E15 (49F22, 58E12)
  - A uniqueness theorem for  $Z^2$ -periodic variational problems. *Comment. Math. Helv.* **62** (1987), no. 4, 511–531. (Marco Degiovanni) **89g:58046** 58E15 (49F22)
  - Bang-Jensen, Jürgen (with Hell, Pavol; MacGillivray, G.) The complexity of colouring by semicomplete digraphs. *SIAM J. Discrete Math.* **1** (1988), no. 3, 281–298. (Mukka S. Krishnamoorthy) **89e:05095** 05C20 (05C15, 68Q25)
  - Bang Jespersen, Niels Chr. see Ramlau-Hansen, Henrik (Not in MR)
  - Banica, C. (with Le Potier, J.) Sur l'existence des fibres vectoriels holomorphes sur les surfaces non-algébriques. [On the existence of holomorphic vector bundles on nonalgebraic surfaces] *J. Reine Angew. Math.* **378** (1987), 1–31. (K. Oeljeklaus (Zbl 624:32017)) **89h:32054** 32J15 (32L05, 55R25)
  - Banichuk, N. V. (with Kobelev, V. V.) On optimal plastic anisotropy. *J. Appl. Math. Mech.* **51** (1987), no. 3, 381–385 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 3, 489–495 (Russian). (Summary) **89f:73054** 73K40 (73E20)
  - Structural design and optimization of elastoplastic constructions. (Russian) *Mechanics and scientific-technological progress*, Vol. 3 (Russian), 251–266, 272, "Nauka", Moscow,

1988. (see 89:73062) 73K40 (73E99)  
 — see also Haug, Edward J. et al., 89:73062
- Ranin, V. G.** (with Abakumov, Yu. G.) The Voronovskaya theorem from a general point of view. (Russian) *Application of functional analysis in approximation theory* (Russian), 4–6, Kalinin. Gos. Univ., Kalinin, 1987. (Weiyi Su) **89:41838** 41A65
- Ranjević, Dragan M.** (with Nedeljković, Ranko R.) On some observing and replacement policies. *Mathematical statistics and probability theory*, Vol. B (Bad Tatzmannsdorf, 1986), 25–31, Reidel, Dordrecht-Boston, MA-London, 1987. (Bo Bergman) **89:90108** 90B25 (60K10, 62N05)  
 — On some statistics connected with runs in Markov chains. *J. Appl. Probab.* **25** (1988), no. 4, 815–821. (Bernard Ycart) **89m:60152** 60J10
- Rank, Bernd** (with Belousov, E. G.; Mandel, Reinhard; Cheremnykh, Yu. N.; Shironin, V. M.) ★ *Математическая оптимизация: вопросы разрешимости и устойчивости*. (Russian) [Mathematical optimization: questions of solvability and stability] *Moskov. Gos. Univ., Moscow*, 1986. 216 pp. (Publisher's description) **89c:90069** 90Cxx (90C31)  
 — (with Mandel, Reinhard) Nonlinear parametric integer programming. *Parametric optimization and related topics* (Plaue, 1985), 16–48, *Math. Res.*, 35, Akademie-Verlag, Berlin, 1987. (Summary) **89:90151** 90C10  
 — (with Mandel, Reinhard) ★ *Parametric integer optimization*. Mathematical Research, 39, Akademie-Verlag, Berlin, 1988. 138 pp. ISBN 3-05-500398-5 (Charles E. Blair) **89m:90119** 90C11 (90C10, 90C31)  
 — (with Mandel, Reinhard) (Mixed-) integer solutions of quasiconvex polynomial inequalities. *Advances in mathematical optimization*, 20–34, *Math. Res.*, 45, Akademie-Verlag, Berlin, 1988. (Jürgen Guddat) **89:90088** 90C33 (90C11)  
 — see also *Advances in mathematical optimization*, 89:90117
- Rank, R.** (with Mandel, Jan; McCormick, Stephen F.) Variational multigrid theory. *Multigrid methods*, 131–177, *Frontiers Appl. Math.*, 3, SIAM, Philadelphia, PA, 1987. (see 89m:65004) 65–02  
 — (with Dupont, Todd F.; Yserentant, Harry) The hierarchical basis multigrid method. *Numer. Math.* **52** (1988), no. 4, 427–458. (L. W. Ehrlich) **89b:65247** 65N20 (65F10, 65N30)
- Rank, Steven B.** On zero-free regions for solutions of  $n$ th order linear differential equations. *Comment. Math. Univ. St. Paul.* **36** (1987), no. 2, 199–213. (Donald A. Lutz) **89b:34088** 34A20 (34A30, 34E05)  
 — On determining the location of complex zeros of solutions of certain linear differential equations. *Ann. Mat. Pura Appl.* (4) **151** (1988), 67–96. (Nicolaie Lungu) **89:34009** 34A20 (30C15, 34A30, 34C10)  
 — Addendum to: "A note on the zeros of solutions of  $w'' + P(z)w = 0$  where  $P$  is a polynomial" [Appl. Anal. **25** (1987), no. 1–2, 29–41; MR 88k:34004]. *Appl. Anal.* **30** (1988), no. 1–3, 245–248. (W. Balser) **89:34010** 34A20 (30C15, 34C10)  
 — A note on the location of complex zeros of solutions of linear differential equations. *Bull. Amer. Math. Soc. (N.S.)* **18** (1988), no. 1, 35–38. (D. V. V. Wend) **89a:34010** 34A20 (34C10)  
 — A note on the zero-sequences of solutions of linear differential equations. *Resultate Math.* **13** (1988), no. 1–2, 1–11. (James K. Langley) **89b:34009** 34A20 (30D20, 30D35, 34A30)
- Ranher, Rajiv D.** (with Maindiratta, Ajay) Nonparametric analysis of technical and allocative efficiencies in production. *Econometrica* **56** (1988), no. 6, 1315–1332. (Not in MR) 90A11
- Rankoff, Leon** The metamorphosis of the butterfly problem. *Math. Mag.* **60** (1987), no. 4, 195–210. (H. W. Guggenheimer) **89m:51029** 51M05 (51N15)
- Ránczki, Gy.** (with Veliczky, J.; Ziermann, M.) ★ *Dynamic factor analysis*. DM, 86–1, Karl Marx University of Economics, Department of Mathematics, Budapest, 1986. 81 pp. (J. L. Mallet) **89c:62124** 62M20 (62H25, 62M10)
- Ranković, Dragić** Notes on unique solutions of Boolean equations. (Serbo-Croatian summary) *Mat. Vesnik* **39** (1987), no. 1, 1–3. (K. P. S. Bhaskara Rao) **89a:93120** 03G05 (06E30)  
 — The formulas of the general reproductive solution of an equation in a Boolean ring with unit. *Publ. Inst. Math. (Beograd) (N.S.)* **42**(56) (1987), 29–34. (S. Rudeanu) **89d:06025** 06E30 (03G05)
- Ranks, H. T.** (with Rosen, I. G.) Computational methods for the identification of spatially varying stiffness and damping in beams. *Control Theory Adv. Tech.* **3** (1987), no. 1, 1–32. (Vi. Răsvan) **89c:93034** 93B30 (93B40, 93C20)  
 — (with Ito, Kazufumi) A theoretical framework for convergence and continuous dependence of estimates in inverse problems for distributed parameter systems. *Appl. Math. Lett.* **1** (1988), no. 1, 13–17. (Not in MR) 93B30 (34A55, 34G20, 49D15, 93C20)  
 — (with Reich, Simeon; Rosen, I. G.) Parameter estimation in nonlinear distributed systems—approximation theory and convergence results. *Appl. Math. Lett.* **1** (1988), no. 3, 211–216. (J. Dancs) **89m:47060** 47H15 (65J15)  
 — (with Ito, Kazufumi) A unified framework for approximation in inverse problems for distributed parameter systems. *Control Theory Adv. Tech.* **4** (1988), no. 1, 73–90. (J. P. Babary) **89d:93034** 93B30 (93C20, 93C25)  
 — (with Gates, S. S.; Rosen, I. G.; Wang, Y.) The identification of a distributed parameter model for a flexible structure. *SIAM J. Control Optim.* **26** (1988), no. 4, 743–762. (Y. Cherruault) **89f:73049** 73K12 (73F99, 93B30, 93C20)
- Ranks, J. S.** (with Bordes, G. A.) Voting games, indifference, and consistent sequential choice rules. *Soc. Choice Welf.* **5** (1988), no. 1, 31–44. (J. J. Buckley) **89f:90008** 90A08
- Ranks, S. P.** (with Chanane, B.) A generalized frequency response for nonlinear systems. *IMA J. Math. Control Inform.* **5** (1988), no. 2, 147–166. (Summary) **89c:93034** 93B15 (93C10)  
 — Existence of periodic solutions in  $n$ -dimensional retarded functional-differential equations. *Internat. J. Control* **48** (1988), no. 5, 2065–2074. (Michał Kisielewicz) **89m:34091** 34K15 (34A10, 34C25, 58F05)  
 — Generalization of the Lyapunov equation to nonlinear systems. *Internat. J. Systems Sci.* **19** (1988), no. 4, 629–636. (Not in MR) 93D05 (93C10)
- Ranks, Thomas** (with Dixon, Lance J.; Friedman, D.; Martinec, Emil) Phenomenology and conformal field theory or can string theory predict the weak mixing angle? *Nuclear Phys. B* **299** (1988), no. 3, 613–626. (B. Spence) **89b:81244** 81G15 (81E30)  
 — (with Dixon, Lance J.) Constraints on string vacua with spacetime supersymmetry. *Nuclear Phys. B* **307** (1988), no. 1, 93–108. (Olaf Lechtenfeld) **89b:81163** 81E99 (81E30, 81E40)
- Banks, W. H. H.** (with Zaturka, M. B.) Eigensolutions in boundary-layer flow adjacent to a stretching wall. *IMA J. Appl. Math.* **36** (1986), no. 3, 263–273. (Not in MR) 76D10  
 — (with Drazin, Philip G.; Zaturka, M. B.) On perturbations of Jeffery-Hamel flow. *J. Fluid Mech.* **186** (1988), 559–581. (Summary) **89a:76025** 76D05
- Bankston, Paul** Model-theoretic characterizations of arcs and simple closed curves. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 898–904. (Summary) **89m:03023** 03C20 (03C65, 54B25, 54D05, 54D35, 54F25, 54F65)
- Bannai, Eiichi** (with Ito, Tatsuhiro) Current research on algebraic combinatorics: supplements to our book, *Algebraic combinatorics*. I. *Graphs Combin.* **2** (1986), no. 4, 287–308. (Andrew Woldar) **89g:05001** 05–02 (05B05, 05C75)  
 — (with Ito, Tatsuhiro) On distance-regular graphs with fixed valency. *Graphs Combin.* **3** (1987), no. 2, 95–109. (Joe Hemminger) **89b:05105** 05C35  
 — Rigid spherical  $t$ -designs and a theorem of Y. Hong. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **34** (1987), no. 3, 485–489. (J. J. Seidel) **89b:05060** 05B30  
 — (with Ito, Tatsuhiro) On distance-regular graphs with fixed valency. II. *Graphs Combin.* **4** (1988), no. 3, 219–228. (Joe Hemminger) **89g:05087** 05C75 (05C35)  
 — see also Conway, J. H., 89a:11067
- Bannier, Ulrich** On generally covariant quantum field theory and generalized causal and dynamical structures. *Comm. Math. Phys.* **118** (1988), no. 1, 163–170. (Matthew J. Donald) **89j:81085** 81E05 (46L60, 46N05)
- Banning, Jan** Proportionen: eine Grundlage der affinen Geometrie. [Proportions: a foundation of affine geometry] *Math. Semesterber.* **35** (1988), no. 1, 64–80. (J. Strommer) **89f:51005** 51A05 (51A30)
- Bannon, Peter R.** (with Zehnder, Joseph A.) Baroclinic flow over a mountain ridge. *J. Atmospheric Sci.* **46** (1989), no. 5, 703–714. (Summary) **89m:86005** 86A10
- Bano, R.** (with Khan, M. Zubair) On  $h$ -divisible QTAG-module. *Arch. Math. (Basel)* **52** (1989), no. 1, 38–41. (Delmar L. Boyer) **89j:20060** 20K99
- Olives Baños, Juan** see *Olives Baños, Juan*
- Bansal, J. L.** (with Soni, N. K.) Some generating relations for hypergeometric functions and polynomials. *Univ. Nac. Tucumán Rev. Ser. A* **29** (1979), no. 1, 137–143 (1987). (Not in MR) 33A30
- Bansal, Rajesh** (with Başar, Tamer) Simultaneous design of communication and control strategies for stochastic systems with feedback. *Analysis and optimization of systems (Antibes, 1988)*, 605–616, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89c:90209** 90C40 (93E03)
- Bansal, S. P.** Prof. J. N. Kapur, eminent mathematician. *Internat. J. Management Systems* **4** (1988), no. 2, i–ii. (Editors) **89j:01057** 01A70  
 — (with Kalra, K. R.; Bagga, P. C.) Equivalent job for block of jobs in  $n \times 2$  flowshop scheduling with setup times separated. *Internat. J. Management Systems* **4** (1988), no. 3, 169–176. (Summary) **89k:90086** 90B35
- Banshchikov, A. V.** Stability of vertical permanent rotations in the Roze problem. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems (Irkutsk, 1985)* (Russian), 210–216, 326, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Summary) **89h:70002** 70E15 (34D20, 70K15, 70K20)
- Bantas, Gh.** (with Cruceanu, Vasile) Professor Radu Miron: his 60th anniversary. *An. Stiint. Univ. "Al. I. Cuza" Iași Sect. I a Mat. (N.S.)* **33** (1987), no. 3, iii–vi. (Editors) **89m:01075** 01A70
- Bántay, P.** Orbifold compactification of heterotic string theories. *Phys. Lett. B* **203** (1988), no. 4, 367–370. (Peter Bouwknegt) **89b:81164** 81E99 (17B67, 22E40, 32J05, 81E30)
- Bantsuri, R. D.** (with Isakhanov, R. S.) Some inverse problems in elasticity theory. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruzin. SSR* **87** (1987), 3–20. (Introduction) **89b:73022** 73K10 (73K40)
- Banu, Olga** (with Simionescu, Corneliu) Structures hermitiennes hyperboliques associées à un groupe de transformation presque produit sur un groupe de Lie  $G_4$  résoluble. (Romanian summary) [Hyperbolic Hermitian structures associated with an almost product transformation group on a solvable Lie group  $G_4$ ] *Bul. Univ. Braşov Ser. C* **28** (1986), 97–100 (1987). (Alfonso Romero) **89a:53045** 53C15  
 — (with Simionescu, Corneliu) Détermination des groupes de Lie  $G_4$  résolubles à un isomorphisme près. (Romanian summary) [Determination of solvable Lie groups  $G_4$  up to isomorphism] *Bul. Univ. Braşov Ser. C* **29** (1987), 93–100 (1988). (Ion D. Teodorescu) **89h:53077** 53C10  
 — (with Simionescu, Corneliu; Tudor, Horia) Détermination des algèbres plates invariantes à gauche et des variétés affines associées à un groupe de Lie résoluble  $G_3$ . (Romanian summary) [Determination of flat left-invariant algebras and of affine varieties associated with a solvable Lie group  $G_3$ ] *Bul. Univ. Braşov Ser. C* **30** (1988), 57–60. (Raymond Couty) **89m:53021** 53A15
- Banuelos, Rodrigo** On an estimate of Cranston and McConnell for elliptic diffusions in uniform domains. *Probab. Theory Related Fields* **76** (1987), no. 3, 311–323. (Terry R. McConnell) **89c:60090** 60J60 (60J65)  
 — (with Klemes, Ivo; Moore, Charles N.) An analogue for harmonic functions of Kolmogorov's law of the iterated logarithm. *Duke Math. J.* **57** (1988), no. 1, 37–68. (Rainer Wittmann) **89k:42019** 42B25 (31A05, 60F15)  
 — A sharp good- $\lambda$  inequality with an application to Riesz transforms. *Michigan Math. J.* **35** (1988), no. 1, 117–125. (Mario Milman) **89c:42023** 42B20 (60G46)  
 — (with Bennett, Andrew G.) Paraproducts and commutators of martingale transforms. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1226–1234. (Roger L. Jones) **89m:60108** 60G46 (60G44)
- Banyaga, Augustin** On isomorphic classical diffeomorphism groups. II. *J. Differential Geom.* **28** (1988), no. 1, 23–35. (Hideki Omori) **89h:58032** 58D05 (22E65, 57R50, 58D15)  
 — (with de la Llave, Rafael; Wayne, C. Eugene) Cohomology equations and commutators of germs of contact diffeomorphisms. *Trans. Amer. Math. Soc.* **312** (1989), no. 2, 755–778. (J. W. Robbin) **89k:58080** 58F05
- Banyas, R.** Correction to the paper: "Convergence of random measures and point processes on the plane" [Probab. Math. Statist. **5** (1985), no. 2, 211–219; MR 87e:60084]. *Probab. Math. Statist.* **8** (1987), 191. (Editors) **89a:60129** 60G57 (60B10)
- Bănzaru, T.** (with Crivăţ, N.) On the quasi-uniform convergence for multifunctions. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara. Lucrăr. Sem. Mat. Fiz.* **1986**, May, 27–32. (Janina Ewert) **89c:54035** 54C60  
 — (with Crivăţ, N.) Characterization of continuity for multifunctions. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara. Lucrăr. Sem. Mat. Fiz.* **1986**,



- November, 54-58. (Janina Ewert) **89c:54036** 54C60
- le van Bao** see **Le Van Bao**
- Bao, Cheng Guang** (with He, J. C.) A procedure to calculate the Talmi-Moshinsky coefficients for  $N$ -body systems with arbitrary masses. *J. Phys. A* **21** (1988), no. 15, 3253-3258. (Summary) **89j:81287** 81H10
- Bao, Ke Da** (with Liu, Fu Sui) The Liouville theorem involving quantum effect. *Acta Math. Sci. (English Ed.)* **6** (1986), no. 2, 201-211. (Summary) **89d:81131** 81H99 (70H10)
- Bao, P.** (with Rokne, J. G.) Inclusion isotonicity of circular complex centered forms. *BIT* **27** (1987), no. 4, 502-509. (G. Alefeld) **89b:65115** 65G10
- (with Rokne, J. G.) Interval Taylor forms. (German summary) *Computing* **39** (1987), no. 3, 247-259. (M. A. Wolfe) **89a:65077** 65G10 (65H10)
- Bao, Xi Liang** Some results in Bianchi cosmological models. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **4** (1987), no. 2, 183-189. (Summary) **89j:30009** 83C15 (83C10)
- An internal solution for a gravitational theory containing a vector gravitational field. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **5** (1988), no. 1, 124-126. (Not in MR) **83D05**
- Bao, Yuan L.** (with Shieh, L. S.; Coleman, Norman P.) Model transformations for state-space self-tuning control of multivariable stochastic systems. *Stochastic Anal. Appl.* **6** (1988), no. 1, 91-101. (Bohdan Maslowski) **89d:93023** 93B17 (93E20)
- (with Shieh, L. S.; Chang, Fan Jên) State-space self-tuning regulators for general multivariable stochastic systems. *Proc. IEEE-D* **136** (1989), no. 1, 17-27. (Benjamin Goldys) **89k:93231** 93E20 (93B17, 93B50, 93C40)
- Baouche, A.** Existence of solutions for differential equations with advanced argument. *Demonstratio Math.* **19** (1986), no. 3, 703-708 (1987). (M. Rama Mohana Rao) **89a:45016** 45J05
- Baouendi, M. S.** Complex vector fields, holomorphic extension of CR functions and related problems. *Hyperbolic equations and related topics (Katata/Kyoto, 1984)*, 1-9, Academic Press, Boston, MA, 1986. (From the text) **89c:32051** 32F20 (35A27, 58G05)
- (with Rothschild, L. P.) Embeddability of abstract CR structures and integrability of related systems. (French summary) *Ann. Inst. Fourier (Grenoble)* **37** (1987), no. 3, 131-141. (H. Jacobowitz) **89c:32053** 32F25 (53C15)
- Baowen, L.** see **Li, Bao Wen**
- Bapat, R. B.** Majorization and singular values. *Linear and Multilinear Algebra* **21** (1987), no. 3, 211-214. (Anna Lee) **89j:15015** 15A18 (15A42, 15A45)
- Refining Schur's inequality using Schur complements. *Linear and Multilinear Algebra* **23** (1988), no. 1, 55-62. (Marvin Marcus) **89d:15008** 15A69 (15A15)
- Multinomial probabilities, permanents and a conjecture of Karlin and Rinott. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 467-472. (Summary) **89k:15008** 15A15 (60E15)
- Baptist, Peter** Über Nagelsche Punktepaare. [On Nagel-like pairs of points] *Math. Semesterber.* **35** (1988), no. 1, 118-126. (J. Strommer) **89f:51070** 51M05
- (with Schröder, Eberhard M.) Merkwürdige Punkte von Dreiecken in euklidischen und minkowskischen Ebenen. [Strange points of triangles in Euclidean and Minkowskian planes] *Mitt. Math. Ges. Hamburg* **11** (1988), no. 5, 591-616. (J. Strommer) **89b:51028** 51M05 (51B20)
- Baptista, J. P.** (with Batista, A. B.; Fabris, J. C.) The zero-helicity waves in a Brans-Dicke cosmology. *Classical Quantum Gravity* **6** (1989), no. 2, 209-218. (Summary) **89k:83058** 83D05
- lee-Baptist, I. P.** see **Lee-Baptist, I. P.**
- Barabanenkov, Yu. N.** A stationary regime for the quantum dynamics of particles in randomly variable potential. (Russian. English summary) *Teoret. Mat. Fiz.* **73** (1987), no. 2, 281-293. (A. Weron) **89h:82025** 82A42 (82A15)
- Barabanov, A. T.** Complete solution of the general Routh problem in control theory. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 5, 1061-1065; translated in *Soviet Phys. Dokl.* **33** (1988), no. 8, 557-559. (Piotr Grabowski) **89m:93062** 93D10
- Barabanov, N. E.** On the Lyapunov exponent of discrete inclusions. I. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 2, 40-46; translated in *Avtomat. Remote Control* **49** (1988), no. 2, part 1, 152-157. (J. W. Macki) **89e:34025** 34A60 (34D05, 39A12)
- On the Lyapunov exponent of discrete inclusions. II. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 3, 24-29; translated in *Avtomat. Remote Control* **49** (1988), no. 3, part 1, 283-287. (J. W. Macki) **89c:34026** 34A60 (34D05, 39A12)
- On the Lyapunov exponent of discrete inclusions. III. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 5, 17-24; translated in *Avtomat. Remote Control* **49** (1988), no. 5, part 1, 558-565. (J. W. Macki) **89m:34060** 34D05 (34A60, 39A12, 93C55)
- A problem of absolute stability of sampled-data automatic control systems. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 8, 28-37; translated in *Avtomat. Remote Control* **49** (1988), no. 8, part 1, 981-988. (D. Bainov) **89m:93063** 93D10 (34D05, 39A11, 93C57)
- On a problem of Kalman. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 3, 3-11, 219; translated in *Siberian Math. J.* **29** (1988), no. 3, 333-341. (Miklós Farkas) **89g:93077** 93D20 (34D20)
- An absolute characteristic exponent of a class of linear nonstationary systems of differential equations. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 4, 12-22, 222; translated in *Siberian Math. J.* **29** (1988), no. 4, 521-530. (Snezhana Khristova) **89j:34064** 34D05 (34A30)
- New criteria for the absolute stability of automatic control systems with one differentiable nonlinearity. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 3, 570-572; translated in *Soviet Phys. Dokl.* **33** (1988), no. 3, 166-167. (A. Halanay) **89f:93032** 93D10 (34D05, 93C05)
- Barabás, B.** Estimation of density functions by order statistics. *Period. Math. Hungar.* **18** (1987), no. 2, 115-122. (I. Vincze) **89a:62088** 62G05 (62G30)
- Barabash, S. B.** (with Busygina, V. P.; Radchenko, V. V.) Methods for finding solutions in applied equilibrium models. (Russian) *Models and methods for the optimization of economic systems (Russian)*, 41-57, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Introduction) **89b:90040** 90A14
- see also **Mathematical methods for the analysis of the interaction of branch and regional systems**, **89j:90003**
- Barabash, A. G.** (with Demidov, S. S.; Panov, M. I.) Regularities and modern tendencies of the development of mathematics. *Philos. Math.* (2) **2** (1987), no. 1, 32-47. (Editors
- 89m:00016** 00A25
- On the impact of the world outlook on mathematical creativity. *Philos. Math.* (2) **3** (1988), no. 1, 1-20. (W. Dörfler) **89j:00039** 00A25
- Baracs, Janos** Descriptive geometry in four dimensions. *Computer aided geometric reasoning, Vol. I, II (Sophia-Antipolis, 1987)*, 171-185, INRIA, Rocquencourt, 1987. (H. Brauner) **89a:51050** 51N05
- Spatial perception and creativity. *Shaping space (Northampton, Mass., 1984)*, 118-132, *Design Sci. Collect.*, Birkhäuser Boston, Boston, MA, 1988. (see **89b:52016**) 52A25 (00A25, 92A25)
- Barahona, Francisco** (with Casari, Adolfo) On the magnetisation of the ground states in two-dimensional Ising spin glasses. *Comput. Phys. Comm.* **49** (1988), no. 3, 417-421. (Summary) **89d:82004** 82-04 (05C70, 82A57, 82A68)
- Baran, Yoram** (with Shaked, U.) On the internal structure of minimal stochastic realizations. *Automatica—J. IFAC* **24** (1988), no. 5, 715-717. (Summary) **89j:93015** 93B10 (93B15, 93B60, 93E03)
- (with Porat, B.) Identification of minimal order state space models from stochastic input-output data. *SIAM J. Control Optim.* **26** (1988), no. 1, 56-65. (G. Banon) **89a:93053** 93E12 (93B15, 93B20)
- Baran, Miroslaw** A functional equation for the Joukowski transformation. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 423-426. (B. Crstici) **89k:39014** 39B20 (30D05)
- Baran, Robert H.** (with Coughlin, James P.) Stochastic models of information obsolescence. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 760-765. (see **89d:00007**) 90B25
- Baranger, M.** (with de Aguiar, M. A. M.; Malta, C. P.; Davies, K. T. R.) Bifurcations of periodic trajectories in nonintegrable Hamiltonian systems with two degrees of freedom: numerical and analytical results. *Ann. Physics* **189** (1987), no. 2, 167-205. (Jair Koiller) **89b:58175** 58F22 (34A50, 58F05, 65M99, 70-08, 70H05)
- (with Davies, K. T. R.; Mahoney, J. H.) The calculation of periodic trajectories. *Ann. Physics* **186** (1988), no. 1, 95-110. (Summary) **89f:70005** 70-08 (70-04, 70D05, 70F05)
- Barannik, A. F.** (with Barannik, L. F.; Fushchich, V. I.) Continuous subgroups of the generalized Poincaré group  $P(1, n)$ . (Russian) *Group-theoretic methods in physics, Vol. 2 (Russian) (Järvala, 1985)*, 169-176, "Nauka", Moscow, 1986. (Editors) **89g:22030** 22E70
- (with Barannik, L. F.; Fushchich, V. I.) On the continuous subgroups of the generalised Poincaré group  $P(1, n)$ . *Group-theoretic methods in physics, Vol. 1 (Järvala, 1985)*, 561-570, VNU Sci. Press, Utrecht, 1986. (Jules Beckers) **89e:22020** 22E43 (22E15, 81C40)
- (with Fushchich, V. I.) Continuous subgroups of pseudo-orthogonal and pseudo-unitary groups. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1986**, no. 87, 48 pp. (Summary) **89m:17006** 17B05
- Barannik, L. F.** (with Barannik, A. F.; Fushchich, V. I.) Continuous subgroups of the generalized Poincaré group  $P(1, n)$ . (Russian) *Group-theoretic methods in physics, Vol. 2 (Russian) (Järvala, 1985)*, 169-176, "Nauka", Moscow, 1986. (Editors) **89g:22030** 22E70
- (with Fushchich, V. I.) Casimir operators for generalized Poincaré groups and the Galilei group. (Russian) *Group-theoretic methods in physics, Vol. 2 (Russian) (Järvala, 1985)*, 176-183, "Nauka", Moscow, 1986. (Editors) **89g:22027** 22E60 (81C40)
- (with Fushchich, V. I.) Casimir operators of the generalised Poincaré and Galilei groups. *Group-theoretic methods in physics, Vol. II (Järvala, 1985)*, 275-282, VNU Sci. Press, Utrecht, 1986. (M. K. F. Wong) **89e:22031** 22E60 (81C40)
- (with Barannik, A. F.; Fushchich, V. I.) On the continuous subgroups of the generalised Poincaré group  $P(1, n)$ . *Group-theoretic methods in physics, Vol. I (Järvala, 1985)*, 561-570, VNU Sci. Press, Utrecht, 1986. (Jules Beckers) **89e:22020** 22E43 (22E15, 81C40)
- (with Fushchich, V. I.) Invariants of subgroups of the generalized Poincaré group  $P(1, n)$ . (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1986**, no. 86, 40 pp. (Summary) **89d:17003** 17B10 (15A72, 81C40)
- (with Marchenko, V. A.) Symmetry reduction for the four-dimensional heat equation. (Russian) *Symmetry and solutions of nonlinear equations of mathematical physics (Russian)*, 54-58, iii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) **89h:35137** 35K05 (58G35)
- Subalgebras of the extended Schrödinger algebra. (Russian) *Symmetry and solutions of nonlinear equations of mathematical physics (Russian)*, 79-84, iv, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) **89f:58140** 58G35
- (with Fushchich, V. I.) Continuous subgroups of generalized Schrödinger groups. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 16, 48 pp. (Summary) **89e:22036** 22E70 (17B10, 58G35)
- (with Fushchich, V. I.) Continuous subgroups of the conformal group in the Minkowski space  $R_{1,n}$ . (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1988**, no. 34, 48 pp. (Summary) **89j:22010** 22E05 (22E70, 35Q20)
- Symmetry reduction and exact solutions of the Liouville equation. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 12, 3-5, 83. (Summary) **89k:58299** 58G35 (22E05, 35Q20, 78A99)
- Subalgebras of the generalized extended Galilei algebra. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 6, 705-709, 812. (From the text) **89k:17021** 17B20 (22E70)
- (with Lagno, V. I.; Fushchich, V. I.) Subalgebras of the Poincaré algebra  $AP(2, 3)$  and the symmetry reduction of the nonlinear ultrahyperbolic d'Alembert equation. I. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 4, 411-416, 542; translated in *Ukrainian Math. J.* **40** (1988), no. 4, 351-356. (A. J. Coleman) **89k:58300** 58G35 (35A30, 35C99, 35L25)
- Baranov, A. M.** (with Paklin, N. N.) The internal source of Vaidya's solution. (Russian) *Izv. Vysch. Uchebn. Zaved. Fiz.* **31** (1988), no. 3, 36-39; translated in *Soviet Phys. J.* **31** (1988), no. 3, 203-206. (Jan Novotný) **89f:83017** 83C15 (83C50)
- Baranov, A. P.** A method for estimating Mahalanobis distance. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 2, 83-89, 135; translated in *Cybernetics* **24** (1988), no. 2, 246-254. (Z. Sidák) **89i:62086** 62H12 (62L20)
- Baranov, M. A.** (with Shvarts, A. S.) On the multiloop contribution to the string theory. *Internat. J. Modern Phys. A* **2** (1987), no. 6, 1773-1796. (Jeffrey M. Rabin) **89e:81134** 81E99 (14H15, 32G15, 81E30)
- Baranov, V. I.** Conditions for the includability of partitions depending on the number of terms. (Russian) *Proceedings of the All-Union seminar on discrete mathematics and its applications (Russian) (Moscow, 1984)*, 62-65, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (Kaicheng Lu) **89f:05016** 05A17



- Application of combinatorial models for the determination of size requirements for the working memory. (Russian) *Programirovanie* 1987, no. 6, 69–80, 96. (Not in MR) 88N25
- Baranov, V. V.** (with Podtyskin, N. S.; Kharybin, N. I.) Optimal decision methods in controllable Markov systems with a nonobservable state. (Russian) *Vestnik Khar'kov. Gos. Univ.* No. 298 *Mat. Mekh. i Voprosy Upravl.* (1987), 49–52. (Ryszard Gessing) 89d:93115 93E20 (90C40, 93C30, 93C40, 93C55)
- Baranov, Yu. S.** (with Gliklikh, Yu. E.) A mechanical constraint on the group of volume-preserving diffeomorphisms. (Russian) *Funktsional. Anal. i Prilozhen.* 22 (1988), no. 2, 61–62; translated in *Functional Anal. Appl.* 22 (1988), no. 2, 133–135. (B. Hajduk) 89m:58033 58D30 (76A02)
- Baranovskii, A. I.** An iterative algorithm for solving a linear programming problem. *Soviet J. Automat. Inform. Sci.* 21 (1988), no. 1, 11–13; translated from *Avtomatika* 1988, no. 1, 12–14, 95 (Russian. English summary). (Summary) 89m:90095 90C05 (65K05)
- Barantsev, R. G.** On singularities of the Tricomi problem solution by the Fourier method. *Mixed type equations*, 47–54, *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) 89b:35104 35M05
- (with Grudstyn, V. V.) Localization of singularities in a problem of scattering by contours with noncanonical boundaries. (Russian) *Asymptotic methods* (Russian), 95–136, 384, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Summary) 89b:78011 78A45 — see also *Asymptotic methods*, 89a:00002
- Barány, I.** (with Füredi, Z.) Empty simplices in Euclidean space. *Canad. Math. Bull.* 30 (1987), no. 4, 436–445. (Jane R. Sangwine-Yager) 89g:52004 52A37 (11K31)
- (with Füredi, Z.) Computing the volume is difficult. *Discrete Comput. Geom.* 2 (1987), no. 4, 319–326. (Klaus Suter) 89a:68203 68U05 (52-04, 68Q25)
- (with Kincses, J.) A characterization of the Helly dimension of convex bodies. *Studia Sci. Math. Hungar.* 22 (1987), no. 1–4, 401–406. (John R. Reay) 89d:52019 52A35
- On the minimal ring containing the boundary of a convex body. *Acta Sci. Math. (Szeged)* 52 (1988), no. 1–2, 93–100. (A. Florian) 89i:52014 52A40 (52A20)
- (with Dolbilin, N. P.) A stability property of the densest circle packing. *Monatsh. Math.* 106 (1988), no. 2, 107–114. (R. Blind) 89j:52011 52A45
- (with Füredi, Z.) On the shape of the convex hull of random points. *Probab. Theory Related Fields* 77 (1988), no. 2, 231–240. (Pamela J. Davy) 89g:60030 60D05 (52A22)
- (with Füredi, Z.) Approximation of the sphere by polytopes having few vertices. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 651–659. (Peter M. Gruber) 89a:52030 52A40 (52A22)
- Baras, J. S.** (with James, M. R.) An observer design for nonlinear control systems. *Analysis and optimization of systems* (Antibes, 1988), 170–180, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) 89e:93026 93B07 (93C10)
- (with Elliott, Robert J.; Kohlmann, Michael) The conditional adjoint process. *Analysis and optimization of systems* (Antibes, 1988), 654–662, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Jose Luis Menaldi) 89k:93222 93E20 (49B60)
- An optimization problem from linear filtering with quantum measurements. *Appl. Math. Optim.* 18 (1988), no. 3, 191–214. (L. L. Campbell) 89g:93094 93E11 (81C99, 93C55, 93E10, 94A14)
- (with Bensoussan, A.; James, M. R.) Dynamic observers as asymptotic limits of recursive filters: special cases. *SIAM J. Appl. Math.* 48 (1988), no. 5, 1147–1158. (Joseph D. Cole) 89j:93010 93B07 (93E10)
- (with James, M. R.) Nonlinear filtering and large deviations: a PDE-control theoretic approach. *Stochastics* 23 (1988), no. 3, 391–412. (Shin'ichi Aihara) 89m:93082 93E11 (49C20, 60F10, 60G35)
- Barash, Yu. S.** ★ Силы Ван-дер-Ваальса. (Russian) [van der Waals forces] "Nauka", Moscow, 1988. 344 pp. ISBN 5-02-013818-5 (S. V. Temko) 89m:82001 82-02
- Barashenkov, I. V.** (with Getmanov, B. S.) Multisolution solutions in the scheme for unified description of integrable relativistic massive fields. Nongenerate  $sl(2, \mathbb{C})$  case. *Comm. Math. Phys.* 112 (1987), no. 3, 423–446. (Vladimir Stefanov Gerdjikov) 89b:81173 81E99 (58F07, 81E40)
- (with Makhan'kov, V. G.) Soliton-like "bubbles" in a system of interacting bosons. *Phys. Lett. A* 128 (1988), no. 1–2, 52–56. (Summary) 89b:82019 82A15 (35Q20)
- (with Getmanov, B. S.; Kovtun, V. E.) Integrable model with nontrivial interaction between sub- and superluminal solitons. *Phys. Lett. A* 128 (1988), no. 3–4, 182–186. (Mark R. Temple-Raston) 89f:81158 81E99 (35Q20, 58F07, 81E13)
- Barashko, A. S.** The statistical equivalence of automata with respect to input and output. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 9, 144–150. (Summary) 89a:68169 68Q99
- Barashkov, A. S.** Low frequency asymptotic behavior of the solution of a three-dimensional MTS problem. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* 1988, no. 2, 90–100. (From the summary) 89m:86015 86A20 (78A55)
- Solution of a three-dimensional problem for a fundamental MTS model. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* 1988, no. 5, 58–70. (Summary) 89k:86007 86A25 (78A25)
- On the uniqueness of quasisolutions of operator equations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 6, 938–940, 960. (Summary) 89f:47092 47H15 (65J15)
- Barata, João C. A.** (with Fredenhagen, Klaus) Charged particles in  $Z_2$  gauge theories. *Comm. Math. Phys.* 113 (1987), no. 3, 403–417. (Claus Montonen) 89e:81078 81E08 (81E13, 81E25)
- Baratella, Paola** Bounds for the error term in Hilb formula for Jacobi polynomials. (Italian summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* 120 (1986), no. 5–6, 207–223 (1987). (Hans-Jürgen Glaeske) 89f:33016 33A65
- Barback, Joseph** On infinite series of infinite isol. *J. Symbolic Logic* 53 (1988), no. 2, 443–462. (Charles Applebaum) 89i:03085 03D50
- Barba Escobedo, Lourdes** Properties of stopping times in the representation of variables. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 359–367, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) 89g:60150 60G40 (60J65)
- Barbark, Salvador** (with Jackson, Matthew) Maximin, leximin, and the protective criterion: characterizations and comparisons. *J. Econom. Theory* 46 (1988), no. 1, 34–44. (Bhaskar Dutta) 89j:90004 90A05 (90A08)
- Barbashov, B. M.** (with Chervyakov, A. M.) A geometric method for solving a boundary value problem in the theory of a relativistic string with masses on the ends. (Russian. English summary) *Teoret. Mat. Fiz.* 74 (1988), no. 3, 430–439; translated in *Theoret. and Math. Phys.* 74 (1988), no. 3, 292–299. (Sorin Marculescu) 89j:81157 81E99 (53B50, 81E30)
- Barbé, André** Periodic patterns in the binary difference field. *Complex Systems* 2 (1988), no. 2, 209–233. (Pierre Michel) 89k:11063a 11K31 (68Q80, 92A05, 92A27)
- Erratum: "Periodic patterns in the binary difference field". *Complex Systems* 2 (1988), no. 6, 726. (Pierre Michel) 89k:11063b 11K31 (68Q80, 92A05, 92A27)
- Barber, B. C.** Analysis of binary quantisation effects in the processing of chirp and synthetic aperture radar signals. *Mathematics in signal processing* (Bath, 1985), 71–101, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see 89b:94004) 94A12 (94A14)
- Barber, Michael N.** (with Alcaraz, Francisco C.; Batchelor, M. T.; Baxter, Rodney James; Quispel, G. R. W.) Surface exponents of the quantum  $XXZ$ , Ashkin-Teller and Potts models. *J. Phys. A* 20 (1987), no. 18, 6397–6409. (Summary) 89b:82100 82A68 (82-04, 82A69)
- (with Batchelor, M. T.; Pearce, Paul A.) Bethe ansatz calculations for the eight-vertex model on a finite strip. *J. Statist. Phys.* 49 (1987), no. 5–6, 1117–1163. (Summary) 89b:82103 82A68 (82-04)
- (with Cates, Michael E.) Effect of boundary conditions on the finite-size transverse Ising model. *Phys. Rev. B* (3) 36 (1987), no. 4, 2024–2029. (W. Th. F. den Hollander) 89d:82026 82A15 (82A97)
- (with Alcaraz, Francisco C.; Batchelor, M. T.) Conformal invariance, the  $XXZ$  chain and the operator content of two-dimensional critical systems. *Ann. Physics* 182 (1988), no. 2, 280–343. (Roland Koberle) 89f:82073 82A68 (81E40, 82A15, 82A67)
- (with Derrida, B.) Dynamical phase transitions in the two-dimensional ANNNI model. New directions in statistical mechanics (Santa Barbara, CA, 1987). *J. Statist. Phys.* 51 (1988), no. 5–6, 877–891. (Summary) 89j:82017 82A25 (82-04, 82A68)
- (with Hamer, C. J.; Batchelor, M. T.) Logarithmic corrections to finite-size scaling in the four-state Potts model. *J. Statist. Phys.* 52 (1988), no. 3–4, 679–710. (Summary) 89i:82086 82A68 (82-04)
- Barberis, Bruno** (with Galletto, Dionigi) On Friedmann's models of the universe. (Italian. English summary) Writings in mathematical physics in honor of the ninetieth birthday of Cataldo Agostinelli (Italian). *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* 120 (1986), suppl., 95–109 (1987). (A. H. Klotz) 89i:83068 83F05
- Barbero, F.** (with Julve, J.; Tiemblo, A.; Tresguerres, R.) Dynamical approach to conformal gravity and the bosonic string effective action. *Z. Phys. C* 40 (1988), no. 4, 619–626. (W. Cox) 89m:81089 81E13 (81E30, 81E40, 83E30)
- Barbieri, F.** see *Materials for the history of mathematics in the collections of the Biblioteca Estense and the Biblio.* 89a:01002
- Barbilian, Dan** see Radu, Nicolae, 89m:01064
- Barbosa, José Carlos** (with Percin, Diemando; de Abreu, Clovis Pompilio) Computational aspects of the parameter estimation of negative binomial distributions and distributions of Neyman type A by the minimum chi-squared method. (Portuguese. English summary) *Rev. Mat. Estatist.* 4/5 (1986/87), 31–43. (Not in MR) 62F10
- madsen Barbosa, Ruy** see Madsen Barbosa, Ruy
- Barbosa, Ruy Madsen** see Madsen Barbosa, Ruy
- Barbosu, Mihai** On the determination of the Eulerian orbital elements of an artificial earth satellite. *Seminar of Celestial Mechanics and Space Research*, 145–152, *Preprint*, 87-10, Univ. "Babeş-Bolyai", Cluj-Napoca, 1987. (see 89c:70021) 70M05
- Barboucha, M.** (with Staroswiecki, M.; Ayaline, P.) Building rules from contingency tables. *Data analysis and informatics, V (Versailles, 1987)*, 175–182, *North-Holland, Amsterdam-New York*, 1988. (see 89g:62009) 62H17 (62-07)
- Barbour, A. D.** (with Holst, Lars) Some applications of the Stein-Chen method for proving Poisson convergence. *Adv. in Appl. Probab.* 21 (1989), no. 1, 74–90. (J. Hüslér) 89m:60046 60F05 (60E15)
- Barbu, Viorel** The time optimal problem for a class of nonlinear systems. *Control problems for systems described by partial differential equations and applications* (Gainesville, Fla., 1986), 16–39, *Lecture Notes in Control and Inform. Sci.*, 97, Springer, Berlin-New York, 1987. (Ovidiu Cârja) 89b:49039 49B27 (49A29, 49B22)
- (with Barron, E. N.) Bang-bang controllers for an optimal cooling problem. (Russian and Polish summaries) *Control Cybernet.* 16 (1987), no. 2, 91–102. (G. F. Raggett) 89b:49034 49B22 (49A29, 49B36)
- Approximation of the Hamilton-Jacobi equations via Lie-Trotter product formula. *Control Theory Adv. Tech.* 4 (1988), no. 2, 189–208. (Moustafa El-Arabyat) 89m:49046 49C10 (35F20, 65K10, 65P05, 93C25)
- (with Barron, E. N.; Jensen, Robert) The necessary conditions for optimal control in Hilbert spaces. *J. Math. Anal. Appl.* 133 (1988), no. 1, 151–162. (Dan Tiba) 89b:49018 49B27 (47H15, 49C20)
- A product formula approach to nonlinear optimal control problems. *SIAM J. Control Optim.* 26 (1988), no. 3, 497–520. (Vl. Răsvan) 89f:93023 93C25 (49E10, 93B40, 93C10)
- le conte de poly-Barbut, C.** see Le Conte de Poly-Barbut, C.
- Barbuti, R.** (with Aquilano, C.; Bocchetti, P.; Martelli, Maurizio) Negation as failure. Completeness of the query evaluation process for Horn clause programs with recursive definitions. *J. Automat. Reason.* 2 (1986), no. 2, 155–170. (Summary) 89j:68145 68T25 (03B70)
- Barceló, B.** On the restriction of the Fourier transform and Fourier series to circles of lacunary radii. *Rend. Circ. Mat. Palermo* (2) 35 (1986), no. 3, 330–348 (1987). (Philip Heywood) 89e:42012 42B10 (42B05)
- (with Kenig, C. E.; Ruiz, Alberto; Sogge, C. D.) Weighted Sobolev inequalities and unique continuation for the Laplacian plus lower order terms. *Illinois J. Math.* 32 (1988), no. 2, 230–245. (Gary M. Lieberman) 89h:35048 35B60 (35J15, 46E35)
- Barceló, Carmen** (with Labarta, Ana) ★ Números y cifras en los documentos arábigo-hispanos. (Spanish) [Numerical symbols in Arabic-Spanish documents] With English and French summaries. *Universidad de Córdoba, Facultad de Filosofía y Letras, Departamento de Lengua y Literatura Árabes, Córdoba*, 1988. 63 pp. ISBN 84-600-5322-9 (H. W. Guggenheimer) 89i:01012 01A35 (01A30)

- Barceló, Juan Antonio** (with Córdoba, Antonio) Band-limited functions:  $L^p$ -convergence. *Bull. Amer. Math. Soc. (N.S.)* **18** (1988), no. 2, 163–166. (Philip Heywood) **89c:42012** 42A38 (42B25, 44A15)
- Barceló, Miguel** (with Canela, Miguel A.) Conditions of angelic type in function spaces. *Publ. Sec. Mat. Univ. Autònoma Barcelona* **30** (1986), no. 1, 49–57. (W. Govaerts) **89b:54022** 54C35 (46A50)
- (with Canela, Miguel A.) Conditions of angelic type in function spaces. *Serdica* **14** (1988), no. 1, 3–6. (Mohan L. Tikoo) **89c:54028** 54C35 (54A25, 54D30)
- Barceló Bugeda, Jaume** Simulation and applications to traffic control. (Spanish. English summary) *Proceedings of the Second International Seminar on Operational Research in the Basque Provinces (San Sebastian, 1987)*, 13–76, *Univ. País Vasco-Euskal Herriko Unib., Bilbao*, 1988. (Summary) **89k:90063** 90B20
- Barcelos-Neto, J.** (with Alves, M. S.) Conformal transformation, gauge fields and trace anomaly. *Classical Quantum Gravity* **5** (1988), no. 2, 377–384. (Zhong Qi Ma) **89b:81110** 81E13 (81E40)
- (with de Almeida da Silva, M. A.; Braga, N. R. F.) Canonical quantization of the  $\sigma$ -model with torsion in superspace. *Z. Phys. C* **38** (1988), no. 4, 619–622. (C. Gauthier) **89f:81126** 81E20 (58E20, 81D07, 81G20)
- Barcelli, Alberto** Comment on: "Quantum mechanics of measurements distributed in time. A path-integral formulation" [Phys. Rev. D (3) **33** (1986), no. 6, 1643–1665] by C. M. Caves. *Phys. Rev. D* (3) **34** (1986), no. 8, 2527–2530. (Summary) **89a:81013** 81B99 (81C35)
- Quantum stochastic differential equations: an application to the electron shelving effect. *J. Phys. A* **20** (1987), no. 18, 6341–6355. (Kalyanapuram R. Parthasarathy) **89c:81031** 81C20 (81K05)
- Barcia, Paulo** (with Holm, Søren) A revised bound improvement sequence algorithm. *European J. Oper. Res.* **36** (1988), no. 2, 202–206. (Summary) **89c:90142** 90C10
- Barclon, Victor** Sufficient conditions for the solution of the inverse problem for a vibrating beam. *Inverse Problems* **3** (1987), no. 2, 181–193. (Yi-Yuan Yu) **89d:73032** 73K12 (34A55)
- (with Constantin, Peter; Titi, E. S.) Existence of solutions to the Stommel-Charney model of the Gulf Stream. *SIAM J. Math. Anal.* **19** (1988), no. 6, 1355–1364. (Summary) **89k:35241** 35Q99 (76U05, 86A05)
- Bárd, A.** An algebraic proof for Kripke-style completeness of a class of multimodal propositional calculi. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **30** (1987), 121–124. (Wojciech Dziuk) **89c:03023** 03B45
- Bard, Jonathan F.** Convex two-level optimization. *Math. Programming* **40** (1988), no. 1 (Ser. A), 15–27. (Marco Gaviano) **89d:90212** 90C31 (90D05, 90D20)
- (with Miller, Jeanne L.) Probabilistic shortest path problems with budgetary constraints. *Comput. Oper. Res.* **16** (1989), no. 2, 145–159. (Not in MR) **90B15**
- (with Feo, Thomas A.) Operations sequencing in discrete parts manufacturing. *Management Sci.* **35** (1989), no. 2, 249–255. (Summary) **89m:90081** 90B30 (90B35)
- Bardakci, K.** (with Rabinovici, E.; Säring, B.) String models with  $c < 1$  components. *Nuclear Phys. B* **299** (1988), no. 1, 151–182. (Raiko Zaikov) **89f:81159** 81E99 (81D15, 81E30, 81E40, 82A25)
- Bardaro, Carlo** A characterization of Banach spaces that are normed in the strong sense, and the variation of vector-valued functions. (Italian) *Atti Sem. Mat. Fis. Univ. Modena* **35** (1987), no. 1, 43–46. (S. Cobzas) **89b:46021** 46B20 (26A45, 46E40)
- (with Ceppitelli, Rita) Minimax inequalities in Riesz spaces. *Atti Sem. Mat. Fis. Univ. Modena* **35** (1987), no. 1, 63–69. (D. Butković) **89b:90260** 90D05 (26B25, 47H99, 49A50, 90C48, 90D12)
- (with Vinti, Gianluca) The perimeter and generalized variation with respect to a measure in  $\mathbb{R}^2$ . (Italian) *Atti Sem. Mat. Fis. Univ. Modena* **35** (1987), no. 1, 173–190. (U. D'Ambrosio) **89d:28006** 28A75 (26B30, 49F20, 49F25)
- Convergence, independent of the weight, of sublinear functionals on vector measures, and applications. (Italian. English summary) *Rend. Istit. Mat. Univ. Trieste* **19** (1987), no. 1, 44–63. (Summary) **89m:49020** 49A50 (46G10)
- (with Ceppitelli, Rita) Some further generalizations of Knaster-Kuratowski-Mazurkiewicz theorem and minimax inequalities. *J. Math. Anal. Appl.* **132** (1988), no. 2, 484–490. (Hubertus Th. Jongen) **89c:90219** 90D05 (49B40)
- Bar-David, Israel** (with Shamai, Shlomo) On information transfer by envelope-constrained signals over the AWGN channel. *IEEE Trans. Inform. Theory* **34** (1988), no. 3, 371–379. (Robert Gray) **89i:94025** 94A40 (94A15)
- Bardelli, Fabio** On Grothendieck's generalized Hodge conjecture for a family of threefolds with geometric genus one (a study of the Abel-Jacobi map). *Proceedings of the conference on algebraic geometry (Berlin, 1985)*, 14–23, *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (Sheldon H. Katz) **89c:14011** 14C30 (32G13)
- Semistable curves, their dual graphs and some applications. *Seminar in Complex Analysis and Geometry 1987 (Rende, 1987)*, 47–65, *Sem. Conf.*, 1, EditEl, Rende, 1988. (Sheldon H. Katz) **89i:14022** 14H40 (14C30)
- (with Verdi, Luisella) On osculating cones and the Riemann-Kempf singularity theorem for hyperelliptic curves, trigonal curves, and smooth plane quintics. *Compositio Math.* **65** (1988), no. 2, 177–199. (Olivier Debarre) **89b:14045** 14H40 (14H45, 14K20)
- (with Pirola, Gian Pietro) Curves of genus  $g$  lying on a  $g$ -dimensional Jacobian variety. *Invent. Math.* **95** (1989), no. 2, 263–276. (Olivier Debarre) **89k:14052** 14H40 (14H10, 14H35)
- Bardi, Martino** Asymptotic spherical symmetry of the free boundary in degenerate diffusion equations. *Ann. Mat. Pura Appl.* (4) **148** (1987), 117–130. (Fouad A. Mohamed) **89f:35215** 35R35 (76S05, 80A20)
- Bardos, Claude** (with Lebeau, G.; Rauch, J.) Scattering frequencies and Gevrey 3 singularities. *Invent. Math.* **90** (1987), no. 1, 77–114. (David Gurarie) **89b:35252** 35P25 (58G17, 58G25)
- Utilisation des notions de propagation de singularités pour le contrôle et la stabilisation des problèmes hyperboliques. [Using the notions of the propagation of singularities for control and stabilization of hyperbolic problems] *Gaz. Math. No. 36* (1988), 56–64. (V. Ivrii) **89i:35019** 35B37 (35L05, 58G20)
- (with Golse, François; Perthame, Benoît; Sentis, Rémi) The nonaccretive radiative transfer equations: existence of solutions and Rosseland approximation. *J. Funct. Anal.* **77** (1988), no. 2, 434–460. (Cor van der Mee) **89f:35174** 35Q20 (35B25, 35K55, 85A25)
- (with Sulem, C.; Sulem, P.-L.) Longtime dynamics of a conductive fluid in the presence of a strong magnetic field. *Trans. Amer. Math. Soc.* **305** (1988), no. 1, 175–191. (Athanasios Cotsiolis) **89b:35154** 35Q99 (76W05)
- Bardossy, A.** (with Szidarovszky, Ferenc; Gershon, Mark) Application of multiobjective dynamic programming to regional natural resource management. *Appl. Math. Comput.* **24** (1987), no. 4, 281–301. (Veijo Kaitala) **89d:90010** 90A05 (49C20, 90B50, 90C39)
- Notes on the robustness of the kriging system. *Math. Geol.* **20** (1988), no. 3, 189–203. (Summary) **89d:86007** 86A20 (86-08)
- (with Bogardi, I.; Kelly, W. E.) Imprecise (fuzzy) information in geostatistics. New advances in geostatistics (Redwood City, CA, 1987). *Math. Geol.* **20** (1988), no. 4, 287–311. (Summary) **89f:86008** 86A20 (03E72)
- Barefoot, Curtiss** (with Jones, Kathryn F.; Lundgren, J. Richard; Maybee, John S.) Biclique covers of regular digraphs. *Proceedings of the seventeenth Southeastern international conference on combinatorics, graph theory, and computing* (Boca Raton, Fla., 1986). *Congr. Numer.* **53** (1986), 147–154. (Giorgio Balconi) **89a:05067** 05C20 (05C70)
- Hamiltonian connectivity of the Halin graphs. *Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing* (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 93–102. (Bert L. Hartnell) **89d:05123** 05C45 (05C10)
- (with Entringer, G.) Computer observations of cycles in cubic graphs. *Comput. Math. Appl.* **15** (1988), no. 4, 241–246. (J. J. Seidel) **89i:05174** 05C38
- Barikis, G.** (with Šiaulyš, Jonas V.) Probabilities of moderate deviations for additive functions. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **28** (1988), no. 2, 224–235; translated in *Lithuanian Math. J.* **28** (1988), no. 2, 107–114. (Adolf Hildebrand) **89j:11081** 11K65 (11N37)
- Baril, A.** On growing automata and random environments. *Fund. Inform.* **10** (1987), no. 4, 369–385. (Jean-Christophe Feauveau) **89c:68093** 68Q75 (68T05)
- van Baril, M.** see **Van Baril, M.**
- Barendregt, H. P.** (with Kennaway, J. Richard; Klop, Jan Willem; Sleep, M. R.) Needed reduction and spine strategies for the lambda calculus. *Inform. and Comput.* **75** (1987), no. 3, 191–231. (J. P. Seldin) **89b:03020** 03B40 (68N15, 68Q55)
- (with van Eekelen, M. C. J. D.; Plasmeijer, M. J.; Glauret, J. R. W.; Kennaway, J. Richard; Sleep, M. R.) LEAN: an intermediate language based on graph rewriting. *PARLE: Conference on Parallel Architectures and Languages—Europe* (Eindhoven, 1987). *Parallel Comput.* **9** (1988/89), no. 2, 163–177. (see **89j:68053**) 68N05 (68Q50, 68R10)
- Baretta, Edoardo** (with Solimano, F.) A generalization of Volterra models with continuous time delay in population dynamics: boundedness and global asymptotic stability. *SIAM J. Appl. Math.* **48** (1988), no. 3, 607–626. (M. Tvrdý) **89f:92033** 92A15 (34K15, 34K20, 45J05)
- (with Takeuchi, Yasuhiro) Global asymptotic stability of Lotka-Volterra diffusion models with continuous time delay. *SIAM J. Appl. Math.* **48** (1988), no. 3, 627–651. (J. M. Cushing) **89g:92055** 92A17
- Barg, A. M.** (with Zyablov, V. V.; Portnoi, S. L.) An estimate for the effectiveness of correcting codes in a Gilbert-Elliott channel. (Russian) *Noise-resistant coding and computer reliability* (Russian), 69–79, 190, "Nauka", Moscow, 1987. (Summary) **89f:94028** 94B35 (94A40, 94B05, 94B10)
- (with Vvedenskaya, N. D.; Zyablov, V. V.) On error and erasure probabilities for block codes with incomplete decoding in a fading channel. (Russian summary) With a Russian translation. *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **16** (1987), no. 5, 329–340, P1–P12. (Summary) **89h:94013** 94B35 (94A40, 94B70)
- Barge, Jean** (with Ojanguren, M.) Fibrés algébriques sur une surface réelle. [Algebraic bundles on a real surface] *Comment. Math. Helv.* **62** (1987), no. 4, 616–629. (R. Parimala) **89d:14032** 14G30 (11E81, 14F05, 19A13, 19G12)
- (with Ghys, É.) Surfaces et cohomologie bornée. [Surfaces and bounded cohomology] *Invent. Math.* **92** (1988), no. 3, 509–526. (Robert Brooks) **89c:55015** 55N35
- Barge, Marcy** The topological entropy of homeomorphisms of Knaster continua. *Houston J. Math.* **13** (1987), no. 4, 465–485. (J. J. Charatonik) **89c:54077** 54H20 (54C70, 54F20, 58F12)
- Rescaling planar hyperbolic sectors. *Proc. Amer. Math. Soc.* **107** (1989), no. 1, 145–154. (Douglas S. Shafer) **89m:58149** 58F14 (34C35)
- di Bari, Cristina** see **Di Bari, Cristina**
- Bari, N. K.** see **Spetich, Joan**, (**89b:01071**)
- Bari, Ruth Aaronson** see **Fasanelli, Florence D.**, (**89b:01071**)
- Baribeau, Line** (with Aupetit, Bernard) Sous-harmonicité de l'angle spectral. (English summary) [Subharmonicity of the spectral angle] *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 1, 51–56. (Robin Harte) **89c:47005** 47A10 (46H30, 47A60)
- Bariev, R. Z.** Correlation functions of the semi-infinite two-dimensional Ising model. III. Influence of a "fixed" boundary. (Russian. English summary) *Teoret. Mat. Fiz.* **77** (1988), no. 1, 127–134; translated in *Theoret. and Math. Phys.* **77** (1988), no. 1, 1090–1095. (Summary) **89k:82088** 82A68 (82A67)
- Barik, N.** Some general generating functions for certain special functions. *Pure Math. Manuscript* **5** (1986), 97–114. (J. P. Singhal) **89g:33011** 33A65
- Bariloro, Maria** (with Giambò, Sebastiano; Pantano, Pietro) Sur la diffraction transversale des ondes non linéaires dans un fluide visqueux relativiste. (English summary) [On the transverse diffraction of nonlinear waves in a relativistic viscous fluid] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 4, 169–172. (A. Pozzi) **89j:76094** 76Y05 (76D33)
- Baringhaus, L.** (with Henze, N.; Morgenstern, D.) Some elementary proofs of the normality of  $XY/(X^2 + Y^2)^{1/2}$  when  $X$  and  $Y$  are normal. *Comput. Math. Appl.* **15** (1988), no. 11, 943–944. (Włodzimierz Bryc) **89g:60038** 60E05
- Baris, Ya. S.** (with Lykova, O. B.) Approximate integral manifolds in stability theory. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1988**, no. 48, 64 pp. (Summary) **89m:34055** 34C30 (58F10, 70K20)
- Barit, W.** (with Magill, K. D., Jr.; Subbiah, S.) The congruences on  $S(X)$  which commute with  $V$ . *Semigroup Forum* **36** (1987), no. 3, 351–364. (Bernard L. Madison) **89c:20096** 20M20 (54H15)
- (with Magill, K. D., Jr.; Subbiah, S.) Green's relations, the  $V$  relation and congruences on  $S(X)$ . *Semigroup Forum* **37** (1988), no. 3, 313–324. (Bernard L. Madison) **89i:20104** 20M20 (54H15)
- Bar-Itzhack, I. Y.** (with Oshman, Yaakov) Square root  $V$ -lambda filtering using normalized state estimates. *Linear algebra in signals, systems, and control* (Boston, MA, 1986), 446–458, *SIAM, Philadelphia, PA*, 1988. (Tohru Katayama) **89k:93205** 93E11



- (with Berman, N.) Control theoretic approach to inertial navigation systems. *J. Guidance Control Dynamics* 11 (1988), no. 3, 237–245. (De Xing Feng) **89j:93077** 93C75 (93B05, 93B07, 93B60)
- Barja Pérez, Javier** ★ Sucesiones exactas de ocho términos en homología de grupos.  $H_2(G, \mathbb{Z}_2)$ . (Spanish) [Eight-term exact sequences in group homology:  $H_2(G, \mathbb{Z}_2)$ ] *Álgebra [Algebra]*, 45. Universidad de Santiago de Compostela, Departamento de Álgebra y Fundamentos, Santiago de Compostela, 1986. vi+108 pp. ISBN 84-600-4640-0 (Title) **89j:18013** 18G99 (20J05)
- Barker, M. A.** (with Krupnik, I. N.) The set of Cesàro limits of subsequences and permutations. (Russian) *Investigations in differential equations and mathematical analysis (Russian)*, 14–18, 170, "Shtiintsa", Kishinev, 1988. (Jozef Antoni) **89k:40010** 40D20
- Barkamkas, Anthony E.** (with Bange, David W.; Host, Linda H.; Slater, P. J.) Efficient near-domination of grid graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 83–92. (B. Zelinka) **89d:05104** 05C35
- (with Bange, David W.; Slater, P. J.) Efficient dominating sets in graphs. *Applications of discrete mathematics* (Clemson, SC, 1986), 189–199, *SIAM, Philadelphia, PA*, 1988. (B. Zelinka) **89k:05080** 05C70 (05C35)
- (with Bange, David W.; Host, Linda H.) Some consequences of the Harary-Palmer similarity property for total graphs. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 53–63. (Peter J. Slater) **89k:05078** 05C60
- Barker, B. M.** (with O'Connell, R. F.) On the completion of the post-Newtonian gravitational two-body problem with spin. *J. Math. Phys.* 28 (1987), no. 3, 661–667. (Summary) **89c:83025** 83C25
- Barker, E.** Intrinsically  $\Sigma^2$  relations. *Ann. Pure Appl. Logic* 39 (1988), no. 2, 105–130. (Cristian Calude) **89j:03087** 03D75 (03D45, 03D60)
- (with Franke, Richard; Goerss, J.) The use of observed data for the initial-value problem in numerical weather prediction. *Comput. Math. Appl.* 16 (1988), no. 1–2, 169–184. (Summary) **89c:65006** 86A10 (86–08)
- Barker, G. P.** (with Yang, Shang Jun) On the exponent of a primitive, minimally strong digraph. *Linear Algebra Appl.* 99 (1988), 177–198. (Robert C. Brigham) **89d:05094** 05C20 (05C30)
- (with Yang, Shang Jun) Semi-iterative and iterative methods for singular  $M$ -matrices. *SIAM J. Matrix Anal. Appl.* 9 (1988), no. 2, 168–180. (L. W. Ehrlich) **89d:65034** 65F10
- Barker, Peter** (with Goldstein, Bernard R.) The role of comets in the Copernican revolution. *Stud. Hist. Philos. Sci.* 19 (1988), no. 3, 299–319. (Kristian Peder Moesgaard) **89j:01016** 01A40 (01A45, 85–03)
- Barker, William H.**  $L^p$  harmonic analysis on  $SL(2, \mathbb{R})$ . *Mem. Amer. Math. Soc.* 76 (1988), no. 393, iv+110 pp. (John F. Price) **89k:22014** 22E30 (22E46)
- Barkhadarov, E. M.** (with Kossyi, I. A.; Mdivnshvili, M. O.; Sokolov, I. V.; Taktakishvili, M. I.) Non-one-dimensional convergent shock waves. *Fluid Dynamics* 23 (1988), no. 2, 296–302; translated from *Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* 1988, no. 2, 164–170 (Russian). (Not in MR) 76L05
- Barkin, Yu. V.** (with Ergasheva, M. E.) Periodic modes of motion of a satellite-gyrost in a triangular point of libration in the circular restricted three-body problem. (Russian) *Problems in the mechanics of a rigid and a deformable body (Russian)*, 12–23, "Nauka", Moscow, 1987. (see **89g:70002**) 70M05 (70F07)
- (with Pankratov, A. A.) The planar motion of a satellite in a gravitation field of a rotating nonspherical planet. (Russian) *Problems in the mechanics of a rigid and a deformable body (Russian)*, 24–36, "Nauka", Moscow, 1987. (see **89g:70002**) 70F05 (70M05)
- Periodic solutions of the first kind for the three-body problem, and the motion of Venus. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 2, 311–314. (From the introduction) **89d:70009** 70F07 (58F40, 70F15)
- (with Pankratov, A. A.) Periodic solutions of Hamiltonian systems in certain degenerate cases. *J. Appl. Math. Mech.* 51 (1987), no. 2, 182–189 (1988); translated from *Prkl. Mat. Mekh.* 51 (1987), no. 2, 235–243 (Russian). (Gerard Thompson) **89f:70021** 70H05 (58F05, 58F30)
- Barkley, Dwight** Slow manifolds and mixed-mode oscillations in the Belousov-Zhabotinskii reaction. *J. Chem. Phys.* 89 (1988), no. 9, 5547–5559. (Summary) **89h:58137** 58F14 (58F40, 80A32, 92A40)
- Near-critical behavior for one-parameter families of circle maps. *Phys. Lett. A* 129 (1988), no. 4, 219–222. (Summary) **89f:58095** 58F14 (34C15, 70K50, 92A09)
- Barkley, Ronald E.** (with Lee, T. Paul) Point representation and hashing of an interval. *Inform. Process. Lett.* 30 (1989), no. 4, 201–203. (Summary) **89k:68023** 68P10
- Barkov, L. M.** (with Arnol'd, V. I.; Belyaev, S. T.; Dimov, G. I.; Kadamtshev, B. B.; Kruglyakov, E. P.; Meshkov, I. N.; Rytov, D. D.; Sidorov, V. A.; Skrinik, A. N.) Boris Valerianovich Chirikov (on his sixtieth birthday). *Soviet Phys. Uspekhi* 31 (1988), no. 7, 682–683 (1989); translated from *Uspekhi Fiz. Nauk* 155 (1988), no. 3, 543–544 (Russian). (Not in MR) 01A70
- Barkovskii, Yu. S.** (with Ogorodnikova, T. V.) Matrices with a positive and simple spectrum. (Russian) *Izv. Severo-Kavkaz. Nauchn. Tsentra Vyssh. Shkoly Estestv. Nauk*, 1987, no. 4, 65–70 (1988). (Anna Lee) **89j:15016** 15A18 (15A48)
- Barland, M.** (with Blanc-Feraud, L.; Menez, J.; Mathieu, Pierre) Image coding using 2-D space-varying linear predictive filters excited by a 2-D multipulse field. (French and German summaries) Multidimensional signal processing. Part II (Noordwijkerhout, 1987). *Signal Process.* 16 (1989), no. 1, 13–19. (see **89j:94003**) 68P25 (94A12)
- Barles, G.** Uniqueness for first-order Hamilton-Jacobi equations and Hopf formula. *J. Differential Equations* 69 (1987), no. 3, 346–367. (Martino Bardi) **89d:35029** 35F25
- (with Perthame, Benoît) Exit time problems in optimal control and vanishing viscosity method. (French summary) *SIAM J. Control Optim.* 26 (1988), no. 5, 1133–1148. (G. F. Raggett) **89i:49021** 49C20 (35B37, 35F20)
- Barlet, D.** Fonctions de type trace réelles et formes hermitiennes horizontales. [Real functions of trace type and horizontal Hermitian forms] *Fonctions de plusieurs variables complexes, V (Paris, 1979–1985)*, 232–244, *Lecture Notes in Math.*, 1188, Springer, Berlin-New York, 1986. (Siegmund Kosarew) **89g:32013** 32C30
- L'espace des feuilletages d'un espace analytique compact. (English summary) [The space of foliations of a compact analytic space] *Ann. Inst. Fourier (Grenoble)* 37 (1987), no. 3, 117–130. (Sandra Hayes) **89d:32050** 32G11 (32G13)
- À propos d'une conjecture de R. Hartshorne. [On a conjecture of R. Hartshorne] *J. Reine Angew. Math.* 374 (1987), 214–220. (Autorreferat (Zbl 595:32039)) **89a:32036** 32M10 (32J99)
- Interaction de strates consécutives pour les cycles évanescents. (English summary) [Interaction of consecutive strata for vanishing cycles] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 12, 473–478. (M. Sebastiani) **89f:32011** 32B30 (14B05)
- (with Varchenko, A. N.) Around the intersection form of an isolated singularity of hypersurface. *Compositio Math.* 67 (1988), no. 2, 149–163. (Tosiaki Kori) **89j:32012** 32B30 (14B05, 58C27)
- Barletta, Antonio** (with Balbinot, Roberto) Switching off black hole evaporation? *Classical Quantum Gravity* 5 (1988), no. 1, L11–L13. (Derek Raine) **89g:83029** 83C47
- (with Balbinot, Roberto) Behaviour of a test field in a vacuum bubble space-time. (Italian and Russian summaries) *Nuovo Cimento B* (11) 102 (1988), no. 2, 179–193. (Derek Raine) **89m:83045** 83C47 (81E20)
- Bar-Lev, S. K.** (with Enis, P.) Reproducibility in the one-parameter exponential family. *Metrika* 32 (1985), no. 6, 391–394. (Syed N. U. A. Kirmani) **89c:62029** 62E10
- (with Stramer, Osnat) Characterizations of natural exponential families with power variance functions by zero regression properties. *Probab. Theory Related Fields* 76 (1987), no. 4, 509–522. (N. R. Mohan) **89a:62036** 62E10
- Barlotti, Marco** A divisibility criterion. (Italian) *Archimede* 39 (1987), no. 2–3, 124–128. (Nikos Tranakis) **89k:11005** 11A05 (11Y99)
- On a construction for Fitting formations. (Italian summary) *Boll. Un. Mat. Ital. A* (7) 2 (1988), no. 1, 73–79. (Surinder K. Sehgal) **89e:20036** 20D10
- Barlow, J. L.** (with Nichols, N. K.; Plemmons, Robert J.) Iterative methods for equality-constrained least squares problems. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 5, 892–906. (W. C. Rheinboldt) **89h:65100** 65K05 (65F10, 90C20)
- Barlow, M. T.** Necessary and sufficient conditions for the continuity of local time of Lévy processes. *Ann. Probab.* 16 (1988), no. 4, 1389–1427. (Mamoru Kanda) **89k:60114** 60J55 (60G17, 60J30)
- (with Perkins, Edwin A.) Brownian motion on the Sierpiński gasket. *Probab. Theory Related Fields* 79 (1988), no. 4, 543–623. (F. B. Knight) **89g:60241** 60J60 (60J25, 60J65)
- Barlow, Richard** Utility theory. *Theory of reliability (Varennia, 1984)*, 245–253, *Proc. Internat. School of Phys. "Enrico Fermi", XCIV, North-Holland, Amsterdam-New York, 1986*. (Editors) **89d:90030** 90A10 (90A05)
- (with Mensing, R. W.; Smiriga, N. G.) Using influence diagrams to solve a calibration problem. *Probability and Bayesian statistics (Innsbruck, 1986)*, 17–30, *Plenum, New York-London*, 1987. (Kurt Hoffmann) **89f:62060** 62K05 (62J05)
- (with Zhang, Xiang) Bayesian analysis of inspection sampling procedures discussed by Deming. *J. Statist. Plann. Inference* 16 (1987), no. 3, 285–296. (S. N. Alam) **89h:62163** 62N10
- see also Basu, Debabrata<sup>1</sup>, **89j:62005**
- Barlow, William E.** (with Prentice, Ross L.) Residuals for relative risk regression. *Biometrika* 75 (1988), no. 1, 65–74. (Not in MR) 62M99
- Barma, Mustansir** (with Dhar, Deepak; Chakrabarti, B. K.; Taraphder, A.) The travelling salesman problem on a randomly diluted lattice. *J. Phys. A* 20 (1987), no. 15, 5289–5298. (Michel Troyon) **89a:90059** 90B15 (82A67)
- Barmish, B. Ross** (with Wei, K. H.) Simultaneous stabilizability of single input-single output systems. *Modelling, identification and robust control (Stockholm, 1985)*, 431–443, *North-Holland, Amsterdam-New York*, 1986. (Summary) **89c:93063** 93D25 (93B50)
- (with Petersen, Ian R.) Control effort considerations in the stabilization of uncertain dynamical systems. *Systems Control Lett.* 9 (1987), no. 5, 417–422. (Summary) **89k:93190** 93D99 (93B50, 93D15)
- (with Wei, K. H.) An iterative design procedure for simultaneous stabilization of MIMO systems. *Automatica—J. IFAC* 24 (1988), no. 5, 643–652. (Jerzy Klamka) **89k:93180** 93D25 (93C35, 93C60)
- (with Fu, Minyue; Saleh, S.) Stability of a polytope of matrices: counterexamples. *IEEE Trans. Automat. Control* 33 (1988), no. 6, 569–572. (Igor N. Livin) **89g:93084** 93D99 (12D10, 15A18, 34D20, 34D30)
- (with Ackermann, J. E.) Robust Schur stability of a polytope of polynomials. *IEEE Trans. Automat. Control* 33 (1988), no. 10, 984–986. (Mohamed Mansour) **89m:93073** 93D99 (30C15)
- (with Fu, Minyue) Maximal unidirectional perturbation bounds for stability of polynomials and matrices. *Systems Control Lett.* 11 (1988), no. 3, 173–179. (Hong Xing Zhou) **89i:93098** 93D99 (34D10)
- fattorosi-Barnaba, M.** see Fattorosi-Barnaba, M.
- Barnabei, Mariëna** (with Brini, Andrea) Symmetrized skew determinants. *Comm. Algebra* 15 (1987), no. 7, 1455–1468. (Michael Clausen) **89a:20010** 20C32 (20G15)
- (with Brini, Andrea) The Littlewood-Richardson rule for co-Schur modules. *Adv. in Math.* 67 (1988), no. 2, 143–173. (J. Désarménien) **89b:20022** 20C30 (15A75)
- Barnard, G. A.** (with Chernoff, Herman; Louis, Thomas A.; Peto, Richard; Whitehead, John Raymond) Discussion of: "On the allocation of treatments in sequential medical trials" [Internat. Statist. Rev. 53 (1985), no. 1, 1–13; MR 89i:62171] by J. A. Bather and "The search for optimality in clinical trials" [ibid. 53 (1985), no. 1, 15–24; MR 89i:62172] by P. Armitage. With replies by Bather and Armitage. *Internat. Statist. Rev.* 53 (1985), no. 1, 25–36. (Per Kragh Andersen) **89i:62173** 62P10 (62L10, 92A07)
- R. A. Fisher—a true Bayesian? (French summary) *Internat. Statist. Rev.* 55 (1987), no. 2, 183–189. (William J. Adams) **89j:01047** 01A60
- Barnard, Mildred Macfarlan** see Field, J. B. F. et al., **89m:01088**
- Barndorff-Nielsen, O. E.** (with Eriksen, Poul Svante) ★ Decomposition, factorization and invariance of measures, with a view to applications in statistics. *Memoirs, T. Aarhus University, Institute of Mathematics, Department of Theoretical Statistics, Aarhus*, 1985. 58 pp. (M. P. Erkov) **89b:28003** 28A50 (28C10, 62A99)
- (with Cox, David Roxbee; Reid, N.) The role of differential geometry in statistical theory. (French summary) *Internat. Statist. Rev.* 54 (1986), no. 1, 83–96. (Javad Behboodian) **89b:62001** 62A99 (01A65, 53A55)
- On some differential geometric concepts of relevance to statistics. *Geometrization of statistical theory (Lancaster, 1987)*, 53–90, *ULDM Publ., Lancaster*, 1987. (Summary) **89f:62008** 62A99 (53B21)
- (with Biesl, P.) Coordinate-free definition of structurally symmetric derivative strings. *Adv. in Appl. Math.* 9 (1988), no. 1, 1–6. (H. Rund) **89e:53020** 53A55 (53A45)



- (with Blæsild, P.) Combination of reproductive models. *Ann. Statist.* **16** (1988), no. 1, 323–341. (Ryuei Nishii) **89b:62040** 62E15 (05C20, 62F03, 62J02)
- (with Jupp, P. E.) Differential geometry, profile likelihood,  $L$ -sufficiency and composite transformation models. *Ann. Statist.* **16** (1988), no. 3, 1009–1043. (Bent Jørgensen) **89b:62055** 62F99 (62A10)
- (with Hall, Peter) On the level-error after Bartlett adjustment of the likelihood ratio statistic. *Biometrika* **75** (1988), no. 2, 374–378. (Sadanori Konishi) **89i:62027** 62E20
- (with Christiansen, C.) Erosion, deposition and size distributions of sand. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1853, 335–352. (Summary) **89e:86011** 86A60
- Barner, Martin** (with Flohr, Friedrich) ★ Analysis. I. (German) Third edition. de Gruyter Lehrbuch. [de Gruyter Textbook] Walter de Gruyter & Co., Berlin-New York, 1987. 494 pp. ISBN 3-11-011516-6 (R. G. Bartle) **89j:26001** 26-01 (00A05)
- Eine differentialgeometrische Kennzeichnung der allgemeinen Dupin'schen Zykliken. [A differential-geometric characterization of the general Dupin cyclides] *Aequationes Math.* **34** (1987), no. 2-3, 277–286. (Wolfgang Kühnel) **89a:53009** 53A05 (53A17)
- Barnes, Bruce A.** The spectrum of integral operators on Lebesgue spaces. *J. Operator Theory* **18** (1987), no. 1, 115–132. (Jean Ludwig) **89i:46065** 46K10 (43A20, 47B38, 47D30, 47G05)
- Fredholm theory in a Banach algebra of operators. *Proc. Roy. Irish Acad. Sect. A* **87** (1987), no. 1, 1–11. (T. T. West) **89c:47015** 47A53 (47D30)
- The spectral and Fredholm theory of extensions of bounded linear operators. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 941–949. (Sandy Grabiner) **89i:47008** 47A20 (47A10, 47A53, 47B38)
- Barnes, Casper W.** (with Tokaji, Isao) Minimum unit noise gain in nonminimal state-space realizations of digital filters. *IEEE Trans. Circuits and Systems* **35** (1988), no. 4, 455–457. (Not in MR) **93B15**
- Barnes, David C.** Extremal problems for eigenvalue functionals. II. *SIAM J. Math. Anal.* **19** (1988), no. 5, 1151–1161. (Catherine Bandle) **89b:35246** 35P15 (49A99, 73H05, 73K40)
- Barnes, Donald W.** On Carlson's spectral sequence. *J. Pure Appl. Algebra* **48** (1987), no. 3, 221–222. (Frederick Cohen) **89i:20075** 20J06 (18G40)
- Barnes, Earl R.** (with Vannelli, Anthony; Walker, James Q.) A new heuristic for partitioning the nodes of a graph. *SIAM J. Discrete Math.* **1** (1988), no. 3, 299–305. (Oleg Taras-zow) **89i:05150** 05C35 (05C50, 90C08)
- see also Dikin, I. I., **89b:90142**
- Barnes, F. W.** Some games of F. Harary, based on finite groups. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), A, 21–30. (Jonathan I. Hall) **89i:20042** 20D60 (20B30, 20B35)
- Barnes, J. Wesley** (with Jensen, Paul A.) ★ Network flow programming. Reprint of the 1980 original. Robert E. Krieger Publishing Co., Inc., Melbourne, FL, 1987. xviii+408 pp. ISBN 0-89464-210-3 (Editors) **89i:90152** 90C35 (90B10)
- Barnes, T.** (with Daniell, G. J.) Numerical solution of spin systems and the  $S = \frac{1}{2}$  Heisenberg antiferromagnet using guided random walks. *Phys. Rev. B* (3) **37** (1988), no. 7, 3637–3651. (Muthiah Daniel) **89d:82006** 82-08 (82A41, 82A68)
- Barnett, A. R.** (with Thompson, I. J.) Modified Bessel functions  $I_\nu(z)$  and  $K_\nu(z)$  of real order and complex argument, to selected accuracy. *Comput. Phys. Comm.* **47** (1987), no. 2-3, 245–257. (John P. Coleman) **89b:65054** 65D20 (33A40, 65-04)
- Barnett, S. M.** (with Knight, P. L.) Squeezing in correlated quantum systems. Special issue on squeezed light. *J. Modern Opt.* **34** (1987), no. 6-7, 841–853. (see **89m:81213a**) **81K05** (81D30)
- (with Gilson, C. R.; Stenholm, S.) Squeezed quantum fluctuations and noise limits in amplifiers and attenuators. Special issue on squeezed light. *J. Modern Opt.* **34** (1987), no. 6-7, 949–963. (see **89m:81213a**) **81K05**
- Barnett, Stephen** (with Gover, M. J. C.) New algorithms for inversion of Toeplitz-like patterned matrices. *Mathematics in signal processing* (Bath, 1985), 499–511, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (T. Ando) **89e:15008** 15A09 (47B35, 94A11)
- (with Mori, Takehiro) On stability tests for some classes of dynamical systems with perturbed coefficients. *IMA J. Math. Control Inform.* **5** (1988), no. 2, 117–123. (P. C. Parks) **89e:93176** 93D20 (49B50, 93C40)
- Euclidean remainders for generalized polynomials. *Linear Algebra Appl.* **99** (1988), 111–122. (Anna Maria Perdon) **89i:12006** 12E05 (15A24, 93B25)
- (with Johnson, Charles Royal) Inverse comrade matrices. *Linear and Multilinear Algebra* **22** (1988), no. 4, 325–333. (Ar. Meenakshi) **89i:15005** 15A09 (15A57)
- Barnett, V.** The bivariate exponential distribution: a review and some new results. *Statist. Neerlandica* **39** (1985), no. 4, 343–356. (S. Talwalker) **89k:62017** 62E15 (62F10)
- Outliers and order statistics. *Comm. Statist. Theory Methods* **17** (1988), no. 7, 2109–2118. (Summary) **89e:62057** 62G30
- Barnette, D. W.** Decomposition theorems for the torus, projective plane and Klein bottle. *Discrete Math.* **70** (1988), no. 1, 1–16. (Andrew Vince) **89i:05065** 05C10 (52A25, 57Q15)
- (with Edelson, Allan) All orientable 2-manifolds have finitely many minimal triangulations. *Israel J. Math.* **62** (1988), no. 1, 90–98. (K. S. Sarkaria) **89e:57018** 57Q15
- An impediment to polyhedrality. *J. Combin. Theory Ser. A* **48** (1988), no. 2, 259–265. (Andrew Vince) **89f:52011** 52A25
- Barnhill, Robert E.** (with Makatura, George T.; Stead, Sarah E.) A new look at higher-dimensional surfaces through computer graphics. *Geometric modeling*, 123–129, *SIAM, Philadelphia, PA*, 1987. (see **89b:65010**) **65D10**
- (with Piper, B.; Rescorla, Kim L.) Interpolation to arbitrary data on a surface. *Geometric modeling*, 281–289, *SIAM, Philadelphia, PA*, 1987. (see **89b:65010**) **65D05**
- Bar-Noy, T.** (with Friedman, M.; Blau, Matthias; Kandel, Abraham) Certain computational aspects of fuzzy decision trees. *Fuzzy Sets and Systems* **28** (1988), no. 2, 163–170. (Summary) **89i:68055** 68Q25 (03E72, 68T20)
- Barnsley, G. R.** (with Soh, W. K.) Computation of nonlinear water waves generated by a submerged body. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 611–620, *North-Holland, Amsterdam-New York*, 1988. (Summary) **89d:76004** 76-08 (76B10, 76B15)
- Barnsley, M. F.** (with Demko, S. G.; Elton, J. H.; Geronimo, J. S.) Invariant measures for Markov processes arising from iterated function systems with place-dependent probabilities. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **24** (1988), no. 3, 367–394. (Pierre Moussa) **89k:60088** 60J05 (28D05, 58F11)
- see also Fractal approximation, **89b:58090**
- Barnyak, M. Ya.** Investigation of the small oscillations of a spherical pendulum with a cavity filled with a viscous incompressible fluid. (Russian) *Applied problems in the dynamics and stability of multidimensional systems* (Russian), 27–33, i, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) **89b:76014** 76D05 (70E99)
- Application of the method of orthogonal projections to the investigation of small oscillations of a fluid in a vessel. (Russian) *Mat. Fiz. Nelinein. Mekh.* **10**(44) (1988), 37–43, 88. (Summary) **89g:76020** 76B99 (65N30, 76-08)
- Barojas W., Jorge** (with Trigueros G., Maria) A model for communication in teaching. (Spanish) *Proceedings of the XIX National Congress of the Mexican Mathematical Society*, Vol. 1 (Spanish) (Guadalajara, 1986), 109–128, *Aportaciones Mat.: Comun.*, 3, Soc. Mat. Mexicana, Mexico City, 1987. (see **89k:00008**) **00A25**
- granja Barón, Angel** see Granja Barón, Angel
- Baron, Jonathan** Second-order probabilities and belief functions. *Theory and Decision* **23** (1987), no. 1, 25–36. (Summary) **89d:03018** 03B48 (60A05)
- Baron, Judson R.** (with Pervaiz, Mehtab M.) Temporal and spatial adaptive algorithm for reacting flows. *Comm. Appl. Numer. Methods* **4** (1988), no. 1, 97–111. (A. Pozzi) **89g:76010** 76-08 (65M50, 76Y05, 80A32)
- Baron, Karol** (with Jarczyk, Witold) On a way of division of segments. *Aequationes Math.* **34** (1987), no. 2-3, 195–205. (F. W. Carroll) **89b:39003** 39A10 (39B10)
- (with Volkmann, Peter) On the Cauchy equation modulo  $2$ . *Fund. Math.* **131** (1988), no. 2, 143–148. (John A. Baker) **89m:39014** 39B20 (39B30, 39B70)
- Roelants van Baronaigien, D.** see Roelants van Baronaigien, D.
- van Baronaigien, D.** see Roelants van Baronaigien, D.
- Baroncelli, Giovanni** see Cavalleri, Donavento, **89d:01018**
- Barone, M. R.** (with Yang, R. J.) Boundary integral equations for recovery of design sensitivities in shape optimization. *AIAA J.* **26** (1988), no. 5, 589–594. (Summary) **89e:73030** 73K40
- Barone, Piero** Space-time stochastic modeling of biological phenomena smoothly varying in space. (French summary) *Spatial processes and spatial time series analysis* (Brussels, 1985), 1–13, *Travaux Rech.*, 11, Publ. Fac. Univ. Saint-Louis, Brussels, 1987. (Summary) **89d:92009** 92A07
- Barone Netto, Angelo** (with Cesar, Mauro O.) Nonconservative positional systems—stability. *Dynamics Stability Systems* **2** (1987), no. 3-4, 213–221. (Ram Krishan Sharma) **89j:70029** 70K20
- Baronets, V. D.** Specialized devices for processing vague information. (Russian) *Decision-making methods and systems. Applied problems in the analysis of solutions in technical systems* (Russian), 54–60, 148, *Rizhsk. Politekh. Inst.*, Riga, 1986. (see **89h:00001**) **03B52** (94D05)
- Baronti, Marco** (with Papini, Pier Luigi) Norm-one projections onto subspaces of  $l_p$ . *Ann. Mat. Pura Appl.* (4) **152** (1988), 53–61. (H. E. Lacey) **89k:46031** 46B25
- Norm-one projections onto subspaces of  $l^\infty$ . *Arch. Math. (Basel)* **51** (1988), no. 3, 242–246. (C. Franchetti) **89i:46016** 46B20 (41A65)
- Barossor, Krasimir R.** An optimal control of the service in a system with evident and latent service breakdowns. (Bulgarian summary) *Mathematics and mathematical education* (Bulgarian) (Sunny Beach (Slivnitsa) Bryag, 1987), 315–319, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89d:93066** 93C75 (60K25)
- Bard, G.** First passage problems for Ehrenfest model. *Probability theory and mathematical statistics with applications* (Visegrad, 1985), 3–6, *Reidel, Dordrecht-Boston, MA*, 1988. (Lyuben R. Mutafchiev) **89g:60026** 60C05 (60F05)
- Barouch, E.** (with Fokas, A. S.; Papageorgiou, V. G.) The bi-Hamiltonian formulation of the Landau-Lifshitz equation. *J. Math. Phys.* **29** (1988), no. 12, 2628–2633. (Yisong Yang) **89i:58047** 58F07 (35Q20, 58F37, 58G37)
- Barozzi, Elisabetta** (with Tamanini, Italo) Penalty methods for minimal surfaces with obstacles. *Ann. Mat. Pura Appl.* (4) **152** (1988), 139–157. (Guy Jumarie) **89m:49057** 49D30 (53A10)
- Barr, A. D. S.** (with Miyassar, A. M.) The linear oscillator under parametric excitation with fluctuating frequency. *J. Sound Vibration* **124** (1988), no. 1, 79–89. (James A. Murdock) **89i:70027** 70J30 (34C28, 34C30, 70J25)
- Barr, Avron** see Handbook: Artificial Intelligence, **89e:68104a** and **89e:68104b**
- Barr, Michael** On categories with effective unions. *Categorical algebra and its applications* (Louvain-La-Neuve, 1987), 19–35, *Lecture Notes in Math.*, 1348, Springer, Berlin-New York, 1988. (R. H. Street) **89k:18021** 18B25 (18E15)
- Barr, S. M.** (with Mohapatra, Pramoda K.) Changing coupling “constants” and violation of the equivalence principle. *Phys. Rev. D* (3) **38** (1988), no. 10, 3011–3019. (Summary) **89k:83068** 83E15 (83E30)
- Barra, Raymond** Fermeture de l'espace des divergences et séparation de l'espace des feuilles. (English summary) [Closure of the space of divergences and separation of the spaces of leaves] *Ann. Fac. Sci. Toulouse Math.* (5) **8** (1986/87), no. 2, 121–130. (Lawrence Conlon) **89g:57037** 57R30
- Distributions invariantes. [Invariant distributions] *Portugal. Math.* **44** (1987), no. 3, 227–242. (George Virsik) **89b:58019** 58A30 (46F99, 53C12, 58C35)
- Barragy, E.** (with Carey, G. F.; McLay, Robert T.; Sharma, M.) Element-by-element vector and parallel computations. *Comm. Appl. Numer. Methods* **4** (1988), no. 3, 299–307. (Not in MR) **65W05**
- (with Carey, G. F.) A partitioning scheme and iterative solution for sparse bordered systems. *Comput. Methods Appl. Mech. Engrg.* **70** (1988), no. 3, 321–327. (Summary) **89b:65047** 65F10
- Barral, L. M.** (with Lagakos, S. W.; De Gruttola, V.) Nonparametric analysis of truncated survival data, with applications to AIDS. *Biometrika* **75** (1988), no. 3, 515–523. (Summary) **89i:62175** 62P10 (62G05)
- Barrar, R. B.** (with Loeb, H. L.; Ziegler, Z.) Multiple node splines with boundary conditions: the fundamental theorem of algebra for monosplines and Gaussian quadrature formulae for splines. *J. Math. Anal. Appl.* **129** (1988), no. 1, 90–102. (Len Bos) **89b:41019** 41A15 (41A55)
- Barraud, A.** (with Roche-Zamboni, I.) Identification multivariable en ligne: une approche paramétrique et structurale simultanée. (English summary) [On-line multivariable identification: a simultaneous parametric and structural approach] *RAIRO Automat.-Prod. Inform. Ind.* **22** (1988), no. 2, 177–199. (G. Banon) **89e:93202** 93E12 (93B30, 93C05)
- sá Barreto, António** see Sá Barreto, António
- sá Barreto, F. C.** see Sá Barreto, F. C.

- Barreto, S. (with Hajek, D. W.) Spaces which are Wallman remainders. *Caribbean J. Math.* 5 (1986), no. 1, 13–18. (Ronnie Levy) **89c:54054** 54D40
- Barrett, B. R. (with Balantekin, A. B.; Schmitt, H. A.) Coherent states for the harmonic oscillator representations of the orthosymplectic supergroup  $Osp(1/2N, \mathbb{R})$ . *J. Math. Phys.* 29 (1988), no. 7, 1634–1639. (R. Delbourgo) **89c:22032** 22E65 (81D30)
- (with Schmitt, H. A.; Halse, P.; Balantekin, A. B.) Orthosymplectic supersymmetry complementarily to combined Bose-Fermi seniority algebras. *Phys. Lett. B* 210 (1988), no. 1–2, 1–4. (Summary) **89j:81263** 81G30
- Barrett, C. R. (with Pattanaik, Prasanta K.) Aggregation of probability judgements. *Econometrica* 55 (1987), no. 5, 1237–1241. (From the introduction) **89f:90004** 90A05 (62C05)
- Barrett, David E. A remark on the global embedding problem for three-dimensional CR manifolds. *Proc. Amer. Math. Soc.* 102 (1988), no. 4, 888–892. (Gregory Fredricks) **89h:32035** 32F25
- Barrett, Gerald V. (with Alexander, Ralph A.; Alliger, George M.; Carson, Kenneth P.) Towards a general model of nonrandom sampling and the impact on population correlation: generalizations of Berkson's fallacy and restriction of range. *British J. Math. Statist. Psych.* 39 (1986), no. 1, 90–105. (Title) **89h:62173** 62P15
- Barrett, H. H. (with Landesman, B. Tehan) Gaussian amplitude functions that are exact solutions to the scalar Helmholtz equation. *J. Opt. Soc. Amer. A* 5 (1988), no. 10, 1610–1619. (Summary) **89j:78069** 78A40
- Barrett, John W. (with Elliott, Charles M.) Total flux estimates for a finite-element approximation of parabolic equations. *IMA J. Numer. Anal.* 6 (1986), no. 3, 253–264. (Summary) **89h:65173** 65N30
- A convergence result for linearised Regge calculus. *Classical Quantum Gravity* 5 (1988), no. 9, 1187–1192. (Matthias Zähringer) **89k:83031** 83C25 (83C27)
- Barrett, Louis C. (with Winslow, Dennis N.) Interlacing theorems for interface Sturm-Liouville systems. *J. Math. Anal. Appl.* 129 (1988), no. 2, 533–559. (Joyce R. McLaughlin) **89m:34029** 34B25
- Barrett, Wayne W. (with Forcade, Rodney W.; Pollington, Andrew D.) On the spectral radius of a  $(0, 1)$  matrix related to Mertens' function. Proceedings of the Victoria Conference on Combinatorial Matrix Analysis (Victoria, BC, 1987). *Linear Algebra Appl.* 107 (1988), 151–159. (Aleksandar Ivić) **89j:15029** 15A36 (05C99, 11C20, 11M26)
- (with Robinson, Donald W.) The Jordan 1-structure of a matrix of Redheffer. *Linear Algebra Appl.* 112 (1989), 57–73. (Shao Kuan Li) **89k:15018** 15A21
- Barria, José On asymptotic Toeplitz operators. *Acta Sci. Math. (Szeged)* 51 (1987), no. 3–4, 435–440. (V. V. Peller) **89f:47037** 47B35
- Barriell, Nils Aall More about existence theorems and the notion of existence. *Theoret. Papers* 8 (1988), 79–88. (Summary) **89h:03006** 03A05 (00A25)
- Barrios Zamudio, Ernesto (with López Estrada, Jesús) On a regularized Gauss-Markov estimator with optimal parameter estimation. (Spanish) *Proceedings of the XIXth National Congress of the Mexican Mathematical Society, Vol. 2 (Spanish) (Guadalajara, 1986)*, 305–310. *Aportaciones Mat.: Comun., 4, Soc. Mat. Mexicana, Mexico City, 1987.* (see **89k:00009**) 62J07
- Barrow, Andrew R. (with Cover, Thomas M.) A bound on the financial value of information. *IEEE Trans. Inform. Theory* 34 (1988), no. 5, part I, 1097–1100. (Summary) **89k:90016** 90A09
- Barrow, E. N. (with Barbu, Viorel) Bang-bang controllers for an optimal cooling problem. (Russian and Polish summaries) *Control Cybernet.* 16 (1987), no. 2, 91–102. (G. F. Raggett) **89h:49034** 49B22 (49A29, 49B36)
- (with Barbu, Viorel; Jensen, Robert) The necessary conditions for optimal control in Hilbert spaces. *J. Math. Anal. Appl.* 133 (1988), no. 1, 151–162. (Dan Tiba) **89h:49018** 49B27 (47H15, 49C20)
- (with Jensen, Robert) Total risk aversion, stochastic optimal control, and differential games. *Appl. Math. Optim.* 19 (1989), no. 3, 313–327. (Jati K. Sengupta) **89k:90203** 90D30 (90A10, 90D25, 93E20)
- Barrow, F. Hutton (with Schmidt, Charles P.) Entropy-based selection with multiple objectives. Multiple criteria decision making. *Naval Res. Logist.* 35 (1988), no. 6, 643–654. (Summary) **89k:90020** 90A10 (90C31)
- shepherd-Barrow, N. I. see Shepherd-Barrow, N. I.
- alves de Barros, Abdénago see Alves de Barros, Abdénago
- Barros, Manuel (with Chen, Bang-Yen; Garay, Oscar J.) Spherical finite type hypersurfaces. *Algebras Groups Geom.* 4 (1987), no. 1, 58–72. (Y. Tashiro) **89c:53092** 53C40 (53A05, 53A10)
- (with Santos, Florentino G.) On the first Chern class of a complex submanifold in an almost Hermitian manifold and the normal connection. *Colloq. Math.* 54 (1987), no. 1, 59–65. (Lieven Vanhecke) **89a:53060** 53C40 (53C15, 57R20)
- (with Chen, Bang-Yen) Stationary 2-type surfaces in a hypersphere. *J. Math. Soc. Japan* 39 (1987), no. 4, 627–648. (Leopold Verstraeten) **89b:53091** 53C40
- (with Urbano, Francisco) Spectral geometry of minimal surfaces in the sphere. *Tôhoku Math. J. (2)* 39 (1987), no. 4, 575–588. (Robert Brooks) **89b:58214** 58G25 (53C40)
- Barroso Filho, Wilton (with Comte, Claude) La formalisation de la dynamique par Lagrange (1736–1813). [The formalization of dynamics by Lagrange (1736–1813)] *Sciences à l'époque de la Révolution Française*, 329–348. *Lib. Bicentenaire Révolution Française, Lib. Sci. Tech. Albert Blanchard, Paris, 1988.* (see **89m:01050**) 01A50
- Barrow, John D. (with Tipler, Frank J.) Action principles in nature. *Nature* 331 (1988), no. 6151, 31–34. (M. A. H. MacCallum) **89g:83056** 83F05 (58E30, 85A40)
- (with Deruelle, Nathalie) The confrontation of no-scale supergravity with cosmology. *Nuclear Phys. B* 297 (1988), no. 4, 733–747. (W. Cox) **89b:83091** 83E50 (81E20, 83F05)
- (with Burd, A. B.) Inflationary models with exponential potentials. *Nuclear Phys. B* 308 (1988), no. 4, 929–945. (C. B. Collins) **89i:83067** 83F05 (83C20)
- String-driven inflationary and deflationary cosmological models. *Nuclear Phys. B* 310 (1988), no. 3–4, 743–763. (Frans R. Klinkhamer) **89m:83098** 83F05 (83C75)
- (with Cotsakis, S.) Inflation and the conformal structure of higher-order gravity theories. *Phys. Lett. B* 214 (1988), no. 4, 515–518. (Summary) **89j:83058** 83D05 (83F05)
- Barry, Daniel Nonparametric Bayesian regression. *Ann. Statist.* 14 (1986), no. 3, 934–953. (Summary) **89a:62149** 62J02 (62F15, 62G05)
- Barry, J. H. (with Khatun, M.; Tanaka, Tomoyasu) Exact solutions for Ising-model even-number correlations on planar lattices. *Phys. Rev. B* (3) 37 (1988), no. 10, part A, 5193–5204. (H. N. V. Temperley) **89b:82102** 82A68
- Barry, J. M. (with Wachspress, E. L.) A method of parallel iteration based on polynomial correction. *Computational techniques and applications: CTAC-87 (Sydney, 1987)*, 93–98. North-Holland, Amsterdam-New York, 1988. (Summary) **89g:65176** 65W05 (65F10)
- Barry, Michael J. J. Schur indices and  ${}^2D_4(q^2)$ ,  $q$  odd. *J. Algebra* 117 (1988), no. 2, 522–524. (Olaf Manz) **89h:20010** 20C15
- Barry, Michele (with Cyrluk, David; Kapur, Deepak; Mundy, J. L.; Nguyen, Van-Duc) A multi-level geometric reasoning system for vision. Geometric reasoning (Oxford, 1986). *Artificial Intelligence* 37 (1988), no. 1–3, 291–332. (see **89j:68007**) 68T10 (13–04)
- Barry, P. D. (with Hurley, D. J.) Generating functions for relatives of classical polynomials. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 839–846. (Mourad E. H. Ismail) **89f:33025** 33A99 (05A15)
- Barry, Phillip J. (with Goldman, Ronald N.) A recursive proof of a B-spline identity for degree elevation. *Comput. Aided Geom. Design* 5 (1988), no. 2, 173–175. (Len Bos) **89h:41020** 41A15 (65D07)
- Bars, Itzhak (with Yankielowicz, Shimon) The string field embedded in a loop space geometry. *Phys. Lett. B* 196 (1987), no. 3, 329–335. (A. I. Pashnev) **89b:81116** 81E13 (17B65, 53C80, 58B20, 81E30)
- (with Pope, C. N.; Sezgin, E.) Massless spectrum and critical dimension of the supermembrane. *Phys. Lett. B* 198 (1987), no. 4, 455–460. (Pierre Gravel) **89b:81152** 81E20 (81E30, 83E15, 83E30)
- First massive level and anomalies in the supermembrane. *Nuclear Phys. B* 308 (1988), no. 2–3, 462–476. (Summary) **89j:81159** 81E99 (81E30, 83E15, 83E30)
- (with Pope, C. N.; Sezgin, E.) Central extensions of area preserving membrane algebras. *Phys. Lett. B* 210 (1988), no. 1–2, 85–91. (Enore Guadagnini) **89j:81158** 81E99 (58G35, 81E30, 83E15, 83E30)
- Barsegayan, V. R. A differential pursuit game with prescribed duration in a gravitational field. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1988, vyp. 2, 97–98, 133. (Summary) **89h:90277** 90D26 (49A45)
- Barsky, Brian A. (with Bartels, Richard H.; Beatty, John C.) ★ An introduction to splines for use in computer graphics and geometric modeling. With forewords by Pierre Bézier and A. Robin Forrest. *Morgan Kaufmann, Palo Alto, CA, 1987.* xiv+476 pp. ISBN 0-934613-27-3 (R. K. Beaton) **89f:65018** 65D10 (41A15, 65–01, 65D07)
- ★ Computer graphics and geometric modeling using beta-splines. Computer Science Workbook, 2. Springer-Verlag, Berlin-New York, 1988. x+156 pp. ISBN 3-540-70006-4 (Antonio López-Carmona) **89g:65015** 65D10 (65–04, 68U05)
- Barsky, David J. (with Aizenman, Michael; Fernández, Roberto) The phase transition in a general class of Ising-type models is sharp. *J. Statist. Phys.* 47 (1987), no. 3–4, 343–374. (Alan D. Sokal) **89f:82013** 82A25 (81E25, 82A43, 82A68)
- Barsoom, Magdy Yousef On the asymptotic behaviour of solutions of linear systems of two ordinary equations of first order. *Demonstratio Math.* 21 (1988), no. 1, 201–214. (Leonid Yu. Motylev) **89j:34075** 34E05 (34A30, 34C11)
- Barsotti, Iacopo Theta functions and differential equations. (Italian. English summary) *Rend. Sem. Mat. Fis. Milano* 55 (1985), 37–42 (1988). (John B. Little) **89d:14058** 14K25 (14L10)
- see also Cristante, V., **89b:01040**
- Barsov, S. S. (with Uflyanov, V. V.) The difference of Gaussian measures. (Russian) *Probability distributions and mathematical statistics (Russian) (Fergana, 1983)*, 48–60, 488, "Fan", Tashkent, 1986. (V. J. Paulauskas) **89g:60007** 60B11 (60G15)
- A comparison principle. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 3, 453–464; translated in *Theory Probab. Appl.* 33 (1988), no. 3, 423–433. (Werner Wolf) **89m:60016** 60B11
- Barsuk, L. O. Absolute stability of distributed systems in different nonequivalent norms. (Russian) *Dynamics of systems (Russian)*, 59–65, 197, *Gorkov. Gos. Univ., Gorki, 1986.* (see **89b:93007**) 45M10 (45N05)
- Bart, H. (with Hoogland, H.) Complementary triangular forms of pairs of matrices, realizations with prescribed main matrices, and complete factorization of rational matrix functions. *Linear Algebra Appl.* 103 (1988), 193–228. (L. Rodman) **89c:15017** 15A21 (15A23, 47A68, 93B25)
- (with Jansen, P. S. M. Kop) Upper triangularization of matrices by lower triangular similarities. *Linear Algebra Appl.* 103 (1988), 229–248. (John Maroulas) **89f:15005** 15A09
- Upper triangularization of matrices by permutations and lower triangular similarity transformations. *Linear Algebra Appl.* 110 (1988), 255–261. (A. Böttcher) **89j:15021** 15A23 (15A21)
- Bartalei, A. (with Catanese, F.) Surfaces with  $K^2 = 6$ ,  $\chi = 4$ , and with torsion. Conference on algebraic varieties of small dimension (Turin, 1985). *Rend. Sem. Mat. Univ. Politec. Torino 1986, Special Issue*, 91–110 (1987). (Paltin Ionescu) **89a:14044** 14J29 (14J10)
- Bartels, J. (with Wu, Tai Tsun) Semiclassical analysis of the weak-coupling limit of SU(2) lattice gauge theory: the subspace of constant fields. *Phys. Rev. D* (3) 37 (1988), no. 8, 2307–2318. (Summary) **89m:81120** 81E25
- (with Falck, N. K.) Path integral on a group manifold and the lattice gauge theory Hamiltonian. *Z. Phys. C* 38 (1988), no. 3, 483–493. (Kornél Szlachányi) **89j:81055** 81C35 (58B99, 58D30, 81E25)
- Bartels, P. H. (with Duckstein, L.; Weber, J. E.) Organization of a knowledge base by Q-analysis. *Appl. Math. Comput.* 26 (1988), no. 4, 289–301. (Summary) **89c:92008** 92A07
- Bartels, Richard H. (with Beatty, John C.; Barsky, Brian A.) ★ An introduction to splines for use in computer graphics and geometric modeling. With forewords by Pierre Bézier and A. Robin Forrest. *Morgan Kaufmann, Palo Alto, CA, 1987.* xiv+476 pp. ISBN 0-934613-27-3 (R. K. Beaton) **89f:65018** 65D10 (41A15, 65–01, 65D07)
- Bartelt, Martin (with Swetits, J. J.) Uniform strong unicity constants for subsets of  $C(X)$ . *J. Approx. Theory* 55 (1988), no. 3, 304–317. (Darrell Schmidt) **89m:41022** 41A52
- Barth, Wolf Paul Abelian surfaces with  $(1, 2)$ -polarization. *Algebraic geometry, Sendai, 1985*, 41–84. *Adv. Stud. Pure Math.*, 10, North-Holland, Amsterdam-New York, 1987. (H. Lange) **89i:14038** 14K10 (58F07, 58F17)
- Affine parts of abelian surfaces as complete intersections of four quadrics. *Math. Ann.* 278 (1987), no. 1–4, 117–131. (Bert van Geemen) **89b:14053** 14J25 (14J05, 14K20, 14M10, 58F17)
- Bartha, Miklós A finite axiomatization of flowchart schemes. *Acta Cybernet.* 8 (1987), no. 2, 203–217. (Siegmund Gerber) **89a:68145** 68Q55 (68N05, 68Q05, 68Q25)



- An equational axiomatization of systolic systems. *Theoret. Comput. Sci.* **55** (1987), no. 2-3, 265-289. (Siegmar Gerber) **89i:68006** 68N05 (68Q05, 68Q45)
- Barthel, Gottfried** (with Hirzebruch, Friedrich; Höfer, Thomas) ★ Geradenkonfigurationen und algebraische Flächen. (German) [Line configurations and algebraic surfaces] *Aspects of Mathematics*, D4. Friedr. Vieweg & Sohn, Braunschweig, 1987. xii+308 pp. ISBN 3-528-08907-5 (Hélène Esnault) **89a:14045** 14J29 (14J25)
- Barthel, Woldeamar** (with Pabel, Helmut) Das isodiametrische Problem der Minkowski-Geometrie. [The isodiametric problem in Minkowski geometry] *Resultate Math.* **12** (1987), no. 3-4, 252-267. (G. D. Chakerian) **89d:52026** 52A40
- Strukturelle Betrachtungen zur affinen Differentialgeometrie. [Structural considerations on affine differential geometry] *Affine Differentialgeometrie (Oberwolfach, 1986)*, 409-419, *Tech. Univ. Berlin, Berlin*, 1988. (Udo Simon) **89k:53006** 53A15 (53-02)
- Zur affinen Differentialgeometrie—Kurventheorie in der allgemeinen Affinegeometrie. [On affine differential geometry—theory of curves in general affine geometry] *Proceedings of the Congress of Geometry (Thessaloniki, 1987)*, 5-19, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1988. (Udo Simon) **89d:53022** 53A15
- Barthélemy, Georges** De la force accélératrice dans les Principia. (English summary) [Accelerative force in the Principia] *Rev. Histoire Sci.* **40** (1987), no. 3-4, 273-280. (William R. Shea) **89m:01033** 01A45 (70-03)
- Barthélemy, Jean-Pierre** (with Mullet, E.) Choice basis: a model for multi-attribute preference. *British J. Math. Statist. Psych.* **39** (1986), no. 1, 106-124. (Fred W. Roush) **89i:90001** 90A05 (92A25)
- (with Luong, Nhuan Xuan) Représentations arborées de mesures de dissimilarité. (English summary) [Tree representations of dissimilarity measures] *Statist. Anal. Données* **11** (1986), no. 1, 20-41. (Summary) **89c:92004** 92A05 (05C05)
- (with Luong, Nhuan Xuan) Sur la topologie d'un arbre phylogénétique: aspects théoriques, algorithmes et applications à l'analyse de données textuelles. (English summary) [The topology of a phylogenetic tree: theoretical aspects, algorithms and applications to textual data analysis] *Math. Sci. Humaines* **100** (1987), 57-80, 131 (1988). (Summary) **89c:92003** 92A05 (05C05, 92A90)
- Comments on: "Aggregation of equivalence relations" [J. Classification **3** (1986), no. 1, 61-65; MR **87h:90008**] by P. C. Fishburn and A. Rubinstein. With a reply by Fishburn and Rubinstein. *J. Classification* **5** (1988), no. 1, 85-88. (Summary) **89i:90002** 90A05 (04A05)
- Barthélemy, L.** (with Bénélan, P.) Phénomène de couche limite pour la pénalisation d'équations quasi-variétés elliptiques avec conditions de Dirichlet au bord. [The boundary layer phenomenon for the penalization of elliptic quasivariational equations with Dirichlet boundary conditions] *Nonlinear partial differential equations and their applications. Collège de France seminar, Vol. VIII (Paris, 1984-1985)*, 47-68, *Pitman Res. Notes Math. Ser.*, 166, *Longman Sci. Tech., Harlow*, 1988. (M. Biroli) **89f:35089** 35J85 (35B20, 35J60, 49A29)
- (with Bénélan, P.) Sous-potentiels d'un opérateur nonlinéaire. (English summary) [Subpotentials of a nonlinear operator] *Israel J. Math.* **61** (1988), no. 1, 85-112. (Simeon Reich) **89d:47131** 47H15 (47H17, 49A29)
- Barthel, H.** see *Computer methods and water resources*, **89g:76003b**
- Bartholdi, John J., III** (with Platzman, Loren K.) Heuristics based on spacefilling curves for combinatorial problems in Euclidean space. Focused issue on heuristics. *Management Sci.* **34** (1988), no. 3, 291-305. (Summary) **89b:90143** 90C10 (90C27)
- (with Platzman, Loren K.; Ammons, Jane C.) A simple and efficient algorithm to compute tail probabilities from transforms. *Oper. Res.* **36** (1988), no. 1, 137-144. (Summary) **89b:60036** 60E10 (68Q25)
- (with Vande Vate, John H.; Zhang, Jixian) Expected performance of the shelf heuristic for 2-dimensional packing. *Oper. Res. Lett.* **8** (1989), no. 1, 11-16. (Summary) **89k:68052** 68Q20 (90B05, 90C27)
- Bartholomew, D. J.** Probability, statistics and theology. With discussion and a reply by the author. *J. Roy. Statist. Soc. Ser. A* **151** (1988), no. 1, 137-178. (Summary) **89c:62004** 62A99 (90A99, 92A90)
- Barik, Vojtěch** (with Markl, Martin) On bijectivity of the canonical transformation  $[B_0 X; Y]_0 \rightarrow [X; Y]_0$ . *Czechoslovak Math. J.* **38**(113) (1988), no. 4, 682-700. (Allan Calder) **89k:55021** 55P91 (55P65)
- Bartlett, A. C.** (with Hollett, C. V.) A necessary and sufficient condition for Schur invariance and generalized stability of polytopes of polynomials. *IEEE Trans. Automat. Control* **33** (1988), no. 6, 575-578. (Edward W. Kamen) **89c:93078** 93D20
- Bartlett, M. S.** Stochastic models and field trials. A celebration of applied probability. *J. Appl. Probab.* **1988, Special Vol. 25A**, 79-89. (Summary) **89j:92006** 92A05 (62-02, 62K99)
- Bartmańska, B.** (with Szynal, D.) On nonuniform estimates of the rate of convergence in the central limit theorem for functions of the average of independent random variables. *Mathematical statistics and probability theory, Vol. A (Bad Tatzmannsdorf, 1986)*, 23-31, *Reidel, Dordrecht-Boston, MA-London*, 1987. (Tapas K. Chandra) **89a:60052** 60F05
- Bartnik, Robert** Maximal surfaces and general relativity. *Miniconference on geometry and partial differential equations, 2 (Canberra, 1986)*, 24-49, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 12, *Austral. Nat. Univ., Canberra*, 1987. (Paul Baird) **89g:58047** 58E15 (35J60, 53A10, 83C99)
- Remarks on cosmological spacetimes and constant mean curvature surfaces. *Comm. Math. Phys.* **117** (1988), no. 4, 615-624. (Judith M. Arms) **89g:53074** 53C50 (53C42, 83C99)
- (with McKinnon, John) Particlelike solutions of the Einstein-Yang-Mills equations. *Phys. Rev. Lett.* **61** (1988), no. 2, 141-144. (Summary) **89c:83015** 83C15 (81E13, 83-04)
- Bartocci, Claudio** (with Bruzzo, Ugo) Some remarks on the differential-geometric approach to supermanifolds. *J. Geom. Phys.* **4** (1987), no. 3, 391-404. (Jaime Muñoz Masqué) **89k:58022** 58A50
- (with Bruzzo, Ugo) Cohomology of supermanifolds. *J. Math. Phys.* **28** (1987), no. 10, 2363-2368. (Anargyros Fellouris) **89a:58006** 58A50
- (with Bruzzo, Ugo) Cohomology of the structure sheaf of real and complex supermanifolds. *J. Math. Phys.* **29** (1988), no. 8, 1789-1794. (Author's review (UB)) **89k:58023** 58A50 (14F05, 15A75, 57R20)
- Bartol, W.** (with Niwiński, D.; Rudak, Leszek) Semi-isomorphism vs. isomorphism of inner extensions of a partial algebra. *Demonstratio Math.* **20** (1987), no. 1-2, 221-227 (1988). (Danica Jakubiková-Studenovská) **89j:08002** 08A55
- (with Niwiński, D.; Rudak, Leszek) The semilattice of inner extensions of a partial algebra. *Demonstratio Math.* **20** (1987), no. 1-2, 229-238 (1988). (Danica Jakubiková-Studenovská) **89j:08003** 08A55
- Bartolini, G.** (with Zolezzi, T.) The V.S.S. approach to the model reference control of nonminimum phase linear plants. *IEEE Trans. Automat. Control* **33** (1988), no. 9, 859-863. (From the summary) **89g:93051** 93B99 (93C05)
- (with Zolezzi, T.) Asymptotic linearization of uncertain systems by variable structure control. *Systems Control Lett.* **10** (1988), no. 2, 111-117. (Edward Jezewski) **89a:93023** 93B50 (93B17, 93C10, 93C15, 93C40)
- de Bartolomeis, Paolo** see *De Bartolomeis, Paolo*
- Bartolone, C.** (with Spera, A. G.) Tits's theorem for the group  $PGL_2(L)$ ,  $L$  a not necessarily commutative local ring. *Ann. Mat. Pura Appl.* (4) **149** (1987), 297-309. (Alex Hahn) **89b:20012** 20B10 (20H25)
- Bartolozzi, Margherita** Dynamical characterization of the most rigid possible velocity fields with respect to some local reference fields and various linear integral conditions. (Italian. English summary) *Istit. Veneto Sci. Lett. Arti Atti Cl. Sci. Fis. Mat. Natur.* **141** (1983), 159-167. (Summary) **89a:70006** 70B99
- Barton, Geoffrey W.** (with Nguyen, T. Chan; Perkins, John D.; Johnston, Richard D.) A condition number scaling policy for stability robustness analysis. *AIChE J.* **34** (1988), no. 7, 1200-1206. (Not in MR) **93D10** (93B50)
- Barton, N. G.** (with Jaccottet, D. R.) A computational method for the inverse scattering problem for ultrasound. *Computational techniques and applications. CTAC-87 (Sydney, 1987)*, 281-290, *North-Holland, Amsterdam-New York*, 1988. (see **89b:80021**) 65P05
- Barton, Russell R.** (with Hearn, Donald W.; Lawphongpanich, Siriphong) The equivalence of transfer and generalized benders decomposition methods for traffic assignment. *Transportation Res. Part B* **23** (1989), no. 1, 61-73. (Not in MR) **90C08**
- Barton, Thomas Joseph** (with Friedman, Yaakov) Grothendieck's inequality for  $JB^*$ -triples and applications. *J. London Math. Soc.* (2) **36** (1987), no. 3, 513-523. (Khristo N. Boyadzhiev) **89a:46139** 46L70 (17C65, 46H70)
- (with Dang, Tien Bang; Horn, Günther) Normal representations of Banach Jordan triple systems. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 551-555. (Bruno Iochum) **89c:46065** 46H70 (17C65, 46L70, 47D99)
- Bartos, Josef** (with Sun, Hun H.) Characterization of abrupt nonlinearity by the Volterra-Fourier method. *J. Franklin Inst.* **325** (1988), no. 4, 465-484. (A. Bultheul) **89c:94020** 94C05
- Bartosiewicz, Zbigniew** On polynomial continuous time systems. *Theory and applications of nonlinear control systems (Stockholm, 1985)*, 293-299, *North-Holland, Amsterdam-New York*, 1986. (Summary) **89c:93026** 93B25 (93B07, 93C60)
- Bartoszek, Wojciech** Nonexpansive actions of topological semigroups on strictly convex Banach spaces and fixed points. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 809-811. (Simeon Reich) **89i:47120** 47H20 (47H09, 47H10)
- Bartoszewicz, Artur** Consistency of tests in noncommutative statistics. *Probab. Math. Statist.* **9** (1988), no. 1, 11-14. (Eiang Chen) **89g:46101** 46L50 (62L99)
- Bartoszyński, R.** (with Dynin, S. M.) Asymptotic properties of the tumor growth curve estimator. *J. Statist. Plann. Inference* **18** (1988), no. 1, 45-56. (N. R. Chaganty) **89g:62P10** 62P12
- Bartoszyński, Tomek** On covering of real line by null sets. *Pacific J. Math.* **131** (1988), no. 1, 1-12. (Kurt Wolford) **89c:03078** 03E05 (03E15, 04A15, 26A03)
- Bartsch, Thomas** A global index for bifurcation of fixed points. *J. Reine Angew. Math.* **391** (1988), 181-197. (Jacobo Pejsachowicz) **89i:58019** 58E07 (47H15, 58F14)
- Bartiz, B. S.** (with Jannussis, A. D.) Coherent states for the harmonic oscillator with time-dependent mass and frequency. *Phys. Lett. A* **129** (1988), no. 5-6, 263-266. (K. Wódkiewicz) **89i:81059** 81D30
- Bartiz, V. E.** (with Jannussis, A. D.) Exact calculation of the squeezed states in the  $q$ -representation. *Phys. Lett. A* **132** (1988), no. 6-7, 324-328. (Summary) **89j:81298** 81K05 (81D30)
- Barna, Rana** A note on  $2sc(E_1)$ . *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 921-925. (Peter G. Hinman) **89h:03079** 03D65 (03D55)
- Barucci, G.** Generalized Minkowski metric and composition algebras. (Italian and Russian summaries) *Nuovo Cimento A* (11) **98** (1987), no. 1, 41-59. (Hyo C. Myung) **89a:17005** 17A75 (53C80, 81C99, 83A05)
- Barucci, Valentina** (with Dobbs, David E.; Mulay, S. B.) Integrally closed factor domains. *Bull. Austral. Math. Soc.* **37** (1988), no. 3, 353-366. (Stephen McAdam) **89g:13004** 13B20
- On the power series ring over a Mori domain. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 6, 267-272. (Sarah Glaz) **89i:13025** 13F25
- Barugola, Alexandre** Sur certaines zones chaotiques. (English summary) [On certain chaotic regions] *Internat. J. Non-Linear Mech.* **23** (1988), no. 5-6, 355-359. (Introduction) **89m:58135** 58F13
- Barut, A. O.** (with Inomata, A.; Wilson, Raj) A new realisation of dynamical groups and factorisation method. *J. Phys. A* **20** (1987), no. 13, 4075-4082. (P. G. L. Leach) **89c:81014** 81C05 (58F07)
- (with Inomata, A.; Wilson, Raj) Algebraic treatment of second Pöschl-Teller, Morse-Rosen and Eckart equations. *J. Phys. A* **20** (1987), no. 13, 4083-4096. (P. G. L. Leach) **89c:81015** 81C05 (58F07)
- (with Inomata, A.; Junker, G.) Path integral treatment of the hydrogen atom in a curved space of constant curvature. *J. Phys. A* **20** (1987), no. 18, 6271-6280. (Takashi Miura) **89b:81060** 81C35 (81G40)
- (with Pavšić, Matej) Kaluza-Klein approach to the classical model of the Dirac electron. *Classical Quantum Gravity* **5** (1988), no. 5, 707-711. (David E. Betounes) **89j:81135** 81E20 (83E15)
- Combining relativity and quantum mechanics: Schrödinger's interpretation of  $\psi$ . *Found. Phys.* **18** (1988), no. 1, 95-105. (Dennis Dieks) **89b:81013** 81B05 (01A60, 81-03, 83A05)
- (with Božić, M.; Marić, Z.) Joint probabilities of noncommuting operators and incompleteness of quantum mechanics. *Found. Phys.* **18** (1988), no. 10, 999-1012. (Summary) **89k:81016** 81B99
- The revival of Schrödinger's interpretation of quantum mechanics. *Found. Phys. Lett.* **1** (1988), no. 1, 47-56. (Not in MR) **81B05** (01A60)
- (with Moore, R. A.; Scott, T. C.) Comment on the paper: "An exactly soluble relativistic quantum two-fermion problem" [J. Math. Phys. **27** (1986), no. 12, 3055-3060; MR



- 88a:81238] by Barut and N. Ünal. *J. Math. Phys.* 29 (1988), no. 1, 268. (Summary) 89a:81043 81D25
- Barve, S. (with Chandra, Prem) On the absolute equivalence of  $T$ -matrices for a sequence space. *Math. Student* 47 (1979), no. 2-4, 215-221 (1985). (S. M. Mazhar) 89m:40002 40D25 (15A57, 40C05, 40C99)
- Barvink, A. I. Symmetric systems of linear inequalities and  $G$ -invariant polyhedra. (Russian) *Optimizatsiya* No. 40(57) (1987), 111-120, 160. (Konrad Engel) 89f:05008 05A15 (13H10)
- Barwise, K. Jon Noun phrases, generalized quantifiers and anaphora. *Generalized quantifiers* (Lund, 1985), 1-29, *Stud. Linguist. Philos.*, 31, Reidel, Dordrecht-Boston, MA, 1987. (see 89m:03003) 03B65
- see also Aczel, Peter, 89j:03039
- Bar'yakhtar, V. G. (with L'vov, V. A.; Yablonskii, D. A.) Magnetic symmetry of the domain boundaries in magneto-ordered crystals (static and kinematic aspects). (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jarmala, 1985), 563-570, "Nauka", Moscow, 1986. (see 89d:81001) 82A60
- (with Ivanov, B. A.; Sukstanskii, O. L.; Tartakovskaya, E. V.) Nonequilibrium thermodynamics of a kink-type soliton gas in quasi-one-dimensional systems. (Russian. English summary) *Teoret. Mat. Fiz.* 74 (1988), no. 1, 46-60; translated in *Theoret. and Math. Phys.* 74 (1988), no. 1, 32-42. (Summary) 89d:82087 82A50 (81H99, 82A35)
- see also Plasma theory and nonlinear and turbulent processes in physics, 89c:00041; Space science and technology, 89i:70003 and 89i:70001
- Barykin, V. N. Space-time symmetries in the electrodynamics of isotropic inertially moving media. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jarmala, 1985), 461-466, "Nauka", Moscow, 1986. (see 89d:81001) 78A25
- Baryshev, M. Yu. An analytic description of the matrix of optimal alphabetic coding of elementary bounded-fragment languages. (Russian) *Proceedings of the All-Union seminar on discrete mathematics and its applications* (Moscow, 1984), 106-108, *Moskov. Gos. Univ., Mekh.-Mat. Fak.*, Moscow, 1986. (V. A. Zinov'ev) 89c:94005 94A24 (68Q45, 94B45)
- Uniquely decodable codes for a language with one prohibited fragment. (Russian) *Probabilistic methods and cybernetics*, No. 22 (Russian), 139-145, *Kazan. Gos. Univ., Kazan'*, 1987. (D. M. Campbell) 89b:68079 68Q45 (94B35)
- Baryshovets, P. P. Finite nonsolvable groups with complemented nonmetacyclic subgroups. (Russian) *Ukrain. Mat. Zh.* 39 (1987), no. 5, 547-551, 677. (E. M. Pal'chik) 89a:20021 20D40
- Finite  $A$ -groups in which all nonmetacyclic subgroups are complemented. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 3, 297-302, 405; translated in *Ukrainian Math. J.* 40 (1988), no. 3, 252-256. (V. A. Belonogov) 89j:20024 20D10 (20D20)
- Baryutina, T. L. (with Alakoz, G. M.; Vo'p'et, L. A.) Implementation of digital signal processing devices in array-programmable homogeneous media. (Russian) *Methods and means of transforming information*, No. 8 (Russian), 38-60, 145, "Zinatne", Riga, 1988. (see 89g:94002) 68Q35 (94A05)
- le Barz, P. see Le Barz, P.
- Barzila', Ya. M. see Kolmogorov, A. N., 89a:01104
- Basak, I. When to combine group judgments and when not to in the analytic hierarchy process: a new method. *Math. Comput. Modelling* 10 (1988), no. 6, 395-404. (Summary) 89d:92086 92A25
- Basak, Subhash (with Magnuson, V. R.; Niemi, G. J.; Regal, R. R.) Determining structural similarity of chemicals using graph-theoretic indices. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* 19 (1988), no. 1-3, 17-44. (Summary) 89c:92094 92A40 (05C99)
- (with Johnson, Mark Allyn; Maggiora, Gerald) A characterization of molecular similarity methods for property prediction. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 630-634. (see 89d:00007) 92A40
- Basalykian, A. Probabilities of large deviations for polynomial Pitman estimators. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* 27 (1987), no. 4, 624-629. (A. L. Rukhin) 89c:62061 62F12 (60F10, 62F10)
- Basanoga, E. O. A transportation problem on partially oriented graphs. (Russian) *Algebra and discrete mathematics* (Russian), 61-69, iii, *Kalmytsk. Gos. Univ., Elista*, 1985. (Summary) 89a:90104 90C08 (05C20, 90B10)
- Basar, E. (with Basar-Eroglu, C.; Röschke, J.) Do coherent patterns of the strange attractor EEG reflect deterministic sensory-cognitive states of the brain? *From chemical to biological organization*, 297-306, *Springer Ser. Synergetics*, 39, Springer, Berlin-New York, 1988. (see 89g:92002) 92A09 (58F13)
- Basar, Tamer (with Saksema, Vikram R.) Multimodeling, singular perturbations, and stochastic decision problems. *Control and dynamic systems*, Vol. 23, 1-58, *Academic Press, Orlando, FL*, 1986. (From the introduction) 89i:93125 93E20 (34E15, 90D10)
- Relaxation techniques and asynchronous algorithms for on-line computation of noncooperative equilibria. *J. Econom. Dynamics Control* 11 (1987), no. 4, 531-549. (Summary) 89c:90113 90D10 (49D20)
- (with Bansal, Rajesh) Simultaneous design of communication and control strategies for stochastic systems with feedback. *Analysis and optimization of systems* (Antibes, 1988), 605-616, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) 89c:90209 90C40 (93E03)
- Solutions to a class of nonstandard stochastic control problems with active learning. *IEEE Trans. Automat. Control* 33 (1988), no. 12, 1122-1129. (George Yin) 89j:93137 93E20 (68T05, 93E03)
- Basar-Eroglu, C. (with Basar, E.; Röschke, J.) Do coherent patterns of the strange attractor EEG reflect deterministic sensory-cognitive states of the brain? *From chemical to biological organization*, 297-306, *Springer Ser. Synergetics*, 39, Springer, Berlin-New York, 1988. (see 89g:92002) 92A09 (58F13)
- Basart, J. M. (with Huguet, L.) From  $T(m)$  triangular graphs to single-error-correcting codes. *Applicable algebra, error-correcting codes, combinatorics and computer algebra* (Karlsruhe, 1986), 5-12, *Lecture Notes in Comput. Sci.*, 307, Springer, Berlin-New York, 1988. (Summary) 89d:94039 94B05 (05C99)
- Basovskaya, D. (with Ravindra, G.) Strongly perfect line graphs of  $(0, 1)$ -graphs. *J. Combin. Inform. System Sci.* 10 (1985), no. 3-4, 157-160. (Alan Tucker) 89c:05048 05C15 (05C75)
- (with Ravindra, G.) Co-strongly perfect graphs. *J. Math. Phys. Sci.* 22 (1988), no. 3, 439-444. (Not in MR) 05C75 (05C35)
- Basawa, I. V. (with Prabhu, N. U.) Large sample inference from single server queues. *Queueing Systems Theory Appl.* 3 (1988), no. 4, 289-304. (Chandra M. Gulati) 89m:60217 60K25 (62M99, 90B22)
- Basch, Michal see Vich, Robert, 89g:94006
- Baseia, B. Extended Schrödinger equations leading to critical phenomena. *J. Math. Phys.* 30 (1989), no. 1, 81-82. (Introduction) 89m:81206 81H20 (81C05)
- Basford, Kaye E. (with McLachlan, Geoffrey J.) ★ Mixture models. Inference and applications to clustering. *Statistics: Textbooks and Monographs*, 84, Marcel Dekker, Inc., New York, 1988. xiv+253 pp. ISBN 0-8247-7691-7 (M. Knott) 89b:62127 62H30 (62-04)
- Bashalkhanov, I. A. see Brusilovskii, P. M. et al., 89d:90069
- Basharin, A. V. see Algorithms, software and hardware for flexible production systems, 89b:93004
- Basharin, G. P. (with Kurenkov, B. E.) The analysis of redundant flows in channel switching networks. (Russian) *Problemy Peredachi Informatsii* 23 (1987), no. 3, 54-63. (Summary) 89c:90094 90B15 (90B22, 94A05)
- see also Analysis of information-computing systems, 89a:00001
- Basheleishvili, M. O. Relations between the coefficients of an anisotropic elastic body. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* 23 (1988), 5-15, 157. (Summary) 89c:73017 73C30
- Solution of the second generalized plane problem of the statics of an anisotropic elastic body. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* 23 (1988), 16-36, 157. (Summary) 89d:73006 73C30
- Basher, A. M. Hasanul see Cheres, E., (Not in MR)
- Bashir, M. (with Al-Sadah, Fayez S. H.; Khaliq, A. Q. M.) Finite difference analysis for Navier-Stokes and energy equations of Couette-Poiseuille flow. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 71-81, North-Holland, Amsterdam-New York, 1988. (see 89b:00021) 76-08 (76D05, 80A20)
- Bashirov, A. E. On linear filtering under dependent wide-band noise. *Stochastics* 23 (1988), no. 4, 413-437. (Emmanuel Nicholas Barron) 89g:93095 93E11
- Bashkine, A. L. see Baikienė, A.
- Bashkin, V. A. (with Egorova, M. V.) An inverted Rayleigh problem in a compressible gas. (Russian) *Uchen. Zap. TsAGI* 18 (1987), no. 4, 17-25. (Summary) 89f:76058 76N15
- Bashkirov, A. I. On the problem of the stability of an equation of neutral type. (Russian) *Boundary value problems* (Russian), 34-38, 193, *Perm. Politekh. Inst.*, Perm, 1983. (see 89c:00008) 34K20
- Some properties of the Cauchy matrix of an equation of neutral type with periodic parameters. (Russian) *Boundary value problems* (Russian), 15-16, ii, *Perm. Politekh. Inst.*, Perm, 1986. (see 89c:00009) 34K05
- Bashmakova, I. G. Diophantine equations and the evolution of algebra. (Russian) *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1612-1628, *Amer. Math. Soc., Providence, RI*, 1987. (Reinhard Bölling) 89f:01002 01A05 (01A20, 01A40)
- el-Basil, Sherif see El-Basil, Sherif
- Basile, Achille Controls of families of finitely additive functions. *Ricerche Mat.* 35 (1986), no. 2, 291-302. (Kazuyuki Saitō) 89c:28008 28A60 (46G99)
- The convergence with respect to small systems comes from a metric. *Rend. Circ. Mat. Palermo* (2) 36 (1987), no. 1, 110-113. (Beloslav Riečan) 89b:28002 28A05
- Basile, Alessandro (with Brutti, Paolo) Loop associated with a resolvable transversal design. (Italian) *Atti Sem. Mat. Fis. Univ. Modena* 36 (1988), no. 1, 37-43. (E. J. F. Primrose) 89i:05044 05B05 (20N05)
- Basit, Boris On a theorem of Gelfand and a new proof of the Orlicz-Pettis theorem. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* 18 (1986), no. 2, 159-162. (Klaus-Dieter Bierstedt) 89b:46006 46A35 (46G10)
- Baskakov, A. G. (with Katsaran, T. K.) Spectral analysis of integro-differential operators with nonlocal boundary conditions. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 8, 1424-1433, 1471; translated in *Differential Equations* 24 (1988), no. 8, 934-941. (M. Tvrdý) 89c:47087 47G05 (45J05)
- Baskakov, A. V. Partial sums of Fourier series. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 36-38, *Saratov. Gos. Univ., Saratov*, 1986. (see 89j:00036) 42A20
- Baskakov, V. A. Functions represented by sparse Fourier series. (Russian) *Application of functional analysis, in approximation theory* (Russian), 6-10, 142, *Kalinin. Gos. Univ., Kalinin*, 1984. (see 89c:00006) 42A16 (42A55)
- Classes of functions with increasing lacunarity. (Russian) *Theory of functions and approximations, Part 1* (Russian) (Saratov, 1984), 103-109, *Saratov. Gos. Univ., Saratov*, 1986. (see 89j:00035) 42A55
- Comparison of orders of approximation of the classes  $W^r H_{\text{op}}$  by linear polynomial operators. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 7, 7-11, 82. (S. Aljančić) 89a:41027 41A35 (42A10)
- Baskaran, G. (with Wille, L. T.; Stein, D. L.) Comments on: "Intractable computations without local minima" [Phys. Rev. Lett. 57 (1986), no. 21, 2764-2767; MR 87j:90054] by E. B. Baum. With a reply by Baum. *Phys. Rev. Lett.* 59 (1987), no. 3, 372-374. (From the text of Wille's comments) 89d:90056 90B10 (68Q15, 82A57, 90C27)
- Baskaran, R. (with Subrahmanyam, P. V.) Common fixed points in closed balls. *Atti Sem. Mat. Fis. Univ. Modena* 36 (1988), no. 1, 1-5. (Livia D'Apuzzo) 89c:47088 47H10 (47H15, 54H25)
- (with Subrahmanyam, P. V.) Remarks on the nonlinear eigenvalue problem  $Tx = \lambda Sx$ . *J. Math. Anal. Appl.* 132 (1988), no. 1, 146-153. (K. Goebel) 89g:47081 47H12 (47H17)
- Baskienė, A. Elliptic almost paracontact metric hypersurfaces in  $T(V_4)$ . (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* 27 (1987), no. 1, 3-14. (Jarolim Bureš) 89b:53058 53C15 (53C40)
- Baskurt, A. (with Goutte, R.) Analytic signal reconstruction from instantaneous phase. (French and German summaries) *Signal Process.* 14 (1988), no. 4, 327-333. (Not in MR) 94A12
- Basmann, R. L. Causality tests and observationally equivalent representations of econometric models. *J. Econometrics* 39 (1988), no. 1-2, 69-104. (Not in MR) 62P20
- see also Bibliography: Basmann, Robert L., 89c:01090

- Bass, F. G.** (with Kivshar, Yu. S.; Konotop, V. V.; Sinitsyn, Yu. A.) Dynamics of solitons under random perturbations. *Phys. Rep.* 157 (1988), no. 2, 63-181. (F. Pempinelli) **89a:35231** 35R60 (00A69, 35Q20, 76B25)
- Bass, Hyman** (with Alperin, Roger) Length functions of group actions on A-trees. *Combinatorial group theory and topology (Alta, Utah, 1984)*, 265-378, *Ann. of Math. Stud.*, 111, Princeton Univ. Press, Princeton, NJ, 1987. (A. H. M. Hoare) **89c:20057** 20F32 (57M99)
- (with Guralnick, R.) Torsion in the Picard group and extension of scalars. *J. Pure Appl. Algebra* 52 (1988), no. 3, 213-217. (F. DeMeyer) **89e:13006** 13C10 (19A13)
- Bass, Jean** see Vo Khac, Khoan, **89k:62001**
- Bass, Jon M.** (with Oden, J. T.) Adaptive computational methods for chemically-reacting radiative flows. *Internat. J. Engrg. Sci.* 26 (1988), no. 9, 959-992. (Summary) **89h:80014** 80A32 (80-08)
- Bass, Ludvik** (with Bracken, A. J.; Holmáker, K.; Jefferies, Brian) Integro-differential equations for the self-organisation of liver zones by competitive exclusion of cell-types. *J. Austral. Math. Soc. Ser. B* 29 (1987), no. 2, 156-194. (Matthew Witten) **89f:92015** 92A09 (45F10, 92A07)
- (with Bracken, A. J.; Green, H. S.) Groups defined on images in fluid diffusion. *J. Austral. Math. Soc. Ser. B* 30 (1988), no. 1, 101-119. (Summary) **89c:76098** 76R50 (80A32)
- Bass, R. F.**  $L_p$  inequalities for functionals of Brownian motion. *Séminaire de Probabilités, XXI*, 206-217, *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (L. C. G. Rogers) **89h:60072** 60G44 (60I65)
- (with Pardoux, É.) Uniqueness for diffusions with piecewise constant coefficients. *Probab. Theory Related Fields* 76 (1987), no. 4, 557-572. (Ruth J. Williams) **89b:60183** 60I60
- (with Pyke, R.) A central limit theorem for  $D(A)$ -valued processes. *Stochastic Process. Appl.* 24 (1987), no. 1, 109-131. (Nareesh C. Jain) **89b:60048** 60F05
- Probability estimates for multiparameter Brownian processes. *Ann. Probab.* 16 (1988), no. 1, 251-264. (Robert J. Adler) **89b:60103** 60G15 (60F10, 60G60, 62G10)
- Uniqueness in law for pure jump Markov processes. *Probab. Theory Related Fields* 79 (1988), no. 2, 271-287. (Mamoru Kanda) **89b:60118** 60J30 (60G44, 60J75)
- Occupation time densities for stable-like processes and other pure jump Markov processes. *Stochastic Process. Appl.* 29 (1988), no. 1, 65-83. (Martin Jacobsen) **89i:60142** 60J25 (60J30, 60J55)
- Bass, Walter A.** Relevant to grue? *Internat. Logic Rev.* No. 35 (1987), 32-36. (Not in MR) 03B45
- Bassali, W. A.** Summation of certain infinite series involving  $\delta_n = \frac{1-3n-2n^2}{24-2n}$ . (Spanish summary) *Rev. Técn. Fac. Ingr. Univ. Zulia* 11 (1988), no. 1, 53-60. (Summary) **89k:40007** 40A25
- Bassalygo, L. A.** (with Dobrushin, R. L.) Epsilon-entropy of a Gibbs field. (Russian) *Problemy Peredachi Informatsii* 23 (1987), no. 1, 3-15. (Summary) **89h:60080** 60G60 (60K35)
- (with Berger, Toby; Dobrushin, R. L.; Pinsker, Mark S.) Andrei Nikolaevich Kolmogorov (April 25, 1903-October 20, 1987). *IEEE Trans. Inform. Theory* 34 (1988), no. 2, 173-175. (Editors) **89f:01057** 01A70
- (with Zinov'ev, V. A.; Litsyn, S. N.) A lower bound for complete trigonometric sums in terms of multiple sums. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 5, 1033-1036; translated in *Soviet Math. Dokl.* 37 (1988), no. 3, 756-759. (Ekkhard Krätzel) **89g:11071** 11L40
- al-Bassam, M. A.** see Al-Bassam, M. A.
- Bassan, B.** (with Bona, E.) Shot noise random fields. *Biomathematics and related computational problems (Naples, 1987)*, 423-427, *Kluwer Acad. Publ., Dordrecht*, 1988. (Robert J. Adler) **89m:60119** 60G60 (60G55, 60G57)
- Bassan, D. S.** (with Munshi, B. M.) Almost semi-continuous mappings. *Math. Student* 49 (1981), no. 2-4, 239-248 (1983). (Janina Ewert) **89g:54026** 54C08
- Bassanelli, Giovanni** On a characteristic Cauchy problem. (Italian summary) *Ann. Mat. Pura Appl.* (4) 147 (1987), 343-362. (Günther A. Uhlmann) **89b:35155** 35Q99 (35A05, 35L70, 81E99)
- Bassanezi, Rodney C.** (with Greco, Gabriele H.) On functionals representable by fuzzy measures. *J. Math. Anal. Appl.* 133 (1988), no. 1, 44-56. (T. Thrivikraman) **89m:28037** 28E10 (03E72)
- Bassanini, Piero** A uniqueness theorem for the semilinear heat equation in an unbounded domain. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 78 (1985), no. 6, 278-285 (1986). (Marco Degiovanni) **89a:35115** 35K60
- A nonlinear hyperbolic boundary value problem arising from wave propagation in a stratified medium. (Italian summary) *Atti Sem. Mat. Fis. Univ. Modena* 35 (1987), no. 2, 335-356 (1988). (G. A. Narioli) **89h:35192** 35L60 (35L50, 35Q15, 78A40, 78A45)
- Bassett, Gilbert W., Jr.** A  $p$ -subset property of  $L_1$  and regression quantile estimates. *Comput. Statist. Data Anal.* 6 (1988), no. 3, 297-304. (Girdhar G. Agarwal) **89g:62097** 62J05
- A property of the observations fit by the extreme regression quantiles. *Comput. Statist. Data Anal.* 6 (1988), no. 4, 353-359. (Roy T. Saint Laurent) **89j:62083** 62J05
- Bassetto, A.** (with Soldati, R.) Limit properties of Feynman integrals in noncovariant algebraic gauges. *Phys. Rev. D* (3) 37 (1988), no. 10, 3065-3066. (Summary) **89d:81036** 81C30 (81E15)
- Basseville, M.** (with Benveniste, A.; Moustakides, G.; Rougé, A.) Detection of abrupt changes in the modal characteristics of nonstationary vector signals. *Modelling, identification and robust control (Stockholm, 1985)*, 537-547, *North-Holland, Amsterdam-New York*, 1986. (Summary) **89c:62149** 62M10 (93E10, 94A13)
- Detecting changes in signals and systems—a survey. *Automatica—J. IFAC* 24 (1988), no. 3, 309-326. (Summary) **89d:94018** 94A13 (94-02, 94A12)
- Bassi, L.** (with De Vito, A.) The transport problem in the space external to a sphere. *Transport Theory Statist. Phys.* 17 (1988), no. 4, 347-383. (Hassan Emamirad) **89j:82084** 82A70 (45P05)
- Bassily, N. L.** A proof of the left-hand side of the Burkholder-Davis-Gundy inequality for a large class of Orlicz spaces. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 30 (1987), 195-199. (Mario Milman) **89b:60121** 60G46 (94E30, 60G44)
- (with Ishak, S.) Maximal inequalities for nonnegative supermartingales. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 30 (1987), 201-212. (T. F. Mori (Zbl 641:60055)) **89k:60061** 60G42 (46E30)
- (with Ishak, S.; Mogyoródi, J.) On the representation of  $L^p$ -mean oscillating random variables. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 30 (1987), 213-222. (Tamotsu Tsuchikura) **89c:60060** 60G42 (46E30)
- A new proof of the right-hand side of the Burkholder-Davis-Gundy inequality. *Probability theory and mathematical statistics with applications (Visegrád, 1985)*, 7-21, *Reidel, Dordrecht-Boston, MA*, 1988. (Dominique Lépine) **89g:60156** 60G42
- Basso, Patricio** (with Gatica, Gabriel) A generalization of the method of bisection to the case of functions with several roots. (Spanish. English summary) *Rev. Mat. Apl.* 9 (1987), no. 1, 8-21. (Summary) **89h:65075** 65H05
- Bassom, A. P.** (with Gajjar, J. S. B.) Nonstationary cross-flow vortices in three-dimensional boundary-layer flows. *Proc. Roy. Soc. London Ser. A* 417 (1988), no. 1852, 179-212. (Summary) **89e:76036** 76D05 (76C05, 76E15)
- Bassotti Rizza, Lucilla** An extension of the theory of linear operators invariant with respect to a congruence group. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 79 (1985), no. 6, 147-158 (1986). (A. S. Dynin) **89h:47041** 47B38 (35E20, 47A99)
- Invariant subspaces for  $T$ -invariant linear operators with respect to a group of homeomorphisms. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 80 (1986), no. 6, 373-383 (1987). (Summary) **89m:35011** 35A25 (47F05)
- Linear operators that are  $T$ -invariant with respect to a congruence group. (Italian. English summary) *Ann. Mat. Pura Appl.* (4) 148 (1987), 173-205. (A. S. Dynin) **89j:47019a** 47B38 (35A30, 47F05)
- Linear operators that are  $T$ -invariant with respect to a congruence group. Translated from the Italian by T. D. Venttsel'. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1(259), 57-85; translated in *Russian Math. Surveys* 43 (1988), no. 1, 67-101. (A. S. Dynin) **89j:47019b** 47B38 (35A30, 47F05)
- Bassout-Lellich, Maarouf** (with Weber, Jean-Daniel) Sur la stabilité d'un corps élastique homogène à frontière fixe. (English summary) [On the stability of an elastic homogeneous body with fixed boundary] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* 302 (1986), no. 14, 839-841. (Summary) **89k:73036** 73H99 (73C99)
- el-Bast, Zeinab Abd** see El-Bast, Zeinab Abd
- Bastani, Farokh B.** (with Leiss, Ernst L.) On maximal-immutable sets. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 59 (1987), 195-204. **89a:05004a** 94B60
- Bastaro, C.** (with Atkinson, Colin) Incipient yielding at a debond crack tip under mixed mode loading. *Internat. J. Fracture* 38 (1988), no. 3, 193-206. (Summary) **89j:73065** 73M05 (73E99)
- Bastero, Jesús** (with Raynaud, Y.) Extraction of good subsequences in lattices of functions and applications to stability. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 80 (1986), no. 1-2, 195-196. (Mario Milman) **89b:46035** 46E30
- Bastin, Françoise** (with Schmets, Jean) A weighted characterization of the locally compact and  $\sigma$ -compact space. *Bull. Soc. Roy. Sci. Liège* 57 (1988), no. 1-2, 73-78. (Francesco Altomare) **89f:46049** 46E10 (54D45)
- Bastin, Georges** (with Gevers, M.) Stable adaptive observers for nonlinear time-varying systems. *IEEE Trans. Automat. Control* 33 (1988), no. 7, 650-658. (Summary) **89c:93024** 93B07 (93B10, 93C40, 93C75)
- Bastin, H.** (with Delchambre, M.) Sur la construction de solutions asymptotiques pour des systèmes non linéaires à multi retards. [Constructing asymptotic solutions for nonlinear systems with multiple delays] *Acad. Roy. Belg. Bull. Cl. Sci.* (5) 72 (1986), no. 5-6, 310-320. (B. Choczewski) **89i:34107** 34K25
- Basto Gonçalves, J.** Minimal-dimensional realizations of Hamiltonian control systems. *Theory and applications of nonlinear control systems (Stockholm, 1985)*, 233-240, *North-Holland, Amsterdam-New York*, 1986. (Allen Tannenbaum) **89e:93035** 93B15 (58F05, 93B27)
- Control of a neoclassic economic model. *Portugal. Math.* 45 (1988), no. 4, 417-428. (Su Sheng Wang) **89m:90038** 90A16 (93C75, 93D99)
- Baston, V. J.** (with Bostock, F. A.) Discrete hamstrung squad car games. *Internat. J. Game Theory* 16 (1987), no. 4, 253-261. (A. C. Liu) **89d:90261** 90D26 (90D05, 90D42)
- (with Bostock, F. A.) A continuous game of ambush. *Naval Res. Logist.* 34 (1987), no. 5, 645-654. (Miroslav D. Atić) **89a:90190** 90D42 (90B40, 90D05)
- (with Bostock, F. A.) Deception games. *Internat. J. Game Theory* 17 (1988), no. 2, 129-134. (Tadeusz Radzik) **89g:90243** 90D05 (90D13)
- (with Bostock, F. A.) An evasion game with barriers. *SIAM J. Control Optim.* 26 (1988), no. 5, 1099-1105. (W. H. Ruckle) **89h:90186** 90D05 (90D26)
- Bastos, Gervasio G.** A new class of ordered abelian groups which are not groups of divisibility. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 1, 17-20. (Jiri Močkoř) **89e:06017** 06F20
- (with Viswanathan, T. M.) Torsion-free abelian groups, valuations and twisted group rings. *Canad. Math. Bull.* 31 (1988), no. 2, 139-146. (L. Fuchs) **89h:13005** 13A18 (20K20)
- Basu, A. K.** (with Sen Roy, S.) On some asymptotic results for multivariate autoregressive models with estimated parameters. *Calcutta Statist. Assoc. Bull.* 35 (1986), no. 139-140, 123-132. (Robert V. Foutz) **89b:62200** 62M20 (62M10)
- (with Sen Roy, S.) On asymptotic prediction problems for multivariate autoregressive models in the unstable nonexplosive case. *Calcutta Statist. Assoc. Bull.* 36 (1987), no. 141-142, 29-37. (Huguette Reynaerts) **89b:62185** 62M10 (62M20)
- Uniform and nonuniform estimates in the CLT for Banach valued dependent random variables. *J. Multivariate Anal.* 25 (1988), no. 2, 153-163. (Adam Jakubowski) **89k:60024** 60F05 (60B12, 60G42)
- Basu, A. P.** (with Tarmast, Ghasem) Reliability of a complex system from Bayesian viewpoint. *Probability and Bayesian statistics (Innsbruck, 1986)*, 31-38, *Plenum, New York-London*, 1987. (From the introduction) **89f:62086** 62N05 (62F15, 90B25)
- (with Habibullah, Mohamed) A test for bivariate exponentiality against BIFRA alternative. *Calcutta Statist. Assoc. Bull.* 36 (1987), no. 141-142, 79-84. (M. M. Siddiqui) **89b:62051** 62F03 (62N05)
- (with Ghosh, J. K.; Joshi, S. N.) On estimating change point in a failure rate. *Statistical decision theory and related topics, IV, Vol. 2 (West Lafayette, Ind., 1986)*, 239-252, *Springer, New York-Berlin*, 1988. (A. Balogh) **89h:62158** 62N05 (62F10)
- Basu, Ashis** (with Ray, Dipankar) Exact solutions to Einstein field equations. *Internat. J. Theoret. Phys.* 27 (1988), no. 3, 369-371. (Jorge A. Pullin) **89d:83018** 83C15



- Basu, Debabrata** *see* Basu, Debabrata<sup>2</sup>
- Basu, Debabrata<sup>1</sup>** ★ Statistical information and likelihood. A collection of critical essays. With a foreword by Richard Barlow. Edited and with a preface by J. K. Ghosh. Lecture Notes in Statistics, 45. Springer-Verlag, New York-Berlin, 1988. xx+365 pp. ISBN 0-387-96751-6 (D. V. Lindley) **89j:62005** 62A10 (00A25, 01A75, 62B05)
- Basu, Debabrata<sup>2</sup>** The Gelfand realization and the generating function of the Clebsch-Gordan coefficients of  $SL(2, \mathbb{R})$  in the hyperbolic basis. *J. Math. Phys.* **28** (1987), no. 3, 514–519. (Summary) **89a:22038** 22E70 (22E46)
- Basu, Dipak Kumar** A class of mixed trilateral generating relations for Jacobi polynomial from the viewpoint of Lie group. *J. Orissa Math. Soc.* **4** (1985), no. 1, 1–3. (Not in MR) 33A75 (33A65)
- Basu, Kaushik** Strategic irrationality in extensive games. *Math. Social Sci.* **15** (1988), no. 3, 247–260. (Theo Driessen) **89h:90263** 90D10
- Basu, Rahul** (with Anishetty, R.; Sharatchandra, H. S.) A general property of spontaneously broken SUSY theories. *Internat. J. Modern Phys. A* **3** (1988), no. 4, 875–877. (Summary) **89f:81152** 81E99 (81D20)
- Basu, Sankar** (with Fettweis, A.) Test for two-dimensional scattering Hurwitz polynomials. *Circuits Systems Signal Process.* **3** (1984), no. 2, 225–242. (John Maroulas) **89i:93097** 93D25 (30C10, 94A99)
- Basu, Tapasendra** Results on mappings of a metric space. *Math. Student* **47** (1979), no. 2–4, 320–324 (1985). (Not in MR) 54H25
- Some fixed point theorems for multivalued mappings using Caristi and Kirk type condition. *J. Indian Acad. Math.* **8** (1986), no. 1, 58–63. (S. P. Singh) **89a:54052** 54H25 (54C60)
- Basu, A. G.** Hamiltonian of the phase separation boundary and phase transitions of the first kind. II. The simplest disordered phases. (Russian. English summary) *Teoret. Mat. Fiz.* **72** (1987), no. 2, 255–268. (Milos Zahradnik) **89d:82037** 82A25
- Baszanski, G.** (with Schumaker, L. L.) Tensor products of abstract smoothing splines. *A. Haar memorial conference, Vol. I, II (Budapest, 1985)*, 181–192. *Colloq. Math. Soc. János Bolyai*, 49, North-Holland, Amsterdam-New York, 1987. (Günther Nürnberger) **89b:41021** 41A15 (41A65, 46N05)
- Batagelj, Vladimir** Inductive classes of graphs. *Graph theory (Dubrovnik, 1985)*, 43–56. *Univ. Novi Sad, Novi Sad, 1986.* (Summary) **89a:05110** 05C75 (05C30)
- Batalin, I. A.** The Fradkin operator method. *Quantum field theory and quantum statistics, Vol. 1*, 105–127. *Hilger, Bristol*, 1987. (Olivier Piguet) **89h:81060** 81C99 (81E13, 81E30)
- (with Fradkin, E. S.) Operator quantization of dynamic systems with constraints of the second kind. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 4, 837–842. (Introduction) **89b:81081** 81D07 (58F06)
- *see also* Quantum field theory and quantum statistics, **89b:81007** and **89b:81008**
- Batalova, Z. S.** (with Belyakova, G. V.) Some bifurcations of embedded structures of the equation of motion of a pendulum with an oscillating axis. (Russian) *Dynamics of systems (Russian)*, 176–195, 199. *Gorkov. Gos. Univ., Gorki*, 1986. (B. M. Garay) **89h:70010** 70K30 (58F14, 70K05)
- (with Belyakova, G. V.) Diagrams of stability of the periodic motions of a pendulum with an oscillating axis. (Russian) *Prikl. Mat. Mekh.* **52** (1988), no. 1, 55–63; translated in *J. Appl. Math. Mech.* **52** (1988), no. 1, 41–48. (From the summary) **89m:70041** 70K20 (58F13, 58F14)
- Bateman, M. A.** Mappings of spectral sequences and the generalized homotopy axiom. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 5, 22–31, 226. (John McCleary) **89i:55014** 55T05 (18G40, 55U15)
- Batbedat, A.** L'algorithme PROXEL pour les dissimilarités. (English summary) [The PROXEL algorithm for dissimilarities] *Math. Sci. Humaines No. 102* (1988), 31–38, 61. (Summary) **89j:92077** 92A25 (05C65)
- Batchelder, William H.** (with Romney, A. Kimball) Test theory without an answer key. *Psychometrika* **53** (1988), no. 1, 71–92. (C. Hayashi) **89e:62139** 62P15 (92A25, 92A90)
- Batchelor, G. K.** A new theory of the instability of a uniform fluidized bed. *J. Fluid Mech.* **193** (1988), 75–110. (Summary) **89m:76066** 76T05 (76D33, 76E99, 76S05)
- Batchelor, M. T.** (with Hamer, C. J.; Quispel, G. R. W.) Conformal anomaly and surface energy for Potts and Ashkin-Teller quantum chains. *J. Phys. A* **20** (1987), no. 16, 5677–5693. (Jacques H. H. Perk) **89c:82069** 82A68 (82A15, 82A25, 82A69)
- (with Alcaraz, Francisco C.; Barber, Michael N.; Baxter, Rodney James; Quispel, G. R. W.) Surface exponents of the quantum  $XXZ$ , Ashkin-Teller and Potts models. *J. Phys. A* **20** (1987), no. 18, 6397–6409. (Summary) **89b:82100** 82A68 (82-04, 82A69)
- (with Barber, Michael N.; Pearce, Paul A.) Bethe ansatz calculations for the eight-vertex model on a finite strip. *J. Statist. Phys.* **49** (1987), no. 5–6, 1117–1163. (Summary) **89b:82103** 82A68 (82-04)
- (with Alcaraz, Francisco C.; Barber, Michael N.) Conformal invariance, the  $XXZ$  chain and the operator content of two-dimensional critical systems. *Ann. Physics* **182** (1988), no. 2, 280–343. (Roland Koberle) **89f:82073** 82A68 (81E40, 82A15, 82A67)
- (with Hamer, C. J.) Some finite-size amplitudes and critical exponents for Potts and Ashkin-Teller quantum chains. *J. Phys. A* **21** (1988), no. 3, L173–L178. (Summary) **89a:82043** 82A68 (82A25)
- (with Hamer, C. J.; Barber, Michael N.) Logarithmic corrections to finite-size scaling in the four-state Potts model. *J. Statist. Phys.* **52** (1988), no. 3–4, 679–710. (Summary) **89i:82086** 82A68 (82-04)
- (with Blöte, Henk W. J.) Conformal anomaly and scaling dimensions of the  $O(n)$  model from an exact solution on the honeycomb lattice. *Phys. Rev. Lett.* **61** (1988), no. 2, 138–140. (Summary) **89g:82064a** 82A68 (82A69)
- (with Blöte, Henk W. J.) Errata: "Conformal anomaly and scaling dimensions of the  $O(n)$  model from an exact solution on the honeycomb lattice". *Phys. Rev. Lett.* **61** (1988), no. 8, 1042. (Editors) **89g:82064b** 82A68 (82A69)
- (with Blöte, Henk W. J.) Conformal invariance and critical behavior of the  $O(n)$  model on the honeycomb lattice. *Phys. Rev. B* (3) **39** (1989), no. 4, 2391–2402. (Summary) **89m:82071** 82A68 (81E40, 82A25, 82A69)
- Batchelor, Marjorie** Graded manifolds and pairs. *Differential geometric methods in mathematical physics (Salamanca, 1985)*, 65–72. *Lecture Notes in Math.*, 1251, Springer, Berlin-New York, 1987. (From the text) **89c:58009** 58A50
- (with Bryant, Peter R.) Graded Riemann surfaces. *Comm. Math. Phys.* **114** (1988), no. 2, 243–255. (Ugo Bruzzo) **89i:58022** 58A50 (32C35, 32G99, 83E50)
- Bate, John A.** (with Hall, Marshall, Jr.; Van Rees, G. H. J.) Structures within (22, 33, 12, 8, 4)-designs. *J. Combin. Math. Combin. Comput.* **4** (1988), 115–122. (D. P. Roselle) **89j:05017** 05B05
- Bate, S. D.** (with Honary, B. K.; Farrell, P. G.) Soft and hard decision decoding of product codes for communication systems. (Russian and Polish summaries) *Systems Sci.* **12** (1986), no. 4, 79–85 (1987). (Not in MR) 93B35
- Batens, Diderik** Static and dynamic paraconsistent logics: a plea for their use in expert systems. *CC AI 3* (1986), no. 1–2, 33–50. (N. C. A. da Costa) **89i:68105** 68T01 (03B60, 03B70, 68T20)
- Some remarks on the structural similarity between music and logic. *Comm. Cognition* **19** (1986), no. 2, 135–151. (Not in MR) 03A05
- Rich relevant logics based on a simple type of semantics. Conference on philosophical logic (Gent, 1985). *Logique et Anal. (N.S.)* **29** (1986), no. 116, 437–457. (Stephen Read) **89g:03022** 03B45
- Relevant implication and the weak deduction theorem. *Studia Logica* **46** (1987), no. 3, 239–245. (Daniel H. Cohen) **89h:03022** 03B45
- Bates, J. L.** (with Constable, R. L.; Knoblock, T. B.) Writing programs that construct proofs. *J. Automat. Reason.* **1** (1985), no. 3, 285–326. (Summary) **89i:68113** 68T15 (03B35, 68Q55, 68T20)
- Bates, Larry** (with Montgomery, R.) Closed geodesics on the space of stable two-monopoles. *Comm. Math. Phys.* **118** (1988), no. 4, 635–640. (N. J. Hitchin) **89i:58023** 58E10 (53C22, 53C80, 58F22, 70G05, 70H05, 81E13)
- Bates, Peter W.** (with Alikakos, Nicholas D.) On the singular limit in a phase field model of phase transitions. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **5** (1988), no. 2, 141–178. (Frederick A. Howes) **89h:35109** 35J60 (35B25, 35R35, 82A25)
- (with Alikakos, Nicholas D.) An invariance principle for a class of monotone systems and application to degenerate parabolic equations. *Nonlinear Partial Differential Equations Conference (Salt Lake City, UT, 1986)*. *Rocky Mountain J. Math.* **18** (1988), no. 2, 215–224. (Joachim Naumann) **89h:35040** 35B40 (35K55, 47H20)
- Bates, R. H. T.** (with Tan, D. G. H.; Murch, R. D.) Algorithmic implementation of a global solution to the scalar inverse scattering problem. *Inverse Problems* **4** (1988), no. 4, 1129–1142. (Charles I. Goldstein) **89k:35059** 35J05 (35P25, 65N99)
- Adelard of Bath** *see* Adelard of Bath
- Bathe, K.-J.** *see* Reliability of methods for engineering analysis, **89c:65010**
- Bather, John** On the allocation of treatments in sequential medical trials. (French summary) *Internat. Statist. Rev.* **53** (1985), no. 1, 1–13. (Per Kragh Andersen) **89i:62171** 62P10 (62L10, 92A07)
- (with Benkherouf, L.) Oil exploration: sequential decisions in the face of uncertainty. *J. Appl. Probab.* **25** (1988), no. 3, 529–543. (Summary) **89e:90068** 90A30 (62L15, 90C40)
- Stopping rules and ordered families of distributions. *Sequential Anal.* **7** (1988), no. 2, 111–126. (Adhir K. Basu) **89j:62108** 62L10 (62L15)
- *see also* Barnard, G. A. et al., **89i:62173**
- Battista, A. B.** (with Baptista, J. P.; Fabris, J. C.) The zero-helicity waves in a Brans-Dicke cosmology. *Classical Quantum Gravity* **6** (1989), no. 2, 209–218. (Summary) **89k:83058** 83D05
- Battle, C.** (with Gomis, J.; Pons, J. M.; Román-Roy, Narciso) On the Legendre transformation for singular Lagrangians and related topics. *J. Phys. A* **20** (1987), no. 15, 5113–5123. (Demeter Krupka) **89f:58051** 58F05 (70H99)
- (with Gomis, J.; Roca, J.) The propagator of a free relativistic particle in a generic gauge  $d\lambda/d\tau = f(\lambda)$ . *Classical Quantum Gravity* **5** (1988), no. 12, 1663–1667. (Summary) **89m:81063** 81C99 (81E13)
- (with Gomis, J.; Pons, J. M.; Román-Roy, Narciso) Lagrangian and Hamiltonian constraints for second-order singular Lagrangians. *J. Phys. A* **21** (1988), no. 12, 2693–2703. (Frans Cantrijn) **89h:58052** 58F05 (70H99)
- Batman, Den** (with Klamkin, Murray) Bounds for the log mean radius for heat conduction in a multilayered cylindrical pipe. *SIAM Rev.* **30** (1988), no. 2, 298–300. (N. D. Sengupta) **89d:80005** 80A20 (80-08)
- Batomunkueva, G. V.** (with Belov, A. G.; Galkin, V. Ya.; Ufimtsev, M. V.) Optimal estimates for the parameters of multiple distributions. (Russian) *Mathematical models and numerical methods (Russian)*, 59–75. *Moskov. Gos. Univ., Moscow*, 1987. (Jana Jurečková) **89a:62065** 62F10
- Bator, Elizabeth M.** (with Lewis, Paul; Race, David) Some connections between Pettis integration and operator theory. *Rocky Mountain J. Math.* **17** (1987), no. 4, 683–695. (J. Diestel) **89b:46060** 46G10 (47B38)
- A decomposition of bounded scalarly measurable functions taking their ranges in dual Banach spaces. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 850–854. (K. Musiał) **89i:46050** 46G10 (28B05, 46B22)
- Pettis decomposition for universally scalarly measurable functions. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 795–800. (Summary) **89m:28016** 28B05 (46G10)
- Batoulis, Jannis** (with Kremer, Kurt) Statistical properties of biased sampling methods for long polymer chains. *J. Phys. A* **21** (1988), no. 1, 127–146. (Summary) **89c:82048** 82A51 (82A41)
- Batrouti, G.** (with Hansen, Alex) Fourier acceleration of iterative processes in disordered systems. *J. Statist. Phys.* **52** (1988), no. 3–4, 747–773. (Summary) **89i:82004** 82-08 (82A42, 82A57)
- (with Davies, C. T. H.; Katz, G. R.; Kronfeld, A.; Lepage, G. P.; Wilson, K.; Rossi, Pietro; Svetitsky, B.) Fourier acceleration in lattice gauge theories. I. Landau gauge fixing. *Phys. Rev. D* (3) **37** (1988), no. 6, 1581–1588. (Summary) **89g:81004a** 81-08 (81E25)
- (with Katz, G. R.; Davies, C. T. H.; Kronfeld, A.; Lepage, G. P.; Rossi, Pietro; Svetitsky, B.; Wilson, K.) Fourier acceleration in lattice gauge theories. II. Matrix inversion and the quark propagator. *Phys. Rev. D* (3) **37** (1988), no. 6, 1589–1596. (Summary) **89g:81004b** 81-08 (81E25, 81G05)
- Pham Ba Trung** *see* Pham Ba Trung
- Batsagin, V. S.** (with Egorushkin, A. A.; Zyabrev, N. B.) A multifactorial problem on the setting up of production and the production of industrial products. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 99, 18 pp. (Summary) **89m:90082** 90B30
- Batson, Robert G.** Necessary and sufficient conditions for boundedness of extreme points of unbounded convex sets. *J. Math. Anal. Appl.* **130** (1988), no. 2, 365–374. (I. Ya. Gusak) **89d:52006** 52A20 (90C05)



- Batt, J.** (with Berestycki, Henri; Degond, P.; Perthame, Benoît) Some families of solutions of the Vlasov-Poisson system. *Arch. Rational Mech. Anal.* **104** (1988), no. 1, 79-103. (John Adam) **89j:35112** 35Q20 (45K05, 82A45, 85A05)
- (with Pfaffelmoser, K.) On the radius continuity of the models of polytropic gas spheres which correspond to the positive solutions of the generalized Emden-Fowler equation. *Math. Methods Appl. Sci.* **10** (1988), no. 5, 499-516. (Gh. Procopiuc) **89k:85001** 85A05 (35Q20)
- Batta, Rajan** (with Leifer, Lloyd A.) On the accuracy of demand point solutions to the planar, Manhattan metric,  $p$ -median problem, with and without barriers to travel. *Comput. Oper. Res.* **15** (1988), no. 3, 253-262. (Not in MR) **90B10**
- Single server queueing-location models with rejection. *Transportation Sci.* **22** (1988), no. 3, 209-216. (Not in MR) **90B15**
- (with Ghose, Anjan; Palekar, Udatia S.) Locating facilities on the Manhattan metric with arbitrarily shaped barriers and convex forbidden regions. *Transportation Sci.* **23** (1989), no. 1, 26-36. (Summary) **89m:90057** 90B10
- Battaglia, Francesco** (with Bhansali, R. J.) Estimation of the interpolation error variance and an index of linear determinism. *Biometrika* **74** (1987), no. 4, 771-779. (Robert V. Foutz) **89a:62205** 62M20 (60G25)
- On the estimation of the inverse correlation function. *J. Time Ser. Anal.* **9** (1988), no. 1, 1-10. (Stefan Mittnik) **89c:62150** 62M10 (62E20)
- Battail, G.** (with Fang, Jaing; Cohen, Gérard Denis; Godlewski, P.) On the inherent intractability of soft decision decoding of linear codes. *Coding theory and applications* (Cachan, 1986), 141-149, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (see **89c:94004**) 94B05 (94B35)
- Battellino, Peter M.** (with Grebogi, Celso; Ott, Edward; Yorke, James A.; Yorke, E. D.) Multiple coexisting attractors, basin boundaries and basic sets. *Phys. D* **32** (1988), no. 2, 296-305. (Summary) **89k:58172** 58F13 (34C15)
- Persistence of three-frequency quasiperiodicity under large perturbations. *Phys. Rev. A* (3) **38** (1988), no. 3, 1495-1502. (Summary) **89i:58129** 58F27 (34C27, 34D05, 58F13, 58F30)
- Battelli, Flaviano** (with Lazzari, Claudio) On the existence of periodic solutions for perturbed systems. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **2** (1988), no. 3, 485-495. (Zengrong Liu) **89k:34097** 34E10 (34C25, 58F20, 70K99)
- Batten, David F.** (with Boyce, David E.) Spatial interaction, transportation, and inter-regional commodity flow models. *Handbook of regional and urban economics*, Vol. 1, 357-406, *Handbooks in Economics*, 7, North-Holland, Amsterdam-New York, 1986. (see **89m:90047**) **90B10** (90A11, 90A17)
- Batten, Lynn Margaret** Embedding pseudo-complements of quadrics in  $PG(n, q)$ ,  $n \geq 3$ ,  $q \geq 2$ . *J. Combin. Theory Ser. A* **49** (1988), no. 2, 338-348. (Christiane Lefevre-Percy) **89m:51009** 51A45 (05B25, 51E20)
- Battese, George E.** (with Coelli, Tim J.) Prediction of firm-level technical efficiencies with a generalized frontier production function and panel data. *J. Econometrics* **38** (1988), no. 3, 387-399. (Not in MR) **62P20** (90A11)
- Battisti, F. D.** Solvability of differential operators. I. Direct and semidirect products of Lie groups. *Miniconference on operator theory and partial differential equations* (North Ryde, 1986), 60-84, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 14, Austral. Nat. Univ., Canberra, 1986. (Michael Cowling) **89a:22015** 22E30 (22E27, 43A80, 58G99)
- (with Dooley, A. H.) Solvability of differential operators. II. Semisimple Lie groups. *Miniconference on operator theory and partial differential equations* (North Ryde, 1986), 85-94, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 14, Austral. Nat. Univ., Canberra, 1986. (Michael Cowling) **89a:22016** 22E30 (43A80, 58G99)
- (with Dooley, A. H.) Invariant differential operators on some Lie groups. *Miniconference on harmonic analysis and operator algebras* (Canberra, 1987), 6-20, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 15, Austral. Nat. Univ., Canberra, 1987. (A. S. Dynin) **89d:22009** 22E30 (22E45)
- Résolubilité globale d'opérateurs différentiels invariants sur certains groupes de Lie. (English summary) [Global solvability of invariant differential operators on certain Lie groups] *J. Funct. Anal.* **77** (1988), no. 2, 261-308. (L. Corwin) **89m:22013** 22E30 (58G35)
- Battisto, S.** (with Borho, W.) Are there odd amicable numbers not divisible by three? *Math. Comp.* **50** (1988), no. 182, 633-637. (F. T. Howard) **89c:11015** 11A51
- Battin, Richard H.** ★ An introduction to the mathematics and methods of astrodynamics. With a foreword by J. S. Przemieniecki. AIAA Education Series. *American Institute of Aeronautics and Astronautics (AIAA)*, Washington, DC, 1987. xxiii+796 pp. ISBN 0-930403-25-8 (David A. Levinson) **89c:70001** 70-01 (70F15, 70M05)
- Battistini, Egidio** An inverse problem for the equation  $u_{tt} - u_{xx} = \delta(x - x_0)f(t)$ . (Italian. English summary) *Istit. Lombardo Accad. Sci. Lett. Rend. A* **119** (1985), 143-155 (1987). (Rolando Magnanini) **89b:35166** 35R30 (35L05)
- Battle, Guy** (with Federbush, Paul) Ondelettes and phase cell cluster expansions, a vindication. *Comm. Math. Phys.* **109** (1987), no. 3, 417-419. (Summary) **89b:81105** 81E08
- A block spin construction of ondelettes. II. The QFT connection. *Comm. Math. Phys.* **114** (1988), no. 1, 93-102. (Summary) **89b:81091** 81E05
- Heisenberg proof of the Balian-Low theorem. *Let. Math. Phys.* **15** (1988), no. 2, 175-177. (John L. Challifour) **89i:81057** 81D30
- Batty, C. J. K.** (with Archbold, R. J.) Homogeneous states of  $C^*$ -algebras. *Quart. J. Math. Oxford Ser. (2)* **38** (1987), no. 151, 259-275. (J. W. Bunce) **89a:46129** 46L30
- (with Arendt, Wolfgang) Tauberian theorems and stability of one-parameter semigroups. *Trans. Amer. Math. Soc.* **306** (1988), no. 2, 837-852. (S. Kantorovitz) **89g:47053** 47D05 (34G10)
- On certain pairs of automorphisms of  $C^*$ -algebras. *J. Austral. Math. Soc. Ser. A* **46** (1989), no. 2, 197-211. (Thomas J. Barton) **89k:46075** 46L40
- Batukhtin, V. D.** (with Korotaeva, L. N.; Maiboroda, L. A.) On an approach to a search for the roots of a nondifferentiable function. (Russian) *Methods for nonsmooth optimization and control problems* (Russian), 17-26, 150, *Akad. Nauk SSSR, Ural. Nauchn. Tsent. Sverdlovsk*, 1986. (Andrzej M. J. Skulimowski) **89a:65079** 65H05 (90C30)
- Baturin, V. A.** (with Gurman, V. I.; Moskalenko, A. I.; Baginov, I. P.; Bobryshev, A. G.; Butin, A. A.; Danilina, E. V.; Derenko, N. V.; Dushin, K. B.; Dykhta, V. A.; Kolokol'nikova, G. A.; Konstantinov, G. N.; Mel'nik, V. V.; Nikiforova, L. N.; Ovsyannikova, N. A.; Rasina, I. V.; Rozenraukh, D. M.; Urbanovich, D. E.; Fedorova, E. Yu.) ★ Методы улучшения в вычислительном эксперименте. (Russian) [Methods of im-
- proving [control] in numerical experiments] "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. 184 pp. ISBN 5-02-028573-0 (Asen L. Dontchev) **89b:65099** 65Kxx (49Dxx, 93B40)
- see also **Brusilovskii, P. M.** et al. **89d:90069**
- Baturina, L. N.** (with Lepeshinskiĭ, N. A.) Representation of the simple paths of a nondirected graph. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1988**, no. 2, 48-50, 81. (Kaicheng Lu) **89m:90058** 90B10 (05C38, 90B99)
- Baturov, D. P.** Subspaces of function spaces. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 4, 66-69. (E. G. Pytkov) **89a:54018** 54C35 (54D20)
- Normality in dense subsets of function spaces. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 4, 63-65; translated in *Moscow Univ. Math. Bull.* **43** (1988), no. 4, 52-55. (Aleksander Blaszczyk) **89k:54036** 54C35
- Batyranov, M. Sh.** (with Lange, E. G.) Solution of a system of linear algebraic equations of special type. (Russian) *Izv. Akad. Nauk Kirgiz. SSR* **1987**, no. 4, 10-20, 83 (1988). (C. Ilioi) **89b:65058** 65F30 (90A16)
- (with Lange, E. G.) Investigation of the consistency of a system of parametric equations. (Russian) *Izv. Akad. Nauk Kirgiz. SSR* **1988**, no. 2, 16-27, 91. (Anna Lee) **89k:15004** 15A06
- Batyrov, B. E.** (with Burenkov, V. I.) An averaging operator in  $L_p$ -spaces for  $0 < p < 1$ . (Russian) *Mat. Zametki* **43** (1988), no. 1, 38-43, 153; translated in *Math. Notes* **43** (1988), no. 1-2, 23-26. (Yu. A. Abramovich) **89d:47058** 47B38
- Batyshin, I. Z.** Fuzzy sets with unified scales. (Russian) *Decision-making methods and systems. Applied problems in the analysis of solutions in technical systems* (Russian), 4-10, 145, *Rizhsk. Politekh. Inst., Riga*, 1986. (see **89b:90001**) **92A25** (03E72)
- Entropy measures and metric properties of an algebra of fuzzy sets. (Russian) *Fuzzy systems: modeling of structure and optimization* (Russian), 4-16, *Kalinin. Gos. Univ., Kalinin*, 1987. (J. Albrecht) **89i:03102** 03E72 (03G25)
- Bau, Sheng** (with Aldred, R. E. L.; Holton, D. A.; Royle, Gordon F.) An 11-vertex theorem for 3-connected cubic graphs. *J. Graph Theory* **12** (1988), no. 4, 561-570. (Charles H. C. Little) **89k:05054** 05C38
- Baublitz, Millard, Jr.** Derivation of the Schrödinger equation from a stochastic theory. *Prog. Theoret. Phys.* **80** (1988), no. 2, 232-244. (David Applebaum) **89i:81025** 81C20 (60J60, 82A31)
- Bauch, H. F.** Zum Begriff der Analytizität auf zusammenhängenden lokalkompakten Gruppen. (English and Russian summaries) [On the concept of analyticity on connected locally compact groups] *Z. Anal. Anwendungen* **5** (1986), no. 5, 457-463. (Summary) **89c:43008** 43A25 (22D05)
- Bauch, Hartmut** (with Jahn, K.-U.; Oelschlägel, Dieter; Süss, H.; Wiebigke, Volkmar) ★ Intervallmathematik. (German) [Interval mathematics] Theorie und Anwendungen. (Theory and applications) Mathematisch-Naturwissenschaftliche Bibliothek [Mathematical-Scientific Library], 72. BSB B. G. Teubner Verlagsgesellschaft, Leipzig, 1987. 260 pp. ISBN 3-322-00384-1 (Manfred W. Kracht) **89c:65061** 65G10 (65-02)
- (with Wiebigke, Volkmar) On the inclusion of solutions of initial value problems for ordinary differential equations by means of interval analytical methods. *Discretization in differential equations and enclosures* (Weissig, 1986), 41-56, *Math. Res.*, 36, Akademie-Verlag, Berlin, 1987. (Dieter Oelschlägel) **89c:65082** 65L05 (65G10)
- Bauchan, O. A.** (with Hong, C. H.) Nonlinear response and stability analysis of beams using finite elements in time. *ALAA J.* **26** (1988), no. 9, 1135-1142. (Summary) **89i:73048** 73K12 (73H10, 73K25)
- Bauderon, Michel** (with Courcelle, Bruno) Graph expressions and graph rewritings. *Math. Systems Theory* **20** (1987), no. 2-3, 83-127. (Stephen L. Bloom) **89f:68038** 68Q50 (05C75, 08B05, 68R05)
- Baudisch, Andreas** On two hierarchies of dimensions. *J. Symbolic Logic* **52** (1987), no. 4, 959-968. (Summary) **89g:03046** 03C45
- Bauer, Douglas** (with Schmeichel, E. F.) A proof of an extension of Ore's theorem. *Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications*, Vol. 2 (Catania, 1986). *Ars Combin.* **24** (1987), B, 93-99. (Ortrud R. Oellermann) **89d:05124** 05C45
- Bauer, Friedrich Ludwig** (with Wirsing, M.) Crypt-equivalent algebraic specifications. *Acta Inform.* **25** (1988), no. 2, 111-153. (J.-J. Ch. Meyer) **89c:68075** 68Q55 (68Q60)
- For all primes greater than 3,  $(\frac{p-1}{p-2}) \equiv 1 \pmod{p^3}$  holds. *Math. Intelligencer* **10** (1988), no. 3, 42. (H. L. Abbott) **89i:11005** 11A07
- (with Möller, Bernhard; Partsch, Helmut; Pepper, Peter) Formal program construction by transformations—computer-aided, intuition-guided programming. *IEEE Trans. Software Engng.* **15** (1989), no. 2, 165-180. (Not in MR) **68Q55** (68N05)
- Bauer, Friedrich-W.** Strong homology theories. *Geometric topology and shape theory* (Dubrovnik, 1986), 3-29, *Lecture Notes in Math.*, 1283, Springer, Berlin-New York, 1987. (Andrzej Kozłowski) **89d:55009** 55N07 (55N20)
- Bauer, Heinz** Mittelwerte und Funktionalgleichungen. [Means and functional equations] *Bayer. Akad. Wiss. Math.-Natur. Kl. Sitzungsber.* **1986**, 1-9 (1987). (L. Losonczy) **89a:39010** 39B20
- Bauer, K. W.** On the determination of Riemann functions. *Complex Variables Theory Appl.* **8** (1987), no. 3-4, 195-203. (Manfred W. Kracht) **89a:35041** 35Cxx (35L10)
- Integro-Differentialoperatoren bei formal hyperbolischen Differentialgleichungen. (English and Russian summaries) [Integro-differential operators in formally hyperbolic differential equations] *Z. Anal. Anwendungen* **6** (1987), no. 5, 479-484. (Manfred W. Kracht) **89c:35027** 35C15 (35C05, 35L99, 45K05)
- Bauer, Lothar** ★ Inspektionsfehler in der attributiven Qualitätskontrolle. (German) [Inspection errors in quality control by attributes] *Arbeiten zur Angewandten Statistik* [Papers on Applied Statistics], 29. Physica-Verlag, Heidelberg, 1987. vi+105 pp. ISBN 3-7908-0366-9 (W. Uhlmann) **89b:62208** 62N10 (62F03, 62F15)
- Bauer, Madeleine** Feuilletage singulier défini par une distribution presque régulière. [Codimension 1] singular foliations defined by almost regular distributions] *Collect. Math.* **37** (1986), no. 3, 189-209. (Claude Lamoureux) **89c:57031** 57R30 (58F18)
- gruner-Bauer, P.** see **Gruner-Bauer, P.**
- Bauer, Peter** On the assessment of the performance of multiple test procedures. *Biometrical J.* **29** (1987), no. 8, 895-906. (Summary) **89a:62051** 62F03
- (with Hackl, Peter) Multiple testing in a set of nested hypotheses. *Statistics* **18** (1987), no. 3, 345-349. (Jan Ámos Víšek) **89b:62052** 62F03
- (with Jury, E. I.) Stability analysis of multidimensional (m-D) direct realization digital filters under the influence of nonlinearities. *IEEE Trans. Acoust. Speech Signal Process.* **36**

- (1988), no. 11, 1770-1780. (B. D. Donevski) **89j:94006** 94A12
- Bauer, Stefan** (with Schneider, Albert<sup>1</sup>) Spherical resolutions for compact Lie groups. *Manuscripta Math.* **60** (1988), no. 4, 387-395. (H.-T. Ku) **89d:57056** 57S25 (57S10)
- Dimension functions of homotopy representations for compact Lie groups. *Math. Ann.* **280** (1988), no. 2, 247-265. (Gunnar Carlsson) **89e:57030** 57S10 (57S15)
- (with May, J. P.) Maximal ideals in the Burnside ring of a compact Lie group. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 684-686. (Summary) **89g:57057** 57S99
- Bauer, Wolfgang** ★ Optimal control of storage power plants. With a German summary. *Dissertationen der Johannes-Kepler-Universität Linz* (Dissertations of the Johannes Kepler University of Linz), **64**. *Verband der Wissenschaftlichen Gesellschaften Österreichs* (VWÖG), Vienna, 1987. 140 pp. ISBN 3-85369-665-1 (From the summary) **89i:93082** 93C75 (90B30)
- Bauernhoppel, Frank** Degree bounds and sub-Hamiltonian cycles in planar graphs. *J. Inform. Process. Cybernet.* **23** (1987), no. 10-11, 529-536. (Václav Koubek) **89d:68025** 68Q25 (05C45, 68Q15, 68R10)
- Baurs, Peter** See Bowers, Peter
- Banes, Hans Joachim** Combinatorial homotopy. *Algebraic topology—rational homotopy* (Louvain-la-Neuve, 1986), 31-50, *Lecture Notes in Math.*, 1318, Springer, Berlin-New York, 1988. (Paul Selick) **89h:55014** 55P15
- Baudry, William C.** (with Máté, A.; Nevai, P.) Asymptotics for solutions of systems of smooth recurrence equations. *Pacific J. Math.* **133** (1988), no. 2, 209-227. (R. C. Varma) **89m:39002** 39A10 (33A65, 42C05)
- Baulieu, Laurent** (with Bellon, M.) Beltrami parametrization and string theory. *Phys. Lett. B* **196** (1987), no. 2, 142-150. (Omar Foda) **89g:81066** 81E99 (53C80, 81E30)
- (with Bellon, M.; Grimm, Richard) Beltrami parametrization for superstrings. *Phys. Lett. B* **198** (1987), no. 3, 343-348. (M. A. Namazie) **89e:81135** 81E99 (53C80, 81E30)
- (with Berghoeff, Eric; Sezgin, E.) Open BRST algebras, ghost unification and string field theory. *Nuclear Phys. B* **307** (1988), no. 2, 348-364. (George Siopsis) **89k:81127** 81E99 (81E30)
- (with Bellon, M.) BRST symmetry for finite-dimensional invariances: applications to global zero modes in string theory. *Phys. Lett. B* **202** (1988), no. 1, 67-74. (Danny Birmingham) **89e:81071** 81E13 (81E30)
- Baum, Dieter** Bemerkungen zur Halbachschen funktion. (English summary) [Comments on the semi-axis function] *Analysis* **7** (1987), no. 3-4, 221-235. (G. D. Chakerian) **89d:52007** 52A20
- Baum, Eric** (with Aschbacher, Michael; Baldi, Pierre; Wilson, R. M.) Embeddings of ultrametric spaces in finite-dimensional structures. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 4, 564-577. (E. Pessa) **89d:54020** 54E99 (94C15)
- see also Wille, L. T. et al. **89d:90096**
- Baum, Howard R.** (with Rehm, Ronald G.; Lozier, Daniel W.) Diffusion-controlled reaction in a vortex field. *Applied mathematics, fluid mechanics, astrophysics* (Cambridge, MA, 1987), 241-248, *World Sci. Publishing, Singapore*, 1988. (see **89f:76002**) **80A25**
- Bauman, E. V.** Variational methods of piecewise approximation. *Analysis and optimization of systems* (Antibes, 1988), 907-915, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89c:00031**) **93B30** (41A30, 93B40)
- Baumann, Eckart** Optimal centered forms. *BIT* **28** (1988), no. 1, 80-87. (Miodrag Petković) **89f:65052** 65G10
- Baumann, Ulrike** (with Lesch, Manfred) Automorphisms of graphs with edge colourings and regular groups of colour preserving automorphisms. (German and Russian summaries) *J. Inform. Process. Cybernet.* **23** (1987), no. 12, 615-618. (Summary) **89m:05057** 05C25 (05C15, 20B25)
- (with Lesch, Manfred; Schmeichel, Irngard) Farb- und zerlegungstreue Automorphismen von Graphen. [Color- and decomposition-conformal automorphisms of graphs] *Math. Nachr.* **134** (1987), 161-167. (J. Sedláček) **89d:05096** 05C25 (05C15)
- Beumeister, Johann** ★ Stable solution of inverse problems. *Advanced Lectures in Mathematics. Friedr. Vieweg & Sohn, Braunschweig*, 1987. viii+254 pp. ISBN 3-528-08961-X (Charles W. Groetsch) **89a:65004** 65-02 (35R30, 45-02, 47-02, 47A50, 65J10)
- Baumelster, Werner** (with Kaufmann, Karl) Single-center expansion of Gaussian basis functions and the angular decomposition of their overlap integrals. *J. Phys. B* **22** (1989), no. 1, 1-12. (Summary) **89j:81271** 81G40
- Baumgart, J.** Aussagen über die Stabilität quasiperiodischer Lösungen durch Einbettung in höherdimensionale Räume. (English and Russian summaries) [Statements on the stability of quasiperiodic solutions by embedding in higher-dimensional spaces] *Z. Angew. Math. Mech.* **67** (1987), no. 8, 357-365. (Silvio Nocilla) **89i:70028** 70K20 (58F27)
- Fourierreihenentwicklung von Differentialgleichungen. (English and Russian summaries) [Fourier series expansion for differential equations] *Z. Angew. Math. Mech.* **68** (1988), no. 10, 513-518. (B. M. Garay) **89k:70042** 70K20
- Baumgärtel, Hellmut** Mathematische Probleme der Quantenfeldtheorie. [Mathematical problems of quantum field theory] *Mitt. Math. Ges. DDR* No. 1-2 (1987), 3-21. (Camillo Trapani) **89j:81086** 81E05 (46L60, 46N05)
- On nets of local algebras on the Minkowski lattice  $Z^d$ . *Group theoretical methods in physics* (Varna, 1987), 513-514, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (see **89g:81001**) **81E05** (46L60)
- Baumslag, Gilbert** (with Shalen, Peter B.) Affine algebraic sets and some infinite finitely presented groups. *Essays in group theory*, 1-14, *Math. Sci. Res. Inst. Publ.*, 8, Springer, New York-Berlin, 1987. (Ralph Strebel) **89b:20071** 20F05 (20C20)
- (with Bachmuth, S.; Dyer, J.; Mochizuki, H. Y.) Automorphism groups of two generator metabelian groups. *J. London Math. Soc.* (2) **36** (1987), no. 3, 393-406. (Ya. G. Berkovich) **89a:20040** 20F28
- (with Miller, Charles F., III) Some odd finitely presented groups. *Bull. London Math. Soc.* **20** (1988), no. 3, 239-244. (Leo P. Comerford, Jr.) **89e:20059** 20F05 (20E06)
- (with Stannbach, U.; Strebel, Ralph) The free metabelian group of rank two contains continuously many nonisomorphic subgroups. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 702. (R. Stöhr) **89e:20066** 20F16 (20E10, 20J05)
- A problem of Stallings on the direct square of a free group. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1007-1009. (Yu. I. Merzlyakov) **89d:20029** 20F32 (20E05)
- Baur, Franz** (with Bamberg, G.) Commodity futures markets and the level of production. *Ökonomie und Mathematik*, 381-395, Springer, Berlin-New York, 1987. (Summary) **89k:90025** 90A11 (90A14)
- Baushev, A. N.** On the weak convergence of Gaussian measures. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 4, 734-742. (S. A. Chobanyan (Zbl 641:60004)) **89g:60006** 60B10 (60B11)
- Bausov, L. I.** Approximation by trigonometric polynomials of functions of several variables with bounded difference. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 6, 8-18, 90. (Summary) **89d:42004** 42A10
- Bautin, S. P.** Reduction of some problems in gas dynamics to the characteristic Cauchy problem of standard type. (Russian) *Analytic and numerical methods for studying problems in continuum mechanics* (Russian), 4-22, 141, *Akad. Nauk SSSR, Ural. Nauchn. Tsent. Sverdlovsk*, 1987. (Summary) **89k:76076** 76N15 (35L99, 35Q20, 76J10, 76L05)
- A class of two-dimensional steady flows of a viscous gas. (Russian) *Dinamika Sploshn. Sredy* No. 82 (1987), 16-30, 164. (Summary) **89h:76028** 76N10
- Representation of the solutions of a system of Navier-Stokes equations by means of characteristic series. (Russian) *Dinamika Sploshn. Sredy* No. 83 (1987), 11-31, 158. (Monique Dauge) **89k:35178** 35Q10 (35C10, 76N15)
- Representation of the solutions of the Navier-Stokes system near the contact characteristic. *J. Appl. Math. Mech.* **51** (1987), no. 4, 448-455 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 4, 574-584 (Russian). (Summary) **89k:76073** 76N10 (35Q10, 76L05)
- Analytic construction of flows of a viscous gas using a sequence of the linearized Navier-Stokes systems. (Russian) *Prikl. Mat. Mekh.* **52** (1988), no. 4, 579-589. (Summary) **89m:76052** 76N15
- Bauwens, Luc** (with Zellner, Arnold; van Dijk, Herman K.) Bayesian specification analysis and estimation of simultaneous equation models using Monte Carlo methods. *J. Econometrics* **38** (1988), no. 1-2, 39-72. (Esfandiar Maasoumi) **89i:62180** 62P20
- Bava, G. P.** (with Ghione, G.; Maio, I.) Fast exact inversion of the generalized Zakharov-Shabat problem for rational scattering data: application to the synthesis of optical couplers. *SIAM J. Appl. Math.* **48** (1988), no. 3, 689-702. (I. Kay) **89e:78011** 78A45 (34A55)
- Bavard, C.** (with Pansu, P.) Sur l'espace des surfaces à courbure et aire bornées. (English summary) [On the space of surfaces with bounded curvature and area] *Ann. Inst. Fourier (Grenoble)* **38** (1988), no. 1, 175-203. (Robert Brooks) **89k:53041** 53C20
- Inégalités isosytoliques conformes pour la bouteille de Klein. (English summary) [Conformal isosytolic inequalities for the Klein bottle] *Geom. Dedicata* **27** (1988), no. 3, 349-355. (Wolfgang Kühnel) **89k:53012** 53A30 (53C20)
- Bavard, François** Statistical mechanics of viscoelasticity. *J. Statist. Phys.* **46** (1987), no. 3-4, 753-775. (Renuka Datta) **89a:73031** 73F05 (82A35)
- Bawendi, M. G.** (with Freed, Karl F.) A lattice model for self- and mutually avoiding semiflexible polymer chains. *J. Chem. Phys.* **86** (1987), no. 6, 3720-3730. (Summary) **89b:82075** 82A51
- (with Freed, Karl F.; Mohanty, Udayan) A lattice field theory for polymer systems with nearest-neighbor interaction energies. *J. Chem. Phys.* **87** (1987), no. 9, 5534-5540. (Summary) **89b:82076** 82A51
- (with Freed, Karl F.) Systematic corrections to Flory-Huggins theory: polymer-solvent-void systems and binary blend-void systems. *J. Chem. Phys.* **88** (1988), no. 4, 2741-2756. (Summary) **89b:82077** 82A51
- Baxendale, Peter H.** Moment stability and large deviations for linear stochastic differential equations. *Probabilistic methods in mathematical physics* (Kyoto, 1985), 31-54, *Academic Press, Boston, MA*, 1987. (Ludwig Arnold) **89c:60068** 60H10 (58F11, 60F10)
- Baxter, John Robert** (with Dal Maso, Gianni; Mosco, U.) Stopping times and  $\Gamma$ -convergence. *Trans. Amer. Math. Soc.* **303** (1987), no. 1, 1-38. (Dominique Bakry) **89b:35061** 35K05 (35J20, 49B50, 60G40, 60J45)
- (with Jain, Naresh C.) A comparison principle for large deviations. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1235-1240. (J. Hüster) **89b:60043** 60F10 (60B05)
- Baxter, Laurence A.** (with Kim, Chul) Bounding the stochastic performance of continuum structure functions. *I. J. Appl. Probab.* **23** (1986), no. 3, 660-669. (Summary) **89e:60027** 60E05 (60E15)
- (with Kim, Chul) Bounding the stochastic performance of continuum structure functions. *II. J. Appl. Probab.* **24** (1987), no. 3, 609-618. (Summary) **89e:60028** 60E05 (60E15)
- (with Kim, Chul) Axiomatic characterizations of continuum structure functions. *Oper. Res. Lett.* **6** (1987), no. 6, 297-300. (Summary) **89c:90056** 90B25
- On the theory of cannibalization. *J. Math. Anal. Appl.* **136** (1988), no. 1, 290-297. (F. Beichelt) **89m:90073** 90B25
- Baxter, Rodney James** (with Andrews, G. E.; Bressoud, D. M.; Burge, W. H.; Forrester, P. J.; Viennot, Gérard) Partitions with prescribed hook differences. *European J. Combin.* **8** (1987), no. 4, 341-350. (Peter Paule) **89g:05014** 05A30 (82A69)
- Chromatic polynomials of large triangular lattices. *J. Phys. A* **20** (1987), no. 15, 5241-5261. (George E. Andrews) **89a:82033** 82A67 (05C15)
- (with Owczarek, A. L.) Generalised percolation probabilities for the self-dual Potts model. *J. Phys. A* **20** (1987), no. 15, 5263-5271. (Introduction) **89k:82059** 82A43 (82A67)
- (with Alcaraz, Francisco C.; Barber, Michael N.; Batchelor, M. T.; Quispel, G. R. W.) Surface exponents of the quantum  $XXZ$ , Ashkin-Teller and Potts models. *J. Phys. A* **20** (1987), no. 18, 6397-6409. (Summary) **89b:82100** 82A68 (82-04, 82A69)
- (with Owczarek, A. L.) A class of interaction-round-a-face models and its equivalence with an ice-type model. *J. Statist. Phys.* **49** (1987), no. 5-6, 1093-1115. (Peter J. Forrester) **89d:82137** 82A68 (82A69)
- (with Choy, T. C.) Spontaneous magnetizations of the Ising model on the Union Jack lattice. *Phys. Lett. A* **125** (1987), no. 8, 365-368. (H. N. V. Temperley) **89b:82113** 82A68 (82A25)
- Ramanujan's identities in statistical mechanics. *Ramanujan revisited* (Urbana-Champaign, Ill., 1987), 69-84, *Academic Press, Boston, MA*, 1988. (Peter J. Forrester) **89h:82043** 82A68 (11P80, 82A69)
- (with Choy, T. C.) Spontaneous magnetisations of the Ising model on the bathroom tile lattice. *J. Phys. A* **21** (1988), no. 9, 2143-2150. (Peter J. Forrester) **89i:82082** 82A68
- (with Guttmann, A. J.) Series expansion of the percolation probability for the directed square lattice. *J. Phys. A* **21** (1988), no. 15, 3193-3204. (Summary) **89i:82047** 82A43 (82A67)



- Free energy of the solvable chiral Potts model. *J. Statist. Phys.* **52** (1988), no. 3-4, 639-667. (M. Lawrence Glasser) **89j:82081** 82A69 (82A67)
- (with Perk, Jacques H. H.; Au-Yang, H.) New solutions of the star-triangle relations for the chiral Potts model. *Phys. Lett. A* **128** (1988), no. 3-4, 138-142. (Paul A. Pearce) **89g:82062** 82A68 (82A69)
- Bayada, G.** (with Chambat, M.) On the various aspects of the thin film equation in hydrodynamic lubrication when the roughness occurs. *Applications of multiple scaling in mechanics* (Paris, 1986), 14-30, *Rech. Math. Appl.*, 4, Masson, Paris, 1987. (Charles J. Amick) **89i:76043** 76D08
- (with Chambat, M.; Faure, J. B.) Some effects of the boundary roughness in a thin film. *Boundary control and boundary variations* (Nice, 1986), 96-115, *Lecture Notes in Comput. Sci.*, 100, Springer, Berlin-New York, 1988. (Charles J. Amick) **89i:76044** 76D08
- Bayalimov, E. B.** Economic interpretation of dual estimates in linear fractional programming. (Russian) *Izv. Akad. Nauk Kirgiz. SSR* **1987**, no. 3, 8-11, 81. (Summary) **89c:90105** 90C32 (90A11)
- On a system of interconnected dual estimates. (Russian) *Izv. Akad. Nauk Kirgiz. SSR* **1988**, no. 2, 8-12, 91. (Summary) **89j:90165** 90C05 (90C32)
- Bayard, David S.** (with Hadaegh, F. Y.; Meldrum, D. R.) Optimal experiment design for identification of large space structures. *Automatica—J. IFAC* **24** (1988), no. 3, 357-364. (Summary) **89d:93035** 93B30 (49D27, 73K40, 93A15, 93B50, 93C75)
- (with Wen, John T.) New class of control laws for robotic manipulators. I. Nonadaptive case. *Internat. J. Control* **47** (1988), no. 5, 1361-1385. (Not in MR) **93C75**
- (with Wen, John T.) New class of control laws for robotic manipulators. II. Adaptive case. *Internat. J. Control* **47** (1988), no. 5, 1387-1406. (Not in MR) **93C75** (93C40)
- Comments on: "An algorithm for a solution of a stochastic adaptive linear quadratic optimal control problem" [IEEE Trans. Automat. Control **31** (1986), no. 12, 1165-1170; MR **87k:93105**] by R. W. Rishel and L. Harris. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 383-384. (Summary) **89k:93235** 93E25
- Bayarri, M. J.** (with DeGroot, Morris H.) Information in selection models. *Probability and Bayesian statistics* (Innsbruck, 1986), 39-51, Plenum, New York-London, 1987. (Summary) **89a:62016** 62B10 (62B05)
- (with DeGroot, Morris H.; Kadane, Joseph B.) What is the likelihood function? With discussion by Mark Berliner [L. Mark Berliner] and R. W. Butler and a reply by the authors. *Statistical decision theory and related topics, IV, Vol. 1* (West Lafayette, Ind., 1986), 3-27, Springer, New York-Berlin, 1988. (Title) **89a:62005** 62A10
- Bayasgalan, B.** Decidability of theories of the derived structures of semigroups. (Russian) *Ural. Gos. Univ. Mat. Zap.* **14** (1988), no. 3 *Algebr. Sistemy i ikh Mnogooobr.*, 4-13, i. (M. A. Taitlin) **89i:03017** 03B25 (20M99)
- Bayasgalan, Ts.** The numerical domain of linear operators in spaces with an indefinite metric. (Russian) *Studia Sci. Math. Hungar.* **24** (1989), no. 1, 67-69. (From the text) **89m:47030** 47B50 (47A12)
- Baybars, Ilker** (with Edahl, Richard H.) A heuristic method for facility planning in telecommunications networks with multiple alternate routes. *Naval Res. Logist.* **35** (1988), no. 4, 503-528. (Not in MR) **90B10**
- Baye, D.** Phase-equivalent potentials from supersymmetry. *J. Phys. A* **20** (1987), no. 16, 5529-5540. (A. I. Pashnev) **89c:81178** 81F05 (81F20)
- Bayen, D. K.** Some remarks on fixed point theorems. *Mathematica (Cluj)* **29**(52) (1987), no. 1, 1-5. (I. A. Rus) **89f:54078** 54H25
- Bayer, Margaret M.** How many faces does a polytope have? *Shaping space* (Northampton, Mass., 1984), 254-255, 260, *Design Sci. Collect.*, Birkhäuser Boston, Boston, MA, 1988. (see **89b:52016**) **52A25**
- Barycentric subdivisions. *Pacific J. Math.* **135** (1988), no. 1, 1-16. (Egon Schulte) **89k:52008** 52A25 (57Q99)
- Bayer, Pilar** Right triangles with rational sides. (Catalan) *Butl. Soc. Catalana Mat.* **No. 1** (1987), 22-32. (Editors) **89f:11085** 11G40 (11D09, 11R29)
- (with Arenas, Angela) Arithmetic behaviour of the sums of three squares. *J. Number Theory* **27** (1987), no. 3, 273-284. (J. S. Hsia) **89c:11053** 11E20 (11E12, 11E25, 11E36, 11F30)
- Bayes, Thomas** see Gillies, Donald A., **89a:01061**; Cléro, Jean-Pierre, **89i:01035** and Zabell, S. L., **89i:01017**
- Baykara, N. A.** (with Demiralp, M.) Analytic evaluation of equipotential hyperangular interaction integrals. (Italian and Russian summaries) *Nuovo Cimento B* (11) **100** (1987), no. 2, 161-171. (Summary) **89a:81179** 81G55 (33A99)
- Bayliss, Alvin** (with Matkowsky, B. J.; Minkoff, M.) Bistable cellular flames. *Applied mathematics, fluid mechanics, astrophysics* (Cambridge, MA, 1987), 108-115, *World Sci. Publishing*, Singapore, 1988. (see **89f:76002**) **80A25**
- (with Matkowsky, B. J.; Minkoff, M.) Adaptive pseudo-spectral computation of cellular flames stabilized by a point source. *Appl. Math. Lett.* **1** (1988), no. 1, 19-24. (Not in MR) **80A25** (80-04)
- (with Li, Yanyan; Morawetz, Cathleen Synge) Scattering by a potential using hyperbolic methods. *Math. Comp.* **52** (1989), no. 186, 321-338. (Luis Vázquez) **89m:65088** 65M99 (65N99, 81F99)
- Bayly, B. J.** (with Goldhirsch, I.; Orszag, Steven A.) Independent degrees of freedom of dynamical systems. *J. Sci. Comput.* **2** (1987), no. 2, 111-121. (Preben Alström) **89d:58078** 58F13 (76F99)
- Bayo, Eduardo** (with Garcia de Jalon, Javier; Serna, Miguel Angel) A modified Lagrangian formulation for the dynamic analysis of constrained mechanical systems. *Comput. Methods Appl. Mech. Engrg.* **71** (1988), no. 2, 183-195. (Summary) **89i:70006** 70-08 (70B15)
- Bayod, J. M.** (with Martínez-Maurica, J.) Ultrametrically tight extensions. *Proceedings of the conference on p-adic analysis* (Houthalen, 1987), 1-10, *Vrije Univ. Brussel, Brussels*, 1986. (T. T. Raghunathan) **89d:54007** 54C20 (12J25, 26E30, 54E99)
- Bayoumi, M. M.** (with Tade, M. O.; Bacon, D. W.) Self-tuning controller design for systems with arbitrary time delays. I. Theoretical development. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1095-1115. (Summary) **89f:93024** 93C30 (93B50, 93C40)
- (with Tade, M. O.; Bacon, D. W.) Self-tuning controller design for systems with arbitrary time delays. II. Algorithms and simulation examples. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1117-1141. (Summary) **89f:93025** 93C30 (93B50, 93C40)
- (with Mo, Li) A novel approach to the explicit pole assignment self-tuning controller design. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 359-363. (Summary) **89k:93106** 93B55 (93C40, 93E15)
- Bays, Carter** A note on the discovery of a new game of three-dimensional life. *Complex Systems* **2** (1988), no. 3, 255-258. (Editors) **89b:90284** 90D42 (68Q80)
- Bazanski, S. L.** (with Kostyukovich, N. N.) Dynamics of relative motion of charged test particles in general relativity. *Acta Phys. Polon. B* **18** (1987), no. 10, 891-912. (K. L. Duggal) **89b:83013** 83C10 (83C50)
- (with Kostyukovich, N. N.) On first integrals of the electromagnetic deviation equations. *Acta Phys. Polon. B* **18** (1987), no. 11, 983-996. (Geoffrey Prince) **89g:83019** 83C40 (83C50)
- Bazarov, D.** An analogue of the Bitsadze-Samarskii problem for a model third-order equation of parabolic-hyperbolic type. (Russian. English summary) *Izv. Akad. Nauk Turkm. SSR Ser. Fiz.-Tekhn. Khim. Geol. Nauk* **1988**, no. 4, 86-89. (A. S. Berdyshev) **89k:35157** 35M05
- The Dirichlet problem for a third-order equation of mixed type. (Russian) *Izv. Vysht. Uchebn. Zaved. Mat.* **1988**, no. 6, 9-14; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 6, 9-15. (A. S. Berdyshev) **89k:35158** 35M05
- Bazarov, M. V.** (with Shokin, Yu. I.; Novikov, Vyacheslav Aleksandrovich) On the construction and package realization of interval methods for solving ordinary differential equations. *Discretization in differential equations and enclosures* (Weissig, 1986), 197-206, *Math. Res.*, 36, Akademie-Verlag, Berlin, 1987. (Eckehard Wagenführer) **89g:65061** 65G10 (65L05, 92A09)
- Bazdyrev, M. B.** Solvability of the problem of the bending of a multilayered beam. (Russian) *Dinamika Sploshn. Sredy* **No. 82** (1987), 138-141, 168. (Summary) **89g:73028** 73K05 (34A35, 73K20)
- Bazhanov, V. A.** On the sources of modern nonclassical logic. (Russian) *Patterns in the development of modern mathematics* (Russian), 201-208, "Nauka", Moscow, 1987. (Kosta Došen) **89f:01045** 01A60 (01A70, 03-03, 03B50, 03B60)
- Bazhanov, V. V.** Integrable quantum systems and classical Lie algebras. *Comm. Math. Phys.* **113** (1987), no. 3, 471-503. (B. G. Konopelchenko) **89d:58051** 58F07 (17B99, 35Q20)
- Bazylev, V. T.** Characteristic curves of mappings of spaces with affine connection. (Russian) *Spaces over algebras, and some problems in the theory of nets* (Russian), 12-19, *Bashkir. Gos. Ped. Inst.*, Ufa, 1985. (see **89f:00017**) **53B05**
- Bazzani, A.** (with Turchetti, G.) Normal forms for symplectic maps. *Advances in nonlinear dynamics and stochastic processes, II* (Rome, 1986), 25-36, *World Sci. Publishing*, Singapore, 1987. (Luis A. Ibori) **89d:58046** 58F05 (34C20, 70H15)
- Normal forms for symplectic maps of  $\mathbb{R}^{2n}$ . *Celestial Mech.* **42** (1987/88), no. 1-4, 107-128. (Jan A. Sanders) **89k:58205** 58F14 (58F05, 70H15)
- Bazzoni, Silvana** Injective dimension of some divisible modules over a valuation domain. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 357-362. (Alberto Facchini) **89d:13012** 13C11
- B'chvarov, S. N.** (with Kolev, P. K.) Investigation of the dynamics of the regional motions of a certain type of manipulating robot. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 2, 221-235 (1987). (Title) **89e:70005** 70B15
- Beale, Evelyn Martin Lansdowne** Optimization methods in oil and gas exploration. *IMA J. Appl. Math.* **36** (1986), no. 1, 1-10. (Not in MR) **86A99**
- ★ Introduction to optimization. Edited and with a preface by Lynne Mackley. Wiley-Interscience Series in Discrete Mathematics and Optimization. A Wiley-Interscience Publication. *John Wiley & Sons, Ltd., Chichester*, 1988. x+121 pp. ISBN 0-471-91760-5 (Giorgio Giorgi) **89f:90079** 90Cxx (90-01)
- see also Hughes, Phillip, **89i:01083**
- Beale, Guy O.** (with Polites, Michael E.) Modelling and designing digital control systems with averaged measurements. *Internat. J. Control* **48** (1988), no. 1, 161-177. (Not in MR) **93B50** (93C55)
- Beale, J. Thomas** Large-time behavior of model gases with a discrete set of velocities. *Mathematics applied to science* (New Orleans, La., 1986), 1-12, *Academic Press*, Boston, MA, 1988. (From the introduction) **89d:76024** 76P05
- (with Schaeffer, David G.) Nonlinear behavior of model equations which are linearly ill-posed. *Comm. Partial Differential Equations* **13** (1988), no. 4, 423-467. (M. Anne Dow) **89h:35329** 35R25 (35K55, 35Q20, 58F12)
- Beale, Martin** see Beale, Evelyn Martin Lansdowne
- Beals, Michael** Singularities of conormal radially smooth solutions to nonlinear wave equations. *Comm. Partial Differential Equations* **13** (1988), no. 11, 1355-1382. (Jean-Marc Delort) **89m:35137** 35L70 (35L67)
- Vector fields associated with the nonlinear interaction of progressing waves. *Indiana Univ. Math. J.* **37** (1988), no. 3, 637-666. (Jean-Marc Delort) **89m:35138** 35L70 (35F20, 58G17)
- Beals, Richard** (with Deift, Percy; Tomei, Carlos) Inverse scattering for selfadjoint  $n$ th order differential operators on the line. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 26-38, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Basudeb Ray Paladhi) **89b:34056** 34B25 (34A55, 35Q20, 47E05)
- (with Stanton, Nancy K.) The heat equation for the  $\bar{\partial}$ -Neumann problem. I. *Comm. Partial Differential Equations* **12** (1987), no. 4, 351-413. (Harold P. Boas) **89b:58199** 58G11 (32F20, 35K05)
- (with Coifman, Ronald R.) Scattering and inverse scattering for first-order systems. II. *Inverse Problems* **3** (1987), no. 4, 577-593. (David J. Kaup) **89c:34023** 34A55 (34B25)
- (with Greiner, Peter) ★ Calculus on Heisenberg manifolds. *Annals of Mathematics Studies*, 119, Princeton University Press, Princeton, NJ, 1988. x+194 pp. ISBN 0-691-08500-3; 0-691-08501-3 (Kenneth G. Miller) **89m:35223** 35S05 (32F20, 35-02, 47G05, 58G15)
- Calcul pseudodifférentiel trois-étape. [Three-step pseudodifferential calculus] *Journées "Equations aux Dérivées Partielles" (Saint Jean de Monts, 1988)*, Exp. No. I, 4 pp., *École Polytech., Palaiseau*, 1988. (see **89c:35002**) **35S05** (47G05)
- (with Stanton, Nancy K.) The heat equation for the  $\bar{\partial}$ -Neumann problem. II. *Canad. J. Math.* **40** (1988), no. 2, 502-512. (Harold P. Boas) **89c:58112** 58G11 (32F20, 35N15)
- Beam, Richard M.** (with Warming, Robert F.) Stability of semi-discrete approximations for hyperbolic initial-boundary value problems. II. Asymptotic estimates. *Computational fluid dynamics* (Sydney, 1987), 749-760, *North-Holland, Amsterdam-New York*, 1988. (see **89c:76003**) **76-08** (65M10)
- (with Warming, Robert F.) Stability of semi-discrete approximations for hyperbolic initial-boundary value problems: stationary modes. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 660-670,



- Notes Numer. Fluid Mech., 24, Vieweg, Braunschweig, 1989. (see 89j:35007) 65N10 (35140)
- Beame, Paul** Limits on the power of concurrent-write parallel machines. *Inform. and Comput.* 76 (1988), no. 1, 13–28. (Ian Parberry) 89j:68027 68Q05 (68Q10)
- Bean, James C.** (with Hopp, Wallace J.; Smith, Robert L.) A new optimality criterion for nonhomogeneous Markov decision processes. *Oper. Res.* 35 (1987), no. 6, 875–883. (A. Nowak) 89j:90232 90C40
- Beardon, A. F.** Fuchsian groups and  $n$ th roots of parabolic generators. *Holomorphic functions and moduli, Vol. II* (Berkeley, CA, 1986), 13–22, *Math. Sci. Res. Inst. Publ.*, 11, Springer, New York-Berlin, 1988. (Jane Gilman) 89m:11039 11F06 (20H10, 30F35)
- Beasley, J. D.** (with Torquato, S.; Chiew, Y. C.) Two-point cluster function for continuum percolation. *J. Chem. Phys.* 88 (1988), no. 10, 6540–6547. (P. A. Kuchment) 89k:82061 82A43
- Beasley, J. E.** An SST-based algorithm for the Steiner problem in graphs. *Networks* 19 (1989), no. 1, 1–16. (Summary) 89j:90089 90B10 (05C35)
- Beasley, LeRoy B.** (with Pullman, Norman J.) Operators that preserve semiring matrix functions. *Linear Algebra Appl.* 99 (1988), 199–216. (Marvin Marcus) 89b:15041 15A69
- (with Pullman, Norman J.) Semiring rank versus column rank. *Linear Algebra Appl.* 101 (1988), 33–48. (Fred W. Roush) 89e:15003 15A03
- Linear operators on matrices: the invariance of rank- $k$  matrices. *Proceedings of the Victoria Conference on Combinatorial Matrix Analysis* (Victoria, BC, 1987). *Linear Algebra Appl.* 107 (1988), 161–167. (Shao Kuan Li) 89h:15004 15A04
- Beatrout, Frank** (with Li, Song Ying) A Plessner decomposition along transverse curves. *Canad. J. Math.* 40 (1988), no. 5, 1243–1255. (Steven George Krantz) 89j:32069 32A40 (32F25)
- Beattie, Christopher** (with Fox, David W.) Schur complements and the Weinstein-Aronszajn theory for modified matrix eigenvalue problems. *Linear Algebra Appl.* 108 (1988), 37–61. (P. Hagedorn) 89j:49029 49G15 (15A18, 65F15)
- Beattie, Margaret** Duality theorems for group actions and gradings. *Ring theory* (Granada, 1986), 28–32, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (Claudia Menini) 89m:16003 16A03
- Duality theorems for rings with actions or coactions. *J. Algebra* 115 (1988), no. 2, 303–312. (Donald S. Passman) 89k:16004 16A03
- A generalization of the smash product of a graded ring. *J. Pure Appl. Algebra* 52 (1988), no. 3, 219–226. (P. Wauters) 89k:16005 16A03
- Beatty, John C.** (with Bartels, Richard H.; Barsky, Brian A.) ★ An introduction to splines for use in computer graphics and geometric modeling. With forewords by Pierre Bézier and A. Robin Forrest. *Morgan Kaufmann, Palo Alto, CA*, 1987. xiv+476 pp. ISBN 0-934613-27-3 (R. K. Beatson) 89f:65018 65D10 (41A15, 65-01, 65D07)
- Beatty, Millard F.** (with Chow, Alan C.) Finite amplitude vibrations of a Mooney-Rivlin oscillator. *Arch. Rational Mech. Anal.* 102 (1988), no. 2, 141–166. (W. Kecs) 89j:73041 73K03 (73D35, 73P10)
- Finite amplitude, periodic motion of a body supported by arbitrary isotropic, elastic shear mountings. *J. Elasticity* 20 (1988), no. 3, 203–230. (Summary) 89j:73053 73G05 (73C50, 73D35, 73P10, 92A08)
- Beau, W.** (with Röhricht, B.; Metzler, Wolfgang<sup>2</sup>; Parisi, J.; Peinke, J.; Rössler, Otto E.) The classes of fractals. *The physics of structure formation* (Tübingen, 1986), 275–281, *Springer Ser. Synergetics*, 37, Springer, Berlin-New York, 1987. (see 89b:58064) 58F13 (54F45)
- gouyon-Beauchamps, D.** see Gouyon-Beauchamps, D.
- Beauchemin, Pierre** (with Brassard, Gilles; Crépeau, Claude; Goutier, Claude) Two observations on probabilistic primality testing. *Advances in cryptography—CRYPTO '86* (Santa Barbara, Calif., 1986), 443–450, *Lecture Notes in Comput. Sci.*, 263, Springer, Berlin-New York, 1987. (Carl Pomerance) 89e:11180 11Y11
- (with Brassard, Gilles; Crépeau, Claude; Goutier, Claude; Pomerance, Carl) The generation of random numbers that are probably prime. *J. Cryptology* 1 (1988), no. 1, 53–64. (Sun Qi) 89j:11126 11Y11 (11A51)
- (with Brassard, Gilles) A generalization of Hellman's extension to Shannon's approach to cryptography. *J. Cryptology* 1 (1988), no. 2, 129–131. (Summary) 89k:94041 94A60 (94A15)
- Beaujouan, Guy** The place of Nicolas Chuquet in a typology of fifteenth-century French arithmetics. *Mathematics from manuscript to print, 1300–1600* (Oxford, 1984), 73–88, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1988. (J. V. Field) 89j:01021 01A40
- Beauquet, Gilles** (with Pogu, Marc) ★ Programmation des éléments finis ( $P_1, 2D$ ). (French) [Programming the finite elements ( $P_1, 2D$ )] *Cepadues Editions, Toulouse*, 1987. 115 pp. ISBN 2-85428-165-9 (Jacques Couot) 89k:65001 65-01 (65-04, 65N30)
- Beauquier, D.** Minimal automaton of a rational cover. *Automata, languages and programming* (Karlsruhe, 1987), 174–189, *Lecture Notes in Comput. Sci.*, 267, Springer, Berlin-New York, 1987. (Summary) 89f:68069 68Q45
- Beauquier, J.** (with Thimonier, Loÿs) Prefix-free words of length  $n$  over  $m$  letters: two-sided well-balanced parentheses and palindromes. *Combinatoire énumérative* (Montreal, Que., 1985/Quebec, Que., 1985), 27–33, *Lecture Notes in Math.*, 1234, Springer, Berlin-New York, 1986. (Juhani Karhumäki) 89g:68035 68Q45 (05A99)
- (with Blattner, M.; Latteux, M.) On commutative context-free languages. *J. Comput. System Sci.* 35 (1987), no. 3, 311–320. (Howard Straubing) 89b:68036 68Q45
- costa de Beauregard, O.** see Costa de Beauregard, O.
- Beauregard, Raymond A.** Left Ore principal right ideal domains. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 459–462. (Jusuf Alajbegović) 89e:16003 16A02
- Beauville, Arnaud** L'approche géométrique du problème de Schottky. [The geometric approach to the Schottky problem] *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 628–633, *Amer. Math. Soc., Providence, RI*, 1987. (John B. Little) 89d:14040 14H40 (14K10, 14K25)
- (with Debarre, Olivier) Sur le problème de Schottky pour les variétés de Prym. [On the Schottky problem for Prym varieties] *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) 14 (1987), no. 4, 613–623 (1988). (John B. Little) 89m:14014 14H40 (14K10, 14K25)
- Le problème de Torelli. [The Torelli problem] *Séminaire Bourbaki*, Vol. 1985/86. *Astérisque* No. 145-146 (1987), 3, 7–20. (A. Papantonopoulou (translated from Zbl 621:14012)) 89a:32020 32G13 (14C30, 32G20)
- Le problème de Schottky et la conjecture de Novikov. [The Schottky problem and Novikov's conjecture] *Séminaire Bourbaki*, Vol. 1986/87. *Astérisque* No. 152-153 (1987), 4, 101–112 (1988). (V. V. Chueshev) 89e:14029 14H40 (14K25, 30F35, 32G20, 58F07)
- (with Mérindol, J.-Y.) Sections hyperplanes des surfaces  $K3$ . [Hyperplane sections of  $K3$  surfaces] *Duke Math. J.* 55 (1987), no. 4, 873–878. (L. Bădescu) 89a:14043 14J28 (14B07)
- Le problème de Schottky: une introduction. [The Schottky problem: an introduction] *Gaz. Math. No. 37* (1988), 54–63. (Olivier Debarre) 89d:14041 14H40 (14-02, 14K25, 32G20)
- Annulation du  $H^1$  et systèmes paracanoniques sur les surfaces. [Vanishing of  $H^1$  and paracanonical systems on surfaces] *J. Reine Angew. Math.* 388 (1988), 149–157. (Yoichi Miyaoka) 89i:14032 14J25 (14C20, 32G13)
- Beauwens, Robert** (with Bouzid, Ben Mustapha) Existence and conditioning properties of sparse approximate block factorizations. *SIAM J. Numer. Anal.* 25 (1988), no. 4, 941–956. (R. J. Plemmons) 89j:65033 65F10 (65F50, 65N20)
- Beauzamy, Bernard** Inégalité de Jensen pour les polynômes avec concentration aux bas degrés. [Jensen's inequality for polynomials with concentration at low degrees] *Séminaire d'Analyse Fonctionnelle 1984/1985*, 73–76, *Publ. Math. Univ. Paris VII*, 26, Univ. Paris VII, Paris, 1986. (see 89b:46005) 26C05
- (with Casazza, Peter G.) Isométries de l'espace de Tzirelson. [Isometries of the Tzirelson space] *Séminaire d'Analyse Fonctionnelle 1984/1985*, 119–124, *Publ. Math. Univ. Paris VII*, 26, Univ. Paris VII, Paris, 1986. (Catherine Finet) 89f:46026 46B20 (47B37)
- Orbites tendant vers l'infini. (English summary) [Orbits tending to infinity] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 4, 123–126. (Bernd Rosenberger) 89e:47003 47A05
- An operator on a separable Hilbert space with many hypercyclic vectors. *Studia Math.* 87 (1987), no. 1, 71–78. (S. Rolewicz) 89j:47004 47A15 (47A99)
- see also *Seminar: Functional Analysis*, 89b:46005 and 89c:46002
- Beaver, Donald de B.** Textbooks of natural philosophy: the beatification of technology. *From ancient omens to statistical mechanics*, 203–213, *Acta Hist. Sci. Nat. Med.*, 39, Univ. Lib. Copenhagen, Copenhagen, 1987. (K. E. Hirst) 89i:01034 01A50 (00A25)
- Beazer, R.** Coherent De Morgan algebras. *Algebra Universalis* 24 (1987), no. 1-2, 128–136. (From the introduction) 89k:06010 06D30
- Behbouchi, R.** Application de l'analyse non standard dans un problème de semi-conducteurs. [Application of nonstandard analysis in a semiconductor problem] *Proceedings of the conferences on mathematical logic, Vol. 3 (Italian)* (Siena, 1985; Padova, 1985; and Siena, 1986), 167–176, *Univ. Siena, Siena*, 1987. (Hanna Nencka) 89b:03110 03H10 (34B10)
- Analyse non standard et pédagogie. [Nonstandard analysis and pedagogy] *Cahiers Math.* 1987, no. 1, 1–8. (Christine Charretton) 89m:00017 00A25 (03H05)
- Behrnes, J.** (with Eberly, D.) A description of self-similar blow-up for dimensions  $n \geq 3$ . (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* 5 (1988), no. 1, 1–21. (Victor A. Galaktionov) 89f:35034 35B40 (35K55)
- (with Bressan, Aldo; Lacey, A.) Total blow-up versus single point blow-up. *J. Differential Equations* 73 (1988), no. 1, 30–44. (Victor A. Galaktionov) 89g:35019 35B40 (35K55)
- Behnke, Natalia** (with da Providência, João) Some remarks on a conjecture of de Oliveira. *Linear Algebra Appl.* 102 (1988), 241–246. (Anna Lee) 89e:15009 15A15 (15A57)
- (with da Providência, João) On the boundary of the  $C$ -numerical range of a normal matrix. *Linear and Multilinear Algebra* 23 (1988), no. 2, 145–157. (Yik-Hoi Au-Yeung) 89k:15042 15A60
- Bebie, H.** (with Marchand, J.-P.) Population model with quasi-periodic clustering. *Phys. A* 151 (1988), no. 2-3, 281–292. (Henryk Gzyl) 89g:60302 60K35 (82A99, 92A15)
- Behjak, Andrej** (with Štefánková, Ivana) Nondeterminism is essential for reversal-bounded two-way multihead finite automata. *Kybernetika (Prague)* 24 (1988), no. 1, 65–71. (Andreas Brandstädt) 89g:68017 68Q15 (03D10, 03D15)
- Beccari, Giannina** (with Massaza, Carla) Perfect homogeneous polynomial ideals of height two, with standard basis of maximal cardinality. (Italian summary) *Boll. Un. Mat. Ital.* D (6) 5 (1986), no. 1, 201–223 (1987). (W. V. Vasconcelos) 89b:13026 13D05 (13H15, 13H15)
- Beccà, C.** (with Biasi, Alberto; Bonneau, Guy; Collina, R.; Delduc, F.) Renormalizability and infrared finiteness of nonlinear  $\sigma$ -models: a regularization-independent analysis for compact coset spaces. *Comm. Math. Phys.* 120 (1988), no. 1, 121–148. (Olivier Piguet) 89k:81085 81E15 (58E20, 81E13)
- On the covariant quantization of the free string: the conformal structure. *Nuclear Phys. B* 304 (1988), no. 3, 513–524. (Helmut Rumpf) 89j:81160 81E99 (81E30)
- (with Piguet, O.) On the renormalization of two-dimensional chiral models. *Nuclear Phys. B* 315 (1989), no. 1, 153–165. (Summary) 89m:81103 81E15 (81E13, 81E40)
- Beccerra, Linda** Tidy Noether lattices. *Algebra Universalis* 24 (1987), no. 1-2, 50–59. (Michael E. Dettelsen) 89a:06038 06F10 (06F05, 13B20)
- On prime divisors of large powers of elements in Noether lattices. *Glasgow Math. J.* 30 (1988), no. 3, 359–367. (Daniel D. Anderson) 89i:06025 06F10 (13E05)
- Becher, Heiko** On optimal experimental design under spatial correlation structures for square and nonsquare plot designs. *Comm. Statist. Simulation Comput.* 17 (1988), no. 3, 771–780. (Not in MR) 62K05
- Bechhofer, Robert E.** (with Goldsman, David M.) Sequential selection procedures for multifactor experiments involving Koopman-Darmois populations with additivity. *Statistical decision theory and related topics, IV, Vol. 2* (West Lafayette, Ind., 1986), 3–21, Springer, New York-Berlin, 1988. (Z. Šidák) 89c:62052 62F07 (62L10)
- (with Goldsman, David M.) Truncation of the Bechhofer-Kiefer-Sobel sequential procedure for selecting the normal population which has the largest mean. II. 2-factor experiments with no interaction. *Comm. Statist. Simulation Comput.* 17 (1988), no. 1, 103–128. (Not in MR) 62F07
- Becher, Adam** Generation of squeezed states in a homogeneous magnetic field. *Phys. Lett. A* 130 (1988), no. 8-9, 481–482. (Summary) 89f:81284 81K05 (81D30)
- Beckmann, Roland** About some technical sketches of Villard de Honnecourt's manuscript. New light on deleted diagrams: an unknown drawing. *British J. Hist. Sci.* 21 (1988), no. 70, part 3, 341–361. (H. L. L. Busard) 89i:01008 01A35
- Bechtel, H.** Locally complemented formations. *J. Algebra* 106 (1987), no. 2, 413–429. (P. Hauck (Zbl 618:20011)) 89d:20017 20D10
- Bechtold, Stephen E.** (with Sumners, De Witt L.) Optimal work-rest scheduling with exponential work-rate decay. *Management Sci.* 34 (1988), no. 4, 547–552. (Summary) 89b:90101 90B35

- Beck, Anna see Einstein, Albert, 89a:01102
- Beck, Gerald J. (with Qu, Yin Sheng; Williams, George W.; Goormastic, Marlene) A generalized model of logistic regression for clustered data. *Comm. Statist. Theory Methods* 16 (1987), no. 12, 3447-3476. (Klaus Hinkelmann) 89b:62135 62J02 (62P10)
- Beck, István (with Krogdahl, Stein) A select and insert sorting algorithm. *BIT* 28 (1988), no. 4, 726-735. (A. D. Booth) 89m:68014 68P10 (68Q25)
- Coloring of commutative rings. *J. Algebra* 116 (1988), no. 1, 208-226. (Liam O'Carroll) 89i:13006 13A99 (05C99, 13E99, 13F10, 13M99)
- Beck, József Uniformity and irregularity. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1400-1407, Amer. Math. Soc., Providence, RI, 1987. (J. Spencer) 89d:05001 05A05
- Irregularities of distribution. I. *Acta Math.* 159 (1987), no. 1-2, 1-49. (O. P. Stackelberg) 89c:11117 11K38
- On a lattice point problem of L. Moser. I. *Combinatorica* 8 (1988), no. 1, 21-47. (H. G. Meijer) 89k:11094 11P21 (11K38)
- On a lattice point problem of L. Moser. II. *Combinatorica* 8 (1988), no. 2, 159-176. (H. G. Meijer) 89m:11095 11P21 (11H31, 11K38)
- On the discrepancy of convex plane sets. *Monatsh. Math.* 105 (1988), no. 2, 91-106. (Gerhard Larcher) 89f:11109 11K38
- Irregularities of distribution. II. *Proc. London Math. Soc.* (3) 56 (1988), no. 1, 1-50. (O. P. Stackelberg) 89c:11118 11K38
- Balanced two-colorings of finite sets in the cube. *Proceedings of the Oberwolfach Meeting "Kombinatorik" (1986). Discrete Math.* 73 (1989), no. 1-2, 13-25. (J. Spencer) 89i:05040 05A99 (11K38)
- Kováčič-Beck, L. see Kováčič-Beck, L.
- Beckenstein, Edward (with Narici, Lawrence) Automatic continuity of certain linear isomorphisms. *Acad. Roy. Belg. Bull. Cl. Sci.* (5) 73 (1987), no. 5, 191-200. (W. Govaerts) 89k:46091 46P05 (46E25, 54C35)
- (with Narici, Lawrence; Todd, Aaron R.) Automatic continuity of linear maps on spaces of continuous functions. *Manuscripta Math.* 62 (1988), no. 3, 257-275. (B. de Pagter) 89j:47020 47B38 (47B55)
- Becker, Bernd Efficient testing of optimal time adders. *IEEE Trans. Comput.* 37 (1988), no. 9, 1113-1121. (Marius Zimand) 89f:68065 68Q35
- (with Simon, Hans-Ulrich) How robust is the n-cube? *Inform. and Comput.* 77 (1988), no. 2, 162-178. (N. N. Mirenkov) 89m:68005 68M10 (68M20)
- Becker, Howard S. More closure properties of pointclasses. *Cabal Seminar* 81-85, 31-36, *Lecture Notes in Math.*, 1333, Springer, Berlin-New York, 1988. (David E. Marker) 89i:03092 03E15
- Borel and analytic one-one parametrizations of the countable sets of reals. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 929-932. (Edward Azoif) 89i:03091 03E15 (03E35, 28A05)
- Becker, J. C. A relation between equivariant and nonequivariant stable cohomotopy. *Math. Z.* 199 (1988), no. 3, 331-356. (Donald M. Davis) 89g:55014 55P42 (55Q55)
- Becker, Janet (with Miles, John) Parametrically excited, progressive cross-waves. *J. Fluid Mech.* 186 (1988), 129-146. (Summary) 89c:76037 76B15
- Becker, Joan L. (with Sarin, Rakesh K.) Lottery dependent utility. *Management Sci.* 33 (1987), no. 11, 1367-1382. (J. A. Rickard) 89a:90027 90A10 (62C99, 90A05, 90D35)
- Becker, Jochen (with Pommerenke, Ch.) On the Hausdorff dimension of quasicircles. *Ann. Acad. Sci. Fenn. Ser. A I Math.* 12 (1987), no. 2, 329-333. (Olli Martio) 89f:30037 30C60
- Becker, Johannes (with Billhardt, Bernd) Configural effects in similarity judgments: a theoretical analysis. *Progress in mathematical psychology*, I, 439-446, North-Holland, Amsterdam-New York, 1987. (Summary) 89a:92068 92A25
- Becker, Klaus Multigrid acceleration of a 2D full potential flow solver. *Multigrid methods (Copper Mountain, CO, 1987)*, 1-21, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (W. Langlois) 89j:76006 76-08 (65P05, 76G99, 76H05)
- Becker, L. C. (with Burton, T. A.; Zhang, Shu Nian) Functional-differential equations and Jensen's inequality. *Dynamics of infinite-dimensional systems (Lisbon, 1986)*, 31-38, NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 37, Springer, Berlin-New York, 1987. (Zhicheng Wang) 89b:34165 34K20
- (with Burton, T. A.; Krisztin, T.) Floquet theory for a Volterra equation. *J. London Math. Soc.* (2) 37 (1988), no. 1, 141-147. (Andrzej Hajnos) 89f:45002 45D05 (45J05, 45M99)
- (with Burton, T. A.) Asymptotic stability criteria for delay-differential equations. *Proc. Roy. Soc. Edinburgh Sect. A* 110 (1988), no. 1-2, 31-44. (István Györi) 89m:34096 34K20
- Becker, Richard Édouard Sur les cônes faiblement complets contenus dans le dual d'un espace de Banach non-reflexif. (English summary) [On weakly complete cones contained in the dual of a nonreflexive Banach space] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 5, 257-259. (Summary) 89c:46016 46B20
- Becker, Ulrich (with Grün, Norbert; Scheid, Werner) Evaluation of Appell functions in relativistic Coulomb-Dirac form factors. *J. Phys. A* 20 (1987), no. 16, 5447-5458. (Summary) 89a:81178 81G45 (33A30)
- Becker-Landeck, Paul-Georg Maße für algebraische Unabhängigkeit nach einer Methode von Mahler. [Measures for algebraic independence, following a method of Mahler] *Acta Arith.* 50 (1988), no. 3, 279-293. (F. Beukers) 89i:11079 11J82
- Beckers, J. (with Hussin, V.) Superalgebras of symmetries in superquantum mechanics. *Group theoretical methods in physics (Varna, 1987)*, 116-125, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (See 89g:81001) 81C40
- (with Dehin, D.; Hussin, V.) On the Heisenberg and orthosymplectic superalgebras of the harmonic oscillator. *J. Math. Phys.* 29 (1988), no. 7, 1705-1711. (Qi Zhi Han) 89m:17002 17A70 (58F35, 81C40)
- (with Dehin, D.; Hussin, V.) Dynamical and kinematical supersymmetries of the quantum harmonic oscillator and the motion in a constant magnetic field. *J. Phys. A* 21 (1988), no. 3, 651-667. (A. I. Pashnev) 89k:81043 81C40 (17B70)
- Beckhoff, Ferdinand ★ Korovkin-Theorie in Algebren. (German) [Korovkin theory in algebras] *Schriftenreihe des Mathematischen Instituts der Universität Münster, Ser. 2 [Series of the Mathematical Institute of the University of Münster, Ser. 2]*, 45, Universität Münster, Mathematisches Institut, Münster, 1987. viii+145 pp. (Robert S. Doran) 89b:46067 46L05 (41A65, 46J05, 46K05, 47D99)
- Beckmann, Martin J. (with Thiss, Jacques-François) The location of production activities. *Handbook of regional and urban economics*, Vol. 1, 21-95, *Handbooks in Econom.*, 7, North-Holland, Amsterdam-New York, 1986. (See 89m:90047) 90B10 (90A11)
- (with Srinivasan, S. K.) An  $(s, S)$  inventory system with Poisson demands and exponential lead time. (German summary) *OR Spektrum* 9 (1987), no. 4, 213-217. (Uendra Dave) 89b:90059 90B05
- see also Contributions to applied mathematics and statistics, 89i:00018
- Beckner, William A generalized Poincaré inequality for Gaussian measures. *Proc. Amer. Math. Soc.* 105 (1989), no. 2, 397-400. (Dominique Bakry) 89m:42027 42C15 (42C05, 58G32, 60G15)
- Bector, C. R. (with Bector, Meena K.) Second order duality for a quasi convex programming problem. *Cahiers Centre Études Rech. Opér.* 29 (1987), no. 1-2, 61-68. (Kang Hoh Phua) 89b:90177 90C30
- (with Chandra, Suresh; Husain, I.) Second order duality in continuous-time nonlinear programming. Sixteenth Manitoba conference on numerical mathematics and computing (Winnipeg, Man., 1986). *Congr. Numer.* 56 (1987), 121-134. (B. Mond) 89b:90224 90C48 (49A55, 49D37, 90C25)
- (with Chandra, Suresh) (Generalized)-convexity and higher order duality for fractional programming. *Opsearch* 24 (1987), no. 3, 143-154. (Siegfried Schaible) 89b:90212 90C32
- (with Gupta, Y. P.; Goel, S.) An economic quantity discount model to increase vendor profits under inflation. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 87-100. (Summary) 89g:90084 90B05
- (with Bhatt, S. K.) Optimality conditions and duality for quasi-convex programming in real Banach space. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 101-108. (Summary) 89b:90255 90C48 (90C30)
- (with Sunjaja, S. K.) Duality in generalized fractional programming involving nondifferentiable functions. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 159-164. (From the introduction) 89k:90157 90C32
- (with Chandra, Suresh; Durga Prasad, M. V.) Nonlinear fractional programming duality for Hanson-Mond class of functions with nondifferentiable terms. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 165-170. (Summary) 89b:90235 90C32
- (with Bector, Meena K.; Husain, I.; Chandra, Suresh) A duality model for a generalized minmax program. *Naval Res. Logist.* 35 (1988), no. 5, 493-501. (Dorel Duca) 89j:90214 90C30 (90C25, 90C32)
- Bector, Meena K. (with Bector, C. R.) Second order duality for a quasi convex programming problem. *Cahiers Centre Études Rech. Opér.* 29 (1987), no. 1-2, 61-68. (Kang Hoh Phua) 89b:90177 90C30
- (with Husain, I.; Chandra, Suresh; Bector, C. R.) A duality model for a generalized minmax program. *Naval Res. Logist.* 35 (1988), no. 5, 493-501. (Dorel Duca) 89j:90214 90C30 (90C25, 90C32)
- Bédard, Robert The lowest two-sided cell for an affine Weyl group. *Comm. Algebra* 16 (1988), no. 6, 1113-1132. (Bhama Srinivasan) 89d:20041 20H15
- Bédarix, D. (with Rubi, J. M.) Brownian motion in a fluid in elongational flow. *J. Statist. Phys.* 53 (1988), no. 1-2, 125-136. (Summary) 89j:76080 76R50 (82A31)
- Bedel'baev, A. A. Conditions for optimality of the second order for the nonsmooth Bolza problem of the calculus of variations. (Russian) *Differential equations, theory of functions and their applications (Russian)*, 8-13, 80, Kazakh. Gos. Univ., Alma-Ata, 1986. (Dariusz Zagrodny) 89m:49027 49A52 (26A24, 26B25, 49B27)
- Correctness of the definition of second-order subdifferentials. (Russian) *Optimizatsiya* No. 39(56) (1986), 5-24, 158. (Péter Tallós) 89a:49017 49A52 (58C20, 90C48)
- matulić-Bedenić, I. see Matulić-Bedenić, I.
- Beder, B. Allelic frequencies given the sample's common ancestral type. *Theoret. Population Biol.* 33 (1988), no. 2, 126-137. (Susan Wilson) 89d:92039 92A10
- Beder, Jay H. A sieve estimator for the covariance of a Gaussian process. *Ann. Statist.* 16 (1988), no. 2, 648-660. (Pham Dinh Tuan) 89f:62073 62M09 (62G05)
- Estimating a covariance function having an unknown scale parameter. *Comm. Statist. Theory Methods* 17 (1988), no. 5, 1641-1657. (Raúl Pedro Mentz) 89f:62118 62M10
- Bedford, Eric (with Dadok, J.) Bounded domains with prescribed group of automorphisms. *Comment. Math. Helv.* 62 (1987), no. 4, 561-572. (Hideaki Kazama) 89c:32078 32M05
- Locally determined envelopes of holomorphy in  $C^2$ . *Math. Ann.* 281 (1988), no. 3, 419-429. (Peter Pflug) 89g:32021 32D10
- (with Taylor, B. Alan) Smooth plurisubharmonic functions without subextension. *Math. Z.* 198 (1988), no. 3, 331-337. (Valentin Napalkov) 89k:32034 32F05
- (with Pinchuk, S. I.) Domains in  $C^2$  with noncompact groups of holomorphic automorphisms. (Russian) *Mat. Sb. (N.S.)* 135(177) (1988), no. 2, 147-157, 271; translated in *Math. USSR-Sb.* 63 (1989), no. 1, 141-151. (Harold P. Boas) 89d:32054 32H05 (32F15, 32M05)
- Bedford, T. see New directions in dynamical systems, 89a:58034
- Bedi, J. S. (with Chaudhry, G. M.) Multi-dimensional state-space model for memory management. *Internat. J. Systems Sci.* 20 (1989), no. 1, 121-128. (Not in MR) 68N25
- Bedient, Jack D. (with Bunt, Lucas N. H.; Jones, Phillip S.) ★ The historical roots of elementary mathematics. Reprint of the 1976 edition. *Dover Publications, Inc., New York*, 1988. xvi+299 pp. ISBN 0-486-25563-8 (Editors) 89b:01003 01A05 (00A05)
- Bedini, Silvio A. The Galilean javalabe. (Italian summary) *Nuncius Ann. Storia Sci.* 1 (1986), no. 1, 25-46. (Summary) 89a:01017 01A45
- Bednarchuk, V. N. A method for joining the vertices of a graph. (Russian. English summary) *Teoret. Elektrotekh. No. 40* (1986), 21-28, 148. (D. Stanomir) 89d:40064 94C15 (05C99, 94C05)
- Bédoz, Erik On automorphisms of group von Neumann algebras. *Math. Japon.* 33 (1988), no. 1, 27-37. (Editors) 89f:46120 46L40
- Bedoya, Hernando (with Stöhr, Karl-Otto) An algorithm to calculate discrete invariants of singular primes in function fields. *J. Number Theory* 27 (1987), no. 3, 310-323. (H.-G. Ruck) 89b:14037 14H05
- Bedrosian, Samuel D. (with Xie, Wei Xia) Experimentally derived fuzzy membership function for gray level images. *J. Franklin Inst.* 325 (1988), no. 2, 155-164. (Not in MR) 94D05 (94A17)
- Beebe, John Examples of infinite, incongruent exact covers. *Amer. Math. Monthly* 95 (1988), no. 2, 121-123. (Štefan Porubský) 89g:11013 11B25 (11A07)



- Beckmann, Brigitte** ★ Eigenfunktionen und Eigenwerte des Laplaceoperators auf Drehflächen und die Gliederung des Spektrums nach den Darstellungen der Isometriengruppe. (German) [Eigenfunctions and eigenvalues of the Laplace operator on surfaces of revolution and the division of the spectrum according to the representations of the group of isometries] *Schriftenreihe des Mathematischen Instituts der Universität Münster, Ser. 2* [Series of the Mathematical Institute of the University of Münster, Ser. 2], 47. *Universität Münster, Mathematisches Institut, Münster, 1988. iii+139 pp.* (Jürgen Eichhorn) **89d:58126** 58G25 (35P05)
- Beckmann, W.** (with Chang, Shao-Chien) Summability domains not containing  $\phi$ . *Analysis* **8** (1988), no. 1-2, 145-164. (Jozsef Antoni) **89k:40011** 40D20 (40D09)
- Beelen, Th. G. J.** (with Van Dooren, Paul) An improved algorithm for the computation of Kronecker's canonical form of a singular pencil. *Linear Algebra Appl.* **105** (1988), 9-65. (Hans-Jürgen Albrand) **89h:65056** 65F30
- (with Van Dooren, Paul) A pencil approach for embedding a polynomial matrix into a unimodular matrix. *SIAM Conference on Linear Algebra in Signals, Systems, and Control* (Boston, Mass., 1986). *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 1, 77-89. (Külmiz Çevik) **89h:65102** 65F30 (15A22, 93B10)
- (with van den Hurk, G. J.; Praagman, C.) A new method for computing a column reduced polynomial matrix. *Systems Control Lett.* **10** (1988), no. 4, 217-224. (Not in MR) **93B25** (65F30, 93B40)
- (with Van Dooren, Paul) A numerical method for deadbeat control of generalized state-space systems. *Systems Control Lett.* **10** (1988), no. 4, 225-233. (Summary) **89h:93062** 93B60 (93B40, 93C55)
- Beem, John K.** (with Parker, Phillip E.) Pseudoconvexity and general relativity. *J. Geom. Phys.* **4** (1987), no. 1, 71-80. (Paul E. Ehrlich) **89h:53098** 53C50 (83C99)
- (with Ehrlich, Paul E.) Completeness of timelike and spacelike submanifolds. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 137-151, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Alexandr V. Levicev) **89h:53095** 53C50 (53C22)
- (with Ehrlich, Paul E.; Markvorsen, Steen) Timelike isometries of space-times with nonnegative sectional curvature. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 153-165, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Alexandr V. Levicev) **89h:53095** 53C50 (53C22)
- (with Ehrlich, Paul E.; Markvorsen, Steen) Timelike isometries and Killing fields. *Geom. Dedicata* **26** (1988), no. 3, 247-258. (Alexandr V. Levicev) **89h:53058** 53C50
- Beemer, G. F. M.** (with van Lint, J. H.) Optimal generalized Petersen graphs. *Philips J. Res.* **43** (1988), no. 2, 129-136. (Brian Alspach) **89i:05151** 05C35
- Beer, G.** (with Liu, Jun) The application of double exponential formulas in the boundary element method. *Boundary elements VII, Vol. I, II* (Como, 1985), 13.3-13.16, *Comput. Mech., Southampton, 1985*. (See **89f:65003**) **65D30**
- Beer, Gerald** Increasing semicontinuous functions and compact topological lattices. *Ricerche Mat.* **35** (1986), no. 2, 303-308. (M. M. McWaters) **89g:54087** 54H12 (06F30)
- Continuity of the straight line path for convex sets. *Israel J. Math.* **58** (1987), no. 2, 205-212. (Summary) **89c:52003** 52A07
- Increasing semicontinuous functions and compact topological lattices. *Mathematica (Cluj)* **29**(52) (1987), no. 1, 7-10. (Jimmie D. Lawson) **89h:54079** 54H12 (06B30, 22A26, 54F05)
- (with Villar, Luzviminda) On the approximation of starshaped sets in Hausdorff distance. *Serdica* **13** (1987), no. 4, 403-407. (R. J. Gardner) **89h:28017** 28C15 (54B20)
- Complete subsets of  $C(X, Y)$  with respect to Hausdorff distance. *Math. Balkanica (N.S.)* **2** (1988), no. 1, 78-84. (V. V. Obukhovskii) **89h:54070** 54E50 (54C35)
- An embedding theorem for the Fell topology. *Michigan Math. J.* **35** (1988), no. 1, 3-9. (Włodzimierz J. Charatonik) **89h:54017** 54B20 (54C30, 54E45)
- On a generic optimization theorem of Petar Kenderov. *Nonlinear Anal.* **12** (1988), no. 6, 647-655. (S. V. Razevskii) **89i:90092** 90C48
- (with Kenderov, P. S.) On the ARG MIN multifunction for lower semicontinuous functions. *Proc. Amer. Math. Soc.* **102** (1988), no. 1, 107-113. (John A. Eidswick) **89f:26001** 26A15 (49A50, 54C60, 90C48)
- On the Young-Fenchel transform for convex functions. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1115-1123. (Jacqueline Morgan) **89i:49006** 49A50 (26E25, 46B99, 54B20)
- On a theorem of Cellina for set valued functions. *Rocky Mountain J. Math.* **18** (1988), no. 1, 37-47. (Janina Ewert) **89h:54034** 54C60
- (with Villar, Luzviminda) Weakly Baire spaces. *Southeast Asian Bull. Math.* **11** (1988), no. 2, 127-133. (J. C. Oxtoby) **89g:54065** 54E52
- (with Villar, Luzviminda) Borel measures and Hausdorff distance. *Trans. Amer. Math. Soc.* **307** (1988), no. 2, 763-772. (R. J. Gardner) **89h:28018** 28C15 (54B20)
- Support and distance functionals for convex sets. *Numer. Funct. Anal. Optim.* **10** (1989), no. 1-2, 15-36. (Pier Luigi Papini) **89m:46031** 46B99 (41A25, 41A65, 52A05)
- de Beer, Willem** Conformal counterterms and boundary conditions for open strings. *Phys. Rev. D* (3) **37** (1988), no. 6, 1696-1698. (Summary) **89k:81128** 81E99 (81E30)
- Beerends, R. J.** Combinatorial identities on root systems and the Fourier transform of Harish-Chandra's  $c$ -function. *Représentations des groupes et analyse complexe* (Luminy, 1986), 1-12, *Journées SMF*, 24, Univ. Poitiers, Poitiers, 1986. (Stephen Seibarski) **89h:17017** 17B20 (05A19, 22E46, 33A70, 43A90)
- An introduction to the Abel transform. *Miniconference on harmonic analysis and operator algebras* (Canberra, 1987), 21-33, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 15, Austral. Nat. Univ., Canberra, 1987. (Antoni Wawrzynczyk) **89f:22021** 22E46 (22E30, 43A90, 44A15)
- The Fourier transform of Harish-Chandra's  $c$ -function and inversion of the Abel transform. *Math. Ann.* **277** (1987), no. 1, 1-23. (Autorreferat (Zbl 597:43006)) **89d:43010** 43A85 (22E30, 43A90)
- A transmutation property of the generalized Abel transform associated with root system  $A_2$ . *Miniconferences on harmonic analysis and operator algebras* (Canberra, 1987), 1-3, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (From the text) **89h:22022** 22E46
- The Abel transform and shift operators. *Compositio Math.* **66** (1988), no. 2, 145-197. (Christopher Meaney) **89m:22014** 22E30 (33A75, 43A85, 44A15)
- Beery, Yair** (with Snyders, Jakov) A recursive Hadamard transform optimal soft decision decoding algorithm. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 4, 778-789. (Kaicheng Lu) **89g:94035** 94B35 (94B05, 94B10)
- Beesham, A.** (with Maharaj, S. D.) Robertson-Walker-type universes with conformally-invariant scalar field. *Astrophys. and Space Sci.* **136** (1987), no. 2, 315-320. (Summary) **89g:83013** 83C15
- A note on the Birkhoff-type theorem in the scale-covariant theory of gravitation. *Astrophys. and Space Sci.* **146** (1988), no. 2, 393-394. (Carl Brans) **89k:83059** 83D05 (83C20, 83C40)
- Conservation laws and radiation in the scale covariant theory of gravitation. *Astrophys. J.* **327** (1988), no. 1, part 1, 40-43. (Summary) **89h:83069** 83D05 (83F05)
- Kinematical quantities in the scale covariant theory of gravitation. *Astrophys. J.* **327** (1988), no. 1, part 1, 44-49. (Summary) **89h:83070** 83D05 (83F05)
- Bevers, C. E.** (with Craine, R. E.) Asymptotic stability in nonlinear elastic materials with dissipation. *J. Elasticity* **19** (1988), no. 2, 101-110. (Joseph J. Roseman) **89f:73015** 73C50 (73C35)
- (with Šilhavý, M.) The asymptotic behavior of classical solutions to the mixed initial-boundary value problem in finite thermo-viscoelasticity. *Quart. Appl. Math.* **46** (1988), no. 2, 319-329. (Stan Chiriță) **89f:73030** 73F15 (73G15)
- Beex, A. A. (Louis)** (with DeBrunner, Victor E.) Sensitivity analysis of digital filter structures. *Linear algebra in signals, systems, and control* (Boston, MA, 1986), 355-374, *SIAM, Philadelphia, PA, 1988*. (See **89f:00025**) **94A12** (93B35)
- Beffa, Gloria** see **Mari Beffa, Gloria**
- Beg, M. I.** On estimation of scale parameter of gamma distribution. *IAPQR Trans.* **12** (1987), no. 2, 49-50. (Summary) **89d:62025** 62F10
- Begher, H.** Randwertaufgaben für elliptische Systeme vom Haack-Vekua Typ. [Boundary value problems for elliptic systems of Haack-Vekua type] *Sitzungsberichte der Berliner Mathematischen Gesellschaft*, 159-170, *Freie Univ. Berlin, Berlin, 1987*. (Bernd Goldschmidt) **89h:35099** 35J45 (30G20)
- Der Satz von Cauchy-Kowalewski für hyperanalytische Funktionen. (English and Russian summaries) [The theorem of Cauchy-Kowalewska for hyperanalytic functions] *Z. Anal. Anwendungen* **6** (1987), no. 1, 43-47. (Manfred W. Kracht) **89a:35008** 35A10 (30G30)
- (with Gilbert, Robert P.) Pseudohyperanalytic functions. *Complex Variables Theory Appl.* **9** (1988), no. 4, 343-357. (Manfred W. Kracht) **89g:30085** 30G20 (35F05)
- (with Wen, Guo Chun) The discontinuous oblique derivative problem for nonlinear elliptic systems of first order. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 1-2, 7-19. (Bernd Goldschmidt) **89h:35100** 35J45 (30G20)
- Beggs, John J.** (with Nerlove, Marc) Biases in dynamic models with fixed effects. *Econom. Lett.* **26** (1988), no. 1, 29-31. (Not in MR) **62P20**
- A simple model for heterogeneity in binary logit models. *Econom. Lett.* **27** (1988), no. 3, 245-249. (Hilmar Drygas) **89m:62061** 62J02 (62F10)
- Begmatov, A. B.** see **Methods for solving boundary value problems in applied mechanics and control, 89c:00022**
- Begmatov, I. A.** (with Burnashev, M. V.) Detection of orthogonal signals in Gaussian white noise. (Russian) *Dokl. Akad. Nauk UzSSR* **1988**, no. 9, 3-4. (Not in MR) **94A12** (62)
- Asymptotic optimality for the likelihood ratio test in the case of minimax detection of a signal in Gaussian white noise. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 3, 6-11, 88. (E. A. Haroutunian) **89k:94018** 94A13 (62F03)
- Begmatov, E. A.** (with Kuindzhi, V. V.; Saamova, T. S.; Strezhev, S. A.) Structure of a spectral representation formed by a diffraction lattice of echelette type. (Russian) *Issled. Prikl. Mat. No. 14* (1987), 66-80. (M. Martinis) **89f:78021** 78A45
- Some properties of eigenvalues of the Schrödinger operator. Investigations in applied mathematics, No. 5. *J. Soviet Math.* **42** (1988), no. 3, 1720-1722. (Not in MR) **35J10** (35P20)
- Begovich, Ofelia** (with Ortega, Romeo; Lozano Leal, Rogelio; Fernández, Guillermo) On the destabilizing effects of unmodeled plant delay in a simple adaptive controller: simulation and local stability results. *Control Theory Adv. Tech.* **3** (1987), no. 2, 141-148. (Not in MR) **34K20** (93C40)
- (with Fernández, Guillermo; Ortega, Romeo) Conditions for preservation of stability of adaptive controllers for systems with unmodeled delay. *IEEE Trans. Automat. Control* **33** (1988), no. 6, 601-603. (Zong Ji Chen) **89h:93137** 93C40 (34K20, 93D05)
- Begue, Catherine** (with Glowinski, R.; Périaux, Jacques) Détermination d'un opérateur de préconditionnement pour la résolution itérative du problème de Stokes dans la formulation d'Helmholtz. (English summary) [A preconditioning operator for the iterative solution of the Stokes problem via the Helmholtz formulation] *C. R. Acad. Sci. Paris Ser. I Math.* **306** (1988), no. 5, 247-252. (Summary) **89d:35191** 35S05 (65F99, 76D07)
- Behari, Ram** see **Kapur, J. N.**, **89m:01094**; **Mishra, R. S.**, **89m:01102** and **Singal, M. K.**, **89m:01109**
- Beharoz, G.** Quadratic spline-on-spline. *Appl. Math. Lett.* **1** (1988), no. 3, 217-218. (Not in MR) **41A15**
- Another approach to the quintic spline. *Appl. Math. Lett.* **1** (1988), no. 4, 335-338. (H. P. Dikshit) **89j:41012** 41A15 (65D07)
- End conditions for cubic spline interpolation derived from integration. *Appl. Math. Comput.* **29** (1989), no. 3, 231-244. (Summary) **89h:65010** 65D07
- Behling, Richard W.** On the naming of formal fallacies. *Internat. Logic Rev.* **35** (1987), 69-70. (Not in MR) **03A05**
- Behn, U.** (with Zagrebnov, V. A.) One-dimensional Markovian-field Ising model: physical properties and characteristics of the discrete stochastic mapping. *J. Phys. A* **21** (1988), no. 9, 2151-2165. (W. Th. F. den Hollander) **89j:82024** 82A31 (60K35, 82A25)
- (with Teubel, A.; Kühnel, A.) Stratonovich model driven by dichotomous noise: analytical results. *Z. Phys. B* **71** (1988), no. 3, 393-402. (Summary) **89f:60055** 60G99 (60H99, 70L05)
- Behncke, H.** On the Calkin representations of  $B(\mathcal{H})$ . *Proc. Amer. Math. Soc.* **101** (1987), no. 1, 101-107. (Robert S. Doran) **89h:47062** 47D25 (46L05)
- Behr, Erazm J.** Enveloping algebras of Lie superalgebras. *Pacific J. Math.* **130** (1987), no. 1, 9-25. (A. Kh. Kushkulei) **89h:17023** 17B99 (16A08, 17A70)
- Behraves, A.** (with Kaveh, A.; Nani, M.; Sabet, S.) A set theoretical approach for configuration processing. *Comput. & Structures* **30** (1988), no. 6, 1293-1302. (Summary) **89j:73072** 73K25
- Behrends, Ehrhard** Sur les  $M$ -idéaux des espaces d'opérateurs compacts. [On the  $M$ -ideals of compact operator spaces] *Séminaire d'Analyse Fonctionnelle 1984/1985*, 11-18, *Publ.*

- Math. Univ. Paris VII*, 26, *Univ. Paris VII, Paris*, 1986. (A. Pietsch) **89h:47060** 47D15 (46B20)
- (with Wodinski, Georg.) A note on Hermitian operators on complex Banach spaces. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 11-12, 801-803. (S. J. Bernau) **89i:47039** 47B15 (46B99)
- Isomorphic Banach-Stone theorems and isomorphisms which are close to isometries. *Pacific J. Math.* **133** (1988), no. 2, 229-250. (Krzyśtof Jarosz) **89h:46019** 46B20
- (with Cambern, Michael) An isomorphic Banach-Stone theorem. *Studia Math.* **90** (1988), no. 1, 15-26. (Krzyśtof Jarosz) **89h:46020** 46B20
- On the geometry of spaces of  $C_0K$ -valued operators. *Studia Math.* **90** (1988), no. 2, 135-151. (Christian Samuel) **89i:46006** 46A32 (46B20, 47D15)
- Behrendt, Gerhard** Covering posets. *Discrete Math.* **71** (1988), no. 3, 189-195. (Jaroslav Nešetřil) **89i:06002** 06A10
- Equivalence structures and their automorphisms. *European J. Combin.* **9** (1988), no. 3, 199-206. (D. J. Kleitman) **89e:05024** 05A99
- Behrens, Ernst August** Brandt's arithmetic. *Algebra-Tagung Halle 1986*, 19-27, *Wissensch. Beitr.* **33**, Martin-Luther-Universität Halle-Wittenberg, Halle (Saale), 1987. (Manfred Stern) **89a:01039** 01A60 (11R54, 16A18)
- Behtash, S.** (with Sastry, S. Shankar) Stabilization of nonlinear systems with uncontrollable linearization. *Dynamical systems approaches to nonlinear problems in systems and circuits* (Henniker, NH, 1986), 242-255, *SIAM, Philadelphia, PA*, 1988. (Djordjijeta Petkovski) **89i:93086** 93D15 (93B60, 93C10)
- (with Sastry, S. Shankar) Stabilization of nonlinear systems with uncontrollable linearization. *IEEE Trans. Automat. Control* **33** (1988), no. 6, 585-590. (Kimio Kanai) **89d:93072** 93D10 (93C10, 93C15)
- (with Shahruz, S. M.) Balanced realizations of singularly perturbed systems. *Internat. J. Control* **49** (1989), no. 1, 207-217. (Summary) **89m:93014** 93B15 (34E15, 93B17)
- Beidar, K. I.** (with Mikhailov, A. V.) Uniform boundedness almost everywhere for orthogonally complete algebraic systems. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* **No. 27** (1985), 15-17, 123. (Not in MR) **08A02**
- (with Stolin, A. A.) The Picard group of a projective limit of rings. (Russian) *Operators in function spaces and problems in function theory* (Russian), 126-131, 148, "Naukova Dumka", Kiev, 1987. (G. Z. Dzhanelidze) **89h:13014** 13C10
- (with Mikhailov, A. V.) The structure of nondegenerate alternative algebras. (Russian. English summary) *Trudy Sem. Petrovsk. No. 12* (1987), 59-74, 243. (Harry F. Smith) **89c:17039** 17D05
- (with Mikhailov, A. V.) Semiprime rings with bounded indexes of nilpotent elements. (Russian. English summary) *Trudy Sem. Petrovsk. No. 13* (1988), 237-249, 259-260. (Bogdan J. Osowski) **89m:16010** 16A12 (16A30, 16A32)
- Beierle, Christoph** (with Pletat, Udo) Integrating logic programming and equational specification of abstract data types. *Algebraic and logic programming* (Gaussig, 1988), 71-82, *Math. Res.*, 49, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) **68Q55**
- van Beijeren, H.** How does one characterize macroscopic diffusion? *Mark Kac Seminar on Probability and Physics. Syllabus* 1985-1987 (Amsterdam, 1985-1987), 13, *CWI Syllabi*, 17, *Math. Centrum, Centrum Wisk. Inform.*, Amsterdam, 1988. (see **89e:60005**) **60J60** (82A70)
- (with Ernst, M. H.; Lebowitz, Joel L.) Editors' preface. *J. Statist. Phys.* **53** (1988), no. 1-2, 1. (Not in MR) **01A70**
- (with Morriss, G. P.; Evans, Dennis J.; Cohen, E. G. D.) Linear response of phase-space trajectories to shearing. *Phys. Rev. Lett.* **62** (1989), no. 14, 1579-1582. (Summary) **89m:82003** 82-08 (58F13, 82A40)
- Beika, I. V.** Methods for spline approximation of resolvent operators in optimal control problems. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No. 4* (1985), 14-17, 100. (Not in MR) **93B28** (41A15)
- (with Zin'ko, P. N.; Lepekha, N. P.) Problems of multiple identification of control systems with incomplete data. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No. 4* (1985), 42-44, 102. (Not in MR) **93B30** (93B40)
- (with Zin'ko, P. N.; Shchur, V. I.) Solution of a special problem of multidimensional approximation by the method of embedded splines. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No. 5* (1986), 9-13, 94. (Summary) **89m:41007** 41A15
- (with Bublik, B. N.) Construction of realizable mathematical models and of methods for solving inverse problems in hydro-acoustics. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No. 6* (1987), 3-7, 113. (Summary) **89h:76079** 76Q05
- Beiko, M. F.** A method for the approximate solution of optimal control problems that are describable by integral equations of macro-economics. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No. 4* (1985), 49-52, 102. (Not in MR) **49D07** (90A99, 93C22)
- (with Zin'ko, P. N.) The method of second-order resolvent operators for solving systems of algebraic equations. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No. 6* (1987), 37-40, 114. (Summary) **89m:93020** 93B28 (47H17)
- Beilinson, A. A.** Height pairing between algebraic cycles. *Current trends in arithmetical algebraic geometry* (Arcata, Calif., 1985), 1-24, *Contemp. Math.*, 67, *Amer. Math. Soc., Providence, RI*, 1987. (Editors) **89j:11052** 11G40 (14C99, 14G10)
- Height pairing between algebraic cycles. *K-theory, arithmetic and geometry* (Moscow, 1984-1986), 1-25, *Lecture Notes in Math.*, 1289, *Springer, Berlin-New York*, 1987. (Joseph H. Silverman) **89h:11027** 11G40 (14C17, 14G10)
- Correction to: "Notes on absolute Hodge cohomology" [*Applications of algebraic K-theory to algebraic geometry and number theory, Part I, II* (Boulder, Colo., 1983), 35-68, *Amer. Math. Soc., Providence, R.I.*, 1986; MR **87m:14019**]. *K-theory, arithmetic and geometry* (Moscow, 1984-1986), 25-26, *Lecture Notes in Math.*, 1289, *Springer, Berlin-New York*, 1987. (Editors) **89a:14023** 14F25 (11G45, 11R70, 14C30, 19F27)
- On the derived category of perverse sheaves. *K-theory, arithmetic and geometry* (Moscow, 1984-1986), 27-41, *Lecture Notes in Math.*, 1289, *Springer, Berlin-New York*, 1987. (Jean-Luc Brylinski) **89h:14027** 14F99 (18E30, 18F20, 32C38, 58G07)
- How to glue perverse sheaves. *K-theory, arithmetic and geometry* (Moscow, 1984-1986), 42-51, *Lecture Notes in Math.*, 1289, *Springer, Berlin-New York*, 1987. (Jean-Luc Brylinski) **89h:14028** 14F99 (18E25, 32C38)
- (with Manin, Yu. I.; Shekhtman, V. V.) Sheaves of the Virasoro and Neveu-Schwarz algebras. *K-theory, arithmetic and geometry* (Moscow, 1984-1986), 52-66, *Lecture Notes in Math.*, 1289, *Springer, Berlin-New York*, 1987. (From the introduction) **89j:58039** 58F07 (14F05, 17B56, 17B65, 17B67, 81E30)
- Beilis, M. V.** On stable quasi-orders on some semigroups of transformations. (Russian) *Theory of semigroups and its applications* (Russian), 48-53, 114, *Saratov. Gos. Univ., Saratov*, 1983. (K. Todorov) **89d:06026** 06F05 (20M20)
- Beineke, L. W.** (with Bagga, K. S.; Lipman, M. J.; Pippert, R. E.) On the edge-integrity of graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **60** (1987), 141-144. (R. C. Entringer) **89g:05069** 05C40
- (with Bagga, K. S.; Chartrand, G.; Oellermann, O. R.) Variations on a theorem of Petersen. *Period. Math. Hungar.* **19** (1988), no. 3, 241-247. (Seymour Schuster) **89i:05208** 05C70
- see also *Conference: Graph Theory*, **89j:05005** and **89j:05006**
- Beirão da Veiga, H.** On a stationary transport equation. *Ann. Univ. Ferrara Sez. VII (N.S.)* **32** (1986), 79-91 (1987). (C. Bardos) **89d:35146** 35Q20 (35F15)
- Existence and asymptotic behavior for strong solutions of the Navier-Stokes equations in the whole space. *Dynamical problems in continuum physics* (Minneapolis, Minn., 1985), 79-87, *IMA Vol. Math. Appl.*, 4, *Springer, New York-Berlin*, 1987. (Howard Swann) **89h:35261** 35Q10 (76D05)
- Stationary motions and the incompressible limit for compressible viscous fluids. *Houston J. Math.* **13** (1987), no. 4, 527-544. (Josef Bemelmans) **89j:35164** 35Q10 (76D05, 76N10)
- On the stationary motion of granulated media. *Rend. Sem. Mat. Univ. Padova* **77** (1987), 243-253. (Alberto Valli) **89a:35161** 35Q10 (76U05)
- Beirlant, Jan** Limit theory for spacing statistics from general univariate distributions. *Publ. Inst. Statist. Univ. Paris* **31** (1986), no. 1, 27-57. (Ken-ichi Yoshihara) **89a:62044** 62E20 (60F17, 62G10)
- Beis, J. S.** (with Sutton, J. P.; Trainor, L. E. H.) A hierarchical model of neocortical synaptic organization. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 346-350. (see **89d:00007**) **92A09**
- Beissinger, Janet Simpson** Similar constructions for Young tableaux and involutions, and their application to shiftable tableaux. *Discrete Math.* **67** (1987), no. 2, 149-163. (Bruce Sagan) **89e:05019** 05A17 (05A19, 68Q20)
- (with Brualdi, Richard A.; Pless, Vera S.) On the MacWilliams identities for linear codes. Proceedings of the Victoria Conference on Combinatorial Matrix Analysis (Victoria, BC, 1987). *Linear Algebra Appl.* **107** (1988), 181-189. (Torleiv Kløve) **89i:94035** 94B05
- Beitia, María Asunción** (with Cain, Bryan E.; Zaballa, Ion) A nested multiplicative commutator equation. *Portugal. Math.* **45** (1988), no. 1, 83-90. (G. N. de Oliveira) **89f:15010** 15A24
- Bejan, Cornelia-Livia** On regular  $F$ -general connections. *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces* (Braşov, 1986), 91-97, *Soc. Ştiinţe Mat. R.S. România, Bucharest*, 1986. (V. C. Gupta) **89e:53042** 53C05 (53C15)
- Almost semi-invariant submanifolds in cosymplectic manifolds of constant  $F$ -sectional curvature. *An. Ştiinţ. Univ. "Al. I. Cuza" Iaşi Secţ. I a Mat. (N.S.)* **32** (1986), no. 1, 63-72. (Guido Karrer) **89d:53073** 53C15 (53C40)
- Bejancu, Aurel** Structure equations for Riemann-Finsler subspaces. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 1, 37-40. (S. Watanabe) **89a:53080** 53C60
- Geometry of vertical vector bundle and its applications. *Math. Rep. Toyama Univ.* **10** (1987), 133-168. (S. Watanabe) **89d:53117** 53C60 (58F05)
- Special immersions of Finsler spaces. *Stud. Cerc. Mat.* **39** (1987), no. 6, 463-487. (Sándor Bácsó) **89d:53047** 53B40
- (with Miron, Radu) A nonstandard theory of Finsler subspaces. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 815-851, *Colloq. Math. Soc. János Bolyai*, 46, *North-Holland, Amsterdam-New York*, 1988. (H. Rund) **89d:53052** 53B40
- díaz Bejarano, J.** see **Díaz Bejarano, J.**
- Bejczy, A. K.** (with Tam, Tzyh Jong; Yun, Xian Ping) Modelling and control of two coordinated robot arms. *Modelling and adaptive control* (Sopron, 1986), 352-360, *Lecture Notes in Control and Inform. Sci.*, 105, *Springer, Berlin-New York*, 1988. (see **89e:93002**) **00A71** (93C75)
- Bek, Roman** On the sources of uncertainties and their treatment in exact languages. (Czech. English and Russian summaries) *Acta Polytech. Prace ČVUT Prace Ser. IV Tech. Teoret.* **1988**, no. 1, 43-56. (Summary) **89m:03020** 03B52 (03B48, 03E72)
- (with Valášek, Michael; Pokorný, Zdeněk; Kofránek, Jiří) The theory of a nonsubjective expert system based on causal analysis, new interpretation of fuzzy description and pattern recognition. (Russian summary) *Comput. Artificial Intelligence* **7** (1988), no. 5, 413-428. (Not in MR) **68T01** (92A25)
- Bekakos, M. P.** (with Evans, David J.) The solution of linear systems by the QIF algorithm on a wavefront array processor. *Parallel Comput.* **7** (1988), no. 1, 111-130. (Summary) **89h:65328** 65W05 (65F05)
- Bekemer, Bernd** ★ Martin Ohm (1792-1872): Universitäts- und Schulmathematik in der neuhumanistischen Bildungsreform. (German) [Martin Ohm (1792-1872): University and school mathematics in the new humanistic educational reform] With a foreword by M. Otte. *Studien zur Wissenschafts-, Sozial- und Bildungsgeschichte der Mathematik* [Studies on the Scientific, Social and Educational History of Mathematics], 4, *Vandenhoeck & Ruprecht, Göttingen*, 1987. xxiv+326 pp. *ISBN* 3-525-40311-9 (Craig G. Fraser) **89e:01026** 01A55 (00A25)
- Bekenov, M. I.** The spectrum of  $\lambda$ -homogeneous models in the class of superstable theories. (Russian) *Theory of algebraic structures* (Russian), 3-12, *Karagand. Gos. Univ., Karaganda*, 1985. (From the text) **89g:03047** 03C45 (03C50)
- Bekenstein, Jacob D.** Communication and energy. *Phys. Rev. A* (3) **37** (1988), no. 9, 3437-3449. (T. W. Barrett) **89h:81061** 81C99 (81B99, 92A40, 94A05, 94A40)
- Beker, Henry** (with Mitchell, Chris) Permutations with restricted displacement. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 3, 338-363. (Bernard Harris) **89f:05009** 05A15 (15A15, 94A60)
- Implementing data security. *Computers in mathematical research* (Cardiff, 1986), 31-39, *Inst. Math. Appl. Conf. Ser. New Ser.*, 14, *Oxford Univ. Press, New York*, 1988. (see **89c:00032**) **68P25** (94A60)
- rofe-Beketov, F. S.** see **Rofe-Beketov, F. S.**
- Bekka, Mohammed E. B.** (with Kaniuth, Eberhard) Irreducible representations of locally compact groups that cannot be Hausdorff separated from the identity representation. *J. Reine Angew. Math.* **385** (1988), 203-220. (Detlef Horst Müller) **89j:22005** 22D10 (22A25)



- Bekker, A.** (with Rautenbach, H. M.; Roux, J. J. J.) A characterization of bimatrix variate distributions with special cases. (Afrikaans. English summary) *Suid-Afrikaanse Tydsk. Natuurwetenskap Tegnol.* 7 (1988), no. 2, 71-76. (Summary) **89j:62023** 62E10 (62H05)
- Bekki, Keisuke** (with Yamada, Sumasu; Kishida, Kuniharu) Notes on poles and convergence rate of autoregressive model. *J. Statist. Comput. Simulation* 25 (1986), no. 3-4, 273-293. (Pham Dinh Tuan) **89m:62107** 62M10
- Beklemishev, L. D.** Normalization of inferences and interpolation for some logics of provability. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 6(258), 179-180. (Alexander V. Chagrov) **89c:03022** 03B45 (03F40)
- Bekmuratov, K. A.** (with Vasil'ev, V. I.; Ovsyannikova, F. P.) The separating force of features in problems of recognition learning based on the method of limiting simplifications. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 4, 1-6 (1988); translated from *Automatika* 1987, no. 4, 3-8, 95 (Russian. English summary). (Summary) **89f:92068** 92A25 (68T10)
- Békollé, David** The Bloch space and BMO analytic functions in the tube over the spherical cone. *Proc. Amer. Math. Soc.* 102 (1988), no. 4, 949-956. (Steven George Krantz) **89c:32087** 32M15 (46E15, 47B38)
- Bekov, A. A.** Integrable cases of the Hamilton-Jacobi equations and dynamic systems reducible to canonical form. *J. Appl. Math. Mech.* 50 (1986), no. 5, 550-558 (1987); translated from *Prikl. Mat. Mekh.* 50 (1986), no. 5, 717-726 (Russian). (Michel Rapaport) **89c:70033** 70H20 (70F05, 70P05)
- A restricted rectilinear three-body problem with variable masses, and its rigorous solution. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1987, no. 1, 63-67. (A. Ya. Savchenko) **89c:70013** 70F07 (70P05)
- Integrable cases of the Hamilton-Jacobi equation and the restricted, rectilinear three-body problem with variable mass. *Soviet Astronom.* 31 (1987), no. 4, 442-446 (1988); translated from *Astronom. Zh.* 64 (1987), no. 4, 850-859 (Russian). (Constantin Simirad) **89d:70017** 70H20 (70F07, 70P05)
- (with Mukhametkalieva, R. K.) Stability of points of libration in the restricted variable-mass three-body problem. (Russian) *Akad. Nauk Kazakh. SSR Trudy Astrofiz. Inst.* 49 (1988), 11-32, 147. (Summary) **89k:70022** 70F07 (70K20, 70P05)
- Bekyarov, K. L.** (with Christov, Christo I.) The Fourier method for the calculation of solutions. (Russian. English and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Plovdiv. Mat. 22* (1986), no. 4, 199-209 (1987). (Summary) **89g:65156** 65P05
- Bekzatov, B.** The rate of convergence of linear means of a conjugate series. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1987, no. 5, 7-11. (N. B. Pogoyan) **89i:42003** 42A10 (42A50)
- Bel, G.** (with Bensana, E.; Dubois, Didier) Construction d'ordonnements prévisionnels: un compromis entre approches classiques et systèmes experts. (English summary) [Production scheduling: a compromise between classical approaches and expert systems] *RAIRO Automat.-Prod. Inform. Ind.* 22 (1988), no. 5, 509-534. (Not in MR) 90B35
- Bel, L.** (with Ruiz, E.) Relativistic Schrödinger equations. *J. Math. Phys.* 29 (1988), no. 8, 1840-1846. (M. Sachs) **89f:81058** 81C40 (81M05)
- Belaga, Edward G.** Bilinear mincing rank. *Theoret. Comput. Sci.* 61 (1988), no. 2-3, 299-306. (Summary) **89k:68058** 68Q25 (11E39, 11Y16)
- Belaid, D.** (with Chatelin, Françoise) Numerical analysis for factorial data analysis. I. Numerical software—the package INDA for microcomputers. *Appl. Stochastic Models Data Anal.* 3 (1987), no. 4, 193-206. (Not in MR) 62H25 (62-07)
- Belair, Jacques** Sur le calcul de la dimension fractale. (English summary) [Calculating fractal dimension] *Ann. Sci. Math. Québec* 11 (1987), no. 1, 7-23. (Ulrich Zähle) **89a:26006** 26A27 (58F08)
- (with Giroux, André) Growth properties of the solutions of a linear functional-differential equation. *J. Math. Anal. Appl.* 134 (1988), no. 1, 125-128. (Günter Frank) **89g:34005** 34A20 (30D05, 34K15)
- Belair, Luc** Le théorème de Macintyre sur les ensembles définissables dans les corps  $p$ -adiques. [Macintyre's theorem on definable sets in  $p$ -adic fields] *Groupe d'Étude d'Analyse Ultramétrique*, 15-30, *Publ. Math. Univ. Paris VII*, 29, Univ. Paris VII, Paris, (G. Cherlin) **89k:12018** 12L12 (03C10, 03C40, 03C60)
- Substructures and uniform elimination for  $p$ -adic fields. *Ann. Pure Appl. Logic* 39 (1988), no. 1, 1-17. (Max A. Dickmann) **89j:03026** 03C10 (03C60, 11U09, 12L12)
- Modèles premiers et corps régulièrement clos. [Prime models and regularly closed fields] *C. R. Math. Rep. Acad. Sci. Canada* 10 (1988), no. 6, 285-290. (G. Cherlin) **89i:12008** 12L12 (03C60)
- Belanger, Alain** (with Dowling, P. N.) Two remarks on absolutely summing operators. *Math. Nachr.* 136 (1988), 229-232. (Hermann König) **89c:47024** 47B10 (46B22, 46G10)
- Belash, K. N.** (with Tret'yakov, A. A.) Methods for solving degenerate problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 7, 1097-1102, 1119. (Bernd Engelmann) **89k:65066** 65H10 (65K05, 90C30)
- Belavin, A. A.** (with Knizhnik, V. G.; Morozov, A. Yu.; Perelomov, A. M.) Two- and three-loop amplitudes in bosonic string theory. *JETP Lett.* 43 (1986), no. 7, 411-415; translated from *Pis'ma Zh. Eksp. Teoret. Fiz.* 43 (1986), no. 7, 319-321 (Russian). (Werner Kleinert) **89h:81165** 81E99 (14H15, 14K25, 32G15, 32L05, 81E30)
- Belavkin, V. P.** (with Staszewski, P.) A Radon-Nikodým theorem for completely positive maps. *Rep. Math. Phys.* 24 (1986), no. 1, 49-55. (A. J. Lazar) **89g:46102** 46L50
- Belbas, S. A.** (with Mayergoyz, I. D.) Applications of fixed-point methods to discrete variational and quasivariational inequalities. *Numer. Math.* 51 (1987), no. 6, 631-654. (Jose Luis Menaldi) **89a:49008** 49A29 (54H25, 65N10, 65N20, 93C20, 93C57, 93E05)
- (with Seidman, Thomas I.) Periodic solutions of certain variational inequalities. *Appl. Anal.* 29 (1988), no. 3-4, 301-327. (Igor Bock) **89k:35121** 35K85 (35B10, 49A29, 49C20)
- The dynamic programming equations for stochastic games with discrete actions. *Systems Control Lett.* 11 (1988), no. 3, 235-242. (Veijo Kaitala) **89g:93089** 93E05 (49A29, 49C20, 90C20, 90D25, 90D45)
- Beljenna, Arezki** (with Gaspari, George; Rudnick, Joseph) The shapes of open and closed random walks: a  $1/d$  expansion. *J. Phys. A* 20 (1987), no. 11, 3393-3414. (Gregory F. Lawler) **89d:82073** 82A41 (82A51)
- Beleckij, Platon Michajlovich** see Beletskii, P. M.
- Belegradek, O. V.** Model theory for locally free algebras. (Russian) *Trudy Inst. Mat. (Novosibirsk)* 8 (1988), *Teor. Model. i ee Primenen.*, 3-25, 184. (F. Gécseg) **89i:03056** 03C05 (03C45, 08B20)
- Belen'kii, I. M.** On the integration of a differential equation of trajectories of conservative systems with two degrees of freedom. (Russian) *Problems in the mechanics of a rigid and a deformable body* (Russian), 3-11, "Nauka", Moscow, 1987. (see **89g:70002**) 70D99
- see also *Problems in the mechanics of a rigid and a deformable body*, **89g:70002**
- Belen'kii, V. Z.** (with Belostotskii, A. M.) Control of economic systems under the process of data improvement. *J. Econom. Dynamics Control* 12 (1988), no. 4, 609-633. (Summary) **89g:90072** 90A16
- Belenova, N. K.** Uniform distribution of flow along the sink arcs of a network. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 11, 144-154. (R. Petrović) **89d:90088** 90B10
- Belesov, A. U.** Integrals polynomial in the generalized velocities in a noninvertible dynamic problem with two degrees of freedom. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1987, no. 3, 63-65. (Summary) **89f:70004** 70D99
- Beletskaya, N. V.** (with Samsonov, V. A.) On the problem of the stability of the relative equilibrium of a rigid body with elastic rods. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 206-210, 326, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Summary) **89f:70009** 70E99 (70K20, 70M99, 73K05)
- Beletskii, P. M.** (with Kaluzhnin, L. A.; Feinberg, V. Z.) ★Kranzprodukte. (German) [Wreath products] With English, French and Russian summaries. Teubner-Texte zur Mathematik [Teubner Texts in Mathematics], 101. BSB B. G. Teubner Verlagsgesellschaft, Leipzig, 1987. 167 pp. ISBN 3-322-00425-2 (Ya. G. Berkovich) **89g:20001** 20-02 (20E22)
- Beletskii, V. V.** Dynamics of cable-connected [tethered] space systems. (Russian) *Mechanics and scientific technological progress*, Vol. 1 (Russian), 226-241, 296, "Nauka", Moscow, 1987. (Summary) **89j:70041** 70M05
- Belertich, Vitold** Ideal rectifier  $n$ -ports are solvable. *Internat. J. Circuit Theory Appl.* 15 (1987), no. 2, 171-180. (D. Stanomir) **89c:94046** 94C05 (94C15)
- Beliekh, A.** (with El Jai, A.) Sur le choix de la répartition spatiale du contrôle dans les systèmes distribués. (English summary) [On the optimal spatial distribution of the control in distributed systems] *RAIRO Automat.-Prod. Inform. Ind.* 21 (1987), no. 5, 493-505. (Alexander P. Suetov) **89h:49037** 49B22 (93C20)
- Belif, Victor A.** (with Huckaby, Dale A.; Shinmi, Masato) Exact two-phase coexistence surface for a three-component solution on a Bethe lattice. *Phys. A* 154 (1989), no. 3, 521-528. (Summary) **89k:82094** 82A68 (82A69)
- Bellare, J. C.** A weighted-output symbol-by-symbol decoding algorithm of binary convolutional codes. *Coding theory and applications* (Cachan, 1986), 154-158, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (see **89c:94004**) 93B35 (94B10)
- Belguith, Jamil** (with Billiet, Yves) Étude des représentations des groupes ponctuels bicolorés cristallographiques sous-tendus par des familles de points équivalents. (English summary) [A study of representations of crystallographic two-colored point groups spanned by families of equivalent points] *Acta Cryst. Sect. A* 44 (1988), no. 2, 124-127. (Marjorie Senechal) **89f:20050** 20H15 (82A60)
- Belhaq, Mohamed** (with Clerc, René-Louis; Hartmann, Christian) Étude numérique d'une 4-résonance d'une équation de Liénard forcée. (English summary) [Numerical study of a 4-resonance of a forced Liénard equation] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* 303 (1986), no. 10, 873-876. (Summary) **89k:58206** 58F14 (70K40)
- (with Clerc, René-Louis; Hartmann, Christian) Bifurcations homocliniques pour des équations de Liénard forcées périodiquement. (English summary) [Homoclinic bifurcations for periodically forced Liénard equations] *J. Méc. Théor. Appl.* 6 (1987), no. 6, 865-877. (W. S. Loud) **89f:58096** 58F14 (34C35, 58F15, 70K40)
- (with Clerc, René-Louis; Hartmann, Christian) Méthodes d'échelles multiples pour la recherche de solutions invariantes par une transformation de  $\mathbb{R}^2$  et applications. [Multiple-scale methods for determining solutions invariant under a transformation of  $\mathbb{R}^2$ , and applications] *Mech. Res. Comm.* 15 (1988), no. 6, 361-370. (Introduction) **89j:58053** 58F08 (34C20)
- Belichenko, V. P.** An expansion of an arbitrary function in an integral in associated spherical functions. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 11, 1930-1937, 2021. (I. F. Kushnirchuk) **89f:33015** 33A45
- Belichkova, N. V.** A Carleman property condition for a second-order degenerate differential operator. (Russian) *Ukrain. Mat. Zh.* 39 (1987), no. 5, 666-667, 681. (Jana D. Madjarova) **89a:35093** 35J70 (47F05)
- Beli, Ya. A.** see Belyi, Ya. A.
- Belikov, Sergei Arkad'evich** Observability of linear and bilinear systems in a Hilbert space. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 2, 139-144, 270; translated in *Ukrainian Math. J.* 40 (1988), no. 2, 115-120. (Zbigniew Emirsajlov) **89c:93025** 93B07 (49E15, 93B05, 93C25)
- Belinskii, É. S.** Trigonometric diameters of some classes of smooth functions of several variables. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 39-42, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) 42A10
- (with Liflyand, I. R.) The behavior of Lebesgue constants of hyperbolic partial sums. (Russian) *Mat. Zametki* 43 (1988), no. 2, 192-196, 300; translated in *Math. Notes* 43 (1988), no. 1-2, 107-109. (D. K. Ugulava) **89g:42024** 42B05
- Belinskii, V. A.** (with Khalatnikov, I. M.) On the generality of inflationary solutions in cosmological models with a scalar field. *Soviet Phys. JETP* 66 (1987), no. 3, 411-449 (1988); translated from *Zh. Eksp. Teoret. Fiz.* 93 (1987), no. 3, 784-799 (Russian). (C. Gauthier) **89f:83110** 83F05 (58F12)
- Belishev, M. I.** Equations of Gelfand-Levitan type in a multidimensional inverse problem for the wave equation. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 165 (1987), *Mat. Vopr. Teor. Rasprostranen. Voln* 17, 15-20, 189. (Alexander Doktor) **89c:35142** 35R30 (35L05)
- (with Kurylev, Ya. V.) A nonstationary inverse problem for the multidimensional wave equation "in the large". (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 165 (1987), *Mat. Vopr. Teor. Rasprostranen. Voln* 17, 21-30, 189. (Alexander Doktor) **89c:35143** 35R30 (35L05)
- An approach to multidimensional inverse problems for the wave equation. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 3, 524-527; translated in *Soviet Math. Dokl.* 36 (1988), no. 3, 481-484. (V. M. Isakov) **89c:35152** 35R30 (35L05)

- Belitskii, G. R.** Borel's theorem in a Banach space. (Russian) *Mathematical physics, functional analysis (Russian)*, 137-139, 148, "Naukova Dumka", Kiev, 1986. (Summary) **89g:58014** 58C05
- (with Lisiyanoi, V. F.) Classification of formal mappings of linear spaces. (Russian) *Mathematical physics, functional analysis (Russian)*, 139-141, 148, "Naukova Dumka", Kiev, 1986. (Summary) **89f:58019** 58C27
- Local solvability of degenerate differential equations. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 47 (1987), 51-59. (L. Reizig) **89h:58173** 58F99
- Belkin, A. R.** Desirable properties of optimal linear rankings. *Soviet J. Comput. Systems Sci.* **25** (1987), no. 4, 128-144; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 2, 3-21 (Russian). (Summary) **89a:90001** 90A05
- Bell, Bradley M.** Generalized gamma parameter estimation and moment evaluation. *Comm. Statist. Theory Methods* **17** (1988), no. 2, 507-517. (Divakar Sharma) **89f:62023** 62F10
- Bell, C. B.** (with Mason, Andrew L.) Nuisance parameters; goodness-of-fit problems, and Kolmogorov-type statistics. *Goodness-of-fit (Debrecen, 1984)*, 21-58, *Colloq. Math. Soc. János Bolyai*, 45, North-Holland, Amsterdam-New York, 1987. (Rashid Ahmad) **89g:62068** 62G10
- lynden-Bell, D.** see **Lynden-Bell, D.**
- Bell, David E.** One-switch utility functions and a measure of risk. *Management Sci.* **34** (1988), no. 12, 1416-1424. (Summary) **89j:90031** 90A10
- Bell, David I.** (with Noll, Landon Curt)  $n$ -clusters for  $1 < n < 7$ . *Math. Comp.* **53** (1989), no. 187, 439-444. (L. M. Kelly) **89j:52008** 52A37
- Bell, E. T.** ★ Mathematics. Queen and servant of science. Reprint of the 1951 original. With a foreword by Martin Gardner. MAA Spectrum. *Mathematical Association of America, Washington, DC*, 1987. xxvi+437 pp. ISBN 0-88385-447-3 (Jeremy Gray) **89j:00001** 00A05 (01-01, 01A75)
- Bell, F. K.** (with Rowlinson, P.) The change in index of a graph resulting from the attachment of a pendant edge. *Proc. Roy. Soc. Edinburgh Sect. A* **108** (1988), no. 1-2, 67-74. (Robert C. Brigham) **89d:05129** 05C50
- Bell, Howard E.** (with Yaqub, Adil) Some periodicity conditions for rings. *Math. J. Okayama Univ.* **29** (1987), 179-183 (1988). (Hazar Abu-Khuzam) **89f:16027** 16A48 (16A70)
- (with Quadri, Murtaza A.; Khan, Moharram A.) Two commutativity theorems for rings. (Serbo-Croatian summary) *Rad. Mat.* **3** (1987), no. 2, 255-260. (A. Yaqub) **89c:16046** 16A70
- (with Klein, Abraham A.) On rings with redundancy in multiplication. *Arch. Math. (Basel)* **51** (1988), no. 6, 500-504. (A. Yaqub) **89m:16063** 16A70
- (with Martindale, W. S., III) Semiderivations and commutativity in prime rings. *Canad. Math. Bull.* **31** (1988), no. 4, 500-508. (Efim Zel'manov) **89k:16063** 16A72 (16A70)
- Some conditions for finiteness of a ring. *Internat. J. Math. Math. Sci.* **11** (1988), no. 2, 239-242. (A. Yaqub) **89c:16025** 16A44 (16A70)
- (with Klein, Abraham A.; Jenkyns, T. A.; Laywine, C. F.) Rings with permutable products. *Resulante Math.* **13** (1988), no. 1-2, 12-22. (M. M. Parmenter) **89a:16043** 16A70
- Bell, J. B.** (with Szymczak, William G.; Solomon, J. M.; Berger, A. E.) Multiple discrete solutions of the incompressible steady-state Navier-Stokes equations. *Numer. Math.* **53** (1988), no. 1-2, 31-50. (M. M. Sussman) **89k:65143** 65N30 (65P05, 76D05, 76E15)
- Bell, J. L.** Some propositions equivalent to the Sikorski extension theorem for Boolean algebras. *Fund. Math.* **130** (1988), no. 1, 51-55. (Yehuda Rav) **89k:03059** 03E65 (03E25, 04A25, 06E20, 54H99)
- Infinitesimals. *Synthese* **75** (1988), no. 3, 285-315. (H. Gonshor) **89i:03120** 03H05 (00A25, 01A60, 26E99)
- Bell, J. S.** ★ Speakable and unspeakable in quantum mechanics. Collected papers on quantum philosophy. *Cambridge University Press, Cambridge-New York*, 1987. xii+212 pp. ISBN 0-521-33495-0 (F. Berdjis) **89k:81005** 81B05 (00A25, 01A75, 81-06)
- Beables for quantum field theory. *Quantum implications*, 227-234, *Routledge & Kegan Paul, London*, 1987. (see **89m:81006**) 81B05
- Are there quantum jumps? *Schrodinger (London, 1987)*, 41-52, *Cambridge Univ. Press, Cambridge-New York*, 1987. (see **89m:01069**) 81-03 (01A60, 81B99)
- Bell, M. A.** (with Whealton, J. H.; Chen, G. L.; Raridon, R. J.; McGaffey, R. W.; Jaeger, E. F.; Hoffman, D. J.) A 3D analysis of Maxwell's equations for cavities of arbitrary shape. *J. Comput. Phys.* **75** (1988), no. 1, 168-189. (W. L. Ko) **89g:78006** 78-08
- Bell, M. J.** (with White, Andrew Arthur) The stability of internal baroclinic jets: some analytical results. *J. Atmospheric Sci.* **45** (1988), no. 18, 2571-2590. (Not in MR) **86A10**
- Bell, Murray** (with Ginsburg, John) On complete partially ordered sets and compatible topologies. *Order* **4** (1987), no. 1, 69-78. (Marcel Ern ) **89b:06004** 06A23 (54D30)
- Bell, R. C.** (with Frederiksen, Jorgen S.) Simulations and closure theory for interacting barotropic waves. *Computational techniques and applications: CTAC-87 (Sydney, 1987)*, 207-216, *North-Holland, Amsterdam-New York*, 1988. (Summary) **89d:86013** 86A35 (86-08)
- (with Kleeman, R.; Frederiksen, Jorgen S.) Statistical dynamics of quasi-geostrophic flows. *Computational techniques and applications: CTAC-87 (Sydney, 1987)*, 347-356, *North-Holland, Amsterdam-New York*, 1988. (Summary) **89g:82028** 82A31 (76D05, 82-04)
- Bell, Robert** (with Cover, Thomas M.) Game-theoretic optimal portfolios. *Management Sci.* **34** (1988), no. 6, 724-733. (Summary) **89c:90013** 90A09
- Bell, S. C.** (with Stinchcombe, R. B.) Hierarchical clustering in the spectra of incommensurate systems. *J. Phys. A* **22** (1989), no. 6, 717-729. (Summary) **89h:82042** 82A42 (81H20, 82A99)
- Bell, Steven R.** Extendibility of the Bergman kernel function. *Complex analysis, II (College Park, Md., 1985-86)*, 33-41, *Lecture Notes in Math.*, 1276, *Springer, Berlin-New York*, 1987. (Bo Berndtsson) **89b:32032** 32H10 (32F20)
- Local regularity of CR homeomorphisms. *Duke Math. J.* **57** (1988), no. 1, 295-300. (Giuseppe Tomassini) **89f:32026** 32D15 (32H99)
- A generalization of Cartan's theorem to proper holomorphic mappings. *J. Math. Pures Appl. (9)* **67** (1988), no. 1, 85-92. (Yoichi Imai) **89d:32056** 32H35 (32F15)
- Weakly pseudoconvex domains with noncompact automorphism groups. *Math. Ann.* **280** (1988), no. 3, 403-408. (M. Skarwaczynski) **89h:32052** 32H99 (32D15, 32F15, 32H10)
- (with Catlin, David W.) Regularity of CR mappings. *Math. Z.* **199** (1988), no. 3, 357-368. (John P. D'Angelo) **89i:32028** 32D15 (32F15, 32F20, 32H35)
- Bell, T. C.** (with Moffat, A.) A note on the DMC data compression scheme. *Comput. J.* **32** (1989), no. 1, 16-20. (Not in MR) **68P25**
- Bell, Wayne C.** (with Hagood, John W.) Separation properties and exact Radon-Nikod m derivatives for bounded finitely additive measures. *Pacific J. Math.* **131** (1988), no. 2, 237-248. (Z. Lipecki) **89c:28004** 28A12
- Bella, A.** On local  $T$ -tightness. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* **18** (1986), no. 2, 188-191. (Richard Wilson) **89b:54006** 54A25
- Some remarks on set tightness. (Italian summary) *Ricerche Mat.* **35** (1986), no. 2, 317-323. (Gino Tironi) **89c:54006** 54A25 (54D55)
- Remarks on the metrizable degree. (Italian summary) *Boll. Un. Mat. Ital. A (7)* **1** (1987), no. 3, 391-396. (R. Hodel) **89a:54006** 54A25 (54E35)
- Some remarks on the Novak number. *General topology and its relations to modern analysis and algebra, VI (Prague, 1986)*, 43-48, *R   E Res. Exp. Math.*, 16, *Heldermann, Berlin*, 1988. (R. Hodel) **89g:54009** 54A25
- (with Cammaroto, F.) On the cardinality of Urysohn spaces. *Canad. Math. Bull.* **31** (1988), no. 2, 153-158. (W. Stephen Watson) **89f:54041** 54D10 (54A25)
- Some cardinality properties of a hyperspace with the locally finite topology. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1274-1278. (J. Mioduszewski) **89k:54006** 54A25 (54B20)
- A note on cardinal invariants of uniformizable spaces. *Third National Conference on Topology (Italian) (Trieste, 1986)*. *Rend. Circ. Mat. Palermo (2) Suppl. No. 18* (1988), 203-208. (O. T. Alas) **89h:54002** 54A25 (54D20, 54E15)
- la Bella, Agostino** see **La Bella, Agostino**
- di Bella, Stefano** see **Di Bella, Stefano**
- le Bellac, Michel** see **Le Bellac, Michel**
- tamburini Bellani, Maria Chiara** see **Tamburini Bellani, Maria Chiara**
- ruiz de velasco y Bellas, Carlos** see **Ruiz de Velasco y Bellas, Carlos**
- Bellen, Alfredo** (with Jackiewicz, Zdzislaw; Zennaro, Marino) Stability analysis of one-step methods for neutral delay-differential equations. *Numer. Math.* **52** (1988), no. 6, 605-619. (David K. Kahaner) **89h:65134** 65L20
- (with Zennaro, Marino) Stability properties of interpolants for Runge-Kutta methods. *SIAM J. Numer. Anal.* **25** (1988), no. 2, 411-432. (David R. Hill) **89c:65067** 65L05
- Bellenot, Steven F.** More quasireflexive subspaces. *Proc. Amer. Math. Soc.* **101** (1987), no. 4, 693-696. (A. Tsarpalias) **89a:46030** 46B10 (46B20)
- (with Haydon, Richard; Odell, Edward) Quasi-reflexive and tree spaces constructed in the spirit of R. C. James. *Banach space theory (Iowa City, IA, 1987)*, 19-43, *Contemp. Math.*, 85, *Amer. Math. Soc., Providence, RI*, 1989. (Abderrazak Sersouri) **89m:46014** 46B10 (46B15)
- Beller, Elyahu** Ancient Jewish mathematical astronomy. *Arch. Hist. Exact Sci.* **38** (1988), no. 1, 51-66. (Kristian Peder Moesgaard) **89b:01012** 01A35 (01A17, 85-03)
- Bellhouse, D. R.** Model-based estimation in finite population sampling. *Amer. Statist.* **41** (1987), no. 4, 260-262. (Summary) **89c:62033** 62D05
- Belling-Seib, Katharina** (with Mervet, P.; M ller, Chr.) Network flow problems with one side constraint: a comparison of three solution methods. *Comput. Oper. Res.* **15** (1988), no. 4, 381-394. (Summary) **89c:90081** 90B10
- An improved general Phase-I method in linear programming. *European J. Oper. Res.* **36** (1988), no. 1, 101-106. (Summary) **89c:90131** 90C05
- Bellissima, Fabio** Finite and finitely separable intermediate propositional logics. *J. Symbolic Logic* **53** (1988), no. 2, 403-420. (Jerzy Kotas) **89h:03040** 03B55
- Bellizzi, Serge** (with Bouc, Robert; Campillo, Fabien; Pardoux, E.) Contr le optimal semi-actif de suspension de v hicule. (English summary) [Semi-active optimal control of vehicle suspension] *Analysis and optimization of systems (Antibes, 1988)*, 689-699, *Lecture Notes in Control and Inform. Sci.*, 111, *Springer, Berlin-New York*, 1988. (see **89c:00031**) 93C75 (49C20, 93B50, 93E20)
- Bellman, Richard** see **Adomian, George A.**, **89h:93002** and **Esogbue, A. O.**, **89m:01087**
- Bellmann, Klaus** (with Ahrens, Heinz) Professor Dr. phil. habil. Dr. rer. nat. h.c. Erna Weber zum 90. Geburtstag. [Prof. Erna Weber on her 90th birthday] *Biometrical J.* **29** (1987), no. 8, 891-893. (Editors) **89c:01040** 01A70
- di Bella, C.** see **Di Bella, C.**
- Bellomo, N.** (with Lachowicz, M.) Kinetic equations for dense gases—a review of physical and mathematical results. *Internat. J. Modern Phys. B* **1** (1987), no. 5-6, 1193-1205. (V. Protopenescu) **89b:82047** 82A40 (82-02)
- (with de Socio, L.) Initial-boundary value problems for the semidiscrete Boltzmann equation: analysis by Adomian's decomposition method. *J. Math. Anal. Appl.* **128** (1987), no. 1, 112-124. (Summary) **89a:35167** 35Q20
- (with de Socio, L.; Monaco, R.) Random heat equation: solutions by the stochastic adaptive interpolation method. *Comput. Math. Appl.* **16** (1988), no. 9, 759-766. (J rgen vom Scheidt) **89m:35222** 35R60 (35A25, 60H15)
- (with Lachowicz, M.) On the asymptotic equivalence between the Enskog and the Boltzmann equations. *J. Statist. Phys.* **51** (1988), no. 1-2, 233-247. (Carlo Cercignani) **89h:82016** 82A40 (76P05)
- Bellon, M.** (with Baulieu, Laurent) Beltrami parametrization and string theory. *Phys. Lett. B* **196** (1987), no. 2, 142-150. (Omar Foda) **89g:81066** 81E99 (53C80, 81E30)
- (with Baulieu, Laurent; Grimm, Richard) Beltrami parametrization for superstrings. *Phys. Lett. B* **198** (1987), no. 3, 343-348. (M. A. Namazie) **89c:81135** 81E99 (53C80, 81E30)
- (with Baulieu, Laurent) BRST symmetry for finite-dimensional invariances: applications to global zero modes in string theory. *Phys. Lett. B* **202** (1988), no. 1, 67-74. (Danny Birmingham) **89c:81071** 81E13 (81E30)
- Belloni, Lanfranco** see **Pais, Abraham**, **89f:01074**
- Bellout, Hamid** Blow-up of solutions of parabolic equations with nonlinear memory. *J. Differential Equations* **70** (1987), no. 1, 42-68. (Victor A. Galaktionov) **89a:35032** 35B40 (35K60)
- (with Friedman, Avner) Identification problems in potential theory. *Arch. Rational Mech. Anal.* **101** (1988), no. 2, 143-160. (D. H. Armitage) **89c:31003** 31B20 (31B15)
- Bellucci, Stefano** Stress-tensor anomaly and boundary conditions of anti-de Sitter supersymmetry. *Progr. Theoret. Phys.* **78** (1987), no. 5, 1176-1185. (Summary) **89a:81084** 81E20 (81E15)



- (with Brooks, Roger; Sonnenschein, Jacob) Supersymmetric chiral bosons. *Nuclear Phys. B* 304 (1988), no. 1, 173–204. (Not in MR) 81E99 (81E40)
- (with Gates, S. James, Jr.)  $D = 10$ ,  $N = 1$  superspace supergravity and the Lorentz Chern-Simons form. *Phys. Lett. B* 208 (1988), no. 3–4, 456–462. (Summary) 89e:83077 83E50 (81E30, 83E30)
- (with González, J.) Boundary conditions and renormalization in anti-de Sitter supersymmetry. *Phys. Rev. D* (3) 37 (1988), no. 8, 2357–2360. (Summary) 89e:81113 81E20 (81E15)
- On-shell equivalence of light-like integrability and canonical constraints for  $D = 10$ ,  $N = 1$  supergravity. *Nuclear Phys. B* 313 (1989), no. 1, 220–236. (Summary) 89m:83091 83E50
- Beloded, N. I.** (with Bondarenko, L. V.; Kravchenok, N. N.) Investigation of the dynamics of stabilization systems with pulse-width modulation on the basis of digital modeling methods. (Russian) *Avtomat. i Vychisl. Tekhn. (Minsk) No. 16* (1987), 43–50, ii. (Not in MR) 93D10 (94C05)
- Belokob, E. D.** (with Enol'skii, V. Z.) On the expression of the parameters of the solutions of algebraically integrable nonlinear equations in terms of the theta-constant. (Russian) *Funktsional. Anal. i Prilozhen.* 21 (1987), no. 1, 70–71. (Alexander A. Pankov) 89b:58086 58F07 (14K25)
- Belokon', A. V.** (with Nasedkin, A. V.) Waves caused by moving loads in an isotropic layer inhomogeneous through the thickness. *J. Appl. Math. Mech.* 51 (1987), no. 2, 237–243 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 2, 305–313 (Russian). (Summary) 89d:73014 73D25 (73C40, 86A15)
- (with Vorovich, I. I.) Some regularities in the formation of wave fields in an anisotropic layer under a pulsating moving load. (Russian) *Mechanics and scientific-technological progress, Vol. 3* (Russian), 215–222, 272, "Nauka", Moscow, 1988. (see 89j:73002) 73D99 (73C30)
- Belokopytov, A. Ya.** A lower bound in a problem of sequential design of screening experiments. (Russian) *Combinatorial analysis, No. 7* (Russian), 38–41, 162–163, *Moskov. Gos. Univ., Moscow*, 1986. (Summary) 89k:62106 62L05
- Parametrization of the capacity of a binary adder multiple access channel in the presence of general information. (Russian) *Problemy Peredachi Informatsii* 24 (1988), no. 2, 100–104; translated in *Problems Inform. Transmission* 24 (1988), no. 2, 163–167. (Summary) 89g:94022 94A40
- Belokopytov, S. V.** (with Dmitriev, M. G.; Gerasimov, V. A.; Klishchik, A. M.; Gornov, A. Yu.; Tyatyskin, A. I.; Pasynkov, V. N.) Interior and outer boundary layers in the optimal control problems. Asymptotic and numerical methods. *RAIL IV* (Novosibirsk, 1986), 216–221, *Boole Press Conf. Ser.*, 8, *Boole, Dun Laoghaire*, 1986. (Viorel Arnautu) 89d:49017 49B10 (34E15, 35B25, 49B22)
- Belokurov, D. V.** Finite-dimensional distributions of the length of the queue in priority systems. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* 1987, no. 4, 41–46, 73. (L. A. Grinshpan) 89a:62010 60K25 (90B22)
- Belonogov, E. K.** (with Zatepin, A. Yu.) Comparative analysis of numerical methods for solving integral equations of inverse problems of radiative heat transfer. (Russian) *Izv. Sibsk. Otdel. Akad. Nauk SSSR Ser. Tekhn. Nauk* 1988, no. 15, 3–10, 141. (Summary) 89j:80001 80-08 (65R20, 80A20)
- (with Vinogradov, I. S.; Zatepin, A. Yu.) Reconstruction of the temperature of a surface from a given radiation field. (Russian) *Izv. Sibsk. Otdel. Akad. Nauk SSSR Ser. Tekhn. Nauk* 1988, no. 15, 10–15, 141. (From the summary) 89k:80002 80-08 (80A20)
- Belonogov, V. A.** Interactions in finite groups and vector spaces. (Russian) *Structural problems in group theory* (Russian), 3–32, 139, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1986. (V. D. Mazurov) 89e:20017 20C20 (20C15)
- Belonov, S. M.** see **Bilmonov, S. M.**
- Beloshapka, V. K.** Finite-dimensionality of the group of automorphisms of a real analytic surface. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 52 (1988), no. 2, 437–442, 448; translated in *Math. USSR-Izv.* 32 (1989), no. 2, 443–448. (Zbigniew Szafraniec) 89d:32M05 (32B10)
- Beloshapkin, V. V.** (with Chernikov, Aleksandr Antonovich; Sagdeev, R. Z.; Zaslavskii, G. M.) Structures and 2D fluid flow symmetry. *Phys. Lett. A* 133 (1988), no. 7–8, 395–398. (Summary) 89f:76035 76D05 (58F13, 76-04, 76F99)
- Belostotskii, A. M.** (with Belen'kii, V. Z.) Control of economic systems under the process of data improvement. *J. Econom. Dynamics Control* 12 (1988), no. 4, 609–633. (Summary) 89g:90072 90A16
- Belotelov, N. V.** (with Aleksandrov, G. A.; Armand, A. D.; Vedyushkin, M. A.; Vilkova, L. P.; Voinov, A. A.; Denisenko, E. A.; Krapivin, V. F.; Logofet, D. O.; Ovsyannikov, L. L.; Pak, S. B.; Pasekov, V. P.; Pisarenko, N. F.; Razzhevskii, V. N.; Sarancha, D. A.; Svirzhev, Yu. M.; Semenov, M. A.; Tarko, A. M.; Fesenko, S. V.; Shmidt, D. A.) ★ Математические модели экосистем. (Russian) [Mathematical models of ecosystems] Экологические и демографические последствия ядерной войны. [Ecological and demographic consequences of a nuclear war] Edited and with a foreword by A. A. Dorodnitsyn. "Nauka", Moscow, 1986. 176 pp. (Summary) 89a:92054 92A17
- Belotserkovskii, O. M.** (with Vinogradov, A. V.; Glazunov, A. S.) Mathematical modeling of the dynamics of the development of myocardial infarction. (Russian) *Voprosy Kibernet. (Moscow) No. 132* (1988), 3–22. (Summary) 89f:92066 92A07 (92A09)
- see also **Magomedov, K. M.**, 89m:65001
- Belotserkovskii, S. M.** (with Volkov, A. E.; Sternin, V. V.; Tokhtamysh, V. Kh.) ★ Владимир Васильевич Голубев. (Russian) [Vladimir Vasil'evich Golubev] *Voenno-Vozd. Inzh. Akad., Moscow*, 1986. 106 pp. (L. Reizip) 89g:01044 01A70
- (with Lifanov, I. K.; Soldatov, M. M.) The method of discrete singularities in plane problems of the theory of elasticity with nonsmooth boundaries. *J. Appl. Math. Mech.* 51 (1987), no. 2, 219–226 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 2, 283–292 (Russian). (Summary) 89c:73011 73C02 (73-08)
- (with Lifanov, I. K.; Mikhailov, A. A.) Calculation of circulation-free flow around arbitrary bodies. (Russian) *Uchen. Zap. TsAGI* 18 (1987), no. 5, 1–10. (Summary) 89c:76001 76-08 (76B99)
- (with Aparinov, V. A.; Lifanov, I. K.; Mikhailov, A. A.) Calculation of nonstationary aerodynamic characteristics of bodies in the case of separated flow. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 10, 1558–1566, 1599. (Summary) 89k:76023 76B99 (76-08, 76G99)
- Belotserkovskii, Yu. F.** Uniform distribution of algebraic numbers near the unit circle. (Russian. English summary) *Vestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1988, no. 1, 49–52, 124. (Gerold S. Wagner) 89f:11110 11K38 (11K60)
- Effective analysis of a class of Diophantine equations. (Russian. English summary) *Vestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1988, no. 3, 111–115, 128. (A. Pethő) 89i:11039 11D41
- Belousov, B. P.** Appendix. A periodic reaction and its mechanism. (Russian) *Oscillations and traveling waves in chemical systems* (Russian), 648–656, "Mir", Moscow, 1988. (see 89f:92003) 92A09
- Belousov, E. G.** (with Bank, Bernd; Mandel, Reinhard; Cheremnykh, Yu. N.; Shironin, V. M.) ★ Математическая оптимизация: вопросы разрешимости и устойчивости. (Russian) [Mathematical optimization: questions of solvability and stability] *Moskov. Gos. Univ., Moscow*, 1986. 216 pp. (Publisher's description) 89c:90069 90Cxx (90C31)
- Über Lipschitzstetigkeit und Richtungs-differenzierbarkeit der Extremalwertfunktion. [On Lipschitz continuity and directional differentiability of extremal value functions] 19. Jahrestagung "Mathematische Optimierung" (Selling, 1987), 28–40, *Seminarberichte*, 90, *Humboldt Univ., Berlin*, 1987. (Ferenc Forgó) 89g:90208 90C31
- Belousov, I. V.** (with Oleinik, V. P.) On the quantum electrodynamics of nonisolated systems. I. The damping harmonic oscillator. (Russian. English summary) *Ukrain. Fiz. Zh.* 31 (1986), no. 10, 1445–1450, 1594. (Adam Bechler) 89a:81189 81L05
- (with Oleinik, V. P.) On the quantum electrodynamics of nonisolated systems. II. The bounded dispersing medium. (Russian. English summary) *Ukrain. Fiz. Zh.* 31 (1986), no. 11, 1605–1610, 1755. (Adam Bechler) 89a:81190 81L05
- Belousov, V. D.** Autotopies and anti-autotopies in quasigroups. (Russian) *Mat. Issled.* No. 102 *Issled. Oper. i Kvazigrupp* (1988), 3–25, 118. (Péter T. Nagy) 89g:20106 20N05
- (with Sokolov, E. I.)  $n$ -ary inverse quasigroups (I-quasigroups). (Russian) *Mat. Issled.* No. 102 *Issled. Oper. i Kvazigrupp* (1988), 26–36, 118. (Péter T. Nagy) 89g:20112 20N15 (20N05)
- Belov, A. G.** (with Batomunkueva, G. V.; Galkin, V. Ya.; Ufimtsev, M. V.) Optimal estimates for the parameters of multiple distributions. (Russian) *Mathematical models and numerical methods* (Russian), 59–75, *Moskov. Gos. Univ., Moscow*, 1987. (Jana Jurečková) 89a:62065 62F10
- Belov, A. S.** Smoothness of the sum of a lacunary trigonometric series. (Russian) *Sibirsk. Mat. Zh.* 28 (1987), no. 5, 32–41, 226. (O. A. Ziza) 89g:42021 42A55
- Belov, A. Ya.** The Shirshov basis of relatively free algebras of complexity  $n$ . (Russian) *Mat. Sb. (N.S.)* 135(177) (1988), no. 3, 373–384, 415; translated in *Math. USSR-Sb.* 63 (1989), no. 2, 363–374. (Yu. N. Mal'tsev) 89d:16022; EA 89m 16A38
- Belov, B. I.** A new optimization characterization for orthogonal polynomials. (Russian) *Approximate methods for analysis and their applications* (Russian), 5–18, *Akad. Nauk SSSR Sibsk. Otdel., Energet. Inst., Irkutsk*, 1985. (From the introduction) 89a:42031 42C05 (33A65, 94A11)
- Belov, D. A.** (with Vainshtein, G. G.; Moskvina, E. A.) Identification of graphic objects based on a transformation to a space of parameters. (Russian) *Algorithms for processing experimental data* (Russian), 98–108, 183, "Nauka", Moscow, 1986. (see 89j:68003) 68T10
- Belov, I. B.** (with Shashin, A. M.; Ivanov, N. M.) Combined additive codes for the correction of multiple defects. (Russian) *Noise-resistant coding and computer reliability* (Russian), 3–7, 189, "Nauka", Moscow, 1987. (see 89j:94001) 94B50
- Belov, N. V.** see **Crystallography and crystal chemistry**, 89h:51021
- Belov, S. Ya.** (with Vladimirov, V. A.) On the analogues and generalizations of Squire's theorem. *J. Appl. Math. Mech.* 51 (1987), no. 3, 314–319 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 3, 403–409 (Russian). (W. O. Criminale, Jr.) 89h:76020 76E99
- Belov, V. V.** (with Karavaev, A. G.) Higher approximations for the quasiclassical trajectory-coherent states of a nonrelativistic particle. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 30 (1987), no. 10, 14–18. (Summary) 89e:81027 81C15 (81D30)
- (with Dobrokhoto, S. Yu.) The Maslov canonical operator on isotropic manifolds with a complex germ, and its applications to spectral problems. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 5, 1037–1042; translated in *Soviet Math. Dokl.* 37 (1988), no. 1, 180–185. (Rémi Vaillancourt) 89h:58185 58G15 (58G25)
- (with Bagrov, V. G.) Destruction time of given accuracy of quasiclassical trajectory-coherent states. (Russian. English summary) *Teoret. Mat. Fiz.* 74 (1988), no. 2, 316–319; translated in *Theoret. and Math. Phys.* 74 (1988), no. 2, 211–213. (Henryk Aródz) 89f:81029 81C05 (81D30)
- Belov, Yu. A.** (with Kas'yanyuk, V. S.) On the set of values of a linear functional subject to constraints involving  $m$  other linear functionals. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 10, 6–10, 74. (Jerzy Sztajnic) 89e:49009 49B05 (41A65)
- (with Zrazhevskaya, V. F.) A modification of the Newton method for solving the Dirichlet problem for the equation  $\Delta u = f(x, u)$ . (Russian) *Vychisl. Prikl. Mat. (Kiev) No. 61* (1987), 27–30, 130. (Summary) 89b:65235 65N05
- Belova, I. V.** (with Zaikina, G. M.) Numerical comparison of some nonlinear optimization methods. (Russian) *Discrete optimization and numerical methods for solving applied problems* (Russian), 3–9, *Akad. Nauk SSSR Sibsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1986. (From the text) 89g:90183 90C30 (65K05)
- Belova, L. A.** (with Lipaev, V. V.) Forecasting of technical-economic indices of the development of complex programs for control systems. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 7, 164–173; translated in *Avtomat. Remote Control* 49 (1988), no. 7, part 2, 949–955. (Not in MR) 90A17
- Belova, M. M.** (with Moskal'kov, M. N.; Savin, V. G.) Numerical solution of a problem of the radiation of sound by a cylindrical piezovibrator under impulse electric excitation. (Russian) *Vychisl. Prikl. Mat. (Kiev) No. 61* (1987), 30–37, 130. (Summary) 89d:73049 73R05 (65P05)
- Belova, M. Yu.** (with Gluzberg, V. E.) A method for the numerical integration of oscillating functions of a certain class. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1987, no. 5, 12–14. (Gheorghe Coman) 89j:65023 65D30
- Belova, O. N.** (with Karlin, V. A.) Investigation of some model problems connected with the parabolized Navier-Stokes equations. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 24, 24 pp. (Summary) 89b:65242 65N10 (35Q10)
- Belova, T. I.** (with Kudryavtsev, A. E.) Quasi-periodic orbits in the scalar classical  $\lambda\phi^4$  field theory. *Phys. D* 32 (1988), no. 1, 18–26. (Not in MR) 81E99 (81-04)

- von Below, Joachim Classical solvability of linear parabolic equations on networks. *J. Differential Equations* 72 (1988), no. 2, 316-337. (W.-K. Chen) **89c:94021** 94C05 (35K35)
- Sturm-Liouville eigenvalue problems on networks. *Math. Methods Appl. Sci.* 10 (1988), no. 4, 383-395. (N. L. Vulchanov) **89j:80008** 80A20 (34B25)
- Béteky, K. (with Tamásy, L.) On the coincidence of two kinds of ellipses in Riemannian and in Finsler spaces. *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 1193-1200. *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (H. Rund) **89c:53039** 53B40 (53A04)
- Beltrametti, E. G. Recent facts in quantum logic and surroundings. *Recent developments in quantum logic (Cologne, 1984)*, 13-31, *Grundlagen Exakt. Naturwiss.*, 6, Bibliographisches Inst., Mannheim, 1985. (see **89b:01008**) **81Bxx** (03G12, 06C15)
- Beltrametti, Mauro Contractions of nonnumerically effective extremal rays in dimension 4. *Proceedings of the conference on algebraic geometry (Berlin, 1985)*, 24-37, Teubner-Texte Math., 92, Teubner, Leipzig, 1986. (Harry D'Souza) **89c:14064** 14J35 (14J10)
- On  $d$ -folds whose canonical bundle is not numerically effective, according to Mori and Kawamata. (Italian summary) *Ann. Mat. Pura Appl.* (4) 147 (1987), 151-172. (Harry D'Souza) **89c:14063** 14J40 (14J10)
- (with Lanteri, Antonio; Palleschi, Marino) Algebraic surfaces containing an ample divisor of arithmetic genus two. *Ark. Mat.* 25 (1987), no. 2, 189-210. (Paltin Ionescu) **89c:14037** 14J10 (14J25)
- (with Sommesse, Andrew John) A criterion for a variety to be a cone. *Comment. Math. Helv.* 62 (1987), no. 3, 417-422. (A. Conte (Zbl 633:14028)) **89f:14041** 14J40 (14J30, 14M05)
- (with Sommesse, Andrew John) On generically polarized Gorenstein surfaces of sectional genus two. *J. Reine Angew. Math.* 386 (1988), 172-186. (Marino Palleschi) **89g:14030** 14J25 (14C20)
- (with Ballico, Edoardo) On 2-spannedness for the adjunction mapping. *Manuscripta Math.* 61 (1988), no. 4, 447-458. (Antonio Lanteri) **89i:14003** 14C20 (14E25)
- Beltrami, E. see Scanlan, Michael J., **89h:01037**
- Bel'tyukov, B. A. (with Makarov, S. A.) On the investigation of a class of two-dimensional partially loaded integral equations. (Russian) *Methods of numerical analysis and optimization (Russian)*, 187-227, 304, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (G. F. Miller) **89c:45014** 45G10 (45L05, 65R20)
- see also Models and methods in operations research, **89j:90018**
- Belubekyan, M. V. (with Sarkisyan, V. S.; Minasyan, M. M.) Jozef Brilla (on the occasion of his sixtieth birthday). (Russian) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1987, no. 1(164), 157-158. (Editors) **89b:01059** 01A70
- Belvedere, L. V. Comments on dynamical mass versus superconducting gap generation. *Phys. Rev. D* (3) 37 (1988), no. 8, 2351-2353. (Gordon Feldman) **89j:81161** 81E99 (81D20, 81G20)
- (with Marino, E. C.) Superconducting Thirring model. *Phys. Rev. D* (3) 37 (1988), no. 8, 2354-2356. (Mircea Crisan) **89c:81067** 81E99
- Belyaev, A. B. (with Men'shikov, I. S.) Some compromise schemes in dynamic models of conflict situations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 1, 3-13, 156; translated in *U.S.S.R. Comput. Math. and Math. Phys.* 28 (1988), no. 1, 1-7. (Milan Mareš) **89d:90246** 90D05
- Belyaev, A. Yu. Wave propagation in a continuous medium with periodically distributed inclusions. (Russian) *Dokl. Akad. Nauk SSSR* 296 (1987), no. 4, 828-831. (From the text) **89a:73018** 73D25 (73C40)
- Belyaev, K. P. (with Dyakonova, E. E.) Estimates of the speed of convergence in the limit theorems for batch-processing systems with heavy traffic. *Moscow Univ. Comput. Math. Cybernet.* 1988, no. 1, 65-70; translated from *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* 1988, no. 1, 56-60, 77 (Russian). (Summary) **89a:60215** 60K25 (90B22)
- Belyaev, S. T. (with Arnold, V. I.; Barkov, L. M.; Dimov, G. I.; Kadamov, B. B.; Kruglyakov, E. P.; Meshkov, I. N.; Rytov, D. D.; Sidorov, V. A.; Skriskii, A. N.) Boris Valerianovich Chirikov (on his sixtieth birthday). *Soviet Phys. Uspekhi* 31 (1988), no. 7, 682-683 (1989); translated from *Uspekhi Fiz. Nauk* 155 (1988), no. 3, 543-544 (Russian). (Not in MR) **01A70**
- Belyaev, S. Yu. An axisymmetric analogue of the Keldysh-Sedov problem. *J. Appl. Math. Mech.* 51 (1987), no. 1, 34-39 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 1, 47-53 (Russian). (V. T. Golovchan) **89m:73012** 73C35
- Belyaev, V. A. Approximation of functions of a complex variable by polynomials. (Russian) *Theory of functions and approximations, Part 1 (Russian) (Saratov, 1984)*, 109-114, Saratov. Gos. Univ., Saratov, 1986. (see **89j:00035**) **30E10** (42A10)
- Belyaev, V. B. (with Kartavtsev, O. I.; Kochkin, V. I.) ★ Конечномерная аппроксимация дифференциального оператора в уравнениях Яковлевского. (Russian) [Finite-dimensional approximation of a differential operator in the Yakubovskii equations] With an English summary. *Сообщения Объединенного Института Ядерных Исследований. Дубна* [Communications of the Joint Institute for Nuclear Research. Dubna], R4-88-574. Joint Inst. Nuclear Res., Dubna, 1988. 8 pp. (Summary) **89m:81178** 81F10
- Belyaev, V. I. (with Ivakhnenko, A. G.; Fleishman, B. S.) Cybernetic methods for optimizing the use of nature. *Soviet J. Automat. Inform. Sci.* 21 (1988), no. 2, 36-40; translated from *Avtomatika* 1988, no. 2, 36-40, 94 (Russian. English summary). (Not in MR) **00A71** (92A17)
- Belyaev, Yu. I. Synthesis of linear schemes for estimating a scalar field by the method of stochastic interpolation. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 4, 18-25 (1988); translated from *Avtomatika* 1987, no. 4, 20-28, 95 (Russian. English summary). (Yu. A. Nikolaev) **89i:93029** 93B30 (41A05, 68T10)
- Belyaev, Yu. K. (with Makarov, A. P.) A model with estimation of an absolutely guaranteed time of failure-free operation. *Soviet J. Comput. Systems Sci.* 25 (1987), no. 4, 66-73; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1986, no. 6, 28-34 (Russian). (S. N. Alam) **89d:62103** 62N05 (90B25)
- (with Lumeškil, Ya. P.) Multidimensional Poisson walks. Statistical methods. *J. Soviet Math.* 40 (1988), no. 2, 162-165. (Benjamin Goldys) **89i:62140** 62M05
- see also Cox, David Roxbee, **89i:62163**
- Belyakov, A. V. Finiteness of all variations of a neighborhood of a bounded set in  $R^n$ . (Russian) *Geometric problems of the theory of functions and sets (Russian)*, 14-26, Kalinin. Gos. Univ., Kalinin, 1987. (Friedbert Prüfer) **89d:53118** 53C65 (26B30, 28A75)
- Belyakova, G. V. (with Batalova, Z. S.) Some bifurcations of embedded structures of the equation of motion of a pendulum with an oscillating axis. (Russian) *Dynamics of systems (Russian)*, 176-195, 199, *Gorkov. Gos. Univ., Gorki*, 1986. (B. M. Garay) **89b:70010** 70K30 (58F14, 70K05)
- (with Batalova, Z. S.) Diagrams of stability of the periodic motions of a pendulum with an oscillating axis. (Russian) *Prikl. Mat. Mekh.* 52 (1988), no. 1, 55-63; translated in *J. Appl. Math. Mech.* 52 (1988), no. 1, 41-48. (From the summary) **89a:70041** 70K20 (58F13, 58F14)
- Belyanin, M. P. (with Vasil'eva, A. B.) On the theory of contrasting structures. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* 1988, no. 2, 22-28, 62; translated in *Moscow Univ. Comput. Math. Cybernet.* 1988, no. 2, 25-32. (Liang Zhongchao) **89k:34063** 34C25 (34E15, 92A15)
- On the asymptotics in a one-dimensional model of some semiconductor devices. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 1, 34-51, 156; translated in *U.S.S.R. Comput. Math. and Math. Phys.* 28 (1988), no. 1, 21-34. (Summary) **89d:78039** 78A55
- (with Vasil'eva, A. B.) On an inner transition layer in a problem of the theory of semiconductor films. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 2, 224-236, 303. (Mircea Crisan) **89h:34051** 34E15 (34D05, 82A70, 82A99)
- Belyanin, P. N. (with Bobrova, I. V.; Gonsales-Sabater, A.) The problem of synthesizing engineering CAD for flexible manufacturing systems. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 1, 49-57; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 3, 12-21, 219 (Russian). (Not in MR) **93B50**
- Belyavskaya, G. B. The nuclei and center of a quasigroup. (Russian) *Mat. Issled.* No. 102 *Issled Oper. i Kvazigrupp* (1988), 37-52, 118. (Ján Duplák) **89f:20077** 20N05
- Belyavskii, S. S. The dimension of the attainability set of a system of differential equations with switching. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* 1987, no. 2, 74-75, 81. (Igor N. Litvin) **89b:49056** 49E15 (93B05)
- Belyayev, V. I. see Belyaev, V. I.
- Belyayev, Yu. K. see Belyaev, Yu. K.
- Belyayev, Yu. L. see Belyaev, Yu. I.
- Belyi, G. V. The commutant of the absolute Galois group. (Russian) *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 346-349, Amer. Math. Soc., Providence, RI, 1987. (Helmut Koch) **89f:12006** 12F10 (11R32)
- Belyi, M. V. (with Bulgakov, V. E.; Zolotov, A. B.) The semi-iterative multigrid method and its program realization for solving three-dimensional boundary value problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 6, 875-888, 958. (J. Mídlíček) **89a:65156** 65N20
- Belyi, S. B. Upper bounds for the distributions of monochromatic subgraphs. (Russian) *Issled. Operatsii i ASU No. 32* (1988), 64-67, 118. (Pavel Tomasta) **89m:05061** 05C35
- Belyi, V. I. (with Strelkovskaya, I. V.) Approximation of functions by plane analytic complex splines. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1987, no. 11, 5-8, 83. (Guillermo López Lagomasino) **89c:30065** 30E10 (41A15, 41A21)
- Belyi, Yu. A. (with Vachov, D.) Anniversaries in the history of mathematics for 1986. (Bulgarian) *Fiz.-Mat. Spis. B'lgar. Akad. Nauk* 28(61) (1986), no. 4, 304-307 (1987). (Editors) **89c:01084** 01A70
- Anniversaries in the history of mathematics for 1987. (Bulgarian) Translated from the Russian by K. Petrova. *Fiz.-Mat. Spis. B'lgar. Akad. Nauk* 30(63) (1988), no. 1, 43-44. (Editors) **89i:01058** 01A70
- Belykh, V. N. (with Sennikovskii, Ya. N.) Qualitative investigation of a periodically nonautonomous pendulum system. II. (Russian) *Methods of qualitative theory of differential equations (Russian)*, 35-47, 211, *Gorkov. Gos. Univ., Gorki*, 1986. (Summary) **89d:58092** 58F14 (34C25, 58F15, 70K40)
- (with Verichev, N. N.) The dynamics of coupled rotators. (Russian. English summary) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* 31 (1988), no. 6, 688-697; translated in *Radiophys. and Quantum Electronics* 31 (1988), no. 6, 503-512. (J. Daneš) **89j:70035** 70K50
- (with Verichev, N. N.) The dynamics of coupled rotators and oscillators. (Russian. English summary) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* 31 (1988), no. 8, 921-928; translated in *Radiophys. and Quantum Electronics* 31 (1988), no. 8, 657-663. (Summary) **89j:70036** 70K50 (58F13)
- Belytschko, Ted (with Lasry, David) A fractal patch test. *Internat. J. Numer. Methods Engrg.* 26 (1988), no. 10, 2199-2210. (Summary) **89f:73050** 73K25 (73K10)
- Bembiev, L. E. Singularities of waves of surface type. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 5(263), 177-178. (Peter R. Popivanov) **89c:35124** 35L05 (35A20, 35L67, 58G16)
- Bemelmans, Josef On a free boundary problem for the stationary Navier-Stokes equations. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* 4 (1987), no. 6, 517-547. (Alberto Valli) **89f:35216** 35R35 (35Q10, 58C15, 76D05)
- (with Dierkes, Ulrich) On a singular variational integral with linear growth. I. Existence and regularity of minimizers. *Arch. Rational Mech. Anal.* 100 (1987), no. 1, 83-103. (T. Zolezzi) **89a:49022** 49B21 (49B36)
- Free boundary problems for the Navier-Stokes equations. *Partial differential equations and calculus of variations*, 96-115, *Lecture Notes in Math.*, 1357, Springer, Berlin-New York, 1988. (M. Biroli) **89k:35179** 35Q10 (35R35, 76D05)
- Benabdallah, Assia (with Serre, D.) Problèmes aux limites pour des systèmes hyperboliques non linéaires de deux équations à une dimension d'espace. (English summary) [Boundary conditions for nonlinear  $2 \times 2$  hyperbolic systems of conservation laws] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 15, 677-680. (Reza Malek-Madani) **89g:35067** 35L65
- Benabdallah, Khalid (with Călugăreanu, Grigore) Abelian groups with continuous lattice of subgroups. *Studia Univ. Babeş-Bolyai Math.* 32 (1987), no. 1, 31-32. (L. Fuchs) **89g:20085** 20K10
- Benabdallah, M. (with Rutkas, A. G.; Solov'ev, A. A.) Stability of degenerate difference systems in Banach spaces. (Russian) *Dynamic systems, No. 6 (Russian)*, 103-109, 126, "Vishcha Shkola", Kiev, 1987. (Xiao Xin Liao) **89f:39002** 39A11 (47A50, 47B39, 47H15)
- Bénabou, Roland Search, price setting and inflation. *Rev. Econom. Stud.* 55 (1988), no. 3, 353-376. (Summary) **89g:90054** 90A14
- Benacquist, M. (with Nordvedt, K.) A many-body Lagrangian for celestial body dynamics to second post-Newtonian linear field order. *Astrophys. J.* 328 (1988), no. 2, part 1, 588-593. (Summary) **89c:83026** 83C25 (83D05)
- Benadada, Y. (with Ferland, J. A.) Partial linearization for generalized fractional programming. (German summary) *Z. Oper. Res.* 32 (1988), no. 2, 101-106. (Siegfried Schaible)



- 89E90172 90C32**  
**Benallou, A.** (with Mellichamp, D. A.; Seborg, Dale E.) Optimal stabilizing controllers for bilinear systems. *Internat. J. Control* **48** (1988), no. 4, 1487-1501. (Not in MR) **93D15** (93C05)
- Ben Amar, M.** Theory of needle-crystal. *Phys. D* **31** (1988), no. 3, 409-423. (Summary) **89d:80606** 80A20 (34E20, 43K03)
- Benamer, Dan** (with Kapur, Deepak; Narendran, Paliath) Complexity of matching problems. Rewriting techniques and applications (Dijon, 1985). *J. Symbolic Comput.* **3** (1987), no. 1-2, 203-216. (Alexander Leitsch) **89a:68131** 68Q50 (03B35, 03D15, 68Q25, 68Q40, 68T15)
- Benardete, Diego** Topological equivalence of flows on homogeneous spaces, and divergence of one-parameter subgroups of Lie groups. *Trans. Amer. Math. Soc.* **306** (1988), no. 2, 499-527. (S. G. Dani) **89k:58248** 58F25 (22E40, 58F10)
- Ben Arous, G.** Noyau de la chaleur hypoelliptique et géométrie sous-riemannienne. [The hypoelliptic heat kernel and sub-Riemannian geometry] *Stochastic analysis* (Paris, 1987), 1-16, *Lecture Notes in Math.*, 1322, Springer, Berlin-New York, 1988. (Kazuaki Taira) **89k:35054** 35H05 (35K99, 53C21, 58G11, 60J60)
- Développement asymptotique du noyau de la chaleur hypoelliptique hors du cut-locus. [Asymptotic expansion of the hypoelliptic heat kernel outside of the cut-locus] *Ann. Sci. École Norm. Sup.* (4) **21** (1988), no. 3, 307-331. (Régis Léandre) **89k:60087** 60H99 (35H05, 58G11, 58G32, 62F10)
- Benaroya, H.** (with Rehak, M.) Simulation of a random differential equation. *J. Guidance Control Dynamics* **11** (1988), no. 2, 173-178. (Not in MR) **34F05**
- Markov chain transition probabilities and experimental data. *Appl. Math. Comput.* **29** (1988), no. 2, part II, 107-121. (Wojciech Bartoszek) **89m:60165** 60J20
- Ben-Artzi, Asher** (with Gohberg, I.) Lower upper factorizations of operators with middle terms. *J. Funct. Anal.* **77** (1988), no. 2, 309-325. (L. Rodman) **89d:47028** 47A68 (47B10)
- (with Ron, Amos) Translates of exponential box splines and their related spaces. *Trans. Amer. Math. Soc.* **309** (1988), no. 2, 683-710. (Rong Qing Jia) **89m:41008** 41A15 (33A10, 41A63)
- Ben-Asher, Joseph** (with Cliff, Eugene M.; Kelley, Henry J.) Optimal evasion with a path-angle constraint and against two pursuers. *J. Guidance Control Dynamics* **11** (1988), no. 4, 300-304. (Summary) **89j:90303** 90D26 (49A45)
- Benassati, J.** Sensitivity of principal component analysis to data perturbation. *Data analysis and informatics, V* (Versailles, 1987), 303-310, North-Holland, Amsterdam-New York, 1988. (Summary) **89i:62093** 62H25
- Benassi, Albert** (with Fouque, Jean-Pierre) Hydrodynamical limit for the asymmetric zero-range process. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **24** (1988), no. 2, 189-200. (T. M. Liggett) **89k:60153** 60K35 (82A99)
- Benassy, Jean Pascal** see Dehez, Pierre, (89d:90065)
- Benatti, F.** (with Ghirardi, G. C.; Rimini, A.; Weber, Tullio) Quantum mechanics with spontaneous localization and the quantum theory of measurement. (Italian and Russian summaries) *Nuovo Cimento B* (11) **100** (1987), no. 1, 27-41. (L. I. Rozonoër) **89k:81009** 81B05
- (with Narnhofer, H.) Entropy behaviour under completely positive maps. *Lett. Math. Phys.* **15** (1988), no. 4, 325-334. (Matthew J. Donald) **89i:82016** 82A15 (46L60)
- Ben-Ayed, Omar** (with Boyce, David E.; Blair, Charles E., III) A general bilevel linear programming formulation of the network design problem. *Transportation Res. Part B* **22** (1988), no. 4, 311-318. (Not in MR) **90C35** (90B10)
- Ben Bouzid, Mustapha** see Bouzid, Ben Mustapha
- Bencl, Vieri** Some applications of the Morse-Conley theory to the study of periodic solutions of second order conservative systems. *Periodic solutions of Hamiltonian systems and related topics* (Il Ciocco, 1986), 57-78, NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci., 209, Reidel, Dordrecht-Boston, MA, 1987. (Michel Willem) **89d:58035** 58F05 (58E05, 58F22)
- (with Fortunato, Donato) A "Birkhoff-Lewis" type result for nonautonomous Hamiltonian systems. *Periodic solutions of Hamiltonian systems and related topics* (Il Ciocco, 1986), 79-84, NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci., 209, Reidel, Dordrecht-Boston, MA, 1987. (Summary) **89a:58038** 58F05 (34C25, 58E05, 58F22)
- A new approach to the Morse-Conley theory. *Proceedings of the international conference on recent advances in Hamiltonian systems* (L'Aquila, 1986), 1-52, World Sci. Publishing, Singapore, 1987. (Michele Matzeu) **89a:58024** 58E05 (58F05, 58F25)
- Benckik, I.** (with Michaletzky, György) Generalized least squares innovation representation. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 1156-1161. (see **89d:00007**) **93E12** (93B15, 93C55)
- Benčur, András** Information measurement in relational databases. *MEDBS 87* (Dresden, 1987), 1-9, *Lecture Notes in Comput. Sci.*, 305, Springer, Berlin-New York, 1988. (see **89a:68004**) **68P15**
- Ben David, Shai** A Laver-type indestructibility for accessible cardinals. *Logic colloquium '86* (Hull, 1986), 9-19, *Stud. Logic Found. Math.*, 124, North-Holland, Amsterdam-New York, 1988. (Eva Hartová) **89e:03093** 03E55 (03E35)
- Ben David Bonjorn, Jacob** see Ben David Bonjorn, Jacob
- Ben Daya, Mohammed** (with Shetty, C. M.) A decomposition procedure for convex quadratic programs. *Naval Res. Logist.* **35** (1988), no. 1, 111-118. (Yahya Fathi) **89e:90154** 90C20 (90C25)
- van Bendegem, Jean Paul** see Van Bendegem, Jean Paul
- Bender, C. M.** (with Mead, Lawrence R.; Papanicolaou, N.) Maximum entropy summation of divergent perturbation series. *J. Math. Phys.* **28** (1987), no. 5, 1016-1018. (G. Papanicolaou) **89b:81050** 81C15 (44A60)
- (with Dunne, Gerald V.) Polynomials and operator orderings. *J. Math. Phys.* **29** (1988), no. 8, 1727-1731. (R. A. Askey) **89h:33012** 33A65 (05A19, 81D05)
- (with Papanicolaou, N.) WKB calculation of quantum adiabatic phases and nonadiabatic corrections. (French summary) *J. Physique* **49** (1988), no. 4, 561-566. (Summary) **89f:81045** 81C15 (58F40)
- (with Dunne, Gerald V.) Exact operator solutions to Euler Hamiltonians. *Phys. Lett. B* **200** (1988), no. 4, 520-524. (V. B. Serebrennikov) **89f:81030** 81C05 (70H05)
- (with Milton, Kimball A.; Pinsky, Stephen S.; Simmons, L. M., Jr.) A new perturbative approximation applied to supersymmetric quantum field theory. *Phys. Lett. B* **205** (1988), no. 4, 493-498. (Summary) **89e:81101** 81E15 (81C30)
- (with Milton, Kimball A.; Moshe, Moshe; Pinsky, Stephen S.; Simmons, L. M., Jr.) Novel perturbative scheme in quantum field theory. *Phys. Rev. D* (3) **37** (1988), no. 6, 1472-1484. (R. Kotecky) **89g:81053** 81E15
- Bender, Edward A.** Errata: "The number of three-dimensional convex polyhedra" [Amer. Math. Monthly **94** (1987), no. 1, 7-21; MR 88b:52010]. *Amer. Math. Monthly* **94** (1987), no. 10, 994. (Editors) **89b:52006** 52A25 (05A15)
- (with Wormald, Nicholas C.) The number of rooted convex polyhedra. *Canad. Math. Bull.* **31** (1988), no. 1, 99-102. (Helmut Prodinger) **89g:05009** 05A15 (05C30)
- (with Canfield, E. Rodney; Robinson, Robert W.) The enumeration of maps on the torus and the projective plane. *Canad. Math. Bull.* **31** (1988), no. 3, 257-271. (Jozsef Sirán) **89g:05056** 05C30
- (with Canfield, E. Rodney; Robinson, Robert W.) The asymptotic number of tree-rooted maps on a surface. *J. Combin. Theory Ser. A* **48** (1988), no. 2, 156-164. (E. M. Palmer) **89e:05107** 05C30 (05C10)
- (with Wormald, Nicholas C.) The asymptotic number of rooted nonseparable maps on a surface. *J. Combin. Theory Ser. A* **49** (1988), no. 2, 370-380. (E. M. Palmer) **89i:05145** 05C30
- (with Wormald, Nicholas C.) Random trees in random graphs. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 314-320. (Zbigniew Palka) **89g:05093** 05C80 (05C05)
- (with Butler, Jon T.) On the size of PLAs required to realize binary and multiple-valued functions. *IEEE Trans. Comput.* **38** (1989), no. 1, 82-98. (Summary) **89k:68059** 68Q25 (68R05)
- boularas-Bendib, Meriem** see Boularas-Bendib, Meriem
- Bendikof, A. D.** (with Pavlov, I. V.) Diffusion processes on the group  $T^m$  and elliptic equations of infinitely many variables. *Probability theory and mathematical statistics, Vol. I* (Vilnius, 1985), 145-169, VNU Sci. Press, Utrecht, 1987. (M. Fukushima) **89f:60092** 60J60 (35J99, 35R15, 58G32)
- (with Pavlov, I. V.)  $L_p$  spaces with a mixed norm on an infinite Cartesian product of probability spaces. (Russian. English summary) *Anal. Math.* **13** (1987), no. 3, 231-250. (Werner Linde) **89i:46030** 46E30 (60A10, 60G42)
- Markov processes and partial differential equations on a group: the spatially homogeneous case. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 5(257), 41-78. (Yu. E. Gliklikh) **89f:60085** 60J45 (58G32)
- (with Pavlov, I. V.) The Wiener process with reflection, and harmonic functions with a finite energy integral. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 3, 586-589; translated in *Theory Probab. Appl.* **33** (1988), no. 3, 547-550. (Di He Hu) **89m:60180** 60J45 (60J40)
- Bendler, John T.** (with Dishon, Menachem; Kesten, Harry; Weiss, G. H.) A first passage time problem for random walk occupancy. *J. Statist. Phys.* **50** (1988), no. 5-6, 1069-1087. (Cheng Xun Wu) **89m:82051** 82A51 (60J15, 60J65, 62E20, 82A41)
- Bendre, S. M.** (with Kale, B. K.) Masking effect on tests for outliers in normal samples. *Biometrika* **74** (1987), no. 4, 891-896. (Naganori Mori) **89b:62053** 62F03
- Bendsee, Martin P.** (with Olhoff, Niels; Taylor, John E.) On the design of structure and controls for optimal performance of actively controlled flexible structures. *Mech. Structures Mach.* **15** (1987), no. 3, 265-295. (Summary) **89f:73055** 73K40 (73K05, 93C75)
- (with Sokolowski, Jan) Sensitivity analysis and optimal design of elastic plates with unilateral point supports. *Mech. Structures Mach.* **15** (1987), no. 3, 383-393. (Vadim Komkov) **89f:73044** 73K10 (73K40, 93B35)
- On optimal design of actively controlled distributed parameter structures. *Boundary control and boundary variations* (Nice, 1986), 55-71, *Lecture Notes in Comput. Sci.*, 100, Springer, Berlin-New York, 1988. (see **89h:93006**) **93C20** (93B50)
- (with Kikuchi, Noboru) Generating optimal topologies in structural design using a homogenization method. *Comput. Methods Appl. Mech. Engrg.* **71** (1988), no. 2, 197-224. (Summary) **89f:73058** 73K40 (73C40, 73K25)
- (with Sokolowski, Jan) Design sensitivity analysis of elastic-plastic analysis problems. *Mech. Structures Mach.* **16** (1988), no. 1, 81-102. (Vadim Komkov) **89f:73077** 73K40 (49D40, 93B35)
- Bene, J.** (with Szépfaussy, P.) Properties of fully developed chaotic one-dimensional maps in the presence of external noise. *Phys. Rev. A* (3) **37** (1988), no. 3, 871-879. (Andrew Osbaldestin) **89a:58054** 58F08 (26A18, 58F13, 58F30)
- (with Szépfaussy, P.) Multifractal properties in the one-dimensional random-field Ising model. *Phys. Rev. A* (3) **37** (1988), no. 5, 1703-1707. (Summary) **89d:82121** 82A68 (58F11, 82A31)
- Benedetti, Giovanni Battista** see Field, J. V., **89e:01014**
- Benedetti, Riccardo** Finiteness for the topology of semi-algebraic sets of bounded complexity—some examples. *Séminaire sur la géométrie algébrique réelle, Tome I*, II, 1-27, *Publ. Math. Univ. Paris VII*, 24, Univ. Paris VII, Paris, 1986. (J. Bochnak) **89d:14033** 14G30
- di Benedetto, E.** On the local behaviour of solutions of degenerate parabolic equations with measurable coefficients. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **13** (1986), no. 3, 487-535. (From the introduction) **89a:35118** 35K65 (35B65)
- (with Chen, Ya Zhe) On the local behavior of solutions of singular parabolic equations. *Arch. Rational Mech. Anal.* **103** (1988), no. 4, 319-345. (Michiel Bertsch) **89k:35107** 35K55 (35B65, 35K65)
- Benedetto, John J.** A quantitative maximum entropy theorem for the real line. *Integral Equations Operator Theory* **10** (1987), no. 6, 761-779. (Walter R. Bloom) **89c:42003** 42A15 (42A38, 46N05)
- di Benedetto, M. D.** see Di Benedetto, M. D.
- Benedetto, Sergio** (with Ajmone Marsan, Marco; Albertengo, Guido; Giachin, Egidio) Combined coding and modulation: theory and applications. *IEEE Trans. Inform. Theory* **34** (1988), no. 2, 223-236. (Shunsuke Ihara) **89f:94012** 94A40 (94A14, 94A29)
- Benedict, R.** (with Chenais, D.; Rousselet, Bernard) Design sensitivity for arch structures with respect to midsurface shape under static loading. *J. Optim. Theory Appl.* **58** (1988), no. 2, 225-239. (Petr Procházka) **89f:73056** 73K40 (49A51)
- Benenti, S.** Fibrés affines canoniques et mécanique newtonienne. [Canonical affine bundles and Newtonian mechanics] *Action hamiltoniennes de groupes. Troisième théorème de Lie* (Lyon, 1986), 13-37, *Travaux en Cours*, 27, Hermann, Paris, 1988. (Hans P. Künzle) **89i:58029** 58F05 (70D05, 70G35, 70H99)

- Bener, A.** (with Huda, S.) Maximum likelihood estimation of components of variance and correlations in the analysis of family data. *Ann. Human Genetics* 51 (1987), no. 3, 259–264. (Summary) **89k:62038** 62F10 (62J10)
- Beneš, V. E.** Using Hopf-Cole, gauge, and Girsanov transformations to reduce stochastic control problems to Gaussian integrations. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 535–553, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:93081** 93E20 (49C20, 93B17)
- (with Rishel, Raymond Warren) Optimality of “full bang to reduce predicted miss” for some partially observed stochastic control problems. *Stochastic differential systems, stochastic control theory and applications* (Minneapolis, Minn., 1986), 1–15, IMA Vol. Math. Appl., 10, Springer, New York-Berlin, 1988. (Wilfried Grecksch) **89c:93217** 93E20 (49C20)
- Beneš, Viktor** (with Štěpán, Josef) The support of extremal probability measures with given marginals. *Mathematical statistics and probability theory, Vol. A* (Bad Tatzmannsdorf, 1986), 33–41, Reidel, Dordrecht-Boston, MA-London, 1987. (Stephen G. Landry) **89b:60013** 60A10 (28A35)
- (with Horálek, V.) On a special application of the truncation problem. *Metrika* 35 (1988), no. 2, 63–76. (Summary) **89b:62041** 62E15 (62P99)
- Bénéteau, L.** Quasigroups and groups arising from cubic surfaces. *Combinatorics '86* (Trento, 1986), 21–30, Ann. Discrete Math., 37, North-Holland, Amsterdam-New York, 1988. (Elena Brožiková) **89c:20107** 20N05 (11G35, 51A45)
- (with Razafimanantsoa, Gérard) Boucles de Moufang  $k$ -nilpotentes minimales. (English summary) [Minimal  $k$ -nilpotent Moufang loops] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 18, 743–746. (Summary) **89d:20055** 20N05
- (with Lacaze, Jacqueline) Symplectic trilinear forms and related designs and quasigroups. *Math. Algebra* 16 (1988), no. 5, 1035–1051. (Petr Němec) **89f:20078** 20N05 (05B05, 05B07)
- Benettin, Giancarlo** Ordered and chaotic motions in dynamical systems with many degrees of freedom. *Molecular-dynamics simulation of statistical-mechanical systems* (Varenna, 1985), 15–40, Proc. Internat. School of Phys. “Enrico Fermi”, XXVII, North-Holland, Amsterdam-New York, 1986. (J. S. Joel) **89m:58058** 58F05 (58F13, 58F30, 82A05)
- A completely classical mechanism for the “freezing” of the high-frequency degrees of freedom. *Chaos and complexity* (Torino, 1987), 84–92, World Sci. Publishing, Singapore, 1988. (From the introduction) **89k:58081** 58F05 (58F11, 82A40, 82A99)
- (with Fröhlich, Jürg; Giorgilli, Antonio) A Nekhoroshev-type theorem for Hamiltonian systems with infinitely many degrees of freedom. *Comm. Math. Phys.* 119 (1988), no. 1, 95–108. (Richard C. Churchill) **89m:58059** 58F05 (34C11, 70H05, 82A60)
- Ben Farah, Slim** Caractérisation des fonctions moyennes sur le cône des matrices de rang un et de trace nulle. (English summary) [Characterization of orbital functions on the cone of rank one and trace zero matrices] *C. R. Acad. Sci. Paris Sér. I Math.* 304 (1987), no. 16, 491–494. (Khélifa Harzallah) **89c:22016** 22E30 (43A85)
- Bengtsson, Anders K. H.** (with Bengtsson, Ingemar; Cederwall, M.; Linden, Noah) Particles, superparticles, and twistors. *Phys. Rev. D* (3) 36 (1987), no. 6, 1766–1772. (Peter R. Law) **89b:81088** 81D25 (32L25, 81D27, 81E30)
- BRST approach to interacting higher-spin gauge fields. *Classical Quantum Gravity* 5 (1988), no. 3, 437–452. (David McMullan) **89d:81058** 81E13 (81D99)
- Bengtsson, Ingemar** The fermionic gauge symmetry in the Green-Schwarz action. *Classical Quantum Gravity* 4 (1987), no. 5, 1143–1148. (Helmut Rumpf) **89a:81168** 81G20 (81E30, 81E99)
- (with Bengtsson, Anders K. H.; Cederwall, M.; Linden, Noah) Particles, superparticles, and twistors. *Phys. Rev. D* (3) 36 (1987), no. 6, 1766–1772. (Peter R. Law) **89b:81088** 81D25 (32L25, 81D27, 81E30)
- (with Cederwall, M.) Particles, twistors and the division algebras. *Nuclear Phys. B* 302 (1988), no. 1, 81–103. (Peter R. Law) **89k:81051** 81D07 (17A35, 81D27, 81E99)
- Benguria, Rafael** (with Ashbaugh, Mark S.) On the ratio of the first two eigenvalues of Schrödinger operators with positive potentials. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 16–25, Lecture Notes in Math., 1285, Springer, Berlin-New York, 1987. (Summary) **89a:35151** 35P15 (35J10)
- (with Ashbaugh, Mark S.) Log-convexity of the ground state of Schrödinger operators: a new proof of the Baumgartner-Grosse-Martin inequality. *Phys. Lett. A* 131 (1988), no. 4–5, 273–276. (Yusuke Kato) **89i:81012** 81C05 (81F05)
- (with Ashbaugh, Mark S.) Optimal lower bound for the gap between the first two eigenvalues of one-dimensional Schrödinger operators with symmetric single-well potentials. *Proc. Amer. Math. Soc.* 105 (1989), no. 2, 419–424. (André Hautot) **89f:81028** 81C05 (34B25)
- Benhabib, Jess** (with Jafarey, Saqib; Nishimura, Kazuo) The dynamics of efficient intertemporal allocations with many agents, recursive preferences, and production. *J. Econom. Theory* 44 (1988), no. 2, 301–320. (Rolf Färe) **89g:90033** 90A10
- Benhabib, Kety** Étude de certaines familles de systèmes différentiels linéaires du plan à coefficients constants. [Study of some families of linear differential systems in the plane with constant coefficients] *Cahiers Math.* 1987, no. 1, 9–30. (Editors) **89f:58097** 58F14 (03H05, 34A30)
- (with Bobo, S.; Baba-Hamed, Ch.) Technique des régionalisations: un petit essai sur l'exponentielle. [The regionalization method: a brief essay on the exponential] *Cahiers Math.* 1987, no. 1, 39–52. (H. Gonsior) **89c:03115** 03H05 (26E35)
- Benhamou, Mabrouk** (with Mahoux, Gilbert) Fluctuations and renormalization of a field on a boundary. *Nuclear Phys. B* 305 (1988), no. 1 FS23, 1–15. (Summary) **89b:81128** 81E15
- Benharbit, A.** Distribution of zeros and oscillatory properties of solutions of a fourth order differential equation. *Rev. Mat. Apl.* 9 (1987), no. 1, 22–26. (G. A. Bogar) **89c:34033** 34C10
- (with Obaid, S. A.) Stream functions of certain rotating cylinders. Hyperbolic partial differential equations. *V. Comput. Math. Appl.* 15 (1988), no. 6–8, 437–446. (E. Cumberbatch) **89f:76020** 76B10 (35C99)
- Benhocine, Abdelhamid** (with Fouquet, Jean-Luc) Pancyclic and panconnected line graphs. *J. Graph Theory* 11 (1987), no. 3, 385–398. (Summary) **89b:05139** 05C75
- Benidir, Messaoud** Caractérisation des polynômes de Hurwitz et de Schur complexes. (English summary) [Characterization of Hurwitz and Schur polynomials in the complex case] *Traitement Signal* 5 (1988), no. 3, 153–159. (Summary) **89m:30012** 30C15 (93D99)
- Bénilan, P.** (with Barthélemy, L.) Phénomène de couche limite pour la pénalisation d'équations quasi-variationnelles elliptiques avec conditions de Dirichlet au bord. [The boundary layer phenomenon for the penalization of elliptic quasivariational equations with Dirichlet boundary conditions] *Nonlinear partial differential equations and their applications. Collège de France seminar, Vol. VIII* (Paris, 1984–1985), 47–68, Pitman Res. Notes Math. Ser., 166, Longman Sci. Tech., Harlow, 1988. (M. Biroli) **89c:35089** 35J85 (35B20, 35J60, 49A29)
- (with Crandall, Michael G.; Sacks, Paul E.) Some  $L^1$  existence and dependence results for semilinear elliptic equations under nonlinear boundary conditions. *Appl. Math. Optim.* 17 (1988), no. 3, 203–224. (Yao Tian Shen) **89d:35055** 35J65
- (with Crandall, Michael G.; Pazy, Ammon) “Bonnes solutions” d'un problème d'évolution semi-linéaire. (English summary) [“Mild solutions” of a semilinear evolution problem] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 13, 527–530. (Nicolaie H. Pavel) **89g:47088** 47H20 (34G20)
- (with Barthélemy, L.) Sous-potentiels d'un opérateur nonlinéaire. (English summary) [Subpotentials of a nonlinear operator] *Israel J. Math.* 61 (1988), no. 1, 85–112. (Simeon Reich) **89d:47131** 47H15 (47H17, 49A29)
- see also Dautray, Robert, **89m:00001** and **89m:00003b**
- Benilov, E. S.** (with Felinovsky, E. N.) Scattering of internal waves in a current above a nonuniform bottom. *Izv. Acad. Sci. USSR Atmospher. Ocean. Phys.* 23 (1987), no. 10, 808–812 (1988); translated from *Izv. Akad. Nauk SSSR Ser. Fiz. Atmosf. i Okeana* 23 (1987), no. 10 (Russian). (Summary) **89j:76030** 76B15 (76C20, 86A05)
- (with Malomed, B. A.) On the spectral singularity problem in the perturbation theory for systems close to the KdV equation. *J. Phys. A* 21 (1988), no. 8, L439–L442. (Summary) **89g:58084** 58F07 (35Q20)
- Ben-Israel, Adi** (with Ben-Tal, A.) Ordered incidence geometry and the geometric foundations of convexity theory. *J. Geom.* 30 (1987), no. 2, 103–122. (Jean-Paul Doignon) **89b:52001** 52A01 (51G05)
- Canonical bases in linear programming. *Linear Algebra Appl.* 102 (1988), 95–119. (Jacques A. Ferland) **89j:90166** 90C05
- Benítez, Carlos** (with Alonso Romero, Javier) The Joly's construction: a common property of some generalized orthogonalities. *Bull. Soc. Math. Belg. Sér. B* 39 (1987), no. 3, 277–285. (J. Strommer) **89c:51032** 51F20
- (with Fernández García-Hierro, Manuel) Functional characterization of best and good approximation in normed product spaces. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 2 (1988), no. 2, 313–322. (C. Dierieck) **89i:41024** 41A28 (41A65, 46B20)
- Benjamin, Arthur** The bisection method: which root? *Amer. Math. Monthly* 94 (1987), no. 9, 861–863. (E. J. Barbeau) **89c:26016** 26A99 (65H99)
- Benjamin, T. B.** (with Bowman, S. B.) Discontinuous solutions of one-dimensional Hamiltonian systems. *Proc. Roy. Soc. London Ser. A* 413 (1987), no. 1845, 263–295. (M. Shearer) **89b:35197** 35L65 (58F05, 76B15, 76L05, 76N15)
- Benjelloun-Touimi, Zakia** (with Nédélec, Jean-Claude; Starling, Felipe) Diffraction d'ondes électromagnétiques par des réseaux de conducteurs et méthode d'équations intégrales. (English summary) [Integral equation methods in a quasiperiodic diffraction problem for the time harmonic Maxwell equations] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 13, 547–550. (Summary) **89c:78009** 78A45
- Benjwal, M. P.** (with Kumar, Sunil; Joshi, D. C.) Hamiltonian formulation for the Yang-Mills fields associated with electric and magnetic charges in the Coulomb gauge. *Acta Phys. Polon. B* 18 (1987), no. 12, 1077–1086. (Yisong Yang) **89b:81117** 81E13 (53C80)
- (with Kumar, Sunil; Prasad, Rakesh; Joshi, D. C.) Classical Yang-Mills theory in presence of extended electric and magnetic sources. *Acta Phys. Polon. B* 18 (1987), no. 12, 1087–1097. (Yisong Yang) **89b:81133** 81E13
- Benkart, G. M.** (with Moody, R. V.) Derivations, central extensions, and affine Lie algebras. *Algebraic Groups Geom.* 3 (1986), no. 4, 456–492. (S. I. Gelfand) **89a:17027** 17B67 (17B40)
- (with Osborn, J. Marshall) Toral rank one Lie algebras. *J. Algebra* 115 (1988), no. 1, 238–250. (Gordon E. Brown) **89d:17016** 17B50
- Benkeri, F.** On the reduction procedure for a nonlinear integro-differential equation. (German and Russian summaries) *Z. Anal. Anwendungen* 7 (1988), no. 3, 259–262. (V. A. Galkin) **89g:45023** 45K05
- Benkhaldoun, F.** (with Larroustou, B.) Numerical analysis of the two-dimensional thermodiffusive model for flame propagation. (French summary) *RAIRO Model. Math. Anal. Numér.* 22 (1988), no. 4, 535–560. (Fouad A. Mohamed) **89m:80009** 80A25 (65P05, 80–08)
- Benkherouf, L.** (with Bather, John) Oil exploration: sequential decisions in the face of uncertainty. *J. Appl. Probab.* 25 (1988), no. 3, 529–543. (Summary) **89c:90068** 90A30 (62L15, 90C40)
- Benkiane, R.** (with Banat, M.; Line, A.; Masbarnat, L.) Modèle de l'écoulement gaz-liquide stratifié à interface ondulée. [Model of stratified gas-liquid flow with undulatory interface] *Computer methods and water resources, Vol. 5* (Rabat, 1988), 175–190, Comput. Mech., Southampton, 1988. (see **89g:76003a**) 76T05 (76–08)
- Benkă, Iosif** Starlike paths and a characterization of starlike Jordan domains. (Romanian summary) *Bul. Univ. Braşov Ser. C* 29 (1987), 7–12 (1988). (K. S. Padmanabhan) **89j:30012** 30C45
- Benmansour, Schérazade** (with Seke, Bobo) Un modèle de propagation de l'information dans un ensemble fini. [A model of propagation of information in a finite set] *Cahiers Math.* 1987, no. 1, 31–37. (Kurt Marti) **89f:94009** 94A15
- Benmouna, M.** (with Jordan, A.; Bouayed, F.; Borucki, A.) Numerical method for the resolution of nonlinear heat transfer problems. *Comm. Appl. Numer. Methods* 4 (1988), no. 1, 17–23. (Summary) **89c:80010** 80A20 (65N30)
- Benn, I. M.** (with Al Saad, A.) Ideal-preserving Lorentzian connections. *J. Math. Phys.* 28 (1987), no. 8, 1883–1885. (Guido Karrer) **89c:53046** 53C50 (53A50, 81E20)
- (with Tucker, R. W.) Clifford analysis of wave equations. *Topics in differential geometry, Vol. II* (Debrecen, 1984), 167–182, Colloq. Math. Soc. János Bolyai, 46, North-Holland, Amsterdam-New York, 1988. (John Ryan) **89d:81053** 81D25 (53A50, 58G16, 58G30, 81D27)
- Bennati, S.** (with Forte, Sandra) Optimum reinforcement of a circular hole under an arbitrary stress system at infinity. (Italian summary) *Meccanica—J. Ital. Assoc. Theoret. Appl. Mech.* 19 (1984), no. 1, 68–74. (Summary) **89j:73078** 73K40



- Benner, Robert E.** (with Gustafson, John L.; Monty, Gary R.) Development of parallel methods for a 1024-processor hypercube. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 4, 609–638. (Not in MR) 63W05
- Bennett, A. Wayne** (with Tucker, Jerry H.; Tapia, Moiez A.) Boolean integral calculus. *Appl. Math. Comput.* **26** (1988), no. 3, part II, 201–236. (A. Thyse) **89m:26035** 26E99 (06E30, 94C10)
- Bennett, Andrew G.** (with Bañuelos, Rodrigo) Paraproducts and commutators of martingale transforms. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1226–1234. (Roger L. Jones) **89m:60108** 60G46 (60G44)
- Bennett, B. M.** see **Bennett, Bruce Michael**
- Bennett, Blair Miller** On confidence regions in multiple assays. *Biometrical J.* **30** (1988), no. 4, 441–449. (Not in MR) 62F10
- Bennett, Bruce Michael** (with Hoffman, D. D.) Erratum: "The computation of structure from fixed-axis motion: rigid structures" [Biol. Cybernet. **54** (1986), no. 2, 71–83; MR 87i:92068]. *Biol. Cybernet.* **58** (1988), no. 6, 426. (Editors) **89c:92090** 92A27 (68T99)
- Bennett, Byron J.** A new filter synthesis technique—the hourglass. *IEEE Trans. Circuits and Systems* **35** (1988), no. 12, 1469–1477. (B. D. Donevski) **89j:94051** 94C30 (94A12)
- Bennett, Charles H.** Notes on the history of reversible computation. Basic concepts in quantum and stochastic transport. *IBM J. Res. Develop.* **32** (1988), no. 1, 16–23. (Summary) **89i:01045** 01A60 (68-03, 81C99, 94A15)
- (with Brassard, Gilles; Robert, Jean-Marc) Privacy amplification by public discussion. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 210–229. (Thomas Beth) **89c:94028** 94A40 (94A13, 94A60)
- Bennett, Colin** (with Sharpley, Robert) ★ Interpolation of operators. Pure and Applied Mathematics, 129. Academic Press, Inc., Boston, MA, 1988. xiv+469 pp. ISBN 0-12-088730-4 (Mario Milman) **89c:46001** 46-02 (46E30, 46Exx, 46M35)
- Bennett, D. L.** (with Brene, N.; Nielsen, Holger Bech) Random dynamics. Unification of fundamental interactions (Marstrand, 1986), 158–163, Royal Swedish Acad. Sci., Stockholm, 1987. (see **89f:81005**) **82A57** (81G20, 82A41, 83F05)
- Bennett, Donna Marie** An extension of Rellick's inequality. *Proc. Amer. Math. Soc.* **106** (1989), no. 4, 987–993. (Hideo Tamura) **89m:35159** 35P05 (35J30, 47F05)
- Bennett, E.** (with Zame, William R.) Bargaining in cooperative games. *Internat. J. Game Theory* **17** (1988), no. 4, 279–300. (D. Thriessen) **89j:90290** 90D12
- Bennett, F. E.** Pairwise balanced designs with prime power block sizes exceeding 7. *Combinatorial design theory*, 43–63, North-Holland Math. Stud., 149, North-Holland, Amsterdam-New York, 1987. (Summary) **89g:05018** 05B05 (05B15)
- (with Wu, Li Sheng; Zhu, Lie) Conjugate orthogonal Latin squares with equal-sized holes. *Combinatorial design theory*, 65–79, North-Holland Math. Stud., 149, North-Holland, Amsterdam-New York, 1987. (Diane Johnson) **89c:05047** 05B15
- Bennett, H. R.** (with Balogh, Zoltán) Total paracompactness of real G-spaces. *Proc. Amer. Math. Soc.* **101** (1987), no. 4, 753–760. (D. J. Lutzer) **89a:54042** 54F05 (54D18)
- (with Chaber, J.) Scattered spaces and the class MOBI. *Proc. Amer. Math. Soc.* **106** (1989), no. 1, 215–221. (W. Stephen Watson) **89k:54029** 54C10 (54D18, 54E30)
- Bennett, M. K.** Biatomic lattices. *Algebra Universalis* **24** (1987), no. 1–2, 60–73. (Ulrich Faigle) **89a:06021** 06C99
- (with Birkhoff, Garrett) Felix Klein and his "Erlanger Programm". *History and philosophy of modern mathematics* (Minneapolis, MN, 1985), 145–176, Minnesota State Philos. Sci., XI, Univ. Minnesota Press, Minneapolis, MN, 1988. (J. Dieudonné) **89f:01032** 01A55 (01A60, 01A70)
- Bennett, P. G.** see **Analysing conflict and its resolution**, **89c:90234**
- Bennett, Robert J.** (with Hordijk, Leon) Regional econometric and dynamic models. *Handbook of regional and urban economics*, Vol. 1, 407–441, *Handbooks in Economics*, 7, North-Holland, Amsterdam-New York, 1986. (see **89m:90047**) **90A17** (90A16, 90A30)
- Nonlinear representation of the profit impacts of local government tax and expenditure decisions. *Transformations through space and time* (Hansholm, 1985), 152–164, *NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci.*, 29, Nijhoff, Dordrecht, 1986. (see **89c:90072**) **90A19**
- Bennett, Stuart** ★ A history of control engineering, 1800–1930. Reprint of the 1979 edition. IEE Control Engineering Series, 8. Peter Peregrinus, London; On behalf of the Institution of Electrical Engineers (IEE), London, 1986. x+214 pp. ISBN 0-86341-047-2 (Editors) **89c:01027** 01A55 (01A60, 34-03, 93-03)
- Benny, David J.** see **Applied mathematics, fluid mechanics, astrophysics**, **89f:76002**
- Benningshofen, Benjamin** (with Kemmerich, S.; Richter, Michael M.) ★ Systems of reductions. With a chapter by Friedrich Otto. Lecture Notes in Computer Science, 277. Springer-Verlag, Berlin-New York, 1987. x+265 pp. ISBN 3-540-18598-4 (Mukkuai S. Krishnamoorthy) **89a:68132** 68Q50 (03B70, 08A99, 20M05, 68-02, 68T15)
- (with Richter, Michael M.) A general theory of superinfinitesimals. *Fund. Math.* **128** (1987), no. 3, 199–215. (W. A. J. Luxemburg) **89b:03106** 03H05 (26E35, 54J05)
- (with Richter, Michael M.) An application of nonstandard methods to computational group theory. *Nonstandard analysis and its applications* (Hull, 1986), 237–257, *London Math. Soc. Stud. Texts*, 10, Cambridge Univ. Press, Cambridge-New York, 1988. (see **89m:03060**) **20F05** (03H05, 68Q50)
- Benoit, J.-P.** (with Krishna, V.) Nash equilibria of finitely repeated games. *Internat. J. Game Theory* **16** (1987), no. 3, 197–204. (S. H. Tjjs) **89g:90246** 90D10
- A nonequilibrium analysis of the finitely-repeated prisoner's dilemma. *Math. Social Sci.* **16** (1988), no. 3, 281–287. (Summary) **89j:90300** 90D20 (90D05)
- Bensana, E.** (with Bel, G.; Dubois, Didier) Construction d'ordonnements prévisionnels: un compromis entre approches classiques et systèmes experts. (English summary) [Production scheduling: a compromise between classical approaches and expert systems] *RAIRO Automat.-Prod. Inform. Ind.* **22** (1988), no. 5, 509–534. (Not in MR) **90B35**
- Benslimane, Ayl** (with Siohan, Pierre) Finite precision design of optimal linear phase 2-D FIR digital filters. *IEEE Trans. Circuits and Systems* **36** (1989), no. 1, 11–22. (Not in MR) **94A12**
- Benslimane, Mohamed** (with Kaidi, El Amin Mokhtar) Structure des algèbres de Jordan-Banach non commutatives complexes régulières ou semi-simples à spectre fini. [Structure of noncommutative complex Jordan-Banach algebras that are regular or semisimple with finite spectrum] *J. Algebra* **113** (1988), no. 1, 201–206. (Bruno Iochum) **89c:17004** 17A15 (46H70, 46L70)
- Benson, Chal** (with Ratcliff, G.) Quantization and an invariant for unitary representations of nilpotent Lie groups. *Illinois J. Math.* **32** (1988), no. 1, 53–64. (Jeffrey Fox) **89j:22012** 22E27
- Benson, Dave** see **Benson, David John**
- Benson, David B.** (with Guezzarian, Irène) Algebraic solutions to recursion schemes. *J. Comput. System Sci.* **35** (1987), no. 3, 365–400. (Stephen L. Bloom) **89d:68050** 68Q55 (03B70, 03D75, 18C10)
- The shuffle bialgebra. *Mathematical foundations of programming language semantics* (New Orleans, LA, 1987), 616–637, *Lecture Notes in Comput. Sci.*, 298, Springer, Berlin-New York, 1988. (Summary) **89h:68037** 68Q10 (16A24, 18B20, 68Q45)
- Benson, David John** Some remarks on the decomposition numbers for the symmetric groups. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 381–394, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (G. D. James) **89h:20037** 20C30
- Spin modules for symmetric groups. *J. London Math. Soc.* (2) **38** (1988), no. 2, 250–262. (A. Kerber) **89k:20020** 20C30
- Benson, Maurice W.** (with Frederickson, Paul O.) Fast pseudo-inverse algorithms on hypercubes. *Multigrid methods* (Copper Mountain, CO, 1987), 23–33, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (W. C. Rheinboldt) **89g:65046** 65F20 (65W05)
- Bensoussan, A.** On some parabolic equations arising from ergodic control. *Nonlinear parabolic equations: qualitative properties of solutions* (Rome, 1985), 29–40, *Pitman Res. Notes Math. Ser.*, 149, Longman Sci. Tech., Harlow, 1987. (Ya. I. Bilopol'ska) **89a:35106** 35K55 (93E20)
- Équations paraboliques intervenant en contrôle optimal ergodique. (English and Portuguese summaries) [Parabolic equations arising in ergodic optimal control] *Mat. Apl. Comput.* **6** (1987), no. 3, 211–255. (Jean-Yves Ouyard) **89i:35020** 35B37 (35R60, 93E20)
- ★ Perturbation methods in optimal control. Translated from the French by C. Tomson. *Wiley/Gauthier-Villars Series in Modern Applied Mathematics*. John Wiley & Sons, Ltd., Chichester; Gauthier-Villars, Paris, 1988. xiv+573 pp. ISBN 0-471-91994-2 (Vladimir K. Sragovich) **89m:93002** 93-02 (34E15, 49C20, 49E25, 93E20)
- On some approximation techniques in nonlinear filtering. *Stochastic differential systems, stochastic control theory and applications* (Minneapolis, Minn., 1986), 17–31, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (L. Stettner) **89d:93099** 93E11 (60G35, 60H10, 93E10)
- (with Baras, J. S.; James, M. R.) Dynamic observers as asymptotic limits of recursive filters: special cases. *SIAM J. Appl. Math.* **48** (1988), no. 5, 1147–1158. (Joseph D. Cole) **89j:93010** 93B07 (93E10)
- see also **Analysis and optimization of systems**, **89c:00031** and **Biography: Bensoussan, Alain**, **89h:01088**
- Benstock, Joseph D.** (with Berndt, Donald J.; Agarwal, Krishna K.) Graph embedding in SYNCHEM2, an expert system for organic synthesis discovery. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1–3, 45–63. (Summary) **89c:92095** 92A40 (05C10, 68R10)
- Ben-Tal, A.** (with Ben-Israel, Adi) Ordered incidence geometry and the geometric foundations of convexity theory. *J. Geom.* **30** (1987), no. 2, 103–122. (Jean-Paul Doignon) **89c:52001** 52A01 (51G05)
- (with Teboulle, M.; Charnes, A.) The role of duality in optimization problems involving entropy functionals with applications to information theory. *J. Optim. Theory Appl.* **58** (1988), no. 2, 209–223. (Jin De Wang) **89g:90238** 90C48 (49A55, 94A17, 94A40)
- (with Charnes, A.; Golany, B.) On n-person game solutions and convex programs with essentially unconstrained duals. *Optimization* **19** (1988), no. 1, 71–84. (Guang Ya Chen) **89h:90237** 90D10 (90C25)
- (with Borwein, J. M.; Teboulle, M.) A dual approach to multidimensional  $L_p$  spectral estimation problems. *SIAM J. Control Optim.* **26** (1988), no. 4, 985–996. (Krzysztof C. Kiwiel) **89i:49008** 49A55 (42A05, 49D29, 90C25, 94A11)
- van Benthem, Johan** ★ Essays in logical semantics. *Studies in Linguistics and Philosophy*, 29. D. Reidel Publishing Co., Dordrecht-Boston, MA, 1986. xii+225 pp. ISBN 90-277-2091-6 (Marcus Kracht) **89d:03024** 03B65 (03-02)
- Towards a computational semantics. *Generalized quantifiers* (Lund, 1985), 31–71, *Stud. Linguist. Philos.*, 31, Reidel, Dordrecht-Boston, MA, 1987. (see **89m:03003**) **68Q55** (03D05)
- Categorical grammar and lambda calculus. *Mathematical logic and its applications* (Druzhba, 1986), 39–60, *Plenum, New York-London*, 1987. (Martin W. Bunder) **89i:03026** 03B40 (03B15, 03B65, 68S15)
- A note on Jönsson's theorem. *Algebra Universalis* **25** (1988), no. 3, 391–393. (R. S. Pierce) **89j:08006** 08B10
- Bentkus, Vidmantas-Kastytis Jurgio** Large deviations in Banach spaces. (Russian) *Teor. Veroyatnost. i Primenen.* **31** (1986), no. 4, 710–716. (V. K. Rohatgi) **89f:60033** 60F10 (60B12)
- (with Liubinskas, K.) Rate of convergence in the invariance principle in Banach spaces. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 3, 423–434. (Hô Dâng Phức) **89c:60012** 60B12 (60F17, 60G15, 60G50)
- (with Zitikis, Ričardas) A remark on the Cramér-von Mises-Smirnov test. (Russian. English and Lithuanian summaries) (Russian) *Litovsk. Mat. Sb.* **28** (1988), no. 1, 14–22; translated in *Lithuanian Math. J.* **28** (1988), no. 1, 8–13. (M. Hušková) **89k:62059** 62G10
- Bentler, P. M.** (with Bonett, Douglas G.; Woodward, J. Arthur) A linear model for estimating the size of a closed population. *British J. Math. Statist. Psych.* **39** (1986), no. 1, 28–40. (Summary) **89h:62009** 62D05 (62P15)
- (with Lee, Sik Yum; Weng, Li-Jen) Multiple population covariance structure analysis under arbitrary distribution theory. *Comm. Statist. Theory Methods* **16** (1987), no. 7, 1951–1964. (Naganori Mori) **89b:62136** 62J05 (62E20)
- (with Berkane, Maïa) Distribution of kurtoses, with estimators and tests of homogeneity of kurtosis. *Statist. Probab. Lett.* **5** (1987), no. 3, 201–207. (Summary) **89a:62124** 62H10 (62H12, 62H15)
- Bentley, H. L.** (with Herrlich, Horst; Lowen-Colebunders, Eva) The category of Cauchy spaces is Cartesian closed. Proceedings of the 8th international conference on categorical topology (L'Aquila, 1986). *Topology Appl.* **27** (1987), no. 2, 105–112. (Summary) **89c:54062** 54E99 (18B99, 54B15, 54B30, 54C35)
- Bentley, J. L.** see **Ryabko, B. Ya. et al.**, **89a:68045**
- Benton, L.** (with Mayer-Kress, Gottfried; Yates, F. E.; Keidel, M.; Tirsch, W.; Pöppel, S. J.; Geist, Karlheinz) Dimensional analysis of nonlinear oscillations in brain, heart, and

- muscle. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1-2, 155-182. (Summary) **89f:92020** 92A09
- Bentosa, F.** (with Caliceti, E.; Grecchi, V.; Maioli, M.; Sacchetti, A.) Analyticity and asymptotics for the Stark-Wannier states. *J. Phys. A* **21** (1988), no. 16, 3321-3331. (M. Demuth) **89j:81289** 81H20
- Bentsman, Joseph** (with Fakhfakh, Jamel; Hvostov, Harry; Lehman, Bradley) Vibrational stabilization of linear systems with time delay. *Analysis and optimization of systems (Antibes, 1988)*, 72-79, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89f:34105** 34K20
- Bentz, W.** (with Liu, L. G.; Arima, A.) Chiral symmetry in nuclear matter. *Ann. Physics* **188** (1988), no. 1, 61-119. (Summary) **89j:81269** 81G35
- Benveniste, A.** (with Basseville, M.; Moustakides, G.; Rougée, A.) Detection of abrupt changes in the modal characteristics of nonstationary vector signals. *Modelling, identification and robust control (Stockholm, 1985)*, 537-547, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:62149** 62M10 (93E10, 94A13)
- Benyamini, Yoav** (with Argyros, Spiros A.) Universal WCG Banach spaces and universal Eberlein compacts. *Israel J. Math.* **58** (1987), no. 3, 305-320. (James Hagler) **89d:46016** 46B20 (04A30, 54A25)
- Ben Yattou, M. L.** Meromorphic extension of functions with a harmonic growth condition. *Complex analysis and applications '85 (Varna, 1985)*, 76-79, *Bulg. Acad. Sci., Sofia*, 1986. (M. Hervé) **89d:32028** 32D15
- Benzi, Walter** Ein Beitrag zu einem Problem von Herrn Fenyő. [A contribution to a problem of Fenyő] *Abh. Math. Sem. Univ. Hamburg* **57** (1987), 21-25. (J. Aczél) **89b:39011** 39B20 (17A01, 39B50)
- Eine Kennzeichnung des Büschelsatzes in Kettengeometrien. [A characterization of the pencil theorem in chain geometries] *J. Geom. Sci.* **31** (1988), no. 1-2, 22-31. (J. André) **89c:51004** 51B05
- see also Blaschke, Wilhelm, **89a:01101**
- Benzaïd, Z.** (with Lutz, D. A.) Constrained controllability of perturbed discrete-time systems. *Internat. J. Control* **48** (1988), no. 2, 655-673. (Valeriu Prepelija) **89i:49027** 49E25 (93B05, 93C05, 93C55)
- Global null controllability of perturbed linear systems with constrained controls. *J. Math. Anal. Appl.* **136** (1988), no. 1, 201-216. (Dumitru Motreanu) **89k:49029** 49E25 (49E15, 93B05, 93C05)
- Benzaouia, Abdellah** (with Burgat, Christian) Regulator problem for linear discrete-time systems with nonsymmetrical constrained control. *Internat. J. Control* **48** (1988), no. 6, 2441-2451. (Summary) **89i:93045** 93B50 (93C05, 93C55)
- (with Burgat, Christian) Stabilizing regulators for uncertain discrete-time linear systems. (French summary) With an appendix by M. Fielder. *RAIRO Automat.-Prod. Inform. Ind.* **22** (1988), no. 2, 147-158. (Chao Shun Zhou) **89c:93162** 93D15 (93B35, 93C40, 93C55)
- (with Burgat, Christian) The regulator problem for a class of linear systems with constrained control. *Systems Control Lett.* **10** (1988), no. 5, 357-363. (Summary) **89d:93042** 93B50 (93C05, 93C55, 93D20)
- Benzi, Margherita** A "neoclassical probability theorist": Francesco Paolo Cantelli. (Italian. English and German summaries) *Historia Math.* **15** (1988), no. 1, 53-72. (Pierre Crépel) **89k:01022** 01A60
- Benzing, H.** (with Kolonko, M.) On monotone optimal decision rules and the stay-on-a-winner rule for the two-armed bandit. *Metroika* **32** (1985), no. 6, 395-407. (Peter Watts Jones) **89b:62178** 62L15 (62L10)
- (with Kalin, Dieter; Theodorescu, R.) Optimal policies for sequential Bernoulli experiments with switching costs. (German and Russian summaries) *J. Inform. Process. Cybernet.* **23** (1987), no. 12, 599-607. (Peter Watts Jones) **89d:62081** 62L15 (90C40, 90D35)
- (with Kolonko, M.) Structured policies for a sequential design problem with general distributions. *Math. Oper. Res.* **12** (1987), no. 1, 60-71. (D. Kalin) **89f:90177** 90C39
- Benzing, Harold E.** (with Palmore, Julian I.; Burns, Scott A.) Ecology models and Newton vector fields. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1-2, 219-232. (L. E. Bobisud) **89i:92048** 92A15 (58F40, 92-08)
- A generalization of nonharmonic Fourier series. *Proc. Amer. Math. Soc.* **105** (1989), no. 3, 670-676. (Joseph Max Rosenblatt) **89j:42022** 42C15 (42A45)
- Ber, A. F.** The principle of duality for compact inverse semigroups. (Russian) *Dokl. Akad. Nauk UzSSR* **1986**, no. 7, 7-9. (V. V. Mukhin) **89a:22006** 22A25 (20M30, 43A65)
- Ber, G. Z.** (with Arutyunov, A. V.; Tynianskii, N. T.) A numerical method of solving complete-dimensional optimal-control problems. *Soviet J. Comput. Systems Sci.* **25** (1987), no. 6, 147-154 (1988); translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 3, 163-169, 222 (Russian). (Summary) **89b:93054** 93B40
- Bera, Anil K.** (with Jarque, Carlos M.) A test for normality of observations and regression residuals. (French summary) *Internat. Statist. Rev.* **55** (1987), no. 2, 163-172. (Summary) **89b:62039** 62F03 (62J05)
- Bera, Rajendra K.** Quadrature formula for a double-pole singular integral. *AIAA J.* **26** (1988), no. 6, 752-754. (Not in MR) **65D32**
- Beran, Ladislav** On Bumby's equation ( $x^2 - 2y^2 = 2$ ) — a solution via Pythagorean triples. (Russian and Czech summaries) *Acta Univ. Carolin.—Math. Phys.* **28** (1987), no. 1, 39-40. (David Lee Hilliker) **89a:11030** 11D25
- Distributivity in finitely generated orthomodular lattices. *Comment. Math. Univ. Carolin.* **28** (1987), no. 3, 433-435. (Radoslaw Godowski) **89a:06019** 06C15
- see also Weil, J. et al., **89i:00014**
- Beran, Rudolf** (with Millar, P. W.) Stochastic estimation and testing. *Ann. Statist.* **15** (1987), no. 3, 1131-1154. (André Antille) **89d:62080** 62L12 (62L10)
- Preparing to reduce level of confidence sets. *Biometrika* **74** (1987), no. 3, 457-468. (Junn T. Hwang) **89b:62049** 62F25 (62G15)
- (with Le Cam, L.; Millar, P. W.) Convergence of stochastic empirical measures. *J. Multivariate Anal.* **23** (1987), no. 1, 159-168. (M. D. Burke) **89a:62045** 62E20 (60F17, 60G57, 62G05)
- Balanced simultaneous confidence sets. *J. Amer. Statist. Assoc.* **83** (1988), no. 403, 679-686. (S. Jeyaratnam) **89b:62050** 62F25 (62J10)
- Preparing test statistics: a bootstrap view of asymptotic refinements. *J. Amer. Statist. Assoc.* **83** (1988), no. 403, 687-697. (Christian Hipp) **89b:62028** 62F03 (62G10)
- Berard, Beatrice** Lateral shuffle. *Theoret. Comput. Sci.* **51** (1987), no. 3, 281-299. (Summary) **89a:68059** 68Q10 (68Q45)
- Bérard, P. H.** ★ Analysis on Riemannian manifolds and geometric applications: an introduction. *Monografías de Matemática [Mathematical Monographs]*, 42, Instituto de Matemática Pura e Aplicada, Rio de Janeiro, 1986. 132 pp. ISBN 85-244-0028-5 (Caroly Gordon) **89b:58001** 58-01 (53-01, 58G25)
- (with Besson, G.) On the number of bound states and estimates on some geometric invariants. *Partial differential equations (Rio de Janeiro, 1986)*, 30-40, *Lecture Notes in Math.*, 1324, Springer, Berlin-New York, 1988. (From the text) **89m:58202** 58G25 (53C21, 58G30)
- From vanishing theorems to estimating theorems: the Bochner technique revisited. *Bull. Amer. Math. Soc. (N.S.)* **19** (1988), no. 2, 371-406. (József Dodziuk) **89i:58152** 58G30 (53C20, 58G11, 58G25)
- Berardi, Luigi** (with Beutelspacher, Albrecht) Partial partitions of finite projective spaces. *Mitt. Math. Sem. Giessen No. 180* (1987), 59-67. (J. W. P. Hirschfeld) **89b:51014** 51E20 (05B25)
- (with Beutelspacher, Albrecht) Blocking sets of the known biplanes. (Italian summary) *Rend. Mat. Appl. (7)* **7** (1987), no. 1, 63-76 (1988). (Ferenc Wettl) **89k:51014** 51E30 (05B30, 51E05)
- Blocking sets in the large Mathieu designs. I. The case  $S(3, 6, 22)$ . *Combinatorics '86 (Trento, 1986)*, 31-42, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (Albrecht Beutelspacher) **89b:05056** 05B25 (05B05, 51E05)
- (with Eugeni, Franco) Blocking sets in the projective plane of order four. *Combinatorics '86 (Trento, 1986)*, 43-50, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (Albrecht Beutelspacher) **89b:05057** 05B25 (51E20)
- (with Eugeni, Franco) Blocking sets and game theory: origins and problems. (Italian) *Atti Sem. Mat. Fis. Univ. Modena* **36** (1988), no. 1, 165-196. (G. Tallini) **89j:51005** 51D20 (51E20, 90D10)
- (with Beutelspacher, Albrecht) Constructing the biplanes of order four from six points. (Italian summary) *Boll. Un. Mat. Ital. A (7)* **2** (1988), no. 2, 285-289. (Nicholas Krier) **89i:51035** 51E05 (05B05)
- Berardi, Stefano** Equalization of finite flowers. *J. Symbolic Logic* **53** (1988), no. 1, 105-123. (Introduction) **89b:03081** 03E10 (03F15)
- Berbee, Henry** Chains with infinite connections: uniqueness and Markov representation. *Probab. Theory Related Fields* **76** (1987), no. 2, 243-253. (Thomas Kaijser) **89c:60052** 60G10
- Berblinger, Michael** (with Schlier, Christoph) The double-Morse well and topological chaos. *Chem. Phys. Lett.* **145** (1988), no. 4, 299-304. (Summary) **89b:58173** 58F13
- Béres, T.** (with Turányi, T.; Tóth, J.) The method of quasi-stationary sensitivity analysis. *J. Math. Chem.* **2** (1988), no. 4, 401-409. (Summary) **89k:80029** 80A32 (86A35)
- Bercha, D. M.** (with Bercha, I. V.) A compatibility condition method for constructing the dispersion laws of the energy and the phonon spectra and the decomposition laws of the thermodynamic potential. (Russian) *Group-theoretic methods in physics, Vol. 1 (Russian) (Jurmala, 1985)*, 650-657, "Nauka", Moscow, 1986. (see **89d:81001**) 81H99
- Bercha, I. V.** (with Bercha, D. M.) A compatibility condition method for constructing the dispersion laws of the energy and the phonon spectra and the decomposition laws of the thermodynamic potential. (Russian) *Group-theoretic methods in physics, Vol. 1 (Russian) (Jurmala, 1985)*, 650-657, "Nauka", Moscow, 1986. (see **89d:81001**) 81H99
- Bercovici, Hari** Three test problems for quasisimilarity. *Canad. J. Math.* **39** (1987), no. 4, 880-892. (Shan Li Sun) **89a:47026** 47A65
- (with Foias, Ciprian; Tannenbaum, Allen) On skew Toeplitz operators. I. *Topics in operator theory and interpolation*, 21-43, *Oper. Theory. Adv. Appl.*, 29, Birkhäuser, Basel-Boston, MA, 1988. (Rodrigo Arocena) **89i:47043** 47B35 (47A20, 93B28)
- Factorization theorems and the structure of operators on Hilbert space. *Ann. of Math. (2)* **128** (1988), no. 2, 399-413. (T. Ando) **89i:47032** 47A65 (47A15)
- A contribution to the structure theory of operators in the class  $A$ . *J. Funct. Anal.* **78** (1988), no. 2, 197-207. (Lawrence Williams) **89c:47019** 47A65 (47A15, 47D25)
- (with Foias, Ciprian; Pearcy, C.) Two Banach space methods and dual operator algebras. *J. Funct. Anal.* **78** (1988), no. 2, 306-345. (Vern Paulsen) **89m:47004** 47A15 (47D15)
- (with Hernández-García, C.; Paulsen, V. I.) Universal compressions of representations of  $H^\infty(G)$ . *Math. Ann.* **281** (1988), no. 2, 177-191. (Wacław Szymański) **89m:46092** 46J25 (46J15, 47A20, 47D25)
- A question on invariant subspaces of Bergman spaces. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 759-760. (Sheldon Axler) **89b:47006** 47A15 (47B38)
- Bercovier, Michel** (with Schatzman, Michelle) Numerical approximation of a wave equation with unilateral constraints. *Math. Comp.* **53** (1989), no. 187, 55-79. (A. O. Garder) **89k:65112** 65M25 (65N30)
- Bérczi, Szaniszló** (with Nagy, Dénes; Farkas, Tamas F.) From M. C. Escher to multidimensional thinking. With notes. *M. C. Escher: art and science (Rome, 1985)*, 315-320, North-Holland, Amsterdam-New York, 1986. (see **89m:00011**) 92A25 (00A05)
- Escherian and non-Escherian developments of new frieze types in Hanti and old Hungarian communal art. *M. C. Escher: art and science (Rome, 1985)*, 349-358, North-Holland, Amsterdam-New York, 1986. (see **89m:00011**) 01A20 (01A25, 92A25)
- Berdikhin, B. M.** (with Voskresenskii, V. E.; Karatsuba, A. I.; Lavrik, A. F.; Malyshev, A. V.; Postnikov, A. G.; Sprindzhuk, V. G.) Nikolai Grigor'evich Chudakov. (Russian) *Uspehi Mat. Nauk* **42** (1987), no. 5(257), 189-190. (Editors) **89b:01037** 01A70
- Berdyshev, A. S.** Boundary value problems of Tricomi problem type for an equation of mixed elliptic-parabolic-hyperbolic type. (Russian) *Equations of mixed type and free boundary value problems (Russian)*, 82-87, 250-251, "Fan", Tashkent, 1987. (Summary) **89c:35114** 35M05
- Berdyshev, V. I.** Geometric characteristics of spaces, and the stability of the best approximation. (Russian) *Theory of functions and approximations, Part 1 (Russian) (Saratov, 1984)*, 115-121, Saratov. Gos. Univ., Saratov, 1986. (see **89j:00035**) 41A65 (46B20)
- Beregov, A. S.** (with Kudinov, E. V.) Application of the decomposition principle to the construction of mathematical models of spin-wave devices. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **31** (1988), no. 11, 106-124; translated in *Soviet Phys. J.* **31** (1988), no. 11, 939-954. (Not in MR) 78-08
- Berele, Allan** Counterexamples for tensor products of p.i. algebras. *Comm. Algebra* **16** (1988), no. 5, 1027-1034. (Louis Rowen) **89c:16021** 16A38
- Cocharacters of  $\mathbb{Z}/2\mathbb{Z}$ -graded algebras. *Israel J. Math.* **61** (1988), no. 3, 225-234. (E. Formanek) **89b:16018** 16A38 (17A70)



- Trace identities and  $Z/2Z$ -graded invariants. *Trans. Amer. Math. Soc.* **309** (1988), no. 2, 581–589. (James F. Hurley) **89m:17043** 17B70 (15A24, 15A69, 22E60)
- Berend, Daniel** Actions of sets of integers on irrationals. *Acta Arith.* **48** (1987), no. 3, 275–306. (Pierre Michel) **89a:11077** 11K06 (11B05)
- A recurrence property of smooth functions. *Israel J. Math.* **62** (1988), no. 1, 32–36. (Ming-Chit Liu) **89j:11066** 11J71 (11J34, 26C05)
- Multiple ergodic theorems. *J. Analyse Math.* **50** (1988), 123–142. (U. Krengel) **89j:28003** 28D05
- Berendsen, H. J. C.** Biological molecules and membranes. *Molecular-dynamics simulation of statistical-mechanical systems* (Varenna, 1985), 496–519, *Proc. Internat. School of Phys. "Enrico Fermi", XCIV, North-Holland, Amsterdam-New York, 1986.* (Vinod Prakash Saxena) **89k:92009** 92A09 (92A07, 92A40)
- Berend, G.** (with Schomburg, B.) On the convergence of the Backus-Gilbert algorithm. *Inverse Problems* **3** (1987), no. 2, 341–346. (A. S. Alekseev) **89h:86002** 86–08 (65D15, 73D50, 86A15)
- (with Kirsch, Andreas; Schomburg, B.) The Backus-Gilbert method. *Inverse Problems* **4** (1988), no. 3, 771–783. (M. Z. Nashed) **89m:86011** 86A15 (44A60)
- Berenshtein, A. D.** (with Vainshtein, A. D.; Kreinin, A. Ya.) The convexity property of the Poisson distribution and its applications in queueing theory. (Russian) *Stability problems for stochastic models* (Russian) (Varna, 1985), 17–22, *Vsesoyuz. Nauch.-Issled. Inst. Sist. Issled., Moscow, 1986.* (M. Grishin (translated from RZhMat 1987:10 V90)) **89h:60027** 60E05 (60K25)
- (with Vainshtein, A. D.) A multiplicative analogue of the Bergstrom inequality for a matrix product in the sense of Hadamard. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 6(258), 181–182. (Anna Lee) **89b:15026** 15A39 (15A45, 47A30)
- (with Zelevinskii, A. V.) Involutions on Gelfand-Tsetlin schemes and multiplicities in skew  $GL_n$ -modules. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 6, 1291–1294; translated in *Soviet Math. Dokl.* **37** (1988), no. 3, 799–802. (A. U. Klimyk) **89h:22030** 22E46
- Berenshtein, Carlos A.** (with Struppa, Daniele) A remark on: "Convolutors in spaces of holomorphic functions" [Complex analysis, II (College Park, Md., 1985–86), 253–275, *Lecture Notes in Math.*, 1276, Springer, Berlin, 1987; MR 89c:32003] by A. Meril and Struppa. *Complex analysis, II (College Park, Md., 1985–86)*, 276–280, *Lecture Notes in Math.*, 1276, Springer, Berlin-New York, 1987. (Valentin Napalkov) **89c:32004** 32A10 (32A40, 46F10, 47B38)
- (with Struppa, Daniele) Solutions of convolution equations in convex sets. *Amer. J. Math.* **109** (1987), no. 3, 521–543. (Boris Derzhavets) **89c:32006** 32A15 (46F10)
- On an overdetermined Neumann problem. *Geometry Seminars, 1986 (Italian)* (Bologna, 1986), 21–26, *Univ. Stud. Bologna, Bologna, 1988.* (see **89f:32001**) 35J25 (35N05)
- (with Yger, Alain) On Łojasiewicz-type inequalities for exponential polynomials. *J. Math. Anal. Appl.* **129** (1988), no. 1, 166–195. (L. I. Ronkin) **89d:30006** 30C15 (30B50, 30D15, 32A15)
- (with Struppa, Daniele) Small degree solutions for the polynomial Bezout equation. *Linear Algebra Appl.* **98** (1988), 41–55. (Alicia Dickenstein) **89g:32005** 32A25 (12D99, 44A35, 68U10)
- Beresina, L. J.** (with Beresina, M. T.) On the transversals of a Latin square. Eleventh British Combinatorial Conference (London, 1987). *Discrete Math.* **25** (1988), C, 37–38. (Katherine Heinrich) **89c:05048** 05B15
- Beresnev, V. L.** (with Ageev, A. A.) Algorithms for the minimization of certain classes of polynomials of Boolean variables. (Russian) *Trudy Inst. Mat. (Novosibirsk)* **10** (1988), *Modeli i Metody Optim.*, 5–17, 264. (S. Rudenau) **89k:90108** 90C09
- Berestovskii, V. N.** "Submetrics" of three-dimensional forms of nonnegative curvature. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 4, 44–56, 224. (Summary) **89h:53078** 53C12 (53C20)
- Homogeneous spaces with an intrinsic metric. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 2, 268–271; translated in *Soviet Math. Dokl.* **38** (1989), no. 1, 60–63. (O. Kowalski) **89k:53063** 53C60 (53C30, 54E45)
- Berestycki, Henri** (with Lasry, Jean-Michel) Remarks on Seifert's problem and nonlinear complex eigenvalues. *Proceedings of the international conference on recent advances in Hamiltonian systems (L'Aquila, 1986)*, 119–134, *World Sci. Publishing, Singapore, 1987.* (Wei Yue Ding) **89f:58124** 58F22 (58F05, 58F30)
- (with Batt, J.; Degond, P.; Perthame, Benoit) Some families of solutions of the Vlasov-Poisson system. *Arch. Rational Mech. Anal.* **104** (1988), no. 1, 79–103. (John Adam) **89j:35112** 35Q20 (45K05, 82A45, 85A05)
- (with Pacella, Filomena) Propriétés de symétrie pour les solutions positives d'équations elliptiques avec conditions aux limites mixtes. (English summary) [Symmetry properties for positive solutions of elliptic equations with mixed boundary conditions] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 2, 71–74. (C. A. Swanson) **89c:35054** 35J65
- Beretta, Edoardo** (with Bischi, G. I.; Solimano, F.) Oscillations in a system with material cycling. *J. Math. Biol.* **26** (1988), no. 2, 143–167. (D. O. Logofet) **89f:92034** 92A15 (58F14)
- Berezanski, Yu. M.** see **Berezanski, Yu. M.**
- Berezanski, L. M.** A linear functional-differential equation in weighted Lebesgue spaces. (Russian) *Boundary value problems* (Russian), 179–181, 203, *Perm. Politekh. Inst., Perm, 1983.* (see **89c:00008**) 34K30
- (with Azbelev, N. V.; Simonov, P. M.) A theorem on the stability of linear equations with aftereffect. (Russian) *Boundary value problems* (Russian), 3–6, *Perm. Politekh. Inst., Perm, 1986.* (see **89c:00009**) 34K20 (34A30)
- Berezanski, Yu. M.** The integration of semi-infinite Toda chain by means of inverse spectral problem. *Rep. Math. Phys.* **24** (1986), no. 1, 21–47. (Vladimir Stefanov Gerdjikov) **89m:58087** 58F07 (35Q20, 39A10)
- (with Lassner, Gerd; Yakovlev, V. S.) Decomposition of positive functionals on commutative nuclear  $\ast$ -algebras. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 5, 638–641, 680. (Josef Wichmann) **89d:46058** 46K10 (46L30, 47D40)
- (with Bogolyubov, N. N.; Daletskii, Yu. L.; Kuchment, P. A.; Levin, B. Ya.; Maslov, V. P.; Novikov, S. P.; Semenov, E. M.) Selim Grigor'evich Krein (on the occasion of his seventieth birthday). (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 5(257), 223–224. (Editors) **89b:01038** 01A70
- (with Ostrovskii, V. L.; Samoilenko, Yu. S.) Expansion in eigenfunctions of families of commuting operators, and representations of commutation relations. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 1, 106–109, 135; translated in *Ukrainian Math. J.* **40** (1988), no. 1, 90–92. (F.-H. Vasilescu) **89d:47030** 47A70 (47B15)
- see also **Application of methods of functional analysis in problems of mathematical physics, 89b:00007**
- Bereznoi, E. I.** (with Zabreiko, P. P.) Some interpolation theory for nonlinear operators. *Nonlinear Anal.* **12** (1988), no. 2, 155–170. (Alberto Venni) **89c:46096** 46M35 (47H99)
- Berezin, A. Yu.** A nonregular problem with an oblique derivative for an elliptic system. (Russian) *Studies in multidimensional elliptic systems of partial differential equations* (Russian), 13–19, 154, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk, 1986.* (Summary) **89c:35039** 35J55
- Berezin, F. A.** ★ Метод вторичного квантования. (Russian) [The method of second quantization] Second edition. Edited and with a preface by M. K. Polivanov. "Nauka", Moscow, 1986. 320 pp. (A. S. Wightman) **89c:81001** 81–02 (81C99, 81E08, 81E99)
- ★ Introduction to superanalysis. Edited and with a foreword by A. A. Kirillov. With an appendix by V. I. Ogievetsky. Translated from the Russian by J. Niederle and R. Kotecký. Translation edited by Dimitri Leites. Mathematical Physics and Applied Mathematics, 9. D. Reidel Publishing Co., Dordrecht-Boston, MA, 1987. xii+424 pp. ISBN 90-277-1668-4 (Anargyros Fellouris) **89b:58006** 58–02 (17B70, 58A50, 58C50, 81–02)
- Berezin, V. A.** (with Kuz'min, V. A.; Tkachev, I. I.) Global geometry of a spherically symmetric universe. *Soviet Phys. JETP* **66** (1987), no. 4, 654–658 (1988); translated from *Zh. Éksp. Teoret. Fiz.* **93** (1987), no. 4, 1159–1167 (Russian). (M. A. H. MacCallum) **89h:83038** 83C40
- (with Kuz'min, V. A.) A new possibility of cosmological model construction in Kaluza-Klein theories. *Modern Phys. Lett. A* **3** (1988), no. 15, 1421–1424. (Summary) **89j:83069** 83E15 (83C75)
- (with Kuz'min, V. A.; Tkachev, I. I.)  $O(3)$ -invariant tunneling in general relativity. *Phys. Lett. B* **207** (1988), no. 4, 397–403. (Summary) **89d:83080** 83F05 (83C45)
- (with Kuz'min, V. A.; Tkachev, I. I.) Wormhole creation via classical fluctuations and inflating worlds. *Phys. Lett. B* **210** (1988), no. 1–2, 64–67. (Markku Lehto) **89j:83092** 83F05 (83E05)
- Berezin, Yu. A.** (with Khudik, V. N.; Pekker, M. S.) Conservative finite-difference schemes for the Fokker-Planck equation not violating the law of an increasing entropy. *J. Comput. Phys.* **69** (1987), no. 1, 163–174. (P. C. Jain) **89g:82004** 82–08 (82A40, 82A45)
- Berezina, M. T.** (with Beresina, L. J.) On the transversals of a Latin square. Eleventh British Combinatorial Conference (London, 1987). *Discrete Math.* **25** (1988), C, 37–38. (Katherine Heinrich) **89c:05048** 05B15
- Berezinski, Miroslaw** (with Petryczek, Grażyna) Application of trajectory decomposition method of the water quality control problem. *Systems analysis and simulation 1988, II (Berlin, 1988)*, 69–74, *Math. Res.*, 47, Akademie-Verlag, Berlin, 1988. (Summary) **89g:92047** 92A17 (49D27, 90B99, 93C75)
- Berezniĭ, V. A.** (with Karmanov, V. G.; Tret'yakov, A. A.) Choice of parameters in the method of penalty functions. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 10, 1451–1461, 1597. (D. Klatte) **89g:90209** 90C31 (49D30, 90C30)
- (with Karmanov, V. G.; Tret'yakov, A. A.) Unconstrained minimization of nonconvex functions. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 11, 1752–1756, 1760. (R. Šerban) **89c:90171** 90C30
- (with Zavriev, S. N.; Tret'yakov, A. A.) The interconnection between Lagrange's theorem and the geometry of feasible sets. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 6, 1289–1291; translated in *Soviet Math. Dokl.* **37** (1988), no. 3, 797–798. (Alexander Shapiro) **89g:90184** 90C30 (90C25)
- Berezneva, T. D.** Convergence of price control processes under a monotone demand function. (Russian) *Ékonom. i Mat. Metody* **24** (1988), no. 2, 313–318. (Haïtao Cai) **89g:90050** 90A12 (90A14)
- Bereznyak, G. I.** (with Nikol'skaya, Zh. A.; Yaroshevich, G. O.) A study of vibro-shock systems. (Russian) *Optimal computation methods and their application, No. 7 (Russian)*, 64–72, 163, *Penz. Politekh. Inst., Penza, 1985.* (see **89g:65006**) 70K99
- Berezovskii, A. A.** A projection-difference method for solving one-dimensional problems of thermal radiation. (Russian) *Application of asymptotic methods in the theory of nonlinear differential equations* (Russian), 29–39, ii, *Akad. Nauk Ukrain. SSR, Kiev, 1987.* (Summary) **89c:80006** 80A20
- (with Shvur, R. A.) Nonlinear one-dimensional stationary problems of heat conduction in piecewise homogeneous media. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 43, 3–11. (Title) **89j:80009** 80A20 (35K05)
- Two-dimensional problems of thermal radiation. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 50, 3–21. (A. Uspenskii (RZhMat 1988:7 B587)) **89f:80003** 80A20
- Spatial localization of cryo-action on biological tissues. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 60, 3–14. (Not in MR) **92A06** (92A09)
- (with Mitropol'skii, Yu. A.) A Stefan problem with a limit stationary state in special electrometallurgy, cryosurgery and the physics of seas. (Russian) *Mat. Fiz. Nelinein. Mekh.* **7**(41) (1987), 50–60, 80. (Summary) **89d:80019** 80A20 (92A09)
- Classical and special formulations of Stefan problems. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1988**, no. 49, 3–20. (Not in MR) **35R35**
- Berg, Christian** Fonctions définies négatives et majoration de Schur. [Negative definite functions and Schur majorization] *Théorie du potentiel (Orsay, 1983)*, 69–89, *Lecture Notes in Math.*, 1096, Springer, Berlin-New York, 1984. (R. M. Hervé (translated from Zbl 554:43002)) **89c:31005** 31C15 (42A82, 43A35)
- The multidimensional moment problem and semigroups. *Moments in mathematics (San Antonio, Tex., 1987)*, 110–124, *Proc. Sympos. Appl. Math.*, 37, Amer. Math. Soc., Providence, RI, 1987. (Introduction) **89k:44013** 44A60 (43A35, 47A20, 47B25)
- The cube of a normal distribution is indeterminate. *Ann. Probab.* **16** (1988), no. 2, 910–913. (S. G. Maloshevskii) **89b:60041** 60E99 (60E07)
- (with Christensen, Jens Peter Reus; Maserick, P. H.) Sequences with finitely many negative squares. *J. Funct. Anal.* **79** (1988), no. 2, 260–287. (W. A. J. Luxemburg) **89k:30034** 30E05 (39A10, 44A60, 46N05, 47B50)
- van den Berg, Imme** ★ Nonstandard asymptotic analysis. *Lecture Notes in Mathematics*, 1249, Springer-Verlag, Berlin-New York, 1987. x+187 pp. ISBN 3-540-17767-1 (From the introduction) **89g:03097** 03H05 (26E35, 41A60)
- Berg, Jan** (with Ganthaler, Heinrich; Morscher, Edgar) Bolzano's Biographie in tabellarischer Übersicht. [Bolzano's biography in a tabular overview] *Bolzano-Studien. Philos.*

- Natur.* 24 (1987), no. 4, 353–372. (Editors) **89i:01059** 01A70 (03-03)
- Is Russell's antinomy derivable in Bolzano's logic? *Bolzano-Studien. Philos. Natur.* 24 (1987), no. 4, 406–413. (Ignacio Angelelli) **89i:03002** 03A05 (01A55, 03-03)
- Bolzano on induction. *Bolzano-Studien. Philos. Natur.* 24 (1987), no. 4, 442–446. (Charles F. Kielkopf) **89k:01018** 01A55 (00A25, 03-03, 03B48)
- see also **Bolzano, Bernard**, **89h:01101**; **89h:01102**; **89h:01103** and **89m:01138**
- Berg, Lothar** Erzeugung linearer involutorischer Halbgruppen. [Generating linear involutory semigroups] *Rostock. Math. Kolloq.* No. 32 (1987), 25–38. (Heinrich Seidel) **89e:20110** 20M14 (06F05)
- New relations in a commutative differential algebra. *Rostock. Math. Kolloq.* No. 32 (1987), 49–55. (Klaus-Dieter Bierstedt) **89h:46062** 46F10 (13N05)
- On nonlinear systems of ordinary differential equations. *Generalized functions, convergence structures, and their applications* (Dubrovnik, 1987), 99–111, Plenum, New York-London, 1988. (see **89i:00025**) 34A34 (65L05)
- Interpolation and approximation by completely monotone polynomials. *Numerical methods* (Miskolc, 1986), 589–604, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (Introduction) **89k:41002** 41A05 (41A10, 65D05, 65D15)
- Every commutative semigroup can be embedded into a complementary semigroup with involution. *Math. Nachr.* 136 (1988), 321–331. (K. Todorov) **89k:20096** 20M14 (06F03)
- Linear involutory semigroups with two generators. *Rostock. Math. Kolloq.* No. 33 (1988), 49–56. (B. Pondělíček) **89h:20086** 20M10 (06F05)
- van den Berg, Michiel** On traces associated with the Dirichlet Laplacian. *J. Math. Anal. Appl.* 126 (1987), no. 1, 176–185. (Gerd Grubb) **89f:35052** 35J05 (35P05, 58G25)
- (with Lewis, John Trevor) Limit theorems for stochastic processes associated with a boson gas. *Stochastic mechanics and stochastic processes* (Swansea, 1986), 16–23, *Lecture Notes in Math.*, 1325, Springer, Berlin-New York, 1988. (Tony C. Dorlas) **89m:60247** 60K35 (60F05, 82A31)
- (with Lewis, John Trevor; Pulé, J. V.) Large deviations and the boson gas. *Stochastic mechanics and stochastic processes* (Swansea, 1986), 24–39, *Lecture Notes in Math.*, 1325, Springer, Berlin-New York, 1988. (Tony C. Dorlas) **89m:60248** 60K35 (60F10, 82A31)
- (with Lewis, John Trevor; Pulé, J. V.) The large deviation principle and some models of an interacting boson gas. *Comm. Math. Phys.* 118 (1988), no. 1, 61–85. (Tony C. Dorlas) **89m:82013** 82A15 (60F10, 60K35, 82A31)
- (with Srisatunharajah, S.) Heat equation for a region in  $\mathbb{R}^2$  with a polygonal boundary. *J. London Math. Soc.* (2) 37 (1988), no. 1, 119–127. (D. T. Haimo) **89e:35062** 35K05
- van den Berg, Peter M.** (with Kleinman, R. E.) The conjugate gradient spectral iterative technique for planar structures. *IEEE Trans. Antennas and Propagation* 36 (1988), no. 10, 1418–1423. (Summary) **89j:78002** 78-08 (78A45)
- Berg, Sven** A variant of Banach's match box problem. *Random graphs '85* (Poznań, 1985), 1–8, *North-Holland Math. Stud.*, 144, North-Holland, Amsterdam-New York, 1987. (Sri Gopal Mohanty) **89d:60122**; **EA** 89m 60J15 (62E20)
- Bergadano, F.** (with Giordana, A.; Saitta, L.) Knowledge representation and use in pattern analysis. *Inform. Sci.* 47 (1989), no. 1, 1–16. (Not in MR) **68T25** (68T10)
- Bergamasco, Adalberto P.** (with Cordaro, P.; Hounie, J.) Global properties of a class of vector fields in the plane. *J. Differential Equations* 74 (1988), no. 2, 179–199. (Makhlof Derridj) **89h:58175** 58G05 (35A05)
- (with Gerszonowicz, Jorge A.; Petronilho, Gerson) On the regularity up to the boundary in the Dirichlet problem for degenerate elliptic equations. *Trans. Amer. Math. Soc.* 313 (1989), no. 1, 317–329. (Günter Berger) **89i:35066** 35J70 (35B65, 35S15)
- Bergamasco, L.** (with Tracy, E. R.; Larson, J. W.; Osborne, A. R.) On the nonlinear Schrödinger limit of the Korteweg-de Vries equation. *Phys. D* 32 (1988), no. 1, 83–106. (Jürgen Burzlaff) **89k:35231** 35Q20 (58F07)
- Bergé, A.-M.** (with Martinet, Jacques) Sur la constante d'Hermite: étude historique. [On Hermite's constant: a historical study] *Séminaire de théorie des nombres*, 1985–1986 (Talence, 1985–1986), Exp. No. 8, 15 pp., *Univ. Bordeaux I, Talence*, (Edward L. Cohen) **89g:11032** 11E39 (01A55, 01A60, 11-03)
- Berge, C.** (with Duchet, P.) Recent problems and results about kernels in directed graphs. *Applications of discrete mathematics* (Clemson, SC, 1986), 200–204, *SIAM, Philadelphia, PA*, 1988. (Hortensia Galeana-Sánchez) **89i:05124** 05C20
- Bergelson, Vitaly** Weakly mixing PET. *Ergodic Theory Dynamical Systems* 7 (1987), no. 3, 337–349. (Steven Alpern) **89g:28022** 28D05 (47A35)
- (with Rosenblatt, Joseph) Mixing actions of groups. *Illinois J. Math.* 32 (1988), no. 1, 65–80. (Arlan Ramsay) **89g:28029** 28D15 (22D10)
- (with Hindman, Neil) A combinatorially large cell of a partition of  $N$ . *J. Combin. Theory Ser. A* 48 (1988), no. 1, 39–52. (Eduard Fuchs) **89m:04003** 04A20 (05A99, 11B75)
- Bergen, Jeffrey** (with Montgomery, S.; Passman, D. S.) Radicals of crossed products of enveloping algebras. *Israel J. Math.* 59 (1987), no. 2, 167–184. (Martha K. Smith) **89c:17019** 17B35 (16A21, 16A45, 16A72)
- (with Carini, Luisa) Derivations with invertible values on a Lie ideal. *Canad. Math. Bull.* 31 (1988), no. 1, 103–110. (Charles Lanski) **89c:16044** 16A68 (16A40, 16A72)
- Constants of Lie algebra actions. *J. Algebra* 114 (1988), no. 2, 452–465. (Charles Lanski) **89c:16048** 16A72 (16A12, 17B30, 17B60)
- (with Carini, Luisa) A note on derivations with power central values on a Lie ideal. *Pacific J. Math.* 132 (1988), no. 2, 209–213. (D. A. Jordan) **89d:16045** 16A72 (16A68, 16A70)
- Automorphic-differential identities in rings. *Proc. Amer. Math. Soc.* 106 (1989), no. 2, 297–305. (K. R. Goodearl) **89k:16064** 16A72 (16A12)
- Berger, A. E.** (with Szymczak, William G.; Solomon, J. M.; Bell, J. B.) Multiple discrete solutions of the incompressible steady-state Navier-Stokes equations. *Numer. Math.* 53 (1988), no. 1–2, 31–50. (M. M. Sussman) **89k:65143** 65N30 (65P05, 76D05, 76E15)
- Berger, Agnes** (with Gómez, Guadalupe; Wallenstein, Sylvan) A homogeneity test for follow-up studies. *IMA J. Math. Appl. Med. Biol.* 5 (1988), no. 2, 101–112. (Charles J. Mode) **89j:92011** 92A07 (62P99)
- Berger, B. S.** (with Rokni, M.) Lyapunov exponents and continuum kinematics. *Internat. J. Engrg. Sci.* 25 (1987), no. 10, 1251–1257. (Li Li) **89c:58073** 58F13 (34D05, 58F11, 73B99)
- (with Rokni, M.) Lyapunov exponents and the evolution of normals. *Internat. J. Engrg. Sci.* 25 (1987), no. 11–12, 1393–1396. (Alexander Kanevskii) **89b:34111** 34D05
- (with Rokni, M.) Lyapunov exponents and subspace evolution. *Quart. Appl. Math.* 45 (1987), no. 4, 789–793. (Daoyi Xu) **89a:34057** 34D05 (34C35, 58F10)
- Berger, Beverly K.** Monte Carlo simulation of a quantized universe. *Gen. Relativity Gravitation* 20 (1988), no. 8, 755–763. (Summary) **89f:83083** 83-08 (83-04, 83C45, 83F05)
- Berger, C. A.** (with Coburn, L. A.; Zhu, Ke He) Toeplitz operators and function theory in  $n$ -dimensions. *Pseudodifferential operators* (Oberwolfach, 1986), 28–35, *Lecture Notes in Math.*, 1256, Springer, Berlin-New York, 1987. (Carl C. Cowen) **89a:47039** 47B35
- (with Coburn, L. A.; Zhu, Ke He) Function theory on Cartan domains and the Berezin-Toeplitz symbol calculus. *Amer. J. Math.* 110 (1988), no. 5, 921–953. (J. Mitchell) **89m:32053** 32M10 (46J15, 47B35)
- Berger, C. S.** Robust pole-placement algorithm for adaptive control. *Proc. IEEE-D* 135 (1988), no. 6, 493–498. (Zong Ji Chen) **89k:93100** 93B55 (93B35, 93C40)
- see also **Lin, Shui Hsin**, **89e:93145**
- Berger, Gerd** (with Tasche, Manfred) Hermite-Lagrange interpolation and Schur's expansion of  $\sin \pi x$ . *J. Approx. Theory* 53 (1988), no. 1, 17–25. (P. Vértési) **89e:41002** 41A05 (41A58)
- Berger, J. O.** (with Chen, Shun Yu) Minimality of empirical Bayes estimators derived from subjective hyperpriors. *Advances in multivariate statistical analysis*, 1–12, *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (Klaus-J. Miescke) **89a:62031** 62C20 (62H12)
- (with Sellke, Thomas) Testing a point null hypothesis: irreconcilability of  $P$  values and evidence. With comments and a rejoinder by the authors. *J. Amer. Statist. Assoc.* 82 (1987), no. 397, 112–139. (S. Blumenthal) **89e:62009a** 62A15 (62A20)
- (with Berry, Donald A.) The relevance of stopping rules in statistical inference. With discussion by Robert Keener, Adam T. Martinsek and Carl N. Morris and a reply by the authors. *Statistical decision theory and related topics, IV*, Vol. 1 (West Lafayette, Ind., 1986), 29–72, Springer, New York-Berlin, 1988. (K. F. Yu) **89e:62134** 62L10
- (with O'Hagan, Anthony) Ranges of posterior probabilities for quasimodular priors with specified quantiles. *J. Amer. Statist. Assoc.* 83 (1988), no. 402, 503–508. (Summary) **89m:62033** 62F15
- see also **Bornholt, Graham**, **89e:62009b**
- Berger, M. A.** see **Berger, Mitchell A.**
- Berger, M. S.** Axisymmetric vortex motions with swirl. *Fixed point theory and its applications* (Berkeley, CA, 1986), 27–32, *Contemp. Math.*, 72, Amer. Math. Soc., Providence, RI, 1988. (Summary) **89e:76028** 76C05
- (with Cherrier, P.) A new variational method for finding Einstein metrics on compact Kähler manifolds. *I. J. Funct. Anal.* 79 (1988), no. 1, 103–135. (John M. Lee) **89e:53098** 53C55 (32F99, 32J99, 53C25, 58E30)
- (with Church, P. T.; Timourian, J. G.) Folds and cusps in Banach spaces with applications to nonlinear partial differential equations. II. *Trans. Amer. Math. Soc.* 307 (1988), no. 1, 225–244. (Norman Dancer) **89d:35056** 35J65 (47H15, 58C27)
- Berger, Marc A.** (with Felzenbaum, Alexander; Fraenkel, Aviezri S.) Remark on the multiplicity of a partition of a group into cosets. *Fund. Math.* 128 (1987), no. 3, 139–144. (F. Pérez Monasor) **89e:20047** 20D60 (20D20)
- (with Felzenbaum, Alexander; Fraenkel, Aviezri S.) Improvements to the Newman-Znám result for disjoint covering systems. *Acta Arith.* 50 (1988), no. 1, 1–13. (Š. Znam) **89f:11013** 11A07 (11B25)
- (with Felzenbaum, Alexander; Fraenkel, Aviezri S.) Disjoint covering systems with precisely one multiple modulus. *Acta Arith.* 50 (1988), no. 2, 171–182. (Š. Znam) **89i:11019** 11B25 (11A07)
- A Malliavin-type anticipative stochastic calculus. *Ann. Probab.* 16 (1988), no. 1, 231–245. (David Nualart Rodón) **89b:60131** 60H05 (58C35, 58G32, 60H07)
- (with Erdős, Paul; Felzenbaum, Alexander; Fraenkel, Aviezri S.) Nearly disjoint covering systems. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), B, 231–246. (R. C. Mullin) **89i:11004** 11A07
- (with Felzenbaum, Alexander; Fraenkel, Aviezri S.) Covers of product sets and the Korec-Znám result. *European J. Combin.* 9 (1988), no. 2, 131–138. (Ivan Korec) **89g:11014** 11B25
- (with Sonar, H. M.) Random walks generated by affine mappings. *J. Theoret. Probab.* 1 (1988), no. 3, 239–254. (Martin I. Goldstein) **89d:60123** 60J15
- Encoding images through transition probabilities. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 575–577. (Linn I. Sennott) **89c:60136** 60J05 (58F08, 60J20)
- A Trotter product formula for random matrices. *Stochastics* 23 (1988), no. 2, 79–84. (Ludwig Arnold) **89b:60049** 60F05 (60B15, 60H20)
- Berger, Marcel** La géométrie métrique des variétés riemanniennes (variations sur la formule  $a^2 = b^2 + c^2 - 2bc \cos \alpha$ ). [The metric geometry of Riemannian manifolds (variations on the formula  $a^2 = b^2 + c^2 - 2bc \cos \alpha$ )] The mathematical heritage of Élie Cartan (Lyon, 1984). *Astérisque* 1985, Numéro Hors Série, 9–66. (J. S. Joel) **89b:53076** 53C20 (01A60, 53C70)
- (with Gostiaux, Bernard) ★ Géométrie différentielle: variétés, courbes et surfaces. (French) [Differential geometry: manifolds, curves and surfaces] *Mathématiques* [Mathematics] Presses Universitaires de France, Paris, 1987. vi+513 pp. ISBN 2-13-039268-7 (Alan West) **89b:53001** 53-01 (58-01)
- L'œuvre d'André Lichnerowicz en géométrie riemannienne. [The work of André Lichnerowicz in Riemannian geometry] *Physique quantique et géométrie* (Paris, 1986), 11–24, *Travaux en Cours*, 32, Hermann, Paris, 1988. (Editors) **89i:01060** 01A70 (53-03)
- Berger, Marsha** On conservation at grid interfaces. *SIAM J. Numer. Anal.* 24 (1987), no. 5, 967–984. (O. Widlund) **89b:65203** 65M05 (65M10)
- (with Kohn, Robert V.) A rescaling algorithm for the numerical calculation of blowing-up solutions. *Comm. Pure Appl. Math.* 41 (1988), no. 6, 841–863. (Hong Yuan Fu) **89g:65154** 65P05 (35B40, 35K57)
- Berger, Mitchell A.** The random walk winding number problem: convergence to a diffusion process with excluded area. *J. Phys. A* 20 (1987), no. 17, 5949–5960. (Gregory F. Lawler) **89b:60111** 60J15 (82A41)
- (with Roberts, P. H.) On the winding number problem with finite steps. *Adv. in Appl. Probab.* 20 (1988), no. 2, 261–274. (J. Gillis) **89e:60135** 60J15
- An energy formula for nonlinear force-free magnetic fields. *Astronom. and Astrophys.* 201 (1988), no. 2, 355–361. (Summary) **89e:85005** 85A20
- Berger, Robert W.** On the torsion of the differential module of a curve singularity. *Arch. Math. (Basel)* 50 (1988), no. 6, 526–533. (Vasile Brînzănescu) **89j:32013** 32B30 (13H99,



- 14B05, 14H20)
- Berger, Roger L.** A nonparametric, intersection-union test for stochastic order. *Statistical decision theory and related topics, IV, Vol. 2 (West Lafayette, Ind., 1986)*, 253–264, Springer, New York-Berlin, 1988. (Hannu Oja) **89f:62042** 62G10
- (with Boon, Dennis D.; Guess, Frank) Tests and confidence sets for comparing two mean residual life functions. (French summary) *Biometrics* **44** (1988), no. 1, 103–115. (George W. Williams) **89g:62160** 62P10 (62N05)
- Berger, S. M.** On deductive varieties of locally convex spaces. *Comment. Math. Univ. Carolin.* **29** (1988), no. 3, 465–475. (Csaba Némethi) **89k:46088** 46M15 (18A40, 46A12)
- Berger, Sonia** (with Hojman, Roberto; Santamarina, Jorge) General exact solutions of Einstein equations for static perfect fluids with spherical symmetry. *J. Math. Phys.* **28** (1987), no. 12, 2949–2950. (F. J. China) **89a:83011** 83C15 (83C55)
- Berger, Stanley A.** Initial-value stability analysis of a liquid jet. *SIAM J. Appl. Math.* **48** (1988), no. 5, 973–991. (Charles J. Amick) **89h:76011** 76B45 (76D10, 76E99)
- (with Hamakiotes, Costas C.) Period tripling in periodic flows through curved pipes. *Phys. Rev. Lett.* **62** (1989), no. 11, 1270–1273. (Summary) **89k:76057** 76E30 (76-04, 76D05)
- Berger, Toby** (with Yeung, Raymond) Optimum “1”-ended binary prefix codes. *Coding theory and applications (Cachan, 1986)*, 68–75, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (Summary) **89g:94039** 94B45 (94A29)
- (with Bassalygo, L. A.; Dobrushin, R. L.; Pinsker, Mark S.) Andrei Nikolaevich Kolmogorov (April 25, 1903–October 20, 1987). *IEEE Trans. Inform. Theory* **34** (1988), no. 2, 173–175. (Editors) **89f:01057** 01A70
- (with Zhang, Zhen) Estimation via compressed information. *IEEE Trans. Inform. Theory* **34** (1988), no. 2, 198–211. (Summary) **89c:94019** 94A15 (94A29)
- Bergeron, François** Combinatorial representations of some Lie groups and Lie algebras. *Combinatoire énumérative (Montreal, Que., 1985/Quebec, Que., 1985)*, 34–47, *Lecture Notes in Math.*, 1234, Springer, Berlin-New York, 1986. (From the introduction) **89h:05011** 05A99 (17B10)
- (with Reutenauer, Christophe) Une interprétation combinatoire des puissances d'un opérateur différentiel linéaire. (English summary) [A combinatorial interpretation of the powers of a linear differential operator] *Ann. Sci. Math. Québec* **11** (1987), no. 2, 269–278. (Helmut Prodinger) **89h:05003** 05A15 (05C05)
- Une combinatoire du pléthysme. [A combinatorics of plethysm] *J. Combin. Theory Ser. A* **46** (1987), no. 2, 291–305. (Joseph Kung) **89b:05017** 05A15 (05A19, 18B99)
- (with Labelle, Gilbert; Leroux, Pierre) Functional equations for data structures. *STACS 88 (Bordeaux, 1988)*, 73–80, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (See **89b:68011**) 68P05
- Berggren, J. L.** Life and work. *From ancient omens to statistical mechanics*, xi–xv, *Acta Hist. Sci. Nat. Med.*, 39, Univ. Lib. Copenhagen, Copenhagen, 1987. (Editors) **89i:01061** 01A70
- Archimedes among the Ottomans. *From ancient omens to statistical mechanics*, 101–109, *Acta Hist. Sci. Nat. Med.*, 39, Univ. Lib. Copenhagen, Copenhagen, 1987. (Julio Samsó-Moya) **89j:01008** 01A20 (01A30, 01A35)
- see also *From ancient omens to statistical mechanics*, **89c:01002**
- Bergh, Jöran** Functions of bounded mean oscillation and Hausdorff-Young type theorems. *Function spaces and applications (Lund, 1986)*, 130–136, *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (William T. Sledd) **89i:42011** 42A16 (46E99)
- Bergh, M. O.** (with Getz, W. M.) Stability of discrete age-structured and aggregated delay-difference population models. *J. Math. Biol.* **26** (1988), no. 5, 551–581. (J. M. Cushing) **89k:92045** 92A15
- van den Bergh, Michel** see *Van den Bergh, Michel*
- van den Bergh, N.** see *Van den Bergh, N.*
- Berghammer, Rudolf** (with Ehler, Herbert; Zierer, Hans) Towards an algebraic specification of code generation. *Sci. Comput. Programming* **11** (1988), no. 1, 45–63. (Summary) **89m:68009** 68N20 (68Q60)
- vanden Bergh, G.** see *Vanden Bergh, G.*
- Bergia, S.** (with Navarro, L.) Recurrences and continuity in Einstein's research on radiation between 1905 and 1916. *Arch. Hist. Exact Sci.* **38** (1988), no. 1, 79–99. (H. Treder) **89a:01040** 01A60 (01A70)
- Berglez, P.** ★ Zur Lösungsdarstellung bei gewissen formal hyperbolischen Differentialgleichungen durch Integro-Differentialoperatoren. (German) [On the representation of solutions, by integro-differential operators, for certain formally hyperbolic differential equations] With an English summary. *Berichte der Mathematisch-Statistischen Sektion in der Forschungsgesellschaft Joanneum [Reports of the Mathematical-Statistical Section of the Research Society Joanneum]*, 267, Forschungszentrum Graz, Mathematisch-Statistische Sektion, Graz, 1986, 16 pp. (Manfred W. Kracht) **89a:35042** 35Cxx (35A20, 35L10)
- On the representation of solutions of partial differential equations in the neighbourhood of isolated singularities. *Complex Variables Theory Appl.* **8** (1987), no. 3–4, 181–193. (Manfred W. Kracht) **89a:35043** 35Cxx (35A20)
- Über funktionentheoretische Eigenschaften der Lösungen gewisser elliptischer Differentialgleichungen. (English and Russian summaries) [On function-theoretic properties of the solutions of certain elliptic differential equations] *Z. Anal. Anwendungen* **6** (1987), no. 1, 23–34. (Manfred W. Kracht) **89a:35044** 35Cxx (30G30, 35J15)
- On the general solution of linear partial differential equations with coefficients depending on one variable. *Z. Angew. Math. Mech.* **68** (1988), no. 7, 318–320. (Manfred W. Kracht) **89k:35047** 35C15 (35C05, 35G05)
- Berglund, Torsten** Multi-block Euler method using patched grids. *Domain decomposition methods (Los Angeles, CA, 1988)*, 285–294, *SIAM, Philadelphia, PA*, 1989. (See **89j:65010**) 76-08
- Bergman, Clifford** Saturated algebras in filtral varieties. *Algebra Universalis* **24** (1987), no. 1–2, 101–110. (Heinrich Werner) **89e:08002** 08A05 (08B25)
- Bergman, George M.** (with Galvin, F.) Transversals of families in complete lattices, and torsion in product modules. *Order* **3** (1987), no. 4, 391–403. (Birge Zimmermann-Huisgen) **89f:06006** 06A23 (13C12, 16A63)
- Geffand-Kirillov dimensions of factor rings. *Comm. Algebra* **16** (1988), no. 12, 2555–2567. (Martha K. Smith) **89j:16033** 16A55 (16A12, 16A38)
- Bergmann, Artur** Reduzierte Normen und Theorie von Algebren. [Reduced norms and the theory of algebras] *Algebra-Tagung Halle 1986*, 29–57, *Wissensch. Beitr.*, 33, Martin-Luther-Univ. Halle-Wittenberg, Halle (Saale), 1987. (Freddy M. J. Van Oystaeyen) **89a:16029** 16A46 (12E15, 16A16)
- Bergmann, E. E.** (with Alon, Noga; Coppersmith, Don; Odlyzko, A. M.) Balancing sets of vectors. *IEEE Trans. Inform. Theory* **34** (1988), no. 1, 128–130. (K. Seitz) **89i:94034** 94B05 (94A12)
- Bergshoeff, Eric** (with Duff, M. J.; Pope, C. N.; Sezgin, E.) Supersymmetric supermembrane vacua and singletons. *Phys. Lett. B* **199** (1987), no. 1, 69–74. (Summary) **89f:83083** 83E15 (81E30, 83E30, 83E50)
- (with Sezgin, E.; Tani, Yoshiaki) Hamiltonian formulation of the supermembrane. *Nuclear Phys. B* **298** (1988), no. 1, 187–204. (Gheorghe Zet) **89c:81102** 81E99 (81E30, 83E15)
- (with Salam, A.; Sezgin, E.; Tani, Yoshiaki)  $N = 8$  supersingleton quantum field theory. *Nuclear Phys. B* **305** (1988), no. 3, 497–515. (Summary) **89j:81136** 81E20 (17A70, 81E30, 83E30)
- (with Baulieu, Laurent; Sezgin, E.) Open BRST algebras, ghost unification and string field theory. *Nuclear Phys. B* **307** (1988), no. 2, 348–364. (George Siopsis) **89k:81127** 81E99 (81E30)
- (with Salam, A.; Sezgin, E.; Tani, Yoshiaki) Singletons, higher spin massless states and the supermembrane. *Phys. Lett. B* **205** (1988), no. 2–3, 237–244. (Summary) **89d:83061** 83E15 (81E30, 83E30, 83E50)
- Bergstra, J. A.** (with Klop, Jan Willem) A universal axiom system for process specification. *CWI Newsl. No. 15* (1987), 3–23. (T. Müldner) **89j:68044** 68Q10 (68Q55)
- (with Tucker, J. V.) Algebraic specifications of computable and semicomputable data types. *Theoret. Comput. Sci.* **50** (1987), no. 2, 137–181. (Eric G. Wagner) **89f:68048** 68Q65
- (with Baeten, J. C. M.; Klop, Jan Willem) On the consistency of Koomen's fair abstraction rule. *Theoret. Comput. Sci.* **51** (1987), no. 1–2, 129–176. (From the introduction) **89m:68031** 68Q10
- (with Klop, Jan Willem) A complete inference system for regular processes with silent moves. *Logic colloquium '86 (Hull, 1986)*, 21–81, *Stud. Logic Found. Math.*, 124, North-Holland, Amsterdam-New York, 1988. (Summary) **89k:68040** 68Q10 (03B70)
- (with Baeten, J. C. M.) Global renaming operators in concrete process algebra. *Inform. and Comput.* **78** (1988), no. 3, 205–245. (Dirk Janssens) **89m:68032** 68Q10
- Bergstrom, Abram R.** The history of continuous-time econometric models. *Econometric Theory* **4** (1988), no. 3, 365–383. (Not in MR) 62P20 (01A60)
- Bergström, Harald** Weak limits of probability measures on metric Schauder spaces. *Probability theory and mathematical statistics, Vol. I (Vilnius, 1985)*, 189–198, *VNU Sci. Press, Utrecht*, 1987. (J. D. Knowles) **89c:60009** 60B10 (28A20)
- Bergum, Gerald** (with Burke, John R.) Covering the integers with linear recurrences. *Applications of Fibonacci numbers (San Jose, CA, 1986)*, 143–147, *Kluwer Acad. Publ., Dordrecht*, 1988. (Joachim Zöllner) **89i:11020** 11B37 (11B25, 11B39, 11B83)
- (with Arkin, Joseph) More on the problem of Diophantus. *Applications of Fibonacci numbers (San Jose, CA, 1986)*, 177–181, *Kluwer Acad. Publ., Dordrecht*, 1988. (Md. Fazle Hossain) **89i:11010** 11A05
- (with Long, Calvin) On a problem of Diophantus. *Applications of Fibonacci numbers (San Jose, CA, 1986)*, 183–191, *Kluwer Acad. Publ., Dordrecht*, 1988. (Neville Robbins) **89i:11026** 11B39 (11D09)
- (with Bicknell-Johnson, Marjorie) The generalized Fibonacci numbers  $(C_n)$ ,  $C_n = C_{n-1} + C_{n-2} + k$ . *Applications of Fibonacci numbers (San Jose, CA, 1986)*, 193–205, *Kluwer Acad. Publ., Dordrecht*, 1988. (Stanley J. Benkoski) **89j:11016** 11B37
- see also *Applications of Fibonacci numbers*, **89b:11003**
- Bergvelt, M. J.** (with de Kerf, E. A.) Symplectic structure and Poisson brackets. *CAP-NISRC Summer Institute in Theoretical Physics, Vol. I (Edmonton, AB, 1987)*, 227–237, *World Sci. Publishing, Singapore*, 1988. (See **89h:81005**) 58F05
- Bergweiler, Walter** An inequality for real functions with applications to function theory. *Bull. London Math. Soc.* **21** (1989), no. 2, 171–175. (Chung-Chun Yang) **89m:26027** 26D10 (30D20)
- Berikashvili, N. A.** On the uniqueness of homology theory on the category of compact spaces. (Russian. English summary) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruz. SSR* **83** (1986), 19–25. (Summary) **89c:55008** 55N40 (55N35)
- On the homology theory of fiber spaces. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruz. SSR* **129** (1988), no. 3, 465–467. (Andrzej Kozłowski) **89j:55024** 55R10 (18G35)
- Berikashvili, G. K.** (with Sulikhanishvili, G. I.) The order of convergence of difference schemes for elliptic systems with solutions in Sobolev spaces. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruz. SSR* **87** (1987), 21–28. (Hans-Eberhard Scholz) **89a:65154** 65N15
- Berisa, Muharem Č.** (with Kastrati, R.) Moduli of smoothness and coefficients of double lacunary trigonometric series. (Russian. English and Serbo-Croatian summaries) *Punime Mat. No. 1* (1986), 29–41. (Ryszard Gajewski) **89h:42001** 42A05 (42A16)
- (with Kastrati, R.) Fourier coefficients of lacunary double trigonometric series belonging to the function classes  $S^p H^q_{p, \lambda}$ . (Russian. English and Albanian summaries) *Punime Mat. No. 2* (1987), 43–48. (Summary) **89g:42009** 42A16 (42A32)
- Berk, H. L.** (with Stotler, D. P.) Solution of hot particle ballooning mode integral equation in tokamaks. *J. Comput. Phys.* **73** (1987), no. 1, 5–40. (Summary) **89a:76008** 76-08 (76W05)
- Berka, Milan** Stochastic methods for global optimization of dynamical systems. (Czech. English and Russian summaries) *Knižnice Odborn. Věd. Spisů Vysoké. Učeni. Tech. v Brně* **111** (1985), 7–23. (Summary) **89a:90099** 90C15 (90C31)
- Berkane, Maia** (with Bentler, P. M.) Distribution of kurtoses, with estimators and tests of homogeneity of kurtosis. *Statist. Probab. Lett.* **5** (1987), no. 3, 201–207. (Summary) **89a:62124** 62H10 (62H12, 62H15)
- van Berkel, C. A. M.** (with de Graaf, Jan) On a property of the Fourier-cosine transform. *Appl. Math. Lett.* **1** (1988), no. 3, 307–310. (Not in MR) 42A38
- van Berkel, K.** A note on Rudolf Snellius and the early history of mathematics in Leiden. *Mathematics from manuscript to print, 1300–1600 (Oxford, 1984)*, 156–161, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1988. (William R. Shea) **89i:01025** 01A45 (01A73)
- Berkeley, George** see *Sherry, David*, **89a:01028** and *Breidert, Wolfgang*, **89m:01043**
- Berker, Ratip** see *Kafali, Kemal*, **89c:01069**
- Berkes, Ildikó** see *Tamás, György*, **89g:83006**

- Berkinblit, M. B.** (with Abdusamatov, R. M.; Feldman, A. G.; Chernavskii, A. V.) Motility and intellect. (Russian) *Intellectual processes and their modeling* (Russian), 5-38, 394, "Nauka", Moscow, 1987. (see 89b:92032) 92A09 (92A25)
- Berkolaiko, M. Z.** Traces of functions in generalized Sobolev spaces with a mixed norm on an arbitrary coordinate subspace. II. (Russian) *Trudy Inst. Mat. (Novosibirsk)* 9 (1987), *Izsl. Geom. "v tselom"* i *Mat. Anal.*, 34-41, 206. (N. Ya. Kruglyak) 89f:46067 46E35
- Berkopce, T.** (with Carroll, Robert Wayne) Generating functions in transmutation theory. *Funkcial. Ekvac.* 29 (1986), no. 3, 281-298. (From the introduction) 89h:33008 33A40 (34B30)
- Berkovich, A.** (with Lowenstein, J. H.) Correlation function of the one-dimensional Fermi gas in the infinite-coupling limit (repulsive case). *Nuclear Phys. B* 285 (1987), no. 1, 70-96. (Tuncay Aktosun) 89c:82008 82A15
- (with Murthy, Ganpathy N.) Finite-size corrections in the nonlinear Schrödinger model. *J. Phys. A* 21 (1988), no. 7, L395-L400. (Anjan Kundu) 89h:82002 82A05 (81E40, 82A69)
- (with Murthy, Ganpathy N.) Operator dimensions and surface exponents for the nonlinear Schrödinger model at  $T = 0$ . *J. Phys. A* 21 (1988), no. 19, 3703-3721. (Summary) 89k:81129 81E99 (81E40)
- Berkovich, L. M.** Absolute invariants and the Korteweg-de Vries equation. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (*Jurmala*, 1985), 505-513, "Nauka", Moscow, 1986. (see 89d:81001) 35Q20 (58F07)
- Absolute invariants and Korteweg-de Vries equation. *Group theoretical methods in physics, Vol. 1* (*Jurmala*, 1985), 449-460, *VNU Sci. Press, Utrecht*, 1986. (Hélène Airault) 89g:58085 58F07 (34C20, 35Q20)
- Berkovich, V. G.** Duality theorems in Galois cohomology of commutative algebraic groups. Selected translations. *Selecta Math. Societ.* 6 (1987), no. 3, 201-296. (T. Ono) 89a:11038 11E72 (11G35, 11G40, 20G10)
- Berkovich, Ya. G.** On irreducible components of a restriction of an irreducible induced character to a normal subgroup. *C. R. Math. Rep. Acad. Sci. Canada* 11 (1989), no. 1, 39-40. (Summary) 89j:20009 20C15
- Degrees of irreducible characters and normal  $p$ -complements. *Proc. Amer. Math. Soc.* 106 (1989), no. 1, 33-35. (David Gluck) 89k:20018 20C15
- Berkovits, Nathan** Supersheet functional integration and the interacting Neveu-Schwartz string. *Nuclear Phys. B* 304 (1988), no. 3, 537-556. (C. Gauthier) 89f:81160 81E99 (81C35, 81E30)
- Berkovitz, Leonard D.** Characterizations of the values of differential games. *Appl. Math. Optim.* 17 (1988), no. 2, 177-183. (A. I. Subbotin) 89f:90215 90D25 (49A52)
- Differential games of survival. *J. Math. Anal. Appl.* 129 (1988), no. 2, 493-504. (O. A. Malafeev) 89c:90122 90D25 (90D26)
- Erratum and addendum: "The existence of value and saddle point in games of fixed duration" [*SIAM J. Control Optim.* 23 (1985), no. 2, 172-196; MR 86g:90141]. *SIAM J. Control Optim.* 26 (1988), no. 3, 740-742. (From the text) 89d:90255 90D25 (49A45)
- Berkowicz, R.** (with Zlatev, Zahari) Numerical treatment of large-scale air pollution models. *Comput. Math. Appl.* 16 (1988), no. 1-2, 93-109. (Summary) 89f:86015 86A35 (90A30, 92A17)
- Berkson, Earl** A Fourier analysis theory of abstract spectral decompositions. *Surveys of some recent results in operator theory, Vol. 1*, 95-132, *Pitman Res. Notes Math. Ser.*, 171, *Longman Sci. Tech.*, Harlow, 1988. (Henry R. Dowson) 89f:47026 47A60 (43A15, 47B40)
- Berkun, V. B.** (with Kucherenko, V. V.) Investigation of the convergence of the multigrid method for stiff problems in domains of complex configuration. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 6, 1307-1310; translated in *Soviet Math. Dokl.* 36 (1988), no. 3, 608-611. (A. V. Dzishkariani) 89b:65291 65N50
- Berlanga, Ricardo** A mapping theorem for topological sigma-compact manifolds. *Compositio Math.* 63 (1987), no. 2, 209-216. (Hans G. Bothe) 89d:57021 57N15
- Berliant, Marcus** (with ten Raa, Thijs) A foundation of location theory: consumer preferences and demand. *J. Econom. Theory* 44 (1988), no. 2, 336-353. (Hans Peters) 89c:90050 90A14 (90A15)
- Berline, Chantal** Les fondements logiques de l'analyse non standard suivant Robinson et Nelson. [The logical foundations of nonstandard analysis following Robinson and Nelson] *Séminaire Général de Logique* 1983-1984 (Paris, 1983-1984), 115-133, *Publ. Math. Univ. Paris VII*, 27, *Univ. Paris VII, Paris*, 1986. (H. Gonshor) 89c:03102 03H05
- Berliner, L. Mark** see Bayarri, M. J. et al., 89a:62005
- Berliner, Paul** Zur Problematik einer Ars Inveniendi. [On the problem of an ars inveniendi] *Philos. Natur.* 24 (1987), no. 3, 186-198. (Eberhard Knobloch) 89g:92064 92A25 (01A50)
- Berlyand, E. L.** (with Busygina, V. P.) Models for input-output balance with input and output functions. (Russian) *Models and methods for the optimization of economic systems* (Russian), 27-41, "Nauka" *Sibirsk. Otdel.*, Novosibirsk, 1987. (From the text) 89a:90049 90A17 (90A11)
- see also Mathematical methods for the analysis of the interaction of branch and regional systems, 89j:90003
- Berlyand, L. V.** (with Dobrokhotov, S. Yu.) "Operator separation of variables" in problems of short-wave asymptotics for differential equations with rapidly oscillating coefficients. (Russian) *Dokl. Akad. Nauk SSSR* 296 (1987), no. 1, 80-84. (Rémi Vaillancourt) 89d:58132 58G35 (35C20, 81C05)
- Berman, Abraham** (with Kotzig, Anton) Cross-cloning and antipodal graphs. *Discrete Math.* 69 (1988), no. 2, 107-114. (J. Sheehan) 89g:05088 05C75 (05C35)
- (with Jain, Surender Kumar) Nonnegative generalized inverses of powers of nonnegative matrices. Proceedings of the Victoria Conference on Combinatorial Matrix Analysis (Victoria, BC, 1987). *Linear Algebra Appl.* 107 (1988), 169-179. (Anna Lee) 89g:15006 15A09 (15A48)
- (with Shasha, Dafna) More on the uniqueness of the Lyapunov scaling factors. Proceedings of the Victoria Conference on Combinatorial Matrix Analysis (Victoria, BC, 1987). *Linear Algebra Appl.* 107 (1988), 253-273. (Anna Lee) 89j:15023 15A24 (15A57)
- Berman, D. L.** Extended interpolation Hermite-Fejér processes, constructed for the roots of orthogonal polynomials of weight  $\sqrt{(1-x)/(1+x)}$ . (Russian) *Operators and their applications* (Russian), 4-10, *Leningrad. Gos. Ped. Inst., Leningrad*, 1985. (see 89f:00013) 41A05
- Necessary conditions for the uniform convergence of interpolation processes. (Russian) *Application of functional analysis in approximation theory* (Russian), 10-15, *Kalinin. Gos. Univ., Kalinin*, 1987. (Weiyi Su) 89h:41003 41A05
- A remark on the extended Hermite-Fejér type interpolation of higher order. *Period. Math. Hungar.* 18 (1987), no. 4, 279-286. (J. Prasad) 89a:41023 41A25
- On the theory of interpolation with boundary conditions. (Russian) *Acta Math. Hungar.* 51 (1988), no. 1-2, 117-124. (J. Szabados) 89d:41001 41A05
- An Hermite-Fejér interpolation process with ultraspherical nodes. (Russian) *Acta Sci. Math. (Szeged)* 52 (1988), no. 1-2, 101-111. (R. Smarzewski) 89f:41005 41A05
- Berman, G. P.** (with Iomin, A. M.) Quasiclassical approximation for a nonlinear oscillator that is stochastic in the classical limit. (Russian. English summary) *Teoret. Mat. Fiz.* 77 (1988), no. 2, 277-284; translated in *Theoret. and Math. Phys.* 77 (1988), no. 2, 1197-1202. (Summary) 89j:81063 81C99 (81C20)
- Berman, Joel** (with Blok, W. J.) Free spectra of nilpotent varieties. *Algebra Universalis* 24 (1987), no. 3, 279-282. (Ralph Freese) 89c:08005 08B10 (08B20)
- (with Blok, W. J.) Positive Boolean dependencies. *Inform. Process. Lett.* 27 (1988), no. 3, 147-150. (János Demetrovics) 89h:68021 68P15
- Berman, Kenneth A.** (with Paul, Jerome L.) Long monochromatic paths in vertex 3-colored planar graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 115-122. (Brian Alspach) 89c:05074 05C10 (05C38)
- (with Halpern, Herbert; Kaffal, Victor; Weiss, Gary) Matrix norm inequalities and the relative Dixmier property. *Integral Equations Operator Theory* 11 (1988), no. 1, 28-48. (J. P. Sproston) 89c:46063 46L05
- (with Kosnowska, Mokhtar) A counterexample to the conjecture of Woess on simple random walks on trees. *Proc. Amer. Math. Soc.* 105 (1989), no. 2, 443-449. (Wolfgang Woess) 89g:60211 60J15 (05C05)
- (with Paul, Jerome L.) A 4-color theorem for surfaces of genus  $g$ . *Proc. Amer. Math. Soc.* 105 (1989), no. 2, 513-522. (Walter Stromquist) 89f:05113 05C15
- Berman, Leonard** see Chang, Jik H. et al., 89a:68048
- Berman, Marcelo Samuel** A special anisotropic model of the universe. *Gen. Relativity Gravitation* 20 (1988), no. 8, 841-845. (C. B. Collins) 89f:83111 83F05 (83C15)
- Berman, N.** (with Bar-Itzhack, I. Y.) Control theoretic approach to inertial navigation systems. *J. Guidance Control Dynamics* 11 (1988), no. 3, 237-245. (De Xing Feng) 89j:93077 93C75 (93B05, 93B07, 93B60)
- Berman, Oded** (with Simchi-Levi, David) Minisum location of a travelling salesman on simple networks. *European J. Oper. Res.* 36 (1988), no. 2, 241-250. (Summary) 89c:90082 90B10
- (with Simchi-Levi, David) A heuristic algorithm for the traveling salesman location problem on networks. *Oper. Res.* 36 (1988), no. 3, 478-484. (Summary) 89c:90092 90B10
- (with Simchi-Levi, David) Finding the optimal a priori tour and location of a traveling salesman with nonhomogeneous customers. *Transportation Sci.* 22 (1988), no. 2, 148-154. (Summary) 89h:90073 90B10
- (with Simchi-Levi, David) The traveling salesman location problem on stochastic networks. *Transportation Sci.* 23 (1989), no. 1, 54-57. (Summary) 89m:90067 90B15
- Berman, Robert D.** Generalized variation and functions of slow growth. *Canad. J. Math.* 40 (1988), no. 1, 55-85. (Albert Baernstein II) 89c:30088 30D50
- (with Nishiura, Togo) Boundary interpolation for inner functions on  $\alpha$ -dispersed subsets of the unit circle. *J. London Math. Soc.* (2) 38 (1988), no. 3, 463-484. (D. Protas) 89m:30068 30D40 (30D50)
- (with Cohn, William S.) Phragmén-Lindelöf theorems for subharmonic functions on the unit disk. *Math. Scand.* 62 (1988), no. 2, 269-293. (W. K. Hayman) 89j:31004 31A20 (31A10)
- Berman, S. D.** see Lyubich, Yu. I. et al., 89a:01070
- Berman, Simeon M.** Spectral conditions for local nondeterminism. *Stochastic Process. Appl.* 27 (1987), no. 1, 73-84. (Robert J. Adler) 89m:60089 60G15
- The modulator of the local time. *Comm. Pure Appl. Math.* 41 (1988), no. 1, 121-132. (S. J. Taylor) 89d:60074 60G17 (60J30, 60J55)
- Sojourns and extremes of a stochastic process defined as a random linear combination of arbitrary functions. *Comm. Statist. Stochastic Models* 4 (1988), no. 1, 1-43. (Michael R. Chernick) 89d:60075 60G17 (60K99)
- Berman, V. S.** (with Polyanin, A. D.) Mass exchange of a pulsating bubble. (Russian) *Prikl. Mat. Mekh.* 52 (1988), no. 6, 982-990. (Not in MR) 76T05 (80A20)
- Berneje, Isabel** Surfaces algébroides de type dimensionnel 1 (caractéristique  $p \neq 0$ ). (English summary) [Algebroid surfaces of dimensionality type 1 (characteristic  $p \neq 0$ )] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 9, 485-488. (Alexandru Buium) 89k:14049 14H20
- Bermúdez, A.** see Bermúdez de Castro, Alfredo
- Bermúdez, Alfredo** see Bermúdez de Castro, Alfredo
- Bermúdez de Castro, Alfredo** see Ancochea-Bermúdez, José María
- Ancochea-Bermúdez, José María** see Ancochea-Bermúdez, José María
- Bermúdez de Castro, Alfredo** (with Rodríguez, Carmen) A nonlinear evolution equation modelling the Marangoni effect: existence of solution and numerical methods. (French summary) *Ann. Fac. Sci. Toulouse Math.* (5) 8 (1986/87), no. 2, 205-223. (Summary) 89g:34094 34G20 (34A50, 35Q20, 47H17, 65J15)
- (with Saguez, C.) Optimality conditions for optimal control problems of variational inequalities. *Control problems for systems described by partial differential equations and applications* (Gainesville, Fla., 1986), 143-153, *Lecture Notes in Control and Inform. Sci.*, 97, Springer, Berlin-New York, 1987. (Robert T. Vescan) 89a:49009 49A29 (49A50, 49A52, 49D40, 73K05)
- (with Durany, J.) Numerical solution of steady-state flow through a porous dam. *Comput. Methods Appl. Mech. Engrg.* 68 (1988), no. 1, 55-65. (Summary) 89c:76006 76-08 (76S05)
- see also Control of partial differential equations, 89j:00028
- Bern, Marshall W.** Two probabilistic results on rectilinear Steiner trees. *Algorithmica* 3 (1988), no. 2, 191-204. (Frank K. Hwang) 89c:68080 68R10 (05C05, 90B10, 90B99)
- Bern, Z.** (with Shimada, T.) Field redefinitions and Chern-Simons terms in the heterotic string. *Phys. Lett. B* 197 (1987), no. 1-2, 119-124. (Marc Henneaux) 89c:81103 81E99 (58G40, 81E30)
- (with Dunbar, David C.) Coupling of open to closed bosonic strings in four dimensions. *Phys. Lett. B* 203 (1988), no. 1-2, 109-117. (Marc Henneaux) 89f:81161 81E99 (81E30)
- (with Halpern, M. B.) Diagrammatic methods in phase-space regularization. *Z. Phys. C* 39 (1988), no. 3, 381-391. (Summary) 89j:81121 81E15 (81E13)



- Bernabeu, E.** (with Sanchez-Soto, L. L.) Time evolution of generalized coherent states. (Italian and Russian summaries) *Nuovo Cimento B* (11) **100** (1987), no. 5, 619–631. (A. O. Barut) **89f:81087** 81D30 (22E45)
- Bernadon, Michel** (with Trounev, Pascal) Pseudo-conforming finite element approximation of linear thin shell problems. *The mathematics of finite elements and applications, VI* (Uxbridge, 1987), 249–260, Academic Press, London-New York, 1988. (see **89c:65004**) 73K25 (73L99)
- (with Ducatel, Y.; Trounev, Pascal) Approximation of a circular cylindrical shell by Clough-Johnson flat plate finite elements. *Numer. Math.* **52** (1988), no. 2, 187–217. (N. Gass) **89b:65257** 65N30 (73K25)
- see also Dautray, Robert, **89m:00003b**
- Bernal, Luis G.** On growth  $k$ -order of solutions of a complex homogeneous linear differential equation. *Proc. Amer. Math. Soc.* **101** (1987), no. 2, 317–322. (H. C. Howard) **89b:34010** 34A20 (30D15, 34A30, 34C11)
- Bernan, Ben** (with Bohn, Henning; Reiss, Peter C.) Alternative nonnested specification tests of time-series investment models. *J. Econometrics* **37** (1988), no. 3, 293–326. (Not in MR) **62P20** (90A09)
- Bernard, Daniel** see Differential geometry, **89c:00035** and Quantum physics and geometry, **89c:00044**
- Bernard, Denis** On the Wess-Zumino-Witten models on the torus. *Nuclear Phys. B* **303** (1988), no. 1, 77–93. (Philippe Christe) **89k:81130** 81E99 (17B65, 32G15, 81D15, 81E40)
- Bernard, M. A.** (with Sharma, Bhu Dev) Some combinatorial results on variable length error-correcting codes. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), B, 181–194. (Do Long Van) **89g:94040** 94B45
- Bernard, Robert S.** Skew grids and irrotational flow. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 631–641, ARO Rep., 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Summary) **89d:76002** 76-08 (65M50)
- Bernard, Christine** (with Maday, Yvon; Métivet, Brigitte) Spectral approximation of the periodic-nonperiodic Navier-Stokes equations. *Numer. Math.* **51** (1987), no. 6, 655–700. (Summary) **89f:65118** 65N30 (35Q10, 65N35, 76-08, 76D05)
- (with Maday, Yvon) Spectral methods for the approximation of fourth-order problems: application to the Stokes and Navier-Stokes equations. *Comput. & Structures* **30** (1988), no. 1-2, 205–216. (Summary) **89g:76005** 76-08 (65N35, 76D05, 76D07)
- (with Maday, Yvon) A collocation method over staggered grids for the Stokes problem. *Internat. J. Numer. Methods Fluids* **8** (1988), no. 5, 537–557. (H. K. Cheng) **89j:76041** 76D07 (65N35, 76-08)
- Bernardi, Claudio** (with D'Aquino, Paola) Topological duality for diagonalizable algebras. *Notre Dame J. Formal Logic* **29** (1988), no. 3, 345–364. (Wojciech Dziuk) **89i:03114** 03G05 (03G25, 06E15)
- Bernardi, Enrico** On a class of second order Fuchsian hyperbolic equations. *Ann. Mat. Pura Appl.* (4) **146** (1987), 161–172. (Hidetoshi Tahara) **89a:35127** 35L15 (35C15)
- (with Bove, Antonio) Geometric results for a class of hyperbolic operators with double characteristics. *Comm. Partial Differential Equations* **13** (1988), no. 1, 61–86. (Yu. V. Egorov) **89b:35078** 35L15
- Propagation of singularities for hyperbolic operators with multiple involutive characteristics. *Osaka J. Math.* **25** (1988), no. 1, 19–31. (Vesselin M. Petkov) **89g:58202** 58G17 (35A20, 35L25, 35S05)
- Bernardini, Gilberto** Ideas and concepts about space and time. (Italian) *Atti Accad. Ligure Sci. Lett.* **43** (1986), 118–124 (1988). (R. Miron) **89i:01001** 01A05 (00A25, 83C99)
- Bernardini, Paolo** see Rose, S. N. et al., **89b:01075**
- aparcio Bernardo, Emiliano** see Aparicio Bernardo, Emiliano
- Bernardo, Jose-M.** Approximations in statistics from a decision-theoretical viewpoint. *Probability and Bayesian statistics* (Innsbruck, 1986), 53–60, Plenum, New York-London, 1987. (Glen Meeden) **89c:62015** 62C10
- Bayesian linear probabilistic classification. *Statistical decision theory and related topics, IV, Vol. 1* (West Lafayette, Ind., 1986), 151–162, Springer, New York-Berlin, 1988. (Title) **89a:62023** 62C10 (62H30)
- Bernasconi, J.** Optimization problems and statistical mechanics. *Chaos and complexity* (Torino, 1987), 245–259, World Sci. Publishing, Singapore, 1988. (Summary) **89i:90062** 90C27 (82A30, 82A99)
- Statistical physics and optimization: binary sequences with small autocorrelations. *Stochastic processes in physics and engineering* (Bielefeld, 1986), 1–16, Math. Appl., 42, Reidel, Dordrecht-Boston, MA, 1988. (A. G. Schlijper) **89b:82038** 82A67 (82-04, 82-08, 90C27)
- Bernas, Heinz** Ein neues sequentielles quadratisches Optimierungsverfahren. [A new sequential quadratic optimization method] 19. Jahrestagung "Mathematische Optimierung" (Sellin, 1987), 5–14, Seminarberichte, 90, Humboldt Univ., Berlin, 1987. (Introduction) **89f:90112** 90C20 (65K05)
- An exact penalty function method for strictly convex quadratic problems. *Advances in mathematical optimization*, 35–43, Math. Res., 45, Akademie-Verlag, Berlin, 1988. (R. N. Kaul) **89k:90124** 90C20 (90C30)
- Berndt, Bruce** Ramanujan's modular equations. *Ramanujan revisited* (Urbana-Champaign, Ill., 1987), 313–333, Academic Press, Boston, MA, 1988. (Günter Köhler) **89e:11023** 11F11
- The notebooks of Srinivasa Ramanujan. *Srinivasa Ramanujan* (1887–1920), 42–51, Macmillan India, Madras, 1988. (see **89m:01070**) 01A70 (01A60)
- (with Almkvist, Gert) Gauss, Landen, Ramanujan, the arithmetic-geometric mean, ellipses,  $\pi$ , and the Ladies' diary. *Amer. Math. Monthly* **95** (1988), no. 7, 585–608. (R. A. Askey) **89j:01028** 01A50 (01A55, 01A60, 33A25)
- Ramanujan—100 years old (fashioned) or 100 years new (fangled)? *Math. Intelligencer* **10** (1988), no. 3, 24–29. (Jeremy Gray) **89e:01041** 01A70 (01A60, 11-03)
- see also Ramanujan revisited, **89c:11001**
- Berndt, Donald J.** (with Benstock, Joseph D.; Agarwal, Krishna K.) Graph embedding in SYNHEM2, an expert system for organic synthesis discovery. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1-3, 45–63. (Summary) **89c:92095** 92A40 (05C10, 68R10)
- Bernittson, Bo**  $\bar{\partial}_s$  and Carleson type inequalities. *Complex analysis, II* (College Park, Md., 1985–86), 42–54, Lecture Notes in Math., 1276, Springer, Berlin-New York, 1987. (John E. Forness) **89b:32004** 32A10 (30D30, 30H05)
- Integral formulas on projective space and the Radon transform of Gindikin-Henkin-Polyakov. *Publ. Mat.* **32** (1988), no. 1, 7–41. (Frank Beatrous, Jr.) **89f:32006** 32A25 (32F10)
- Bernert, Klaus** Numerical solution of the Navier-Stokes equations on orthogonal grids. *Numerical methods* (Miskolc, 1986), 377–383, Colloq. Math. Soc. János Bolyai, 50, North-Holland, Amsterdam-New York, 1988. (Vassilios A. Dougalis) **89b:65139** 65M05 (76-08, 76D05)
- Bernhard, Pierre** (with Colomb, Annie-Laure) Saddle point conditions for a class of stochastic dynamical games with imperfect information. *IEEE Trans. Automat. Control* **33** (1988), no. 1, 98–101. (Yaakov Yavin) **89a:90175** 90D15 (90D26, 93E05)
- Bernido, Christopher C.** Path integrals and quantum interference effects in a five-dimensional Kaluza-Klein theory. *Phys. Lett. A* **125** (1987), no. 4, 176–180. (A. D. Popova) **89a:83056** 83E15 (81B05, 81C35)
- On probability functions with topological constraints and path integrals. *IV International Symposium on Selected Topics in Statistical Mechanics (Russian)* (Dubna, 1987), 47–54, Joint Inst. Nuclear Res., Dubna, 1988. (see **89g:82003**) 81C20 (82A41)
- (with Carpio-Bernido, M. Victoria) An exact solution of a ring-shaped oscillator plus a  $c \sec^2 \theta / r^2$  potential. *Phys. Lett. A* **134** (1989), no. 7, 395–399. (Summary) **89m:81031** 81C05 (81C35)
- carpio-Bernido, M. Victoria** see Carpio-Bernido, M. Victoria
- Bernik, O. Ya.** (with Kirichenko, V. V.) Semi-perfect rings of distributive-module type. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 3, 15–17, 84. (Andrzej Skowroński) **89m:16045** 16A53 (16A35, 16A48, 16A51)
- Bernik, V. A.** (with Karatsuba, A. A.; Kubilyus, I. P.; Platonov, V. P.; Suprunenko, D. A.) Vladimir Gennadiyevich Sprindzhuk. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 4 (262), 161–162; translated in *Russian Math. Surveys* **43** (1988), no. 4, 195–197. (Editors) **89m:01076** 01A70
- Bernik, V. I.** (with Platonov, V. P.; Suprunenko, D. A.; Vol'vachev, R. T.) Vladimir Gennadiyevich Sprindzhuk. (Russian) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 1, 120–121. (Editors) **89a:01079** 01A70
- Berninghaus, S.** (with Völker, R.) Optimale Innovationspolitik bei unvollständiger Information. (English summary) [Optimal innovation policy under incomplete information] *OR Spektrum* **10** (1988), no. 3, 173–183. (Manfred Kraft) **89b:90002** 90A05 (90A16, 90B50, 90C40)
- Bernis, F.** Change of sign of the solutions to some parabolic problems. *Nonlinear analysis and applications* (Arlington, Tex., 1986), 75–82, Lecture Notes in Pure and Appl. Math., 109, Dekker, New York, 1987. (H. J. Kuiper) **89a:35107** 35K55 (35B05)
- Existence results for doubly nonlinear higher order parabolic equations on unbounded domains. *Math. Ann.* **279** (1988), no. 3, 373–394. (Yoshio Yamada) **89j:35062** 35K55 (47H17)
- Berniyazov, Zh. E.** (with Smagulov, Sh.) Stable difference schemes for models of magnetogasdynamics. (Russian) *Mathematical analysis and differential equations* (Russian), 127–130, Novosibirsk. Gos. Univ., Novosibirsk, 1987. (see **89j:00015**) 76-08 (76N15, 76W05)
- Bernoff, Andrew J.** Slowly varying fully nonlinear wavevectors in the Ginzburg-Landau equation. *Phys. D* **30** (1988), no. 3, 363–381. (Mario Skrinjar) **89m:35187** 35Q20 (82A99)
- Bernot, Gilles** Good functors... are those preserving philosophy! *Category theory and computer science* (Edinburgh, 1987), 182–195, Lecture Notes in Comput. Sci., 283, Springer, Berlin-New York, 1987. (Horst Reichel) **89f:68049** 68Q65
- Bernoulli, Daniel** ★ Die Werke von Daniel Bernoulli. Band 3. (German) [The works of Daniel Bernoulli. Vol. 3] *Mechanik* [Mechanics] Edited and with comments by D. Speiser, A. de Baenst-Vandenbroucke, J. L. Pietenpol, and P. Radelet-de Grave. With contributions by H. Straub. Birkhäuser Verlag, Basel-Boston, MA, 1987. xxviii+457 pp. ISBN 3-7643-1213-0 (Jesper Lützen) **89b:01074** 01A75 (01A50)
- see also Gower, Barry, **89g:01030**
- Bernoulli, Jacob I** see Yushkevich, A. P., **89a:01025** and Garibaldi, Ubaldo, **89g:01029**
- Bernoulli, Johann I** ★ Der Briefwechsel von Johann I Bernoulli. Band 2. (French) [The correspondence of Johann I Bernoulli. Vol. 2] Der Briefwechsel mit Pierre Varignon. [The correspondence with Pierre Varignon] Erster Teil: 1692–1702. [Part 1: 1692–1702] Edited and with commentary by Pierre Costabel and Jeanne Peiffer. With contributions by Joachim Otto Fleckenstein, Volker Scheuber, Bénédicte Bildeau and Patricia Radelet. Die Gesammelten Werke der Mathematiker und Physiker der Familie Bernoulli. [The Collected Works of the Mathematicians and Physicists of the Bernoulli Family] Birkhäuser Verlag, Basel-Boston, MA, 1988. xviii+442 pp. ISBN 3-7643-1183-5 (P. Bockstaël) **89k:01039** 01A75 (01A45)
- Bernreuther, W.** (with Göckeler, M.) Renormalization group and finite size effects in scalar lattice field theories. *Nuclear Phys. B* **295** (1988), no. 2 FS21, 199–210. (Summary) **89c:81090** 81E25 (81-04)
- (with Göckeler, M.; Kremer, Manfred) A finite size scaling analysis of the  $O(4)$ -invariant lattice  $\phi^4$  theory. *Nuclear Phys. B* **295** (1988), no. 2 FS21, 211–228. (Summary) **89c:81091** 81E25 (81-04)
- Bernroider, Gustav** Patterns are universal restrictions in space-time, a theory exemplified by sexual neurogenesis. *Science on form* (Sakura, 1985), 319–328, Reidel, Dordrecht-Boston, MA, 1987. (see **89g:82013**) 92A09
- Bernshetein, A. V.** Absolutely admissible tests in the presence of nuisance parameters. Statistical methods of estimation and verification of hypotheses. *J. Soviet Math.* **41** (1988), no. 1, 783–787. (Ryszard Zieliński) **89j:62010** 62C15 (62F03)
- Bernstein, Dennis S.** (with Haddad, Wassim M.) The optimal projection equations with Petersen-Hollot bounds: robust stability and performance via fixed-order dynamic compensation for systems with structured real-valued parameter uncertainty. *IEEE Trans. Automat. Control* **33** (1988), no. 6, 578–582. (Not in MR) 93D15 (93C40)
- (with Haddad, Wassim M.) Robust reduced-order modeling via the optimal projection equations with Petersen-Hollot bounds. *IEEE Trans. Automat. Control* **33** (1988), no. 7, 692–695. (Not in MR) 93B17 (93C40)
- (with Haddad, Wassim M.) Unified optimal projection equations for simultaneous reduced-order, robust modelling, estimation and control. *Internat. J. Control* **47** (1988), no. 4, 1117–1132. (Not in MR) 93B50
- (with Hyland, D. C.) Optimal projection equations for reduced-order modelling, estimation, and control of linear systems with multiplicative white noise. *J. Optim. Theory Appl.* **58** (1988), no. 3, 387–409. (Joseph D. Cole) **89j:93104** 93E10 (93A15, 93E20)

- Inequalities for the trace of matrix exponentials. *SIAM J. Matrix Anal. Appl.* 9 (1988), no. 2, 156–158. (Sing Cheong Ong) **89b:15031** 15A45
- Bernstein, Dorothy Lewis** see Moskal, Ana, (89b:01071)
- Bernstein, Herbert J.** An inequality for selfadjoint operators on a Hilbert space. *Proc. Amer. Math. Soc.* 100 (1987), no. 2, 319–321. (Summary) **89b:47013a** 47A30 (65F15, 65J10)
- Corrigenda to: "An inequality for selfadjoint operators on a Hilbert space". *Proc. Amer. Math. Soc.* 101 (1987), no. 2, 394. (Summary) **89b:47013b** 47A30 (65F15, 65J10)
- (with Goldstein, Max) Optimizing Givens' algorithm for multiprocessors. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 3, 601–602. (I. Norman Katz) **89b:65090** 65F15 (65W05)
- Bernstein, M.** (with Percus, J. K.) Expansion into a vacuum: a one-dimensional model. *Phys. Rev. A* (3) 37 (1988), no. 5, 1642–1653. (B. H. Lavenda) **89d:82065** 82A40 (82A50)
- Bernussou, J.** (with Geromel, J. C.) Parametrical optimization approach for decentralized regulation of discrete systems. *Control and dynamic systems*, Vol. 23, 123–137, Academic Press, Orlando, FL, 1986. (Mihail Voicu) **89c:93007** 93A15 (93B40, 93C55)
- (with Elsayed, H. M.; Mahmoud, Magdi S.; Bilal, A. Y.) Adaptive alternate-routing in telephone networks: optimal and equilibrium solutions. *Inform. Decision Tech.* 14 (1988), no. 1, 65–74. (Summary) **89b:90086** 90B10
- (with Badr, R. I.; Hassan, M. F.; Bilal, A. Y.) Time-domain robustness and performance optimisation of linear quadratic control problems. *Proc. IEEE-D* 135 (1988), no. 4, 223–231. (Andrzej Świerniak) **89j:93043** 93B50 (49B50, 93B35, 93D15)
- Berrahmoune, Larbi** Stabilisation d'une classe de systèmes distribués hyperboliques. (English summary) [Stabilization of a class of hyperbolic distributed systems] *Analysis and optimization of systems (Antibes, 1988)*, 484–493, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89c:93163** 93D15 (93C20, 93D20)
- Berres, Manfred** A-additive measures on measure spaces. *Fuzzy Sets and Systems* 27 (1988), no. 2, 159–169. (Summary) **89m:28038** 28E10 (28A10, 60A10, 68T99)
- Berrut, J.-P.** Rational functions for guaranteed and experimentally well-conditioned global interpolation. *Comput. Math. Appl.* 15 (1988), no. 1, 1–16. (I. Norman Katz) **89b:65029** 65D05
- Berry, Donald A.** (with Berger, J. O.) The relevance of stopping rules in statistical inference. With discussion by Robert Keener, Adam T. Martinsek and Carl N. Morris and a reply by the authors. *Statistical decision theory and related topics, IV*, Vol. 1 (West Lafayette, Ind., 1986), 29–72, Springer, New York-Berlin, 1988. (K. F. Yu) **89c:62134** 62L10
- (with Fristedt, Bert) Optimality of myopic stopping times for geometric discounting. *J. Appl. Probab.* 25 (1988), no. 2, 437–443. (E.-A. Weiss, Jr.) **89g:60154** 60G40 (62L15, 90C39, 90C40)
- Berry, Gerard** (with Sethi, Ravi) From regular expressions to deterministic automata. *Theoret. Comput. Sci.* 48 (1986), no. 1, 117–126. (J. Calvert) **89a:68046** 68Q05 (03D05)
- Berry, J. Calvin** Equivariant estimation of a normal mean using a normal concomitant variable for covariance adjustment. (French summary) *Canad. J. Statist.* 15 (1987), no. 2, 177–183. (Jon Stene) **89a:62066** 62F10 (62B10, 62C07)
- Berry, Jack J.** (with Edwards, Don) The efficiency of simulation-based multiple comparisons. (French summary) *Biometrics* 43 (1987), no. 4, 913–928. (James E. Gentle) **89g:62122** 62J15 (62F25, 65C05)
- Berry, M. V.** (with Sameh, Ahmed) Multiprocessor Jacobi algorithms for dense symmetric eigenvalue and singular value decompositions. *Proceedings of the 1986 International Conference on Parallel Processing*, 433–440, IEEE Comput. Soc. Press, Washington, DC, 1986. (see **89b:68010**) 65W05 (65F15)
- (with Keating, J. P.) False singularities in partial sums over closed orbits. *J. Phys. A* 20 (1987), no. 17, L1139–L1141. (Summary) **89c:58102** 58F19 (81C99)
- (with Mondragon, R. J.) Neutrino billiards: time-reversal symmetry-breaking without magnetic fields. *Proc. Roy. Soc. London Ser. A* 412 (1987), no. 1842, 53–74. (V. F. Lazutkin) **89f:81064** 81C99 (35P20, 58F40, 81–04)
- Quantum phase corrections from adiabatic iteration. *Proc. Roy. Soc. London Ser. A* 414 (1987), no. 1846, 31–46. (Edward R. Vrscaj) **89c:81028** 81C05 (58F05)
- (with Hannay, J. H.) Classical nonadiabatic angles. *J. Phys. A* 21 (1988), no. 6, L325–L331. (Summary) **89c:70028** 70H05 (58F05)
- (with Goldberg, Joel Hart) Renormalisation of curlicues. *Nonlinearity* 1 (1988), no. 1, 1–26. (Summary) **89b:58105** 58F08 (11L05, 78A45)
- Berry, Steven** (with Briggs, Hugh) A nonparametric test of a first-order Markov process for regimes in a noncooperatively collusive industry. *Econom. Lett.* 27 (1988), no. 1, 73–77. (Title) **89i:62139** 62M02 (62G10)
- Bers, Lipman** see Albers, Donald J., **89g:01043**
- Bersenev, D. K.** The Suslin property for measures and a theorem of Carathéodory on the extension of measures. (Russian. English and Georgian summaries) *Tbilis. Gos. Univ. Inst. Prikl. Mat. Trudy* 20 (1987), 103–112, 123. (Z. Lipecki) **89d:28003** 28A12
- Bersener, S. M.** Stable solution of a class of matrix equations. (Russian) *Computational processes and systems*, No. 5 (Russian), 272–274, "Nauka", Moscow, 1987. (J. Segethová) **89b:65066** 65F05 (65H99)
- Bershadskii, M. A.** Off-shell string amplitudes and singular states in bosonic string theory. *Phys. Lett. B* 184 (1987), no. 4, 320–324. (Daniel G. Caldi) **89b:81174** 81E99 (30F99, 81E30, 81G25, 83E15)
- (with Radul, A.) g-loop amplitudes in bosonic string theory in terms of branch points. *Phys. Lett. B* 193 (1987), no. 2–3, 213–218. (V. A. Golubeva) **89c:81136** 81E99 (32G15, 58G35, 81E30)
- Off-shell states in the theory of a bosonic string. *Soviet J. Nuclear Phys.* 45 (1987), no. 5, 925–928 (1988); translated from *Yadernaya Fiz.* 45 (1987), no. 5, 1491–1497 (Russian). (Olaf Lechtenfeld) **89g:81068** 81E99 (14H45, 81E30, 81E40)
- (with Radul, A.) Fermionic fields on  $Z_N$ -curves. *Comm. Math. Phys.* 116 (1988), no. 4, 689–700. (K. Schoutens) **89b:81167** 81E99 (14K20, 58G35, 81E40)
- The superbranch points and two-loop correction in the heterotic string theory. *Modern Phys. Lett. A* 3 (1988), no. 1, 91–108. (Jeffrey M. Rabin) **89f:81128** 81E20 (32G15, 58A50, 81E30, 81E40, 83E30)
- The loop measure over supermoduli space. *Phys. Lett. B* 201 (1988), no. 1, 67–72. (Cedomir Crnković) **89d:81086** 81E99 (14H15, 14K20, 81E30)
- Bertaut, Erwin-Félix** (with Weigel, Dominique) Sur la relation entre les groupes ponctuels à quatre dimensions d'une phase modulée mono incommensurable et de sa structure de base. (English summary) [On the relation between the four-dimensional point groups of a mono-incommensurate modulated phase and its basic structure] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers Sci. Terre* 303 (1986), no. 5, 341–344. (Summary) **89b:20071** 20H15 (82A60)
- Berteloot, François** Existence d'une structure kählérienne sur les variétés homogènes semi-simples. (English summary) [Existence of a Kähler metric on semisimple homogeneous manifolds] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 19, 809–812. (B. Gilligan) **89c:32048** 32M10
- (with Oeljeklaus, K.) Invariant plurisubharmonic functions and hypersurfaces on semisimple complex Lie groups. *Math. Ann.* 281 (1988), no. 3, 513–530. (Akio Kodama) **89i:32065** 32M10 (32F05)
- Bertera, M.** (with Pike, E. R.; Defrise, M.; De Mol, C.) The use of singular systems and other inversion methods in weighted  $L^2$ -spaces. *Mathematics in signal processing (Bath, 1985)*, 167–179, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see **89b:94004**) 94A12
- (with Brianzi, P.; Pike, E. R.; Rebolia, L.) Linear regularizing algorithms for positive solutions of linear inverse problems. *Proc. Roy. Soc. London Ser. A* 415 (1988), no. 1849, 257–275. (P. M. Gupta) **89c:65053** 65J10 (35R30, 45B05, 65Rxx)
- Berthier, Anne-Marie** (with Amrein, W. O.; Georgescu, V.) Weighted estimates for differential operators with operator-valued coefficients. (French summary) *Bull. Soc. Math. France* 115 (1987), no. 3, 291–307. (Summary) **89a:34066** 34G10 (47E05)
- (with Georgescu, V.) On the point spectrum of Dirac operators. *J. Funct. Anal.* 71 (1987), no. 2, 309–338. (From the introduction) **89b:35131** 35P25 (81C10)
- (with Georgescu, V.; Purice, Radu) Sur un problème aux limites de la théorie de Ginzburg-Landau. (English summary) [A boundary value problem in the Ginzburg-Landau theory] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 1, 55–58. (Piero de Mottoni) **89k:35195** 35Q20 (35J99, 81J05)
- Bertilhon, Jacques** see Lécuyer, Bernard-Pierre, **89c:01032**
- Bertilhon, Louis-Adolphe** see Lécuyer, Bernard-Pierre, **89c:01032**
- Bertin, G.** (with Lin, Chia Chiao; Lowe, S. A.; Thurstans, R. P.) Modal approach to the morphology of spiral galaxies. I. Basic structure and astrophysical viability. *Astrophys. J.* 338 (1989), no. 1, part 1, 78–103. (Not in MR) **85A05** (76E20)
- (with Lin, Chia Chiao; Lowe, S. A.; Thurstans, R. P.) Modal approach to the morphology of spiral galaxies. II. Dynamical mechanisms. *Astrophys. J.* 338 (1989), no. 1, part 1, 104–120. (Not in MR) **85A05** (76E20)
- Bertin, José** Réseaux de Kummer et surfaces  $K3$ . [Kummer lattices and  $K3$  surfaces] *Invent. Math.* 93 (1988), no. 2, 267–284. (Shigeyuki Kondo) **89c:14039** 14J28
- Bertin, M.-J.** (with Amice, Y.; Bertrandias, F.; Decomps-Guillois, Annette; Dress, F.; Grandet, M.; Mendes France, M.; Rauzy, Gérard) Charles Pisot. (French) *Acta Arith.* 51 (1988), no. 1, 1–4. (Editors) **89i:01054** 01A70
- Bertoin, Jean** Temps locaux et intégration stochastique pour les processus de Dirichlet. [Local times and stochastic integration for Dirichlet processes] *Séminaire de Probabilités, XXI*, 191–205, *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (Philip Protter) **89g:60177** 60H05 (60G44, 60J25, 60J55)
- Une application du calcul du nombre de montées et de descentes aux fonctions de martingales locales continues. (English summary) [An application of the calculation of the number of up and down crossings to functions of continuous local martingales] *Ann. Inst. H. Poincaré Probab. Statist.* 24 (1988), no. 2, 201–207. (Michael Sharpe) **89k:60062** 60G44
- Une extension d'une inégalité de Burkholder, Davis, Gundy pour les processus à  $\alpha$ -variation bornée et applications. (English summary) [An extension of a Burkholder-Davis-Gundy inequality for processes with bounded  $\alpha$ -variation; applications] *Stochastics* 24 (1988), no. 2, 75–86. (Svend-Erik Graversen) **89m:60095** 60G17
- Applications des processus de Dirichlet aux temps locaux et temps locaux d'intersection d'un mouvement brownien. (English summary) [Applications of Dirichlet processes to the local times and local times of intersection of a Brownian motion] *Probab. Theory Related Fields* 80 (1989), no. 3, 433–460. (F. B. Knight) **89m:60184** 60J55 (60J65)
- Bertolazzi, Paola** (with Sassano, Antonio) An  $O(mn)$  algorithm for regular set-covering problems. *Theoret. Comput. Sci.* 54 (1987), no. 2–3, 237–247. (Ingo Wegener) **89c:68041** 68Q20 (05B40)
- Bertolini, Marina** Multiple coverings of rational scrolls. (Italian. English summary) *Istit. Lombardo Accad. Sci. Lett. Rend. A* 120 (1986), 117–123 (1987). (Antonio Lanteri) **89c:14056** 14J26 (14E20)
- (with Turrini, Cristina) On the automorphisms of some line congruences in  $P^3$ . *Geom. Dedicata* 27 (1988), no. 2, 191–197. (Aigil Papantonopoulou) **89k:14088** 14M15 (14J25, 14J50)
- Bertolini, Massimo** (with Canuto, Giuseppe) Good reduction of elliptic curves defined over  $\mathbb{Q}(\sqrt{2})$ . *Arch. Math. (Basel)* 50 (1988), no. 1, 42–50. (M. A. Kenku) **89d:11046** 11G05 (14G25)
- Bertolino, F.** (with Racugno, Walter) On error bounds in choosing between two simple hypotheses. (Italian summary) *Metron* 45 (1987), no. 1–2, 223–248. (Vijaya Prakash Gupta) **89c:62030** 62F10 (62F15)
- Bertoluzza, Carlo** Some characterizations of associative multiplication laws. (Spanish) *First conference on analysis (Spanish) (Mérida, 1986)*, 287–307, Univ. de los Andes, Mérida, 1986. (Summary) **89a:17006** 17A75 (08A99, 39B40)
- Bertoni, Alberto** (with Mauri, G.; Sabadini, Nicoletta) On the class NL with oracle. (Russian summary) *Comput. Artificial Intelligence* 6 (1987), no. 5, 411–420. (Summary) **89k:68047** 68Q15 (03D15)
- (with Goldwurm, M.; Sabadini, Nicoletta) Analysis of a class of algorithms for problems on trace languages. *Applicable algebra, error-correcting codes, combinatorics and computer algebra (Karlsruhe, 1986)*, 202–214, *Lecture Notes in Comput. Sci.*, 307, Springer, Berlin-New York, 1988. (D. M. Campbell) **89b:68080** 68Q45 (68Q25)
- Bertoni, G.** (with Penati, M. E.; Tibaldi, M.) Reduced order regulators for large scale systems: a numerical implementation for stochastic and deterministic systems. *Large scale systems: theory and applications 1983 (Warsaw, 1983)*, 439–445, *IFAC Proc. Ser.*, 10, IFAC, Laxenburg, 1984. (Jian-Min Zhu) **89f:93016** 93B50 (93A15, 93B17, 93B40, 93E20)
- Bertossi, Alan A.** Parallel circle-cover algorithms. *Inform. Process. Lett.* 27 (1988), no. 3, 133–139. (Not in MR) **68U05** (68Q25)
- On the domatic number of interval graphs. *Inform. Process. Lett.* 28 (1988), no. 6, 275–280. (Summary) **89h:68054** 68Q20 (05C35, 68Q25, 68R10)
- (with Gori, Alessandro) Total domination and irredundance in weighted interval graphs. *SIAM J. Discrete Math.* 1 (1988), no. 3, 317–327. (Jürgen Ebert) **89m:68055** 68Q25



- (05C70, 68R10)  
**Bertossi, Leopoldo** An example of rate of convergence in the finite element method. (Spanish) *Rev. Mat. Apl.* 9 (1987), no. 1, 27–33. (Darrell L. Hicks) **89g:65122** 65M60 (65M10)
- Bertotti, Bruno** *see* Schrödinger, Erwin, **89h:91108**
- Bertotti, Maria Letizia** Forced oscillations of asymptotically linear Hamiltonian systems. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 1 (1987), no. 3, 729–740. (Michel Willem) **89b:58176** 58F22 (34C25, 58E05, 58F05)
- Localization of closed orbits of nonlinear Hamiltonian systems with 1,–2 resonance near an equilibrium. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 1 (1987), no. 4, 965–978. (James D. Meiss) **89d:70021** 70K15 (34C25, 58F22, 70H05, 70K20)
- Bertran, E.** (with San-Martin, M.) Comparative study of different adaptive strategies for a robot joint control. *Intelligent autonomous systems* (Amsterdam, 1986), 129–141, North-Holland, Amsterdam-New York, 1987. (From the text) **89b:93075** 93C75 (93B30, 93C40)
- Bertrand, Anne** *see* Bertrand-Mathis, Anne
- Bertrand, Daniel** Lemmes de zéros et nombres transcendants. [Zéro-transcendental numbers] *Séminaire Bourbaki*, Vol. 1985/86. *Astérisque* No. 145-146 (1987), 3, 21–44. (W. W. Adams) **89a:11074** 11J81 (13A99)
- (with Philippon, Patrice) Sous-groupes algébriques de groupes algébriques commutatifs. [Algebraic subgroups of commutative algebraic groups] *Illinois J. Math.* 32 (1988), no. 2, 263–280. (D. W. Masser) **89d:14039** 14L10 (11J81)
- Bertrand, P.** (with Abou-Kandil, H.) Government-private sector relations as a Stackelberg game. A degenerate case. *J. Econom. Dynamics Control* 11 (1987), no. 4, 513–517. (Summary) **89c:90128** 90D40
- Bertrandias, F.** (with Amice, Y.; Bertin, M.-J.; Decomps-Guilloux, Annette; Dress, F.; Grandet, M.; Mendès France, M.; Rauzy, Gérard) Charles Pisot. (French) *Acta Arith.* 51 (1988), no. 1, 1–4. (Editors) **89d:01054** 01A70
- Bertrand-Mathis, Anne** Specification, synchronisation, average length. (French summary) *Coding theory and applications* (Cachan, 1986), 86–95, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (N. S. Kambou) **89i:94022** 94A29
- Ensembles intersectifs et récurrence de Poincaré. [Intersective sets and Poincaré recurrence] *Colloque de Théorie Analytique des Nombres "Jean Coquet"* (Marseille, 1985), 55–72, *Publ. Math. Orsay*, 88-02, Univ. Paris XI, Orsay, 1988. (Manfred Denker) **89h:28023** 28D05 (54H20)
- Points génériques de Champenowne sur certains systèmes codes; application aux  $\theta$ -shifts. (English summary) [Champenowne's generic points on certain code systems; application to  $\theta$ -shifts] *Ergodic Theory Dynamical Systems* 8 (1988), no. 1, 35–51. (J. Aczél) **89d:94032** 94A29 (11K55, 28D20, 94A17)
- Bertschi, M.** (with Reed, B. A.) Erratum: "A note on even pairs" [Discrete Math. 65 (1987), no. 3, 317–318; MR 88f:05066] by Reed. *Discrete Math.* 71 (1988), no. 2, 187. (Editors) **89e:05123** 05C38
- Bertsekas, Dimitri P.** ★ Dynamic programming. Deterministic and stochastic models. Prentice-Hall, Inc., Englewood Cliffs, NJ, 1987. viii+376 pp. ISBN 0-13-221581-0 (Ken W. Bosworth) **89e:49001** 49-02 (49C20, 49D30, 90C39, 93E20)
- (with Hosein, Patrick A.; Tseng, Paul) Relaxation methods for network flow problems with convex arc costs. *SIAM J. Control Optim.* 25 (1987), no. 5, 1219–1243. (Summary) **89h:90243** 90C35 (90B10)
- (with Tseng, Paul) The RELAX codes for linear minimum cost network flow problems. *Ann. Oper. Res.* 13 (1988), no. 1–4, 125–190. (Summary) **89h:90080** 90B10 (65K99, 90C35)
- The auction algorithm: a distributed relaxation method for the assignment problem. *Ann. Oper. Res.* 14 (1988), no. 1–4, 105–123. (Summary) **89h:90156** 90C10 (65K99, 68Q25)
- (with Eckstein, Jonathan) Dual coordinate step methods for linear network flow problems. *Math. Programming* 42 (1988), no. 2 (Ser. B), 203–243. (Yixun Lin) **89i:90164** 90C35 (68Q25, 90B10, 90C27)
- (with Tseng, Paul) Relaxation methods for minimum cost ordinary and generalized network flow problems. *Oper. Res.* 36 (1988), no. 1, 93–114. (Summary) **89d:90089** 90B10
- Bertsimas, Dimitris** (with Papaconstantinou, Xenophon) Analysis of the stationary  $E_k/C_2/s$  queueing system. *European J. Oper. Res.* 37 (1988), no. 2, 272–287. (Jos H. A. de Smitt) **89i:90121** 90B22 (60K25)
- (with Papaconstantinou, Xenophon) On the steady-state solution of the  $M/C_2(a, b)/s$  queueing system. *Transportation Sci.* 22 (1988), no. 2, 125–138. (Summary) **89b:60207** 60K25 (90B20, 90B22)
- Bertuzzi, A.** (with Gandolfi, A.; Lucidi, S.) Constrained cross-validation applied to estimation of kinetic parameters of cell populations in perturbed growth. *System modelling and optimization* (Tokyo, 1987), 614–623, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (Summary) **89m:92042** 92A15 (92A09, 92A10)
- Bertz, Steven H.** Branching in graphs and molecules. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* 19 (1988), no. 1–3, 65–83. (W. T. Tutte) **89d:92091** 92A40 (05C99)
- Berwick, Robert C.** Computational complexity, mathematical linguistics, and linguistic theory. *Mathematics of language*, 1–17, *Benjamins*, Amsterdam, 1987. (See **89a:68006**) 68S05 (68Q15, 68S15)
- Berzhanov, A. B.** (with Umbetzhano, D. U.; Zhakshbaev, B. Zh.) Solutions, almost multiperiodic with respect to some of the variables, of systems of partial differential equations. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1988, no. 1, 55–59. (Bolis Basit) **89h:35032** 35B10 (35F05)
- Berzi, Vittorio** (with Reni, Marco) Weak Riemannian structures on gauge-group orbits. *Internat. J. Theoret. Phys.* 26 (1987), no. 2, 151–174. (M. Craioveanu) **89a:58013** 58B20 (53C30, 58D15, 81E13)
- Berzin, Corinne** Approximation du temps local des champs aléatoires gaussiens stationnaires par régularisation des trajectoires. (English summary) [Smoothing of paths and approximation of local time of stationary Gaussian fields] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 5, 291–294. (Summary) **89a:60131** 60G60 (60G15, 60G17)
- (with Iribarren, Ileana) Estimation de la matrice des moments spectraux d'ordre 2 d'un champ aléatoire gaussien à l'aide des courbes de niveau. (English summary) [Estimation of the second-order spectral moments matrix of a Gaussian random field based on the level curves] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 18, 915–918. (Akio Noda) **89m:60090** 60G15 (60G60)
- Berzins, M.** Global error estimation in the method of lines for parabolic equations. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 4, 687–703. (Manfred Dobrowolski) **89e:65097** 65M20
- Besada, Manuel** (with Hervés, Carlos) Existence of competitive equilibrium in an economy with no time horizon. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 84–90, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89j:90044** 90A14
- (with Estévez, Margarita; Hervés, Carlos) Equilibria in economies with countably many commodities. *Econom. Lett.* 26 (1988), no. 3, 203–207. (Erwin Klein) **89k:90028** 90A14
- Besanko, David** (with Donnenfeld, Shabtai) The impact of buyers' expectations on entry deterrence. *Econom. Lett.* 26 (1988), no. 4, 375–380. (Summary) **89k:90051** 90A12 (90A05)
- Besinbaev, S.** (with Luk'yanov, A. T.; Kavokin, A. A.) Numerical solution of a system of equations of convective diffusion of a multicomponent solution taking into account interphase interactions. (Russian) *Some problems in functional analysis, differential equations and their applications* (Russian), 15–21, 108, *Kazakh. Gos. Univ., Alma-Ata*, 1985. (See **89a:00016**) 65N05 (65N10)
- Beslagic, Amer** (with van Douwen, E. K.; Merrill, John W. L.; Watson, W. Stephen) The cardinality of countably compact Hausdorff spaces. *Topology Appl.* 27 (1987), no. 1, 1–10. (Hao Xuan Zhou) **89a:54007** 54A25 (03E35, 54D30)
- Besley, Timothy** Tied-in credit with a monopoly product market. *Econom. Lett.* 28 (1988), no. 2, 105–108. (Summary) **89j:90032** 90A10
- Besnard, Didier** (with Harlow, Francis H.; Johnson, Norman Lee; Rauenzahn, Rick; Wolfe, Jonathan) Instabilities and turbulence. Stanislaw Ulam 1909–1984. *Los Alamos Sci.* No. 15 Special Issue (1987), 145–174. (See **89m:01133a**) 76E15
- Besnard, Philippe** (with Siegel, Pierre) Supposition-based logic for automated nonmonotonic reasoning. 9th International Conference on Automated Deduction (Argonne, IL, 1988), 592–601, *Lecture Notes in Comput. Sci.*, 310, Springer, Berlin-New York, 1988. (See **89c:08004**) 68T01 (03B35, 03B60, 68T30)
- Besov, O. V.** Embeddings of an anisotropic Sobolev space for a domain with a flexible horn condition. (Russian) Studies in the theory of differentiable functions of several variables and its applications, XII (Russian). *Trudy Mat. Inst. Steklov.* 181 (1988), 3–14, 269. (S. K. Vodop'yanov) **89k:46046** 46E35
- (with Kudryavtsev, L. D.; Lizorkin, P. I.; Nikol'skii, S. M.) Investigations in the theory of spaces of differentiable functions of several variables. (Russian) Probability theory, function theory, mechanics (Russian). *Trudy Mat. Inst. Steklov.* 182 (1988), 68–127. (H. Triebel) **89m:46062** 46E35 (01A60, 46-03)
- Bespalov, A. N.** (with Kuznetsov, Yuri Alekseevich) RF cavity computations by the domain decomposition and fictitious components methods. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* 2 (1987), no. 4, 259–278. (Lubor Malina) **89k:78010** 78A50 (65N25, 65N30, 78-08)
- Finite element method for the eigenmode problem of a RF cavity resonator. *Soviet J. Numer. Anal. Math. Modelling* 3 (1988), no. 3, 163–178. (Charles I. Goldstein) **89i:78001** 78-08 (65N30, 78A50)
- Bespalov, M. S.** Some applications of multiplicative systems of functions. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 42–45, *Saratov. Gos. Univ., Saratov*, 1986. (See **89j:00036**) 42C15
- Bespalova, S. A.** (with Klovov, Yu. A.) Some remarks on solutions of autonomous equations that approach finite limits at infinity. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 2, 336–338, 366. (Not in MR) 34C11 (34A34)
- (with Klovov, Yu. A.) Solution of the Cauchy problem for a system of ordinary differential equations using Chebyshev polynomials. (Russian) *Lav. Mat. Ezhegodnik* No. 31 (1988), 3–12, 250. (A. D. Ziebur) **89e:34002** 34A10 (34A45, 34A50, 65L05)
- (with Sokol, I. A.) On some results on the nonexistence of solutions of boundary value problems for a third-order ordinary differential equation. (Russian) *Lav. Mat. Ezhegodnik* No. 31 (1988), 13–19, 250. (Jan Andres) **89e:34030** 34B15
- Bespyayko, L. G.** (with Skibenko, V. P.) On the construction of domains of asymptotic stability. (Russian) *Partial differential equations* (Russian), 61–65, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (See **89c:00023**) 34D05
- Bessarabenco, K. V.** (with Gorbenco, I. D.; Zamula, A. A.) Accelerated algorithms for forming systems of characteristic discrete signals. (Russian) *Radiotekhn. (Kharkov)* No. 84 (1988), 69–72, iv. (Not in MR) 94A12 (12E20)
- Besse, Ph.** Optimal metric in principal components analysis of longitudinal data. *Data analysis and informatics, V* (Versailles, 1987), 419–430, North-Holland, Amsterdam-New York, 1988. (Summary) **89i:62094** 62H25
- (with Caussinus, H.; Ferré, L.; Fine, Jeanne) Principal components analysis and optimization of graphical displays. *Statistics* 19 (1988), no. 2, 301–312. (S. John) **89g:62087** 62H25
- Bessel, Friedrich Wilhelm** *see* Swijtkin, Zeno G., **89c:01101** and Minow, Helmut, **89j:01044**
- Besseling, J. F.** *see* Trends in applications of mathematics to mechanics, **89g:58004**
- Bessis, Daniel** (with Geronimo, J. S.; Moussa, P.) Function weighted measures and orthogonal polynomials on Julia sets. *Constr. Approx.* 4 (1988), no. 2, 157–173. (I. N. Baker) **89h:58085** 58F08 (30D05, 42C05, 58F11)
- (with Handy, Carlos R.; Williams, Robert M.) Moment problem formulation of the simplified ideal magnetohydrodynamics ballooning equation. *J. Math. Phys.* 29 (1988), no. 3, 717–720. (Summary) **89d:76018** 76E25
- (with Derrida, B.) Statistical properties of valleys in the annealed random map model. *J. Phys. A* 21 (1988), no. 9, L509–L515. (W. Th. F. den Hollander) **89k:60155** 60K35 (82A31)
- (with Handy, Carlos R.; Morley, T. D.) Generating quantum energy bounds by the moment method: a linear-programming approach. *Phys. Rev. A* (3) 37 (1988), no. 12, 4557–4569. (Summary) **89i:81046** 81C99 (44A60, 90C50)
- Bessis, G.** (with Bessis, N.) Algebraic recursive determination of matrix elements from ladder operator considerations. *J. Phys. A* 20 (1987), no. 17, 5745–5754. (Summary) **89c:81208** 81G45
- Bessis, N.** (with Bessis, G.) Algebraic recursive determination of matrix elements from ladder operator considerations. *J. Phys. A* 20 (1987), no. 17, 5745–5754. (Summary)

- Besson, G.** A Kato type inequality for Riemannian submersions with totally geodesic fibers. *Ann. Global Anal. Geom.* 4 (1986), no. 3, 273-289. (Jürgen Eichhorn) **89b:58215** 58G25 (53C42, 58G11)
- (with Béard, P. H.) On the number of bound states and estimates on some geometric invariants. *Partial differential equations (Rio de Janeiro, 1986)*, 30-40, *Lecture Notes in Math.*, 1324, Springer, Berlin-New York, 1988. (From the text) **89m:58202** 58G25 (53C21, 58G30)
- Bessonov, A. P.** See **Artobolevskii, I. I.**, **89m:70002**
- Bessonov, A. V.** ★ Теория объектов в логике. (Russian) [The theory of objects in logic] "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. 136 pp. (V. Ya. Kreinovich) **89f:03004** 03A05 (68T30)
- Bessonov, G. A.** (with Korobov, V. I.; Sklyar, G. M.) The problem of the stable synthesis of bounded controls for a class of nonstationary systems. (Russian) *Prikl. Mat. Mekh.* 52 (1988), no. 1, 9-15; translated in *J. Appl. Math. Mech.* 52 (1988), no. 1, 5-11. (Wei Bing Gao) **89k:93085** 93B50 (93D15)
- Bessonov, Yu. E.** Determination of the intersections of geometric graphs by means of the operation of modular product. (Russian) *Vychisl. Sistemy No. 119 Voprosy Algoritm. Anal. Strukt. Inform.* (1987), 43-48, 114. (T. R. S. Walsh) **89g:05098** 05C99 (68Q25)
- Best, D. J.** (with Rayner, J. C. W.) A test for bivariate normality. *Statist. Probab. Lett.* 6 (1988), no. 6, 407-412. (Summary) **89c:62092** 62H15
- Best, Elke** (with Merceron, Agathe) D-continuity and Petri's axioms of concurrency for nonsequential process models. *Fund. Inform.* 10 (1987), no. 2, 161-211. (Anna Bagyinszkiné-Orosz) **89g:68011** 68Q10 (68Q90)
- (with Devillers, Raymond) Sequential and concurrent behaviour in Petri net theory. *Theoret. Comput. Sci.* 55 (1987), no. 1, 87-136. (Anna Bagyinszkiné-Orosz) **89d:68064** 68Q90 (68Q55)
- (with Fernández, César) ★ Nonsequential processes. A Petri net view. EATCS Monographs on Theoretical Computer Science, 13. Springer-Verlag, Berlin-New York, 1988. x+112 pp. ISBN 3-540-19030-9 (Rüdiger Valk) **89i:68035** 68Q10 (68Q55, 68Q90)
- Best, M. J.** (with Caron, Richard J.) A parameterized Hessian quadratic programming problem. *Ann. Oper. Res.* 5 (1986), no. 1-4, 373-394. (Summary) **89d:90157** 90C20
- Bester, Helmut** Bargaining, search costs and equilibrium price distributions. *Rev. Econom. Stud.* 55 (1988), no. 2, 201-214. (Summary) **89b:90041** 90A14
- Bestle, D.** Beobachtbarkeit von chaotischen Systemen. [Observability of chaotic systems] *Z. Angew. Math. Mech.* 67 (1987), no. 4, T55-T56. (From the text) **89a:58068** 58F13 (93B07)
- Bestman, A. R.** Transient flow of a radiating gas between concentric spheres. *IMA J. Appl. Math.* 37 (1986), no. 2, 173-183. (Not in MR) **76E20** (85A25)
- Unsteady low Reynolds number flow in a heated tube of slowly varying section. *J. Austral. Math. Soc. Ser. B* 30 (1988), no. 2, 179-202. (P. W. Duck) **89k:76043** 76D99 (76Z05, 92A06, 92A09)
- Bestvina, Miladen** Stabilizing fake Hilbert spaces. *Topology Appl.* 26 (1987), no. 3, 293-305. (Ross Geoghegan) **89a:57021** 57N20 (54F50)
- Degenerations of the hyperbolic space. *Duke Math. J.* 56 (1988), no. 1, 143-161. (William Harvey) **89m:57011** 57M99 (20H10, 57M10)
- Characterizing k-dimensional universal Menger compacta. *Mem. Amer. Math. Soc.* 71 (1988), no. 380, vi+110 pp. (John J. Walsh) **89g:54083** 54F65 (55M10, 57N15)
- Betancor, Jorge Juan** A Cauchy problem associated with an operator semigroup with infinitesimal generator  $B_{\alpha, \alpha} = x^{1-\alpha} \partial_x^2 + \partial_x^2$ . (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 1* (Spanish) (Badajoz, 1986), 102-111, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Donald Myers) **89k:47057** 47D05 (34G99, 35R20, 44A15)
- Betancourt, Octavio** BETAS, a spectral code for three-dimensional magnetohydrodynamic equilibrium and nonlinear stability calculations. *Comm. Pure Appl. Math.* 41 (1988), no. 5, 551-568. (Jean Pierre Branner) **89h:76045** 76W05 (76-08, 76E20, 76E30)
- Betancourt Núñez, Godehardo A.** (with González Diéguez, Belarmino) A generalized Riemann problem on nonsmooth curves. (Spanish. English summary) *Cienc. Mat. (Havana)* 8 (1987), no. 3, 37-44. (Summary) **89j:30055** 30E25
- Beth, Th.** See *Applicable algebra, error-correcting codes, combinatorics and computer algebra*, **89b:94002**
- Bethke, Ingemar** On the existence of extensional partial combinatory algebras. *J. Symbolic Logic* 52 (1987), no. 3, 819-833. (Henk Barendregt) **89b:03025** 03B40
- Bethmann, J.** Limiting behaviour of sums of a random number of independent and identically distributed random variables. *Teor. Veroyatnost. i Primenen.* 32 (1987), no. 3, 619-622. (Zdzisław Rychlik) **89b:60050** 60F05
- The Lindeberg-Feller theorem for sums of a random number of independent random variables in a triangular array. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 2, 354-359; translated in *Theory Probab. Appl.* 33 (1988), no. 2, 334-339. (Dominik Szynal) **89j:60034** 60F05
- Bethuel, Fabrice** (with Zheng, Xiao Min) Density of smooth functions between two manifolds in Sobolev spaces. *J. Funct. Anal.* 80 (1988), no. 1, 60-75. (A. J. Tromba) **89i:58015** 58D15 (46E35, 58E20)
- Betina, Kamel** Caractérisation des connexions linéaires singulières régulières le long d'un diviseur à croisements normaux dans le cas de plusieurs variables. (English summary) [Characterization of singular linear connections regular along normal crossings in the several variables case] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 5, 243-245. (Arno van den Essen) **89g:58190** 58G07 (32C38, 35A20)
- Betley, S.** (with Przytycki, Józef H.; Żukowski, T.) Hyperbolic structures on Dehn filling of some punctured-torus bundles over  $S^1$ . *Kobe J. Math.* 3 (1987), no. 2, 117-147. (From the introduction) **89f:57017** 57N10
- Homological stability for  $O_{n,n}$  over a local ring. *Trans. Amer. Math. Soc.* 303 (1987), no. 1, 413-429. (Ruth Charney) **89b:20090** 20G10 (11E72, 18G99, 19D55)
- Betounes, David E.** Utiyama's Lagrangian and external gauge fields. *Differential geometry and its applications, communications (Brno, 1986)*, 33-42, *Univ. J. E. Purkyně, Brno*, 1987. (Ian M. Anderson) **89d:58032** 58E30 (49F05, 49H05)
- Differential geometric aspects of continuum mechanics in higher dimensions. *Differential geometry: the interface between pure and applied mathematics (San Antonio, Tex., 1986)*, 23-37, *Contemp. Math.*, 68, Amer. Math. Soc., Providence, RI, 1987. (Hans P. Künzle) **89c:73006** 73B05 (53C40, 53C80)
- Betrò, Bruno** (with Schoen, Fabio) Sequential stopping rules for the multistart algorithm in global optimisation. *Math. Programming* 38 (1987), no. 3, 271-286. (I. M. Stancu-Minasian) **89d:90152** 90C15 (90C30)
- Betsch, Gerhard** (with Lagler, Wilfried) Carl Friedrich Gauß und die Göttinger Professoren-Witwen-und-Waisenkasse. Ein bisher unbekannter Briefwechsel zwischen Gauß und Georg Ernst Friedrich Hopenstedt (1779-1858). [Carl Friedrich Gauss and the Göttingen insurance fund for the widows and orphans of professors. A previously unknown correspondence between Gauss and Georg Ernst Friedrich Hopenstedt (1779-1858)] *Gauss-Ges. Göttingen Mitt.* No. 25 (1988), 17-26. (D. J. Struik) **89j:01030** 01A55
- Betsumiya, T.** (with Watanabe, Yasunari; Ito, M.; Soma, Tsuruhiko) Nonperiodic tessellation with eight-fold rotational symmetry. *Science on form (Sakura, 1985)*, 471-477, *Reidel, Dordrecht-Boston, MA*, 1987. (see **89g:2013**) 52A45 (51M20)
- Bettazzi, Rodolfo** See **Cassinat, Jean**, **89b:01019**
- Betten, Dieter** (with Knarr, Norbert) Rotationsflächen-Ebenen. [Planes generated by rotational surfaces] *Abh. Math. Sem. Univ. Hamburg* 57 (1987), 227-234. (H. Salzmann) **89b:51025** 51H10
- Einige Klassen topologischer 3-Räume. [Some classes of topological 3-spaces] *Resultate Math.* 12 (1987), no. 1-2, 37-61. (Rainer Löwen) **89b:51026** 51H10
- Kalahari and the sequence "Sloane No. 377". *Combinatorics '86 (Trento, 1986)*, 51-58, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (E. A. Enneking) **89f:05010** 05A15 (11B83, 90D42)
- Betten, J.** Invariants of fourth-order tensors. *Applications of tensor functions in solid mechanics*, 203-226, *CISM Courses and Lectures*, 292, Springer, Vienna, 1987. (see **89m:73002**) 73B99
- Formulation of anisotropic constitutive equations. *Applications of tensor functions in solid mechanics*, 227-250, *CISM Courses and Lectures*, 292, Springer, Vienna, 1987. (see **89m:73002**) 73B05
- Interpolation methods for tensor functions. *Applications of tensor functions in solid mechanics*, 251-278, *CISM Courses and Lectures*, 292, Springer, Vienna, 1987. (see **89m:73002**) 73B05
- Tensor function theory and classical plastic potential. *Applications of tensor functions in solid mechanics*, 279-299, *CISM Courses and Lectures*, 292, Springer, Vienna, 1987. (see **89m:73002**) 73E99
- see also *Applications of tensor functions in solid mechanics*, **89m:73002**
- Betti, Renato** Symmetric categories and Cauchy-completion. (Italian summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* 117 (1983), no. 4-6, 239-243 (1986). (S. B. Niefield) **89d:18002** 18D05 (18B10, 18D20, 18F10)
- (with Power, A. J.) On local adjointness of distributive bicategories. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 2 (1988), no. 4, 931-947. (R. H. Street) **89k:18014** 18D05 (18D20)
- (with Grandis, Marco) Complete theories in 2-categories. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* 29 (1988), no. 1, 9-57. (R. H. Street) **89g:18014** 18D05 (18C10, 18G40)
- Betz, Cristina** Some properties of an extended local Feynman-Kac semigroup. (Spanish summary) *Acta Cient. Venezolana* 37 (1986), no. 6, 622-624. (M. G. Shur) **89c:60086** 60J40 (60J57)
- Beukers, F.** (with Wolfart, Jürgen) Algebraic values of hypergeometric functions. *New advances in transcendence theory (Durham, 1986)*, 68-81, *Cambridge Univ. Press, Cambridge-New York*, 1988. (Noriko Hirata-Kohno) **89m:11071** 11J99 (11G15, 33A35)
- Beumee, J. G. B.** (with Rabitz, Herschel) On the use of filtering theory for the inversion of temporal chemical systems: mathematical formulation. *SIAM J. Appl. Math.* 48 (1988), no. 4, 925-935. (Summary) **89c:93148** 93C75 (92A40, 93E10, 93E11)
- Beurling, Arne Karl-August** see **Ahlfors, Lars**, **89i:01053**
- Beutelspacher, Albrecht** A defense of the honour of an unjustly neglected little geometry or a combinatorial approach to the projective plane of order five. *J. Geom.* 30 (1987), no. 2, 182-195. (J. W. P. Hirschfeld) **89a:51017** 51E15
- (with Berardi, Luigia) Partial partitions of finite projective spaces. *Mitt. Math. Sem. Giessen* No. 180 (1987), 59-67. (J. W. P. Hirschfeld) **89b:51014** 51E20 (05B25)
- (with Berardi, Luigia) Blocking sets of the known bipartite. (Italian summary) *Rend. Mat. Appl.* (7) 7 (1987), no. 1, 63-76 (1988). (Ferenc Wettl) **89k:51014** 51E30 (05B30, 51E05)
- Enciphered geometry. Some applications of geometry to cryptography. *Combinatorics '86 (Trento, 1986)*, 59-68, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (E. J. F. Primrose) **89b:51015** 51E20 (94A60)
- (with Berardi, Luigia) Constructing the bipartite of order four from six points. (Italian summary) *Boll. Un. Mat. Ital. A* (7) 2 (1988), no. 2, 285-289. (Nicholas Krier) **89c:51035** 51E05 (05B05)
- Beuter, Anne** (with Glass, L.; Larocque, David) Time delays, oscillations, and chaos in physiological control systems. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* 90 (1988), no. 1-2, 111-125. (Summary) **89b:92014** 92A09 (58F13)
- Beveraggi, M.** (with Cohen, Gérard Denis) On the density of best coverings in Hamming spaces. (French summary) *Coding theory and applications (Cachan, 1986)*, 39-44, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (H. F. Mattson, Jr.) **89m:94012** 94B05 (11H31)
- Berilacqua, Roberto** (with Codenotti, B.; Romani, F.) Parallel solution of block tridiagonal linear systems. *Linear Algebra Appl.* 104 (1988), 39-57. (David C. Arney) **89c:65024** 65F05 (65W05)
- Bevis, Jean H.** (with Hall, Frank J.; Hartwig, Robert E.) Consimilarity and the matrix equation  $A\bar{X} - X\bar{B} = C$ . *Current trends in matrix theory (Auburn, Ala., 1986)*, 51-64, *North-Holland, New York-Amsterdam*, 1987. (Summary) **89a:15015** 15A24 (15A21)
- (with Hall, Frank J.; Hartwig, Robert E.) The matrix equation  $A\bar{X} - X\bar{B} = C$  and its special cases. *SIAM J. Matrix Anal. Appl.* 9 (1988), no. 3, 348-359. (Ji-guang Sun) **89h:15021** 15A24
- Beyer, G.** (with Harms, S.) Ableitung und Realisierung eines Algorithmus zum Schnitt zweier Quadriken. [Derivation and realization of an algorithm for the intersection of two quadrics] *Computergeometrie (Johanngeorgenstadt, 1986)*, 5-10, *Studientexte*, 92, *Tech. Univ. Dresden, Dresden*, 1986. (see **89b:65043a**) 65D10
- Beyer, Klaus** Zu den Integralgleichungen für Polarisation und Magnetisierung. [On integral equations for polarization and magnetization] *Rostock Math. Kolloq.* No. 33 (1988), 65-74. (N. D. Sengupta) **89k:78008** 78A30 (49A10)



- Gleichgewichtsfiguren magnetischer Flüssigkeiten. (English and Russian summaries) [Equilibrium configurations of magnetic fluids] *Z. Anal. Anwendungen* 7 (1988), no. 1, 67–76. (H. Tasso) **89g:76044** 76V05
- Beyer, W. A.** (with Mauldin, R. Daniel; Stein, Paul R.) Corrigendum: "Shift-maximal sequences in function iteration: existence, uniqueness, and multiplicity" [*J. Math. Anal. Appl.* 115 (1986), no. 2, 305–362; MR 87j:58049]. *J. Math. Anal. Appl.* 137 (1989), no. 1, 296. (Editors) **89m:58106** 58F08 (58F11)
- see also Ulam, Stan, **89m:01133a**
- Beyer, William H.** see **Handbook: CRC, mathematical sciences, 89a:00029**
- Beylikin, G.** (with Chang, Weita; Carrion, Philip) Wavefront sets of solutions to linearised inverse scattering problems. *Inverse Problems* 3 (1987), no. 4, 683–690. (A. G. Ramm) **89c:86001** 86A15 (35R30)
- (with Burridge, R.) On double integrals over spheres. *Inverse Problems* 4 (1988), no. 1, 1–10. (Summary) **89f:86006** 86A15 (44A15, 81F99)
- Beyn, Wolf-Jürgen** (with Lorenz, Jens) Center manifolds of dynamical systems under discretization. *Numer. Funct. Anal. Optim.* 9 (1987), no. 3–4, 381–414. (Bernd Aulbach) **89a:58055** 58F08 (58F10, 65L05)
- Beynon, M.** Free constructions in ordered abelian monoids and groups. *Algebra and order (Luminy-Marseille, 1984)*, 47–61, *R. E. Res. Exp. Math.*, 14, Heldermann, Berlin, 1986. (Summary) **89d:06027** 06F05 (06F20, 18A40, 18B99)
- Bezdek, A.** (with Bezdek, K.) Enclosing a set by sets. *Studia Sci. Math. Hungar.* 21 (1986), no. 3–4, 409–413. (L. M. Kelly) **89f:52020** 52A37
- (with Bezdek, K.) On the centroids of convex solids of revolution. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 30 (1987), 115–119. (A. Florian) **89d:51030** 51M25 (52A40)
- Bezdek, J. C.** (with Hathaway, R. J.; Howard, R. E.; Wilson, Celia A.; Windham, M. P.) Local convergence analysis of a grouped variable version of coordinate descent. *J. Optim. Theory Appl.* 54 (1987), no. 3, 471–477. (Summary) **89f:90163** 90C31
- (with Davenport, J. W.; Hathaway, R. J.) Parameter estimation for finite mixture distributions. *Comput. Math. Appl.* 15 (1988), no. 10, 819–828. (Title) **89h:62045** 62F10 (65U05)
- (with Hathaway, R. J.) Recent convergence results for the fuzzy *c*-means clustering algorithms. *J. Classification* 5 (1988), no. 2, 237–247. (Summary) **89h:62094** 62H30
- (with Kim, Taehwan; Hathaway, R. J.) Optimality tests for fixed points of the fuzzy *c*-means algorithm. *Pattern Recognition* 21 (1988), no. 6, 651–663. (Summary) **89m:65063** 65K05 (03E72, 68T10, 90C99)
- Bezdek, K.** (with Bezdek, A.) Enclosing a set by sets. *Studia Sci. Math. Hungar.* 21 (1986), no. 3–4, 409–413. (L. M. Kelly) **89f:52020** 52A37
- (with Connelly, R.; Kertész, G.) On the average number of neighbors in a spherical packing of congruent circles. *Intuitive geometry (Sifkov, 1985)*, 37–52, *Colloq. Math. Soc. János Bolyai*, 48, North-Holland, Amsterdam-New York, 1987. (A. Florian) **89a:52034** 52A45 (05B40, 52A40)
- (with Bezdek, A.) On the centroids of convex solids of revolution. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 30 (1987), 115–119. (A. Florian) **89d:51030** 51M25 (52A40)
- Densest packing of small number of congruent spheres in polyhedra. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 30 (1987), 177–194. (R. Blind) **89a:52035** 52A45
- Bezmen, Marc** Logic programming and PROLOG. *CWI Quarterly* 1 (1988), no. 3, 15–29. (Not in MR) **68T25** (68–02)
- (with van Leeuwen, Jan) On estimating the complexity of logarithmic decompositions. *Inform. Process. Lett.* 26 (1988), no. 6, 321–324. (Summary) **89a:68096** 68Q25 (68P05)
- Bezembinder, Th.** Problems of content and structure in utilities for social choice. *Progress in mathematical psychology*, 1, 467–483, North-Holland, Amsterdam-New York, 1987. (Summary) **89a:90028** 90A10 (90A08, 92A27)
- Bezerra, V. B.** Einstein gravity in the loop variable approach. *Classical Quantum Gravity* 5 (1988), no. 8, 1065–1072. (Ruth M. Williams) **89f:83070** 83C99 (83C27)
- Bezhaev, A. Yu.** (with Vasilenko, V. A.) Splines in Hilbert spaces and their finite-element approximations. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* 2 (1987), no. 3, 191–202. (C. Dierieck) **89b:41016** 41A15 (65D07)
- Bezhanov, K. A.** (with Ter-Krikorov, A. M.) Investigation of a spectral problem of the theory of laminar flows of an ideal incompressible heavy fluid. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 11, 1843–1851, 2019. (M. Švec) **89d:34045** 34B25 (34C15, 35Q10, 45B05, 76D10, 76V05)
- Wave motion of a stratified fluid that is generated by the unevenness of the bottom and surface pressure. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 2, 319–322. (Editors) **89h:76024** 76V05
- Bézier, Pierre** see **Ding, Qiu Lin, 89b:65037; Nowacki, Horst, 89c:01079 and Bartels, Richard H. et al., 89f:65018**
- Bézin, Jean-Paul** (with Robba, P.) Rational solutions of linear differential equations. *Proceedings of the conference on *p*-adic analysis (Houthalen, 1987)*, 11–18, *Vrije Univ. Brussel, Brussels*, 1986. (G. Eisenreich) **89a:12012** 12H05 (12H25)
- Suites récurrentes linéaires en caractéristique non nulle. (English summary) [Linear recurrent sequences in nonzero characteristic] *Bull. Soc. Math. France* 115 (1987), no. 2, 227–239. (John H. Loxton) **89d:11009** 11B37 (11D61)
- Indépendance linéaire des valeurs des solutions transcendentes de certaines équations fonctionnelles. (English summary) [Linear independence of the values of transcendental solutions of some functional equations] *Manuscripta Math.* 61 (1988), no. 1, 103–129. (P. Bundschuh) **89e:11039** 11J72 (30D05, 39B99)
- Beznea, Lucian** Parabolic and elliptic parts in standard *H*-cones of functions. *Rev. Roumaine Math. Pures Appl.* 32 (1987), no. 10, 875–880. (Rainer Wittmann) **89c:31008** 31D05
- Bezručka, B. P.** (with Astakhov, V. V.; Ponomarenko, V. I.; Seleznev, E. P.) Quasihomogeneous stochastic motions and their break-up in a system of coupled nonlinear nonlinear oscillators. (Russian) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* 31 (1988), no. 5, 627–630. (Not in MR) **58F13**
- Bezruglyi, S. I.** Outer conjugation of the actions of countable amenable groups. (Russian) *Mathematical physics, functional analysis (Russian)*, 59–63, 145, "Naukova Dumka", Kiev, 1986. (N. N. Ganihodzaev) **89a:46135** 46L55 (22D40, 28D15)
- Outer conjugacy of automorphisms of the normalizer of a flow. (Russian) *Operators in function spaces and problems in function theory (Russian)*, 66–73, 145, "Naukova Dumka", Kiev, 1987. (A. L. Fedorov) **89m:28034** 28D99 (58F11)
- Bezverkhil, V. N.** Solution of the occurrence problem in some classes of groups with one defining relation. (Russian) *Algorithmic problems in the theory of groups and semigroups (Russian)*, 3–21, 126, *Tul'sk. Gos. Ped. Inst.*, Tula, 1986. (R. Stöhr) **89c:20065** 20F10 (20E06)
- Solution of the conjugacy problem for words in Artin and Coxeter groups of large type. (Russian) *Algorithmic problems in the theory of groups and semigroups (Russian)*, 26–61, 126, *Tul'sk. Gos. Ped. Inst.*, Tula, 1986. (James Howie) **89g:20055** 20F10 (20F32, 20F38)
- Bezverkhnaya, I. S.** Generalization of a result of A. I. Mal'tsev. (Russian) *Algorithmic problems in the theory of groups and semigroups (Russian)*, 22–23, 126, *Tul'sk. Gos. Ped. Inst.*, Tula, 1986. (R. Stöhr) **89c:20050** 20E05
- Bezzatev, S. V.** An algorithm for decoding a ternary Golay code. (Russian) *Noise-resistant coding and computer reliability (Russian)*, 29–32, 189, "Nauka", Moscow, 1987. (see **89h:94001**) **94B35** (94B25)
- (with Shekhunova, N. A.) The constructive distance of the best of the known (55, 16, 19) Goppa codes. (Russian) *Problemy Peredachi Informatsii* 23 (1987), no. 4, 119. (Summary) **89h:94056** 94B05 (11T71)
- Bhagat, Bikan** (with Pandey, Y. P.) Spectral theorems for a second order singular matrix differential equation. (Arabic summary) *Libyan J. Sci.* 12 (1982/83), 41–52. (H. Hochstadt) **89h:34019** 34B25 (34A30)
- Bhagwandas** (with Banerjee, Snigdha; Kageyama, Sanpei) Some constructions of two-associate class BIB designs. *Ann. Inst. Statist. Math.* 39 (1987), no. 3, 671–679. (Kishan Lal Sharma) **89c:62098** 62K10
- (with Kageyama, Sanpei) A method of construction of resolvable incomplete block designs with more than two replications. *Bull. Fac. School Ed. Hiroshima Univ. Part II* 10 (1987), 87–92. (Nicholas Krier) **89f:05033** 05B05 (05B30, 62K99)
- Bhagwat, K. V.** (with Khandekar, D. C.; Wiegell, F. W.) On a path integral with a topological constraint. *Phys. Lett. A* 127 (1988), no. 8–9, 379–382. (Summary) **89a:81031** 81C35
- (with Lawande, S. V.) Feynman propagator for the  $\delta$ -function potential. *Phys. Lett. A* 131 (1988), no. 1, 8–10. (Introduction) **89j:81058** 81C35
- Bhagwat, Neeta** (with Singh, Bijendra) Common fixed points of commuting mappings. *Vikram Math. J.* 6 (1985/86), 17–21. (Introduction) **89d:54031** 54H25
- Bhakta, J. C.** Hirota method for solving a pair of coupled nonlinear Schrödinger equations. (Bengali summary) *Chittagong Univ. Stud. Part II Sci.* 10 (1986), no. 1–2, 65–68. (Summary) **89g:35092** 35Q20 (58G37)
- Bhakta, P. C.** (with Choudhury, Sumitra Roy) Some existence theorems for functional equations arising in dynamic programming. II. *J. Math. Anal. Appl.* 131 (1988), no. 1, 217–231. (Introduction) **89h:90248** 90C39 (39B20, 54H25)
- Bhamathi, G.** Forces in nature and their unification. *Recent developments in theoretical physics (Kottayam, 1986)*, 46–68, *World Sci. Publishing, Singapore*, 1987. (see **89a:81004**) **81G20**
- Bhamini, M. P.** (with Arya, S. P.) Some generalizations of pairwise Urysohn spaces. *Indian J. Pure Appl. Math.* 18 (1987), no. 12, 1088–1093. (M. K. Vamanamurthy) **89b:54027** 54D10 (54E55)
- Bhan, H. L.** (with Bhat, V. K.; Singh, Yoginder) Exponent  $\nu_\lambda$  for 2D directed compact site animals. *J. Phys. A* 21 (1988), no. 16, 3405–3407. (Summary) **89h:82039** 82A67
- Bhandari, Rajendra** (with Samuel, Joseph) General setting for Berry's phase. *Phys. Rev. Lett.* 60 (1988), no. 23, 2339–2342. (F. Berdjis) **89m:81022** 81B05 (81C99)
- Bhandari, Subir Kumar** (with Bose, Arup) On selecting the most likely event. *J. Statist. Plann. Inference* 17 (1987), no. 2, 227–240. (D. Y. Huang) **89h:62040** 62F07
- On a conjecture of Karlin in sampling theory. *Sankhya Ser. A* 49 (1987), no. 1, 58–62. (David Bellhouse) **89h:62032** 62D05
- Bhanot, Gyan** The Metropolis algorithm. *Rep. Progr. Phys.* 51 (1988), no. 3, 429–457. (Suresh V. Lawande) **89c:65006** 65Cxx (60–04, 65U05, 82–08)
- Bhansali, R. J.** (with Battaglia, Francesco) Estimation of the interpolation error variance and an index of linear determinism. *Biometrika* 74 (1987), no. 4, 771–779. (Robert V. Foutz) **89a:62205** 62M20 (60G25)
- Bharathi, K.** (with Nagaraj, M.) Regularity for quaternion functions of several complex variables. *Indian J. Pure Appl. Math.* 18 (1987), no. 8, 697–704. (J. Löhmus) **89h:30041** 30G35
- jagadguru shankarācārya swāmi s'ree Bhāratikṛṣṇa Teerthajee Mahārāj** see **Shankarācāryaswāmi**
- Bhargava, Alok** Wald tests and systems of stochastic equations. *Internat. Econom. Rev.* 28 (1987), no. 3, 789–808. (Kimio Morimune) **89a:62223** 62P20
- Bhargava, Bharat** (with Ng, Peter Lei) A dynamic majority determination algorithm for reconfiguration of network partitions. *Inform. Sci.* 46 (1988), no. 1–2, 27–45. (Not in MR) **68M10** (68P15, 90B10)
- Bhargava, Srinivasamurthy** (with Adiga, Chandrashekar) On two elliptic  $\theta$ -function identities stated by Srinivasa Ramanujan. *Internat. J. Math. Ed. Sci. Tech.* 18 (1987), no. 2, 318–320. (Summary) **89h:33001** 33A25
- (with Adiga, Chandrashekar; Somashekar, D. D.) On certain continued fractions related to  ${}_3\phi_2$  basic hypergeometric functions. *J. Math. Phys. Sci.* 21 (1987), no. 6, 613–629. (Mourad E. H. Ismail) **89f:40002** 40A15 (33A30)
- On Rogers-Ramanujan identities. *Srinivasa Ramanujan (1887–1920)*, 75–81, *Macmillan India, Madras*, 1988. (see **89m:01070**) **11P68**
- (with Nanjunda Rao, S.) On linear combinations of  $n$  analytic functions in generalized Pinchuk and generalized Moulis classes. *Indian J. Pure Appl. Math.* 19 (1988), no. 9, 875–879. (K. S. Padmanabhan) **89j:30013** 30C45
- (with Nanjunda Rao, S.) On a class of functions unifying the classes of Paatero, Robertson and others. *Internat. J. Math. Math. Sci.* 11 (1988), no. 2, 251–258. (Otto Fekete) **89c:30013** 30C45
- Bhaskara, K. H.** (with Viswanath, K.) ★ Poisson algebras and Poisson manifolds. Pitman Research Notes in Mathematics Series, 174. *Longman Scientific & Technical, Harlow; copublished in the United States with John Wiley & Sons, Inc., New York*, 1988. viii+128 pp. ISBN 0-582-01989-3 (Jean-Claude Cortet) **89j:58026** 58F05 (17B65, 53C57, 70G35, 70H05)
- Bhaskar, Jayaram** (with Sahni, Sartaj) A linear algorithm to find a rectangular dual of a planar triangulated graph. *Algorithmica* 3 (1988), no. 2, 247–278. (Summary) **89a:68081** 68Q20 (05–04, 68R10)

- (with Sahni, Sartaj) Via assignment in single-row routing. *IEEE Trans. Comput.* **38** (1989), no. 1, 142–148. (Summary) **89j:68118** 68R10 (68Q25)
- Bhat, U. Narayan** (with Lal, Ram) Number of successes in Markov trials. *Adv. in Appl. Probab.* **20** (1988), no. 3, 677–680. (Alan F. Karr) **89h:60107** 60J10
- (with Lal, Ram) Correction: "Reduced systems in Markov chains and their applications in queueing theory" [Queueing Systems Theory Appl. **2** (1987), no. 2, 147–172; MR **88k:60123**]. *Queueing Systems Theory Appl.* **4** (1989), no. 1, 93. (Editors) **89k:60091** 60J10 (:0K25)
- Bhat, V. K.** (with Bhan, H. L.; Singh, Yoginder) Exponent  $\nu_+$  for 2D directed compact site animals. *J. Phys. A* **21** (1988), no. 16, 3405–3407. (Summary) **89h:82039** 82A67
- Bhatia, Nam P.** (with Egerland, Walter O.) The solution of the type-problem for  $N \leq 4$ . *Transactions of the Fifth Army Conference on Applied Mathematics and Computing (West Point, NY, 1987)*, 745–749, ARO Rep., 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (see **89b:00029**) 54C05
- (with Egerland, Walter O.) A refinement of Šarkovskii's theorem. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 965–972. (Jaroslav Stark) **89f:58119** 58F22 (26A18, 58F13)
- Bhatia, Rajendra** The use of multilinear algebra in proving perturbation inequalities for matrices. *Modern analysis and its applications (New Delhi, 1983)*, 191–195, Prentice-Hall of India, New Delhi, 1986. (Marvin Marcus) **89c:15023** 15A42 (15A69, 47A55, 65F15)
- (with Ando, Tsuyoshi) Eigenvalue inequalities associated with the Cartesian decomposition. *Linear and Multilinear Algebra* **22** (1987), no. 2, 133–147. (Lajos László) **89c:15022** 15A42 (15A57, 15A60)
- Perturbation inequalities for the absolute value map in norm ideals of operators. *J. Operator Theory* **19** (1988), no. 1, 129–136. (Fuad Kittaneh) **89g:47010** 47A30 (47B10)
- (with Sinha, K. B.) A unitary analogue of Kato's theorem on variation of discrete spectra. *Lett. Math. Phys.* **15** (1988), no. 3, 201–204. (P. R. Chernoff) **89h:47017** 47A55 (47A05, 47B15)
- (with Holbrook, John A. R.) On the Clarkson-McCarthy inequalities. *Math. Ann.* **281** (1988), no. 1, 7–12. (A. Alexiewicz) **89m:47005** 47A30 (47D25)
- Bhatnagar, Km. Alpina** (with Agrawal, B. D.; Prasad, Jagadamba) Certain theorems on trilateral generating relations. *Math. Student* **49** (1981), no. 2-4, 113–115 (1985). (B. M. Agrawal) **89h:33020** 33A99
- Bhat-Nayak, Vasanti N.** (with Ito, Noboru; Wirmani-Prasad, Anjana) Some new Hadamard matrices. *Graphs Combin.* **3** (1987), no. 3, 221–225. (Summary) **89b:05053** 05B20
- (with Wirmani-Prasad, Anjana) Corrigendum: "Complete enumeration of dicyclic solutions of some designs" [Ars Combin. **19** (1985), 201–211; MR **87a:05025**]. *Ars Combin.* **25** (1988), 221. (Editors) **89c:05028** 05B05
- (with Kane, V. D.) Two families of simple and irreducible BIBDs. *Discrete Math.* **68** (1988), no. 2-3, 311–313. (Summary) **89h:05013** 05B05
- Bhatt, R. C.** (with Singh, O. V.) On certain expansions of hypergeometric functions. *Math. Ed. (Siwan)* **22** (1988), no. 1, 28–32. (K. C. Gupta) **89g:33007** 33A30
- (with Singh, O. V.) Some finite summation theorems and expansions of hypergeometric functions. *Math. Ed. (Siwan)* **22** (1988), no. 3, 67–73. (B. M. Agrawal) **89c:33006** 33A30
- Bhatt, S. K.** (with Bector, C. R.) Optimality conditions and duality for quasi-convex programming in real Banach space. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **62** (1988), 101–108. (Summary) **89h:90255** 90C48 (90C30)
- Bhatt, Subhash J.** Sufficiency and strong commutants in quantum probability theory. *Proc. Indian Acad. Sci. Math. Sci.* **95** (1986), no. 2, 97–107. (Andrzej Łuczak) **89a:46133** 46L50 (47D40, 81C20)
- Bhattacharjee, A.** (with Sen, Tanaji) Geometric angles in cyclic evolutions of a classical system. *Phys. Rev. A* (3) **38** (1988), no. 9, 4389–4394. (Richard C. Churchill) **89m:70026** 70H05 (34D10, 58F05)
- Bhattacharjee, Jayanta K.** ★ Convection and chaos in fluids. *World Scientific Publishing Co., Singapore*, 1987. xii+243 pp. ISBN 9971-50-224-0 (James D. Meiss) **89c:76001** 76-02 (58F13, 76E15)
- Hopf bifurcation in a binary liquid: exact upper bound on the frequency. *J. Phys. A* **21** (1988), no. 2, L113–L116. (Summary) **89c:76059** 76E15 (76T05)
- Randomly stirred fluids, mode coupling theories and the turbulent Prandtl number. *J. Phys. A* **21** (1988), no. 10, L551–L554. (Summary) **89c:76051** 76F99 (82A99)
- (with McKane, A. J.) Lorenz model for the rotating Rayleigh-Bénard problem. *J. Phys. A* **21** (1988), no. 10, L555–L558. (Summary) **89c:76040** 76E15 (76U05)
- Bhattacharya, P. K.** Maximum likelihood estimation of a change-point in the distribution of independent random variables: general multiparameter case. *J. Multivariate Anal.* **23** (1987), no. 2, 183–208. (A. L. Rukhin) **89a:62046** 62E20 (62F12, 62H15)
- Bhattacharya, Prabir** Fuzzy subgroups: some characterizations. II. *Inform. Sci.* **38** (1986), no. 3, 293–297. (From the introduction to Part II) **89h:20100b** 20N99 (03E72)
- Fuzzy subgroups: some characterizations. *J. Math. Anal. Appl.* **128** (1987), no. 1, 241–252. (From the introduction to the first paper: **89h:20100a** 20N99 (03E72))
- (with Mukherjee, N. P.) On the intersection of a family of maximal subgroups containing the Sylow subgroups of a finite group. *Canad. J. Math.* **40** (1988), no. 2, 352–359. (W. E. Deskins) **89b:20053** 20D25 (20D20)
- (with Mukherjee, N. P.) The normal index of a maximal subgroup of a finite group. *Proc. Amer. Math. Soc.* **106** (1989), no. 1, 25–32. (W. E. Deskins) **89c:20052** 20E28 (20D10)
- Bhattacharya, Rabi N.** (with Lee, Oesook) Asymptotics of a class of Markov processes which are not in general irreducible. *Ann. Probab.* **16** (1988), no. 3, 1333–1347. (George L. O'Brien) **89m:60148** 60J05 (60F05, 60F17)
- (with Lee, Oesook) Ergodicity and central limit theorems for a class of Markov processes. *J. Multivariate Anal.* **27** (1988), no. 1, 80–90. (A. Fuchs) **89i:60043** 60F05 (60J05)
- Bhattacharya, Samir K.** (with Singh, Naunihal) Bayesian analysis of an outlier model in life testing. *South African Statist. J.* **22** (1988), no. 1, 55–67. (Not in MR) **62N05**
- Bhattacharya, Tilak** Radial symmetry of the first eigenfunction for the  $p$ -Laplacian in the ball. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 169–174. (C. A. Swanson) **89k:35177** 35P30 (35J60)
- Bhattacharyya, Asoke K.** (with Sanyal, Subrata) Correction to: "Diffraction by a half-plane with two face impedances. Uniform asymptotic expansion for plane wave and arbitrary line source incidence" [IEEE Trans. Antennas and Propagation **35** (1986), no. 5, 718–723; MR **87h:78025**]. *IEEE Trans. Antennas and Propagation* **35** (1987), no. 12, 1499. (Editors) **89a:78007** 78A45
- Bhattacharyya, B. B.** One-sided Chebyshev inequality when the first four moments are known. *Comm. Statist. Theory Methods* **16** (1987), no. 9, 2789–2791. (Javad Behboodiani) **89a:60047** 60E15 (60E05)
- Bhattacharyya, D.** (with Ray, Dipankar) On "radiating Vaidya metric imbedded in de Sitter space". *Gen. Relativity Gravitation* **19** (1987), no. 7, 651–654. (Dieter Lorenz-Petzold) **89b:83019** 83C15
- Bhattacharyya, G. K.** (with Chen, Shu-Mei) Exact confidence bounds for an exponential parameter under hybrid censoring. *Comm. Statist. Theory Methods* **17** (1988), no. 6, 1857–1870. (Summary) **89c:62172** 62N05 (62F25)
- (with Guttman, I.; Johnson, Richard A.; Reiser, B.) Confidence limits for stress-strength models with explanatory variables. *Technometrics* **30** (1988), no. 2, 161–168. (A. C. Cohen) **89c:62129** 62N05 (62F25)
- Bhattacharyya, Kamal** (with Mukherjee, Debashis) Corrigendum: "Perturbative quantum dynamics: variants of the Dirac method" [J. Phys. A **19** (1986), no. 1, 67–89; MR **87k:81023**]. *J. Phys. A* **21** (1988), no. 2, 575. (Editors) **89d:81030** 81C15
- Bhattacharyya, Pijush Kanti** (with Gopalsamy, S.) An equilibrium finite element method for fourth order elliptic equations with variable coefficients. *Comput. Math. Appl.* **15** (1988), no. 5, 405–424. (B. Kellogg) **89h:65174** 65N30 (73K25)
- (with Balasundaram, S.) A mixed finite-element method for fourth-order elliptic problems with variable coefficients. *J. Comput. Appl. Math.* **22** (1988), no. 1, 1–24. (John Stephenson) **89i:65112** 65N30 (73K10, 73K25)
- (with Gopalsamy, S.) On existence and uniqueness of solutions of boundary value problems of fourth order elliptic partial differential equations with variable coefficients. *J. Math. Anal. Appl.* **136** (1988), no. 2, 589–608. (R. Kodnár) **89m:35066** 35J40
- Bhattacharyya, S. P.** see **Bhattacharyya, Shankar Prasad**
- Bhattacharyya, Sandhya** (with Das, A. G.) Functions of bounded  $(gk)$  variation. *Ranchi Univ. Math. J.* **17** (1986), 11–20 (1987). (P. C. Bhakta) **89c:26015** 26A45
- Bhattacharyya, Shankar Prasad** ★ Robust stabilization against structured perturbations. *Lecture Notes in Control and Information Sciences*, 99. Springer-Verlag, Berlin-New York, 1987. x+172 pp. ISBN 3-540-18056-7 (N. K. Bose) **89h:93085** 93D15 (93C05, 93D10)
- (with Keel, L. H.; Howze, J. W.) Stabilizability conditions using linear programming. *IEEE Trans. Automat. Control* **33** (1988), no. 5, 460–463. (Not in MR) **93D15** (90C50, 93B50, 93C05)
- (with Shafai, B.) An algorithm for pole assignment in high order multivariable systems. *IEEE Trans. Automat. Control* **33** (1988), no. 9, 870–876. (Mikolaj Buslowicz) **89j:93041** 93B40 (93B55, 93C05, 93C35)
- (with Keel, L. H.; Howze, J. W.) Stabilization of linear systems with fixed order controllers. *Linear Algebra Appl.* **98** (1988), 57–76. (Zong Ji Chen) **89h:93086** 93D15 (93B27, 93C05, 93C45)
- (with Chapellat, Hervé) An alternative proof of Kharitonov's theorem. *IEEE Trans. Automat. Control* **34** (1989), no. 4, 448–450. (B. Ross Barnish) **89h:93182** 93D99
- Bhattacharyya, Shankar Prasad** (with Keel, L. H.) Robust stability and stabilization in parameter space. *Linear algebra in signals, systems, and control (Boston, MA, 1986)*, 576–593, SIAM, Philadelphia, PA, 1988. (Mohamed Mansour) **89m:93064** 93D10 (49D07, 93B35, 93D15)
- Bhatti, F. M.** (with Essam, J. W.) Low density series expansions for backbone properties of percolation clusters. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1-3, 85–112. (H. N. V. Temperley) **89c:82039** 82A43 (05C80, 82A67)
- Bhatti, Shaban A.** (with Chaudhry, Muhammad Anwar; Ahmad, B.) On kernels and annihilators in BCK-algebras. *Math. Japon.* **33** (1988), no. 3, 339–343. (Marek Palasinski) **89i:06019** 06D99 (03G25)
- Bhatwadekar, S. M.** (with Roy, Amit) Some cancellation theorems about projective modules over polynomial rings. *J. Algebra* **111** (1987), no. 1, 166–176. (N. Mohan Kumar) **89h:13015** 13C10 (19A13)
- Analytic isomorphism and category of finitely generated modules. *Comm. Algebra* **16** (1988), no. 9, 1949–1958. (N. Mohan Kumar) **89i:13009** 13C05 (19A13)
- Bhavanari, Satyanarayana** (with Reddy, Yenumula Venkateswara) A note on  $N$ -groups. *Indian J. Pure Appl. Math.* **19** (1988), no. 9, 842–845. (Celestina Cotti-Ferrero) **89m:16080** 16A76
- Bhave, P. R.** see **Laporté, Gilbert**, (Not in MR)
- Bhave, S. V.** Separable hidden variables theory to explain Einstein-Podolsky-Rosen paradox. *British J. Philos. Sci.* **37** (1986), no. 4, 467–475. (Jeffrey Bub) **89h:81014** 81B05
- Bhave, V. N.** (with Sampathkumar, E.) Reconstruction of a disconnected graph from its elementary partition graphs. *J. Combin. Inform. System Sci.* **9** (1984), no. 4, 242–246. (R. L. Hemminger) **89c:05080** 05C60
- Bhavsar, C. D.** (with Khatri, C. G.) Probability models on scale invariant functions for a complex random vector. *J. Ramanujan Math. Soc.* **2** (1987), no. 2, 145–164. (Yasunori Fujikoshi) **89k:62073** 62H12
- Bhimasankaram, P.** On generalized inverses of a block in a partitioned matrix. *Linear Algebra Appl.* **109** (1988), 131–143. (Frank J. Hall) **89j:15007** 15A09
- Bhonsle, B. R.** see **Obituary: Bhonsle, B. R.** **89i:01131**
- Bhosale, S. D.** A representation theorem of generalized Laplace  $L_4$  transformable generalized functions. *Ranchi Univ. Math. J.* **17** (1986), 3–10 (1987). (From the introduction) **89f:44004** 44A10
- Bhosle, Usha N.** Moduli of parabolic  $G$ -bundles. *Bull. Amer. Math. Soc. (N.S.)* **20** (1989), no. 1, 45–48. (P. E. Newstead) **89c:32057** 32L05 (14D20, 14F05, 32G13)
- Bhutani, Kiran R.** Injectivity and injective hulls of abelian groups in a local topological spaces. *Austral. Math. Soc. J.* **37** (1988), no. 1, 43–59. (Kimmio I. Rosenthal) **89c:18018** 18G05 (18B25)
- Characterising complete Boolean algebras in terms of pure essentialness. *Bull. Austral. Math. Soc.* **38** (1988), no. 1, 23–30. (Saunders Mac Lane) **89m:18014** 18F20 (06E99, 18E15)
- Bhutani, O. P.** (with Mital, Poornima) Symmetry method for the solution of fourth order nonlinear wave equation. *Modern analysis and its applications (New Delhi, 1983)*, 379–390, Prentice-Hall of India, New Delhi, 1986. (Philippe-A. Dionne) **89d:35118** 35L75 (35A25, 58G35, 58G37)
- (with Chandrasekaran, G.; Mital, Poornima) On the exact solutions of nonlinear differential equations of nuclear engineering system via invariant variational principles.



- Internat. J. Engrg. Sci.* **26** (1988), no. 3, 243–248. (Jesús Hernández) **89h:80007** 80A20 (82A70)
- (with Mital, Poornima; Chandrasekaran, G.) On invariant solutions of the generalised Boussinesq equation. *Internat. J. Engrg. Sci.* **26** (1988), no. 3, 307–310. (Summary) **89c:76027** 76B15
- Bhuyan, G. B.** (with Nayak, B. K.) Bianchi type V perfect fluid models with source-free electromagnetic fields. *Gen. Relativity Gravitation* **19** (1987), no. 9, 939–948. (Colin B. G. McIntosh) **89b:83028** 83C15 (83C50)
- Bi, Wen Yi** (with Luo, Xiao Nan; Jiang, Jian Guo) A general algorithm for the FFT, its minimization and the optimal radix. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **9** (1987), no. 3, 219–226. (Summary) **89g:65173** 65T05
- (with Jiang, Jian Guo; Luo, Xiao Nan) The general algorithm of the FFT and its minimum. (Chinese. English summary) *Math. Numer. Sinica* **10** (1988), no. 1, 1–5. (Summary) **89i:65142** 65T05
- Bianco, Loredana** (with Lettieri, Ada) Equations with fuzzy numbers. *Inform. Sci.* **47** (1989), no. 1, 63–76. (Summary) **89j:03042** 03E72
- Bialecki, Bernard** (with Stenger, Frank) Sinc-Nyström method for numerical solution of one-dimensional Cauchy singular integral equation given on a smooth arc in the complex plane. *Math. Comp.* **51** (1988), no. 183, 133–165. (M. S. Abou El-Seoud) **89g:65163** 65R20
- Bialek, Krystyna** On some inequalities connected with Fermat's equation. *Elem. Math.* **43** (1988), no. 3, 78–83. (Zhen Fu Cao) **89i:11040** 11D41
- Bialek, William** (with Onuchic, José Nelson) Protein dynamics and reaction rates: mode-specific chemistry in large molecules? *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 16, 5908–5912. (Summary) **89c:92009** 92A08
- Bian, Gao Rui** (with Zhang, Yao Ting) Invariant tests of existence of the linear relationship with left  $O(n)$ -invariant errors. A Chinese summary appears in Chinese Ann. Math. Ser. A **7** (1986), no. 5, 607. *Chinese Ann. Math. Ser. B* **7** (1986), no. 4, 488–497. (Summary) **89b:62112** 62H15
- (with Wang, Jia Gang; Zhang, Yao Ting) Conditions for the uniqueness of statistic's distribution in the class of spherical distributions. *J. Math. Res. Exposition* **7** (1987), no. 3, 479–486. (Masashi Okamoto) **89d:62039** 62H05
- (with Zhang, Yao Ting) Maximum likelihood estimators and likelihood ratio tests of linear functional relations in the case of a left  $O(n)$ -invariant error distribution. (Chinese. English summary) *J. Math. Res. Exposition* **7** (1987), no. 3, 487–497. (Summary) **89a:62128** 62H12 (62A05, 62H15)
- Bian, Song Yuan** (with Li, Tao Sheng) On duality principles. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* **21** (1987), no. 4, 505–509. (Chat Yin Ho) **89m:51005** 51A05 (18B99)
- The common self-polar triangle of conics. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* **22** (1988), no. 3, 275–278. (Summary) **89k:51036** 51N15
- Biancofiore, Aldo** (with Livorni, Elvira Laura) On the genus of a hyperplane section of a geometrically ruled surface. *Ann. Mat. Pura Appl.* (4) **147** (1987), 173–185. (Antonio Lanteri) **89d:14054** 14J26 (14C20)
- (with Livorni, Elvira Laura) Algebraic ruled surfaces with low sectional genus. *Ricerche Mat.* **36** (1987), no. 1, 17–32. (Marino Palleschi) **89m:14021** 14J26
- On the degree of the discriminant locus of a smooth section surface of a  $(n+2)$ -fold with nonnegative Kodaira dimension. *Monatsh. Math.* **105** (1988), no. 1, 35–42. (Antonio Lanteri) **89c:14052** 14J25 (14C20)
- Biane, Ph.** (with Le Gall, J.-F.; Yor, Marc) Un processus qui ressemble au pont brownien. [A process similar to the Brownian bridge] *Séminaire de Probabilités, XXI*, 270–275. *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (F. B. Knight) **89d:60145** 60J65 (60J55)
- (with Yor, Marc) Quelques précisions sur le méandre brownien. (English summary) [Some refinements of results on the Brownian meander] *Bull. Sci. Math.* (2) **112** (1988), no. 1, 101–109. (L. C. G. Rogers) **89i:60156** 60J65 (60G17)
- Biaz, Khaleb** Quelques propriétés de certaines marches aléatoires en milieu aléatoire. [Some properties of certain random walks in a random environment] *Probabilités*, 1–40. *Publ. Inst. Rech. Math. Rennes*, 1986-1, Univ. Rennes I, Rennes, 1986. (N. H. Bingham) **89g:60212** 60J15 (60F05)
- Bibel, Wolfgang** ★ Automated theorem proving. Second edition. Artificial Intelligence. *Friedr. Vieweg & Sohn, Braunschweig*, 1987. xiv+289 pp. ISBN 3-528-18520-1 (Editors) **89k:03009** 03B35 (03-02, 68T15)
- Constraint satisfaction from a deductive viewpoint. *Artificial Intelligence* **35** (1988), no. 3, 401–413. (Not in MR) **68T20**
- Bieberman, L. I.** Bifurcation values of the parameters of generators of quasi-harmonic oscillations. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 6, 19–26; translated in *Avtomat. Remote Control* **49** (1988), no. 6, part 1, 703–708. (Zdeněk Ertinger) **89g:94043** 94C05 (34C15, 58F14, 58F21)
- Bibikov, Yu. N.** Bifurcation to invariant tori with small frequencies. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations (Budapest, 1987)*, 18–25. *János Bolyai Math. Soc., Budapest*, 1987. (N. Chafee) **89d:58093** 58F14 (34D30, 58F30)
- Criteria for the absolute stability of two-dimensional systems with nonstationary nonlinearities. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems (Irkutsk, 1985)* (Russian), 189–193, 326, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Pavel Krbeec) **89g:34068** 34D20
- Bihlke, P. N.** The grouping of  $p$ -multiple separable Boolean functions. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 5, 21–24, 125. (Juraj Hromkovič) **89c:94023** 94C10
- Bičák, Jiří** The symmetries of an asymptotically flat space-time and gravitational radiation. *Group theoretical methods in physics*, Vol. 1–3 (Zvenigorod, 1982), 87–94, Harwood Academic Publ., Chur, 1985. **89k:83035** 83C30 (53C80, 83C40)
- (with Rudenko, V. N.) ★ Гравитационные волны в ОТО и проблема их обнаружения. (Russian) [Gravitational waves in the general theory of relativity and the problem of their detection] *Moskov. Gos. Univ., Moscow*, 1987. 269 pp. (From the preface) **89b:83043** 83C35 (83B05)
- Radiative properties of space-times with the axial and boost symmetries. *Gravitation and geometry*, 55–69, *Monographs Textbooks Phys. Sci.*, 4, Bibliopolis, Naples, 1987. (Nora Breton Bács) **89e:83046** 83C30 (83C15, 83C40)
- (with Reilly, Paul; Winicour, J.) Boost-rotation symmetric gravitational null cone data. *Gen. Relativity Gravitation* **20** (1988), no. 2, 171–181. (Tevian Dray) **89a:83031** 83C30 (83C05)
- Bican, L.** (with Drápal, A.; Kepka, T.) Cancellative relations and matrices. (Russian and Czech summaries) *Acta Univ. Carolin.—Math. Phys.* **28** (1987), no. 1, 21–31. (Wiesław A. Dudek) **89b:15045** 15A99 (08A99, 13C99)
- Bicchieri, Cristina** Strategic behavior and counterfactuals. *Synthese* **76** (1988), no. 1, 135–169. (A. Rapoport) **89k:90190** 90D10 (03B48)
- Bičák, Jiří** see Bičák, Jiří
- Bickel, P. J.** (with Yahav, Joseph A.) On estimating the number of unseen species and system reliability. *Statistical decision theory and related topics, IV*, Vol. 2 (West Lafayette, Ind., 1986), 265–271, Springer, New York-Berlin, 1988. (Truc Nguyen) **89c:62031** 62F10
- (with Mallows, C. L.) A note on unbiased Bayes estimates. *Amer. Statist.* **42** (1988), no. 2, 132–134. (Stig I. Rosenlund) **89i:62022** 62E15 (62A15)
- Bicknell-Johnson, Marjorie** (with Bergum, Gerald) The generalized Fibonacci numbers  $\{C_n\}$ ,  $C_n = C_{n-1} + C_{n-2} + k$ . *Applications of Fibonacci numbers (San Jose, CA, 1986)*, 193–205, *Kluwer Acad. Publ., Dordrecht*, 1988. (Stanley J. Benkoski) **89g:11016** 11B37
- In memoriam: Brother Alfred Brousseau. February 17, 1907–May 31, 1988. *Fibonacci Quart.* **26** (1988), no. 3, 194. (Editors) **89i:01062** 01A70
- Bidkham, M.** (with Dewan, K. K.) On the zeros of a polynomial. *Numerical methods and approximation theory, III* (Niš, 1987), 121–128, Univ. Niš, Niš, 1988. (N. K. Govil) **89k:30005** 30C15 (30C10)
- Bidner, M. S.** (with Darderes, Enrique A.; Sorraín, O. M.) Numerical simulation of the one-dimensional flow of a real gas through a porous medium. (Spanish. English summary) *Rev. Internac. Métod. Numér. Calc. Diseñ. Ingr.* **4** (1988), no. 2, 151–173. (Summary) **89f:76077** 76S05 (76-08)
- Bidoit, N.** The Verso algebra or how to answer queries with fewer joins. *J. Comput. System Sci.* **35** (1987), no. 3, 321–364. (J. Paredaens) **89a:68035** 68P15
- Bidyuk, P. I.** An algorithm for order reduction of an autoregression model of a moving average. (Russian) *Adapt. Sistemy Avtomat. Upravleniya* No. 16 (1988), 29–38, 1. (Summary) **89b:93045** 93B20 (39A10, 93C55)
- Bie, Ole** (with Borgan, Ørnulf; Liestøl, Knut) Confidence intervals and confidence bands for the cumulative hazard rate function and their small sample properties. *Scand. J. Statist.* **14** (1987), no. 3, 221–233. (Summary) **89a:62116** 62G15
- Bieberbach, Ludwig** Alexander Dinghas zum Gedächtnis. [In memory of Alexander Dinghas] *Sitzungsberichte der Berliner Mathematischen Gesellschaft*, 85–88, Freie Univ. Berlin, Berlin, 1987. (Editors) **89j:01058** 01A70
- see also Shields, Allen, **89b:01112** and Mehrtens, Herbert, **(89b:01002)**
- Biedenharn, L. C.** (with van Dam, H.; Marmo, G.; Morandi, G.; Mukunda, N.; Samuel, Joseph; Sudarshan, E. C. G.) Classical models for Regge trajectories. *Internat. J. Modern Phys. A* **2** (1987), no. 5, 1567–1589. (A. O. Barut) **89b:81071** 81C99
- (with Wu, Jian Shi; Stahlhofen, A.; Iachello, F.) A group theoretical calculation of the  $S$  matrix for the Dirac-Coulomb problem. *J. Phys. A* **20** (1987), no. 14, 4637–4652. (R. G. Newton) **89b:81238** 81F99 (20C35, 22E70, 81C05)
- (with Louck, J. D.; Lohe, M. A.) On the denominator function for canonical SU(3) tensor operators. II. Explicit polynomial form. *J. Math. Phys.* **29** (1988), no. 5, 1106–1117. (Ronald C. King) **89f:81059** 81C40 (22E70)
- Biela, Andrzej** Program-substitution and admissibility of rules in algorithmic logic. *Acta Inform.* **25** (1988), no. 4, 439–473. (G. Mirkowska) **89k:68100** 68Q60 (03B70, 68Q05)
- Bielak, Halina** Some remarks about medians in graphs. *Graphs, hypergraphs and matroids, II* (Zagán, 1986), 7–15, *Higher College Engrg., Zielona Góra*, 1987. (Peter J. Slater) **89c:05182** 05C99
- Bielak, J.** (with Foelsche, G. A.; Griffin, J. H.) Transient response of joint-dominated space structures: a new linearization technique. *AIAA J.* **26** (1988), no. 10, 1278–1285. (Summary) **89f:73059** 73K40 (70K40, 73K30)
- Bielawski, Roger** The fixed point index for acyclic maps on ENRs. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 7–8, 487–499. (Helga Schirmer) **89d:55001** 55M20 (54C60, 54C65)
- Bielecki, T.** (with Kumar, P. R.) Optimality of zero-inventory policies for unreliable manufacturing systems. *Oper. Res.* **36** (1988), no. 4, 532–541. (Summary) **89f:90041** 90B05
- (with Stettner, L.) On some problems arising in asymptotic analysis of Markov processes with singularly perturbed generators. *Stochastic Anal. Appl.* **6** (1988), no. 2, 129–168. (V. Mackevičius) **89c:60138** 60J25 (47D07, 60F17, 60G40)
- Bielski, W.** (with Telega, Józef Joachim) On existence of solutions for geometrically nonlinear shells and plates. *Z. Angew. Math. Mech.* **68** (1988), no. 4, T155–T157. (Igor Bock) **89f:73053** 73K15 (73K10)
- Biemond, J.** (with van der Putten, Frits G.; Woods, John W.) Identification and restoration of images with symmetric noncausal blurs. *IEEE Trans. Circuits and Systems* **35** (1988), no. 4, 385–393. (Not in MR) **93E12** (93E11)
- see also Multidimensional signal processing, **89j:94003**
- Bien, Zeungnam** (with Lee, Haiyoung) Method of computing the inverse of a matrix whose elements are a linear combination of Walsh functions. *Internat. J. Control* **47** (1988), no. 5, 1235–1242. (Mihail Voicu) **89e:15009** 15A09 (15A99, 49D40, 93B25)
- (with Kim, Young Seog) Two stable MRAC algorithms for linear discrete-time multivariable plants. *Internat. J. Control* **48** (1988), no. 3, 1043–1056. (Not in MR) **93C55** (93C05)
- (with Choi, Y. K.) Decentralized adaptive control scheme for control of a multi-agent-type robot. *Internat. J. Control* **48** (1988), no. 4, 1715–1722. (Not in MR) **93C40** (93A15)
- Bienaymé, Irénée Jules** see Schneider, Ivo, **89f:01042**
- Bienstock, Daniel** On reliability analysis of generalizations of Halin graphs. *Applications of discrete mathematics* (Clemson, SC, 1986), 87–106, SIAM, Philadelphia, PA, 1988. (Michael B. Richey) **89i:05098** 05C10 (90B25)
- Broadcasting with random faults. *Discrete Appl. Math.* **20** (1988), no. 1, 1–7. (Summary) **89b:68013** 68M15 (68R10)
- (with Monma, Clyde L.) On the complexity of covering vertices by faces in a planar graph. *SIAM J. Comput.* **17** (1988), no. 1, 53–76. (M. M. Syslo) **89d:05064** 05C10 (68Q15, 68R10, 90C27)
- Asymptotic analysis of some network reliability models. *SIAM J. Discrete Math.* **1** (1988), no. 1, 14–21. (Charles J. Colbourn) **89c:68002** 68M10 (05C99, 68M15, 90B25, 94C15)

- Bier, Thomas** Hyperplane codes. *Graphs Combin.* 1 (1985), no. 3, 207–212. (Summary) 89d:94040 94B05
- Lattices associated to the rectangular association scheme. Proceedings of the Singapore conference on combinatorial mathematics and computing (Singapore, 1986). *Ars Combin.* 23 (1987), A, 41–50. (Summary) 89b:05062 05B30
- A family of nonbinary linear codes. *Discrete Math.* 65 (1987), no. 1, 47–51. (G. Ramharter) 89g:94027 94B05 (11T71)
- (with Manickam, N.) The first distribution invariant of the Johnson-scheme. *Southeast Asian Bull. Math.* 11 (1987), no. 1, 61–68. (J. J. Seidel) 89b:05061 05B30
- (with Cheng, Kai Nah; Hartley, Brian) A remark on association schemes on finite groups. *Arch. Math. (Basel)* 51 (1988), no. 6, 481–484. (Roderick Gow) 89j:20010 20C15 (05B30)
- (with Delsarte, P.) Some bounds for the distribution numbers of an association scheme. *European J. Combin.* 9 (1988), no. 1, 1–5. (Siu Lun Ma) 89e:05054 05B30
- Some distribution numbers of the hypercubic association scheme. *European J. Combin.* 9 (1988), no. 1, 7–17. (Siu Lun Ma) 89e:05055 05B30
- Some distribution numbers of the triangular association scheme. *European J. Combin.* 9 (1988), no. 1, 19–22. (Siu Lun Ma) 89e:05056 05B30
- Bierbrauer, J.** (with Gyárfás, A.) On  $(n, k)$ -colorings of complete graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 123–139. (Aiden A. Bruen) 89i:05114 05C15
- Bierens, Herman J.** ARMA memory index modeling of economic time series. With comments and a reply by the author. *Econometric Theory* 4 (1988), no. 1, 35–76. (A. L. Nagar) 89k:62113 62M10
- (with Hartog, Joop) Nonlinear regression with discrete explanatory variables, with an application to the earnings function. *J. Econometrics* 38 (1988), no. 3, 269–299. (Manfred Kraft) 89i:62177 62P20 (62J02, 90A19)
- Bieri, Robert** (with Neumann, Walter D.; Strebel, Ralph) A geometric invariant of discrete groups. *Invent. Math.* 90 (1987), no. 3, 451–477. (P. Kropholler) 89b:20108 20J05 (22E40, 57R19)
- Bierlein, D.** (with Stich, W. J. A.) On the extremality of measure extensions. *Manuscripta Math.* 63 (1989), no. 1, 89–97. (Detlef Plachky) 89m:28007 28A33 (60A10)
- Biermann, Kurt-R.** ★ Die Mathematik und ihre Dozenten an der Berliner Universität 1810–1933. (German) [Mathematics and its docents at the University of Berlin 1810–1933] Stationen auf dem Wege eines mathematischen Zentrums von Weltgeltung [Stations on the way of a mathematical center of international standing]. Second edition. With a preface by Heinz Stiller. *Akademie-Verlag, Berlin*, 1988. 407 pp. ISBN 3-05-500402-7 (S. L. Segal) 89k:01037 01A73 (01A55, 01A60, 01A72)
- Bierstone, Edward** (with Milman, Pierre D.) Local analytic invariants and splitting theorems in differential analysis. *Israel J. Math.* 60 (1987), no. 3, 257–280. (Y. Yomdin) 89g:58021 58C25 (46E99)
- (with Milman, Pierre D.) Ideals of holomorphic functions with  $C^\infty$  boundary values on a pseudoconvex domain. *Trans. Amer. Math. Soc.* 304 (1987), no. 1, 323–342. (Ikuro Kimura) 89c:32042 32F15 (32E25, 32N15, 46J15)
- (with Milman, Pierre D.) Semianalytic and subanalytic sets. *Inst. Hautes Études Sci. Publ. Math.* No. 67 (1988), 5–42. (Z. Denkowski) 89k:32011 32B20 (58C06, 58C27)
- Bierth, K.-J.** An average reward criterion by Mandl. *Operations research proceedings 1986* (Ulm, 1986), 643–648, *Springer, Berlin-New York*, 1987. (D. Kalin) 89j:90262 90C40 (90C39)
- An expected average reward criterion. *Stochastic Process. Appl.* 26 (1987), no. 1, 123–140. (Uriel G. Rothblum) 89i:90178 90C39 (90C40)
- Biesiada, Marek** (with Szydłowski, Marek; Szczepny, Jerzy) Quantum effects in multidimensional homogeneous cosmological models. *Classical Quantum Gravity* 4 (1987), no. 6, 1731–1747. (Jorge Zanelli) 89d:83069 83E15 (83C47, 83F05)
- (with Szydłowski, Marek; Szczepny, Jerzy) Is the space-time dimension 11 distinguished in cosmology? *Gen. Relativity Gravitation* 19 (1987), no. 12, 1181–1194. (Jorge A. Pullin) 89a:83065 83E15 (83E50, 83F05)
- (with Szydłowski, Marek; Szczepny, Jerzy) Multidimensional mixmaster models. *Phys. Lett. B* 195 (1987), no. 1, 27–30. (Summary) 89c:83047 83E15 (58F13, 83F05)
- On some group properties of Newtonian static star structure equations. *Finite-dimensional integrable nonlinear dynamical systems* (Johannesburg, 1988), 151–160, *World Sci. Publishing, Singapore*, 1988. (conclusion) 89j:85003 85A25 (58F35, 58G35, 58G40, 85A15)
- (with Szydłowski, Marek; Szczepny, Jerzy) Dynamical dimensional reduction in multidimensional Bianchi I models. *Acta Phys. Polon. B* 19 (1988), no. 1, 3–15. (Matej Pavšič) 89c:83044 83E15
- (with Szydłowski, Marek) On some group properties of structure equations of stellar systems. *J. Phys. A* 21 (1988), no. 17, 3409–3415. (Summary) 89b:85001 85A05 (22E05, 35A30, 35Q20, 58G35)
- (with Szydłowski, Marek; Szczepny, Jerzy) Null geodesics in multidimensional homogeneous cosmologies. *Phys. Lett. B* 211 (1988), no. 1–2, 42–48. (Jorge A. Pullin) 89j:83070 83E15 (83F05)
- Bieszk, Leon** (with Gordziejewski, Władysław) Sur la généralisation de certains théorèmes touchants l'équation de translation sur le produit direct des groupes. [A generalization of some theorems concerning the translation equation of the direct product of groups] *Publ. Math. Debrecen* 34 (1987), no. 3–4, 241–249. (Z. Moszner) 89c:39015 39B40 (39B50)
- On some classification of the anticommutative real three-dimensional algebras. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 183–192, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (D. I. Papuc) 89e:17001 17A30 (17B05)
- de Bièvre, S.** see De Bièvre, S.
- Bigalke, Hans-Günther** Zur Struktur regulärer Parkettierungen der euklidischen Ebene. (English summary) [On the structure of regular tilings of the Euclidean plane] *Z. Krist.* 176 (1986), no. 1–2, 35–65. (Summary) 89j:52012 52A45 (05B45, 82A60)
- teixidor i Bigas, Montserrat** see Teixidor i Bigas, Montserrat
- Bigazzi, P.** (with Rubio, M. A.; Ciliberto, S.) Transition between localized oscillations and traveling waves in thermal convection. *Chaos and complexity* (Torino, 1987), 157–170, *World Sci. Publishing, Singapore*, 1988. (Summary) 89i:76051 76E15
- Bigelow, John C.** (with Pargetter, Robert) An analysis of indefinite probability statements. *Synthese* 73 (1987), no. 2, 361–370. (Zeno G. Swijtink) 89b:03041 03B48 (60A99)
- (with Ellis, Brian; Pargetter, Robert) Forces. *Philos. Sci.* 55 (1988), no. 4, 614–630. (Not in MR) 03B30 (03A05)
- Real possibilities. *Philos. Stud.* 53 (1988), no. 1, 37–64. (Steve Kuhn) 89b:03023 03B45
- Biggins, J. D.** (with Cannings, C.) Markov renewal processes, counters and repeated sequences in Markov chains. *Adv. in Appl. Probab.* 19 (1987), no. 3, 521–545. (Peter Purdue) 89b:60203 60K15 (92A10)
- A note on repeated sequences in Markov chains. *Adv. in Appl. Probab.* 19 (1987), no. 3, 739–742. (Peter Purdue) 89b:60204 60K15 (92A10)
- Biggs, N. L.** Graphs with large girth. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), C, 73–80. (David Riley Witte) 89f:05106 05C38 (05C25)
- (with Mohar, Bojan; Shawe-Taylor, John) The spectral radius of infinite graphs. *Bull. London Math. Soc.* 20 (1988), no. 2, 116–120. (Robert C. Bringham) 89a:05103 05C50 (05C75)
- Bigman, J.** The inductive inference of pattern recognition rules which are capable of a linguistic interpretation. *Comput. Math. Appl.* 15 (1988), no. 10, 839–862. (Not in MR) 68T10
- Bigl, Dante** (with Cicala, Placido) Weighted residuals as a basis of a general solution method in elasticity. (Italian summary) *Meccanica—J. Ital. Assoc. Theoret. Appl. Mech.* 19 (1984), no. 1, 34–37. (Summary) 89k:73018 73C99 (73K25)
- Biglieri, Ezio** (with Elia, Michele) Multidimensional modulation and coding for band-limited digital channels. *IEEE Trans. Inform. Theory* 34 (1988), no. 4, 803–809. (L. L. Campbell) 89k:94020 94A14 (94B05)
- Bigun, Ya. I.** Investigation of stability and averaging in multifrequency systems with delay. (Russian) *Boundary value problems (Russian)*, 41–43, 193–194, *Perm. Politekh. Inst., Perm*, 1983. (see 89c:00008) 34K20 (34C29)
- le Bihan, Jean** see Le Bihan, Jean
- Bihari, I.** A second order nonlinear differential inequality. *Acta Math. Hungar.* 50 (1987), no. 1–2, 155–163. (Russell C. Thompson) 89b:34030 34A40 (34C11, 34E05)
- Bijker, Roelof** (with Kota, V. K. B.) Interacting boson-fermion model of collective states. IV. The SU(3)  $\otimes$  U(2) limit. *Ann. Physics* 187 (1988), no. 1, 148–197. (G. Vanden Bergh) 89j:81259 81G30
- van der Bijl, Jos** (with van Mill, Jan) Linear spaces, absolute retracts, and the compact extension property. *Proc. Amer. Math. Soc.* 104 (1988), no. 3, 942–952. (G. H. M. Thomas) 89k:57037 57N17 (54C20, 54F40, 55M15)
- Bijebier, J.** On the quantization of the problem of two interacting relativistic spinless particles. (Italian and Russian summaries) *Nuovo Cimento A* (11) 98 (1987), no. 1, 99–123. (A. O. Barut) 89c:81050 81C99
- Relativistic bound states: transition matrix elements for the scattering by an external field. (Italian and Russian summaries) *Nuovo Cimento A* (11) 100 (1988), no. 1, 91–118. (Summary) 89i:81134 81F20 (81C15)
- Bikhbaev, R. F.** (with It's, A. R.) Asymptotic behavior of the solution to the Cauchy problem as  $t \rightarrow \infty$  for the Landau-Lifshits equation. (Russian. English summary) *Theoret. Mat. Fiz.* 76 (1988), no. 1, 3–17; translated in *Theoret. and Math. Phys.* 76 (1988), no. 1, 665–675. (Song Mu Zheng) 89i:35115 35Q20 (35B40, 35C20, 35Q15, 58F40, 82A05)
- Bikchantaev, I. A.** Differential boundary value problems for first-order elliptic systems on Riemann surfaces. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 10, 1725–1736, 1835. (Guo Chun Wen) 89b:35104 35J55 (30F25, 30G20)
- Convergence of Cauchy kernels for generalized analytic functions on an open Riemann surface. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 12, 3–12, 79. (A. D. Mednykh) 89j:30067 30F25 (30G20)
- Bikhchandani, Sushil** Reputation in repeated second-price auctions. *J. Econom. Theory* 46 (1988), no. 1, 97–119. (M. Mahan) 89i:90104 90D40 (90A14)
- Bikinen, R. R.** (with Rudneva, I. V.) Effectiveness of "soft" decoding with a guarantee in a channel with Rayleigh fading. (Russian) *Noise-resistant coding and computer reliability (Russian)*, 90–94, 190, "Nauka", Moscow, 1987. (see 89b:94001) 94B35
- Bikmukhametov, I. Kh.** An estimate of a polynomial from generalized exponentials. (Russian) *Investigations in the theory of the approximation of functions (Russian)*, 3–14, *Akad. Nauk SSSR Bashkir. Filial, Otdel Fiz. Mat., Ufa*, 1986. (Z. Rubinstein) 89m:30011 30C10
- Bital, A. Y.** (with Elsayed, H. M.; Mahmoud, Magdi S.; Bernussou, J.) Adaptive alternate-routing in telephone networks: optimal and equilibrium solutions. *Inform. Decision Tech.* 14 (1988), no. 1, 65–74. (Summary) 89b:90086 90B10
- (with Badr, R. I.; Hassan, M. F.; Bernussou, J.) Time-domain robustness and performance optimisation of linear quadratic control problems. *Proc. IEE-D 135* (1988), no. 4, 223–231. (Andrzej Świerniak) 89j:93043 93B50 (49B50, 93B35, 93D15)
- Bital, Adel** (with Gervais, Jean-Loup) Modular invariance for closed strings at the new critical dimensions. *Phys. Lett. B* 187 (1987), no. 1–2, 39–44. (Daniel G. Caldi) 89a:81113 81E99 (81E30, 81G25, 83E30)
- (with Gervais, Jean-Loup) Liouville superstring and Ising model in three dimensions. *Nuclear Phys. B* 295 (1988), no. 2 FS21, 277–295. (Claude Itzykson) 89e:81137 81E99 (81E30, 82A25, 82A68)
- (with Gervais, Jean-Loup) Systematic approach to conformal systems with extended Virasoro symmetries. *Phys. Lett. B* 206 (1988), no. 3, 412–420. (K. Schoutens) 89j:81162 81E99 (17B65, 58F35, 81E40)
- (with Gervais, Jean-Loup) Superconformal algebra and super-KdV equation: two infinite families of polynomial functions with vanishing Poisson brackets. *Phys. Lett. B* 211 (1988), no. 1–2, 95–100. (Summary) 89k:58114 58F07 (17B65, 81E40)
- Bilalov, B. T.** Uniform convergence of series in a system of sines. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 1, 175–177, 184. (T. I. Akhobadze) 89j:42005 42A20
- Biłardi, Gianfranco** (with Sarrafzadeh, Majid) Optimal VLSI circuits for the discrete Fourier transform. *Advances in computing research, Vol. 4*, 87–101, *JAI, Greenwich, CT*, 1987. (Summary) 89d:68037 68Q35 (68Q25, 94A11)
- Bičchenko, G. G.** (with Alekseev, F. F.; Borodin, V. M.) A method for constructing Lyapunov functions. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems (Irkutsk, 1985) (Russian)*, 45–52, 322, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (see 89c:00040) 34D20
- Bilchev, Svetoslav I.** (with Velikova, Emiliya A.) On a problem of G. Tsintsifas. (Russian. English summary) *Mathematics and mathematical education (Bulgarian)* (Sunny



- Beach (*Sl'nchev Bryag*), 1987), 586–593, *Bulg. Acad. Sci., Sofia*, 1987. (Béla Uhrin) **89j:51018** 51M25 (26D99)
- Bilenko, V. I. The A-method for solving Riccati differential equations. (Russian) *Investigations in the theory of the approximation of functions* (Russian), 5–13, 120, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (V. R. Ibragimov) **89b:65108** 65L05
- A numerical-analytic algorithm for solving an equation of the transport of particles in plane geometry. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 62 (1987), 69–76, 131. (Summary) **89d:82150** 82A70 (82–08)
- Biler, Piotr Formes normales d'équations différentielles au voisinage d'un point singulier. [Normal forms of differential equations in the neighborhood of a singular point] *Équations aux dérivées partielles non linéaires dissipatives et systèmes dynamiques*, 83–94, *Travaux en Cours*, 28, Hermann, Paris, 1988. (see **89a:35004**) **58F21** (34C20)
- Bilger, R. W. Turbulent diffusion flames. *Annual review of fluid mechanics*, Vol. 21, 101–135, *Annual Reviews, Palo Alto, CA*, 1989. (see **89g:76002**) **80A25** (76F99)
- Bilinski, Stanko Die quasiregulären Polyeder zweiter Stufe. [The quasiregular polyhedra of second degree] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **196** (1987), no. 1–3, 1–12. (R. Blind) **89d:52011** 52A25 (51M20)
- Bilinski, L. Ya. see *Methods and means of transforming information*, **89g:94002**
- Bilotti, Mauro (with Korchmaros, Gabor) Hyperovals with a transitive collineation group. [Normal forms of differential equations in the neighborhood of a singular point] *Geom. Dedicata* **24** (1987), no. 3, 269–281. (T. G. Ostrom) **89a:51024** 51E20 (20B25)
- (with Jha, Vikram; Johnson, Norman Lloyd; Menichetti, Giampaolo) The collineation groups of Baer-elation planes. *Atti Sem. Mat. Fis. Univ. Modena* **36** (1988), no. 1, 23–35. (P. B. Kirkpatrick) **89i:51008** 51E15 (20B25, 51A40)
- Billard, Luc (with Lançon, F.) Two-dimensional system with a quasicrystalline ground state. (French summary) *J. Physique* **49** (1988), no. 2, 249–256. (Hanna Nencka) **89m:82057** 82A57 (51M20, 52A45)
- Billeke, Jorge (with Wallace C., Myrta) Bifurcations of codimension one singularities of tangent vector fields on Whitney's umbrella. *Dynamical systems, Valparaíso 1986*, 1–11, *Lecture Notes in Math.*, 1331, Springer, Berlin-New York, 1988. (Patrick Bonckaert) **89i:58102** 58F14 (58C27)
- (with Wallace C., Myrta) Bifurcations génériques de singularités de champs de vecteurs tangents au cône de  $\mathbb{R}^3$ . (English summary) [Generic bifurcations of singularities of vector fields tangent to the cone in  $\mathbb{R}^3$ ] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 16, 719–721. (Summary) **89g:58145** 58F14 (58C27)
- Billera, L. J. (with Cushman, R.; Sanders, J. A.) The Stanley decomposition of the harmonic oscillator. *Nederl. Akad. Wetensch. Indag. Math.* **50** (1988), no. 4, 375–393. (Sergey Yuzvinsky) **89m:13013** 13H10 (05A15, 52A25)
- Homology of smooth splines: generic triangulations and a conjecture of Strang. *Trans. Amer. Math. Soc.* **310** (1988), no. 1, 325–340. (L. L. Schumaker) **89k:41010** 41A15 (65D07)
- Billet, Germain Finite-difference schemes with dissipation control joined to a generalization of van Leer flux splitting. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 11–20, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) **76–08**
- Billity, V. (with Périaux, Jacques; Perrier, P.; Stoufflet, Bruno) 2-D and 3-D Euler computations with finite element methods in aerodynamics. *Nonlinear hyperbolic problems* (St. Etienne, 1986), 64–81, *Lecture Notes in Math.*, 1270, Springer, Berlin-New York, 1987. (From the introduction) **89a:76001** 76–08 (65N30)
- Billhardt, Bernd (with Becker, Johannes) Configural effects in similarity judgments: a theoretical analysis. *Progress in mathematical psychology*, I, 439–446, North-Holland, Amsterdam-New York, 1987. (Summary) **89g:92068** 92A25
- Billiet, Yves (with Belguith, Jamil) Étude des représentations des groupes ponctuels bicolores cristalllographiques sous-tendues par des familles de points équivalents. (English summary) [A study of representations of crystallographic two-colored point groups spanned by families of equivalent points] *Acta Cryst. Sect. A* **44** (1988), no. 2, 124–127. (Marjorie Senecal) **89f:20050** 20H15 (82A60)
- (with Masmoudi, Korchi) Quelques propriétés des représentations induites principales illustrées par les groupes ponctuels cristalllographiques. (English summary) [Some properties of principal induced representations illustrated by the crystallographic point groups] *Acta Cryst. Sect. A* **45** (1989), no. 1, 26–34. (R. L. E. Schwarzenberger) **89m:20058** 20H15 (20G45, 82A60)
- Billig, Yu. V. A homomorphic image of a special Lie algebra. (Russian) *Mat. Sb. (N.S.)* **136** (178) (1988), no. 3, 320–323, 430. (Jürgen Walscheny) **89k:17015** 17B05
- Billigheimer, C. E. Singular selfadjoint fourth order difference operators. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 57–86, *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (Stanislaw Kus) **89a:39006** 39A70 (47B39)
- Billings, S. A. (with Korenberg, M. J.; Liu, Yan Ping; McIlroy, P. J.) Orthogonal parameter estimation algorithm for nonlinear stochastic systems. *Internat. J. Control* **48** (1988), no. 1, 193–210. (Summary) **89e:93184** 93E10 (93C10, 93E12)
- (with Chen, Sheng<sup>2</sup>) Recursive maximum likelihood identification of a nonlinear output-affine model. *Internat. J. Control* **48** (1988), no. 4, 1605–1629. (Lei Guo) **89k:93208** 93E12 (93C10, 93C30, 93C55)
- (with Leontaritis, I. J.) Prediction error estimator for nonlinear stochastic systems. *Internat. J. Systems Sci.* **19** (1988), no. 4, 519–536. (Summary) **89b:93100** 93E10 (93C10, 93C55)
- (with Korenberg, M. J.; Chen, Sheng<sup>2</sup>) Identification of nonlinear output-affine systems using an orthogonal least-squares algorithm. *Internat. J. Systems Sci.* **19** (1988), no. 8, 1559–1568. (Not in MR) **93B30** (93C55)
- Billingsley, Patrick ★ *Prawdopodobieństwo i miara*. (Polish) [Probability and measure] Translated from the English by Krystyna Kizeweter and Janusz E. Roguski. *Państwowe Wydawnictwo Naukowe (PWN)*, Warsaw, 1987. 580 pp. ISBN 83-01-07170-2 (Editors) **89b:60001** 60-01 (28-01)
- Billington, David Conditions for degree sequences to be realisable by 3-uniform hypergraphs. *J. Combin. Math. Combin. Comput.* **3** (1988), 71–91. (S. L. Hakimi) **89g:05089** 05C75 (05C65)
- Bilodeau, Bénédicte see Bernoulli, Johann I. **89i:01039**
- Bilodeau, G. G. Absolutely monotonic functions and connection coefficients for polynomials. *J. Math. Anal. Appl.* **131** (1988), no. 2, 517–529. (Cheng-Ming Lee) **89g:26022** 26E05 (26C05, 33A65)
- Bilonoosov, S. M. Analysis of the solvability of Fredholm boundary integral equations of the second kind in the classical problem of the torsion of an elastic body of revolution. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 62 (1987), 26–30, 130. (Summary) **89b:65310** 65R20 (73C99, 73K99)
- Bily, Barbara Optimal control problem for first Fornasini-Marchesini model of 2-D systems. *Found. Control Engrg.* **13** (1988), no. 2, 57–66. (Jerzy Klamka) **89m:49059** 49D37 (49D40, 93B17, 93C55)
- Bilyalov, R. F. The Einstein equations in vacuum for spaces with axial symmetry in a special coordinate system. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **30** (1987), no. 10, 120–121. (Jan Novotný) **89a:83027** 83C20 (83C05)
- Binder, David A. (with Thomsen, Ib; Tesfu, Dinke) Estimation of design effects and intraclass correlations when using outdated measures of size. (French summary) *Internat. Statist. Rev.* **54** (1986), no. 3, 343–349. (David Bellhouse) **89b:62022** 62D05
- Binder, JH On the interplay of the centre and the state space in quantum logics. *Rep. Math. Phys.* **24** (1986), no. 3, 337–341. (S. Gudder) **89c:81023** 81B10 (06C15)
- Binder, K. (with Heermann, Dieter W.) ★ Monte Carlo simulation in statistical physics. An introduction. Springer Series in Solid-State Sciences, 80. Springer-Verlag, Berlin-New York, 1988. viii+127 pp. ISBN 3-540-19107-0 (Ernesto Omerti) **89i:82002** 82-04 (82-01, 82A25, 82A41, 82A43, 82A68)
- (with Ohno, Kaoru) Scaling theory of star polymers and general polymer networks in bulk and semi-infinite good solvents. (French summary) *J. Physique* **49** (1988), no. 8, 1329–1351. (Summary) **89j:82053** 82A51
- (with Desai, Rashmi C.; Heermann, Dieter W.) Finite-size scaling in a microcanonical ensemble. *J. Statist. Phys.* **53** (1988), no. 3–4, 795–823. (M. Lawrence Glasser) **89k:82004** 82-08 (82A25, 82A68)
- Binder, P. M. Lattice models of the Lorentz gas: physical and dynamical properties. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems* **1** (1987), no. 4, 559–574. (Summary) **89c:82030** 82A40 (76-08, 76P05)
- (with Ernst, M. H.) Lorentz lattice gases: basic theory. New directions in statistical mechanics (Santa Barbara, CA, 1987). *J. Statist. Phys.* **51** (1988), no. 5–6, 981–990. (Summary) **89i:82035** 82A40 (82A67)
- Binder, Z. (with Noyer, P.) An augmented Lagrangian tracking method in hierarchical optimization. *Large Scale Systems* **13** (1987), no. 3, 191–214. (H. Abou-Kandil) **89j:93003** 93A13 (49D29, 49D30, 90C50, 93A15, 93B40)
- (with Aly, G.; Badr, A.) Multi-model control of MIMO systems: location and control algorithms. *Internat. J. Systems Sci.* **19** (1988), no. 9, 1687–1698. (Not in MR) **93C05** (00A71, 93C55)
- Binding, Paul (with Browne, Patrick J.) Applications of two parameter spectral theory to symmetric generalised eigenvalue problems. *Appl. Anal.* **29** (1988), no. 1–2, 107–142. (Brian D. Sleeman) **89k:47026** 47A70 (47B25)
- (with Browne, Patrick J.) Two parameter eigenvalue problems for matrices. *Linear Algebra Appl.* **113** (1989), 139–157. (L. Rodman) **89m:47012** 47A70 (15A18)
- Bing, R. H. ★ Collected papers. Vol. 1, 2. Edited and with a preface by Sukhjiti Singh, Steve Armentrout and Robert J. Daverman. *American Mathematical Society, Providence, RI*, 1988. Vol. 1: xxii+886 pp.; Vol. 2: pp. i–xxii and 895–1654. ISBN 0-8218-0117-1 (John Hempel) **89b:01100** 01A75 (54-03)
- Shrinking without lengthening. *Topology* **27** (1988), no. 4, 487–493. (John Hempel) **89m:57010** 57M30 (57N12)
- see also Brown, Morton, **89g:01046**; Singh, Sukhjiti, **89g:01047**; Jones, F. Burton, **89b:01067** and Whyburn, Lucille, **89b:01085**
- Bingener, Jürgen ★ *Lokale Modulräume in der analytischen Geometrie*. Band 1. (German) [Local moduli spaces in analytic geometry. Vol. 1] With the cooperation of Siegmund Kosarew. Aspects of Mathematics, D2. Friedr. Vieweg & Sohn, Braunschweig, 1987. xiv+369 pp. ISBN 3-528-06300-9 (Ciprian Borcea) **89b:32040** 32G13
- ★ *Lokale Modulräume in der analytischen Geometrie*. Band 2. (German) [Local moduli spaces in analytic geometry. Vol. 2] With the cooperation of Siegmund Kosarew. Aspects of Mathematics, D3. Friedr. Vieweg & Sohn, Braunschweig, 1987. pp. i–xix and 370–709. ISBN 3-528-06301-7 (Ciprian Borcea) **89b:32041** 32G13
- Splitting theorems for PO-complexes. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 3, 527–534. (Genevieve Pourcin) **89c:32058** 32G05 (46G20, 46M99)
- Analytic moduli spaces as orbit spaces. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 3, 535–542. (Genevieve Pourcin) **89c:32059** 32G05 (32K05, 46G20, 46M99)
- Local moduli spaces in analytic geometry. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 3, 543–552. (Genevieve Pourcin) **89c:32060** 32G10 (32G13, 46G20, 46M99)
- Local moduli for strictly pseudoconvex spaces. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 3, 553–558. (Genevieve Pourcin) **89c:32061** 32G05 (32G13, 46G20, 46M99)
- Bingham, Michael S. Local conditional expectations and an application to a central limit theorem on a locally compact abelian group. *Math. Z.* **195** (1987), no. 1, 1–12. (Hm. Zeuner) **89a:60027** 60B15
- Functional central limit theorems for approximate martingale arrays in a locally compact abelian group. *J. Theoret. Probab.* **1** (1988), no. 1, 3–26. (Wilfried Hazod) **89i:60018** 60B15 (60F17, 60G48)
- Replacing the martingale assumption in a martingale central limit theorem. *Stochastic Process. Appl.* **29** (1988), no. 1, 103–106. (Zdzisław Rychlik) **89g:60065** 60F05 (60G42)
- Bingham, N. H. (with Doney, R. A.) On higher-dimensional analogues of the arc-sine law. *J. Appl. Probab.* **25** (1988), no. 1, 120–131. (D. V. Gusak) **89g:60249** 60J65
- (with Goldie, Charles M.) Riesz means and self-neglecting functions. *Math. Z.* **199** (1988), no. 3, 443–454. (J. Steinebach) **89i:60065** 60F15 (40G99)
- Binglin, Lu see Lu, Bing Lin
- Biogelac, S. (with Chow, J. H.; Winkelman, J. R.) Simultaneous generation of sensitivity functions—transfer function matrix approach. *Automatica—J. IFAC* **24** (1988), no. 2, 239–242. (P. Sannuti) **89i:93036** 93B35 (93B30, 93B40, 93C35)
- tran quoc Binh see Tran Quoc Binh
- tshan Binh Tram see Tshan Binh Tram
- Bini, D. (with Pan, V.) Polynomial division and its computational complexity. *J. Complexity* **2** (1986), no. 3, 179–203. (Joos Heintz) **89k:68060** 68Q25 (12-04)
- (with Fontani, A.) On the evaluation of the eigenvalues of the finite differences Laplacian over a hexagon. *Calcolo* **24** (1987), no. 1, 65–84. (Reinhard Scholz) **89b:65169** 65N25
- (with Pan, V.) Efficient algorithms for the evaluation of the eigenvalues of (block) banded Toeplitz matrices. *Math. Comp.* **50** (1988), no. 182, 431–448. (A. Bultheel) **89c:65054**

- 65F30
- Blin, Jacob** (with Rosenthal, Hanan) On the epsilon entropy of mixed random variables. *IEEE Trans. Inform. Theory* 34 (1988), no. 5, part 1, 1110-1114. (M. Zakai) **89m:94010** 94A34
- Blimore, K. G.** (with Herrero, M. J.) Matching and bargaining in dynamic markets. *Rev. Econom. Stud.* 55 (1988), no. 1, 17-31. (Introduction) **89c:90026** 90A14
- (with Herrero, M. J.) Security equilibrium. *Rev. Econom. Stud.* 55 (1988), no. 1, 33-48. (Introduction) **89c:90027** 90A14
- see also *Economic organizations as games*, **89c:90246**
- Binz, J.** Fastpythagoräische Quadrupel. [Almost Pythagorean quadruples] *Elem. Math.* 43 (1988), no. 3, 83-85. (Carl E. Linderholm) **89d:11018** 11D09 (11A99)
- Biondi, Paola** A characterization of the Grassmann space representing the 2-dimensional subspaces of a projective space. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 1 (1987), no. 3, 713-727. (Christiane Lefevre-Percy) **89f:51006** 51A05 (51A45, 51D20)
- On finite Grassmann spaces. *Combinatorics '86* (Trento, 1986), 69-73, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (Christiane Lefevre-Percy) **89f:51007** 51A05 (51A45, 51D20)
- Biran, B.** (with Floratos, E. G. F.; Savvidi, G. K.) The self-dual closed bosonic membranes. *Phys. Lett. B* 198 (1987), no. 3, 329-332. (Summary) **89g:81069** 81E99 (81E30)
- Birbrair, L. B.** (with Saponov, Yu. I.) Linear classification of quadratic mappings in the space  $C^n$ . (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 49 (1988), 3-5, 123. (J. S. Joel) **89h:58022** 58C27 (32M05)
- Birch, B. J.** see Heilbronn, Hans Arnold, **89i:01140**
- Birch, Jeffrey B.** (with Lee, Wonwoo) Fractional principal components regression: a general approach to biased estimators. *Comm. Statist. Simulation Comput.* 17 (1988), no. 3, 713-727. (Not in MR) 62J05
- Birch, Nancy J.** (with Burdick, Richard K.) Confidence intervals on the ratio of expected mean squares  $(\theta_1 + \theta_2 + \theta_3)/\theta_4$ . *Statist. Probab. Lett.* 7 (1989), no. 4, 335-342. (Summary) **89k:62047** 62F25 (62J10)
- Bird, Richard S.** An introduction to the theory of lists. *Logic of programming and calculi of discrete design* (Marktoberdorf, 1986), 5-42, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 36, Springer, Berlin-New York, 1987. (F. J. van der Linden) **89c:68054** 68D40 (68P05, 68Q65)
- Birdsall, Theodore G.** (with Bold, Gary E. J.) Minimum bandwidth interpolation of real discrete data. *J. Acoust. Soc. Amer.* 83 (1988), no. 4, 1471-1475. (Not in MR) 94A11 (41A05)
- al-Birdzhandi, Nizam ad-Din** see Abdulla-Zade, Kh. F., **89c:01010**
- Birge, John R.** (with Louveau, François) A multicut algorithm for two-stage stochastic linear programs. *European J. Oper. Res.* 34 (1988), no. 3, 384-392. (A. G. Zilinskas) **89f:90108** 90C15
- (with Qi, Li Qun) Computing block-angular Karmarkar projections with applications to stochastic programming. *Management Sci.* 34 (1988), no. 12, 1472-1479. (Summary) **89k:90096** 90C05 (90C15)
- (with Glazebrook, K. D.) Assessing the effects of machine breakdowns in stochastic scheduling. *Oper. Res. Lett.* 7 (1988), no. 6, 267-271. (Summary) **89j:90140** 90B35
- (with Wallace, Stein W.) A separable piecewise linear upper bound for stochastic linear programs. *SIAM J. Control Optim.* 26 (1988), no. 3, 725-739. (Riho Lepp) **89f:90109** 90C15
- Birgé, Lucien** On the risk of histograms for estimating decreasing densities. *Ann. Statist.* 15 (1987), no. 3, 1013-1022. (Eswar G. Phadia) **89c:62089** 62G05
- Birget, Jean-Camille** Stability and  $J$ -depth of expansions. *Bull. Austral. Math. Soc.* 38 (1988), no. 1, 41-54. (André Lentini) **89j:20063** 20M10
- Birk, J.** (with Zeitz, M.) Extended Luenberger observer for nonlinear multivariable systems. *Internat. J. Control* 47 (1988), no. 6, 1823-1836. (Not in MR) 93B07 (93C10, 93C35)
- Birkel, Thomas** The invariance principle for associated processes. *Stochastic Process. Appl.* 27 (1987), no. 1, 57-71. (C. S. Withers) **89c:60074** 60F17 (60F05)
- Moment bounds for associated sequences. *Ann. Probab.* 16 (1988), no. 3, 1184-1193. (Ram Shanmugam) **89h:60223** 62E10
- On the convergence rate in the central limit theorem for associated processes. *Ann. Probab.* 16 (1988), no. 4, 1685-1698. (Roy W. Erickson) **89c:60039** 60F05
- Birkeland, Bent** Newton and mathematics. (Norwegian. English summary) *Normat* 36 (1988), no. 2, 61-75, 90. (Editors) **89i:01026** 01A45 (01A70)
- Birkenmeier, Gary F.** (with Tucci, Ralph P.) Homomorphic images and the singular ideal of a strongly right bounded ring. *Comm. Algebra* 16 (1988), no. 6, 1099-1112. (S. S. Page) **89e:16025a** 16A34
- (with Tucci, Ralph P.) Corrigenda: "Homomorphic images and the singular ideal of a strongly right bounded ring". *Comm. Algebra* 16 (1988), no. 12, 2661-2662. (S. S. Page) **89e:16025b** 16A34
- Birkhof, Georg D.** see Birkhoff, George David
- Birkhoff, Garrett** Sound waves in fluids. *Appl. Numer. Math.* 3 (1987), no. 1-2, 3-24. (Introduction) **89h:76030** 76Q05 (76-08)
- (with Mac Lane, Saunders) ★ *Algebra*. Third edition. *Chelsea Publishing Co., New York*, 1988. xx+626 pp. ISBN 0-8284-0330-9 (Editors) **89i:00009** 00A05
- (with Bennett, M. K.) Felix Klein and his "Erlanger Programm". *History and philosophy of modern mathematics* (Minneapolis, MN, 1985), 145-176, *Minnesota Stud. Philos. Sci., XI*, Univ. Minnesota Press, Minneapolis, MN, 1988. (J. Dieudonné) **89f:01032** 01A55 (01A60, 01A70)
- Birkhoff, George David** see Kuznetsova, O. V., **89f:01048**
- Birkin, Mark** (with Clarke, Martin) Comprehensive dynamic urban models: integrating macro- and micro-approaches. *Transformations through space and time* (Hansholm, 1985), 165-191, *NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci.*, 29, Nijhoff, Dordrecht, 1986. (see **89c:90072**) 92A20
- Birman, Graciela Silvia** On  $L^2$  and  $L^3$ . *Elem. Math.* 43 (1988), no. 2, 46-50. (J. K. Beem) **89h:53040** 53B30 (53C50)
- Birman, J. L.** (with Solomon, A. I.) Dynamical symmetry in the many-body problem. *Group-theoretic methods in physics*, Vol. 1 (Russian) (*Jurmalu*, 1985), 682-688, "Nauka", Moscow, 1986. (see **89d:81001**) 81G30
- Birman, Joan S.** (with Series, C.) Algebraic linearity for an automorphism of a surface group. *J. Pure Appl. Algebra* 52 (1988), no. 3, 227-275. (N. V. Ivanov) **89j:57006** 57M99 (20F05, 20F34, 22E40)
- (with Kanenobu, Taizo) Jones' braid-plate formula and a new surgery triple. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 687-695. (Hugh Reynolds Morton) **89c:57003** 57M25
- see also *Braids*, **89f:20003**
- Birman, M. Sh.** (with Yafaev, D. R.) A general scheme in the stationary theory of scattering. (Russian) *Wave propagation. Scattering theory* (Russian), 89-117, 257-258, *Probl. Mat. Fiz.*, 12, Leningrad. Univ., Leningrad, 1987. (M. Demuth) **89h:47016** 47A40 (81F05)
- (with Solomyak, M. Z.)  $L_2$ -theory of the Maxwell operator in arbitrary domains. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 6(258), 61-76, 247. (S. Z. Levendorskii) **89c:35127** 35Q20 (35P20)
- (with Solomyak, M. Z.) Weyl asymptotics of the spectrum of the Maxwell operator for domains with a Lipschitz boundary. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1987, vyp. 3, 23-28, 127. (Summary) **89h:35253** 35P25 (47F05)
- (with Solomyak, M. Z.) Construction in a piecewise-smooth domain of a function of the class  $H^2$  from the value of the normal derivative. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 163 (1987), Kraev. Zadachi Mat. Fiz. i Smezhn. Vopr. Teor. Funktsii 19, 17-28, 186. (From the introduction) **89h:35035** 35J25
- The Maxwell operator for a periodic resonator with inward edges. (Russian) Boundary value problems of mathematical physics, 13 (Russian). *Trudy Mat. Inst. Steklov.* 179 (1988), 23-35, 241. (Piero Bassanini) **89h:35160** 35P05 (35Q20, 47F05, 78A25)
- see also *Basilev, V. S. et al.*, **89i:01066**
- Birmingham, Danny** (with Torre, C. G.) Functional integral construction of the BRST invariant string ground state. *Classical Quantum Gravity* 4 (1987), no. 5, 1149-1162. (V. P. Akulov) **89c:81104** 81E99 (81C35, 81E30)
- (with Rakowski, Mark; Thompson, George) Topological field theories, Nicolai maps and BRST quantization. *Phys. Lett. B* 214 (1988), no. 3, 381-386. (Summary) **89i:81103** 81E99
- (with Kantowski, R.; Milton, Kimball A.) Scalar and spinor Casimir energies in even-dimensional Kaluza-Klein spaces of the form  $M^4 \times S^{n_1} \times S^{n_2} \times \dots$ . *Phys. Rev. D* (3) 38 (1988), no. 6, 1809-1822. (Summary) **89j:83044** 83C47 (81E20, 83E15)
- Biró, Balázs** Isomorphic but not base-isomorphic base-minimal cylindric set algebras. *Algebra Universalis* 24 (1987), no. 3, 292-300. (D. Monk) **89c:03111** 03G15 (03C15, 06E99)
- (with Shelah, Saharon) Isomorphic but not lower base-isomorphic cylindric set algebras. *J. Symbolic Logic* 53 (1988), no. 3, 846-853. (S. Comer) **89k:03084** 03G15 (03C30)
- Birrell, M.** (with Marchi, S.) Regular points for degenerate elliptic equations. *Matematiche (Catania)* 40 (1985), no. 1-2, 145-153 (1988). (Maurizio Chicco) **89i:35067** 35J70 (35I67)
- (with Marchi, S.) Remark on: "Wiener estimates at boundary points for degenerate elliptic equations" [Boll. Un. Mat. Ital. B (6) 5 (1986), no. 3, 689-706; MR 88g:35090]. *Boll. Un. Mat. Ital. C* (6) 5 (1986), no. 1, 257-267 (1987). (Jiti Rakosnik) **89c:35058** 35J70 (35D10)
- A Green function method to obtain an estimate on the modulus of continuity in a parabolic problem. *Nonlinear parabolic equations: qualitative properties of solutions* (Rome, 1985), 41-49, *Pitman Res. Notes Math. Ser.*, 149, Longman Sci. Tech., Harlow, 1987. (From the introduction) **89h:35049** 35B65 (35K10, 35K85)
- (with Karlsson, T.) Wiener estimates for a class of systems of parabolic variational inequalities. *Ann. Mat. Pura Appl.* (4) 147 (1987), 197-210. (Igor Bobak) **89c:35122** 35K85
- (with Mosco, U.) Wiener estimates for parabolic obstacle problems. *Nonlinear Anal.* 11 (1987), no. 9, 1005-1027. (Stavros A. Belbas) **89j:35059** 35K85 (31B35)
- (with Marchi, S.) Errata corrigé: "Wiener estimates at boundary points for degenerate elliptic equations" [Boll. Un. Mat. Ital. B (6) 5 (1986), no. 3, 689-706; MR 88g:35090]. (Italian) *Boll. Un. Mat. Ital. B* (7) 2 (1988), no. 3, 713. (Editors) **89h:35127** 35J70
- al-Birunt, Abd'l-Rayhan** see Haddad, Foad I. et al., **89i:01010** and Kennedy, E. S., **89i:01012**
- Biryukov, B. V.** (with Biryukova, L. G.; Nutsudidze, N. N.) Mathematics and logic. The problem of the interrelation of two sciences in the history of logical-mathematical thought. (Russian) *Patterns in the development of modern mathematics* (Russian), 170-193, "Nauka", Moscow, 1987. (Stanislaw J. Surma) **89c:01034** 01A60 (00A25, 03-03, 03A05)
- Biryukova, L. G.** (with Biryukov, B. V.; Nutsudidze, N. N.) Mathematics and logic. The problem of the interrelation of two sciences in the history of logical-mathematical thought. (Russian) *Patterns in the development of modern mathematics* (Russian), 170-193, "Nauka", Moscow, 1987. (Stanislaw J. Surma) **89c:01034** 01A60 (00A25, 03-03, 03A05)
- Bisbis, B. Youssef** (with Retzlaff, David G.; Chan, Paul C.-H.) Sequential bifurcations, maximum multiplicity, and chaos for a first order reaction. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 370-374. (see **89d:00007**) 80A32 (58F13, 58F14)
- Bischi, G. I.** (with Beretta, Edoardo; Solimano, F.) Oscillations in a system with material cycling. *J. Math. Biol.* 26 (1988), no. 2, 143-167. (D. O. Logofet) **89f:92034** 92A15 (58F14)
- Bisdikian, Chatschik** (with Merakos, Lazaros F.) Delay analysis of the  $n$ -ary stack random-access algorithm. *IEEE Trans. Inform. Theory* 34 (1988), no. 5, part 1, 931-942. (Andrea Sgarro) **89m:94003** 94A05
- Bisgaard, Torben Maack** Extension of characters on  $\ast$ -semigroups. *Math. Ann.* 282 (1988), no. 2, 251-258. (K. A. Ross) **89h:43009** 43A40
- Bishnoi, B. B.** (with Singh, Jokhan) Bayes procedures for tests of hypotheses. *Vikram Math. J.* 6 (1985/86), 22-26. (Lionel Weiss) **89h:62056** 62F03 (62F15)
- Bishop, A. R.** (with McLaughlin, D. W.; Forest, M. G.; Overman, E. A., II) Quasiperiodic route to chaos in a near-integrable PDE: homoclinic crossings. *Phys. Lett. A* 127 (1988), no. 6-7, 335-340. (Summary) **89c:58074** 58F13 (70K50)
- Bishop, Christopher J.** A counterexample in conformal welding concerning Hausdorff dimension. *Michigan Math. J.* 35 (1988), no. 1, 151-159. (N. G. Makarov) **89c:30042** 30C85 (30C35, 30C55, 30D55, 31A15)
- Approximating continuous functions by holomorphic and harmonic functions. *Trans. Amer. Math. Soc.* 311 (1989), no. 2, 781-811. (Arne Stray) **89j:30051** 30E10 (31A05,



- 46315)
- Bishop, N. T.** The event horizons of two Schwarzschild black holes. *Gen. Relativity Gravitation* 20 (1988), no. 6, 573–581. (Piotr Bizon) **89b:83018** 83C30 (83C15, 83C75)
- (with Landsberg, P. T.) The thermodynamics of a system containing  $n$  identical black holes and black-body radiation. *Gen. Relativity Gravitation* 20 (1988), no. 7, 723–728. (Summary) **89c:83039** 83C47
- The Poincaré inequality for a vector field with zero tangential or normal component on the boundary. *Questions Math.* 11 (1988), no. 2, 195–199. (Jöran Bergh) **89b:26019** 26D10 (46E35, 58A14)
- Bishop, R. F.** (with Vourdas, A.) A new coherent paired state with possible applications to fluctuation-dissipation phenomena. *J. Phys. A* 20 (1987), no. 12, 3727–3741. (K. Wódkiewicz) **89b:81095** 81D30
- (with Vourdas, A.) Coherent mixed states and a generalised  $P$  representation. *J. Phys. A* 20 (1987), no. 12, 3743–3769. (K. Wódkiewicz) **89b:81096** 81D30 (81C25)
- (with Vourdas, A.) General two-mode squeezed states. *Z. Phys. B* 71 (1988), no. 4, 527–529. (K. Wódkiewicz) **89b:81088** 81D30 (22E45)
- (with Vourdas, A.) Phase-admixed states: coherence and incoherence. *Phys. Rev. A* (3) 39 (1989), no. 1, 214–220. (Summary) **89b:81083** 81D30 (81K05)
- Bishop, Steve R.** (with Virgin, Lawrence N.; Leung, Dennis L. M.) On the computation of domains of attraction during the dynamic modelling of oscillating systems. *Appl. Math. Modelling* 12 (1988), no. 5, 503–516. (Zhong-Hua Yang) **89b:65120** 65L07 (58F12, 58F13)
- Bisacco, Mauro** (with Fornasini, Ettore; Marchesini, Giovanni) Controller design for 2D systems. *Frequency domain and state space methods for linear systems* (Stockholm, 1985), 99–113, North-Holland, Amsterdam-New York, 1986. (V. S. Zajačkovski) **89d:93027** 93B25 (13A23, 93B15, 93B50)
- (with Šebek, M.; Fornasini, Ettore) Controllability and reconstructibility conditions for 2-D systems. *IEEE Trans. Automat. Control* 33 (1988), no. 5, 496–499. (Jerzy Klamka) **89c:93021** 93B05 (49E15, 93B07, 93B50, 93C05)
- (with Fornasini, Ettore; Marchesini, Giovanni) 2-D partial fraction expansions and minimal commutative realizations. *IEEE Trans. Circuits and Systems* 35 (1988), no. 12, 1533–1539. (Joseph D. Cole) **89b:93046** 93B20 (93B10, 93B15, 93B25, 93C55)
- Bisio, Giacomo** Some cases of systems with maximum entropy production in the steady state. (Italian. English and French summaries) *Atti Accad. Ligure Sci. Lett.* 42 (1985), 65–72 (1987). (M. Carrasi) **89j:82028** 82A35
- Biskup, Joachim** (with Meyer, Renate) Design of relational database schemes by deleting attributes in the canonical decomposition. *J. Comput. System Sci.* 35 (1987), no. 1, 1–22. (J. Paredaens) **89g:68005** 68P15 (68P05)
- (with Räscher, Uwe) The equivalence problem for relational database schemes. *MFDBS 87* (Dresden, 1987), 42–70, *Lecture Notes in Comput. Sci.*, 305, Springer, Berlin-New York, 1988. (see **89g:68004**) 68P15
- see also **MFDBS 87**, **89a:68004**
- Bismut, Jean-Michel** (with Gillet, H.; Soule, C.) Torsion analytique et fibrés déterminants holomorphes. (English summary) [Analytic torsion and holomorphic determinant bundles] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 3, 81–84. (N. J. Hitchin) **89b:58201** 58G12 (32G13, 32J25, 32L05)
- (with Vasserot, Éric) Comportement asymptotique de la torsion analytique associée aux puissances d'un fibré en droites positif. (English summary) [The asymptotic behavior of the analytic torsion associated with high powers of a positive line bundle] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 14, 779–781. (Summary) **89m:58188** 58G10 (32L15)
- (with Gillet, H.; Soule, C.) Analytic torsion and holomorphic determinant bundles. I. Bott-Chern forms and analytic torsion. *Comm. Math. Phys.* 115 (1988), no. 1, 49–78. (Peter Haskell) **89g:58192a** 58G10 (14F05, 32L10, 58G11)
- (with Gillet, H.; Soule, C.) Analytic torsion and holomorphic determinant bundles. II. Direct images and Bott-Chern forms. *Comm. Math. Phys.* 115 (1988), no. 1, 79–126. (Peter Haskell) **89g:58192b** 58G10 (14F05, 32L10, 58G11)
- (with Gillet, H.; Soule, C.) Analytic torsion and holomorphic determinant bundles. III. Quillen metrics on holomorphic determinants. *Comm. Math. Phys.* 115 (1988), no. 2, 301–351. (Peter Haskell) **89g:58192c** 58G10 (14F05, 32L10, 58G11)
- Transgressed Chern forms for Dirac operators. *J. Funct. Anal.* 77 (1988), no. 1, 32–50. (Lutz Habermann) **89b:58123** 58G10 (58G11, 58G12)
- (with Cheeger, Jeff)  $\eta$ -invariants and their adiabatic limits. *J. Amer. Math. Soc.* 2 (1989), no. 1, 33–70. (Jürgen Eichhorn) **89k:58269** 58G10 (58C50, 58G12, 58G20)
- Bisschop, Johannes J.** Language requirements for a priori error checking and model reduction in large-scale programming. *Mathematical models for decision support (Val d'Isère, 1987)*, 171–181, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 48, Springer, Berlin-New York, 1988. (see **89g:90136**) 90C30 (90C06)
- Bisseling, R. H.** (with Kosloff, R.) Optimal choice of grid points in multidimensional pseudospectral Fourier methods. *J. Comput. Phys.* 76 (1988), no. 2, 243–262. (Summary) **89c:81005** 81–08 (81G55)
- Bissell, C. C.** Cartesian geometry: the Dutch contribution. *Math. Intelligencer* 9 (1987), no. 4, 38–44. (Y. Dold) **89b:01020** 01A45
- see also **Kremer, H.**, **89f:65033**
- Bisson, Terrence Paul** Cohomology morphisms from  $H^*(BU; \mathbb{Z}/p)$  to  $H^*(B\mathbb{Z}/p; \mathbb{Z}/p)$ . *Proc. Amer. Math. Soc.* 101 (1987), no. 2, 363–370. (Gunnar Carlsson) **89a:55030** 55S10 (55R35, 55R40)
- Bisterfeld, Helgard** see **Hahn, Philipp Matthäus**, **89m:01140**
- Bitrickas, V.** Approximate solution of a discrete control optimization problem. (Russian. English and Lithuanian summaries) *Lietuv. Mat. Šb.* 28 (1988), no. 1, 23–32; translated in *Lithuanian Math. J.* 28 (1988), no. 1, 14–21. (V. Popescu) **89k:93139** 93C55 (90C30, 93B40)
- The maximum principle for discrete-continuous control systems. (Russian. English and Lithuanian summaries) *Lietuv. Mat. Šb.* 28 (1988), no. 3, 432–442. (Constantin Vărsan) **89j:49018** 49B34
- Bitritza, Yuval** Stability criterion for continuous-time system polynomials with uncertain complex coefficients. *IEEE Trans. Circuits and Systems* 35 (1988), no. 4, 442–448. (Andrzej W. Olbrot) **89j:93099** 93D99 (93B35)
- (with Kailath, Thomas) Inversion and factorization of non-Hermitian quasi-Toeplitz matrices. *Linear Algebra Appl.* 98 (1988), 77–121. (I. Meznik) **89b:65067** 65F05 (15A09, 15A23, 65F30, 93B25, 94A11)
- Bisultanova, L. A.** A boundary value problem for an equation with a two-dimensional domain of parabolicity. (Russian) *Mathematical physics (Russian)*, 55–60, Leningrad. Gos. Ped. Inst., Leningrad, 1987. (A. M. Nagornii) **89d:35121** 35M05
- A boundary value problem for an equation of mixed type. (Russian) *Partial differential equations (Russian)*, 50–56, Leningrad. Gos. Ped. Inst., Leningrad, 1987. (see **89c:00023**) 35M05
- Biswas, Rupak** (with Arney, David C.; Flaherty, Joseph E.) A posteriori error estimation of adaptive finite difference schemes for hyperbolic systems. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing (West Point, NY, 1987)*, 437–457, *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Summary) **89d:65088** 65M15
- Biswas, S. N.** (with Soni, S. K.) Supersymmetry, parastatistics, and operator realizations of a Lie algebra. *J. Math. Phys.* 29 (1988), no. 1, 16–20. (Robert Baston) **89b:81102** 81E05 (17B70, 81D05)
- (with Das, Ashok) Thermo field dynamics and parastatistical mechanics. *Modern Phys. Lett. A* 3 (1988), no. 6, 549–559. (Summary) **89b:81175** 81E99 (82A15)
- (with Balakrishnan, Janaki; Goyal, Ashok; Soni, S. K.) Chiral anomaly for parafermions from stochastic quantization. *Phys. Rev. D* (3) 37 (1988), no. 2, 571–573. (M. A. Namazie) **89b:81162** 81E99 (81C20, 81E13)
- Biswas, Saraj K.** (with Ahmed, N. U.) Optimal control of large space structures governed by a coupled system of ordinary and partial differential equations. *Math. Control Signals Systems* 2 (1989), no. 1, 1–18. (J. P. Babary) **89m:70067** 70Q05 (49B10, 49B22, 73K99, 93C20)
- Biswas, Suddhendu** (with Nair, Gurprit) A palm probabilistic technique on the estimation of the expected time to failure at a specified shock based on the data of earlier shocks. *J. Indian Soc. Agricultural Statist.* 38 (1986), no. 2, 240–248. (Not in MR) 90B25
- (with Ebraheem, Nather Abbas) On an application of the diffusion approximation of the generalized birth and death process for stochastic population projection. *Comm. Statist. Theory Methods* 17 (1988), no. 3, 779–789. (Edward Pollak) **89g:60228** 60J27 (60J80, 92A15)
- (with Noor, Hamed Saad) Generalized age-dependent model for estimation of mean survival time in the presence of two competing risks. *Internat. J. Systems Sci.* 19 (1988), no. 11, 2211–2222. (Summary) **89m:62111** 62P10 (62G05, 62N05, 90B25)
- Bisztriczky, Tibor** (with Pach, János) An upper bound for families of linearly related plane convex sets. *Arch. Math. (Basel)* 50 (1988), no. 1, 56–58. (Kit Hanes) **89a:52002** 52A10 (52A35)
- Affinely embeddable convex bodies. *Geom. Dedicata* 26 (1988), no. 1, 99–109. (Béla Uhrin) **89c:52003** 52A20 (51A05)
- Bitar, Khalil M.** Partition function for finite-temperature lattice SU(2) gauge theory. A novel investigation of the phase transition. *Nuclear Phys. B* 300 (1988), no. 1 FS22, 61–73. (Summary) **89d:81081** 81E25 (81-04, 82A25)
- Bitmead, Robert R.** (with Mareels, I. M. Y.) Nonlinear dynamics in adaptive control: periodic and chaotic stabilization. II. Analysis. *Automatica—J. IFAC* 24 (1988), no. 4, 485–497. (Summary) **89c:93142** 93C40 (93B50, 93C10, 93C55)
- (with Setbates, W. A.; Mareels, I. M. Y.; Anderson, B. D. O.; Johnson, C. Richard, Jr.) Excitation conditions for signed regressor least mean squares adaptation. *IEEE Trans. Circuits and Systems* 35 (1988), no. 6, 613–624. (Not in MR) 94A11 (94A05)
- (with Mareels, I. M. Y.) Bifurcation effects in robust adaptive control. *IEEE Trans. Circuits and Systems* 35 (1988), no. 7, 835–841. (Dumitru Motreanu) **89g:93056** 93C40 (58F14, 93D20, 93D25)
- Bitran, G. R.** (with Sarkar, D.) On upper bounds of sequential stochastic production planning problems. *European J. Oper. Res.* 34 (1988), no. 2, 191–207. (Summary) **89a:90064** 90B30
- Bitsadze, A. V.** \* *Уравнения Бекья*. (Russian) [Ilya Nestorovich Vekua] “*Met-sniereba*”, Tbilisi, 1987. 64 pp. (Editors) **89a:01052** 01A70
- (with Vinogradov, V. S.; Dezin, A. A.; Il'in, V. A.) Partial differential equations. (Russian) Mathematical physics and complex analysis (Russian). Translated in Proc. Steklov Inst. Math. 1988, no. 3, 263–300. *Trudy Mat. Inst. Steklov.* 176 (1987), 259–299, 328. (Summary) **89a:35001** 35-02 (35-03)
- Some properties of polyharmonic functions. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 5, 825–831, 917; translated in *Differential Equations* 24 (1988), no. 5, 543–548. (Ognyan Kounchev) **89k:31006** 31B30 (31A30, 35C10, 35J30)
- (with Andreev, A. F.; Erugin, N. P.; Zubov, V. I.; Izobov, N. A.; Il'in, V. A.; Kiguradze, I. T.; Krasovskii, N. N.; Kudryavtsev, L. D.; Millionshchikov, V. M.; Pliss, V. A.; Samarskii, A. A.; Sibirskii, K. S.; Tikhonov, A. N.) Yuri Stanislovovich Bogdanov. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 6, 1091–1097; translated in *Differential Equations* 24 (1988), no. 6, 692–699. (Editors) **89i:01055** 01A70
- (with Alimov, Sh. A.; Dorodnitsyn, A. A.; Erugin, N. P.; Moiseev, E. I.; Samarskii, A. A.; Tikhonov, A. N.) Vladimir Aleksandrovich Il'in (on the occasion of his 60th birthday). (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 5, 739–750. (Editors) **89b:01053** 01A70
- see also **Birthday: Bitsadze, A. V.**, **89a:01088**
- Bitsadze, D. G.** On the problem of dependence on the parameter of the solutions of multipoint nonlinear boundary value problems. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* 22 (1987), 42–55, 232. (E. S. Chichkin) **89i:34015** 34B10
- Bitsadze, R. G.** General representation of the solutions of a quasilinear equation of a problem of nonlinear oscillations. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* 128 (1987), no. 3, 493–496 (1988). (J. D. Keckić) **89j:35035** 35C05
- Global solvability of the Cauchy problem for an equation of nonlinear oscillations. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* 131 (1988), no. 1, 17–20. (Summary) **89j:35113** 35Q20 (35L70)
- Bitstakis, Efthichios** Quantum statistical determinism. *Found. Phys.* 18 (1988), no. 3, 331–355. (Not in MR) 81B05
- Bitsoris, G.** Positively invariant polyhedral sets of discrete-time linear systems. *Internat. J. Control* 47 (1988), no. 6, 1713–1726. (Summary) **89d:93031** 93B27 (93C05, 93C55)
- (with Vassilaki, M.; Hennes, J.-C.) Feedback control of linear discrete-time systems under state and control constraints. *Internat. J. Control* 47 (1988), no. 6, 1727–1735. (Not in MR) 93B50 (93C05, 93C55)

- Bittanti, Sergio** (with Colaneri, Patrizio; De Nicolao, Giuseppe) Two techniques for the solution of the discrete-time periodic Riccati equation. *Linear algebra in signals, systems, and control* (Boston, MA, 1986), 315-331. *SIAM, Philadelphia, PA, 1988.* (Summary) **89i:93022** 93B25 (39A10, 39A12, 93E10, 93E11)
- (with Colaneri, Patrizio; De Nicolao, Giuseppe) The difference periodic Riccati equation for the periodic prediction problem. *IEEE Trans. Automat. Control* **33** (1988), no. 8, 706-712. (B. G. Pachpatte) **89h:93049** 93E03 (39A10, 39A12)
- Bittencourt, J. A.** ★ Fundamentals of plasma physics. Pergamon Press, Oxford-Elmsford, NY, 1986. xviii+711 pp. ISBN 0-08-033924-7; 0-08-033923-9 (D. ter Haar) **89i:82054** 82A45 (76W05, 76X05, 82-01)
- Bittner, R.** (with Kobus, Z.) About eigensolutions of abstract differential equations with mixed conditions. *Publ. Math. Debrecen* **34** (1987), no. 3-4, 215-229. (Not in MR) **34A25** (34G10)
- Bixby, Robert E.** (with Marcotte, O. M.-C.; Trotter, L. E., Jr.) Packing and covering with integral feasible flows in integral supply-demand networks. *Math. Programming* **39** (1987), no. 3, 231-239. (Summary) **89g:90092** 90B10
- (with Coullard, Collette R.) Adjoints of binary matroids. *European J. Combin.* **9** (1988), no. 2, 139-147. (Jiří Tuma) **89d:05051** 05B35
- (with Fourer, Robert) Finding embedded network rows in linear programs. I. Extraction heuristics. Focussed issue on heuristics. *Management Sci.* **34** (1988), no. 3, 342-376. (Summary) **89b:90120** 90C05
- (with Wagner, Donald K.) An almost linear-time algorithm for graph realization. *Math. Oper. Res.* **13** (1988), no. 1, 99-123. (Craig Tovey) **89f:05117** 05C50 (05C05, 68R10, 90C08)
- Bisler, Nathan E.** An improved time integrator for finite element analysis. *Comm. Appl. Numer. Methods* **5** (1989), no. 2, 69-78. (Not in MR) **65L60**
- Biyaşima, Minoru** (with Suzuki, Naomichi) Multiplicity distributions in a two-component branching process. *Ann. Inst. Statist. Math.* **40** (1988), no. 2, 229-246. (P. Jagers) **89g:60263** 60J85 (81F20)
- Blizharov, T.** Stabilization of synchronous machines. (Russian) *Some problems in functional analysis, differential equations and their applications* (Russian), 21-25, 108, *Kazakh. Gos. Univ., Alma-Ata, 1985.* (see **89a:00016**) 93D05
- Blizhanova, G. I.** (with Danilyuk, I. I.) An irregular Stefan problem. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 9, 3-7, 86. (Summary) **89b:35169** 35R35 (35K05, 80A20)
- Bizod, Piotr** (with Malec, Edward; Ó Murchadha, Niall) Trapped surfaces in spherical stars. *Phys. Rev. Lett.* **61** (1988), no. 10, 1147-1150. (Mark D. Roberts) **89f:83067** 83C75
- Björger, Peter** (with Madsen, Henrik O.) Reliability of ideal plastic systems based on lower-bound theorem. *Reliability and optimization of structural systems* (Aalborg, 1987), 417-432. *Lecture Notes in Engng.*, 33, Springer, Berlin-New York, 1987. (Summary) **89j:73043** 73E20 (62N05, 73K35, 73K99)
- Björn, Sten** (with Lindström, Mikael) Algebras of holomorphic functions. *J. Math. Anal. Appl.* **128** (1987), no. 1, 207-213. (Javier Gómez Gil) **89h:46071** 46G20 (32E25, 46J15)
- Differentiation under the integral sign and holomorphy. *Math. Scand.* **60** (1987), no. 1, 77-95. (Jorge Mujica) **89b:46062** 46G20 (46E40, 58C10)
- (with Lindström, Mikael) Characterization of Schwartz spaces by their holomorphic duals. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 909-913. (C. H. Cook) **89f:46099** 46G20 (46A12)
- Björk, Jan-Erik** Filtered Noetherian rings. *Noetherian rings and their applications* (Oberwolfach, 1983), 59-97, *Math. Surveys Monographs*, 24, Amer. Math. Soc., Providence, RI, 1987. (Michael M. Kapranov) **89c:16018** 16A33 (32C38, 58G07)
- Björk, Tomas** (with Grandell, Jan) Exponential inequalities for ruin probabilities in the Cox case. Special issue for ICA 1988 Helsinki. *Scand. Actuar. J.* **1988**, no. 1-2, 77-111. (Erhard Kremer) **89i:62168** 62P05
- Björke, Øyvind** (with Wang, Kesheng) The off-line motion planning via the computer graphics simulation system. *Systems analysis and simulation 1988*, 1 (Berlin, 1988), 335-349. *Math. Res.*, 46, Akademie-Verlag, Berlin, 1988. (see **89g:00018**) 68U05
- Bjorkman, J. E.** (with Tosa, Y.) Anomaly-free supergravity theories remain anomaly-free after dimensional reduction. *Phys. Lett. B* **198** (1987), no. 3, 349-355. (Summary) **89b:83092** 83E50 (81E99)
- Björner, Anders** Some Cohen-Macaulay complexes arising in group theory. *Commutative algebra and combinatorics* (Kyoto, 1985), 13-19, *Adv. Stud. Pure Math.*, 11, North-Holland, Amsterdam-New York, 1987. (Stephen D. Smith) **89g:05036** 05B30 (06A10, 20D30, 20F16, 20J05)
- Face numbers of complexes and polytopes. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1408-1418, *Amer. Math. Soc., Providence, RI, 1987.* (P. McMullen) **89d:52013** 52A25
- (with Lovász, L.) Pseudomodular lattices and continuous matroids. *Acta Sci. Math. (Szeged)* **51** (1987), no. 3-4, 295-308. (Jiří Tuma) **89j:05026** 05B35 (06C10, 06C20)
- (with Frankl, Peter; Stanley, Richard P.) The number of faces of balanced Cohen-Macaulay complexes and a generalized Macaulay theorem. *Combinatorica* **7** (1987), no. 1, 23-34. (P. McMullen) **89d:52012** 52A25 (05A15, 55U05)
- (with Kalai, Gil) An extended Euler-Poincaré theorem. *Acta Math.* **161** (1988), no. 3-4, 279-303. (Sergey Yuzvinsky) **89m:52009** 52A37 (51H99, 55N99)
- (with Wachs, Michelle L.) Generalized quotients in Coxeter groups. *Trans. Amer. Math. Soc.* **308** (1988), no. 1, 1-37. (Joseph Kung) **89c:05012** 05A99 (06F99, 20B30, 20F99)
- Björnstad, Jan F.** (with Butler, Ronald W.) The equivalence of backward elimination and multiple comparisons. *J. Amer. Statist. Assoc.* **83** (1988), no. 401, 136-144. (C. R. Rao) **89g:62121** 62J15 (62J05)
- Bkouche, Rudolphe** see Lehmann, Daniel, **89f:51002**
- Blachowicz, Krystyna** On certain of Leibniz's observations concerning the substantiation of mathematical statements. Foundations of statements in mathematics and in philosophy. Types of logical systems and problems of truth (Jablonna, 1983). *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* **12** (1983), no. 4, 143-147. (see **89g:03001**) 01A45 (03A05)
- Black, S. C.** (with List, R. J.) A note on plithism. *European J. Combin.* **10** (1989), no. 1, 111-112. (Michael H. Peel) **89m:20011** 20C30
- Blackburn, William K.** Weinstein on definite descriptions. *Philos. Stud.* **53** (1988), no. 2, 263-278. (Not in MR) **03B10** (03A05, 03B65)
- Blackman, D. R.** (with McCowan, A. D.) The equations for long waves and their application. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 475-486, North-Holland, Amsterdam-New York, 1988. (Yu. Z. Aleshkov) **89i:76028** 76B15
- Blackorby, Charles** (with Schworm, William) The existence of input and output aggregates in aggregate production functions. *Econometrica* **56** (1988), no. 3, 613-643. (Summary) **89c:90023** 90A11
- (with Donaldson, David) Money metric utility: a harmless normalization? *J. Econom. Theory* **46** (1988), no. 1, 120-129. (Summary) **89g:90034** 90A10
- Blackwell, D.** (with Ramakrishnan, S.) Stationary plans need not be uniformly adequate for leavable, Borel gambling problems. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 1024-1027. (E.-A. Weiss, Jr.) **89b:60114** 60G40
- Blesild, P.** Yokes: elemental properties with statistical applications. *Geometrization of statistical theory* (Lancaster, 1987), 193-198, *ULDM Publ.*, Lancaster, 1987. (Summary) **89m:62005** 62A99 (53B99)
- (with Barndorff-Nielsen, O. E.) Coordinate-free definition of structurally symmetric derivative strings. *Adv. in Appl. Math.* **9** (1988), no. 1, 1-6. (H. Rund) **89e:53020** 53A55 (53A45)
- (with Barndorff-Nielsen, O. E.) Combination of reproductive models. *Ann. Statist.* **16** (1988), no. 1, 323-341. (Ryuei Nishii) **89b:62040** 62E15 (05C20, 62F03, 62J02)
- Blaga, L.** (with Lungu, N.; Goron, S.) On integral representation of the overpotential. (Romanian summary) *Bul. Stiint. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Mas.* **28** (1985), 32-34. (Not in MR) **31B15**
- On necessary and sufficient single-extremality conditions in geometric programming problems. *Seminar on Optimization Theory*, 23-28, Preprint, 87-8, Univ. "Babeş-Bolyai", Cluj-Napoca, 1987. (From the text) **89k:90184** 90C99
- Blaga, Petru** Some results on the integral spline approximation. *Seminar on Numerical and Statistical Calculus* (Cluj-Napoca, 1987), 37-48, Preprint, 87-9, Univ. "Babeş-Bolyai", Cluj-Napoca, 1987. (B. Boyanov) **89j:41013** 41A15 (41A35)
- Probabilistic considerations on B-spline functions. (Romanian. English summary) *Studia Univ. Babeş-Bolyai Math.* **32** (1987), no. 2, 10-13. (Gheorghe Micula) **89f:41010** 41A15
- Blagitzko, B. Ya.** (with Odintsova, V. I.; Rabyk, V. G.) Some features of the optimization of electrical networks in a frequency domain. (Russian. English summary) *Teoret. Elektrotekh. No. 43* (1987), 133-141, 167. (Not in MR) **90B10** (49D30, 94C05)
- Blagodatskiĭ, V. I.** see Clarke, Frank H., **89m:49028**
- Blagojević, M.** (with Vasilic, M.) Asymptotic symmetry and conserved quantities in the Poincaré gauge theory of gravity. *Classical Quantum Gravity* **5** (1988), no. 9, 1241-1257. (R. J. McKellar) **89k:83060** 83D05 (83C40)
- (with Nikolić, I.; Vasilic, M.) Local Poincaré generators in the  $R + T^2 + R^2$  theory of gravity. (Italian and Russian summaries) *Nuovo Cimento B* (11) **101** (1988), no. 4, 439-451. (P. K. Smer) **89m:83072** 83D05 (81E13)
- (with Popović, D. S.; Sazdović, B.) Generalized canonical quantization of antisymmetric tensor gauge theory. *Phys. Lett. B* **214** (1988), no. 1, 47-50. (Summary) **89j:81095** 81E13
- Blagoveshchenskii, Yu. N.** Solutions of systems of stochastic equations. *Statistical methods. J. Soviet Math.* **40** (1988), no. 2, 166-168. (K. Malakian) **89i:60044** 60F05
- Blaha, Kenneth D.** Finding a minimum base for permutation groups is NP-hard. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 141-150. (Vera Pless) **89i:20005** 20B05 (68Q25)
- Blair, Charles E., III** (with Ben-Ayed, Omar; Boyce, David E.) A general bilevel linear programming formulation of the network design problem. *Transportation Res. Part B* **22** (1988), no. 4, 311-318. (Not in MR) **90C35** (90B10)
- Blair, D. E.** (with Vanhecke, Lieven) Jacobi vector fields and the volume of tubes about curves in Sasakian space forms. *Ann. Mat. Pura Appl.* (4) **148** (1987), 41-49. (O. Kowalski) **89d:53091** 53C25
- (with Abe, Kinetsu) Ruled hypersurfaces of Euclidean space. *Rocky Mountain J. Math.* **17** (1987), no. 4, 697-708. (Thomas E. Cecil) **89d:53013** 53A07 (53C40)
- Blair, Howard A.** Canonical conservative extensions of logic program completions. 1987 Symposium on Logic Programming (San Francisco, CA, 1987), 154-161, *IEEE Comput. Soc. Press, Washington, DC, 1987.* (see **89a:68009**) 68T25
- Blair, Robert L.** Chain conditions in para-Lindelöf and related spaces. *Proceedings of the 1986 Topology Conference* (Lafayette, LA, 1986). *Topology Proc.* **11** (1986), no. 2, 247-266. (W. Stephen Watson) **89e:54039** 54D18 (54E65)
- (with Swardson, Mary Anne) Insertion and extension of hedgehog-valued functions. *Indian J. Math.* **29** (1987), no. 3, 229-250 (1988). (Ernest P. Lane) **89m:54025** 54C45 (54D15)
- (with Polkowski, Lech T.; Swardson, Mary Anne) Non-zero-dimensional topologies between zero-dimensional ones. *Proceedings of the 1987 Topology Conference* (Birmingham, AL, 1987). *Topology Proc.* **12** (1987), no. 1, 39-46. (Ronnie Levy) **89e:54074** 54G10
- (with Polkowski, Lech T.; Swardson, Mary Anne) Topologies larger than  $\alpha$ -compact topologies. *Topology Appl.* **30** (1988), no. 2, 149-157. (H. Hušek (Zbl 657:54019)) **89m:54034** 54D30 (54A10, 54A15, 54B10)
- Correction to: "Extensions of continuous functions from dense subspaces" [*Proc. Amer. Math. Soc.* **54** (1976), 355-359; MR **52** #11821]. *Proc. Amer. Math. Soc.* **106** (1989), no. 3, 857-858. (R. Engelking) **89k:54035** 54C20
- Blair, Roger D.** (with Romano, Richard E.) The influence of attitudes toward risk on the value of forecasting. *Quart. J. Econom.* **103** (1988), no. 2, 387-396. (Marco Scarsini) **89g:90035** 90A10
- Blais, François** Fleuves critiques. (English summary) [Critical rivers] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 9, 439-442. (S. R. Bernfield) **89k:34040** 34C05 (03H05, 58F14, 58F21)
- Blake, Andrew** (with Zisserman, Andrew) ★ Visual reconstruction. MIT Press Series in Artificial Intelligence. MIT Press, Cambridge, MA-London, 1987. xii+225 pp. ISBN 0-262-02271-0 (From the publisher's description) **89i:92086** 92A27 (00A69, 68T99, 73K99)
- Blake, Ian F.** ★ An introduction to applied probability. Reprint of the 1979 edition. Robert E. Krieger Publishing Co., Inc., Melbourne, FL, 1987. xvi+528 pp. ISBN 0-89464-211-1 (Editors) **89a:60001** 60-01
- (with Freeman, George H.; Mark, Jon W.) Trellis source codes designed by conjugate gradient optimization. *IEEE Trans. Comm.* **36** (1988), no. 1, 1-12. (Summary) **89d:94042** 94B10 (90C50, 94A29)



- (with Freeman, George H.; Mark, Jon W.) Trellis source code design as an optimization problem. Coding techniques and coding theory. *IEEE Trans. Inform. Theory* 34 (1988), no. 5, part II, 1226–1241. (See 89j:94002) 94A29 (94B10)
- (with Wong, Benny C. Y.) Detector relative efficiency analysis in non-Gaussian noise. *J. Franklin Inst.* 325 (1988), no. 6, 755–774. (Summary) 89j:94013 94A13
- Blake, John** (with Kucera, Adam) Computational modelling of cavitation bubbles near boundaries. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 391–400, North-Holland, Amsterdam-New York, 1988. (Simona Popp) 89j:76029 76B10 (76-08)
- The Kelvin impulse: application to cavitation bubble dynamics. *J. Austral. Math. Soc. Ser. B* 30 (1988), no. 2, 127–146. (E. Cumberbatch) 89m:76011 76B10
- Blake, Robert W.** (with Harper, David G.) Energetics of piscivorous predator-prey interactions. *J. Theoret. Biol.* 134 (1988), no. 1, 59–76. (Summary) 89h:92064 92A18 (92A15)
- Blakley, G. R.** (with Dixon, R. D.) Smallest possible message expansion in threshold schemes. *Advances in cryptography—CRYPTO '86* (Santa Barbara, Calif., 1986), 266–274, *Lecture Notes in Comput. Sci.*, 263, Springer, Berlin-New York, 1987. (Albrecht Beutelspacher) 89d:94036 94A60
- (with Rundell, William) Cryptosystems based on an analog of heat flow. *Advances in cryptography—CRYPTO '87* (Santa Barbara, CA, 1987), 306–329, *Lecture Notes in Comput. Sci.*, 293, Springer, Berlin-New York, 1988. (Gottfried Anger) 89j:94028 94A60 (35K70, 35R25, 35R30, 68P25)
- Blanc, J. P. C.** On a numerical method for calculating state probabilities for queueing systems with more than one waiting line. Proceedings of the 2nd international conference on computational and applied mathematics (Leuven, 1986). *J. Comput. Appl. Math.* 20 (1987), Special Issue, 119–125. (Winfried K. Grassmann) 89a:60211 60K25 (60J27, 65U05, 90B22)
- On the relaxation times of open queueing networks. *Queueing theory and its applications*, 235–259, *CWI Monographs*, 7, North-Holland, Amsterdam-New York, 1988. (Hans Daduna) 89m:60218 60K25 (68M20, 90B22)
- (with Iasnogorodski, R.; Nain, Ph.) Analysis of the  $M/G/1 \rightarrow /M/1$  queueing model. *Queueing Systems Theory Appl.* 3 (1988), no. 2, 129–156. (Jacqueline Loris-Teghem) 89e:60184 60K25 (90B22)
- le Blanc, Richard** see **Le Blanc, Richard**
- Blanc-Fernand, L.** (with Barlaud, M.; Menez, J.; Mathieu, Pierre) Image coding using 2-D space-varying linear predictive filters excited by a 2-D multipulse field. (French and German summaries) Multidimensional signal processing, Part II (Noordwijkerhout, 1987). *Signal Process.* 16 (1989), no. 1, 13–19. (See 89j:94003) 68P25 (94A12)
- Blanchard, Dominique** (with Frémond, Michel; Visintin, A.) Phase change with dissipation. *Thermomechanical couplings in solids* (Paris, 1986), 411–418, North-Holland, Amsterdam-New York, 1987. (L. N. Tao) 89g:80063 80A20
- Blanchard, F.** Développement des nombres réels en base non entière. (English summary) [Expansion of real numbers in a nonintegral base] *Rev. Mat. Apl.* 9 (1988), no. 2, 9–19. (B. Volkmann) 89j:11077 11K26 (11K16, 28D05, 54H20, 68Q45)
- Blanchard, Paul** Morphismes et complètes sur les langages rationnels. (English, German and Russian summaries) [Morphisms and computations on rational languages] *J. Inform. Process. Cybernet.* 23 (1987), no. 1, 3–11. (Howard Straubing) 89j:68070 68Q45
- Blanchard, Ph.** (with Zheng, Wei An) Pathwise conservation law for stationary diffusion processes. *Stochastic processes in classical and quantum systems* (Ascona, 1985), 105–108, *Lecture Notes in Phys.*, 262, Springer, Berlin-New York, 1986. (From the text) 89d:60138 60J60
- (with Zheng, Wei An) Stochastic variational principle and diffusion processes. *Stochastic processes in classical and quantum systems* (Ascona, 1985), 109–117, *Lecture Notes in Phys.*, 262, Springer, Berlin-New York, 1986. (Summary) 89d:60139 60J60 (81C20)
- (with Stubbe, J.; Vázquez, L.) On the stability of solitary waves for classical scalar fields. *Ann. Inst. H. Poincaré Phys. Théor.* 47 (1987), no. 3, 309–336. (Jürgen Burzlaff) 89a:35168 35Q20 (35B35, 35L70, 81C05)
- (with Golin, Simon) Diffusion processes with singular drift fields. *Comm. Math. Phys.* 109 (1987), no. 3, 421–435. (Summary) 89a:60179 60J60 (60H10, 81C20)
- (with Stubbe, J.; Rezende, J.) New estimates on the number of bound states of Schrödinger operators. *Lett. Math. Phys.* 14 (1987), no. 3, 215–225. (Summary) 89h:35247 35P15 (35J10, 81C05)
- (with Combe, Ph.; Sirugue, M.; Sirugue-Collin, M.) Jump processes. An introduction and some applications to quantum physics. Functional integration with emphasis on the Feynman integral (Sherbrooke, PQ, 1986). *Rev. Circ. Mat. Palermo (2) Suppl. No. 17* (1987), 47–104 (1988). (Jacques Vauthier) 89h:81042 81C20 (60J75, 81-02)
- (with Stubbe, J.; Vázquez, L.) Stability of bound states for  $(1+1)$ -dimensional nonlinear scalar fields. *J. Phys. A* 21 (1988), no. 5, 1137–1156. (Gustavo Perla Menzala) 89e:81016 81C05 (35Q20)
- see also *Stochastic processes in physics and engineering*, 89a:00025
- Blanchet, Didier** A stochastic version of the Malthusian trap model: consequences for the empirical relationship between economic growth and population growth in LDCs. *Math. Population Stud.* 1 (1988), no. 1, 79–99. (Summary) 89h:92041 92A15 (62P20)
- broto i Blanco, Carles** see **Broto i Blanco, Carles**
- Blanco, R.** The problem of causality for a classical extended electron. *J. Phys. A* 20 (1987), no. 17, 5885–5898. (Not in MR) 78A25 (78A35)
- Classical dynamics of an extended charge subjected to a linear force field and Rayleigh-Jeans radiation for a wide class of charge distributions. *J. Phys. A* 20 (1987), no. 17, 5899–5921. (Not in MR) 78A25 (78A35)
- Blanco Ferro, Antonio A.** Hopf algebras and Galois descent. *Publ. Sec. Mat. Univ. Autònoma Barcelona* 30 (1986), no. 1, 65–80. (E. J. Taft) 89b:16005 16A24 (16A74)
- (with Ladrà González, Manuel) A description of the cohomology of small categories. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 43–47, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) 89j:18014 18G99
- Blanco García, Covadonga** (with Tarrio, Ana D.; Zacarias Maceiras, Fernando) Numerical solution of nonlinear equations. (Spanish) *Bol. Soc. Port. Mat.* No. 10 (1988), 31–42. (Not in MR) 65H05
- Blanco Martín, Ma. Francisca** (with Pérez Carrillo de Albornoz, Ma. Luisa) Spectral spaces and compactification. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 48–53, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) 89k:54113 54H99 (06E20)
- Blank, Robert G.** (with Dietrich, Brenda L.) An abstract duality. *Discrete Math.* 70 (1988), no. 2, 203–208. (Joseph Kung) 89f:05052 05B35
- Blankford, Roger D.** Astrophysical black holes. *Three hundred years of gravitation*, 277–329, *Cambridge Univ. Press, Cambridge-New York*, 1987. (See 89b:83007) 85A15 (01A60, 83F05)
- (with Kovner, Israel) Formation of arcs by nearly circular gravitational lenses. *Phys. Rev. A* (3) 38 (1988), no. 8, 4028–4035. (Summary) 89j:85008 85A40 (83F05)
- Blank, B. E.** Nontangential maximal functions over compact Riemannian manifolds. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 999–1002. (A. S. Dynin) 89i:58142 58G16 (31C12, 42B25)
- Blank, J.** (with Havlíček, M.) Irreducible  $\ast$ -representations of the Lie superalgebras  $B(0, n)$  with finite-degenerated vacuum. II. *J. Math. Phys.* 29 (1988), no. 3, 546–559. (Gerald A. Goldin) 89m:17009 17B10 (17B70)
- Blank, Ya. P.** see **Obituary: Blank, Ya. P.**, 89m:01127
- Blankenbuecher, R.** (with Partovi, M. H.) Quantum density matrix and entropic uncertainty. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 1 (Laramie, WY, 1985, and Seattle, WA, 1986/1987), 235–244, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (See 89f:62001) 94A17 (81B99)
- (with Partovi, M. H.) Time, energy, and the limits of measurement. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 1 (Laramie, WY, 1985, and Seattle, WA, 1986/1987), 249–255, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (See 89f:62001) 81B05 (94A15)
- Blankenship, Gilmer L.** Applications of homogenization theory to the control of flexible structures. *Stochastic differential systems, stochastic control theory and applications* (Minneapolis, Minn., 1986), 33–55, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (Summary) 89h:73049 73K20 (34C29, 73C40, 73K12, 93C75)
- (with LaVigna, A.; MacEnany, D. C.; Quadrat, J.-P.; Yan, I.) A MACSYMA/expert system for nonlinear filtering. *Stochastic processes in physics and engineering* (Bielefeld, 1986), 17–61, *Math. Appl.*, 42, Reidel, Dordrecht-Boston, MA, 1988. (Faris A. Badawi) 89j:93114 93E11 (68Q40, 68T05, 93-04)
- Blanton, George** Smoothness in disjoint groups of real functions under composition. *Aequationes Math.* 35 (1988), no. 1, 1–16. (P. Dráglá) 89h:26004 26A18 (39B10)
- Blanton, John D.** see **Euler, Leonhard**, 89g:01067
- Blauša, Danilo** see **Ivanšić, I.**, 89i:01085
- Blaušák, Victor** Finsler connections compatible with almost  $\pi$ -Finsler structures. *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces* (Braşov, 1986), 99–102, *Soc. Ştiinţe Mat. R.S. România, Bucharest*, 1986. (Yoshihiro Ichijyo) 89h:53044 53B40
- Blaschke, Wilhelm** ★ *Gesammelte Werke*. Band 2. (German) [Collected works. Vol. 2] *Kinematik und Integralgeometrie*. [Kinematics and integral geometry] With commentaries by Hans Robert Müller and Luis A. Santaló. With introductory material by Erwin Kruppa. Edited by W. Burau, S. S. Chern, K. Leichtweiß, Müller, Santaló, U. Simon and K. Strubecker. *Thales-Verlag, Essen*, 1985. 368 pp. ISBN 3-88908-202-5 (C. Thas) 89a:01097 01A75
- ★ *Gesammelte Werke*. Band 3. (German) [Collected works. Vol. 3] *Konvexgeometrie*. [Convex geometry] With commentary by Kurt Leichtweiß. With introductory material by Hans Reichardt. Edited by W. Burau, S. S. Chern, Leichtweiß, H. R. Müller, L. A. Santaló, U. Simon and K. Strubecker. *Thales-Verlag, Essen*, 1985. 416 pp. ISBN 3-88908-203-3 (C. Thas) 89a:01098 01A75
- ★ *Gesammelte Werke*. Band 4. (German) [Collected works. Vol. 4] *Affine Differentialgeometrie*. [Differential geometry der Kreis- und Kugelgruppen]. [Affine differential geometry. Differential geometry of circle and ball groups] With commentaries by Werner Burau and Udo Simon. Edited by Burau, S. S. Chern, K. Leichtweiß, H. R. Müller, L. A. Santaló, Simon and K. Strubecker. *Thales-Verlag, Essen*, 1985. 400 pp. ISBN 3-88908-204-1 (C. Thas) 89a:01099 01A75
- ★ *Gesammelte Werke*. Band 5. (German) [Collected works. Vol. 5] *Geometrie der Gewebe*. [Geometry of webs] With commentaries in English by S. S. Chern. With introductory material by Otto Haupt, Werner Burau, Enrico Bompiani, Hans Reichardt and I. M. Yaglom. Edited by Burau, Chern, K. Leichtweiß, H. R. Müller, L. A. Santaló, U. Simon and K. Strubecker. *Thales-Verlag, Essen*, 1985. 351 pp. ISBN 3-88908-205-X (C. Thas) 89a:01100 01A75
- ★ *Gesammelte Werke*. Band 6. (German) [Collected works. Vol. 6] *Selecta*. [Miscellaneous] With commentaries by Walter Benz, Karl Strubecker, Kurt Leichtweiß, Werner Burau, Helmut Grunsky and Dietrich Kölzow. Edited by Burau, S. S. Chern, Leichtweiß, H. R. Müller, L. A. Santaló, U. Simon and Strubecker. *Thales-Verlag, Essen*, 1986. 383 pp. ISBN 3-88908-206-8 (C. Thas) 89a:01101 01A75
- ruiz Blasco, Francisco José** see **Ruiz Blasco, Francisco José**
- Blasco, José Luis** A note on inverse-closed subalgebras of  $C(X)$ . *Acta Math. Hungar.* 51 (1988), no. 1-2, 47–49. (Warren Page) 89g:54037 54C40 (22A05, 46E25)
- Blasco, O.** see **Blasco De La Cruz, Oscar**
- Blasco, Oscar** see **Blasco De La Cruz, Oscar**
- Blasco De La Cruz, Oscar** On Fourier coefficients of operators. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 112–120, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) 89i:47052 47B38 (42A16)
- Boundary values of vector-valued functions in Orlicz-Hardy classes. *Arch. Math. (Basel)* 49 (1987), no. 5, 434–439. (Takahiko Nakazi) 89a:46077 46E40 (46B22, 46E30)
- Boundary values of vector-valued harmonic functions considered as operators. *Studia Math.* 86 (1987), no. 1, 19–33. (Introduction) 89c:46053 46E40 (31C99, 46A32, 46G10)
- Boundary values of functions in vector-valued Hardy spaces and geometry on Banach spaces. *J. Funct. Anal.* 78 (1988), no. 2, 346–364. (P. Wojtaszczyk) 89f:46080 46E40 (46B22, 46J15)
- Convolution of operators and applications. *Math. Z.* 199 (1988), no. 1, 109–114. (Constantin Niclescu) 89i:47053 47B38 (46B22)
- On the dual space of  $H^1_{\theta}$ . *Colloq. Math.* 55 (1988), no. 2, 253–259. (Takahiko Nakazi) 89m:46068 46E40 (42B30, 46J15)

- Blaselo, Helmuth** ★ Das Kognos-Prinzip. (German) [The Kognos principle] Zur Dynamik sich-selbst-organisierender wirtschaftlicher und sozialer Systeme. [On the dynamics of self-organizing economic and social systems] Volkswirtschaftliche Schriften [Publications in Political Economics], 364. Duncker & Humblot, Berlin, 1986. 272 pp. ISBN 3-428-05989-1 (Manfred Kochen) **89d:90059** 90A16 (00A69, 03E72, 92A12, 93A10)
- Blasi, Alberto** (with Becchi, C.; Bonneau, Guy; Collina, R.; Delduc, F.) Renormalizability and infrared finiteness of nonlinear  $\sigma$ -models: a regularization-independent analysis for compact coset spaces. *Comm. Math. Phys.* **120** (1988), no. 1, 121–148. (Olivier Piguet) **89k:81085** 81E15 (58E20, 81E13)
- (with Collina, R.) Stability of nonlinear homogeneous  $\sigma$  models. *Phys. Lett. B* **200** (1988), no. 1–2, 98–102. (Summary) **89a:81061** 81E13 (81E15)
- de Blasi, F. S.** see De Blasi, F. S.
- Blasius, Don** (with Clozel, Laurent; Ramakrishnan, Dinakar) Opérateurs de Hecke et formes de Maass: application de la formule des traces. (English summary) [Hecke operators and Maass forms: application of the trace formula] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 2, 59–62. (J. Smidt) **89g:11042** 11F70 (11S37, 22E55)
- Blasko, Rudolf** Elementary remarks on higher monotonicity properties of certain Sturm-Liouville functions. (German, Russian and Slovak summaries) *Práce Štúd. Vysokéj školy Doprov. Spojov Zilne Sér. Mat.-Fyz.* **5** (1985), 11–19 (1986). (Not in MR) **34A30**
- Blass, Andreas** Well-ordering and induction in intuitionistic logic and topology. *Mathematical logic and theoretical computer science* (College Park, Md., 1984–1985), 29–48, *Lecture Notes in Pure and Appl. Math.*, 106, Dekker, New York, 1987. (Ieke Moerdijk) **89c:03095** 03F55 (03G30, 18B25)
- Selective ultrafilters and homogeneity. *Ann. Pure Appl. Logic* **38** (1988), no. 3, 215–255. (A. Kanamori) **89h:03081** 03E05 (03E35)
- see also Bibliography: Mathematical logic, **89c:03001e**
- Blass, Piotr** (with Lang, Jeffrey) Locally factorial generic Zariski surfaces are factorial. *J. Algebra* **111** (1987), no. 2, 347–353. (Toshiyuki Katsura) **89d:14048** 14J05 (13F20, 14J25, 14M05)
- (with Lang, Jeffrey) Surfaces de Zariski factorielles. (English summary) [Factorial Zariski surfaces] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 15, 671–674. (Noriko Yui) **89f:14032** 14J05 (14J25)
- (with Lang, Jeffrey) A method for computing the kernel of a map of divisor classes of local rings in characteristic  $p \neq 0$ . *Michigan Math. J.* **35** (1988), no. 1, 67–81. (F. DeMeyer) **89f:14036** 14J17 (13F99)
- Blaszak, M.** Master symmetries and point-particle representation of solitons. *J. Phys. A* **20** (1987), no. 12, 3619–3630. (Ernest G. Kalnins) **89f:35175** 35Q20 (58G35)
- Soliton point particles of extended evolution equations. *J. Phys. A* **20** (1987), no. 18, L1253–L1255. (Summary) **89a:35169** 35Q20 (58F07)
- On interacting solitons. *Acta Phys. Polon. A* **74** (1988), no. 4, 439–444. (Summary) **89k:35196** 35Q20
- Blaszczak, A.** A note on zero-dimensional preimages of compact spaces. 15th winter school in abstract analysis (Srni, 1987). *Acta Univ. Carolin.—Math. Phys.* **28** (1987), no. 2, 5–7. (J. M. Aarts) **89c:54007** 54A25 (54F50)
- A construction of a rigid Boolean algebra. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 7–8, 465–471. (D. Monk) **89d:03034** 03C65 (03C50, 06E05)
- Blatnik, J.** (with Sladky, K.) A note on the stability of interconnected dynamic systems with time-varying interactions. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **16** (1987), no. 4, 271–282. (From the introduction) **89h:93008** 93A15 (93D05)
- Blatt, H.-P.** (with Isler, A.; Saff, E. B.) Remarks on the behaviour of zeros of best approximating polynomials and rational functions. *Algorithms for approximation* (Shrivenham, 1985), 437–445, *Inst. Math. Appl. Conf. Ser. New Ser.*, 10, Oxford Univ. Press, New York, 1987. (Myron S. Henry) **89c:41006** 41A10 (41A20, 41A50)
- Blattner, M.** (with Beauquier, J.; Latteux, M.) On commutative context-free languages. *J. Comput. System Sci.* **35** (1987), no. 3, 311–320. (Howard Straubing) **89b:68036** 68Q45
- Blau, Harvey I.** On block induction. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 395–397, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Jörn B. Olsson) **89f:20010** 20C20
- On linear groups with a cyclic or T.1 Sylow subgroup. *J. Algebra* **114** (1988), no. 2, 268–285. (Pamela Ferguson) **89h:20011** 20C15
- Blau, Matthias** On the geometric quantisation of constrained systems. *Classical Quantum Gravity* **5** (1988), no. 7, 1033–1044. (Mircea Puta) **89j:58038** 58F06 (81D07)
- (with Friedman, M.; Bar-Noy, T.; Kandel, Abraham) Certain computational aspects of fuzzy decision trees. *Fuzzy Sets and Systems* **28** (1988), no. 2, 163–170. (Summary) **89i:68055** 68Q25 (03E72, 68T20)
- Weiss-Zumino terms and the geometry of the determinant line bundle. *Phys. Lett. B* **209** (1988), no. 4, 503–506. (Summary) **89m:58189** 58G10 (58G11, 81E13)
- Blau, Steven K.** (with Guth, Alan H.) Inflationary cosmology. *Three hundred years of gravitation*, 524–603, *Cambridge Univ. Press, Cambridge-New York*, 1987. (see **89b:83007**) **83F05** (01A60, 85A40)
- (with Clements, Minot; Della Pietra, Stephen; Carlip, Steven; Della Pietra, Vincent) The string amplitude on surfaces with boundaries and crosscaps. *Nuclear Phys. B* **301** (1988), no. 2, 285–303. (Tsou Sheung Tsun) **89h:81168** 81E99 (32G15, 53C80, 81E30)
- (with Visser, Matt; Wipf, Andreas) Determinants of conformal wave operators in four dimensions. *Phys. Lett. B* **209** (1988), no. 2–3, 209–213. (Bo-Wei Xu) **89i:81086** 81E20 (81D25, 83C47)
- Blaum, Mario** Systematic unidirectional burst detecting codes. *IEEE Trans. Comput.* **37** (1988), no. 4, 453–457. (Franco Eugeni) **89f:94026** 94B20 (94B35)
- A (16, 9, 6, 5, 4) error-correcting dc free block code. *IEEE Trans. Inform. Theory* **34** (1988), no. 1, 138–141. (Not in MR) **94B45**
- Blazek, M.** On an inverse problem in quantum statistical physics. *Czechoslovak J. Phys. B* **38** (1988), no. 7, 705–719. (C. S. Sharma) **89h:82010** 82A31 (62E20, 81C20)
- Blazewicz, J.** (with Kubiak, W.; Röck, H.; Szwarcfiter, J.) Minimizing mean flow-time with parallel processors and resource constraints. *Acta Inform.* **24** (1987), no. 5, 513–524. (Summary) **89a:68023** 68N25 (68Q25, 90B35)
- (with Finke, G.; Haupt, Reinhard; Schmidt, Günter Joachim) New trends in machine scheduling. *European J. Oper. Res.* **37** (1988), no. 3, 303–317. (Summary) **89h:90122** 90B35
- Blazhkevich, B. I.** (with Vasil'ev, E. D.) A numerical method for integration of nonlinear circuit equations that contain higher derivatives of unknowns. (Russian. English summary) *Teoret. Elektrotekh. No. 39* (1985), 85–92, 138. (Not in MR) **94C05** (34A34)
- Blecher, D. P.** Geometry of the tensor product of  $C^*$ -algebras. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 1, 119–127. (Lothar M. Schmitt) **89g:46094** 46L05 (46K05, 46M05)
- Blecher, M. H.** (with Leach, P. G. L.) The Schrödinger equation for the  $x^2 + \lambda x^2/(1 + g x^2)$  interaction. *J. Phys. A* **20** (1987), no. 17, 5923–5927. (Summary) **89b:81030** 81C05 (34B25)
- Bleeksmith, Richard** (with Brillhart, John; Gerst, Irving) Some infinite product identities. *Math. Comp.* **51** (1988), no. 183, 301–314. (David M. Bressoud) **89f:05017** 05A17 (05A19, 11P57)
- Bleher, Siegfried** (with Grebogi, Celso; Ott, Edward; Brown, Reggie) Fractal boundaries for exit in Hamiltonian dynamics. *Phys. Rev. A* **38** (1988), no. 2, 930–938. (Summary) **89g:58127** 58F13 (58F05, 70H05, 70K50)
- Biel, Ron C.** (with Kahane, J.-P.) A computation of the Littlewood exponent of stochastic processes. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 2, 367–370. (S. J. Taylor) **89a:60138** 60H07 (60G17)
- Multilinear measure theory and the Grothendieck factorization theorem. *Proc. London Math. Soc.* **(3)** **56** (1988), no. 3, 529–546. (Joseph Max Rosenblatt) **89d:28005** 28A25 (26D15, 46A99, 46G99, 46M05)
- Bleicher, Michael N.** Isoperimetric division into a finite number of cells in the plane. *Studia Sci. Math. Hungar.* **22** (1987), no. 1–4, 123–137. (A. Florian) **89a:52036** 52A45 (05B45, 52A40)
- Bleiler, Steven A.** (with Casson, Andrew J.) ★ Automorphisms of surfaces after Nielsen and Thurston. London Mathematical Society Student Texts, 9. *Cambridge University Press, Cambridge-New York*, 1988. iv+105 pp. ISBN 0-521-34203-1 (William Dunbar) **89k:57025** 57N05 (32G15, 57R30, 58F15)
- (with Moriah, Yoav) Heegaard splittings and branched coverings of  $B^3$ . *Math. Ann.* **281** (1988), no. 4, 531–543. (Wolfgang H. Heil) **89f:57006** 57M25 (57N10)
- Bleistein, Norman** (with Handelsman, Richard A.) ★ Asymptotic expansions of integrals. Second edition. *Dover Publications, Inc., New York*, 1986. xvi+425 pp. ISBN 0-486-65082-0 (From the preface) **89d:41049** 41A60
- Blekher, P. M.** see von Neumann, John, **89f:01093** and **89f:01094**
- Blencowe, M. P.** (with Duff, M. J.) Supersingletons. *Phys. Lett. B* **203** (1988), no. 3, 229–236. (Marc Henneaux) **89j:81163** 81E99 (81E30, 83E30)
- Blennerhassett, P. J.** (with Kachoyan, B. J.) On the finite Dean problem: linear theory. *J. Austral. Math. Soc. Ser. B* **30** (1988), no. 2, 157–178. (Salvatore Rionero) **89k:76048** 76E10 (76U05)
- Bleris, G. L.** (with Doni, E. G.; Fanidis, Ch.) The rhombohedral coincidence site lattices. (Russian summary) *Annuaire Univ. Sofia Fac. Phys.* **78** (1984), no. 1, 47–53 (1988). (Not in MR) **20H15** (82A60)
- Blest, D. C.** (with Fitzgerald, D. G.) Scheduling sports competitions with a given distribution of times. *Discrete Appl. Math.* **22** (1988/89), no. 1, 9–19. (Summary) **89k:90084** 90B35 (05B30, 90D40)
- Bleuler, Konrad** Group theory and differential methods in contemporary physics. (Bulgarian) Translated from the German by B. Damyanov. *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* **28(61)** (1986), no. 4, 280–282 (1987). (Editors) **89c:22014** 22Exx (58F06)
- see also Differential geometrical methods in theoretical physics, **89j:00012**
- Blevins, D. K.** (with Magill, K. D., Jr.; Misra, P. R.; Parnami, J. C.; Tewari, U. B.) More on automorphism groups of laminated near-rings. *Proc. Edinburgh Math. Soc.* **(2)** **31** (1988), no. 2, 185–195. (Günter Pilz) **89m:16071** 16A76
- Bleyer, A.** A new construction of continuous endomorphisms of the operator field. Generalized functions, convergence structures, and their applications (Dubrovnik, 1987), 113–119, *Plenum, New York-London*, 1988. (R. Bittner) **89m:44015** 44A40 (46F10)
- Bleyer, U.** (with von Borzeszkowski, Horst-Heino) On gauge-invariant theories of gravitation. *Group theoretical methods in physics*, Vol. 1–3 (Zvenigorod, 1982), 59–66, *Harwood Academic Publ., Chur*, 1985. (Carl Brans) **89m:83073** 83D05
- Bliv, N. K.** (with Idrisov, Zh. M.) On a general boundary value problem for an elliptic system of first-order equations on the plane, in fractional spaces. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1987**, no. 3, 19–23. (Ai Nong Fang) **89k:35074** 35J55
- van der Bijl, F.** see By its very nature they may not neglect pure mathematics, **89h:01099**
- Blikle, Andrzej** Three-valued predicates for software specification and validation. *VDM '88. VDM—the way ahead* (Dublin, 1988), 243–266, *Lecture Notes in Comput. Sci.*, 328, Springer, Berlin-New York, 1988. (see **89m:68093**) **68N99** (03B50, 68Q60)
- A guided tour of the mathematics of MetaSoft'88. *Inform. Process. Lett.* **29** (1988), no. 2, 81–86. (Not in MR) **68N99**
- Blind, G.** Optimale Zerlegungen eines konvexen Bereichs in konvexe Bereiche. [Optimal divisions of a convex domain into convex domains] *Studia Sci. Math. Hungar.* **21** (1986), no. 3–4, 387–399. (W. J. Firey) **89a:52031** 52A40
- (with Blind, Roswitha) Gewisse einfache Polytope sind durch ihren Graph eindeutig bestimmt. (English summary) [Certain simple polytopes are uniquely determined by their graph] *Monatsh. Math.* **104** (1987), no. 3, 163–173. (Wolfgang Kühnel) **89b:52007** 52A25 (05C75)
- Blind, Roswitha** Die minimale Anzahl der  $j$ -Seiten ( $d - 3 \leq j \leq d - 1$ ) von  $d$ -Polytopen ohne dreieckige 2-Seiten. [The minimum number of  $j$ -faces ( $d - 3 \leq j \leq d - 1$ ) of  $d$ -polytopes without triangular 2-faces] *Studia Sci. Math. Hungar.* **21** (1986), no. 3–4, 359–362. (Wolfgang Kühnel) **89a:52013** 52A25
- (with Mani-Levitska, Peter) Puzzles and polytope isomorphisms. *Computer aided geometric reasoning*, Vol. I, II (Sophia-Antipolis, 1987), 255–274, *INRIA, Rocquencourt*, 1987. (Udo Pachner) **89a:52014** 52A25 (05C99)
- (with Mani-Levitska, Peter) Puzzles and polytope isomorphisms. *Aequationes Math.* **34** (1987), no. 2–3, 287–297. (G. Ewald) **89b:52006** 52A25 (05C99)
- (with Blind, G.) Gewisse einfache Polytope sind durch ihren Graph eindeutig bestimmt. (English summary) [Certain simple polytopes are uniquely determined by their graph] *Monatsh. Math.* **104** (1987), no. 3, 163–173. (Wolfgang Kühnel) **89b:52007** 52A25 (05C75)
- Blinder, S. M.** Green's function and propagator for the one-dimensional  $\delta$ -function potential. *Phys. Rev. A* **(3)** **37** (1988), no. 3, 973–976. (Henryk Aródt) **89e:81017** 81C05



- Blinov, A. P.** The asymptotic stability of systems with delay. *J. Appl. Math. Mech.* **50** (1986), no. 5, 658–662 (1987); translated from *Prikl. Mat. Mekh.* **50** (1986), no. 5, 851–855 (Russian). **89c:34082** 34K20
- Blinov, I. N.** A method for superfast convergence and the reducibility of almost periodic systems. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 2, 187–199, 363; translated in *Differential Equations* **24** (1988), no. 2, 139–148. (Sergei Mazanik) **89c:34044** 34C20 (34C27)
- Bilimiyakov, N. M.** Estimates for the topological index. (Russian) *Geometry and the theory of singularities in nonlinear equations* (Russian), 9–23, 182, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1987. (Stanislav Janeczko) **89b:58146** 58F14 (34C40, 57R45, 58C27, 58F21)
- Topological index estimates. *Global analysis—studies and applications, III*, 180–198, *Lecture Notes in Math.*, 1334, Springer, Berlin-New York, 1988. (Editors) **89f:58103** 58F14
- Bloch, André** see Cartan, Henri, **89a:01041** and **89a:01042**
- Bloch, Anthony M.** Total least squares estimation in infinite dimensions and completely integrable Hamiltonian systems. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 241–246, North-Holland, Amsterdam-New York, 1986. (Yong-Zai Lu) **89e:93063** 93B30 (49F15, 58F07)
- Lax-type flows on Grassmann manifolds. *Differential geometry: the interface between pure and applied mathematics* (San Antonio, Tex., 1986), 39–50, *Contemp. Math.*, 68, Amer. Math. Soc., Providence, RI, 1987. (Mircea Puta) **89b:58065** 58F05 (70H05)
- An infinite-dimensional Hamiltonian system on projective Hilbert space. *Trans. Amer. Math. Soc.* **302** (1987), no. 2, 787–796. (Tudor S. Ratiu) **89e:58041** 58F05 (58F07, 70H05, 81C99)
- A geometric approach to errors-in-variables models. *Linear algebra in signals, systems, and control* (Boston, MA, 1986), 481–492, SIAM, Philadelphia, PA, 1988. (see **89f:00025**) 93E10 (93B27)
- Bloch, Daniel A.** (with Moses, Lincoln E.) Nonoptimally weighted least squares. *Amer. Statist.* **42** (1988), no. 1, 50–53. (Summary) **89b:62137** 62J05
- Bloch, Spencer** Cycles on arithmetic schemes and Euler characteristics of curves. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 421–450, *Proc. Sympos. Pure Math.*, 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Gerd Faltings) **89b:14014** 14D10 (11G45, 14C17, 14H25)
- Euler characteristics and Swan conductors. *Algebraic geometry, Sendai, 1985*, 85–90, *Adv. Stud. Pure Math.*, 10, North-Holland, Amsterdam-New York, 1987. (Gerd Faltings) **89b:14013** 14F20 (14H20)
- de Rham cohomology and conductors of curves. *Duke Math. J.* **54** (1987), no. 2, 295–308. (Kazuya Kato) **89b:11028** 11G40 (11G45, 14F20, 14G10)
- Bloch, Jonathan L.** Cyclic homology of filtered algebras. *K-Theory* **1** (1987), no. 5, 515–518. (Zbigniew Marciniak) **89b:18018** 18G55 (16A03, 16A62, 19D55)
- Bloch, Louis** (with Hart, David) Orbit types for maps of the interval. *Ergodic Theory Dynamical Systems* **7** (1987), no. 2, 161–164. (M. Eisenberg) **89g:58172** 58F20 (26A18, 54H20, 58F08)
- Bloch, Richard E.** (with Wilson, Robert Lee) Classification of the restricted simple Lie algebras. *J. Algebra* **114** (1988), no. 1, 115–259. (Rolf Farnsteiner) **89e:17014** 17B50
- Bloher, Konrad** see Bleuler, Konrad
- Blok, W. J.** (with Berman, Joel) Free spectra of nilpotent varieties. *Algebra Universalis* **24** (1987), no. 3, 279–282. (Ralph Freese) **89e:08005** 08B10 (08B20)
- (with Berman, Joel) Positive Boolean dependencies. *Inform. Process. Lett.* **27** (1988), no. 3, 147–150. (János Demetres) **89b:68021** 68P15
- (with Pigozzi, Don) Alfred Tarski's work on general metamathematics. *J. Symbolic Logic* **53** (1988), no. 1, 36–50. (E. Mendelson) **89c:03002** 03-03 (01A60, 01A70, 03A05, 03G99)
- Blokh, A. M.** Dynamical systems on one-dimensional branched manifolds. II. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 47 (1987), 67–77. (L. Janos) **89i:58056** 58F08
- Dynamical systems on one-dimensional branched manifolds. III. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 48 (1987), 32–46. (L. Janos) **89i:58057** 58F08
- The connection between entropy and transitivity for one-dimensional mappings. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 5(257), 209–210. (D. Newton) **89g:58117** 58F11 (26A18, 28D20, 54H20, 58F13)
- Letter to the editor: "Decomposition of dynamical systems on an interval" [Uspekhi Mat. Nauk **38** (1983), no. 5(233), 179–180; MR 86d:54060]. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 6(258), 233. (Editors) **89b:54044** 54H20 (28D05, 58F11, 58F20)
- (with Lyubich, M. Yu.) Generic behavior of the trajectories of mappings of an interval. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 49 (1988), 5–16, 123. (Katarina Jankova) **89b:58138** 58F08 (26A18, 54H20)
- Blokhin, A. M.** Application of difference analogues of dissipative energy integrals to the investigation of the stability of difference schemes. (Russian) *Trudy Inst. Mat. (Novosibirsk)* **11** (1988), *Vychisl. Problemy v Zadachakh Mat. Fiz.*, 67–93, 120. (Stanislav Burys) **89i:65088** 65M10
- van Blokland-Vogelsang, Rian** (with Verbeek, Albert; Eilers, Paul) Iterative estimation of pattern and error parameters in a probabilistic unidimensional unfolding model. *Progress in mathematical psychology*, I, 393–418, North-Holland, Amsterdam-New York, 1987. (C. Hayashi) **89g:92065** 92A25 (62P15)
- Bloom, J. G.** (with ten Thije Boonkkamp, J. H. M.; Verwer, Jan G.) Corrigendum: "On the odd-even hopscotch scheme for the numerical integration of time-dependent partial differential equations" [Appl. Numer. Math. **3** (1987), no. 1, 183–193] by ten Thije Boonkkamp and Verwer. *Appl. Numer. Math.* **3** (1987), no. 4, 361–362. (O. Widlund) **89b:65216** 65M10
- (with Brunner, H.) The numerical solution of nonlinear Volterra integral equations of the second kind by collocation and iterated collocation methods. *SIAM J. Sci. Statist. Comput.* **8** (1987), no. 5, 806–830. (William F. Moss) **89f:65138** 65R20
- (with Toet, A.; Koenderink, J. J.) The construction of a simultaneous functional order in nervous systems. IV. The influence of physical constraints on the resulting functional order. *Biol. Cybernet.* **58** (1988), no. 4, 275–286. (Summary) **89c:92034** 92A09
- (with Sanz-Serna, J. M.; Verwer, Jan G.) On simple moving grid methods for one-dimensional evolutionary partial differential equations. *J. Comput. Phys.* **74** (1988), no. 1, 191–213. (Ivan Kopeček) **89f:65097** 65M50
- Bloom, F. A.** A relativistic quantum mechanical harmonic oscillator without space-time variables. *J. Math. Phys.* **29** (1988), no. 6, 1389–1395. (Summary) **89i:81013** 81C05 (81C40)
- Bloom, Frederick** Almost global existence in the plane wave-nonlinear dielectric interaction problem. Hyperbolic partial differential equations. V. *Comput. Math. Appl.* **15** (1988), no. 6-8, 491–510. (R. C. MacCamy) **89g:78002** 78-08
- Bloom, Gary S.** (with Burr, S. A.) On unavoidable digraphs in orientations of graphs. *J. Graph Theory* **11** (1987), no. 4, 453–462. (J. Sheehan) **89b:05121** 05C55 (05C20)
- (with Kennedy, John W.; Quintas, Louis V.) A characterization of graphs of diameter two. *Amer. Math. Monthly* **95** (1988), no. 1, 37–38. (J. Sheehan) **89e:05162** 05C75
- Bloom, Lynette M.** (with Bloom, Walter R.) Multipliers on spaces of functions with  $p$ -summable Fourier transforms. *Harmonic analysis* (Luxembourg, 1987), 100–112, *Lecture Notes in Math.*, 1359, Springer, Berlin-New York, 1988. (Gilbert Crombez) **89m:43005** 43A15 (43A22, 43A77)
- Bloom, Stephen L.** (with Tindell, Ralph) A note on zero-congruences. *Acta Cybernet.* **8** (1987), no. 1, 1–4. (Ana Pasztor) **89e:18011** 18C10 (08A30, 68Q55)
- Bloom, Steven** (with Tabacco Vignati, Anita; Vignati, Marco) Interpolation and factorization of operators. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 567–576. (Naum Zobin) **89d:46073** 46M35 (47A55, 47A68)
- Bloom, Thomas** The Lebesgue constant for Lagrange interpolation in the simplex. *J. Approx. Theory* **54** (1988), no. 3, 338–353. (R. Gervais) **89m:41001** 41A05 (41A10, 41A65)
- Bloom, Walter R.** (with Fournier, John J. F.) Generalized Lipschitz spaces on Vilenkin groups. *Math. Nachr.* **132** (1987), 67–80. (C. W. Onneweer) **89a:43013** 43A75 (22C05, 43A15, 46E99)
- (with Bloom, Lynette M.) Multipliers on spaces of functions with  $p$ -summable Fourier transforms. *Harmonic analysis* (Luxembourg, 1987), 100–112, *Lecture Notes in Math.*, 1359, Springer, Berlin-New York, 1988. (Gilbert Crombez) **89m:43005** 43A15 (43A22, 43A77)
- (with Fournier, John J. F.) Smoothness conditions and integrability theorems on bounded Vilenkin groups. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 1, 46–61. (W. R. Wade) **89d:42032** 42C10 (43A75)
- (with Heyer, Herbert) Continuity of convolution semigroups on hypergroups. *J. Theoret. Probab.* **1** (1988), no. 3, 271–286. (Wilfried Hazod) **89j:60012** 60B15 (43A05, 43A30, 43A35)
- Fourier series of local Lipschitz functions on zero-dimensional groups. *Math. Z.* **198** (1988), no. 3, 401–404. (Colin C. Graham) **89k:43005** 43A25 (42A20)
- Bloomenthal, Jules** Polygonization of implicit surfaces. *Comput. Aided Geom. Design* **5** (1988), no. 4, 341–355. (Not in MR) 68U05 (65D99)
- Bloomfield, R.** see VDM '88. VDM—the way ahead, **89m:68093**
- Bloor, M. I. G.** (with King, Andrew Charles) A note on the free surface induced by a submerged source at infinite Froude number. *J. Austral. Math. Soc. Ser. B* **30** (1988), no. 2, 147–156. (E. G. Broadbent) **89k:76024** 76B99
- Bioschitsyn, V. Ya.** see Kourovka notebook, **89f:20002**
- Blot, Joël** Calculus of variations in mean and convex Lagrangians. *J. Math. Anal. Appl.* **134** (1988), no. 2, 312–321. (Shi Tao Deng) **89k:58053** 58E05 (47H99, 49B27, 58E30, 58F05)
- Blöte, Henk W. J.** (with den Nijs, Marcel P. M.) Corrections to scaling at two-dimensional Ising transitions. *Phys. Rev. B* (3) **37** (1988), no. 4, 1766–1778. (Summary) **89j:81149** 81E25 (82A25, 82A68)
- (with Batchelor, M. T.) Conformal anomaly and scaling dimensions of the  $O(n)$  model from an exact solution on the honeycomb lattice. *Phys. Rev. Lett.* **61** (1988), no. 2, 138–140. (Summary) **89g:82064a** 82A68 (82A69)
- (with Batchelor, M. T.) Errata: "Conformal anomaly and scaling dimensions of the  $O(n)$  model from an exact solution on the honeycomb lattice". *Phys. Rev. Lett.* **61** (1988), no. 8, 1042. (Editors) **89g:82064b** 82A68 (82A69)
- (with Batchelor, M. T.) Conformal invariance and critical behavior of the  $O(n)$  model on the honeycomb lattice. *Phys. Rev. B* (3) **39** (1989), no. 4, 2391–2402. (Summary) **89m:82071** 82A68 (81E40, 82A25, 82A69)
- Blough, David K.** Consistent estimation of location region. *Ann. Inst. Statist. Math.* **40** (1988), no. 2, 343–352. (Margaret P. Gessaman) **89b:62042** 62F10
- Blows, T. R.** (with Lloyd, N. G.; Kalenge, M. C.) Some cubic systems with several limit cycles. *Nonlinearity* **1** (1988), no. 4, 653–669. (Hassan El-Owaidy) **89k:34043** 34C05 (34C10, 58F14, 58F21)
- Bloznelis, M.** Rate of convergence to a stable law in the space  $\mathbb{R}^d$ . (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **28** (1988), no. 1, 33–43; translated in *Lithuanian Math. J.* **28** (1988), no. 1, 21–29. (Eugeniusz Rychlik) **89g:60066** 60F05
- Bludman, Sidney A.** (with Schinder, Paul J.; Piran, Tsvi) General-relativistic implicit hydrodynamics in polar-sliced space-time. *Phys. Rev. D* (3) **37** (1988), no. 10, 2722–2731. (Gh. Procopiuc) **89e:83045** 83C55 (83-08)
- Bludov, V. V.** (with Khamov, E. V.) Mechanization of investigations in group theory. (Russian) *Theory of algebraic structures* (Russian), 12–18, *Karagand. Gos. Univ., Karaganda*, 1985. (M. Greendlinger) **89b:20003** 20-04 (03B35, 20F05, 20F10)
- Blum, Alex**  $D$ -validity in predicate logic with individual constants. *Internat. Logic Rev.* **35** (1987), 28–31. (Not in MR) 03B10
- Blum, Edward K.** (with Ehrig, H.; Parisi-Presicce, Francesco) Algebraic specification of modules and their basic interconnections. *J. Comput. System Sci.* **34** (1987), no. 2-3, 293–339. (Julian Padgett) **89g:68042** 68Q55 (68P05)
- The semantics and complexity of parallel programs for vector computations. I. A case study using Ada. *BIT* **28** (1988), no. 3, 530–551. (Summary) **89b:68097** 68Q55 (65W05)
- (with Reid, Gregory J.) On the numerical solution of three-dimensional boundary value problems by separation of variables. *SIAM J. Numer. Anal.* **25** (1988), no. 1, 75–90. (Hartmut Strese) **89a:65182** 65N99
- Blum, Heribert** Extrapolation techniques in the numerical treatment of corner and crack singularities. *The mathematics of finite elements and applications, VI* (Uxbridge, 1987), 555–562, Academic Press, London-New York, 1988. (see **89c:65004**) 65N30 (73K25)
- (with Rannacher, R.) Extrapolation techniques for reducing the pollution effect of reentrant corners in the finite element method. *Numer. Math.* **52** (1988), no. 5, 539–564. (T. R. Hopkins) **89e:65117** 65N30
- Blum, Lenore** A new simple homotopy algorithm for linear programming. *I. J. Complexity* **4** (1988), no. 2, 124–136. (F. Pickel) **89h:90140** 90C05 (65K05, 90C33)

- Blum, Lesser** (with Torruella, A. J.) Invariant expansion. IV. The exponentials of tensorial expressions. *J. Chem. Phys.* **89** (1988), no. 8, 4976–4980. (Summary) **89j:82049** 82A50 (81G55)
- (with Cornu, Françoise; Jancovici, Bernard) The two-dimensional one-component plasma in a doubly periodic background: exact results. *J. Statist. Phys.* **50** (1988), no. 5-6, 1221–1243. (W. I. Skrypnik) **89i:82056** 82A45 (82A05)
- Bluman, G. W.** (with Kumei, Sukeyuki) Exact solutions for wave equations of two-layered media with smooth transition. *J. Math. Phys.* **29** (1988), no. 1, 86–96. (A. S. Alekseev) **89g:35061** 35L05 (35C05, 35T30)
- (with Reid, Gregory J.; Kumei, Sukeyuki) New classes of symmetries for partial differential equations. *J. Math. Phys.* **29** (1988), no. 4, 806–811. (Pierre-Louis Lions) **89i:35003a** 35A30 (35L65, 35Q20, 58G35)
- (with Reid, Gregory J.; Kumei, Sukeyuki) Erratum: "New classes of symmetries for partial differential equations". *J. Math. Phys.* **29** (1988), no. 10, 2320. (Pierre-Louis Lions) **89i:35003b** 35A30 (35L65, 35Q20, 58G35)
- Blumens, A. A.** (with Grudskenski, Janis) Principles of automatization of the design of experiments for dynamic systems. (Russian) *Decision-making methods and systems. Applied problems in the analysis of solutions in technical systems (Russian)*, 92–99, 150, *Rizsk. Politekh. Inst., Riga*, 1986. (see **89h:00001**) 62K99 (90B30)
- Blume, Lawrence E.** Equilibrium and optimality in a sequence of markets with transactions costs. *Contributions to mathematical economics*, 103–118, North-Holland, Amsterdam-New York, 1986. (Erwin Klein) **89a:90042** 90A14
- Blumen, A.** (with Köhler, Günther Horst) Subordination on ultrametric spaces. *J. Phys. A* **20** (1987), no. 16, 5627–5633. (Hanna Nencka) **89g:60235** 60J30 (82A41)
- (with Zumofen, G.; Klafter, J.) Fractal patterns in chemistry. *Fractals, quasicrystals, chaos, knots and algebraic quantum mechanics (Maratea, 1987)*, 1–20, NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci., 235, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89e:2067** 92A40
- (with Zumofen, G.; Klafter, J.) Fractal concepts in reaction kinetics. *Fractals, quasicrystals, chaos, knots and algebraic quantum mechanics (Maratea, 1987)*, 21–52, NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci., 235, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89g:80009** 80A30 (92A40)
- (with Köhler, Günther Horst; Knapp, E. W.) Continuous-time random walks on a long-range hierarchical model. *Phys. Rev. B* (3) **38** (1988), no. 10, 6774–6778. (Summary) **89i:82041** 82A41 (82A57)
- Blumenfeld, Raphael** Probability densities of homogeneous functions: explicit approximation and applications to percolating networks. *J. Phys. A* **21** (1988), no. 3, 815–825. (R. T. Smythe) **89d:82082** 82A43 (60K35)
- Blumenthal, Robert A.** (with Hebda, James J.) The generalized Cartan-Ambrose-Hicks theorem. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 14, 647–651. (R. J. Crittenden) **89e:53043** 53C05 (53C10)
- (with Hebda, James J.) An analogue of the holonomy bundle for a foliated manifold. *Tōhoku Math. J. (2)* **40** (1988), no. 2, 189–197. (Jean Wouafa Kanga) **89d:53069** 53C12 (57R30)
- Blumer, A.** (with Blumer, J.; Haussler, D.; McConnell, R.; Ehrenfeucht, Andrzej) Complete inverted files for efficient text retrieval and analysis. *J. Assoc. Comput. Mach.* **34** (1987), no. 3, 578–595. (Armin Cremers) **89h:68028** 68P20 (68Q25, 68R10, 68T10)
- Blumer, J.** How much is that DAWG in the window? A moving window algorithm for the directed acyclic word graph. *J. Algorithms* **8** (1987), no. 4, 451–469. (Summary) **89a:68082** 68Q20 (05C20, 68R10)
- (with Blumer, A.; Haussler, D.; McConnell, R.; Ehrenfeucht, Andrzej) Complete inverted files for efficient text retrieval and analysis. *J. Assoc. Comput. Mach.* **34** (1987), no. 3, 578–595. (Armin Cremers) **89h:68028** 68P20 (68Q25, 68R10, 68T10)
- Böhmmlinger, Martin** Approximation durch Bernsteinoperatoren auf kompakten konvexen Mengen. (English summary) [Approximation with Bernstein operators on compact convex sets] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **196** (1987), no. 4-7, 181–215. (M. W. Müller) **89j:41035** 41A36 (41A25, 41A40)
- Blunden, A. R.** (with Blunden, W. R.; Gostelow, J. P.) On the application of queueing theory concepts to boundary layer transition. *Computational techniques and applications: CTAC-87 (Sydney, 1987)*, 109–117, North-Holland, Amsterdam-New York, 1988. (Summary) **89d:76001** 76-05 (60K25, 76F99)
- Blunden, W. R.** (with Gostelow, J. P.; Blunden, A. R.) On the application of queueing theory concepts to boundary layer transition. *Computational techniques and applications: CTAC-87 (Sydney, 1987)*, 109–117, North-Holland, Amsterdam-New York, 1988. (Summary) **89d:76001** 76-05 (60K25, 76F99)
- Blunt, M. J.** (with Ball, R. C.) A family of exponents from a fractal model of viscous fingering and DLA. *J. Phys. A* **20** (1987), no. 17, 5961–5969. (Summary) **89e:76100** 76S05 (82A99)
- Blyth, Colin R.** Letter to the editor: "A practical procedure to obtain confidence intervals for the Bernoulli parameter" [Comput. Statist. Data Anal. **2** (1984), no. 3, 191–206; Zbl 559:62029] by O. Alvarez, A. Matuszewski and D. Sotres and "A basic statistical problem: confidence interval for the Bernoulli parameter" [ibid. **3** (1985), no. 2, 103–114] by Matuszewski and Sotres. *Comput. Statist. Data Anal.* **7** (1989), no. 1, 93–98. (Not in MR) 62F25
- Blyth, T. S.** (with Robertson, Edmund F.) ★ Sets and mappings. Essential Student Algebra, 1. Chapman and Hall, New York, 1986. vi+120 pp. ISBN 0-412-27880-4 (Frederick Hoffman) **89b:00001a** 00A05 (04-01)
- (with Robertson, Edmund F.) ★ Matrices and vector spaces. Essential Student Algebra, 2. Chapman and Hall, New York, 1986. vi+120 pp. ISBN 0-412-27870-7 (Frederick Hoffman) **89b:00001b** 00A05 (15-01)
- (with Robertson, Edmund F.) ★ Abstract algebra. Essential Student Algebra, 3. Chapman and Hall, New York, 1986. vi+120 pp. ISBN 0-412-27860-X (Frederick Hoffman) **89b:00001c** 00A05 (12-01, 16-01, 20-01)
- (with Robertson, Edmund F.) ★ Linear algebra. Essential Student Algebra, 4. Chapman and Hall, New York, 1986. vi+120 pp. ISBN 0-412-27850-2 (Frederick Hoffman) **89b:00001d** 00A05 (15-01)
- (with Robertson, Edmund F.) ★ Groups. Essential Student Algebra, 5. Chapman and Hall, New York, 1986. vi+120 pp. ISBN 0-412-27840-5 (Frederick Hoffman) **89b:00001e** 00A05 (20-01)
- (with Noor, A. S. A.; Varlet, J. C.) Congruences on double MS-algebras. (French summary) *Bull. Soc. Roy. Sci. Liège* **56** (1987), no. 2, 143–152. (R. Beazer) **89a:06024** 06D15 (06D20, 06D30)
- (with Varlet, J. C.) Polarised Ockham algebras with locally complemented skeletons. *Bull. Soc. Roy. Sci. Liège* **57** (1988), no. 3, 151–156. (R. Beazer) **89m:06013** 06D15 (06D20)
- (with Varlet, J. C.) The ideal lattice of an MS-algebra. *Glasgow Math. J.* **30** (1988), no. 2, 137–143. (R. Beazer) **89j:06009** 06D30 (06D15, 06D20)
- (with Noor, A. S. A.; Varlet, J. C.) Ockham algebras with De Morgan skeletons. *J. Algebra* **117** (1988), no. 1, 165–178. (Joel Berman) **89m:06012** 06D15 (06D20)
- Blythe, S. P.** (with Anderson, Roy Malcolm) Distributed incubation and infectious periods in models of the transmission dynamics of the human immunodeficiency virus (HIV). *IMA J. Math. Appl. Med. Biol.* **5** (1988), no. 1, 1–19. (Summary) **89a:92034** 92A15
- (with Anderson, Roy Malcolm) Variable infectiousness in HIV transmission models. *IMA J. Math. Appl. Med. Biol.* **5** (1988), no. 3, 181–200. (Summary) **89i:92034** 92A15 (92A07)
- (with Anderson, Roy Malcolm) Heterogeneous sexual activity models of HIV transmission in male homosexual populations. *IMA J. Math. Appl. Med. Biol.* **5** (1988), no. 4, 237–260. (Not in MR) 92A15
- Byumin, S. L.** (with Denisenko, Yu. I.; Milovidov, S. P.) On the investigation and solution of integer systems of linear equations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 6, 787–792, 957. (A. M. Galperin) **89h:65055** 65F20 (90C05)
- Bo, Lian Ming** The strong Markov property of a denumerable Markov process. (Chinese. English summary) *J. Math. Res. Exposition* **8** (1988), no. 2, 279–290. (Min Ping Qian) **89i:60145** 60J27
- Boas, A. J.** (with Alavi, Yousef; Chartrand, G.; Erdős, Paul; Oellermann, O. R.) The ascending subgraph decomposition problem. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 7–14. (H. Joseph Straight) **89a:05136** 05C70
- (with Williams, Kenneth L.) Optimizing subcase solutions for  $(M, N)$ -transitivity. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 914–919. (see **89d:00007**) 90B10 (05C20, 68R10)
- Boas, Harold P.** (with Boas, R. P.) Short proofs of three theorems on harmonic functions. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 906–908. (Ü. Kuran) **89d:31008** 31B05 (30D30)
- (with Straube, Emil J.) Integral inequalities of Hardy and Poincaré type. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 172–176. (Josef Voldrich) **89f:46068** 46E35 (26D10, 35H05)
- Small sets of infinite type are benign for the  $\bar{\partial}$ -Neumann problem. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 569–578. (John P. D'Angelo) **89g:32026** 32F20 (35N15)
- van emde Boas, Peter** see **van Emde Boas, Peter**
- Boas, R. P.** Selected topics from Pólya's work in complex analysis. *Math. Mag.* **60** (1987), no. 5, 271–274. (Heinrich Begehr) **89k:01030** 01A70 (30-03, 30B10, 30C15, 30D15)
- (with Trembinska, A. M.) An extension of Carlson's theorem for analytic functions. *J. Math. Anal. Appl.* **129** (1988), no. 1, 131–133. (D. Drasin) **89a:30023** 30D15
- (with Boas, Harold P.) Short proofs of three theorems on harmonic functions. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 906–908. (Ü. Kuran) **89d:31008** 31B05 (30D30)
- see also **Nikiforov, A. F.** **89h:33001**
- vilas Boas Mendes, Lúcia Helena** see **Vilas Boas Mendes, Lúcia Helena**
- Boasón, Luc** (with Autebert, Jean-Michel; Sényergues, Gérard) Groups and NTS languages. *J. Comput. System Sci.* **35** (1987), no. 2, 243–267. (Klaus Madlener) **89i:68114** 68Q45 (20F10, 68Q50)
- sterba-Boatwright, B. D.** see **Sterba-Boatwright, B. D.**
- Bobatto, G. E.** (with Milone, A. A. E.; Milone, L. A.) Numerical evaluation of the line broadening function  $H(a, v)$ . *Astrophys. and Space Sci.* **147** (1988), no. 2, 229–234. (Summary) **89h:65031** 65D20 (33A70)
- Bobenko, A. I.** (with Kubenskii, V. L.) Qualitative analysis and calculations of finite-gap solutions of the Korteweg-de Vries equation. An automorphic approach. (Russian. English summary) *Theoret. Mat. Fiz.* **72** (1987), no. 3, 352–360. (Piotr Biler) **89e:58057** 58F07 (30F10, 35Q20)
- (with Bordag, L. A.) Qualitative analysis of finite-gap solutions of the KdV equation by means of an automorphic approach. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **165** (1987), Mat. Vopr. Teor. Rasprostranen. Voln **17**, 31–41, 189–190. (I. S. Kravitschik) **89i:35197** 35Q20 (35B99, 58F07)
- (with Kuznetsov, V. B.) Lax representation and new formulae for the Goryachev-Chaplygin top. *J. Phys. A* **21** (1988), no. 9, 1999–2006. (Tudor S. Ratiu) **89g:58086** 58F07 (70E15)
- Bobeth, M.** (with Aksenov, V. L.; Plakida, N. M.) Nonergodic behavior in the Ising model with a transverse field. (Russian. English summary) *Theoret. Mat. Fiz.* **76** (1988), no. 1, 47–57; translated in *Theoret. and Math. Phys.* **76** (1988), no. 1, 696–703. (M. Lawrence Glasser) **89i:82081** 82A68 (82A25)
- Bobileva, O. N.** (with Rvachëv, V. L.) Approximation properties of structures of difference type for the Neumann boundary value problem. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 2, 291–293; translated in *Soviet Math. Dokl.* **37** (1988), no. 1, 79–82. (R. Schumann) **89h:65164** 65N15 (41A30)
- Bobisud, L. E.** (with Stakgold, I.) Dead cores in nonlinear reaction-diffusion systems. *Nonlinear Anal.* **11** (1987), no. 10, 1219–1227. (J. López Gómez) **89h:35069** 35K37 (35J60)
- (with O'Regan, D.; Royalty, W. D.) Existence and nonexistence for a singular boundary value problem. *Appl. Anal.* **28** (1988), no. 4, 245–256. (P. B. Bailey) **89i:34016** 34B15
- (with O'Regan, D.; Royalty, W. D.) Solvability of some nonlinear boundary value problems. *Nonlinear Anal.* **12** (1988), no. 9, 855–869. (Jan Andres) **89j:34023** 34B15
- Bobkov, A. I.** (with Tyurlikova, O. A.) Construction of strategies for the classification of a level of knowledge based on a graph-analytic model. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 5, 109–112, 135; translated in *Cybernetics* **24** (1988), no. 5, 669–673. (Costica Cazacu) **89m:68115** 68T05
- Bobkov, S. G.** Upper functions and oscillating Gaussian processes. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **158** (1987), Probl. Teor. Veroyatn. Raspr. **5**, 1–13, 169; translated in *J. Soviet Math.* **43** (1988), no. 6, 2745–2751. (O. O. Kurchenko) **89e:60083** 60G15
- Bobkov, V. V.** (with Bohte, Z.; Mandrik, P. A.) Improved correspondence between solutions of differential and difference equations. (Serbo-Croatian summary) *Facta Univ. Ser.*



- Math. Inform.* No. 2 (1987), 67-74. (L. A. V. Carvalho) **89h:65109** 65L05 (34A50, 34K05, 39A10)
- Bobo, S.** (with Benhabib, Kety; Baba-Hamed, Ch.) Technique des régionalisations: un petit essai sur l'exponentielle. [The regionalization method: a brief essay on the exponential] *Cahiers Math.* **1987**, no. 1, 39-52. (H. Gonsbor) **89e:03115** 03H05 (26E35)
- Boboc, Cristinel** The lower semicontinuity of the value function in optimal control. *Stud. Cerc. Mat.* **40** (1988), no. 2, 119-124. (S. Raczynski) **89m:49021** 49A50 (49C20)
- Boboc, N.** (with Bucur, Gh.) Fine potentials and supermean functions on standard  $H$ -cones. *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 10, 881-890. (Rainer Wittmann) **89c:31009** 31D05
- (with Bucur, Gh.) On a Hunt hypothesis. *Stud. Cerc. Mat.* **39** (1987), no. 5, 418-421. (Eugen Popa) **89d:31016** 31D05 (60J40)
- (with Bucur, Gh.) Order and convexity in potential theory. *Potential theory—surveys and problems* (Prague, 1987), 24-41, *Lecture Notes in Math.*, 1344, Springer, Berlin-New York, 1988. (see **89m:31001**) 31C05
- Cabiria Andreian Cazacu on her sixtieth birthday. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 10, 807-808. (Editors) **89j:01059** 01A70
- (with Bucur, Gh.) On Frostman property in standard  $H$ -cones of functions. *Stud. Cerc. Mat.* **40** (1988), no. 2, 125-136. (Tadashi Murazawa) **89m:31009** 31D05
- Bobochko, V. N.** The de la Vallée-Poussin problem for a system of singularly perturbed differential equations with unstable spectrum. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 6, 15-24; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 6, 16-28. (Zoran Kadelburg) **89j:34082** 34E15 (34B10, 34E05)
- Boborykin, V. G.** On the solution of finite-dimensional analogues for some contact problems in elasticity theory with friction. (Russian) *Methods for solving nonlinear problems, and data processing* (Russian), 8-13, 104, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1986. (see **89f:00011**) 73T05 (73-08)
- Bobrik, R. V.** Mean-square stability of solutions of a system of linear differential equations with Gaussian coefficients. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 6, 778-780, 815. (Ralf Manthey) **89m:33088** 93E15 (34F05, 60G15, 60H25)
- Bobrov, B. F.** (with Apostolyuk, A. S.; Borydyuk, B. A.; Gradetskii, A. V.; Larin, V. B.; Safronov, Yu. G.; Solov'ev, V. S.) Optimization of the de Prony method for the identification of linear dynamical systems. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 66, 64 pp. (Not in MR) **93B30** (93B40)
- Bobrov, N. E.** Confidence limits for the defectiveness acceptance level. Statistical methods of estimation and verification of hypotheses. *J. Soviet Math.* **41** (1988), no. 1, 809-811. (Harshinder Singh) **89m:62109** 62N10
- Bobrowa, I. V.** (with Belyanin, P. N.; Gonsales-Sabater, A.) The problem of synthesizing engineering CAD for flexible manufacturing systems. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 1, 49-57; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 3, 12-21, 219 (Russian). (Not in MR) **93B50**
- Bobrovskii, V. P.**  $\omega$ -uniform distributions. (Russian) *Theory of algebraic structures* (Russian), 18-24, *Karagand. Gos. Univ., Karaganda*, 1985. (Gerold S. Wagner) **89a:11080** 11K38
- Bobrovsky, B. Z.** (with Steinberg, Y.; Schuss, Z.) On the optimal filtering problem for the cubic sensor. *Circuit Systems Signal Process.* **7** (1988), no. 3, 381-408. (B. G. Mertzios) **89j:93123** 93E11
- (with Zakai, Moshe; Zeitouni, O.) Error bounds for the nonlinear filtering of signals with small diffusion coefficients. *IEEE Trans. Inform. Theory* **34** (1988), no. 4, 710-721. (Faris A. Badawi) **89m:93081** 93E11 (94A12)
- Bobryshev, A. G.** (with Gurban, V. I.; Baturin, V. A.; Moskalenko, A. I.; Baginov, I. P.; Butin, A. A.; Danilina, E. V.; Derenko, N. V.; Dushin, K. B.; Dykhta, V. A.; Kolokol'nikova, G. A.; Konstantinov, G. N.; Mel'nik, V. V.; Nikiforova, L. N.; Ovsyannikova, N. A.; Rasina, I. V.; Rozenraukh, D. M.; Urbanovich, D. E.; Fedorova, E. Yu.) ★ Методы улучшения в вычислительном эксперименте. (Russian) [Methods of improving [control] in numerical experiments] “*Nauka*” *Sibirsk. Otdel., Novosibirsk*, 1988. 184 pp. ISBN 5-02-028573-0 (Asen L. Dontchev) **89h:65099** 65Kxx (49Dxx, 93B40)
- Bobyleva, O. N.** see Bobileva, O. N.
- Boccalletti, D.** (with Fortini, Pierluigi) On two solutions of the 't Hooft-Polyakov monopole complete equations. (Italian and Russian summaries) *Nuovo Cimento B* (11) **100** (1987), no. 1, 91-104. (Yisong Yang) **89c:81062** 81E13
- Boccaro, N.** see *Propagation in systems far from equilibrium*, **89f:76003**
- Bocchetti, P.** (with Aquilano, C.; Barbuti, R.; Martelli, Maurizio) Negation as failure. Completeness of the query evaluation process for Horn clause programs with recursive definitions. *J. Automat. Reason.* **2** (1986), no. 2, 155-170. (Summary) **89j:68145** 68T25 (03B70)
- Bocharov, O. B.** On a method for the numerical solution of the one-dimensional Buckley-Leverett problem. (Russian) *Dinamika Splashn. Sredy* No. 77 (1986), 3-20, 159. (Summary) **89e:65085** 65M05
- Bocharov, P. P.** (with Al'bores, F. Kh.) A single-server service system of finite capacity with distributions of phase type and absolute priority. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 12, 93-103. (Summary) **89b:60206** 60K25 (90B22)
- Böcherer, S.** (with Raghavan, Srinivasacharya) On Fourier coefficients of Siegel modular forms. *J. Reine Angew. Math.* **384** (1988), 80-101. (A. Perelli) **89c:11068** 11F30 (11F46)
- Das Gaußsche Klassenzahlproblem. [Gauss's class number problem] *Mitt. Math. Ges. Hamburg* **11** (1988), no. 5, 565-589. (Franz Halter-Koch) **89h:11082** 11R11 (01A65, 11E41)
- Bochicchio, Marco** BRST quantization of superstring field theory. *Phys. Lett. B* **198** (1987), no. 4, 475-478. (Danny Birmingham) **89c:81105** 81E99 (81E30, 83E30)
- Bochkashvili, P. N.** (with Tikhonov, A. N.; Goncharskii, A. V.; Matvienko, A. N.; Rau, É. I.; Savin, D. O.; Stepanov, V. V.) Microtomography of layered media in conical beams. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 5, 1095-1097. (From the text) **89d:92016** 92A07 (44A15)
- Bochkarev, A. D.** Solution of a problem with nonlocal boundary conditions for an equation of hyperbolic type with a coefficient that has a first-order singularity in the interior of the domain. (Russian) *Differential equations and mathematical physics* (Russian), 58-62, *Kuibyshev. Gos. Ped. Inst., Kuibyshev*, 1985. (see **89f:35006**) 35L80
- Solution of a problem with discontinuous gluing conditions for an equation of mixed type with a coefficient that has a first-order singularity on part of the boundary. (Russian)
- Analytic methods for solving differential equations* (Russian), 9-14, 144, *Kuibyshev. Gos. Univ., Kuibyshev*, 1986. (Summary) **89g:35075** 35M05
- Bochkarev, P. M.** Application of the differential invariant method to the investigation of almost-periodic systems of second-order differential equations. (Russian) *Partial differential equations* (Russian), 93-97, *Leningrad. Gos. Ped. Inst., Leningrad*, 1986. (A. I. Perov) **89b:34103** 34C27
- Bochkareva, O. V.** Solution of boundary value problems for a differential equation whose coefficients are singular in the interior of and on the boundary of the domain. (Russian) *Differential equations and mathematical physics* (Russian), 82-85, *Kuibyshev. Gos. Ped. Inst., Kuibyshev*, 1985. (see **89f:35006**) 35M05
- Bochmann, D.** (with Posthoff, C.; Haubold, K.) ★ Diskrete Mathematik. (German) [Discrete mathematics] Mathematisch-Naturwissenschaftliche Bibliothek [Mathematical-Scientific Library], 70. *RSB B. G. Teubner Verlagsgesellschaft, Leipzig*, 1986. 248 pp. ISBN 3-322-00300-0 (B. Zelinka) **89b:00003** 00A05 (05-01, 06-01, 68-01)
- Bochnak, J.** (with Kucharz, W.) Sur les classes d'homologie représentables par des hypersurfaces algébriques réelles. (English summary) [On homology classes represented by real algebraic hypersurfaces] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 13, 609-611. (A. Tognoli) **89h:14032** 14G30 (57R95)
- (with Kucharz, W.) Nonisomorphic algebraic structures on smooth manifolds. *Proc. Amer. Math. Soc.* **101** (1987), no. 3, 424-426. (Selman Akbulut) **89d:32019** 32B99 (14G30)
- (with Kucharz, W.) On real algebraic morphisms into even-dimensional spheres. *Ann. of Math.* (2) **128** (1988), no. 2, 415-433. (Robert Silhol) **89h:57060** 57R35 (14G30)
- Bocherishvili, R. D.** Convergence of Lax and Godunov difference schemes for a class of quasilinear hyperbolic systems. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **25** (1988), 21-28, 273. (Not in MR) **65M10**
- (with Shkirladze, N. M.) Kinetic type splitting. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **25** (1988), 29-37, 274. (Summary) **89g:76034** 76N15 (76-08)
- Bock, H. H.** On the interface between cluster analysis, principal component analysis, and multidimensional scaling. *Multivariate statistical modeling and data analysis* (Harrisonburg, Va., 1986), 17-34, *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (Summary) **89a:62141** 62H30 (62H25)
- Bock, M. E.** (with Diaconis, P.; Huffer, Fred W.; Perlman, Michael D.) Inequalities for linear combinations of gamma random variables. (French summary) *Canad. J. Statist.* **15** (1987), no. 4, 387-395. (G. S. Lingappaiah) **89e:62020** 62E15
- Shrinkage estimators: pseudo-Bayes rules for normal mean vectors. *Statistical decision theory and related topics, IV, Vol. 1* (West Lafayette, Ind., 1986), 281-297, *Springer, New York-Berlin*, 1988. (Khurshed Alam) **89b:62106** 62H12 (62C15, 62F15)
- (with Govindarajulu, Z.) A note on the noncentral chi-square distribution. *Statist. Probab. Lett.* **7** (1988), no. 2, 127-129. (Summary) **89b:62014** 62E15
- (with Solomon, Herbert) Tables for distributions of quadratic forms. *Statistics* **19** (1988), no. 3, 399-435. (Summary) **89i:62181** 62Q05 (60E05)
- Bockenholt, U.** A logistic representation of multivariate paired-comparison models. *J. Math. Psych.* **32** (1988), no. 1, 44-63. (Summary) **89a:62222** 62P15 (62J15)
- Böcker, J.** (with Hartmann, I.; Zwanig, Ch.) ★ Nichtlineare und adaptive Regelungssysteme. (German) [Nonlinear and adaptive control systems] Hochschultext. [University Textbooks] Springer-Verlag, Berlin-New York, 1986. xiv+579 pp. ISBN 3-540-16930-X (Jerzy Jaroń) **89h:93001** 93-01 (93C10, 93C40, 93D05)
- Bockmayr, Alexander** A note on a canonical theory with undecidable unification and matching problem. *J. Automat. Reason.* **3** (1987), no. 4, 379-381. (G. E. Peterson) **89d:68076** 68T15 (03B35, 68Q50)
- Bocjan, Gheorghe** ★ Random sets and related topics. *Monografi Matematice* [Mathematical Monographs], 27. *Universitatea din Timisoara, Facultatea de Stiinte ale Naturii, Sectia Matematica, Timisoara*, 1986. vi+177 pp. (A. Nowak) **89b:60085** 60H25 (28B20, 54H05, 60B99)
- Boddy, Mark** (with Dean, Thomas) Reasoning about partially ordered events. *Artificial Intelligence* **36** (1988), no. 3, 375-399. (Petr Jirká) **89j:03010** 03B45 (03D15, 68T99, 92A25)
- Bode, Dieter** ★ Zur Bestimmung eines Kreises durch drei Punkte. (German) [On the definition of a circle through three points] Schriftenreihe der Fachhochschule Lippe [Publication Series of the Lippe Technical College], 3. *Fachhochschule Lippe, Lemgo*, 1986. 20 pp. (Hans Robert Müller) **89j:65040** 65F99 (51-04, 51N20)
- Bodea, Constanța** (with Diaconescu, G.; Velicanu, M.) A relational operator for sorted join. *Econom. Comput. Econom. Cybernet. Stud. Res.* **23** (1988), no. 2, 33-36. (Not in MR) **68P20**
- Bodendiek, R.** (with Wagner, Klaus<sup>1</sup>) The fascination of minimal graphs. *Graph theory in memory of G. A. Dirac* (Sandbjerg, 1985), 39-51, *Ann. Discrete Math.*, 41, North-Holland, Amsterdam-New York, 1989. (Andrew Vince) **89m:05047** 05C10 (57M15)
- (with Wagner, Klaus<sup>1</sup>) On a standard method concerning embeddings of graphs. *Graph theory in memory of G. A. Dirac* (Sandbjerg, 1985), 453-472, *Ann. Discrete Math.*, 41, North-Holland, Amsterdam-New York, 1989. (Andrew Vince) **89c:05034** 05C10
- Bodenschütz, E.** (with Kramer, Lorenz; Zimmermann, Walter Josef; Pesch, W.) Pattern selection in convective instabilities with axial anisotropy. *Propagation in systems far from equilibrium* (Les Houches, 1987), 240-249, *Springer Ser. Synergetics*, 41, Springer, Berlin-New York, 1988. (see **89f:76003**) 76E15 (76E25, 76E30, 82A57)
- Bödigheimer, C.-F.** Stable splittings of mapping spaces. *Algebraic topology* (Seattle, Wash., 1985), 174-187, *Lecture Notes in Math.*, 1286, Springer, Berlin-New York, 1987. (Donald W. Kahn) **89c:55011** 55Q05 (55Q10)
- (with Madsen, Ib) Homotopy quotients of mapping spaces and their stable splitting. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 156, 401-409. (Donald M. Davis) **89m:55007** 55P99 (57S99)
- Bođjanová, Slávka** The application of certain concepts in the theory of fuzzy sets in the classification of multivariate observations. (Slovak. English summary) *Ekonóm.-Mat. Obzor* **24** (1988), no. 4, 439-449. (Summary) **89m:03047** 03E72 (62H30)
- Bodlaender, H. L.** ★ Distributed computing: structure and complexity. CWI Tract, 43. *Stichting Mathematisch Centrum, Centrum voor Wiskunde en Informatica, Amsterdam*, 1987. vi+294 pp. ISBN 90-6196-327-3 (R. K. Shyamasundar) **89j:68015** 68M10 (65W05, 68Q10, 68Q25)

- (with Schoone, A. A.; van Leeuwen, Jan) Improved diameter bounds for altered graphs. *Graph-theoretic concepts in computer science* (Bernried, 1986), 227–236, *Lecture Notes in Comput. Sci.*, 246, Springer, Berlin-New York, 1987. (J. Bond) **89a:05092** 05C35
- Bodnar, D. I.** Positive-definite branching continued fractions. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 45–49, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) 30B70 (40A15)
- Bodnarchuk, P. I.** (with Slon'ovskii, R. V.) Justification of fractional rational numerical methods for stable correction. (Russian) *Mat. Metody i Fiz.-Mekh. Polya* No. 23 (1986), 32–37, 109. (Summary) **89a:65125** 65L20
- Bodnarchuk, Yu. V.** Automorphisms of bounded wreath products of groups. (Ukrainian. Russian summary) *Vysnik Kiyv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 14–15, 123. (Not in MR) 20F28
- Bodner, V. A.** (with Rodnitshev, N. E.; Yurikov, E. P.) On the optimization of systems with a random jump structure. (Russian. English summary) *Kibernetika* (Kiev) 1988, no. 2, 108–110, 136. (Bohdan Maslowski) **89j:93138** 93E20 (49D07, 93C57)
- Bodson, M.** (with Mason, J. E.; Bai, E. Wei; Fu, L.-C.; Sastry, S. Shankar) Analysis of adaptive identifiers in the presence of unmodeled dynamics: averaging and tuned parameters. *IEEE Trans. Automat. Control* 33 (1988), no. 10, 969–976. (Jan Bialasiewicz) **89i:93032** 93B30 (49D07, 93C40, 93D25)
- Bodunov, N. A.** (with Kotchenko, F. F.) Dependence of the stability of linear periodic systems on the period. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 2, 338–341, 366–367. (Not in MR) 34C25 (34D20)
- Bodwin, Geoffrey T.** (with Kovács, Eve V.) Equivalence of Dirac-Kähler and staggered lattice fermions in two dimensions. *Phys. Rev. D* (3) 38 (1988), no. 4, 1206–1219. (Summary) **89h:81151** 81E25
- Bodysanskii, E. V.** (with Solov'eva, T. V.) Synthesis of pseudodual adaptive regulators. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1987, no. 11, 69–71, 87. (Andrzej W. Olbrot) **89f:93026** 93C40 (93B50)
- Synthesis of multidimensional adaptive regulators on the basis of a multilevel approach. (Russian) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1987, no. 12, 65–67, 88. (Summary) **89e:93083** 93B50 (93A13, 93C40)
- Design of multidimensional pseudodual adaptive controllers. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 4, 62–64, 89. (Summary) **89e:93084** 93B50 (93C40, 93E12, 93E20)
- Design of a dual adaptive extremal controller. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 5, 63–65, 89. (Benjamin Goldys) **89g:93107** 93E20 (93C40, 93E12)
- Boe, Brian D.** Kazhdan-Lusztig polynomials for Hermitian symmetric spaces. *Trans. Amer. Math. Soc.* 309 (1988), no. 1, 279–294. (Stephen Siebanski) **89i:22024** 22E46 (17B10, 32M15)
- Boehler, J.-P.** Physical motivation. *Applications of tensor functions in solid mechanics*, 3–11, *CISM Courses and Lectures*, 292, Springer, Vienna, 1987. (see **89m:73002**) 73C30
- Introduction to the invariant formulation of anisotropic constitutive equations. *Applications of tensor functions in solid mechanics*, 13–30, *CISM Courses and Lectures*, 292, Springer, Vienna, 1987. (see **89m:73002**) 73B05
- Representations for isotropic and anisotropic nonpolynomial tensor functions. *Applications of tensor functions in solid mechanics*, 31–53, *CISM Courses and Lectures*, 292, Springer, Vienna, 1987. (see **89m:73002**) 73B10
- Anisotropic linear elasticity. *Applications of tensor functions in solid mechanics*, 55–65, *CISM Courses and Lectures*, 292, Springer, Vienna, 1987. (see **89m:73002**) 73C30
- Yielding and failure of transversely isotropic solids. *Applications of tensor functions in solid mechanics*, 67–97, *CISM Courses and Lectures*, 292, Springer, Vienna, 1987. (see **89m:73002**) 73E05
- On a rational formulation of isotropic and anisotropic hardening. *Applications of tensor functions in solid mechanics*, 99–122, *CISM Courses and Lectures*, 292, Springer, Vienna, 1987. (see **89m:73002**) 73E05
- Anisotropic hardening of rolled sheet-steel. *Applications of tensor functions in solid mechanics*, 123–139, *CISM Courses and Lectures*, 292, Springer, Vienna, 1987. (see **89m:73002**) 73E05
- see also *Applications of tensor functions in solid mechanics*, **89m:73002**
- Boehm, Paul** (with Fonio, Harald-Reto; Habel, Annegret) Amalgamation of graph transformations: a synchronization mechanism. *J. Comput. System Sci.* 34 (1987), no. 2–3, 377–408. (Dirk Janssens) **89e:68070** 68Q50
- Boehm, Wolfgang** Smooth curves and surfaces. *Geometric modeling*, 175–184, *SIAM, Philadelphia, PA*, 1987. (see **89b:65010**) 65D10
- On de Boor-like algorithms and blossoming. *Comput. Aided Geom. Design* 5 (1988), no. 1, 71–79. (Summary) **89b:65030** 65D05
- Boender, C. G. E.** (with Rinnooy Kan, A. H. G.; Vercellis, C.) Stochastic optimization methods. *Stochastics in combinatorial optimization* (Udine, 1986), 94–112, *World Sci. Publishing, Singapore*, 1987. (Mamoru Ohashi) **89m:90120** 90C15 (90C27, 90C30)
- (with Rinnooy Kan, A. H. G.; Vellekoop, A. H.) A random field model for estimating the content of soil layers. *Appl. Math. Lett.* 1 (1988), no. 2, 109–112. (Summary) **89e:86001** 86–08 (86A60)
- Boente, Graciela** (with Fraiman, Ricardo; Yohai, Victor J.) Qualitative robustness for stochastic processes. *Ann. Statist.* 15 (1987), no. 3, 1293–1312. (Zhen Hua Wang) **89g:62049** 62F35 (60G55)
- (with Fraiman, Ricardo) On the asymptotic behaviour of general maximum likelihood estimates for the nonregular case under nonstandard conditions. *Biometrika* 75 (1988), no. 1, 45–56. (M. N. Goria) **89k:62042** 62F12
- (with Fraiman, Ricardo) Consistency of a nonparametric estimate of a density function for dependent variables. *J. Multivariate Anal.* 25 (1988), no. 1, 90–99. (Summary) **89k:62051** 62G05
- de Boer, Martin J. M.** (with Lindenmayer, Aristed) Map OL-systems with edge label control: comparison of marker and cyclic systems. *Graph-grammars and their application to computer science* (Warrenton, VA, 1986), 378–392, *Lecture Notes in Comput. Sci.*, 291, Springer, Berlin-New York, 1987. (see **89b:68009**) 68Q45 (68Q50)
- Boerner, G.** (with Lister, G. G.; Anzer, U.) Numerical simulations of accretion onto rotating, magnetic neutron stars. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 427–438, *North-Holland, Amsterdam-New York*, 1988. (Summary) **89d:85001** 85–08 (85A30)
- Boero, Gianna** Vector autoregression models: a time series approach to macroeconomic modelling. *Survey of statistical methods and applications*, 5 (Italian) (Cagliari, 1985), 1–17, *Coll. Atti Congr., Piaggia, Bologna*, 1987. (see **89a:62003**) 62M10 (62P20)
- Boers, A. H.** Duplication of algebras. II. *Nederl. Akad. Wetensch. Indag. Math.* 50 (1988), no. 3, 235–244. (Ivar Heuch) **89k:17058** 17D92 (17A30)
- Boesch, F. T.** (with Prodinger, Helmut) Spanning tree formulas and Chebyshev polynomials. *Graphs Combin.* 2 (1986), no. 3, 191–200. (J. W. Moon) **89d:05060** 05C05
- (with Yang, C. S.; Wang, Ching Fa; Li, Chao Yen) Graph theoretic reliability analysis for the Boolean  $n$  cube networks. *IEEE Trans. Circuits and Systems* 35 (1988), no. 9, 1175–1179. (W.-K. Chen) **89g:94054** 94C15 (94C10)
- Boese, F. G.** On the lag-dependence of the zeros of the characteristic functions for a class of difference differential equations. *Z. Angew. Math. Mech.* 68 (1988), no. 4, T55–T58. (Zhicheng Wang) **89f:34094** 34K05 (34K20)
- Boethius** see Majewski, Maksymilian, **89m:01023**
- Boettner, Reinhard** Model reduction and stability analysis of nonlinear dynamical systems by means of centre manifold theory. *Systems analysis and simulation 1988, I* (Berlin, 1988), 159–162, *Math. Res.*, 46, Akademie-Verlag, Berlin, 1988. (see **89g:00018**) 58F10
- Boev, T. B.** Propagation and nonpropagation of singularities for a class of semilinear P. D. equations. *C. R. Acad. Bulgare Sci.* 41 (1988), no. 8, 25–28. (V. Ivrlil) **89i:35007** 35A20 (58G17)
- Crawley-Boevey, W. W.** see Crawley-Boevey, W. W.
- Boffa, Maurice** (with Bryant, Roger M.) Les groupes linéaires vérifiant une identité monoidale. (English summary) [Linear groups with a monoidal identity] *C. R. Acad. Sci. Paris Sér. I Math.* 308 (1989), no. 5, 127–128. (Zhi Jie Chen) **89m:20060** 20H20
- Böfgen, R.** (with Reichert, M. A.) Computing the decomposition of primes  $p$  and  $p$ -adic absolute values in semisimple algebras over  $\mathbb{Q}$ . *J. Symbolic Comput.* 4 (1987), no. 1, 3–10. (Kurt Girstmair) **89i:11083** 11Y40 (11R27)
- Boffi, Giandomenico** The universal form of the Littlewood-Richardson rule. *Adv. in Math.* 68 (1988), no. 1, 40–63. (Piotr Pragacz) **89f:20047** 20G05 (05A17, 20G15)
- The case of the submaximal minors: a finishing touch. *Adv. in Math.* 68 (1988), no. 1, 64–84. (Piotr Pragacz) **89i:13016** 13D25 (14M12, 20G05, 20G15)
- Boffi, V. C.** (with Spiga, G.) Spatial effects in the study of nonlinear evolution problems of particle transport theory. *Transport Theory Statist. Phys.* 17 (1988), no. 2–3, 241–255. (François Golse) **89i:82031** 82A40 (35C99, 82A70)
- (with Rossani, A.) Space-dependent forces and current density transients in particle transport theory. (Italian summary) *Z. Angew. Math. Phys.* 39 (1988), no. 6, 902–917. (Not in MR) 82A70
- Bofinger, Eve** Step down procedures for comparison with a control. *Austral. J. Statist.* 29 (1987), no. 3, 348–364. (S. Panchapakesan) **89b:62157** 62J15 (62F07)
- Least significant spacing for “one versus the rest” normal populations. *Comm. Statist. Theory Methods* 17 (1988), no. 5, 1697–1716. (Thomas J. Santner) **89h:62086** 62G30 (62F10)
- Bogachëv, V. I.** Subspaces of the differentiability of smooth measures on infinite-dimensional spaces. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 1, 18–22; translated in *Soviet Math. Dokl.* 37 (1988), no. 2, 304–308. (V. A. Romanov) **89e:46046; EA** **89m** 46G05 (28C20, 46G12, 58C35)
- Differentiability of measures in the sense of Skorokhod. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 2, 349–354; translated in *Theory Probab. Appl.* 33 (1988), no. 2, 330–334. (N. Sarapa) **89h:60005** 60B11 (28C20, 46G12)
- Bogacz, R.** (with Irretier, H.; Sikora, Jan) On limit cycles of two degrees of freedom system with dry friction. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations* (Budapest, 1987), 611–614, *János Bolyai Math. Soc., Budapest*, 1987. (From the text) **89k:70020** 70K10 (34C05)
- Bogaenko, K. I.** (with Boichuk, M. V.) Approximation of solutions for the Navier-Stokes equations by series in eigenfunctions of the Laplace operator. (Russian) *Some problems in the theory of asymptotic methods in nonlinear mechanics* (Russian), 44–48, iii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1986. (Summary) **89h:76015** 76D05 (35Q10)
- Bogaerts, W.** (with Rijckaert, M. J.; Debroey, V.) Expert systems: the state of the art. *Mathematical models for decision support* (Val d'Isère, 1987), 487–517, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 48, Springer, Berlin-New York, 1988. (see **89g:90136**) 68T99
- Bogaevskii, V. N.** (with Povzner, A. Ya.) Algebraic methods in perturbation theory. (Russian) *Asymptotic methods in mathematical physics* (Russian), 29–44, 299, “Naukova Dumka”, Kiev, 1988. (Summary) **89k:34098** 34E10 (58C27, 58F30)
- (with Ostrer, L. A.) On the stability of permanent rotations of a rigid body. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 2, 304–307; translated in *Soviet Phys. Dokl.* 33 (1988), no. 1, 47–48. (Summary) **89e:70010** 70E15 (70K20)
- Bogan, Yu. A.** Bending of a strongly anisotropic plate over an obstacle. (Russian) *Dinamika Sploshn. Sredy* No. 80 (1987), 14–22, 164. (Summary) **89c:73047** 73K10 (73C30, 73C60)
- Bogardi, I.** Water resources models. *Economic-ecological modeling*, 117–134, *Stud. Regional Sci. Urban Econom.*, 16, North-Holland, Amsterdam-New York, 1987. (see **89d:90076**) 90A30
- (with Bárdossy, A.; Kelly, W. E.) Imprecise (fuzzy) information in geostatistics. New advances in geostatistics (Redwood City, CA, 1987). *Math. Geol.* 20 (1988), no. 4, 287–311. (Summary) **89f:86008** 86A20 (03E72)
- Bogatko, V. I.** (with Kolton, G. A.) On a problem of nonlinear diffraction of strong shock waves. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astron.* 1988, vyp. 3, 45–49, 124–125. (Summary) **89k:76069** 76L05
- Bogatyi, S. A.** (with Shavgulidze, E. T.) Periodic points of the mapping of a system of intervals. (Russian) *Mat. Zametki* 43 (1988), no. 3, 365–381, 430; translated in *Math. Notes* 43 (1988), no. 3–4, 210–219. (Zuo Ling Zhou) **89h:58154** 58F20 (54H20)
- Bogatyyev, A. V.** (with Pyatnitskii, E. S.) Construction of piecewise-quadratic Lyapunov functions for nonlinear control systems. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 10, 30–38. (B. M. Garay) **89e:93172** 93D20 (34D20, 93C10)
- Bogdan, T. J.** (with Lerche, L.) A note on solitary wave solutions of the Leibovich-Roberts equation. *Quart. Appl. Math.* 46 (1988), no. 2, 365–374. (L. Debnath) **89k:76021** 76B25 (35Q20)
- Bogdanov, A. V.** (with Tiganov, I. I.) On a problem of initial slip for a chemically reacting gas. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 4, 834–837; translated in *Soviet Phys. Dokl.* 33 (1988), no. 2, 101–102. (Introduction) **89e:80015** 80A32



- Bogdanov, E. I.** (with Nagibbarova, I. A.; Deryugin, I. A.) ★ ДИНАМИКА КВАНТОВЫХ СИСТЕМ. (Russian) [The dynamics of quantum systems] *"Nauka i Tekhnika"*, Minsk, 1986. 280 pp. (J. Christina) **89g:81102** 81G10 (58C27, 58F14, 81-02, 81K05)
- Bogdanov, I. V.** (with Demkov, Yu. N.) Determination of the internal structure of relativistic astrophysical objects in the wave approximation. *Soviet Phys. JETP* **66** (1987), no. 1, 1-8 (1988); translated from *Zh. Eksp. Teoret. Fiz.* **93** (1987), no. 1, 3-16 (Russian). (Summary) **89c:83037** 83C47 (81E20, 85A15)
- Bogdanov, L. V.** On the two-dimensional Zakharov-Shabat problem. (Russian. English summary) *Theoret. Mat. Fiz.* **72** (1987), no. 1, 155-159. (Woodford W. Zachary) **89j:58040** 58F07 (35Q20, 81F05)
- (with Manakov, S. V.) Nonlocal  $\bar{\partial}$ -problem and  $(2+1)$ -dimensional soliton equations. *Plasma theory and nonlinear and turbulent processes in physics*, Vol. 1, 2 (Kiev, 1987), 7-19. *World Sci. Publishing, Singapore*, 1988. (Cun-Zheng Wang) **89m:58088** 58F07 (35Q20, 58G35)
- (with Manakov, S. V.) The nonlocal  $\bar{\partial}$  problem and  $(2+1)$ -dimensional soliton equations. *J. Phys. A* **21** (1988), no. 10, L537-L544. (Summary) **89h:35277** 35Q20 (58F07)
- Bogdanov, Yu. S.** (with Mazanik, S. A.) Lyapunov transforms of linear differential systems. (Russian) *Problems in the qualitative theory of differential equations* (Russian) (*Irkutsk*, 1986), 9-13, 280. "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (see **89j:34002**) 34C20
- see also **Obituary: Bogdanov, Yu. S.**, **89f:01084** and **Andreev, A. F. et al.**, **89i:01055**
- Bogdanović, Stojan** (with Malinović, Todor) Semigroups whose proper subsemigroups are (right-)  $t$ -Archimedean. *Proceedings of the Conference "Algebra and Logic"*, Cetinje 1986, 7-14. *Univ. Novi Sad, Novi Sad*, 1987. (Alessandra Cherubini) **89g:20093** 20M10
- Semigroups of Galbiati-Veronesi. II. (Serbo-Croatian summary) *Facta Univ. Ser. Math. Inform.* **2** (1987), 61-66. (Summary) **89h:20087** 20M10
- (with Milić, Svetozar) Inflation of semigroups. *Publ. Inst. Math. (Beograd) (N.S.)* **41(55)** (1987), 63-73. (T. Tamura) **89b:20128** 20M10
- Inflation of semigroups and semirings. (Serbo-Croatian summary) *Zb. Rad. No. 1* (1987), 1-9. (Mohan S. Putcha) **89h:20088** 20M10 (16A78)
- Generalized  $U$ -semigroups. (Serbo-Croatian summary) *Zb. Rad. No. 2* (1988), 3-7. (John M. Howie) **89m:20070** 20M10
- Bogdanski, Yu. V.** The maximum principle for a nonregular elliptic differential equation in a countable-dimensional Hilbert space. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 1, 21-25, 132; translated in *Ukrainian Math. J.* **40** (1988), no. 1, 17-19. (A. V. Uglanov) **89g:35109** 35R15 (35B50, 35J99)
- Bogdanstev, E. N.** Semi-Markov models in the operation of engineering systems. (Russian) *Mathematical methods for the analysis of complex stochastic systems* (Russian), 63-67, v. *Akad. Nauk Ukrain. SSR, Inst. Kibernet.*, Kiev, 1988. (see **89j:90164**) 90B25
- Reliability of a restorable system with variable rates of resource exhaustion and repair of elements. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 2, 68-73, 134; translated in *Cybernetics* **24** (1988), no. 2, 224-232. (F. Beichelt) **89g:60271** 60K20 (60K15, 90B25)
- Boger, F.** (with Aharony, Amnon; Oxaal, U.; Murat, M.; Meir, Yigal; Feder, Jens; Jossang, T.) Growth and viscous fingers on percolating porous media. *Random fluctuations and pattern growth* (*Cargèse*, 1988), 83-86. *NATO Adv. Sci. Inst. Ser. E: Appl. Sci.*, 157. *Kluwer Acad. Publ., Dordrecht*, 1988. (see **89j:00034**) 82A43 (76S05)
- Bogotof, Peter** (with Hallefford, Asa; Kok, Matthijs) On the convergence of reference point methods in multiobjective programming. *European J. Oper. Res.* **34** (1988), no. 1, 56-68. (Summary) **89i:90078** 90C31 (90S50)
- Bogges, A.** The holomorphic extension of CR functions near a point of higher type. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 847-855. (M. Klimek) **89i:32029** 32D15 (32E99)
- (with Dwilewicz, R.) Subaveraging estimates for CR functions. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 117-124. (Mario Landucci) **89j:32027** 32F99
- Boggio, L.** Errata corrigé: "On the stability of production prices" [*Metroeconomica* **37** (1985), no. 3, 241-267; MR **87j:90028**]. *Metroeconomica* **37** (1985), no. 3 (Editors) **89f:90023** 90A11
- Boggs, Paul T.** (with Byrd, Richard H.; Schnabel, Robert B.) A stable and efficient algorithm for nonlinear orthogonal distance regression. *SIAM J. Sci. Statist. Comput.* **8** (1987), no. 6, 1052-1078. (Girdhar G. Agarwal) **89a:62150** 62J02 (65D10)
- Boghossian, Bruce M.** (with Levermore, C. David) A cellular automaton for Burgers' equation. *Complex Systems* **1** (1987), no. 1, 17-29. (P. A. Kuchment) **89a:35170a** 35Q20 (58F40, 68Q75, 68Q80)
- (with Levermore, C. David) Errata: "A cellular automaton for Burgers' equation". *Complex Systems* **1** (1987), no. 6, 1125. (P. A. Kuchment) **89a:35170b** 35Q20 (58F40, 68Q75, 68Q80)
- Boglaev, I. P.** Numerical integration of some singularly perturbed systems of ordinary differential equations. *BAII IV* (Novosibirsk, 1986), 228-232. *Boole Press Conf. Ser.*, 8. *Boole, Dún Laoghaire*, 1986. (From the introduction) **89b:65184** 65L10
- A numerical method for solving a quasilinear elliptic equation with a small parameter multiplying the highest derivatives. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 4, 492-502, 622. (Ervin Schechter) **89f:65102** 65N05
- Boglaev, Yu. P.** Construction by iterations of fundamental solutions of systems of linear ordinary differential equations in general position. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 5, 1037-1041; translated in *Soviet Math. Dokl.* **37** (1988), no. 3, 760-764. (A. D. Ziebur) **89f:34017** 34A45 (34A30, 34C20)
- Bognár, M.** Walking in finite directed graphs. *Studia Sci. Math. Hungar.* **22** (1987), no. 1-4, 305-313. (Oleg Tarasow) **89d:05125** 05C45
- On linking Jordan curves. *Acta Math. Hungar.* **51** (1988), no. 1-2, 15-22. (Jack Weinstein) **89g:55011** 55N99 (57Q45)
- Bogodistov, S. S.** (with Sitnikov, V. G.) Dynamics of the angular motion of an aircraft in the presence of aerodynamic hysteresis of the moment characteristic. (Russian) *Uchen. Zap. TsAGI* **18** (1987), no. 2, 130-142. (Summary) **89b:76024** 76G99 (34C99, 58F40)
- Bogojević, Aleksandar R.** BRST invariance of the measure in string field theory. *Phys. Lett. B* **198** (1987), no. 4, 479-485. (Roger Brooks) **89a:81114** 81E99 (81E20, 81E30, 81G20, 83E30)
- Bogolyubov, N. M.** see **Bogolyubov, N. M.**
- Bogolyubov, N. N., Jr.** see **Bogolyubov, N. N., Jr.**
- Bogolyubov, Aleksei Nikolaevich** Geometry and mechanics in the works of J.-V. Poincaré. (Russian) *Studies in the history of physics and mechanics*, 1986 (Russian), 178-191, 271, "Nauka", Moscow, 1986. (C. J. Scriba) **89d:01036** 01A55 (51-03, 70-03, 73-03)
- see also **Kraevna, V. K.**, **89a:01068**; *History of mechanics in Russia*, **89d:01077**; **Voronina, M. M.**, **89i:01109** and **Artobolevskii, I. I.**, **89m:70002**
- Bogolyubov, N. M.** (with Izergin, A. G.; Reshetikhin, N. Yu.) Finite-size effects and critical indices of 1D quantum models. *JETP Lett.* **44** (1986), no. 9, 521-523 (1987); translated from *Pisma Zh. Eksp. Teoret. Fiz.* **44** (1986), no. 9, 405-407 (Russian). (Chris Athorne) **89a:81115** 81E99 (81E40, 82A15, 82A25)
- (with Izergin, A. G.; Reshetikhin, N. Yu.) Finite-size effects and infrared asymptotics of the correlation functions in two dimensions. *J. Phys. A* **20** (1987), no. 15, 5361-5369. (M. Lawrence Glasser) **89b:82020** 82A15 (81E25, 81E40)
- Bogolyubov, N. N.** (with Berezanskii, Yu. M.; Daletskii, Yu. L.; Kuchment, P. A.; Levin, B. Ya.; Maslov, V. P.; Novikov, S. P.; Semenov, E. M.) Selim Grigor'evich Krein (on the occasion of his seventieth birthday). (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 5(257), 223-224. (Editors) **89b:01038** 01A70
- (with Vladimirov, V. S.) Dmitrii Nikolaevich Zubarev (on the occasion of his seventieth birthday). (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 4(262), 235-236; translated in *Russian Math. Surveys* **43** (1988), no. 4, 241-243. (Editors) **89m:01077** 01A70
- see also **Kolmogorov, A. N.**, **89a:01104** and **Bogolyubov, N. N., Jr.**, **89c:81220**
- Bogolyubov, N. N., Jr.** (with Shumovskii, A. S.) ★ Сверхизлучение. (Russian) [Super-radiation] With a foreword by N. N. Bogolyubov. Лекции для Молодых Ученых [Lectures for Young Scientists], R17-87-176. *Obšč. Inst. Yadernykh Issled., Dubna*, 1987.. 88 pp. (K. Wódkiewicz) **89c:81270** 81K05 (81-02)
- (with Mitropolskii, Yu. A.; Prikrpat-skii, A. K.; Samoilenko, V. Gr.) ★ Интегрируемые динамические системы: спектральные и дифференциально-геометрические аспекты. (Russian) [Integrable dynamic systems: spectral and differential-geometric aspects] "Naukova Dumka", Kiev, 1987. 296 pp. (Eugene Gutkin) **89g:58093** 58F07 (35Q20)
- (with Kazaryan, A. R.; Kurbatov, A. M.; Neskoromnyi, V. N.) The nonequilibrium description of superradiant state on the basis of exact evolution equation. *Internat. J. Modern Phys. B* **1** (1987), no. 1, 69-88. (Summary) **89a:81183** 81K05
- Bogomol'naya, A. V.** (with Nazarov, F. L.; Rukhsin, S. E.) The covering of a convex polygon by triangles with fixed vertices. (Russian) *Mat. Zametki* **44** (1988), no. 2, 191-195, 286; translated in *Math. Notes* **44** (1988), no. 1-2, 586-589. (Marek Lassak) **89i:52021** 52A45 (52A25)
- Bogomolov, Alexander** A method of approximating stiffness matrices for some pseudo-differential equations. *J. Comput. Phys.* **74** (1988), no. 1, 85-93. (M. K. Kadalbajoo) **89b:65258** 65N30 (65F99)
- Bogomol'nyi, E. B.** Smoothed wave functions of chaotic quantum systems. *Phys. D* **31** (1988), no. 2, 169-189. (Summary) **89b:81062** 81C99 (58F13, 81-04)
- Bogomol'nyi, V. M.** The solution of boundary value problems of the theory of shells with an unknown boundary. *J. Appl. Math. Mech.* **51** (1987), no. 1, 135-137 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 1, 172-175 (Russian). (Summary) **89c:73068** 73L99
- Bogomolov, F. A.** (with Monastyrskii, M. I.) Geometry of the orbit space, and phases in  $^3\text{He}$  and in a neutron star in a  $P$ -state. (Russian. English summary) *Theoret. Mat. Fiz.* **73** (1987), no. 2, 210-222. (Mario Škrinjar) **89i:82023** 82A25 (32M05, 53C80)
- Bogomolov, S. V.** Convergence of the method of summary approximation for the Boltzmann equation. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 1, 119-126, 158; translated in *U.S.S.R. Comput. Math. and Math. Phys.* **28** (1988), no. 1, 79-84. (Janusz Mika) **89d:82066** 82A40 (45K05, 47H17)
- (with Lebedev, V. A.) Convergence of the Euler difference scheme for the solution of a system of stochastic differential equations in the particle method for the Boltzmann equation. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 8, 1264-1267, 1280. (Summary) **89f:82031** 82A40 (82-08)
- Bogomolova, I. A.** (with Glasko, V. B.; Kal'ner, V. D.; Kulik, N. I.; Kondorskaya, E. E.; Tikhonov, A. N.; Yurasov, S. A.) Inverse problems associated with the control of diffusional and thermal processes. *J. Engng. Phys.* **53** (1987), no. 5, 1329-1335 (1988); translated from *Inzh.-Fiz. Zh.* **53** (1987), no. 5, 835-842 (Russian). (Summary) **89d:80007** 80A20 (93C20)
- Bogopolskii, O. V.** Arboreal decomposability of groups of automorphisms of free groups. (Russian) *Algebra i Logika* **26** (1987), no. 2, 131-149, 271. (Robert G. Burns) **89i:20045** 20E06 (20F28)
- Bogoshi, Jonas** (with Naidoo, Kevin; Webb, John) The oldest mathematical artefact. *Math. Gaz.* **71** (1987), no. 458, 294. (M. P. Closs) **89a:01003** 01A10
- Bogovskii, M. E.** (with Maslennikova, V. N.) Elliptic boundary value problems in unbounded domains with noncompact and nonsmooth boundaries. (Italian summary) *Rend. Sem. Mat. Fis. Milano* **56** (1986), 125-138 (1988). (J. V. A. Gonçalves) **89i:35049** 35J25 (35D05)
- Bogowski, Franciszek** (with Burniak, Czesław) On the domain of local univalence and starlikeness in a certain class of holomorphic functions. *Demonstratio Math.* **20** (1987), no. 3-4, 519-536 (1988). (G. Lakshma Reddy) **89m:30019** 30C45 (30C55)
- Bogoyavlenskii, O. I.** (with Anile, A. M.; Moschetti, G.) Some solutions of Einstein's equations with shock waves. *J. Math. Phys.* **28** (1987), no. 12, 2942-2948. (K. S. Bhamra) **89b:83018** 83C15 (83C55, 83F05)
- Some constructions of integrable dynamical systems. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **51** (1987), no. 4, 737-766, 910; translated in *Math. USSR-Izv.* **31** (1988), no. 1, 47-75. (A. Morimoto) **89g:58087** 58F07 (70H05)
- Integrable dynamical systems connected with the KdV equation. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **51** (1987), no. 6, 1123-1141, 1358; translated in *Math. USSR-Izv.* **31** (1988), no. 3, 435-454. (A. Morimoto) **89b:58075** 58F07 (35Q20)
- Algebraic constructions of some integrable equations. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **52** (1988), no. 4, 712-739, 895; translated in *Math. USSR-Izv.* **33** (1989), no. 1, 39-65. (Hana Petzeltová) **89m:45013** 45K05 (35Q20, 58F07)
- Boguslavskaya, E. I.** (with Kolomiets, M. D.) An approach to the modeling of complex dynamical systems. (Russian) *Adapt. Sistemy Avtomat. Upravleniya* **15** (1987), 107-113, v. (Summary) **89c:93035** 93B30 (00A71, 93A10)
- Boguslavskii, I. A.** A robust algorithm for recurrent filtering. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 6, 1329-1332; translated in *Soviet Phys. Dokl.* **33** (1988), no. 6, 404-405. (Not in MR) **93E25** (93E11)
- Bohdanecký, Z.** (with Radil, T.; Lánský, P.; Indra, M.; Mates, J.; Radilová, J.; Yakimoff, N.) Perception quantitatively analyzed. *Biomathematics and related computational problems*

- (Naples, 1987), 83–97, *Kluwer Acad. Publ., Dordrecht*, 1988. (see **89f:92002**) 92A27
- Bohlin, Karl** see **Poincaré, Henri**, **89c:01054b**
- Bohm, Arno** (with Ne'eman, Yuval) Twenty years of dynamical groups and spectrum generating algebras. *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jarmala*, 1985), 479–517, "Nauka", Moscow, 1986. (see **89d:81002**) 81C40 (81-02)
- (with Kielanowski, P.; Kmiecik, M.; Loewe, M.) Relativistic spectrum generating groups: spectrum and radiative transitions in a collective model of hadrons. *Group theoretical methods in physics* (Varna, 1987), 208–222, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (Summary) **89j:81254** 81G20
- (with Boya, L. J.; Kielanowski, P.; Kmiecik, M.; Loewe, M.; Magnollay, P.) Theory of relativistic extended objects. *Internat. J. Modern Phys. A* 3 (1988), no. 5, 1103–1121. (Summary) **89c:81199** 81G25
- (with Kmiecik, M.; Boya, L. J.) Representation theory of superconformal quantum mechanics. *J. Math. Phys.* 29 (1988), no. 5, 1163–1170. (Véronique Hussin) **89d:81038** 81C40 (81G20)
- (with Boya, L. J.; Kmiecik, M.) Hydrogen atom in one dimension. *Phys. Rev. A* (3) 37 (1988), no. 9, 3567–3569. (P. G. L. Leach) **89d:81018** 81C05 (70F05, 70G05, 81G45)
- Bohm, David** The implicate order and Prigogine's notions of irreversibility. *Found. Phys.* 17 (1987), no. 7, 667–677. (Jeffrey Bub) **89b:82041** 82A35 (81B05, 92A05)
- see also **Quantum implications**, **89m:81006** and **Hiley, B. J.**, (**89m:81006**)
- Böhm, Johannes** Zum isoperimetrischen Problem bei Simplex in  $r$ -dimensionalen Räumen konstanter Krümmung. [On the isoperimetric problem for simplices in  $r$ -dimensional spaces of constant curvature] *Studia Sci. Math. Hungar.* 21 (1986), no. 1–2, 267–281. (A. Florian) **89a:52032** 52A40 (51M20, 52A25)
- (with Börner, W.; Hertel, E.; Krötenheerdt, O.; Mögling, Werner; Stämmler, L.) ★ *Geometrie. I. (German)* [Geometrie. I] Axiomatischer Aufbau der euklidischen Geometrie. [Axiomatic construction of Euclidean geometry] With historical comments by H. Wussing. Fifth edition. Studienbücherei. [Textbook Library] Mathematik für Lehrer [Mathematics for Teachers], 6. VEB Deutscher Verlag der Wissenschaften, Berlin, 1988. 146 pp. ISBN 3-326-00370-6 (Editors) **89b:51001** 51-02 (51M05)
- Böhm, Volker** Returns to size vs returns to scale: the core with production revisited. *J. Econom. Theory* 46 (1988), no. 1, 215–219. (Summary) **89h:90029** 90A11 (90A14)
- Bohman, Harald** see **Ajne, Björn**, **89a:01049**
- Bohman, Jan** (with Fröberg, Carl-Erik) The Stieltjes function—definition and properties. *Math. Comp.* 51 (1988), no. 183, 281–289. (Herman J. J. te Riele) **89i:11095** 11M06 (11Y35, 33A10, 65B10)
- Böhm, Gernot** see **Newton, Isaac**, **89j:01024**
- Böhme, Johann F.** Estimation of spectral parameters of correlated signals in wavefields. *Mathematics in signal processing* (Bath, 1985), 485–497, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see **89b:94004**) 62M15
- Parameter estimation in array processing. *Signal processing and pattern recognition in nondestructive evaluation of materials* (Lac Beauport, PQ, 1987), 307–325, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 44, Springer, Berlin-New York, 1988. (see **89a:94002**) 94A12
- Böhmer, Klaus** (with Locker, John) Asymptotic expansions for the discretization error of least squares solutions of linear boundary value problems. *Math. Comp.* 51 (1988), no. 183, 75–91. (L. Greenberg) **89f:65081** 65L10
- (with Allgower, E. L.) Resolving singular nonlinear equations. *Nonlinear Partial Differential Equations Conference* (Salt Lake City, UT, 1986). *Rocky Mountain J. Math.* 18 (1988), no. 2, 225–268. (Hubertus Th. Jongen) **89h:58040** 58E07 (47H15, 58C27)
- Böhmer, W.** (with Trautmann, G.) Special instanton bundles and Poncelet curves. *Singularities, representation of algebras, and vector bundles* (Lambrecht, 1985), 325–336, *Lecture Notes in Math.*, 1273, Springer, Berlin-New York, 1987. (Alexey N. Rudakov) **89d:14024** 14F05 (14H35, 14H45)
- Bohn, Henning** (with Bernanke, Ben; Reiss, Peter C.) Alternative nonnested specification tests of time-series investment models. *J. Econometrics* 37 (1988), no. 3, 293–326. (Not in MR) **89d:62P20** 90A09
- Bohn, S. Elwood** (with Lee, Jong) Errata: "Semitopological groups" [Amer. Math. Monthly 72 (1965), 996–998; MR 32 #7672]. *Amer. Math. Monthly* 94 (1987), no. 10, 994. (Editors) **89d:22001** 22A05
- Bohne, Erhart** (with Gierzech, Heike) Trägerflächen isophotischer Flächenelemente aus Scharen gleicher Stellung bei Zentralbeleuchtung ( $Q; v_4(L, g)$ ). [Support surfaces of isophotic area elements from linear systems with equal position under central illumination ( $Q; v_4(L, g)$ )] *Wiss. Z. Pädagog. Hochschule "Karl Friedrich Wilhelm Wander"* Dresden 21 (1987), 9–16. (H. Brauner) **89k:53002** 53A05 (51N35)
- Bohr, Niels** see **Markov, M. A.**, **89c:01034**; **Anniversary: History of physics**, **89c:01047**; **Holcomb, Harmon R., III**, **89f:81011**; **Mehra, Jagdish**, **89g:01039** and **Wise, M. Norton**, **89g:01041**
- Bohr, Tomas** (with Christensen, Ole Büssing) Universal aspects of the escape from strange sets. *Phys. Scripta* 38 (1988), no. 5, 641–644. (Summary) **89i:58077** 58F13
- Bohre, S. K.** Fixed point theorems for mappings in pseudocompact Tichonov space. *Acta Cienc. Indica Math.* 13 (1987), no. 3, 178–180. (Sehic Park) **89g:54096** 54H25
- (with Jain, Rajendra Kumar<sup>1</sup>) Fixed points of orbitally continuous mappings. *Math. Ed. (Siwan)* 21 (1987), no. 4, 120–123. (Summary) **89e:54092** 54H25
- (with Namdeo, R. K.) On unique fixed point theorems in Hausdorff spaces. *Bull. Calcutta Math. Soc.* 80 (1988), no. 2, 121–126. (Livia D'Apuzzo) **89i:54052** 54H25 (47H10)
- Bohte, Z.** (with Bobkov, V. V.; Mandrik, P. A.) Improved correspondence between solutions of differential and difference equations. (Serbo-Croatian summary) *Facta Univ. Ser. Math. Inform. No. 2* (1987), 67–74. (L. A. V. Carvalho) **89h:65109** 65L05 (34A50, 34K05, 39A10)
- A posteriori error bounds for eigensystems of matrices. *Numerical methods and approximation theory, III* (Niš, 1987), 129–138, *Univ. Niš, Niš*, 1988. (Summary) **89g:65037** 65F15
- Boian, Florian Mircea** Reversible execution with loop-exit schemes. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* 32 (1987), no. 3, 29–36. (Not in MR) **68N05**
- Boicescu, Vlad** Axiel Lukasiewicz-Moisil algebras. *Proceedings of the Conference on Algebra (Romanian)* (Timişoara, 1986), 5–6, *Univ. Timişoara, Timişoara*, 1987. (see **89f:00028**) 06D30
- Irredundant  $n$ -valued Moisil algebras. *Discrete Math.* 71 (1988), no. 3, 197–204. (Wojciech Dziuk) **89i:06018** 06D30 (03B50, 03G20)
- Boichenko, V. A.** (with Leonov, G. A.) Lyapunov orbital exponents of autonomous systems. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1988, vyp. 3, 7–10, 123; translated in *Vestnik Leningrad Univ. Math.* 21 (1988), no. 3, 1–6. (L. Hatvani) **89m:34061** 34D05 (34C25)
- Boicher, Georgi S.** (with Rusev, Pet'r) Uniform convergence of Laguerre series on arcs of the boundaries of their domains of convergence. (Bulgarian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Méc.* 77 (1983), no. 1, 151–161 (1988). (Summary) **89h:33004** 33A30 (30B50)
- On polar singularities of Jacobi series. *Complex analysis and applications '85* (Varna, 1985), 119–126, *Bulg. Acad. Sci., Sofia*, 1986. (S. D. Bajpai) **89a:33005** 33A65
- Boichuk, A. A.** Construction of solutions of boundary value problems for nonlinear systems in critical cases. (Russian) *Some problems in the theory of asymptotic methods in nonlinear mechanics* (Russian), 39–43, ii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1986. (Mazen Mohamed Shahin) **89b:34041** 34B15
- Conditions for the appearance of the dichotomy of linear periodic systems. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 251–256, 327, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (see **89c:00040**) 34A30 (34C25)
- Boundary value problems for weakly perturbed linear and nonlinear systems in critical cases. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1988, no. 39, 44 pp. (Summary) **89m:34024** 34B05
- Iterative methods for constructing solutions of two-point boundary value problems for nonlinear systems. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 3, 6–9, 84. (G. S. Tabidze) **89h:65125** 65L10
- The Green function for a linear nonhomogeneous boundary value problem. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 7, 3–6, 85. (V. Šeda) **89j:34037** 34B27 (34B05)
- (with Lykova, O. B.) Construction of periodic solutions of nonlinear systems in critical cases. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 1, 62–69, 134; translated in *Ukrainian Math. J.* 40 (1988), no. 1, 51–58. (Russell C. Thompson) **89h:34037** 34C25 (34A34)
- Boichuk, B. G.** Deductive synthesis of linear automatic control systems. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 4, 75–83 (1988); translated from *Avtomatika* 1987, no. 4, 70–79, 96 (Russian. English summary). (Not in MR) **93B50** (93B25)
- Boichuk, L. M.** Synthesis of two-level coordinating control systems using adjoint projection operators. *Soviet J. Automat. Inform. Sci.* 19 (1986), no. 6, 38–42 (1987); translated from *Avtomatika* 1986, no. 6, 38–42, 95 (Russian. English summary). (Asen L. Dontchev) **89a:93024** 93B50 (93A13, 93B28)
- Invariant filtering of discrete processes. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 2, 9–15 (1988); translated from *Avtomatika* 1987, no. 2, 10–16, 95 (Russian. English summary). (Not in MR) **93E11** (93C55, 93E14, 94A34)
- Boichuk, M. V.** (with Bogaenko, K. I.) Approximation of solutions for the Navier-Stokes equations by series in eigenfunctions of the Laplace operator. (Russian) *Some problems in the theory of asymptotic methods in nonlinear mechanics* (Russian), 44–48, iii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1986. (Summary) **89h:76015** 76D05 (35Q10)
- Boldoi, J.** (with Ludwig, Jean; Müller, Detlef Horst) On infinitely small orbits. *Studia Math.* 88 (1988), no. 1, 1–11. (Rainer Felix) **89f:22009** 22E25 (22E27, 22E30, 43A80)
- Boik, Robert J.** The Fisher-Pitman permutation test: a nonrobust alternative to the normal theory  $F$  test when variances are heterogeneous. *British J. Math. Statist. Psych.* 40 (1987), no. 1, 26–42. (Title) **89i:62070** 62G10 (62P15)
- Boiko, A. Ya.** Construction of completely conservative difference schemes of magneto-hydrodynamics in mixed Euler-Lagrange variables by means of the projection method. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 7, 1138–1149, 1284; translated in *Differential Equations* 24 (1988), no. 7, 728–736. (Vladimir Janovsky) **89f:76007** 76-08 (65M05, 76W05)
- Boiko, R. V.** (with Kotov, V. N.) Stochastic models for microbiological processes. (Russian) *Asymptotic problems in the theory of random processes* (Russian), 23–33, 114, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (N. L. Vulchanov) **89g:92034** 92A15 (60J85)
- Branching processes with a stabilizing branching regime. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 38 (1988), 9–16, 133. (P. Jagers) **89e:60164** 60J80
- Boikov, I. V.** Asymptotically optimal cubature formulas on classes of differentiable functions. (Russian) *Optimal computation methods and their application*, No. 7 (Russian), 3–14, 161, *Penz. Politekh. Inst., Penza*, 1985. (see **89g:65006**) 65D32
- (with Dobrynina, N. F.) Algorithms that are optimal with respect to accuracy for the calculation of Hadamard integrals. (Russian) *Optimal computation methods and their application*, No. 7 (Russian), 14–28, 161, *Penz. Politekh. Inst., Penza*, 1985. (see **89g:65006**) 65D30
- see also *Optimal computation methods and their application*, **89g:65006**
- Boileau, Michel** (with Flapan, Erica) Uniqueness of free actions on  $S^3$  respecting a knot. *Canad. J. Math.* 39 (1987), no. 4, 969–982. (Cameron MCA. Gordon) **89d:57004** 57M25 (57S17)
- (with Rost, Markus; Zieschang, Heiner) On Heegaard decompositions of torus knot exteriors and related Seifert fibre spaces. *Math. Ann.* 279 (1988), no. 3, 553–581. (Martin Scharlemann) **89a:57013** 57N10 (57Q15)
- Boillat, Guy** (with Strumia, Alberto) Limitation des vitesses d'onde et de choc quand la densité relativiste d'entropie (ou d'énergie) est convexe. (English summary) [Boundedness of wave and shock velocities when the relativistic density of entropy (or energy) is convex] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 2, 111–114. (R. M. Gundersen) **89h:35205** 35L67 (76L05, 76Y05)
- Involutions des systèmes conservatifs. (English summary) [Involutions of conservative systems] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 17, 891–894. (Vesselin M. Petkov) **89m:35135** 35L65 (76L05, 76W05)
- Boimotov, K. Kh.** (with Dzhangibekov, G.) On a singular integral operator. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 3(261), 171–172; translated in *Russian Math. Surveys* 43 (1988), no. 3, 199–200. (From the text) **89f:47076** 47G05 (47A53)
- Strongly degenerate elliptic differential operators of the Triebel class. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 8, 39–47; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 8, 53–63. (H. Triebel) **89m:35086** 35J70
- (with Kostyuchenko, A. G.) The distribution of the eigenvalues of an elliptic operator in a bounded domain. (Russian. English summary) *Trudy Sem. Petrovsk. No. 13* (1988), 3–18, 256. (S. Z. Levendorskii) **89k:35170** 35P20 (35J40)



- de Boissieu, Christian Demande de monnaie et politique monétaire. [The demand for money and monetary policy] *Marchés, capital et incertitude*, 201-224, *Economica, Paris*, 1986. (see 89f:90002) 90A12 (90A09)
- Boissonade, J. (with De Kepper, P.) From bistability to sustained oscillations in homogeneous chemical systems in flow reactor mode. (Russian) *Oscillations and traveling waves in chemical systems (Russian)*, 249-284, "Mir", Moscow, 1988. (see 89f:92003) 92A40 (58F14)
- Boissonnat, Jean Daniel (with Avnaim, Francis) Polygon placement under translation and rotation. *STACS 88 (Bordeaux, 1988)*, 322-333, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (see 89b:68011) 68U05
- Boite, René (with Kunt, Murat) ★ Traitement de la parole. (French) [Speech processing] Complément au Traité d'Électricité. [Complement to the Treatise on Electricity] *Presses Polytechniques Romandes, Lausanne*, 1987. x+285 pp. ISBN 2-88074-140-1 (B. D. Donevski) 89f:94001 94-01 (68T10, 92A25, 93C55, 94A12)
- Boiteux, Marcel Faut-il renoncer au calcul économique? [Must we renounce economic calculus?] *Marchés, capital et incertitude*, 81-87, *Economica, Paris*, 1986. (see 89f:90002) 90A17  
— see also Markets, capital and uncertainty, 89f:90002
- Boiti, M. (with Leon, J. P.; Martina, L.; Pempinelli, F.) On the recursion operator for the KP hierarchy in two and three spatial dimensions. *Phys. Lett. A* 123 (1987), no. 7, 340-344. (P. M. Santini) 89a:35171 35Q20 (58F07, 58G37)  
— (with Leon, J. P.; Martina, L.; Pempinelli, F.) Integrable nonlinear evolutions in  $2+1$  dimensions with nonanalytic dispersion relations. *J. Phys. A* 21 (1988), no. 18, 3611-3627. (J. Christina) 89m:35188 35Q20 (58F07)
- (with Leon, J. P.; Martina, L.; Pempinelli, F.) Scattering of localized solitons in the plane. *Phys. Lett. A* 132 (1988), no. 8-9, 432-439. (Summary) 89b:35278 35Q20
- Boivin, André  $T$ -invariant algebras on Riemann surfaces. *Mathematika* 34 (1987), no. 2, 160-171. (Arne Stray) 89c:30113 30F99 (30E10, 46J15)
- Boivin, Daniel Réurrence multiple et contractions linéaires. (English summary) [Multiple recurrence and linear contractions] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 14, 653-656. (Richard Isaac) 89b:60092 60F25 (28D05, 46A35)  
— Théorèmes de convergence locale pour les résolvantes et les processus abéliens à plusieurs paramètres. [Local convergence theorems for resolvents and abelian processes with multiple parameters] *Canad. J. Math.* 39 (1987), no. 5, 1147-1161. (U. Krengel) 89a:47012 47A35 (28D05, 47B38)
- Baja, Nicolae (with Dăianu, Dan) An  $a$ -category of ordered sets. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* 1986, May, 7-10. (Kimmo I. Rosenthal) 89d:18001a 18B99 (06A10)  
— On the curvatures of the foils parallel with the middle surface of thin shells related to its curvature lines. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* 1986, May, 61-64. (Günter Aumann) 89c:53004 53A05  
— (with Dăianu, Dan) Isotone correspondences. *Proceedings of the Conference on Algebra (Romanian) (Timișoara, 1986)*, 21-24, *Univ. Timișoara, Timișoara*, 1987. (R. H. Street) 89j:18009b 18B10 (20J15)
- Bojadžiev, H. N. see Boyadzhiev, Khristo N.
- Bojadžiev, L. I. see Boyadzhiev, L. I.
- Bojadžiev, G. (with Sattar, M. A.) Bifurcations in the three-dimensional Kolmogorov model. *Math. Biosci.* 86 (1987), no. 1, 51-66. (H. A. DeKleine) 89d:92050 92A15 (58F14)
- wagner-Bojakowska, E. see Wagner-Bojakowska, E.
- Bojadzcyk, A. (with Brent, Richard P.; Van Dooren, Paul; de Hoog, F.) Downdating the Cholesky factorization. *Algorithms and applications on vector and parallel computers (Amsterdam, 1985-86)*, 307-323, *Special Topics Supercomput.*, 3, North-Holland, Amsterdam-New York, 1987. (Summary) 89i:65042 65F30 (65W05)
- Bojanić, R. (with Mazhar, S. M.) An estimate of the rate of convergence of Cesàro means of Fourier series of functions of bounded variation. *Mathematical analysis and its applications (Kuwait, 1985)*, 17-22, *KFAS Proc. Ser.*, 3, Pergamon, Oxford-Elmsford, NY, 1988. (H. P. Dikshit) 89h:42012 42A24 (40G99)
- Bojanov, B. D. see Boyanov, Borislav D.
- Bojanov, Borislav see Boyanov, Borislav D.
- Bojanov, Todor see Boyanov, Todor P.
- Bojarski, Bogdan Remarks on local function spaces. *Function spaces and applications (Lund, 1986)*, 137-152, *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (J. S. Martins) 89g:46061 46E35
- Bojdecki, Tomasz ★ Teoría general de procesos e integración estocástica. Parte I. (Spanish) [The general theory of processes and stochastic integration. Part I] *Monografías del Instituto de Matemáticas [Monographs of the Institute of Mathematics]*, 16, Universidad Nacional Autónoma de México, Mexico City, 1985. iv+107 pp. ISBN 968-837-546-2 (From the introduction) 89a:60099 60G07 (60H05)  
— (with Gorostiza, Luis G.) Inhomogeneous infinite-dimensional Langevin equations. *Stochastic Anal. Appl.* 6 (1988), no. 1, 1-9. (Robert L. Wolpert) 89b:60111 60G20 (60G15, 60H10, 60H15)
- Bokan, N. Curvature tensors on Hermitian manifolds. *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 213-239, *Colloq. Math. Soc. Janos Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Yang Lian Pan) 89h:53060 53B35
- Böker, F. A criterion for selecting log-linear models for contingency tables. (German summary) *OR Spektrum* 10 (1988), no. 3, 167-172. (Jon Stene) 89i:62088 62H17  
— Some remarks on measures of association in  $2 \times 2$  tables. *Statist. Probab. Lett.* 6 (1988), no. 6, 395-397. (Summary) 89c:62070 62H17 (62H20)
- Bokhari, M. A. (with Sharma, Ambikeshwar) Equiconvergence of certain sequences of rational interpolants (Hermite case). *Methods of functional analysis in approximation theory (Bombay, 1985)*, 281-292, *Internat. Schriftenreihe Numer. Math.*, 76, Birkhäuser, Basel-Boston, MA, 1986. (Ryōzi Sakai) 89a:41004 41A05  
— On certain sequences of least squares approximants. *Bull. Austral. Math. Soc.* 37 (1988), no. 3, 415-422. (H. N. Mhaskar) 89i:30046 30E10
- Bokhomer, Ya. E. Commuting selfadjoint extensions of systems of Hermitian operators. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 2, 149-153, 270; translated in *Ukrainian Math. J.* 40 (1988), no. 2, 124-127. (E. R. Tsekanovskii) 89c:47042 47B25 (47A20)
- Bokil, G. B. Theory of crystal symmetry upon the derivation of the 230 space groups. Crystal symmetries. *Comput. Math. Appl.* 16 (1988), no. 5-8, 479-485. (see 89i:00029) 01A60
- Bokowski, Jürgen Aspects of computational synthetic geometry. II. Combinatorial complexes and their geometric realization—an algorithmic approach. *Computer aided geometric reasoning, Vol. I, II (Sophia-Antipolis, 1987)*, 87-125, *INRIA, Rocquencourt*, 1987. (Neil L. White) 89a:05050 05B35  
— (with Garms, Klaus) Altschuler's sphere  $M_{425}^{10}$  is not polytopal. *European J. Combin.* 8 (1987), no. 3, 227-229. (Andrew Vince) 89a:52015 52A25  
— (with Sturmfels, Bernd) Polytopal and nonpolytopal spheres: an algorithmic approach. *Israel J. Math.* 57 (1987), no. 3, 257-271. (A. Altschuler) 89b:52009 52A25 (05B35)  
— (with Shemer, Ido) Neighborly 6-polytopes with 10 vertices. *Israel J. Math.* 58 (1987), no. 1, 103-124. (P. McMullen) 89b:52010 52A25  
— (with Wills, J. M.) Regular polyhedra with hidden symmetries. *Math. Intelligencer* 10 (1988), no. 1, 27-32. (H. S. M. Coxeter) 89c:52011 52A25 (20F32)
- Bökstedt, Marcel (with Waldhausen, Friedhelm) The map  $BSG \rightarrow A(\ast) \rightarrow QS^0$ . *Algebraic topology and algebraic K-theory (Princeton, N.J., 1983)*, 418-431, *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (Ross Staffeldt) 89c:57041 57R50 (18F25, 19D10, 55R12)
- Bokuchava, I. V. (with Kvatadze, Z. A.; Shervashidze, T. L.) On limit theorems for random vectors controlled by a Markov chain. *Probability theory and mathematical statistics, Vol. I (Vilnius, 1985)*, 231-250, *VNU Sci. Press, Utrecht*, 1987. (Introduction) 89c:60040 60F05 (60J10)  
— see also School-Colloquium: Probability Theory and Mathematical Statistics, 89b:60007 and 89b:60008
- Bokuchava, N. V. (with Mamasakhlisov, G. V.) Mathematical models of the optimal control of dynamical systems. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* 130 (1988), no. 1, 49-52. (Not in MR) 49C05
- Bokur, L. A. (with Kukin, G. P.) Undecidable algorithmic problems for semigroups, groups and rings. (Russian) *Algebra. Topology. Geometry, Vol. 25 (Russian)*, 3-66, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (O. V. Belegegradskii) 89a:20036 20F10 (03D35, 16A99, 17B99, 20M05)  
— Some new results in the combinatorial theory of rings and groups. *Algebra—some current trends (Varna, 1986)*, 34-43, *Lecture Notes in Math.*, 1352, Springer, Berlin-New York, 1988. (E. Formanek) 89m:16001 16-02 (20-02)  
— (with L'vov, I. V.; Kharchenko, V. K.) Noncommutative rings. (Russian) *Current problems in mathematics. Fundamental directions, Vol. 18 (Russian)*, 5-116, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (J. S. Joel) 89j:16001 16-02
- Boland, James W. (with Brigham, Robert C.; Dutton, Ronald D.) The difference between a neighborhood graph and a wheel. *Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987)*. *Congr. Numer.* 58 (1987), 151-156. (George R. T. Hendry) 89c:05110 05C35 (05C38)
- Boland, Philip J. (with Proschan, Frank; Tong, Yung Liang) Moment and geometric probability inequalities arising from arrangement increasing functions. *Ann. Probab.* 16 (1988), no. 1, 407-413. (Summary) 89b:60022 60D05 (60E15, 62H10)  
— (with Proschan, Frank) Multivariate arrangement increasing functions with applications in probability and statistics. *J. Multivariate Anal.* 25 (1988), no. 2, 286-298. (Yung L. Tong) 89d:62042 62H10 (60E15)
- Bolashov, M. J. (with Lamata, M. T.; Moral, S.) Decision making problems in a general environment. *Fuzzy Sets and Systems* 25 (1988), no. 2, 135-144. (Summary) 89c:90002 90A05 (03E72)
- Bold, Gary E. J. (with Birdsall, Theodore G.) Minimum bandwidth interpolation of real discrete data. *J. Acoust. Soc. Amer.* 83 (1988), no. 4, 1471-1475. (Not in MR) 94A11 (41A05)
- Boldrighini, C. (with De Masi, A.; Pellegrinotti, A.; Presutti, Errico) Collective phenomena in interacting particle systems. *Stochastic Process. Appl.* 25 (1987), no. 1, 137-152. (Autorreferat (Zbl 626:60103)) 89c:60115 60K35
- Boldur-Lătescu, G. The complex prospect for the problem of cybernetic-economic systems control. *Econom. Comput. Econom. Cybernet. Stud. Res.* 23 (1988), no. 2, 5-13. (Not in MR) 93A10
- Boley, Bruno A. In memoriam: Horst H. E. Leipholz. September 26, 1919-March 22, 1988. *Mech. Res. Comm.* 15 (1988), no. 3, 139. (Editors) 89i:01063 01A70
- Boley, Daniel (with Golub, Gene H.) A survey of matrix inverse eigenvalue problems. *Inverse Problems* 3 (1987), no. 4, 595-622. (Summary) 89m:65036 65F15
- Belfarine, Helene (with Rodrigues, Josemar; Rogatko, André) A general theory of prediction in finite populations. (French summary) *Internat. Statist. Rev.* 53 (1985), no. 3, 239-254. (Summary) 89b:62020 62D05  
— Minimax prediction in finite populations. *Comm. Statist. Theory Methods* 16 (1987), no. 12, 3683-3700. (A. L. Rukhin) 89c:62014 62C05 (62D05)  
— (with Leite, José Galvão; Rodrigues, Josemar) Exact expressions for the posterior mode of a finite population size: capture-recapture sequential sampling. *Rebrapa* 1 (1987), no. 1, 91-100. (James M. Dickey) 89b:62026 62D05 (62F15, 62L12)  
— (with Rodrigues, Josemar) A Bayesian shrunken predictor in repeated sampling. *Rebrapa* 1 (1987), no. 2, 171-177. (Not in MR) 62D05  
— (with Pereira, C. A. de B.; Rodrigues, Josemar) Robust linear prediction in finite populations: a Bayesian perspective. *Sankhyā Ser. B* 49 (1987), no. 1, 23-35. (Daniela Cocchi) 89c:62021 62D05 (62F15, 62F35)  
— Finite population prediction under dynamic generalized linear models. *Comm. Statist. Simulation Comput.* 17 (1988), no. 1, 187-207. (Raymond L. Chambers) 89j:62013 62D05  
— (with Rodrigues, Josemar; Leite, José Galvão) A Bayesian analysis in closed animal populations from capture recapture experiments with trap response. *Comm. Statist. Simulation Comput.* 17 (1988), no. 2, 407-430. (Not in MR) 62F15 (92A17, 92A18)  
— (with Achcar, Jorge A.) Predictive densities in survival analysis with a generalized gamma regression model. *Rebrapa* 2 (1988), no. 1, 23-31. (Not in MR) 62N05
- Bolgrabskaya, I. A. (with Savchenko, A. Ya.) Investigation of some dynamic properties of systems with distributed parameters on the basis of a model for a system of connected absolutely rigid bodies. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems (Irkutsk, 1985) (Russian)*, 164-171, 325, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Summary) 89f:70008 70E99 (70E05, 70E10)

- Bolker, Ethan** (with Ash, Peter; Crapo, Henry; Whiteley, Walter) Convex polyhedra, Dirichlet tessellations, and spider webs. *Shaping space* (Northampton, Mass., 1984), 231–250. *Design Sci. Collect.*, Birkhäuser Boston, Boston, MA, 1988. (see **89b:52016**) 52A45 (52A25)
- Bolkvadze, Zh. D.** (with Gongadze, Yu. A.; Dzhashishvili, G. N.; Nikolaishvili, Sh. S.) On the approximate solution of plane parallel problems of atmospheric optics. (Russian. English and Georgian summaries) *Approximate methods for solving some problems of the transfer of neutron and gamma radiation* (Russian), 151–169, 172–173, Tbilis. Gos. Univ., Inst. Prikl. Mat., Tbilisi, 1986. (see **89b:82003**) 78A15 (85A20, 86A35)
- Bollaerts, Dirk** On the Poincaré series associated to the  $p$ -adic points on a curve. *Acta Arith.* **51** (1988), no. 1, 9–30. (Hernando Enrique Sierra-Morales) **89i:11130** 11S80 (11F85, 11G20, 14G10, 14G20)
- Bolland, John M.** Sorting out centrality: an analysis of the performance of four centrality models in real and simulated networks. *Social Networks* **10** (1988), no. 3, 233–253. (Ki Hang Kim) **89j:20722** 92A20 (94C15)
- Bollé, D.** (with Gesztesy, F.; Klaus, M.) Scattering theory for one-dimensional systems with  $\int dx V(x) = 0$ . *J. Math. Anal. Appl.* **122** (1987), no. 2, 496–518. (Summary) **89k:34028** 34B25 (47E05, 81F05)
- (with Dupont, Patrick Jean; Roekaerts, D.) On the Nicolai map and Witten index for two-dimensional supersymmetric magnetic field systems. *J. Phys. A* **20** (1987), no. 14, 4703–4716. (A. K. Raina) **89d:81032** 81C20 (81D20, 81G20)
- (with Gesztesy, F.; Danneels, C.) Threshold scattering in two dimensions. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **48** (1988), no. 2, 175–204. (Arne Jensen) **89k:81184** 81F05 (35P25, 47F05)
- (with Gesztesy, F.; Klaus, M.) Errata: "Scattering theory for one-dimensional systems with  $\int dx V(x) = 0$ ". *J. Math. Anal. Appl.* **130** (1988), no. 2, 590. (Editors) **89k:34028b** 34B25 (47E05, 81F05)
- (with Dupont, Patrick Jean; Roekaerts, D.) Stochastic representation of nonabelian supersymmetric quantum mechanics. *Nuclear Phys. B* **300** (1988), no. 3, 455–472. (R. M. Kadobyan/kii) **89j:81044** 81C20
- Bollenbacher, Albert** (with Hicks, Troy L.) A fixed point theorem revisited. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 898–900. (Livia D'Apuzzo) **89d:54032** 54H25
- Bollerslev, Tim** On the correlation structure for the generalized autoregressive conditional heteroskedastic process. *J. Time Ser. Anal.* **9** (1988), no. 2, 121–131. (Not in MR) **62M10**
- Bolley, Pierre** (with Camus, Jacques; Pham The Lai) Estimation de la résolvante du problème de Dirichlet dans les espaces de Hölder. (English summary) [Estimate for the resolvent of the Dirichlet problem in Hölder spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 6, 253–256. (B. Hellwig) **89a:35064** 35J25 (47F05)
- Bölling, Reinhard** On ranks of class groups of fields in dihedral extensions over  $\mathbb{Q}$  with special reference to cubic fields. *Math. Nachr.* **135** (1988), 275–310. (T. Metsänkylä) **89j:11105** 11R29 (11R16, 11R21)
- Bollini, C. G.** (with Giambiagi, J. J.) Analyticity in fourth-order wave equations. (Italian summary) *Nuovo Cimento A* (11) **98** (1987), no. 2, 151–167. (Summary) **89g:81094** 81F05
- Bollobás, B.** (with Harris, A. J.) List-colourings of graphs. *Graphs Combin.* **1** (1985), no. 2, 115–127. (Alan Tucker) **89e:05086** 05C15
- (with Fenner, T. I.; Frieze, A. M.) An algorithm for finding Hamilton paths and cycles in random graphs. *Combinatorica* **7** (1987), no. 4, 327–341. (A. G. Thomason) **89h:05049** 05C80 (05C45, 68R10, 90B15)
- (with Brightwell, Graham) Graphs whose every transitive orientation contains almost every relation. *Israel J. Math.* **59** (1987), no. 1, 112–128. (Miro Křivánek) **89d:05157** 05C80
- The chromatic number of random graphs. *Combinatorica* **8** (1988), no. 1, 49–55. (Zbigniew Palka) **89i:05244** 05C80 (05C15)
- Sorting in rounds. Proceedings of the First Japan Conference on Graph Theory and Applications (Hakone, 1986). *Discrete Math.* **72** (1988), no. 1–3, 21–28. (Mark R. Jerrum) **89k:05006** 05A15 (68P10, 68Q25)
- The isoperimetric number of random regular graphs. *European J. Combin.* **9** (1988), no. 3, 241–244. (Andrzej Ruciński) **89e:05180** 05C80 (05C35)
- (with Winkler, Peter M.) The longest chain among random points in Euclidean space. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 347–353. (Summary) **89k:60011** 60C05 (06A10, 11K99)
- (with Chung, F. R. K.) The diameter of a cycle plus a random matching. *SIAM J. Discrete Math.* **1** (1988), no. 3, 328–333. (Mark R. Jerrum) **89j:05062** 05C80 (05C35)
- Bolondi, Giorgio** On the classification of curves linked to two skew lines. *Proceedings of the conference on algebraic geometry* (Berlin, 1985), 38–52. *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (A. Hirschowitz) **89e:14032** 14H45 (14F05, 14H50, 14N05)
- Liaison and maximal rank. (Italian summary) *Boll. Un. Mat. Ital. D* (6) **5** (1986), no. 1, 51–70 (1987). (Mei Chu Chang) **89b:14047** 14H45 (14F05, 14H50)
- Smoothing curves by reflexive sheaves. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 797–803. (Rosa M. Miró-Roig) **89e:14033** 14H45 (14F05)
- Bolotin, S. V.** On the Hill determinant of a periodic orbit. (Russian) *Vestnik Moskov. Univ. Ser. I-Mat. Mekh.* **1988**, no. 3, 30–34, 114. (Zhong-heng Guo) **89i:58030** 58F05 (70H35, 70K99)
- Bolotin, V. V.** The theory of statistical sets of fatigue cracks with an application to reliability and resource prediction. (Russian) *Mechanics and scientific-technological progress*, Vol. 3 (Russian), 23–34, 269, "Nauka", Moscow, 1988. (see **89j:73002**) 73M05 (62N05, 73M15)
- Bolotin, Yu. L.** (with Gonchar, V. Yu.; Tarasov, V. N.; Chekanov, N. A.) The transition "regularity-chaos-regularity" and statistical properties of energy spectra. *Phys. Lett. A* **135** (1989), no. 1, 29–31. (Summary) **89m:58060** 58F05 (70K50)
- Bolotin, Yu. V.** Duality in a problem of the optimal distribution of forces for the control of mechanical systems. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 74, 28 pp. (Summary) **89e:70063** 70Q05 (34E15, 49A55, 93B50)
- Bolotov, A. A.** (with Shaib, A.) Metric classification algorithms. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 3, 527–530; translated in *Soviet Math. Dokl.* **36** (1988), no. 3, 485–488. (From the introduction) **89c:68084** 68T10
- Boľshakov, S. Yu.** (with Davydov, É. G.) ★ Теоретико-групповые методы агрегирования в сетевых задачах. (Russian) [Group-theoretic methods for aggregation in network problems] Сообщения по Прикладной Математике. [Reports in Applied Mathematics] *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1986. 64 pp. (Jacek Błażewicz) **89a:90067** 90B35 (05C35, 90B10, 90C27)
- Boľshakov, V. I.** Upper values of a permanent in  $A_n^+$ . (Russian) *Combinatorial analysis*, No. 7 (Russian), 92–118, 164–165, *Moskov. Gos. Univ., Moscow*, 1986. (G. P. Egorychev) **89m:15002** 15A15
- The spectrum of the permanent on  $A_n^+$ . (Russian) *Proceedings of the All-Union seminar on discrete mathematics and its applications* (Russian) (Moscow, 1984), 65–73, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (G. P. Egorychev) **89m:05028** 05B20 (15A15)
- Boľshakov, Yu. I.** Classification of linear mappings from one pseudo-Euclidean space into another. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 2(260), 131–132; translated in *Russian Math. Surveys* **43** (1988), no. 2, 161–162. (B. Klotzke) **89h:51022** 51F99
- Bolsinov, A. V.** New examples of completely integrable systems on Lie algebras. (Russian) *Geometry, differential equations and mechanics* (Russian) (Moscow, 1985), 54–58, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (From the introduction) **89h:58076** 58F07 (17B65)
- Involutive families of functions on dual spaces of Lie algebras of type  $G + V$ . (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 6(258), 183–184. (Dao Ji Meng) **89j:17009** 17B15
- Bolstad, William M.** Estimation in the multiprocess dynamic generalized linear model. *Comm. Statist. Theory Methods* **17** (1988), no. 12, 4179–4204. (Not in MR) **62M20** (90A20)
- Bolthausen, E.** Laplace approximations for sums of independent random vectors. II. Degenerate maxima and manifolds of maxima. *Probab. Theory Related Fields* **76** (1987), no. 2, 167–206. (Naresh C. Jain) **89g:60092** 60F10 (60B11)
- Bolton, Roger** (with Lakshmanan, T. R.) Regional energy and environmental analysis. *Handbook of regional and urban economics*, Vol. 1, 581–628, *Handbooks in Econom.*, 7, North-Holland, Amsterdam-New York, 1986. (see **89m:90047**) 90A30
- Boltonov, A. I.** (with Sologub, V. G.) A Fredholm integral equation of the second kind in a problem of the scattering of waves by two bands. (Russian) *Vestnik Khar'kov. Gos. Univ.* No. 298 *Mat. Mekh. i Voprosy Upravl.* (1987), 63–72. (From the text) **89e:78012** 78A45
- Boltyanskii, A. V.** Normal local controllability of objects that can be described by a system of second-order differential equations with one control parameter. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 2, 341–342, 367. (Ventseslav G. Rumchev) **89e:93016** 93B05 (49E15)
- Boltyanskii, V. G.** (with Balk, M. B.) ★ Геометрия масс. (Russian) [The geometry of masses] Библиотечка "Квант" [Library "Kvant"], 61. "Nauka", Moscow, 1987. 160 pp. (W. J. Firey) **89j:51020** 51N20 (01A05, 70C99)
- see also Klem, F., **89b:01078** and **89b:01079**
- Boltyanskii, V. V.** Dense embeddings of topological vector spaces. (Russian. English and Georgian summaries) *Sovshch. Akad. Nauk Gruzin. SSR* **127** (1987), no. 3, 469–472. (G. J. O. Jameson) **89c:46003** 46A05
- Boltzmann, Ludwig** see von Plato, Jan, **89d:01052**; Maxwell, James Clerk, **89d:01079**; Hörz, Herbert, **89e:01054** and Flamm, Dieter, **89m:01069**
- Bolyai, János** ★ Appendix. The theory of space. Edited and with an introduction, comments and addenda by Ferenc Kárteszi. Translated from the Hungarian. With a supplement by Barna Szénássy. North-Holland Mathematics Studies, 138. North-Holland Publishing Co., Amsterdam-New York, 1987. 239 pp. ISBN 0-444-86528-4 (Livia Giacardi) **89m:01052** 01A55 (01A75, 51-03)
- see also Matviishin, Ya. A., **89i:01035**
- Bolz, Heinrich** (with Niethammer, Wilhelm) On the evaluation of matrix functions given by power series. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 2, 202–209. (Ching-Tsuan Pan) **89c:65055** 65F30 (65D20)
- Bolzano, Bernard** ★ Bernard Bolzano—Gesamtausgabe. Reihe I. Schriften. Band 11. Teil 2. (German) [Bernard Bolzano—collected works. Series I. Writings. Vol. 11. Part 2] Wissenschaftslehre. §§46–90. [Theory of science. Sections 46–90] Edited and with an introduction by Jan Berg. Friedrich Frommann Verlag Günther Holzboog GmbH & Co., Stuttgart, 1987. 264 pp. ISBN 3-7728-0444-6 (Joseph W. Dauben) **89h:01101** 01A75 (00A25, 01A55, 03-03)
- ★ Bernard Bolzano—Gesamtausgabe. Reihe I. Schriften. Band 12. Teil 1. (German) [Bernard Bolzano—collected works. Series I. Writings. Vol. 12. Part 1] Wissenschaftslehre. §§121–163. [Theory of science. Sections 121–163] Edited and with an introduction by Jan Berg. Friedrich Frommann Verlag Günther Holzboog GmbH & Co., Stuttgart, 1987. 285 pp. ISBN 3-7728-0446-2 (Joseph W. Dauben) **89h:01102** 01A75 (00A25, 01A55, 03-03)
- ★ Bernard Bolzano—Gesamtausgabe. Reihe I. Schriften. Band 12. Teil 2. (German) [Bernard Bolzano—collected works. Series I. Writings. Vol. 12. Part 2] Wissenschaftslehre. §§164–222. [Theory of science. Sections 164–222] Edited and with an introduction by Jan Berg. Friedrich Frommann Verlag Günther Holzboog GmbH & Co., Stuttgart, 1988. 237 pp. ISBN 3-7728-0447-0 (Joseph W. Dauben) **89h:01103** 01A75 (00A25, 01A55, 03-03, 04-03)
- ★ Bernard Bolzano—Gesamtausgabe. Einleitungsband. Teil II. Bibliographie. Abteilung I. Supplement II. (German) [Bernard Bolzano—collected works. Introductory volume. Part II. Bibliography. Section I. Supplement II] Ergänzungen zur Bolzano-Bibliographie (Stand: Anfang 1987). [Addenda to the Bolzano bibliography (as of the beginning of 1987)] Edited and with a preface by Jan Berg and Edgar Morscher. Friedrich Frommann Verlag Günther Holzboog GmbH & Co., Stuttgart, 1988. 128 pp. ISBN 3-7728-0438-1 (Editors) **89m:01138** 01A75 (00A15)
- see also Bolzano studies, **89c:01001**; George, Rolf, **89i:01038**; Berg, Jan et al., **89i:01059**; **89k:01018** and Ganthaler, Heinrich, **89c:01001**
- Bolzern, Paolo** (with Colaneri, Patrizio) The periodic Lyapunov equation. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 4, 499–512. (P. Talpalaru) **89j:34005** 34A10 (39A11)
- Boman, Jan** (with Quinto, Eric Todd) Support theorems for real-analytic Radon transforms. *Duke Math. J.* **55** (1987), no. 4, 943–948. (Bernd Droste) **89m:44004** 44A15 (53C65, 58G15, 92A07)
- Bomar, Bruce W.** (with Smith, L. Montgomery) An algorithm for constrained roundoff noise minimization in digital filters with application to two-dimensional filters. *IEEE Trans. Circuits and Systems* **35** (1988), no. 11, 1359–1368. (B. D. Donevski) **89i:94010** 94A12
- Bomash, A. Ya.** (with Nagaev, R. F.) The structure of the characteristic equation of a linear mechanical system of chain type. (Russian. English summary) *Vestnik Leningrad. Univ.*



- Mat. Mekh. Astronom.* 1988, vyp. 2, 98-100, 133. (Summary) 89j:70027 70J05 (39A10, 70J10, 70J25, 73K05)
- Bombal, Fernando** Weakly sequentially complete Orlicz spaces of vector functions. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 80 (1986), no. 1-2, 111-115. (R. D. McWilliams) 89d:46038 46E40 (46E30)
- Spaces of vector-valued continuous functions with the Dunford-Pettis property. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 80 (1986), no. 4, 607-608. (Dinámico P. Pombo, Jr.) 89b:46052 46E40
- Bombelli, Luca** Symplectic framework. *New perspectives in canonical gravity*, 17-28, *Monographs Textbooks Phys. Sci. Lecture Notes*, 5, Bibliopolis, Naples, 1988. (see 89m:83003) 58F05
- The initial value formulation. *New perspectives in canonical gravity*, 29-35, *Monographs Textbooks Phys. Sci. Lecture Notes*, 5, Bibliopolis, Naples, 1988. (see 89m:83003) 83C05
- Lagrangian formulation. *New perspectives in canonical gravity*, 77-91, *Monographs Textbooks Phys. Sci. Lecture Notes*, 5, Bibliopolis, Naples, 1988. (see 89m:83003) 83C05 (58F05)
- Hamiltonian formulation. *New perspectives in canonical gravity*, 93-118, *Monographs Textbooks Phys. Sci. Lecture Notes*, 5, Bibliopolis, Naples, 1988. (see 89m:83003) 83C05 (58F05)
- The weak field limit. *New perspectives in canonical gravity*, 119-129, *Monographs Textbooks Phys. Sci. Lecture Notes*, 5, Bibliopolis, Naples, 1988. (see 89m:83003) 83C25 (83C05)
- The strong coupling limit. *New perspectives in canonical gravity*, 131-143, *Monographs Textbooks Phys. Sci. Lecture Notes*, 5, Bibliopolis, Naples, 1988. (see 89m:83003) 83C05
- The general program. *New perspectives in canonical gravity*, 161-170, *Monographs Textbooks Phys. Sci. Lecture Notes*, 5, Bibliopolis, Naples, 1988. (see 89m:83003) 83C45 (81D07)
- The weak field limit. *New perspectives in canonical gravity*, 171-180, *Monographs Textbooks Phys. Sci. Lecture Notes*, 5, Bibliopolis, Naples, 1988. (see 89m:83003) 83C45 (83C25)
- see also Moore, Christopher, 89b:83066
- Bombieri, Enrico** On the Thue-Mahler equation. *Diophantine approximation and transcendence theory* (Bonn, 1985), 213-243, *Lecture Notes in Math.*, 1290, Springer, Berlin-New York, 1987. (J. Wolfkill) 89j:11027 11D61 (11J25)
- (with Taylor, Jean E.) Quasicrystals, tilings, and algebraic number theory: some preliminary connections. *The legacy of Sonya Kovalevskaya* (Cambridge, Mass., and Amherst, Mass., 1985), 241-264, *Contemp. Math.*, 64, Amer. Math. Soc., Providence, RI, 1987. (M. Mendes France) 89a:82031 82A60 (11K26, 11L03, 52A45)
- (with Hejhal, Dennis A.) On the zeros of Epstein zeta functions. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* 304 (1987), no. 9, 213-217. (Summary) 89c:11136 11M41 (11E45, 11R42)
- (with Sperber, Steven) On the degree of Artin  $L$ -functions in characteristic  $p$ . (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 9, 393-398. (H.-G. Rück) 89c:14029 14G10 (14G13, 14G15)
- (with van der Poorten, A. J.) Some quantitative results related to Roth's theorem. *J. Austral. Math. Soc. Ser. A* 45 (1988), no. 2, 233-248. (Guang Shan Xu) 89j:11075 11J17 (11J61, 11J68)
- (with Friedlander, J. B.; Iwaniec, H.) Primes in arithmetic progressions to large moduli. III. *J. Amer. Math. Soc.* 2 (1989), no. 2, 215-224. (D. R. Heath-Brown) 89m:11087 11N13
- see also Number theory, trace formulas and discrete groups, 89m:11003
- Bomplani, Enrico** see Blaschke, Wilhelm, 89a:01100
- Bomze, Immanuel M.** Remarks on the recursive structure of copositivity. *J. Inform. Optim. Sci.* 8 (1987), no. 3, 243-260. (K. G. Murty) 89b:90159 90C20
- A note on aspirations in nontransferable utility games. *Internat. J. Game Theory* 17 (1988), no. 3, 193-200. (Roy Gardner) 89b:90266 90D12
- tran van Bon** see Tran Van Bon
- Bona, C.** see Bona García, Carlos
- Bona, Carlos** see Bona García, Carlos
- Bona, E.** (with Bassan, B.) Shot noise random fields. *Biomathematics and related computational problems* (Naples, 1987), 423-427, *Kluwer Acad. Publ., Dordrecht*, 1988. (Robert J. Adler) 89m:60119 60G60 (60G55, 60G57)
- Bona, Jerry L.** (with Albert, J. P.; Henry, D. B.) Sufficient conditions for stability of solitary-wave solutions of model equations for long waves. *Phys. D* 24 (1987), no. 1-3, 343-366. (Summary) 89a:35166 35Q20
- (with Sachs, Robert L.) Global existence of smooth solutions and stability of solitary waves for a generalized Boussinesq equation. *Comm. Math. Phys.* 118 (1988), no. 1, 15-29. (Ralph Saxton) 89k:35198 35Q20 (35B35, 76B25)
- Bóna, P.** Time evolution automorphisms in generalized mean-field theories. *Czechoslovak J. Phys. B* 37 (1987), no. 4, 482-491. (H. Araki) 89c:82009 82A15 (46L60, 81E05)
- Bonadies, M.** (with Tonon, M. L.) Universal solutions for elastic shells. (Italian summary) *Riv. Mat. Univ. Parma* (4) 13 (1987), 119-130 (1988). (Claude Surry) 89k:73056 73L05
- Bona García, Carlos** (with Coll, Bartolomé) On the Stephani universes. *Gen. Relativity Gravitation* 20 (1988), no. 3, 297-303. (Nora Bretón Báez) 89b:83006 83C15 (83C40, 83F05)
- (with Coll, Bartolomé) Classification of the space-times admitting a constant curvature synchronization. *J. Math. Phys.* 29 (1988), no. 2, 327-331. (F. J. Flaherty) 89c:83029 83C20 (83C40)
- A new proof of the generalized Birkhoff theorem. *J. Math. Phys.* 29 (1988), no. 6, 1440-1441. (P. Aechuthan) 89f:83051 83C40
- (with Massó, J.) Harmonic synchronizations of spacetime. *Phys. Rev. D* (3) 38 (1988), no. 8, 2419-2422. (Norbert Noutchegueme) 89j:83017 83C20
- Bonahon, Francis** (with Ota, Jean-Pierre) Variétés hyperboliques à géodésiques arbitrairement courtes. (English summary) [Hyperbolic manifolds with arbitrarily short geodesics] *Bull. London Math. Soc.* 20 (1988), no. 3, 255-261. (William Harvey) 89g:57012 57N10 (20H10, 30F40, 32G15, 53C22)
- Bonalito, Paolo** The usual, the ambiguous and two types of visual incongruity in the work of Maurits Cornelis Escher. *M. C. Escher: art and science* (Rome, 1985), 359-368, North-Holland, Amsterdam-New York, 1986. (see 89m:60011) 92A25
- Bonami, Aline** (with Johnson, Raymond L.) Tent spaces based on the Lorentz spaces. *Math. Nachr.* 132 (1987), 81-99. (Ron Kerman) 89g:46052 46E30 (42B99)
- Bonan, S.** (with Lubinsky, D. S.; Nevai, P.) Orthogonal polynomials and their derivatives. II. *SIAM J. Math. Anal.* 18 (1987), no. 4, 1163-1176. (Daniel P. Maki) 89a:42032 42C05
- Bonanno, Giacomo** Advertising, perceived quality and strategic entry deterrence and accommodation. *Metroeconomica* 38 (1986), no. 3, 257-280. (Summary) 89d:90013 90A06
- (with Zeeman, E. Christopher) Divergence of choices despite similarity of characteristics: an application of catastrophe theory. *European J. Oper. Res.* 36 (1988), no. 3, 379-392. (Fred W. Roush) 89b:90054 90A15 (58C25, 92A25)
- Oligopoly equilibria when firms have local knowledge of demand. *Internat. Econom. Rev.* 29 (1988), no. 1, 45-55. (From the introduction) 89g:90055 90A14 (90D10)
- Can good news lead to a more pessimistic choice of action? *Theory and Decision* 25 (1988), no. 2, 123-136. (Summary) 89k:90017 90A09 (62C99)
- Bonato, C. A.** (with Thomaz, M. T.; Malbouisson, A. P. C.) Equivalence of the propagator of quasistatic solutions and the quantum harmonic oscillator. *Phys. Rev. A* (3) 39 (1989), no. 4, 2225-2227. (Summary) 89m:81029 81C05 (81E99)
- Bonatti, Christian** Un point fixe commun pour des difféomorphismes commutants de  $S^2$ . (English summary) [A common fixed point for commuting diffeomorphisms of  $S^2$ ] *Ann. of Math.* (2) 129 (1989), no. 1, 61-69. (Lawrence Conlon) 89m:57025 57R25 (57R30, 58F18)
- Bonchev, Danail** (with Polansky, Oskar E.) On the topological complexity of chemical systems. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 126-158, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (Daniel Turzik) 89g:20706 92A40 (05C99)
- (with Mekenyán, Ovanés; Polansky, Oskar E.) Some relationships between the Wiener number and the number of self-returning walks in chemical graphs. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 209-218, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (T. R. S. Walsh) 89i:05175 05C38 (92A40)
- Boncompagni, Baldassare** see Jayawardene, S. A., 89b:01034
- Bond, J.** (with Delorme, C.) New large bipartite graphs with given degree and diameter. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), C, 123-132. (David Fisher) 89g:05058 05C35
- Bond, Robert J.** Unramified abelian extensions of number fields. *J. Number Theory* 30 (1988), no. 1, 1-10. (Norikata Nakagoshi) 89k:11107 11R37 (11R29)
- Bondar', I. P.** (with Stanzhitskii, A. N.) Oscillation of the solutions of second-order differential equations with impulse action at a fixed moment of time. (Russian) *Some problems in the theory of asymptotic methods in nonlinear mechanics* (Russian), 49-53, iii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1986. (D. Bobrowski) 89a:34044 34C10 (93C57)
- Development of an aspect of the comparison method for second-order differential equations with impulse action. (Russian) *Problems of the stability of integral manifolds in equations of mathematical physics* (Russian), 4-9, i, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) 89f:34044 34C10 (93C57)
- Bondarenko, B. A.** Methods for constructing basis systems of polynomial solutions of partial differential equations. (Russian) *Voprosy Vychisl. i Prikl. Mat. (Tashkent)* No. 80 (1986), 4-9, 135. (Not in MR) 35C10
- (with Karachik, V. V.) Analogues of the Euler formula for generalized-homogeneous polynomials and functions. (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 5, 5-7. (Gradimir V. Milovanović) 89a:26022 26C05 (26B35, 33A70)
- Distribution of multinomial coefficients modulo  $p$ . (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 12, 3-5. (T. T. Tonkov) 89c:11032 11B65 (05A10)
- Bondarenko, L. N.** (with Gavriluk, I. P.; Zhuk, P. F.) A property of the finite-difference operator of the second derivative. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 62 (1987), 3-8, 129. (Summary) 89b:65255 65N25
- (with Zhuk, P. F.) Combined iterative methods of variational type. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 9, 1283-1296, 1437. (Anton Suhadolc) 89m:65057 65J10 (47A50)
- Bondarenko, L. V.** (with Beloded, N. I.; Kravchenok, N. N.) Investigation of the dynamics of stabilization systems with pulse-width modulation on the basis of digital modeling methods. (Russian) *Avtomat. i Vychisl. Tekhn. (Minsk)* No. 16 (1987), 43-50, ii. (Not in MR) 93D10 (94C05)
- Bondarenko, N. P.** Selfadjoint extensions of the minimal operator generated by a degenerate Sturm-Liouville operator-differential equation. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1987, no. 8, 3-6, 87. (R. C. Gilbert) 89b:47068 47E05 (34B25, 34G10, 47B25)
- Bondarenko, T. M.** Formal and intuitive aspects of the mathematization of knowledge. (Russian) *Scientific knowledge: logic, concepts, structure* (Russian), 133-153, "Nauka" (Sibirsk. Otdel., Novosibirsk, 1987. (V. Ya. Kreinovich) 89a:00030 00A25 (81B99)
- Bondarenko, V. M.** (with Redkovets, S. N.) Diagnostics of active electrical circuits. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 4 (1985), 58-62, 103. (Summary) 89k:94082 94C05 (90B25)
- Bondarev, B. V.** Statistical theory of systems of created reactive species. *Phys. A* 148 (1988), no. 3, 456-502. (David E. Miller) 89g:92077 92A40 (80A32, 82A99)
- On testing composite statistical hypotheses. II. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 38 (1988), 16-25, 133. (František Rublík) 89k:62060 62G10
- On testing composite statistical hypotheses. I. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 36 (1987), 3-10, 138; translated in *Theory Probab. Math. Statist.* No. 36 (1988), 1-8. (František Rublík) 89c:62043 62F03 (62F12)
- The Kolmogorov statistic in the case of a piecewise continuous distribution function. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 2, 145-149, 270; translated in *Ukrainian Math. J.* 40 (1988), no. 2, 120-124. (Tenko Raykov) 89g:62069 62G10
- Bondarev, P. A.** (with Mitropolskii, Yu. A.; Kolomiets, V. G.) Application of asymptotic methods of nonlinear mechanics for the investigation of the oscillations of systems with distributed parameters. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 15, 44 pp. (Summary) 89g:34062 34C29 (35C20, 73K12, 73K35)
- Bondarev, V. M.** (with Rublinskii, V. I.; Sigalov, V. L.) Exact solution of the path tracing problem. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 6, 67-70, 88. (Summary) 89f:90044 90B10 (05C35)

- Bondareva, O. N.** Finite approximations of choice on an infinite set. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 1, 16-21; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 1, 18-23, 220 (Russian). (Ki Hang Kim) 89j:90008 90A06 (90A08)
- Axiomatics of the core and of the von Neumann-Morgenstern solution as fuzzy and nonfuzzy choice functions. (Russian. English summary) *Vestnik Leningrad Univ. Math. Mekh. Astronom.* 1988, vyp. 2, 3-7, 130; translated in *Vestnik Leningrad Univ. Math.* 21 (1988), no. 2, 1-7. (English summary) 89j:90003 90A05 (03E72, 90A08)
- Bondesson, Lennart** On the infinite divisibility of the half-Cauchy and other decreasing densities and probability functions on the nonnegative line. *Scand. Actuar. J.* 1987, no. 3-4, 225-247. (F. W. Steutel) 89j:60049 60E07 (60E15)
- (with Peetre, Jaak) The classes  $V_\alpha$  are monotone. *Function spaces and applications* (Lund, 1986), 153-157, *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (J. Horváth) 89m:44014 44A35 (26A51, 60E07)
- A remarkable property of generalized gamma convolutions. *Probab. Theory Related Fields* 78 (1988), no. 3, 321-333. (John Kent) 89d:60024 60E07
- gracia-Bondia, José M.** see **Gracia-Bondia, José M.**
- Bondy, J. A.** (with Kouider, M.) Hamilton cycles in regular 2-connected graphs. *J. Combin. Theory Ser. B* 44 (1988), no. 2, 177-186. (Arthur M. Hobbs) 89h:05037 05C45 (05C38)
- Bone, Terrence** (with Jeffries, Clark; Klee, Victor) A qualitative analysis of  $\dot{x} = Ax + b$ . *Discrete Appl. Math.* 20 (1988), no. 1, 9-30. (Pauline van den Driessche) 89f:92035 92A15 (15A06, 34D20)
- Bonet, José** (with Maestre, Manuel) On the space  $\mathcal{D}_{\infty}(\Omega, E)$ . (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 80 (1986), no. 1-2, 31-39. (Klaus-Dieter Bierstedt) 89a:46083 46F05 (46A45, 46E40)
- A note on the coincidence of topologies in tensor products. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 81 (1987), no. 1, 87-89. (S. Cobzas) 89e:46080 46M05 (46A07, 46A09)
- (with Dierolf, Susanne) A note on biduals of strict (LF)-spaces. *Resultate Math.* 13 (1988), no. 1-2, 23-32. (Klaus-Dieter Bierstedt) 89j:46002 46A12 (46A06, 46A20)
- Bonett, Douglas G.** (with Woodward, J. Arthur; Bentler, P. M.) A linear model for estimating the size of a closed population. *British J. Math. Statist. Psych.* 39 (1986), no. 1, 28-40. (Summary) 89h:62009 62D05 (62P15)
- Bonetti, Flavio** (with Civolani, Nino) On the product of two tolerances. (Italian summary) *Ann. Univ. Ferrara Sez. VII (N.S.)* 33 (1987), 189-205 (1988). (Ivan Chajda) 89g:08002 08A30 (04A05, 05C99, 92A27)
- Bonevac, Daniel** (with Seung, T. K.) Conflict in practical reasoning. *Philos. Stud.* 53 (1988), no. 3, 315-345. (Steve Kuhn) 89g:03023 03B45
- dinh phú Bông** see **Dinh Phú Bông**
- Bongaarts, P. J. M.** The mathematical structure of free quantum fields. Gaussian systems. *Proceedings Seminar 1984-1986. Mathematical Structures in Field Theories, Vol. 1* (Amsterdam, 1984-1986), 1-47, *CWI Syllabi*, 16, Math. Centrum, Centrum Wisk. Inform., Amsterdam, 1988. (see 89m:81083) 81E05 (46N05)
- see also **Complex differential geometry and supermanifolds in strings and fields**, 89g:58002
- Bongiovanni, G.** (with Bovet, Daniel P.; Cerioli, A.) Comments on a paper of R. A. Brualdi: "Notes on the Birkhoff algorithm for doubly stochastic matrices" [*Canad. Math. Bull.* 25 (1982), no. 2, 191-199; MR 83k:15019]. *Canad. Math. Bull.* 31 (1988), no. 4, 394-398. (Thomas H. Foregger) 89m:15013 15A51 (05C50)
- Bonilla, L. L.** (with Casado, J. M.; Morillo, M.) Self-synchronization of populations of nonlinear oscillators in the thermodynamic limit. *J. Statist. Phys.* 48 (1987), no. 3-4, 571-591. (C. Eugene Wayne) 89f:82014 82A25 (58F14, 82A31, 82A35)
- (with Casado, J. M.; Morillo, M.) Corrigendum to: "Self-synchronization of populations of nonlinear oscillators in the thermodynamic limit" [*J. Statist. Phys.* 48 (1987), no. 3-4, 571-591; MR 89f:82014]. *J. Statist. Phys.* 50 (1988), no. 3-4, 849-850. (C. Eugene Wayne) 89k:82028 82A25 (58F14, 82A31)
- Bonini, M.** (with Aldazabal, Gerardo; Iengo, R.; Núñez, Carmen) Intrinsic normal-ordered vertex operators from the multiloop  $N$ -tachyon amplitude. *Phys. Lett. B* 199 (1987), no. 1, 41-48. (Summary) 89h:81158 81E99 (81E30)
- (with Iengo, R.) Correlation functions and zero modes on higher genus Riemann surfaces. *Internat. J. Modern Phys. A* 3 (1988), no. 4, 841-860. (Olaf Lechtenfeld) 89h:81169 81E99 (14H15, 81E30, 81E40)
- Bonissoli, Arrigo** (with Quattrocchi, Pasquale) Existence and extension of sharply  $k$ -transitive permutation sets: a survey and some new results. *Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. 1* (Catania, 1986). *Ars Combin.* 24 (1987), A, 163-173. (T. G. Ostrom) 89c:20008 20B20
- The regular subgroups of the sharply 3-transitive finite permutation groups. *Combinatorics '86* (Trento, 1986), 75-86, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (H. Kimura) 89b:20013 20B10
- (with Fiori, Carla) Sharply 1-transitive subsets of certain permutation groups. *Geom. Dedicata* 26 (1988), no. 3, 309-314. (H. Kimura) 89g:20003 20B20
- On the sharply 1-transitive subsets of  $PGL(2, p^m)$ . *J. Geom.* 31 (1988), no. 1-2, 32-41. (Chat Yin Ho) 89c:20010 20B25 (51E20)
- Bonitz, M.** (with Klimontovich, Yu. L.) Definition of the degree of order in selforganization processes. (German summary) *Ann. Physik* (7) 45 (1988), no. 5, 340-352. (Vadim Komkov) 89j:93002 93A10 (34C10, 80A99, 92A40)
- (with Klimontovich, Yu. L.) Evolution of the entropy of stationary states in self-organization processes in the control parameter space. *Z. Phys. B* 70 (1988), no. 2, 241-249. (Summary) 89g:82034 82A35 (70L05, 92A05, 93C30, 94A17)
- ben david Bonjorn, Jacob** see **Ben David Bonjorn, Jacob**
- Bonnans, J. Frédéric** (with Gaudrat, V.; Saguez, C.) A domain control approach to state-constrained control problems. *Boundary control and boundary variations* (Nice, 1986), 72-90, *Lecture Notes in Comput. Sci.*, 100, Springer, Berlin-New York, 1988. (see 89b:93006) 49B10
- (with Casas Rentería, Eduardo) Contrôle de systèmes elliptiques semilinéaires comportant des contraintes sur l'état. (English summary) [Control of semilinear elliptic systems with state constraints] *Nonlinear partial differential equations and their applications. Collège de France seminar, Vol. VIII* (Paris, 1984-1985), 69-86, *Pitman Res. Notes Math. Ser.*, 166, Longman Sci. Tech., Harlow, 1988. (Françoise Berquier) 89d:49022 49B22 (35J60, 93C20)
- (with Casas Rentería, Eduardo) Optimal control of state-constrained unstable systems of elliptic type. *Control of partial differential equations* (Santiago de Compostela, 1987), 84-91, *Lecture Notes in Control and Inform. Sci.*, 114, Springer, Berlin-New York, 1989. (see 89j:90028) 49B27
- Bonnard, Bernard** On singular extremals in the time minimal control problem. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 439-452, North-Holland, Amsterdam-New York, 1986. (see 89j:93010) 93B50
- Bonneau, Guy** Renormalization of bosonic nonlinear  $\sigma$ -models built on compact homogeneous manifolds. *Renormalization of quantum field theories with nonlinear field transformations* (Tegernsee, 1987), 120-129, *Lecture Notes in Phys.*, 303, Springer, Berlin-New York, 1988. (see 89g:81058) 81E15 (81-02, 81E13)
- Kähler geometry and supersymmetric nonlinear  $\sigma$ -models: an introduction. *Renormalization of quantum field theories with nonlinear field transformations* (Tegernsee, 1987), 144-150, *Lecture Notes in Phys.*, 303, Springer, Berlin-New York, 1988. (see 89g:81058) 81E13 (81-02)
- (with Becchi, C.; Blasi, Alberto; Collina, R.; Delduc, F.) Renormalizability and infrared finiteness of nonlinear  $\sigma$ -models: a regularization-independent analysis for compact coset spaces. *Comm. Math. Phys.* 120 (1988), no. 1, 121-148. (Olivier Piguet) 89k:81085 81E15 (58E20, 81E13)
- Bonneau, Pierre G.** Poids et équivalence des codes linéaires. (English summary) [Weights and equivalence of linear codes] *RAIRO Inform. Théor. Appl.* 21 (1987), no. 3, 331-339. (O. Moreno) 89b:94028 94B05
- Bonnefille, Max** Propagation des oscillations dans deux classes de systèmes hyperboliques ( $2 \times 2$  et  $3 \times 3$ ). (English summary) [Propagation of oscillations in two classes of hyperbolic systems ( $2 \times 2$  and  $3 \times 3$ )] *Comm. Partial Differential Equations* 13 (1988), no. 8, 905-925. (Maria Cinquini-Cibrario) 89i:35091 35L45 (35L60)
- Bonnefont, Jacques** (with Prat, Marc) Interaction dynamique entre un écoulement de gaz externe turbulent et une phase liquide dispersée en milieu poreux. (English summary) [Dynamical interaction between a turbulent external gas flow and a dispersed liquid phase trapped in a porous medium] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* 305 (1987), no. 18, 1397-1400. (Not in MR) 76S05
- Bonnemay, Alain** (with Terrier, François) Logique multivalente pour systèmes de diagnostic et application à la logique ternaire. (English summary) [Multivalued logics for diagnosis systems and application to three-valued logics] *Traitement Signal* 4 (1987), no. 6, 493-500. (Not in MR) 68T20 (03B50)
- Bonnet, M.** (with Bui, H. D.) Regular B.I.E. for three-dimensional cracks in elastodynamics. *Advanced boundary element methods* (San Antonio, Tex., 1987), 41-47, Springer, Berlin-New York, 1988. (see 89b:65009) 73M05
- Bonnet, Pierre** Analyse de Fourier explicite sur certains groupes de Lie nilpotents. (English summary) [Explicit Fourier analysis on certain nilpotent Lie groups] *Actes du colloque Jean Braconnier* (Lyon, 1986), 117-145, *Publ. Dép. Math. Nouvelle Sér. B*, 87-1, Univ. Claude-Bernard, Lyon, 1987. (Detlef Horst Müller) 89a:22014 22E27
- Bonnet, Robert** (with Si-Kaddour, Hamza) Comparison of Boolean algebras. *Order* 4 (1987), no. 3, 273-283. (Martin Weese) 89d:06021 06E05 (04A20)
- Bonner, W. B.** An exact solution of Einstein's equations for two particles falling freely in an external gravitational field. *Gen. Relativity Gravitation* 20 (1988), no. 6, 607-622. (Mario C. Diaz) 89k:83012 83C15 (83C10)
- Bonome, A.** (with Castro, Regina) Normality of almost paracontact 3-structure. *Bull. Math. Soc. Sci. Math. R. S. Roumanie (N.S.)* 31(79) (1987), no. 2, 107-115. (Ion Mihai) 89h:53059 53C15
- Bonomi, Andrea** see **Bruschi, Rita**, 89d:01058
- Bonora, L.** (with Cotta-Ramusino, P.; Rinaldi, M.; Stasheff, James) The evaluation map in field theory, sigma-models and strings. I. *Comm. Math. Phys.* 112 (1987), no. 2, 237-282. (Akira Asada) 89d:53120 53C80 (58D30, 58E20, 81E20, 81E30)
- (with Pasti, P.; Tonin, M.) Chiral anomalies in higher-dimensional supersymmetric theories. *Nuclear Phys. B* 286 (1987), no. 1, 150-174. (Summary) 89e:81093 81E13 (53C80, 83E15, 83E50)
- (with Martellini, M.; Viallet, C.-M.) Bosonic strings and complex structures. *Phys. Lett. B* 197 (1987), no. 3, 335-338. (M. A. Namazi) 89e:81138 81E99 (32G15, 81E30)
- (with Cotta-Ramusino, P.; Rinaldi, M.) Generalized Wess-Zumino terms and global anomalies in string sigma models. *Proceedings of the Johns Hopkins Workshop on Current Problems in Particle Theory. 11. Frontiers in Particle Theory*, 225-247, World Sci. Publishing, Singapore, 1988. (Aleksandar R. Bogojević) 89h:81141 81E20 (58G25, 81E30, 81E40)
- (with Cotta-Ramusino, P.; Rinaldi, M.) Generalized Wess-Zumino terms. *Renormalization of quantum field theories with nonlinear field transformations* (Tegernsee, 1987), 232-239, *Lecture Notes in Phys.*, 303, Springer, Berlin-New York, 1988. (see 89g:81058) 81E20 (81E30)
- (with Cotta-Ramusino, P.; Rinaldi, M.; Stasheff, James) The evaluation map in field theory, sigma-models and strings. II. *Comm. Math. Phys.* 114 (1988), no. 3, 381-437. (Akira Asada) 89d:53121 53C80 (58D30, 58E20, 81E20, 81E30)
- (with Bregola, M.; Lechner, K.; Pasti, P.; Tonin, M.) Anomaly-free supergravity and super-Yang-Mills theories in ten dimensions. *Nuclear Phys. B* 296 (1988), no. 4, 877-901. (Paul Howe) 89c:83050 83E50 (81E30, 81G20, 83E30)
- (with Bregola, M.; Cotta-Ramusino, P.; Martellini, M.) Virasoro-type algebras and BRST operators on Riemann surfaces. *Phys. Lett. B* 205 (1988), no. 1, 53-56. (Summary) 89d:17020 17B65 (32G15, 81E99)
- Bonotto, Cinzia** Synonymy for Bressan's modal calculus  $MC^*$ . I. A synonymy relation for  $MC^*$ . (Italian summary) *Istit. Veneto Sci. Lett. Arti Atti Cl. Sci. Fis. Mat. Natur.* 140 (1982), 11-24. (Summary) 89a:03028a 03B45
- Synonymy for Bressan's modal calculus  $MC^*$ . II. A sufficient criterion for nonsynonymy. Senses and a necessary and sufficient condition for synonymy. *Istit. Veneto Sci. Lett. Arti Atti Cl. Sci. Fis. Mat. Natur.* 140 (1982), 85-99. (Summary) 89a:03028b 03B45
- Bontas, Silvia** Un model de Markov de la fiabilité des systèmes à quatre états. (English summary) [A Markov model of reliability for four-state systems] *An. Univ. Galați Mat.* 5(10) (1987), no. 2, 15-18. (From the text) 89k:90072 90B25 (60K20)
- Bontsema, J.** (with Curtin, R. F.; Schumacher, J. M.) Robust control of flexible structures: a case study. *Automatica—J. IFAC* 24 (1988), no. 2, 177-186. (Hartmut Logemann) 89k:93161 93D15 (73K05, 93B35, 93C20)



- Bony, Jean-Michel** Second microlocalization and propagation of singularities for semilinear hyperbolic equations. *Hyperbolic equations and related topics (Katata/Kyoto, 1984)*, 11-49, Academic Press, Boston, MA, 1986. (Teresa Monteiro-Fernandes) **89c:35099** 35L70 (35A27, 35L67, 58G16)
- *Seconde microlocalisation et équations non-linéaires*. [Second microlocalization and nonlinear equations] *Hyperbolic equations (Padua, 1985)*, 11-32, Pitman Res. Notes Math. Ser., 158, Longman Sci. Tech., Harlow, 1987. (Gilles Lebeau) **89f:58131** 58G15 (35A27, 58G16)
- Solutions globales bornées pour les modèles discrets de l'équation de Boltzmann, en dimension 1 d'espace. [Bounded global solutions for discrete models of the Boltzmann equation in one space dimension] *Journées "Équations aux dérivées partielles" (Saint Jean de Monts, 1987)*, Exp. No. XVI, 10 pp., École Polytech., Palaiseau, 1987. (Carlo Cercignani) **89b:35141** 35Q20 (76P05, 82A40)
- (with Lerner, Nicolas) Quantification asymptotique et microlocalisations d'ordre supérieur. [Asymptotic quantization and higher-order microlocalizations] *Séminaire sur les équations aux dérivées partielles 1986-1987*, Exp. No. II-III, 29 pp., École Polytech., Palaiseau, 1987. (Rémi Vaillancourt) **89b:58204** 58G15 (35A27, 35B99)
- Bouziat, I.** (with Riganti, Riccardo) Periodical solutions of nonlinear dynamical systems by decomposition method. *Math. Res. Comm.* **14** (1987), no. 5-6, 371-378. (Introduction) **89c:70051** 70K30 (34C15, 34C25, 49D27)
- (with Monaco, R.; Zavattaro, M. G.) A stochastic model in continuum mechanics: time evolution of the probability density in the random initial-boundary value problem. *Math. Comput. Modelling* **10** (1988), no. 3, 207-216. (Kazimierz Sobczyk) **89j:76069** 76N15
- On the solution of first order evolution problems in continuum physics. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 486-489. (Summary) **89b:35070** 35F20 (35C99, 76P05, 82A40)
- Bouziat, Celestina** A class of permutable semigroups. (Italian. English summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **117** (1983), no. 4-6, 355-368 (1986). (Franco Migliorini) **89d:20047** 20M10
- van den Boogaard, Henk** System identification based on point processes and correlation densities. II. The refractory neuron model. *Math. Biosci.* **91** (1988), no. 1, 35-65. (Y. Cherruault and A. Guilleux) **89j:92022** 92A09
- Boogaert, P.** (with Haendendock, J.; Delbaen, F.) Limit theorems for the present value of the surplus of an insurance portfolio. *Insurance Math. Econom.* **7** (1988), no. 2, 131-138. (Fl. De Vylder) **89b:62165** 62P05 (60F99, 60G44, 62E20, 90A09)
- Book, D. L.** (with Löhner, Rainald; Morgan, Kenneth; Vahdati, M.; Boris, Jay P.) FEM-FCI: combining unstructured grids with high resolution. *Comm. Appl. Numer. Methods* **4** (1988), no. 6, 717-729. (Not in MR) **65N30**
- Book, Ronald V.** Thue systems and the Church-Rosser property: replacement systems, specification of formal languages, and presentations of monoids. *Combinatorics on words (Waterloo, Ont., 1982)*, 1-38, Academic Press, Toronto, ON, 1983. (John P. Helm) **89a:03072** 03D03 (08A50, 20M35, 68Q45)
- Separating relativized complexity classes. *Mathematical logic and theoretical computer science (College Park, Md., 1984-1985)*, 49-69, *Lecture Notes in Pure and Appl. Math.*, 106, Dekker, New York, 1987. (Uwe Schöningh) **89c:68034** 68Q15 (03D15, 68-02)
- Towards a theory of relativizations: positive relativizations. *STACS 87 (Passau, 1987)*, 1-21, *Lecture Notes in Comput. Sci.*, 247, Springer, Berlin-New York, 1987. (M. Tetrushvili) **89c:03064** 03D15 (68Q15)
- (with Orponen, P.; Russo, D.; Watanabe, Osamu) Lowness properties of sets in the exponential-time hierarchy. *SIAM J. Comput.* **17** (1988), no. 3, 504-516. (José L. Balcar) **89b:68049** 68Q15 (03D15, 68Q30)
- (with Ko, Ker-I) On sets truth-table reducible to sparse sets. *SIAM J. Comput.* **17** (1988), no. 5, 903-919. (Lane Hemachandra) **89i:68039** 68Q15 (03D15, 03D30, 68Q05)
- Bookbinder, James H.** (with Reece, Kathleen E.) Vehicle routing considerations in distribution system design. *European J. Oper. Res.* **37** (1988), no. 2, 204-213. (Not in MR) **90B10** (90B35)
- (with Tan, Jin-Yan) Strategies for the probabilistic lot-sizing problem with service-level constraints. *Management Sci.* **34** (1988), no. 9, 1096-1108. (Not in MR) **90B30**
- Booles, George** Alphabetical order. *Notre Dame J. Formal Logic* **29** (1988), no. 2, 214-215. (Gordon Fisher) **89d:04003** 04A10 (03D05, 04A05, 06A05)
- Boon, H. J.** Lazy variable-renumbering makes substitution cheap. *Inform. Process. Lett.* **29** (1988), no. 5, 229-232. (David B. Benson) **89m:68083** 68Q55 (03B40, 03B70, 68Q25)
- Boon, C.** (with van der Houwen, P. J.; Wubs, F. W.) Analysis of smoothing matrices for the preconditioning of elliptic difference equations. (German and Russian summaries) *Z. Angew. Math. Mech.* **68** (1988), no. 1, 3-10. (Summary) **89b:65109** 65F35 (65N20)
- Boon, J.-P.** (with d'Humières, D.; Lallemand, P.; Dab, D.; Noullez, A.) Fluid dynamics with lattice gases. *Chaos and complexity (Torino, 1987)*, 278-301, *World Sci. Publishing, Singapore*, 1988. (Summary) **89j:76016** 76-08 (65C20, 76R50, 82A40, 82A99)
- ten thije Boonkamp, J. H. M.** see **ten Thije Boonkamp, J. H. M.**
- Boonayatsana, R.** (with Slutski, Giora) The interchange or pump (dilemmas for context-free languages. *Theoret. Comput. Sci.* **56** (1988), no. 3, 321-338. (Sheng Yu) **89i:68073** 68Q50 (03D05, 68Q45)
- de Boor, Carl** (with Höllig, Klaus) B-splines without divided differences. *Geometric modeling*, 21-27, *SIAM, Philadelphia, PA*, 1987. (see **89b:65010**) **65D07**
- B-form basics. *Geometric modeling*, 131-148, *SIAM, Philadelphia, PA*, 1987. (see **89b:65010**) **65D10** (65D15)
- (with Höllig, Klaus) Minimal support for bivariate splines. *Proceedings of China-U.S. Joint Conference on Approximation Theory (Hangzhou, 1985)*, *Approx. Theory Appl.* **3** (1987), no. 4, 11-23. (Rong Qing Jia) **89h:41022** 41A15 (41A63, 65D07)
- (with Höllig, Klaus; Riemenschneider, Sherman) Some qualitative properties of bivariate Euler-Frobenius polynomials. *J. Approx. Theory* **50** (1987), no. 1, 8-17. (Len Bos) **89d:41019** 41A15 (41A05, 41A63)
- (with Höllig, Klaus) Approximation power of smooth bivariate pp functions. *Math. Z.* **197** (1988), no. 3, 343-363. (Rong Qing Jia) **89h:41023** 41A15 (41A63, 65D07)
- Boorkina, R. S.** (with Vilyunov, V. N.) Method of matching asymptotic expansions in the theory of ignition. *BAIL IV (Novosibirsk, 1986)*, 423-429, *Boole Press Conf. Ser.*, 8, Boole, Dún Laoghaire, 1986. (Summary) **89a:80006** 80A25
- Boon, Dennis D.** (with Berger, Roger L.; Guess, Frank) Tests and confidence sets for comparing two mean residual life functions. (French summary) *Biometrics* **44** (1988), no. 1, 103-115. (George W. Williams) **89g:62160** 62P10 (62N05)
- Boess, Bernhelm** (with Wojciechowski, Krzysztof P.) Desuspension of splitting elliptic symbols. II. *Ann. Global Anal. Geom.* **4** (1986), no. 3, 349-400. (Andreas Nestke) **89f:58126** 58G10 (35J99, 58G20)
- (with Wojciechowski, Krzysztof P.) Addendum to: "Desuspension of splitting elliptic symbols. I, II" [Ann. Global Anal. Geom. **3** (1985), no. 3, 337-383; MR 87f:58148; ibid. **4** (1986), no. 3, 349-400]. *Ann. Global Anal. Geom.* **5** (1987), no. 1, 87. (Editors) **89b:58197** 58G10 (35S05, 58G15)
- Booth, Andrew D.** (with Booth, Ian J. M.) A note on the progressive calculation of the mean and variance. *J. Comput. Phys.* **77** (1988), no. 2, 537-539. (Not in MR) **65U05**
- Booth, G. L.** Special radicals of gamma rings. *Contributions to general algebra*, 4 (Krems, 1985), 7-21, *Hölder-Pichler-Tempsky, Vienna*, 1987. (Shoji Kyuno) **89f:16054** 16A78 (16A21)
- On the radicals of  $\Gamma_N$ -rings. *Math. Japon.* **32** (1987), no. 3, 357-372. (E. M. Patterson) **89a:16053** 16A78 (16A21)
- (with Groenwald, N. J.) On uniformly strongly prime gamma rings. *Bull. Austral. Math. Soc.* **37** (1988), no. 3, 437-445. (R. Gorton) **89c:16053** 16A78
- Radicals of matrix gamma rings. *Math. Japon.* **33** (1988), no. 3, 325-334. (Shoji Kyuno) **89j:16054** 16A78 (16A21, 16A42)
- On antisimple gamma rings. *Quaestiones Math.* **11** (1988), no. 1, 7-15. (Shoji Kyuno) **89f:16055** 16A78 (16A12, 16A21, 16A42)
- The strongly prime radical of a gamma ring. *Quaestiones Math.* **11** (1988), no. 4, 339-359. (Shoji Kyuno) **89m:16082** 16A78 (16A12, 16A21, 16A42)
- Booth, Ian J. M.** (with Booth, Andrew D.) A note on the progressive calculation of the mean and variance. *J. Comput. Phys.* **77** (1988), no. 2, 537-539. (Not in MR) **65U05**
- Boothby, W. M.** Global feedback linearizability of locally linearizable systems. *Algebraic and geometric methods in nonlinear control theory*, 243-256, *Math. Appl.*, 29, Reidel, Dordrecht-Boston, MA, 1986. (Valeriu Prepelit) **89d:93051** 93C10 (58F07, 93B10)
- (with Dayawansa, Wijesuriya P.) Some global aspects of the feedback linearization problem. *Differential geometry: the interface between pure and applied mathematics (San Antonio, Tex., 1986)*, 51-64, *Contemp. Math.*, 68, Amer. Math. Soc., Providence, RI, 1987. (Edward Jezierski) **89b:93035** 93B17 (93B50, 93C15)
- Booty, M. R.** (with Matalon, M.; Matkowsky, B. J.) A nonlinear wave equation in nonadiabatic flame propagation. *SIAM J. Appl. Math.* **48** (1988), no. 3, 519-535. (Summary) **89c:80016** 80A25
- Bor, Hüseyin** A note on  $[N, q]_k$  summability factors. *Pure Appl. Math. Sci.* **24** (1986), no. 1-2, 17-23. (Summary) **89f:40003** 40D15 (40F05)
- On the absolute Cesàro summability factors of infinite series. (Serbo-Croatian summary) *Mat. Vesnik* **39** (1987), no. 4, 381-384. (S. M. Mazhar) **89b:40002** 40F05 (40D15, 40G05)
- Absolute summability factors for infinite series. *Indian J. Pure Appl. Math.* **19** (1988), no. 7, 664-671. (S. M. Mazhar) **89b:40003** 40F05 (40D15, 40G05)
- On the absolute  $g$ -summability factors of infinite series. *Portugal. Math.* **45** (1988), no. 2, 131-138. (S. M. Mazhar) **89b:40004** 40F05 (40D15, 40G05)
- Bor, N.** see **Bohr, Niels**
- Bor, Nils** see **Bohr, Niels**
- Boratyński, Maksymilian** (with Greco, Silvio) When does an ideal arise from the Ferrand construction? (Italian summary) *Boll. Un. Mat. Ital. B (7)* **1** (1987), no. 1, 247-258. (Monica Idà) **89a:14012** 14C99 (13H15, 14M05)
- marro Borau, Joaquín** see **Marro Borau, Joaquín**
- Borbély, Albert** Univalence as Tauberian condition. *Studia Sci. Math. Hungar.* **23** (1988), no. 3-4, 417-433. (W. H. J. Fuchs) **89m:30004** 30B10 (30C50, 30C55, 40E05)
- Borcea, V. T.** (with Neagu, Alexandru) A characterization of quasiconformal maps between Riemannian manifolds. *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces (Braşov, 1986)*, 103-107, *Soc. Ştiinţe Mat. R.S. România, Bucharest*, 1986. (Editors) **89j:53037** 53C20 (30C60)
- Borceux, Francis** (with Pedicchio, M. Cristina) De Morgan's and strong De Morgan's laws in a topos of sheaves. 15th winter school in abstract analysis (Srni, 1987). *Acta Univ. Carolin.—Math. Phys.* **28** (1987), no. 2, 9-12. (S. B. Niefield) **89e:18007** 18B25 (03G30, 18A15)
- (with Veit, A. Barbara) Subobject classifier for algebraic structures. *J. Algebra* **112** (1988), no. 2, 306-314. (Summary) **89g:18006** 18B25
- see also *Categorical algebra and its applications*, **89g:18001**
- Borchardt, M.** Duality concepts and their use in discrete optimization. *Differential equations and optimal control (Žagreb, 1985)*, 25-33, *Higher College Engrg., Zielona Góra*, 1986. (Ivan Singer) **89g:90152** 90C10 (90C11)
- Zur Anwendung eines Dualitätskonzeptes für quadratische Optimierungsprobleme mit stetigen und Booleschen Variablen. I. [On the application of a duality concept for quadratic programming problems with continuous and Boolean variables. I] *Wiss. Z. Tech. Hochsch. Ilmenau* **33** (1987), no. 3, 25-33. (Klaus Lommatsch) **89h:90174** 90C20
- Borchers, Richard** Automorphism groups of Lorentzian lattices. *J. Algebra* **111** (1987), no. 1, 133-153. (J. S. Hsia) **89b:20018** 20B27 (51F15)
- Generalized Kac-Moody algebras. *J. Algebra* **115** (1988), no. 2, 501-512. (Chang Kun Liu) **89j:17004** 17B05 (17B10, 17B67)
- Borchers, Wolfgang** (with Miyakawa, Tetsuro)  $L^2$  decay for the Navier-Stokes flow in halfspaces. *Math. Ann.* **282** (1988), no. 1, 139-155. (Michael Wiegner) **89k:35180** 35Q10 (35B40, 76D05)
- Borch-Johnsen, Knut** see **Ramlau-Hansen, Henrik** (Not in MR)
- Borchmann, P.** (with Dewel, G.) Chemical structures and convection. *From chemical to biological organization*, 114-121, *Springer Ser. Synergetics*, 39, Springer, Berlin-New York, 1988. (see **89c:92002**) **76E15** (80A32, 92A09)
- Bordag, L. A.** (with Bobenko, A. I.) Qualitative analysis of finite-gap solutions of the KdV equation by means of an automorphic approach. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **165** (1987), *Mat. Vopr. Teor. Rasprostran. Voln* **17**, 31-41, 189-190. (I. S. Krasil'shchik) **89k:35197** 35Q20 (35B99, 58F07)
- Bordag, M.** (with Kaschlun, L.) On the light-cone expansion in gauge field theories (QED). *Ann. Physik (7)* **44** (1987), no. 4, 265-282. (H. S. Green) **89b:81129** 81E15 (81L05)
- Bordale, Gabriela** Representing finite relative Stone algebras by mono-unary algebras. *Contributions to general algebra*, 5 (Salzburg, 1986), 45-60, *Hölder-Pichler-Tempsky, Vienna*, 1987. (Ivo Düntsch) **89e:06010** 06D15 (06A10, 08A60)

- Forbidden substructures in certain types of lattices. (Portuguese) *Proceedings of the Second Meeting of Portuguese Algebraists (Portuguese)* (Porto, 1987), 45–49, Univ. Porto, Porto, 1987. (Summary) **89e:06011** 06D15 (08A60)
- Borde, Arvid** The existence of singularities in general relativity despite isolated failures of geodesic focusing. *J. Math. Phys.* **28** (1987), no. 11, 2683–2684. (Summary) **89f:83068** 83C75
- Bordes, G. A.** (with Banks, J. S.) Voting games, indifference, and consistent sequential choice rules. *Soc. Choice Welf.* **5** (1988), no. 1, 31–44. (J. J. Buckley) **89f:90008** 90A08
- Bordetskiĭ, A. B.** (with Khavronina, M. A.) The use of automatic classification algorithms for adjusting parameters of an interactive procedure for finding extrema. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 2, 178–181; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 4, 208–211, 224 (Russian). (Not in MR) **90C31**
- Bordiha, Henning** On deterministic grammars with valuations. *Wiss. Z. Tech. Univ. Magdeburg* **31** (1987), no. 5, 1–3. (Klaus Madlener) **89m:68074** 68Q45 (68Q50)
- Bordley, Robert F.** When present value equals the change in the Hamiltonian. *J. Optim. Theory Appl.* **57** (1988), no. 3, 511–512. (Not in MR) **93C75** (49C10, 93C10, 93C15)
- An additive group utility for a fund manager. *Management Sci.* **34** (1988), no. 7, 836–842. (J. A. Rickard) **89g:90036** 90A10 (90D30)
- The cost of delayed lottery resolution. *Oper. Res.* **36** (1988), no. 1, 115–121. (Summary) **89d:90269** 90D35
- Bordunov, N. N.** (with Yastremskii, A. I.; Uteuliev, N.) Duality relations and conditions for optimality in linear problems of stochastic programming with discretely distributed random variables. (Russian) *Issled. Operatsii i ASU* No. 29 (1987), 27–37, 114. (J. Mockus) **89a:90100** 90C15
- (with Uteuliev, N.; Yastremskii, A. I.) Duality relations and conditions for optimality in nonlinear stochastic programming problems. (Russian) *Issled. Operatsii i ASU* No. 31 (1988), 19–22, 112. (Ebu Tamm) **89g:90158** 90C15
- (with Yastremskii, A. I.; Uteuliev, N.) Stochastic programming problems with discrete distributions. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 3, 121–122, 135. (Summary) **89h:90162** 90C15
- Bordyug, B. A.** (with Avramenko, L. G.; Larin, V. B.) On weakly nonlinear measurable systems. (Russian) *Application of asymptotic methods in the theory of nonlinear differential equations (Russian)*, 5–10, i, *Akad. Nauk Ukrain. SSR, Kiev*, 1987. (Summary) **89e:93023** 93B07 (70E99, 93C10)
- (with Larin, V. B.) Control of the motion of a quadrupedal walking apparatus. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 22, 60 pp. (Summary) **89f:70041** 70Q05
- (with Avramenko, L. G.; Larin, V. B.) Problems on the determination of the orientation of a rigid body. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 59, 48 pp. (Summary) **89e:70027** 70Q05 (70-04, 70E15)
- (with Apostolyuk, A. S.; Bobrov, B. F.; Gradetskii, A. V.; Larin, V. B.; Safronov, Yu. G.; Solov'ev, V. S.) Optimization of the de Prony method for the identification of linear dynamical systems. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 66, 64 pp. (Not in MR) **93B30** (93B40)
- (with Aliev, Fikret Akhmadali oglu; Larin, V. B.) Frequency methods for solving matrix algebraic Riccati equations. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 8(42) (1987), 1–5, 92. (K. Seitz) **89h:93018** 93B25
- (with Aliev, Fikret Akhmadali oglu; Larin, V. B.) Frequency methods of solving matrix algebraic Riccati equations. *Soviet J. Comput. Systems Sci.* **25** (1987), no. 6, 154–161 (1988); translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 3, 169–175, 222 (Russian). (O. A. Sebakhy) **89d:93026** 93B25
- Computer algebra methods in problems of the control of the motion of walking apparatus. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1988**, no. 42, 24 pp. (Summary) **89k:93079** 93B40 (70B15, 93C75)
- Boreisha, Yu. E.** Means of interaction of asynchronous parallel processes. (Russian) *Models and systems of information processing*, No. 7 (Russian), 76–82, 110, "Vyscha Shkola", Kiev, 1988. (see **89j:68011**) **68Q10** (68Q55)
- Borel, Armand** Hermann Weyl and Lie groups. *Hermann Weyl, 1885–1985*, 53–82, *Eidgenössische Tech. Hochschule, Zürich*, 1986. (see **89a:01046**) **01A70** (22-03)
- (with Grivel, Pierre-Paul; Kaup, B.; Haefliger, André; Malgrange, B.; Ehlers, F.)  $\star$  Algebraic  $D$ -modules. *Perspectives in Mathematics*, 2, Academic Press, Inc., Boston, MA, 1987. xii+355 pp. ISBN 0-12-117740-8 (Emmanuel Andronikof) **89g:32014** 32C38 (58G07)
- Borel, Émile** see Knobloch, Eberhard, **89d:01048**
- Borel, J.-P.** Discrepancies de suites homothétiques. (English summary) [Discrepancies of homothetic sequences] *Monatsh. Math.* **104** (1987), no. 3, 175–189. (Rudolf J. Taschner) **89a:11081** 11K38 (11K06)
- Suites et mesures ayant des propriétés d'auto-similarité. [Sequences and measures with self-similarity properties] *Groupe de travail en théorie analytique et élémentaire des nombres*, 1986–1987, 15–38, *Publ. Math. Orsay*, 88-01, Univ. Paris XI, Orsay, 1988. (Henri Faure) **89i:11089** 11K38 (11B83, 11K31, 28A75)
- Borell, Christer** Real polynomial chaos and absolute continuity. *Probab. Theory Related Fields* **77** (1988), no. 3, 397–400. (Jerzy Szulga) **89d:60078** 60G30 (28A35)
- Borell, Merrile** Marey et d'Arsonval: the exact sciences in late nineteenth-century French medicine. *From ancient omens to statistical mechanics*, 225–237, *Acta Hist. Sci. Nat. Med.*, 39, Univ. Lib. Copenhagen, Copenhagen, 1987. (see **89c:01002**) **01A55**
- Borevich, Z. I.** (with Lezama Serrano, J. O.) The multiplicative group of a semiperfect ring. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 19–20, 123. (Summary) **89c:20043** 20E15 (16A99)
- $\star$  Определители и матрицы. (Russian) [Determinants and matrices] Third edition. "Nauka", Moscow, 1988. 184 pp. ISBN 5-02-013736-7 (Editors) **89k:15001** 15-01
- (with Ermakov, S. M.; Skopin, A. I.; Yakovlev, A. V.) Dmitrii Konstantinovich Faddeev (on the occasion of his 80th birthday). (Russian) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1988**, vyp. 1, 3–5. (Editors) **89f:01058** 01A70
- (with Kolotilina, L. Yu.) Normalizers of the intermediate subgroups in the general linear group over a ring. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1988**, vyp. 1, 6–8, 116; translated in *Vestnik Leningrad. Univ. Math.* **21** (1988), no. 1, 1–4. (Sen Qiu) **89d:20039** 20G35 (20H25)
- see also Rings and modules. Limit theorems of probability theory, **89f:00015**
- Borgan, Ørnulf** (with Bie, Ole; Liestøl, Knut) Confidence intervals and confidence bands for the cumulative hazard rate function and their small sample properties. *Scand. J. Statist.* **14** (1987), no. 3, 221–233. (Summary) **89a:62116** 62G15
- Borgardt, A. A.** (with Karpenko, D. Ya.) The light cone in linear and nonlinear field theory. (Russian. English summary) *Ukrain. Fiz. Zh.* **32** (1987), no. 7, 965–971, 1114. (Summary) **89g:81034** 81D25
- Borgatti, Steve** (with Everett, Martin G.) Calculating role similarities: an algorithm that helps determine the orbits of a graph. *Social Networks* **10** (1988), no. 1, 77–91. (Stephen B. Seidman) **89g:92060** 92A20 (05C99)
- A comment on P. Doreian's regular equivalence in symmetric structures: "Measuring regular equivalence in symmetric structures" [Social Networks **9** (1987), no. 2, 89–107, MR 88g:05127]. With a reply by Doreian. *Social Networks* **10** (1988), no. 3, 265–285. (O. D'Antona) **89i:05251** 05C99 (92A20)
- Börger, Egon** (with Löwen, Ulrich) Logical decision problems and complexity of logic programs. *Fund. Inform.* **10** (1987), no. 1, 1–33. (Summary) **89c:03065** 03D15 (68Q15, 68T25)
- Logic as machine: complexity relations between programs and formulae. *Trends in theoretical computer science (Udine, 1984)*, 59–94, *Principles Comput. Sci. Ser.*, 12, Computer Sci. Press, Rockville, MD, 1988. (see **89m:68002**) **68Q05** (03B35, 03B70, 03C13, 68Q15)
- see also Trends in theoretical computer science, **89m:68002**
- Börger, Christoph** (with Peskin, Charles S.) A Lagrangian fractional step method for the incompressible Navier-Stokes equations on a periodic domain. *J. Comput. Phys.* **70** (1987), no. 2, 397–438. (C. Wayne Mastin) **89c:76007** 76-08 (65N99, 76D05)
- Borges, Carlos R.** On the  $M_3 \rightarrow M_1$  question. *Questions Answers Gen. Topology* **4** (1986/87), no. 2, 105–115. (Heikki J. K. Junnila) **89e:54054** 54E20 (54E35)
- Subjective isometries. *Proceedings of the 1987 Topology Conference (Birmingham, AL, 1987)*, *Topology Proc.* **12** (1987), no. 1, 47–58. (Melvin R. Currie) **89f:54059** 54E40 (54D30)
- Characterisation of functional properties by nets. *Bull. Austral. Math. Soc.* **38** (1988), no. 3, 335–338. (V. J. Mancuso) **89i:54015** 54C10
- LECs, local mixers, topological groups and special products. *J. Austral. Math. Soc. Ser. A* **44** (1988), no. 2, 252–258. (Eva Butkovičová) **89e:54029** 54C55 (22A05)
- Linearly stratifiable spaces are  $K_0$ -spaces. *Questions Answers Gen. Topology* **6** (1988), no. 1, 61–66. (Summary) **89d:54016** 54E20 (54D15)
- Borghero, Francesco** Determining generalized forces compatible with given dynamical trajectories in a holonomic system. (Italian. English summary) *Rend. Sem. Fac. Sci. Univ. Cagliari* **56** (1986), no. 2, 7–17. (A. Crumeyrolle) **89b:70003** 70F20 (58F05, 70G25)
- Borgis, D.** (with Moreau, M.) Nucleation theory for a model bistable chemical reaction. *J. Statist. Phys.* **50** (1988), no. 5–6, 935–962. (Summary) **89f:92076** 92A40 (92A08)
- Borgman, Leon E.** New advances in geostatistics for statistical tests useful in geostatistical studies. *New advances in geostatistics (Redwood City, CA, 1987)*, *Math. Geol.* **20** (1988), no. 4, 383–403. (Summary) **89d:86008** 86A20 (86-08)
- Borghain, P.** (with Krori, K. D.; Das, Kanika; Sarma, Arunima) Exact interior solutions in Einstein-Cartan-Yukawa theory. *Canad. J. Phys.* **66** (1988), no. 2, 126–131. (Carl Brans) **89a:83047** 83D05
- (with Krori, K. D.; Kar, P. K.; Das, Dipali) Exact scalar and spinor solutions in some rotating universes. *J. Math. Phys.* **29** (1988), no. 7, 1645–1649. (Reinhard Ilge) **89i:83010** 83C10 (83C15)
- (with Krori, K. D.; Das, Kanika) Interior Schwarzschild-like solution in higher dimensions. *Phys. Lett. A* **132** (1988), no. 6–7, 321–323. (Dieter Lorenz-Petzold) **89j:83081** 83E15
- Borgs, Christian** Confinement, deconfinement and freezing in lattice Yang-Mills theories with continuous time. *Comm. Math. Phys.* **116** (1988), no. 2, 309–342. (Claus Montonen) **89k:81115** 81E25 (81E08, 81E13)
- Borho, W.** Nilpotent orbits, primitive ideals, and characteristic classes. *Algebraic groups Utrecht 1986*, 17–32, *Lecture Notes in Math.*, 1271, Springer, Berlin-New York, 1987. (Louis Solomon) **89h:22023** 22E45 (17B10, 22E47, 32C38)
- Nilpotent orbits, primitive ideals, and characteristic classes (a survey). *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 350–359, *Amer. Math. Soc., Providence, RI*, 1987. (R. W. Carter) **89d:17012** 17B35 (17B20, 32C38)
- (with Brylinski, Jean-Luc; MacPherson, R.) Springer's Weyl group representations through characteristic classes of cone bundles. *Math. Ann.* **278** (1987), no. 1–4, 273–289. (Toshiaki Shoji) **89g:17010** 17B20 (20G05, 22E45)
- (with Battisti, S.) Are there odd amicable numbers not divisible by three? *Math. Comp.* **50** (1988), no. 182, 633–637. (F. T. Howard) **89c:11015** 11A51
- Boridy, Elie** Équilibre électrostatique de deux conducteurs sphériques concentriques dont l'un est muni d'une ouverture circulaire. (English summary) [Electrostatic equilibrium of two concentric spherical conductors, one of which has a circular aperture] *Canad. J. Phys.* **66** (1988), no. 7, 559–563. (Summary) **89h:78006** 78A30
- Boris, Jay P.** (with Löhner, Rainald; Morgan, Kenneth; Vahdati, M.; Book, D. L.) FEM-FCT: combining unstructured grids with high resolution. *Comm. Appl. Numer. Methods* **4** (1988), no. 6, 717–729. (Not in MR) **65N30**
- New directions in computational fluid dynamics. *Annual review of fluid mechanics*, Vol. 21, 345–385, *Annual Reviews, Palo Alto, CA*, 1989. (see **89g:76002**) **76-08**
- Borisenko, A. A.** (with Yampol'skii, A. L.) Cylindricity of tangent bundles of strongly parabolic metrics and strongly parabolic surfaces. (Russian) *Ukrain. Geom. Sb.* No. 29 (1986), 12–32, i. (Z. Jankovský (translated from Zbl 611:53020)) **89g:53072** 53C25 (53C20)
- Borisenko, A. I.** Adaptive control of a matrix of spectral densities at the output of a linear multidimensional object. (Russian) *Kibernet. i Vychisl. Tekhn.* No. 79 (1988), 87–92, 120. (Summary) **89m:93047** 93C40 (93C30, 93E25)
- Borisenko, O. D.** (with Stepanyuk, O. L.) Limit behavior of the solutions of parabolic equations. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 28 (1986), 5–10, 131. (Summary) **89f:35092** 35K10 (35B20)
- Borisenko, S. D.** Stability and attraction of the solutions of nonlinear systems with impulse action. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 5–12, 122. (Summary) **89c:34050** 34D20 (93C57)
- An approach to the solution of a problem on the technical stability of the solutions of a multidimensional system. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat.*



- Mekh.* No. 28 (1986), 3–5, 131. (Not in MR) 34D99
- Linear functional-differential equations with impulse action. (Russian) *Problems of the stability of integral manifolds in equations of mathematical physics* (Russian), 10–13, i, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (see 89c:00026) 34K05 (34A30, 93C57)
  - (with Kosolapov, V. I.; Obolenskii, A. Yu.) ★ Устойчивость процессов при непрерывных и дискретных возмущениях. (Russian) [Stability of processes under continuous and discrete perturbations] With a foreword by A. A. Martynuk. "Naukova Dumka", Kiev, 1988. 199 pp. (P. Brunovsky) 89h:34042 34D10 (34–02, 34D20, 34D99, 93D99)
  - Estimates for the solutions of differential-difference equations with impulse action. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 5, 886–888, 918. (Summary) 89c:34069 34K05 (93C57)
  - Stability of the solutions of functional-differential equations with impulse action. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 6, 1069–1070, 1103. (Not in MR) 34K20 (93C57)
  - Borisov, A. B. (with Kiselev, V. V.) Topological defects in incommensurate magnetic and crystal structures and quasi-periodic solutions of the elliptic sine-Gordon equation. *Phys. D* 31 (1988), no. 1, 49–64. (Peter L. Christiansen) 89f:82099 82A99 (35Q20)
  - Borisov, A. N. (with Glushkov, V. I.) Choice of alternatives on the basis of the analysis of fuzzy evidence. (Russian) *Fuzzy systems: modeling of structure and optimization* (Russian), 63–76, Kalinin. Gos. Univ., Kalinin, 1987. (see 89c:00014) 92A25 (03E72)
  - see also Decision-making methods and systems. *Applied problems in the analysis of solutions in technical syst.* 89h:00001
  - Borisov, Adriyan V. Invariant densities in the three-dimensional pseudo-Euclidean space. (Bulgarian summary) *Mathematics and mathematical education* (Bulgarian) (*Sunny Beach* (*Slivnitshe Bryag*), 1987), 169–180, *Bulgar. Acad. Sci., Sofia*, 1987. (L. A. Santaló) 89g:53106 53C65 (53C50)
  - (with Stanilov, Gr.; Ganchev, Georgi) Academician Boyan L. Petkanchin (1907–1987). (Bulgarian) *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* 29(62) (1987), no. 3, 208–212. (Editors) 89b:01061 01A70
  - (with Kasabov, Ognian T.) On the sectional curvature of Kähler manifolds of indefinite metrics. *Pliska Stud. Math. Bulg.* 9 (1987), 66–70. (From the introduction) 89d:53044 53B30 (53B35)
  - Density for sets of spheres in pseudo-Euclidean space. (French summary) *Rend. Circ. Mat. Palermo* (2) 36 (1987), no. 1, 103–109. (L. A. Santaló) 89c:53103 53C65 (52A22)
  - Borisov, I. S. An accuracy of Gaussian approximation of sum distribution of independent random variables in Banach spaces. *Probability theory and mathematical statistics* (Kyoto, 1986), 28–54, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (V. K. Rohatgi) 89f:60008 60B12
  - Borisov, K. Yu. (with Rubinov, A. M.) Model analysis of the possibilities for the extensive growth of the Soviet economy. (Russian) *Optimizatsiya* No. 40(57) (1987), 83–88, 160. (Not in MR) 90A17 (90A16)
  - Turnpike properties of  $\delta$ -optimal trajectories in models of economic dynamics. (Russian) *Optimizatsiya* No. 41(58) (1987), 76–87. (From the text) 89k:90037 90A16
  - Borisov, L. E. A method for solving a problem of fuzzy mathematical programming. (Russian) *Fuzzy systems: modeling of structure and optimization* (Russian), 57–63, Kalinin. Gos. Univ., Kalinin, 1987. (Summary) 89m:90168 90C99 (03E72)
  - Borisov, N. V. (with Andrianov, A. A.; Ioffe, M. V.) Scattering theory for the supersymmetric Hamiltonian, and supersymmetry of nuclear interactions. (Russian. English summary) *Teoret. Mat. Fiz.* 72 (1987), no. 1, 97–111. (Horia Scutaru) 89a:81160 81F15 (81G20)
  - (with Müller, Werner; Schrader, Robert) Relative index theorems and supersymmetric scattering theory. *Comm. Math. Phys.* 114 (1988), no. 3, 475–513. (Brian DeFazio) 89j:58131 58G12 (47A40, 58A12, 81C40, 81F20)
  - Borisova, Galina S. Representations of entire functions of exponential type in series on Appell polynomials and quasipolynomials. *Complex analysis and applications '85* (Varna, 1985), 112–118, *Bulgar. Acad. Sci., Sofia*, 1986. (Pet'r Rusev) 89c:30065 30D10 (30B99)
  - Borisovich, A. Yu. Letter to the editors: "The reduction of the problem of bifurcation of minimal surfaces to operator equations and the determination of bifurcations of a catenoid, a helicoid and Scherk and Enneper surfaces" [*Uspekhi Mat. Nauk* 41 (1986), no. 5(251), 165–166; MR 88c:58013]. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 5(263), 236. (Editors) 89k:58056 58E07
  - Borisovich, Yu. G. (with Gel'man, B. D.; Myshkis, A. D.; Obukhovskii, V. V.) ★ Введение в теорию многозначных отображений. (Russian) [Introduction to the theory of multivalued mappings] Voronezh. Gos. Univ., Voronezh, 1986. 104 pp. (Andrzej Fryszkowski) 89f:49014 49A50 (28B20, 34A60, 49–01, 49E10, 54C60, 58C30, 90C30)
  - A modern approach to the theory of topological characteristics of nonlinear operators. I. (Russian) *Geometry and the theory of singularities in nonlinear equations* (Russian), 24–46, 182, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1987. (Jacobo Pejsachowicz) 89g:58029 58C30 (47H05, 47H09, 58B99)
  - (with Gel'man, B. D.; Myshkis, A. D.; Obukhovskii, V. V.) New results in the theory of multivalued mappings. I. Topological characteristics and solvability of operator relations. (Russian) *Mathematical analysis*, Vol. 25 (Russian), 123–197, 200, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (Christian Fenske) 89c:58017 58C30 (47H10, 54C60)
  - (with Fomenko, T. N.) Homological methods in the theory of periodic and equivariant maps. *Global analysis—studies and applications*, III, 21–41, *Lecture Notes in Math.*, 1334, Springer, Berlin-New York, 1988. (Christian Fenske) 89m:58029 58C30 (55M35, 57S99)
  - Modern approach to the theory of topological characteristics of nonlinear operators. I. *Global analysis—studies and applications*, III, 199–220, *Lecture Notes in Math.*, 1334, Springer, Berlin-New York, 1988. (Jacobo Pejsachowicz) 89g:58029b 58C30 (47H05, 47H09, 58B99)
  - see also Global analysis—studies and applications, 89f:58002
  - Borisyuk, M. N. (with Arshinskii, L. V.) Extremal problems in quadrupole wing theory. (Russian) *Asymptotic methods* (Russian), 267–293, 386, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Summary) 89c:76025 76B05
  - Börjesson, Lennart Mixed norm estimates for certain means. *Trans. Amer. Math. Soc.* 309 (1988), no. 2, 517–541. (Douglas Kurtz) 89d:42024 42B15
  - Borkar, V. S. Control of Markov chains with long-run average cost criterion. *Stochastic differential systems, stochastic control theory and applications* (Minneapolis, Minn., 1986), 57–77, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (V. N. Igolkina) 89c:93218 93E20 (49C20, 90C39, 90C40)
  - The probabilistic structure of controlled diffusion processes. *Acta Appl. Math.* 11 (1988), no. 1, 19–48. (B. I. Anan'ev) 89g:93108a 93E20 (49C20, 60J60)
  - Errata: "The probabilistic structure of controlled diffusion processes". *Acta Appl. Math.* 12 (1988), no. 1, 103. (B. I. Anan'ev) 89g:93108b 93E20 (49C20, 60J60)
  - (with Ghosh, Mrinal K.) Ergodic control of multidimensional diffusions. I. The existence results. *SIAM J. Control Optim.* 26 (1988), no. 1, 112–126. (Emmanuel Nicholas Barron) 89h:93054 93E20 (49A60)
  - Borm, G. F.  $p$ -adic Fourier transforms. *Nederl. Akad. Wetensch. Indag. Math.* 50 (1988), no. 1, 1–8. (Michel Gataoupe) 89f:42023 42C10 (11Q25, 11S80, 42A38, 43A32, 46P05)
  - (with Schikhof, W. H.; de Vries, Hendrik)  $p$ -adic representative functions on abelian groups. *Nederl. Akad. Wetensch. Indag. Math.* 50 (1988), no. 1, 9–13. (Gopal Prasad) 89g:20011 20C11 (20K21, 22B99)
  - Borm, P. E. M. Information types: a comparison. *Cahiers Centre Études Rech. Opér.* 30 (1988), no. 1, 23–37. (M. Mañas) 89m:90171 90D05
  - Borneas, M. Comments on a nonlinear equation. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timisoara. Lucrur. Sem. Mat. Fiz.* 1986, November, 103–108. (Piero de Mottoni) 89j:81035b 81D25 (81G25)
  - On a nonlinear equation. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timisoara. Lucrur. Sem. Mat. Fiz.* 1986, May, 107–112. (Piero de Mottoni) 89g:81035a 81D25 (81G25)
  - Borner, H. P. (with O'Brien, M. C. M.) A pseudoscalar operator approach to the  $T \otimes \tau_2$  Jahn-Teller system. *J. Phys. A* 21 (1988), no. 23, 4289–4303. (Summary) 89j:81280 81G50 (22E70, 81H99)
  - Börner, W. (with Böhm, Johannes; Hertel, E.; Krötenheerdt, O.; Mögling, Werner; Stammler, L.) ★ Geometrie. I. (German) [Geometry. I] Axiomatischer Aufbau der euklidischen Geometrie. [Axiomatic construction of Euclidean geometry] With historical comments by H. Wussing. Fifth edition. Studienbücherei. [Textbook Library] Mathematik für Lehrer [Mathematics for Teachers], 6. VEB Deutscher Verlag der Wissenschaften, Berlin, 1988. 146 pp. ISBN 3-326-00370-6 (Editors) 89b:51001 51–02 (51M05)
  - Bernholt, Graham Comment on J. O. Berger and T. Selk: "Testing a point null hypothesis: irreconcilability of  $P$  values and evidence" [*J. Amer. Statist. Assoc.* 82 (1987), no. 397, 112–139; MR 89a:62009a]. With a reply by Selk. *J. Amer. Statist. Assoc.* 82 (1987), no. 400, 1201. (S. Blumenthal) 89a:62009b 62A15 (62A20)
  - Bornstein, Claudio T. (with Villela, Paulo R. C.) An improved upper bound for the 0-1 knapsack problem. (Hungarian. English summary) *Szigma—Mat.-Közgazdasági Folyóirat* 20 (1987/88), no. 1, 89–94. (F. Szidarovszky) 89j:90189 90C10
  - (with Rust, R.) Minimizing a sum of staircase functions under linear constraints. *Optimization* 19 (1988), no. 2, 181–190. (Vicente Campos) 89f:90045 90B10 (65K05, 90C27)
  - Borodachev, A. N. Elastic equilibrium of a layer that is nonhomogeneous with respect to thickness. (Russian) *Prikl. Mekh.* 24 (1988), no. 8, 30–36, 131; translated in *Soviet Appl. Mech.* 24 (1988), no. 8, 753–758. (Summary) 89j:73016 73C40 (73T05)
  - Borodachev, N. M. The stress state near the curved front of a semi-infinite crack in an elastic body. (Russian) *Prikl. Mekh.* 24 (1988), no. 3, 63–68, 134; translated in *Soviet Appl. Mech.* 24 (1988), no. 3, 262–268. (Summary) 89f:73065 73M05
  - Borodich, F. M. Spatial self-similar problems of the penetration of blunted bodies into an ideal compressible fluid (the supersonic case). (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* 1988, no. 3, 110–114, 166; translated in *J. Appl. Mech. Tech. Phys.* 29 (1988), no. 3, 415–418. (Summary) 89j:76067 76N10 (76J99)
  - Similarity in a three-dimensional problem of the penetration of rigid bodies into an ideal incompressible fluid. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* 1988, no. 5, 127–132, 176; translated in *J. Appl. Mech. Tech. Phys.* 29 (1988), no. 5, 718–722. (Summary) 89m:76012 76B10 (35R30)
  - Problems of the interaction of blunt bodies with an acoustic medium. (Russian) *Prikl. Mat. Mekh.* 52 (1988), no. 4, 610–616. (From the summary) 89m:76050 76J99 (76L05, 76N10)
  - Borodin, A. I. (with Bugai, A. S.) ★ Выдающиеся математики. (Russian) [Outstanding mathematicians] Биографический словарь-справочник. [A biographical dictionary-handbook] Second edition. "Radnyans'ka Shkola", Kiev, 1987. 655 pp. (Editors) 89i:01064 01A70 (00A20)
  - (with Lavrenko, N. I.) Mathematical calendar for the 1987/88 academic year (September–October). (Russian) *Mat. v Shkole* 1987, no. 4, 71. (Editors) 89c:01044 01A70
  - Mathematical calendar for the academic year 1987/1988 (November–December). (Russian) *Mat. v Shkole* 1987, no. 5, 72. (Editors) 89d:01056 01A70
  - Anniversaries in mathematics for the 1987/88 academic year (January–February). (Russian) *Mat. v Shkole* 1987, no. 6, 73–74. (Editors) 89d:01057 01A70
  - Mathematical calendar for the 1987/88 academic year. (Russian) *Mat. v Shkole* 1988, no. 1, 82. (Editors) 89i:01065 01A70
  - (with Saushkin, A. F.) Mathematical calendar for the 1987/88 academic year. (Russian) *Mat. v Shkole* 1988, no. 2, 75–76. (Editors) 89g:01045 01A70
  - (with Saushkin, A. F.) Mathematical calendar for the 1987/88 academic year. (Russian) *Mat. v Shkole* 1988, no. 3, 66–67. (Editors) 89h:01055 01A70
  - Borodin, A. N. On the weak convergence to Brownian local time. *Probability theory and mathematical statistics* (Kyoto, 1986), 55–63, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (M. Csörgö) 89g:60239 60J55 (60F17, 60J65)
  - A weak invariance principle for local times. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 158 (1987), *Probl. Teor. Veroyatn. Raspred. X*, 14–31, 169; translated in *J. Soviet Math.* 43 (1988), no. 6, 2751–2764. (P. Révész) 89a:60178 60J55 (60F17)
  - Borodin, O. V. Coupled colorings of graphs on a plane. (Russian) *Metody Diskret. Analiz.* No. 45 (1987), 21–27, 95. (Ioan Tomescu) 89d:05069 05C15
  - On the total coloring of planar graphs. *J. Reine Angew. Math.* 394 (1989), 180–185. (G. Laman) 89m:05049 05C15
  - Borodin, V. M. (with Alekssev, F. F.; Bil'chenko, G. G.) A method for constructing Lyapunov functions. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 45–52, 322, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (see 89c:00040) 34D20

- Borodulin, V. I.** (with Zorin, O. L.; Pron'ko, G. P.; Razumov, A. V.; Solov'ev, L. D.) A string model of hadrons and of their interactions. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (Jarmala, 1985), 212-221, "Nauka", Moscow, 1986. (see 89d:81001) 81E99 (81E30)
- Borogovac, Muhamed** (with Borogovac, Nefa) Analytic inequalities related to indefinite scalar products. (Serbo-Croatian summary) *Rad. Mat.* 3 (1987), no. 2, 173-178. (Hans Arwed Keller) 89f:46046 46D05 (26D15)
- Borogovac, Nefa** (with Borogovac, Muhamed) Analytic inequalities related to indefinite scalar products. (Serbo-Croatian summary) *Rad. Mat.* 3 (1987), no. 2, 173-178. (Hans Arwed Keller) 89f:46046 46D05 (26D15)
- Borok, V. M.** A criterion for the absolute  $\Sigma$ -stability of partial differential equations. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 3, 438-444, 547; translated in *Differential Equations* 24 (1988), no. 3, 309-313. (Summary) 89f:35031 35B35 (35K25)
- Boronin, A. B.** (with Pershin, O. Yu.) Dynamic location problems where the components of the graph of connections have a radial structure. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 2, 46-51, 134; translated in *Cybernetics* 24 (1988), no. 2, 195-203. (Summary) 89h:90244 90C35 (05C99, 90B10)
- Boros, Endre** PG(2,  $p^2$ ),  $p > 2$ , has property  $B(p+2)$ . *Ars Combin.* 25 (1988), 111-113. (Anne Delandsheer) 89e:51009 51E20 (05B25)
- (with Füredi, Z.) Rectangular dissections of a square. *European J. Combin.* 9 (1988), no. 3, 271-280. (Konrad Engel) 89i:05014 05A15 (05B40, 52A45)
- Borosh, I.** (with Flahive, Mary G.; Rubin, David S.; Treybig, L. B.) A sharp bound for solutions of linear Diophantine equations. *Proc. Amer. Math. Soc.* 105 (1989), no. 4, 844-846. (Edward L. Cohen) 89i:15022 15A36 (11D04, 90C10)
- Borovikov, I. P.** (with Gaponenko, Yu. L.) A method for the linearization of the inverse problem for the wave equation. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 10, 1516-1526, 1598. (A. S. Alekseev) 89g:35111 35R30 (35L05)
- Borovikov, V. A.** (with Anyutin, A. P.) Evolution of localized disturbances of a stratified fluid with variable Brunt-Väisälä frequency. *J. Appl. Math. Mech.* 50 (1986), no. 5, 670-674 (1987); translated from *Prikl. Mat. Mekh.* 50 (1986), no. 5, 863-867 (Russian). (A. Pozzi) 89e:76081 76V05
- (with Kinber, B. E.) The inaccuracy of "universal and sufficient" heuristic conditions for estimating the boundaries of applicability of geometric optics and geometric diffraction theory. (Russian. English summary) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* 30 (1987), no. 10, 1226-1237. (A. S. Silbergleit) 89g:78019 78A45
- (with Kelbert, M. Ya.) Adaptation of initial conditions for internal waves in a weakly compressible fluid. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* 1988, no. 5, 89-94, 175; translated in *J. Appl. Mech. Tech. Phys.* 29 (1988), no. 5, 683-687. (Summary) 89k:76029 76C10 (35Q10, 76L05, 76N10)
- The field of a point source of internal waves in a half-space with variable Brunt-Väisälä frequency. (Russian) *Prikl. Mat. Mekh.* 52 (1988), no. 4, 688-692. (Summary) 89k:76097 76V05
- see also Kravtsov, Yu. A., 89g:78020
- Borovkov, A. A.** Limit theorems for queueing networks. II. (Russian) *Teor. Veroyatnost. i Primenen.* 32 (1987), no. 2, 282-298. (W. Szczotka) 89b:60208 60K25 (60F99)
- Asymptotic analysis of communication networks. (Russian) *Dokl. Akad. Nauk SSSR* 296 (1987), no. 5, 1033-1038; translated in *Soviet Math. Dokl.* 36 (1988), no. 2, 335-339. (L. B. Boguslavskii) 89a:60243 60K99 (68M10, 90B15, 94A05)
- Borovkov, K. A.** A method for the proof of limit theorems for branching processes. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 1, 115-123; translated in *Theory Probab. Appl.* 33 (1988), no. 1, 105-113. (P. Jagers) 89e:60165 60I80
- On the problem of improving Poisson approximation. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 2, 364-368; translated in *Theory Probab. Appl.* 33 (1988), no. 2, 343-347. (Gábor J. Székely) 89i:60040 60E99 (60F05)
- Borovoi, M. V.** Conjugation of Shimura varieties. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 783-790, *Amer. Math. Soc., Providence, RI*, 1987. (James Milne) 89h:11025 11G18 (11R39, 22E55)
- Galois cohomology of real reductive groups and real forms of simple Lie algebras. (Russian) *Funktsional. Anal. i Prilozhen.* 22 (1988), no. 2, 63-64; translated in *Functional Anal. Appl.* 22 (1988), no. 2, 135-136. (A. A. Bondarenko) 89i:11052 11E72 (17B20)
- Borovskii, Yu. E.** Pfaffian systems with coefficients in  $L_\infty$  and their geometric applications. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 2, 10-16, 216; translated in *Siberian Math. J.* 29 (1988), no. 2, 170-175. (H. Kilp) 89h:58008 58A17 (35A30)
- Borovskikh, Yu. V.** (with Korolyuk, V. S.) A functional limit theorem for the mean square deviation of a density estimate. (Russian) *Asymptotic methods in the investigation of stochastic models* (Russian), 81-84, 145, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (Paul Deheuvels) 89g:62035 62F05
- Asymptotic behavior of integral functionals of a multidimensional empirical process. (Russian) *Theory of random processes*, no. 15 (Russian), 10-16, 117, "Naukova Dumka", Kiev, 1987. (Jana Jurečková) 89a:60086 60F17
- (with Korolyuk, V. S.) ★ Мартингальная аппроксимация. (Russian) [Martingale approximation] "Naukova Dumka", Kiev, 1988. 247 pp. ISBN 5-12-009301-9 (R. J. Tomkins) 89h:60071 60G42 (60F05, 60G46, 60G48)
- The theory of  $U$ -statistics in Banach spaces. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1988, no. 3, 60 pp. (Summary) 89f:62010 62E20 (60-02, 60B11)
- A central limit theorem for  $U$ -statistics. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 2, 6-9, 88. (R. M. Dudley) 89g:60010 60B12 (62E20)
- (with Korolyuk, V. S.) A multidimensional  $U$ -statistic empirical process. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 2, 12-15, 88. (Paul Deheuvels) 89i:60051 60F05
- The law of large numbers for  $U$ -statistics. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 7, 6-9, 85. (R. J. Tomkins) 89j:60047 60F15 (62F12)
- (with Korolyuk, V. S.) Asymptotic theory of  $U$ -statistics. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 2, 169-182, 271; translated in *Ukrainian Math. J.* 40 (1988), no. 2, 142-154. (Gábor J. Székely) 89c:60026 60F05 (62E20)
- Borowczyk, Włodzimierz** Design of an optimal linear filter, intended for smoothing and prediction, that satisfies the condition of minimum variance of random error. (Polish. English and Russian summaries) *Postępy Cybernet.* 11 (1988), no. 1, 79-92. (Not in MR) 93E11
- Borowiecki, Mieczysław** (with Patil, H. P.) On colouring and the chromatic polynomial of  $k$ -trees. *J. Combin. Inform. System Sci.* 11 (1986), no. 2-4, 124-128. (Ortrud R. Oellermann) 89j:05035 05C15
- Two extremal problems in the class of uniquely colourable graphs. *Graphs, hypergraphs and matroids, II* (Žagaň, 1986), 17-25, *Higher College Engng., Zielona Góra*, 1987. (Larry Basenstapler) 89e:05111 05C35 (05C15)
- Characterization of graphs having minimal kernels cardinality half their order. *Graphs, hypergraphs and matroids, II* (Žagaň, 1986), 27-28, *Higher College Engng., Zielona Góra*, 1987. (see 89a:05005) 05C75
- see also *Graphs, hypergraphs and matroids*, 89a:05005
- Borzo-Borrallo, J. M.** see Páez-Borrallo, J. M.
- Borşan, D.** On the topology associated with an  $n$ -metric. (Romanian. English summary) *Studia Univ. Babeş-Bolyai Math.* 32 (1987), no. 2, 3-9. (Helmut Ludescher) 89j:54034 54E99
- dimova-Borshukova, Stefka** see Dimova-Borshukova, Stefka
- Boršík, Ján** (with Dobóš, Jozef) On metric preserving functions. *Real Anal. Exchange* 13 (1987/88), no. 1, 285-293. (M. Laczkovich) 89a:26007 26A30
- mankoč-Borštnik, N.** see Mankoč-Borštnik, N.
- Bortakovskii, A. S.** (with Pantelev, A. V.) Optimal control of continuous-discrete systems. (Russian) *Problems in the qualitative theory of differential equations* (Russian) (Irkutsk, 1986), 244-250, 287, "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (see 89j:34002) 49B34 (93B50, 93C55, 93C60)
- Borubayev, A. A.** Absolutes of uniform spaces. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1(259), 193-194; translated in *Russian Math. Surveys* 43 (1988), no. 1, 233-234. (G. D. Dimov) 89m:54041 54E15 (54C10, 54G05)
- Borucka-Cieslewicz, Anna** On approximation by rational functions. *Funct. Approx. Comment. Math.* 16 (1988), 169-174. (Summary) 89k:41017 41A20
- Borucki, A.** (with Jordan, A.; Bouayed, F.; Benmouna, M.) Numerical method for the resolution of nonlinear heat transfer problems. *Comm. Appl. Numer. Methods* 4 (1988), no. 1, 17-23. (Summary) 89c:80010 80A20 (65N30)
- Borukhov, V. T.** Linear relations and structural properties of finite-dimensional autonomous linear dynamical systems. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 33 (1989), no. 1, 13-16, 92. (Not in MR) 34C35
- Borwein, David** (with Markovich, Tom) A Tauberian theorem concerning Borel-type and Cesàro methods of summability. *Canad. J. Math.* 40 (1988), no. 1, 228-247. (Amnon Jakimovski) 89c:40011 40G10 (40E05)
- (with Borwein, J. M.; Shail, R.; Zucker, I. J.) Energy of static electron lattices. *J. Phys. A* 21 (1988), no. 7, 1519-1531. (Summary) 89f:82070 82A65 (81H99)
- (with Markovich, Tom) Cesàro and Borel-type summability. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1108-1112. (S. Baron) 89f:40005 40G05 (40E05, 40G10)
- Borwein, J. M.** (with Borwein, P. B.) ★ Pi and the AGM. A study in analytic number theory and computational complexity. Canadian Mathematical Society Series of Monographs and Advanced Texts. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1987. xvi+414 pp. ISBN 0-471-83138-7 (H. London) 89a:11134 11Y60 (68Q30)
- (with Fitzpatrick, Simon; Giles, J. R.) The differentiability of real functions on normed linear space using generalized subgradients. *J. Math. Anal. Appl.* 128 (1987), no. 2, 512-534. (W. W. Breckner) 89b:58027 58C20 (26E15, 46G05, 49A52, 90C48)
- Epi-Lipschitz-like sets in Banach space: theorems and examples. *Nonlinear Anal.* 11 (1987), no. 10, 1207-1217. (J. E. Spingarn) 89b:90225 90C48 (46G99, 58C20, 90C25)
- (with Borwein, P. B.) More Ramanujan-type series for  $1/\pi$ . *Ramanujan revisited* (Urbana-Champaign, Ill., 1987), 359-374, *Academic Press, Boston, MA*, 1988. (Duncan A. Buell) 89d:11118 11Y60
- (with Borwein, David; Shail, R.; Zucker, I. J.) Energy of static electron lattices. *J. Phys. A* 21 (1988), no. 7, 1519-1531. (Summary) 89f:82070 82A65 (81H99)
- (with Ben-Tal, A.; Teboulle, M.) A dual approach to multidimensional  $L_p$  spectral estimation problems. *SIAM J. Control Optim.* 26 (1988), no. 4, 985-996. (Krzysztof C. Kiwiel) 89i:49008 49A55 (42A05, 49D29, 90C25, 94A11)
- (with Borwein, P. B.) On the complexity of familiar functions and numbers. *SIAM Rev.* 30 (1988), no. 4, 589-601. (Klaus W. Wagner) 89k:68061 68Q25 (03D15, 11Y16)
- Borwein, P. B.** (with Borwein, J. M.) ★ Pi and the AGM. A study in analytic number theory and computational complexity. Canadian Mathematical Society Series of Monographs and Advanced Texts. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1987. xvi+414 pp. ISBN 0-471-83138-7 (H. London) 89a:11134 11Y60 (68Q30)
- (with Borwein, J. M.) More Ramanujan-type series for  $1/\pi$ . *Ramanujan revisited* (Urbana-Champaign, Ill., 1987), 359-374, *Academic Press, Boston, MA*, 1988. (Duncan A. Buell) 89d:11118 11Y60
- Padé approximants for the  $q$ -elementary functions. *Constr. Approx.* 4 (1988), no. 4, 391-402. (Annie A. M. Cuyt) 89f:41022 41A21 (33A10, 41A20)
- (with Borwein, J. M.) On the complexity of familiar functions and numbers. *SIAM Rev.* 30 (1988), no. 4, 589-601. (Klaus W. Wagner) 89k:68061 68Q25 (03D15, 11Y16)
- (with Kroó, András; Grothmann, R.; Saff, E. B.) The density of alternation points in rational approximation. *Proc. Amer. Math. Soc.* 105 (1989), no. 4, 881-888. (G. Meinardus) 89b:41035 41A20 (41A50)
- Hypertranscendence of the functional equation  $g(x^2) = [g(x)]^2 + cx$ . *Proc. Amer. Math. Soc.* 107 (1989), no. 1, 215-221. (I. N. Baker) 89m:39011 39B10 (30D05)
- Borza, László** ★ Periodic length of fractions with their gamma values:  $\alpha^2 \equiv 1 \pmod{p}$ ,  $p-1 = \lambda \cdot \gamma$ . Vol. 1. (German)  $2 \leq \alpha \leq 337$ ;  $3 \leq p < 10,000$ . Number Theoretical Series, 1/1. *Fachverlag für Zahlentheorie, Garching*, 1986. xxxii+854+x pp. ISBN 3-925726-00-4 (Duncan A. Buell) 89g:11001a 11-00 (11Y70)
- ★ Periodic length of fractions with their gamma values:  $\alpha^2 \equiv 1 \pmod{p}$ ,  $p-1 = \lambda \cdot \gamma$ . Vol. 2. (German)  $338 \leq \alpha \leq 673$ ;  $3 \leq p < 10,000$ . Number Theoretical Series, 1/2. *Fachverlag für Zahlentheorie, Garching*, 1986. pp. i-viii, 855-1674 and i-xii. ISBN 3-925726-01-2 (Duncan A. Buell) 89g:11001b 11-00 (11Y70)
- ★ Periodic length of fractions with their gamma values:  $\alpha^2 \equiv 1 \pmod{p}$ ,  $p-1 = \lambda \cdot \gamma$ . Vol. 3. (German)  $674 \leq \alpha \leq 1,009$ ;  $3 \leq p < 10,000$ . Number Theoretical Series, 1/3. *Fachverlag für Zahlentheorie, Garching*, 1986. pp. i-viii, 1675-2455 and i-xix. ISBN 3-925726-02-0 (Duncan A. Buell) 89g:11001c 11-00 (11Y70)
- Borzacchini, L.** Graphical partially ordered sets. *Discrete Appl. Math.* 18 (1987), no. 3, 247-262. (R. L. Hemminger) 89b:05128 05C60 (06A10)



- (with Avellis, Giovanna) Reconstruction theory for  $g$ -graphs. Eleventh British Combinatorial Conference (London, 1987). *Art. Combin.* **25** (1988), 4, 173–177. (William L. Kocay) **89f:05125** 05C60 (05C99)
- Horzdova, T. V.** (with Shamaeva, O. Yu.) A scheme-functional approach to the realization of decomposition methods for inversion of large-dimension matrices. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 2, 39–42, 133; translated in *Cybernetics* **24** (1988), no. 2, 187–192. (G. Maes) **89f:65031** 65F05 (65W05)
- Horzyko, V. I.** A uniqueness theorem of S. R. Bernfeld-R. D. Driver-V. Lakshmikantham theorem type for differential equations with hysteresis nonlinearities. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **30** (1987), no. 2, 74–77. (Jianxun He) **89b:34003** 34A10 (34A34, 34A40)
- Conditions for the existence and uniqueness of a solution of the Cauchy problem for a system of ordinary differential equations with hysteresis nonlinearities. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **30** (1987), no. 12, 766–770 (1988). (Mihai Turinici) **89c:34003** 34A10
- Uniqueness conditions for systems of differential equations with hysteresis terms. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 8, 1291–1295, 1468; translated in *Differential Equations* **24** (1988), no. 8, 827–830. (I. Kubiacyk) **89b:34003** 34A10 (34K05)
- Horzenka, V. I.** A problem of the theory of choice of options with an incomplete family of entries. (Russian. English summary) *Avtomat. i Telemekh.* **1986**, no. 7, 104–109. (Summary) **89b:90012** 90A06
- von Borzeszkowski, Horst-Heino** (with Bleyer, U.) On gauge-invariant theories of gravitation. *Group theoretical methods in physics*, Vol. 1–3 (Zvenigorod, 1982), 59–66, Harwood Academic Publ., Chur, 1985. (Carl Brans) **89m:83073** 83D05
- (with Treder, H.-J.) ★ The meaning of quantum gravity. *Fundamental Theories of Physics*. D. Reidel Publishing Co., Dordrecht-Boston, MA, 1988. viii+132 pp. ISBN 90-277-2518-7 (A. D. Popova) **89g:83024** 83C45 (81G25)
- (with Treder, H.-J.) Interference and interaction in Schrödinger's wave mechanics. *Found. Phys.* **18** (1988), no. 1, 77–93. (Dennis Dieks) **89f:81016** 81B05 (01A55, 01A60, 81-03)
- Borzer, V. V.** On the high-temperature asymptotics of the partition function for the  $P(\phi)_2$  model of Euclidean field theory. (Russian. English summary) *Teoret. Mat. Fiz.* **76** (1988), no. 3, 328–338; translated in *Theoret. and Math. Phys.* **76** (1988), no. 3, 895–902. (Summary) **89j:81091** 81E08 (82A15)
- Borzymowski, Andrzej** (with Sadowski, Antoni) On some sequences of iterates. *Discuss. Math.* **8** (1986), 85–91 (1987). (A. Smajdor) **89g:39009** 39B10 (26B99, 35R99)
- (with Sadowski, Antoni) A boundary value problem for the Mangeron polyvibrating equation. *Rend. Mat. Appl.* (7) **6** (1986), no. 4, 565–585 (1988). (Summary) **89m:35205** 35Q99
- Borzymowski, Andrzej** (with Kubiak, Ryszard; Sokolowski, Stefan Andrzej) A set-theoretic model for a typed polymorphic lambda calculus. A contribution to MetaSoft. *VDM '88. VDM—the way ahead* (Dublin, 1988), 267–298, *Lecture Notes in Comput. Sci.*, **328**, Springer, Berlin-New York, 1988. (see **89m:68093**) **68Q65** (03B40, 03B70, 68Q55)
- Bös, Dieter** Public sector pricing. *Handbook of public economics*, Vol. I, 129–211, *Handbooks in Econ.*, **4**, North-Holland, Amsterdam-New York, 1985. (see **89m:9002a**) **90A12**
- Corrigendum: "Public sector pricing" [*Handbook of public economics*, Vol. I, 129–211, North-Holland, Amsterdam, 1985]. *Handbook of public economics*, Vol. II, 1093, *Handbooks in Econ.*, **4**, North-Holland, Amsterdam-New York, 1987. (see **89m:9002b**) **90A12**
- Bos, H. J. M.** Fundamental concepts of the Leibnizian calculus. *300 Jahre Nova methodus* von G. W. Leibniz (1684–1984) (Noordwijkerhout, 1984), 103–118, *Studia Leibnitiana Sonderheft*, **14**, Steiner, Wiesbaden, 1986. (Craig G. Fraser) **89m:01034** 01A45
- The concept of construction and the representation of curves in seventeenth-century mathematics. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1629–1641, *Amer. Math. Soc.*, Providence, RI, 1987. (C. J. Scriba) **89f:01022** 01A45 (00A25)
- Tractational motion and the legitimization of transcendental curves. *Centaurus* **31** (1988), no. 1, 9–62. (Eberhard Knobloch) **89i:01027** 01A45 (01A50)
- Bös, S.** (with Kühn, Reimer; van Hemmen, J. L.) Martingale approach to neural networks with hierarchically structured information. *Z. Phys. B* **71** (1988), no. 2, 261–271. (Summary) **89j:92023** 92A09 (82A57, 82A99)
- Bonák, Miroslav** A unilateral boundary-value problem for the rod. (Russian and Czech summaries) *Apl. Mat.* **33** (1988), no. 2, 103–115. (C. Dierieck) **89f:73044** 73K05
- Boscarol, M.** see *Foundations of logic and functional programming*. **89c:68005**
- Bosch, Carlos** (with Kucera, Jan) A note on the spaces  $\mathcal{O}_M$  and  $\mathcal{O}'_M$ . *Internat. J. Math. Math. Sci.* **11** (1988), no. 4, 823–824. (Hans-Joachim Petzsche) **89g:46076** 46F05
- van den Bosch, F.** (with de Roos, André Marc; Gabriel, W.) Cannibalism as a life boat mechanism. *J. Math. Biol.* **26** (1988), no. 6, 619–633. (L. E. Bobisud) **89i:92035** 92A15 (92A12)
- Bosch, S.** Néron models. *Proceedings of the conference on  $p$ -adic analysis* (Houthalen, 1987), 31–39, *Vrije Univ. Brussel, Brussels*, 1986. (Frank Herrlich) **89a:11060** 11G10 (14G20, 14G25, 14K15)
- Bosch, William** Functions that preserve the uniform distribution of sequences. *Trans. Amer. Math. Soc.* **307** (1988), no. 1, 143–152. (L. Kátai) **89h:11046** 11K06 (11J71)
- Boschková, Monika** Self-tuning controls of linear stochastic systems in presence of drift. *Kybernetika (Prague)* **24** (1988), no. 5, 347–362. (Zong Ji Chen) **89k:93128** 93C40 (93C15, 93C60, 93E10)
- lo Bosco, Dario** see *Lo Bosco, Dario*
- Bosco, F. A.** (with de Aguiar, F. S.; Goulart Rosa, S., Jr.) Yang-Lee zeros of the Ising model on the closed Cayley tree. *Phys. Lett. A* **127** (1988), no. 4, 194–198. (Summary) **89a:82037** 82A68 (82A25)
- Bosco, Pier Giorgio** (with Giovannetti, Elio; Moiso, Corrado) Narrowing vs. SLD-resolution. International Joint Conference on Theory and Practice of Software Development (Pisa, 1987). *Theoret. Comput. Sci.* **59** (1988), no. 1–2, 3–23. (Costică Cazacu) **89k:68130** 68T15
- Boscovich, R. G.** see *Boscovich, Ruggiero Giuseppe*
- Boscovich, R. J.** see *Bosković, Rudjer*
- Boscovich, Roger** see *Bosković, Rudjer*
- Boscovich, Ruggiero Giuseppe** see *Proverbio, Edoardo*. **89c:01024**
- Bose, Arup** (with Bhandari, Subir Kumar) On selecting the most likely event. *J. Statist. Plann. Inference* **17** (1987), no. 2, 227–240. (D. Y. Huang) **89h:62040** 62F07
- Edgeworth correction by bootstrap in autoregressions. *Ann. Statist.* **16** (1988), no. 4, 1709–1722. (I. V. Basawa) **89f:62144** 62M10
- Higher order approximations for autocorrelations from linear processes with applications. *Statistics* **19** (1988), no. 2, 259–269. (Theo Gasser) **89g:62148** 62M10
- Bose, Bella** (with Lin, Der-Jei) Theory and design of  $t$ -error correcting and  $d(d > t)$ -unidirectional error detecting ( $t$ -EC  $d$ -UED) codes. *IEEE Trans. Comput.* **37** (1988), no. 4, 433–439. (Dali Tao) **89g:94042** 94B99
- Bose, Indrani** (with Ray, Purusattam; Dhar, Deepak) Rooted spiral trees in dimensions 2, 3 and 4. *J. Phys. A* **21** (1988), no. 4, L219–L225. (Summary) **89c:82067** 82A68 (05C05, 65C05, 82A67)
- (with Ray, Purusattam; Mukhopadhyay, Subhashish) Effect of loops on spiral lattice animal statistics. *J. Phys. A* **21** (1988), no. 20, L979–L982. (Summary) **89i:82076** 82A67 (05A15, 82A51)
- Bose, Mansumi** (with Mukerjee, Rahul) Factorial designs for quality-quantity interaction. *Calcutta Statist. Assoc. Bull.* **36** (1987), no. 141–142, 39–48. (I. M. Chakravarti) **89d:62078** 62K15
- (with Mukerjee, Rahul) Nonequireplicate Kronecker factorial designs. *J. Statist. Plann. Inference* **19** (1988), no. 2, 261–267. (I. M. Chakravarti) **89j:62106** 62K15
- (with Mukerjee, Rahul) Estimability-consistency and its equivalence with regularity in factorial experiments. *Utilitas Math.* **33** (1988), 211–216. (P. D. Puri) **89g:62135** 62K15
- Bose, N. K.** (with Kim, K. D.) Invariance of the strict Hurwitz property for bivariate polynomials under coefficient perturbations. *IEEE Trans. Automat. Control* **33** (1988), no. 12, 1172–1174. (Not in MR) **93D05**
- (with Delansky, J. F.) Real and complex polynomial stability and stability domain construction via network realizability theory. *Internat. J. Control* **48** (1988), no. 3, 1343–1349. (Not in MR) **93D20**
- Bose, Pradip** A novel technique for efficient parallel implementation of a classical logic/fault simulation problem. *IEEE Trans. Comput.* **37** (1988), no. 12, 1569–1577. (Not in MR) **68Q35** (68Q10, 68U20)
- Bose, R. K.** (with Sahani, D.) Fixed point theorems in Banach spaces. *Proc. Nat. Acad. Sci. India Sect. A* **56** (1986), no. 1, 45–50. (Roman Mañka) **89a:47078** 47H10
- Bose, Raj Chandra** see *Chatterjee, S. K.*. **89f:01060** and *Obituary: Bose, Raj Chandra*. **89h:01094**
- Bose, S. N.** (with Einstein, Albert; Schrödinger, Erwin) ★ La statistica quantistica e le onde di materia. (Italian) [Quantum statistics and matter waves] Translated from the German by Paolo Bernardini. *Saggi di Scienze e Filosofia Naturale* [Essays on Natural Philosophy and Natural Science], **3**, *Bibliopolis, Naples*, 1986. 99 pp. ISBN 88-7088-128-8 (Editors) **89b:01075** 01A75 (81-03)
- Bose, T. K.** ★ Computational fluid dynamics. With a foreword by B. Natarajan. *John Wiley & Sons, Inc., New York*, 1988. xii+214 pp. ISBN 0-470-20953-4 (Shijun Luo) **89f:76008** 76-08 (76G15)
- Boseck, Helmut** Marius Sophus Lie und die nicht kommutative harmonische Analysis. [Marius Sophus Lie and noncommutative harmonic analysis] *Math. Ges. DDR. No. 4* (1986), 35–52. (Willard Parker) **89b:01017** 01A55 (01A60, 22-03)
- Boseniak, T.** (with Ebeling, Werner) Evolution strategies in complex optimization: the travelling salesman problem. *Systems Anal. Modelling Simulation* **5** (1988), no. 5, 413–422. (Alexander H. G. Rinnooy Kan) **89k:90050** 90B10 (90C27)
- Boshier, Alan** (with Nomura, Kazumasa) A remark on the intersection arrays of distance-regular graphs. *J. Combin. Theory Ser. B* **44** (1988), no. 2, 147–153. (Ortrud R. Oellermann) **89d:05116** 05C38
- Boshilov, P.** (with Aneva, B. L.; Stoyanov, D. T.) On the classical mechanics of a nonrelativistic superparticle. *J. Phys. A* **20** (1987), no. 16, 5723–5728. (Roger Picken) **89c:81060** 81D07 (70H05, 81C99)
- Boshnakov, Georgi N.** A method for structural identification of time series models. (Bulgarian summary) *Mathematics and mathematical education (Bulgarian)* (Sunny Beach (Slivnjev Bryag), 1987), 325–330, *Bulg. Acad. Sci., Sofia*, 1987. (see **89c:00038**) **62M10**
- Bošković, Rudjer** see *Proverbio, Edoardo*. **89a:01027**; *Swijtink, Zeno G.*. **89c:01101**; *Stipančić, Ernest*. **89f:01030**; *Dadić, Zarko*. **89h:01027** and *Stipančić, Ernest*. **89m:01049**
- Bosma, Wieb** Optimal continued fractions. *Nederl. Akad. Wetensch. Indag. Math.* **49** (1987), no. 4, 353–379. (E. P. Merkes) **89b:40001** 40A15 (11A55)
- Bosquet, Jean** Théophile De Donder et la gravifique einsteinienne. (English summary) [Théophile De Donder and Einstein's theory of gravitation] *Acad. Roy. Belg. Bull. Cl. Sci.* (5) **73** (1987), no. 5, 209–253. (H. Treder) **89f:01088** 01A75 (83-03)
- Bossavit, A.** Stiff problems and boundary layers in electricity: a mathematical analysis of skin-effect. *BAIL IV* (Novosibirsk, 1986), 233–240, *Boole Press Conf. Ser.*, **8**, Boole, Dun Laoghaire, 1986. (Summary) **89b:78002** 78A25
- La condition à la limite "champ normal" en magnétostatique. (English summary) [The boundary condition " $h$  normal to the wall" in magnetostatics] *EDF Bull. Direction Études Rech. Sér. C Math. Inform.* **1986**, no. 4, 3, 5–15. (From the text) **89f:78012** 78A30
- Coupling finite elements and boundary elements in eddy-current computations. *Advanced boundary element methods* (San Antonio, Tex., 1987), 49–54, *Springer, Berlin-New York*, 1988. (see **89b:65009**) **78-08**
- Mixed finite elements and the complex of Whitney forms. *The mathematics of finite elements and applications, VI* (Uxbridge, 1987), 137–144, *Academic Press, London-New York*, 1988. (A. P. Stone) **89b:58028** 58A99 (65N30)
- Le calcul des courants de Foucault en trois dimensions en présence de corps magnétiques parfaits à l'aide du code "Trifou": le cas simplement connexe. (English summary) [Computation, with the "Trifou" code, of three-dimensional eddy currents in the presence of perfectly permeable bodies: the simply connected case] *EDF Bull. Direction Études Rech. Sér. C Math. Inform.* **1988**, no. 1, 3, 59–76. (Summary) **89d:78001** 78-08
- Calcul des courants induits et des forces électromagnétiques dans un système de conducteurs mobiles. (English summary) [Computation of eddy-currents and Lorentz forces in a system of moving conductors] *EDF Bull. Direction Études Rech. Sér. C Math. Inform.* **1988**, no. 3, i, 29–47. (Summary) **89f:78012** 78A25 (78-08)
- (with Planchard, Jacques) On the dynamo effect. (Portuguese summary) *Mat. Apl. Comput.* **7** (1988), no. 1, 41–54. (A. Elcrat) **89i:86021** 86A99 (78A25)

- Bossert, Walter** (with Pfingsten, Andreas) The circular and time reversal tests reconsidered in economic price index theory. *Statist. Hefte* 28 (1987), no. 4, 271-284. (Summary) 89j:62142 62P20 (90A12)
- Bossong, Georg** Science in the vernacular languages: the case of Alfonso X el Sabio. *De astronomia Alphonso Regis* (Berkeley, CA, 1985), 13-21, Univ. Barcelona, Barcelona, 1987. (see 89m:01026) 01A35
- Boet, J.-B.** Conformal and holomorphic anomalies on Riemann surfaces and determinant line bundles. *VIIIth international congress on mathematical physics* (Marseille, 1986), 768-775, *World Sci. Publishing, Singapore*, 1987. (J. S. Joel) 89k:58178 58G10 (32F20, 32L10, 81E30, 81E40)
- Fonctions de Green-Arakelov, fonctions  $\theta$  et courbes de genre 2. (English summary) [Green-Arakelov functions, theta functions and curves of genus 2] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 14, 643-646. (Bert van Geemen) 89b:11051 11G30 (14G25, 14K25, 30F15, 32G15)
- (with Mestre, Jean-François) Moyenne arithmético-géométrique et périodes des courbes de genre 1 et 2. [Arithmetic-geometric mean and periods of curves of genus 1 and 2] *Gaz. Math.* No. 38 (1988), 36-64. (Reinhard Bölling) 89k:14072 14K20 (11F03, 11G05)
- Bostanov, U. A.** Construction of a Lyapunov function for a system of differential equations. (Russian) *Differential equations, theory of functions and their applications* (Russian), 13-18, 80, *Kazakh. Gos. Univ., Alma-Ata*, 1986. (see 89j:00011) 34D20
- Bostock, F. A.** (with Baston, V. J.) Discrete hamstrung squad car games. *Internat. J. Game Theory* 16 (1987), no. 4, 253-261. (A. C. Liu) 89d:90261 90D26 (90D05, 90D42)
- (with Baston, V. J.) A continuous game of ambush. *Naval Res. Logist.* 34 (1987), no. 5, 645-654. (Miroslav D. Asić) 89a:90190 90D42 (90B40, 90D05)
- (with Baston, V. J.) Deception games. *Internat. J. Game Theory* 17 (1988), no. 2, 129-134. (Tadeusz Radzik) 89g:90243 90D05 (90D13)
- (with Baston, V. J.) An evasion game with barriers. *SIAM J. Control Optim.* 26 (1988), no. 5, 1099-1105. (W. H. Ruckle) 89k:90186 90D05 (90D26)
- Bosworth, Ken W.** Shape constrained curve and surface fitting. *Geometric modeling*, 247-263, *SIAM, Philadelphia, PA*, 1987. (see 89b:65010) 65D10
- Bosznay, Adam P.** A property of spheres in normed linear spaces. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 29 (1986), 183-188 (1987). (Autorreferat (Zbl 627:46015)) 89e:46010 46B20 (52A05)
- On the farthest point problem. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 29 (1986), 189-192 (1987). (Autorreferat (Zbl 627:46017)) 89e:46011 46B20 (52A05)
- Counterexample to the farthest point conjecture in metric linear spaces. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 29 (1986), 245-246 (1987). (Autorreferat (Zbl 627:46016)) 89e:46012 46B20 (52A05)
- Professor Ziemba, founder of the ICNO-conferences, will be 80 in December. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations* (Budapest, 1987), 11-13, *János Bolyai Math. Soc., Budapest*, 1987. (Editors) 89b:01039 01A70
- On a problem concerning the 14 ball property. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 30 (1987), 241-244. (G. Godini) 89e:46013 46B20 (41A65)
- Solving the farthest point problem in finite-dimensional subspace of  $C(\Omega)$ . *Acta Math. Hungar.* 51 (1988), no. 1-2, 165-169. (W. W. Breckner) 89d:41050 41A65 (46E25)
- A remark on balls in normed linear spaces. *Period. Math. Hungar.* 19 (1988), no. 2, 149-153. (Abderrazak Sersouri) 89f:46027 46B20
- A remark concerning strong uniqueness of approximation. *Studia Sci. Math. Hungar.* 23 (1988), no. 1-2, 85-87. (Pier Luigi Papini) 89j:41049 41A65 (41A52)
- Some results concerning farthest points. *Functional analysis and approximation* (Bagini di Lucca, 1988), 120-124, *Pitagora, Bologna*, 1989. (see 89m:46002) 46B20 (41A65)
- Botelho, F.** Rotation sets of maps of the annulus. *Pacific J. Math.* 133 (1988), no. 2, 251-266. (Roberto Moriyon) 89k:58263 58F99 (58F11)
- Botelho, Luiz C. L.** Invariant path integration and the covariant functional measure for Einstein gravitation theory. *Phys. Rev. D* (3) 38 (1988), no. 8, 2464-2467. (Introduction) 89j:83035 83C45
- Both, N.** (with Purdea, I.) Power algebra of a universal algebra. *Mathematica (Cluj)* 29 (1987), no. 1, 73-79. (K. Dröhlav) 89m:08002 08A05 (20N15)
- Tolerances in logic. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* 32 (1987), no. 1, 33-35. (Jerzy Kotas) 89b:03011 03B05 (08A30)
- (with Purdea, I.) Types of relational independence in universal algebras. (Romanian. English summary) *Stud. Cerc. Mat.* 40 (1988), no. 3, 249-258. (I. Gy. Maurer) 89j:08004 08A99
- Botha, J. D.** (with Shapiro, Alexander) Dual algorithms for orthogonal Procrustes rotations. *SIAM J. Matrix Anal. Appl.* 9 (1988), no. 3, 378-383. (M. M. Konstantinov) 89g:15016 15A42 (15A15, 93B60)
- Bothe, Hans Günter** Hausdorff dimension of attractors: an example. *Dynamical systems and environmental models* (Eisenach, 1986), 9-13, *Math. Ecol., Akademie-Verlag, Berlin*, 1987. (From the text) 89c:58072 58F12
- Three remarks concerning the Hausdorff dimension of expanding attractors. *Proceedings of the conference on ergodic theory and related topics, II* (Georgenthal, 1986), 24-35, *Teubner-Texte Math.*, 94, *Teubner, Leipzig*, 1987. (Jaroslav Stark) 89d:58099 58F15 (28A75, 58F12)
- ★ Some remarks concerning the fractal dimensions of expanding attractors. With a German summary. Report MATH, 88-07. *Akademie der Wissenschaften der DDR, Karl-Weierstrass-Institut für Mathematik, Berlin*, 1988. 72 pp. (M. Yu. Lyubich) 89m:58130 58F12 (58F13, 58F15)
- Botkin, N. D.** (with Patsko, V. S.) Numerical solution of linear differential games. *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 543-546, "Angel Kanchev" Tech. Univ., Ruse, 1987. (É. G. Al'brekht) 89g:90258 90D25 (49A45, 93B40)
- Botnaru, D. V.** Left-continuous functors. (Russian) *Mat. Issled. No. 105 Moduli, Algebra, Topol.* (1988), 30-39, 195. (Csaba Némethi) 89j:18002 18A40 (46M15)
- Botsaris, C. A.** (with Tzafestas, Spyros G.) Stabilization and optimal control of symmetrically  $\epsilon$ -coupled bilinear systems via quadratic state feedback controllers. *J. Inform. Optim. Sci.* 8 (1987), no. 2, 221-231. (Summary) 89k:93162 93D15 (15A23, 49D40, 93B25)
- Botsko, Michael W.** An elementary proof that a bounded a.e. continuous function is Riemann integrable. *Amer. Math. Monthly* 95 (1988), no. 3, 249-252. (James Foran) 89c:26001 26A06 (26A42)
- Bott, Raoul** (with Taubes, Clifford Henry) On the rigidity theorems of Witten. *J. Amer. Math. Soc.* 2 (1989), no. 1, 137-186. (Jürgen Eichhorn) 89k:58270 58G10 (57R91)
- see also Morse, Marston, 89c:01099
- Bottaro Aruffo, Ada** ( $\mathcal{L} \times \mathcal{B}(p)$ -measurability and convergence in measure. (Italian. English summary) *Istit. Lombardo Accad. Sci. Lett. Rend. A* 118 (1984), 203-246 (1987). (B. Bongiorno) 89c:28013 28B20 (47H99)
- Böttcher, Axel** (with Lawitzky, Gisbert; Simon, Hans-Ulrich) Worst-case analysis of heuristics for the local microcode optimization problem. *Oper. Res. Lett.* 7 (1988), no. 3, 127-130. (Summary) 89g:90127 90B35 (05C99, 68N25, 68Q25)
- Bottema, Ome** (see Nieuwland, G. Y., 89a:01077; Veldkamp, G. R., 89d:01070 and Groenman, J. T., 89k:01061)
- mandekić-Botteri, Vinko** see Mandekić-Botteri, Vinko
- Bottin, S.** An after-Shannon measure of the storage capacity of an associative noise-like coding memory. *Biol. Cybernet.* 59 (1988), no. 3, 151-159. (Adnan M. Awad) 89g:94019 94A24 (92A09, 94A29)
- Botto, Jean-Luc** Numerical divergence of fast recursive least-squares transversal filters. (French summary) *RAIRO Automat.-Prod. Inform. Ind.* 22 (1988), no. 3, 231-254. (Summary) 89c:93084 93E25 (93E11)
- Bouayed, F.** (with Jordan, A.; Borucki, A.; Benmouna, M.) Numerical method for the resolution of nonlinear heat transfer problems. *Comm. Appl. Numer. Methods* 4 (1988), no. 1, 17-23. (Summary) 89c:80010 80A20 (65N30)
- Bouaziz, Abderrazak** Sur les caractères des groupes de Lie réductifs non connexes. [On the characters of nonconnected reductive Lie groups] *J. Funct. Anal.* 70 (1987), no. 1, 1-79. (Table of Contents) 89c:22020 22E45
- Bouhoun, B. M.** (with Golitsyn, G. S.) Influence of vertical stratification on motion in a differentially heated rotating annulus. *Geophys. Astrophys. Fluid Dynamics* 42 (1988), no. 1-2, 1-35. (A. S. Gupta) 89f:76046 76E20 (76C20, 86A35)
- Bouc, Robert** (with Bellizzi, Serge; Campillo, Fabien; Pardoux, É.) Contrôle optimal semi-actif de suspension de véhicule. (English summary) [Semi-active optimal control of vehicle suspension] *Analysis and optimization of systems* (Antibes, 1988), 689-699, *Lecture Notes in Control and Inform. Sci.*, 111, *Springer, Berlin-New York*, 1988. (see 89c:00031) 93C75 (49C20, 93B50, 93E20)
- Bouchart, F.** (with Goulter, I. C.) Fuzzy programming applications in water distribution network design. *Computer methods and water resources*, Vol. 2 (Rabat, 1988), 33-44, *Comput. Mech., Southampton*, 1988. (see 89g:76038) 90B10
- Bouchaud, Jean-Philippe** (with Georges, Antoine; Lhuillier, C.) Pair wave functions for strongly correlated fermions and their determinantal representation. (French summary) *J. Physique* 49 (1988), no. 4, 553-559. (Summary) 89d:81133 81J05
- (with Georges, Antoine) Flory formula as an extended law of large numbers. *Phys. Rev. B* (3) 39 (1989), no. 4, 2846-2849. (Summary) 89k:82065 82A51 (60J15, 82A41)
- Boucher, Wayne** Calculation of the inbreeding coefficient. *J. Math. Biol.* 26 (1988), no. 1, 57-64. (Susan Wilson) 89d:92040 92A10
- (with Nagylaki, Thomas) Regular systems of inbreeding. *J. Math. Biol.* 26 (1988), no. 2, 121-142. (Reinhard Bürger) 89k:92024 92A10 (15A51, 60J20)
- Bouchet, André** Reducing prime graphs and recognizing circle graphs. *Combinatorica* 7 (1987), no. 3, 243-254. (R. C. Read) 89e:05163 05C75
- Isotropic systems. *European J. Combin.* 8 (1987), no. 3, 231-244. (Daniel Turzik) 89b:05066 05B35 (05C99)
- Greedy algorithm and symmetric matroids. *Math. Programming* 38 (1987), no. 2, 147-159. (Ulrich Faigle) 89a:05046 05B35 (90C27)
- Graphic presentations of isotropic systems. *J. Combin. Theory Ser. B* 45 (1988), no. 1, 58-76. (Daniel Turzik) 89f:05150 05C99 (05B35)
- Transforming trees by successive local complementations. *J. Graph Theory* 12 (1988), no. 2, 195-207. (Henry Martyn Mulder) 89i:05252 05C99 (05C05)
- Bouchiat, C.** (with Gibbons, Gary) Nonintegrable quantum phase in the evolution of a spin-1 system: a physical consequence of the nontrivial topology of the quantum state-space. (French summary) *J. Physique* 49 (1988), no. 2, 187-199. (H. Hogreve) 89i:81041 81C99 (81B05)
- Bouchiba, M.** Sur l'équation de la corrosion intergranulaire par diffusion de surface. (English summary) [On the equation of intergranular corrosion by surface diffusion] *RAIRO Model. Math. Anal. Numér.* 21 (1987), no. 3, 425-444. (Yanis C. Yortsos) 89c:76097 76R50 (34B15, 82A99)
- Bouchitté, Guy** (with Attouch, H.; El Mabrouk, Mongi) Formulations variationnelles pour des équations elliptiques semi-linéaires avec second membre mesure. (English summary) [Variational formulations of semilinear elliptic equations involving measures] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 4, 161-164. (Summary) 89c:35055 35J65 (35J85, 49A29)
- Conjuguée et sous-différentiel d'une fonctionnelle intégrale sur un espace de Sobolev. (English summary) [Conjugate and subdifferential of an integral functional on Sobolev spaces] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 2, 79-82. (Lionel Thibault) 89b:46067 46G05 (46E27, 46E35, 49A52)
- Bouchon, Bernadette** Mesures d'information relatives à des observations imprécises. [Information measures with respect to fuzzy observations] 11<sup>e</sup> congrès international de cybernétique (Namur, 1986), 201-210, *Assoc. Internat. Cybernét., Namur*, 1986. (Pl. Kannappan) 89d:94025 94A17 (94B05)
- (with Akdag, Herman) Optimality of right leaning trees. *Coding theory and applications* (Cachan, 1986), 76-85, *Lecture Notes in Comput. Sci.*, 311, *Springer, Berlin-New York*, 1988. (Ding Zhu Du) 89i:05094 05C05 (90B50)
- Bouda, A.** (with Ader, J. P.; Wallet, J. C.) Perturbative BRST current algebra anomalies for the free bosonic string. *Phys. Lett. B* 215 (1988), no. 1, 111-118. (Summary) 89j:81076 81D15 (17B65, 58D30, 81E30)
- Gauged BRS symmetry for the Weyl-Lorentz-diffeomorphism group. *Phys. Rev. D* (3) 38 (1988), no. 10, 3174-3177. (Summary) 89k:81098 81E20 (81E30, 83C99)
- Boudaoud, M.** (with Chaparro, L. F.) Composite modeling of nonstationary signals. *J. Franklin Inst.* 324 (1987), no. 1, 113-124. (D. Stanomir) 89d:94013 94A12 (62H12, 93E25)
- le Boudec, Jean-Yves** see Le Boudec, Jean-Yves
- Boudjema, F.** (with Hamzaoui, C.; Rahal, V.; Ren, H. C.) Electromagnetic properties of generalized Majorana particles. *Phys. Rev. Lett.* 62 (1989), no. 8, 852-854. (Summary) 89k:81189 81G10
- Boudourides, M. A.** Adiabatic annular shear flows with temperature-dependent viscosity. *J. Math. Anal. Appl.* 132 (1988), no. 2, 539-547. (A. Elcrat) 89j:76046 76E15 (76F10,



- 76U05)
- (with Charalambakis, Nicolas Ch.) Asymptotic stability of a stratified multicomponent flow with temperature-dependent viscosities. (French summary) *J. Méc. Théor. Appl.* 7 (1988), no. 1, 65–77. (L. Debnath) **89h:76016** 76E15 (76F10, 76V05, 80A20)
  - Stabilization of adiabatic rigid body rotation by dissipation. *Quart. Appl. Math.* 46 (1988), no. 1, 49–54. (Ram Babu Mishra) **89d:76030** 76U05
  - Boué, F.** (with Edwards, S. F.; Vilgis, T. A.) The entropy of a network of rod molecules. (French summary) *J. Physique* 49 (1988), no. 10, 1635–1645. (Summary) **89i:82065** 82A57 (82A51)
  - Bougé, Luc** (with Apt, Krzysztof R.; Clermont, Ph.) Two normal form theorems for CSP programs. *Inform. Process. Lett.* 26 (1987), no. 4, 165–171. (Dirk Janssens) **89k:68039** 68Q10
  - Repeated snapshots in distributed systems with synchronous communications and their implementation in CSP. Twelfth international colloquium on automata, languages and programming (Nafplion, 1985). *Theoret. Comput. Sci.* 49 (1987), no. 2–3, 145–169. (Dirk Janssens) **89a:68041** 68Q10
  - On the existence of symmetric algorithms to find leaders in networks of communicating sequential processes. *Acta Inform.* 25 (1988), no. 2, 179–201. (Summary) **89a:68060** 68Q10
  - Bougeard, Mireille L.** Morse theory for some lower- $C^2$  functions in finite dimension. *Math. Programming* 41 (1988), no. 2 (Ser. A), 141–159. (A. B. Németh) **89k:58054** 58E05 (49F15, 90C48)
  - Bougerol, Philippe** Tightness of products of random matrices and stability of linear stochastic systems. *Ann. Probab.* 15 (1987), no. 1, 40–74. (Ludwig Arnold) **89a:60028** 60B15 (60H10, 93E15)
  - Théorèmes limite pour les systèmes linéaires à coefficients markoviens. (English summary) [Limit theorems for linear systems with Markov coefficients] *Probab. Theory Related Fields* 78 (1988), no. 2, 193–221. (Toshio Yamada) **89i:60122** 60H10 (60F05, 60F15, 60J25)
  - Boukal, Benzon** Bayes sequential procedure for estimation and for determination of burn-in time in a hazard rate model with an unknown change-point parameter. *Sequential Anal.* 6 (1987), no. 1, 37–53. (René Flaviigny) **89f:62066** 62L12 (62F15, 62N05)
  - Boukas, K.** (with Haurie, A.) Optimality conditions for continuous time systems with controlled jump Markov disturbances: application to an FMS planning problem. *Analysis and optimization of systems* (Antibes, 1988), 663–676, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89f:49029** 49B60 (90C39, 93C75, 93E20)
  - Boukhemis, A.** (with Maroni, P.) Une caractérisation des polynômes strictement  $1/p$  orthogonaux de type Scheffer. Étude du cas  $p = 2$ . [A characterization of strictly  $1/p$  orthogonal polynomials of Scheffer type. The case  $p = 2$ ] *J. Approx. Theory* 54 (1988), no. 1, 67–91. (W. A. Al-Salam) **89h:33013** 33A65 (33A70, 42C05)
  - Boukhohza, Mustapha** Simplification des modules quadratiques sur l'anneau des entiers relatifs. (English summary) [Simplification of quadratic modules over the ring of relative integers] *C. R. Math. Rep. Acad. Sci. Canada* 10 (1988), no. 4, 193–196. (A. Prószynski) **89i:11047** 11E12 (11E16, 11E88)
  - Boukraa, S.** The BRS algebra of a free minimal differential algebra. *Nuclear Phys. B* 303 (1988), no. 2, 237–259. (J. Stasheff) **89k:17034** 17B55 (18G99, 55P62, 55U99, 57T10, 81E99)
  - Boullaras, Driss** Existence d'un centre isochrone dans les systèmes différentiels quadratiques plans. [Existence of an isochronic center in plane quadratic differential systems] *Cahiers Math.* 1988, no. 1, 37–41. (Not in MR) 34C99
  - Boullaras-Bendib, Meriem** Méthode directe de Liapunov dans les systèmes dynamiques non autonomes. [Lyapunov's direct method in nonautonomous dynamical systems] *Cahiers Math.* 1988, no. 1, 49–51. (Not in MR) 34D20 (34C35, 54H20, 58F10)
  - Boudin, Richard** Best approximation of a normal operator in the trace norm. *Acta Sci. Math. (Szeged)* 51 (1987), no. 3–4, 467–474. (Lawrence Fialkow) **89g:47025** 47B15 (47A99)
  - Best approximation of a nonnormal operator in the trace norm. *J. Math. Anal. Appl.* 132 (1988), no. 1, 102–113. (T. Ando) **89e:47013** 47A55 (47A30, 47B15)
  - Approximation by operators with fixed nullity. *Proc. Amer. Math. Soc.* 103 (1988), no. 1, 141–144. (R. W. Cross) **89g:47003** 47A05 (47A30, 47A99)
  - Boulding, Kenneth E.** System breaks and positive feedback as sources of catastrophe. *Paradoxical effects of social behavior*, 47–54, *Physica, Heidelberg*, 1986. (See **89d:90019**) 92A05
  - Boulesau, N.** (with Hirsch, F. A.) Propriétés d'absolue continuité dans les espaces de Dirichlet et application aux équations différentielles stochastiques. (English summary) [Absolute continuity properties in Dirichlet spaces and an application to stochastic differential equations] *Séminaire de Probabilités, XX*, 1984/85, 131–161, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (David Nualart Rodón) **89f:60060** 60H10 (31C25, 60H07)
  - (with Lamberton, D.) Théorie de Littlewood-Paley-Stein et processus stables. [Littlewood-Paley-Stein theory and stable processes] *Séminaire de Probabilités, XX*, 1984/85, 162–185, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (A. Fuchs) **89h:60119** 60J30 (42B25)
  - (with Hirsch, F. A.) Sur des propriétés du flot d'une équation différentielle stochastique. (English summary) [Remarks about the flow of a stochastic differential equation] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 9, 421–424. (Summary) **89a:60140** 60H10 (58D25, 58G32, 60J65)
  - Bouligand, Georges** Propriétés des champs univoques conservatifs dérivant d'un potentiel superficiel sur un domaine compact nivelé. (English summary) [Properties of single-valued conservative vector fields derived from a surface potential on a compact level domain] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* 301 (1985), no. 11, 759–762. (M. Dragani) **89c:76112** 76W05 (58G40)
  - Boult, T.** (with Sikorski, K.) Complexity of computing topological degree of Lipschitz functions in  $n$  dimensions. *J. Complexity* 2 (1986), no. 1, 44–59. (Summary) **89i:65051** 65H05 (55M25, 58C30, 68Q25, 90C30)
  - (with Sikorski, K.) Can we approximate zeros of functions with nonzero topological degree? *J. Complexity* 4 (1988), no. 4, 317–329. (Eugene Allgower) **89j:58011** 58C30 (41A65, 90C30)
  - Boulton, G. S.** (with Hindmarsh, R. C. A.; Morland, L. W.; Hutter, K.) The unsteady plane flow of ice-sheets: a parabolic problem with two moving boundaries. *Geophys. Astrophys. Fluid Dynamics* 39 (1987), no. 3, 183–225. (Andrew C. Fowler) **89a:86013** 86A60
  - Boulware, David G.** (with Deser, S.; Stelle, K. S.) Properties of energy in higher derivative gravity theories. *Quantum field theory and quantum statistics*, Vol. 2, 101–117, Hilger, Bristol, 1987. (See **89b:81008**) 83C47 (81E20)
  - Bountis, Tassos** (with Tsarouhas, George) On the application of normal forms near attracting fixed points of dynamical systems. *Phys. A* 153 (1988), no. 1, 160–178. (George Contopoulos) **89m:58150** 58F14 (34C20, 58F10)
  - (with Mahmoud, Gamal M.) Synchronized periodic solutions of a class of periodically driven nonlinear oscillators. *Trans. ASME Ser. E J. Appl. Mech.* 55 (1988), no. 3, 721–728. (James A. Murdock) **89f:70032** 70K40 (34A50, 34C15, 34C25)
  - Bouquet, S.** (with Leach, P. G. L.; Feix, M. R.) Analysis and solution of a nonlinear second-order differential equation through rescaling and through a dynamical point of view. *J. Math. Phys.* 29 (1988), no. 12, 2563–2569. (Manfred Andrie) **89m:34015** 34A34 (34C20, 58F35, 70K99)
  - Bourad, Fawzia** (with Arino, Ovide; Hassani, Nacer) Un résultat sur le comportement asymptotique des solutions de systèmes dynamiques monotones. (English summary) [On the asymptotic behaviour of the solutions of certain order-preserving dynamical systems] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 7, 311–315. (E. Lami Dozo) **89k:47109** 47H20 (34K15)
  - Bourbaki, Nicolas** ★ Lie groups and Lie algebras. Chapters 1–3. Translated from the French. Reprint of the 1975 edition. Elements of Mathematics. Springer-Verlag, Berlin-New York, 1989. xviii+450 pp. ISBN 3-540-50218-1 (Editors) **89k:17001** 17–01 (00A05, 22–01)
  - see also Toth, Imre, **89a:00032b** and Interview with three members of Nicolas Bourbaki, **89c:01039**
  - Bourdache-Siguerdjane, Houria** On the synthesis of optimal nonlinear feedback laws. *Optimal control* (Oberwolfach, 1986), 182–189, *Lecture Notes in Control and Inform. Sci.*, 95, Springer, Berlin-New York, 1987. (Andrzej M. J. Skulimowski) **89a:93025** 93B50 (65K10, 93B40)
  - Bourdaud, Gérard** ★ Analyse fonctionnelle dans l'espace euclidien. (French) [Functional analysis in Euclidean space] Publications Mathématiques de l'Université Paris VII [Mathematical Publications of the University of Paris VII], 23, Université de Paris VII, U.E.R. de Mathématiques, Paris, 1986. 191 pp. (J. Horváth) **89a:46001** 46–01 (42–01, 42Bxx, 47G05)
  - (with Moussai, Madani) Continuité des opérateurs pseudo-différentiels sur les espaces de Besov localisés. (English summary) [Continuity of pseudodifferential operators on localized Besov spaces] *Bull. Sci. Math.* (2) 112 (1988), no. 4, 419–432. (Summary) **89k:47075** 47G05 (35S05)
  - Une algèbre maximale d'opérateurs pseudo-différentiels. [A maximal algebra of pseudodifferential operators] *Comm. Partial Differential Equations* 13 (1988), no. 9, 1059–1083. (C. Carton-Lebrun) **89g:47063** 47G05 (35S05, 47D30)
  - Localisation et multiplicateurs des espaces de Sobolev homogènes. (English summary) [Localization and multipliers of homogeneous Sobolev spaces] *Manuscripta Math.* 60 (1988), no. 1, 93–130. (Hans G. Feichtinger) **89j:46031a** 46E35
  - Erratum: "Localization and multipliers of homogeneous Sobolev spaces". (French) *Manuscripta Math.* 61 (1988), no. 2, 249. (Hans G. Feichtinger) **89j:46031b** 46E35
  - Bourdon, Paul** Density of the polynomials in Bergman spaces. *Pacific J. Math.* 130 (1987), no. 2, 215–221. (Daniel H. Luecking) **89a:46060** 46E20 (30D55, 30E10)
  - (with Axler, Sheldon) Finite-codimensional invariant subspaces of Bergman spaces. *Trans. Amer. Math. Soc.* 306 (1988), no. 2, 805–817. (D. N. Clark) **89f:46051** 46E15 (32A10, 32H20, 46J15, 47B38)
  - Bourgain, J.** A density condition for analyticity of the restriction algebra. Appendix to: "On the dichotomy problem for tensor algebras" [Trans. Amer. Math. Soc. 293 (1986), no. 2, 793–798; MR 86m:43005]. *Geometrical aspects of functional analysis* (1985/86), 151–156, *Lecture Notes in Math.*, 1267, Springer, Berlin-New York, 1987. (From the text) **89d:43005** 43A25 (43A46, 46J99)
  - On dimension free maximal inequalities for convex symmetric bodies in  $\mathbb{R}^n$ . *Geometrical aspects of functional analysis* (1985/86), 168–176, *Lecture Notes in Math.*, 1267, Springer, Berlin-New York, 1987. (Roger L. Jones) **89g:42032** 42B25 (42B15)
  - Geometry of Banach spaces and harmonic analysis. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 871–878, *Amer. Math. Soc., Providence, RI*, 1987. (Alberto Torchinsky) **89d:42001** 42–02 (43A46, 46B20)
  - On pointwise ergodic theorems for arithmetic sets. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 10, 397–402. (F. Schweiger) **89c:28018** 28D05 (11L15, 11L40, 82A99)
  - (with Tzafriri, L.) Invertibility of "large" submatrices with applications to the geometry of Banach spaces and harmonic analysis. *Israel J. Math.* 57 (1987), no. 2, 137–224. (T. Figiel) **89a:46035** 46B20 (15A60, 43A46, 47A99, 47B38)
  - Ruzsa's problem on sets of recurrence. *Israel J. Math.* 59 (1987), no. 2, 150–166. (Zun Shan) **89d:11012** 11B75 (11B83, 11K31)
  - Construction of sets of positive measure not containing an affine image of a given infinite structures. *Israel J. Math.* 60 (1987), no. 3, 333–344. (N. Passell) **89g:28004** 28A12 (26A03, 28A75)
  - (with Lindenstrauss, Joram; Milman, Vitali D.) Minkowski sums and symmetrizations. *Geometric aspects of functional analysis* (1986/87), 44–66, *Lecture Notes in Math.*, 1317, Springer, Berlin-New York, 1988. (G. Schechtman) **89g:46025** 46B20 (46E99, 52A20, 52A22)
  - On finite-dimensional homogeneous Banach spaces. *Geometric aspects of functional analysis* (1986/87), 232–238, *Lecture Notes in Math.*, 1317, Springer, Berlin-New York, 1988. (T. Figiel) **89h:46021** 46B20
  - Vector-valued Hausdorff-Young inequalities and applications. *Geometric aspects of functional analysis* (1986/87), 239–249, *Lecture Notes in Math.*, 1317, Springer, Berlin-New York, 1988. (Mario Milman) **89h:46069** 46E40 (43A15, 46B20)
  - (with Lindenstrauss, Joram) Projection bodies. *Geometric aspects of functional analysis* (1986/87), 250–270, *Lecture Notes in Math.*, 1317, Springer, Berlin-New York, 1988. (G. Schechtman) **89g:46024** 46B20 (52A20)
  - (with Meyer, Mathieu; Milman, Vitali D.; Pajor, A.) On a geometric inequality. *Geometric aspects of functional analysis* (1986/87), 271–282, *Lecture Notes in Math.*,

- 1317, Springer, Berlin-New York, 1988. (Yehoram Gordon) **89h:46012** 46B05 (46B20)
- Remarques sur les zonoides (projection bodies, etc.). [Remarks on zonoids (projection bodies, etc.)] *Séminaire d'Analyse Fonctionnelle* 1985/1986/1987, 171–186, *Publ. Math. Univ. Paris VII*, 28, Univ. Paris VII, Paris, 1988. (W. J. Firey) **89f:52005** 52A20 (52A40)
- (with Lindenstrauss, Joram) Nouveaux résultats sur les zonoides et les corps de projection. (English summary) [New results on zonoids and projection bodies] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 8, 377–380. (P. McMullen) **89e:52004** 52A20
- Temps de retour pour les systèmes dynamiques. (English summary) [Return times for dynamical systems] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 12, 483–485. (Summary) **89e:28025** 28D05
- On the maximal ergodic theorem for certain subsets of the integers. *Israel J. Math.* **61** (1988), no. 1, 39–72. (Alberto de la Torre) **89f:28037a** 28D05
- On the pointwise ergodic theorem on  $LP$  for arithmetic sets. *Israel J. Math.* **61** (1988), no. 1, 73–84. (Alberto de la Torre) **89f:28037b** 28D05
- (with Szarek, S. J.) The Banach-Mazur distance to the cube and the Dvoretzky-Rogers factorization. *Israel J. Math.* **62** (1988), no. 2, 169–180. (H. E. Lacey) **89g:46026** 46B20 (52A20)
- Almost sure convergence and bounded entropy. *Israel J. Math.* **63** (1988), no. 1, 79–97. (F. Móricz) **89k:60052** 60G15 (28D99, 47A35, 47B38, 94A17)
- A nonlinear version of Roth's theorem for sets of positive density in the real line. *J. Analyse Math.* **50** (1988), 169–181. (B. Volkmann) **89i:11017** 11B05 (28A99, 42A38)
- A remark on the uncertainty principle for Hilbertian basis. *J. Funct. Anal.* **79** (1988), no. 1, 136–143. (Anatolij Dvurečenskij) **89f:81025** 81B99 (46N05, 81C20)
- Bourgat, J.-F.** (with Glowinski, R.; Le Tallec, Patrick) Formulation variationnelle et algorithme de décomposition de domaines pour les problèmes elliptiques. (English summary) [Variational formulation and domain decomposition algorithm for elliptic problems] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 13, 569–572. (Summary) **89h:65290** 65N50
- (with Le Tallec, Patrick; Mani, S.) Modélisation et calcul des grands déplacements de tuyaux élastiques en flexion-torsion. (English summary) [Numerical simulation of the large displacements of elastic pipes in flexion and torsion] *J. Méc. Théor. Appl.* **7** (1988), no. 4, 379–408. (N. Gassat) **89m:73021** 73G10 (49D29, 73-08, 73K25)
- Bourgat, Alain** (with Quintard, Michel; Whitaker, Stephen) Éléments de comparaison entre la méthode d'homogénéisation et la méthode de prise de moyenne avec fermeture. (English summary) [Comparison between homogenization theory and the method of volume averaging with closure] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **306** (1988), no. 7, 463–466. (Yanis C. Yortsos) **89m:76060** 76R50 (35B25, 35Q20, 82A70)
- Bourgoin, C.** (with Proth, J.-M.; Xue, Jin Song) Boucle fermée multi-produits: régimes transitoire et permanent. (English summary) [Multiproduct closed loops: transitory and steady states] *RAIRO Automat.-Prod. Inform. Ind.* **22** (1988), no. 4, 341–356. (Not in MR) 90B30
- Bourguet, Marie-Noëlle** Décrire, compter, calculer: the debate over statistics during the Napoleonic period. *The probabilistic revolution*, Vol. 1, 305–316, *Bradford Book*, MIT Press, Cambridge, MA-London, 1987. (Summary) **89b:01018** 01A55
- Bourguignon, Jean-Pierre** L'opérateur de Dirac et la géométrie riemannienne. [The Dirac operator and Riemannian geometry] *Rend. Sem. Mat. Univ. Politec. Torino* **44** (1986), no. 3, 317–359 (1987). (J. S. Joel) **89h:58209** 58G30 (01A60, 53C20, 58G10, 58G25)
- Yang-Mills theory: the differential geometric side. *Differential geometry* (Lyngby, 1985), 13–54, *Lecture Notes in Math.*, 1263, Springer, Berlin-New York, 1987. (Lutz Habermann) **89f:58040** 58E15 (53C05, 81E13)
- (with Lawson, H. Blaine, Jr.) Formules de variations de l'aire et applications. (English summary) [Variational formulas for the area functional and applications] *Théorie des variétés minimales et applications* (Palaiseau, 1983–1984), *Astérisque* No. 154-155 (1987), 8, 51–71, 349 (1988). (see **89g:58052**) 58E15
- Sphères minimales d'après J. Sacks et K. Uhlenbeck. (English summary) [Minimal spheres, following J. Sacks and K. Uhlenbeck] *Théorie des variétés minimales et applications* (Palaiseau, 1983–1984), *Astérisque* No. 154-155 (1987), 10, 245–254, 352 (1988). (see **89g:58052**) 58E15 (53C42, 58E20)
- Bourlind, F. Jay** (with Haberman, Richard) Variation of wave action: modulations of the phase shift for strongly nonlinear dispersive waves with weak dissipation. *Phys. D* **32** (1988), no. 1, 72–82. (Summary) **89h:35292** 35Q20 (34C10)
- (with Haberman, Richard) The modulated phase shift for strongly nonlinear, slowly varying, and weakly damped oscillators. *SIAM J. Appl. Math.* **48** (1988), no. 4, 737–748. (Ji Bin Li) **89j:34049** 34C15 (34E15, 58F30)
- Bourlind, H.** (with Kamp, Y.) Auto-association by multilayer perceptrons and singular value decomposition. *Biol. Cybernet.* **59** (1988), no. 4-5, 291–294. (Summary) **89f:92016** 92A09 (92A27)
- Bourlind, Maryse** Problème de Dirichlet pour le bilaplacien dans un polygone: résolution par éléments finis frontiers raffinés. (English summary) [The Dirichlet problem for the biharmonic equation on a polygonal domain: an adapted boundary element method] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 11, 461–466. (Summary) **89h:65259** 65N30
- Bourles, H.**  $\alpha$ -stability and robustness of large-scale interconnected systems. *Internat. J. Control* **45** (1987), no. 6, 2221–2232. (Peter J. Moylan) **89c:93006** 93A15 (49E20, 93D20)
- Bourn, Dominique** The shift functor and the comprehensive factorization for internal groupoids. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **28** (1987), no. 3, 197–226. (Kimmo I. Rosenthal) **89a:18008** 18B40 (18G50, 20L05)
- A right exactness property for internal categories. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **29** (1988), no. 2, 109–155. (Walter Tholen) **89h:18009** 18E10 (18A32, 18A40, 18D30)
- Bourquin, Frédéric** (with Ciarlet, Philippe G.) Modélisation des vibrations d'une multi-structure formée d'un corps élastique tridimensionnel et d'une plaque. (English summary) [Modeling of the vibrations of a multistructure composed of a three-dimensional elastic body and a plate] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 9, 435–438. (Summary) **89f:73055** 73K20 (73C40, 73K12)
- Bouscaren, Elisabeth** (with Poizat, Bruno) Des belles paires aux beaux uples. [From beautiful pairs to beautiful tuples] *J. Symbolic Logic* **53** (1988), no. 2, 434–442. (Anand Pillay) **89f:03023** 03C45
- Boudira, Wadoud** A completion procedure for hierarchical conditional rewriting systems. *Algebraic and logic programming* (Gaussig, 1988), 93–107, *Math. Res.*, 49, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) 68Q50
- (with Rémy, Jean-Luc) Hierarchical contextual rewriting with several levels. *STACS 88* (Bordeaux, 1988), 193–206, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (Summary) **89c:68067** 68Q50
- Bousfield, A. K.** Uniqueness of infinite deloopings for  $K$ -theoretic spaces. *Pacific J. Math.* **129** (1987), no. 1, 1–31. (Douglas C. Ravenel) **89g:55017** 55P60 (55N15, 55P47, 55R45)
- Bousfield, R. A.** (with Samuels, P.) An investigation of dual eigenvalue systems using trigonometric polynomials and differential geometry. *Internat. J. Non-Linear Mech.* **22** (1987), no. 2, 109–123. (R. Kodnár) **89c:73040** 73H05
- (with Samuels, P.) A complete physical unfolding for the dual buckling eigenvalue problem for a beam on an elastic foundation. *Mech. Structures Mach.* **15** (1987), no. 1, 29–45. (Summary) **89f:73037** 73H05 (58C28, 73K05)
- A theorem for symmetric  $n$ -linear forms. *Linear Algebra Appl.* **105** (1988), 183–193. (B. Reichstein) **89j:15047** 15A69 (15A99)
- Boutet de Monvel-Berthier, A. M.** see Berthier, Anne-Marie
- Boutet de Monvel-Berthier, Anne-Marie** see Berthier, Anne-Marie
- Boutigny, Jacques** ★ Mécanique. 1. (French) [Mechanics. 1] Cours de Physique. [Course in Physics] *Librairie Vuibert*, Paris, 1984. 315 pp. ISBN 2-7117-4198-2 (Editors) **89a:7001a** 70-01
- ★ Mécanique. 2. (French) [Mechanics. 2] Cours de Physique. [Course in Physics] *Librairie Vuibert*, Paris, 1986. 315 pp. ISBN 2-7117-4242-3 (Editors) **89a:7001b** 70-01
- Bouton, Catherine** Approximation gaussienne d'algorithmes stochastiques à dynamique markovienne. (English summary) [Gauss approximation of stochastic algorithms with Markov dynamics] *Ann. Inst. H. Poincaré Probab. Statist.* **24** (1988), no. 1, 131–155. (Jose Luis Menaldi) **89g:60223** 60J25 (60F15, 60G35, 60J60)
- haji-Boutros, J.** see Haji-Boutros, J.
- Bouvier, Alain** (with Dobbs, David E.; Fontana, Marco) Universally catenarian integral domains. *Adv. in Math.* **72** (1988), no. 2, 211–238. (David F. Anderson) **89m:13007** 13C15 (13A17, 13B25, 13G05)
- (with Anderson, David F.; Dobbs, David E.; Fontana, Marco; Kabbaj, Salah) On Jaffard domains. *Exposition. Math.* **6** (1988), no. 2, 145–175. (J. W. Brewer) **89c:13014** 13C15
- (with Kabbaj, Salah) Examples of Jaffard domains. *J. Pure Appl. Algebra* **54** (1988), no. 2-3, 155–165. (Marco Fontana) **89k:13019** 13G05 (13A18, 13C15, 13F20)
- Bouvier, I. Z.** (with Star, Z.) A question of protocol. *Amer. Math. Monthly* **95** (1988), no. 2, 118–121. (I. Broere) **89f:05073** 05C15
- (with Chernoff, W. W.) The toroidal graphs  $\{6, 3\}_{h,r}$  are Hamiltonian. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), A, 179–186. (Andrew Vince) **89d:05126** 05C45 (05C10, 05C25)
- see also Foster, Ronald M., **89c:05067**
- Bowknegt, Peter** On the construction of modular invariant partition functions. *Nuclear Phys. B* **290** (1987), no. 4, 507–526. (Vladimir K. Dobrev) **89h:17024** 17B65 (11F46, 17B67, 81E40)
- Extended conformal algebras. *Phys. Lett. B* **207** (1988), no. 3, 295–299. (Summary) **89d:17021** 17B65 (81E40)
- Bouyakoub, Abdelkader** Sur les fibrés principaux de dimension 4, en tores, munis de structures symplectiques invariantes et leurs structures complexes. (English summary) [On 4-dimensional principal torus bundles having invariant symplectic structures, and their complex structures] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 9, 417–420. (Marisa Fernández) **89f:53054** 53C15 (32C10, 32J15, 53C57, 57R15)
- Bouysso, Denis** (with Roy, Bernard) Comparaison, sur un cas précis, de deux modèles concurrents d'aide à la décision. [Comparison, in a precise case, of two concurrent decision-aid models] *Marchés, capital et incertitude*, 155–177, *Economica*, Paris, 1986. (see **89f:90002**) 90A05
- (with Vansnick, Jean-Claude) A note on the relationships between utility and value functions. *Risk, decision and rationality* (Aix-en-Provence, 1986), 103–114, *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1988. (Walter Trockel) **89c:90017** 90A10 (90A05)
- Bouza, Carlos** see Bouza Herrera, Carlos N.
- Bouza, Carlos** Symmetric QP and linear programming under primal-dual uncertainty. *Oper. Res. Lett.* **6** (1987), no. 5, 221–225. (Summary) **89h:90141** 90C05 (90C20)
- Bouza Herrera, Carlos N.** (with Allende Alonso, Sira M.) Optimization criteria for multivariate strata construction. *Approximation and optimization* (Havana, 1987), 227–233, *Lecture Notes in Math.*, 1354, Springer, Berlin-New York, 1988. (see **89k:41001**) 62D05
- Bouzi, Ben Mustapha** (with Beauwens, Robert) Existence and conditioning properties of sparse approximate block factorizations. *SIAM J. Numer. Anal.* **25** (1988), no. 4, 941–956. (R. J. Plemmons) **89j:65033** 65F10 (65F50, 65N20)
- Bovdi, A. A.** Unitary subgroup of the multiplicative group of a group algebra. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 17–18, 123. (Not in MR) 20C05
- Unitariness of the multiplicative group of a group algebra. (Russian. English and Estonian summaries) *Tartu Riikl. Ül. Toimetised* No. 764 (1987), 3–11. (S. M. Vovsi) **89h:20022** 20C07 (16A27)
- The structure of the multiplicative group of an integral group ring. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 6, 1295–1297; translated in *Soviet Math. Dokl.* **38** (1989), no. 1, 195–197. (J. Wiegold) **89m:20007** 20C07 (20C99)
- Bove, Antonio** (with Bernardi, Enrico) Geometric results for a class of hyperbolic operators with double characteristics. *Comm. Partial Differential Equations* **13** (1988), no. 1, 61–86. (Yu. V. Egorov) **89h:35078** 35L15
- Bovet, Daniel P.** (with Bongiovanni, G.; Cerioli, A.) Comments on a paper of R. A. Brualdi: "Notes on the Birkhoff algorithm for doubly stochastic matrices" [Canad. Math. Bull. **25** (1982), no. 2, 191–199; MR 83k:15019]. *Canad. Math. Bull.* **31** (1988), no. 4, 394–398. (Thomas H. Foregger) **89m:15013** 15A51 (05C50)
- (with De Agostino, S.; Petreschi, R.) Parallelism and the feedback vertex set problem. *Inform. Process. Lett.* **28** (1988), no. 2, 81–85. (Summary) **89k:68116** 68R10 (05C20, 68Q25)
- Bovier, Anton** (with Campanino, Massimo; Klein, Abel; Perez, J. Fernando) Smoothness of the density of states in the Anderson model at high disorder. *Comm. Math. Phys.* **114**



- (1988), no. 3, 439-461. (Aernout C. D. van Enter) **89c:82050** 82A57 (81H99, 82A42)
- (with Klein, Abel) Weak disorder expansion of the invariant measure for the one-dimensional Anderson model. *J. Statist. Phys.* **51** (1988), no. 3-4, 501-517. (Massimo Campanino) **89k:82007** 82A05 (60K35, 82A57)
- Bovik, Alan Conrad** (with Longbotham, Harold Gene) Theory of order statistic filters and their relationship to linear FIR filters. *IEEE Trans. Acoust. Speech Signal Process.* **37** (1989), no. 2, 275-287. (Toshu Katayama) **89k:93203** 93E11 (93E14, 94A12)
- Bovin, V. P.** (with Shneitberg, I. Ya.) Magnetization in the Ising model on hierarchical lattices. (Russian. English summary) *Theoret. Mat. Fiz.* **74** (1988), no. 3, 469-473; translated in *Theoret. and Math. Phys.* **74** (1988), no. 3, 320-323. (Mircea Crisan) **89h:82044** 82A68 (82A25)
- Bowcock, J. E.** (with Yu, Yuan Hong) Sharp conditions for oscillations caused by retarded and advanced perturbations. *Bull. Austral. Math. Soc.* **37** (1988), no. 3, 429-435. (A. Reza Afsharizadeh) **89i:34093** 34K15
- Bowden, R. J.** Repeated sampling in the presence of publication effects. With comments by Lawrence S. Cahoon and Peter C. Ordeshook. *J. Amer. Statist. Assoc.* **82** (1987), no. 398, 476-491. (Summary) **89c:62022** 62D05 (62P25)
- (with Turkington, D. A.) Identification information and instruments in linear econometric models with rational expectations. *J. Econometrics* **38** (1988), no. 3, 361-373. (H. T. Amundsen) **89m:62116** 62P20
- Bowditch, B. H.** (with Epstein, D. B. A.) Natural triangulations associated to a surface. *Topology* **27** (1988), no. 1, 91-117. (N. V. Ivanov) **89e:57004** 57M99 (32G15)
- Bowen, K. C.** A mathematician's journey through operational research. *Math. Programming* **42** (1988), no. 1 (Ser. B), 33-40. (Editors) **89h:01056** 01A70
- Bowers, Peter** (with Noyes, Richard M.) Gas evolution oscillators. (Russian) *Oscillations and traveling waves in chemical systems* (Russian), 511-531, "Mir", Moscow, 1988. (see **89f:92003**) 92A40 (80A32, 92A09)
- Bowers, Philip L.** Limitation topologies on function spaces. *Trans. Amer. Math. Soc.* **314** (1989), no. 1, 421-431. (Mohan L. Tikoo) **89k:54037** 54C35 (54A10)
- Bowick, M. J.** (with Rajeev, S. G.) The holomorphic geometry of closed bosonic string theory and Diff  $S^1/S^1$ . *Nuclear Phys. B* **293** (1987), no. 2, 348-384. (Jouko Mickelsson) **89a:81085** 81E20 (53C80, 58B20, 58D15, 81E30)
- (with Rajeev, S. G.) String theory as the Kähler geometry of loop space. *Phys. Rev. Lett.* **58** (1987), no. 6, 535-538. (Andrew Pressley) **89a:22034a** 22E65 (53C55, 58B20, 58D30, 81E13)
- (with Rajeev, S. G.) Errata: "String theory as the Kähler geometry of loop space". *Phys. Rev. Lett.* **58** (1987), no. 11, 1158. (Andrew Pressley) **89a:22034b** 22E65 (53C55, 58B20, 58D30, 81E13)
- (with Rajeev, S. G.) The complex geometry of string theory and loop space. *Proceedings of the Johns Hopkins Workshop on Current Problems in Particle Theory. 11. Frontiers in Particle Theory*, 101-144, World Sci. Publishing, Singapore, 1988. (Jouko Mickelsson) **89h:81074** 81D07 (32L05, 58B25, 58F06, 81E30)
- (with Lahiri, Amitabha) The Ricci curvature of Diff  $S^1/SL(2, \mathbb{R})$ . *J. Math. Phys.* **29** (1988), no. 9, 1979-1981. (Roberto Cianci) **89j:58007** 58B20 (22E65, 58B25, 58D05)
- (with Rajeev, S. G.) Anomalies as curvature in complex geometry. *Nuclear Phys. B* **296** (1988), no. 4, 1007-1033. (Jouko Mickelsson) **89h:81176** 81E99 (53C80)
- (with Giddings, Steven B.; Harvey, Jeffrey A.; Horowitz, Gary T.; Strominger, Andrew) Axionic black holes and an Aharonov-Bohm effect for strings. *Phys. Rev. Lett.* **61** (1988), no. 25, 2823-2826. (C. Gauthier) **89j:83045** 83C47 (81G25, 83C99)
- Bowker, Albert H.** see Olkin, Ingram, **89h:01057**
- Bowman, Adrian W.** (with Härdle, W.) Bootstrapping in nonparametric regression: local adaptive smoothing and confidence bands. *J. Amer. Statist. Assoc.* **83** (1988), no. 401, 102-110. (Margaret P. Gessaman) **89f:62040** 62G05
- Bowman, Douglas** A new generalization of Davison's theorem. *Fibonacci Quart.* **26** (1988), no. 1, 40-45. (A. J. van der Poorten) **89c:11016** 11A55 (11J81)
- Bowman, Joel M.** see Molecular vibrations, **89f:81008**
- Bowman, K. O.** (with Shenton, L. R.) Sums of powers of binomial coefficients. *Comm. Statist. Simulation Comput.* **16** (1987), no. 4, 1189-1207. (Luis Verde-Star) **89g:05006** 05A10
- (with Shenton, L. R.) \* Properties of estimators for the gamma distribution. With a contribution by Y. C. Patel. *Statistics: Textbooks and Monographs*, 89, Marcel Dekker, Inc., New York, 1988. xvi+268 pp. ISBN 0-8247-7556-2 (Marietta J. Tretter) **89h:62043** 62F10 (62F12)
- Bowman, S. B.** (with Benjamin, T. B.) Discontinuous solutions of one-dimensional Hamiltonian systems. *Proc. Roy. Soc. London Ser. A* **413** (1987), no. 1845, 263-295. (M. Shearer) **89h:35197** 35L65 (58F05, 76B15, 76L05, 76N15)
- Bownds, John M.** A formal solution to a classical initial-boundary value problem in groundwater hydraulics. *Appl. Math. Comput.* **26** (1988), no. 4, 333-354. (C. R. Hadlock) **89j:86002** 86A05 (76S05)
- A Green's function for a two-point boundary value problem in groundwater theory. *Differential Integral Equations* **1** (1988), no. 2, 173-181. (Summary) **89a:35172** 35Q20 (76S05)
- Boxer, Laurence** Compressed compacta and SARI maps. *Proceedings of the 1986 topology conference* (Lafayette, La., 1986). *Topology Proc.* **11** (1986), no. 1, 7-23. (From the introduction) **89a:54043** 54F43 (54C55, 55P55)
- Buxna, O. J.** (with Syski, R.) J. W. Cohen: his scientific career. *Queueing theory and its applications*, vii-xx, CWT Monographs, 7, North-Holland, Amsterdam-New York, 1988. (Editors) **89m:01078** 01A70
- (with Groenendijk, Wim P.) Two queues with alternating service and switching times. *Queueing theory and its applications*, 261-282, CWT Monographs, 7, North-Holland, Amsterdam-New York, 1988. (Hans Daduna) **89j:60123** 60K25 (90B22)
- (with Groenendijk, Wim P.) Waiting times in discrete-time cyclic-service systems. *IEEE Trans. Comm.* **36** (1988), no. 2, 164-170. (Martin A. Wortman) **89g:90107** 90B22 (60K25)
- see also *Queueing theory and its applications*, **89c:60004**
- Boya, L. J.** Supersymmetric quantum mechanics and critical potentials. *Group theoretical methods in physics* (Varna, 1987), 126-141, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (see **89g:81001**) 81C40
- (with Bohm, Arno; Kielanowski, P.; Kmiecik, M.; Loewe, M.; Magnollay, P.) Theory of relativistic extended objects. *Internat. J. Modern Phys. A* **3** (1988), no. 5, 1103-1121. (Summary) **89c:81199** 81G25
- (with Bohm, Arno; Kmiecik, M.) Representation theory of superconformal quantum mechanics. *J. Math. Phys.* **29** (1988), no. 5, 1163-1170. (Véronique Hussin) **89d:81038** 81C40 (81G20)
- (with Kmiecik, M.; Bohm, Arno) Hydrogen atom in one dimension. *Phys. Rev. A* (3) **37** (1988), no. 9, 3567-3569. (P. G. L. Leach) **89d:81018** 81C05 (70F05, 70G05, 81G45)
- Boyadzhiev, D. I.** see Vuchkov, I. et al., **89f:62058**
- Boyadzhiev, Khristo N.** New applications of Bernstein's inequality to the theory of operators: a local Sinclair lemma and a generalization of the Fuglede-Putnam theorem. *Complex analysis and applications '85* (Varna, 1985), 97-104, *Bulgar. Acad. Sci., Sofia*, 1986. (Jörg Eschmeier) **89a:47033** 47B15 (47A30)
- Boyadzhiev, L. I.** On a theorem of V. F. Cowling for series on Laguerre polynomials. *Complex analysis and applications '85* (Varna, 1985), 105-111, *Bulgar. Acad. Sci., Sofia*, 1986. (Shri Nivas Bhatt) **89c:33015** 33A65 (42C15)
- Boyadzhiev, Todor** (with Deneva, Sonya) The equations of motion of a flexible thread in special cases. (Russian. English summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **75** (1981), no. 2, 231-243 (1985). (Summary) **89c:73024** 73K03 (70H25)
- Boyadzhieva, L.** (with Vuchkov, I.; Solakov, E.) \* Прикладной линейный регрессионный анализ. (Russian) [Applied linear regression analysis] With the collaboration of D. Boyadzhiev. Translated from the Bulgarian and with a preface by Yu. P. Adler. Библиотека Иностраных Книг для Экономистов и Статистиков. [A Library of Foreign Books for Economists and Statisticians] "Finansy i Statistika", Moscow, 1987. 240 pp. (Summary) **89f:62058** 62J05 (62G05, 62P20)
- Boyanov, Borislav D.** B-splines with Birkhoff knots. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 2, 11-14. (Len Bos) **89d:41020** 41A10 (41A05)
- $\sigma$ -perfect splines and their application to optimal recovery problems. *J. Complexity* **3** (1987), no. 4, 429-450. (From the introduction) **89m:65018** 65D15 (41A15, 65D07)
- B-splines with Birkhoff knots. *Constr. Approx.* **4** (1988), no. 2, 147-156. (Gerhard Merz) **89c:41001** 41A05 (41A15, 65D07)
- (with Grozev, Georgi R.) A note on the optimal recovery of functions in  $H^\infty$ . *J. Approx. Theory* **53** (1988), no. 1, 67-77. (Avraham A. Melkman) **89g:41012** 41A25 (30E10, 41A50)
- Boyanov, Todor P.** (with Karlov, Emil A.) Polynomial approximations of nonrectifiable sets in the plane. (Bulgarian summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **72** (1978), 5-9 (1986). (Martin Bartelt) **89a:41005** 41A10 (41A25)
- Boyar, Joan F.** (with Karloff, Howard J.) Coloring planar graphs in parallel. *J. Algorithms* **8** (1987), no. 4, 470-479. (François Jaeger) **89d:68067** 68R10 (05-04, 05C15, 68Q25)
- Boyaruk, D. A.** Results of the solution of parametric integer linear programming problems by local optimization methods. (Russian) *Design and development of program packages* (Russian), 90-93, vii-viii, Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev, 1987. (Summary) **89j:90153** 90C10
- Boyarovich, V. V.** (with Kalis, Harijs Edmunds) A procedure for calculating the stationary magnetic field on the basis of the Biot-Savart-Laplace law in multilayered media. (Russian. English summary) *Latvijas PSR Zināt. Akad. Vēstis Fiz. Tehn. Zināt. Ser.* **1988**, no. 3, 113-119, 128. (Summary) **89j:78018** 78A30
- Boyarinov, I. M.** (with Davydov, A. A.; Shabanov, B. M.) Error correction in the main memory of a high-speed computer. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 7, 152-165. (Petr Némec) **89c:94033** 94D05
- Systolic and semisystolic calculations in GF(2<sup>m</sup>). (Russian) *Voprosy Kibernet. (Moscow)* **No. 128** (1987), 183-191. (Summary) **89c:11182** 11Y16 (11T99)
- Parallel decoding of Preparata codes. (Russian) *Voprosy Kibernet. (Moscow)* **No. 135** (1988), 170-179. (Alexander M. Barg) **89g:94034** 94B25 (94B35)
- Boyarintsev, Ya. E.** Representation of the solutions of a system of linear algebraic equations by means of generalized inverse matrices. (Russian) *Computational methods in linear algebra* (Russian) (Moscow, 1982), 33-45, Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow, 1983. (Zahari Zlatev) **89h:15004** 15A09 (15A06, 65F20)
- \* Методы решения вырожденных систем обыкновенных дифференциальных уравнений. (Russian) [Methods for solving degenerate systems of ordinary differential equations] "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. 158 pp. ISBN 5-02-028564-1 (Zuxiu Zheng) **89m:34002** 34A08 (15A09, 34A30, 65Fxx, 65Lxx)
- Boyaruk, A. A.** Relations for extensions in varieties of algebras. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 6(258), 185-186. (V. S. Retakh) **89j:16040** 16A58 (16A56)
- Boyaruk, A.** Singular perturbations of piecewise monotonic maps of the interval. *J. Statist. Phys.* **48** (1987), no. 3-4, 561-569. (Jaroslav Stark) **89j:58065** 58F11 (26A18, 28A33, 58F15)
- (with Byers, W.; Gauthier, P.) Higher-dimensional analogues of the tent maps. *Nonlinear Anal.* **11** (1987), no. 11, 1317-1324. (From the introduction) **89h:58111** 58F13 (26A18)
- (with Friedman, N.; Scarowsky, M.) Ergodic properties of computer orbits for simple piecewise monotonic transformations. *Comput. Math. Appl.* **15** (1988), no. 12, 997-1006. (Ethan M. Coven) **89h:58168** 58F30 (54H20, 58F11, 65D99)
- (with Góra, P.) Why computers like Lebesgue measure. *Comput. Math. Appl.* **16** (1988), no. 4, 321-329. (Hitoshi Nakada) **89m:58107** 58F08 (28D05, 58-04, 65C20)
- (with Scarowsky, M.) A bound on the number of periodic orbits of certain piecewise linear maps. *J. Math. Anal. Appl.* **132** (1988), no. 1, 247-250. (W. R. Utz) **89h:58162** 58F22 (58F08)
- (with Levesque, Réjean) Spectral decomposition for combinations of Markov operators. *J. Math. Anal. Appl.* **132** (1988), no. 1, 251-263. (Anzelm Iwanik) **89f:47044** 47B38 (47A35)
- A matrix method for estimating the Liapunov exponent of one-dimensional systems. *J. Statist. Phys.* **50** (1988), no. 1-2, 213-229. (Eric Cornelis) **89g:58118** 58F11 (28D99, 34D05, 82A99)
- Boyce, David E.** (with Batten, David F.) Spatial interaction, transportation, and inter-regional commodity flow models. *Handbook of regional and urban economics*, Vol. 1, 357-406, *Handbooks in Econom.*, 7, North-Holland, Amsterdam-New York, 1986. (see **89m:90047**) 90B10 (90A11, 90A17)
- (with LeBlanc, Larry J.) The network design problem. A comment on the paper by LeBlanc and Boyce: "A bilevel programming algorithm for exact solution of the network design problem with user-optimal flows" [Transportation Res. Part B **20** (1986), no. 3, 259-265]. *Transportation Res. Part B* **22** (1988), no. 3, 236-237. (Not in MR) 90C35

- (with Ben-Ayed, Omar; Blair, Charles E., III) A general bilevel linear programming formulation of the network design problem. *Transportation Res. Part B* 22 (1988), no. 4, 311–318. (Not in MR) 90C35 (90B10)
- Boychev, Georgi S.** *see* **Boichev, Georgi S.**
- Boychuk, B. G.** *see* **Boichuk, B. G.**
- Boychuk, L. M.** *see* **Boichuk, L. M.**
- Boyd, Colin** Probabilistic prime tests. *Computers in mathematical research (Cardiff, 1986)*, 57–68, *Inst. Math. Appl. Conf. Ser. New Ser.*, 14, Oxford Univ. Press, New York, 1988. (Andreas Guthmann) 89k:11128 11Y11 (68Q25)
- Boyd, David W.** The Diophantine equation  $x^2 + y^m = z^{2n}$ . *Amer. Math. Monthly* 95 (1988), no. 6, 544–547. (Nikos Tzanakis) 89f:11046 11D41 (11D25)
- Reciprocal polynomials having small measure. II. *Math. Comp.* 53 (1989), no. 187, 355–357, S1–S5. (M. Marden) 89m:30013 30C15 (12-04, 26C05, 65D20)
- Boyd, J. N.** (with Farley, R. W.; Raychowdhury, P. N.) Invariance of geometric equations in convex coordinates. *Pure Appl. Math. Sci.* 25 (1987), no. 1-2, 11–26. (W. J. Firey) 89d:51037 51N20
- Boyd, John Philip** Exponentially convergent Fourier-Chebyshev quadrature schemes on bounded and infinite intervals. *J. Sci. Comput.* 2 (1987), no. 2, 99–109. (Helmut Brass) 89d:65022 65D30
- Boyd, Robert** (with Richerson, Peter J.) The evolution of reciprocity in sizable groups. *J. Theoret. Biol.* 132 (1988), no. 3, 337–356. (Summary) 89d:92045 92A12 (92A18)
- Mistakes allow evolutionary stability in the repeated prisoner's dilemma game. *J. Theoret. Biol.* 136 (1989), no. 1, 47–56. (Summary) 89j:92077 90D05 (90D45)
- Boyd, Stephen** (with Desoer, C. A.) Subharmonic functions and performance bounds on linear time-invariant feedback systems. *Modelling, identification and robust control (Stockholm, 1985)*, 103–111, North-Holland, Amsterdam-New York, 1986. (see 89b:93008) 93B28 (31A05)
- Boyer, Charles P.** Self-dual and anti-self-dual Hermitian metrics on compact complex surfaces. *Mathematics and general relativity (Santa Cruz, CA, 1986)*, 105–114, *Contemp. Math.*, 71, Amer. Math. Soc., Providence, RI, 1988. (Claude LeBrun) 89h:53127 53C55 (32J15, 57N13)
- (with Mann, Benjamin M.) Monopoles, nonlinear  $\sigma$  models, and two-fold loop spaces. *Comm. Math. Phys.* 115 (1988), no. 4, 571–594. (Martin A. Guest) 89c:32030 32G13 (53C05, 57R99, 58E15, 81E13)
- (with Mann, Benjamin M.) Homology operations on instantons. *J. Differential Geom.* 28 (1988), no. 3, 423–465. (Ronald J. Stern) 89m:58044 58E15 (53C05, 55S12, 55S20, 57N13, 57T25)
- A note on hyper-Hermitian four-manifolds. *Proc. Amer. Math. Soc.* 102 (1988), no. 1, 157–164. (S. M. Salamon) 89c:53049 53C55 (32C10, 32L25, 53C15, 53C25)
- Boyer, Marcel** (with Moreaux, Michel) Rational rationing in Stackelberg equilibria. *Quart. J. Econom.* 103 (1988), no. 2, 409–414. (From the text) 89d:90043 90A14
- Boyer, Robert P.** Representation theory of  $U_1(H)$  in the symmetric tensors. *J. Funct. Anal.* 78 (1988), no. 1, 13–23. (S. Strătilă) 89i:46069 46L35 (22E65)
- Representation theory of  $U_1(H)$ . *Proc. Amer. Math. Soc.* 103 (1988), no. 1, 97–104. (Alan L. Carey) 89m:22023 22E65 (46L55)
- *see also* Muet, Pierre-Alain, 89f:90034
- Boyer, Robert S.** *see* **Jiang, Yun Fei**, 89e:68107
- Boyer, Steven** On proper powers in free products and Dehn surgery. *J. Pure Appl. Algebra* 51 (1988), no. 3, 217–229. (Charles Livingston) 89m:57003 57M25
- Boyland, Philip L.** Invariant circles and rotation bands in monotone twist maps. *Comm. Math. Phys.* 113 (1988), no. 1, 67–77. (Helmut Rüssmann) 89b:58181 58F27 (34C35, 54H20, 58F22)
- Boyle, Jeffrey** Classifying 1-handles attached to knotted surfaces. *Trans. Amer. Math. Soc.* 306 (1988), no. 2, 475–487. (Charles Livingston) 89f:57032 57Q45 (57M99)
- Boyle, Mike** (with Marcus, Brian; Trow, Paul) Resolving maps and the dimension group for shifts of finite type. *Mem. Amer. Math. Soc.* 70 (1987), vi+146 pp. (Manfred Denker) 89c:28019 28D05 (28D20, 54H20, 58F11)
- Nasu's simple automorphisms. *Dynamical systems (College Park, MD, 1986–87)*, 23–32, *Lecture Notes in Math.*, 1342, Springer, Berlin-New York, 1988. (Fred W. Roush) 89j:54041 54H20 (28D99, 58F20)
- (with Krieger, Wolfgang) Almost Markov and shift equivalent sofic systems. *Dynamical systems (College Park, MD, 1986–87)*, 33–93, *Lecture Notes in Math.*, 1342, Springer, Berlin-New York, 1988. (Fred W. Roush) 89i:28007 28D05 (54H20)
- (with Lind, Douglas; Rudolph, Daniel J.) The automorphism group of a shift of finite type. *Trans. Amer. Math. Soc.* 306 (1988), no. 1, 71–114. (Meir Smorodinsky) 89m:54051 54H20 (28B27, 28D15, 34C35, 58F11)
- Boyom, Michel Nguilio B.** The lifting problem for affine structures in nilpotent Lie groups. *Trans. Amer. Math. Soc.* 313 (1989), no. 1, 347–379. (Megerdich Toomanian) 89i:53035 53C30
- Bozdoğan, Hamparsum** (with Ramirez, Donald E.) An expert model selection approach to determine the "best" pattern structure in factor analysis models. *Multivariate statistical modeling and data analysis (Harrisonburg, Va., 1986)*, 35–60, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston, MA*, 1987. (Summary) 89a:62140 62H25 (62-07)
- (with Eisenblätter, Dorothea) Two-stage multi-sample cluster analysis as a general approach to discriminant analysis. *Multivariate statistical modeling and data analysis (Harrisonburg, Va., 1986)*, 95–119, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston, MA*, 1987. (Summary) 89a:62142 62H30
- (with Ramirez, Donald E.) An adjusted likelihood-ratio algorithm for the Behrens-Fisher problem. *Statist. Hefte* 28 (1987), no. 3, 217–231. (Summary) 89j:62024 62E10
- Bozdoğanov, Ivan D.** Solution of the Orr-Sommerfeld boundary value problem by the matrix double-sweep method. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian) (Sunny Beach (Sl'nchev Bryag), 1987)*, 320–324, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) 89e:76002 76-08 (76E05)
- Božejko, Marek** Uniformly bounded representations of free groups. *J. Reine Angew. Math.* 377 (1987), 170–186. (A. Figà-Talamanca) 89a:22009 22D12 (43A65)
- (with Januszkiewicz, T.; Spatzier, R. J.) Infinite Coxeter groups do not have Kazhdan's property. *J. Operator Theory* 19 (1988), no. 1, 63–67. (K. A. Ross) 89i:22025 22E46 (20G15, 22E30, 51F15)
- Bozhinov, N. S.** *see* **Božinov, Nikolai S.**
- Bozhinov, Nikolai S.** *see* **Božinov, Nikolai S.**
- Božić, M.** (with Barut, A. O.; Marić, Z.) Joint probabilities of noncommuting operators and incompleteness of quantum mechanics. *Found. Phys.* 18 (1988), no. 10, 999–1012. (Summary) 89k:81016 81B99
- Božiev, O. L.** Weak solutions of a hyperbolic equation. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 128 (1987), no. 3, 485–488 (1988). (Summary) 89h:35179 35L20 (35D05)
- Božinov, Nikolai S.** On the Duhamel representation of the commutants and multipliers related to the operators with convolutional multiplier resolvent. (Bulgarian summary) *Mathematics and mathematical education (Bulgarian) (Sunny Beach (Sl'nchev Bryag), 1987)*, 181–186, *Bulgar. Acad. Sci., Sofia*, 1987. (D. Przeworska-Rolewicz) 89h:47050 47B47 (44A35)
- Representation of multipliers of eigen and joint function expansions of nonlocal spectral problems for first and second order differential operators. *Mathematical analysis and its applications (Kuwait, 1985)*, 101–118, *KFAS Proc. Ser.*, 3, Pergamon, Oxford-Elmsford, NY, 1988. (From the introduction) 89h:34020 34B25 (47A70, 47E05)
- Bzis, G.** (with Ichiarglou, S.) Existence and construction of dynamical systems having a prescribed integral of motion—an inverse problem. *Inverse Problems* 3 (1987), no. 2, 213–227. (Elisa Udeschini-Brinis) 89a:58039 58F05 (34A55, 34C40, 70H99)
- Bornyak, L. S.** Solution of a nonlinear singular integral equation with a Hilbert kernel by the projection-iterative method. (Russian) *Functional-differential equations and their applications (Russian)*, 19–25, ii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1985. (Summary) 89a:65196 65R20
- de Bra, P.** *see* **De Bra, P.**
- Braam, Peter J.** A Kaluza-Klein approach to hyperbolic three-manifolds. *Enseign. Math.* (2) 34 (1988), no. 3-4, 275–311. (Nicholas Buchdahl) 89m:57013 57N10 (32L25, 53A30, 53C10, 58A14, 58E15)
- Braat, L. C.** (with van Lierop, W. F. J.) Environment, policy, and modeling. *Economic-ecological modeling*, 7–19, *Stud. Regional Sci. Urban Econom.*, 16, North-Holland, Amsterdam-New York, 1987. (see 89d:90076) 90A30 (92A17)
- (with van Lierop, W. F. J.) Integrated economic-ecological modeling. *Economic-ecological modeling*, 49–68, *Stud. Regional Sci. Urban Econom.*, 16, North-Holland, Amsterdam-New York, 1987. (see 89d:90076) 90A30 (92A17)
- (with van Lierop, W. F. J.) Evaluation. *Economic-ecological modeling*, 282–285, *Stud. Regional Sci. Urban Econom.*, 16, North-Holland, Amsterdam-New York, 1987. (see 89d:90076) 90A30 (92A17)
- *see also* *Economic-ecological modeling*, 89d:90076
- Bracewell, Ronald N.** ★ The Fourier transform and its applications. Third edition. McGraw-Hill Series in Electrical Engineering. Circuits and Systems. McGraw-Hill Book Co., New York, 1986. xx+474 pp. ISBN 0-07-007015-6 (Editors) 89c:42013 42A38
- Bracha, Gabriel** Asynchronous Byzantine agreement protocols. *Inform. and Comput.* 75 (1987), no. 2, 130–143. (Summary) 89a:68012 68M10 (68M15)
- An  $O(\log n)$  expected rounds randomized Byzantine Generals protocol. *J. Assoc. Comput. Mach.* 34 (1987), no. 4, 910–920. (Summary) 89a:68014 68M15 (68M10, 68Q20)
- Brachinger, Hans-Wolfgang** (with Schubert, Renate) Measuring price-induced changes in standard of living in least developed countries: economic validity of Laspeyres price indices and some further suggestions. *Statist. Hefte* 29 (1988), no. 2, 85–112. (Not in MR) 90A12
- Brackbill, J. U.** The ringing instability in particle-in-cell calculations of low-speed flow. *J. Comput. Phys.* 75 (1988), no. 2, 469–492. (Summary) 89c:76008 76-08
- Brackebusch, Ruth E.** James space on general trees. *J. Funct. Anal.* 79 (1988), no. 2, 446–475. (James Hagler) 89m:46018 46B20 (46B22)
- Bracken, A. J.** (with Bass, Ludvik; Holmáker, K.; Jefferies, Brian) Integro-differential equations for the self-organisation of liver zones by competitive exclusion of cell-types. *J. Austral. Math. Soc. Ser. B* 29 (1987), no. 2, 156–194. (Matthew Witten) 89f:92015 92A09 (45F10, 92A07)
- (with McAnally, D. S.) Heisenberg equations of motion for the Coulomb problem and so(4, 2). *Group theoretical methods in physics (Varna, 1987)*, 223–229, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (see 89g:81001) 81C99 (58F05, 58F40)
- (with Green, H. S.; Bass, Ludvik) Groups defined on images in fluid diffusion. *J. Austral. Math. Soc. Ser. B* 30 (1988), no. 1, 101–119. (Summary) 89c:76098 76R50 (80A32)
- (with Fawcett, R. J. B.) Simple orthogonal and unitary compact quantum systems and the İnönü-Wigner contraction. *J. Math. Phys.* 29 (1988), no. 7, 1521–1528. (Nigel B. Backhouse) 89k:81044 81C40 (17B10)
- (with McAnally, D. S.) Time dependence of variables in the quantum-mechanical and classical Coulomb problems, and the dynamical algebra so(4, 2). *Phys. Rev. A* (3) 37 (1988), no. 7, 2304–2308. (Summary) 89c:81049 81C40
- Brackx, F.** (with Constales, Denis; Delanghe, R.; Serras, Herman) Clifford algebra with REDUCE. Proceedings of the Winter School on Geometry and Physics (Srní, 1987). *Rend. Circ. Mat. Palermo (2) Suppl. No. 16* (1987), 11–19. (Horia Scutaru) 89i:15035 15A66 (68Q40, 68U30)
- (with Delanghe, R.; Van hamme, J.) Generalized inverses of elliptic systems of differential operators with constant coefficients and related REDUCE programs for explicit calculations. Proceedings of the Winter School on Geometry and Physics (Srní, 1987). *Rend. Circ. Mat. Palermo (2) Suppl. No. 16* (1987), 21–28. (Summary) 89f:35004 35-04 (35J99)
- *see also* *Proceedings: Workshop on Clifford Algebra, Clifford Analysis and their Applications in Mathematical*, 89g:15037
- Brada, Claude** ★ Éléments de la géométrie des octaves de Cayley. (French) [Elements of the geometry of Cayley numbers] Dissertation, Université d'Aix-Marseille I, Marseille, 1984. Publications du Département de Mathématiques. Nouvelle Série. D [Publications of the Department of Mathematics. New Series. D]. 86-2. Université Claude-Bernard, Département de Mathématiques, Lyon, 1986. iv+90 pp. (J. Vanžura) 89a:53056 53C30 (17D05, 22E20, 51H25)
- (with Pecaut-Tison, Françoise) Géométrie du plan projectif des octaves de Cayley. (English summary) [Geometry of the projective plane of Cayley octaves] *Geom. Dedicata* 23 (1987), no. 2, 131–154. (Hermann Hähl) 89a:51037 51H20 (17A75, 17B25, 17C40, 53C35)
- Bradas, James C.** (with Fennelly, A. J.; Smalley, Larry L.) Inflation in Einstein-Cartan theory with energy-momentum tensor with spin. *Phys. Lett. A* 129 (1988), no. 4, 195–200.



- (Maurizio Gasperini) **89e:83089** 83F05 (83D05)
- Bradbury, I. S.** Approximations to permutation distributions in the completely randomized design. *Comm. Statist. Theory Methods* **17** (1988), no. 2, 543–555. (Not in MR) **62K15**
- Bradbury, R.** (with Antonelli, P. L.; Buck, Rosalie Giovanna; Reichelt, R.; Elliott, Robert J.) Nonlinear prediction of crown-of-thorns outbreaks on the Great Barrier Reef. *Stochastic Anal. Appl.* **6** (1988), no. 4, 349–363. (Miguel Angel Canela) **89m:92041** 92A15 (60G25)
- Bradeanu, Doina** (with Maksay, St.) A Galerkin approximation solution for heat transfer in thin bars. (Russian) *Seminar on Mechanics*, 7–22, Preprint, 88-1, Univ. "Babeş-Bolyai", Cluj-Napoca, 1988. (see **89f:00016**) **80A20** (65P05, 80-08)
- Some considerations on the application of the Galerkin method to unidimensional diffusion-convection problems. *Seminar on Mechanics*, 23–34, Preprint, 88-1, Univ. "Babeş-Bolyai", Cluj-Napoca, 1988. (Summary) **89f:65074** 65L10 (34B05, 49D15, 76-08, 76R99)
- Finding variational functionals by the Galerkin procedure. Applications to the heat transfer. *Seminar on Mechanics*, 35–50, Preprint, 88-1, Univ. "Babeş-Bolyai", Cluj-Napoca, 1988. (S. Dost) **89k:80012** **80A20** (49D15, 65N30)
- Bradeanu, Petre** The Ritz variational method for the heat transfer in a circular cylinder. *Studia Univ. Babeş-Bolyai Math.* **32** (1987), no. 1, 3–12. (B. Vujanović) **89h:80008** **80A20** (35K05, 49G10)
- Bradeanu, Teodora** (with Tarina, M.) The divergence operator for Finsler tensor fields. *The Proceedings of the Fourth National Conference on Finsler and Lagrange Spaces* (Braşov, 1986), 109–114, Soc. Ştiinţe Mat. R.S. România, Bucharest, 1986. (L. Tamásy) **89c:53021** 53B40
- Brademeyer, B. D.** (with Safwat, K. N. A.) Proof of global convergence of an efficient algorithm for predicting trip generation, trip distribution, modal split and traffic assignment simultaneously on large-scale networks. *Comput. Math. Appl.* **16** (1988), no. 4, 269–277. (Not in MR) **90B10**
- Braden, Bart** Pólya's geometric picture of complex contour integrals. *Math. Mag.* **60** (1987), no. 5, 321–327. (D. Mitrović) **89m:30003** 30A10 (30-01, 30-03)
- Braden, H. W.** Extending  $N = \frac{1}{2}$  supersymmetries. *Nuclear Phys. B* **291** (1987), no. 3, 516–534. (H. Hogreve) **89d:81122** 81G20 (81E30, 81E99)
- Anomaly coefficients: their calculation and congruences. *J. Math. Phys.* **29** (1988), no. 4, 727–741. (Nigel B. Backhouse) **89i:81066** 81E13 (20G45, 22E70)
- On the absence of global anomalies. *Phys. Lett. B* **200** (1988), no. 1-2, 91–94. (Akira Asada) **89b:81177** 81E99 (17B10, 22E46)
- Bradford, R. J.** (with Abbott, J. A.; Davenport, James H.) Factorisation of polynomials: old ideas and recent results. *Trends in computer algebra* (Bad Neuenahr, 1987), 81–91, *Lecture Notes in Comput. Sci.*, 296, Springer, Berlin-New York, 1988. (Joachim von zur Gathen) **89f:12001** 12-04 (11K09, 11Y05, 68Q40)
- Bradler, I.** (with Feĭdman, I. A.) A difference method for solving some elliptic boundary value problems. (Russian. English summary) *Seminar analysis* (Berlin, 1986/87), 17–23, *Akad. Wiss. DDR, Berlin*, 1987. (J. Miklíček) **89c:65098** 65L10 (65N10)
- Bradley, Derek** (with Missaghi, M.; Chin, S. B.) A Taylor-series approach to numerical accuracy and a third-order scheme for strong convective flows. *Comput. Methods Appl. Mech. Engrg.* **69** (1988), no. 2, 133–151. (Summary) **89d:76029** 76R05 (76-08)
- Bradley, F. H.** see Glosberman, M., (Not in MR)
- Bradley, Michael** Dust EPL cosmologies. *Classical Quantum Gravity* **5** (1988), no. 1, L15–L19. (Mario C. Diaz) **89e:83016** 83C15 (83F05)
- Bradley, R. M.** Analytical enumeration of Hamiltonian walks on a fractal. *J. Phys. A* **22** (1989), no. 1, L19–L24. (Preben Alström) **89j:82092** 82A99 (05C99, 82A41, 82A51)
- Bradley, Richard C.** (with Bryc, Włodzimierz; Janson, Svante) On dominations between measures of dependence. *J. Multivariate Anal.* **23** (1987), no. 2, 312–329. (I. G. Zhurbenko) **89h:60058** 60G05
- Corrections to: "The central limit question under  $p$ -mixing" [Rocky Mountain J. Math. **17** (1987), no. 1, 95–114; MR 88i:60038]. *Rocky Mountain J. Math.* **17** (1987), no. 4, 891. (Yutaka Kato) **89d:60036** 60F05 (60G10)
- A central limit theorem for stationary  $p$ -mixing sequences with infinite variance. *Ann. Probab.* **16** (1988), no. 1, 313–332. (Włodzimierz Bryc) **89a:60053** 60F05
- On some results on M. I. Gordin: a clarification of a misunderstanding. *J. Theoret. Probab.* **1** (1988), no. 2, 115–119. (Ken-ichi Yoshihara) **89d:60037** 60F05 (60G10)
- Bradshaw, Peter** (with Cebeci, Tuncer) ★ Physical and computational aspects of convective heat transfer. Springer Study Editions. Springer-Verlag, New York-Berlin, 1988. xii+487 pp. ISBN 0-387-96821-0 (Editors) **89f:76086a** 76Rxx (76-04, 76-08, 76D10)
- Bradwardine, Thomas** see Murdoch, John E., **89c:01012**
- Brady, John F.** (with Koch, Donald L.; Cox, Raymond G.; Brenner, Howard) The effect of order on dispersion in porous media. *J. Fluid Mech.* **200** (1989), 173–188. (Summary) **89m:76063** 76S05 (76R50, 82A42, 82A57)
- Brady, Michael Emmett J. M.** Keynes's position on the general applicability of mathematical, logical and statistical methods in economics and social science. *Synthese* **76** (1988), no. 1, 1–24. (Pierre Crépel) **89k:90003** 90Axx (01A60, 90-03)
- Braess, D.** (with Peisker, P.) On the numerical solution of the biharmonic equation and the role of squaring matrices for preconditioning. *IMA J. Numer. Anal.* **6** (1986), no. 4, 393–404. (Summary) **89f:65175** 65N30 (65F35)
- (with Schaback, R.) Helmut Werner. (German) *Jahresber. Deutsch. Math.-Verein.* **89** (1987), no. 4, 179–195. (Editors) **89c:01045** 01A70
- Braga, N. R. F.** (with de Almeida da Silva, M. A.; Barcelos-Neto, J.) Canonical quantization of the  $\sigma$ -model with torsion in superspace. *Z. Phys. C* **38** (1988), no. 4, 619–622. (C. Gauthier) **89f:81126** 81E20 (58E20, 81D07, 81G20)
- Braga, W.** Secondary flows on low aspect ratio rotating cavities. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 119–127, North-Holland, Amsterdam-New York, 1988. (Summary) **89c:76080** 76U05 (76-04, 76C05)
- monti Bragadin, Giacomo** see Monti Bragadin, Giacomo
- Bragg, Louis R.** Nonhomogeneous differential equations that involve iterated operators. (Portuguese summary) *Mat. Apl. Comput.* **5** (1986), no. 2, 185–197. (Summary) **89a:34068** 34G10 (35C99, 47A50)
- Exponential sums and certain hypergeometric type initial value problems. *Appl. Anal.* **30** (1988), no. 1-3, 115–127. (W. Balsev) **89k:34010** 34A25 (33A35)
- Braginskii, R. P.** (with Moiseev, Yu. V.; Gnedenko, B. V.; Malunov, V. V.; Molchanov, S. A.) Features of the percolation model of polymer aging. (Russian) *Dokl. Akad. Nauk SSSR* **303** (1988), no. 3, 535–537; translated in *Soviet Math. Dokl.* **38** (1989), no. 3, 546–549. (Not in MR) **73S99** (73M10)
- Braham, R.** (with Hamblen, J. O.) On the behavior of some associative neural networks. *Biol. Cybernet.* **60** (1988), no. 2, 145–151. (Summary) **89i:92011** 92A09
- Brähe, Tychō** see Song, Sang-yong, **89m:01039**
- Braides, Andrea** A homogenization theorem for weakly almost periodic functionals. (Italian summary) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **10** (1986), no. 1, 261–281. (From the introduction) **89f:49015** 49A50
- Relaxation of functionals with constraints on the divergence. (Italian summary) *Ann. Univ. Ferrara Sez. VII (N.S.)* **33** (1987), 157–177 (1988). (Paolo Marcellini) **89f:49007** 49A50 (49D20)
- Brailov, A. V.** (with Fomenko, A. T.) Topology of integral submanifolds of completely integrable Hamiltonian systems. (Russian) *Mat. Sb. (N.S.)* **134**(176) (1987), no. 3, 375–385, 447–448; translated in *Math. USSR-Sb.* **62** (1989), no. 2, 373–383. (Zhaojun Liang) **89d:58036** 58F05
- Bratlovskaya, V. A.** (with Kogan, V. R.) A method for calculating periodic vortex flows of an incompressible fluid. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 8, 1226–1233, 1278–1279. (Summary) **89k:76025** 76C05 (65M99, 76-08)
- Brak, R.** (with Wilkinson, M. K.) Multifractal properties of absorption probabilities. *J. Phys. A* **21** (1988), no. 9, 2131–2142. (Summary) **89f:82101** 82A99 (82-08)
- Brakova, M. A.** Asymptotic behaviour of strip mappings of some symmetric strips. *Complex analysis and applications '85* (Varna, 1985), 127–134, *Bulg. Acad. Sci., Sofia*, 1986. (P. Lappan) **89a:30004** 30C20 (30E15)
- Brakhagen, F.** (with Fogwell, T. W.) Multigrid methods for the solution of porous media multiphase flow equations. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 139–148, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 76-08 (76S05, 76T05)
- Bramble, James H.** (with Pasciak, Joseph E.) New convergence estimates for multigrid algorithms. *Math. Comp.* **49** (1987), no. 180, 311–329. (David C. Arney) **89b:65234** 65Nxx (65F10)
- (with Pasciak, Joseph E.) A preconditioning technique for indefinite systems resulting from mixed approximations of elliptic problems. *Math. Comp.* **50** (1988), no. 181, 1–17. (M. Zlámal) **89m:65097a** 65N30 (65F10)
- (with Pasciak, Joseph E.) Corrigenda: "A preconditioning technique for indefinite systems resulting from mixed approximations of elliptic problems". *Math. Comp.* **51** (1988), no. 183, 387–388. (M. Zlámal) **89m:65097b** 65N30 (65F10)
- (with Pasciak, Joseph E.; Xu, Jin Chao) The analysis of multigrid algorithms for nonsymmetric and indefinite elliptic problems. *Math. Comp.* **51** (1988), no. 184, 389–414. (Timothy Nigel Phillips) **89b:65260** 65N30 (65F10)
- (with Pasciak, Joseph E.; Schatz, Alfred H.) The construction of preconditioners for elliptic problems by substructuring. III. *Math. Comp.* **51** (1988), no. 184, 415–430. (Charles I. Goldstein) **89c:65118** 65N30 (65F10)
- (with Pasciak, Joseph E.; Sammon, P. H.; Thomée, Vidar) Incomplete iterations in multistep backward difference methods for parabolic problems with smooth and nonsmooth data. *Math. Comp.* **52** (1989), no. 186, 339–367. (M. K. Kadalbajoo) **89f:65101** 65N10 (65N20)
- (with Pasciak, Joseph E.; Schatz, Alfred H.) The construction of preconditioners for elliptic problems by substructuring. IV. *Math. Comp.* **53** (1989), no. 187, 1–24. (Charles I. Goldstein) **89m:65098** 65N30 (65F35)
- Brameller, A.** (with Yang, Tai Cheng; Munro, N.) Improved condition for the optimality of decentralised control for large-scale systems. *Proc. IEEE-D* **136** (1989), no. 1, 44–46. (Not in MR) **93A15**
- maliavin-Brameret, Marie-Paule** see Maliavin-Brameret, Marie-Paule
- Brams, Josef** Das Verhältnis zwischen der Translatio Vaticana und der Translatio vetus der Aristotelischen Physik. [The relation between the Translatio Vaticana and the Translatio vetus of Aristotelian physics] *Aristotelisches Erbe im arabisch-lateinischen Mittelalter*, 190–214, *Miscellanea Mediaevalia*, 18, de Gruyter, Berlin-New York, 1986. (see **89i:01015**) **01A35** (01A20)
- (with Vuillemin-Diem, Gudrun) *Physica Nova und Recensio Matritensis—Wilhelm von Moerbeke's Doppelte Revision der Physica Vetus*. [Physica Nova and Recensio Matritensis—Wilhelm von Moerbeke's double revision of the Physica vetus] *Aristotelisches Erbe im arabisch-lateinischen Mittelalter*, 215–288, *Miscellanea Mediaevalia*, 18, de Gruyter, Berlin-New York, 1986. (see **89i:01015**) **01A35** (01A20)
- Brams, Steven J.** (with Felsenthal, Dan S.; Maoz, Zeev) New chairman paradoxes. *Paradoxical effects of social behavior*, 243–256, *Physica, Heidelberg*, 1986. (see **89d:90019**) **90A08**
- (with Kilgour, D. Marc) Optimal threats. *Oper. Res.* **35** (1987), no. 4, 524–536. (Summary) **89a:90160** 90D05
- (with Kilgour, D. Marc) ★ Game theory and national security. *Basil Blackwell, Inc., New York*, 1988. xiv+199 pp. ISBN 1-557-86003-3; 1-557-86004-1 (A. Rapoport) **89c:90245** 90D45 (00A25, 00A69, 90D05, 90D35, 92A90)
- (with Kilgour, D. Marc) National security games. Formal analysis in international relations. *Synthese* **76** (1988), no. 2, 185–200. (see **89c:90218**) **92A90** (90D40)
- Bramson, Maury** (with Griffiths, David) Survival of cyclical particle systems. *Percolation theory and ergodic theory of infinite particle systems* (Minneapolis, Minn., 1984–1985), 21–29, *IMA Vol. Math. Appl.*, 8, Springer, New York-Berlin, 1987. (Peter Donnelly) **89b:60234** 60K35
- (with Cox, J. Theodore; Griffiths, David) Occupation time large deviations of the voter model. *Probab. Theory Related Fields* **77** (1988), no. 3, 401–413. (T. M. Liggett) **89c:60116** 60K35 (60F10)
- (with Durrett, Rick) A simple proof of the stability criterion of Gray and Griffiths. *Probab. Theory Related Fields* **80** (1988), no. 2, 293–298. (Kai Long Ren) **89m:60249** 60K35
- (with Griffiths, David) Flux and fixation in cyclic particle systems. *Ann. Probab.* **17** (1989), no. 1, 26–45. (J. Theodore Cox) **89k:60154** 60K35 (82A99)
- Branan, J.** (with Samek, D.) Maxwell's field with two types of currents induced by the new Dirac field. (Serbo-Croatian summary) *Akad. Nauka Umjet. Bosne Hercegov. Rad. Odjeli. Prirod. Mat. Nauka* No. 25 (1988), 131–148. (E. Comay) **89k:78003** 78A25
- (with Marjanović-Gabela, N.; Samek, D.) Quantization of the free electromagnetic field in the new formulation. (Serbo-Croatian summary) *Akad. Nauka Umjet. Bosne Hercegov.*

- Rad. Odjelj. Prirod. Mat. Nauka* No. 25 (1988), 177-187. (Not in MR) 81L05 (81D07)
- Branchina, Vincenzo** (with Majorana, Armando) On the transport coefficients for a relativistic gas of hard spheres. *Matematiche (Catania)* 40 (1985), no. 1-2, 267-273 (1988). (Gert Due Billing) 89i:82039 82A40 (76P05)
- Brand, Daniel** (with Iyengar, Vijay S.) Timing analysis using functional analysis. *IEEE Trans. Comput.* 37 (1988), no. 10, 1309-1314. (A. Thyse) 89k:94100 94C10
- Brand, H. R.** see *Propagation in systems far from equilibrium*, 89f:76003
- Brand, K.** (with Lemke, M.; Linden, Johannes) Multigrid bibliography. *Multigrid methods*, 189-278, *Frontiers Appl. Math.*, 3, SIAM, Philadelphia, PA, 1987. (see 89m:65004) 65-00 (00A15)
- Brand, Neal** Quadratic isomorphisms of  $Z_p \otimes Z_p$  objects. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 157-163. (Chris Rodger) 89g:05037 05B30
- Design isomorphisms and group isomorphisms. *Geom. Dedicata* 27 (1988), no. 3, 281-294. (Cheryl E. Praeger) 89i:05045 05B05 (20B25, 57S25)
- Brand, P. J.** (with Haldorsen, H. H.; Macdonald, C. J.) Review of the stochastic nature of reservoirs. *Mathematics in oil production* (Cambridge, 1987), 109-209, *Inst. Math. Appl. Conf. Ser. New Ser.*, 18, Oxford Univ. Press, New York, 1988. (see 89j:76003) 76-08 (76S05, 76T05)
- Brändas, Erkki** (with Engdahl, Erik) Resonance regions determined by a projection-operator formulation. *Phys. Rev. A* (3) 37 (1988), no. 11, 4145-4152. (W. O. Amrein) 89b:81254 81F99
- Brandenburg, Franz-J.** A note on: "Deque automata and a subfamily of context-sensitive languages which contains all semilinear bounded languages" [Theoret. Comput. Sci. 40 (1985), no. 2-3, 163-174; MR 87j:68065] by K. Ayers. *Theoret. Comput. Sci.* 52 (1987), no. 3, 341-342. (Jürgen Dassow) 89d:68039 68Q45 (03D05, 68Q50)
- Representations of language families by homomorphism equality operations and generalized equality sets. *Theoret. Comput. Sci.* 55 (1987), no. 2-3, 183-263. (Matti Linna) 89g:68036 68Q45
- On polynomial time graph grammars. *STACS 88 (Bordeaux, 1988)*, 227-236, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (Summary) 89c:68068 68Q50 (03D05, 03D15, 68Q15)
- Brandenburg, H.** On para-uniform nearness spaces and  $D$ -complete regularity. *Acta Math. Hungar.* 51 (1988), no. 1-2, 51-55. (Ramesh Ori) 89f:54058 54E17 (54D15)
- Brandenburger, Adam** (with Dekel, Eddie) Rationalizability and correlated equilibria. *Econometrica* 55 (1987), no. 6, 1391-1402. (O. A. Malafeev) 89c:90114 90D10
- (with Dekel, Eddie) Common knowledge with probability 1. *J. Math. Econom.* 16 (1987), no. 3, 237-245. (Erwin Klein) 89a:90187 90D40 (90A05)
- Brandner, O.** (with DeFacio, B.) Information, uncertainty and the singular value decomposition of the filtered Fourier transformation. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 83-90, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (L. L. Campbell) 89c:94009 94A11 (62M20, 93E11)
- (with DeFacio, B.) Coherent-state path-integral formulation of inverse scattering theory. Functional integration with emphasis on the Feynman integral (Sherbrooke, PQ, 1986). *Rend. Circ. Mat. Palermo (2) Suppl. No. 17* (1987), 185-209 (1988). (Pierre C. Sabatier) 89b:81253 81F99 (58D30, 81-02, 81D30)
- Brandi, Primo** (with Salvadori, Anna) The Weierstrass integral of the calculus of variations along BV curves, in comparison with the integrals of Lebesgue and Serrin. (Italian) *Atti Sem. Mat. Fis. Univ. Modena* 35 (1987), no. 2, 319-325 (1988). (A. Avena) 89m:49080 49F25 (26B15)
- (with Ceppitelli, Rita) Existence, uniqueness and continuous dependence for differential equations in a hereditary structure. (Italian. English summary) *Atti Sem. Mat. Fis. Univ. Modena* 35 (1987), no. 2, 357-363 (1988). (Z. Vorel) 89f:34095 34K05 (34A10)
- Brandis, Albrecht** Moduln und verschränkte Homomorphismen endlicher Gruppen. [Modules and crossed homomorphisms of finite groups]. *J. Reine Angew. Math.* 385 (1988), 102-116. (Hartmut Laue) 89b:20047 20D10 (20C05)
- Brandt, Rolf** Infinite soluble groups with the Bell property: a finiteness condition. *Monatsh. Math.* 104 (1987), no. 3, 191-197. (J. R. J. Groves) 89a:20044 20F45 (20E10)
- The Dilworth number of subgroup lattices. *Arch. Math. (Basel)* 50 (1988), no. 6, 502-510. (Patrizia Longobardi) 89c:20054 20E15 (20F22)
- (with Wilson, John S.) Characterization of finite soluble groups by laws in a small number of variables. *J. Algebra* 116 (1988), no. 2, 334-341. (Hartmut Laue) 89g:20056 20F12 (20D10, 20F16)
- Brandstätter, Andreas** (with Spinrad, Jeremy; Stewart, Lorna) Bipartite permutation graphs are bipartite tolerance graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 165-174. (Pavel Tomasta) 89j:05059 05C75 (68R10)
- (with Spinrad, Jeremy; Stewart, Lorna) Bipartite permutation graphs. *Discrete Appl. Math.* 18 (1987), no. 3, 279-292. (E. Orlau) 89c:05064 05C75 (68R10)
- The computational complexity of feedback vertex set, Hamiltonian circuit, dominating set, Steiner tree, and bandwidth on special perfect graphs. (German and Russian summaries) Mathematical aspects of informatics (Mädgesprung, 1986). *J. Inform. Process. Cybernet.* 23 (1987), no. 8-9, 471-477. (Charles J. Colbourn) 89b:68053 68R10 (05C99, 68Q25, 90B10)
- (with Müller, Haiko) The NP-completeness of STEINER TREE and DOMINATING SET for chordal bipartite graphs. *Theoret. Comput. Sci.* 53 (1987), no. 2-3, 257-265. (Charles J. Colbourn) 89a:68106 68Q25 (05C35, 68R10)
- (with Kratsch, Dieter) On domination problems for permutation and other graphs. *Theoret. Comput. Sci.* 54 (1987), no. 2-3, 181-198. (Charles J. Colbourn) 89a:68172 68R10 (05C35)
- Brandstetter, J.** (with Hartmann, P.) Über Homomorphismen projektiver Räume. [On homomorphisms of projective spaces] *Geom. Dedicata* 28 (1988), no. 1, 87-92. (F. Radó) 89m:51006 51A10 (51C05)
- Brandt, Achi** Multilevel approaches to large scale problems. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 1319-1334, *Amer. Math. Soc., Providence, RI*, 1987. (T. A. Porsching) 89d:65003 65-02 (65F99, 65N50)
- (with Ruge, J.) A multigrid approach for elasticity problems on "thin" domains. *Multigrid methods (Copper Mountain, CO, 1987)*, 541-554, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (Petr Procházka) 89i:73008 73-08 (65N30, 73C99)
- (with Lanza, Antonio) Multigrid in general relativity. I. Schwarzschild spacetime. *Classical Quantum Gravity* 5 (1988), no. 5, 713-732. (Summary) 89f:83004 83-08 (83C15)
- (with Kandel, Daniel; Domany, Eytan; Ron, Dorit; Loh, Eugene, Jr.) Simulations without critical slowing down. *Phys. Rev. Lett.* 60 (1988), no. 16, 1591-1594. (Summary) 89b:82007 82-08 (82A68)
- Brandt, Andreas** (with Sulanke, H.) On the  $GI/M/\infty$  queue with batch arrivals of constant size. *Queueing Systems Theory Appl.* 2 (1987), no. 2, 187-200. (J. G. C. Templeton) 89f:60106a 60K25 (90B22)
- On stationary queue length distributions for  $G/M/s/r$  queues. *Queueing Systems Theory Appl.* 2 (1987), no. 4, 321-332. (Masakiyo Miyazawa) 89d:60158 60K05 (60G10, 90B22)
- (with Sulanke, H.) Acknowledgement of priority. Comment on: "On the  $GI/M/\infty$  queue with batch arrivals of constant size". *Queueing Systems Theory Appl.* 3 (1988), no. 2, 199. (J. G. C. Templeton) 89f:60106b 60K25 (90B22)
- Brandt, Heinrich** see Eichler, Martin, 89a:01057 and Hoehnke, Hans-Jürgen, 89c:01045
- Brandt, Jürgen** Invariant signals for median-filters. *Utilitas Math.* 31 (1987), 93-105. (Summary) 89m:94002 94A05
- Brandt, Ulrike** (with Walter, H. K.-G.) Complete language tables. *Papers on automata and languages, VIII*, 13-32, *DM*, 86-3, *Kar. Marx Univ. Econom., Budapest*, 1986. (Ranjana Chaudhuri) 89d:68040 68Q45
- Index sets in the arithmetical hierarchy. *Ann. Pure Appl. Logic* 37 (1988), no. 2, 101-110. (Rodney G. Downey) 89d:03039 03D25 (03D55)
- Brandwajn, Alexandre** Load imbalance in DASD dynamic reconnection. *Inform. Process. Lett.* 28 (1988), no. 3, 111-119. (Not in MR) 68M20
- (with Jow, Yung-Li Lily) An approximation method for tandem queues with blocking. *Oper. Res.* 36 (1988), no. 1, 73-83. (Summary) 89b:90087 90B22
- de Branges, Louis** Underlying concepts in the proof of the Bieberbach conjecture. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 25-42, *Amer. Math. Soc., Providence, RI*, 1987. (J. Rovnyak) 89f:30029 30C50 (30E05, 33A30, 47A45)
- Complementations in Krein spaces. *Trans. Amer. Math. Soc.* 305 (1988), no. 1, 277-291. (D. Sarason) 89c:46034 46D05 (47B50)
- de Branges, Tatiana** see Waksman, L. L., 89a:47015
- Brankin, R. W.** (with Gladwell, I.; Shampine, L. F.) Locating special events when solving ODEs. *Appl. Math. Lett.* 1 (1988), no. 2, 153-156. (Not in MR) 65L99 (65L05)
- (with Gladwell, I.; Shampine, L. F.) Starting BDF and Adams codes at optimal order. *J. Comput. Appl. Math.* 21 (1988), no. 3, 357-368. (Summary) 89b:65166 65L05
- Brankov, Georgi** ★ Квантова биомеханика. (Bulgarian) [Quantum biomechanics] With Russian and English summaries. *Izdat. Bulgar. Akad. Nauk (Publishing House of the Bulgarian Academy of Sciences)*, Sofia, 1987. 134 pp. (From the summary) 89m:92008 92A08 (92A09, 92A40)
- Brankov, I. G.** (with Danchev, D. M.) On the limit Gibbs states of the spherical model. *J. Phys. A* 20 (1987), no. 14, 4901-4913. (Nicolae Angelescu) 89c:82006 82A05 (82A68)
- (with Danchev, D. M.) On the limit Gibbs states of the spherical and mean spherical models. *IV International Symposium on Selected Topics in Statistical Mechanics (Russian) (Dubna, 1987)*, 59-65, *Joint Inst. Nuclear Res., Dubna*, 1988. (Aernout C. D. van Enter) 89f:82066 82A57 (82A41, 82A42)
- (with Tonchev, N. S.) On the finite-size scaling equation for the spherical model. *J. Statist. Phys.* 52 (1988), no. 1-2, 143-159. (Aernout C. D. van Enter) 89j:82018 82A25 (82A69)
- Brannan, David A.** Growth rates of subharmonic functions in the plane. *J. Ramanujan Math. Soc.* 1 (1986), no. 1-2, 98-104. (P. Lappan) 89j:31002 31A20 (31A05)
- (with Hayman, Walter) Research problems in complex analysis. *Bull. London Math. Soc.* 21 (1989), no. 1, 1-35. (From the introduction) 89m:30001 30-02 (00A07, 31-02)
- Brannan, James R.** (with Renke, James A.) Application of RKH space methods to the filtering problem for linear hereditary systems. *Analysis and optimization of systems (Antibes, 1988)*, 715-724, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) 89g:93199 93E11 (46N05, 93E03)
- Brännäs, Kurt** Linear regression with grouped data on the dependent variable. (Italian summary) *Metron* 45 (1987), no. 3-4, 63-79. (Not in MR) 62J05
- Brans, Carl H.** Consistency of field equations in "self-creation" cosmologies. *Gen. Relativity Gravitation* 19 (1987), no. 9, 949-952. (W. M. Baker) 89b:83071 83D05
- Nonlinear Lagrangians and the significance of the metric. *Classical Quantum Gravity* 5 (1988), no. 12, L197-L199. (Andrzej Trautman) 89m:83074 83D05 (53B50, 83C10)
- Branson, Thomas P.** (with Ørsted, Bent) Conformal deformation and the heat operator. *Indiana Univ. Math. J.* 37 (1988), no. 1, 83-110. (R. Schimming) 89g:58214 58G30 (35K05, 35S05, 58G11, 58G25)
- Brant, Larry J.** (with Mullen, Gary L.) A study of frequency cubes. *Discrete Math.* 69 (1988), no. 2, 115-121. (William I. Notz) 89b:05050 05B15
- Brants, Juris** Applications of group theory for the relativistic calculation of impurity ions in crystals. (Russian) *Group-theoretic methods in physics, Vol. 1 (Russian) (Järvala, 1985)*, 658-661, "Nauka", Moscow, 1986. (see 89d:81001) 82A60
- Bräsel, Heidemarie** Rangminimale Maschinenbelegungsprobleme. [Rank-minimal machine occupation problems] *Wiss. Z. Tech. Univ. Magdeburg* 31 (1987), no. 5, 68-72. (Summary) 89f:90070 90B35
- Brass, Helmut** (with Förster, Klaus-Jürgen) On the estimation of linear functionals. *Analysis* 7 (1987), no. 3-4, 237-258. (B. Boyanov) 89c:65009 65Dxx (41A55)
- A remark on best  $L^1$ -approximation by polynomials. *J. Approx. Theory* 52 (1988), no. 3, 359-361. (Eli Passow) 89d:41021 41A15
- Brassard, Gilles** (with Bratley, Paul) ★ Algorithmique. (French) [Computer algorithms] Conception et analyse. [Design and analysis] *Manuels Informatiques Masson*. [Masson Data Processing Manuals] Masson, Paris; Presses de l'Université de Montréal, Montréal, PQ, 1987. xiv+344 pp. ISBN 2-225-80944-5 (Editors) 89d:68001 68-01 (65-01)
- (with Crépeau, Claude) Zero-knowledge simulation of Boolean circuits. *Advances in cryptography—CRYPTO '86 (Santa Barbara, Calif., 1986)*, 223-233, *Lecture Notes in Comput. Sci.*, 263, Springer, Berlin-New York, 1987. (Melvin M. Sweet) 89c:94031 94A60 (68Q15, 94C05)
- (with Beauchemin, Pierre; Crépeau, Claude; Goutier, Claude) Two observations on probabilistic primality testing. *Advances in cryptography—CRYPTO '86 (Santa Barbara,*



- Calif., 1986), 443-450. *Lecture Notes in Comput. Sci.*, 263, Springer, Berlin-New York, 1987. (Carl Pomerance) **89c:11180** 11Y11
- ★ Modern cryptography. A tutorial. *Lecture Notes in Computer Science*, 325. Springer-Verlag, New York-Berlin, 1988. vi+107 pp. ISBN 0-387-96842-3 (Yvo Desmedt) **89k:94042** 94A60 (11T71, 68P25)
- (with Kannan, Sampath) The generation of random permutations on the fly. *Inform. Process. Lett.* **28** (1988), no. 4, 207-212. (Summary) **89b:68016** 68P05 (68Q20)
- (with Beauchemin, Pierre; Crépeau, Claude; Goutier, Claude; Pomerance, Carl) The generation of random numbers that are probably prime. *J. Cryptology* **1** (1988), no. 1, 53-64. (Sun Qi) **89g:11126** 11Y11 (11A51)
- (with Beauchemin, Pierre) A generalization of Hellman's extension to Shannon's approach to cryptography. *J. Cryptology* **1** (1988), no. 2, 129-131. (Summary) **89c:94041** 94A60 (94A15)
- (with Bennett, Charles H.; Robert, Jean-Marc) Privacy amplification by public discussion. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 210-229. (Thomas Beth) **89c:94028** 94A40 (94A13, 94A60)
- Brasselet, J.-P. (with Gonzalez-Sprinberg, Gerardo) Espaces de Thom et contre-exemples de J.-L. Verdier et M. Goresky. [Thom spaces and counterexamples of J.-L. Verdier and M. Goresky] *Bol. Soc. Brasil. Mat.* **17** (1986), no. 2, 23-50. (Summary) **89b:32031** 32C42 (14F99, 32C35, 57R20)
- (with Gonzalez-Sprinberg, Gerardo) Sur l'homologie d'intersection et les classes de Chern des variétés singulières (espaces de Thom, exemples de J.-L. Verdier et M. Goresky). [On the homology of intersection and Chern classes of singular varieties (Thom spaces, examples of J.-L. Verdier and M. Goresky)] With an appendix by Verdier. *Géométrie algébrique et applications, II (La Rabida, 1984)*, 5-14, *Travaux en Cours*, 23, Hermann, Paris, 1987. (Introduction) **89b:32030** 32C42 (14F99, 32C35, 57R20)
- Bratchikov, A. V. (with Deriazov, A. A.; Tyutin, I. V.)  $1/N$ -expansions in  $U(N) \times U(k)$ -invariant  $N \times k$  matrix chiral models ( $D = 2, 3$ ). (Russian. English summary) *Theoret. Mat. Fiz.* **75** (1988), no. 3, 361-370; translated in *Theoret. and Math. Phys.* **75** (1988), no. 3, 581-587. (Summary) **89g:81044** 81E13
- Bratichuk, N. S. Time of attainment of a level by a semicontinuous lattice walk on a countably valued Markov chain. (Russian) *Asymptotic methods in the investigation of stochastic models (Russian)*, 410, 142, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (N. H. Bingham) **89g:60113** 60J15
- Spectral properties of operators that are connected with walks on a countably-valued Markov chain. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 12, 39 pp. (Summary) **89d:60119** 60J10 (47B37)
- Some properties of the maximum and the minimum of a process with independent increments. (Russian) *Theory of random processes*, No. 16 (Russian), 14-18, 108, "Naukova Dumka", Kiev, 1988. (Jia Gang Wang) **89b:60146** 60J30
- Distribution of the absolute maximum and the magnitude of the jump for a process with independent increments. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 6, 7-10, 86. (Gh. Oprisan) **89m:60175** 60J30
- Some problems for random walks defined on a countable Markov chain. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 39 (1988), 18-23, 125. (Jörg-Uwe Löbus) **89g:60214** 60J15
- Some properties of a walk on an ergodic Markov chain. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 1, 25-31, 132; translated in *Ukrainian Math. J.* **40** (1988), no. 1, 20-24. (Serban Grigorescu) **89d:60117** 60J05
- Bratley, Paul (with Brassard, Gilles) ★ Algorithmique. (French) [Computer algorithms] Conception et analyse. [Design and analysis] *Manuels Informatiques Masson*. (Masson Data Processing Manuals) Masson, Paris; Presses de l'Université de Montréal, Montréal, PQ, 1987. xiv+344 pp. ISBN 2-225-80944-5 (Editors) **89d:68001** 68-01 (65-01)
- Brattelli, Ola (with Kishimoto, Akitsaki; Robinson, Derek W.) Embedding product type actions into  $C^*$ -dynamical systems. *J. Funct. Anal.* **75** (1987), no. 1, 188-210. (Hisashi Choda) **89c:46086** 46L55
- On some  $C^*$ -dynamical systems. *Miniconferences on harmonic analysis and operator algebras (Canberra, 1987)*, 4-7, *Proc. Centre Math. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (see **89c:00024**) 46L55 (22C05)
- Bratti, Giuliano Classification of the Hartogs domains  $A$  in  $C^2$  that satisfy the equation  $H^2(A, C) = 0$ . (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **79** (1985), no. 5, 68-74 (1986). (J. Kajiwara) **89b:32033** 32E15
- A generalization of the Komatsu-Kaneko cohomological theorem for the extension of solutions of partial differential equations to morphisms of sheaves of abelian groups. (Italian. English summary) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **11** (1987), no. 1, 237-241. (From the text) **89b:58191** 58G07 (35A27)
- On a theorem of Hartogs. (Italian) *Rend. Sem. Mat. Univ. Padova* **79** (1988), 59-70. (J. Kajiwara) **89i:32030** 32D20
- Bratus', A. S. (with Myshkis, A. D.) Extremum conditions in spectral isoperimetric problems with a varying boundary. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 12, 1790-1801, 1918. (Fred Tröltzsch) **89c:49016** 49B22 (35J40, 35P15, 93B60)
- Brauschli, H. (with Haas, R.) A combination of boundary elements with conformal mapping methods. *Boundary elements VII*, Vol. I, II (Como, 1985), 12.3-12.13, *Comput. Mech., Southampton*, 1985. (see **89f:65003**) 65E05
- Brauer, Alfred see Rohrbach, H. **89i:01102**
- Brauer, Fred Absolute stability in delay equations. *J. Differential Equations* **69** (1987), no. 2, 185-191. (R. S. Dahiya) **89b:34166** 34K20 (92A15)
- A class of Volterra integral equations arising in delayed-recruitment population models. *Natur. Resource Modeling* **2** (1987), no. 2, 259-278. (Pauline van den Driessche) **89c:92049** 92A15 (45D03, 45M10)
- Brauer, L. E. Ya. see Brauer, L. E. J.
- Brault, Pascal (with Vallée, Olivier; Nguyen Tran Minh) Nonperturbative uniform wavefunctions of coupled radial Schrödinger equations. *J. Phys. A* **21** (1988), no. 2, L67-L73. (Summary) **89d:81029** 81C12
- Braumann, Carlos A. Upper bound on the probability of extinction of a population with density-dependent growth in a random environment. (Portuguese. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2. (Spanish) (Badajoz, 1986), 368-374, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89g:92035** 92A15 (60H10)
- Estimating parameters and extinction probabilities in population stochastic differential equation models. *Biomathematics and related computational problems (Naples, 1987)*, 133-143, *Kluwer Acad. Publ., Dordrecht*, 1988. (B. Raja-Rao) **89k:92046** 92A15 (60H10)
- Braun, Amiram Localization in Noetherian p.i. rings as a finite criterion. *Israel J. Math.* **60** (1987), no. 1, 54-64. (G. Krause) **89c:16007** 16A08 (16A12, 16A33, 16A38)
- P.I. rings and the localization at height 1 prime ideals. *Israel J. Math.* **62** (1988), no. 1, 113-122. (Yu. N. Mal'tsev) **89k:16030** 16A38
- (with Warfield, R. B., Jr.) Symmetry and localization in Noetherian prime PI rings. *J. Algebra* **118** (1988), no. 2, 322-335. (Allen D. Bell) **89k:16031** 16A38 (16A08, 16A33)
- Braun, M. A. On the connection between a quasipotential equation and the Schrödinger equation. (Russian. English summary) *Teoret. Mat. Fiz.* **72** (1987), no. 3, 394-402. (Summary) **89b:81031** 81C05
- Braun, Rüdiger W. Linear topological structure of closed ideals in certain  $F$ -algebras. *Proc. Roy. Irish Acad. Sect. A* **87** (1987), no. 1, 35-44. (Daniel H. Luecking) **89d:46027** 46E10 (32E25, 46J99)
- Linear topological structure of closed ideals in weighted algebras of entire functions. *Arch. Math. (Basel)* **50** (1988), no. 3, 251-258. (Daniel H. Luecking) **89i:46060** 46J20 (32A15, 32E25, 32F05, 46E10)
- Brauner, Claude-Michel (with Bandle, C.) Singular perturbation method in a parabolic problem with free boundary. *BAIL IV (Novosibirsk, 1986)*, 7-14, *Boole Press Conf. Ser.*, 8, Boole, Dun Laoghaire, 1986. (Summary) **89f:35025** 35B25 (35K55, 35R35, 80A32)
- Brauner, Heinrich Die Drehflächen mit Böschungsschmiegenlinien. [The surfaces of revolution with osculating lines of constant slope] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **196** (1987), no. 4-7, 217-226. (Hans Robert Müller) **89i:53003** 53A05 (53A04)
- Brauns, Hans-Andreas On extensions of operator ideals to multi-ideals. (German and Russian summaries) *Wiss. Z. Pädagog. Hochschule "Karl Liebknecht" Potsdam* **31** (1987), no. 1, 139-143. (A. Pietsch) **89d:47104** 47D30 (46M05)
- Braunstein, Samuel L. (with Caves, Carlton M.) Information-theoretic Bell inequalities. *Phys. Rev. Lett.* **61** (1988), no. 6, 662-665. (T. W. Barrett) **89c:81006** 81B05 (94A15)
- Braverman, E. Ya. Solvability on the half-axis of some nonlinear integral equations with deviating argument. (Russian) *Boundary value problems (Russian)*, 30-33, 154-155, *Perm. Politekh. Inst., Perm*, 1984. (see **89b:00008**) 45G10
- Complete continuity of a linear operator in the space of step functions. (Russian) *Boundary value problems (Russian)*, 49-52, v, *Perm. Politekh. Inst., Perm*, 1986. (see **89c:00009**) 47B38
- Braverman, M. Sh. A method for the characterization of probability distributions. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 3, 552-556. (W. Bryc (Zbl 628:60022)) **89k:60018** 60E07
- Linear operators generated by random processes. (Russian) *Theory of random processes*, No. 16 (Russian), 7-13, 108, "Naukova Dumka", Kiev, 1988. (Dominique Lépine) **89i:60147** 60J30 (47B38)
- castañeda Bravo, Fernando see Castañeda Bravo, Fernando
- Brawley, J. V. (with Carlitz, L.) Irreducibles and the composed product for polynomials over a finite field. *Discrete Math.* **65** (1987), no. 2, 115-139. (Rex Matthews) **89g:11118** 11T06
- Bray, A. J. (with Rodgers, G. J.) Critical behaviour of Dyson's hierarchical model with a random field. *J. Phys. A* **21** (1988), no. 9, 2177-2185. (Roland Koberle) **89b:82008** 82A25 (82A68)
- (with Rodgers, G. J.) Density of states of a sparse random matrix. *Phys. Rev. B* (3) **37** (1988), no. 7, 3557-3562. (Summary) **89d:82054** 82A31
- (with Rodgers, G. J.) Diffusion in a sparsely connected space: a model for glassy relaxation. *Phys. Rev. B* (3) **38** (1988), no. 16, part A, 11461-11470. (Summary) **89j:82057** 82A57
- Dynamics of dilute magnets above  $T_c$ . *Phys. Rev. Lett.* **60** (1988), no. 8, 720-723. (Summary) **89a:82039** 82A68 (82A25)
- Bray, Marcel Cosmologies non homogènes et anisotropes correspondant à l'équation d'état  $p = p$ . (Italian summary) [Nonhomogeneous anisotropic cosmologies corresponding to the equation of state  $p = p$ ] *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **119** (1985), no. 5-6, 191-202 (1986). (Enric Verdaguer) **89b:83020** 83C15 (83C40, 83C55)
- Bray, William O. Asymptotic properties of the Radon transform in  $\mathbb{R}^n$ . *Publ. Inst. Math. (Beograd) (N.S.)* **40**(54) (1986), 87-98. (Bernad Droste) **89a:44006** 44A15
- Brazhnik, P. K. (with Davydov, V. A.; Mikhailov, A. S.) A kinematic approach to the description of autowave processes in active media. (Russian. English summary) *Teoret. Mat. Fiz.* **74** (1988), no. 3, 440-447; translated in *Theoret. and Math. Phys.* **74** (1988), no. 3, 300-306. (Summary) **89g:80012** 80A32 (76W05, 92A08)
- Brdička, Miroslav (with Hladík, Arnošt) ★ Teoretická mechanika. (Czech) [Theoretical mechanics] *Academia [Publishing House of the Czechoslovak Academy of Sciences], Prague*, 1987. 583 pp. (Jiří Nedoma) **89c:70002** 70-02
- Brdýs, M. (with Coulbeck, B.; Orr, C. H.; Rance, J. P.) A hierarchical approach to optimized control of water distribution systems. II. Lower-level algorithm. *Optimal Control Appl. Methods* **9** (1988), no. 2, 109-126. (Not in MR) **90A30** (49D29, 93A13, 93C75)
- Breakwell, John V. (with Chuang, Chien-Hsiung; Speyer, Jason L.) An asymptotic expansion for an optimal relaxation oscillator. *SIAM J. Control Optim.* **26** (1988), no. 3, 678-696. (Krystyn Styczeń) **89d:49037** 49D50 (34E10, 41A60)
- Brebbia, Carlos Alberto (with Nardini, D.) The solution of parabolic and hyperbolic problems using an alternative boundary element formulation. *Boundary elements VII*, Vol. I, II (Como, 1985), 3.87-3.97, *Comput. Mech., Southampton*, 1985. (see **89f:65003**) 65M99
- (with Telles, J. C. F.; Wrobel, L. C.) ★ Методы граничных элементов. (Russian) [Boundary element techniques] Translated from the English by L. G. Korneichuk. Translation edited and with a preface by E. I. Grigolyuk. "Mir", Moscow, 1987. 525 pp. (C. Illo) **89i:65002** 65-02 (65N30, 73-08, 73K25, 76-08)
- (with Tang, Wei Feng; Telles, J. C. F.) A generalized approach to transfer the domain integrals onto boundary ones for potential problems in BEM. *Boundary elements IX*, Vol. 1 (Stuttgart, 1987), 99-116, *Comput. Mech., Southampton*, 1987. (see **89c:00008**) 73-08
- (with Hayami, K.) A new coordinate transformation method for singular and nearly singular integrals over general curved boundary elements. *Boundary elements IX*, Vol. 1

- (Stuttgart, 1987), 375–399, *Comput. Mech.*, Southampton, 1987. (Summary) **89i:73005** 73–08 (73K25)
- (with Wrobel, L. C.) The solution of parabolic problems using the dual reciprocity boundary element. *Advanced boundary element methods* (San Antonio, Tex., 1987), 55–71, Springer, Berlin-New York, 1988. (G. T. Symm) **89b:65226** 65M60
- see also Betcher 86, 89a:73003; Doblaré, M. et al. **89b:65005**; Boundary elements, **89e:00008**, **89e:00009**, **89e:00010**, **89f:65003**; Computer methods and water resources, **89g:76003a**, **89g:76003b**, **89g:76003c**, **89g:76003d**; Computational methods in water resources, **89m:76002** and **89m:76003**
- Brechet, Y. (with Kirkaldy, J. S.) Contribution to the theory of diffusion-reaction controlled Liesegang patterns. *J. Chem. Phys.* **90** (1989), no. 3, 1499–1504. (Summary) **89k:80027** 80A32 (92A40)
- Brechner, Beverly L. (with Mayer, John C.) Antoine's necklace or how to keep a necklace from falling apart. *College Math. J.* **19** (1988), no. 4, 306–320. (Kenneth A. Perko, Jr.) **89i:57005** 57M30
- Brecht, Timothy B. (with Colbourn, Charles J.) Lower bounds on two-terminal network reliability. *Discrete Appl. Math.* **21** (1988), no. 3, 185–198. (J. J. Stiffler) **89m:68008** 68M15 (68R10, 90B25)
- Bredikhin, B. M. The smoothing method in additive problems with weight functions. (Russian) *Additive problems in number theory* (Russian), 3–7, Kulbyshev. Gos. Ped. Inst. Kuybyshev, 1985. (see **89f:11004**) 11P45
- (with Vladimirov, V. S.; Karatsuba, A. A.; Mishchenko, E. F.; Nikol'skii, S. M.) Aleksandr Fedorovich Lavrik (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 4(262), 237–238; translated in *Russian Math. Surveys* **43** (1988), no. 4, 245–247. (Editors) **89m:01079** 01A70
- see also Additive problems in number theory, **89f:11004**
- Bredon, Glen E. ★ Теория пучков. (Russian) [Sheaf theory] Translated from the English by A. Yu. Volovikov. Translation edited, with a preface and with an appendix by E. G. Sklyarenko. "Nauka", Moscow, 1988. 312 pp. (Editors) **89j:55006** 55N30 (55–02)
- Breen, L. Biextensions alternées. [Alternating biextensions] *Compositio Math.* **63** (1987), no. 1, 99–122. (V. Cristante) **89i:14059** 14K05
- Breen, Marilyn *j*-partitions for visible shorelines. *Aequationes Math.* **36** (1988), no. 2–3, 201–211. (John D. Baildon) **89j:52007** 52A35 (52A30)
- Some Krasnosel'skii numbers for finitely starlike sets in the plane. *J. Geom.* **32** (1988), no. 1–2, 1–12. (John D. Baildon) **89i:52010** 52A30 (52A35)
- *k*-partitions and a characterization for compact unions of *k* starshaped sets. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 677–680. (John D. Baildon) **89e:52017** 52A30 (52A35)
- A weak Krasnosel'skii theorem in  $\mathbb{R}^d$ . *Proc. Amer. Math. Soc.* **104** (1988), no. 2, 558–562. (John D. Baildon) **89i:52011** 52A35 (52A30)
- Breen, P. (with Henderson, W.) Dominated strategies in searching for evolutionary stable strategies. *J. Austral. Math. Soc. Ser. B* **30** (1988), no. 2, 214–219. (Peter D. Taylor) **89h:90283** 90D40 (92A12, 92A15, 92A18)
- Brefort, B. (with Ghidaglia, Jean-Michel; Temam, Roger) Attractors for the penalized Navier-Stokes equations. *SIAM J. Math. Anal.* **19** (1988), no. 1, 1–21. (Athanasios Cotsiolis) **89b:35135** 35Q10 (58F12, 65P05, 76D05)
- Brigman, L. M. (with Fokin, I. N.) Methods for determining equilibrium states in polymatrix games with zero sum. (Russian) *Optimizatsiya* No. 40(57) (1987), 70–82, 160. (F. Szidarovszky) **89f:90204** 90D10 (90C05)
- Bregman, Z. (with Alon, Noga) Every 8-uniform 8-regular hypergraph is 2-colorable. *Graphs Combin.* **4** (1988), no. 4, 303–305. (R. H. Schelp) **89j:05053** 05C65 (05C15)
- Bregola, M. (with Bonora, L.; Lechner, K.; Pasti, P.; Tonin, M.) Anomaly-free supergravity and super-Yang-Mills theories in ten dimensions. *Nuclear Phys. B* **296** (1988), no. 4, 877–901. (Paul Howe) **89c:83050** 83E50 (81E30, 81G20, 83E30)
- (with Bonora, L.; Cotta-Ramusino, P.; Martellini, M.) Virasoro-type algebras and BRST operators on Riemann surfaces. *Phys. Lett. B* **205** (1988), no. 1, 53–56. (Summary) **89d:17020** 17B65 (32G15, 81E99)
- Bregvadze, D. V. Convergence of subsequences of partial sums of multiple orthogonal series. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **129** (1988), no. 2, 245–247. (Summary) **89j:42011** 42B05
- Summability of multiple orthogonal series by a Cesàro method of mixed type. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **131** (1988), no. 1, 21–24. (Summary) **89k:42012** 42B05 (42A24)
- Brehm, Ulrich Maximally symmetric polyhedral realizations of Dyck's regular map. *Mathematika* **34** (1987), no. 2, 229–236. (J. M. Wills) **89b:52011** 52A25 (51M20, 52A37, 57M20)
- A maximally symmetric polyhedron of genus 3 with 10 vertices. *Mathematika* **34** (1987), no. 2, 237–242. (J. M. Wills) **89b:52012** 52A25 (51M20, 52A37, 57M20)
- Representation of homomorphisms between submodule lattices. *Resulata Math.* **12** (1987), no. 1–2, 62–70. (Victor Camillo) **89a:16035** 16A52 (06F99, 16A89)
- (with Kühnel, Wolfgang) Combinatorial manifolds with few vertices. *Topology* **26** (1987), no. 4, 465–473. (T. Banchoff) **89c:57022** 57Q15
- Breider, Wolfgang Berkeleys Kritik an der Infinitesimalrechnung. [Berkeley's critique of the infinitesimal calculus] 300 Jahre Nova methodus von G. W. Leibniz (1684–1984) (Noordwijkerhout, 1984), 185–191, *Studia Leibnitiana Sonderheft*, 14, Steiner, Wiesbaden, 1986. (L. Grattan-Guinness) **89i:01043** 01A50 (26–03)
- Breier, Peter see Breuer, Peter
- Breiman, Leo see Loh, Wei-Yin, **89j:62078**
- Breil, W. (with Leitmann, G.) State feedback for uncertain dynamical systems. *Appl. Math. Comput.* **22** (1987), no. 1, 65–87. (Chao Shun Zhou) **89a:93041** 93D15 (49D27, 93B07, 93B35, 93B50, 93C40)
- Breit, William see Lives of the laureates, **89d:01074**
- Breitenecker, F. (with Peschel, M.; Mende, W.; Kopacek, P.) Adaptive control and growth processes. *Modelling and adaptive control* (Sopron, 1986), 281–296, *Lecture Notes in Control and Inform. Sci.*, 105, Springer, Berlin-New York, 1988. (see **89c:93002**) 93C40 (92A17, 93A10)
- Breitenlohner, Peter  $N = 2$  supersymmetric Yang-Mills theories in the Wess-Zumino gauge. *Renormalization of quantum field theories with nonlinear field transformations* (Tegernsee, 1987), 64–80, *Lecture Notes in Phys.*, 303, Springer, Berlin-New York, 1988. (see **89g:81058**) 81E15 (81E13)
- (with Maison, Dieter; Gibbons, Gary) 4-dimensional black holes from Kaluza-Klein theories. *Comm. Math. Phys.* **120** (1988), no. 2, 295–333. (K. P. Tod) **89j:83018** 83C20 (83E15)
- see also Renormalization of quantum field theories with nonlinear field transformations, **89g:81058**
- Breitung, Karl Asymptotic crossing rates for stationary Gaussian vector processes. *Stochastic Process. Appl.* **29** (1988), no. 2, 195–207. (Georg Lindgren) **89b:60061** 60G15
- Brekho, O. M. (with Karshiev, A. Sh.) An exponential two-node multiphase queueing system with loss of customers. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 11, 103–110. (Summary) **89f:60107** 60K25 (90B22)
- Brekke, Lee (with Freund, Peter G. O.; Olson, Mark; Witten, Edward) Non-Archimedean string dynamics. *Nuclear Phys. B* **302** (1988), no. 3, 365–402. (Marc Henneaux) **89k:81131** 81E99 (81E30)
- Brelot, Marcel Quelques aspects mathématiques de la lutte pour la vie. [Some mathematical aspects of the struggle for life] *Actes du 112<sup>e</sup> Congrès National des Sociétés Savantes* (Lyon, 1987), 103–108, *Com. Trav. Hist. Sci., Paris*, 1987. (From the text) **89k:92047** 92A15
- see also Kral, Josef et al., **89h:01071** and Monna, A. F., **89h:01076**
- Bremaud, P. ★ An introduction to probabilistic modeling. Undergraduate Texts in Mathematics. Springer-Verlag, New York-Berlin, 1988. xvi+207 pp. ISBN 0-387-96460-6 (Andrew D. Barbour) **89i:60001** 60–01 (00A71)
- An averaging principle for filtering a jump process with point process observations. *IEEE Trans. Inform. Theory* **34** (1988), no. 3, 582–586. (Paul I. Nelson) **89i:62157** 62M20 (60G35, 93E10, 93E11)
- Bremner, A. On Euler's quartic surface. *Math. Scand.* **61** (1987), no. 2, 165–180. (D. J. Lewis) **89j:11026** 11D41 (11D72, 11G35, 14G25, 14J20)
- On power bases in cyclotomic number fields. *J. Number Theory* **28** (1988), no. 3, 288–298. (L. Skula) **89d:11092** 11R18
- On diagonal cubic surfaces. *Manuscripta Math.* **62** (1988), no. 1, 21–32. (D. J. Lewis) **89k:11013** 11D25 (11D72, 11G35, 14G25, 14J20)
- The rational cuboid and a quartic surface. *Rocky Mountain J. Math.* **18** (1988), no. 1, 105–121. (Edward L. Cohen) **89c:11041** 11D09 (11E25, 11G99, 14J20)
- Brenan, Kathryn E. (with Engquist, Björn) Backward differentiation approximations of nonlinear differential/algebraic systems. *Math. Comp.* **51** (1988), no. 184, 659–676, S7–S16. (Summary) **89a:65102** 65L05
- Brendel, Volker (with Perelson, Alan S.) Kinetic analysis of adsorption processes. *SIAM J. Appl. Math.* **47** (1987), no. 6, 1306–1319. (Matthew Witten) **89f:92007** 92A07
- Brene, N. (with Bennett, D. L.; Nielsen, Holger Bech) Random dynamics. *Unification of fundamental interactions* (Marstrand, 1986), 158–163, *Royal Swedish Acad. Sci., Stockholm*, 1987. (see **89f:81005**) **82A57** (81G20, 82A41, 83F05)
- Brenier, Yann Décomposition polaire et réarrangement monotone des champs de vecteurs. (English summary) [Polar decomposition and increasing rearrangement of vector fields] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 19, 805–808. (Robert McOwen) **89b:58226** 58G30 (26A48, 28D05, 35J60, 49A34, 58A12)
- (with Osher, Stanley) The discrete one-sided Lipschitz condition for convex scalar conservation laws. *SIAM J. Numer. Anal.* **25** (1988), no. 1, 8–23. (Summary) **89a:65134** 65M10 (65M05)
- Brenig, L. Complete factorisation and analytic solutions of generalized Lotka-Volterra equations. *Phys. Lett. A* **133** (1988), no. 7–8, 378–382. (L. E. Bobisud) **89j:92050** 92A15 (34A05, 34C20)
- Brennan, James E. Functions with rapidly decreasing negative Fourier coefficients. *Complex analysis, I* (College Park, Md., 1985–86), 31–43, *Lecture Notes in Math.*, 1275, Springer, Berlin-New York, 1987. (S. M. Shah) **89c:42004** 42A16 (42A32)
- Brennan, Joseph P. (with Wolfskill, J.) Remarks: "On the probability that the determinant of an  $n \times n$  matrix over a finite field vanishes" [Discrete Math. **51** (1984), no. 3, 311–315; MR **86i:50121**] by A. Mukhopadhyay. *Discrete Math.* **67** (1987), no. 3, 311–313. (George E. Andrews) **89c:15021** 15A33 (15A15, 60C05)
- (with Herzog, Jürgen; Ulrich, Bernd) Maximally generated Cohen-Macaulay modules. *Math. Scand.* **61** (1987), no. 2, 181–203. (Matthew Miller) **89j:13027** 13H15 (13C13, 13H10)
- Brennan, Michael J. (with Schwartz, Eduardo S.) Time-invariant portfolio insurance strategies. *J. Finance* **43** (1988), no. 2, 283–299. (Summary) **89c:90014** 90A09
- Brennen, Christopher E. (with d'Agostino, Luca; Acosta, Allan J.) Linearized dynamics of two-dimensional bubbly and cavitating flows over slender surfaces. *J. Fluid Mech.* **192** (1988), 485–509. (Summary) **89m:76065** 76T05 (76B10)
- (with d'Agostino, Luca) Linearized dynamics of spherical bubble clouds. *J. Fluid Mech.* **199** (1989), 155–176. (Not in MR) **76T05**
- Brenner, D. (with Hagan, P. S.) Sorption limits with increasing diffusion coefficients. *SIAM J. Appl. Math.* **48** (1988), no. 4, 917–920. (Summary) **89d:80012** 80A20
- Brenner, Howard (with Falade, Adebawale) First-order wall curvature effects upon the Stokes resistance of a spherical particle moving in close proximity to a solid wall. *J. Fluid Mech.* **193** (1988), 533–568. (Summary) **89k:76044** 76D99 (76T05, 76W05)
- (with Nitsche, Ludwig C.; Nitsche, Johannes M.) Existence, uniqueness and regularity of a time-periodic probability density distribution arising in a sedimentation-diffusion problem. *SIAM J. Math. Anal.* **19** (1988), no. 1, 153–166. (Ervin Schechter) **89c:35074** 35K20 (35B10, 80A20)
- (with Koch, Donald L.; Cox, Raymond G.; Brady, John F.) The effect of order on dispersion in porous media. *J. Fluid Mech.* **200** (1989), 173–188. (Summary) **89m:76063** 76S05 (76R50, 82A42, 82A57)
- Brenner, Susanne C. An optimal-order multigrid method for P1 nonconforming finite elements. *Math. Comp.* **52** (1989), no. 185, 1–15. (Hong Ci Huang) **89f:65119** 65N30 (65F10)
- Brenner, Terence The spectra of certain elliptic operators in  $\mathbb{R}^N$ . *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 424–428. (Robert M. Kauffman) **89k:35162** 35P05 (35J30, 47F05)
- Brensted, A. see Brøndsted, Arne
- Brent, Richard P. (with Bojanicz, A.; Van Dooren, Paul; de Hoog, F.) Downdating the Cholesky factorization. *Algorithms and applications on vector and parallel computers* (Amsterdam, 1985–86), 307–323, *Special Topics Supercomput.*, 3, North-Holland, Amsterdam-New York, 1987. (Summary) **89i:65042** 65F30 (65W05)



- (with Cohen, Graeme L.) A new lower bound for odd perfect numbers. *Math. Comp.* 53 (1989), no. 187, 431–437, S7–S24. (Samuel S. Wagstaff, Jr.) **89m:11008** 11A25 (11Y05, 11Y70)
- Brentano, Franz** ★ Philosophical investigations on space, time and the continuum. Translated from the German and with a note by Barry Smith. Edited and with an introduction by Stephan Körner and Roderick M. Chisholm. With notes by Alfred Kastil. *Croom Helm, London*, 1988. xxvi+202 pp. ISBN 0-7099-4476-4 (Lawrence Sklar) **89c:01051** 01A75 (00A25, 03-03)
- Brentjes, Sonja** Untersuchungen zum Nicomachus Arabus. [Investigations on Arabic versions of Nicomachos] *Centaurus* 30 (1987), no. 3, 212–239 (1988). (Jan P. Hogendijk) **89f:01010** 01A30 (01A20)
- Die ersten sieben vollkommenen Zahlen und drei Arten befreundeter Zahlen in einem Werk zur elementaren Zahlentheorie von Isma'il b. Ibrahim b. Fallus. [The first seven perfect numbers and three kinds of amicable numbers in a work on elementary number theory by Isma'il b. Ibrahim ibn Fallus] *NTM Schr. Geschichte Natur. Tech. Medizin* 24 (1987), no. 1, 21–30. (Y. Dold) **89f:01011** 01A30
- Brenton, Lawrence** (with Hill, Richard) On the Diophantine equation  $1 = \sum 1/n_i + 1/\prod n_i$  and a class of homologically trivial complex surface singularities. *Pacific J. Math.* 133 (1988), no. 1, 41–67. (P. Orlik) **89d:32023** 32C40 (14B05, 32B30)
- Breton, M. G.** (with Butler, Clare) A topological problem in polymer physics: configurational and mechanical properties of a random walk enclosing a constant area. *J. Phys. A* 20 (1987), no. 12, 3955–3968. (Cheng Xun Wu) **89d:82092** 82A51 (82A41)
- Breker, M.** (with Vukman, J.) Jordan derivations on prime rings. *Bull. Austral. Math. Soc.* 37 (1988), no. 3, 321–322. (Andrzej Nowicki) **89f:16049** 16A72 (16A12)
- Jordan derivations on semiprime rings. *Proc. Amer. Math. Soc.* 104 (1988), no. 4, 1003–1006. (Jaroslav Zemánek) **89d:16004** 16A12 (16A72, 46H99)
- Breslow, N. E.** (with Cain, K. C.) Logistic regression for two-stage case-control data. *Biometrika* 75 (1988), no. 1, 11–20. (Summary) **89j:62139** 62P10
- Bressan, Alberto** On differential systems with impulsive controls. (Italian summary) *Rend. Sem. Mat. Univ. Padova* 78 (1987), 227–235. (Pradeep Misra) **89d:93065** 93C57 (34H05, 49B36)
- (with Rampazzo, Franco) On differential systems with vector-valued impulsive controls. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 2 (1988), no. 3, 641–656. (D. Bainov) **89j:93078** 93C57 (34H05)
- Contractive metrics for nonlinear hyperbolic systems. *Indiana Univ. Math. J.* 37 (1988), no. 2, 409–421. (Alain Bachelot) **89m:35136** 35L65 (35L60)
- Nonexistence of solutions for differential inclusions with upper semicontinuous nonconvex right-hand side. *Rend. Sem. Mat. Univ. Padova* 79 (1988), 297–299. (Not in MR) **49A50** (34A60)
- (with Colombo, Giovanni) Extensions and selections of maps with decomposable values. *Studia Math.* 90 (1988), no. 1, 69–86. (Michel Valadier) **89j:54021** 54C65 (46E40, 47H99, 54C20, 54C60)
- (with Cellina, Arrigo; Colombo, Giovanni) Upper semicontinuous differential inclusions without convexity. *Proc. Amer. Math. Soc.* 106 (1989), no. 3, 771–775. (Zvi Artstein) **89m:34023** 34A60 (49E10)
- Bressan, Aldo** On the logic of senses. An anomalous use of belief sentences. Its rigorous and formal treatment. *Proceedings of the conferences on mathematical logic, Vol. 3 (Italian) (Siena, 1985; Padova, 1985; and Siena, 1986)*, 137–165. *Univ. Siena, Siena*, 1987. (Mieczysław Omyła) **89a:03029** 03B45 (03B65)
- (with Bebernes, J.; Lacey, A.) Total blow-up versus single point blow-up. *J. Differential Equations* 73 (1988), no. 1, 30–44. (Victor A. Galaktionov) **89g:35019** 35B40 (35K55)
- Bressloff, P. C.** (with Taylor, John G.; Restuccia, A.) A functional light-cone gauge construction of a bosonic string compactified on a torus. *Internat. J. Modern Phys. A* 3 (1988), no. 2, 451–486. (Marc Henneaux) **89j:81164** 81E99 (81E30)
- Bresson, Denis** Petite bibliographie sur "la théorie du mesurage". [Short bibliography on the "theory of measurement"] *Math. Sci. Humaines* No. 101 (1988), 73–74. (Editors) **89f:92064** 92A25
- Bressoud, D. M.** Definite integral evaluation by enumeration, partial results in the Macdonald conjectures. *Combinatoire énumérative (Montréal, Qué., 1985/Québec, Qué., 1985)*, 48–57. *Lecture Notes in Math.*, 1234. Springer, Berlin-New York, 1986. (Laurent Habsieger) **89f:05011** 05A15 (05A30)
- Colored tournaments and Weyl's denominator formula. *European J. Combin.* 8 (1987), no. 3, 245–255. (Ira Gessel) **89a:05068** 05C20 (05A19)
- (with Andrews, G. E.; Baxter, Rodney James; Burge, W. H.; Forrester, P. J.; Viennot, Gérard) Partitions with prescribed hook differences. *European J. Combin.* 8 (1987), no. 4, 341–350. (Peter Paule) **89g:05014** 05A30 (82A69)
- The Bailey lattice: an introduction. *Ramanujan revisited (Urbana-Champaign, Ill., 1987)*, 57–67. Academic Press, Boston, MA, 1988. (Ira Gessel) **89f:05018** 05A30 (33A30)
- Bretagnolle, Jean** Hétérogénéité et information de Kullback. (English summary) [Heterogeneity and Kullback's information] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 14, 787–790. (J. Aczél) **89k:94026** 94A17 (60E15)
- Le Breton, Alain** see Le Breton, Alain
- Breton, M.** (with Ali, A.; Haurie, A.) Sequential Stackelberg equilibria in two-person games. *J. Optim. Theory Appl.* 59 (1988), no. 1, 71–97. (G. P. Papavasiliopoulos) **89j:90278** 90D03 (90D15, 93A13)
- Bretón, Nora** see Bretón Baez, Nora
- Breton, Pierre** (with Tremblay, André-Marie Séguin; Fourcade, Bertrand) Famille d'exposants pour les propriétés électriques des fractals. (English summary) [Family of exponents for the electrical properties of fractals] *Ann. Sci. Math. Québec* 11 (1987), no. 1, 183–204. (Hanna Nencka) **89b:82067** 82A43 (11K55, 26A30, 58F19, 58G25, 60K35)
- (with Fourcade, Bertrand; Tremblay, André-Marie Séguin) Multifractals and critical phenomena in percolating networks: fixed point, gap scaling, and universality. *Phys. Rev. B* (3) 36 (1987), no. 16, 8925–8928. (Summary) **89b:82064** 82A43 (26A18, 58F11, 58F14)
- Bretón Baez, Nora** (with García Díaz, Alberto; Hauser, Isidore) Stationary axisymmetric solutions in the vacuum Jordan-Brans-Dicke theory. *Internat. J. Theoret. Phys.* 27 (1988), no. 5, 635–640. (Kenneth Dunn) **89f:83075** 83D05
- Bretteville, Jacques** (with Mauss, Jacques) Ecoulement d'un fluide newtonien dans une conduite pour de grands nombres de Reynolds. (English summary) [Pipe flow of a Newtonian fluid at high Reynolds number] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* 306 (1988), no. 13, 859–862. (Summary) **89c:76051** 76D15
- Breuer, M. A.** (with Chowdhury, Salim U.) Optimization algorithms for a class of nonlinear programming problems. *Comput. Math. Appl.* 15 (1988), no. 3, 175–184. (Summary) **89b:90179** 90C30
- Breuer, P. T.** A new method for real rational uniform approximation. *Algorithms for approximation (Shrivenham, 1985)*, 265–283. *Inst. Math. Appl. Conf. Ser. New Ser.*, 10. Oxford Univ. Press, New York, 1987. (Darrell Schmidt) **89b:65044** 65D15 (41A20)
- Breuer, Peter** Local limit theorems for functionals in the conditional invariance principle. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 158 (1987), *Probl. Teor. Veroyatn. Raspred. X*, 32–38, 169; translated in *J. Soviet Math.* 43 (1988), no. 6, 2764–2768. (Yu. S. Mishura) **89b:60085** 60F17 (60G60)
- Breusch, Trevor S.** Maximum likelihood estimation of random effects models. *J. Econometrics* 36 (1987), no. 3, 383–389. (Jacob Paroush) **89b:62216** 62P20
- (with Schmidt, Peter Joseph) Alternative forms of the Wald test: how long is a piece of string? *Comm. Statist. Theory Methods* 17 (1988), no. 8, 2789–2795. (J. A. Melamed) **89m:62019** 62F03
- Brevdo, Leonid** A study of absolute and convective instabilities with an application to the Eady model. *Geophys. Astrophys. Fluid Dynamics* 40 (1988), no. 1–2, 1–92. (H. Tasso) **89c:76063** 76E20
- Brevik, I.** Phenomenological electrodynamics in curvilinear space, with application to Rindler space. *J. Math. Phys.* 28 (1987), no. 9, 2241–2249. (A. O. Barut) **89b:78016** 78A99
- Higher-order correction to the Casimir force on a compact ball when  $\epsilon\mu = 1$ . *J. Phys. A* 20 (1987), no. 15, 5189–5198. (A. O. Barut) **89b:81241** 81G10 (81E99)
- (with Einevoll, G.) Casimir force on a solid ball when  $\epsilon(\omega)\mu(\omega) = 1$ . *Phys. Rev. D* (3) 37 (1988), no. 10, 2977–2989. (Summary) **89c:81192** 81G10
- Brew, J. S.** Competition and niche dynamics from steady-state solutions of dispersal equations. *Theoret. Population Biol.* 32 (1987), no. 2, 240–261. (Werner Timischl) **89d:92077** 92A17
- Brewer, James W.** (with Klingler, Lee) Pole shifting for families of systems: the dimension one case. *Math. Control Signals Systems* 1 (1988), no. 3, 285–292. (Mikolaj Buslowicz) **89k:93047** 93B25 (93B55, 93C05)
- Brewer, K. R. W.** (with Hanif, Muhammad; Tam, S. M.) How nearly can model-based prediction and design-based estimation be reconciled? *J. Amer. Statist. Assoc.* 83 (1988), no. 401, 128–132. (K. R. Shah) **89j:62084** 62J05
- Brewin, Leo** A continuous time formulation of the Regge calculus. *Classical Quantum Gravity* 5 (1988), no. 6, 839–847. (Ruth M. Williams) **89b:83029** 83C99 (83C27)
- The Riemann and extrinsic curvature tensors in the Regge calculus. *Classical Quantum Gravity* 5 (1988), no. 9, 1193–1203. (Ruth M. Williams) **89m:83064** 83C99 (83C27)
- The Gauss-Codazzi (Codazzi) equation on a Regge spacetime. *Classical Quantum Gravity* 5 (1988), no. 9, 1205–1213. (Ruth M. Williams) **89m:83065** 83C99 (83C27)
- An application of a first-order formulation of the Regge calculus. *Gen. Relativity Gravitation* 20 (1988), no. 4, 383–393. (Matthias Zähringer) **89c:83025** 83C25 (83C27)
- Brezhnev, A. L.** (with Chernov, I. A.) On transonic expansions. *J. Appl. Math. Mech.* 51 (1987), no. 4, 537–539 (1988); translated from *Fizmat. Mekh.* 51 (1987), no. 4, 688–690 (Russian). (Not in MR) **76H05**
- Brezin, E.** (with Schulz, U.; Villain, J.; Orland, H.) Thermal fluctuations in some random field models. *J. Statist. Phys.* 51 (1988), no. 1–2, 1–27. (Aernout C. D. van Enter) **89i:82045** 82A42 (82A57)
- Brezinski, Claude** Partial Padé approximation. *J. Approx. Theory* 54 (1988), no. 2, 210–233. (A. J. Rodrigues) **89b:41040** 41A21 (41A20)
- Other manifestations of the Schur complement. *Linear Algebra Appl.* 111 (1988), 231–247. (G. Mühlbach) **89k:15009** 15A15
- see also Delahaye, Jean-Paul, **89j:65003**
- Brezis, Halm** (with Atkinson, Frederick V.; Peletier, L. A.) Solutions d'équations elliptiques avec exposant de Sobolev critique qui changent de signe. (English summary) [Nodal solutions of elliptic equations with critical Sobolev exponents] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 16, 711–714. (J.-P. Gossez) **89k:35088** 35J65 (35B40)
- see also Nonlinear partial differential equations and their applications. Collège de France seminar, **89a:35006**; Biography: Brezis, Halm R., **89b:01089** and Nonlinear partial differential equations and their applications. Collège de France Seminar, **89j:35008**
- Brezmes Brezmes, T.** (with Gil, María Angeles; Gil Álvarez, Pedro Ángel) Variance as an unquietness measure in the two-dimensional case. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 81 (1987), no. 1, 91–101. (Summary) **89a:62013** 62A99 (62B10)
- Brezuleanu, Alexandru** (with Ionescu, Cristodor) "Good" Noetherian rings. *Proceedings of the Conference on Algebra (Romanian) (Timișoara, 1986)*, 1–4. *Univ. Timișoara, Timișoara*, 1987. (Daniel D. Anderson) **89i:13020** 13E05 (13-02, 13H99)
- Brezzi, F.** New applications of mixed finite element methods. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 1335–1347. *Amer. Math. Soc., Providence, RI*, 1987. (C. Phillips) **89d:65098** 65N30
- A survey of mixed finite element methods. *Finite elements (Hampton, VA, 1986)*, 34–49. *ICASE/NASA LaRC Ser., Springer, New York-Berlin*, 1988. (I. Christie) **89m:65099** 65N30
- (with Douglas, Jim, Jr.) Stabilized mixed methods for the Stokes problem. *Numer. Math.* 53 (1988), no. 1–2, 225–235. (R. N. Pandey) **89g:65138** 65N30 (76-08, 76D07)
- Briançon, J.** (with Granger, M.; Maisonne, Philippe) Le nombre de modules du germe de courbe plane  $x^a + y^b = 0$ . [The number of moduli of the plane curve germ  $x^a + y^b = 0$ ] *Math. Ann.* 279 (1988), no. 3, 535–551. (Gerhard Pfister) **89c:14001** 14B05 (32B30)
- Brianzi, P.** (with Bertero, M.; Pike, E. R.; Reboli, L.) Linear regularizing algorithms for positive solutions of linear inverse problems. *Proc. Roy. Soc. London Ser. A* 415 (1988), no. 1849, 257–275. (P. M. Gupta) **89c:65053** 65J10 (35R30, 45B05, 65Rxx)
- Brickell, Ernie F.** (with Wei, V. K.) Optical orthogonal codes and cyclic block designs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 175–192. (Barbu C. Kestenband) **89d:05024** 05B05 (94B60)
- Brickmann, Jürgen** (with Yurtsever, Ersin) Computationally induced "irregularity" in the spectra of integrable quantum systems. *Phys. Rev. A* (3) 38 (1988), no. 2, 1027–1035. (Jean-Paul Marchand) **89j:81071** 81C99 (58F13, 81-04)
- Bricmont, J.** (with Lebowitz, Joel L.; Maes, Christian) Percolation in strongly correlated systems: the massless Gaussian field. *J. Statist. Phys.* 48 (1987), no. 5–6, 1249–1268. (H.

- Kesten) **89c:82040** 82A43 (60K35)
- (with Kupiainen, A.) The renormalization group and the random field Ising model. *Mathematical quantum field theory and related topics (Montreal, PQ, 1987)*, 15–27, *CMS Conf. Proc.*, 9, Amer. Math. Soc., Providence, RI, 1988. (Summary) **89i:82083** 82A68 (82A25)
- (with Kupiainen, A.) Phase transition in the 3d random field Ising model. *Comm. Math. Phys.* **116** (1988), no. 4, 539–572. (Tony C. Dorlas) **89b:82007** 82A25 (82A68)
- Bricogne, G. A Bayesian statistical theory of the phase problem. I. A multichannel maximum-entropy formalism for constructing generalized joint probability distributions of structure factors. *Acta Cryst. Sect. A* **44** (1988), no. 4, 517–545. (E. E. Tareeva) **89c:82054** 82A60 (82A75)
- Bridger, Jacob (with Sidi, Avram) Convergence and stability analyses for some vector extrapolation methods in the presence of defective iteration matrices. *J. Comput. Appl. Math.* **22** (1988), no. 1, 35–61. (Paul S. Jensen) **89i:65038** 65F10 (65F15)
- Bridger, Mark Looking at the Mandelbrot set. *College Math. J.* **19** (1988), no. 4, 353–363. (Editors) **89i:58058** 58F08
- Bridges, Douglas S. A constructive Morse theory of sets. *Mathematical logic and its applications (Dziedica, 1986)*, 61–79, Plenum, New York-London, 1987. (Wim Veldman) **89a:03059** 03F65 (03E30)
- The Euclidean distance construction of order homomorphisms. *Math. Social Sci.* **15** (1988), no. 2, 179–188. (Hiroaki Osana) **89g:90037** 90A10 (90A06)
- Bridges, Thomas J. Strong internal resonance,  $Z_2 \otimes Z_2$  symmetry, and multiple periodic solutions. *SIAM J. Math. Anal.* **19** (1988), no. 5, 1015–1031. (M. J. Sewell) **89j:58027** 58F05 (34C25, 34D20, 58F35, 70K20)
- Briem, Eggert Simplicial function spaces. *Exposition. Math.* **6** (1988), no. 1, 91–95. (Francesco Altomare) **89c:46035** 46E15 (46A55)
- Briere, Christian (with Goodwin, Brian) Geometry and dynamics of tip morphogenesis in *Acetabularia*. *J. Theoret. Biol.* **131** (1988), no. 4, 461–475. (Summary) **89b:92013** 92A09 (92A06)
- Briere, G. (with Chaudhry, M. L.; Madill, B. R.) Computational analysis of steady-state probabilities of  $M/G^{2p}/1$  and related nonbulk queues. *Queueing Systems Theory Appl.* **2** (1987), no. 2, 93–114. (Summary) **89g:60278** 60K25 (90B22)
- (with Chaudhry, M. L.) Computational analysis of single-server bulk-arrival queues:  $GI^X/M/1$ . *Queueing Systems Theory Appl.* **2** (1987), no. 2, 173–185. (B. R. K. Kashyap) **89c:60102** 60K25 (90B22)
- (with Chaudhry, M. L.) Computational analysis of single-server bulk-arrival queues  $M^X/G/1$ . *Comput. Oper. Res.* **15** (1988), no. 3, 283–292. (Summary) **89d:90100** 90B22
- Brierley, S. D. (with Lee, E. B.) Coefficient assignment for generalized linear systems. (Russian and Polish summaries) *Systems Sci.* **11** (1985), no. 2, 5–18 (1987). (Andrzej W. Olbrot) **89b:93040** 93B25 (34K35, 93B55)
- Briet, Ph. (with Combes, J. M.; Duclos, P.) Spectral properties of Schrödinger operators with trapping potentials in the semiclassical limit. *Differential equations and mathematical physics (Birmingham, Ala., 1986)*, 55–72, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Shu Nakamura) **89a:35150** 35P05 (35J10, 81C10, 81C99)
- (with Combes, J. M.; Duclos, P.) On the location of resonances for Schrödinger operators in the semiclassical limit. II. Barrier top resonances. *Comm. Partial Differential Equations* **12** (1987), no. 2, 201–222. (Arne Jensen) **89c:81028b** 81C15 (35J10, 47F05)
- (with Combes, J. M.; Duclos, P.) On the location of resonances for Schrödinger operators in the semiclassical limit. I. Resonances free domains. *J. Math. Anal. Appl.* **126** (1987), no. 1, 90–99. (Arne Jensen) **89c:81028a** 81C15 (35J10, 47F05)
- (with Combes, J. M.; Duclos, P.) Erratum for: "On the location of resonances for Schrödinger operators in the semiclassical limit. II. Barrier top resonances". *Comm. Partial Differential Equations* **13** (1988), no. 3, 377–381. (Arne Jensen) **89c:81028c** 81C15 (35J10, 47F05)
- Brietze, Eduardo (with Nowosad, Pedro) Mathematical aspects of the minimum critical mass problem. *Partial differential equations (Rio de Janeiro, 1986)*, 53–64, *Lecture Notes in Math.*, 1324, Springer, Berlin-New York, 1988. (Cor van der Mee) **89i:82111** 82A75 (82A70)
- Brieux, Alain see Pouille, Emmanuel, **89j:01065**
- le Brigand, D. see Le Brigand, D.
- Briggs, G. A. D. (with Tew, R. H.; Ockendon, J. R.) Acoustical scattering by a shallow surface-breaking crack in an elastic solid under light fluid loading. *Recent developments in surface acoustic waves (Nottingham, 1987)*, 309–316, *Springer Ser. Wave Phenomena*, 7, Springer, Berlin-New York, 1988. (Summary) **89i:76085** 76Q05 (73D25, 73J06)
- Briggs, Hugh (with Berry, Steven) A nonparametric test of a first-order Markov process for regimes in a noncooperatively collusive industry. *Econom. Lett.* **27** (1988), no. 1, 73–77. (Title) **89i:62139** 62M02 (62G10)
- Briggs, Keith An exact solution of the relativistic two-body problem with scalar interaction. *J. Phys. A* **21** (1988), no. 8, 1831–1833. (Summary) **89f:81065** 81C99
- Exact two-body solution of the Lorentz-Dirac equation. *Phys. Rev. A* (3) **37** (1988), no. 3, 977–978. (Summary) **89a:81164** 81G10
- Erratum: "Exact two-body solution of the Lorentz-Dirac equation" [Phys. Rev. A (3) **37** (1988), no. 3, 977–978; MR **89a:81164**]. *Phys. Rev. A* (3) **39** (1989), no. 2, 914. (Editors) **89m:81187** 81G10
- Briggs, William L. ★ A multigrid tutorial. *Society for Industrial and Applied Mathematics (SIAM)*, Philadelphia, PA, 1987. x+88 pp. ISBN 0-89871-221-1 (David C. Arney) **89j:65001** 65-01
- (with McCormick, Stephen F.) Introduction. *Multigrid methods*, 1–30, *Frontiers Appl. Math.*, 3, SIAM, Philadelphia, PA, 1987. (see **89m:65004**) 65-02
- Brigham, Robert C. (with Boland, James W.; Dutton, Ronald D.) The difference between a neighborhood graph and a wheel. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 151–156. (George R. T. Hendry) **89c:05110** 05C35 (05C38)
- (with Dutton, Ronald D.) Bounds on some graph invariants as a function of girth. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 13–22. (Pavel Tomasta) **89i:05158** 05C35
- (with Dutton, Ronald D.) An extremal problem for edge domination insensitive graphs. *Discrete Appl. Math.* **20** (1988), no. 2, 113–125. (George R. T. Hendry) **89d:05106** 05C35
- (with Chinn, P. Z.; Dutton, Ronald D.) Vertex domination-critical graphs. *Networks* **18** (1988), no. 3, 173–179. (Michael Jacobson) **89i:05152** 05C35
- Brightwell, Graham (with Bollobás, B.) Graphs whose every transitive orientation contains almost every relation. *Israel J. Math.* **59** (1987), no. 1, 112–128. (Mirko Krivánek) **89d:05157** 05C80
- Linear extensions of infinite posets. *Discrete Math.* **70** (1988), no. 2, 113–136. (Michael Saks) **89j:06001** 06A10
- Brihaye, Y. (with Kosiński, P.) Some results for Grassmannian models on a lattice. *Phys. A* **151** (1988), no. 2–3, 385–396. (Kornél Szlachányi) **89j:81150** 81E25 (82A68)
- Briksa, M. S. (with Kalinyak, M. I.) Solution of the quasilinear differential heat equation for domains that are conformally mapped onto a half plane. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 28 (1986), 64–68, 133. (Summary) **89g:35043** 35K05 (80A20)
- Brilla, Jozef Laplace transform-boundary element method for time dependent problems (invited contribution). *Boundary elements IX, Vol. 3 (Stuttgart, 1987)*, 83–99, *Comput. Mech., Southampton*, 1987. (Introduction) **89f:73036** 73F15 (65N30, 73-08)
- Mathematical aspects of the theory of viscoelasticity. *Trends in applications of mathematics to mechanics (Wassenaar, 1987)*, 238–250, Springer, Berlin-New York, 1988. (see **89g:58004**) 73F99 (73B05, 73C60)
- see also Sarkisyan, V. S. et al., **89b:01059**
- Brillard, Alain Asymptotic analysis of incompressible and viscous fluid flow through porous media. Brinkman's law via epi-convergence methods. (French summary) *Ann. Fac. Sci. Toulouse Math.* (5) **8** (1986/87), no. 2, 225–252. (Charles J. Amick) **89d:35138** 35Q10 (76S05)
- Brillhart, John (with Montgomery, Peter L.; Silverman, Robert D.) Tables of Fibonacci and Lucas factorizations. *Math. Comp.* **50** (1988), no. 181, 251–260, S1–S15. (Summary) **89h:11002** 11-04 (11B39)
- (with Blecksmith, Richard; Gerst, Irving) Some infinite product identities. *Math. Comp.* **51** (1988), no. 183, 301–314. (David M. Bressoud) **89f:05017** 05A17 (05A19, 11P57)
- Brillinger, David R. Some statistical methods for random process data from seismology and neurophysiology. *Ann. Statist.* **16** (1988), no. 1, 1–54. (Francesco Battaglia) **89b:62202** 62M99 (62P10, 62P99)
- Brinkov, V. E. A variant of the closure operator related to some combinatorial structures. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian) (Sunny Beach (Slivnitsa) Bryag, 1987)*, 331–334, *Bulg. Acad. Sci., Sofia*, 1987. (Summary) **89d:05052** 05B35
- (with Milanov, P. B.) On the knapsack problem. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 3, 25–27. (Mukkai S. Krishnamoorthy) **89a:90094** 90C10
- Brin, Matthew G. (with Thickstun, T. L.) Open, irreducible 3-manifolds which are end 1-movable. *Topology* **26** (1987), no. 2, 211–233. (D. Repovš (Zbl 622:57010)) **89f:57018** 57N10 (57M35)
- (with Squier, Craig C.) On the genus of  $Z_3 \times Z_3 \times Z_3$ . *European J. Combin.* **9** (1988), no. 5, 431–443. (Arthur T. White) **89i:05099** 05C10 (05C25, 20F32)
- Brindley, J. (with Kaas-Petersen, Chr.; Merkin, J. H.; Scott, Stephen K.) A simple model for sustained oscillations in isothermal branched-chain or autocatalytic reactions in a well-stirred open system. III. Multiple stationary states and Hopf bifurcations. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1853, 463–496. (Summary) **89i:92073** 92A40 (58F14)
- Brindza, B. On  $S$ -integral solutions of the Catalan equation. *Acta Arith.* **48** (1987), no. 4, 397–412. (A. Pethő) **89d:11022** 11D61 (11J87)
- Sánchez-Bringas, Federico see Sánchez-Bringas, Federico
- Bringer, A. (with Steeb, W.-H.; Louw, J.) Nonlinear wave equations, covariant exterior derivative, Painlevé test, and integrability. *Internat. J. Theoret. Phys.* **26** (1987), no. 4, 375–385. (Benno Fuchssteiner) **89a:58107** 58G16 (35L70, 58F07)
- Brini, Andrea (with Barnabei, Marilena) Symmetrized skew determinants. *Comm. Algebra* **15** (1987), no. 7, 1455–1468. (Michael Clausen) **89a:20010** 20C32 (20G15)
- (with Barnabei, Marilena) The Littlewood-Richardson rule for co-Schur modules. *Adv. in Math.* **67** (1988), no. 2, 143–173. (J. Désarménien) **89a:20022** 20C30 (15A75)
- (with Palareti, Aldopao; Teolis, Antonio G. B.) Jordan-Capelli series in superalgebras. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 5, 1330–1333. (Anargyros Fellouris) **89b:17007** 17A70
- Brink, Chris (with Heidema, Johannes) A verisimilar ordering of theories phrased in a propositional language. *British J. Philos. Sci.* **38** (1987), no. 4, 533–549. (Piotr Wojtylak) **89c:03017** 03B30 (03A05)
- Weak entailment and 3-valued logic. *J. Non-Classical Logic* **4** (1987), no. 2, 5–22. (Wojciech Dziuk) **89f:03016** 03B50 (03B45)
- Brink, Lars Field theories for higher spins. *Quantum field theory and quantum statistics, Vol. 2, 197–207, Hilger, Bristol*, 1987. (see **89b:81008**) 81D25
- (with Henneaux, M.) ★ Principles of string theory. With a preface by Claudio Teitelboim. Series of the Centro de Estudios Científicos de Santiago. [Series of the Center for Scientific Studies of Santiago] Plenum Press, New York-London, 1988. xiv+297 pp. ISBN 0-306-42657-9 (Miao Li) **89i:81001** 81-02 (81E30, 81E40, 83E30)
- see also Unification of fundamental interactions, **89f:81005**
- Brinkmann, Gunnar (with Möller, Martina; Carstens, Hans-Georg) Nowhere-zero flows in low genus graphs. *J. Graph Theory* **12** (1988), no. 2, 183–190. (François Jaeger) **89f:05067** 05C10 (05C15)
- Brinzănescu, Vasile (with Flondor, Paul) Quadratic intersection form and 2-vector bundles on nonalgebraic surfaces. *Proceedings of the conference on algebraic geometry (Berlin, 1985)*, 53–64, *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (Robert Frankel) **89d:32061** 32J15 (32L05)
- Brio, M. (with Wu, Cheng-chin) An upwind differencing scheme for the equations of ideal magnetohydrodynamics. *J. Comput. Phys.* **75** (1988), no. 2, 400–422. (Summary) **89c:76009** 76-08 (76W05)
- Admissibility conditions for weak solutions of nonstrictly hyperbolic systems. *Nonlinear hyperbolic equations—theory, computation methods, and applications (Aachen, 1988)*, 43–50, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 35L65 (65M99, 76-08, 76L05, 76W05)
- Brion, M. Sur l'image de l'application moment. [On the image of the moment mapping] *Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliavin (Paris, 1986)*, 177–192, *Lecture Notes in Math.*, 1296, Springer, Berlin-New York, 1987. (B. Gilligan) **89i:32062** 32M05 (14M17, 58F05)



- (with Luna, D.) Sur la structure locale des variétés sphériques. (English summary) [The local structure of spherical varieties] *Bull. Soc. Math. France* **115** (1987), no. 2, 211–226. (V. L. Popov) **89k:14077** 14L30 (14M17)
- Classification des espaces homogènes sphériques. [Classification of spherical homogeneous spaces] *Compositio Math.* **63** (1987), no. 2, 189–208. (S. Kaneyuki) **89d:32068** 32M10 (53C30)
- Briozzo, C. B.** (with Budde, Carlos E.; Cáceres, Manuel O.; Lamberti, P. W.) Stability of a Robertson-Walker universe against stochastic perturbations. *Phys. Lett. A* **129** (1988), no. 7, 363–366. (Summary) **89e:83086** 83F05 (83C99)
- Briscolini, M.** (with Carnevale, G. F.; Vallis, G. K.; Purini, R.) The role of initial conditions in flow stability with an application to modons. *Phys. Fluids* **31** (1988), no. 9, 2567–2572. (M. A. Grinfeld) **89k:76053** 76E20 (76E25)
- Brislaw, Chris** Kernels of trace class operators. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1181–1190. (V. S. Sunder) **89d:47059** 47B38 (47B10)
- Bristeau, M. O.** (with Glowinski, R.; Périaux, Jacques) Numerical methods for the Navier-Stokes equations. Applications to the simulation of compressible and incompressible viscous flows. *Finite elements in physics (Lausanne, 1986)*, 73–187, North-Holland, Amsterdam-New York, 1987. (Introduction) **89m:65081** 65M05 (76-08)
- (with Glowinski, R.; Mantel, B.; Périaux, Jacques; Singh, Gian Sundar) On the use of subcycling for solving the compressible Navier-Stokes equations by operator-splitting and finite element methods. *Comm. Appl. Numer. Methods* **4** (1988), no. 3, 309–317. (Summary) **89h:65211** 65P05 (76-08, 76N10)
- Britikov, V. E.** Asymptotics of the number of forests made up of nonrooted trees. (Russian) *Mat. Zametki* **43** (1988), no. 5, 672–684, 703; translated in *Math. Notes* **43** (1988), no. 5–6, 387–394. (Ioan Tomescu) **89c:05063** 05C80 (05C05)
- salas Brito, A. L.** see Salas Brito, A. L.
- Brito, Dagobert L.** (with Intriligator, Michael D.) A predator-prey model of guerrilla warfare. Formal analysis in international relations. *Synthese* **76** (1988), no. 2, 235–244. (see **89c:90218**) **92A90** (90D40, 92A15)
- Brito, Fabiano G. B.** (with Walczak, P. G.) Total curvature of orthogonal vector fields on three-manifolds. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 9–10, 553–556. (David J. Welsh) **89f:53051** 53C12 (57R30)
- Brito, Maria R.** On supercycles  $C(a, b, d)$ . Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), A, 165–171. (E. J. Farrell) **89f:05074** 05C15
- Brito, Ricardo** (with Cuesta, José Antonio; Rañada, Antonio F.) Absence of dissipative solutions of the Schrödinger and Klein-Gordon equations with logarithmic nonlinearity. *Phys. Lett. A* **128** (1988), no. 6–7, 360–366. (Gustavo Perla Menzala) **89f:35176** 35Q20 (81C05)
- Brits, S. J. M.** (with Steeb, W.-H.; van Tonder, A.; Louw, J.) Thermodynamic quantities and the motion of energy levels. *Helv. Phys. Acta* **61** (1988), no. 7, 979–987. (Summary) **89j:81039** 81C12
- (with Steeb, W.-H.; van Tonder, A.) Energy level motion and a supersymmetric Hamiltonian. *J. Phys. A* **21** (1988), no. 11, 2657–2660. (Summary) **89m:80096** 58F19 (81C99)
- Britton, John P.** The structure and parameters of Column  $\Phi$ . From ancient omens to statistical mechanics, 23–36, *Acta Hist. Sci. Nat. Med.*, 39, Univ. Lib. Copenhagen, Copenhagen, 1987. (George Abraham) **89i:01002** 01A17
- Britton, N. F.** A singular dispersion relation arising in a caricature of a model for morphogenesis. *J. Math. Biol.* **26** (1988), no. 4, 387–403. (Gert Due Billing) **89k:92010** 92A09
- Aggregation and the competitive exclusion principle. *J. Theoret. Biol.* **136** (1989), no. 1, 57–66. (Summary) **89i:92058** 92A18 (92A15, 92A17)
- (with Skevington, Suzanne M.) A mathematical model of the gate control theory of pain. *J. Theoret. Biol.* **137** (1989), no. 1, 91–105. (Not in MR) **92A07**
- Brivio, G. P.** (with Casati, G.; Perotti, L.; Guarneri, I.) Quantum suppression of chaotic diffusion: theory and experiment. Progress in chaotic dynamics. *Phys. D* **33** (1988), no. 1–3, 51–57. (Not in MR) **81C99**
- Broadbridge, P.** Integrable forms of the one-dimensional flow equation for unsaturated heterogeneous porous media. *J. Math. Phys.* **29** (1988), no. 3, 622–627. (Summary) **89a:35173** 35Q20 (35K10, 58G37, 76S05)
- (with Rogers, Colin) On a nonlinear moving boundary problem with heterogeneity: application of a reciprocal transformation. (French summary) *Z. Angew. Math. Phys.* **39** (1988), no. 1, 122–128. (Fouad A. Mohamed) **89a:35230** 35R35 (35K55, 76S05, 80A20)
- Broadie, Mark N.** (with Eaves, B. Curtis) A variable rate refining triangulation. *Math. Programming* **38** (1987), no. 2, 161–202. (Balder von Hohenbalken) **89b:90178** 90C30 (58C30, 65H10)
- Broberg, Per** Critical branching populations with reproductive sibling correlations. *Stochastic Process. Appl.* **30** (1988), no. 1, 133–147. (J. D. Biggins) **89m:60202** 60J80
- Brocas, J.** Permutational description of the dynamics of octacoordinate polyhedra. *Graph theory and topology in chemistry (Athens, Ga., 1987)*, 239–265, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (N. Trinajstić) **89h:92079** 92A40 (82A99)
- Brochard, Françoise** (with Redon, Claude; Rondelez, Francis) Démouillage: régime de gravité. (English summary) [Dewetting: the gravity controlled regime] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **306** (1988), no. 16, 1143–1146. (R. Finn) **89j:76035** 76B45 (76D99, 76E99)
- Brock, William A.** (with Majumdar, Mukul) On characterizing optimal competitive programs in terms of decentralizable conditions. *J. Econom. Theory* **45** (1988), no. 2, 262–273. (Summary) **89g:90046** 90A11
- Bricker, L.** (with Andradas, C.; Ruiz, Jesús M.) Minimal generation of basic open semi-analytic sets. *Invent. Math.* **92** (1988), no. 2, 409–430. (Michel Coste) **89f:32016** 32C05 (11E10, 14G30, 32B20)
- On the separation of basic semi-algebraic sets by polynomials. *Manuscripta Math.* **60** (1988), no. 4, 497–508. (Michel Coste) **89d:14034** 14G30 (12D15, 12J15)
- Brockett, Patrick L.** (with Arnold, Barry C.) Variance bounds using a theorem of Pólya. *Statist. Probab. Lett.* **6** (1988), no. 5, 321–326. (Yung L. Tong) **89d:60030** 60E15 (62G30)
- Brockett, R. W.** (with Loncaric, Josip) The geometry of compliance programming. *Theory and applications of nonlinear control systems (Stockholm, 1985)*, 35–42, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:70064** 70Q05 (70B15)
- (with Cebuhar, W. A.) Smoothing and linearization of discontinuous control systems. *Dynamical systems approaches to nonlinear problems in systems and circuits (Henniker, NH, 1986)*, 199–208, *SIAM, Philadelphia, PA*, 1988. (Khashayar Khorasani) **89k:93217** 93E14 (94A14)
- Brockmann, R. A.** Geometric sensitivity analysis with local coordinate transformations. *Comm. Appl. Numer. Methods* **4** (1988), no. 1, 59–65. (Summary) **89d:73035** 73K25
- Brockwell, Peter J.** (with Liu, Jian) On the general bilinear time series model. *J. Appl. Probab.* **25** (1988), no. 3, 553–564. (E. J. Hannan) **89j:62127** 62M10 (60G10)
- (with Davis, Richard Alan) Simple consistent estimation of the coefficients of a linear filter. *Stochastic Process. Appl.* **28** (1988), no. 1, 47–59. (Summary) **89k:62120** 62M20 (60G10, 60G15)
- Broder, Andrei** (with Dolev, Danny; Fischer, Michael) Efficient fault-tolerant routings in networks. *Inform. and Comput.* **75** (1987), no. 1, 52–64. (Joseph Y. Halpern) **89f:68007** 68M10 (68R10, 90B10, 94C15)
- Brodl, S. M.** (with Migalko, N. A.) A queueing model with variable number of servers. Stability problems of stochastic models. *J. Soviet Math.* **40** (1988), no. 4, 458. (C. E. M. Pearce) **89j:60124** 60K25 (90B22)
- Brodie, M. A.** (with Chamberlain, Robert F.; Kappe, Luise-Charlotte) Finite coverings by normal subgroups. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 669–674. (H. Heineken) **89i:20062** 20F26 (20F24)
- Brodmann, M.** A bound for the first cohomology of a projective surface. *Arch. Math. (Basel)* **50** (1988), no. 1, 68–72. (Paltin Ionescu) **89e:14019** 14F15 (14F12, 14J25)
- Brodoskii, V. G.** On the problem of the Fredholm potential of a boundary value problem. (Russian) *Boundary value problems (Russian)*, 18–22, 192, *Perm. Politekh. Inst., Perm*, 1983. (see **89c:00008**) **47A50** (47A53)
- On periodic solutions of a system of differential equations with a deviating argument. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1988**, no. 3, 10–14. (Binggen Zhang) **89i:34094** 34K15
- Brodskii, B. E.** (with Darkhovskii, B. S.) A nonparametric method for the fastest detection of a change in the mean of a random sequence. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 4, 703–711. (Tenko Raykov) **89a:62180** 62L05 (62G99)
- Brodskii, M. A.** (with Strakhov, V. N.) In the class of homogeneous polyhedra homeomorphic to a ball, the solution of the inverse Newtonian potential problem is unique. (Russian) *Dokl. Akad. Nauk SSSR* **292** (1987), no. 6, 1337–1340. (A. S. Alekseev) **89d:52014** 52A25 (31B20, 86A20)
- van den Broeck, C.** see Van den Broeck, C.
- vanden Broeck, J.-M.** see Vanden-Broeck, J.-M.
- Broeckhove, J.** (with Kesteloot, E.; Van Leuven, P.) Rotational motion, shell structure and coherent state dynamics. *Phys. Lett. B* **202** (1988), no. 1, 1–4. (John J. Sullivan) **89f:81260** 81G30 (81D30)
- van den Broek, B.** (with Verhulst, F.) Averaging techniques and the oscillator-flywheel problem. *Nieuw Arch. Wisk. (4)* **5** (1987), no. 2, 185–206. (Ram Krishan Sharma) **89h:58182** 58F30 (34C29)
- Broemeling, Lyle D.** (with Tsurumi, Hiroki) ★ Econometrics and structural change. *Statistics: Textbooks and Monographs*, 74, Marcel Dekker, Inc., New York, 1987. x+266 pp. ISBN 0-8247-7500-7 (W. E. Griffiths) **89g:62165** 62P20 (62F15)
- Broer, Henk** On some quasiperiodic bifurcations. *Delft Progr. Rep.* **12** (1988), no. 1, 79–96. (A. Vanderbauwhede) **89h:58138** 58F14
- Broere, I.** (with Burger, Marieta) Uniquely cocolourable graphs. *Graphs Combin.* **2** (1986), no. 3, 201–208. (H. Joseph Straight) **89f:05075** 05C15
- (with Döman, D.; Ridley, J. N.) The clique numbers and chromatic numbers of certain Paley graphs. *Quaestiones Math.* **11** (1988), no. 1, 91–93. (Yair Caro) **89b:05082** 05C15 (05C55)
- Broersma, H. J.** (with Jagers, A. A.) The unique 4-regular graphs on 14 and 15 vertices with diameter 2. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), C, 55–62. (Ortrud R. Oellermann) **89e:05164** 05C75
- Broffitt, James D.** Restricted Bayes estimates for binomial parameters. *Probability and Bayesian statistics (Innsbruck, 1986)*, 61–72, Plenum, New York-London, 1987. (K. D. Ling) **89a:62077** 62F15 (62F10)
- Bruggi, G.** (with Lugiatto, L. A.; Oldano, C.; Sartirana, L.; Wang, Kai Ge; Narducci, L. M.; Oppo, G. L.; Pernigo, M. A.; Tredice, J. R.; Prati, F.) Spontaneous symmetry breaking and spatial structures in optical systems. *Far from equilibrium phase transitions (Sitges, 1988)*, 263–280, *Lecture Notes in Phys.*, 319, Springer, Berlin-New York, 1988. (see **89j:82002**) **81K05** (78A60)
- (with Lugiatto, L. A.; Oldano, C.; Sartirana, L.; Wang, Kai Ge; Narducci, L. M.; Oppo, G. L.; Prati, F.) Spatial symmetry breaking in optical systems. *Neural and synergetic computers (Schloss Elmau, 1988)*, 242–251, Springer Ser. Synergetics, 42, Springer, Berlin-New York, 1988. (see **89i:92026**) **78A60** (81K05)
- Broglia, Fabrizio** Essential coverings and triangulations. (Italian summary) *Ann. Mat. Pura Appl. (4)* **146** (1987), 185–216. (Mario Pezzana) **89h:57016** 57Q15 (57R05)
- (with Acquistapace, Francesca) Essential coverings for stratified sets with only isolated singularities. *Boll. Un. Mat. Ital. A (7)* **1** (1987), no. 3, 359–362. (Er Jian Xiao) **89c:32017** 32B15 (57N80)
- de Broglie, Louis V.** see Lochak, Georges, **89a:81001**; **89c:01071**; **Datsev, A. B.**, **89f:01062** and **Germann, P.**, **89h:01060**
- Brokate, Martin** On a certain optimal harvesting problem with continuous age structure. *Optimal control of partial differential equations, II (Oberwolfach, 1986)*, 29–42, *Internat. Schriftenreihe Numer. Math.*, 78, Birkhäuser, Basel-Boston, MA, 1987. (Colin W. Clark) **89d:92051** 92A15 (90A16, 90A30, 93C75)
- Brokaw, Charles J.** Bending-wave propagation by microtubules and flagella. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1–2, 247–263. (Summary) **89f:92017** 92A09 (76Z10, 92A06)
- Bromek, T.** (with Niewiadomska-Bugaj, M.) Threshold rules in two-class discrimination problems. *Probab. Math. Statist.* **8** (1987), 11–16. (Khurshed Alam) **89c:62100** 62H30
- Brøndsted, Arne** ★ Введение в теорию выпуклых многогранников. (Russian) [An introduction to the theory of convex polytopes] Translated from the English by K. I. Osolkov. Translation edited and with a preface by B. S. Kashin. “Mir”, Moscow, 1988. 240 pp. ISBN 5-03-001115-3 (Editors) **89h:52006** 52A25
- Broniatowski, Michel** Convergence for the sample extremes via convolutions. *Mathematical statistics and probability theory, Vol. A (Bad Tatzmannsdorf, 1986)*, 43–52, *Reidel, Dordrecht-Boston, MA-London*, 1987. (Toshio Mori) **89a:60054** 60F05 (62G30)

- Bronisz, Piotr** (with Krus, Lech) Application of generalized Raiffa solution to multicriteria bargaining support. *System modelling and optimization* (Tokyo, 1987), 707-211, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (see 89f:00029) 90A05 (90C31)
- (with Krus, Lech) Interactive procedures for multicriteria decision support in bargaining problem. *Systems analysis and simulation 1988, I* (Berlin, 1988), 59-62, *Math. Res.*, 46, Akademie-Verlag, Berlin, 1988. (Summary) 89j:90311 90D35 (90C31)
- Bronnikov, K. A.** (with Shikin, G. N.) Some exact solutions in the relativistic theory of gravitation. (Russian. English summary) *Teoret. Mat. Fiz.* 76 (1988), no. 2, 304-313; translated in *Theoret. and Math. Phys.* 76 (1988), no. 2, 879-885. (Jan Novotný) 89j:83059 83D05
- Bronovets, M. A.** (with Aleksandrov, Viktor Mikhailovich; Kovalenko, E. V.) Planar contact problems for a linearly deformable foundation with a thin reinforcing covering. (Russian) *Prkl. Mekh.* 24 (1988), no. 8, 60-67, 133; translated in *Soviet Appl. Mech.* 24 (1988), no. 8, 781-787. (Not in MR) 73T05
- Bronstein, I. U.** (with Anosov, D. V.; Aranson, S. Kh.; Grines, V. Z.) Smooth dynamical systems [Current problems in mathematics. Fundamental directions. Vol. 1, 151-242, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow, 1985; MR 87e:58060]. Translated from the Russian by E. R. Dawson and D. O'Shea. *Dynamical systems, I*, 149-233, *Encyclopaedia Math. Sci.*, 1, Springer, Berlin-New York, 1988. (see 89g:58060) 58Fxx (34C35)
- (with Kopanskii, A. Ya.) Chain recurrence in dynamical systems without uniqueness. *Nonlinear Anal.* 12 (1988), no. 2, 147-154. (From the text) 89j:58054 58F08 (54H20, 58F09)
- Bronstein, M. D.** Division theorems in spaces of functions of finite smoothness and in Gevrey spaces. (Russian) *Dokl. Akad. Nauk SSSR* 289 (1986), no. 5, 1039-1042. (S. Łojasiewicz) 89f:58018 58C25 (46E10, 46F10)
- Division theorems for hyperbolic polynomials. *Hyperbolic equations* (Padua, 1985), 33-46, *Pitman Res. Notes Math. Ser.*, 158, Longman Sci. Tech., Harlow, 1987. (Haruki Yamada) 89g:35064 35L25 (58C25)
- On the representation of symmetric functions in Gevrey-Carleman spaces. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 4, 13-18, 85. (Summary) 89h:58028 58C25 (46E10)
- Bronstein, I. U.** see Bronstein, I. U.
- Bronstein, M. D.** see Bronstein, M. D.
- Bronzan, J. B.** Analytic approach to weak-coupling SU(2) Hamiltonian lattice gauge theory. *Phys. Rev. D* (3) 37 (1988), no. 6, 1621-1636. (Summary) 89a:81063 81E13
- Parametrization of SU(3). *Phys. Rev. D* (3) 38 (1988), no. 6, 1994-1999. (Summary) 89h:22012 22E15 (22E70, 81C40, 81E25)
- Brooke, James** (with Ali, S. Twareque; Busch, Paul; Gagnon, René; Schroeck, Franklin E., Jr.) Current conservation as a geometric property of space-time. (French summary) *Canad. J. Phys.* 66 (1988), no. 3, 238-244. (R. M. Kadobayanskii) 89j:81043 81C20
- The Monge statue in Beaune, France. *Math. Intelligencer* 10 (1988), no. 4, 44. (Not in MR) 01A70
- Brookes, C. J. B.** Modules over polycyclic groups. *Proc. London Math. Soc.* (3) 57 (1988), no. 1, 88-108. (D. A. R. Wallace) 89c:16013 16A27
- Brookes, Stephen D.** Semantically based axiomatics. *Mathematical foundations of programming language semantics* (New Orleans, LA, 1987), 312-330, *Lecture Notes in Comput. Sci.*, 298, Springer, Berlin-New York, 1988. (N. Measor) 89m:68084 68Q55
- Brookmeyer, Ron** (with Gail, M. H.) Biases in prevalent cohorts. (French summary) *Biometrics* 43 (1987), no. 4, 739-749. (Paul Embrechts) 89a:62217 62P10 (62N05, 92A07, 92A15)
- Brooks, James K.** (with Dinculeanu, Nicolae)  $H^1$  and BMO spaces of abstract martingales. *Seminar on stochastic processes, 1985* (Gainesville, Fla., 1985), 9-34, *Progr. Probab. Statist.*, 12, Birkhäuser Boston, Boston, MA, 1986. (Bernard Bru) 89b:60123 60G48 (46G10)
- (with Dinculeanu, Nicolae) Modifications càdlàg et décomposition de Doob-Meyer des quasimartingales à valeurs dans un espace de Banach. (English summary) [Càdlàg modifications and the Doob-Meyer decomposition of quasimartingales with values in a Banach space] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 6, 273-278. (Terry R. McConnell) 89c:60064 60G48 (60B11)
- Brooks, R. J.** (with Stone, Mervyn; Chan, F. Y.; Chan, Lai Kow) Cross-validated graduation. *Insurance Math. Econom.* 7 (1988), no. 1, 59-66. (Summary) 89i:62169 62P05
- Brooks, Robert** On the angles between certain arithmetically defined subspaces of  $C^n$ . (French summary) *Ann. Inst. Fourier (Grenoble)* 37 (1987), no. 1, 175-185. (Autorreferat (Zbl 611:15003)) 89h:11022 11F72 (58G25)
- Isospectral potentials on a surface of genus 3. *Holomorphic functions and moduli, Vol. I* (Berkeley, CA, 1986), 203-208, *Math. Sci. Res. Inst. Publ.*, 10, Springer, New York-Berlin, 1988. (Min-oo Maung) 89k:58284 58G25 (53C20)
- Constructing isospectral manifolds. *Amer. Math. Monthly* 95 (1988), no. 9, 823-839. (Min-oo Maung) 89k:58285 58G25 (11F72, 53C20)
- Injectivity radius and low eigenvalues of hyperbolic manifolds. *J. Reine Angew. Math.* 390 (1988), 117-129. (Carolyn Gordon) 89h:58192 58G25 (35P15, 53C20)
- Brooks, Roger** (with Gates, S. James, Jr.; Muhammad, Fuad) Unidexterous superspace: the flux of (super)strings. *Phys. Lett. B* 194 (1987), no. 1, 35-42. (Paul Howe) 89c:81123 81E99 (81E30, 81G20)
- (with Gates, S. James, Jr.) Manifestly supersymmetric gauge fixing in  $D = 2$  supergravity theories. *Classical Quantum Gravity* 5 (1988), no. 2, 367-376. (Mark D. Roberts) 89c:83078 83E50 (81E20)
- (with Muhammad, Fuad; Gates, S. James, Jr.) Extended  $D = 2$  supergravity theories and their lower superspace realizations. *Classical Quantum Gravity* 5 (1988), no. 5, 785-805. (Thomas Schmitt) 89f:83096 83E50 (83E30)
- (with Gates, S. James, Jr.) NSR BRST. *Nuclear Phys. B* 296 (1988), no. 2, 290-312. (B. Spence) 89a:81116 81E99 (81E30)
- (with Bellucci, Stefano; Sonnenschein, Jacob) Supersymmetric chiral bosons. *Nuclear Phys. B* 304 (1988), no. 1, 173-204. (Not in MR) 81E99 (81E40)
- Broomhead, D. S.** (with Lowe, David) Multivariable functional interpolation and adaptive networks. *Complex Systems* 2 (1988), no. 3, 321-355. (Not in MR) 92A25 (65D05)
- (with Yrye, Susan C.) Particle paths in wavy vortices. *Nonlinearity* 1 (1988), no. 3, 409-434. (Summary) 89e:76029 76C05 (34C35, 58F13, 58F40, 76E15)
- Brossamer, Gunnar A.** Brownian occupation measures on compact manifolds. *Seminar on stochastic processes, 1985* (Gainesville, Fla., 1985), 290-322, *Progr. Probab. Statist.*, 12, Birkhäuser Boston, Boston, MA, 1986. (J. C. Taylor) 89b:60190 60J65 (58G32)
- Un théorème limite central presque sûr pour les mesures d'occupation du mouvement brownien sur une variété riemannienne compacte. (English summary) [An almost everywhere central limit theorem for the occupation measures of Brownian motion on a compact Riemannian manifold] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 18, 919-922. (Summary) 89k:58294 58G32 (60F05, 60J65)
- An almost everywhere central limit theorem. *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 3, 561-574. (Albert Raugi) 89i:60045 60F05 (60B10)
- Brossard, Jean** Densité de l'intégrale d'aire dans  $\mathbb{R}^{n+1}$  et limites non tangentielles. (English summary) [Density of the area integral in  $\mathbb{R}^{n+1}$  and nontangential limits] *Invent. Math.* 93 (1988), no. 2, 297-308. (Michèle Mastrangelo-Dehen) 89h:31008 31B25 (31B05, 60J55)
- Broszkiewicz, Irena** A note on tensor products of semigroups of contractions. *Univ. Jagel. Acta Math.* No. 26 (1987), 191-198. (Wacław Szymański) 89f:47010 47A20 (43A35, 47D05, 47D10)
- Decompositions of tensor products of contractions. *Ann. Polon. Math.* 48 (1988), no. 1, 105-107. (Thomas Hoover) 89f:47060 47D05 (47A20)
- Brothers, John E.** (with Ziemer, William P.) Minimal rearrangements of Sobolev functions. 15th winter school in abstract analysis (Srní, 1987). *Acta Univ. Carolin.—Math. Phys.* 28 (1987), no. 2, 13-24. (From the introduction) 89m:42016 42B25 (26D15, 46E35, 49F20)
- (with Ziemer, William P.) Minimal rearrangements of Sobolev functions. *J. Reine Angew. Math.* 384 (1988), 153-179. (Gerald B. Folland) 89g:26013 26D10 (26D15, 28A75, 46E35, 49F20)
- Brotherton-Ratcliffe, R. V.** (with Smith, F. T.) Complete breakdown of an unsteady interactive boundary layer (over a surface distortion or in a liquid layer). *Mathematika* 34 (1987), no. 1, 86-100. (P. W. Duck) 89a:76036 76E30 (76D10)
- Broto i Blanco, Carles** (with Zarati, S.) Nil-localization of unstable algebras over the Steenrod algebra. *Math. Z.* 199 (1988), no. 4, 525-537. (Vincent Giambalvo) 89i:55015 55T15 (55Q45, 57T25)
- Brouae, Françoise** ★ Algorithmes pour le calcul numérique. (French) [Algorithms for numerical computation] PRÉPA Grandes Écoles. *Librairie Vuibert, Paris*, 1987. 192 pp. ISBN 2-7117-2363-1 (Charles Saltzer) 89f:65001 65-01
- Broué, Michel** Théorie locale des blocs d'un groupe fini. [Local theory of the blocks of a finite group] *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 360-368, *Amer. Math. Soc., Providence, RI*, 1987. (Jörn B. Olsson) 89f:20011 20C20
- (with Michel, Jean) Blocs et séries de Lusztig dans un groupe réductif fini. (English summary) [Blocks and Lusztig series for a reductive finite group] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 1, 21-24. (David Benson) 89a:20045 20G05 (20C20)
- Blocs, isométries parfaites, catégories dérivées. (English summary) [Blocks, perfect isometries, derived categories] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 1, 13-18. (P. Donovan) 89e:20018 20C20
- see also Andler, Martin, 89a:01092
- Broughton, Peter** Arthur Storer of Maryland: his astronomical work and his family ties with Newton. *J. Hist. Astronom.* 19 (1988), no. 2, 77-96. (Kristian Peder Moesgaard) 89f:01023 01A45 (85-03)
- Broughton, S. A.** Volumes of subgroups of compact Lie groups. *Algebras Groups Geom.* 4 (1987), no. 3, 325-364. (Dragomir Z. Djoković) 89g:22004 22C05 (22E99, 53C30)
- Milnor numbers and the topology of polynomial hypersurfaces. *Invent. Math.* 92 (1988), no. 2, 217-241. (M. Sebastiani) 89h:32025 32C40 (14B05, 14F25)
- lamoureux-Brousse, L.** see Lamoureux-Brousse, L.
- Brousseau, Alfred** see Bicknell-Johnson, Marjorie, 89i:01062
- Brouwer, A. E.** (with Calderbank, A. R.) An Erdős-Ko-Rado theorem for regular intersecting families of octads. *Graphs Combin.* 2 (1986), no. 4, 309-316. (Henk van Tilborg) 89g:05038 05B30 (05B40)
- (with Posner, E. C.; Reichstein, Z.) Hadamard codes which have an even number of ones in each half. *Utilitas Math.* 32 (1987), 131-140. (Bal Kishan Dass) 89b:94032 94B10
- (with Neumaier, A.) A remark on partial linear spaces of girth 5 with an application to strongly regular graphs. *Combinatorica* 8 (1988), no. 1, 57-61. (J. J. Seidel) 89i:05253 05C99
- Uniqueness of the Biggs-Smith graph. *Graph theory in memory of G. A. Dirac (Sandbjerg, 1985)*, 75-78, *Ann. Discrete Math.*, 41, North-Holland, Amsterdam-New York, 1989. (Robert Beazer) 89m:05058 05C25 (05C75)
- Brouwer, Floor** (with Wrigley, Neil) Qualitative statistical models for regional economic analysis. *Handbook of regional and urban economics, Vol. 1*, 443-490, *Handbooks in Economics*, 7, North-Holland, Amsterdam-New York, 1986. (see 89m:90047) 90A19
- (with Nijkamp, Peter; Scholten, H.) Hybrid log-linear models for spatial interaction and stability analysis. *Metroeconomica* 39 (1988), no. 1, 43-65. (Title) 89h:62176 62P20 (90A19)
- Brouwer, L. E. J.** see Panov, M. I., 89b:01029; Martino, Enrico, 89h:03108; Dubucs, Jacques-Paul, 89k:01023 and Johnson, Dale M., 89b:01002
- Brovenko, A. V.** A numerical algorithm for calculating the spectral characteristics of a two-dimensional open resonator with inhomogeneous dielectric inclusions. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 1, 51-55, 88. (Summary) 89c:78001 78-08
- Broverman, S.** (with Dow, A.) A note on  $\beta D - D$ . *Rocky Mountain J. Math.* 17 (1987), no. 3, 421-430. (Hao Xuan Zhou) 89a:54030a 54D40 (03E35, 54A25)
- (with Dow, A.) Erratum: "A note on  $\beta D - D$ ". *Rocky Mountain J. Math.* 18 (1988), no. 1, 211. (Hao Xuan Zhou) 89a:54030b 54D40 (03E35, 54A25)
- Browder, Felix E.** Mathematics and the sciences. *History and philosophy of modern mathematics* (Minneapolis, MN, 1985), 278-292, *Minnesota Stud. Philos. Sci.*, XI, Univ. Minnesota Press, Minneapolis, MN, 1988. (F. J. Murray) 89e:00017 00A25 (01A05)
- see also Ekeland, Ivar, 89i:00013
- Browder, William** (with Adem, Alejandro) The free rank of symmetry of  $(S^k)^h$ . *Invent. Math.* 92 (1988), no. 2, 431-440. (M.-C. Ku) 89e:57034 57S25 (57S17)



- Brower, Richard C.** (with Moriarty, K. J. M.; Myers, Eric; Rebbi, Claudio) The multigrid method for fermion calculations in quantum chromodynamics. *Multigrid methods (Copper Mountain, CO, 1987)*, 85-100, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (see **89c:65005**) 81-08 (81E25, 81G05)
- Brown, A. L.** Chebyshev sets and the shapes of convex bodies. *Methods of functional analysis in approximation theory (Bombay, 1985)*, 97-121, *Internat. Schriftenreihe Numer. Math.*, 76, Birkhäuser, Basel-Boston, MA, 1986. (Pier Luigi Papini) **89a:41040** 41A65 (46B20)
- Brown, Bruce Maxwell** (with Hettmansperger, T. P.) Invariant tests in bivariate models and the  $L_1$  criterion. *Statistical data analysis based on the  $L_1$ -norm and related methods (Neuchâtel, 1987)*, 333-344, *North-Holland, Amsterdam-New York, 1987*. (Hannu Oja) **89j:62061** 62G10 (62H15)
- (with Hettmansperger, T. P.) Affine invariant rank methods in the bivariate location model. *J. Roy. Statist. Soc. Ser. B* **49** (1987), no. 3, 301-310. (J. V. Deshpande) **89d:62032** 62G05 (62G10, 62H12, 62H15)
- (with Higgins, P. M.) Finite full transformation semigroups as collections of random functions. *Glasgow Math. J.* **30** (1988), no. 2, 203-211. (Fred W. Roush) **89g:60067** 60F05 (05C30, 20M20)
- Brown, Byron W., Jr.** (with Whittemore, Alice S.; Friend, Nina; Holly, Elizabeth A.) Amendment to: "A test to detect clusters of disease" [Biometrika **74** (1987), no. 3, 631-635; MR **88i:62184**, *Biometrika* **75** (1988), no. 2, 396. (Editors) **89d:62108** 62P10 (92A07)]
- Brown, C. C.** see **Brown, Clifford Caperton**
- Brown, Charles C.** (with Tan, W. Y.) A nonhomogeneous two-stage model of carcinogenesis. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 445-448. (see **89d:00007**) 92A07 (92A15)
- Brown, Clifford Caperton** The use of extended valued normal forms in removing a boundedness condition on an operator inequality. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 669-678. (Peter Meyer-Nieberg) **89c:47035** 47B25 (15A39, 82A15)
- Brown, Cynthia A.** (with Purdom, Paul Walton, Jr.) Polynomial-average-time satisfiability problems. *Inform. Sci.* **41** (1987), no. 1, 23-42. (Summary) **89c:68038** 68Q15 (03B35, 03D15, 68T15)
- Brown, D. J.** see **Brown, Donald J.**
- Heath-Brown, D. R.** see **Heath-Brown, D. R.**
- Brown, David** see **Brown, David W.**
- Brown, David P.** (with Wu, Jinn-Wen) On the stability of shift variant discrete systems. *J. Franklin Inst.* **325** (1988), no. 5, 659-668. (Not in MR) 93C75 (93C55, 93D20)
- (with Wu, Jinn-Wen) Exponentially stable linear discrete systems. *J. Franklin Inst.* **326** (1989), no. 1, 139-150. (Bernd Aulbach) **89c:39011** 39A11
- Brown, David W.** (with Lindenber, Katja; Wang, Xidi) A review of current issues in the quantum theory of envelope solitons. *Far from equilibrium phase transitions (Sitges, 1988)*, 1-28, *Lecture Notes in Phys.*, 319, Springer, Berlin-New York, 1988. (see **89j:82002**) 92A40 (81H99)
- Brown, Dennison R.** (with Houston, R. S.) Cancellative semigroups on manifolds. *Semigroup Forum* **35** (1987), no. 3, 279-302. (Haskell Cohen) **89a:22005** 22A20
- Brown, Donald J.** (with Aliprantis, C. D.; Burkishaw, O.) Edgeworth equilibria. *Econometrica* **55** (1987), no. 5, 1109-1137. (Walter Trockel) **89c:90025** 90A14 (46N05)
- (with Aliprantis, C. D.; Burkishaw, O.) Edgeworth equilibria in production economies. *J. Econom. Theory* **43** (1987), no. 2, 252-291. (Diethard Pallaschke) **89i:90016** 90A14 (46N05)
- Brown, Edgar H., Jr.** (with Cohen, Ralph L.) The Adams spectral sequence of  $\Omega^2 S^3$  and Brown-Gitler spectra. *Algebraic topology and algebraic K-theory (Princeton, N.J., 1983)*, 101-125, *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (R. M. F. Moss) **89d:55020** 55P42 (55P35, 55T15)
- (with Szczarba, Robert H.) Continuous cohomology and real homotopy type. *Trans. Amer. Math. Soc.* **311** (1989), no. 1, 57-106. (Donald W. Kahn) **89i:55005** 55N35 (55P62)
- Brown, Gavin** Inequalities for measures of sum sets. *Miniconference on harmonic analysis and operator algebras (Canberra, 1987)*, 34-41, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 15, Austral. Nat. Univ., Canberra, 1987. (B. K. Lahiri) **89g:28001** 28A05 (11B05)
- (with Dooley, A. H.) A class of ergodic measures. *Miniconferences on harmonic analysis and operator algebras (Canberra, 1987)*, 8-14, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (A. L. Fedorov) **89h:28033** 28D99
- (with Wilson, David C.) Trigonometric sums and polynomial zeros. *Miniconferences on harmonic analysis and operator algebras (Canberra, 1987)*, 15-20, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (N. K. Govil) **89h:42002** 42A05 (11L03, 11M26, 30C15)
- Some inequalities that arise in measure theory. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 1, 83-94. (Ion Raşa) **89d:26019** 26D20 (28A75, 43A05, 43A10)
- Brown, Harvey Robert** The problem of measurement in quantum physics: an evaluation of the extant proofs of insolubility. (Portuguese) *Cad. Hist. Filos. Ciênc.* No. 9 (1986), 5-33. (Introduction) **89b:81015** 81B05
- (with Foster, Sara) On a recent attempt to define the interpretation basis in the many worlds interpretation of quantum mechanics. *Internat. J. Theoret. Phys.* **27** (1988), no. 12, 1507-1531. (Summary) **89b:81014** 81B05
- (with Svetlichny, George; Redhead, Michael L. G.; Butterfield, Jeremy) Do the Bell inequalities require the existence of joint probability distributions? *Philos. Sci.* **55** (1988), no. 3, 387-401. (Dennis Dieks) **89b:81014** 81B05
- Brown, J. B.** (with Humke, P.; Laczkovich, M.) Measurable Darboux functions. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 603-610. (Pavel Kostyrko) **89b:26003** 26A21
- Brown, J. David** (with Teitelboim, Claudio) Neutralization of the cosmological constant by membrane creation. *Nuclear Phys. B* **297** (1988), no. 4, 787-836. (Summary) **89d:83081** 83F05 (81G25, 83C47, 83E15)
- Brown, James Ward** (with Churchill, Ruel V.) ★ Fourier series and boundary value problems. Fourth edition. *McGraw-Hill Book Co., New York, 1987*. x+292 pp. ISBN 0-07-010881-1 (Editors) **89b:35001** 35-01 (42-01)
- Brown, Johnny E.** Iteration of functions subordinate to schlicht functions. *Complex Variables Theory Appl.* **9** (1987), no. 2-3, 143-152. (Thomas McCoy) **89a:30019** 30C80 (30D05)
- (with Goldstein, Myron; McDonald, John N.) A sequence of extremal problems for trigonometric polynomials. *J. Math. Anal. Appl.* **130** (1988), no. 2, 545-551. (S. Izumi) **89c:42002** 42A05
- Brown, K. A.** (with Warfield, R. B., Jr.) The influence of ideal structure on representation theory. *J. Algebra* **116** (1988), no. 2, 294-315. (G. Krause) **89c:16026** 16A33 (16A52, 16A64, 16A66)
- Corrigendum and addendum to: "Height one primes of polycyclic group rings" [J. London Math. Soc. (2) **32** (1985), no. 3, 426-438; MR **87e:16032**]. *J. London Math. Soc.* (2) **38** (1988), no. 3, 421-422. (Editors) **89j:16014** 16A27 (20C07)
- (with Hajarnavis, C. R.) Injectively homogeneous rings. *J. Pure Appl. Algebra* **51** (1988), no. 1-2, 65-77. (S. A. Paramhans) **89g:16007** 16A15 (16A33, 16A36, 16A60)
- (with Levasseur, T.) Cohomology of induced modules in rings of differential operators. *Proc. Edinburgh Math. Soc.* (2) **31** (1988), no. 1, 41-47. (K. R. Goodearl) **89c:16004** 16A05 (16A56, 16A61, 17B35, 32C38)
- (with du Cloux, Fokko) On the representation theory of solvable Lie algebras. *Proc. London Math. Soc.* (3) **57** (1988), no. 2, 284-300. (S. Paul Smith) **89c:17026** 17B35 (16A08, 17B30)
- Brown, Kenneth S.** Trees, valuations, and the Bieri-Neumann-Strebel invariant. *Invent. Math.* **90** (1987), no. 3, 479-504. (D. J. Collins) **89c:20060** 20F05 (20E06, 22E40)
- (with Thévenaz, Jacques) A generalization of Sylow's third theorem. *J. Algebra* **115** (1988), no. 2, 414-430. (W. E. Deskins) **89c:20048** 20D60 (06A10, 20D20, 20D30)
- Brown, Lawrence D.** The differential inequality of a statistical estimation problem. *Statistical decision theory and related topics, IV, Vol. 1 (West Lafayette, Ind., 1986)*, 299-324, Springer, New York-Berlin, 1988. (Anirban Dasgupta) **89d:62010** 62C15 (34A40, 62C07)
- (with Rinott, Yosef) Inequalities for multivariate infinitely divisible processes. *Ann. Probab.* **16** (1988), no. 2, 642-657. (Moshe Shaked) **89c:60035** 60E15 (60E07, 60K20, 62E10)
- (with Farrell, R. H.) Proof of a necessary and sufficient condition for admissibility in discrete multivariate problems. *J. Multivariate Anal.* **24** (1988), no. 1, 46-52. (James Berger) **89f:62003** 62C07 (62F10)
- Brown, Lawrence G.** Determination of  $A$  from  $M(A)$  and related matters. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 6, 273-278. (Sze-Kai Tsui) **89j:46061** 46L05 (46L10)
- Brown, Leon** (with Korenblum, Boris) Cyclic vectors in  $A^\infty$ . *Proc. Amer. Math. Soc.* **102** (1988), no. 1, 137-138. (Per Hag) **89c:46025** 46E10 (30H05, 46J15, 47B38)
- Brown, M. L.** see **Brown, Martin Lawrence**
- Brown, Mark A.** On the logic of ability. *J. Philos. Logic* **17** (1988), no. 1, 1-26. (S. K. Thomason) **89c:03023** 03B45 (03B60)
- Brown, Martin Lawrence** A note on orders of isogenies of elliptic curves. *Bull. London Math. Soc.* **20** (1988), no. 3, 221-227. (Fumiaki Momose) **89j:11044** 11G05 (14G25)
- Note on supersingular primes of elliptic curves over  $\mathbb{Q}$ . *Bull. London Math. Soc.* **20** (1988), no. 4, 293-296. (M. A. Kenku) **89f:11079** 11G05
- Brown, Michael R.** (with Matthaeus, William H.) Nearly incompressible magnetohydrodynamics at low Mach number. *Phys. Fluids* **31** (1988), no. 12, 3634-3644. (Summary) **89j:76087** 76W05 (76X05)
- Brown, Morton** The mathematical work of R. H. Bing. *Proceedings of the 1987 Topology Conference (Birmingham, AL, 1987)*. *Topology Proc.* **12** (1987), no. 1, 1-25. (Editors) **89c:10046** 01A70 (54-03)
- (with Katz, Barry P.) Detection of a random alteration in a multivariate observation when knowing probable direction. *Comput. Statist. Data Anal.* **6** (1988), no. 2, 145-155. (Summary) **89a:62132** 62H15 (62F15)
- (with Slaminka, Edward E.; Transue, William Raoul Reagle) An orientation preserving fixed point free homeomorphism of the plane which admits no closed invariant line. *Topology Appl.* **29** (1988), no. 3, 213-217. (Jerzy Ombach) **89i:58076** 58F13 (54H20)
- Brown, R. A.** see **Brown, Robert Arthur**
- Brown, R. C.** see **Brown, Richard C.**
- Brown, R. D.** Convergence criteria for Aronszajn's method and for the Bazley-Fox method. *Proc. Roy. Soc. Edinburgh Sect. A* **108** (1988), no. 1-2, 91-108. (M. Z. Nashed) **89d:47031** 47A70 (49G15)
- Brown, R. F.** see **Brown, Robert F.**
- Brown, Reggie** (with Ott, Edward; Grebogi, Celso) The goodness of ergodic adiabatic invariants. *J. Statist. Phys.* **49** (1987), no. 3-4, 511-550. (G. Benettin) **89c:58076** 58F13 (70H05, 70K50, 82A05)
- (with Bleher, Siegfried; Grebogi, Celso; Ott, Edward) Fractal boundaries for exit in Hamiltonian dynamics. *Phys. Rev. A* (3) **38** (1988), no. 2, 930-938. (Summary) **89g:58127** 58F13 (58F05, 70H05, 70K50)
- Brown, Reginald F. ★** Biomedical systems analysis via compartmental concept. *Cybernetics and Systems Series. Abacus Press, Tunbridge Wells, 1985*. vi+686 pp. ISBN 0-85626-433-4 (P. Bertrand) **89a:92017** 92A09 (92-01, 92A05, 93-01)
- Brown, Richard C.** (with Hinton, D. B.) Weighted interpolation inequalities of sum and product form in  $\mathbb{R}^n$ . *Proc. London Math. Soc.* (3) **56** (1988), no. 2, 261-280. (E. R. Love) **89c:26027** 26D10 (39A12)
- Brown, Robert Arthur** (with Thomas, P. D.) LU decomposition of matrices with augmented dense constraints. *Internat. J. Numer. Methods Engrg.* **24** (1987), no. 8, 1451-1459. (Iain S. Duff) **89a:65050** 65F05 (65V05)
- Brown, Robert Bruce** Nonexistence of a regular graph design with  $v = 17$  and  $k = 6$ . *Discrete Math.* **68** (1988), no. 2-3, 315-318. (Sharad S. Sane) **89h:05014** 05B05 (05B30, 62K10)
- Brown, Robert F.** Multiple solutions to parametrized nonlinear differential systems from Nielsen fixed point theory. *Nonlinear analysis, 89-98, World Sci. Publishing, Singapore, 1987*. (Jing Xian Sun) **89c:47086** 47H15 (34B15, 47H10, 55M20)
- Topological identification of multiple solutions to parametrized nonlinear equations. *Pacific J. Math.* **131** (1988), no. 1, 51-69. (Gilles Fournier) **89c:47087** 47H15 (34B15, 34G20, 47H10, 55M20)
- see also **Fixed point theory and its applications, 89c:00036**
- Brown, Ron** Real closures of fields at orderings of higher level. *Pacific J. Math.* **127** (1987), no. 2, 261-279. (Niels Schwartz) **89c:12005** 12J15 (12D15, 12J10)
- The behavior of chains of orderings under field extensions and places. *Pacific J. Math.* **127** (1987), no. 2, 281-297. (Niels Schwartz) **89c:12006** 12J15 (12D15, 12J10)
- Minimal covers of  $S_n$  by abelian subgroups and maximal subsets of pairwise noncommuting elements. *J. Combin. Theory Ser. A* **49** (1988), no. 2, 294-307. (Michael E. Mays)

- 89i:20043** 20D60 (20B30)  
 — Automorphisms and isomorphisms of real Henselian fields. *Trans. Amer. Math. Soc.* **307** (1988), no. 2, 675–703. (T. Y. Lam) **89k:12012** 12J10 (12J15, 12J20)
- Brown, Ronald** A nonabelian tensor product of groups. *Algebra-Tagung Halle 1986*, 59–72, *Wissensch. Beitr.*, 33, Martin-Luther-Univ. Halle-Wittenberg, Halle (Saale), 1987. (D. L. Johnson) **89a:20062** 20L15 (18G50, 55Q20)  
 — (with Ellis, Graham J.) Hopf formulae for the higher homology of a group. *Bull. London Math. Soc.* **20** (1988), no. 2, 124–128. (Stefan Jackowski) **89g:20082** 20J05 (55Q30)  
 — see also Ashley, N., **89k:55028**
- Brown, Scott W.** (with Chevreau, B.) Toute contraction à calcul fonctionnel isométrique est réflexive. (English summary) [Every contraction with isometric functional calculus is reflexive] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 5, 185–188. (László Kérchy) **89i:47007** 47A15 (47A65, 47C05, 47D25)  
 — Full analytic subspaces for contractions with rich spectrum. *Pacific J. Math.* **132** (1988), no. 1, 1–10. (Hari Bercovici) **89j:47012** 47A65 (47A15)
- Brown, Timothy C.** (with Nair, M. Gopalan) A simple proof of the multivariate random time change theorem for point processes. *J. Appl. Probab.* **25** (1988), no. 1, 210–214. (F. Papangelou) **89i:60049** 60G55
- Brown, W. C.** ★ A second course in linear algebra. A Wiley-Interscience Publication. John Wiley & Sons, Inc., New York, 1988. xii+264 pp. ISBN 0-471-62602-3 (M. Pearl) **89i:15001** 15-01 (46-01, 47-01)  
 — (with Kerr, Jeanne Wald) Derivations and the Cohen-Macaulay type of points in generic position in  $n$ -space. *J. Algebra* **112** (1988), no. 1, 159–172. (Andrew Kustin) **89i:14024** 14H20 (13H10)  
 — (with Kerr, Jeanne Wald) A matrix problem associated with computing Cohen-Macaulay type. *Linear and Multilinear Algebra* **22** (1988), no. 3, 213–227. (William H. Gustafson) **89i:15025** 15A30 (14M05, 18G10)
- Brownell, W. Dale** The effectivity of certain measures of algebraic independence. *Séminaire de théorie des nombres, Paris 1984–85*, 41–50, *Progr. Math.*, 63, Birkhäuser Boston, Boston, MA, 1986. (Introduction) **89i:11100** 11J85  
 — Large transcendence degree revisited. I. Exponential and non-CM cases. *Diophantine approximation and transcendence theory (Bonn, 1985)*, 149–173, *Lecture Notes in Math.*, 1290, Springer, Berlin-New York, 1987. (Daniel Bertrand) **89h:11042** 11J85 (13F20, 14K07)  
 — (with Tubbs, Robert) Large transcendence degree revisited. II. The CM case. *Diophantine approximation and transcendence theory (Bonn, 1985)*, 175–188, *Lecture Notes in Math.*, 1290, Springer, Berlin-New York, 1987. (Daniel Bertrand) **89h:11043** 11J85 (13F20, 14K22)  
 — Bounds for the degrees in the Nullstellensatz. *Ann. of Math.* (2) **126** (1987), no. 3, 577–591. (D. W. Masser) **89b:12001** 12D99 (11J99, 13B25)  
 — Borne effective pour l'exposant dans le théorème des zéros. (English summary) [An effective bound for the exponent in the Nullstellensatz] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 7, 287–290. (D. W. Masser) **89h:12002** 12D99 (11J99, 13B25)  
 — On the factorization of partial differential equations. *Canad. J. Math.* **39** (1987), no. 4, 825–834. (Carlos A. Berenstein) **89c:30077** 30D35 (34A20)  
 — Note on a paper of P. Philippon: "Zero estimates in commutative algebraic groups" [Bull. Soc. Math. France **114** (1986), no. 3, 355–383]. *Michigan Math. J.* **34** (1987), no. 3, 461–463. (D. W. Masser) **89a:11075** 11J81 (13A99, 14C17)  
 — Local Diophantine Nullstellen inequalities. *J. Amer. Math. Soc.* **1** (1988), no. 2, 311–322. (Daniel Bertrand) **89h:11041** 11J85 (13F20)  
 — see also Philippon, Patrice, **89h:12003**
- Browne, M. C.** (with Clarke, E. M.; Grünberg, O.) Characterizing finite Kripke structures in propositional temporal logic. International Joint Conference on Theory and Practice of Software Development (Pisa, 1987). *Theoret. Comput. Sci.* **59** (1988), no. 1-2, 115–131. (Neculai Curteanu) **89k:03030** 03B70 (03B45, 68Q10, 68Q55, 68Q60)
- Browne, Michael W.** (with Shapiro, Alexander) Analysis of covariance structures under elliptical distributions. *J. Amer. Statist. Assoc.* **82** (1987), no. 400, 1092–1097. (Hannu Oja) **89c:62088** 62H10 (62F35)  
 — (with Shapiro, Alexander) Adjustments for kurtosis in factor analysis with elliptically distributed errors. *J. Roy. Statist. Soc. Ser. B* **49** (1987), no. 3, 346–352. (Masashi Okamoto) **89b:62123** 62H25 (62F05)  
 — Amendment to: "Robustness of statistical inference in factor analysis and related models" [Biometrika **74** (1987), no. 2, 375–384; MR **88h:62095**]. *Biometrika* **75** (1988), no. 2, 395. (Editors) **89d:62051** 62H25 (62F35)  
 — (with Neudecker, Heinz) The covariance matrix of a general symmetric second degree matrix polynomial under normality assumptions. *Linear Algebra Appl.* **103** (1988), 13–20. (R. Kala) **89j:15026** 15A52
- Browne, Patrick J.** (with Sleeman, B. D.) Multiparameter deficiency index theory. *Appl. Anal.* **29** (1988), no. 1-2, 45–54. (A. D. Wood) **89m:47013** 47A70 (47B25)  
 — (with Binding, Paul) Applications of two parameter spectral theory to symmetric generalised eigenvalue problems. *Appl. Anal.* **29** (1988), no. 1-2, 107–142. (Brian D. Sleeman) **89k:47026** 47A70 (47B25)  
 — (with Sleeman, B. D.) Inverse multiparameter eigenvalue problems for matrices. III. *Proc. Edinburgh Math. Soc.* (2) **31** (1988), no. 1, 151–155. (Paul Binding) **89g:15011** 15A18 (47A70)  
 — (with Isaev, Hamlet) Symmetric multiparameter problems and deficiency index theory. *Proc. Edinburgh Math. Soc.* (2) **31** (1988), no. 3, 481–488. (Erik G. F. Thomas) **89m:47014** 47A70 (47B25)  
 — (with Binding, Paul) Two parameter eigenvalue problems for matrices. *Linear Algebra Appl.* **113** (1989), 139–157. (L. Rodman) **89m:47012** 47A70 (15A18)
- Browning, G.** (with Kreiss, Heinz-Otto) Numerical problems connected with weather prediction. *Progress and supercomputing in computational fluid dynamics (Jerusalem, 1984)*, 377–394, *Progr. Sci. Comput.*, 6, Birkhäuser Boston, Boston, MA, 1985. (Introduction) **89a:86004** 86A10 (65P05)
- Broy, Manfred** Equational specification of partial higher order algebras. *Logic of programming and calculi of discrete design (Marktredorf, 1986)*, 185–241, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 36, Springer, Berlin-New York, 1987. (W. Wechler) **89g:68046** 68Q65 (03B70, 68N15, 68P05)  
 — (with Streicher, Thomas) Views of distributed systems. *Mathematical models for the semantics of parallelism (Rome, 1986)*, 114–143, *Lecture Notes in Comput. Sci.*, 280, Springer, Berlin-New York, 1987. (Summary) **89a:68061** 68Q10
- Nondeterministic data flow programs: how to avoid the merge anomaly. *Sci. Comput. Programming* **10** (1988), no. 1, 65–85. (Horst Reichel) **89b:68016** 68N05 (68R10)
- Views of queues. *Sci. Comput. Programming* **11** (1988), no. 1, 65–86. (Neculai Curteanu) **89m:68094** 68Q65 (68Q10, 68Q55)
- Brody, C. G.** Skew-symmetric matrices, staircase functions and theorems of the alternative. *System modelling and optimization (Budapest, 1985)*, 133–140, *Lecture Notes in Control and Inform. Sci.*, 84, Springer, Berlin-New York, 1986. (Introduction) **89i:90113** 90C20
- Brozius, Henk** (with de Haan, L.) On limiting laws for the convex hull of a sample. *J. Appl. Probab.* **24** (1987), no. 4, 852–862. (Sidney I. Resnick) **89i:60036** 60F05 (60D05, 60G55)
- radicati di Brozolo, Luigi A.** see Radicati di Brozolo, Luigi A.
- Brualdi, Richard A.** Combinatorially determined elementary divisors. Eighteenth South-eastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 193–216. (Jozef Širáň) **89e:05139** 05C50  
 — (with Solheid, Ernie S.) Some extremal problems concerning the square of a  $(0, 1)$ -matrix. *Linear and Multilinear Algebra* **22** (1987), no. 1, 57–73. (Ron Aharoni) **89i:05043** 05B20 (05C50)  
 — In memoriam. Herbert J. Ryser, 1923–1985. *J. Combin. Theory Ser. A* **47** (1988), no. 1, iv, 1–5. (Editors) **89a:01053** 01A70  
 — (with Goldwasser, John L.; Michael, T. S.) Maximum permanents of matrices of zeros and ones. *J. Combin. Theory Ser. A* **47** (1988), no. 2, 207–245. (Werner Hartmann) **89i:51010** 15A15 (15A45)  
 — (with Li, Qiao) On the combinatorial compound matrix. *J. Math. Res. Exposition* **8** (1988), no. 1, 153–162. (Peter M. Gibson) **89i:05063** 05B20 (15A15)  
 — Some applications of doubly stochastic matrices. Proceedings of the Victoria Conference on Combinatorial Matrix Analysis (Victoria, BC, 1987). *Linear Algebra Appl.* **107** (1988), 77–100. (Thomas H. Foregger) **89k:15036** 15A51 (05C50, 94C15)  
 — (with Pless, Vera S.; Beissinger, Janet Simpson) On the MacWilliams identities for linear codes. Proceedings of the Victoria Conference on Combinatorial Matrix Analysis (Victoria, BC, 1987). *Linear Algebra Appl.* **107** (1988), 181–189. (Torleiv Kløve) **89i:94035** 94B05  
 — Dedication. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 1, iv–v. (Editors) **89a:01054** 01A70  
 — see also Bongiovanni, G. et al., **89m:15013**
- Bruce, Annadora J.** (with Herndon, W. C.) Perimeter codes for benzenoid aromatic hydrocarbons. *Graph theory and topology in chemistry (Athens, Ga., 1987)*, 491–513, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (Summary) **89c:92101** 92A40
- Bruce, James William** (with Giblein, Peter J.) ★ Кривые и особенности. (Russian) [Curves and singularities] Геометрическое введение в теорию особенностей. [A geometric introduction to singularity theory] Translated from the English by I. G. Shcherbak. Translation edited and with a preface by V. I. Arnol'd. Современная Математика: Вводные Курсы. [Contemporary Mathematics: Introductory Courses] "Mir", Moscow, 1988. 264 pp. ISBN 5-03-001194-3 (Editors) **89h:58023** 58C27  
 — Stable mappings of discriminant varieties. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 1, 69–82. (Pierre D. Milman) **89d:58019** 58C27  
 — (with Roberts, R. M.) Critical points of functions on analytic varieties. *Topology* **27** (1988), no. 1, 57–90. (Hiroaki Terao) **89c:32019** 32B30
- Bruce, Kim B.** (with Riecke, Jon G.) The semantics of Miranda's algebraic types. *Mathematical foundations of programming language semantics (New Orleans, LA, 1987)*, 455–473, *Lecture Notes in Comput. Sci.*, 298, Springer, Berlin-New York, 1988. (Summary) **89h:68098** 68Q55 (03B40)
- Bruch, J. C., Jr.** (with Adali, S.; Sadek, Ibrahim S.; Sloss, J. M.) Feedback control of a vibrating beam by stiffening action. *Mech. Res. Comm.* **15** (1988), no. 1, 21–29. (Edward Jezierski) **89c:93124** 93C20 (93B50, 93C75)  
 — (with Adali, S.; Sadek, Ibrahim S.; Sloss, J. M.) Distributed control of layered orthotropic plates with damping. *Optimal Control Appl. Methods* **9** (1988), no. 1, 1–17. (Russell D. Rupp) **89d:49001** 49A22 (35L75, 49B22, 73K10, 90C31, 93C75)  
 — (with Sloss, J. M.; Adali, S.; Sadek, Ibrahim S.) Boundary feedback control of a vibrating beam subject to a displacement constraint. *Optimal Control Appl. Methods* **10** (1989), no. 1, 81–87. (Summary) **89m:93041** 93C20 (73K12)
- Bruck, Jehoshua** (with Goodman, Joseph W.) A generalized convergence theorem for neural networks. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part I, 1089–1092. (Summary) **89k:92011** 92A09 (90C27)
- Brück, Rainer** On locally univalent entire functions. *Complex Variables Theory Appl.* **9** (1987), no. 1, 101–107. (S. M. Shah) **89a:30013** 30C55 (30D15)  
 — Uniqueness theorems for harmonic functions. *Analysis* **8** (1988), no. 1-2, 121–143. (D. H. Armitage) **89i:31001** 31A05  
 — Interpolation formulas for entire functions of exponential type and some applications. *J. Math. Anal. Appl.* **135** (1988), no. 1, 165–177. (Albert Baerstein II) **89m:30053** 30D10 (30E05)  
 — (with Merzlyakov, S. G.) Representation of certain functions analytic in a strip or in the plane. *Math. Sem. Giessen* **No. 185** (1988), 83–95. (J. Gopala Krishna) **89g:30050** 30D10 (30B40, 30B50, 30D20)
- Brucker, P.** An efficient algorithm for the job-shop problem with two jobs. (German summary) *Computing* **40** (1988), no. 4, 353–359. (Summary) **89j:90141** 90B35  
 — (with Meyer, Wolfgang) Scheduling two irregular polygons. *Discrete Appl. Math.* **20** (1988), no. 2, 91–100. (Alexander H. G. Rinnooy Kan) **89d:90170** 90C27 (90B35)
- Brucker, R.** (with Sorg, M.) Geometry and topology of  $SO(4)$  trivializable gauge fields. *Z. Naturforsch. A* **42** (1987), no. 6, 521–537. (Summary) **89c:53059** 53C80 (58G40, 81E13)
- Brückmann, Peter** Some birational invariants of algebraic varieties. *Proceedings of the conference on algebraic geometry (Berlin, 1985)*, 65–73, *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (Fumio Sakai) **89i:14013** 14F10 (14M10)  
 — (with Staskowiak, Marion) Zentralbündel von Schrägspiegelungen an Ebenen im äquiaffinen Raum. [Central bundles of skew reflections in planes in the equiaffine space] *Beiträge Algebra Geom.* **No. 25** (1987), 85–100. (Frieder Knüppel) **89d:51018** 51F15  
 — (with Staskowiak, Marion) Orthogonalitätsrelationen mit Parallelinvarianz und Zentralbündel von Schrägspiegelungen an Ebenen im äquiaffinen Raum. [Orthogonality



- relations with parallel invariance and central bundles of oblique reflections in planes in an equi-affine space] *Beiträge Algebra Geom.* No. 26 (1988), 43–52. (Frieder Knüppel) **89b:51019** 51F15
- Bruckner, G.** (with Kluge, R.) On a coupled system of partial differential equations. (German and Russian summaries) *Z. Anal. Anwendungen* 6 (1987), no. 2, 133–141. (G. P. Bava) **89b:35156** 35Q99
- Bruckstein, Alfred M.** (with Kailath, Thomas) On discrete Schrödinger equations and their two-component wave equation equivalents. *J. Math. Phys.* 28 (1987), no. 12, 2914–2924. (Pierre C. Sabatier) **89a:34019** 34A55 (34B25, 35J10, 39A12, 81C05)
- (with Citron, T. K.; Kailath, Thomas) Inverse scattering and minimal partial realizations. *Internat. J. Control* 48 (1988), no. 4, 1537–1550. (Vimal Singh) **89k:93032** 93B15 (93A20, 93C05)
- Brucoli, Michele** (with La Scala, Massimo; Torelli, Francesco; Trovato, Michele) Overlapping decomposition for small disturbance stability analysis of interconnected power networks. *Large Scale Systems* 13 (1987), no. 2, 115–129. (Not in MR) **93C75** (49D27, 49D30, 93A15, 93D99)
- de Brucq, D.** (with Panzarella, L.; Rakotopara, D.) Observation d'un système non linéaire. (English summary) [Observation of a nonlinear system] *RAIRO Automat.-Prod. Inform. Ind.* 22 (1988), no. 4, 357–361. (Not in MR) **93B07** (93C10, 93C55)
- Brudaru, Octav** (with Silion, Radu) Pipelined processing of tasks with deterministic or stochastic execution times. (Romanian summary) *Bul. Inst. Politehn. Iasi Sect. I* 34(38) (1988), no. 1–4, 13–18. (Summary) **89m:90083** 90B35 (05C35)
- Bruder, Jürgen** (with Strehmel, K.; Weiner, R.) Partitioned adaptive Runge-Kutta methods for the solution of nonstiff and stiff systems. *Numer. Math.* 52 (1988), no. 6, 621–638. (Summary) **89d:65067** 65L05
- Brüder, Jörg** Additive Diophantine inequalities with mixed powers. I, II. *Mathematika* 34 (1987), no. 2, 124–130, 131–140. (R. J. Cook) **89d:11024** 11D75
- On Waring's problem for cubes and biquadrates. *J. London Math. Soc.* (2) 37 (1988), no. 1, 25–42. (K. Thanigasalam) **89a:11103** 11P05
- (with Baker, R. C.) On pairs of additive cubic equations. *J. Reine Angew. Math.* 391 (1988), 157–180. (D. R. Heath-Brown) **89c:11036** 11D25 (11D72, 11P55)
- A problem in additive number theory. *Math. Proc. Cambridge Philos. Soc.* 103 (1988), no. 1, 27–33. (Shō Iseki) **89c:11150** 11P05
- On Waring's problem for cubes and biquadrates. II. *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 2, 199–206. (K. Thanigasalam) **89c:11138** 11P05
- Cubic Diophantine inequalities. *Mathematika* 35 (1988), no. 1, 51–58. (D. R. Heath-Brown) **89m:11033** 11D75 (11P05)
- Brudnyi, Yu. A.** (with Irodova, I. P.) ★ Прикладная теория приближения. (Russian) [Applied approximation theory] *Yaroslavl Gos. Univ., Yaroslavl*, 1986. 88 pp. (Gheorghe Coman) **89a:65013** 65Dxx
- Bruen, Alden A.** (with Silverman, Robert) Arcs and blocking sets. II. *European J. Combin.* 8 (1987), no. 4, 351–356. (J. C. Fisher) **89d:05043** 05B25 (51E20)
- (with Hirschfeld, J. W. P.) Intersections in projective space. II. Pencils of quadrics. *European J. Combin.* 9 (1988), no. 3, 255–270. (J. C. Fisher) **89c:51046** 51E20
- (with Silverman, Robert) On extendable planes, M.D.S. codes and hyperovals in  $PG(2, q)$ ,  $q = 2^n$ . *Geom. Dedicata* 28 (1988), no. 1, 31–43. (Wolfgang Knapp) **89c:51009** 51E15 (05B25, 05B28, 94B25)
- Brugia, Odoardo** (with Filipponi, Piero) Functions of the Kronecker square of the matrix  $Q$ . *Applications of Fibonacci numbers* (San Jose, CA, 1986), 69–76, *Kluwer Acad. Publ., Dordrecht*, 1988. (J. S. Frame) **89f:15011** 15A24
- Bruhat, F.** (with Tits, J.) Schémas en groupes et immeubles des groupes classiques sur un corps local. II. Groupes unitaires. (English summary) [Group schemes and buildings of classical groups over a local field. II. Unitary groups] *Bull. Soc. Math. France* 115 (1987), no. 2, 141–195. (Guy Rousseau) **89b:20098** 20G25 (11E57, 22E50)
- (with Tits, J.) Groupes algébriques sur un corps local. Chapitre III. Compléments et applications à la cohomologie galoisienne. [Algebraic groups over local fields. III. Further remarks and applications to Galois cohomology] *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* 34 (1987), no. 3, 671–698. (James E. Humphreys) **89b:20099** 20G25 (11E72, 12G05, 22E20)
- choquet-Bruhat, Yvonne** see Choquet-Bruhat, Yvonne
- levy-Bruhl, Pierre** see Levy-Bruhl, Pierre
- Bruha, B.** (with Koch, B. P.) Transient chaos in weakly coupled Josephson junctions. (French summary) *J. Physique* 49 (1988), no. 1, 35–40. (Summary) **89b:70011** 70K50 (34C15, 58F13, 94C05)
- Transient chaos and perturbed long range interactions. *Phys. Scripta* 37 (1988), no. 2, 193–196. (Summary) **89a:70011** 70F05 (58F13, 70F07)
- Bruhn, Gerhard** Erhaltungssätze und schwache Lösungen der Gasdynamik. [Conservation laws and weak solutions of gas dynamics] *Sitzungsberichte der Berliner Mathematischen Gesellschaft*, 149–155, *Freie Univ. Berlin, Berlin*, 1987. (C. N. Kaul) **89k:76077** 76N15 (35L65, 35Q20)
- de Bruijn, N. G.** Generalizing Automath by means of lambda-typed lambda calculus. *Mathematical logic and theoretical computer science* (College Park, Md., 1984–1985), 71–92, *Lecture Notes in Pure and Appl. Math.*, 106, *Dekker, New York*, 1987. (Summary) **89b:03026** 03B40 (03B35)
- Modulated quasicrystals. *Nederl. Akad. Wetensch. Indag. Math.* 49 (1987), no. 2, 121–132. (Marjorie Senechal) **89a:51031** 51F15 (52A43, 82A60)
- A riffle shuffle card trick and its relation to quasicrystal theory. *Nieuw Arch. Wisk.* (4) 5 (1987), no. 3, 285–301. (J. M. Wills) **89f:52034** 52A45 (05B45, 52A25)
- see also Biography: de Bruijn, N. G., **89i:01123**
- de Bruin, Arle** (with Rinnooy Kan, A. H. G.; Trienekens, H. W. J. M.) A simulation tool for the performance evaluation of parallel branch and bound algorithms. *Math. Programming* 42 (1988), no. 2 (Ser. B), 245–271. (Summary) **89k:90134** 90C27 (68Q10, 68R05)
- de Bruin, Marcel G.** Simultaneous partial Padé approximants. *J. Comput. Appl. Math.* 21 (1988), no. 3, 343–355. (Summary) **89b:65045** 65D15 (30E10, 41A21)
- Bruckhli, A. V.** An optimality condition of Goh type for extremals that degenerate at a point. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1987, no. 3, 46–50, 110–111. (Phan Huy Khai) **89b:49023** 49B10 (93C10, 93C15)
- Brum, C.** On Dirac matrices in gravitational field. *Rev. Roumaine Phys.* 32 (1987), no. 4, 375–382. (Pierre Angles) **89d:81077** 81E20 (81D27, 83C60)
- Brumatti, P.** (with Simis, A.; Vasconcelos, W. V.) Normal Rees algebras. *J. Algebra* 112 (1988), no. 1, 26–48. (Jürgen Herzog) **89b:13011** 13B20 (13C04)
- Brumberg, V. A.** (with Kopeikin, S. M.) Relativistic equations of motion of the Earth's satellite in a geocentric frame of reference. (Russian. English summary) *Kinemat. Fiz. Nebesn. Tel* 5 (1989), no. 1, 3–8. (Not in MR) **70M05** (70F15)
- see also Soffel, Michael H., **89m:85001**
- Brumfiel, G. W.** The real spectrum of an ideal and  $KO$ -theory exact sequences. *K-Theory* 1 (1987), no. 3, 211–235. (G. Horrocks) **89c:18009** 18F25 (13D15, 19L99)
- The tree of a non-Archimedean hyperbolic plane. *Geometry of group representations* (Boulder, CO, 1987), 83–106, *Contemp. Math.*, 74, *Amer. Math. Soc., Providence, RI*, 1988. (Christopher W. Stark) **89m:51024** 51G05 (22E20, 22E40, 51M10)
- Brummelhuis, R. G. M.** An F. and M. Riesz theorem for bounded symmetric domains. (French summary) *Ann. Inst. Fourier (Grenoble)* 37 (1987), no. 2, 139–150. (A. B. Aleksandrov) **89c:43002** 43A15 (32M15)
- (with de Paep, P. J.) Point derivations of function algebras generated by holomorphic functions. *Proc. Amer. Math. Soc.* 105 (1989), no. 1, 117–120. (Håkan Hedenmalm) **89c:46058** 46J15
- Brümmer, G. C. L.** (with Hager, A. W.) Functorial uniformization of topological spaces. Proceedings of the 8th international conference on categorical topology (L'Aquila, 1986). *Topology Appl.* 27 (1987), no. 2, 113–127. (M. Hušek) **89c:54025** 54B30 (18A40, 54E15)
- (with Banaschewski, B.) Stably continuous frames. *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 1, 7–19. (Jiří Rosický) **89c:54059** 54E55 (06D99, 18B30)
- Brun, M. A.** (with Fayolle, G.) On a system with impatience and repeated calls. *Queueing theory and its applications*, 283–305, *CWI Monographs*, 7, *North-Holland, Amsterdam-New York*, 1988. (Ralph L. Disney) **89i:60179** 60K25 (90B22)
- Bruna, Joaquim** (with Burgués i Badia, Josep Ma.) Holomorphic approximation and estimates for the  $\bar{\partial}$ -equation on strictly pseudoconvex nonsmooth domains. *Duke Math. J.* 55 (1987), no. 3, 539–596. (Harold P. Boas) **89c:32024** 32E30 (32F15, 35N15)
- (with Nagel, Alexander; Wainger, Stephen) Convex hypersurfaces and Fourier transforms. *Ann. of Math.* (2) 127 (1988), no. 2, 333–365. (Michael Cowling) **89d:42023** EA **89m** 42B10
- (with Ahern, Patrick) On holomorphic functions in the ball with absolutely continuous boundary values. *Duke Math. J.* 56 (1988), no. 1, 129–142. (A. B. Aleksandrov) **89b:32012** 32A40
- (with Korenblum, Boris) On Kolmogorov's theorem, the Hardy-Littlewood maximal function and the radial maximal function. *J. Analyse Math.* 50 (1988), 225–239. (Roger L. Jones) **89k:42029** 42B25 (42A50)
- Brumacci, Francesco A.** DB2 and DB2A: two useful tools for constructing Hamiltonian circuits. *European J. Oper. Res.* 34 (1988), no. 2, 231–236. (H. T. Lau) **89c:05136** 05C45 (90B10)
- Bruneau, Charles-Henri** (with Jouron, Claude) Un nouveau schéma décentré pour le problème de la cavité entraînée. (English summary) [A new upwind scheme for the driven cavity flow] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 7, 359–362. (W. Langlois) **89f:76001** 76-04
- Brunner, Robert** An example in the cohomology of augmented algebras. *J. Pure Appl. Algebra* 55 (1988), no. 1–2, 81–84. (J. P. May) **89c:55013** 55S10 (16A99)
- Brunet, Pere** Including shape handles in recursive subdivision surfaces. *Comput. Aided Geom. Design* 5 (1988), no. 1, 41–50. (Summary) **89c:65021** 65D10
- Brungs, H.-H.** Chain rings and valuations. *Ring theory* (Granada, 1986), 33–37, *Lecture Notes in Math.*, 1328, *Springer, Berlin-New York*, 1988. (P. M. Cohn (Zbl 648:16013)) **89k:16036** 16A39
- Brüning, Jochen** (with Seeley, Robert) An index theorem for first order regular singular operators. *Amer. J. Math.* 110 (1988), no. 4, 659–714. (Elmar Schrohe) **89k:58271** 58G10 (47F05)
- Heat kernel asymptotics for operator valued Sturm-Liouville equations. *Analysis* 8 (1988), no. 1–2, 73–93. (Wei Tao Zhang) **89j:35037** 35C20 (34G10, 35B40, 35J99, 35P99)
- (with Schröder, Herbert) On the absence of log terms in the constant curvature case. *Asymptotic Anal.* 1 (1988), no. 3, 193–203. (Atsushi Katsuda) **89m:58203** 58G25
- Brunner, Don** (with Higgs, Denis) Primary decomposition for  $\Sigma$ -groups. *Canad. Math. Bull.* 31 (1988), no. 4, 399–403. (Luigi Salce) **89k:20079** 20K10 (20K25)
- (with Higgs, Denis) Constructions of  $\Sigma$ -groups, relatively free  $\Sigma$ -groups. *J. Austral. Math. Soc. Ser. A* 46 (1989), no. 1, 8–21. (L. Fuchs) **89i:20082** 20K99 (22A99)
- Brunner, E.** (with Neumann, N.) Nonparametric methods for the 2-period-cross-over design under weak model assumptions. (German summary) *Biometrical J.* 29 (1987), no. 8, 907–920. (Summary) **89c:62078** 62G10 (62I10)
- Brunner, H.** Polynomial spline collocation methods for Volterra integrodifferential equations with weakly singular kernels. *IMA J. Numer. Anal.* 6 (1986), no. 2, 221–239. (Summary) **89b:65217** 65R20 (45J05)
- Collocation methods for one-dimensional Fredholm and Volterra integral equations. *The state of the art in numerical analysis* (Birmingham, 1986), 563–600, *Inst. Math. Appl. Conf. Ser. New Ser.*, 9, *Oxford Univ. Press, New York*, 1987. (Summary) **89m:65112** 65R20 (45D05, 45L10)
- (with Blom, J. G.) The numerical solution of nonlinear Volterra integral equations of the second kind by collocation and iterated collocation methods. *SIAM J. Sci. Statist. Comput.* 8 (1987), no. 5, 806–830. (William F. Moss) **89f:65138** 65R20
- The numerical solution of initial value problems for integro-differential equations. *Numerical analysis 1987* (Dundee, 1987), 18–38, *Pitman Res. Notes Math. Ser.*, 170, *Longman Sci. Tech., Harlow*, 1988. (Gheorghe Micula) **89j:65088** 65R20 (45J05, 65L05)
- (with Aguilar, Marco Angel) Collocation methods for second-order Volterra integro-differential equations. *Appl. Numer. Math.* 4 (1988), no. 6, 455–470. (H. Brunner) **89m:65111** 65R20
- The approximate solution of initial-value problems for general Volterra integro-differential equations. (German summary) *Computing* 40 (1988), no. 2, 125–137. (P. M. Gupta) **89f:65139** 65R20 (45D05, 45J05)
- Brunner, Norbert** Automatic transfer between permutation-models. *Contributions to general algebra*, 5 (Salzburg, 1986), 61–67, *Hölder-Pichler-Tempsky, Vienna*, 1987. (Paul E. Howard) **89c:03080** 03E25 (03E35, 04A25, 22A05)
- Spaces of urelements. II. *Rend. Sem. Mat. Univ. Padova* 77 (1987), 305–315. (Andreas Blass) **89d:03046** 03E25 (03E35, 54G20)

- Superamorphous sets. *Rep. Math. Logic* No. 21 (1987), 15–17 (1988). (John K. Truss) **89f:03042** 03E25
- Bruno, Giordano** see Gatti, Hilary, **89e:01015**
- Brunovský, Pavol** (with Kmeľ, T.) The nitrogen transformation cycle in water. *Dynamical systems and environmental models* (Eisenach, 1986), 132–138, *Math. Ecol., Akademie-Verlag, Berlin*, 1987. (From the introduction) **89b:92011** 92A08 (92A17)
- (with Meravý, Pavol) How to solve algebraic equations by means of differential equations. (Slovak) *Pokroky Mat. Fyz. Astronom.* 32 (1987), no. 5, 273–286. (Š. Schwabik) **89b:58036** 58C30 (65H10)
- (with Fiedler, Berndol) Connecting orbits in scalar reaction diffusion equations. *Dynamics reported*, Vol. 1, 57–89, Teubner, Stuttgart, 1988. (Yuzo Hosono) **89j:58071** 58F12 (35K57, 58F15)
- Bruns, G.** (with Banaschewski, B.) The fundamental duality of partially ordered sets. *Order* 5 (1988), no. 1, 61–74. (Jiří Rosický) **89g:06003** 06A10
- Bruns, Winfried** (with Vetter, Udo) ★ Determinantal rings. *Lecture Notes in Mathematics*, 1327. Springer-Verlag, Berlin-New York, 1988. viii+236 pp. ISBN 3-540-19468-1 (Piotr Pragacz) **89i:13001** 13-02 (13C05, 13H10, 14M12)
- Brunson, T. M.** (with Skinner, C. J.) The analysis of dependencies between time series in psychological experiments. *British J. Math. Statist. Psych.* 40 (1987), no. 2, 125–139. (Summary) **89g:92066** 92A25 (62M10)
- Brunson, Barry W.** The partial order of iterated exponentials. *Amer. Math. Monthly* 93 (1986), no. 10, 779–786. (Margret H. Höft) **89d:06001** 06A10 (20B30)
- Brunsvoll, J.** (with Cyvin, B. N.; Cyvin, S. J.; Gutman, I.) Distribution of  $K$ , the number of Kekulé structures in benzenoid hydrocarbons. III. Kekulé structure statistics. *Match* No. 21 (1986), 301–315. (Summary) **89g:20797** 92A40 (05A15)
- (with Cyvin, S. J.; Cyvin, B. N.; Chen, Rong Si; Su, Lin Xian) The number of Kekulé structures for rectangle-shaped benzenoids. V. *Match* No. 22 (1987), 141–150. (N. Trinajstić) **89c:92097** 92A40 (05A15)
- (with Balaban, Alexandru T.; Ciolescu, Jerzy; Cyvin, B. N.; Cyvin, S. J.; Gutman, I.; He, Wen Chen; He, Wen Jie; Knop, J. V.; Kovacević, M.; Müller, W. R.; Szymanski, K.; Tošić, Ratko; Trinajstić, N.) Enumeration of benzenoid and coronoid hydrocarbons. *Z. Naturforsch.* A 42 (1987), no. 8, 863–870. (Summary) **89d:92090** 92A40 (05A15)
- Brus, Dzh.** see Bruce, James William
- Brus, Tomek** Asymmetric mixtures and catastrophes. *European J. Oper. Res.* 36 (1988), no. 3, 371–378. (James Callahan) **89m:58028** 58C28 (90A15)
- Bruschi, D.** (with Pighizzini, G.; Sabadini, Nicoletta) On the existence of the minimum asynchronous automaton and on decision problems for unambiguous regular trace languages. *STACS 88 (Bordeaux, 1988)*, 334–345, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (see **89b:68011**) 68Q45 (03D05)
- Bruschi, M.** (with Ragnisco, O.) On new solvable many-body dynamical systems with velocity-dependent forces. *Inverse Problems* 4 (1988), no. 3, L15–L20. (From the text) **89m:58089** 58F07 (70F99, 70H05)
- (with Ragnisco, O.) Recursion operator and Bäcklund transformations for the Ruijsenaars-Toda lattice. *Phys. Lett. A* 129 (1988), no. 1, 21–25. (Introduction) **89j:58041** 58F07 (83G35, 70H05, 70K99, 82A99)
- Bruschi, Rita** ★ Willard Van Orman Quine: a bibliographic guide. With an introduction in Italian by Corrado Mangione, Andrea Bonomi, Giulio Giorello and Giovanni Orlandi. With a preface by Quine. Pubblicazioni della Facoltà di Lettere e Filosofia dell'Università di Milano [Publications of the Faculty of Letters and Philosophy of the University of Milan], 113. La Nuova Italia Editrice SpA, Florence, 1986. xi+201 pp. ISBN 88-221-0266-5 (John W. Dawson, Jr.) **89d:01058** 01A70 (00A15, 03-03, 03A05)
- Brusco, Sandro** Heterogeneous distribution of information and convergence to rational expectations equilibrium in a partial equilibrium model. *Econom. Lett.* 28 (1988), no. 1, 21–25. (Introduction) **89j:90045** 90A14 (90A10, 90A16)
- Brusilovskii, P. M.** A collective of evolving automata in forecasting problems. (Russian) *Problems in applied analysis* (Russian), 96–99, 150, *Akad. Nauk SSSR, Dal'nevostochn. Nauchn. Tsent, Vladivostok*, 1986. (see **89m:00008**) 68Q99
- (with Gurman, V. I.; Drozdovskii, E. E.) ★ Приложение математических моделей к анализу эколого-экономических систем. (Russian) [Application of mathematical models to the analysis of ecological-economic systems] Edited by I. A. Bashalkhanov and V. A. Baturin. "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. 216 pp. (Editors) **89d:90069** 90A30
- (with Nasryov, F. S.) Bayesian decisions in ecological-economic systems. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 8, 69–74; translated in *Automat. Remote Control* 49 (1988), no. 8, part 1, 1013–1016. (Summary) **89j:92062** 92A17 (90A30)
- Brusin, V. A.** (with Maksimov, Yu. M.) Investigation of a class of robust algorithms for the identification of models of "input-output" dynamical systems. (Russian) *Dynamics of systems* (Russian), 3–17, 196, *Gorkov. Gos. Univ., Gorki*, 1986. (Yu. A. Nikolaev) **89g:93032** 93B30 (93B35, 93E12)
- Estimates for the output processes of stochastic discrete relay systems of a certain class. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 12, 66–72; translated in *Automat. Remote Control* 48 (1987), no. 12, part 1, 1615–1620. (Summary) **89a:93045** 93E03 (93C55)
- Control of the spectrum of multidimensional oscillatory objects. *J. Appl. Math. Mech.* 51 (1987), no. 3, 401–405 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 3, 515–519 (Russian). (Krzysztof Kuźmicki) **89j:93053** 93B55 (93B50, 93B60)
- Brunstina, S. G.** (with Sukhanov, E. V.) Countable representable varieties of semigroups. (Russian) *Ural. Gos. Univ. Mat. Zap.* 14 (1988), no. 3 *Algebr. Sistemy i ikh. Mnogobobr.*, 14–22, i. (St. Schwarz) **89i:20085** 20M07
- Bruss, F. Thomas** Correction: "On an optimal selection problem of Cowan and Zabczyk" [*J. Appl. Probab.* 24 (1987), no. 4, 918–928; MR 88i:60082] *J. Appl. Probab.* 25 (1988), no. 3, 647. (Editors) **89g:60151** 60G40 (62L15, 90C40, 90D35)
- Invariant record processes and applications to best choice modelling. *Stochastic Process. Appl.* 30 (1988), no. 2, 303–316. (S. M. Samuels) **89m:60098** 60G40 (90C40)
- Brustein, Ram** (with Schwartz, Moshe) From Lagrangian to Brownian motion. *J. Statist. Phys.* 51 (1988), no. 3–4, 585–613. (A. Weron) **89j:82026** 82A31
- (with Nemeschansky, Dennis; Yankielowicz, Shimon) Beta functions and S-matrix in string theory. *Nuclear Phys. B* 301 (1988), no. 2, 224–246. (C. Gauthier) **89h:81170** 81E99 (81E30, 81F15)
- Bruter, Claude Paul** ★ De l'intuition à la controverse. (French) [From intuition to controversy] Essai sur quelques controverses entre mathématiciens. [Essay on some controversies among mathematicians] Bibliothèque Scientifique Albert Blanchard. [Albert Blanchard Scientific Library] Librairie Scientifique et Technique Albert Blanchard, Paris, 1987. xii+169 pp. ISBN 2-85367-022-8 (J. Dieudonné) **89d:01081** 01A80 (00A25)
- Brutman, L.** Generalized alternating polynomials, some properties and numerical applications. *IMA J. Numer. Anal.* 6 (1986), no. 2, 125–136. (Summary) **89b:65021** 65D03 (65D15)
- Alternating polynomials associated with the Chebyshev extrema nodes. *J. Approx. Theory* 53 (1988), no. 1, 33–40. (Ambikeshwar Sharma) **89f:41002** 41A05 (41A10, 41A50)
- Bruton, L. T.** (with Lin, Zhi Ping) BIBO stability of inverse 2-D digital filters in the presence of nonessential singularities of the second kind. *IEEE Trans. Circuits and Systems* 36 (1989), no. 2, 244–254. (Summary) **89k:94011** 94A12 (93D25)
- (with Liu, Qingli) Design of 3-D planar and beam recursive digital filters using spectral transformations. *IEEE Trans. Circuits and Systems* 36 (1989), no. 3, 365–374. (Summary) **89k:94006** 94A11 (94A12, 94C05)
- Brutti, Paolo** (with Basile, Alessandro) Loop associated with a resolvable transversal design. (Italian) *Atti Sem. Mat. Fis. Univ. Modena* 36 (1988), no. 1, 37–43. (E. J. F. Primrose) **89i:05044** 05B05 (20N05)
- Bruyère, Véronique** An answer to a question about finite maximal prefix sets of words. *Theoret. Comput. Sci.* 56 (1988), no. 3, 339–344. (Danièle Beauquier) **89f:68051** 68Q70 (68R05)
- le Bruyn, L.** see Le Bruyn, L.
- Bruyns, P. V.** Results on subgroups of the group of homeomorphisms of the rational numbers. *Quaestiones Math.* 11 (1988), no. 3, 293–300. (J. Wiegold) **89i:20012** 20B27 (20B35)
- Bruzual, Ramón** Local semigroups of contractions and some applications to Fourier representation theorems. *Integral Equations Operator Theory* 10 (1987), no. 6, 780–801. (Lawrence Williams) **89a:47065** 47D05 (47A20, 47B35)
- Bruzzo, Ugo** Integration on supermanifolds. *7th Italian conference on general relativity and gravitational physics (Rapallo, 1986)*, 143–155, *World Sci. Publishing, Singapore*, 1987. (Alice Rogers) **89a:58007** 58A50 (58C50)
- Lagrangian gauge theories on supermanifolds. *Differential geometric methods in mathematical physics (Salamanca, 1985)*, 91–113, *Lecture Notes in Math.*, 1251, Springer, Berlin-New York, 1987. (Alice Rogers) **89b:58037** 58C50 (58E15, 83E50)
- (with Cienci, Roberto) Mathematical foundations of supermanifold field theories: action functional and reduction to spacetime. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 1 (1987), no. 2, 491–507. (Paolo Teofilatto) **89g:58011** 58A50 (58E30, 81E13, 83E50)
- (with Bartocci, Claudio) Some remarks on the differential-geometric approach to supermanifolds. *J. Geom. Phys.* 4 (1987), no. 3, 391–404. (Jaime Muñoz Masqué) **89k:58022** 58A50
- The global Utiyama theorem in Einstein-Cartan theory. *J. Math. Phys.* 28 (1987), no. 9, 2074–2077. (Judith M. Arms) **89b:53110** 53C80 (58F05, 83D05)
- (with Bartocci, Claudio) Cohomology of supermanifolds. *J. Math. Phys.* 28 (1987), no. 10, 2363–2368. (Anargyros Fellouris) **89a:58006** 58A50
- (with Bartocci, Claudio) Cohomology of the structure sheaf of real and complex supermanifolds. *J. Math. Phys.* 29 (1988), no. 8, 1789–1794. (Author's review (UB)) **89k:58023** 58A50 (14F05, 15A75, 57R20)
- Bryan, A. C.** (with Miller, Julian Francis; Stuart, A. E. G.) Superposition formulae for sine-Gordon multisolitons. (Italian and Russian summaries) *Nuovo Cimento B* (11) 101 (1988), no. 6, 637–652. (Summary) **89m:35189a** 35Q20
- (with Miller, Julian Francis; Stuart, A. E. G.) Superposition formulae for multisolitons. II. The modified Korteweg-de Vries equation. (Italian and Russian summaries) *Nuovo Cimento B* (11) 101 (1988), no. 6, 715–720. (Summary) **89m:35189b** 35Q20
- Bryan, R. K.** Maximum entropy and the phase problem in protein crystallography. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 2 (Laramie, WY, 1985 and Seattle, WA, 1986/1987), 155–169, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (see **89f:62002**) 92A40 (82A60, 94A12)
- Bryant, C. F.** (with Rikabi, J.; Freeman, E. M.) An error-based approach to complementary formulations of static field solutions. *Internat. J. Numer. Methods Engrg.* 26 (1988), no. 9, 1963–1987. (Summary) **89f:78003** 78-08
- Bryant, John Logan** Homogeneous ENRs. *Topology Appl.* 27 (1987), no. 3, 301–306. (Dušan Repovš) **89d:57025** 57P99 (54F40, 55N30)
- (with Pacheco, Peter S.)  $K_*$  obstructions to factoring an open manifold. *Topology Appl.* 29 (1988), no. 2, 107–139. (Christopher W. Stark) **89m:57019** 57Q25 (19D35, 57Q12)
- Bryant, P.** see Bryant, Peter R.
- Bryant, Peter** see Bryant, Peter R.
- Bryant, Peter Graham** On characterizing optimization-based clustering methods. *J. Classification* 5 (1988), no. 1, 81–84. (H. Chernoff) **89b:62125** 62H30
- Bryant, Peter R.** Sheaf representations and graded manifolds. *J. Pure Appl. Algebra* 47 (1987), no. 3, 213–230. (Mitchell Rothstein) **89b:58023** 58A50
- (with Batchelor, Marjorie) Graded Riemann surfaces. *Comm. Math. Phys.* 114 (1988), no. 2, 243–255. (Ugo Bruzzo) **89b:58022** 58A50 (32C35, 32G99, 83E50)
- $GH^\infty$  supermanifolds. *J. Math. Phys.* 29 (1988), no. 7, 1575–1579. (Anargyros Fellouris) **89k:58024** 58A50
- Bryant, Robert L.** On notions of equivalence of variational problems with one independent variable. *Differential geometry: the interface between pure and applied mathematics* (San Antonio, Tex., 1986), 65–76, *Contemp. Math.*, 68, *Amer. Math. Soc., Providence, RI*, 1987. (Donato Scolozzi) **89f:58037** 58E10 (49D05)
- A survey of Riemannian metrics with special holonomy groups. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 505–514, *Amer. Math. Soc., Providence, RI*, 1987. (Marisa Fernández) **89f:53068** 53C25 (53C15, 53C20)
- Metrics with exceptional holonomy. *Ann. of Math.* (2) 126 (1987), no. 3, 525–576. (Marisa Fernández) **89b:53084** 53C25 (53C15, 53C57)
- Surfaces of mean curvature one in hyperbolic space. (French summary) *Théorie des variétés minimales et applications* (Palaiseau, 1983–1984). *Astérisque* No. 154-155 (1987), 12, 321–347, 353 (1988). (see **89g:58052**) 53C40
- Surfaces in conformal geometry. *The mathematical heritage of Hermann Weyl* (Durham, NC, 1987), 227–240, *Proc. Sympos. Pure Math.*, 48, *Amer. Math. Soc., Providence, RI*,



1988. (John M. Lee) **89m:53102** 53C42 (32C10, 53A10, 58E12)
- (with Harvey, Reese) Submanifolds in hyper-Kähler geometry. *J. Amer. Math. Soc.* 2 (1989), no. 1, 1–31. (S. M. Salamon) **89m:53090** 53C40 (32C10, 53C25, 53C55)
- Bryant, Roger M.** Automorphism groups of nilpotent Lie algebras. *J. London Math. Soc.* (2) 36 (1987), no. 2, 257–274. (Daniel Segal) **89e:20093** 20G15 (17B30, 17B40)
- (with Boffa, Maurice) Les groupes linéaires vérifiant une identité monodiale. (English summary) [Linear groups with a monoidal identity] *C. R. Acad. Sci. Paris Sér. I Math.* 308 (1989), no. 5, 127–128. (Zhi Jie Chen) **89m:20060** 20H20
- Bryant, V. W.** A tournament result deduced from hares. *Elem. Math.* 42 (1987), no. 6, 153–156. (J. Richard Lundgren) **89a:05069** 05C20
- Bryc, Włodzimierz** (with Bradley, Richard C.; Janson, Svante) On dominations between measures of dependence. *J. Multivariate Anal.* 23 (1987), no. 2, 312–329. (I. G. Zhurbenko) **89b:60058** 60G05
- Trajectories of Gaussian processes and interpolation of Banach spaces. *Stochastic Process. Appl.* 25 (1987), no. 2, 257–263. (Evarist Giné) **89b:60104** 60G15 (60G17)
- Remarks on properties of probability distributions determined by conditional moments. *Probab. Theory Related Fields* 78 (1988), no. 1, 51–62. (Donald Richards) **89e:60029** 60E05 (62E15)
- Bryce, R. A.** Optimization without calculus. *The Hanna Neumann lectures at ICME 5* (Adelaide, 1984), 1–26. *Notes on Pure Math.*, 13, Austral. Nat. Univ., Canberra, 1986. (Robert W. Owens) **89g:90140** 90C05
- (with Cossey, John; Ormerod, E. A.) Fitting classes after Dark. *Group theory* (Singapore, 1987), 293–321, de Gruyter, Berlin-New York, 1989. (T. O. Hawkes) **89m:20017** 20D10 (20F19)
- Brychkov, Yu. A.** (with Marichev, O. I.; Yakubovich, S. B.) Integral Appell  $F_3$ -transformation with respect to parameters. *Complex analysis and applications '85* (Varna, 1985), 135–140. *Bulgar. Acad. Sci., Sofia*, 1986. (Hans-Jürgen Glaeske) **89a:44007** 44A15
- (with Prudnikov, A. P.) Some formulas of operational calculus for step functions generated by special functions. *J. Engng. Phys.* 53 (1987), no. 6, 1472–1475 (1988); translated from *Inzh.-Fiz. Zh.* 53 (1987), no. 6, 1010–1014 (Russian). (Summary) **89f:44005** 44A10
- (with Prudnikov, A. P.; Marichev, O. I.) ★ Integrals and series. Vol. 2. Special functions. Translated from the Russian by N. M. Queen. Second edition. *Gordon & Breach Science Publishers, New York*, 1988. 750 pp. ISBN 2-88124-090-9 (Editors) **89i:00030** 00A22 (33-00)
- Brydges, D. C.** (with Kennedy, Tom) Mayer expansions and the Hamilton-Jacobi equation. *J. Statist. Phys.* 48 (1987), no. 1–2, 19–49. (Gerhard C. Hegerfeldt) **89f:82004** 82A05 (81E25)
- The role of the classical action in cluster expansions. *Mathematical quantum field theory and related topics* (Montreal, PQ, 1987), 181–192. *CMS Conf. Proc.*, 9, Amer. Math. Soc., Providence, RI, 1988. (Summary) **89j:81092** 81E08 (82A05)
- (with Wright, Jill Dianne) Mayer expansions and the Hamilton-Jacobi equation. II. Fermions, dimensional reduction formulas. *J. Statist. Phys.* 51 (1988), no. 3–4, 435–456. (Gerhard C. Hegerfeldt) **89k:81086** 81E15 (82A99)
- Brykalov, S. A.** Equilibrium existence for some heating control systems. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* 17 (1988), no. 6, 371–380. (Zbigniew Emirsajlow) **89m:93040** 93C20 (34K10)
- Brylawski, Thomas H.** (with Dieter, Elaine) Exchange systems. *Discrete Math.* 69 (1988), no. 2, 123–151. (Ulrich Faigle) **89f:05054** 05B35
- Brylinski, Jean-Luc** Cyclic homology and equivariant theories. (French summary) *Ann. Inst. Fourier (Grenoble)* 37 (1987), no. 4, 15–28. (Claude Schochet) **89j:55008** 55N91 (17B56, 19L47, 46L80, 58G12)
- (with Getzler, Ezra) The homology of algebras of pseudodifferential symbols and the noncommutative residue. *K-Theory* 1 (1987), no. 4, 385–403. (P. Schapira) **89j:58135** 58G15
- (with Borho, W.; MacPherson, R.) Springer's Weyl group representations through characteristic classes of cone bundles. *Math. Ann.* 278 (1987), no. 1–4, 273–289. (Toshiaki Shoji) **89f:17010** 17B20 (20G05, 22E45)
- A differential complex for Poisson manifolds. *J. Differential Geom.* 28 (1988), no. 1, 93–114. (Alberto Medina) **89m:58006** 58A12 (16A62, 58A10)
- Remark on Witten's modular forms. *Proc. Amer. Math. Soc.* 105 (1989), no. 3, 773–775. (P. S. Landweber) **89g:57035** 57R20 (11F11)
- Bryl'kov, A. N.** Sets of points of unbounded divergence of Haar series. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 2, 86–88; translated in *Moscow Univ. Math. Bull.* 43 (1988), no. 2, 61–64. (A. Oleviskii) **89f:42038** 42C10
- Bryll, Grzegorz** (with Halkowska, Katarzyna) L-decidability of fragmentary Słupecki systems. (Polish. English summary) *Zeszyty Nauk. Wyz. Szkoły Ped. w Opolu Mat.* 24 (1986), 5–10 (1987). (Summary) **89c:03043** 03B50
- Bryson, Arthur E., Jr.** (with Wie, Bong) Pole-zero modeling of flexible space structures. *J. Guidance Control Dynamics* 11 (1988), no. 6, 554–561. (Summary) **89k:73055** 73K99 (70Q05, 93B55, 93C75)
- (with Lee, Allan Yeow-Nam) Neighbouring extremals of dynamic optimization problems with parameter variations. *Optimal Control Appl. Methods* 10 (1989), no. 1, 39–52. (Summary) **89k:49013** 49B10 (49B50, 65L10, 93B35)
- Bryum, A. Z.** (with Gorr, G. V.) The sufficient conditions for the existence of asymptotically pendulum-like motions of a heavy rigid body with a fixed point. *J. Appl. Math. Mech.* 50 (1986), no. 4, 522–525 (1987); translated from *Prikl. Mat. Mekh.* 50 (1986), no. 4, 681–684 (Russian). (Summary) **89e:70011** 70E15
- Bryzichev, S.** Existence of solutions for nonlinear systems of differential-functional equations of parabolic type in an arbitrary domain. *Ann. Polon. Math.* 47 (1987), no. 3, 309–317. (Hans Engler) **89b:35162** 35R10 (35K20)
- Bshouty, D.** (with Hengartner, N.; Hengartner, W.) A constructive method for starlike harmonic mappings. *Numer. Math.* 54 (1988), no. 2, 167–178. (D. Gaier) **89m:30016** 30C30 (65E05)
- Convolution properties of subclasses of  $S_R$ . *Rev. Roumaine Math. Pures Appl.* 33 (1988), no. 6, 495–499. (Z. Lewandowski) **89m:30029** 30C45
- (with Abdul Hadi, Z.) Univalent functions in  $H - \bar{H}(D)$ . *Trans. Amer. Math. Soc.* 305 (1988), no. 2, 841–849. (G. Schöber) **89c:30045** 30C60
- Bshouty, Nader H.** (with Seroussi, Gadiel) Vector sets for exhaustive testing of logic circuits. *IEEE Trans. Inform. Theory* 34 (1988), no. 3, 513–522. (B. Hazeltine)
- 89j:94049** 94C10
- (with Kaminski, Michael; Kirkpatrick, David) Addition requirements for matrix and transposed matrix products. *J. Algorithms* 9 (1988), no. 3, 354–364. (D. Z. Spicer) **89m:68061** 68Q25 (15-04, 65F05)
- Bu, Dingguo** see **Pu, Ding Guo**
- Bu, Qi Yue** (with Shen, Hong Ru) Some optimality conditions for vector optimization problems. (Chinese) *Chinese J. Oper. Res.* 3 (1984), no. 2, 69–70. (Not in MR) **90C31**
- Bu, Shang Quan** Quelques remarques sur la propriété de Radon-Nikodým analytique. (English summary) [Some remarks on the analytic Radon-Nikodým property] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 18, 757–760. (Wolfgang Lusky) **89g:46040** 46B22
- Buadze, T. G.** Some problems of the projection estimation of the density of a distribution. (Russian. English and Georgian summaries) *Trudy Tbiliss. Univ. Mat. Mekh. Astronom.* No. 21 (1986), 161–183. (M. A. Mirzakhmedov) **89a:62090** 62G05
- Buassonad, Zh.** see **Boissonade, J.**
- Bub, Jeffrey** On the nature of randomness in quantum mechanics, or how to count quantum logically. *Recent developments in quantum logic* (Cologne, 1984), 45–59. *Grundlagen Exakt. Naturwiss.*, 6, Bibliographisches Inst., Mannheim, 1985. (see **89h:81008**) **81B10** (03G12)
- Bube, Kenneth P.** The effect of discontinuities on the order of convergence of numerical inversion methods. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 3, 407–417. (Summary) **89d:86004** 86A15 (35R30, 65P05, 73D50, 86-08)
- Bublik, B. N.** (with Beiko, I. V.) Construction of realizable mathematical models and of methods for solving inverse problems in hydro-acoustics. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 6 (1987), 3–7, 113. (Summary) **89k:76079** 76Q05
- (with Lyashenko, I. N.; Lyashenko, B. N.) Two-sided approximation of a solution of a problem of two centers in quantum mechanics. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 10, 3–6, 84. (Summary) **89k:81021** 81C05 (65L10, 81-08)
- see also **Models and systems of information processing**, **89j:68011**
- Bublik, G. F.** On the theory of vibration-isolated ground gyrocompasses under conditions of random perturbations. (Russian) *Prikl. Mekh.* 24 (1988), no. 3, 126–130, 136. (Summary) **89f:70034** 70L05 (70E05)
- Bubnicki, Zdzisław** Time-optimal control of large scale operation systems with the use of globally optimal models. (Russian and Polish summaries) *Systems Sci.* 13 (1987), no. 3–4, 19–35 (1988). (Not in MR) **93A15** (49D27)
- Buhov, B. A.** ★ К вопросу о разрешимости многомерных обратных задач для параболических уравнений. (Russian) [On the problem of the solvability of multidimensional inverse problems for parabolic equations] *Препринт* [Preprint], 714. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1987. 45 pp. (Gottfried Anger) **89g:35112** 35R30 (35K10, 65M60)
- (with Anikonov, Yu. E.) Existence and uniqueness of the solution of an inverse problem for a parabolic equation. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 4, 777–779; translated in *Soviet Math. Dokl.* 37 (1988), no. 1, 130–132. (Gottfried Anger) **89f:35196** 35R30 (35K20)
- (with Anikonov, Yu. E.) Inverse problems of transport theory. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 5, 1037–1040; translated in *Soviet Math. Dokl.* 37 (1988), no. 2, 497–500. (Janusz Mika) **89i:82105** 82A70 (35Q20, 35R30, 45K05, 85A25)
- Buchanan, Bruce S.** A model for repeat paired comparison preference tests. *Psychometrika* 53 (1988), no. 2, 209–221. (Summary) **89e:92049** 92A25 (62P15, 90A06)
- Buchanan, J. L.** (with Gilbert, Robert P.) Hypermembrane shells. *Trends in applications of mathematics to mechanics* (Wassenaar, 1987), 261–272. *Springer, Berlin-New York*, 1988. (see **89g:80004**) **73L99** (30G20, 35J45, 73C03, 73L05)
- Buchberger, Bruno** Applications of Gröbner bases in nonlinear computational geometry. *Mathematical aspects of scientific software* (Minneapolis, Minn., 1986/87), 59–87. *IMA Vol. Math. Appl.*, 14, Springer, New York-Berlin, 1988. (Bernd Sturmfels) **89g:13001** 13-04 (03B35, 13A15, 68Q40, 68U05)
- Applications of Gröbner bases in nonlinear computational geometry. *Trends in computer algebra* (Bad Neuenahr, 1987), 52–80. *Lecture Notes in Comput. Sci.*, 296, Springer, Berlin-New York, 1988. (Summary) **89a:68112** 68Q40 (13-04, 68T15, 68U05)
- Buchbinder, I. L.** see **Bukhbinder, I. L.**
- Buchdahl, H. A.** On the compatibility of relativistic wave equations in Riemann spaces. V. *Classical Quantum Gravity* 4 (1987), no. 5, 1055–1062. (F. J. Chinea) **89a:81086** 81E20 (81D27, 83C47, 83C60)
- Characteristic functions and higher order Lagrangians. *J. Math. Phys.* 29 (1988), no. 5, 1122–1126. (J. Chrastina) **89m:70032** 70H20 (58E30)
- Invariant aberrations. I. Preliminaries. *J. Opt. Soc. Amer. A* 5 (1988), no. 11, 1957–1962. (Summary) **89m:78003a** 78A05
- Invariant aberrations. II.  $p$ -invariants. *J. Opt. Soc. Amer. A* 5 (1988), no. 11, 1963–1967. (Summary) **89m:78003b** 78A05
- Invariant aberrations. III.  $l$ -invariants. *J. Opt. Soc. Amer. A* 5 (1988), no. 11, 1968–1971. (Summary) **89m:78003c** 78A05
- Invariant aberrations. IV.  $s$ -invariants. *J. Opt. Soc. Amer. A* 5 (1988), no. 11, 1972–1975. (Summary) **89m:78003d** 78A05
- see also **Walter, Johann**, **89k:80006**
- Buchdahl, N. P.** Hermitian-Einstein connections and stable vector bundles over compact complex surfaces. *Math. Ann.* 280 (1988), no. 4, 625–648. (Claude LeBrun) **89d:53092** 53C25 (32L05, 53C05, 53C55)
- Buche, A. B.** On non-Markov functional equations. Proceedings of the National Seminar on Stochastic Process, Statistical Inference and Sample Survey (Sambalpur, 1985). *J. Orissa Math. Soc.* 4 (1985), no. 2, 61–66. (see **89a:60006**) **60H99**
- Bucher, Walter** A note on regular classes in special Thue systems. *Discrete Appl. Math.* 21 (1988), no. 3, 199–205. (John P. Helm) **89k:68089** 68Q50 (20M35)
- Buchert, Thomas** (with Götz, Günter) A class of solutions for self-gravitating dust in Newtonian gravity. *J. Math. Phys.* 28 (1987), no. 11, 2714–2719. (Dieter Lorenz-Petzel) **89b:83099** 83F05
- Buchholz, Wilfried** Induktive Definitionen und Dilatoren. (English summary) [Inductive definitions and dilators] *Arch. Math. Logic* 27 (1988), no. 1, 51–60. (G. E. Mints) **89i:03107** 03F15
- Buchholz, Wolfgang** (with Richter, W. F.; Schwaiger, J.) Distributional implications of equal sacrifice rules. *Soc. Choice Welf.* 5 (1988), no. 2–3, 223–226. (Summary) **89e:90023**

- 90A09
- Büchi, J. Richard** (with Senger, Steven) Coding in the existential theory of concatenation. *Arch. Math. Logik Grundlag.* **26** (1986/87), no. 1-2, 101-106. (Introduction) **89b:03061** 03D05
- Buchin, V. A.** Stabilization of the unstable states of distributed mechanical systems. (Russian) *Mechanics and scientific-technological progress (Russian)*, 164-184, 286, "Nauka", Moscow, 1987. (Summary) **89g:93070** 93D15 (80A32)
- Buchmann, Johannes** On the computation of units and class numbers by a generalization of Lagrange's algorithm. *J. Number Theory* **26** (1987), no. 1, 8-30. (Charles J. Parry) **89b:11104** 11Y40 (11R27, 11R29, 11Y65)
- (with Williams, Hugh Cowie) On the infrastructure of the principal ideal class of an algebraic number field of unit rank one. *Math. Comp.* **50** (1988), no. 182, 569-579. (Ken Nakamura) **89g:11098** 11R11 (11R16, 11R27, 11Y16, 11Y40)
- (with Sands, Jonathan W.) Leopoldi's conjecture in parameterized families. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 43-48. (Lawrence Washington) **89m:11101** 11R27 (11R37)
- (with Ford, David) On the computation of totally real quartic fields of small discriminant. *Math. Comp.* **52** (1989), no. 185, 161-174. (Duncan A. Buell) **89f:11147** 11R16 (11Y40)
- Buchmüller, W.** (with Lerche, W.) Geometry and anomaly structure of supersymmetric  $\sigma$ -models. *Ann. Physics* **175** (1987), no. 1, 159-196. (Agostino Prastaro) **89a:81064** 81E13 (53C80)
- (with Dragon, N.) Einstein gravity from restricted coordinate invariance. *Phys. Lett. B* **207** (1988), no. 3, 292-294. (R. J. McKellar) **89b:83019** 83C40 (83C05, 83D05)
- Buchner, K.** Sard's theorem on Banach manifolds. *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 241-244, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Andreas Kriegl) **89e:58014** 58C27 (58B99)
- Buchner, Michael A.** (with Kucharz, W.) Algebraic vector bundles over real algebraic varieties. *Bull. Amer. Math. Soc. (N.S.)* **17** (1987), no. 2, 279-282. (Selman Akbulut) **89a:14025** 14G30 (55R15)
- (with Kucharz, W.) Topological triviality of a family of zero-sets. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 699-705. (Toshizumi Fukui) **89b:58029** 58C25
- Buchstaben, David A.** (with Akin, Kaan) Characteristic-free realizations of the Giambelli and Jacobi-Trudi determinantal identities. *Algebra and topology 1986 (Taejón, 1986)*, 1-61, *Korea Inst. Tech., Taejón*, 1987. (Piotr Pragacz) **89i:20065** 20G05
- Resolutions and representations of  $GL(n)$ . *Commutative algebra and combinatorics (Kyoto, 1985)*, 21-28, *Adv. Stud. Pure Math.*, 11, North-Holland, Amsterdam-New York, 1987. (Piotr Pragacz) **89j:13012** 13D25 (20G05)
- Buchukuri, T. V.** (with Gegelia, T. G.) The character of the isolated singularities of the solutions of a system of equations of elasticity theory. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **125** (1987), no. 3, 501-504. (Editors) **89c:73075** 73R05 (73B25)
- Buchwald, Jed Z.** ★ From Maxwell to microphysics. Aspects of electromagnetic theory in the last quarter of the nineteenth century. *University of Chicago Press, Chicago, IL*, 1988. xvi+339 pp. ISBN 0-226-07883-3 (Editors) **89b:01031** 01A55 (78-03)
- Buchweitz, Ragnar-Olaf** (with Eisenbud, David; Herzog, Jürgen) Cohen-Macaulay modules on quadrics. *Singularities, representation of algebras, and vector bundles (Lambrecht, 1985)*, 58-116, *Lecture Notes in Math.*, 1273, Springer, Berlin-New York, 1987. (Luchezar L. Avramov) **89g:13005** 13C05 (13D25, 13H10, 15A66)
- Buck, B.** (with Merchant, A. C.) Exact separation of a three-body problem in one dimension. *J. Phys. A* **22** (1989), no. 3, 257-267. (Summary) **89m:81030** 81C05 (70F07)
- Buck, Rosalie Giovanna** (with Antonelli, P. L.; Bradbury, R.; Reichelt, R.; Elliott, Robert J.) Nonlinear prediction of crown-of-thorns outbreaks on the Great Barrier Reef. *Stochastic Anal. Appl.* **6** (1988), no. 4, 349-363. (Miguel Angel Canela) **89m:92041** 92A15 (60G25)
- Bucki, Andrzej** Infinitesimal variations of invariant submanifolds of an almost  $r$ -paracontact Riemannian manifold of  $P$ -Sasakian type. II. *Tensor (N.S.)* **44** (1987), no. 2, 118-125. (Ion Mihai) **89g:53055** 53C15 (53C25, 53C40)
- The group of isometries of an almost  $r$ -paracontact compact Riemannian manifold. *Tensor (N.S.)* **44** (1987), no. 2, 142-147. (J. J. Etayo) **89f:53055** 53C15 (53C25)
- Buckingham, A. D.** Quantum chemistry. *Schrödinger (London, 1987)*, 112-118, *Cambridge Univ. Press, Cambridge-New York*, 1987. (see **89m:01069**) 81G55 (92A40)
- Buckingham, Simon** Weil triviality and anomalies in two-dimensional supergravity. *Classical Quantum Gravity* **5** (1988), no. 12, 1615-1625. (Mark D. Roberts) **89k:83076** 83E50
- Buckle, Henry Thomas** see Krüger, Lorenz, **89f:01036**
- Buckles, Billy P.** (with Petry, Frederick E.; Sachar, Harvinder S.) A domain calculus for fuzzy relational databases. *Fuzzy Sets and Systems* **29** (1989), no. 3, 327-340. (Summary) **89k:68029** 68P15 (03E72)
- Bucklew, James A.** (with Bahr, Randall K.) Minimax estimation of continuous time deterministic signals in colored noise. *Stochastic Process. Appl.* **27** (1987), no. 1, 97-120. (Věra Lánská) **89i:93104** 93E10 (60G35, 62M20)
- (with Cambanis, Stamatis) Estimating random integrals from noisy observations: sampling designs and their performance. *IEEE Trans. Inform. Theory* **34** (1988), no. 1, 111-127. (Adnan M. Awad) **89d:60112** 60H20 (45E10, 94A12)
- (with Kuhlmann, Federico) Piecewise uniform vector quantizers. Coding techniques and coding theory. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part II, 1259-1263. (see **89j:94002**) 94A34 (94A14)
- Buckley, Fred** (with Palka, Zbigniew) Random graphs with the distance-hereditary property. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 217-224. (Colin J. H. McDiarmid) **89i:05245** 05C80 (60C05)
- (with Doty, Lynne L.; Harary, Frank) On graphs with signed inverses. *Networks* **18** (1988), no. 3, 151-157. (J. Sedláček) **89i:05222** 05C75 (05C50)
- Buckley, J. J.** (with Tucker, Douglas) Extended fuzzy relations: application to fuzzy expert systems. *Internat. J. Approx. Reason.* **1** (1987), no. 2, 177-195. (Not in MR) 03E72 (68T10, 68T25, 90A05)
- Possibility and necessity in optimization. *Fuzzy Sets and Systems* **25** (1988), no. 1, 1-13. (Janusz Kacprzyk) **89a:90159** 90C99 (03E72, 90C15)
- Possibilistic linear programming with triangular fuzzy numbers. *Fuzzy Sets and Systems* **26** (1988), no. 1, 135-138. (Summary) **89a:90077** 90C05 (03E72)
- Fuzzy input-output analysis. *European J. Oper. Res.* **39** (1989), no. 1, 54-60. (Not in MR) 90A16
- Buckley, M. J.** see Buckley, Michael James
- Buckley, Michael J.** see Buckley, Michael Joseph
- Buckley, Michael James** (with Eagleson, G. K.; Silverman, B. W.) The estimation of residual variance in nonparametric regression. *Biometrika* **75** (1988), no. 2, 189-199. (Winston T. Lin) **89f:62055** 62G05
- Buckley, Michael Joseph** God in the project of Newtonian mechanics. *Newton and the new direction in science (Cracow, 1987)*, 85-105, *Specola Vaticana, Vatican City*, 1988. (see **89b:01014**) 01A45 (01A50)
- Buckmaster, J. D.** see Mathematical modeling in combustion science, **89b:80008**
- Bucur, Gh.** (with Boboc, N.) Fine potentials and supermean functions on standard  $H$ -cones. *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 10, 881-890. (Rainer Wittmann) **89c:31009** 31D05
- (with Boboc, N.) On a Hunt hypothesis. *Stud. Cerc. Mat.* **39** (1987), no. 5, 418-421. (Eugen Popa) **89d:31016** 31D05 (60J40)
- (with Boboc, N.) Order and convexity in potential theory. *Potential theory—surveys and problems (Prague, 1987)*, 24-41, *Lecture Notes in Math.*, 1344, Springer, Berlin-New York, 1988. (see **89m:31001**) 31C05
- (with Boboc, N.) On Frostman property in standard  $H$ -cones of functions. *Stud. Cerc. Mat.* **40** (1988), no. 2, 125-136. (Tadashi Murazawa) **89m:31009** 31D05
- Bucy, R. S.** (with Campbell, L. A.) Determination of steady state behavior for periodic discrete filtering problems. *Comput. Math. Appl.* **15** (1988), no. 2, 131-140. (Arunabha Bagchi) **89c:93192** 93E11 (65L99)
- Buczolich, Z.** An existence theorem for higher Peano derivatives in  $\mathbb{R}^m$ . *Real Anal. Exchange* **13** (1987/88), no. 1, 245-252. (Cheng-Ming Lee) **89c:26018** 26B05 (26A24)
- Nearly upper semicontinuous gauge functions in  $\mathbb{R}^m$ . *Real Anal. Exchange* **13** (1987/88), no. 2, 436-440. (Peter Bullen) **89f:26013** 26B05
- Continuous functions with everywhere infinite variation with respect to sequences. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 497-502. (M. Łaczko) **89j:26005** 26A15 (26A45)
- Budaev, V. D.** The convergence of spectral expansions at the point of discontinuity of the coefficients of a linear nonselfadjoint differential operator of order  $2m$ . (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 4, 780-784; translated in *Soviet Math. Dokl.* **36** (1988), no. 2, 309-313. (G. Yu. Tamanyan) **89a:34030** 34B25 (47E05)
- al-Budaiwi, Aisha** see Al-Budaiwi, Aisha
- Budak, A. B.** (with Denisov, V. N.) Some properties of the eigenfunctions of the Sturm-Liouville operator with discontinuous coefficients. (Russian) *Mat. Zametki* **42** (1987), no. 6, 819-830, 910. (Not in MR) 34B25 (47E05)
- Budanov, V. G.** An equation for the decoupling of  $T$ -exponents with arbitrary quadratic generators. (Russian. English summary) *Teoret. Mat. Fiz.* **71** (1987), no. 3, 331-336. (Summary) **89c:58113** 58F35 (34B20, 34B27)
- Budd, Chris** Semilinear elliptic equations with near critical growth rates. *Proc. Roy. Soc. Edinburgh Sect. A* **107** (1987), no. 3-4, 249-270. (Xin Kang Guo) **89c:35055** 35J65 (35B40, 58E05, 58F05, 58F14)
- (with Norbury, John) Symmetry breaking in semilinear elliptic equations with critical exponents. *Nonlinear diffusion equations and their equilibrium states, I (Berkeley, CA, 1986)*, 191-215, *Math. Sci. Res. Inst. Publ.*, 12, Springer, New York-Berlin, 1988. (John M. Ball) **89k:35089** 35J65 (35B32, 58E07)
- Comparison theorems for radial solutions of semilinear elliptic equations. *J. Differential Equations* **72** (1988), no. 2, 338-359. (Philip W. Schaefer) **89c:35006** 35B05 (35J60)
- (with Wheeler, A. A.) A new approach to the space-charge problem. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1853, 389-415. (Summary) **89c:78005** 78A20
- Budde, Carlos E.** (with Cáceres, Manuel O.) Marginal distribution of a Markovian chain with internal states: the resolvent matrix. *Phys. Lett. A* **125** (1987), no. 8, 369-374. (Cheng Xun Wu) **89c:60130** 60J10 (60J20, 82A40)
- (with Briozzo, C. B.; Cáceres, Manuel O.; Lamberti, P. W.) Stability of a Robertson-Walker universe against stochastic perturbations. *Phys. Lett. A* **129** (1988), no. 7, 363-366. (Summary) **89c:38086** 83F05 (83C99)
- (with Cáceres, Manuel O.) Diffusion in presence of external anomalous noise. *Phys. Rev. Lett.* **60** (1988), no. 26, 2712-2714. (Summary) **89d:82048** 82A31 (82A41)
- Budelli, R.** (with Diez Martinez, O.; Pérez, P.; Segundo, J. P.) Locking, intermittency, and bifurcations in a periodically driven pacemaker neuron: Poincaré maps and biological implications. *Biol. Cybernet.* **60** (1988), no. 1, 49-58. (Summary) **89j:92004** 92-04 (58F13, 92-08, 92A09)
- Budescu, David V.** (with Zwick, Rami; Carlstein, E.) Measures of similarity among fuzzy concepts: a comparative analysis. *Internat. J. Approx. Reason.* **1** (1987), no. 2, 221-242. (Summary) **89g:92071** 92A25 (03E72)
- Budimir, J.** (with Skinner, J. L.) On the relationship between  $T_1$  and  $T_2$  for stochastic relaxation models. *J. Statist. Phys.* **49** (1987), no. 5-6, 1029-1042. (Summary) **89c:82022** 82A31 (82A15)
- Budinas, B. L.** Decidability of the reachability problem for vector addition systems. (Russian) *Voprosy Kibernet. (Moscow)* No. 134 (1988), 22-45. (Summary) **89f:68052** 68Q90
- Budinčević, Mirko** Perturbations of a linear difference equation. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **16** (1986), no. 2, 53-62. (L. A. V. Carvalho) **89c:39006** 39A11 (39A12)
- Budinich, P.** (with Dąbrowski, L.; Furlan, P.) Minimal surfaces and strings from spinors: a realization of the Cartan programme. (Italian summary) *Nuovo Cimento A* (11) **96** (1986), no. 2, 194-211. (Summary) **89b:53012** 53A10 (53A50, 81D27, 81E30)
- Budkin, A. I.** (with Bakhturin, Yu. A.; Volokov, M. V.; et al.) ★ Многообразие алгебраических систем. (Russian) [Varieties of algebraic systems] *Препринт [Preprint]*, 86-647, *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1986. 43 pp. (Editors) **89c:17001** 17-02 (08-02, 16-02)
- Filters in the lattice of quasivarieties of groups. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **52** (1988), no. 4, 875-881, 896; translated in *Math. USSR-Izv.* **33** (1989), no. 1, 201-207. (Yu. I. Merzlyakov) **89k:20041** 20E10 (06B99, 08B15, 08C15)
- odvirko-Budko, B. I.** see Odvirko-Budko, B. I.
- Budriené, E. O.** (with Polezhaev, A. A.; Pitsyn, M. O.) Mathematical modelling of intercellular regulation causing the formation of spatial structures in bacterial colonies. *J. Theoret. Biol.* **135** (1988), no. 3, 323-341. (Not in MR) 92A15



- Buechler, Steven On nontrivial types of  $U$ -rank 1. *J. Symbolic Logic* 52 (1987), no. 2, 548–551. (Gabriel Srouf) **89b:03049** 03C45
- Coordinatization in superstable theories. II. *Trans. Amer. Math. Soc.* 307 (1988), no. 1, 411–417. (Daniel Lascar) **89b:03057** 03C45
- Buckley, P. (with Vanhecke, Lieven) Geometry and symmetry on Sasakian manifolds. *Tsukuba J. Math.* 12 (1988), no. 2, 403–422. (David Blair) **89m:53072** 53C25 (53C15)
- Buckenhouse, F. On affine quadratic sets. *Atti Sem. Mat. Fis. Univ. Modena* 35 (1987), no. 1, 71–76. (J. W. P. Hirschfeld) **89b:51016** 51E20 (51M35)
- On a theorem of O'Nan and Scott. *Bull. Soc. Math. Belg. Sér. B* 40 (1988), no. 1, 1–9. (Martin W. Liebeck) **89j:20003** 20B05
- (with Buset, Dominique) On the foundations of incidence geometry. Geometries and groups (Noordwijkerhout, 1986). *Geom. Dedicata* 25 (1988), no. 1–3, 269–296. (Gernot Stroth) **89b:51011** 51D20 (51E30)
- (with Delandtsheer, Anne; Doyen, Jean) Finite linear spaces with flag-transitive groups. *J. Combin. Theory Ser. A* 49 (1988), no. 2, 268–293. (Vikram Jha) **89k:20007** 20B25 (05B25, 51A99, 51E10)
- Buell, Duncan A. (with Young, Jeff) The twentieth Fermat number is composite. *Math. Comp.* 50 (1988), no. 181, 261–263. (John Michael Schram) **89b:11012** 11A51 (11Y05, 11Y11)
- Buendía, E. *see* Izuru, L. Gr. **89b:81011**
- Bueno, Vanderlei Costa A note on the component lifetime estimation of a multistate monotone system through the system lifetime. *Adv. in Appl. Probab.* 20 (1988), no. 3, 686–689. (Summary) **89j:90131** 90B25 (62N05)
- Bueno de Mesquita, Bruce (with Lalman, David) Arms races and the opportunity for peace. Formal analysis in international relations. *Synthese* 76 (1988), no. 2, 263–283. (see **89b:90218**) **92A90** (90D45, 92A25)
- Bueso, J. L. *see* Ring theory, **89j:16002**
- Buflon, Georges Louis Leclerc *see* Zabel, S. L. **89k:01017**
- Bugadze, V. M. Absolute convergence almost everywhere of a Fourier-Haar series of the superposition of functions. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 49–52. *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) **42C10** (40A05)
- Effect of the change of variable on the convergence and absolute convergence of a Fourier-Haar series. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 128 (1987), no. 3, 481–483 (1988). (Summary) **89g:42042** 42C10
- Bugai, A. S. (with Borodin, A. I.) ★ Выдающиеся математики. (Russian) [Outstanding mathematicians] Биографический словарь-справочник. [A biographical dictionary-handbook] Second edition. "Radyans'ka Shkola", Kiev, 1987. 655 pp. (Editors) **89k:01064** 01A70 (00A20)
- niewiadomska-Bugaj, M. *see* Niewiadomska-Bugaj, M.
- Bugajska, Krystyna Some properties of topological geons. *Internat. J. Theoret. Phys.* 26 (1987), no. 7, 623–636. (George S. Whiston) **89a:83055** 83E05 (81G25)
- Structure of a leaf of some codimension one Riemannian foliation. (French summary) *Ann. Inst. Fourier (Grenoble)* 38 (1988), no. 1, 169–174. (James J. Hebda) **89f:53052** 53C12 (57R30)
- Lorentzian structures of open, spin manifolds. *J. Math. Phys.* 30 (1989), no. 3, 619–623. (George S. Whiston) **89k:57050** 57R15 (53C80, 57R70)
- Bugalho, M. H. Orthogonality transitivity and cosmologies with a nonabelian two-parameter isometry group. *Classical Quantum Gravity* 4 (1987), no. 4, 1043–1045. (M. A. H. MacCallum) **89c:83033** 83C40 (83C20)
- Barceló Bugada, Jaume *see* Barceló Bugada, Jaume
- Bugiel, Piotr On the convergence of iterates of the Frobenius-Perron operator associated with a point-transformation of Markov type. *Proceedings of the conference on ergodic theory and related topics, II* (Georgenthal, 1986), 36–40. *Teubner-Texte Math.*, 94, Teubner, Leipzig, 1987. (Bielosław Riečan) **89j:47007** 47A35 (28D05)
- Bugir, M. K. An approach to the study of the oscillation of partial differential equations. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 3, 9–12, 84. (S. V. Duzhin) **89m:35017** 35B05 (58G30)
- (with Dobrotvor, I. G.) A condition for the oscillation of the solutions of fourth-order partial differential equations. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 5, 9–11, 86. (S. V. Duzhin) **89m:35018** 35B05 (58G30)
- Bugrii, A. I. (with Shadura, V. N.) The method of finite-ordered chains for determining critical surfaces in two-dimensional spin models. (Russian. English summary) *Physics of multiparticle systems*, No. 12 (Russian), 85–93, 96, 97, "Naukova Dumka", Kiev, 1987. (Mircea Crisan) **89k:82089** 82A68 (82-04, 82A25)
- Thermodynamics of the plane Ising model with nearest-neighbor interaction on a finite-size rectangular lattice. (Russian) *IV International Symposium on Selected Topics in Statistical Mechanics* (Russian) (Dubna, 1987), 66–70. *Joint Inst. Nuclear Res., Dubna*, 1988. (see **89g:82003**) **82A68** (82A67)
- Bugrov, A. G. On the theory of sound propagation in a quasistratified ocean. (Russian) *Dokl. Akad. Nauk SSSR* 301 (1988), no. 6, 1472–1475. (From the text) **89b:86003** 86A05 (76Q05)
- Bugrov, Ya. S. The rate of convergence of linear means of Fourier series. (Russian) *Theory of functions and approximations, Part 1* (Russian) (Saratov, 1984), 3–13. *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00035**) **42A24**
- Embedding theorems and the convergence of multiple Fourier series. (Russian) Studies in the theory of differentiable functions of several variables and its applications, XII (Russian). *Trudy Mat. Inst. Steklov.* 181 (1988), 15–26, 269. (J. Musielak) **89g:46062** 46E35 (42B05)
- Bugrovskii, V. V. (with Butusov, O. B.; Mikhailenko, E. V.) A quasi-two-dimensional mathematical model of atmospheric circulation in closed hollows. (Russian) *Dokl. Akad. Nauk SSSR* 301 (1988), no. 4, 1012–1015. (Not in MR) **92A17**
- Buhăescu, T. T. On directional derivative of quasiconvex functions. (French and Romanian summaries) *An. Univ. Galați Mat.* 4(9) (1986), no. 2, 31–34. (Luděk Zajíček) **89a:26021** 26B25
- Buhariwala, K. J. (with Hansen, J. S.) Dynamics of viscoelastic structures. *AIAA J.* 26 (1988), no. 2, 220–227. (Summary) **89c:73031** 73F15
- Buhl, Hans Ulrich Axiomatic considerations in multi-objective location theory. *European J. Oper. Res.* 37 (1988), no. 3, 363–367. (Summary) **89c:90028** 90B10
- Bühler, Walter K. ★ Gauss. (German) Eine biographische Studie. [A biographical study] Translated from the English. *Springer-Verlag, Berlin-New York*, 1987. viii+191 pp. ISBN 3-540-16883-4 (Editors) **89b:01057** 01A70
- Bühler, Wolfgang J. Two proofs of the Kantorovich inequality and some generalizations. *Rev. Colombiana Mat.* 21 (1987), no. 1, 147–154. (Włodzimierz Bryc) **89k:15027** 15A42 (47A05)
- Bühlmann, H. Entwicklungstendenzen in der Risikotheorie. [Trends of development in risk theory] *Jahresber. Deutsch. Math.-Verein.* 90 (1988), no. 3, 111–128. (Hans U. Gerber) **89g:90026** 90A09 (01A65, 62P05)
- Buhmann, J. (with Divko, R.; Schulten, K.) Associative memory with high information content. *Phys. Rev. A* (3) 39 (1989), no. 5, 2689–2692. (Summary) **89m:92012** 92A09 (82A57, 82A99)
- Bühning, Wolfgang An analytic continuation formula for the generalized hypergeometric function. *SIAM J. Math. Anal.* 19 (1988), no. 5, 1249–1251. (H. M. Srivastava) **89i:33004** 33A30 (30B40)
- Buhrrow, Joachim Die großen Lehrbücher der exakten Naturwissenschaften im 17. und 18. Jahrhundert—auch sprachliche und didaktische Meisterwerke. (English and Russian summaries) [The great textbooks of the exact natural sciences in the 17th and 18th century which are also linguistic and didactic masterpieces] *Wiss. Z. Pädagog. Hochsch. "Liselotte Herrmann" Güstrow Math.-Natur. Fak.* 25 (1987), no. 1, 97–112. (P. Bockstaale) **89c:01018** 01A45 (01A50)
- Bui, D. B. (with Mavlyanov, A. V.) Mutual derivability of the operations of program algebras. I. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 1, 35–39, 49, 133; translated in *Cybernetics* 24 (1988), no. 1, 41–47. (Michał Grabowski) **89c:68076** 68Q55 (08A99)
- Bui, H. D. (with Bonnet, M.) Regular B.I.E. for three-dimensional cracks in elastodynamics. *Advanced boundary element methods* (San Antonio, Tex., 1987), 41–47. *Springer, Berlin-New York*, 1988. (see **89b:65009**) **73M05**
- Bui, Huy-Qui Representation theorems and atomic decomposition of Besov spaces. *Math. Nachr.* 132 (1987), 301–311. (L. I. Nikolova) **89b:46044** 46E35 (46F20)
- Bui, T. D. (with Li, Zi-Cai) A new kind of combinations between the Ritz-Galerkin and finite element methods for singularity problems. (German summary) *Computing* 40 (1988), no. 1, 29–50. (M. Zlámal) **89b:65271** 65N30
- (with Li, Zi-Cai) Generalized hybrid-combined methods for the singularity problems of homogeneous elliptic equations. *Internat. J. Numer. Methods Engrg.* 26 (1988), no. 4, 785–803. (A. I. Šchiop) **89b:65184** 65N30
- Buliati, Marcello Information flux and constraints in development and evolution: a critical review. *Chaos and complexity* (Torino, 1987), 331–348. *World Sci. Publishing, Singapore*, 1988. (Steven Matthyse) **89m:92037** 92A12 (92A10)
- *see also* Chaos and complexity, **89g:58144**
- Budosh, E. *see* Bajdosó, Ernő
- Budosh, E. (with Romanovskii, I. V.) Computational aspects of finite dynamic programming. (Russian) *Optimizatsiya* No. 41(58) (1987), 148–162. (P. Rutkaskas) **89m:90161** 90C39
- Bui Kat Tyong (with Emelichev, V. A.) A decomposition approach to the solution of quasiblock problems of discrete optimization on the basis of a method for constructing a sequence of plans. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 1, 116–118, 136. (From the text) **89c:90095** 90C30 (49D27)
- Bui Kho'i-Dam On the convergence of amarts in Orlicz spaces. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 30 (1987), 231–239. (Annie Millet) **89g:60163** 60G48 (46E30, 60G42)
- Butkis, A. A. *see* Applied problems in mathematical physics, **89f:00005**
- Bui Minh Phong On Lucas and Lehmer pseudoprime numbers. (Hungarian. English summary) *Mat. Lapok* 33 (1982/86), no. 1–3, 79–92. (Péter Kiss) **89f:11020** 11A51 (11B37)
- On super pseudoprimes which are products of three primes. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 30 (1987), 125–129. (Charles M. Grinstead) **89d:11001** 11A15 (11A41)
- Buintseva, N. B. (with Matveev, P. N.) Existence of classical solutions of dissipative shallow water equations. (Russian) *Mathematical physics* (Russian), 150–152. *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (O. Vejvoda) **89f:35177** 35Q20 (76B15)
- Asymptotic representations of the solution of a mixed problem of the motion of an inviscid fluid. (Russian) *Partial differential equations* (Russian), 142–152. *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Vladan D. Djordjević) **89f:76024** 76B15 (35C20)
- Bui to Long A constant in an embedding theorem. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1987, no. 5, 84–87. (G. Wildenhain) **89b:46045** 46E35 (35D05)
- Buitendijk, R. B. Logical errors in database SQL retrieval queries. *Comput. Sci. Econom. Management* 1 (1988), no. 2, 79–96. (Not in MR) **68P20**
- Buiter, Willem H. Efficient "myopic" asset pricing in general equilibrium. A potential pitfall in excess volatility tests. *Econom. Lett.* 25 (1987), no. 2, 143–148. (Summary) **89b:90022** 90A09 (90A14)
- Buium, A. Movable singularities and differential Galois theory. *Proceedings of the conference on algebraic geometry* (Berlin, 1985), 74–80. *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (Introduction) **89a:12013** 12H05
- (with Takeuchi, Mitsuhiro) Rigidity of maps from Hopf algebras to group algebras. *J. Algebra* 118 (1988), no. 1, 14–19. (E. J. Taft) **89i:16004** 16A24
- Bujalance, E. (with Etayo Miquel, José Javier; Gamboa, J. M.) Algebraic function fields in one variable over real-closed ground fields. *Géométrie algébrique et applications, III* (La Rabida, 1984), 125–129. *Travaux en Cours*, 24, Hermann, Paris, 1987. (N. Sankaran) **89i:12009** 12F20 (12D15, 14G30, 14H05)
- A note on the group of automorphisms of a compact Klein surface. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 81 (1987), no. 3, 565–569. (Summary) **89c:20069** 20F29 (14H99, 20H10)
- (with Etayo Godejuela, José Javier) Large automorphism groups of hyperelliptic Klein surfaces. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 679–686. (David Singerman) **89i:20072** 20H10 (14H99, 30F10)
- Bujalance, J. A. Normal subgroup of even index in an NEC group. *Arch. Math. (Basel)* 49 (1987), no. 6, 470–478. (David Singerman) **89j:20056** 20H15 (30F35, 51F15)
- Topological types of Klein surfaces with a maximum order automorphism. *Glasgow Math. J.* 30 (1988), no. 1, 87–96. (David Singerman) **89g:30079a** 30F10 (20H10)

- Corrigendum to the paper: "Topological types of Klein surfaces with a maximum order automorphism." *Glasgow Math. J.* 30 (1988), no. 3, 369. (David Singerman) **89g:30079b** 30F10 (20H10)
- Orders of the automorphisms of bordered Klein surfaces of topological genus 1. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 82 (1988), no. 1, 83–90. (R. Michael Porter) **89m:20054** 20H10 (30F35, 57N05)
- Bejdová, Ernő** (with Burger, Mária) Oscillating chemical reactions as an example of the development of a subfield of science. (Russian) *Oscillations and traveling waves in chemical systems* (Russian), 608–647, "Mir", Moscow, 1988. (see **89f:92003**) **92A40**
- Bukharbaev, K. B.** On the absolute stability of automatic control systems with essential nonlinearities. (Russian) *Differential equations and applied problems* (Russian), 27–29, iii, *Tul'sk. Politekh. Inst.*, Tula, 1985. (see **89g:00008**) **93D05** (93C10)
- Bukhalev, V. A.** (with Efimov, E. V.; Kazakov, I. E.) Complex processing of information from gauges and indicators in dynamical systems with conditionally Markov structure. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 1, 61–71; translated in *Automat. Remote Control* 49 (1988), no. 1, part 1, 48–56. (Summary) **89c:94016** 94A15 (60J27, 93C15, 93E12)
- Bukhbinder, I. L.** (with Kuzenko, S. M.) Superfields of matter in an external field of  $N = 1$  supergravity. Green functions, effective action, superconformal anomalies. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (Järnala, 1985), 67–74, "Nauka", Moscow, 1986. (see **89d:81001**) **83E50** (81E20, 81E99)
- (with Lyakhovich, S. L.) Canonical quantization and local measure in gravity with higher derivatives. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (Järnala, 1985), 101–115, "Nauka", Moscow, 1986. (see **89d:81001**) **83C45**
- (with Odintsov, S. D.; Shapiro, I. L.) Equations of the renormalization group and asymptotic conformal invariance in an external gravitational field. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (Järnala, 1985), 115–123, "Nauka", Moscow, 1986. (see **89d:81001**) **81E15** (83C47)
- (with Odintsov, S. D.; Shapiro, I. L.) Equations of the renormalization group and effective potential in curved space-time. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (Järnala, 1985), 123–130, "Nauka", Moscow, 1986. (see **89d:81001**) **81E20** (81E15)
- (with Lyakhovich, S. L.) Canonical quantization and local measure of  $R^2$  gravity. *Classical Quantum Gravity* 4 (1987), no. 6, 1487–1501. (Metin Arik) **89c:83034** **83C45** (83D05)
- (with Kuzenko, S. M.) Quantization of classically equivalent theories in superspace of simple supergravity, and quantum equivalence. *Soviet J. Nuclear Phys.* 45 (1987), no. 3, 539–544; translated from *Yadernaya Fiz.* 45 (1987), no. 3, 868–877 (Russian). (Summary) **89a:83066** **83E50** (83C45)
- (with Odintsov, S. D.) Effective action in multidimensional supergravity theories and the induction of Einstein gravity. *Soviet J. Nuclear Phys.* 46 (1987), no. 4, 720–723 (1988); translated from *Yadernaya Fiz.* 46 (1987), no. 4, 1233–1239 (Russian). (Summary) **89b:83093** **83E50** (81G25)
- (with Lyakhovich, S. L.) Canonical quantization of theories with higher derivatives. Quantization of  $R^2$ -gravity. (Russian. English summary) *Teoret. Mat. Fiz.* 72 (1987), no. 2, 204–218. (N. V. Mitskevich) **89a:83035** **83C45** (58D30, 83D05)
- (with Wolfenaut, J. J.) Renormalisation group equations and effective action in curved spacetime. *Classical Quantum Gravity* 5 (1988), no. 8, 1127–1136. (A. D. Popova) **89m:81113** **81E20** (81E13, 81E15, 83E15)
- (with Odintsov, S. D.) Effective action in multidimensional (super)gravities. *Czechoslovak J. Phys. B* 38 (1988), no. 6, 585–590. (Mark D. Roberts) **89j:83071** **83E15** (83E50)
- (with Fradkin, E. S.) On the mean field equations of motion in the theories with unstable vacuum. *Fortschr. Phys.* 36 (1988), no. 2, 97–105. (G. Vitiello) **89i:81104** **81E99** (81C12)
- (with Odintsov, S. D.) Effective action in multi-dimensional supergravities and induced Einstein gravity. *Internat. J. Modern Phys. A* 3 (1988), no. 8, 1859–1870. (A. D. Popova) **89i:83062** **83E50** (81E20, 83E15)
- (with Lavrov, P. M.; Odintsov, S. D.) Unique effective action in Kaluza-Klein quantum theories and spontaneous compactification. *Nuclear Phys. B* 308 (1988), no. 1, 191–202. (Gheorghe Zet) **89j:83036** **83C45** (81E20, 83E15)
- (with Kuzenko, S. M.) Nonlocal action for supertrace anomalies in superspace of  $N = 1$  supergravity. *Phys. Lett. B* 202 (1988), no. 2, 233–237. (Mark D. Roberts) **89c:83079** **83E50**
- (with Odintsov, S. D.) A unique effective action in Kaluza-Klein theories and spontaneous compactification. *Soviet J. Nuclear Phys.* 47 (1988), no. 2, 377–379 (1988); translated from *Yadernaya Fiz.* 47 (1988), no. 2, 598–601 (Russian). (Summary) **89c:83067** **83E15** (83C45)
- (with Odintsov, S. D.) The asymptotic behavior of an effective potential for composite fields in curved space-time. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 31 (1988), no. 2, 93–98; translated in *Soviet Phys. J.* 31 (1988), no. 2, 163–167. (Summary) **89j:81137** **81E20**
- (with Ketov, S. V.) The one-loop counterterm for the four-dimensional sigma model with higher derivatives. (Russian. English summary) *Teoret. Mat. Fiz.* 77 (1988), no. 1, 42–50; translated in *Theoret. and Math. Phys.* 77 (1988), no. 1, 1032–1038. (Summary) **89j:81122** **81E15** (81E13)
- Bukhgeim, A. L.** ★ Разностные методы решения некорректных задач. (Russian) [Difference methods for solving ill-posed problems] *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1986. 149 pp. (Rong Hua Li) **89b:65089** **65J05** (65M10, 65M30, 65N10)
- ★ Введение в теорию обратных задач. (Russian) [Introduction to the theory of inverse problems] "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. 131 pp. ISBN 5-02-028586-2 (Wen Gui Luan) **89i:35127** **35R30** (39A10, 45N05, 65Jxx, 65P05)
- Bukhnikashvili, I. A.** Polynomials with the least deviation and zero derivative at a given point. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 131 (1988), no. 2, 269–271. (Summary) **89k:41006** **41A10**
- Bukhvalov, A. V.** Some Banach properties of spaces of measurable vector-valued functions. (Russian) *Problems in functional analysis* (Russian), 3–15, 116, *Petrozavodsk. Gos. Univ., Petrozavodsk*, 1985. (Summary) **89c:46040** **46E40** (46E30)
- Nonlinear majorization of linear operators. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 1, 14–17; translated in *Soviet Math. Dokl.* 37 (1988), no. 1, 4–7. (C. D. Aliprantis) **89m:47034** **47B55** (46A40, 47H07)
- Bukiet, Bruce** Application of front tracking to two-dimensional curved detonation fronts. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 1, 80–99. (Summary) **89c:80017** **80A25** (80–08)
- Bukov, V. N.** (with Chudinova, V. G.) Optimization of the motion of a nonlinear object on the basis of a forecasting model. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 1, 38–45; translated in *Automat. Remote Control* 49 (1988), no. 1, part 1, 28–33. (Not in MR) **93C75** (93C10)
- (with Khorvat, Ya.) A comparative analysis of some algorithms for the identification of parameters of a linear dynamic object. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* 17 (1988), no. 4, 239–251. (J. Bokor) **89i:93111** **93E12** (93C05)
- Bulanova, N. S.** (with Andrianov, I. V.) Application of the method of Padé approximants for estimating the domain of applicability of the small parameter method. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 62 (1987), 31–34, 130. (Summary) **89c:65092** **65L99**
- Bulanze, E. N.** A nonstationary model for the dynamics of a limited age structure. (Russian) *Cybernetics and computer technology, No. 3* (Russian), 48–56, "Nauka", Moscow, 1987. (M. Yunusov) **89g:92056** **92A17** (45K05)
- Bularas, Driss** Conditions for the presence of a singular point of center type of a general quadratic differential system. (Russian) *Mat. Issled. No. 99 Dinam. Sistemy Uravn. Mat. Fiz.* (1988), 32–49, 170. (A. Ya. Narmanov) **89f:34039** **34C05**
- Bularas, Meriem** Stability of invariant sets. (Russian) *Mat. Issled. No. 99 Dinam. Sistemy Uravn. Mat. Fiz.* (1988), 50–59, 171. (L. Janos) **89f:54074** **54H20** (34C35, 34D30)
- Bulatov, V. L.** The ground state and excitations of a one-dimensional Bose gas on a finite interval. (Russian. English summary) *Teoret. Mat. Fiz.* 75 (1988), no. 1, 148–156; translated in *Theoret. and Math. Phys.* 75 (1988), no. 1, 433–439. (M. Lawrence Gussner) **89f:82008** **82A15**
- Bulatov, V. P.** Methods for solving multiextremal problems (global search). (Russian) *Methods of numerical analysis and optimization* (Russian), 133–157, 303, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (D. Klatte) **89d:90180** **90C30** (65K05)
- see also *Models and methods in operations research*, **89j:00018**
- Bulatović, R.** (with Kažić, M.) On the inversion of the Lagrange-Dirichlet theorem. *Z. Angew. Math. Mech.* 68 (1988), no. 4, T61–T63. (Gerard Thompson) **89f:70028** **70K20**
- Bulanenko, E. V.** The Dirichlet problem for an operator of elasticity theory. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 1, 109–110, 135; translated in *Ukrainian Math. J.* 40 (1988), no. 1, 93–94. (Summary) **89c:35135** **35Q20** (47F05, 73C02, 73C30)
- Bulatskii, V. A.** (with Virchenko, M. I.; Shestakova, N. V.) Modeling of price formation in agriculture. (Russian) *Optimizatsiya* No. 40(57) (1987), 46–63, 159. (Summary) **89d:90036** **90A12**
- (with Vasil'ev, V. A.; Kutateladze, S. S.; Marshak, V. D.) V. L. Makarov's contribution to mathematical economics. (Russian) *Optimizatsiya* No. 41(58) (1987), 5–14. (Editors) **89b:01058** **01A70**
- Feedback in optimization problems. (Russian) *Trudy Inst. Mat. (Novosibirsk)* 10 (1988), *Modeli i Metody Optim.*, 55–63, 264. (Dariusz Zagrodny) **89j:90251** **90C33** (47H10, 49A99, 90C31)
- Bulboacă, Teodor** On some classes of differential subordinations. II. *Studia Univ. Babeş-Bolyai Math.* 31 (1986), no. 2, 13–21. (K. S. Padmanabhan) **89c:30056** **30C80**
- Particular  $n$ - $\alpha$ -close-to-convex functions. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* 31 (1986), no. 3, 27–31. (K. S. Padmanabhan) **89c:30023** **30C45** (30C80)
- Classes of first-order differential subordinations. *Mathematica (Cluj)* 29(52) (1987), no. 1, 11–17. (M. Reade) **89f:30044** **30C80**
- van den Bulck, Eric** see **Van den Bulck, Eric**
- Buldaev, A. S.** (with Pogozhev, I. B.) ★ Оптимизация иммунного процесса по критерию минимума индекса тяжести заболевания. (Russian) [Optimization of the immune process by the criterion of the minimum of the index of the severity of the illness] Препринт [Preprint], 86–604. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1986. 27 pp. (Introduction) **89d:92010** **92A07**
- Buldygin, V. V.** (with Kharazishvili, A. B.) ★ Неравенство Брунна-Минковского и его приложения. (Russian) [The Brunn-Minkowski inequality and its applications] "Naukova Dumka", Kiev, 1985. 200 pp. (Yu. A. Brudnyi) **89b:52019** **52A40** (28A75, 60G15)
- (with Kozachenko, Yu. V.) Lévy-Baxter type theorems and strong sub-Gaussian random processes. *Probability theory and mathematical statistics, Vol. II* (Vilnius, 1985), 87–102, *VNU Sci. Press, Utrecht*, 1987. (Báram S. Rajput) **89a:60109** **60G15**
- (with Solntsev, S. A.) Strong laws of large numbers and the continuity of Gaussian processes. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 35, 28–44. (Summary) **89f:60034** **60F15** (60G15)
- (with Kozachenko, Yu. V.) Sub-Gaussian random vectors and processes. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 36 (1987), 10–22, 138; translated in *Theory Probab. Math. Statist.* No. 36 (1988), 9–20. (A. Weron) **89c:60056** **60G15** (60E05)
- Buldyrev, V. S.** (with Pavlov, B. S.) ★ Линейная алгебра и функции многих переменных. (Russian) [Linear algebra and functions of several variables] *Leningrad. Univ., Leningrad*, 1985. 496 pp. (J. Daneš) **89f:00001** **00A05** (15–01, 26–01, 47–01, 58–01)
- (with Lyalinov, M. A.) An asymptotic boundary condition on the surface of an absorbing convex body. (Russian. English summary) *Vestnik Leningrad. Univ. Fiz. Khim.* 1987, vyp. 2, 10–16, 134. (Summary) **89b:78006** **78A40**
- Buledza, A. V.** Two-step variants of the Richardson iterative method. (Russian. English summary) *Kibernetika (Kiev)* 1987, no. 2, 35–40, 46, 133. (Introduction) **89b:65048** **65F10**
- Bullfin, R. L.** (with Liu, Chang Yung) Scheduling open shops with unit execution times to minimize functions of due dates. *Oper. Res.* 36 (1988), no. 4, 553–559. (Summary) **89f:90074** **90B35**
- An algorithm for the continuous variable upper bound knapsack problem. *Opsearch* 25 (1988), no. 2, 119–125. (Summary) **89c:90140** **90C09**
- Bulgak, A. S.** A multicriteria problem of scheduling theory with inventory resources. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 12, 143–146. (Summary) **89c:90122** **90B35**
- Bulgakov, A. I.** (with Minaev, G. A.; Sazonov, A. Yu.; Chadaev, V. I.) Jet flow in a high granular layer, taking into account the shape of the flame. (Russian) *Boundary value*



- problems (Russian), 117-121, 161, *Perm. Politekh. Inst., Perm*, 1984. (see **89b:00008**) 76N99
- Functional-differential inclusions with a nonconvex-valued operator. (Russian) *Boundary value problems* (Russian), 23-28, iii, *Perm. Politekh. Inst., Perm*, 1986. (see **89c:00009**) 34K05 (34A60)
  - A functional-differential inclusion with an operator that has nonconvex images. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 10, 1659-1668, 1834. (R. R. Akhmerov) **89d:34107** 34K05 (34A10, 34A60)
- Bulgakov, A. Ya.** (with Godunov, S. K.) Circular dichotomy of a matrix spectrum. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 5, 59-70, 237; translated in *Siberian Math. J.* 29 (1988), no. 5, 734-744. (Anna Lee) **89m:15005** 15A18 (15-04, 15A45, 47A10, 65F15)
- Bulgakov, D. N.** Topological loops defined by a system of continuous quasilinear. (Russian) *Webbs and quasigroups* (Russian), 48-51, *Kalinin. Gos. Univ., Kalinin*, 1988. (Michael Tkachenko) **89f:22003** 22A30 (20N05)
- Bulgakov, V. E.** (with Belyi, M. V.; Zolotov, A. B.) The semi-iterative multigrid method and its program realization for solving three-dimensional boundary value problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 6, 875-888, 958. (J. Miklíček) **89a:65156** 88N20
- Bulgakov, V. I.** The phase portrait of a third-order autonomous system. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 10, 1821-1822, 1839. (D. Bobrowski) **89j:34039** 34C05
- Bulgarelli, U.** (with Cerimele, M. M.; Zaretti, A.) A numerical method for a mathematical model in gravitational hydrodynamics. *Appl. Math. Comput.* 27 (1988), no. 3, part I, 251-264. (V. Soundalgekar) **89j:76009** 76-08 (76N15, 85A30)
- Bullinskii, A. V.** (with Doukhan, Paul) Inégalités de mélange fort utilisant des normes d'Orlicz. (English summary) [Strong mixing moment inequalities using Orlicz norms] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 19, 827-830. (Summary) **89b:60017** 60B11 (60E15, 62G05)
- Le comportement du maximum de sommes de variables aléatoires multi-indexées. (English summary) [The behavior of the maximum of sums of random variables with multi-index] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 13, 561-564. (Summary) **89b:60068** 60F10 (60G60)
  - Various mixing conditions and the asymptotic normality of random fields. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 4, 785-789; translated in *Soviet Math. Dokl.* 37 (1988), no. 2, 443-448. (O. O. Kurchenko) **89f:60104** 60G60 (60F05)
- Bullitka, V. K.** (with Ninčák, Ján) Color colorings of complete bipartite graphs, and estimates for Häggkvist numbers. (Russian) *Math. Slovaca* 38 (1988), no. 1, 11-17. (Larry Basenpiller) **89f:05076** 05C15 (05C38)
- Bull, R. A.** Survey of generalizations of Urquhart semantics. *Notre Dame J. Formal Logic* 28 (1987), no. 2, 220-237. (Miroslaw Szatkowski) **89a:03030** 03B45
- Correction to: "Survey of generalizations of Urquhart semantics" [*Notre Dame J. Formal Logic* 28 (1987), no. 2, 220-237; MR 89a:03030]. *Notre Dame J. Formal Logic* 30 (1989), no. 1, 151-152. (From the text) **89m:03012** 03B45
- Bullejos, Manuel** Generalized crossed groupoids. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish)* (Badajoz, 1986), 54-58, *Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz*, 1987. (see **89d:00009**) 20L17 (18G50)
- Bullen, P. S.** (with Mitrovic, D. S.; Vasić, P. M.) ★ Means and their inequalities. Translated and revised from the Serbo-Croatian. Mathematics and its Applications (East European Series), 31. *D. Reidel Publishing Co., Dordrecht-Boston, MA*, 1988. xx+459 pp. ISBN 90-277-2629-9 (Editors) **89d:26003** 26-02 (26Dxx)
- Bullett, Shaun** Dynamics of quadratic correspondences. *Nonlinearity* 1 (1988), no. 1, 27-50. (M. Rees) **89b:58106** 58F08 (30D05)
- Bullinaria, J. A.** Comment on Jourjine's space-time Dirac-Kähler spinors and string model: "Space-time Dirac-Kähler spinors" [*Phys. Rev. D* (3) 35 (1987), no. 2, 757-758; MR 88c:81044] and "String model with Dirac-Kähler spinors" [*ibid.* D (3) 34 (1986), no. 4, 1217-1218; MR 87i:81212] by A. Jourjine. *Phys. Rev. D* (3) 36 (1987), no. 4, 1276-1278. (Alexander W. Smith) **89b:81080** 81D05 (81D07, 81D27, 81E30)
- Bullister, Edward T.** (with Orszag, Steven A.) Numerical simulation of turbulent spots in channel and boundary layer flows. *J. Sci. Comput.* 2 (1987), no. 3, 263-281. (Summary) **89c:76072** 76F99 (76D20)
- Bullock, D.** (with Grossberg, S.) Self-organizing neural architectures for eye movements, arm movements, and eye-arm coordination. *Neural and synergetic computers* (Schloss Elmau, 1988), 197-228, *Springer Ser. Synergetics*, 42, *Springer, Berlin-New York*, 1988. (see **89i:92026**) 92A09 (68T05, 92A25)
- Bullock, Thomas E.** (with Sangsuk-lam, Suwanchai) Analysis of continuous-time Kalman filtering under incorrect noise covariances. *Automatica—J. IFAC* 24 (1988), no. 5, 659-669. (Faria A. Badawi) **89k:93207** 93E11 (93C60)
- Bullough, R. K.** (with Timonen, J.; Pilling, D. J.) Exact Bethe ansatz thermodynamics for the sine-Gordon model in classical limit: effect of long strings. (Russian summary) *Physics of multiparticle systems*, No. 12 (Russian), 51-56, 95, 97, "Naukova Dumka", Kiev, 1987. (Sung G. Chung) **89j:81225** 81E99 (82A99)
- (with Pilling, D. J.; Timonen, J.) Sine-Gordon statistical mechanics: classical limit of Bethe ansatz. (Russian summary) *Physics of multiparticle systems*, No. 12 (Russian), 56-70, 95, 97, "Naukova Dumka", Kiev, 1987. (Sung G. Chung) **89i:82104** 82A69
  - (with Jiang, Zhuhan) Combined  $\bar{\partial}$  and Riemann-Hilbert inverse methods for integrable nonlinear evolution equations in  $(2+1)$  dimensions. *J. Phys. A* 20 (1987), no. 7, L429-L435. (Benno Fuchssteiner) **89a:35183** 35Q20
  - (with Timonen, J.; Pilling, D. J.; Chen, Yu-zhong) Recent results on the statistical mechanics of integrable models in  $1+1$  dimensions. *Plasma theory and nonlinear and turbulent processes in physics*, Vol. 1, 2 (Kiev, 1987), 878-896, *World Sci. Publishing, Singapore*, 1988. (Anjan Kundu) **89b:82017** 82A05 (81C25, 81E40, 82A69)
  - "The wave" "par excellence", the solitary progressive great wave of equilibrium of the fluid: an early history of the solitary wave. *Solitons* (Tiruchirappalli, 1987), 7-42, *Springer Ser. Nonlinear Dynamics*, *Springer, Berlin-New York*, 1988. (Peter L. Christiansen) **89d:01037** 01A55 (35-03, 35Q20)
  - (with Cheng, Yi; Li, Yi Shen) Integrable nonispectral flows associated with the Kadomtsev-Petviashvili equations in  $2+1$  dimensions. *J. Phys. A* 21 (1988), no. 8, L443-L449. (J. J. C. Nimmo) **89i:58048** 58F07 (17B65, 35Q20, 58G35)
- Bulman-Fleming, Sydney** (with McDowell, Kenneth) On V. Fleischer's characterization of absolutely flat monoids. *Algebra Universalis* 25 (1988), no. 3, 394-399. (Lex Renner) **89k:20089** 20M10 (20M30, 20M50)
- Bulmer, M. G.** Genetic models of endosperm evolution in higher plants. *Evolutionary processes and theory* (Israel, 1985), 743-763, *Academic Press, Orlando, FL*, 1986. (Summary) **89c:92022** 92A10
- Bul'onkova, A. A.** see Hoare, C. A. R., **89k:68001**
- Bulota, K.** Calculation of the nearest integer. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* 28 (1988), no. 2, 269-284; translated in *Lithuanian Math. J.* 28 (1988), no. 2, 140-152. (S. I. Gendler) **89i:11014** 11A55 (11J70, 11Y65)
- Solutions of a Diophantine inequality. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* 28 (1988), no. 3, 443-460. (Guang Shan Xu) **89i:11076** 11J25 (11D75, 11J13)
- Bultheel, Adhemar** Triangular decomposition of Toeplitz and related matrices: a guided tour in the algorithmic aspects. *Bull. Soc. Math. Belg. Sér. A* 37 (1985), no. 2, 101-141. (Summary) **89m:65041** 65F30 (15A57)
- On the convergence of Schur parameters for a Toeplitz matrix with a meromorphic symbol. I. *Schur methods in operator theory and signal processing*, 161-190, *Oper. Theory. Adv. Appl.*, 18, *Birkhäuser, Basel-Boston, MA*, 1986. (Autorreferat (Zbl 589:47026)) **89f:30058** 30E10 (15A57, 30D20, 65F05)
  - (with Van Barel, M.) An algebraic method to solve the minimal partial realization problem for scalar sequences. *Linear Algebra Appl.* 104 (1988), 117-129. (A. Böttcher) **89j:15020** 15A22 (30E25, 47B35, 93B15)
- Bulychov, V. A.** (with Frolov, F. F.) Boundary value problems for generalized differential equations. (Russian) *Mat. Sb. (N.S.)* 135(177) (1988), no. 3, 275-296, 414; translated in *Math. USSR-Sb.* 63 (1989), no. 2, 267-287. (Jürgen vom Scheidt) **89b:35360** 35R60 (35D99, 60G60, 60H99)
- Bulychev, Yu. G.** (with Taran, V. N.) An invariant group method for identifying target positions in triangulating, multiposition passive radar systems. *Soviet J. Comm. Tech. Electron.* 32 (1987), no. 8, 107-115; translated from *Radiotekhn. i Elektron.* 32 (1987), no. 4, 755-765 (Russian). (Summary) **89g:78029** 78A99
- (with Taran, V. N.; Khutortsev, V. V.) Stochastic semigroups of operators for space-time filtering. *Soviet J. Comm. Tech. Electron.* 32 (1987), no. 11, 36-40; translated from *Radiotekhn. i Elektron.* 32 (1987), no. 6, 1251-1255 (Russian). (Not in MR) 94A05 (60H99)
- Bumcrot, Robert J.** (with Althoen, S. C.) ★ Introduction to discrete mathematics. The Prindle, Weber & Schmidt Series in Mathematics. *PWS-KENT Publishing Co., Boston, MA*, 1988. xiv+346 pp. ISBN 0-534-91504-3 (Mukai S. Krishnamoorthy) **89f:05001** 05-01 (00A05, 68-01, 94C15)
- Bump, Daniel** (with Hoffstein, Jeffrey) On Shimura's correspondence. *Duke Math. J.* 55 (1987), no. 3, 661-691. (Stephen Gelbart) **89c:11072** 11F37 (11F66, 11F70, 11R39, 22E55)
- (with Friedberg, Solomon; Goldfeld, Dorian) Poincaré series and Kloosterman sums for  $SL(3, \mathbb{Z})$ . *Acta Arith.* 50 (1988), no. 1, 31-89. (Shigeki Tsuyumine) **89j:11047** 11F37 (11L05)
  - Barnes' second lemma and its application to Rankin-Selberg convolutions. *Amer. J. Math.* 110 (1988), no. 1, 179-185. (David Soudry) **89f:11076** 11F67 (11F70, 11F99, 22E50, 33A15)
- Bunakov, A. Ė.** (with Kononenko, A. F.; Chistyakov, Yu. E.) Hierarchical differential (dynamic) games and their applications. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 140-153, "Nauka", Moscow, 1987. (Boleslaw Tolwiński) **89f:90214** 90D20 (90D25, 90D45, 93A13)
- Bunce, John W.** (with Ando, Tsuyoshi) The geometric mean, operator inequalities, and the Wheatstone bridge. *Linear Algebra Appl.* 97 (1987), 77-91. (George E. Trapp) **89a:47022** 47A62 (47B55, 47D20, 94C05)
- Inertia and controllability in infinite dimensions. *J. Math. Anal. Appl.* 129 (1988), no. 2, 569-580. (Jerzy Szatjan) **89b:93020** 93B05 (49E15, 93C25)
- Bunde, Armin** Anomalous transport in disordered structures: effect of additional disorder. *Random fluctuations and pattern growth* (Cargèse, 1988), 27-32, *NATO Adv. Sci. Inst. Ser. E: Appl. Sci.*, 157, *Kluwer Acad. Publ., Dordrecht*, 1988. (see **89j:00034**) 82A57 (82A43, 82A70)
- (with Havlin, Shlomo; Stanley, H. E.) Anomalous transport in random linear structures. *Random fluctuations and pattern growth* (Cargèse, 1988), 37-41, *NATO Adv. Sci. Inst. Ser. E: Appl. Sci.*, 157, *Kluwer Acad. Publ., Dordrecht*, 1988. (see **89j:00034**) 82A42 (82A70)
  - (with Miyazima, Sasaki) Finite lifetime effects in models of epidemics. *Random fluctuations and pattern growth* (Cargèse, 1988), 343-344, *NATO Adv. Sci. Inst. Ser. E: Appl. Sci.*, 157, *Kluwer Acad. Publ., Dordrecht*, 1988. (see **89j:00034**) 92A15
- Bunder, M. W.** Some generalizations to two systems of set theory based on combinatory logic. *Arch. Math. Logik Grundlag.* 26 (1986/87), no. 1-2, 5-12. (Introduction) **89a:03097** 03E70 (03B40)
- Bundschuh, Peter** (with Pethő, Attila) Zur Transzendenz gewisser Reihen. (English summary) [On the transcendence of certain series] *Monatsh. Math.* 104 (1987), no. 3, 199-223. (P. L. Cijssouw) **89h:11036** 11J81
- Bundy, Alan** Incidence calculus: a mechanism for probabilistic reasoning. *J. Automat. Reason.* 1 (1985), no. 3, 263-283. (Summary) **89j:68140** 68T20 (03B35, 03B48, 68T05, 92A25)
- Correctness criteria of some algorithms for uncertain reasoning using incidence calculus. *J. Automat. Reason.* 2 (1986), no. 2, 109-126. (Fujio Nishida) **89k:68137** 68T20 (03B35, 03B48, 03B60)
  - (with Sterling, Leon; Byrd, Lawrence; O'Keefe, Richard; Silver, Bernard) Solving symbolic equations with PRESS. *J. Symbolic Comput.* 7 (1989), no. 1, 71-84. (Not in MR) 68Q40 (68-04)
- Bunge, Marta** (with Dubuc, Eduardo J.) Local concepts in synthetic differential geometry and germ representability. *Mathematical logic and theoretical computer science* (College Park, Md., 1984-1985), 93-159, *Lecture Notes in Pure and Appl. Math.*, 106, *Dekker, New York*, 1987. (Ieke Moerdijk) **89f:58005** 58A20 (03G30, 18F15)
- On a synthetic proof of the Ambrose-Palais-Singer theorem for infinitesimally linear spaces. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* 28 (1987), no. 2, 127-142. (I. Kolár) **89a:58004** 58A05 (18F15)
- Bungert, Hans** see How does man see and experience his world?, **89a:00032a**

- Bunimovich, A. I.** (with Yakunina, G. E.) On the shape of minimum-resistance solids of revolution moving in plastically compressible and elastic-plastic media. *J. Appl. Math. Mech.* **51** (1987), no. 3, 386–392 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 3, 496–503 (Russian). (Summary) **89j:73044** 73E99 (73D05, 73K40)  
— see also **Birthday: Bunimovich, A. I.** **89i:01124**
- Bunimovich, L. A.** Rigorous results in nonequilibrium statistical mechanics. *Proceedings of the conference on ergodic theory and related topics, II (Georgenthal, 1986)*, 41–52, *Teubner-Texte Math.*, 94, Teubner, Leipzig, 1987. (Editors) **89m:82004** 82A05 (82A35, 82A40)  
— see also **Neumann, John**, **89f:01093** and **89f:01094**
- Bunin, A. I.** (with Leonov, G. A.; Kokschi, N.) Attraktorlokalisierung des Lorenz-Systems. (English and Russian summaries) [Attractor localization of the Lorenz system] *Z. Angew. Math. Mech.* **67** (1987), no. 12, 649–656. (Hans G. Bothe) **89d:58073** 58F12 (34C05, 58F13)
- kleine Büning, Hans** see **Kleine Büning, Hans**
- Buning, Pieter G.** Sources of error in the graphical analysis of CFD results. *J. Sci. Comput.* **3** (1988), no. 2, 149–164. (Not in MR) **76-08** (65G99, 68U20)
- Bunke, Olaf** see **Seminar: Nonlinear Regression**, **89b:62005**
- Bunkin, F. V.** (with Galaktionov, V. A.; Kirichenko, N. A.; Kurdyumov, S. P.; Samarskii, A. A.) A nonlinear boundary value problem of ignition by radiation. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 4, 549–559, 623. (Summary) **89d:80008** 80A20 (35K20)
- Bun'kova, G. V.** (with Martynov, G. A.) Universal asymptotic behavior of two-particle distribution functions of polar fluids. (Russian) *Dokl. Akad. Nauk SSSR* **295** (1987), no. 6, 1371–1375. (Introduction) **89b:82071** 82A50
- Bunn, Robert** Critical notice: Michael Hallett's Cantorian set theory and limitation of size [Oxford Univ. Press, New York, 1984; MR 86e:03003]. *Philos. Sci.* **55** (1988), no. 3, 461–478. (Not in MR) **03A05** (00A25, 01A60, 03-03, 04-03)
- Bunse-Gerstner, Angelika** Eigenvalue algorithms for matrices with special structure. *Numerical methods (Miskolc, 1986)*, 141–163, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (William W. Hager) **89b:65091** 65F15
- Bunt, Lucas N. H.** (with Jones, Phillip S.; Bedient, Jack D.) ★ The historical roots of elementary mathematics. Reprint of the 1976 edition. *Dover Publications, Inc., New York*, 1988. xvi+299 pp. ISBN 0-486-25563-8 (Editors) **89b:01003** 01A05 (00A05)
- Buntinas, Martin** Products of sequence spaces. *Analysis* **7** (1987), no. 3-4, 293–304. (W. H. Ruckle) **89f:46017** 46A45 (46M05)  
— (with Goes, Günther) Products of sequence spaces and multipliers. (Serbo-Croatian summary) *Rad. Mat.* **3** (1987), no. 2, 287–300. (P. K. Kamthan) **89d:46007** 46A45
- Buntine, Wray** Generalized subsumption and its applications to induction and redundancy. *Artificial Intelligence* **36** (1988), no. 2, 149–176. (Summary) **89f:68056** 68T05 (03B70)
- Bunu, I. D.** (with Goyan, I. M.; Teybysé, E. I.) Tertiary ideals and pretorsions. (Russian) *Mat. Issled.* No. 105 *Moduli, Algebr., Topol.* (1988), 40–44, 195. (L. Bican) **89k:16053** 16A63
- Buonocristiano, Sandro** (with Hacon, Derek) A geometrical approach to characteristic numbers. *Geometry today (Rome, 1984)*, 21–38, *Progr. Math.*, 60, Birkhäuser Boston, Boston, MA, 1985. (P. J. Kahn) **89a:57047** 57R17 (55N22, 57R20)
- nguyên Bù'ông** see **Nguyễn Bù'ông**
- Buoni, John J.** (with Ahac, Alan A.; Olesky, D. D.) Stable LU factorization of H-matrices. *Linear Algebra Appl.* **99** (1988), 97–110. (François Robert) **89b:65044** 65F05 (65G05)
- Buonocore, A.** (with Nobile, A. G.; Ricciardi, Luigi M.) A new integral equation for the evaluation of first-passage-time probability densities. *Adv. in Appl. Probab.* **19** (1987), no. 4, 784–800. (Chull Park) **89d:60140** 60J60 (60J70)
- Buonocore, Pasquale** Some isoperimetric inequalities in a special case of the problem of torsional creep. *Appl. Anal.* **27** (1988), no. 1-3, 133–142. (Igor Bock) **89d:35057** 35J65 (73E25)
- Buonomano, V.** (with Prado de Andrade, A. F.) Stochastic processes for indirectly interacting particles and stochastic quantum mechanics. *Found. Phys.* **18** (1988), no. 4, 401–426. (David Applebaum) **89b:81043** 81C20 (60J60)
- Burabev, M. S.** see **al-Fārāhī, Abū Naṣr Muḥammad ibn Muḥammad ibn Tarkhān**, **89b:01105** and **89k:01041**
- Burago, Ya. D.** (with Zalgaller, V. A.) ★ Geometric inequalities. Translated from the Russian by A. B. Sosinskiĭ. *Grundlehren der Mathematischen Wissenschaften [Fundamental Principles of Mathematical Sciences]*, 285. Springer Series in Soviet Mathematics. Springer-Verlag, Berlin-New York, 1988. xiv+331 pp. ISBN 3-540-13615-0 (Editors) **89b:52020** 52A40 (53-02)
- Barak, Ya. I.** (with Chekurin, V. F.) ★ Физико-механические поля в полупроводниках. (Russian) [Physical-mechanical fields in semiconductors] *Математические основы теории*. [Mathematical bases of the theory] "Naukova Dumka", Kiev, 1987. 264 pp. (Vladimir Šips) **89k:82068** 82A55 (73R05, 78A60, 82-02)
- Buran, Werner** see **Blaschke, Wilhelm**, **89a:01097**; **89a:01098**; **89a:01099**; **89a:01100** and **89a:01101**
- Buravtsev, V. N.** see **All-Union Conference: Mathematical and Computational Methods in Biology. Biomolecular Systems**, **89a:92002**
- Burbea, Jacob** Sharp inequalities for holomorphic functions. *Illinois J. Math.* **31** (1987), no. 2, 248–264. (P. Agranovich) **89c:32012** 32A35 (30D55)
- Burbidge, John B.** (with Magee, Lonnie; Robb, A. Leslie) Alternative transformations to handle extreme values of the dependent variable. *J. Amer. Statist. Assoc.* **83** (1988), no. 401, 123–127. (Not in MR) **62J05**
- Burchsted, Frederic F.** Archives of American mathematics. *Historia Math.* **14** (1987), no. 4, 366–374. (Editors) **89a:01091** 01A72
- Burchuladze, T. V.** Dynamic problems in the nonclassical theory of thermoelasticity that are solvable in closed form. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruzin. SSR* **87** (1987), 29–44. (From the introduction) **89b:73037** 73U05 (35C05, 73C25)
- Bürckert, Hans-Jürgen** Solving disequations in equational theories. *9th International Conference on Automated Deduction (Argonne, IL, 1988)*, 517–526, *Lecture Notes in Comput. Sci.*, 310, Springer, Berlin-New York, 1988. (see **89c:68004**) **68T15** (03B35, 03C05)
- Burckhardt, Johann Jakob** ★ Die Symmetrie der Kristalle. [The symmetry of crystals] Von René-Just Haüy zur kristallographischen Schule in Zürich. [From René-Just Haüy to the crystallographic school in Zürich] With contributions by Erhard Scholz. Birkhäuser Verlag, Basel-Boston, MA, 1988. 196 pp. ISBN 3-7643-1918-6 (B. Rosenfeld) **89m:51020** 51F15 (20H15, 82-03, 82A60)
- Burczyński, T.** (with Adamczyk, T.) Boundary element method for shape design synthesis of elastic structures. *Boundary elements VII, Vol. I, II (Como, 1985)*, 12.93–12.106, *Comput. Mech.*, Southampton, 1985. (see **89f:65003**) **65R20** (73K25)
- Burd, A. B.** (with Barrow, John D.) Inflationary models with exponential potentials. *Nuclear Phys. B* **308** (1988), no. 4, 929–945. (C. B. Collins) **89i:83067** 83F05 (83C20)
- Burda, Z.** (with Jurkiewicz, Jerzy Władysław) Ising model on a random lattice with a topology of a torus. *Phys. Lett. B* **214** (1988), no. 3, 425–428. (Thórhur Jónsson) **89k:82090** 82A68
- Burdakov, O. P.** see **Dennis, John E., Jr.**, **89j:65002**
- Burde, G. L.** Some exact solutions of problems on laminar jets of immiscible fluids. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* **1988**, no. 3, 94–98, 165; translated in *J. Appl. Mech. Tech. Phys.* **29** (1988), no. 3, 400–403. (Summary) **89j:76043** 76D99
- Burdet, G.** (with Perrin, Martine-Jacqueline) A geometric insight into the Fokker-Planck equation. *J. Geom. Phys.* **4** (1987), no. 1, 81–98. (Hans P. Künzle) **89i:53068** 53C80 (58G32, 81D25)  
— (with Duval, Christian; Perrin, Martine-Jacqueline) A classical analogue of Yukawa coupling: presymplectic formalism. *Lett. Math. Phys.* **15** (1988), no. 1, 81–89. (A. Crumeyrolle) **89c:81072** 81E13 (58F05, 81G15)
- Burdett, Jeremy K.** Topology and the structures of molecules and solids. *Graph theory and topology in chemistry (Athens, Ga., 1987)*, 302–324, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (Introduction) **89d:92092** 92A40 (81G55, 82A55)
- Burdick, Richard K.** (with Graybill, Franklin A.) The present status of confidence interval estimation on variance components in balanced and unbalanced random models. *Comm. Statist. Theory Methods* **17** (1988), no. 4, 1165–1195. (Not in MR) **62J10**  
— (with Lu, Tai-Fang C.; Graybill, Franklin A.) Confidence intervals on a difference of expected mean squares. *J. Statist. Plann. Inference* **18** (1988), no. 1, 35–43. (I. Guttman) **89a:62173** 62J10 (62F25)  
— (with Birch, Nancy J.) Confidence intervals on the ratio of expected mean squares ( $\theta_1 + \theta_2 + \theta_3$ )/ $\theta_4$ . *Statist. Probab. Lett.* **7** (1989), no. 4, 335–342. (Summary) **89k:62047** 62F25 (62J10)
- Burdik, Č.** (with Smirnov, Yu. F.; Tolstol, V. N.; Havlíček, M.; Sakharuk, A. A.) The Dyson-type boson realizations for representations of the semisimple Lie algebras and superalgebras. *Group theoretical methods in physics, Vol. 1–3 (Zvenigorod, 1982)*, 67–76, *Harwood Academic Publ., Chur*, 1985. (Summary) **89m:17020** 17B15 (17B70, 81C40)  
— A new class of realisations of the Lie algebra  $so(q, 2n - q)$ . *J. Phys. A* **21** (1988), no. 2, 289–295. (E. W. Wallace) **89f:17005** 17B10
- Burdakovskii, A. N.** Conditions for the optimality of singular controls in the Goursat-Darboux problem. (Russian) *Upravlyaemye Sistemy* No. 26 (1985), 31–39, 83–84. (Summary) **89k:49018** 49B36
- Burdyak, V. Ya.** Partial structures of closures on complete lower semilattices. (Russian) *Methods for solving nonlinear problems, and data processing (Russian)*, 14–23, 104–105, *Dnepropetrovsk Gos. Univ., Dnepropetrovsk*, 1986. (see **89f:00011**) **06A12**
- Burzy, Krzysztof** Brownian excursions and minimal thinness. III. Applications to the angular derivative problem. *Math. Z.* **192** (1986), no. 1, 89–107. (Autoreferat (Zbl 603:30039)) **89b:60175** 60J45 (31C99)
- ★ Multidimensional Brownian excursions and potential theory. *Pitman Research Notes in Mathematics Series*, 164. *Longman Scientific & Technical, Harlow, John Wiley & Sons, Inc., New York*, 1987. vi+172 pp. ISBN 0-582-00573-6 (Michael Cranston) **89b:60146** 60J65 (31C99, 60G17, 60J45, 60J55)  
— Convergence of 2-dimensional h-processes. *Probab. Math. Statist.* **8** (1987), 49–52. (Paul McGill) **89c:60094** 60J65 (31A20, 60J45)  
— On Brownian paths connecting boundary points. *Ann. Probab.* **16** (1988), no. 3, 1034–1038. (Mamoru Kanda) **89f:60086** 60J45 (60J50, 60J65)  
— Harmonic measure on 3-dimensional Brownian paths. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 2, 407–412. (Robert J. Adler) **89f:60084** 60G17 (60J65)
- Burenin, E. A.** The upper semilattice of m-degrees that are contained in complete Turing degrees. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 3, 63–66, 85; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 3, 88–92. (G. N. Kobzev) **89i:03060**; **EA 89m** 03D30
- Burenkov, V. I.** (with Batyrov, B. E.) An averaging operator in  $L_p$ -spaces for  $0 < p < 1$ . (Russian) *Mat. Zametki* **43** (1988), no. 1, 38–43, 153; translated in *Math. Notes* **43** (1988), no. 1-2, 23–26. (Yu. A. Abramovich) **89d:47058** 47B38
- A theorem on iterated norms for Nikol'skii-Besov spaces and its application. (Russian) Studies in the theory of differentiable functions of several variables and its applications, XII (Russian). *Trudy Mat. Inst. Steklov.* **181** (1988), 27–39, 269. (Georgi E. Karadzhov) **89f:46069** 46E35
- Bures, Jarolim** see **Proceedings: School on Geometry and Physics**, **89a:00021**
- Burev, D. D.** Analytic solution of a general nonlinear optimal control problem. (Russian) *Voprosy Kibernet. (Moscow)* No. 136 (1988), 40–49. (Adam Łoświcki) **89g:49046** 49D29 (93C10, 93C55, 93C57)
- A discrete analytic solution of a smooth nonlinear problem of optimal control. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 8, 1255–1258, 1279. (Stanisław Walczak) **89i:93046** 93B50 (39A12, 93C10, 93C15)
- van der Burg, Eeke** (with de Leeuw, Jan) Use of the multinomial jack-knife and bootstrap in generalized nonlinear canonical correlation analysis. *Appl. Stochastic Models Data Anal.* **4** (1988), no. 3, 159–172. (Summary) **89i:62091** 62H20  
— (with de Leeuw, Jan; Verdegaaal, Renée) Homogeneity analysis with  $k$  sets of variables: an alternating least squares method with optimal scaling features. *Psychometrika* **53** (1988), no. 2, 177–197. (Not in MR) **62P15**
- Burgat, Christian** (with Benzaouia, Abdellah) Regulator problem for linear discrete-time systems with nonsymmetrical constrained control. *Internat. J. Control* **48** (1988), no. 6, 2441–2451. (Summary) **89i:93045** 93B50 (93C05, 93C55)  
— (with Benzaouia, Abdellah) Stabilizing regulators for uncertain discrete-time linear systems. (French summary) With an appendix by M. Fielder. *RAIRO Automat.-Prod. Inform. Ind.* **22** (1988), no. 2, 147–158. (Chao Shun Zhou) **89c:93162** 93D15 (93B35, 93C40, 93C55)  
— (with Benzaouia, Abdellah) The regulator problem for a class of linear systems with constrained control. *Systems Control Lett.* **10** (1988), no. 5, 357–363. (Summary)



- Burge, R. E.** (with Ali, S. M.) New automatic techniques for smoothing and segmenting SAR images. (French and German summaries) *Signal Process.* **14** (1988), no. 4, 335–346. (Not in MR) 93E14 (94A13)
- Burge, W. H.** (with Andrews, G. E.; Baxter, Rodney James; Bressoud, D. M.; Forrester, P. J.; Viennot, Gérard) Partitions with prescribed hook differences. *European J. Combin.* **8** (1987), no. 4, 341–350. (Peter Paule) 89g:05014 05A30 (82A69)
- Burger, Marc** (with Schroeder, Viktor) Volume, diameter and the first eigenvalue of locally symmetric spaces of rank one. *J. Differential Geom.* **26** (1987), no. 2, 273–284. (Werner Ballmann) 89a:53046 53C20 (53C35, 58G25)
- Spectre du laplacien, graphes et topologie de Feil. [Spectrum of the Laplacian, graphs and the Feil topology] *Comment. Math. Helv.* **63** (1988), no. 2, 226–252. (Marie-France Vignéras) 89h:58193 58G25 (22E46)
- Burger, Mária** (with Bujdosó, Ernő) Oscillating chemical reactions as an example of the development of a subfield of science. (Russian) *Oscillations and traveling waves in chemical systems* (Russian), 608–647, "Mir", Moscow, 1988. (see 89f:92003) 92A40
- see also *Oscillations and traveling waves in chemical systems*, 89f:92003
- Burger, Marieta** (with Broere, L.) Uniquely colorable graphs. *Graphs Combin.* **2** (1986), no. 3, 201–208. (H. Joseph Straight) 89f:05075 05C15
- Bürger, Reinhard** Evolutionary dynamics of functionally constrained phenotypic characters. *IMA J. Math. Appl. Med. Biol.* **3** (1986), no. 4, 265–287. (Jon Stene) 89d:92041 92A10 (92A15)
- Mutation-selection balance and continuum-of-alleles models. *Math. Biosci.* **91** (1988), no. 1, 67–83. (Roger Lui) 89k:92025 92A10
- Perturbations of positive semigroups and applications to population genetics. *Math. Z.* **197** (1988), no. 2, 259–272. (Mats Gyllenberg) 89b:47057 47D05 (35K22, 47B55, 92A10)
- Burgers, G. J. H.** (with van Dam, H.) On classical action at a distance theories which contain a cutoff. *J. Math. Phys.* **28** (1987), no. 3, 677–684. (Summary) 89c:70025 70G50 (70H40, 81E13)
- Burgess, C. P.** (with Morris, T. R.) Open and unoriented strings à la Polyakov. *Nuclear Phys. B* **291** (1987), no. 2, 256–284. (Marc Henneaux) 89d:81087a 81E99 (81E30)
- (with Morris, T. R.) Open superstrings à la Polyakov. *Nuclear Phys. B* **291** (1987), no. 2, 285–333. (Marc Henneaux) 89d:81087b 81E99 (81E30)
- Burgess, D. A.** Mean values of character sums. II. *Mathematika* **34** (1987), no. 1, 1–7. (Ronald J. Evans) 89g:11072 11L40
- On a set of congruences related to character sums. *J. London Math. Soc.* (2) **37** (1988), no. 3, 385–394. (Ronald J. Evans) 89g:11073 11L40
- Burgess, John P.** The truth is never simple. *J. Symbolic Logic* **51** (1986), no. 3, 663–681. (G. Asner) 89i:03113a 03F40 (03B30, 03D35, 03F30)
- Addendum to: "The truth is never simple". *J. Symbolic Logic* **53** (1988), no. 2, 390–392. (G. Asner) 89i:03113b 03F40 (03B30, 03D35, 03F30)
- Burgess, W. D.** (with Menal, P.) On strongly  $\pi$ -regular rings and homomorphisms into them. *Comm. Algebra* **16** (1988), no. 8, 1701–1725. (K. R. Goodearl) 89f:16015 16A30 (16A33, 16A51)
- van der Burgh, A. H. P.** (with van Horssen, W. T.) On initial boundary value problems for weakly semilinear telegraph equations. Asymptotic theory and application. *SIAM J. Appl. Math.* **48** (1988), no. 4, 719–736. (Enrique Zuazua) 89j:35038 35C20 (35B20, 35L70)
- Burghard, Jochen** A tree pattern matching algorithm with reasonable space requirements. *CAAP'88 (Nancy, 1988)*, 1–15, *Lecture Notes in Comput. Sci.*, 299, Springer, Berlin-New York, 1988. (Răzvan Andonie) 89j:68058 68Q20
- Burghel, Dan** (with Vigé-Poirier, Micheline) Cyclic homology of commutative algebras. I. Algebraic topology—rational homotopy (Louvain-la-Neuve, 1986), 51–72, *Lecture Notes in Math.*, 1318, Springer, Berlin-New York, 1988. (Sue Geller) 89k:18027 18G35 (14B05, 16A62, 18G50, 19D55)
- (with Kappeler, Thomas) Multiplicities of the eigenvalues of the discrete Schrödinger equation in any dimension. *Proc. Amer. Math. Soc.* **102** (1988), no. 2, 255–260. (Summary) 89e:15013 15A18 (39A12)
- Burgin, M. S.** (with Kuznetsov, V. I.) Types of symmetries in physical theory. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jarmala*, 1985), 362–371, "Nauka", Moscow, 1986. (see 89d:81002) 81C40
- Operations on concrete sets. (Russian) *Ordered sets and lattices*, No. 9 (Russian), 3–12, 108, *Saratov Gos. Univ., Saratov*, 1986. (Summary) 89f:03052 03E99 (03D43, 03E72, 06D15)
- (with Kuznetsov, V. I.) Problems as components of a problem-heuristic subsystem of a scientific theory. (Russian) *Scientific knowledge: logic, concepts, structure* (Russian), 52–83, "Nauka" *Sibirsk. Otdel., Novosibirsk*, 1987. (V. Ya. Kreinovich) 89b:00035 00A25 (03E72)
- The arithmetical hierarchy and inductive Turing machines. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 3, 530–533; translated in *Soviet Math. Dokl.* **37** (1988), no. 2, 390–393. (Gerhard Lischke) 89f:03032 03D10 (03D20, 03D55, 68Q05)
- Burgmeister, P.** (with Plokhov, A. G.) An approach of approximating the  $\epsilon$ -null-controllability set of nonlinear nonautonomous systems. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **17** (1988), no. 6, 357–369. (Zdzisław Wyderka) 89k:93019 93B05 (49E15, 93C10)
- Burgos, M. E.** Quantum mechanics is compatible with realism. *Found. Phys.* **17** (1987), no. 8, 809–812. (Dennis Dieks) 89a:81006 81B05
- Burguera, M.** (with Viaño Rey, Juan M.) A numerical method for the unilateral contact problem with perfect plasticity. *Computational plasticity, Part I, II (Barcelona, 1987)*, 209–220, *Pineridge, Swansea*, 1987. (N. Gass) 89j:73069 73T05 (49A29, 65P05, 73–08)
- Burgués i Badia, Josep Ma.** (with Bruna, Joaquim) Holomorphic approximation and estimates for the  $\bar{\partial}$ -equation on strictly pseudoconvex nonsmooth domains. *Duke Math. J.* **55** (1987), no. 3, 539–596. (Harold P. Boas) 89g:32024 32E30 (32F15, 35N15)
- Buriev, K.** An additive problem with prime numbers. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **30** (1987), no. 11, 686–688 (1988). (Matti Jutila) 89f:11111 11P45
- Burim, V. M.** (with Kutovoi, V. A.) Conditions for the absence of condensation points of the discrete spectrum for the Sturm-Liouville equation with unbounded operator potential. (Ukrainian. Russian summary) *Vysnik Kiiv. Univ. Ser. Mat. Mekh.* No. 28 (1986), 124–127, 136. (Summary) 89f:47071 47E05 (34B25, 34G10)
- Burinskii, A. Ya.** The problem of the source of the Kerr-Newman metric: the volume Casimir effect and superdense pseudovacuum state. *Phys. Lett. B* **216** (1989), no. 1–2, 123–126. (Eric Verdaguier) 89m:83046 83C47 (81E20)
- Burkard, Rainer E.** Assignment problems: recent solution methods and applications. *System modelling and optimization (Budapest, 1985)*, 153–169, *Lecture Notes in Control and Inform. Sci.*, 84, Springer, Berlin-New York, 1986. (K. V. Shakhbazyan) 89d:90146 90C10 (90B10)
- (with Cuninghame-Green, R. A.) Saddlepoints in group and semigroup minimization. *Optimization* **19** (1988), no. 4, 451–459. (Knut Richter) 89h:90184 90C27 (06F05, 90C10)
- Burke, James V.** Second order necessary and sufficient conditions for convex composite NDO. *Math. Programming* **38** (1987), no. 3, 287–302. (L. Grippo) 89d:90181 90C30
- (with Moré, Jorge J.) On the identification of active constraints. *SIAM J. Numer. Anal.* **25** (1988), no. 5, 1197–1211. (Pierre Loridan) 89i:90068 90C30 (65K05)
- Burke, John R.** (with Bergum, Gerald) Covering the integers with linear recurrences. *Applications of Fibonacci numbers (San Jose, CA, 1986)*, 143–147, *Kluwer Acad. Publ., Dordrecht*, 1988. (Joachim Zöllner) 89j:11020 11B37 (11B25, 11B39, 11B83)
- (with Webb, W. A.) Sums of perturbed sequences of integers. *J. Number Theory* **29** (1988), no. 3, 264–270. (Richard J. Friedlander) 89j:11009 11B13 (11B50, 11P32)
- Burke, Jonathan L.** Inactive transfer policies and efficiency in general overlapping-generations economies. *J. Math. Econom.* **16** (1987), no. 3, 201–222. (Summary) 89g:90052 90A12 (90A14)
- Burke, Maxim R.** Recouvrements ponctuels dénombrables par des ensembles négligeables. [Point countable coverings by sets of measure zero] *Canad. Math. Bull.* **31** (1988), no. 1, 59–62. (Rae M. Shortt) 89d:28001 28A05 (03E15, 03E35, 04A20)
- (with Fremlin, David H.) A note on measurability and almost continuity. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 611–612. (S. M. Srivastava) 89c:28009 28A20 (03E35)
- Weakly dense subsets of the measure algebra. *Proc. Amer. Math. Soc.* **106** (1989), no. 4, 867–874. (D. H. Fremlin) 89m:28011 28A51 (06E99, 54A25)
- Burke, Murray D.** (with Csörgő, Sándor; Horváth, Lajos) A correction to and improvement of: "Strong approximations of some biometric estimates under random censorship" [Z. Wahrsch. Verw. Gebiete **56** (1981), no. 1, 87–112; MR **83a:62102**]. *Probab. Theory Related Fields* **79** (1988), no. 1, 51–57. (Niels Keiding) 89b:62058 62G05 (62P10)
- (with Gombay, Edit) On goodness-of-fit and the bootstrap. *Statist. Probab. Lett.* **6** (1988), no. 5, 287–293. (Nariaki Sugiura) 89f:62043 62G10 (60G15, 62E20)
- Burke, Shawn E.** (with Hubbard, James E., Jr.) Distributed actuator control design for flexible beams. *Automatica—J. IFAC* **24** (1988), no. 5, 619–627. (Not in MR) 93C75 (93C20)
- Burkhardt, G.** (with Küchler, U.) The semimartingale decomposition of one-dimensional quasidiffusions with natural scale. *Stochastic Process. Appl.* **25** (1987), no. 2, 237–244. (F. B. Knight) 89f:60242 60G60 (60G48)
- Burkhardt, Hans** Modalities in language, thought and reality in Leibniz, Descartes and Crusius. *Synthese* **75** (1988), no. 2, 183–215. (Title) 89c:03007 03–03 (01A45, 01A50, 03A05, 03B45, 03B65)
- Burkhardt, Rainer** ★ Elemente der euklidischen und polareuklidischen Geometrie. (German) [Elements of Euclidean and polar Euclidean geometry] Dreieit und Dreieck. Kreis und Winkelkreis. Vierseit und Viereck. [Trilateral and triangle. Circle and tangential figures. Quadrilateral and quadrangle] Beiträge zum Studium Fundamentale [Contributions to the Study of Fundamentals], I. Verlag Urachhaus Johannes M. Mayer GmbH, Stuttgart, 1986. 108 pp. ISBN 3-87838-952-3 (J. Strommer) 89m:51001 51–01
- Burkholder, Donald L.** A proof of Pelczyński's conjecture for the Haar system. *Studia Math.* **91** (1988), no. 1, 79–83. (P. Wojtaszczyk) 89j:46026 46E30 (41A44, 42C10, 46B25, 60G46)
- Burkholder, Douglas G.** Azumaya rings, Pierce stalks and central ideal algebras. *Comm. Algebra* **17** (1989), no. 1, 103–113. (F. DeMeyer) 89j:16006 16A16
- Products of Azumaya rings and Kochen's map. *Comm. Algebra* **17** (1989), no. 1, 115–134. (F. DeMeyer) 89j:16008 16A16
- Burkin, I. M.** Necessary conditions for the stability of multiply connected control systems in the critical case of two zero roots. (Russian) *Mathematical methods for optimization and control in systems* (Russian), 117–123, Kalinin. Gos. Univ., Kalinin, 1987. (P. Brunovsky) 89k:34076 34D20 (34D25, 93D05, 93D10)
- Burkina, L. I.** Existence of periodic solutions of a three-dimensional automatic control system. (Russian) *Mathematical methods for optimization and control in systems* (Russian), 110–116, Kalinin. Gos. Univ., Kalinin, 1987. (Qinde Zhou) 89f:34057 34C25 (49A10, 49D50)
- Burkinshaw, O.** (with Aliprantis, C. D.; Brown, Donald J.) Edgeworth equilibria. *Econometrica* **55** (1987), no. 5, 1109–1137. (Walter Trockel) 89c:90025 90A14 (46N05)
- (with Aliprantis, C. D.; Brown, Donald J.) Edgeworth equilibria in production economies. *J. Econom. Theory* **43** (1987), no. 2, 252–291. (Diethard Pallaschke) 89i:90016 90A14 (46N05)
- (with Aliprantis, C. D.) The fundamental theorems of welfare economics without proper preferences. *J. Math. Econom.* **17** (1988), no. 1, 41–54. (Nicholas C. Yannelis) 89c:90047 90A14 (46N05)
- Berkitt, A. N.** (with Irving, A. C.) Identity of the conjugate gradient and Lanczos algorithms for matrix inversion in lattice fermion calculations. *Phys. Lett. B* **205** (1988), no. 1, 69–72. (Summary) 89c:81006 81–08 (65F99, 81E25)
- Burkov, S. E.** Ground states of two-dimensional quasicrystals. *J. Statist. Phys.* **52** (1988), no. 1–2, 453–461. (Summary) 89i:82075 82A60
- Burkov, V. D.** Stiff derivations of semiprime rings. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 12, 12–14, 79. (Efim Zelmanov) 89b:16044 16A72 (16A12)
- Derivations of quasimatrix algebras. (Russian) *Mat. Zametki* **42** (1987), no. 2, 298–304, 346. (Andrzej Nowicki) 89a:16046 16A72
- Burkovskaya, V. L.** (with Makarov, Vladimir Leonidovich; Kopystyra, N. P.) An estimate for the accuracy of the method of nets for a problem of the optimal control of elliptic systems. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 61 (1987), 12–19, 129. (Summary) 89b:65298 65N99 (65K10)
- Burks, Christian** (with Perlwitz, Marcela D.; Waterman, Michael S.) Pattern analysis of the genetic code. *Adv. in Appl. Math.* **9** (1988), no. 1, 7–21. (Summary) 89d:92043 92A10 (92A12)
- Burlacu, E.** (with Burlacu, V.) Sur les approximations de la fiabilité d'un système binaire cohérent. (Romanian summary) [Reliability approximations for a coherent binary

- system] *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* 1986, November, 23-29. (Not in MR) 62N05
- Burlacu, V. (with Burlacu, E.) Sur les approximations de la fiabilité d'un système binaire cohérent. (Romanian summary) [Reliability approximations for a coherent binary system] *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* 1986, November, 23-29. (Not in MR) 62N05
- Burlaka, V. S. (with Yanishevskii, A. P.) Investigation of the stability of motion of a two-body system. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 10(44) (1988), 1-5, 87. (Summary) 89c:70012 70E99 (70K20)
- Burlakov, M. P. Clifford structures and integration on smooth manifolds. (Russian) *Differentsial'naya Geom. Mnogobraz. Figur* No. 18 (1987), 14-16, 135. (Summary) 89c:58005 58A10
- The Einstein equations in quasi-Riemannian spaces. (Russian) *Izv. Severo-Kavkaz. Nauchn. Tsentra Vyssh. Shkoly Estestv. Nauk.* 1987, no. 3, 72-76, 142. (Jan Novotný) 89c:83043 83E10 (53B50)
- Burlando, Laura Two sets of continuity points of the spectrum and spectral radius functions in an algebra of operators. (Italian summary) *Istit. Lombardo Accad. Sci. Lett. Rend. A* 120 (1986), 135-147 (1987). (P. Aiena) 89d:47004 47A10 (47A25)
- Burlankov, D. E. Exact solutions for moving matter in general relativity. *Soviet Phys. JETP* 66 (1987), no. 6, 1095-1099; translated from *Zh. Eksp. Teoret. Fiz.* 93 (1987), no. 6, 1921-1929 (Russian). (Jorge A. Pullin) 89c:83013 83C15 (83C10)
- Burlatskii, S. F. (with Pronin, K. A.) Metastable states in diffusion-controlled processes. *J. Phys. A* 22 (1989), no. 5, 531-535. (Summary) 89c:80023 80A30
- Burley, Walter ★ Von der Reinheit der Kunst der Logik. (German) [Of the purity of the art of logic] *Erster Traktat: Von den Eigenschaften der Termini*. [First tract: of the properties of termini] Dual Latin-German text. Translated from the Latin, edited and with an introduction by Peter Kunze. Philosophische Bibliothek [Philosophical Library]. 401. Felix Meiner Verlag, Hamburg, 1988. xlviii+269 pp. ISBN 3-7873-0717-6 (H. L. L. Busard) 89c:01009 01A35 (03-03)
- see also Kupp, Clemens, (89c:01015)
- Burman, Prabir Smoothing sparse contingency tables. *Sankhyā Ser. A* 49 (1987), no. 1, 24-36. (H. Enke) 89a:62134 62H17 (62G05)
- Burmeister, Peter (with Wojdyło, Bolesław) Properties of homomorphisms and quomorphisms between partial algebras. I. *Contributions to general algebra*, 5 (Salzburg, 1986), 69-90, Hölder-Pichler-Tempsky, Vienna, 1987. (Danica Jakubiková-Studenovská) 89c:08003 08A55
- Burmeister, W. (with Dietze, Siegfried; Hess, Walter Paul; Schmidt, Jochen W.) Solution of a class of weakly coupled programs via dualization, and applications. *Discretization in differential equations and enclosures* (Weissig, 1986), 57-80, *Math. Res.*, 36, Akademie-Verlag, Berlin, 1987. (C. P. Orlieb) 89j:90200 90C25 (65K05)
- (with Schmidt, Jochen W.) A lemma on convex functionals in finite-dimensional spaces. *Arch. Math. (Basel)* 50 (1988), no. 2, 189-192. (W. W. Breckner) 89c:90156 90C25
- (with Spedicato, E.) A strict bound to the condition number of bordered positive definite matrices. (German summary) *Computing* 40 (1988), no. 2, 181-183. (Cs. J. Hegedűs) 89c:65056 65F35
- (with Schmidt, Jochen W.) On the R-order of coupled sequences arising in single-step type methods. *Numer. Math.* 53 (1988), no. 6, 653-661. (W. C. Rheinboldt) 89h:65086 65H99
- Burmistrov, A. N. (with Kovalov, V. P.) Asymptotic solution of the Whipple equation of gas lubrication for large compressibility numbers. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* 1988, no. 4, 86-92, 165; translated in *J. Appl. Mech. Tech. Phys.* 29 (1988), no. 4, 535-540. (Summary) 89c:76075 76N15 (76D08)
- Burn, Geoffrey (with Hankin, Chris; Peyton Jones, Simon) A safe approach to parallel combinator reduction. *Theoret. Comput. Sci.* 56 (1988), no. 1, 17-36. (Dorothy Bollman) 89i:68081 68Q55
- Burn, K. (with Dubi, A.; Goldfeld, A.) Algorithms for the calculation of the second moment of geometrical splitting in Monte Carlo. *Transport Theory Statist. Phys.* 16 (1987), no. 8, 1149-1165. (Summary) 89a:65008 65C05
- Burnap, Charles (with Zweifel, P. F.) Cauchy problems involving nonselfadjoint operators. *Appl. Anal.* 25 (1987), no. 4, 301-318. (Summary) 89c:35110 35R20 (34G10, 47B40)
- (with Lambert, Alan) Proximity and similarity of operators. *Proc. Roy. Irish Acad. Sect. A* 87 (1987), no. 1, 95-102. (Lawrence Fialkow) 89b:47031 47A65
- Burnashev, M. V. (with Begmatov, I. A.) Detection of orthogonal signals in Gaussian white noise. (Russian) *Dokl. Akad. Nauk UzSSR* 1988, no. 9, 3-4. (Not in MR) 94A12 (62)
- Burnett, Charles Introduction. *Adelard of Bath*, 1-6, *Warburg Inst. Surveys Texts*, XIV, Warburg Inst., London, 1987. (see 89c:01017) 01A70 (01A35)
- (with Cochrane, Louise) *Adelard and the Mappa clavicula. Adelard of Bath*, 29-32, *Warburg Inst. Surveys Texts*, XIV, Warburg Inst., London, 1987. (see 89c:01017) 01A35
- *Adelard, music and the quadrivium. Adelard of Bath*, 69-86, *Warburg Inst. Surveys Texts*, XIV, Warburg Inst., London, 1987. (see 89c:01017) 01A35
- *Adelard, Erpaphalau and the science of the stars. Adelard of Bath*, 133-145, *Warburg Inst. Surveys Texts*, XIV, Warburg Inst., London, 1987. (see 89c:01017) 01A35
- Catalogue: the writings of Adelard of Bath and closely associated works, together with the manuscripts in which they occur. *Adelard of Bath*, 163-196, *Warburg Inst. Surveys Texts*, XIV, Warburg Inst., London, 1987. (see 89c:01017) 01A35
- see also Adelard of Bath, 89c:01017
- Burnett, Richard T. (with Willan, Andrew R.) Linear rank tests for randomized block designs. *Comm. Statist. Theory Methods* 17 (1988), no. 8, 2455-2470. (Summary) 89c:62050 62G10 (62K10)
- Burnham, K. P. A comment on maximum likelihood estimation for finite mixtures of distributions. *Biometrical J.* 30 (1988), no. 3, 379-384. (Not in MR) 62F10
- Burniak, Czesław (with Bogowski, Franciszek) On the domain of local univalence and starlikeness in a certain class of holomorphic functions. *Demonstratio Math.* 20 (1987), no. 3, 519-536 (1988). (G. Lakshma Reddy) 89m:30019 30C45 (30C55)
- Burnosov, S. V. (with Kozlov, R. I.) Asymptotic behavior of and estimates for the solutions of monotone difference equations. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 16-29, 322, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Summary) 89h:39002 39A10 (39A05, 39A11)
- Burns, Daniel M., Jr. (with De Bartolomeis, Paolo) Applications harmoniques stables dans  $P^*$ . [Stable harmonic mappings into  $P^*$ ] *Ann. Sci. École Norm. Sup. (4)* 21 (1988), no. 2, 159-177. (James F. Glazebrook) 89h:58044 58E20 (53C55)
- (with Epstein, C. L.) A global invariant for three-dimensional CR-manifolds. *Invent. Math.* 92 (1988), no. 2, 333-348. (M. Kalka) 89b:53060 53C15 (32F25, 57R20)
- (with De Bartolomeis, Paolo) Stability of vector bundles and extremal metrics. *Invent. Math.* 92 (1988), no. 2, 403-407. (Mitsuhiko Itoh) 89d:53114 53C55 (32L05, 53C25, 58E11)
- Burns, J. M. (with Goldsmith, B.) Maximal order abelian subgroups of symmetric groups. *Bull. London Math. Soc.* 21 (1989), no. 1, 70-72. (Cheryl E. Praeger) 89i:20013 20B35
- Burns, James E. (with Lynch, Nancy) The Byzantine firing squad problem. *Advances in computing research*, Vol. 4, 147-161, JAI, Greenwich, CT, 1987. (Julian Padgett) 89i:68002 68M10 (68N25, 68Q10)
- Burns, John A. (with Cliff, Eugene M.; Herdman, Terry L.; Turi, Janos) On integral transforms appearing in the derivation of the equations of an aeroelastic system. *Nonlinear analysis and applications* (Arlington, Tex., 1986), 89-98, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (H. K. Cheng) 89c:76013 76B05 (73J05)
- Burns, Scott A. (with Palmore, Julian I.; Benzinger, Harold E.) Ecology models and Newton vector fields. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* 90 (1988), no. 1-2, 219-232. (L. E. Bobisud) 89i:92048 92A15 (58F40, 92-08)
- Burosch, Gustav (with Demetrovics, János; Katona, G. O. H.) The poset of closures as a model of changing databases. *Order* 4 (1987), no. 2, 127-142. (J. Paredaens) 89i:68013 68P15 (06A10, 68P05)
- (with Laborde, Jean-Marie) Some intersection theorems for structures. *European J. Combin.* 9 (1988), no. 3, 207-214. (D. J. Kleitman) 89i:05153 05C35 (05A05)
- (with Leon'ev, V. K.; Markosyan, A. S.) On the possibility of propagating information on graphs. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 2, 265-268; translated in *Soviet Math. Dokl.* 37 (1988), no. 1, 52-55. (Karl Weber) 89d:05147 05C75 (94A15)
- Burov, A. A. Nonintegrability of the equations of motion of a gyroscope in a Cardano suspension. (Russian) *Problems on the investigation of stability and stabilization of motion* (Russian), 3-10, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1986. (A. Ya. Savchenko) 89c:70009 70E05 (58F05)
- Burova, I. N. ★ Развитие проблемы бесконечности в истории науки. (Russian) [The development of the problem of infinity in the history of science] "Nauka", Moscow, 1987. 134 pp. (E. Mendelson) 89c:00048 00A25 (01A05, 03A05)
- Burova, M. V. (with Kalashnikov, O. K.) Stability of the hierarchy of interactions in grand unification theory. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jarmala, 1985), 286-293, "Nauka", Moscow, 1986. (see 89d:81001) 81G20
- Burovov, I. A. (with Emel'yanov, S. V.; Levada, F. Yu.) An estimate for the norm of the control vector in binary automatic systems. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 2, 288-291; translated in *Soviet Phys. Dokl.* 33 (1988), no. 3, 162-163. (Not in MR) 93B30
- (with Emel'yanov, S. V.; Kirilychev, V. N.) Controllability of linear dynamical systems. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 4, 832-835; translated in *Soviet Phys. Dokl.* 33 (1988), no. 4, 245-246. (Jerzy Klamka) 89j:93005 93B05 (49E15, 93C05, 93C60)
- Burr, Deborah On errors-in-variables in binary regression—Berkson case. *J. Amer. Statist. Assoc.* 83 (1988), no. 403, 739-743. (Not in MR) 62J05
- Burr, S. A. (with Erdős, Paul; Faudree, R. J.; Rousseau, C. C.; Schelp, R. H.; Gould, R. J.; Jacobson, Michael S.) Goodness of trees for generalized books. *Graphs Combin.* 3 (1987), no. 1, 1-6. (Zheng Sheng Wu) 89b:05122 05C55
- (with Bloom, Gary S.) On unavoidable digraphs in orientations of graphs. *J. Graph Theory* 11 (1987), no. 4, 453-462. (J. Sheehan) 89b:05121 05C55 (05C20)
- Burrell, Philippe R. A cybernetical model of concept learning. 11<sup>e</sup> congrès international de cybernétique (Namur, 1986), 1077-1092, *Assoc. Internat. Cybernét., Namur*, 1986. (see 89a:94001) 68T05
- Burridge, Peter (with Wallis, Kenneth F.) Prediction theory for autoregressive-moving average processes. *Econometric Rev.* 7 (1988), no. 1, 65-95. (Summary) 89h:62148 62M10 (62M20)
- Burridge, R. (with Beylkin, G.) On double integrals over spheres. *Inverse Problems* 4 (1988), no. 1, 1-10. (Summary) 89f:66006 86A15 (44A15, 81F99)
- (with Papanicolaou, George C.; White, Benjamin S.) One-dimensional wave propagation in a highly discontinuous medium. *Wave Motion* 10 (1988), no. 1, 19-44. (Sergej M. Zverev) 89c:86002 86A15 (73D15)
- Burris, S. Primitive positive clones which are endomorphism clones. *Algebra Universalis* 24 (1987), no. 1-2, 41-49. (Agnes Szendrei) 89a:08002b 08A40 (08A35)
- (with Willard, R.) Finitely many primitive positive clones. *Proc. Amer. Math. Soc.* 101 (1987), no. 3, 427-430. (Agnes Szendrei) 89a:08002a 08A40 (03C50)
- The model completion of the class of  $\mathcal{L}$ -structures. *Z. Math. Logik Grundlag. Math.* 33 (1987), no. 4, 313-314. (Andrey Morozov) 89c:03051 03C57 (03B25)
- (with Albert, M. H.) Bounded obstructions, model companions and amalgamation bases. *Z. Math. Logik Grundlag. Math.* 34 (1988), no. 2, 109-115. (Milan Grulović) 89c:03059 03C52 (03C07)
- Bursill, L. A. (with Peng, Ju Lin; Fan, Xu Dong) Spiral lattice concepts. *Modern Phys. Lett. B* 1 (1987), no. 5-6, 195-206. (M. Mendès France) 89h:82034 82A57
- Burskii, V. P. Boundary value problems for a second-order hyperbolic equation in a disk. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 2, 22-29, 83. (Summary) 89d:35105 35L20
- Uniqueness of the solution of the Dirichlet problem in a ball for the wave equation. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 6, 1038-1039, 1101. (A. O. Oganessian) 89m:35127 35L20 (33A45)
- Some boundary value problems for systems of first-order differential equations with a homogeneous symbol in a disk. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 9(43) (1988), 32-35, 86. (Summary) 89j:35044 35F15
- Burstall, Francis E. Twistor methods for harmonic maps. *Differential geometry* (Lyngby, 1985), 55-96, *Lecture Notes in Math.*, 1263, Springer, Berlin-New York, 1987. (John C. Wood) 89b:58054 58E20 (53C42, 81E99)
- Burstall, R. (with Lampson, B.) Pebble, a kernel language for modules and abstract data types. *Inform. and Comput.* 76 (1988), no. 2-3, 278-346. (Summary) 89b:68045 68Q55 (68N15, 68Q65)
- Burstein, Gabriel (with Nicu, Mihail D.; Balaceanu, Constantin) Simplicial differential geometric theory for language cortical dynamics. *Fuzzy Sets and Systems* 23 (1987), no. 3, 303-313. (Marta C. Bunge) 89c:58004 58A05 (03E72, 51K10, 92A09)



- Burt, P. B. Nonperturbative solution of nonlinear field equations. (Italian and Russian summaries) *Nuovo Cimento B* 11 (1987), no. 1, 43-52. (M. I. Monastyrskii) **89b:81021** 81C05 (35Q20, 81E13)
- Burton, F. Warren (with McKeown, G. P.; Rayward-Smith, V. J.) On process assignment in parallel computing. *Inform. Process. Lett.* 29 (1988), no. 1, 31-34. (Not in MR) **68Q10**
- Burton, G. R. Steady symmetric vortex pairs and rearrangements. *Proc. Roy. Soc. Edinburgh Sect. A* 108 (1988), no. 3-4, 269-290. (Charles J. Amick) **89f:35178** 35Q20 (35J60, 76C05)
- (with Ryan, E. P.) On reachable sets and extremal rearrangements of control functions. *SIAM J. Control Optim.* 26 (1988), no. 6, 1481-1489. (A. Blaquière) **89m:49065** 49E15 (49A36, 49A50)
- Burton, J. A. (with Zinober, A. S. I.) Continuous self-adaptive control using a smoothed variable structure controller. *Internat. J. Systems Sci.* 19 (1988), no. 8, 1515-1528. (Not in MR) **93C40**
- Burton, Robert M., Jr. (with Kim, Tae-Sung) An invariance principle for associated random fields. *Pacific J. Math.* 132 (1988), no. 1, 11-19. (Gail Ivanoff) **89d:60094** 60G57 (60F17)
- (with Ravishanker, K.; Palmes, E. D.) Convergence to steady state in a diffusional sampler. *SIAM Rev.* 30 (1988), no. 3, 482-486. (Summary) **89h:92080** 92A40
- Burton, T. A. (with Becker, L. C.; Zhang, Shu Nian) Functional-differential equations and Jensen's inequality. *Dynamics of infinite-dimensional systems* (Lisbon, 1986), 31-38, NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 37, Springer, Berlin-New York, 1987. (Zhicheng Wang) **89b:34165** 34K20
- Liapunov's direct method for delay equations. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations* (Budapest, 1987), 26-33, *János Bolyai Math. Soc., Budapest*, 1987. (L. A. V. Carvalho) **89b:34167** 34K20 (34K15)
- Liapunov functions and boundedness for differential and delay equations. *Hiroshima Math. J.* 18 (1988), no. 2, 341-350. (R. R. Akhmerov) **89i:34103** 34K20 (34C11, 34D20, 34K15)
- (with Becker, L. C.; Krisztin, T.) Floquet theory for a Volterra equation. *J. London Math. Soc.* (2) 37 (1988), no. 1, 141-147. (Andrzej Hajnosz) **89f:45002** 45D05 (45J05, 45M99)
- (with Dwigings, D. P.) An asymptotic fixed point theorem for a locally convex space. *Proc. Amer. Math. Soc.* 103 (1988), no. 1, 247-251. (D. N. Cheban) **89g:47075** 47H10 (54H25)
- (with Becker, L. C.) Asymptotic stability criteria for delay-differential equations. *Proc. Roy. Soc. Edinburgh Sect. A* 110 (1988), no. 1-2, 31-44. (István Györi) **89m:34096** 34K20
- see also Wu, Jian Hong et al., **89b:45009**
- Buryak, O. E. The splitting method for solving stochastic differential equations that describe the scattering process in an  $N$ -particle system. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 125, 10 pp. (Summary) **89b:81256** 81G99 (60H10)
- (with Arsen'ev, A. A.) On a connection between the solution of the Boltzmann equation and the solution of the Landau-Fokker-Planck equation. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 67, 22 pp. (Summary) **89j:82033** 82A40
- Burygina, A. V. (with Rasskazov, A. O.) On the strengthening of the shear theory of layered orthotropic shallow shells. (Russian) *Prikl. Mekh.* 24 (1988), no. 4, 32-37, 133; translated in *Soviet Appl. Mech.* 24 (1988), no. 4, 343-347. (J. L. Nowinski) **89j:73070** 73K15
- Burzio, Marco (with Demaria, Davide Carlo) Characterization of tournaments by coned 3-cycles. 15th winter school in abstract analysis (Srní, 1987). *Acta Univ. Carolinae—Math. Phys.* 28 (1987), no. 2, 25-30. (G. Chartrand) **89f:05086** 05C20 (05C75)
- (with Demaria, Davide Carlo) On simply disconnected tournaments. *Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications*, Vol. 1 (Catania, 1986). *Ars Combin.* 24 (1987), A, 149-161. (L. W. Beineke) **89f:05087** 05C20 (05C75)
- Burzlaff, J. The soliton number of optical soliton bound states for two special families of input pulses. *J. Phys. A* 21 (1988), no. 2, 561-566. (Jean-Louis Guiraud) **89d:78041** 78A60
- Burzyk, J. An example of a non-complete normed  $N$ -space. (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 7-8, 449-455. (Jan H. Fourie) **89c:46004** 46A06
- (with Antosik, P.) Sequential conditions for barrelledness and bornology. (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 7-8, 457-459. (Carl L. DeVito) **89d:46001** 46A05 (46A07, 46A09)
- (with Aniszczak, Bohdan; Kamiński, A.) Borel and monotone hierarchies and extension of Rényi probability spaces. *Colloq. Math.* 51 (1987), 9-25. (A. I. Dale) **89b:60064** 60A05 (28A05)
- Busard, H. L. L. see Euclid, **89g:01004**
- Busch, Paul Can quantum theoretical reality be considered sharp? *Recent developments in quantum logic* (Cologne, 1984), 81-101, *Grundlagen Exakt. Naturwiss.*, 6, *Bibliographisches Inst., Mannheim*, 1985. (see **89h:81008**) **81B05**
- Some realizable joint measurements of complementary observables. *Found. Phys.* 17 (1987), no. 9, 905-937. (S. Gudder) **89h:81023** 81B10 (81C20)
- (with Schonbek, Tomas P.; Schroeck, Franklin E., Jr.) Quantum observables: compatibility versus commutativity and maximal information. *J. Math. Phys.* 28 (1987), no. 12, 2866-2872. (Pekka Johannes Lahti) **89b:81016** 81B05
- (with Ali, S. Twareque; Brooke, James; Gagnon, René; Schroeck, Franklin E., Jr.) Current conservation as a geometric property of space-time. (French summary) *Canad. J. Phys.* 66 (1988), no. 3, 238-244. (R. M. Kadobyan'skii) **89j:81043** 81C20
- Surprising features of unsharp quantum measurements. *Phys. Lett. A* 130 (1988), no. 6-7, 323-329. (Pekka Johannes Lahti) **89j:81018** 81B99
- Büscher, T. H. Path-integral derivation of quantum duality in nonlinear sigma-models. *Phys. Lett. B* 201 (1988), no. 4, 466-472. (A. D. Popova) **89d:81078** 81E20 (58E30, 81E40)
- (with Lindström, U.; Roček, M.) New supersymmetric  $\sigma$ -models with Wess-Zumino terms. *Phys. Lett. B* 202 (1988), no. 1, 94-98. (Summary) **89b:81118** 81E15 (81E40)
- Buschman, R. G. A theorem for simple continuous function relations. *Ganita Sandesh* 1 (1987), no. 1-2, 25-28. (P. Anandani) **89j:33004** 33A35 (33A30)
- Contiguous relations for Appell functions. *Indian J. Math.* 29 (1987), no. 2, 165-171. (A. N. Srivastava) **89d:33006** 33A30 (33A35)
- Substitution formulas for Mellin transformations. *Pure Appl. Math. Sci.* 25 (1987), no. 1-2, 1-4. (Summary) **89b:44005** 44A15
- Busch-Vishniac, Ilene J. (with Paynter, Henry M.) Remarks on Riemann's method of characteristics. *J. Acoust. Soc. Amer.* 84 (1988), no. 3, 813-821. (Summary) **89i:35088** 35Lxx (01A60, 35A25, 73D15, 76B99, 76J10, 76N15, 76Q05)
- Bussemeyer, Jerome R. (with Rapoport, Amnon) Psychological models of deferred decision making. *J. Math. Psych.* 32 (1988), no. 2, 91-134. (Byron J. T. Morgan) **89j:92078** 92A25 (60G40, 62L15)
- (with Forsyth, Barbara; Nozawa, Georgie) Comparisons of elimination by aspects and suppression of aspects choice models based on choice response time. *J. Math. Psych.* 32 (1988), no. 3, 341-349. (Summary) **89j:92079** 92A25 (90A06)
- Busenberg, Stavros (with Martelli, Mario) Bounds for the period of periodic orbits of dynamical systems. *J. Differential Equations* 67 (1987), no. 3, 359-371. (S. B. Agase) **89a:34071** 34G20 (34C25, 39A10, 47H10, 58F08, 58F22)
- (with Mahaffy, J. M.) The effects of dimension and size for a compartmental model of repression. *SIAM J. Appl. Math.* 48 (1988), no. 4, 882-903. (Yuzo Hosono) **89m:92013** 92A09 (35K55, 35R10)
- (with Cooke, Kenneth; Iannelli, Mimmo) Endemic thresholds and stability in a class of age-structured epidemics. *SIAM J. Appl. Math.* 48 (1988), no. 6, 1379-1395. (H. W. Hethcote) **89k:92048** 92A15 (35Q99)
- (with Cooke, Kenneth) The population dynamics of two vertically transmitted infections. *Theoret. Population Biol.* 33 (1988), no. 2, 181-198. (H. W. Hethcote) **89e:92034** 92A15
- Buser, P. (with Semmler, K.-D.) The geometry and spectrum of the one-holed torus. *Comment. Math. Helv.* 63 (1988), no. 2, 259-274. (Andrew Haas) **89k:58286** 58G25 (11J06, 30F99)
- Buset, Dominique (with Buekenhout, F.) On the foundations of incidence geometry. Geometries and groups (Noordwijkerhout, 1986). *Geom. Dedicata* 25 (1988), no. 1-3, 269-296. (Gernot Stroth) **89b:51011** 51D20 (51E30)
- Buskens, R. W. (with Stanton, R. G.) A census of tetravalent GM graphs on fourteen to twenty vertices. *J. Combin. Math. Combin. Comput.* 2 (1987), 51-72. (Fabrizio Luccio) **89a:05083** 05C30
- (with Allston, J. L.; Stanton, R. G.) Seventeen quadruples on seventeen points. *J. Combin. Math. Combin. Comput.* 3 (1988), 97-104. (Derek Smith) **89e:05027** 05B05
- (with Allston, J. L.; Stanton, R. G.) An examination of the nonisomorphic solutions to a problem in covering designs on fifteen points. *J. Combin. Math. Combin. Comput.* 4 (1988), 189-206. (W. H. Mills) **89m:05038** 05B40
- Buskes, G. J. H. M. Extension of Riesz homomorphisms. III. *J. Austral. Math. Soc. Ser. A* 43 (1987), no. 1, 35-46. (C. D. Aliprantis) **89c:47051** 47B55 (46A40, 46B30)
- The support of certain Riesz pseudonorms and the order-bound topology. *Rocky Mountain J. Math.* 18 (1988), no. 1, 167-178. (C. D. Aliprantis) **89d:46013** 46A40
- Buslaev, A. G. Factorization of a special integral operator. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 6, 780-783, 815. (L. Rodman) **89k:47076** 47G05 (45A05, 45P05, 47A68)
- Buslaev, A. P. Widths of random vectors and their applications in approximation theory. (Russian) *Mat. Zametki* 43 (1988), no. 4, 474-497, 574; translated in *Math. Notes* 43 (1988), no. 3-4, 273-287. (Béla Uhrin) **89g:41015** 41A46 (41A65, 60D05)
- Buslaev, V. S. (with Rybakina, E. A.) A trace formula for the nonlinear Klein-Gordon equation. (Russian) *Wave propagation. Scattering theory* (Russian), 190-213, 259, *Probl. Mat. Fiz., 12, Leningrad. Univ., Leningrad*, 1987. (Summary) **89c:35103** 35L70 (35Q20, 58F05, 81C05)
- (with Dmitrieva, L. A.) Adiabatic perturbation of a periodic potential. II. (Russian. English summary) *Teoret. Mat. Fiz.* 73 (1987), no. 3, 430-442. (Summary) **89c:34058** 34E20 (81H20)
- Quasiclassical approximation for equations with periodic coefficients. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 6(258), 77-98, 248. (V. F. Lazutkin) **89i:81024** 81C15 (35Q20, 58G15, 81H20)
- (with Ladyzhenskaya, O. A.; Merkur'ev, S. P.; Faddeev, L. D.) Vladimir Ivanovich Smirnov. (Russian) *Vestnik Leningrad. Univ. Fiz. Khim.* 1987, vyp. 2, 3-8. (Editors) **89c:01046** 01A70
- (with Chernenko, V. G.) Spectral identities for a system of many quantum particles. (Russian. English summary) *Vestnik Leningrad. Univ. Fiz. Khim.* 1987, vyp. 2, 16-21, 134. (Summary) **89a:81024** 81C10
- (with Gef'and, I. M.; Ladyzhenskaya, O. A.; Pavlov, B. S.; Solomyak, M. Z.; Faddeev, L. D.; Yafaev, D. R.) Mikhail Shlémovich Birman (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 3(261), 201-202; translated in *Russian Math. Surveys* 43 (1988), no. 3, 233-235. (Editors) **89i:01066** 01A70
- Buslaeva, M. V. Asymptotic dynamics and spectral analysis for the Schrödinger operator with weakly accelerating potential. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 164 (1987), *Differentsial'naya Geom. Gruppy Li i Mekh.* IX, 10-19, 196. (A. G. Baskakov) **89h:34021** 34B25 (47E05)
- Bussnaina, A. A. (with Sharif, M. A. R.) An investigation into the numerical dispersion problem of the skew upwind finite difference scheme. *Appl. Math. Modelling* 12 (1988), no. 2, 98-108. (Summary) **89a:65137** 65M10
- Busnel, G. Remarks on stability in charge exchange dynamics in a monoatomic ionized gas. *Transport Theory Statist. Phys.* 17 (1988), no. 2-3, 257-269. (M. Drăganu) **89i:82055** 82A45
- Busqué, Claudí  $K$ -theoretic triviality for Rickart  $C^*$ -algebras and  $\aleph_0$ -continuous regular rings. *Proc. Amer. Math. Soc.* 101 (1987), no. 1, 24-28. (Mi-Soo Smith) **89a:46141** 46L80 (16A54, 19K99, 46L05)
- Directly finite  $\aleph_0$ -complete regular rings are unit-regular. *Ring theory* (Granada, 1986), 38-49, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (S. K. Berberian) **89k:16021** 16A30
- Buss, Samuel R. ★ Bounded arithmetic. *Studies in Proof Theory. Lecture Notes*, 3. *Bibliopolis, Naples*, 1986. vi+221 pp. ISBN 88-7088-150-4 (Peter Clote) **89b:03104** 03F30 (03D15, 03D20, 03F05, 03F35, 68Q25)
- Polynomial size proofs of the propositional pigeonhole principle. *J. Symbolic Logic* 52 (1987), no. 4, 916-927. (Summary) **89g:03056** 03D15 (68Q25)
- Busse, F. H. Patterns of bifurcation from spherically symmetric states. *The physics of structure formation* (Tübingen, 1986), 88-96, *Springer Ser. Synergetics*, 37, Springer, Berlin-New York, 1987. (Summary) **89c:58028** 58E07 (76E15)
- On the optimum theory of turbulence. *Energy stability and convection* (Capri, 1986), 3-21, *Pitman Res. Notes Math. Ser.*, 168, Longman Sci. Tech., Harlow, 1988. (Summary) **89e:76052** 76F99 (76E15, 76F10, 76S05)

- (with Riah, N.) Mixed-mode patterns of bifurcations from spherically symmetric basic states. *Nonlinearity* 1 (1988), no. 2, 379–388. (Summary) **89c:58086** 58F14 (76E15)  
— see also *Dynamo theory of planetary magnetism*. **89j:26001**
- Busse, H.-G.** (with Havsteen, B.) Analysis of life processes and economic systems by methods of thermodynamics. *From chemical to biological organization*, 348–357, Springer Ser. Synergetics, 39, Springer, Berlin-New York, 1988. (see **89c:92002**) **92A05** (82A35, 90A16)
- Busse, J.** An object-oriented component in Prolog. (Russian summary) *J. New Generation Comput. Systems* 1 (1988), no. 3, 243–255. (Not in MR) **68T25**
- Bussing, Thomas R. A.** (with Murman, Earl M.) Finite-volume method for the calculation of compressible chemically reacting flows. *AIAA J.* 26 (1988), no. 9, 1070–1078. (Summary) **89j:80002** 80-08 (80A32)
- Bustamante González, Jorge** (with González Diéguez, Belarmino) Some properties of the singular integral of Cauchy type. (Spanish. English summary) *Cienc. Mat. (Havana)* 8 (1987), no. 1, 3–10. (Joaquim Bruna) **89c:30106** 30E20 (42B20)
- The Dini condition and the Cauchy integral. (Spanish. English summary) *Cienc. Mat. (Havana)* 8 (1987), no. 2, 9–14. (Summary) **89d:30045** 30E10 (30B60)
- Farina-Busto, Luis** see *Farina-Busto, Luis*
- Bustos, Maria Cristina** (with Concha, Fernando) On the construction of global weak solutions in the Kynch theory of sedimentation. *Math. Methods Appl. Sci.* 10 (1988), no. 3, 245–264. (Fouad A. Mohamed) **89i:76090** 76T05 (35R35, 80A20)
- Busygin, V. P.** (with Berlyand, E. L.) Models for input-output balance with input and output functions. (Russian) *Models and methods for the optimization of economic systems* (Russian), 27–41, “Nauka” Sibirsk. Otdel., Novosibirsk, 1987. (From the text) **89a:90049** 90A17 (90A11)
- (with Barabash, S. B.; Radchenko, V. V.) Methods for finding solutions in applied equilibrium models. (Russian) *Models and methods for the optimization of economic systems* (Russian), 41–57, “Nauka” Sibirsk. Otdel., Novosibirsk, 1987. (Introduction) **89b:90040** 90A14
- Buszowski, Wojciech** Transition from potential to actual infinity via Ackermann's principle. Foundations of statements in mathematics and in philosophy. Types of logical systems and problems of truth (Jablonna, 1983). *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* 12 (1983), no. 4, 148–151. (see **89c:03001**) **03E70**
- Solvable problems for classical categorical grammars. (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 5-6, 373–382. (Summary) **89a:03073** 03D05 (68Q99)
- Butcher, J. C.** Optimal order and stepsize sequences. *IMA J. Numer. Anal.* 6 (1986), no. 4, 433–438. (Summary) **89b:65137** 65L99
- The equivalence of algebraic stability and AN-stability. *BIT* 27 (1987), no. 4, 510–533. (G. Hall) **89a:65126** 65L20
- Towards efficient implementation of singly-implicit methods. *ACM Trans. Math. Software* 14 (1988), no. 1, 68–75. (Summary) **89b:65167** 65L05
- On a class of matrices with real eigenvalues. *Linear Algebra Appl.* 103 (1988), 1–12. (Jeffrey Stuart) **89c:15014** 15A18 (15A57)
- Peter James Lorimer. *New Zealand Math. Soc. Newslett.* No. 43 (1988), 24–25. (Editors) **89i:01067** 01A70
- see also *Recent theoretical results in numerical ordinary differential equations*, (Not in MR)
- Butenin, N. V.** (with Neimark, Yu. I.; Fufaev, N. A.) ★ Введение в теорию нелинейных колебаний. (Russian) [Introduction to the theory of nonlinear oscillations] Second edition. “Nauka”, Moscow, 1987. 383 pp. (W. S. Loud) **89c:34001** 34-02 (34C15, 54H25, 58Fxx, 70Kxx)
- Buth, Bettina** (with Buth, Karl-Heinz) Correctness proofs for META IV written code generator specifications using term rewriting. *VDM '88. VDM—the way ahead* (Dublin, 1988), 406–433, *Lecture Notes in Comput. Sci.*, 328, Springer, Berlin-New York, 1988. (see **89m:68093**) **68Q60** (68Q50)
- Buth, Karl-Heinz** (with Buth, Bettina) Correctness proofs for META IV written code generator specifications using term rewriting. *VDM '88. VDM—the way ahead* (Dublin, 1988), 406–433, *Lecture Notes in Comput. Sci.*, 328, Springer, Berlin-New York, 1988. (see **89m:68093**) **68Q60** (68Q50)
- Buti, B.** (with Kennel, C. F.; Hada, T.; Pellat, R.) Nonlinear, dispersive, elliptically polarized Alfvén waves. *Phys. Fluids* 31 (1988), no. 7, 1949–1961. (Summary) **89d:76035** 76W05
- Butin, A. A.** (with Gurman, V. I.; Baturin, V. A.; Moskalenko, A. I.; Baginov, I. P.; Bobryshev, A. G.; Danilina, E. V.; Derenko, N. V.; Dushin, K. B.; Dykhta, V. A.; KoloKol'nikova, G. A.; Konstantinov, G. N.; Mel'nik, V. V.; Nikiforova, L. N.; Ovsyanikova, N. A.; Rasina, I. V.; Rozenraukh, D. M.; Urbanovich, D. E.; Fedorova, E. Yu.) ★ Методы улучшения в вычислительном эксперименте. (Russian) [Methods of improving [control] in numerical experiments] “Nauka” Sibirsk. Otdel., Novosibirsk, 1988. 184 pp. ISBN 5-02-028573-0 (Asen L. Dontchev) **89b:65099** 65Kxx (49Dxx, 93B40)
- Butko, S. N.** (with Petrovskii, A. M.; Rodionov, V. V.) Interactive multicriterial choice of variants in problems with weak constraints. *Internat. J. Systems Sci.* 19 (1988), no. 1, 65–76. (Summary) **89a:90140** 90C31 (90A05)
- Butković, Davor** (with Kraljević, Hrvoje) Some notes on almost convergence. *V. Mathematikertreffen Zagreb-Graz (Mariatrost/Graz, 1986)*, Ber. No. 275, 28 pp., Ber. Math.-Statist. Sekt. Forschungsgesellsch. Joanneum, 274–282, Forschungszentrum Graz, Graz, 1987. (Gokulananda Das) **89d:40002** 40A05
- Butkovskii, A. G.** A phase-space (state-space) portrait of a control dynamic system. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 507–512, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:49028** 49E15 (49A50)
- Dynamic systems with control, and an optical-mechanical analogy. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 9, 34–47; translated in *Avtomat. Remote Control* 49 (1988), no. 9, part 1, 1133–1144. (Ll. G. Chambers) **89m:70027** 70H05 (49C05, 70H35, 70Q05, 78A05)
- Butler, C. A.** (with Morley, T. D.) Six generalized Schur complements. *Linear Algebra Appl.* 106 (1988), 259–269. (George E. Trapp) **89b:15022** 15A24 (15A45)
- (with Morley, T. D.) A note on the shortened operator. *SIAM J. Matrix Anal. Appl.* 9 (1988), no. 2, 147–155. (George E. Trapp) **89c:15020** 15A24 (47B99, 94C05)
- Butler, Clare** (with Brereton, M. G.) A topological problem in polymer physics: configurational and mechanical properties of a random walk enclosing a constant area. *J. Phys. A* 20 (1987), no. 12, 3955–3968. (Cheng Xun Wu) **89d:82092** 82A51 (82A41)
- Butler, G. J.** (with Wolkowicz, G. S. K.) Exploitative competition in a chemostat for two complementary, and possibly inhibitory, resources. *Math. Biosci.* 83 (1987), no. 1, 1–48. (J. Tóth (Zbl 609:92035)) **89a:92035** 92A15
- (with Timourian, J. G.; Viger, C.) The rank theorem for locally Lipschitz continuous functions. *Canad. Math. Bull.* 31 (1988), no. 2, 217–226. (P. T. Church) **89j:58008** 58C25 (49A52)
- (with Waltman, Paul) Persistence in three-dimensional Lotka-Volterra systems. *Math. Comput. Modelling* 10 (1988), no. 1, 13–16. (D. O. Logofet) **89c:92050** 92A15
- Butler, Gregory** A proof of Holt's algorithm. *J. Symbolic Comput.* 5 (1988), no. 3, 275–283. (Jennifer Whitehead) **89k:20002** 20-04
- Butler, Jon T.** (with Bender, Edward A.) On the size of PLAs required to realize binary and multiple-valued functions. *IEEE Trans. Comput.* 38 (1989), no. 1, 82–98. (Summary) **89k:68059** 68Q25 (68R05)
- Butler, Lynne M.** Rational generating functions for enumerating chains of partitions. *J. Combin. Theory Ser. A* 50 (1989), no. 1, 132–161. (John R. Stembridge) **89m:05006** 05A15 (05A17, 05A19)
- Butler, Philip H.** (with Searle, Barry G.) Recursive calculation of transformation factors in terms of primitive factors. *J. Phys. A* 21 (1988), no. 9, 1977–1981. (R. Mirman) **89k:81046** 81C40 (20C35, 22E70, 81G20, 81G30)
- (with Searle, Barry G.) Calculation of primitive 6-j symbols. *J. Phys. A* 21 (1988), no. 14, 3041–3050. (Ronald C. King) **89m:81061** 81C40 (20C35)
- (with Searle, Barry G.) 6-j for mixed symmetry triads in  $K_{20}$ . *J. Phys. A* 21 (1988), no. 16, 3313–3319. (Summary) **89i:81037** 81C40 (20C35, 22E70)
- Butler, Ronald W.** Extendibility and the optimality of  $F$ ,  $T^2$  and forward variable selection. *Scand. J. Statist.* 13 (1986), no. 4, 257–262. (Donald R. Jensen) **89b:62099** 62H05 (62H15, 62J05)
- (with Bjørnstad, Jan F.) The equivalence of backward elimination and multiple comparisons. *J. Amer. Statist. Assoc.* 83 (1988), no. 401, 136–144. (C. R. Rao) **89g:62121** 62J15 (62J05)
- Optimal clustering on the real line. *J. Multivariate Anal.* 24 (1988), no. 1, 88–108. (Jack C. Lee) **89c:62101** 62H30 (62G30)
- see also *Bayarri, M. J. et al.*, **89a:62005**
- Butnariu, D.** Values and cores of fuzzy games with infinitely many players. *Internat. J. Game Theory* 16 (1987), no. 1, 43–68. (Olga M. Kosheleva) **89a:90164** 90D12 (03E72)
- Additive fuzzy measures and integrals. III. *J. Math. Anal. Appl.* 125 (1987), no. 1, 288–303. (Summary) **89g:28033** 28E10 (03E72, 90D99)
- Butomo, V. N.** Numerical solution of an integral equation with a logarithmic singularity in the kernel. (Russian) *Metody Vychisl. No. 15* (1988), 110–113, 181. (Not in MR) **65R20**
- Butov, A. A.** (with Krichagina, E. V.) A functional limit theorem for a symmetric walk in a random environment. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 2(260), 133–134; translated in *Russian Math. Surveys* 43 (1988), no. 2, 163–164. (Not in MR) **60J15** (60F17)
- Butsan, G. P.** (with Zhdanok, A. I.; Girko, V. L.) Distributions on functional structures. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 27, 56 pp. (Summary) **89g:60224** 60J25 (47D07, 60J05)
- (with Kozachenko, M. Yu.) A limit theorem for parametric stochastic operator systems. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 2, 153–162, 270; translated in *Ukrainian Math. J.* 40 (1988), no. 2, 127–135. (Shi Sheng Zhang) **89c:60013** 60B12 (60H99)
- Buttazzo, Giuseppe** (with Attouch, H.) Homogenization of reinforced periodic one-codimensional structures. *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* 14 (1987), no. 3, 465–484 (1988). (Dietrich Göhde) **89i:35012** 35B25 (73K20, 78A30)
- (with Kohn, Robert V.) Reinforcement by a thin layer with oscillating thickness. *Appl. Math. Optim.* 16 (1987), no. 3, 247–261. (Denise Huet) **89c:73048** 73K20 (34E10, 73C40)
- Elliptic problems with a thin insulating layer around the boundary. Proceedings of the International Workshop on Integral Functionals in the Calculus of Variations (Trieste, 1985). *Rend. Circ. Mat. Palermo (2) Suppl. No. 15* (1987), 143–153. (Y. Cherruault) **89d:49002** 49A22 (35J20)
- An optimization problem for thin insulating layers around a conducting medium. *Boundary control and boundary variations* (Nice, 1986), 91–95, *Lecture Notes in Comput. Sci.*, 100, Springer, Berlin-New York, 1988. (see **89b:93006**) **93C20**
- Relaxation problems in control theory. *Calculus of variations and partial differential equations* (Trento, 1986), 31–39, *Lecture Notes in Math.*, 1340, Springer, Berlin-New York, 1988. (Shuzhi Zhou) **89m:49054** 49D20 (93C15)
- (with Ambrosio, Luigi) Weak lower semicontinuous envelope of functionals defined on a space of measures. (Italian summary) *Ann. Mat. Pura Appl. (4)* 150 (1988), 311–339. (Tadeusz Pruszek) **89f:49012** 49A50 (46E27, 46G10)
- Butterfield, Jeremy** (with Stirling, Colin) Predicate modifiers in the tense logic. *Logique et Anal. (N.S.)* 30 (1987), no. 117–118, 31–50. (George F. Schumm) **89b:03030** 03B45 (03B65)
- (with Svetlichny, George; Redhead, Michael L. G.; Brown, Harvey Robert) Do the Bell inequalities require the existence of joint probability distributions? *Philos. Sci.* 55 (1988), no. 3, 387–401. (Dennis Dieks) **89b:81014** 81B05
- Buttig, Ingolf** Spectral approximation by  $L_2$  discretization of the Laplace operator on manifolds of bounded geometry. *Ann. Global Anal. Geom.* 6 (1988), no. 1, 55–107. (Józef Dodziuk) **89m:58204** 58G25
- Büttiker, Markus** (with Thomas, Harry) Propagation and stability of kinks in driven and damped nonlinear Klein-Gordon chains. *Phys. Rev. A* (3) 37 (1988), no. 1, 235–246. (Summary) **89b:73016** 73D99 (35Q20, 73K03, 82A99)
- see also *Basic concepts in quantum and stochastic transport*, **89a:00017**
- Büttner, H.** (with Reichl, J.) Energy spectra for nonlinear oscillators with broken symmetry. *J. Phys. A* 20 (1987), no. 18, 6321–6326. (Summary) **89b:81077** 81C99
- Büttner, Wolfram** Unification in datastructure multiset. *J. Automat. Reason.* 2 (1986), no. 1, 75–88. (Summary) **89i:68133** 68T15 (03B35)
- (with Simonis, Helmut) Embedding Boolean expressions into logic programming. *J. Symbolic Comput.* 4 (1987), no. 2, 191–205. (Petr Jirák) **89f:68061** 68T25 (03B35, 03B70)
- Butusov, O. B.** (with Bugrovskii, V. V.; Mikhailenko, E. V.) A quasi-two-dimensional mathematical model of atmospheric circulation in closed hollows. (Russian) *Dokl. Akad. Nauk SSSR* 301 (1988), no. 4, 1012–1015. (Not in MR) **92A17**



- Butuzov, V. F. (with Vasil'eva, A. B.) Boundary layer methods in singularly perturbed partial differential equations. *BAIL IV (Novosibirsk, 1986)*, 183–193. *Boole Press Conf. Ser.*, 8, Boole, Dun Laoghaire, 1986. (Dietrich Göhde) **89b:35010** 35B25 (35J25, 35K20)
- (with Vasil'eva, A. B.) Asymptotic behavior of a solution of contrasting structure type. (Russian) *Mat. Zametki* **42** (1987), no. 6, 831–841, 910. (Andrzej Trzciński) **89f:34079** 34E10
- (with Urazgildina, T. A.) Asymptotic solution of the problem of heat propagation in thin bodies. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 1, 13–21, 133. (Summary) **89a:35108** 35K55 (35C20, 80A20)
- ★ Сингулярные возмущения. (Russian) [Singular perturbations] Новое в Жизни, Науке, Технике: Серия "Математика, Кибернетика" [Current Life, Science and Technology: Series "Mathematics and Cybernetics"], 88–1. "Znanie", Moscow, 1988, 48 pp. (Yu Cheng Su) **89c:34094** 34E15 (34–02, 35B25, 35C20)
- (with Vasil'eva, A. B.) On the asymptotic theory of contrast space structures. *BAIL V (Shanghai, 1988)*, 363–367. *Boole Press Conf. Ser.*, 12, Boole, Dun Laoghaire, 1988. (see **89j:65008**) 35C20 (35B25)
- (with Nikitin, A. G.) An angular boundary layer in the asymptotics of the solution of a singularly perturbed system of equations of elliptic type. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 2, 343–345, 367. (Summary) **89d:35051** 35J55 (35C20)
- (with Vasil'eva, A. B.) On the asymptotic theory of contrasting spatial structures. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 3, 346–361, 477. (Summary) **89d:35082** 35K55
- (with Kalachëv, L. V.) Asymptotics of the solution of a problem of combustion in the case of an autocatalytic reaction. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 5, 683–694, 782. (Summary) **89c:80018** 80A25
- Butzer, Paul L. (with Kirschfink, Heribert; Schulz, Dietmar) An extension of the Lindeberg-Trotter operator-theoretic approach to limit theorems for dependent random variables. II. Approximation theorems with  $O$ -rates, applications to martingale difference arrays. *Acta Sci. Math. (Szeged)* **51** (1987), no. 3–4, 423–433. (Dominik Szynal) **89g:60068** 60F05 (60G42)
- (with Vaillant, Jean Léon) Obituary: Henri Georges Garnir. *Bull. London Math. Soc.* **19** (1987), no. 6, 609–622. (Editors) **89c:01048** 01A70
- (with Stens, R. L.) Linear prediction in terms of samples from the past: an overview. *Numerical methods and approximation theory, III (Nif, 1987)*, 1–22. *Univ. Nif, Nif*, 1988. (Summary) **89i:42022** 42A85 (42A38, 94A12)
- (with Stollenwerk, Roswitha) Hermannus Contractus (1013–1054), Mathematiker und—Rheumatiker? [Hermannus Contractus (1013–1054), mathematician and—rheumatic?] *Erbe Auftrag (Beson)* **64** (1988), no. 3, 197–206. (H. L. L. Busard) **89i:01014** 01A35 (01A70)
- (with Spletstößer, W.; Stens, R. L.) The sampling theorem and linear prediction in signal analysis. *Jahresber. Deutsch. Math. Verein.* **90** (1988), no. 1, 70 pp. (Xing Wei Zhou) **89h:94006** 94A12 (41A05, 42A15, 60G25, 62M20, 94A15)
- Butzmann, H.-P. Sequentially determined convergence spaces. *General topology and its relations to modern analysis and algebra, VI (Prague, 1986)*, 61–68. *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (Ray Gazik) **89c:54006** 54A20
- Buysale, S. V. Euclidean planes in three-dimensional manifolds of nonpositive curvature. (Russian) *Mat. Zametki* **43** (1988), no. 1, 103–114, 155; translated in *Math. Notes* **43** (1988), no. 1–2, 60–66. (V. V. Glazyrin) **89d:53082** 53C20
- Byers, A. Radicals of  $\Omega$ -groups. *Contributions to general algebra, 4 (Krems, 1985)*, 23–35. *Hölder-Pichler-Tempsky, Vienna*, 1987. (Smile Markovski) **89c:20128** 20N99 (16A21)
- Byrka, Steven G. Lie sphere transformations and the focal sets of certain taut immersions. *Trans. Amer. Math. Soc.* **311** (1989), no. 1, 117–133. (Sheila Carter) **89k:53054** 53C42
- Büyükkasoy, Alınur (with Uzgören, Gökhan) Contribution of the secondary diffraction to the surface current induced on a perfectly conducting cylindrical strip. (Turkish summary) *İstanbul Tek. Üniv. Bül.* **38** (1985), no. 1, 99–112. (B. P. Belinski) **89c:78010** 78A45
- Buzano, Ernesto (with Russo, Alessandro) Bifurcation problems with  $O(2) \oplus \mathbb{Z}_2$  symmetry and the buckling of a cylindrical shell. *Ann. Mat. Pura Appl.* (4) **146** (1987), 217–262. (R. R. Huilgol) **89h:58044** 58E07 (73H05)
- Buzar, Sh. (with Kuleshov, A. A.) Local solvability of pseudodifferential equations of constant strength. I. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 5, 831–837, 917–918; translated in *Differential Equations* **24** (1988), no. 5, 548–553. (Xue Bo Luo) **89h:35361a** 35S05 (35A07)
- (with Kuleshov, A. A.) Local solvability of pseudodifferential equations of constant strength. II. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 6, 1005–1011, 1100; translated in *Differential Equations* **24** (1988), no. 6, 663–668. (Xue Bo Luo) **89h:35361b** 35S05 (35A07)
- Buzási, Károly (with Vishnyakova, N. I.) Description of modules with two generators over a non-Noetherian valuation ring. (Russian) *Publ. Math. Debrecen* **34** (1987), no. 3–4, 343–350. (Iuliu Crivei) **89f:13003** 13A18 (13C13)
- On representations of infinite groups. *Algebra—some current trends (Varna, 1986)*, 44–59. *Lecture Notes in Math.*, 1352, Springer, Berlin-New York, 1988. (From the introduction) **89k:20021** 20C32
- On the structure of a real crossed group algebra. *Bull. Austral. Math. Soc.* **38** (1988), no. 1, 31–40. (D. A. R. Wallace) **89k:20010** 20C07 (16A27)
- Buzetjans, Şerban (with Andrica, Dorin) Relatively dense universal sequences for the class of continuous periodical functions of period  $T$ . *Anal. Numér. Théor. Approx.* **16** (1987), no. 1, 1–9. (J. A. Haight) **89f:11084** 11K06
- Buzza, Claudio Actions de  $R$  et courbure de Ricci du fibré unitaire tangent des surfaces. (English summary) [Actions of  $R$  and Ricci curvature of the unit tangent bundle of surfaces] *Rend. Circ. Mat. Palermo* (2) **35** (1986), no. 2, 244–260. (G. R. Jensen) **89c:53058** 53C20 (58F17, 70D99)
- Courbure de Ricci et géométrie conforme. [Ricci curvature and conformal geometry] *Ann. Mat. Pura Appl.* (4) **147** (1987), 3–19. (H. Wu) **89c:53059** 53C20 (53A30, 53C21, 53C25)
- Byalyi, M. L. First integrals that are polynomial in the momenta for a mechanical system on the two-dimensional torus. (Russian) *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 4, 64–65. (From the text) **89c:70029** 70H05 (58F05)
- Byambazar, D. Estimates for the rate of convergence of the two-sided Smirnov test. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 5, 42–49. (Zuzana Práškova) **89h:62045** 62E20 (62G10)
- Byar, D. (with Slud, E.) How dependent causes of death can make risk factors appear protective. (French summary) *Biometrics* **44** (1988), no. 1, 265–269. (Rahul Mukerjee) **89h:62214** 62P10 (62N05)
- Byatt-Smith, J. G. B. Perturbation theory for approximately integrable partial differential equations, and the change of amplitude of solitary-wave solutions of the BBM equation. *J. Fluid Mech.* **182** (1987), 467–483. (F. Pempinelli) **89b:76007** 76B25 (35Q20, 76B15)
- On the change of amplitude of interacting solitary waves. *J. Fluid Mech.* **182** (1987), 485–497. (Alan Jeffrey) **89f:35179** 35Q20 (76B25)
- Resonant oscillations in shallow water with small mean-square disturbances. *J. Fluid Mech.* **193** (1988), 369–390. (Summary) **89m:76014** 76B15 (76B10)
- Byblir, O. Ya. (with Lenyuk, M. P.) Hybrid integral Weber transforms for a piecewise-homogeneous polar axis. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 8, 3–11, 87. (G. P. Los') **89f:44008** 44A15 (34B25, 34B30)
- Bychkova, T. V. Probability inequalities for sums of random elements. (Russian) *Stability problems for stochastic models (Russian) (Varna, 1985)*, 22–26. *Vsesoyuz. Nauch.-Issled. Inst. Sistem. Issled.*, Moscow, 1986. (Dominik Szynal) **89c:60014** 60B12 (60E15)
- Byczkowska, H. (with Byczkowski, T.) Zero-one law for subgroups of paths of group-valued stochastic processes. *Studia Math.* **89** (1988), no. 1, 65–73. (Wilfried Hazod) **89g:60022** 60B15 (28C10, 43A05, 60F20)
- Byczkowski, T. RKHS for Gaussian measures on metric vector spaces. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 1–2, 93–103. (Summary) **89c:46061** 46G12 (46E20, 60B11, 60G15)
- (with Ryznar, Michał) Series of independent vector-valued random variables and absolute continuity of seminorms. *Math. Scand.* **62** (1988), no. 1, 59–74. (Evarist Giné) **89h:60006** 60B11 (60B12)
- (with Byczkowska, H.) Zero-one law for subgroups of paths of group-valued stochastic processes. *Studia Math.* **89** (1988), no. 1, 65–73. (Wilfried Hazod) **89g:60022** 60B15 (28C10, 43A05, 60F20)
- Byers, Ralph A bisection method for measuring the distance of a stable matrix to the unstable matrices. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 5, 875–881. (Pradeep Misra) **89k:65036** 65F15 (15A99, 93D99)
- (with Nash, Stephen G.) Approaches to robust pole assignment. *Internat. J. Control* **49** (1989), no. 1, 97–117. (Andrzej Świerniak) **89m:93033** 93B60 (65K05, 93B35)
- Byers, W. (with Boyarsky, A.; Gauthier, P.) Higher-dimensional analogues of the tent maps. *Nonlinear Anal.* **11** (1987), no. 11, 1317–1324. (From the introduction) **89h:58111** 58F13 (26A18)
- Bykadorov, I. A. Conditions for the quasiconvexity of sums of linear-fractional functions. (Russian) *Optimizatsiya No. 39* (1986), 25–41, 158. (Joachim Hirsche) **89a:90149** 90C32 (26B25)
- Bykadorov, Yu. A. On properties of the Green function. (Russian) *Boundary value problems for ordinary differential equations (Russian)*, 83–90, v. *Latv. Gos. Univ., Riga*, 1987. (C. Corduneanu) **89f:45014** 45J05 (34B27)
- Bykov, A. A. (with Trubetskov, M. K.) Optimization of the form of a periodic interface between two homogeneous media with different dielectric permeabilities. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **29** (1989), no. 1, 75–81, 158. (Summary) **89k:78018** 78A45
- Bykov, Ya. V. (with Korovinskaya, I. G.) Distribution of zeros of the solutions of some classes of elliptic and hyperbolic equations. (Russian) *Studies in integro-differential equations, No. 20 (Russian)*, 194–203, 342. "Ilim", Frunze, 1987. (L. M. Kuks) **89h:35019** 35B05 (35L10)
- (with Kul'taev, T. Ch.) Asymptotic behavior of the solutions of a class of partial differential equations of second order with respect to the space variable and of higher order with respect to the time variable with retarded argument. (Russian) *Studies in integro-differential equations, No. 20 (Russian)*, 204–211, 342. "Ilim", Frunze, 1987. (Summary) **89g:35009** 35B05 (35R10)
- (with Aksiev, A. Z.) Oscillation properties of the solutions of a class of partial difference equations. (Russian) *Studies in integro-differential equations, No. 20 (Russian)*, 289–301, 344–345. "Ilim", Frunze, 1987. (L. M. Kuks) **89i:39001** 39A10 (39A12)
- (with Aksiev, A. Z.) ★ Колеблемость решений некоторых классов уравнений в конечных разностях. (Russian) [Oscillation of the solutions of some classes of finite difference equations] "Ilim", Frunze, 1988, 185 pp. ISBN 5-8355-0022-X (Stanislav Kus) **89i:39002** 39A10 (34A10, 39A70, 47H15)
- (with Temirov, B. K.) Oscillation of solutions of a class of nonlinear differential-difference equations. (Russian) *Izv. Akad. Nauk Kirgiz. SSR* **1988**, no. 2, 3–8, 91. (Reinhard Redlinger) **89m:35209** 35R10 (35B05, 39A10)
- Bykova, A. N. (with Kir'yana, A. I.) Stability of a second-order quasipolynomial. (Russian) *Partial differential equations (Russian)*, 87–89. *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (see **89c:00023**) 34K20
- Bykova, E. I. Some methods for increasing the stability of pattern recognition according to standards. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 5, 105–108, 135; translated in *Cybernetics* **24** (1988), no. 5, 664–668. (Not in MR) **88T10**
- Bykovskii, V. A. The discrete Fourier transform and a cyclic convolution on integer lattices. (Russian) *Mat. Sb. (N.S.)* **136** (178) (1988), no. 4, 451–467, 590. (J. Albrecht) **89m:65118** 65T05
- (with Vinogradov, A. I.; Lokutsievskii, O. V.; Fel'dman, N. I.) Nikolai Mikhailovich Korobov (on the occasion of his seventieth birthday). (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 1(259), 221–222; translated in *Russian Math. Surveys* **43** (1988), no. 1, 265–267. (Editors) **89c:01049** 01A70
- Bykovtsev, A. S. (with Kramarovskii, D. B.) The propagation of a complex fracture area. The exact three-dimensional solution. *J. Appl. Math. Mech.* **51** (1987), no. 1, 89–98 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 1, 117–129 (Russian). (Summary) **89c:73070** 73M05
- Bylen, Karl Inverse semigroups with countable universal semilattices. *Semigroups and their applications (Chico, Calif., 1986)*, 37–42. *Reidel, Dordrecht-Boston, MA*, 1987. (N. R. Reilly) **89b:20134** 20M15 (20M10, 20M18)
- Embedding any countable semigroup without idempotents in a 2-generated simple semigroup without idempotents. *Glasgow Math. J.* **30** (1988), no. 2, 121–128. (G. Pollák) **89c:20103** 20M15
- Bylov, B. F. On the possible proximity of regular and nonregular systems. (Russian) *Partial differential equations (Russian)*, 39–41. *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (see

- 89c:00023** 34A30  
— (with Tikhonova, E. A.) The exponents of a piecewise-constant three-dimensional system. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 9, 1483–1497, 1650. (M. I. Rakhimberdiev) **89b:34112** 34D05
- Reduction of a linear system to block-triangular form. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 12, 2027–2031, 2203. (From the text) **89j:34055** 34C20 (34A30)
- Bynum, Bryant** (with Sharda, Ramesh) Accuracy & error analysis of LP software on microcomputers. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 552–557. (see **89d:00007**) 90C05
- Byon, Song Bu** (with Li, Gi Song) A construction method for a  $D$ - $G$  optimal discrete design for a model of a polynomial expression in the  $k$ -dimensional ball. (Korean. English summary) *Su-hak* 1987, no. 4, 15–19. (Summary) **89k:62094** 62K05
- Byrd, Lawrence** (with Sterling, Leon; Bundy, Alan; O'Keefe, Richard; Silver, Bernard) Solving symbolic equations with PRESS. *J. Symbolic Comput.* 7 (1989), no. 1, 71–84. (Not in MR) **68Q40** (68-04)
- Byrd, Richard H.** (with Schnabel, Robert B.; Shultz, Gerald A.) A trust region algorithm for nonlinearly constrained optimization. *SIAM J. Numer. Anal.* 24 (1987), no. 5, 1152–1170. (Summary) **89f:65069** 65K05 (90C30)
- (with Boggs, Paul T.; Schnabel, Robert B.) A stable and efficient algorithm for nonlinear orthogonal distance regression. *SIAM J. Sci. Statist. Comput.* 8 (1987), no. 6, 1052–1078. (Girdhar G. Agarwal) **89a:62150** 62J02 (65D10)
- (with Schnabel, Robert B.; Shultz, Gerald A.) Using parallel function evaluations to improve Hessian approximation for unconstrained optimization. *Ann. Oper. Res.* 14 (1988), no. 1–4, 167–193. (Summary) **89g:90185** 90C30
- (with Schnabel, Robert B.; Shultz, Gerald A.) Approximate solution of the trust region problem by minimization over two-dimensional subspaces. *Math. Programming* 40 (1988), no. 3 (Ser. A), 247–263. (Summary) **89c:90081** 90C20
- (with Schnabel, Robert B.; Shultz, Gerald A.) Parallel quasi-Newton methods for unconstrained optimization. *Math. Programming* 42 (1988), no. 2 (Ser. B), 273–306. (Summary) **89k:90139** 90C30 (65K05, 65W05)
- Byrd, Stan** Factoring operators satisfying  $p$ -estimates. *Trans. Amer. Math. Soc.* 310 (1988), no. 2, 567–582. (Peter Meyer-Nieberg) **89f:47066** 47B55 (46B30, 47A68)
- Byrkin, A. P.** (with Tolstykh, A. L.) Third- and fourth-order compact schemes in problems of internal flows of viscous and nonviscous gases. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 8, 1234–1251, 1279. (Summary) **89f:76004** 76-08 (76H05, 76J99, 76N15)
- Byrne, Charles L.** (with Wombell, Richard J.; Fiddy, Michael A.) An optimisation technique for the inversion of scattered field data. *Wave phenomena* (San Jose, CA, 1988), 92–99, Springer, New York-Berlin, 1989. (see **89g:00020**) 78A45
- Byrnes, Christopher L.** (with Helmke, Uwe; Morse, A. Stephen) Necessary conditions in adaptive control. *Modelling, identification and robust control* (Stockholm, 1985), 3–14, North-Holland, Amsterdam-New York, 1986. (Kazuhiko Terashima) **89d:93058** 93C40 (49B10)
- (with Castro-Linares, Rafael; Isidori, A.) Linear model matching with prescribed tracking error and internal stability for nonlinear systems. *Analysis and optimization of systems* (Antibes, 1988), 249–258, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89f:93085** 93B50 (93C05)
- (with Isidori, A.) Heuristics for nonlinear control. *Modelling and adaptive control* (Sopron, 1986), 48–70, *Lecture Notes in Control and Inform. Sci.*, 105, Springer, Berlin-New York, 1988. (Jack David Katzberg) **89i:93087** 93D15 (34D40, 93C10)
- (with Martin, Clyde Franklin) Global observability and detectability: an overview. *Modelling and adaptive control* (Sopron, 1986), 71–89, *Lecture Notes in Control and Inform. Sci.*, 105, Springer, Berlin-New York, 1988. (From the introduction) **89k:93021** 93B07 (58E17, 58F05, 93-02)
- (with Isidori, A.) Local stabilization of minimum-phase nonlinear systems. *Systems Control Lett.* 11 (1988), no. 1, 9–17. (Peng Nian Chen) **89g:93071** 93D15 (93C10)
- see also *Modelling, identification and robust control*, **89b:93008**; *Theory and applications of nonlinear control systems*, **89b:93010** and *Modelling and adaptive control*, **89c:93002**
- Bytsenko, A. A.** (with Goncharov, Yu. P.) The inflationary universe in the gauged  $N = 8$  supergravity induced from a superstring. *Phys. Lett. B* 199 (1987), no. 3, 363–365. (Mark D. Roberts) **89e:83083** 83E50 (81E30, 83E30, 83F05)
- Byun, H.** Power equivalence of presentations. *Comm. Algebra* 16 (1988), no. 8, 1733–1747. (Ming-chang Kang) **89i:13012** 13C10 (13C05)
- Byun, Kuk-Whan** (with Wie, Bong) New generalized structural filtering concept for active vibration control synthesis. *J. Guidance Control Dynamics* 12 (1989), no. 2, 147–154. (Not in MR) **93B50** (93B55)
- Byun, Seung-Wan** (with Lee, Chong-Won) Optimal complex modal-space control of rotating disc vibrations. *Optimal Control Appl. Methods* 9 (1988), no. 4, 357–370. (Not in MR) **93C20** (93B50, 93B60)
- Byvaikov, M. E.** (with Romashchev, A. A.) Synthesis of a difference equation for statistical estimation and forecasting. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 9, 51–57. (Summary) **89b:62201** 62M20 (39A10, 62M09, 93E25)
- 89g:20020** 20C20 (20C25, 20C30)
- Cabannes, Henri** (with Dang Hong Tiem) Exact solutions for some discrete models of the Boltzmann equation. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems* 1 (1987), no. 4, 575–584. (Summary) **89d:82067** 82A40
- (with Kawashima, Shuichi) Le problème aux valeurs initiales en théorie cinétique discrète. (English summary) [The initial-value problem in discrete kinetic theory] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 9, 507–511. (Carlo Cercignani) **89m:82030** 82A40 (76P05)
- Cabasso, S.** (with Marinari, E.; Paolucci, P.; Parisi, Giorgio) Eigenstates and limit cycles in the SK model. *J. Phys. A* 21 (1988), no. 22, 4201–4210. (Summary) **89k:82070** 82A57
- Cabib, Ello** A relaxed control problem for two-phase conductors. (Italian summary) *Ann. Univ. Ferrara Sez. VII (N.S.)* 33 (1987), 207–218 (1988). (Pierre-Louis Lions) **89k:49003** 49A22 (35J25, 49D20)
- Cabibbo, Nicola** see *Majorana, Ettore*, **89m:01141**
- Cabo, A.** On equivalence transformations generated by pure first-class constraints. *Quantum field theory and quantum statistics*, Vol. 1, 129–141, Hilger, Bristol, 1987. (P. G. L. Leach) **89f:70023** 70H15 (58F05, 81D07)
- Cabos, Christian** On different formulations of the tau method. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 667–671. (Ian Gladwell) **89f:65028** 65D99 (65L99)
- Caboz, Régis** (with Loiseau, Jean-François; Codaccioni, Jean-Pierre) Hyperelliptic integrals and multiple hypergeometric series. *Math. Comp.* 50 (1988), no. 182, 501–512. (H. Hochstadt) **89a:33002** 33A25 (33A35)
- Cahral, H. E.** The masses in an isosceles solution of the three-body problem. *Celestial Mech.* 41 (1987/88), no. 1–4, 175–177. (From the text) **89f:70014** 70F07
- Cabral, Luis M. B.** Asymmetric equilibria in symmetric games with many players. *Econom. Lett.* 27 (1988), no. 3, 205–208. (D. Marc Kilgour) **89g:90096** 90D10
- Cabrera, Javier** (with Hall, Peter; Watson, Geoffrey S.) Kernel density estimation with spherical data. *Biometrika* 74 (1987), no. 4, 751–762. (Michael Falk) **89g:62057** 62G05
- (with Accardi, Luigi; Watson, Geoffrey S.) Some stationary Markov processes in discrete time for unit vectors. (Italian summary) *Metron* 45 (1987), no. 1–2, 115–133. (P. E. Jupp) **89f:60073** 60J05 (62H99)
- Ordóñez Cabrera, M.** see *Ordóñez Cabrera, M.*
- Cabrera-García, M.** (with Martínez-Moreno, J.; Rodríguez-Palacios, A.) Mal'cev  $H^*$ -algebras. *Math. Proc. Cambridge Philos. Soc.* 103 (1988), no. 3, 463–471. (Kiyosi Yamaguti) **89g:17019** 17D10
- gutierrez Cabrera, Segundo** see *Gutiérrez Cabrera, Segundo*
- nguyen phuoc Cúc** see *Nguyễn Phước Cúc*
- Caceres, E.** On some involution theorems on twofold Poisson manifolds. *Lett. Math. Phys.* 15 (1988), no. 3, 193–200. (I. Vaisman) **89f:58052** 58F05 (53C57)
- Caccetta, L.** (with Vijayan, Kaipillil) Applications of graph theory. Fourteenth Australasian conference on combinatorial mathematics and computing (Dunedin, 1986). *Discrete Math.* 23 (1987), B, 21–77. (Summary) **89a:05124** 05C99 (92A40)
- (with Smyth, W. F.) Properties of edge-maximal  $K$ -edge-connected  $D$ -critical graphs. *J. Combin. Math. Combin. Comput.* 2 (1987), 111–131. (J. Sheehan) **89e:05112** 05C35
- (with Smyth, W. F.) Diameter critical graphs with a minimum number of edges. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 61 (1988), 143–153. (J. Sedláček) **89i:05223** 05C75 (05C35)
- (with Giannini, L. M.) An application of discrete mathematics in the design of an open pit mine. *Discrete Appl. Math.* 21 (1988), no. 1, 1–19. (H. T. Lau) **89i:05125** 05C20 (90B10, 90B30)
- (with Erdős, Paul; Vijayan, Kaipillil) Graphs with unavoidable subgraphs with large degrees. *J. Graph Theory* 12 (1988), no. 1, 17–27. (Carsten Thomassen) **89d:05105** 05C35
- Caceres, Manuel O.** (with Budde, Carlos E.) Marginal distribution of a Markovian chain with internal states: the resolvent matrix. *Phys. Lett. A* 125 (1987), no. 8, 369–374. (Cheng Xun Wu) **89e:60130** 60J10 (60J20, 82A40)
- (with Briozzo, C. B.; Budde, Carlos E.; Lamberti, P. W.) Stability of a Robertson-Walker universe against stochastic perturbations. *Phys. Lett. A* 129 (1988), no. 7, 363–366. (Summary) **89e:83086** 83F05 (83C99)
- (with Budde, Carlos E.) Diffusion in presence of external anomalous noise. *Phys. Rev. Lett.* 60 (1988), no. 26, 2712–2714. (Summary) **89d:82048** 82A31 (82A41)
- Cacioppo, Robert** On finite bases for varieties and pseudovarieties. *Algebra Universalis* 25 (1988), no. 3, 263–280. (Sheila Oates-Williams) **89i:08006** 08B05 (08C99)
- Cackowski, Zdzisław** Epistemological obstacles in the scientific development. *Isaac Newton's Philosophiae naturalis principia mathematica* (Lublin, 1987), 131–142, *World Sci. Publishing, Singapore*, 1988. (see **89m:01042**) 01A05
- Cacoullos, T. ★** Exercises in probability. Translated from the Greek. Problem Books in Mathematics. Springer-Verlag, New York-Berlin, 1989. x+248 pp. ISBN 0-387-96735-4 (Martin I. Goldstein) **89k:60001** 60-01 (00A07)
- Cacuci, D. G.** (with Perez, R. B.; Protopoulos, V.) Duals and propagators: a canonical formalism for nonlinear equations. *J. Math. Phys.* 29 (1988), no. 2, 353–361. (M. Z. Nashed) **89b:58087** 58F07 (35Q20, 47H15)
- Cadden, Renzo** (with Hangan, Théodor) Une caractérisation des métriques riemanniennes tridimensionnelles  $SO(2)$ -isotropes. (English summary) [A characterization of  $SO(2)$ -isotropic three-dimensional Riemannian metrics] *Rend. Sem. Fac. Sci. Univ. Cagliari* 57 (1987), no. 1, 61–84. (O. Kowalski) **89m:53064** 53C20 (53C25)
- (with Sanini, A.) Harmonic metrics induced by vector fields. (Italian) *Rend. Sem. Fac. Sci. Univ. Cagliari* 57 (1987), no. 2, 123–130. (V. Oproiu) **89k:53042** 53C20 (53C25)
- Cade, R.** Integral-equation perturbation theory for electrostatic torus problems with applied fields. *IMA J. Appl. Math.* 36 (1986), no. 1, 59–84. (D. H. Armitage) **89m:78006** 78A30 (45K05)
- Some extensions of the arithmetic-mean theory of Robin's integral equation for bodies with vertices. *J. Integral Equations Appl.* 1 (1988), no. 1, 147–165. (L. Debnath) **89h:45002** 45B05 (78A30)
- cavazos-Cadena, Rolando** see *Cavazos-Cadena, Rolando*
- Cadet, Serge** Propagation and interactions of nonlinear shear waves in a discrete lattice. *Wave Motion* 11 (1989), no. 1, 77–97. (Summary) **89k:82077** 82A60 (82A99)
- Cadoi, M.**  $N = 1$  supergravity models based on noncompact Hermitian symmetric coset spaces. *Nuclear Phys. B* 304 (1988), no. 2, 311–326. (Georghe Zet) **89g:83052** 83E50

-C-

wallace C., Myrna see *Wallace C., Myrna*



- (81D20, 81E20, 81G25)
- Caelli, T. M.** (with Ojztori, M. N.; Steil, G. M.) Underlying neural computations for some visual phenomena. *Biol. Cybernet.* **60** (1988), no. 2, 89–106. (Summary) **89j:92019** 92A09
- (with Ferraro, Mario) Relationship between integral transform invariances and Lie group theory. *J. Opt. Soc. Amer. A* **5** (1988), no. 5, 738–742. (Antoni Wawrzynczyk) **89j:45001** 45A05 (22E30, 42B10, 57S20, 78A35)
- de Caes, D.** On upper bounds for 3-graphs without tetrahedra. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **62** (1988), 193–202. (Yair Caro) **89g:05059** 05C35 (05C65)
- (with Gregory, D. A.) Factorizations of symmetric designs. *J. Combin. Theory Ser. A* **49** (1988), no. 2, 323–337. (Giordano Gallina) **89i:05068** 05B30
- Caenepeel, S.** (with Schikhof, W. H.) Two elementary proofs of Katsaras' theorem on  $p$ -adic compactoids. *Proceedings of the conference on  $p$ -adic analysis (Houthalen, 1987)*, 41–44, *Vrije Univ. Brussel, Brussels*, 1986. (G. Rangan) **89a:46149** 46P05 (46A05)
- Cancellation theorems for projective graded modules. *Ring theory (Granada, 1986)*, 50–59, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (L. N. Vaserstein) **89h:16024** 16A50 (13C10, 19A13)
- Caffarelli, Michel** (with Claverie, Pierre) Development of a pure diffusion quantum Monte Carlo method using a full generalized Feynman-Kac formula. I. Formalism. *J. Chem. Phys.* **88** (1988), no. 2, 1088–1099. (Summary) **89b:81010a** 81-08 (81G45, 81G55)
- (with Claverie, Pierre) Development of a pure diffusion quantum Monte Carlo method using a full generalized Feynman-Kac formula. II. Applications to simple systems. *J. Chem. Phys.* **88** (1988), no. 2, 1100–1109. (Summary) **89b:81010b** 81-08 (81G45, 81G55)
- Caffarelli, Luis A.** (with Aguilera, N. E.) Regularity results for discrete solutions of second order elliptic problems in the finite element method. *Calcolo* **23** (1986), no. 4, 327–353 (1987). (H. D. Mittelmann) **89b:65171** 65N30 (35J25, 39A12)
- (with Aguilera, N. E.; Spruck, Joel) An optimization problem in heat conduction. *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* **14** (1987), no. 3, 355–387 (1988). (Constantin Vărsan) **89h:49016** 49D21 (35K05, 93C20)
- (with Nirenberg, L.; Spruck, Joel) On a form of Bernstein's theorem. *Analyse mathématique et applications*, 55–66, *Gauthier-Villars, Paris*, 1988. (Michael Grüter) **89j:53006** 53A10 (35J60, 58G30)
- (with Friedman, Avner) A model of dislocations and the associated free boundary problem. *Indiana Univ. Math. J.* **37** (1988), no. 3, 451–479. (J. R. Ockendon) **89h:35348** 35R35 (35Q99, 73S05)
- (with Friedman, Avner) Blowup of solutions of nonlinear heat equations. *J. Math. Anal. Appl.* **129** (1988), no. 2, 409–419. (Victor A. Galaktionov) **89c:35077** 35K55 (35B40)
- Caffisch, Russel E.** (with Liu, Tai-Ping) Stability of shock waves for the Broadwell equations. *Comm. Math. Phys.* **114** (1988), no. 1, 103–130. (Summary) **89k:76078** 76P05 (35Q20, 76E99, 76L05, 82A40)
- (with Lim, Chian; Luke, Jonathan H. C.; Sangani, Ashok S.) Periodic solutions for three sedimenting spheres. *Phys. Fluids* **31** (1988), no. 11, 3175–3179. (A. M. J. Davis) **89f:76039** 76D07
- Caginalp, G.** The role of microscopic anisotropy in the macroscopic behavior of a phase boundary. *Ann. Physics* **172** (1986), no. 1, 136–155. (Mircea Crisan) **89g:82021** 82A25 (82A50)
- Mathematical models of phase boundaries. *Material instabilities in continuum mechanics* (Edinburgh, 1985–1986), 35–52, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1988. (see **89f:73005**) **89A99** (82A25)
- (with Fife, P. C.) Dynamics of layered interfaces arising from phase boundaries. *SIAM J. Appl. Math.* **48** (1988), no. 3, 506–518. (Summary) **89d:80009** 80A20 (82A25)
- Cagliari, Francesca** Disconnectedness cogenerated by Hausdorff spaces. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **29** (1988), no. 1, 3–8. (Michael M. Zarichnyi) **89f:54023** 54B30 (54D05)
- (with Mantovani, Sandra) Disconnectedness and partial products. *J. Pure Appl. Algebra* **53** (1988), no. 1–2, 33–37. (S. B. Niefeld) **89k:18002** 18A20 (18B30, 54B30, 54D30)
- (with Mantovani, Sandra) Localizations in universal topological categories. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 639–640. (H. Herrlich) **89g:54023** 54B30 (18A40)
- (with Mantovani, Sandra) Factorizations in topological categories and related topics. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo (2) Suppl. No. 18* (1988), 209–219. (Jürgen Kosłowski) **89m:18005** 18B30 (54B30)
- Cailliet, Giuseppe** The world of Escher and physics. *M. C. Escher: art and science* (Rome, 1985), 287–295, North-Holland, Amsterdam-New York, 1986. (see **89m:00011**) **92A25** (82A35, 82A60)
- Cagnac, Francis** (with Noutchegueme, Norbert) Solutions globales pour un système quasi-linéaire. (English summary) [Global solutions for quasilinear systems] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 8, 365–368. (P. Günther) **89h:35206** 35L70 (83C99)
- (with Noutchegueme, Norbert) Solutions des équations d'Einstein avec sources, minkowskienne à l'infini passé. (English summary) [Solutions of Einstein's equations with sources, Minkowskian at past-infinity] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 10, 441–444. (Philippe-A. Dionne) **89f:83011** 83C05 (35Q20)
- Cahen, Michel** (with Gutt, S.; Lemaire, L.; Spindel, Ph.) Killing spinors. *Bull. Soc. Math. Belg. Sér. A* **38** (1986), 75–102 (1987). (Introduction) **89d:53122** 53C80 (53A50, 81D27, 83C60, 83E50)
- (with Gutt, S.) An algebraic construction of a product on the regular orbits of semisimple Lie groups. *Gravitation and geometry*, 71–82, *Monographs Textbooks Phys. Sci.*, 4, *Bibliopolis, Naples*, 1987. (Zi-Xin Hou) **89c:22023** 22E46 (58F06)
- Déformations et quantification. [Deformations and quantization] *Physique quantique et géométrie* (Paris, 1986), 43–62, *Travaux en Cours*, 32, Hermann, Paris, 1988. (Virgil Obădeanu) **89k:58107** 58F06 (81D07)
- (with Gutt, S.; Kozameh, C.; Newman, E. T.) Yang-Mills equations and solvable groups. *II. J. Math. Phys.* **29** (1988), no. 4, 1022–1025. (David McMullan) **89f:81094** 81E13 (53C80, 58E30)
- see also Quantum theories and geometry, **89g:00017**
- Cahn, Paul-Jean** (with Haouat, Youssef) Polynômes, dérivées et différences finies divisées à valeurs entières sur un anneau de pseudo-valuation. (English summary) [Integer-valued polynomials, derivatives and finite divided differences on a pseudovaluation domain] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 14, 581–584. (Jean-Luc Chabert) **89h:13010** 13B25 (13F20)
- (with Haouat, Youssef) Polynômes à valeurs entières sur un anneau de pseudo-valuation. (English summary) [Integer-valued polynomials on a pseudovaluation domain] *Manuscripta Math.* **61** (1988), no. 1, 23–31. (Jean-Luc Chabert) **89f:13007** 13B25 (13F20)
- Cahill, R. T.** (with Roberts, C. D.; Prashifka, J.) Why baryons are not Skyrmions. *Austral. J. Phys.* **41** (1988), no. 1, 11–18. (Summary) **89c:81195** 81G20 (81G05)
- Cahlon, B.** Existence theorems of random solutions to stochastic functional integral equations. Hyperbolic partial differential equations. V. *Comput. Math. Appl.* **15** (1988), no. 6–8, 473–481. (Min Ping Qian) **89j:60081** 60H20 (45D05)
- Samuel-Cahn, Ester** see Samuel-Cahn, Ester
- Cahn, John W.** (with Taylor, Jean E.) An introduction to quasicrystals. *The legacy of Sonya Kovalevskaya* (Cambridge, Mass., and Amherst, Mass., 1985), 265–286, *Contemp. Math.*, 64, Amer. Math. Soc., Providence, RI, 1987. (M. Mendes France) **89a:82032** 82A60 (52A45)
- Cahoon, Lawrence S.** see Bowden, R. J., **89c:62022**
- Cahouet, J.** (with Chabard, J.-P.) An efficient 3D finite element solver for a generalized Stokes problem. *The mathematics of finite elements and applications, VI* (Uxbridge, 1987), 379–386, *Academic Press, London-New York*, 1988. (see **89c:65004**) **65N30** (76D07)
- (with Chabard, J.-P.) Some fast 3D finite element solvers for the generalized Stokes problem. *Internat. J. Numer. Methods Fluids* **8** (1988), no. 8, 869–895. (M. M. Sussman) **89i:76005** 76-08 (65P05, 76D07)
- Cai, Chuan Ren** (with Zhu, Xiao Zhang) Nilpotent rings satisfying the minimal condition for principal right ideals. (Chinese) *Yangzhou Shixue Ziran Kexue Xuebao* **1985**, no. 2, 2–5. (Yonghua Xu) **89g:16016** 16A21
- (with Fang, Hong Jin) A note on the paper: "On the Köthe problem and the nilpotent problem" [Sci. Sinica Ser. A **26** (1983), no. 9, 901–908; MR 85k:16007] by Y. H. Xu. (Chinese. English summary) *J. Math. Res. Exposition* **8** (1988), no. 4, 493–494. (Summary) **89m:16011** 16A12 (16A22)
- Cai, Da Yong** (with Fan, Su Zhen) A component of NS-ITPACK—L101. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **9** (1988), no. 2, 115–119. (Summary) **89h:65234** 65V05 (65F50, 68U30)
- Cai, Guo Qiang** (with Lin, Y. K.) On exact stationary solutions of equivalent nonlinear stochastic systems. *Internat. J. Non-Linear Mech.* **23** (1988), no. 4, 315–325. (T. T. Soong) **89f:70038** 70L05 (60H99)
- (with Lin, Y. K.) Exact stationary response solution for second order nonlinear systems under parametric and external white noise excitations. II. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 3, 702–705. (Summary) **89g:70025** 70L05 (34F05, 70K99)
- Cai, Guo-Ray** (with Sun, Yu-Geng) The minimum augmentation of any graph to a  $K$ -edge-connected graph. *Networks* **19** (1989), no. 1, 151–172. (Mukai S. Krishnamoorthy) **89i:05154** 05C35 (05C40, 68R10)
- Cai, Heng Wu** Immersed submanifolds and their tubular hypersurfaces. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* **27** (1988), no. 2, 152–158. (Bang-yen Chen) **89m:53091** 53C40
- Cai, Hui Jing** Plemelj formulas for generalized  $M$ -analytic functions. (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* **1987**, no. 4, 1–9. (Summary) **89j:30086** 30G20
- Cai, Jian** On the filling discs of meromorphic functions. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* **26** (1987), no. 6, 746–749. (J. S. Hwang) **89j:30053** 30D40
- Cai, Jing Qiu** (with Li, Ming Shi) Perturbation analysis for a class of common linear programming problems. (Chinese) *Chinese J. Oper. Res.* **3** (1984), no. 1, 55–56. (Not in MR) **90C05**
- Cai, Kai Ren** Topology of some closed submanifolds in Euclidean space. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B **8** (1987), no. 3, 384. *Chinese Ann. Math. Ser. A* **8** (1987), no. 2, 234–241. (Y. L. Xin) **89g:53091** 53C42 (53C40)
- An application of stress energy tensor to the vanishing theorem of differential forms. *Internat. J. Math. Math. Sci.* **11** (1988), no. 4, 675–682. (A. Aeppli) **89m:58004** 58A10 (53B20, 58A14, 58E20)
- Cai, Lu** (with Luo, Liao Fu) The Rényi entropy of a nucleic acid sequence and its relation to evolution. (Chinese. English summary) *Neimenggu Daxue Xuebao* **18** (1987), no. 4, 733–737. (Summary) **89c:92030** 92A12
- Cai, Rui Xian** A rapid engineering method for solving Poisson equation in a doubly connected region. *Kexue Tongbao (English Ed.)* **33** (1988), no. 5, 367–371. (Vladimir Janovsky) **89i:65129** 65N99
- Cai, Sheng Shan** (with Hu, Si Zhu; Li, Xin Zhou) Fermion-generalized monopole dynamics in Kaluza-Klein theory. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* **26** (1987), no. 3, 289–296. (Summary) **89d:83062** 83E15
- Cai, Sui Lin** The weak saddle and separatrix cycle of a quadratic system. (Chinese) *Acta Math. Sinica* **30** (1987), no. 4, 553–559. (Zhaojun Liang) **89h:34068** 34C05 (58F21)
- (with Zhang, Ping Guang) Quadratic systems with second-order or third-order weak saddle. (Chinese) *Acta Math. Sinica* **30** (1987), no. 4, 560–565. (Ding Jun Luo) **89a:34043** 34C05 (58F21)
- (with Zhang, Ping Guang) Quadratic systems with a weak saddle. (Chinese) *J. Math. Res. Exposition* **7** (1987), no. 1, 63–68. (Lian Wang) **89f:58117** 58F21 (34C05)
- (with Zheng, Jian Min) A discussion on a boundary value problem for a first-order ordinary differential equation with two singular boundary points, and a numerical method for its solution. (Chinese. English summary) *Zhejiang Daxue Xuebao* **21** (1987), no. 4, 127–138. (Man Kam Kwong) **89a:34028** 34B15 (49D15, 65L10)
- (with Zhang, Ping Guang) A quadratic system with weak saddle. II. *Ann. Differential Equations* **4** (1988), no. 2, 131–142. (Lian Wang) **89k:34041** 34C05 (58F21)
- Recent developments in the study of quadratic systems. (Chinese. English summary) *Adv. in Math. (Beijing)* **18** (1989), no. 1, 5–21. (Summary) **89k:58238** 58F21 (34C05)
- Cai, Wei** The limit problems for Zienkiewicz triangular elements. (Chinese. English summary) *Math. Numer. Sinica* **8** (1986), no. 4, 345–353. (Rong Hua Li) **89a:65162** 65N30
- Cai, Wei Cheng** (with Zhang, Guang Yuan<sup>2</sup>; Li, Xin Zhou) Fermion fields in the soliton background of a six-dimensional pure Kaluza-Klein theory. (Chinese. English summary) *High Energy Phys. Nuclear Phys.* **12** (1988), no. 2, 281–285. (Sheng Jiang) **89f:83095** 83E15

- Cal, Xi Yao** (with Duan, Ping) A real-time interprocessor synchronization algorithm for communication in distributed computer systems. *J. Comput. Sci. Tech. (English Ed.)* 2 (1987), no. 4, 292-302. (Not in MR) 89N25 (68M10)
- Cal, Y. Q.** (with Papini, G.) The equation of deviation in a conformally invariant theory of gravitation and electromagnetism. *Classical Quantum Gravity* 5 (1988), no. 3, 491-506. (Jorge A. Pullin) 89d:83077 83E99 (83C50)
- (with Papini, G.) Particle interferometry in weak gravitational fields. *Classical Quantum Gravity* 6 (1989), no. 3, 407-418. (Summary) 89m:83005 83B05 (83C99)
- Cal, Yunhai** (with He, Anming) Scattering amplitude for Witten's open superstring field theory. *Phys. Lett. B* 196 (1987), no. 1, 60-64. (B. Spence) 89a:81117 81E99 (81E30, 81E40)
- (with Polchinski, J.) Consistency of open superstring theories. *Nuclear Phys. B* 296 (1988), no. 1, 91-128. (Olaf Lechtenfeld) 89i:81125 81E99 (81E30)
- Cal, Zhi Qiang** (with Guo, Ben Yu) Error estimates for a Schwarz alternating procedure on L-shaped regions. *Appl. Math. Comput.* 28 (1988), no. 1, 39-46. (Summary) 89j:65079 65N99
- Calanieto, Eduardo R.** Quantum geometry, maximal acceleration and the world of pure spinors. *Quantum field theory and quantum statistics*, Vol. 1, 649-666, Hilger, Bristol, 1987. (see 89b:81007) 81B99 (81D25, 81D27)
- Systems and uncertainty: a geometrical approach. *Topics in the general theory of structures*, 199-206, *Theory Decis. Lib. Ser. D. Syst. Theory Knowledge Engrg. Probl. Solving*, Reidel, Dordrecht-Boston, MA, 1987. (Editors) 89j:94027 94A99 (93A99)
- Problems connected with neuronc equations. *Biostatistics and related computational problems* (Naples, 1987), 13-26, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) 89j:92024 92A09 (68Q80)
- (with Guz, W.) The Dirac-like equation in phase space and baryon mass spectrum. (Italian and Russian summaries) *Nuovo Cimento A* (11) 99 (1988), no. 5, 677-683. (Summary) 89f:81258 81G25 (81F15, 81G05)
- (with Guz, W.) Quantum Fisher metric and uncertainty relations. *Phys. Lett. A* 126 (1988), no. 4, 223-225. (T. W. Barrett) 89a:81014 81B99 (81C20)
- (with Gasperini, M.; Predazzi, E.; Scarpetta, G.) On the confining aspects of a conformally flat geometry. *Phys. Lett. A* 132 (1988), no. 2-3, 82-84. (Summary) 89j:81138 81E20 (81G05, 83C47)
- "Spineurs simples", "Urfelder" and factorizations of Dirac equations and spinors. *Phys. Scripta* 37 (1988), no. 2, 197-200. (A. O. Barut) 89b:81062 81C40 (22E70, 58A15, 81D27)
- see also **Topics in the general theory of structures**, 89b:90001 and **Investigations in the theory of structures**, 89k:00005
- Caicedo, X.** (with Sette, A.-M.) Logics and pseudogroups. *Methods and applications of mathematical logic* (Campinas, 1985), 101-115, *Contemp. Math.*, 69, Amer. Math. Soc., Providence, RI, 1988. (From the introduction) 89a:03071 03C95 (03G25)
- Calimmi, R.** Emden-Chandrasekhar axisymmetric, rigid-body rotating polytropes. IV. Exact configurations for  $n = 5$ . *Astrophys. and Space Sci.* 135 (1987), no. 2, 347-364. (Summary) 89a:85002 85A05
- Cain, Bryan E.** (with Beitia, Maria Asunción; Zaballa, Ion) A nested multiplicative commutator equation. *Portugal. Math.* 45 (1988), no. 1, 83-90. (G. N. de Oliveira) 89f:15010 15A24
- Cain, G. L.** Countable compactifications. *General topology and its relations to modern analysis and algebra*, VI (Prague, 1986), 69-75, *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (Ronnie Levy) 89a:54043 54D35
- Cain, K. C.** (with Breslow, N. E.) Logistic regression for two-stage case-control data. *Biometrika* 75 (1988), no. 1, 11-20. (Summary) 89j:62139 62P10
- Cain, Marianne R.** (with Wagner, Neal R.; Putter, Paul S.) Large-scale randomization techniques. *Advances in cryptography—CRYPTO '86* (Santa Barbara, Calif., 1986), 393-404, *Lecture Notes in Comput. Sci.*, 263, Springer, Berlin-New York, 1987. (Kaicheng Lu) 89b:94026 94A60 (93A15)
- Calnes, Peter E.** ★ Linear stochastic systems. *Wiley Series in Probability and Mathematical Statistics: Probability and Mathematical Statistics*. John Wiley & Sons, Inc., New York, 1988. xvi+874 pp. ISBN 0-471-08101-9 (Roman Swiniarski) 89f:93037 93E99 (49D40, 60G07, 93C05, 93C40)
- (with Sabourin, Michael G.) An information theoretic approach to regulation systems. *IMA J. Math. Control Inform.* 5 (1988), no. 2, 85-101. (Summary) 89e:93102 93B50 (49D40, 93E20, 94A34)
- Cairns, Grant** Feuilletages totalement géodésiques sur les variétés simplement connexes. [Totally geodesic foliations on simply connected manifolds] *Feuilletages riemanniens, quantification géométrique et mécanique* (Lyon, 1986), 1-14, *Travaux en Cours*, 26, Hermann, Paris, 1988. (James J. Hebda) 89d:57038 57R30 (53C12)
- see also **Molino, P.**, 89b:53054
- Čajka, Josef** (with Pospíšil, Jiří) Sum and product decompositions of the scattering matrix and their realization. (Czech summary) *Sb. Vysoké. Učení Tech. v Brně* 1985, no. 1-4, 45-49. (Not in MR) 94C99 (15A99)
- Cakalli, H.**  $s$ -absolute almost convergent sequences. *Pure Appl. Math. Sci.* 27 (1988), no. 1-2, 13-19. (Mursaleen) 89k:40009 40C05 (40D05)
- Calabi, Eugenio** Convex affine maximal surfaces. Reprinted in *Affine Differential Geometry* [(Oberwolfach, 1986), 199-223, Tech. Univ. Berlin, Berlin, 1988]. *Resultate Math.* 13 (1988), no. 3-4, 199-223. (Udo Simon) 89g:53011 53A15 (49F10, 53C42)
- Calamai, Paul H.** (with Conn, A. R.) A projected Newton method for  $l_p$  norm location problems. *Math. Programming* 38 (1987), no. 1, 75-109. (James G. Morris) 89d:90230 90C35 (65K10, 90B10)
- (with Moré, Jorge J.) Projected gradient methods for linearly constrained problems. *Math. Programming* 39 (1987), no. 1, 93-116. (Summary) 89f:90132 90C30 (65K05)
- (with Moré, Jorge J.) Quasi-Newton updates with bounds. *SIAM J. Numer. Anal.* 24 (1987), no. 6, 1434-1441. (Summary) 89f:65059 65H10 (65K05, 90C30)
- Caldas, L. L.** (with Kucinski, M. Y.) Toroidal helical fields. *Z. Naturforsch. A* 42 (1987), no. 10, 1124-1132. (Summary) 89f:78013 78A30 (76W05)
- Caldas Pinto, J. R.** (with Wellstead, P. E.) Self-tuning filters and predictors for two-dimensional systems. *Mathematics in signal processing* (Bath, 1985), 553-566, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see 89h:94004) 94A05
- Caldeira-Saraiva, F.** The boundedness of solutions of a Liénard equation arising in the theory of ship rolling. *IMA J. Appl. Math.* 36 (1986), no. 2, 129-139. (Vadim Komkov) 89k:70043 70K20 (34C11, 70K15, 70K40)
- fajardo Caldera, Miguel A.** see **Fajardo Caldera, Miguel A.**
- Calderbank, A. R.** (with Brouwer, A. E.) An Erdős-Ko-Rado theorem for regular intersecting families of octads. *Graphs Combin.* 2 (1986), no. 4, 309-316. (Henk van Tilborg) 89g:05038 05B30 (05B40)
- Symmetric designs as the solution of an extremal problem in combinatorial set theory. *European J. Combin.* 9 (1988), no. 2, 171-173. (Siu Lun Ma) 89e:05029 05B05 (05B30)
- (with Coffman, E. G., Jr.; Flatto, Leopold) Optimal directory placement on disk storage devices. *J. Assoc. Comput. Mach.* 35 (1988), no. 2, 433-446. (Not in MR) 68M20
- Geometric invariants for quasimetric designs. *J. Combin. Theory Ser. A* 47 (1988), no. 1, 101-110. (J. H. van Lint) 89d:05025 05B05
- Inequalities for quasimetric designs. *J. Combin. Theory Ser. A* 48 (1988), no. 1, 53-64. (Arnold Neumaier) 89d:05026 05B05
- Calderin, Alberto Pedro** (with Santos, Juan Enrique; Douglas, Jim, Jr.) Finite element methods for a composite model in elastodynamics. *SIAM J. Numer. Anal.* 25 (1988), no. 3, 513-532. (Summary) 89b:65277 65N30 (73-08, 73D99, 73K20)
- gomez-Calderon, Javier** see **Gomez-Calderon, Javier**
- Caldiroli, Piero** ★ Selected papers. Vol. I-IV. (Italian) Edited and with a preface by Erasmo Recami, Roberto Mignani and Ruggero M. Santilli. Hadronic Press New Series of Reprints of Historical Value. Selected Papers of Italian Physicists. *Hadronic Press, Inc., Nonantum, MA*, 1986. Vol. I: xxiii+357 pp. Vol. II: xxiii+352 pp. Vol. III: xxi+355 pp. Vol. IV: xxi+342 pp. ISBN 0-911767-31-2 (A. O. Barut) 89h:01104 01A75 (81-03, 82-03)
- Caldwell, James** Computation of eigenvalues of spheroidal harmonics using relaxation. *J. Phys. A* 21 (1988), no. 19, 3685-3693. (Summary) 89m:65019 65D15 (33A55)
- Caliceti, E.** (with Goldoni, L.; Graffi, S.) Probability of convergence of perturbation theory for hydrogen photoionization. *J. Math. Phys.* 28 (1987), no. 11, 2655-2661. (Edward R. Vrscaj) 89b:81047 81C12 (81C20)
- (with Bentosela, F.; Grecchi, V.; Maioli, M.; Sacchetti, A.) Analyticity and asymptotics for the Stark-Wannier states. *J. Phys. A* 21 (1988), no. 16, 3321-3331. (M. Demuth) 89j:81289 81H20
- Calib, Franca** (with Marchetti, Elena) Gaussian quadrature formulae for the numerical approximation of a double integral with Cauchy-type singularity. (Italian summary) *Rend. Sem. Fac. Sci. Univ. Cagliari* 57 (1987), no. 1, 99-105. (Summary) 89m:65028 65D32
- Calise, Anthony J.** (with Moerdor, Daniel D.) Near-optimal output feedback regulation of ill-conditioned linear systems. *IEEE Trans. Automat. Control* 33 (1988), no. 5, 463-466. (Cheng Zhi Li) 89e:93099 93B50 (93C05)
- (with Kramer, Friedrich S.) Fixed-order dynamic compensation for multivariable linear systems. *J. Guidance Control Dynamics* 11 (1988), no. 1, 80-85. (Summary) 89i:93049 93B50 (93B10)
- Call, Frederick W.** Quasicoherent modules on quasi-affine schemes. *Rocky Mountain J. Math.* 17 (1987), no. 4, 783-787. (G. Horrocks) 89d:14025 14F05 (13C11)
- Contracted primes of the complete ring of quotients. *Bull. Austral. Math. Soc.* 38 (1988), no. 3, 373-375. (James A. Huckaba) 89k:13007 13B30
- Callahan, Michael J.** (with Hoffman, David A.; Hoffman, James T.) Computer graphics tools for the study of minimal surfaces. *Comm. ACM* 31 (1988), no. 6, 648-661. (Editors) 89k:58063 58E12 (58-04)
- Callan, Curtis G., Jr.** Strings in background fields. *Unification of fundamental interactions* (Marstrand, 1986), 114-117, *Royal Swedish Acad. Sci., Stockholm*, 1987. (see 89f:81005) 81E20 (81E30, 83E30)
- sánchez-Calle, Antonio** see **Sánchez-Calle, Antonio**
- Callebaut, Dirk K.** Comparison between the philosophies of Newton and Einstein. *Newton and the new direction in science* (Cracow, 1987), 193-201, *Specola Vaticana, Vatican City*, 1988. (see 89b:01014) 01A60
- (with Khater, A. H.; El Sheikh, M. G.) A class of semi-analytical solutions for a rotating toroidal plasma. *Astrophys. and Space Sci.* 145 (1988), no. 2, 277-286. (R. K. Jain) 89f:76102 76X05 (76U05)
- grossi Calleja, Rafael** see **Grossi Calleja, Rafael**
- Callinap, Fethi** Zeta functions of the real quadratic fields with discriminant  $d = n^2 + 4 \equiv 5 \pmod{8}$ . (Turkish. English summary) *Doga Mat.* 12 (1988), no. 1, 1-5. (Summary) 89e:11070 11R42
- Callias, C.** (with Markenscoff, X.) Singular asymptotics of integrals and the near-field radiated from nonuniformly moving dislocations. *Arch. Rational Mech. Anal.* 102 (1988), no. 3, 273-285. (Sergej M. Zverev) 89j:73026 73D10 (41A60, 73D15, 73S05)
- The resolvent and the heat kernel for some singular boundary problems. *Comm. Partial Differential Equations* 13 (1988), no. 9, 1113-1155. (Andreas Juhl) 89m:58193 58G11 (35K05, 35P05)
- Calogero, Francesco** Integrable many-body problems in more than one dimension. *Rep. Math. Phys.* 24 (1986), no. 1, 141-143. (Nick Gnanoulis) 89d:58052 58F07
- (with Eckhaus, Wiktor) Necessary conditions for integrability of nonlinear PDEs. *Inverse Problems* 3 (1987), no. 2, L27-L32. (From the text) 89a:35174 35Q20 (35R30, 58F07, 58G37)
- (with Eckhaus, Wiktor) Nonlinear evolution equations, rescalings, model PDEs and their integrability. I. *Inverse Problems* 3 (1987), no. 2, 229-262. (Hong Yuan Fu) 89e:35128 35Q20 (58G35, 76B15)
- (with De Lillo, S.) The Eckhaus PDE  $\psi_t + \psi_{xx} + 2(|\psi|^2)_x \psi + |\psi|^4 \psi = 0$ . *Inverse Problems* 3 (1987), no. 4, 633-681. (M. Victor Wickerhauser) 89g:35093a 35Q20 (35B25)
- Nonlinear evolution PDEs that are applicable and integrable. *Plasma theory and nonlinear and turbulent processes in physics*, Vol. 1, 2 (Kiev, 1987), 3-6, *World Sci. Publishing, Singapore*, 1988. (see 89c:00041) 35Q20
- (with Eckhaus, Wiktor) Nonlinear evolution equations, rescalings, model PDEs and their integrability. II. *Inverse Problems* 4 (1988), no. 1, 11-33. (Hong Yuan Fu) 89g:35094 35Q20
- (with De Lillo, S.) Corrigendum: "The Eckhaus PDE  $\psi_t + \psi_{xx} + 2(|\psi|^2)_x \psi + |\psi|^4 \psi = 0$ ". *Inverse Problems* 4 (1988), no. 2, 571. (M. Victor Wickerhauser) 89g:35093b 35Q20 (35B25)
- Universality and integrability of the nonlinear evolution PDEs describing  $N$ -wave interactions. *J. Math. Phys.* 30 (1989), no. 1, 28-40. (P. M. Santini) 89m:58090 58F07 (35Q20)
- see also **Kundu, A.**, 89g:35093c



- Caltagirone, Jean-Paul** (with Fabrie, Pierre; Combarnous, Michel) De la convection naturelle oscillante en milieu poreux au chaos temporel? (English summary) [From oscillating natural convection in porous media to chaos?] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **305** (1987), no. 7, 549–553. (Not in MR) 76E15 (58F13, 76S05)
- Calcutt, Giorgio** Effective Lagrangian for low-lying states of interacting bosonic strings. *J. Phys. A* **21** (1988), no. 9, 2225–2238. (Summary) 89f:81162 81E99 (81E30, 81G25)
- Calude, Cristian** (with Chitescu, Ion) Random sequences according to P. Martin-Löf. *Found. Control Engrg.* **12** (1987), no. 2, 75–84. (Ludwig Staiger) 89c:68059 68Q30
- ★ Theories of computational complexity. *Annals of Discrete Mathematics*, 35. North-Holland Publishing Co., Amsterdam-New York, 1988. xii+487 pp. ISBN 0-444-70356-X (John P. Helm) 89g:03057 03D15 (03-02, 68-02, 68Q25, 68Q30)
- (with Chitescu, Ion) Random sequences: some topological and measure-theoretical properties. *Ann. Univ. București Mat.* **37** (1988), no. 2, 27–32. (J. C. Oxtoby) 89m:60004 60A05 (03D80, 68Q30)
- Calagareanu, Grigore** (with Benabdallah, Khalid) Abelian groups with continuous lattice of subgroups. *Studia Univ. Babeş-Bolyai Math.* **32** (1987), no. 1, 31–32. (L. Fuchs) 89b:20085 20K10
- Calvão, M. O.** (with Rebouças, M. J.; Teixeira, A. F. F.; Monteiro S. W., Jr.) Notes on a class of homogeneous space-times. *J. Math. Phys.* **29** (1988), no. 5, 1127–1129. (Jan Novotný) 89f:83036 83C20
- Calvert, Bruce D.** (with Fitzpatrick, Simon) Consequences of the duality map taking planes to planes. *Nonlinear analysis and applications (Arlington, Tex., 1986)*, 105–114. *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (H. E. Lacey) 89a:46031 46B10 (46E30)
- (with Kartasatos, Athanassios G.) On the compactness of the nonlinear evolution operator in a Banach space. *Bull. London Math. Soc.* **19** (1987), no. 6, 551–558. (Ricardo Torrejón) 89c:47094 47H20 (47H06)
- (with Fitzpatrick, Simon) A Banach lattice characterization of  $c_0$  and  $l_p$ . *Math. Chronicle* **16** (1987), 25–40. (H. E. Lacey) 89c:46022 46B30
- (with Fitzpatrick, Simon) Nonexpansive projections onto two-dimensional subspaces of Banach spaces. *Bull. Austral. Math. Soc.* **37** (1988), no. 1, 149–160. (Ehrhard Behrends) 89c:46017 46B20 (46B30)
- (with Kartasatos, Athanassios G.) On the convexity of the interior of the domain of an  $m$ -accretive operator in a Banach space. *Nonlinear Anal.* **12** (1988), no. 7, 727–732. (A. J. B. Potter) 89f:47099 47H06 (46B20)
- Carrillo Calvet, Humberto** see Carrillo Calvet, Humberto
- Calvet, J. L.** (with Titi, A.) Hierarchical optimization with overlapping systems—application to an electric power network. *Large scale systems: theory and applications 1983 (Warsaw, 1983)*, 603–610. *IFAC Proc. Ser.*, 10, IFAC, Laxenburg, 1984. (H. Abou-Kandil) 89a:93008 93A13 (49D27, 49D40, 93A15, 93C75)
- (with Sultan, M. A.; Hassan, M. F.) Parameter estimation in large-scale systems using sequential decomposition. *Internat. J. Systems Sci.* **19** (1988), no. 3, 487–496. (Summary) 89b:49050 49D27 (93A13, 93B30, 93C35)
- Calvet, Jean-Paul** (with Arkun, Yaman) Feedforward and feedback linearization of nonlinear systems with disturbances. *Internat. J. Control* **48** (1988), no. 4, 1551–1559. (Not in MR) 93B17 (93C10)
- Calvez, Léon-Claude** (with Le Bihan, Jean) A new class of functions for transient analysis of coaxial cables terminated with parallel resistor and capacitor. *IEEE Trans. Circuits and Systems* **35** (1988), no. 5, 512–518. (Summary) 89b:94033 94C05 (44A10)
- le Calvez, Patrice** see le Calvez, Patrice
- Calvo, Adina** Homologie de Hochschild et homologie cyclique de certaines algèbres de matrices triangulaires. (English summary) [The Hochschild and cyclic homology of some algebras of triangular matrices] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 3, 103–105. (Ross Staffeldt) 89f:18018 18G15 (17B56, 18G10, 19D55)
- Calvo, Bernard** Objects dominants. (English summary) [Dominant objects] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 13, 515–517. (M. A. López López) 89m:18012 18D10
- Calvo, Guillermo A.** (with Obstfeld, Maurice) Optimal time-consistent fiscal policy with finite lifetimes. *Econometrica* **56** (1988), no. 2, 411–432. (Rolf van Dawen) 89c:90039 90A16 (93C75)
- Calvo-Flores Segura, Antonio** An algorithm for a two-person bargaining model. (Spanish. English summary) *Estadist. Española* **No. 110** (1986), 101–111. (Summary) 89a:90161 90D05 (90D10)
- Calzetti, D.** (with Giallisco, M.; Ruffini, R.) The normalization of the correlation functions for extragalactic structures. *Astronom. and Astrophys.* **198** (1988), no. 1-2, 1–15. (Summary) 89d:85009 85A35
- Calzolari, Antonella** (with Costantini, Cristina; Marchetti, Federico) A confidence interval for Monte Carlo methods with an application to simulation of obliquely reflecting Brownian motion. *Stochastic Process. Appl.* **29** (1988), no. 2, 209–222. (B. L. Granovsky) 89b:65011 65C05 (60J65)
- Calzolari, Giorgio** (with Panattoni, Lorenzo) Alternative estimators of FIML covariance matrix: a Monte Carlo study. *Econometrica* **56** (1988), no. 3, 701–714. (D. E. A. Giles) 89c:62128 62P20
- le Cam, L.** see le Cam, L.
- Camacho, M. I.** Quasi-homogeneous vector fields of degree 2 in  $\mathbb{R}^3$ . *Dynamical systems, Valparaíso 1986*, 38–46. *Lecture Notes in Math.*, 1331, Springer, Berlin-New York, 1988. (Marco Antonio Teixeira) 89f:58062 58F10 (58C27, 58F18)
- (with Palmeira, C. F. B.) Errata to: "Nonsingular quadratic differential equations in the plane" [Trans. Amer. Math. Soc. **301** (1987), no. 2, 845–859; MR 88b:58109]. *Trans. Amer. Math. Soc.* **307** (1988), no. 1, 431. (From the text) 89g:58170 58F18 (34C35)
- Camarena, Ricardo** (with Pelletier, Dominique; Fortin, Andre) Are FEM solutions of incompressible flows really incompressible? (or how simple flows can cause headaches!). *Internat. J. Numer. Methods Fluids* **9** (1989), no. 1, 99–112. (Summary) 89f:76024 76-08 (73F99, 76A10, 76D07)
- Camargo, José Luiz Corrêa** A note on common fixed points in topological vector space. *Math. Japon.* **33** (1988), no. 3, 335–338. (Jagadish Achari) 89c:47106 47H10
- Cambanis, Stamatios** Random filters which preserve the stability of random inputs. *Adv. in Appl. Probab.* **20** (1988), no. 2, 275–294. (Summary) 89c:60053 60G15 (60G12, 60G35)
- (with Bucklew, James A.) Estimating random integrals from noisy observations: sampling designs and their performance. *IEEE Trans. Inform. Theory* **34** (1988), no. 1, 111–127. (Adnan M. Awad) 89d:60112 60H20 (45E10, 94A12)
- (with Hardin, Clyde D., Jr.; Weron, Aleksander) Innovations and Wold decompositions of stable sequences. *Probab. Theory Related Fields* **79** (1988), no. 1, 1–27. (Peter J. Brockwell) 89g:60146 60G25 (62M20)
- Cambren, Michael** (with Greim, P.) Mappings of continuous functions on hyper-Stonian spaces. 15th winter school in abstract analysis (Srní, 1987). *Acta Univ. Carolin.—Math. Phys.* **28** (1987), no. 2, 31–40. (Pilar Cembranos) 89f:46081 46E40 (46B20, 46E15)
- (with Greim, P.) Spaces of continuous vector functions as duals. *Canad. Math. Bull.* **31** (1988), no. 1, 70–78. (Pilar Cembranos) 89c:46041 46E40 (46B10, 46G10)
- (with Behrends, Ehrhard) An isomorphic Banach-Stone theorem. *Studia Math.* **90** (1988), no. 1, 15–26. (Krzysztof Jarosz) 89b:46020 46B20
- Camerini, P. M.** (with Galbiati, G.; Maffioli, Francesco) Algorithms for finding optimum trees: description, use and evaluation. *Ann. Oper. Res.* **13** (1988), no. 1-4, 265–397. (Summary) 89c:90206 90C35 (05C05, 68Q25, 90B10)
- Cameron, David** Euler and Maclaurin made easy. *Math. Sci.* **12** (1987), no. 1, 3–20. (J. J. Cross) 89f:41021 41A60 (01A50, 33A70, 65D30)
- Summation of trigonometric series. *Math. Sci.* **12** (1987), no. 2, 71–79. (H. P. Dikshit) 89g:42011 42A24 (42A32)
- Cameron, Douglas E.** (with Spetich, Joan) Nina Karlovna Bari (1901–1961). *Women of mathematics*, 6–12. Greenwood, Westport, CT, 1987. (see 89b:01071) 01A70
- Cameron, M. A.** (with Eagleson, G. K.; Wilcox, M. E.; Laing, D. G.; Panhuber, H.) Testing for correlated errors in the analysis of variance. (French summary) *Biometrics* **44** (1988), no. 3, 695–704. (Summary) 89g:62117 62J10
- Cameron, Peter J.** Digraphs admitting sharply edge-transitive automorphism groups. *European J. Combin.* **8** (1987), no. 4, 357–365. (Martin W. Liebeck) 89f:05091 05C25 (05C20, 20B25)
- (with Deza, M.; Frankl, Peter) Sharp sets of permutations. *J. Algebra* **111** (1987), no. 1, 220–247. (Johannes Siemons) 89c:20011 20B30 (05A05, 20B05)
- On the structure of a random sum-free set. *Probab. Theory Related Fields* **76** (1987), no. 4, 523–531. (B. Volkmann) 89f:11018 11B05 (11K31, 60F15)
- Some treelike objects. *Quart. J. Math. Oxford Ser. (2)* **38** (1987), no. 150, 155–183. (R. A. Bailey) 89a:05009 05A15 (03C07, 05C05, 06A10, 08A02, 20B99)
- Geometric sets of permutations. *Geometries and groups (Noordwijkerhout, 1986)*. *Geom. Dedicata* **25** (1988), no. 1-3, 339–351. (Jürgen Bierbrauer) 89g:20014 20B35 (51D20)
- (with Kiyota, Masao) Sharp characters of finite groups. *J. Algebra* **115** (1988), no. 1, 125–143. (Olaf Manz) 89b:20026 20C15
- Cameron, R. G.** New pole assignment algorithm with reduced norm feedback matrix. *Proc. IEEE-D* **135** (1988), no. 2, 111–118. (T. Kaczorek) 89b:93059 93B55 (93B40)
- Cameron, Robert D.** Source encoding using syntactic information source models. *IEEE Trans. Inform. Theory* **34** (1988), no. 4, 843–850. (Not in MR) 94A29
- Camillo, Victor** (with Yousif, Mohamed F.) Semi-V-modules. *Comm. Algebra* **17** (1989), no. 1, 165–177. (H. Tominaga) 89j:16021 16A30 (16A52)
- Cammaroto, F.** (with Bella, A.) On the cardinality of Urysohn spaces. *Canad. Math. Bull.* **31** (1988), no. 2, 153–158. (W. Stephen Watson) 89f:54041 54D10 (54A25)
- Camp, C. V.** (with Gipson, G. S.) Effective use of Monte Carlo quadrature for body force integrals occurring in the integral form of elastostatics. *Boundary elements VII, Vol. I, II* (Como, 1985), 13.17–13.26. *Comput. Mech., Southampton*, 1985. (see 89f:65003) 65C05 (73-08)
- Campana, F.** Rigidité des fibres des réductions algébriques. [Rigidity of the fibers of algebraic reductions] *J. Reine Angew. Math.* **385** (1988), 152–160. (Csaba Hatvani) 89d:32048 32G10 (32C25)
- Algèbre d'itération de l'espace des feuilletages d'un espace analytique compact. [Algebraicity of the space of foliations of a compact analytic set] *Math. Ann.* **281** (1988), no. 3, 387–391. (Thomas Peternell) 89b:32055 32J99
- Campanato, S.**  $L^2$  theory and nonlinear parabolic systems. *Nonlinear parabolic equations: qualitative properties of solutions (Rome, 1985)*, 55–62. *Pitman Res. Notes Math. Ser.*, 149, Longman Sci. Tech., Harlow, 1987. (Paul G. Schmidt) 89k:35106 35K55 (35B65)
- A maximum principle for nonlinear elliptic systems: boundary fundamental estimates. *Adv. in Math.* **66** (1987), no. 3, 291–317. (Gary M. Lieberman) 89d:35058 35J65 (35B50)
- Elliptic systems with nonlinearity  $q$  greater or equal to two. Regularity of the solution of the Dirichlet problem. (Italian summary) *Ann. Mat. Pura Appl. (4)* **147** (1987), 117–150. (Gary M. Lieberman) 89c:35056 35J65 (35B65)
- A few recent results for differential systems under monotonicity conditions. (Italian) *Boll. Un. Mat. Ital. A (7)* **2** (1988), no. 1, 27–57. (Francesco Zirilli) 89c:35048 35J45 (35Bxx)
- Campanino, Massimo** (with Bovier, Anton; Klein, Abel; Perez, J. Fernando) Smoothness of the density of states in the Anderson model at high disorder. *Comm. Math. Phys.* **114** (1988), no. 3, 439–461. (Aernout C. D. van Enter) 89c:82050 82A57 (81H99, 82A42)
- Campbell, Colin M.** (with Robertson, Edmund F.; Thomas, Richard M.) Fibonacci numbers and groups. *Applications of Fibonacci numbers (San Jose, CA, 1986)*, 45–60. *Kluwer Acad. Publ., Dordrecht*, 1988. (D. L. Johnson) 89f:20043 20F05 (11B39)
- Campbell, D. E.** Redistribution of wealth when knowledge is dispersed. *Soc. Choice Welf.* **5** (1988), no. 4, 281–286. (K. Zimmermann) 89j:90060 90A15
- Campbell, David K.** Nonlinear science—from paradigms to practicalities. Stanislaw Ulam 1909–1984. *Los Alamos Sci. No. 15 Special Issue* (1987), 218–262. (see 89m:01133a) 58F07 (58F13, 82A99)
- Campbell, H. E. A.** (with Cohen, Fred R.; Peterson, F. P.; Selick, Paul) The space of maps of Moore spaces into spheres. *Algebraic topology and algebraic K-theory (Princeton, N.J., 1983)*, 72–100. *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (J. F. Adams) 89a:55012 55P35
- Campbell, James** (with Dibrell, Phillip) Hyponormal powers of composition operators. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 914–918. (Raj Kishor Singh) 89f:47045 47B38 (47B20)
- (with Petersen, Karl) The spectral measure and Hilbert transform of a measure-preserving transformation. *Trans. Amer. Math. Soc.* **313** (1989), no. 1, 121–129. (Richard D. Duncan) 89i:28008 28D05 (47A35, 47A60)
- Campbell, L. A.** (with Bucy, R. S.) Determination of steady state behavior for periodic discrete filtering problems. *Comput. Math. Appl.* **15** (1988), no. 2, 131–140. (Arunabha Bagchi) 89c:93192 93E11 (65L99)
- Campbell, Paul J.** (with Grinstein, Louise S.) Anna Johnson Pell Wheeler (1883–1966). *Women of mathematics*, 241–246. Greenwood, Westport, CT, 1987. (see 89b:01071) 01A70

- see also *Women of mathematics*, 89b:01071
- Campbell, R. B.** Regular systems of inbreeding with mutation. *Theoret. Population Biol.* 34 (1988), no. 1, 24–37. (Summary) 89i:92027 92A10
- Campbell, Stephen L.** Control problem structure and the numerical solution of linear singular systems. *Math. Control Signals Systems* 1 (1988), no. 1, 73–87. (Summary) 89h:34061 34H05 (93B40, 93C05, 93C30)
- Campbell, Stephen R.** (with Plummer, M. D.) On well-covered 3-polytopes. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), A, 215–242. (Mirko Krivánek) 89i:05224 05C75
- Campello, Ray E.** (with Maculan, Nelson) An  $O(n^3)$  worst case bounded special LP knapsack (0-1) with two constraints. (French summary) *RAIRO Rech. Opér.* 22 (1988), no. 1, 27–32. (Svatopluk Poljak) 89h:90150 90C08
- Cămpenian, Cezar** Semiautomata, outer measures and Carathéodory property. *An. Univ. București Mat.* 37 (1988), no. 2, 52–55. (J. C. Oxtoby) 89m:28022 28C15 (68Q70)
- Campi, Stefano** Recovering a centred convex body from the areas of its shadows: a stability estimate. *Ann. Mat. Pura Appl.* (4) 151 (1988), 289–302. (P. R. Goodey) 89m:52002 52A15 (43A90, 52A22)
- Cămpian, M.** (with Cămpian, V.) Contributions to the theory of  $n$ -structures. (Romanian. French summary) *Bul. Ştiinţ. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Maş.* 28 (1985), 57–60. (Summary) 89e:54013 54A99 (54B30)
- Cămpian, V.** (with Cămpian, M.) Contributions to the theory of  $n$ -structures. (Romanian. French summary) *Bul. Ştiinţ. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Maş.* 28 (1985), 57–60. (Summary) 89e:54013 54A99 (54B30)
- Campillo, Fabien** Testing for a change-point in linear systems with incomplete observation. *Asymptotic theory for non i.i.d. processes (Luminy-Marseille, 1984)*, 225–242, *Travaux Rech.*, 8, Publ. Fac. Univ. Saint-Louis, Brussels, 1986. (Ye Ji Xu) 89g:62145 62M07 (62M10)
- (with Bellizzi, Serge; Bouc, Robert; Pardoux, É.) Contrôle optimal semi-actif de suspension de véhicule. (English summary) [Semi-active optimal control of vehicle suspension] *Analysis and optimization of systems (Antibes, 1988)*, 689–699, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see 89c:00031) 93C75 (49C20, 93B50, 93E20)
- Campisi, Domenico** (with La Bella, Agostino) Transportation investment and dynamic equilibrium in a multi-regional input-output system. *System modelling and optimization (Tokyo, 1987)*, 416–425, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (see 89f:00029) 90A17
- Cămpoli, Oscar A.** A principal ideal domain that is not a Euclidean domain. *Amer. Math. Monthly* 95 (1988), no. 9, 868–871. (C. Small) 89h:11066 11R11 (13F10)
- Camos, I.** (with Jiménez, J. L.) A “nonrelativistic” approach to the Lorentz-Dirac equation. (Italian and Russian summaries) *Nuovo Cimento B* (11) 101 (1988), no. 6, 687–696. (P. Achuthan) 89k:78013 78A35
- Camos, L. M. B. C.** On oblique Alfvén waves in a viscous and resistive atmosphere. *J. Phys. A* 21 (1988), no. 13, 2911–2930. (From the summary) 89e:86010 86A35
- Erratum for the paper: “On extensions of the Laurent theorem in the functional calculus with applications to the generation of higher transcendental functions” [*Mat. Vesnik* 38 (1986), no. 4, 375–390; MR 88g:33014]. *Mat. Vesnik* 40 (1988), no. 1, 85. (Editors) 89m:33024 33A70 (26A33, 33A40)
- Camos, R. G.** The para-Bose oscillator in a finite linear space. (Italian and Russian summaries) *Nuovo Cimento B* (11) 100 (1987), no. 4, 485–492. (P. G. L. Leach) 89i:81042 81C99 (58F35)
- Some properties of the zeros of polynomial solutions of Sturm-Liouville equations. *SIAM J. Math. Anal.* 18 (1987), no. 6, 1664–1668. (G. Yu. Tamanyan) 89f:34045 34C10 (33A65, 34A30)
- Camos, Tânia M. M.** (with Micali, Artibano; Costa e Silva, Maria C.; Ferreira, Silvia M. M.) Derivations dans les algèbres gamétiques. III. (English summary) [Derivations in gametic algebras. III] *Linear Algebra Appl.* 113 (1989), 79–99. (H. Gonsior) 89k:17059 17D92
- de Campos Ibáñez, Luis Miguel** (with González Muñoz, Antonio) A subjective approach for ranking fuzzy numbers. *Fuzzy Sets and Systems* 29 (1989), no. 2, 145–153. (Summary) 89k:93062 03E72
- Campostrini, Massimo** (with Curci, Giuseppe; Rossi, Paolo) The Gross-Neveu model and the pseudofermion algorithm. *Nuclear Phys. B* 314 (1989), no. 2, 467–518. (Summary) 89k:81132 81E99 (81-08, 81E30)
- Campus, Cinzia** (with Mariani, Mauro) The principle of plenitude in the *Metaphysics*  $\Theta$ , 4 and *De coelo* A, 12. (Italian) *Teoria* 6 (1986), no. 2, 171–192. (Robin Smith) 89h:03007 03A05 (01A20, 03-03, 03B45)
- tô Câm Tu** see Tô Câm Tu
- chaffy-Camus, Claudine** see Chaffy-Camus, Claudine
- Camus, Jacques** (with Bolley, Pierre; Phạm The Lai) Estimation de la résolvante du problème de Dirichlet dans les espaces de Hölder. (English summary) [Estimate for the resolvent of the Dirichlet problem in Hölder spaces] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 6, 253–256. (B. Hellwig) 89a:35064 35J25 (47F05)
- ngo duy Can** see Ngo Duy Can
- Cañada, A.** Nonlinear boundary value problems for elliptic systems. *Proc. Edinburgh Math. Soc.* (2) 30 (1987), no. 2, 257–272. (Robert Stephen Cantrell) 89a:35083 35J65
- Čanak, Miloš** Der Zusammenhang zwischen der Randwertaufgabe von Riemann und einem Problem der mathematischen Musiktheorie. (Serbo-Croatian summary) [The connection between the Riemann boundary value problem and a problem of mathematical music theory] Second international symposium on complex analysis and applications (Budva, 1986). *Mat. Vesnik* 38 (1986), no. 4, 399–405. (Manfred W. Kracht) 89h:35172 35L05 (00A69, 35C99, 35Q15, 73K12)
- Canale, Anna** Reverse integral inequalities with respect to different measures. (Italian summary) *Atti Accad. Pontaniana (N.S.)* 36 (1987), 229–241 (1988). (Yisong Yang) 89g:26018 26D15 (28A75)
- martínez Canalejo, H.** see Martínez Canalejo, H.
- Canalis-Durand, Mireille** (with Yalo, Paulin) Robustesse des systèmes linéaires bouclés aux perturbations non-linéaires. (English summary) [Robustness of linear feedback systems with nonlinear perturbations] *Analysis and optimization of systems (Antibes, 1988)*, 282–293, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (J. P. Babary) 89i:93037 93B35 (03H10, 49B50)
- Canarotto, D.** An introduction to the geometry of singularities in general relativity. *Riv. Nuovo Cimento* (3) 11 (1988), no. 3, 60 pp. (C. T. J. Dodson) 89m:53130 53C80 (53C05, 83C75)
- Canary, R. D.** (with Epstein, D. B. A.; Green, Paul) Notes on notes of Thurston. *Analytical and geometric aspects of hyperbolic space (Coventry/Durham, 1984)*, 3–92, *London Math. Soc. Lecture Note Ser.*, 111, Cambridge Univ. Press, Cambridge-New York, 1987. (William Dunbar) 89e:57008 57N10 (32G15, 32G99, 54A20, 57M99, 58F17)
- Candelas, P.** (with Dale, A. M.; Lütken, C. A.; Schimmrigk, Rolf) Complete intersection Calabi-Yau manifolds. *Frontiers of high energy physics (London, 1986)*, 88–134, *Hilger, Bristol*, 1987. (H. Wu) 89e:14040 14J30 (14M10, 32J25, 53C25, 53C55)
- Yukawa couplings between (2, 1)-forms. *Mathematical aspects of string theory (San Diego, Calif., 1986)*, 488–542, *Adv. Ser. Math. Phys.*, 1, World Sci. Publishing, Singapore, 1987. (see 89m:81001) 53C80 (32L25, 81E30, 83E30)
- (with Lütken, C. A.; Schimmrigk, Rolf) Complete intersection Calabi-Yau manifolds. II. Three generation manifolds. *Nuclear Phys. B* 306 (1988), no. 1, 113–136. (Nicholas Buchdahl) 89g:53102 53C55 (14J30, 32J15, 53C80, 83E30)
- Candeloro, Domenico** Transformation-invariant measures in higher dimensions. (Italian) *Atti Sem. Mat. Fis. Univ. Modena* 35 (1987), no. 1, 33–42. (Gerold S. Wagner) 89h:11068 11K55 (28D05)
- (with Martellotti, Anna) An overview of some recent results concerning finitely additive measures. (Italian) *Atti Sem. Mat. Fis. Univ. Modena* 35 (1987), no. 2, 327–334 (1988). (Giuliana Coletti) 89e:28003 28A10 (28B05, 28B10)
- Candler, Wilfred** A linear bilevel programming algorithm. A comment to: “A linear bilevel programming algorithm based on bicriteria programming” [*Comput. Oper. Res.* 14 (1987), no. 2, 173–179] by G. Ünlü. *Comput. Oper. Res.* 15 (1988), no. 3, 297–298. (Not in MR) 90C05
- Canela, Miguel A.** (with Barceló, Miguel) Conditions of angelic type in function spaces. *Publ. Sec. Mat. Univ. Autònoma Barcelona* 30 (1986), no. 1, 49–57. (W. Govaerts) 89h:54022 54C35 (46A50)
- Intermediate topologies in  $F$ -spaces. *Arch. Math. (Basel)* 51 (1988), no. 2, 147–150. (N. Adasch) 89k:46001 46A06
- Some results in representable Banach spaces. *Publ. Mat.* 32 (1988), no. 1, 79–85. (Jan H. Fourie) 89g:46027 46B20 (46B10, 46M05)
- (with Barceló, Miguel) Conditions of angelic type in function spaces. *Serdica* 14 (1988), no. 1, 3–6. (Mohan L. Tikoo) 89e:54028 54C35 (54A25, 54D30)
- Canfield, E. Rodney** (with Bender, Edward A.; Robinson, Robert W.) The enumeration of maps on the torus and the projective plane. *Canad. Math. Bull.* 31 (1988), no. 3, 257–271. (Jozef Sirán) 89g:05056 05C30
- (with Bender, Edward A.; Robinson, Robert W.) The asymptotic number of tree-rooted maps on a surface. *J. Combin. Theory Ser. A* 48 (1988), no. 2, 156–164. (E. M. Palmer) 89e:05107 05C30 (05C10)
- Canfora, Albino** Extension and applications of C. Miranda’s integral inequality. (Italian) *Ricerche Mat.* 36 (1987), suppl., 53–57. (Bruno Franchi) 89i:35027 35B45 (35J15, 46E35)
- Cangemi, D.** (with Makowka, M.; Wanders, G.) The two-dimensional Minkowski space fermion determinant by example. *Phys. Lett. B* 211 (1988), no. 1–2, 107–110. (Summary) 89h:81171 81E99
- Canino, Annamaria** Large heteroclinic orbits for some evolution equations. *Nonlinear Anal.* 12 (1988), no. 10, 975–987. (Filomena Pacella) 89m:35026 35B40 (35J65, 35Q20, 58E05, 58F15)
- Canjar, R. Michael** Mathias forcing which does not add dominating reals. *Proc. Amer. Math. Soc.* 104 (1988), no. 4, 1239–1248. (Eva Hartová) 89k:03054 03E05 (03E35, 03E40, 04A20)
- Countable ultraproducts without CH. *Ann. Pure Appl. Logic* 37 (1988), no. 1, 1–79. (Alan Mekler) 89g:03073 03E40 (03C20, 03E50)
- Cankova, Iva P.** see Tsankova, Iva P.
- Canmars, Piermarco** (with Vespi, Vincenzo) Existence and uniqueness results for a nonlinear stochastic partial differential equation. *Stochastic partial differential equations and applications (Trento, 1985)*, 1–24, *Lecture Notes in Math.*, 1236, Springer, Berlin-New York, 1987. (P. Kotelenetz) 89g:60191 60H15 (35R60)
- (with Soner, H. M.) On the singularities of the viscosity solutions to Hamilton-Jacobi-Bellman equations. *Indiana Univ. Math. J.* 36 (1987), no. 3, 501–524. (From the introduction) 89m:35044 35F20 (35B25)
- (with Vespi, Vincenzo) Generation of analytic semigroups in the  $L^p$  topology by elliptic operators in  $\mathbb{R}^n$ . *Israel J. Math.* 61 (1988), no. 3, 235–255. (J. A. Goldstein) 89h:35087 35J15 (35K15, 35P05, 47F05)
- (with Da Prato, G.; Zolésio, J.-P.) Dynamical shape control of the heat equation. *Systems Control Lett.* 12 (1989), no. 2, 103–109. (Summary) 89m:49047 49C20 (76D05, 80A20, 93C20)
- Cannata, F.** (with Ferrari, L.) Dimensions of relativistic quantum mechanical paths. *Amer. J. Phys.* 56 (1988), no. 8, 721–725. (G. Albinus) 89j:81022 81C05 (81C99)
- Canell, David S.** (with Meyer, Christopher W.) Introduction to convection. *Random fluctuations and pattern growth (Cargèse, 1988)*, 263–268, *NATO Adv. Sci. Inst. Ser. E: Appl. Sci.*, 157, Kluwer Acad. Publ., Dordrecht, 1988. (see 89j:00034) 76E15
- Canillo, Tullio** see Pais, Abraham, 89f:01074
- Cannings, C.** (with Biggins, J. D.) Markov renewal processes, counters and repeated sequences in Markov chains. *Adv. in Appl. Probab.* 19 (1987), no. 3, 521–545. (Peter Purdue) 89b:60203 60K15 (92A10)
- (with Law, R.) Conditions for the initial increase of new alleles with frequency dependent selection. *J. Math. Biol.* 25 (1987), no. 5, 465–476. (Edward Pollak) 89e:92036 92A10
- (with Vickers, G. T.) On the number of stable equilibria in a one-locus, multi-allelic system. *J. Theoret. Biol.* 131 (1988), no. 3, 273–277. (Peter Arzberger) 89g:92032 92A10
- (with Vickers, G. T.) Patterns of ESSs. I, II. *J. Theoret. Biol.* 132 (1988), no. 4, 387–408, 409–420. (W. Gordon S. Hines) 89g:92076 92A18 (05C80, 92A12)
- Cannizzo, Aurelio** (with Rodonò, Lucia G.) Solutions of Artin equations in extended Euler form. (Italian. English summary) *Istit. Lombardo Accad. Sci. Lett. Rend. A* 119 (1985), 51–64 (1987). (J. Aczél) 89h:39004 39A10 (26A51, 33A15)
- Cannon, John R.** (with Lin, Yanping) Determination of a parameter  $p(t)$  in some quasilinear parabolic differential equations. *Inverse Problems* 4 (1988), no. 1, 35–45. (Dang Dinh Ang) 89h:35333 35R30 (35K55)



- (with Knightly, George H.) Some remarks on a quasi-steady-state approximation of the Navier-Stokes equation. *J. Austral. Math. Soc. Ser. B* 29 (1988), no. 4, 440–447. (F. Milinazzo) **89c:76037** 76D03 (65N99)
- (with Yin, Hong Ming) On the existence of the weak solution and the regularity of the free boundary to a one-dimensional two-phase degenerate Stefan problem. *J. Differential Equations* 73 (1988), no. 1, 104–118. (A. Visintin) **89f:35217** 35R35 (35D05)
- Canny, John** ★ The complexity of robot motion planning. ACM Doctoral Dissertation Awards, 1987. MIT Press, Cambridge, MA-London, 1988. xviii+197 pp. ISBN 0-262-03136-1 (W. A. Gruver) **89m:68142** 68U30 (68Q25, 90B40, 93C99)
- (with Donald, Bruce) Simplified Voronoi diagrams. Third ACM Symposium on Computational Geometry (Waterloo, Ont., 1987). *Discrete Comput. Geom.* 3 (1988), no. 3, 219–236. (Summary) **89c:68092** 68U05 (52-04)
- Cano, F.** Techniques pour la désingularisation des champs de vecteurs. [Techniques for the desingularization of vector fields] *Géométrie algébrique et applications, II (La Rabida, 1984)*, 15–26, *Travaux en Cours*, 23, Hermann, Paris, 1987. (M. G. Soares) **89a:14006** 14B05 (14E15, 32C40)
- (with Piedra Sánchez, Ramón) Characteristic polygon of surface singularities. *Géométrie algébrique et applications, II (La Rabida, 1984)*, 27–42, *Travaux en Cours*, 23, Hermann, Paris, 1987. (Kurt Behnke) **89c:14051** 14J17 (14B05, 14E15)
- Local and global results on the desingularization of three-dimensional vector fields. Singularités d'équations différentielles (Dijon, 1985). *Astérisque* No. 150-151 (1987), 15–58, 185. (M. G. Soares) **89c:14013** 14E15 (14B05, 14E35)
- Dierichness of a singular foliation. *Holomorphic dynamics (Mexico, 1986)*, 73–94, *Lecture Notes in Math.*, 1345, Springer, Berlin-New York, 1988. (Dominique Cerveau) **89m:57026** 57R30 (32L99, 58F18)
- (with Cerveau, Dominique) Le problème de la séparatrice: une conséquence de la réduction des singularités de feuilletages. (English summary) [Existence of a separatrix: a consequence of reducing the singularities of foliations] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 8, 387–390. (Dietrich Flocker) **89m:58151** 58F14 (57R30)
- Cano, Edouard** (with Achard, Jean-Luc) Formulation intégrale-différentielle pour les écoulements transitoires d'un fluide isovolume et visqueux. (English summary) [Integro-differential formulation of a time-dependent incompressible viscous flow problem] *J. Méc. Théor. Appl.* 7 (1988), no. 5, 645–682. (Paul G. Schmidt) **89m:76025** 76D05
- Cantalebe, B.** (with Rehbach, C.) Computation of the pressure in an incompressible rotational flow of inviscid fluid. *Rech. Aéropat. (English Edition)* 1988, no. 2, 57–61; translated from *Rech. Aéropat.* 1988, no. 2, 57–61 (French, English summary). (Summary) **89c:76006** 76-08 (76C05)
- Cantalebe, Yves** Light amplification behind a beam splitter, nonlocality and interpretation of quantum mechanics. *Microphysical reality and quantum formalism, Vol. 1, 2 (Urbino, 1985)*, 267–283, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89m:81009** 81B05 (81-03)
- Castell, Francesco Paolo** see Bezi, Margherita, **89c:01022**
- Canto e Castro, L.** Uniform forms of convergence in extreme-value theory—normal and gamma models. *Ann. Sci. Univ. Clermont-Ferrand II Probab. Appl. No. 6* (1987), 25–41. (C. W. Anderson) **89c:60022** 60F05 (62G99)
- Canione, D.** (with Ferro, Alfredo; Omodeo, E. G.) Decision procedures for elementary sublanguages of set theory. VIII. A semidecision procedure for finite satisfiability of unquantified set-theoretic formulae. *Comm. Pure Appl. Math.* 41 (1988), no. 1, 105–120. (G. Asser) **89c:03085** 03E30 (03B25)
- (with Ghelfo, Susanna; Omodeo, E. G.) The automation of syllogistic. I. Syllogistic normal forms. *J. Symbolic Comput.* 6 (1988), no. 1, 83–98. (Hans-Joachim Goltz) **89i:68111** 68T15 (03B35, 68R10)
- Cantoni, Vittorio** (with Logli, Augusto) Intrinsic properties of a physical system and uncertainty principles. (Italian. English summary) *Boll. Un. Mat. Ital. B* (7) 2 (1988), no. 2, 267–278. (A. Barchielli) **89m:81010** 81B05
- Cantor, Georg** see Stern, Manfred, **89b:01081** and Bunn, Robert, (Not in MR)
- Cantrell, Robert Stephen** (with Cosner, Chris) On the steady-state problem for the Volterra-Lotka competition model with diffusion. *Houston J. Math.* 13 (1987), no. 3, 337–352. (Mario Primicerio) **89d:92052** 92A15 (35J99, 35K99)
- On the simplicity and uniqueness of positive eigenvalues admitting positive eigenfunctions for weakly coupled elliptic systems. Nonlinear Partial Differential Equations Conference (Salt Lake City, UT, 1986). *Rocky Mountain J. Math.* 18 (1988), no. 2, 269–275. (Robert M. Kauffman) **89i:35100** 35P05 (35J25, 35J65)
- Cantrijn, F.** On the geometry of degenerate Lagrangians. *Differential geometry and its applications, communications (Brno, 1986)*, 43–53, *Univ. J. E. Purkyně, Brno*, 1987. (H. S. P. Grässer) **89c:58082** 58F05 (70H35)
- (with Sarlet, W.; Crampin, M.) Pseudosymmetries, Noether's theorem and the adjoint equation. *J. Phys. A* 20 (1987), no. 6, 1365–1376. (Summary) **89b:58187** 58F37 (58F05, 70H35)
- Cantwell, John** (with Conlon, Lawrence) Every surface is a leaf. *Topology* 26 (1987), no. 3, 265–285. (Introduction) **89d:57039** 57R30
- (with Conlon, Lawrence) The theory of levels. *Index theory of elliptic operators, foliations, and operator algebras (New Orleans, LA/Indianapolis, IN, 1986)*, 1–10, *Contemp. Math.*, 70, Amer. Math. Soc., Providence, RI, 1988. (Claude Lamoureux) **89m:58196** 58G12 (46L55, 57R30, 58F18)
- Canuto, Claudio** Boundary conditions in Chebyshev and Legendre methods. *SIAM J. Numer. Anal.* 23 (1986), no. 4, 815–831. (Wolfgang Moldenhauer) **89b:65287** 65N35
- Topics in spectral methods for hyperbolic equations. *Partial differential equations of hyperbolic type and applications, 1–32*, *World Sci. Publishing, Singapore*, 1987. (Summary) **89m:65084** 65M10
- (with Quarteroni, A.) On the boundary treatment in spectral methods for hyperbolic systems. *J. Comput. Phys.* 71 (1987), no. 1, 100–110. (N. Gass) **89c:65128** 65N35
- (with Hussaini, M. Y.; Quarteroni, A.; Zang, T. A.) ★ Spectral methods in fluid dynamics. Springer Series in Computational Physics. Springer-Verlag, New York-Berlin, 1988. xiv+557 pp. ISBN 0-387-17371-4 (From the preface) **89m:76004** 76-08 (65-02, 76-02)
- Spectral methods and a maximum principle. *Math. Comp.* 51 (1988), no. 184, 615–629. (Dragoslav Herceg) **89d:65099** 65N30 (65N35)
- (with Funaro, D.) The Schwarz algorithm for spectral methods. *SIAM J. Numer. Anal.* 25 (1988), no. 1, 24–40. (Viorcel Arnautu) **89b:65286** 65N35 (65N30)
- Canuto, Giuseppe** (with Bertolini, Massimo) Good reduction of elliptic curves defined over  $\mathbb{Q}(\sqrt{2})$ . *Arch. Math. (Basel)* 50 (1988), no. 1, 42–50. (M. A. Kenku) **89d:11046** 11G05 (14G25)
- Cao, Ce Wen** Lax representation of the restricted 3 + 1 sine-Gordon equation. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 18, 1369–1371. (Not in MR) **58G37** (35Q20)
- (with Cao, Ying Luo) A calculation of upper and lower bounds for the smallest eigenvalue, using intermediate operators. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* 10 (1988), no. 3, 285–288. (Zeng Rong Chen) **89c:65102** 65L15
- Cao, Chong Guang** Some theorems on self-conjugate quaternion matrices. (Chinese. English summary) *J. Math. Res. Exposition* 8 (1988), no. 3, 346–348. (Ji-guang Sun) **89c:15031** 15A48 (15A57)
- Cao, Da Song** Index functions of graphs. (Chinese. English summary) *J. East China Norm. Univ. Natur. Sci. Ed.* 1987, no. 4, 1–8. (Qiao Li) **89m:05084** 05C50
- Cao, Guanghui** (with Banerjee, P. P.) Periodic and aperiodic solitary wave solutions of the nonlinear Klein-Gordon equation without dispersion. *J. Phys. A* 21 (1988), no. 1, 55–71. (John Albert) **89b:35276** 35Q20 (35L70, 81C05)
- (with Banerjee, P. P.) Interaction of baseband and envelope solitary wave solutions of the nonlinear Klein-Gordon equation with dispersion. *Wave Motion* 10 (1988), no. 4, 323–331. (Summary) **89c:65155** 65P05 (35L70, 35Q20)
- Cao, Hai Xing** (with Wang, Cheng Dao) A clustering method for topological structures, based on Sugeno measures. (Chinese. English summary) *J. East China Norm. Univ. Natur. Sci. Ed.* 1988, no. 1, 40–44. (Not in MR) **68T10** (03E72)
- Fast fuzzy systems. (Chinese. English summary) *J. Systems Sci. Math. Sci.* 8 (1988), no. 2, 127–133. (Summary) **89c:94055** 94D05 (03E72)
- Cao, Hong Xing** (with Yin, Xiao Rong) Multidimensional fuzzy Markov process and its application to the study of climate impact on economics. (Chinese summary) *Math. Appl.* 1 (1988), no. 1-2, 29–37. (Summary) **89m:60206** 60J99 (03E72, 90A20, 92A17)
- Cao, Inlo** see Cao, Ying Luo
- Cao, Jian Min** (with Wang, Shun Jin) Solution of Elliott's SU(3) model in a continuous variable representation. (Chinese. English summary) *High Energy Phys. Nuclear Phys.* 12 (1988), no. 4, 557–567. (Summary) **89j:81260** 81G30
- Cao, Jian Zhong** A decomposable quasilinear operator is a normal operator. (Chinese) An English summary appears in *Chinese Ann. Math. Ser. B* 8 (1987), no. 4, 489. *Chinese Ann. Math. Ser. A* 8 (1987), no. 5, 580–583. (Sheng Wang Wang) **89c:47029** 47B15 (47B40)
- Cao, Ke Fei** (with Peng, Shou Li) A new global regularity of fractal dimensions on critical points of transitions to chaos. *Phys. Lett. A* 131 (1988), no. 4-5, 261–264. (Summary) **89c:58137** 58F13 (26A18, 58F08, 82A25)
- Cao, Li** (with Wu, Da Jin) Spatial structure for a quasi-three-dimensional Brusselator. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 5, 27–30. (Summary) **89c:92084** 92A40 (58F14)
- (with Wu, Da Jin) A quasithermodynamic analysis of nonequilibrium fluid-fluid reaction interfaces. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 16 (1988), no. 1, part 1, 23–28. (Summary) **89f:80013** 80A32 (76R10)
- Cao, Min Qian** A formula for evaluating the permanents of a class of  $(0, 1)$ -matrices of order  $n \geq 3$  with row and column sums equal to 3. (Chinese) *J. Shanghai Jiaotong Univ.* 22 (1988), no. 2, 104–105. (Not in MR) 15A15
- Cao, Qing Jie** On some theorems of Lyapunov's asymptotic stability. *Ann. Differential Equations* 3 (1987), no. 2, 133–143. (L. Pintér) **89b:34113** 34D05 (93D20)
- (with Meng, Fan Wei) Asymptotic properties of the solutions of a class of differential equations. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 13 (1987), no. 4, 171–174. (Summary) **89b:34127** 34E05
- Cao, Sheng Lin** The theory of relativity and superluminal-speeds. I. Kinematical part. *Astrophys. and Space Sci.* 145 (1988), no. 2, 293–302. (Summary) **89i:83002** 83A05
- Cao, Sheng Yan** (with Zhao, You Yuan) Progeny testing for the maximum genetic gain in unit cost. (Chinese. English summary) *J. Biomath.* 3 (1988), no. 2, 117–121. (Summary) **89j:92044** 92A10
- Cao, Wei Ming** (with Guo, Ben Yu) The Fourier pseudospectral method with a restrain operator for the RLW equation. *J. Comput. Phys.* 74 (1988), no. 1, 110–126. (P. C. Jain) **89c:76039** 76B25 (65M05, 76-08)
- Cao, Xi-Ren** Realization probability in multi-class closed queueing networks. *European J. Oper. Res.* 36 (1988), no. 3, 393–401. (Introduction) **89c:90066** 90B22 (60K25)
- (with Heidelberger, Philip; Zazanis, Michael A.; Suri, Rajan) Convergence properties of infinitesimal perturbation analysis estimates. *Management Sci.* 34 (1988), no. 11, 1281–1302. (Summary) **89i:90036** 90B22
- The static property of a perturbed multiclass closed queueing network and decomposition. *IEEE Trans. Automat. Control* 34 (1989), no. 2, 246–249. (Summary) **89j:90122** 90B22
- Cao, Xian Tong** (with Chen, Lan Sun) A note on the uniqueness of limit cycles in two species predator-prey system. *Ann. Differential Equations* 2 (1986), no. 4, 415–417. (Summary) **89c:92042** 92A15 (34C05)
- (with Chen, Lan Sun) The problem of limit cycles of generalized Volterra equations. (Chinese) *J. Math. Res. Exposition* 6 (1986), no. 3, 53–56. (Yang Kuang) **89d:92053** 92A15 (34C05, 58F14, 58F21)
- Cao, Xiang Yan** The  $p$ -adic differentiability of Walsh series. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* 5 (1988), no. 1, 113–120. (Zhong De Wang) **89m:42022** 42C10
- Cao, Xuan Chuan** Generalisation of the theory of coupled differential equations. *J. Phys. A* 21 (1988), no. 3, 617–624. (Ivan Ginchev) **89c:34015** 34A30 (34C20)
- Cao, Ya Yan** (with Ouyang, Zi Xiang) The quasicondition number of a matrix and interpolation problems. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* 5 (1988), no. 1, 107–112. (Summary) **89j:65039** 65F35 (15A12)
- Cao, Yi** (with Zhang, Guo Bin) Mistakes in the paper "New proofs of some theorems on infinitely differentiable functions" [Bull. Austral. Math. Soc. 17 (1977), no. 2, 161–175; MR 57 #7650] by M. A. B. Deakin. *J. Math. Res. Exposition* 6 (1986), no. 3, 163–164. (Editors) **89m:58027** 58C27
- Cao, Ying Luo** (with Cao, Ce Wen) A calculation of upper and lower bounds for the smallest eigenvalue, using intermediate operators. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* 10 (1988), no. 3, 285–288. (Zeng Rong Chen) **89c:65102** 65L15
- Cao, You An** A generator theorem for the orthogonal group  $O_n(V)$ . (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* 1987, no. 4, 10–14. (Zhe-xian Wan) **89j:20049** 20G15 (11E57)

- Symplectic groups over a stable ring. (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* 10 (1988), no. 2, 7–14. (Zhe-xian Wan) **89m:20048** 20G35
- Cao, Yu Fang** (with Pan, Feng) Some isoscalar factors for  $SO_N \supset SO_{N-1}$  and state expansion coefficients for  $SO_N \supset SO_{N-1}$  in terms of  $SU_N \supset SU_{N-1} \supset SO_{N-1}$ . *J. Math. Phys.* 29 (1988), no. 11, 2384–2388. (Summary) **89h:22046** 22E70 (81C40)
- Cao, Yu Shu** On the equation  $a^2 - b^2 = 22^2$ . (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* 1987, no. 4, 18–22. (Editors) **89c:11052** 11D61
- Cao, Z.-Q.** see **Cao, Zhi Qiang**
- Cao, Zhen Fu** (with Wang, Du Zheng) On the Diophantine equations  $x^{2a} - Dy^2 = 1$  and  $x^2 - Dy^{2a} = 1$ . (Chinese) *Yangzhou Shiyan Ziran Kexue Xuebao* 1985, no. 2, 16–18. (Lian Xiang Wang) **89f:11048** 11D41
- An Erdős conjecture, Pell sequences and Diophantine equations. *J. Harbin Inst. Tech.* 1987, no. 2, 122–124. (Md. Fazlee Hossain) **89b:11022** 11D41 (11D57)
- Exponential Diophantine equations of the form  $a^2 + b^2 = c^2$ . (Chinese. English summary) *J. Harbin Inst. Tech.* 1987, no. 4, 113–121, 112. (Qi Sun) **89k:11016** 11D61
- (with Sun, Qi) On the equation  $\sum_{j=1}^n 1/x_j + 1/x_1 \cdots x_n = 1$ . (Chinese. English summary) *J. Math. Res. Exposition* 7 (1987), no. 1, 125–128. (Summary) **89b:11029** 11D68
- On a problem of Rotkiewicz. (Chinese) *J. Math. Res. Exposition* 7 (1987), no. 2, 319–320, 318. (Sun Qi) **89j:11008** 11A55
- On a problem of Hall. (Chinese. English summary) *J. Math. Res. Exposition* 7 (1987), no. 3, 411–413. (Summary) **89b:11023** 11D41
- (with Liu, Rui; Zhang, Liang Rui) On the equation  $\sum_{j=1}^n (1/x_j) + (1/(x_1 \cdots x_n)) = 1$  and Znam's problem. *J. Number Theory* 27 (1987), no. 2, 206–211. (Sun Qi) **89d:11023** 11D68 (11A05)
- (with Wang, Du Zheng) On a problem of Hugh Edgar. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 14, 1043–1046. (Not in MR) 11D61
- (with Sun, Qi) On the equation  $\sum_{j=1}^n 1/x_j + 1/x_1 \cdots x_n = n$  and the number of solutions of Znam's problem. (Chinese. English summary) *Dongbei Shuxue* 4 (1988), no. 1, 43–48. (Summary) **89j:11005** 11A07 (11D68)
- (with Sun, Qi) On the Diophantine equations  $x^2 + D^m = p^n$  and  $x^2 + 2^m = y^n$ . (Chinese. English summary) *Sichuan Daxue Xuebao* 25 (1988), no. 2, 164–169. (Summary) **89j:11029** 11D61
- Cao, Zhen Zong** Nontrivial solutions of nonlinear degenerate elliptic boundary value problems. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* 27 (1988), no. 2, 159–164. (Summary) **89m:35087** 35J70 (35J60)
- Multiple solutions of nonlinear degenerate elliptic boundary value problems. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* 27 (1988), no. 5, 587–589. (Summary) **89m:35088** 35J70 (35J60)
- Cao, Zhi Hao** Solving large sparse linear and quadratic generalized eigenvalue problems. *J. Math. Res. Exposition* 5 (1985), no. 2, 27–33. (Vasile I. Ionescu) **89a:65059** 65F15 (49G20, 73K30)
- Residual bounds on approximate deflation pair systems of a generalized eigenvalue problem. (Chinese. English summary) *Math. Numer. Sinica* 9 (1987), no. 2, 113–118. (T. Y. Li) **89a:65060** 65F15
- The contraction numbers of some nonstandard multigrid methods. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* 10 (1988), no. 1, 41–54. (From the summary) **89k:65149** 65N99
- Cao, Zhi Jiang** Analytic descriptions of selfadjoint ordinary differential operators. (Chinese. English summary) *Neimenggu Daxue Xuebao* 18 (1987), no. 3, 393–401. (Summary) **89a:47072** 47E05 (34B25)
- Cao, Zhi Qiang** (with Kim, Ki Hang; Roush, F. W.) ★ Incline algebra and applications. Ellis Horwood Series: Mathematics and its Applications. Ellis Horwood Ltd., Chichester; Halsted Press [John Wiley & Sons, Inc.], New York, 1984. xiv+165 pp. ISBN 0-85312-765-4 (S. V. Ovchinnikov) **89b:08001** 08-02 (03E72, 90A05, 90A08, 92A25)
- nguyên Cao Thang** see **Nguyễn Cao Thang**
- Capasso, V.** (with Kunisch, K.) A reaction-diffusion system arising in modelling man-environment diseases. *Quart. Appl. Math.* 46 (1988), no. 3, 431–450. (Si Ning Zheng) **89k:92049** 92A15 (35K57)
- Capel, H. W.** (with van der Weele, J. P.; Kluiving, R.) Period doubling in maps with a maximum of order  $z$ . *Phys. A* 145 (1987), no. 3, 425–460. (Summary) **89f:58109** 58F14 (58F08)
- (with Wiersma, G. L.) Lattice equations, hierarchies and Hamiltonian structures: the Kadomtsev-Petviashvili equation. *Phys. Lett. A* 124 (1987), no. 3, 124–130. (Allan P. Fordy) **89f:35189** 35Q20 (58F07, 58G37)
- (with van der Weele, J. P.; Valkering, T. P.; Post, T.) The squeeze effect in nonintegrable Hamiltonian systems. *Phys. A* 147 (1988), no. 3, 499–532. (P. Hagedorn) **89b:58082** 58F05 (58F14, 70H05)
- (with Elezović-Hadžić, S.; Milošević, S.; Wiersma, G. L.) Exact renormalization group treatment of the piecewise directed random walks on fractals. *Phys. A* 150 (1988), no. 2, 402–418. (Preben Alström) **89f:82039** 82A41 (82A25, 82A68)
- (with van der Weele, J. P.; Valkering, T. P.; Post, T.) The birth of twin Poincaré-Birkhoff chains near 1:3 resonance. *Phys. A* 153 (1988), no. 2, 283–294. (Summary) **89i:58109** 58F14 (58F05, 70H05, 70K30)
- (with Post, T.; van der Weele, J. P.) Short-phase anomalies in intermittent band switching. *Phys. Lett. A* 133 (1988), no. 7-8, 373–377. (Introduction) **89i:58097** 58F13
- Capelo, António** (with Baiocchi, Claudio) ★ Вариационные и квазивариационные неравенства. (Russian) [Variational and quasivariational inequalities] Приложения к задачам со свободной границей. [Applications to free boundary problems] Translated from the English by V. I. Agoshkov, E. E. Ovchinnikov and V. P. Shutyayev. Translation edited and with a preface by Agoshkov. "Nauka", Moscow, 1988. 448 pp. ISBN 5-02-013766-9 (Editors) **89m:49012** 49A29 (35R35, 46N05)
- Capérà, Philippe** (with Van Cutsem, Bernard) ★ Méthodes et modèles en statistique non paramétrique. (French) [Methods and models in nonparametric statistics] Exposé fondamental. [Basic exposition] With a foreword by Capérà, Van Cutsem and Alain Baillie. Les Presses de l'Université Laval, Sainte-Foy, Dunod, Paris, 1988. xvi+359 pp. ISBN 2-7637-7145-9 (Table of Contents) **89c:62069** 62Gxx
- Tail ordering and asymptotic efficiency of rank tests. *Ann. Statist.* 16 (1988), no. 1, 470–478. (J. V. Deshpande) **89a:62117** 62G20 (60E05, 62G10)
- Capletto, A.** (with Zanolin, Fabio) An existence theorem for periodic solutions in convex sets with applications. *Resultate Math.* 14 (1988), no. 1-2, 10–29. (Maria Patrizia Pera)
- 89g:34051** 34C25 (34B15, 34C35, 58E05, 58F22)
- fuster Capilla, Robert** see **Fuster Capilla, Robert**
- Capocelli, R. M.** (with Gargano, L.; Vaccaro, U.) A model for communication over noisy channels. *Physics of cognitive processes (Amalfi, 1986)*, 117–162, *World Sci. Publishing, Singapore*, 1987. (S. Csibi) **89a:94003** 94A05 (94B60)
- (with Giancarlo, Raffaele) Efficient VLSI networks for converting an integer from binary system to residue number system and vice versa. *IEEE Trans. Circuits and Systems* 35 (1988), no. 11, 1425–1430. (Charles J. Colbourn) **89i:68066** 68Q35 (68Q10, 68Q25, 94C99)
- (with De Santis, Alfredo; Taneja, Inder Jeet) Bounds on the entropy series. *IEEE Trans. Inform. Theory* 34 (1988), no. 1, 134–138. (Summary) **89b:94012** 94A17
- Capodanno, Pierre** Une généralisation d'un problème de Tchetayev. I. Équations du mouvement. (English and Russian summaries) [A generalization of a problem of Chetaev. I. Equations of motion] *Bull. Polish Acad. Sci. Tech. Sci.* 34 (1986), no. 1-2, 1–9. (Summary) **89c:70009** 70E99
- Une généralisation d'un problème de Tchetayev. II. Stabilité d'un mouvement particulier du système. (English and Russian summaries) [A generalization of a problem of Chetaev. II. Stability of a particular motion of the system] *Bull. Polish Acad. Sci. Tech. Sci.* 34 (1986), no. 1-2, 11–17. (Summary) **89c:70010** 70E99
- Sur les petites oscillations d'un pendule élastique contenant un liquide. (English and Russian summaries) [Small oscillations of an elastic pendulum containing a liquid] *Bull. Polish Acad. Sci. Tech. Sci.* 35 (1987), no. 7-8, 435–451. (Summary) **89c:73043** 73J06 (34C15)
- Sur les petites oscillations planes d'un liquide dans un récipient fixe fermé par un couvercle élastique. (English summary) [On the plane small oscillations of a liquid in a fixed container closed by an elastic cover] *J. Méc. Théor. Appl.* 7 (1988), no. 1, 21–33. (A. Jami) **89f:76023** 76B99 (73J06)
- Petites oscillations planes de deux liquides pesants non miscibles dans un vase fixe. [Small plane oscillations of two immiscible heavy liquids in a fixed vessel] *Mech. Res. Comm.* 15 (1988), no. 4, 243–247. (Summary) **89e:76024** 76B99 (76B10, 76T05)
- Capozzi, A.** On a class of nonlinear problems with lack of compactness. *Periodic solutions of Hamiltonian systems and related topics (Il Ciocco, 1986)*, 89–91, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 209, Reidel, Dordrecht-Boston, MA, 1987. (Summary) **89a:58025** 58E05 (34C25, 35B10, 58F05, 58F22)
- CapPELL, Sylvaín** (with Ruberman, Daniel) Imbeddings and homology cobordisms of lens spaces. *Comment. Math. Helv.* 63 (1988), no. 1, 75–88. (A. A. Ranicki) **89c:57040** 57R40 (19G24, 57Q60)
- (with Weinberger, Shmuel) Which  $H$ -spaces are manifolds? I. *Topology* 27 (1988), no. 4, 377–386. (A. A. Ranicki) **89k:57066** 57R67 (19M05, 55P45, 57-02)
- CapPELL, A.** (with Izykson, C.; Zuber, J.-B.) The A-D-E classification of minimal and  $A^{(1)}$  conformal invariant theories. *Comm. Math. Phys.* 113 (1987), no. 1, 1–26. (Andrew A. Bytsenko) **89b:81178** 81E99 (11F22, 17B67, 81E40, 82A68)
- Capps, Richard H.** Representations of  $E_4$  and other algebras. *J. Math. Phys.* 28 (1987), no. 6, 1215–1222. (Summary) **89b:17011** 17B10 (17B25)
- Geometrical classification scheme for weights of Lie algebras. *J. Math. Phys.* 29 (1988), no. 8, 1732–1735. (Ronald C. King) **89b:17005** 17B10
- Capri, A. Z.** (with Kobayashi, Masanori) The first-rank tensor field coupled to an electromagnetic field. *J. Phys. A* 20 (1987), no. 17, 6101–6112. (Summary) **89b:81089** 81D25 (81G10)
- (with Ferrari, R.) Zero-energy modes and Lüders' theorem. (French summary) *Canad. J. Phys.* 66 (1988), no. 12, 1040–1043. (Summary) **89m:81084** 81E05
- Capri, O. N.** (with Fava, N. A.) A generalization of Yano's extrapolation theorem. *Portugal. Math.* 44 (1987), no. 4, 371–378. (Summary) **89i:42028** 42B25 (28A99, 47H99)
- Capria, M. Mamone** (with Salamon, S. M.) Yang-Mills fields on quaternionic spaces. *Nonlinearity* 1 (1988), no. 4, 517–530. (Yang Lian Pan) **89k:58064** 58E15 (53C55)
- Caprino, S.** (with Marchioro, Carlo) On nonlinear stability of stationary Euler flows on a rotating sphere. *J. Math. Anal. Appl.* 129 (1988), no. 1, 24–36. (D. A. Nield) **89f:76012** 76E30 (58D25)
- Capriz, Gianfranco** (with Virga, Epifanio G.) Examples of nonuniqueness in linear viscoelasticity. (Italian) Writings in mathematical physics in honor of the ninetieth birthday of Cataldo Agostinelli (Italian). *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* 120 (1986), suppl., 81–86 (1987). (Introduction) **89b:73023** 73F15 (73F20)
- (with Virga, Epifanio G.) A uniqueness theorem in linear viscoelasticity. (Italian. English summary) *Rend. Sem. Mat. Univ. Padova* 79 (1988), 15–24. (Stan Chirijă) **89j:73052** 73F15
- Capursi, Mauro** (with Palombella, Antonia) On the almost Hermitian structures associated to a generalized Lagrange space. (Italian summary) *Mem. Sect. Stint. Acad. Repub. Soc. Romania Ser. IV* 8 (1985), no. 1, 57–63 (1987). (S. Watanabe) **89g:53105** 53C60
- (with Dragomir, Sorin) On the topology of Landsberg spaces. (Italian summary) *Riv. Mat. Univ. Parma* (4) 13 (1987), 305–313 (1988). (H. Rund) **89m:53124** 53C60
- Capuzzo-Dolcetta, L.** (with Menaldi, José-Luis) On the deterministic optimal stopping time problem in the ergodic case. *Theory and applications of nonlinear control systems (Stockholm, 1985)*, 453–460, *North-Holland, Amsterdam-New York*, 1986. (Winston T. Lin) **89c:49020** 49C20
- Hamilton-Jacobi equations with constraints. *Stochastic differential systems, stochastic control theory and applications (Minneapolis, Minn., 1986)*, 99–106, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (Stefan Mirica) **89c:49019** 49C20 (35B37, 35F30)
- (with Menaldi, José-Luis) Asymptotic behavior of the first order obstacle problem. *J. Differential Equations* 75 (1988), no. 2, 303–328. (Viorel Arnaud) **89j:49023** 49C20 (35B40, 35C20, 35R99)
- see also **ECM/87. Educational computing in mathematics**, **89f:00024**
- Car, Mireille** Un problème de diviseurs dans  $F_q[X]$ . [A problem of divisors in  $F_q[X]$ ] *Acta Arith.* 50 (1988), no. 4, 339–350. (S. D. Cohen) **89m:11116** 11T06
- Carabineanu, A.** Application of conformal transformation methods in the theory of thin airfoils. (Romanian) *Stud. Cerc. Mec. Apl.* 47 (1988), no. 1, 25–28. (Summary) **89e:76016** 76B05
- Caracciolo, S.** (with Radicati di Brozolo, Luigi A.) Entropy and data acquisition. *Wandering in the fields*, 227–243, *World Sci. Publishing, Singapore*, 1987. (see **89m:81002**) 28D99



- (with Pelissetto, A.) Phases and topological structures of de Sitter lattice gravity. *Nuclear Phys. B* **299** (1988), no. 4, 693–718. (Ruth M. Williams) **89g:83025** 83C45 (83C27)
- Caraman, Petru** Quasiconformal mappings between Riemann-Wiener manifolds and between  $HC^1$ -surfaces of an abstract Wiener space. (French summary) *Mem. Sec. Ştiinţ. Acad. Repub. Soc. România Ser. IV* **8** (1985), no. 1, 9–32 (1987). (C. J. Atkin) **89k:58029** 58B20 (30C60, 58C35)
- Discoidal quasiregular (DQR) functions in  $\mathbb{H}$ . *An. Ştiinţ. Univ. "Al. I. Cuza" Iaşi Sec. I a Mat. (N.S.)* **33** (1987), no. 2, 107–112. (S. B. Agard) **89e:30035** 30C60 (30C80, 46G20)
- Differentiability of quasiconformal mappings in abstract Wiener spaces. *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 2, 121–129. (Warren Page) **89h:46068a** 46G05 (30C60, 58C20)
- Corrigenda to: "Differentiability of quasiconformal mappings in abstract Wiener spaces". *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 8, 759. (Warren Page) **89h:46068b** 46G05 (30C60, 58C20)
- Locally bi-Lipschitz mappings as a subclass of quasiconformal homeomorphisms in a normed space. *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 10, 891–894. (S. B. Agard) **89e:30036** 30C60
- Carandell, Joan** see al-Andalusi, Muhammad Ibn al-Raqqam, **89c:01007**
- Carasso, A. S.** Deconvolution in slow motion and the experimental determination of the impulse response of a linear time invariant system. *Mathematics in signal processing (Bath, 1985)*, 193–212, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (Manfred Tasche) **89c:35153** 35R30 (45D05, 93B30)
- (with Simiu, Emil) Identification of dynamic Green's functions in structural networks. *AIAA J.* **27** (1989), no. 4, 492–499. (Not in MR) **93B30** (73K99)
- Carathéodory, Constantin** see Shields, Allen, **89c:01037**
- Carayol, Henri** Sur les représentations  $l$ -adiques associées aux formes modulaires de Hilbert. [On  $l$ -adic representations associated with Hilbert modular forms] *Ann. Sci. École Norm. Sup. (4)* **19** (1986), no. 3, 409–468. (S. Raghavan (Zbl 616:10025)) **89i:11083** 11F70 (11F55, 11F67, 11G25)
- hermoso Carazo, A.** see Hermoso Carazo, A.
- Carbery, Anthony** Variants of the Calderón-Zygmund theory for  $L^p$ -spaces. *Rev. Mat. Iberoamericana* **2** (1986), no. 4, 381–396. (M. Cotlar) **89f:42011** 42B20 (42B25, 47B38, 47G05)
- Differentiation in lacunary directions and an extension of the Marcinkiewicz multiplier theorem. (French summary) *Ann. Inst. Fourier (Grenoble)* **38** (1988), no. 1, 157–168. (Akihiko Miyachi) **89h:42026** 42B25 (42B15)
- Carbonaro, Bruno** (with Russo, Remigio) On wave propagation and uniqueness in nonviscous fluid dynamics. *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* **14** (1987), no. 3, 389–402 (1988). (P. M. Santini) **89j:35105** 35Q10 (35B30, 76B15)
- (with Ignaczak, Józef) Some theorems in temperature-rate-dependent thermoelasticity for unbounded domains. *J. Thermal Stresses* **10** (1987), no. 3, 193–220. (S. Dost) **89g:73044** 73U05 (73C25)
- (with Russo, Remigio) Examples of nonuniqueness and nonvalidity of the domain of influence theorem for a linear elastodynamic differential system. (Italian, English summary) *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 1, 37–53. (Summary) **89e:73028** 73D99
- Addendum to: "Some examples of nonuniqueness of solutions to the equation of linear elastodynamics" [*J. Elasticity* **17** (1987), no. 3, 207–222; MR **88d:73020**]. *J. Elasticity* **19** (1988), no. 1, 93–98. (From the text) **89c:73023** 73D99 (35L20, 73C15)
- Carbonaro, P.** Exceptional relativistic gas dynamics. *Phys. Lett. A* **129** (1988), no. 7, 372–376. (Summary) **89d:83046** 83C55 (76Y05)
- Carbone, A.** Small perturbations of nonlinear equations. (Italian summary) *Boll. Un. Mat. Ital. B (7)* **1** (1987), no. 4, 1139–1150. (Heinrich Steinlein) **89c:47076** 47H15
- (with Singh, Sankatha Prasad) Fixed point theorems for Altman type mappings. *Indian J. Pure Appl. Math.* **18** (1987), no. 12, 1082–1087. (Livia D'Apuzzo) **89h:54050** 54H25
- Carbone, Marc** (with Lière, Jaume) Limit cycles of a class of polynomial systems. *Proc. Roy. Soc. Edinburgh Sect. A* **109** (1988), no. 1–2, 187–199. (Carmen Chicone) **89e:58120** 58F21 (34C05)
- Carboni, A.** Bicatagories of partial maps. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **28** (1987), no. 2, 111–126. (J. Duskin) **89g:18015** 18D05 (03D99, 03G30)
- (with Freyd, Peter J.; Scedrov, Andre) A categorical approach to realizability and polymorphic types. *Mathematical foundations of programming language semantics (New Orleans, LA, 1987)*, 23–42, *Lecture Notes in Comput. Sci.*, 298, Springer, Berlin-New York, 1988. (Luis M. Laita) **89g:68043** 68Q55 (03B15, 03B40, 18A99, 68N05)
- Carbone, Philippe** Anneaux de Bezout, Hermite et Kaplansky "universels". ["Universal" Bezout, Hermite and Kaplansky rings] *Canad. Math. Bull.* **30** (1987), no. 4, 461–470. (David C. Lantz) **89h:13033** 13F99 (13C13)
- Carcano, Giovanna** A commutativity condition for algebras of invariant functions. (Italian summary) *Boll. Un. Mat. Ital. B (7)* **1** (1987), no. 4, 1091–1105. (E. Kaniuth (Zbl 632:22005)) **89h:22011** 22D15 (22D10, 43A20)
- Carcione, J. M.** (with Kosloff, D.; Kosloff, R.) Wave-propagation simulation in an elastic anisotropic (transversely isotropic) solid. *Quart. J. Mech. Appl. Math.* **41** (1988), no. 3, 319–345. (Summary) **89h:73018** 73D15 (73–04, 73–08, 73C30, 86A15)
- Cardelli, Luca** A semantics of multiple inheritance. *Inform. and Comput.* **76** (1988), no. 2–3, 138–164. (From the introduction) **89k:68093** 68Q55
- raggi-Cárdenas, A.** see Raggi-Cárdenas, A.
- Cárdenas, Humberto** (with Luis, Emilio) On the Chern classes of representations of the symmetric groups. *Group theory (Singapore, 1987)*, 333–345, *de Gruyter, Berlin-New York*, 1989. (J. L. Alperin) **89k:20075** 20J06 (20C15, 57R20)
- Cardona, A.** (with Geradin, M.) A beam finite element nonlinear theory with finite rotations. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 11, 2403–2438. (Claude Surry) **89h:73042** 73K05 (70B15, 73G05, 73K25)
- Cardoso, F.** see Partial differential equations, **89c:35002**
- Cardoso, J. B.** (with Arora, J. S.) Variational method for design sensitivity analysis in nonlinear structural mechanics. *AIAA J.* **26** (1988), no. 5, 595–603. (Summary) **89e:73031** 73K40
- Cardoso, Jayme M.** On plane homology. (Portuguese) *Bol. Soc. Paran. Mat.* (2) **9** (1988), no. 1, 129–130. (From the text) **89i:51017** 51M15
- Cardy, John L.** Conformal invariance. *Phase transitions and critical phenomena, Vol. 11*, 55–126, Academic Press, London-New York, 1987. (Philippe Christe) **89f:82015** 82A25 (81E40, 82–02)
- Continuously varying exponents and the value of the central charge. *J. Phys. A* **20** (1987), no. 13, L891–L896. (Chris Athorne) **89c:81081** 81E15 (81E40, 82A25)
- (with Ludwig, Andreas W. W.) Perturbative evaluation of the conformal anomaly at new criticality with applications to random systems. *Nuclear Phys. B* **285** (1987), no. 4, 687–718. (Chris Athorne) **89b:82027** 82A25 (81E40, 82A43, 82A68)
- Anisotropic corrections to correlation functions in finite-size systems. *Nuclear Phys. B* **290** (1987), no. 3, 355–362. (Ömer Oğuz) **89c:81102** 81E15
- Universal amplitude in the sizes of rings in two dimensions. *J. Phys. A* **21** (1988), no. 16, L797–L799. (Summary) **89i:82077** 82A67 (82A25, 82A41, 82A51)
- Is there a  $c$ -theorem in four dimensions? *Phys. Lett. B* **215** (1988), no. 4, 749–752. (Summary) **89k:81087** 81E15 (81E25)
- Central charge and universal combinations of amplitudes in two-dimensional theories away from criticality. *Phys. Rev. Lett.* **60** (1988), no. 26, 2709–2711. (Summary) **89f:82016** 82A25 (81E15)
- Carel, Claude** (with Weigel, Dominique; Veyseyre, Renée) Sur les symboles du groupe d'espace d'une wüstite de tri-incommensurabilité cubique et sur les groupes de Bravais de sa famille cristalline dans l'espace euclidien à six dimensions. (English summary) [Symbols of the space group of a tri-incommensurate cubic wüstite and Bravais groups of its crystal family in six-dimensional Euclidean space] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **305** (1987), no. 5, 349–352. (Not in MR) **82A60**
- Carel, Szaasz**  $I_{\infty, m}$ -objekt in einem Elementaropos. (Romanian summary) [ $I_{\infty, m}$ -object in an elementary topos] *Bul. Univ. Braşov Ser. C* **30** (1988), 65–67. (Colin McLarty) **89i:18002** 18B25
- Carena, Marcela** (with Wagner, Carlos; Masperi, Luis) Nonabelian theory for massive vector bosons and canonical quantization. *Phys. Rev. D* (3) **37** (1988), no. 2, 560–562. (Summary) **89a:81065** 81E13 (81D07)
- Carey, A. L.** (with Baggett, L. W.; Moran, William; Ramsay, Arlan) Nonmonomial representations of abelian groups with multipliers (announcement). *Miniconference on harmonic analysis and operator algebras (Canberra, 1987)*, 1–5, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 15, Austral. Nat. Univ., Canberra, 1987. (see **89b:00009**) **22D12**
- (with Ruijsenaars, S. N. M.) On fermion gauge groups, current algebras and Kac-Moody algebras. *Acta Appl. Math.* **10** (1987), no. 1, 1–86. (H. Araki) **89b:22027** 22E65 (17B65, 17B67, 46L60, 81D15, 81E05)
- (with Evans, David E.) On an automorphic action of  $U(n, 1)$  on  $\mathcal{O}_n$ . *J. Funct. Anal.* **70** (1987), no. 1, 90–110. (Autorreferat (Zbl 615:46062)) **89a:46136** 46L55 (22E65, 46L40)
- (with Hannabuss, K. C.) Temperature states on loop groups, theta functions and the Luttinger model. *J. Funct. Anal.* **75** (1987), no. 1, 128–160. (H. Araki) **89c:22030** 22E65 (47D45, 81E05, 82A15)
- The origin of three-cocycles in quantum field theory. *Phys. Lett. B* **194** (1987), no. 2, 267–270. (Summary) **89c:81106** 81E99 (46L99)
- Representations of infinite-dimensional groups and applications. *Miniconferences on harmonic analysis and operator algebras (Canberra, 1987)*, 21–28, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (Editors) **89c:22033** 22E65
- Carey, G. F.** (with Jiang, B.-N.) Least-squares finite element approximation of nonlinear problems. *Nonlinear analysis and applications (Arlington, Tex., 1986)*, 267–272, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (Andreas Felgenhauer) **89h:65267** 65N30 (76G99)
- (with Jiang, B.-N.) Least-squares finite element method and preconditioned conjugate gradient solution. *Internat. J. Numer. Methods Engrg.* **24** (1987), no. 7, 1283–1296. (Mutsuto Kawahara) **89a:65163** 65N30
- (with Barragy, E.; McLay, Robert T.; Sharma, M.) Element-by-element vector and parallel computations. *Comm. Appl. Numer. Methods* **4** (1988), no. 3, 299–307. (Not in MR) **65W05**
- (with Barragy, E.) A partitioning scheme and iterative solution for sparse bordered systems. *Comput. Methods Appl. Mech. Engrg.* **70** (1988), no. 3, 321–327. (Summary) **89h:65047** 65F10
- (with Jiang, B.-N.) A stable least-squares finite element method for nonlinear hyperbolic problems. *Internat. J. Numer. Methods Fluids* **8** (1988), no. 8, 933–942. (Summary) **89g:65123** 65M60
- (with MacKinnon, R. J.) Analysis of material interface discontinuities and superconvergent fluxes in finite difference theory. *J. Comput. Phys.* **75** (1988), no. 1, 151–167. (P. C. Jain) **89g:76009** 76–08 (65L60, 65N30, 73–08, 76S05, 80A20)
- Carey, Malachy** (with Srinivasan, Ashok) Congested network flows: time-varying demands and start-time policies. *European J. Oper. Res.* **36** (1988), no. 2, 227–240. (Summary) **89e:90095** 90B15 (90B35)
- Carey, Richard W.** Some remarks on principal currents and index theory for single and several commuting operators. *Surveys of some recent results in operator theory, Vol. I*, 133–154, *Pitman Res. Notes Math. Ser.*, 171, Longman Sci. Tech., Harlow, 1988. (F.-H. Vasilescu) **89i:47019** 47A53 (47B20, 47D99, 49F20, 58G12)
- (with Pincus, J. D.) On local index and the cocycle property for Lefschetz numbers. *Topics in operator theory and interpolation*, 45–86, *Oper. Theory: Adv. Appl.*, 29, Birkhäuser, Basel-Boston, MA, 1988. (F.-H. Vasilescu) **89m:47007** 47A53 (46M20, 47D99)
- Carfora, Mauro** (with Ellis, G. F. R.; Williams, Ruth M.) ★ Flat and curved space-times. *The Clarendon Press, Oxford University Press, New York*, 1988. x+351 pp. ISBN 0-19-851164-7; 0-19-851169-8 (C. B. Collins) **89m:83001** 83–01
- (with Marzuoli, Annalisa) Model geometries in the space of Riemannian structures and Hamilton's flow. *Classical Quantum Gravity* **5** (1988), no. 5, 659–693. (Jean Marion) **89c:58020** 58D17 (53C80, 58G17, 58G30)
- Carliè, A. O.** (with Nogueira, S. R. A.; Zanette, S. I.) On the labelling and symmetry adaptation of the solvable finite group representations. *J. Phys. A* **21** (1988), no. 6, 1321–1328. (Ronald C. King) **89g:20031** 20C35 (81C40)
- rocha-Caridi, Alvaray** see Rocha-Caridi, Alvaray
- Carillo, Sandra** (with Rogers, Colin) On reciprocal properties of the Caudrey-Dodd-Gibbon and Kaup-Kupershmidt hierarchies. *Phys. Scripta* **36** (1987), no. 6, 865–869. (Summary) **89a:35204** 35Q20 (58F07, 58F37, 58G37)

- Painlevé property: a conjectured integrability test for nonlinear partial differential equations. *Publ. Dip. Metod. Model. Mat. Sci. Appl. Univ. Stud. Roma Quad.* No. 1 (1988), 23 pp. (Peter L. Christiansen) **89i:58164** 58G37 (35Q20, 58F07)
- Carliena, José F.** Geometric theory of the time rescaling. *Differential geometry and its applications, communications* (Brno, 1986), 55–61, *Univ. J. E. Purkyně, Brno*, 1987. (Mark J. Gotay) **89c:70032** 70H15 (70G35)
- (with López Lacasta, Carlos) Group theoretical treatment of optical aberrations. *Differential geometry and its applications, communications* (Brno, 1986), 63–70, *Univ. J. E. Purkyně, Brno*, 1987. (Ram Krishan Sharma) **89c:78002** 78A10
- (with Ibor, Luis A.; Lacomba, Ernesto A.) Time scaling as an infinitesimal canonical transformation. *Celestial Mech.* **42** (1987/88), no. 1–4, 201–213. (Mark J. Gotay) **89m:70031** 70H15 (53C57, 58F05, 70F15, 70H05)
- (with López Lacasta, Carlos; Román-Roy, Narciso) Geometric study of the connection between the Lagrangian and Hamiltonian constraints. *J. Geom. Phys.* **4** (1987), no. 3, 315–334. (Frans Cantrijn) **89i:58031** 58F05 (70H99)
- (with López Lacasta, Carlos) The time-evolution operator for singular Lagrangians. *Lett. Math. Phys.* **14** (1987), no. 3, 203–210. (Jaime Muñoz Masqué) **89d:58037** 58F05 (58E30, 70H99)
- (with Ibor, Luis A.) Noncanonical groups of transformations, anomalies, and cohomology. *J. Math. Phys.* **29** (1988), no. 3, 541–545. (Manfred Andrie) **89c:58042** 58F05 (58F06, 70G35, 70H05, 70H35)
- (with López Lacasta, Carlos; Rañada, Manuel F.) Geometric Lagrangian approach to first-order systems and applications. *J. Math. Phys.* **29** (1988), no. 5, 1134–1142. (Martine J. Perrin) **89c:58043** 58F05 (70H05, 70H35)
- (with López Lacasta, Carlos; Román-Roy, Narciso) Origin of the Lagrangian constraints and their relation with the Hamiltonian formulation. *J. Math. Phys.* **29** (1988), no. 5, 1143–1149. (Martine J. Perrin) **89c:58044** 58F05 (70H05, 70H99)
- (with Rañada, Manuel F.) Canonoid transformations from a geometric perspective. *J. Math. Phys.* **29** (1988), no. 10, 2181–2186. (Manfred Andrie) **89i:70024** 70H15 (58F05)
- (with Rañada, Manuel F.) Noether's theorem for singular Lagrangians. *Lett. Math. Phys.* **15** (1988), no. 4, 305–311. (Hans P. Künzle) **89c:58083** 58F05 (70H35)
- Carlini, A.** (with De Donato, O.) Quadratic extremum principles for finite strain rigid-viscoplastic dynamics of continua. *Internat. J. Solids and Structures* **24** (1988), no. 6, 599–618. (Petr Procházka) **89f:73031** 73F15 (49H05, 73F30)
- Carlini, Giovanni** On the variational principles in classical continuum mechanics. (Italian. English summary) *Rend. Circ. Mat. Palermo* (2) **36** (1987), no. 1, 122–138. (P. Villaggio) **89h:73004** 73A05 (70H25)
- Carlini, Luisa** Centralizers and Lie ideals. *Rend. Sem. Mat. Univ. Padova* **78** (1987), 255–259. (D. A. Jordan) **89d:16041** 16A68 (16A70)
- (with Bergen, Jeffrey) Derivations with invertible values on a Lie ideal. *Canad. Math. Bull.* **31** (1988), no. 1, 103–110. (Charles Lanski) **89c:16044** 16A68 (16A40, 16A72)
- (with Hentzel, Irvin R.; Piacentini Cattaneo, Giulia Maria) Degree four identities not implied by commutativity. *Comm. Algebra* **16** (1988), no. 2, 339–356. (V. A. Artamonov) **89c:17005** 17A30
- The cocharacter sequence of the finite-dimensional Grassmann algebra. *Linear and Multilinear Algebra* **23** (1988), no. 2, 131–137. (Jorn B. Olsson) **89j:16026** 16A38 (20C15)
- (with Bergen, Jeffrey) A note on derivations with power central values on a Lie ideal. *Pacific J. Math.* **132** (1988), no. 2, 209–213. (D. A. Jordan) **89d:16045** 16A72 (16A68, 16A70)
- Cárja, O.** On constraint controllability of linear systems in Banach spaces. *J. Optim. Theory Appl.* **56** (1988), no. 2, 215–225. (Zbigniew Emirsajlow) **89b:49057** 49E15 (93B05, 93C05, 93C25)
- Carl, Bernd** (with Heinrich, Stefan; Kühn, Thomas)  $s$ -numbers of integral operators with Hölder continuous kernels over metric compacta. *J. Funct. Anal.* **81** (1988), no. 1, 54–73. (Hermann König) **89i:47036** 47B10 (47B38, 47G05)
- Carlen, Eric A.** (with Stroock, Daniel W.) An application of the Bakry-Emery criterion to infinite-dimensional diffusions. *Séminaire de Probabilités, XX*, 1984/85, 341–348, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (Richard Holley) **89b:60167** 60K35 (60J60)
- Carlsson, Lennart** (with Ahlfors, Lars) Arne Beurling in memoriam. *Acta Math.* **161** (1988), no. 1–2, 1–9. (Editors) **89i:01053** 01A70
- Carlier, J.** (with Pinson, E.) An algorithm for solving the job-shop problem. *Management Sci.* **35** (1989), no. 2, 164–176. (Summary) **89m:90084** 90B35
- Carlip, Steven** (with Blau, Steven K.; Clements, Mino; Della Pietra, Stephen; Della Pietra, Vincent) The string amplitude on surfaces with boundaries and crosscaps. *Nuclear Phys. B* **301** (1988), no. 2, 285–303. (Tsou Sheung Tsun) **89h:81168** 81E99 (32G15, 53C80, 81E30)
- Sewing closed string amplitudes. *Phys. Lett. B* **209** (1988), no. 4, 464–472. (Olaf Lechtenfeld) **89j:81165** 81E99 (32G15, 81E30)
- Quadratic differentials and closed string vertices. *Phys. Lett. B* **214** (1988), no. 2, 187–192. (Čedomir Crnković) **89j:81166** 81E99 (30F30, 32G15, 81E30)
- Carlitz, L.** (with Brawley, J. V.) Irreducibles and the composed product for polynomials over a finite field. *Discrete Math.* **65** (1987), no. 2, 115–139. (Rex Matthews) **89g:11118** 11T06
- On the power series expansion of a certain function over a field of characteristic  $p$ . *Indian J. Math.* **29** (1987), no. 2, 159–163. (From the text) **89j:11122** 11T99 (11A07)
- Carlson, B. C.** A table of elliptic integrals of the second kind. *Math. Comp.* **49** (1987), no. 180, 593–606, S13–S17. (F. W. J. Olver) **89b:65013** 65A05 (33A25, 65V05)
- A table of elliptic integrals of the third kind. *Math. Comp.* **51** (1988), no. 183, 267–280, S1–S5. (F. W. J. Olver) **89c:33003** 33A25 (65A05)
- A table of elliptic integrals: cubic cases. *Math. Comp.* **53** (1989), no. 187, 327–333. (Summary) **89m:65009** 65A05 (33A25, 65D20)
- Carlson, David A.** Time-space efficient algorithms for computing convolutions and related problems. *Inform. and Comput.* **75** (1987), no. 1, 1–14. (Joseph Ja'Ja') **89a:68097** 68Q25
- Upper and lower bounds on time-space tradeoffs for computations with embedded fast Fourier transforms. *SIAM J. Discrete Math.* **1** (1988), no. 1, 22–37. (Summary) **89d:68026** 68Q25 (65T05, 94A11)
- Carlson, David H.** Nonsingularity criteria for matrices involving combinatorial considerations. *Proceedings of the Victoria Conference on Combinatorial Matrix Analysis* (Victoria, BC, 1987). *Linear Algebra Appl.* **107** (1988), 41–56. (Pauline van den Driessche) **89i:15005** 15A09 (05C50)
- Carlson, Dean A.** On the existence of sporadically catching-up optimal solutions for infinite-horizon optimal control problems. *J. Optim. Theory Appl.* **53** (1987), no. 2, 219–235. (Martin Brokate) **89c:49003** 49A10 (49A36)
- Carlson, James A.** The geometry of the extension class of a mixed Hodge structure. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 199–222, *Proc. Sympos. Pure Math.*, 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Richard M. Hain) **89b:32036** 32J25 (14C30, 14K30)
- Carlson, Jon F.** Varieties for modules. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 37–44, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (J. L. Alperin) **89d:20032** 20C20 (20J05, 20J06)
- Products and projective resolutions. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 399–408, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (David Benson) **89d:20010** 20C20 (20J06)
- (with Roggenkamp, K. W.) Itô's theorem and character degrees revisited. *Arch. Math. (Basel)* **50** (1988), no. 3, 214–217. (Roderick Gow) **89b:20027** 20C15
- (with Jones, Alfredo) Wild categories of periodic modules. *Illinois J. Math.* **32** (1988), no. 3, 557–561. (David Benson) **89g:20021** 20C20 (20J06)
- On exponents of homology and cohomology of finite groups. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 814–816. (D. F. Holt) **89c:20076** 20J06
- Exponents of modules and maps. *Invent. Math.* **95** (1989), no. 1, 13–24. (David Benson) **89k:20076** 20J06 (16A26)
- Carlson, Lauri** Quantified Hintikka-style epistemic logic. *Synthese* **74** (1988), no. 2, 223–262. (Charles F. Kielkopf) **89c:03024** 03B45
- Carlson, Neil** (with Miller, Keith) Gradient weighted moving finite elements in two dimensions. *Finite elements* (Hampden, VA, 1986), 151–164, *ICASE/NASA LaRC Ser.*, Springer, New York-Berlin, 1988. (P. K. Mahanti) **89i:65094** 65M60 (65N30, 76–08)
- Carlson, R. E.** Shape preserving interpolation. *Algorithms for approximation* (Shrivenham, 1985), 97–113, *Inst. Math. Appl. Conf. Ser. New Ser.*, 10, Oxford Univ. Press, New York, 1987. (Ding Yuan Liu) **89c:65017** 65D10
- Carlson, Robert C.** (with Yano, Candace A.) Safety stocks for assembly systems with fixed production intervals. *J. Manuf. Oper. Management* **1** (1988), no. 2, 182–201. (Not in MR) 90B30
- Carlson, Timothy J.** Some unifying principles in Ramsey theory. *Discrete Math.* **68** (1988), no. 2–3, 117–169. (Eva Butkovičová) **89b:04006** 04A20 (05A17)
- Carlsson, Gunnar** Free  $\mathbb{Z}/2$ -actions on finite complexes. *Algebraic topology and algebraic K-theory* (Princeton, N.J., 1983), 332–344, *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (C. B. Thomas) **89c:57054** 57S25
- Segal's Burnside ring conjecture and the homotopy limit problem. *Homotopy theory* (Durham, 1985), 6–34, *London Math. Soc. Lecture Note Ser.*, 117, Cambridge Univ. Press, Cambridge-New York, 1987. (Haynes R. Miller) **89c:55020** 55P91 (55P42)
- Segal's Burnside ring conjecture and related problems in topology. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 574–579, Amer. Math. Soc., Providence, RI, 1987. (J. F. Adams) **89g:55010** 55N91 (18F25, 19D99, 55P99)
- Carlsson, Hasse** (with Sjögren, Peter) Estimates for maximal functions along hypersurfaces. *Ark. Mat.* **25** (1987), no. 1, 1–14. (Michael Cowling) **89a:42027** 42B25
- Carlslein, E.** (with Zwick, Rami; Budescu, David V.) Measures of similarity among fuzzy concepts: a comparative analysis. *Internat. J. Approx. Reason.* **1** (1987), no. 2, 221–242. (Summary) **89g:92071** 92A25 (03E72)
- Nonparametric change-point estimation. *Ann. Statist.* **16** (1988), no. 1, 188–197. (E. F. Schuster) **89b:62079** 62G05
- Law of large numbers for the subspace values of a statistic from a stationary sequence. *Statistics* **19** (1988), no. 2, 295–299. (Lajos Horváth) **89g:62054** 62G05 (60F05)
- Carlton, E. H.** Connection between internal representation of rigid transformation and cortical activity paths. *Biol. Cybernet.* **59** (1988), no. 6, 419–429. (Summary) **89i:92070** 92A27 (92A09)
- Carlucci, Francesco** (with Zornitta, Gino) Bayesian prevision of time series by transfer function models. *Probability and Bayesian statistics* (Innsbruck, 1986), 73–82, *Plenum, New York-London*, 1987. (Hironao Kawashima) **89b:62149** 62M10
- Carlucci Aiello, L.** see Aiello, Luigia
- Carmeli, M.** Cawley's counterexample to Dirac's conjecture as a curved spacetime. *Internat. J. Theoret. Phys.* **26** (1987), no. 1, 83–89. (Summary) **89c:83011** 83C15 (70G50)
- fernández-Carmena, F.** see Fernández-Carmena, F.
- Carmichael, J.-P.** (with Massé, J.-C.; Theodorescu, R.) Multivariate reciprocal stationary Gaussian processes. *J. Multivariate Anal.* **23** (1987), no. 1, 47–66. (H. Niemi (Zbl 635:60040)) **89f:60041** 60G15 (60G10, 60G60)
- (with Massé, J.-C.; Theodorescu, R.) Representations for multivariate reciprocal Gaussian processes. *IEEE Trans. Inform. Theory* **34** (1988), no. 1, 155–157. (Bogusław Szymański) **89d:60071** 60G15 (60J25)
- Carmichael, N.** (with Quinn, M. D.) Fixed-point methods in nonlinear control. *IMA J. Math. Control Inform.* **5** (1988), no. 1, 41–67. (Jing Xian Sun) **89d:93052** 93C10 (47H10, 93B05, 93B07)
- dutra do Carmo, Eduardo Gomes** see Dutra do Carmo, Eduardo Gomes
- do Carmo, Manoel** ★ Superfícies mínimas. (Portuguese.) [Minimal surfaces] 16<sup>o</sup> Colóquio Brasileiro de Matemática. [16th Brazilian Mathematics Colloquium] *Instituto de Matemática Pura e Aplicada, Rio de Janeiro*, 1987. iv+122 pp. ISBN 85-244-0032-3 (João Lucas Marques Barbosa) **89g:53005** 53A10 (49F10, 53C42, 58E12)
- (with Dajczer, Marcos) Conformal rigidity. *Amer. J. Math.* **109** (1987), no. 5, 963–985. (Michael T. Anderson) **89c:53016** 53A30 (53A07)
- Carmody, Kevin** Circular and hyperbolic quaternions, octonions, and sedenions. *Appl. Math. Comput.* **28** (1988), no. 1, 47–72. (John Ryan) **89k:15045** 15A78
- Finite Fourier series. *Appl. Math. Comput.* **28** (1988), no. 2, 89–96. (Summary) **89b:65229** 65T05 (42C05)
- gonzález Carmona, Andrés** see González Carmona, Andrés
- lópez-Carmona, Antonio** see López-Carmona, Antonio
- Carmona, J. J.** (with Cufi, J.) On the distance of an analytic function to VMO. *J. London Math. Soc.* (2) **34** (1986), no. 1, 52–66. (Autorreferat (Zbl 583:30034)) **89a:30030** 30D55 (30D40, 30E10, 30H05)



- (with Cufi, J.) On analytic functions with locally connected cluster sets. *Complex Variables Theory Appl.* 10 (1988), no. 1, 43–52. (Paul D. Humke) **89g:30060** 30D40
- (with Cufi, J.; Pommerenke, Ch.) On the angular limits of Bloch functions. *Publ. Mat.* 32 (1988), no. 2, 191–198. (J. Clunie) **89m:30071** 30D45 (30B10, 30C35, 30D40)
- Carmona, Joaquim** A note on the reformulation of LP models. *Mathematical models for decision support (Val d'Isère, 1987)*, 183–186, NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 48, Springer, Berlin-New York, 1988. (see **89g:90136**) 90C05
- Carmona, René** Exercises for a book on random potentials. *Random media (Minneapolis, Minn., 1985)*, 45–65, IMA Vol. Math. Appl., 7, Springer, New York-Berlin, 1987. (Summary) **89f:60066** 60H25 (47E05, 58D25, 82A42)
- (with Nualart, D.) Random nonlinear wave equations: propagation of singularities. *Ann. Probab.* 16 (1988), no. 2, 730–751. (Summary) **89k:60081** 60H15 (35L05, 35R60)
- Carnal, H.** Un problème de probabilité maximale. [A problem of maximum probability] *Elem. Math.* 43 (1988), no. 5, 149–151. (Gh. Oprisan) **89m:60026** 60C05
- Carnap, Rudolf** On protocol sentences. Translated from the German by Richard Creath and Richard Nollan. *Noûs* 21 (1987), no. 4, 457–470. (Siegfried Gottwald) **89a:03007** 03A05 (01A75, 03B30)
- see also Coffa, José Alberto, **89a:03001**; Creath, Richard, **89b:03002** and Friedman, Michael, **89f:01047**
- Carnevale, G. F.** (with Frederiksen, Jorgen S.) Stability properties of exact nonzonal solutions for flow over topography. *Geophys. Astrophys. Fluid Dynamics* 35 (1986), no. 3, 173–207. (D. M. Sloan) **89f:86011** 86A35 (76E20)
- (with Vallis, G. K.; Purini, R.; Briscoll, M. J.) The role of initial conditions in flow stability with an application to modons. *Phys. Fluids* 31 (1988), no. 9, 2567–2572. (M. A. Grinfeld) **89k:76053** 76E20 (76E25)
- Carnielli, Walter A.** Methods of proof for relatedness and dependence logics. *Rep. Math. Logic* No. 21 (1987), 35–46 (1988). (George F. Schumm) **89c:03024** 03B45
- Caro, Yair** On unique covering and unique decomposition of matroids and graphs. *Notas Soc. Mat. Chile* 6 (1987), no. 1, 1–12. (Ulrich Faigle) **89d:05057** 05B40 (05B35, 05C70)
- (with Schönheim, J.) Edgemappings with fixed edges and avoiding free triangles. Eleventh British Combinatorial Conference (London, 1987). *Discrete Math.* 25 (1988), A, 159–164. (Derek Smith) **89i:05200** 05C55
- Caromichel, Adam** (with Wilksy, Alan S.; Gershwin, Stanley B.) Multiple time scale analysis of manufacturing systems. *Analysis and optimization of systems (Antibes, 1988)*, 677–688, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89c:00031**) 90B30 (60J27, 90B25)
- Caron, Armand** Approximation numérique d'un problème de diffusion non linéaire par une méthode itérative sous contrainte de régularité. [Numerical approximation of a nonlinear diffusion problem by an iterative method under a regularity constraint] 11<sup>e</sup> congrès international de cybernétique (Nanterre, 1986), 1338–1348, *Assoc. Internat. Cybernét.*, Nanterre, 1986. (see **89a:94001**) 92A09
- Caron, Richard J.** (with Best, M. J.) A parameterized Hessian quadratic programming problem. *Ann. Oper. Res.* 5 (1986), no. 1–4, 373–394. (Summary) **89d:90157** 90C20
- (with McDonald, James Frederick) A new approach to the analysis of random methods for detecting necessary linear inequality constraints. *Math. Programming* 43 (1989), no. 1 (Ser. A), 97–102. (Summary) **89m:90169** 90C99 (65K99)
- Carotenuto, L.** (with Muraca, P.; Raiconi, G.) Optimal location of a moving sensor for the estimation of a distributed-parameter process. *Internat. J. Control* 46 (1987), no. 5, 1671–1688. (Claudia Simionescu) **89d:93116** 93E20 (49A60, 93C20, 93E12)
- (with Raiconi, G.) On the minimization of quadratic functions with bilinear constraints via augmented Lagrangians. *J. Optim. Theory Appl.* 55 (1987), no. 1, 23–36. (William W. Hager) **89b:90160** 90C20
- (with Muraca, P.; Raiconi, G.) Observation strategy for a parallel connection of discrete-time linear systems. *Math. Comput. Simulation* 30 (1988), no. 5, 389–403. (Leopoldo Jetto) **89m:93080** 93E03 (90C32, 93C05, 93C55)
- Carothers, N. L.** Rearrangement invariant subspaces of Lorentz function spaces. II. *Rocky Mountain J. Math.* 17 (1987), no. 3, 607–616. (T. Figiel) **89a:46065** 46E30 (46B25)
- (with Dilworth, S. J.) Subspaces of  $L_{p,q}$ . *Proc. Amer. Math. Soc.* 104 (1988), no. 2, 537–545. (Yves Raynaud) **89m:46051** 46E30 (46B20)
- Carow-Watamura, Ursula** (with Watamura, Satoshi)  $N$ -string vertex, canonical forms and bosonization. *Nuclear Phys. B* 302 (1988), no. 1, 149–162. (Summary) **89e:81139** 81E99 (81E30)
- (with Ezawa, Z. F.; Watamura, Satoshi)  $N$ -loop superstring amplitude from Feynman-like rules; spin structures including Ramond sector, handle operator and  $g$ -vacuum. *Nuclear Phys. B* 315 (1989), no. 1, 166–192. (Summary) **89k:81133** 81E99 (81E30)
- Carpenter, B. E.** see Turing's ACE report, **89a:01045**
- Carpenter, G. A.** (with Grossberg, S.) Self-organizing neural network architectures for real-time adaptive pattern recognition. *Neural and synergetic computers (Schloss Elmau, 1988)*, 42–74, Springer Ser. Synergetics, 42, Springer, Berlin-New York, 1988. (see **89i:92026**) 92A25 (68T10, 92A09)
- Carpi, Arturo** On unambiguous reductions of monoids of unambiguous relations. *Theoret. Comput. Sci.* 51 (1987), no. 1–2, 215–220. (Howard Straubing) **89b:68043** 68Q50
- Multidimensional unreplicative configurations. *Theoret. Comput. Sci.* 56 (1988), no. 2, 233–241. (Dominique Gouyou-Beauchamps) **89b:20094** 20M35 (05A99, 68Q45, 68R05)
- Carpino, M.** (with Nobili, Anna M.; Milani, Andrea) Fundamental frequencies and small divisors in the orbits of the outer planets. *Astronom. and Astrophys.* 210 (1989), no. 1–2, 313–336. (Not in MR) 70F15
- Carpio-Bernido, M. Victoria** (with Bernido, Christopher C.) An exact solution of a ring-shaped oscillator plus a  $\sec^2\theta/r^2$  potential. *Phys. Lett. A* 134 (1989), no. 7, 395–399. (Summary) **89m:81031** 81C05 (81C35)
- Carr, Donna M.**  $P_\lambda$  partition relations. *Fund. Math.* 128 (1987), no. 3, 181–195. (Carlos A. Di Prisco) **89g:03074** 03E55 (03E05)
- A note on the  $\lambda$ -Shelah property. *Fund. Math.* 128 (1987), no. 3, 197–198. (Carlos A. Di Prisco) **89g:03075** 03E55 (03E05)
- Carr, Jack** (with Ball, J. M.) Coagulation-fragmentation dynamics. *Dynamics of infinite-dimensional systems (Lisbon, 1986)*, 23–30, NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 37, Springer, Berlin-New York, 1987. (Renuka Datta) **89j:82091** 82A99
- (with Ball, J. M.) Asymptotic behaviour of solutions to the Becker-Döring equations for arbitrary initial data. *Proc. Roy. Soc. Edinburgh Sect. A* 108 (1988), no. 1–2, 109–116. (Vojislav Marić) **89k:82064** 82A99 (34E05)
- Carr, Peter** The valuation of sequential exchange opportunities. *J. Finance* 43 (1988), no. 5, 1235–1256. (Not in MR) 90A09
- Carr, Rodney** Construction of manifolds of positive scalar curvature. *Trans. Amer. Math. Soc.* 307 (1988), no. 1, 63–74. (Viktor Schroeder) **89b:53077** 53C20
- martínez Carracedo, Celso** see Martínez Carracedo, Celso
- Carrà Ferro, Giuseppa** On the tangent space to an affine differential variety at a given point. *Boll. Un. Mat. Ital. D* (6) 4 (1985), no. 1, 1–16 (1986). (A. Buium (Zbl 608:14001)) **89a:14003** 14A10 (12H05)
- Some properties of the lattice points and their application to differential algebra. *Comm. Algebra* 15 (1987), no. 12, 2625–2632. (G. Eisenreich) **89a:12014** 12H05 (11H06)
- Carral, Michel** Quadratic and  $\lambda$ -Hermitian forms. *J. Pure Appl. Algebra* 56 (1989), no. 1, 1–7. (L. N. Vaserstein and E. Wheland) **89j:18007** 18F25 (11E39, 19G12)
- guiljarro Carranza, P.** see Guiljarro Carranza, P.
- Carraro, Carlo** Square root Kalman algorithms in econometrics. *Comput. Sci. Econom. Management* 1 (1988), no. 1, 41–51. (Summary) **89j:62143** 62P20 (62M20)
- salinas Carrasco, Luis** see Salinas Carrasco, Luis
- Carrasco, P.** (with Cegarra, A. M.; Garzon, A. R.) An exact sequence in the first variable for nonabelian cohomology in algebraic categories. A Mayer-Vietoris sequence for nonabelian cohomology of groups. *Categorical algebra and its applications (Louvain-La-Neuve, 1987)*, 72–86, *Lecture Notes in Math.*, 1348, Springer, Berlin-New York, 1988. (Timothy Porter) **89m:18019** 18G50
- (with Cegarra, A. M.; Garzon, A. R.) La suite fondamentale de Hochschild-Serre pour la cohomologie non abélienne des groupes. II. (English summary) [The Hochschild-Serre fundamental exact sequence in nonabelian group cohomology. II] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 2, 71–74. (U. Stambach) **89j:18021** 18G50 (20J05)
- Carraway, R. L.** (with Morin, Thomas L.) Theory and applications of generalized dynamic programming: an overview. The mathematics of systems and computations (Atlanta, GA, 1986). *Comput. Math. Appl.* 16 (1988), no. 10–11, 779–788. (Summary) **89j:90258** 90C39 (49C20)
- Carreras Escobar, Francesc** An extension of the power index. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish) (Badajoz, 1986)*, 375–382, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89f:90206** 90D12
- (with Owen, Guillermo) Evaluation of the Catalanian Parliament, 1980–1984. *Math. Social Sci.* 15 (1988), no. 1, 87–92. (Summary) **89j:90256** 90D45 (90A08, 90D12)
- Carrier, George F.** (with Pearson, Carl E.) ★ Partial differential equations. Theory and technique. Second edition. *Academic Press, Inc., Boston, MA*, 1988. xii+340 pp. ISBN 0-12-160451-9 (Editors) **89j:35001** 35-01 (65-01)
- Carrier, J.** (with Greengard, Leslie; Rokhlin, Vladimir V.) A fast adaptive multipole algorithm for particle simulations. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 4, 669–686. (Summary) **89c:65008** 65C20 (70-08, 78-08, 78A35, 82-08)
- Carrière, Yves** Feuilletages riemanniens à croissance polynomiale. [Riemannian foliations with polynomial growth] *Comment. Math. Helv.* 63 (1988), no. 1, 1–20. (P. Molino) **89f:57033** 57R30 (53C12, 58F18)
- Autour de la conjecture de L. Markus sur les variétés affines. (English summary) [On L. Markus' conjecture concerning affine manifolds] *Invent. Math.* 95 (1989), no. 3, 615–628. (William Goldman) **89m:53116** 53C50 (53C05)
- see also Molino, P., **89b:53054**
- Carriero, M.** (with Leaci, A.; Pascali, E.) On the semicontinuity and the relaxation for integrals with respect to the Lebesgue measure added to integrals with respect to a Radon measure. *Ann. Mat. Pura Appl.* (4) 149 (1987), 1–21. (Carlo Bardaro) **89d:49011** 49A50 (49D20)
- (with Leaci, A.; Pascali, E.) On the lower semicontinuity of a class of integral functionals. *Proceedings of the International Workshop on Integral Functionals in the Calculus of Variations (Trieste, 1985)*. *Rend. Circ. Mat. Palermo (2) Suppl. No. 15* (1987), 155–161. (Han Ch'ing Lai) **89f:49016** 49A50 (28C05, 46N05)
- Carrillo, Humberto** see Carrillo Calvet, Humberto
- díaz Carrillo, M.** see Díaz Carrillo, M.
- Carrillo Calvet, Humberto** (with Lipman, David) The multiple sequence alignment problem in biology. *SIAM J. Appl. Math.* 48 (1988), no. 5, 1073–1082. (Summary) **89h:92038** 92A12
- pérez Carrillo de Albornoz, Ma. Luisa** see Pérez Carrillo de Albornoz, Ma. Luisa
- Carrión, Philip** (with Chang, Weita; Beylkin, G.) Wavefront sets of solutions to linearised inverse scattering problems. *Inverse Problems* 3 (1987), no. 4, 683–690. (A. G. Ramm) **89c:86001** 86A15 (35R30)
- incertis Carro, Fernando C.** see Incertis Carro, Fernando C.
- Carroll, C. E.** (with Hioe, F. T.) Driven three-state model and its analytic solutions. *J. Math. Phys.* 29 (1988), no. 2, 487–509. (Thomas O. Phillips) **89d:81135** 81K05 (81C05)
- Carroll, John** An exponentially fitted scheme for initial value problems involving second order differential equations. *BAIL IV (Novosibirsk, 1986)*, 241–248, *Boole Press Conf. Ser.*, 8, Boole, Dún Laoghaire, 1986. (J. Sprekels) **89a:65103** 65L05
- A composite integration scheme for the numerical solution of systems of ordinary differential equations. *J. Comput. Appl. Math.* 25 (1989), no. 1, 1–13. (Not in MR) 65L05
- Carroll, John M.** (with Robbins, Lynda E.) Using binary derivatives to test an enhancement of DES. *Cryptologia* 12 (1988), no. 4, 193–208. (Yvo Desmedt) **89i:94029** 94A60 (68P25)
- Carroll, John W.** Iterated  $n$ -player prisoner's dilemma games. *Philos. Stud.* 53 (1988), no. 3, 411–415. (A. Rapoport) **89h:90264** 90D10
- Carroll, M. M.** (with Rajagopal, K. R.) Pseudoplane elastic deformations and motions of nonlinear elastic solids. *Istanbul Tek. Üniv. Bil.* 39 (1986), no. 3–4, 317–332. (V. Gheorghijă) **89e:73012** 73C50
- Finite strain solutions in compressible isotropic elasticity. *J. Elasticity* 20 (1988), no. 1, 65–92. (Summary) **89f:73033** 73G05 (73C50, 73G10)
- Carroll, Raymond J.** (with Simpson, Douglas G.; Ruppert, David)  $M$ -estimation for discrete data: asymptotic distribution theory and implications. *Ann. Statist.* 15 (1987), no. 2, 657–669. (Summary) **89b:62076** 62F12 (62F35)
- (with Stefanski, Leonard A.) Conditional scores and optimal scores for generalized linear measurement-error models. *Biometrika* 74 (1987), no. 4, 703–716. (K. R. Shah) **89b:62048** 62F10 (62J02)

- The effects of variance function estimation on prediction and calibration: an example. *Statistical decision theory and related topics, IV, Vol. 2 (West Lafayette, Ind., 1986)*, 273–280, Springer, New York-Berlin, 1988. (A. L. Nagar) **89b:62138** 62J05
- (with Welsh, A. H.) A note on asymmetry and robustness in linear regression. *Amer. Statist.* **42** (1988), no. 4, 285–287. (Summary) **89h:62099** 62J05 (62F35)
- (with Wu, Margaret C.) Estimation and comparison of changes in the presence of informative right censoring by modeling the censoring process. (French summary) *Biometrics* **44** (1988), no. 1, 175–188. (Per Krager Andersen) **89d:62109** 62P10 (62J05)
- (with Cline, Daren B. H.) An asymptotic theory for weighted least-squares with weights estimated by replication. *Biometrika* **75** (1988), no. 1, 35–43. (Nariaki Sugijara) **89c:62105** 62J05 (62F12)
- (with Spiegelman, C. H.; Sacks, Jerome) A quick and easy multiple-use calibration-curve procedure. *Technometrics* **30** (1988), no. 2, 137–141. (Summary) **89d:62038** 62G15
- (with Härdle, W.) Symmetrized nearest neighbor regression estimates. *Statist. Probab. Lett.* **7** (1989), no. 4, 315–318. (Summary) **89k:62052** 62G05
- Carroll, Robert Wayne** (with Berkepec, T.) Generating functions in transmutation theory. *Funkcial. Ekvac.* **29** (1986), no. 3, 281–298. (From the introduction) **89h:33008** 33A40 (34B30)
- The integral equations of inverse scattering theory and the underlying transmutations. *Oakland conference on partial differential equations and applied mathematics (Rochester, Mich., 1986)*, 1–38, *Pitman Res. Notes Math. Ser.*, 154, Longman Sci. Tech., Harlow, 1987. (From the introduction) **89c:35115** 35P05 (35A25, 45–02)
- Some features of the maps from potential to spectral data. *Appl. Anal.* **26** (1987), no. 1, 61–85. (Basudeb Ray Paladhi) **89d:34021** 34A55 (34B25, 35P05, 35R30)
- (with Raphael, Louise) Some inverse problems with spectral limitations on data. *SIAM J. Appl. Math.* **48** (1988), no. 5, 1194–1205. (Basudeb Ray Paladhi) **89k:35248** 35R30 (34A55, 73D50, 86A15)
- Carroll, Tim** (with Gioia, A. A.) Roots of multiplicative functions. *Compositio Math.* **65** (1988), no. 3, 349–358. (V. C. Harris) **89c:11007** 11A25
- Carlsaw, H. S.** (with Jaeger, J. C.) ★ Conduction of heat in solids. Reprint of the second edition. Oxford Science Publications. The Clarendon Press, Oxford University Press, New York, 1988. x+510 pp. ISBN 0-19-853368-3 (Editors) **89f:80004** 80A20 (80–01)
- Carson, Kenneth P.** (with Alexander, Ralph A.; Barrett, Gerald V.; Alliger, George M.) Towards a general model of nonrandom sampling and the impact on population correlation: generalizations of Berkson's fallacy and restriction of range. *British J. Math. Statist. Psych.* **39** (1986), no. 1, 90–105. (Title) **89h:62173** 62P15
- Cars, Marjorie** see **Proceedings: Congress on Mathematical Education, 89b:00026**
- Carstensen, Hans-Georg** A 5-color-extension-theorem. *Computation theory and logic*, 67–77, *Lecture Notes in Comput. Sci.*, 270, Springer, Berlin-New York, 1987. (Introduction) **89c:05087** 05C15
- (with Möller, Martina; Brinkmann, Gunnar) Nowhere-zero flows in low genus graphs. *J. Graph Theory* **12** (1988), no. 2, 183–190. (François Jaeger) **89f:05067** 05C10 (05C15)
- Cartan, Henri** Allocation de monsieur Henri Cartan. (English summary) [Address of Professor Henri Cartan: some recollections in honor of Jean-Louis Koszul] *Ann. Inst. Fourier (Grenoble)* **37** (1987), no. 4, 1–4. (Editors) **89c:01050** 01A70
- (with Ferrand, Jacqueline) Le cas André Bloch. [The case of André Bloch] *Cahiers du séminaire d'histoire des mathématiques*, 9, 210–219, Univ. Paris VI, Paris, 1988. (Editors) **89a:01042** 01A60 (01A70)
- (with Ferrand, Jacqueline) The case of André Bloch. *Math. Intelligencer* **10** (1988), no. 1, 23–26. (Richard L. Francis) **89a:01041** 01A60 (01A70)
- Carter, Brandon** (with Abramowicz, M. A.; Lasota, J. P.) Optical reference geometry for stationary and static dynamics. *Gen. Relativity Gravitation* **20** (1988), no. 11, 1173–1183. (Carl Brans) **89m:83009** 83C10 (83C20)
- (with Gaffet, B.) Standard covariant formulation for perfect-fluid dynamics. *J. Fluid Mech.* **186** (1988), 1–24. (Summary) **89c:76127** 76Y05
- Carter, J. Scott** Simplifying the self-intersection sets of codimension one immersions. *Houston J. Math.* **13** (1987), no. 3, 353–366. (Summary) **89m:57033** 57R42
- Immersed codimension one projective spaces in spherical space forms. *Proc. Amer. Math. Soc.* **105** (1989), no. 1, 254–257. (M.-C. Ku) **89g:57055** 57S25 (57R42, 57R95, 57S17)
- Immersed projective planes in lens spaces. *Proc. Amer. Math. Soc.* **106** (1989), no. 1, 251–260. (Donald M. Davis) **89k:57061** 57R42 (57M35)
- Carter, R. W.** ★ On the structure and complex representation theory of finite groups of Lie type. Notes taken by Burkhard Külshammer. Vorlesungen aus dem Fachbereich Mathematik der Universität Essen [Lecture Notes in Mathematics at the University of Essen], 16, Universität Essen, Fachbereich Mathematik, Essen, 1987. 90 pp. (Bhama Srinivasan) **89a:20046** 20G05 (20C15)
- Irreducible characters of finite groups of Lie type. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 45–50, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (David B. Surowski) **89c:20018a** 20C15 (20G40)
- Raising and lowering operators for  $\mathfrak{sl}_n$  with applications to orthogonal bases of  $\mathfrak{sl}_n$ -modules. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 351–366, *Proc. Sympos. Pure Math.*, 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Jorge A. Vargas) **89h:17008** 17B20 (20C20, 20G05, 22E47)
- Carter, Thomas E.** Effects of propellant mass loss on fuel-optimal rendezvous near Keplerian orbit. *J. Guidance Control Dynamics* **12** (1989), no. 1, 19–26. (Martin Brokate) **89m:49032** 49B10 (49B36, 93C75)
- Cartians, Dan** ★ Synchronization phenomena in reaction-diffusion systems. With German, French, Spanish and Russian summaries. Teubner-Texte zur Physik [Teubner Texts in Physics], 8. BSB B. G. Teubner Verlagsgesellschaft, Leipzig, 1986. 283 pp. ISBN 3-322-00334-5 (Yuzo Hosono) **89j:20002** 92-02 (35B32, 35K57, 58F14, 80A32, 92A09, 92A40)
- Cartier, P.** (with Hongler, M.-O.; Flury, P.) Numerical study of a model of vibro-transporter. *Phys. Lett. A* **135** (1989), no. 2, 106–112. (Summary) **89m:70048** 70K40 (70K50)
- Cartier, Pierre** (with Voros, A.) Nouvelle interprétation de la formule des traces de Selberg. [A new interpretation of the Selberg trace formula] *Journées "Équations aux Dérivées Partielles" (Saint Jean de Monts, 1988)*, Exp. No. XIII, 8 pp., Ecole Polytech., Palaiseau, 1988. (see **89g:35002**) 11F72 (58G25)
- (with Voros, A.) Une nouvelle interprétation de la formule des traces de Selberg. (English summary) [A new form of Selberg's trace formula for hyperbolic Riemann surfaces] C. R.
- Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 4, 143–148. (Audrey A. Terras) **89m:11050** 11F72 (22E40, 43A85, 58G25)
- (with Feneyrol-Perrin, Yvette) Comparaison des diverses théories d'intégration en analyse non standard. (English summary) [Comparison among various integration theories in nonstandard analysis] C. R. Acad. Sci. Paris Sér. I Math. **307** (1988), no. 7, 297–301. (W. A. J. Luxemburg) **89m:28036** 28E05 (03H05, 26A42, 26E35, 28A25)
- Cartmell, M. P.** (with Roberts, John Wilson) Simultaneous combination resonances in an autoparametrically resonant system. *J. Sound Vibration* **123** (1988), no. 1, 81–101. (Summary) **89c:70052** 70K30 (73D35, 73K12)
- Carton-Lebrun, C.** A real variable definition of the Hilbert transform on  $\mathbb{S}^1$  and  $\mathbb{S}^p$ . *Appl. Anal.* **29** (1988), no. 3–4, 235–251. (Stevan Pilipović) **89m:46079** 46F12 (42A50, 44A15, 46F10)
- Cartwright, Donald I.** (with Kucharski, Krzysztof) Jackson's theorem for compact connected Lie groups. *Miniconference on harmonic analysis and operator algebras (Canberra, 1987)*, 42–44, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 15, Austral. Nat. Univ., Canberra, 1987. (see **89b:00009**) 41A10 (22C05, 22E30, 41A65, 42A10)
- (with Sordi, P. M.) A local limit theorem for random walks on the Cartesian product of discrete groups. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **1** (1987), no. 1, 107–115. (P. Gerl) (Zbl 626:60069) **89a:60159** 60J15 (60B15)
- (with Kucharski, Krzysztof) Jackson's theorem for compact connected Lie groups. *J. Approx. Theory* **55** (1988), no. 3, 352–359. (Paolo M. Sordi) **89j:43008** 43A50 (41A10)
- Random walks on direct sums of discrete groups. *J. Theoret. Probab.* **1** (1988), no. 4, 341–356. (Wolfgang Woess) **89j:60013** 60B15 (60J15)
- Cartwright, Mary L.** (with Reuter, G. E. H.) On periodic solutions of van der Pol's equation with sinusoidal forcing term and large parameter. *J. London Math. Soc.* (2) **36** (1987), no. 1, 102–114. (Tomasz Kapitaniak) **89g:34052** 34C25 (34C15)
- Carusotto, Salvatore** Theory of a quantum anharmonic oscillator. *Phys. Rev. A* (3) **38** (1988), no. 7, 3249–3257. (Yusuke Kato) **89m:81032** 81C05
- Caruth, A.** The Artin-Rees equations. *Math. Proc. Cambridge Philos. Soc.* **102** (1987), no. 3, 385–387. (W. Heinzer) **89b:13028** 13E05
- Carvalho, C.** see **Carvalho, Maria Conceição, V.**
- aragão de Carvalho, C. A.** see **Aragão de Carvalho, C. A.**
- de Carvalho, F. J. Craveiro** Projections of transnormal twisted spheres. *Portugal. Math.* **45** (1988), no. 4, 347–349. (P. T. Church) **89m:57031** 57R40
- (with Robertson, S. A.) Equichordal curves. *Proc. Roy. Soc. Edinburgh Sect. A* **110** (1988), no. 1–2, 85–91. (G. D. Chakerian) **89h:53002** 53A04 (52A99)
- vaz de Carvalho, Julia** see **Vaz de Carvalho, Júlia**
- Carvalho, L. A. V.** (with Cooke, Kenneth) A nonlinear equation with piecewise continuous argument. *Differential Integral Equations* **1** (1988), no. 3, 359–367. (Daoyi Xu) **89d:34114** 34K20 (34K15, 34K25, 92A15)
- (with Ferreira, Raimundo R.) On a new extension of Liapunov's direct method to discrete equations. *Quart. Appl. Math.* **46** (1988), no. 4, 779–788. (Author's review (L.A.V.C.)) **89m:39009** 39A11
- Carvalho, Maria Conceição, V.** (with Streit, L.) A remark on the second virial coefficient in the quantum Lorentz model. *J. Phys. A* **21** (1988), no. 19, 3739–3748. (A. Ventura) **89m:81172** 81F05 (82A40)
- Carvalho e Silva, Jaime** A sufficient condition for the well-posedness of a Goursat problem. *Portugal. Math.* **45** (1988), no. 2, 221–228. (Qing Yi Chen) **89k:35051** 35E99
- Carverhill, Andrew** Conditioning a lifted stochastic system in a product space. *Ann. Probab.* **16** (1988), no. 4, 1840–1853. (Michael Cranston) **89m:60135** 60H10
- Casadio Tarabusi, Enrico** Convex maps in  $L^p$  spaces. (Italian summary) *Rend. Sem. Mat. Univ. Politec. Torino* **44** (1986), no. 3, 365–382 (1987). (J. M. Isidro) **89f:46100** 46G20 (47H99, 52A07)
- (with Trapani, Stefano) Envelopes of holomorphy. (Italian) *Seminar in Complex Analysis and Geometry 1987 (Rende, 1987)*, 67–79, *Sem. Conf.*, 1, EditEl, Rende, 1988. (J. Kajiwara) **89i:32027** 32D10
- Casado, J. M.** (with Bonilla, L. L.; Morillo, M.) Self-synchronization of populations of nonlinear oscillators in the thermodynamic limit. *J. Statist. Phys.* **48** (1987), no. 3–4, 571–591. (C. Eugene Wayne) **89f:82014** 82A25 (58F14, 82A31, 82A35)
- (with Bonilla, L. L.; Morillo, M.) Corrigendum to: "Self-synchronization of populations of nonlinear oscillators in the thermodynamic limit" [*J. Statist. Phys.* **48** (1987), no. 3–4, 571–591; MR 89f:82014]. *J. Statist. Phys.* **50** (1988), no. 3–4, 849–850. (C. Eugene Wayne) **89k:82028** 82A25 (58F14, 82A31)
- Casady, Robert J.** (with Nathan, Gad; Sirken, Monroe G.) Alternative dual system network estimators. (French summary) *Internat. Statist. Rev.* **53** (1985), no. 2, 183–197. (K. Vijayan) **89h:62010** 62D05
- Casalegno, Paolo** Kripke's puzzle. (Italian) *Teoria* **6** (1986), no. 2, 193–207. (Ignacio Angelelli) **89c:03025** 03B45 (03A05)
- Casali, Maria Rita** (with Grasselli, Luigi) Characterizing crystallizations among Lins-Mandel 4-coloured graphs. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo* (2) **Suppl. No. 18** (1988), 221–228. (K. S. Sarkaria) **89i:57009** 57Q15 (05C99, 57M05, 57N10)
- Casali, P.** (with Guigiani, M.) New developments in the boundary element method for plane and axisymmetric elasticity. *Advanced boundary element methods (San Antonio, Tex., 1987)*, 81–91, Springer, Berlin-New York, 1988. (Summary) **89c:73002** 73-08 (73C02)
- Casals, M. R.** (with Gil, Maria Angeles) An operative extension of the likelihood ratio test from fuzzy data. *Statist. Hefte* **29** (1988), no. 3, 191–203. (Summary) **89m:62034** 62F99 (03E72)
- papacostas Casanova, Alcibiades** see **Papacostas Casanova, Alcibiades**
- Casanova, Juan** On the precession problem in the *Alfonso tables*. *De astronomia Alphonsi Regis (Berkeley, CA, 1985)*, 79–87, Univ. Barcelona, Barcelona, 1987. (see **89m:01026**) 01A35
- Casari, Adolfo** (with Barahona, Francisco) On the magnetisation of the ground states in two-dimensional Ising spin glasses. *Comput. Phys. Comm.* **49** (1988), no. 3, 417–421. (Summary) **89d:82004** 82-04 (05C70, 82A57, 82A68)
- Casarelli, M.** (with Alabiso, C.) Complexity and relaxation in nonlinear chains and in a model of radiant cavity. *Chaos and complexity (Torino, 1987)*, 93–98, World Sci. Publishing, Singapore, 1988. (From the text) **89k:58079** 58F05 (70K50, 82A99)



- Casas, Carmen Product of functions in Sobolev spaces. *Mathematical analysis and systems theory*, III, 47–57, DM, 86-5, Karl Marx Univ. Econom., Budapest, 1986. (S. N. Mukhopadhyay) **89d:46052** 46J10 (46E35)
- Casas, Eduardo *see* Casas Rentería, Eduardo
- guerrero Casas, Flor Ma. *see* Guerrero Casas, Flor Ma.
- Casas, J. A. (with Muñoz, C.) Three-generation  $SU(3) \times SU(2) \times U(1)_Y \times U(1)$  orbifold models through Fayet-Iliopoulos terms. *Phys. Lett. B* **209** (1988), no. 2-3, 214–220. (Summary) **89f:81249** 81G20 (81E30)
- (with Muñoz, C.) Inflation from superstrings. *Phys. Lett. B* **216** (1989), no. 1-2, 37–40. (Summary) **89m:83099** 83F05 (81E30, 81G25)
- Casas Alvero, E. (with Xambó Descamps, S.) Halphen's enumerative theory of conics and its extensions to higher order conditions. *Géométrie algébrique et applications, II (La Rabida, 1984)*, 55–73, *Travaux en Cours*, 23, Hermann, Paris, 1987. (Susan J. Colley) **89a:14071** 14N10 (14C17)
- Casasayas, J. (with Tufillaro, N.; Nunes, A.) Unbounded orbits of a swinging Atwood's machine. *Amer. J. Phys.* **56** (1988), no. 12, 1117–1120. (George Contopoulos) **89k:70047** 70K99
- Casas Rentería, Eduardo (with Fernández, Luis A.) Optimal control of quasilinear multistate elliptic systems. *Analysis and optimization of systems (Antibes, 1988)*, 395–406, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89c:00031**) **49A22** (49B22, 93C20)
- (with Bonnans, J. Frédéric) Contrôle de systèmes elliptiques semilinéaires comportant des contraintes sur l'état. (English summary) [Control of semilinear elliptic systems with state constraints] *Nonlinear partial differential equations and their applications. Collège de France seminar, Vol. VIII (Paris, 1984–1985)*, 69–86, *Pitman Res. Notes Math. Ser.*, 166, Longman Sci. Tech., Harlow, 1988. (Françoise Berquier) **89d:49022** 49B22 (35J60, 93C20)
- (with Bonnans, J. Frédéric) Optimal control of state-constrained unstable systems of elliptic type. *Control of partial differential equations (Santiago de Compostela, 1987)*, 84–91, *Lecture Notes in Control and Inform. Sci.*, 114, Springer, Berlin-New York, 1989. (see **89j:00028**) **49B27**
- (with Fernández, Luis A.) Optimal control of quasilinear elliptic equations. *Control of partial differential equations (Santiago de Compostela, 1987)*, 92–99, *Lecture Notes in Control and Inform. Sci.*, 114, Springer, Berlin-New York, 1989. (see **89j:00028**) **49B22** (49E05)
- Casasón, Trinidad On quasi LF spaces and the closed graph theorem. (Serbo-Croatian summary) *Rad. Mat.* **4** (1988), no. 1, 159–173. (José Bonet) **89b:46005** 46A30 (46A15)
- Casas-Vázquez, J. (with Lebon, G.; Pérez-García, Carlos) On the thermodynamic foundations of viscoelasticity. *J. Chem. Phys.* **88** (1988), no. 8, 5068–5075. (Summary) **89d:73025** 73F99 (73B30)
- (with Jou, D.; Lebon, G.) Extended irreversible thermodynamics. *Rep. Progr. Phys.* **51** (1988), no. 8, 1105–1179. (B. H. Lavenda) **89k:82044** 82A35
- Canali, G. (with Guarneri, I.; Perotti, L.) Chaos and quantum dynamics of simple models. (Russian summary) *Physics of multiparticle systems*, No. 14 (Russian), 6–11, 97, 100, "Naukova Dumka", Kiev, 1988. (see **89k:82001**) **58F13** (81D99)
- (with Brivio, G. P.; Perotti, L.; Guarneri, I.) Quantum suppression of chaotic diffusion: theory and experiment. *Progress in chaotic dynamics. Phys. D* **33** (1988), no. 1-3, 51–57. **81C99**
- Canazza, Peter G. (with Beauzamy, Bernard) Isométries de l'espace de Tzirelson. [Isometries of the Tzirelson space] *Séminaire d'Analyse Fonctionnelle 1984/1985*, 119–124, *Publ. Math. Univ. Paris VII*, 26, Univ. Paris VII, Paris, 1986. (Catherine Finet) **89f:46026** 46B20 (47B37)
- Cascales, Bernardo A note on the localization of sets of linear mappings. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 1 (Spanish) (Badajoz, 1986)*, 140–145, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (P. Pérez Carreras) **89j:46006** 46A32
- (with Orihuela, J.) Compactness in locally convex spaces. *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 1 (Spanish) (Badajoz, 1986)*, 146–150, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (P. Pérez Carreras) **89j:46011** 46A50
- Cascetta, Ennio (with Nguyen, Sang) A unified framework for estimating or updating origin/destination matrices from traffic counts. *Transportation Res. Part B* **22** (1988), no. 6, 437–455. (Not in MR) **90C08** (90B20)
- Casclari, Blaglo (with Leuci, Margherita) Extensions of nonlinear connections to the algebra of tensor fields along the canonical projection of the tangent bundle of a differentiable manifold. (Italian. English summary) *Matematiche (Catania)* **39** (1984), no. 1-2, 19–28 (1988). (V. Cruceanu) **89d:53057** 53C05
- (with Amici, O.) The local version of the Ambrose-Cartan-Hicks theorem for Finsler connection. *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces (Brasov, 1986)*, 25–36, *Soc. Stiint. Mat. R.S. România, Bucharest*, 1986. (Masao Hashiguchi) **89e:53032** 53B40
- (with Amici, O.) An example of Lagrangian theory of relativity satisfying the conservation law. *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces (Brasov, 1986)*, 37–42, *Soc. Stiint. Mat. R.S. România, Bucharest*, 1986. (Mihai Anastasie) **89f:53102** 53C60 (53C80, 83D05)
- (with Amici, O.; Hashiguchi, Masao) On Finsler metrics associated with a Lagrangian. *Rep. Fac. Sci. Kagoshima Univ. Math. Phys. Chem. No. 20* (1987), 33–41. (H. Rund) **89g:53030** 53B40 (58F05)
- (with Amici, O.; Dragomir, Sorin) On the cohomology of Finsler manifolds. *Topics in differential geometry, Vol. I, II (Debreceen, 1984)*, 57–82, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (L. Tamásy) **89e:53101**; **EA 89m** 53C60 (58A12)
- Casdagli, Martin Periodic orbits for dissipative twist maps. *Ergodic Theory Dynamical Systems* **7** (1987), no. 2, 165–173. (Helmut Rüssmann) **89b:58177** 58F22 (34C35, 54H20)
- Casella, George Conditionally acceptable recensored set estimators. *Ann. Statist.* **15** (1987), no. 4, 1363–1371. (Shelmyahu Zacks) **89b:62052** 62F35 (62H12)
- (with Maatta, Jon M.) Conditional properties of interval estimators of the normal variance. *Ann. Statist.* **15** (1987), no. 4, 1372–1388. (G. K. Robinson) **89a:62078** 62F25 (62A20)
- Conditionally acceptable frequentist solutions. With discussion and a reply by the author. *Statistical decision theory and related topics, IV, Vol. 1 (West Lafayette, Ind., 1986)*, 73–117, Springer, New York-Berlin, 1988. (A. L. Rukhin) **89c:62065** 62F25 (62A99)
- Caselles, V. On band irreducible operators on Banach lattices. *Quaestiones Math.* **10** (1987), no. 4, 339–350. (Peter Dodds) **89f:47054** 47B55 (47A10)
- Dunford-Pettis operators and the Radon-Nikodým property. *Arch. Math. (Basel)* **50** (1988), no. 2, 183–188. (Walter Schachermayer) **89a:46044** 46B30 (46B22, 47B99)
- A short proof of the equivalence of KMP and RNP in Banach lattices and preduals of von Neumann algebras. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 973–974. (Sze-Kai Tsui) **89c:46029** 46B22 (46G10, 46L10)
- An extension of Ando-Krieger's theorem to ordered Banach spaces. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1070–1072. (George Isac) **89f:47055** 47B55 (47B38)
- Caserta, Francesco An application of Baumslag-Solitar non-Hopfian groups to finitary automorphisms. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 30–32. (Yu. I. Merzlyakov) **89d:20025** 20E36
- maravall Casenoves, Dario *see* Maravall Casenoves, Dario
- Cassey, Richard M. (with James, Donald A.) Parallel and vector processing in landscape dynamics. *Appl. Math. Comput.* **27** (1988), no. 1, 3–22. (Summary) **89b:68155** 68U20 (68Q10, 90A30, 92A17)
- Cash, J. R. An adaptive deferred correction method for nonlinear two-point boundary value problems. *Numerical analysis 1987 (Dundee, 1987)*, 39–52, *Pitman Res. Notes Math. Ser.*, 170, Longman Sci. Tech., Harlow, 1988. (Bernhard A. Schmitt) **89h:65126** 65L10
- On the numerical integration of nonlinear two-point boundary value problems using iterated deferred corrections. II. The development and analysis of highly stable deferred correction formulae. *SIAM J. Numer. Anal.* **25** (1988), no. 4, 862–882. (Summary) **89g:65099** 65L10
- Casher, A. (with Polarski, D.) On the construction of an  $SU(8)$  charge in  $N = 8$  supergravity. *Classical Quantum Gravity* **5** (1988), no. 4, 551–559. (A. D. Popova) **89g:83053** 83E50 (81G20)
- Casini, Emanuele About some parameters of normed linear spaces. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **80** (1986), no. 1-2, 11–15 (1987). (John R. Giles) **89b:46022** 46B20 (46C05)
- Casini, P. Newton's *Principia* and the philosophers of the Enlightenment. Newton's *Principia* and its legacy. *Notes and Records Roy. Soc. London* **42** (1988), no. 1, 35–52. (Jens Høyrup) **89h:01026** 01A50
- Caso, C. (with Gil, María Angeles) A note on the estimation of the mutual information in the stratified sampling. (Italian summary) *Metron* **45** (1987), no. 1-2, 295–301. (Summary) **89b:62025** 62D05 (62B10)
- Casolo, Carlo Groups with subnormal subgroups of bounded defect. *Rend. Sem. Mat. Univ. Padova* **77** (1987), 177–187. (From the text) **89i:20055** 20E34 (20D35)
- Direct products and defects of subnormal subgroups. *J. London Math. Soc.* (2) **38** (1988), no. 1, 56–66. (T. O. Hawkes) **89c:20043** 20D35 (20D10)
- Caspers, W. J. (with Iske, P. L.) Exact ground states of one-dimensional valence-bond-solid Hamiltonians. *Modern Phys. Lett. B* **1** (1987), no. 5-6, 231–237. (H. N. V. Temperley) **89f:82079** 82A68
- Cassandras, Christos G. (with Strickland, Stephen G.) Perturbation analysis and augmented Markov chains for discrete event systems. *Analysis and optimization of systems (Antibes, 1988)*, 939–950, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89c:00031**) **93B35** (60J10, 93B07, 93E03)
- Optimal transmission and jamming strategies in a communication channel. *Optimal Control Appl. Methods* **9** (1988), no. 1, 19–36. (Summary) **89a:94004** 94A05 (49B36, 90D25, 90D40, 94A40)
- Cassell, J. S. Liouville-Green asymptotic theory for second-order equations with complex-valued coefficients. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 154, 135–149. (T. G. Proctor) **89g:34080** 34E05 (34C20)
- Casselman, William *see* Robert P. Langlands receives first NAS Award in Mathematics, **89b:01070**
- Cassels, J. W. S. Addendum: "A Diophantine equation" [Glasgow Math. J. **27** (1985), 11–18; MR **87b:11022**]. *Glasgow Math. J.* **29** (1987), no. 2, 275. (Editors) **89h:11021** 11D25
- *see also* Heilbronn, Hans Arnold, **89i:01140**
- Cassidy, Charles Embedding of  $U_n$ -groups in  $D_n$ -groups. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 15–20. (David Meier) **89c:20041** 20E06 (20E25)
- Cassidy, David C. *see* Einstein, Albert, **89a:01102**
- Cassier, Gilles Algèbres ultrafaibles d'opérateurs. [Ultraweak operator algebras] *Séminaire d'Analyse Fonctionnelle 1985/1986*, 1–9, *Publ. Math. Univ. Paris VII*, 28, Univ. Paris VII, Paris, 1988. (Edward Azoff) **89i:47083** 47D25 (46A32, 47C05)
- Cassin, Jean Rodolfo Bettazzi (1861–1941), précurseur oublié de l'axiome du choix. (English and Italian summaries) [Rodolfo Bettazzi (1861–1941): forgotten precursor of the axiom of choice] *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **116** (1982), no. 1-2, 169–179 (1984). (Ignacio Angelelli) **89b:01019** 01A55 (01A70, 04-03, 04A25)
- The first arithmetic book of Francisco Maurolico, written in 1557 and printed in 1575: a step towards a theory of numbers. *Mathematics from manuscript to print, 1300–1600 (Oxford, 1984)*, 162–179, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1988. (Doru Stănescu) **89i:01017** 01A40 (01A45, 11-03)
- Casson, Andrew J. (with Gordon, C. McCa.) Reducing Heegaard splittings. *Topology Appl.* **27** (1987), no. 3, 275–283. (Tsuyoshi Kobayashi) **89c:57020** 57N70 (57M99, 57N10)
- (with Bleiler, Steven A.) Automorphisms of surfaces after Nielsen and Thurston. *London Mathematical Society Student Texts*, 9, Cambridge University Press, Cambridge-New York, 1988. iv+105 pp. ISBN 0-521-34203-1 (William Dunbar) **89k:57025** 57N05 (32G15, 57R30, 58F15)
- Cassou-Nogues, Ph. (with Taylor, M. J.) A note on elliptic curves and the monogeneity of rings of integers. *J. London Math. Soc.* (2) **37** (1988), no. 1, 63–72. (Teruo Takeuchi) **89c:11158** 11R20 (11G05, 11R33)
- Cassou-Nogues, Pierrette Étude du comportement du polynôme de Bernstein lors d'une déformation à  $\mu$ -constant de  $X^a + Y^b$  avec  $(a, b) = 1$ . [Study of the behavior of the Bernstein polynomial under a  $\mu$ -constant deformation of  $X^a + Y^b$ , with  $(a, b) = 1$ ] *Compositio Math.* **63** (1987), no. 3, 291–313. (M. Sebastiani) **89k:32042** 32G11 (32B30, 32C40)

- Castagnino, Mario** (with Domenech, G.; Noriega, R. J.; Schifini, C. G.) On a Weyl-type theorem for higher-order Lagrangians. *J. Math. Phys.* **28** (1987), no. 8, 1854–1857. (R. J. McKellar) **89a:83044** 83D05 (83C47)
- (with Mazzitelli, F. D.; Paz, J. P.) Cauchy data and Hadamard singularities in time-dependent backgrounds. *Phys. Rev. D* **3** (1987), no. 10, 2994–3001. (Summary) **89a:81105** 81E99 (81E30, 83C47)
- Probability and time in quantum gravity. *SILARG, VI (Rio de Janeiro, 1987)*, 271–302, *World Sci. Publishing, Singapore*, 1988. (Byung Ha Cho) **89j:83037** 83C45
- (with Levinas, M. L.) Photon motion in the ECSK theory. *Gen. Relativity Gravitation* **20** (1988), no. 7, 715–721. (Summary) **89e:83064** 83E10 (81G10)
- (with Laciana, Carlos) On a parametrization method for the semiclassical vacuum problem. *I. J. Math. Phys.* **29** (1988), no. 2, 460–475. (Gary T. Horowitz) **89a:81087** 81E20
- (with el Hasi, C. D.; Mazzitelli, F. D.; Paz, J. P.) On the Dirac equation in anisotropic backgrounds. *Phys. Lett. A* **128** (1988), no. 1–2, 25–28. (Charles A. Nelson) **89h:81084** 81D25 (81E20, 83C15)
- (with Domenech, G.; Levinas, M. L.; Umerez, N.) Supersymmetric couplings and trajectories in  $N = 1$  supergravity. *Classical Quantum Gravity* **6** (1989), no. 1, L1–L5. (Summary) **89j:83086** 83E50
- Castaing, C.** Compacité dans l'espace des mesures de probabilité de transition. [Compactness in the space of transition probability measures] *Séminaire d'analyse convexe*, Vol. 16, Exp. No. 5, 19 pp., *Univ. Sci. Tech. Languedoc, Montpellier*, 1986. (Thomas E. Armstrong) **89a:46061** 46E27 (28B20, 54C60, 54C65, 60B10, 90A10)
- Quelques résultats de convergence dans les inclusions différentielles. [Some results on convergence in differential inclusions] *Séminaire d'analyse convexe*, Vol. 17, Exp. No. 12, 37 pp., *Univ. Sci. Tech. Languedoc, Montpellier*, 1987. (Halina Frankowska) **89j:34020** 34A60 (26E25, 34G20)
- Validité du théorème de Reshetnyak dans les espaces hilbertiens. [Validity of Reshetnyak's theorem in Hilbert spaces] *Séminaire d'analyse convexe*, Vol. 17, Exp. No. 8, 9 pp., *Univ. Sci. Tech. Languedoc, Montpellier*, 1987. (Michel Valadier) **89m:28017** 28B05 (46G10)
- Castan, S.** (with Shen, J.) Fast approximate realization with no multiplications of linear filters. *Mathematics in signal processing (Bath, 1985)*, 523–540, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, *Oxford Univ. Press, New York*, 1987. (B. D. Denevski) **89d:94005** 94A05
- ponte Castañeda, P.** see **Ponte Castañeda, P.**
- Castañeda Bravo, Fernando** The structure of continuous convergence and its importance in differential calculus in nonnormable spaces. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* **81** (1987), no. 1, 37–54. (Javier Gómez Gil) **89e:58013** 58C20 (46G05)
- saorín Castaño, M.** see **Saorín Castaño, M.**
- Castaño, David A.** (with Teneketzis, Demosthenis) Further results on the asymptotic agreement problem. *IEEE Trans. Automat. Control* **33** (1988), no. 6, 515–523. (Summary) **89c:90006** 90A05
- (with Luh, Peter B.; Miao, Xi-Yi; Chang, Shi Chung) Stochastic task selection and renewable resource allocation. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 335–339. (Summary) **89j:90160** 90B50 (90A30, 90B35)
- Castaños, O.** (with Draayer, J. P.) Contracted symplectic model with ds-shell applications. *Nuclear Phys. A* **491** (1989), no. 3, 349–372. (Summary) **89m:81195** 81G30
- vidal Castedo, Elvio** see **Vidal Castedo, Elvio**
- Castelein, R.** (with Johnson, Alan) Constrained optimal control. *IEEE Trans. Automat. Control* **34** (1989), no. 1, 122–126. (Mikolaj Buslowicz) **89k:93041** 93B17 (93B50, 93C35, 93C55)
- Castell, L.** (with Heidenreich, W.; Künemund, T.) All unitary irreducible representations of  $osp(N, 4)$  with positive energy. *Quantum theory and the structures of time and space*, Vol. 6 (Tutzing, 1984), 138–175, *Hanser, Munich*, 1986. (Bani Mitra) **89k:17047** 17B70 (22E70, 81G20)
- see also *Quantum theory and the structures of time and space*, **89e:81004**
- Castella, D.** Erratum: "Compressible regular Baer rings" [Comm. Algebra **15** (1987), no. 8, 1621–1635; MR 88f:16003]. (French) *Comm. Algebra* **17** (1989), no. 1, 247–250. (Editors) **89j:16003** 16A08 (16A52)
- Castellani, L.** Chiral  $D = 10$ ,  $N = 2$  supergravity on the group manifold. I. Free differential algebra and solution of Bianchi identities. *Nuclear Phys. B* **294** (1987), no. 4, 877–889. (Mark D. Roberts) **89e:83080** 83E50 (53C80, 83E15)
- SUPERGRAV—a REDUCE package for Bose-Fermi exterior calculus and the construction of supergravity actions. *Internat. J. Modern Phys. A* **3** (1988), no. 6, 1435–1449. (Mark D. Roberts) **89k:83001** 83–04 (83E50)
- String field theory as general relativity of loops. *Phys. Lett. B* **206** (1988), no. 1, 47–50. (Jouko Mickelsson) **89m:81131** 81E99 (17A70, 17B65, 81E30)
- Castellanos, Darío** The ubiquitous  $\pi$ . I. *Math. Mag.* **61** (1988), no. 2, 67–98. (E. J. Barbeau) **89c:01025** 01A50 (11–03, 26A09)
- The ubiquitous  $\pi$ . II. *Math. Mag.* **61** (1988), no. 3, 148–163. (E. J. Barbeau) **89c:11184** 11Y60 (01A05, 11–01, 11–03, 26A09)
- Castellanos Noda, Longina** The safeguarded cubic interpolation method for computing a point satisfying the Wolfe conditions. (Spanish. English summary) *Investigación Oper.* **8** (1987), no. 1, 33–42. (Summary) **89d:90182** 90C30 (65D05)
- dacunha-Castelle, Didier** see **Dacunha-Castelle, Didier**
- Castelli, Benedetto** see **Galilei, Galileo**, **89i:01139**
- Castelli, M.** (with Marsili-Libelli, S.) An adaptive search algorithm for numerical optimization. *Appl. Math. Comput.* **23** (1987), no. 4, 341–357. (R. N. Kaul) **89a:90083** 90C05 (65K05)
- Castellini, Gabriele** Closure operators and functorial topologies. *J. Pure Appl. Algebra* **55** (1988), no. 3, 251–259. (M. Husek) **89k:18006** 18A40
- Castelló, Francisco** (with Samsó, Julio) An hypothesis on the epoch of Ptolemy's star catalogue according to the authors of the Alfonsine tables. *J. Hist. Astronom.* **19** (1988), no. 2, 115–120. (Anne Tihon) **89h:01019** 01A35
- garcía Castellón, F.** see **García Castellón, F.**
- Casten, R. F.** (with Warner, Daniel D.) The interacting boson approximation. *Rev. Modern Phys.* **60** (1988), no. 2, 389–469. (Summary) **89b:81249** 81G30
- van Casteren, Jan A.** see **Van Casteren, Jan A.**
- Casti, J.** (with Andersson, Å. E.; Christiansen, P. L.; Karlqvist, Å.) Emerging paradigms in applied mathematical modelling—an introduction. Special issue on emerging paradigms in applied mathematical modelling. *J. Comput. Appl. Math.* **22** (1988), no. 2–3, 143–181. (David Yeung) **89j:92001** 92–01 (58F40, 90A16, 93A10)
- Engineering control systems and computing in the 90s. Special issue on emerging paradigms in applied mathematical modelling. *J. Comput. Appl. Math.* **22** (1988), no. 2–3, 301–314. (Summary) **89e:93004** 93A10 (00A69, 68M05)
- see also *Special issue: Emerging paradigms in applied mathematical modelling*, **89c:00028**
- alfonso x of Castille** see **Alfonso X of Castille**
- Castillo, Enrique** ★ Extreme value theory in engineering. *Statistical Modeling and Decision Science*. *Academic Press, Inc., Boston, MA*, 1988. xvi+389 pp. ISBN 0-12-163475-2 (J. V. Deshpande) **89j:62001** 62–02 (62G30)
- torres del Castillo, G. F.** see **Torres del Castillo, G. F.**
- luna del Castillo, J. D.** see **Luna del Castillo, J. D.**
- Castillo, Jesús M. F.** see **Fdez. Castillo, Jesús M.**
- Castillo, José E.** (with Steinberg, Stanly; Roache, Patrick J.) Parameter estimation in variational grid generation. *Appl. Math. Comput.* **28** (1988), no. 2, 155–177. (Summary) **89h:65201** 65N50
- (with Steinberg, Stanly; Roache, Patrick J.) On the folding of numerically generated grids: use of a reference grid. *Comm. Appl. Numer. Methods* **4** (1988), no. 4, 471–481. (Summary) **89e:65129** 65N50
- escamilla-Castillo, Juan** see **Escamilla-Castillo, Juan**
- Castillo-Chávez, C.** Nonlinear character dependent models with constant time delay in population dynamics. *J. Math. Anal. Appl.* **128** (1987), no. 1, 1–29. (Hal Leslie Smith) **89a:92036** 92A15
- Linear character-dependent models with constant time delay in population dynamics. *Math. Modelling* **9** (1987), no. 11, 821–836. (V. Sree Hari Rao) **89e:92036** 92A15
- Castle, C. M. A.** (with Pitteway, M. L. V.) On the subtractive version of Euclid's algorithm. *Bull. Inst. Math. Appl.* **24** (1988), no. 1–2, 17–21. (H. J. Godwin) **89g:11004** 11A05 (11N37)
- Castoral, Ralf** (with Länger, Helmut) A formula for the solution of a system of difference equations over a commutative ring. II. *Contributions to general algebra, 5 (Salzburg, 1986)*, 91–93, *Hölder-Pichler-Tempsky, Vienna*, 1987. (André Hautot) **89d:39001** 39A10 (12H10)
- Castorina, P.** (with Agodi, A.; Consoli, M.) Renormalization group equations and the continuum limit of some renormalizable quantum field theories. *Phys. Lett. B* **202** (1988), no. 1, 127–130. (Summary) **89a:81080** 81E15
- pérez Castriello, J. D.** see **Pérez Castriello, J. D.**
- Castro, Alfonso** (with Kurepa, Alexandra) Energy analysis of a nonlinear singular differential equation and applications. (Spanish summary) *Rev. Colombiana Mat.* **21** (1987), no. 1, 155–166. (Snezhana Khristova) **89j:34083** 34E15
- (with Shivaji, Ratnasingham) Multiple solutions for a Dirichlet problem with jumping nonlinearities. II. *J. Math. Anal. Appl.* **133** (1988), no. 2, 509–528. (From the introduction) **89c:34031** 34B15
- (with Shivaji, Ratnasingham) Nonnegative solutions for a class of radially symmetric nonpositone problems. *Proc. Amer. Math. Soc.* **106** (1989), no. 3, 735–740. (C. A. Swanson) **89k:35015** 35B05 (35J65)
- Radially symmetric solutions to a superlinear Dirichlet problem in a ball with jumping nonlinearities. *Trans. Amer. Math. Soc.* **315** (1989), no. 1, 353–372. (H. J. Kuiper) **89m:35076** 35J65 (35B05)
- bermúdez de Castro, Alfredo** see **Bermúdez de Castro, Alfredo**
- de Castro, Constanancio** Introduction to axiomatic measurement in behavioral science. I. Order structures. (Spanish. English summary) *Teoría (San Sebastián)* **(2)** **2** (1987), no. 5–6, 401–426. (Mario Bunge) **89m:92053** 92A25 (00A69, 90A10)
- Castro, Eduardo A.** (with Fernández, Francisco M.; Artega, Gustavo A.) Critical parameters from power series expansions. *J. Math. Chem.* **1** (1987), no. 3, 267–280. (Summary) **89a:82012** 82A25
- (with Fernández, Francisco M.) Eigenvalues from the Riccati equation. *J. Phys. A* **20** (1987), no. 16, 5541–5547. (Ernest R. Davidson) **89b:34057** 34B25 (34B05, 65L15, 81–08, 81C05)
- (with Díaz, Carlos G.; Fernández, Francisco M.) On the numerical integration of the Schrödinger equation. *J. Phys. A* **21** (1988), no. 1, L11–L13. (Summary) **89c:81008** 81–08
- (with Estrín, Darío A.; Fernández, Francisco M.) Generalized Hill determinant method. *Phys. Lett. A* **130** (1988), no. 6–7, 330–332. (M. Znojil) **89i:81017** 81C05 (34A50, 34B25, 65L10)
- (with Fernández, Francisco M.; Frydman, Gabriel I.) Tight bounds to the Schrödinger equation eigenvalues. *J. Phys. A* **22** (1989), no. 6, 641–645. (Summary) **89m:81034** 81C05 (81–08)
- Castro, Francisco** Calculs effectifs pour les idéaux d'opérateurs différentiels. [Effective calculations for ideals of differential operators] *Géométrie algébrique et applications, III (La Rabida, 1984)*, 1–19, *Travaux en Cours*, 24, *Hermann, Paris*, 1987. (Herwig Hauser) **89a:32010** 32C38 (32B05)
- canto e Castro, L.** see **Canto e Castro, L.**
- Castro, Regina** (with Bonome, A.) Normality of almost paracontact 3-structure. *Bull. Math. Soc. Sci. Math. R. S. Roumanie (N.S.)* **31**(79) (1987), no. 2, 107–115. (Ion Mihai) **89b:53059** 53C15
- Castro Galdames, Rafael** (with Díaz Reyes, Gilberto) Asymptotic solution of the problem of waves on the surface of a plane layer of stratified liquid with rotation. (Spanish. English summary) *Cienc. Mat. (Havana)* **8** (1987), no. 1, 25–36. (Summary) **89a:76052** 76V05 (35C20, 35L99, 76U05)
- Castro-Linares, Rafael** (with Byrnes, Christopher I.; Isidori, A.) Linear model matching with prescribed tracking error and internal stability for nonlinear systems. *Analysis and optimization of systems (Antibes, 1988)*, 249–258, *Lecture Notes in Control and Inform. Sci.*, 111, *Springer, Berlin-New York*, 1988. (Summary) **89e:93085** 93B50 (93C05)
- Casull, Vincenzo** (with Greenspan, Donald) ★ Numerical analysis for applied mathematics, science, and engineering. *Addison-Wesley Publishing Company, Advanced Book Program*, Redwood City, CA, 1988. x+341 pp. ISBN 0-201-09286-7 (Charles Saltzer) **89g:65004** 65–01



- Eulerian-Lagrangian methods for the Navier-Stokes equations at high Reynolds number. Numerical methods in laminar and turbulent flow (Montreal, PQ, 1987). *Internat. J. Numer. Methods Fluids* 8 (1988), no. 10, 1349–1360. (Summary) **89m:76006** 76–08 (76D05, 76R99)
- Cataldo, H. M.** (with Hernández, E. S.) Non-Markovian quantal Brownian motion model. *J. Statist. Phys.* 50 (1988), no. 1–2, 383–403. (Summary) **89m:81269** 81G35 (82A99)
- (with Hernández, E. S.) Memory loss process and non-Gibbsian equilibrium solutions of master equations. *J. Statist. Phys.* 53 (1988), no. 3–4, 673–688. (Summary) **89k:82036** 82A30 (81H99)
- (with Hernández, E. S.) Semiclassical description of harmonic quantal Brownian motion. *Phys. Rev. A* (3) 39 (1989), no. 4, 2034–2041. (Summary) **89m:81050** 81C25 (81K05)
- Catanese, F.** (with Bartalesi, A.) Surfaces with  $K^2 = 6$ ,  $\chi = 4$ , and with torsion. Conference on algebraic varieties of small dimension (Turin, 1985). *Rend. Sem. Mat. Univ. Politec. Torino* 1986, Special Issue, 91–110 (1987). (Paltin Ionescu) **89a:14044** 14J29 (14J10)
- Canonical rings and “special” surfaces of general type. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 175–194, *Proc. Sympos. Pure Math.*, 46, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Gang Xiao) **89f:14039** 14J29 (14J10)
- Moduli of algebraic surfaces. *Theory of moduli* (Montecatini Terme, 1985), 1–83, *Lecture Notes in Math.*, 1337, Springer, Berlin-New York, 1988. (Arnaud Beauville) **89i:14031** 14J15 (14J29, 32G13, 32J15)
- (with Debarre, Olivier) Surfaces with  $K^2 = 2$ ,  $p_g = 1$ ,  $q = 0$ . *J. Reine Angew. Math.* 395 (1989), 1–55. (Gang Xiao) **89m:14017** 14J10 (14J29)
- Catelan, Paolo** (with Lucchin, Francesco; Matarrese, Sabino) Peak number density of non-Gaussian random fields. *Phys. Rev. Lett.* 61 (1988), no. 3, 267–280. (Summary) **89d:85010** 85A35 (60G60)
- Cater, F. S.** On monotonic functions and real number order. *Real Anal. Exchange* 13 (1987/88), no. 2, 454–458. (Cheng-Ming Lee) **89f:26011** 26A48
- Cates, Michael E.** (with Barber, Michael N.) Effect of boundary conditions on the finite-size transverse Ising model. *Phys. Rev. B* (3) 36 (1987), no. 4, 2024–2029. (W. Th. F. den Hollander) **89d:82026** 82A15 (82A97)
- Catherall, D.** The optimisation of approximate-factorisation schemes for solving elliptic partial differential equations in three dimensions, featuring a new two-factor scheme. *J. Comput. Phys.* 78 (1988), no. 1, 138–159. (Summary) **89g:65153** 65N99
- de sainte-Catherine, Myriam** see de Sainte-Catherine, Myriam
- nguyen Cat Ho** see Nguyen Cat Ho
- Caticha, Ariel** Dual potentials in nonabelian gauge theories. *Phys. Rev. D* (3) 37 (1988), no. 8, 2323–2327. (Summary) **89d:81059** 81E13
- Caticha, Nestor** Limit theorems for spin systems with an abelian discrete symmetry. *J. Math. Phys.* 29 (1988), no. 11, 2491–2493. (A. Comtet) **89m:82072** 82A68 (82A25)
- Catlin, David W.** Regularity of solutions of the  $\bar{\partial}$ -Neumann problem. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 708–714, Amer. Math. Soc., Providence, RI, 1987. (Mei Chi Shaw) **89i:32040** 32F20 (35N15)
- (with Bell, Steven R.) Regularity of CR mappings. *Math. Z.* 199 (1988), no. 3, 357–368. (John P. D’Angelo) **89i:32028** 32D15 (32F15, 32F20, 32H35)
- A Newlander-Nirenberg theorem for manifolds with boundary. *Michigan Math. J.* 35 (1988), no. 2, 233–240. (Zhihua Chen) **89j:32026** 32F25 (32C10, 35N15)
- Catlin, Donald E.** ★ Estimation, control, and the discrete Kalman filter. *Applied Mathematical Sciences*, 71. Springer-Verlag, New York-Berlin, 1989, xiv+274 pp. ISBN 0-387-96777-X (L. Stettner) **89k:93001** 93-01 (93E10, 93E11, 93E20)
- Catlin, Paul A.** Super-Eulerian graphs, collapsible graphs, and four-cycles. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 233–246. (Prabir Das) **89i:05192** 05C45 (05C38)
- Nearly-Eulerian spanning subgraphs. *Acta Combin.* 25 (1988), 115–124. (François Jaeger) **89g:05072** 05C45 (05C05)
- Graph homomorphisms into the five-cycle. *J. Combin. Theory Ser. B* 45 (1988), no. 2, 199–211. (J. Sheehan) **89m:05095** 05C75 (05C10)
- A reduction method to find spanning Eulerian subgraphs. *J. Graph Theory* 12 (1988), no. 1, 29–44. (François Jaeger) **89b:05116** 05C45 (05C38)
- tanzil Cattabianchi, Luigi** see Tanzil Cattabianchi, Luigi
- Cattabriga, L.** see Recent developments in hyperbolic equations, **89i:35001**
- Cattaneo, Gianpiero** (with Dalla Pozza, Carlo; Garola, Claudio; Nisticò, Giuseppe) On the logical foundations of the Jauch-Piron approach to quantum physics. *Internat. J. Theoret. Phys.* 27 (1988), no. 11, 1313–1349. (Summary) **89j:81013** 81B10
- piacentini Cattaneo, Giulia Maria** see Piacentini Cattaneo, Giulia Maria
- Cattani, Eduardo** (with Kaplan, Aroldo; Schmid, Wilfried) Some remarks on  $L^2$  and intersection cohomologies. *Hodge theory* (Sant Cugat, 1985), 32–41, *Lecture Notes in Math.*, 1246, Springer, Berlin-New York, 1987. (J. H. de Boer (Zbl 624:14013)) **89f:32018** 32C35 (32G20)
- Cattermole, Kenneth W.** ★ Mathematical foundations for communication engineering. Vol. 2. Statistical analysis and finite structures. A Halsted Press Book. John Wiley & Sons, Inc., New York, 1986. x+357 pp. ISBN 0-470-20177-0 (From the introduction) **89c:94001** 94-01 (62-01, 94A05, 94A13, 94A17, 94A60, 94B15)
- Cattiaux, Patrick** Time reversal of diffusion processes with a boundary condition. *Stochastic Process. Appl.* 28 (1988), no. 2, 275–292. (Ralf Manthey) **89g:60243** 60J60 (60H10, 60J35)
- Catton, Philip** (with Solomon, Graham) Discussion: uniqueness of embeddings and space-time relationalism. *Philos. Sci.* 55 (1988), no. 2, 280–291. (Lawrence Sklar) **89d:03006** 03B30 (83A05)
- Cătușanu, Irina**  $\mathcal{P}$ -bounded operator and  $\mathcal{F}$ -bounded operators. *An. Univ. București Mat.* 36 (1987), 9–12. (Peter Dodds) **89a:47057** 47B55 (46A40, 47D99)
- phan dang Cau** see Phan Dang Cau
- Cauchon, Gérard** Commutants des modules de type fini sur les algèbres noethériennes. [Commutants of modules of finite type over Noetherian algebras] *Séminaire d’algèbre Paul Dubreil et Marie-Paule Malliavin, 37ème année* (Paris, 1985), 109–117, *Lecture Notes in Math.*, 1220, Springer, Berlin-New York, 1986. (Iuliu Crivei) **89a:16028** 16A45
- Centralisateurs dans les anneaux de polynômes différentiels formels et leurs corps de fractions. [Centralizers in formal differential polynomial rings and their fraction fields] *Ring theory* (Granada, 1986), 60–68, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (K. R. Goodearl) **89m:16005** 16A05 (12H05, 16A39, 47E05, 47G05, 58G07)
- Centralisateurs des opérateurs pseudo-différentiels formels en une indéterminée. [Centralizers of formal pseudodifferential operators in one indeterminate] *Deuxième Contact Franco-Belge en Algèbre* (Faulx-les-Tombes, 1987). *Bull. Soc. Math. Belg. Sér. A* 40 (1988), no. 2, 185–190. (Arno van den Essen) **89m:12007** 12H20 (16A72)
- Cauchy, A.-L.** see Koetzier, T. **89a:01035**; Laugwitz, Detlef, **89a:01036**; Rozhko, E. K., **89b:01025** and Schneider, Ivo, **89f:01042**
- Causon, D. M.** High resolution finite volume schemes and computational aerodynamics. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 63–74, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 65M05 (35L65, 76-08, 76L05)
- Caussignac, Ph.** (with Descloux, J.; Rappaz, J.) Study of an elliptic problem with nonlinear boundary conditions. *Math. Methods Appl. Sci.* 9 (1987), no. 3, 261–275. (R. Schumann) **89c:35057** 35J65 (47H15)
- Causinus, H.** (with Besse, Ph.; Ferré, L.; Fine, Jeanne) Principal components analysis and optimization of graphical displays. *Statistics* 19 (1988), no. 2, 301–312. (S. John) **89g:62087** 62H25
- Cavailles, Jean** see Mathematics and philosophy: Jean Cavailles, Albert Lautman, **89j:00016**
- Cavalcante, J. A.** (with Tenenblat, K.) Conservation laws for nonlinear evolution equations. *J. Math. Phys.* 29 (1988), no. 4, 1044–1049. (Hubert Golik) **89j:58042** 58F07 (35Q20, 58G37)
- Cavaller, Tom M.** (with Hong, Jae-Dong; Chandra, M. Jeya) The assignment of minimum crews among bases in an airlift operation. *European J. Oper. Res.* 38 (1989), no. 2, 208–212. (Not in MR) 90B35
- Cavaliere, Bonaventura** ★ Carteggio. (Italian) [Correspondence] Edited and with an introduction by Giovanna Baroncelli. Archivio della Corrispondenza degli Scienziati Italiani [Archive of the Correspondence of Italian Scientists], 3. Leo S. Olschki Editore, Florence, 1987. 272 pp. ISBN 88-222-3525-8 (Eberhard Knobloch) **89d:01018** 01A45 (01A75)
- see also Terreggino, Giuseppe, **89b:01023** and Ulivi, Elisabetta, **89j:01026**
- Cavalli-Sforza, Luigi L.** (with Feldman, Marcus W.) Towards a theory for the evolution of learning. *Evolutionary processes and theory* (Israel, 1985), 725–741, *Academic Press, Orlando, FL*, 1986. (Summary) **89g:92033** 92A12 (92A10)
- Cavaterra, Cecilia** An inverse problem for a semilinear wave equation. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 2 (1988), no. 3, 695–711. (Rolando Magnanini) **89j:35128** 35R30 (35L70)
- Caravaz-Cadena, Rolando** Necessary and sufficient conditions for a bounded solution to the optimality equation in average reward Markov decision chains. *Systems Control Lett.* 10 (1988), no. 1, 71–78. (Aleksandr A. Yushkevich) **89g:90229** 90C40 (49B60, 93E20)
- (with Lasserre, J. B.) Strong 1-optimal stationary policies in denumerable Markov decision processes. *Systems Control Lett.* 11 (1988), no. 1, 65–71. (Aleksandr A. Yushkevich) **89j:90263** 90C40
- Necessary conditions for the optimality equation in average-reward Markov decision processes. *Appl. Math. Optim.* 19 (1989), no. 1, 97–112. (Mamoru Ohashi) **89j:90264** 90C40
- Cave, Jonathan** Long-term competition in a dynamic game: the cold fish war. *Rand J. Econom.* 18 (1987), no. 4, 596–610. (Anthony T. Charles) **89d:90070** 90A30 (90D45)
- Caves, Carlton M.** (with Milburn, G. J.) Quantum-mechanical model for continuous position measurements. *Phys. Rev. A* (3) 36 (1987), no. 12, 5543–5555. (A. Barchielli) **89d:81015** 81B99 (81C35)
- (with Braunstein, Samuel L.) Information-theoretic Bell inequalities. *Phys. Rev. Lett.* 61 (1988), no. 6, 662–665. (T. W. Barrett) **89c:81006** 81B05 (94A15)
- see also Barchielli, Alberto, **89a:81013**
- Cavicchioli, Alberto** Generalized handles in graphs and connected sums of manifolds. *J. Geom.* 30 (1987), no. 1, 69–84. (John Hempel) **89a:57026** 57Q05 (05C10)
- On some properties of the groups  $G(n, I)$ . (Italian summary) *Ann. Mat. Pura Appl.* (4) 151 (1988), 303–316. (Stephen J. Pride) **89m:20031** 20F05
- Lins-Mandel 3-manifolds and their groups: a simple proof of the homology sphere conjecture. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo* (2) Suppl. No. 18 (1988), 229–237. (K. S. Sarkaria) **89i:57010** 57Q15 (05C99, 57M05, 57N10)
- A combinatorial characterization of  $S^2 \times S^1$  among closed 4-manifolds. *Proc. Amer. Math. Soc.* 105 (1989), no. 4, 1008–1014. (Dončo Dimovski) **89b:57011** 57N13 (57M15, 57Q05, 57Q15)
- Caviglia, Giacomo** (with Morro, A.) Conservation laws in anisotropic elastostatics. *Internat. J. Engrg. Sci.* 26 (1988), no. 4, 393–400. (G. A. Narioli) **89j:73017** 73C30 (35Q99, 58E30, 58G35, 73C60)
- Composite variational principles and the determination of conservation laws. *J. Math. Phys.* 29 (1988), no. 4, 812–816. (L. G. Chambers) **89c:49033** 49H05 (58A15, 58E30, 70H30, 76D05, 76N99)
- (with Morro, A.) Conservation laws for systems with memory. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 1090–1092. (see **89d:00007**) 35L65 (73F99)
- Cayford, A. H.** (with Straus, E. G.) On the existence of essential singularities. *Analysis of one complex variable* (Laramie, Wyo., 1985), 205–213, *World Sci. Publishing, Singapore*, 1987. (From the introduction) **89j:30045** 30D40 (30D30)
- (with Straus, E. G.) Singularities of analytic functions in a differential ring. *Acta Arith.* 50 (1988), no. 2, 147–154. (Not in MR) 30H05 (30G05)
- Cayley, Arthur** see Crilly, Tony, **89j:01039**
- andreaian Cazacu, Cabiria** see Andreaian Cazacu, Cabiria
- Cazacu, M. D.** Thermodynamic model of the onset of cavitation in the flow of a viscous fluid in a channel. *Rev. Roumaine Math. Pures Appl.* 33 (1988), no. 10, 857–860. (Not in MR) 76A05
- Cazacu, Maria** Algorithms and recursive functions. (Romanian summary) *Bul. Inst. Politehn. Iași Sect. I* 33(37) (1987), no. 1–4, 59–60. (Not in MR) 68Q05
- Căzănescu, Virgil Emil** On algebraic theories with iterate. *Rev. Roumaine Math. Pures Appl.* 33 (1988), no. 7, 561–573. (Summary) **89j:68095** 68Q55 (03B70, 08A99)
- Căzăneve, Thierry** (with Balabane, Mikhaël; Douady, A.; Merle, F.) Existence d’états excités pour une équation de Dirac non linéaire. (English summary) [Existence of excited states

- for a nonlinear Dirac equation] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 3, 117–120. (Gustavo Perla Menzala) **89e:81022** 81C10 (35Q20)
- (with Haraux, A.) Some oscillatory properties of the wave equation in several space dimensions. *J. Funct. Anal.* **76** (1988), no. 1, 87–109. (Paul L. Davis) **89h:35173** 35L05 (35B05)
- (with Weissler, Fred B.) The Cauchy problem for the nonlinear Schrödinger equation in  $H^1$ . *Manuscript Math.* **61** (1988), no. 4, 477–494. (Tuncay Aktosun) **89j:35114** 35Q20 (35J10, 35J60)
- Cazes, Pierre** Un modèle généralisant les correspondances multiples et les correspondances hiérarchiques. (English summary) [A model generalizing multiple correspondences and hierarchical correspondences] *Data analysis and informatics, V (Versailles, 1987)*, 343–349, North-Holland, Amsterdam-New York, 1988. (Summary) **89i:62099** 62H99
- tejada Cazorla, Juan** see **Tejada Cazorla, Juan**
- Ceausescu, Zola** (with Arsene, Gr.; Constantinescu, T.) Multiplicative properties in the structure of contractions. *Operator theory and systems (Amsterdam, 1985)*, 9–22, *Oper. Theory Adv. Appl.*, 19, Birkhäuser, Basel-Boston, MA, 1986. (E. Durszt) **89a:47025** 47A65 (47A20)
- (with Suciu, Ion) Extreme points in the set of contractive intertwining dilations. *Topics in operator theory*, 57–65, *Oper. Theory Adv. Appl.*, 32, Birkhäuser, Basel-Boston, MA, 1988. (E. Durszt) **89k:47011** 47A20
- (with Arsene, Gr.; Constantinescu, T.) Schur analysis of some completion problems. *Linear Algebra Appl.* **109** (1988), 1–35. (Joseph A. Ball) **89k:47010** 47A20 (15A48, 30E05, 93C50)
- Cebeci, Tuncer** (with Bradshaw, Peter) ★ Physical and computational aspects of convective heat transfer. Springer Study Editions. Springer-Verlag, New York-Berlin, 1988. xii+487 pp. ISBN 0-387-96821-0 (Editors) **89i:76086a** 76Rxx (76-04, 76-08, 76D10)
- (with Su, Wennan) Separation of three-dimensional laminar boundary layers on a prolate spheroid. *J. Fluid Mech.* **191** (1988), 47–77. (Summary) **89m:76029** 76D15 (76-08, 76D10, 76N05)
- ★ Solutions manual and computer programs for *Physical and computational aspects of convective heat transfer*. Springer-Verlag, New York-Berlin, 1989. x+113 pp. ISBN 0-387-96825-3 (Editors) **89i:76086b** 76Rxx (76-04, 76-08, 80A20)
- Cebulak, W. A.** (with Brockett, R. W.) Smoothing and linearization of discontinuous control systems. *Dynamical systems approaches to nonlinear problems in systems and circuits (Henniker, NH, 1986)*, 199–208, SIAM, Philadelphia, PA, 1988. (Khashayar Khorasani) **89k:93217** 93E14 (94A14)
- Ceccatto, H. A.** (with Keirstead, W. P.; Huberman, B. A.) Vibrational properties of hierarchical systems. *J. Statist. Phys.* **53** (1988), no. 3–4, 733–757. (Dieter H. Mayer) **89m:82007** 82A05 (58F05, 58F19, 82A42)
- (with Huberman, B. A.) The complexity of hierarchical systems. *Phys. Scripta* **37** (1988), no. 1, 145–150. (M. Mendes France) **89d:82157** 82A99
- Cecchi, M.** (with Furi, Massimo; Marini, M.) About asymptotic problems for ordinary differential equations. (Italian summary) *Boll. Un. Mat. Ital. B (7)* **2** (1988), no. 2, 333–343. (V. B. Headley) **89d:34032** 34B15 (34B05, 47E05)
- Cecchini, R.** (with Tarlini, M.) Symbolic Lie algebras manipulations using COMMON LISP. *Comput. Phys. Comm.* **52** (1989), no. 2, 283–289. (Summary) **89k:17002** 17-04 (68Q40)
- de Cecco, Giuseppe** see **De Cecco, Giuseppe**
- Cecil, Thomas E.** (with Chern, S. S.) Taubness and Lie sphere geometry. *Math. Ann.* **278** (1987), no. 1–4, 381–399. (Wolfgang Kühnel) **89e:53084** 53C42
- Cecot, W.** (with Orkisz, J.) On coupling of the boundary element and  $R$ -function methods. *Boundary elements IX, Vol. 1 (Stuttgart, 1987)*, 435–445, *Comput. Mech., Southampton*, 1987. (Georges A. Lebaud) **89k:65133** 65N30 (65P05)
- Cecotti, S.** (with Ferrara, S.; Villasante, M.) Linear multiplets and super Chern-Simons forms in 4D supergravity. *Internat. J. Modern Phys. A* **2** (1987), no. 6, 1839–1869. (A. D. Popova) **89f:83097** 83E50 (81E30, 81G20, 83E30)
- (with Ferrara, S.; Girardello, L.) Gravitational supervertices in  $n = 1, 4D$  superstrings. *Phys. Lett. B* **198** (1987), no. 3, 336–342. (Elias Kiritsis) **89a:81118** 81E99 (81E30, 83E30, 83E50)
- (with Ferrara, S.; Girardello, L.; Pasquinucci, A.; Porrati, Massimo) Matter-coupled supergravity with Gauss-Bonnet invariants: component Lagrangian and supersymmetry breaking. *Internat. J. Modern Phys. A* **3** (1988), no. 7, 1675–1733. (Markku Lehto) **89j:83072** 83E15 (81E30, 81G25, 83E30)
- (with Ferrara, S.; Porrati, Massimo; Sabharwal, S.) New minimal higher derivative supergravity coupled to matter. *Nuclear Phys. B* **306** (1988), no. 1, 160–180. (S. Deser) **89e:83081** 83E50
- (with Ferrara, S.; Girardello, L.) Hidden noncompact symmetries in string theory. *Nuclear Phys. B* **308** (1988), no. 2–3, 436–450. (Frans R. Klinkhamer) **89k:81134** 81E99 (81E30, 83E30, 83E50)
- (with Ferrara, S.; Girardello, L.) A topological formula for the Kähler potential of 4D  $N = 1, 2$  strings, and its implications for the moduli problem. *Phys. Lett. B* **213** (1988), no. 4, 443–449. (Tristan Hübsch) **89m:53131** 53C80 (32G07, 32J05, 53C55, 81E30, 81E40)
- Ceder, J.** A necessary and sufficient condition for a Baire  $\alpha$  function to be a product of two Darboux Baire  $\alpha$  functions. *Rend. Circ. Mat. Palermo (2)* **36** (1987), no. 1, 78–84. (A. M. Bruckner) **89f:26002** 26A15 (26A21)
- Cederbaum, Israel** (with Wimer, Shmuel; Koren, I.) Floorplans, planar graphs, and layouts. *IEEE Trans. Circuits and Systems* **35** (1988), no. 3, 267–278. (Summary) **89a:68180** 68R10 (05C35)
- Cederbaum, L.** (with Meyer, Hans-Dieter; Kučar, J.) Time-dependent rotated Hartree formal development. *J. Math. Phys.* **29** (1988), no. 6, 1417–1430. (Summary) **89i:81020** 81C05 (81G55)
- see also *Fractals, quasicrystals, chaos, knots and algebraic quantum mechanics*, **89c:00037**
- Cederwall, M.** Interactions in new string theories. *Phys. Lett. B* **191** (1987), no. 4, 349–353. (A. I. Pashnev) **89a:81119** 81E99 (81E30, 81G25, 83E30)
- (with Bengtsson, Anders K. H.; Bengtsson, Ingemar; Linden, Noah) Particles, superparticles, and twistors. *Phys. Rev. D* **36** (1987), no. 6, 1766–1772. (Peter R. Law) **89b:81088** 81D25 (32L25, 81D27, 81E30)
- (with Bengtsson, Ingemar) Particles, twistors and the division algebras. *Nuclear Phys. B* **302** (1988), no. 1, 81–103. (Peter R. Law) **89k:81051** 81D07 (17A35, 81D27, 81E99)
- Cedó, Ferran** Regular group algebras whose maximal right and left quotient rings coincide. *Ring theory (Granada, 1986)*, 69–74, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (S. K. Berberian) **89i:16006** 16A27 (16A08)
- A question of Cohn on semifir monoid rings. *Comm. Algebra* **16** (1988), no. 6, 1187–1189. (Peter Malcolmson) **89e:16006** 16A06 (20M25)
- On the maximal quotient ring of regular group rings. *J. Algebra* **115** (1988), no. 1, 164–174. (D. A. R. Wallace) **89d:16015** 16A27 (16A30, 20C07)
- The maximal quotient ring of regular group rings. II. *Proc. Amer. Math. Soc.* **104** (1988), no. 2, 357–362. (D. A. R. Wallace) **89i:16007** 16A27 (20C07)
- Cegarra, A. M.** (with Garzon, A. R.; Carrasco, P.) An exact sequence in the first variable for nonabelian cohomology in algebraic categories. A Mayer-Vietoris sequence for nonabelian cohomology of groups. *Categorical algebra and its applications (Louvain-La-Neuve, 1987)*, 72–86, *Lecture Notes in Math.*, 1348, Springer, Berlin-New York, 1988. (Timothy Porter) **89m:18019** 18G50
- (with Carrasco, P.; Garzon, A. R.) La suite fondamentale de Hochschild-Serre pour la cohomologie non abélienne des groupes. II. (English summary) [The Hochschild-Serre fundamental exact sequence in nonabelian group cohomology. II] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 2, 71–74. (U. Stambach) **89j:18021** 18G50 (20J05)
- Cegielski, Kazimierz** Connection on differential modules. *Differential geometry (Warsaw, 1979)*, 29–33, *Banach Center Publ.*, 12, PWN, Warsaw, 1984. (W. Waliszewski) **89k:58019** 58A40
- Cegielski, Andrzej** An iterative process in zero-sum continuous games. *Differential equations and optimal control (Zagreb, 1986)*, 7–13, *Higher College Engrg.*, Zielona Góra, 1987. (Summary) **89c:90235** 90D05 (49A45)
- Cegla, W.** (with Lewis, John Trevor; Raggio, G. A.) The free energy of quantum spin systems and large deviations. *Comm. Math. Phys.* **118** (1988), no. 2, 337–354. (Mary Lunn) **89k:82019** 82A15
- Cegrell, Urban** Subharmonic functions and minimal surfaces. *Complex analysis, II (College Park, Md., 1985–86)*, 60–66, *Lecture Notes in Math.*, 1276, Springer, Berlin-New York, 1987. (Ü. Kuran) **89a:31002** 31B05 (31C10, 32F05)
- ★ Capacities in complex analysis. *Aspects of Mathematics, E14. Friedr. Vieweg & Sohn, Braunschweig*, 1988. xii+153 pp. ISBN 3-528-06335-1 (J. Siciak) **89m:32001** 32-02 (30C85, 31C15, 32F05)
- Plurisubharmonic functions outside compact sets. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 81–84. (Julia Cufi) **89d:32040** 32F05 (31C10)
- Cel, Jarosław** On the application of the no-gain property in nonlinear resistive networks. *IEEE Trans. Circuits and Systems* **35** (1988), no. 8, 1061–1062. (Not in MR) **94C05**
- Celakowski, N.** (with Janeva, B.) Vector-valued associatives. *Proceedings of the Conference "Algebra and Logic", Cetinje 1986*, 15–21, *Univ. Novi Sad, Novi Sad*, 1987. (B. Pondělíček) **89f:20083** 20N15
- Celux, G.** Classification et modèles. (English summary) [Classification and models] *Rev. Statist. Appl.* **36** (1988), no. 4, 43–57. (Summary) **89k:62081** 62H30 (62B10)
- Celia, M. A.** see *Computational methods in water resources*, **89m:76002** and **89m:76003**
- Čelić, Momir V.** Multilevel iterative methods for solving singular finite element equations. (Serbo-Croatian. English summary) *Mat. Vesnik* **39** (1987), no. 3, 241–255. (Summary) **89a:65164** 65N30
- Čelíkorsky, Sergej** On the continuous dependence of trajectories of bilinear systems on controls and its applications. *Kybernetika (Prague)* **24** (1988), no. 4, 278–292. (Ivan Ginchev) **89j:49035** 49E05 (49D07, 65K10, 93C15)
- On the Lipschitzian dependence of trajectories of multi-input time dependent bilinear systems on controls. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **17** (1988), no. 4, 231–238. (Günter Kern) **89j:49033** 49E05 (49E15, 93C15)
- Cellary, Wojciech** (with Gelenbe, Erol; Morzy, Tadeusz) ★ Concurrency control in distributed database systems. *Studies in Computer Science and Artificial Intelligence*, 3, North-Holland Publishing Co., Amsterdam-New York, 1988. xvi+349 pp. ISBN 0-444-70409-4 (J. Paredaens) **89k:68030** 68P15
- Celletti, Alessandra** (with Falcolini, Corrado; Porzio, Anna) Rigorous numerical stability estimates for the existence of KAM tori in a forced pendulum. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **47** (1987), no. 1, 85–111. (Jan A. Sanders) **89e:58105** 58F30 (58-04, 70K40)
- (with Falcolini, Corrado; Porzio, Anna) Rigorous KAM stability statements for nonautonomous one-dimensional Hamiltonian systems. *Rend. Sem. Mat. Univ. Politec. Torino* **45** (1987), no. 1, 43–70 (1988). (Helmut Rüssmann) **89k:58084** 58F05 (58F27, 70H05)
- (with Chierchia, Luigi) On rigorous stability results for low-dimensional KAM surfaces. *Phys. Lett. A* **128** (1988), no. 3–4, 166–168. (Richard C. Churchill) **89e:58103** 58F27 (58F05, 58F10, 58F30)
- (with Giorgilli, Antonio) On the numerical optimization of KAM estimates by classical perturbation theory. *Z. Angew. Math. Phys.* **39** (1988), no. 5, 743–747. (Michel Rapaport) **89j:70023** 70G99 (70H99)
- Cellina, Arrigo** (with Solimini, S.) Continuous extensions of selections. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 9–10, 573–581. (P. Maritz) **89g:54040** 54C65 (54C60, 54E35)
- (with Colombo, Giovanni; Fonda, Alessandro) A continuous version of Liapunov's convexity theorem. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **5** (1988), no. 1, 23–36. (J. P. R. Christensen) **89e:28005** 28A10 (54C65)
- On the set of solutions to Lipschitzian differential inclusions. *Differential Integral Equations* **1** (1988), no. 4, 495–500. (G. Anichini) **89d:34023** 34A60 (49A50, 49E15)
- (with Bressan, Alberto; Colombo, Giovanni) Upper semicontinuous differential inclusions without convexity. *Proc. Amer. Math. Soc.* **106** (1989), no. 3, 771–775. (Zvi Arstein) **89m:34023** 34A60 (49E10)
- Celmaster, William** Parallelization of physical systems on the BBN butterfly: some examples. *Numerical algorithms for modern parallel computer architectures (Minneapolis, MN, 1986–87)*, 1–9, *IMA Vol. Math. Appl.*, 13, Springer, New York-Berlin, 1988. (see **89j:65093**) **65W05**
- Cen, Jian Miao** von Neumann regularity of the matrix  $\Gamma_{m,n}$ -ring  $M_{m,n}$  over a  $\Gamma$ -ring  $M$ . (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **4** (1987), no. 3, 37–42. (J. Luh) **89i:16056** 16A78 (16A30)



- (with Yuan, Xiang Huan) von Neumann regularity of full matrix  $\Gamma$ -rings. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* 5 (1988), no. 2, 13–18. (Summary) **89i:16040** 16A42 (16A30)
- Cen, Yong Ting** Methods for the fuzzy set-theoretic treatment of gray concepts and their operators. (Chinese. English summary) *Fuzzy Math.* 7 (1987), no. 1, 77–80. (Summary) **89i:03103** 03E72
- Cendra, Herman** (with Marsden, Jerrold E.) Lin constraints, Clebsch potentials and variational principles. *Phys. D* 27 (1987), no. 1–2, 63–89. (H. S. P. Grässer) **89i:58060** 58E30 (49H05, 70E15, 76A02)
- Ceng, Ken-cheng** see **Zeng, Ken Cheng**
- Cenkl, Bohumil** (with Porter, Richard) Cohomology of nilmanifolds. *Algebraic topology—rational homotopy* (Louvain-la-Neuve, 1986), 73–86, *Lecture Notes in Math.*, 1318, Springer, Berlin-New York, 1988. (Francis Clarke) **89i:57018** 57T15 (17B56, 20F18, 22E41, 55P62, 58A12)
- Censor, Yair** (with Elfving, Tommy; Herman, Gabor T.) Special-purpose algorithms for linearly constrained entropy maximization. *Maximum-entropy and Bayesian spectral analysis and estimation problems* (Laramie, Wyo., 1983), 241–254, *Fund. Theories Phys.*, Reidel, Dordrecht-Boston, MA, 1987. (Frank Natterer) **89d:92011** 92A07 (65K05)
- (with Segman, Joseph) On block-iterative entropy maximization. *J. Inform. Optim. Sci.* 8 (1987), no. 3, 275–291. (M. C. Cheng) **89a:94011** 94A17 (90C25)
- (with Altschuler, Martin D.; Powlis, William D.) On the use of Cimmino's simultaneous projections method for computing a solution of the inverse problem in radiation therapy treatment planning. *Inverse Problems* 4 (1988), no. 3, 607–623. (Not in MR) **78A60** (92A07)
- Parallel application of block-iterative methods in medical imaging and radiation therapy. *Math. Programming* 42 (1988), no. 2 (Ser. B), 307–325. (Summary) **89i:92005** 92A07 (90C50)
- Centeno, Lourdes** The expected utility applied to reinsurance. *Risk, decision and rationality* (Aix-en-Provence, 1986), 679–689, *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1988. (Summary) **89i:90023** 90A09 (62P05, 90A10)
- del Centina, Andrea** see **Del Centina, Andrea**
- Centrella, Joan M.** Nonlinear gravitational waves and inhomogeneous cosmologies. *Dynamical spacetimes and numerical relativity* (Philadelphia, PA, 1985), 123–150, Cambridge Univ. Press, Cambridge-New York, 1986. (Summary) **89i:83030** 83C35 (83–08, 83F05)
- (with Shapiro, Stuart L.; Evans, Charles R.; Hawley, John F.; Teukolsky, Saul A.) Test-bed calculations in numerical relativity. *Dynamical spacetimes and numerical relativity* (Philadelphia, PA, 1985), 328–344, Cambridge Univ. Press, Cambridge-New York, 1986. (see **89i:83064**) 83–08
- see also **Dynamical spacetimes and numerical relativity**, **89i:83064**
- Ceplita, J.** On the question of the existence of a bounded solution of a second-order equation with a nonsummable singularity. (Russian) *Boundary value problems for ordinary differential equations* (Russian), 91–100, *v. Latv. Gos. Univ., Riga*, 1987. (C. S. Coleman) **89a:34064** 34A10 (34C11)
- Ceppitelli, Rita** (with Bardaro, Carlo) Minimax inequalities in Riesz spaces. *Atti Sem. Mat. Fis. Univ. Modena* 35 (1987), no. 1, 63–69. (D. Butković) **89i:90260** 90D05 (26B25, 47H99, 49A50, 90C48, 90D12)
- (with Brandi, Primo) Existence, uniqueness and continuous dependence for differential equations in a hereditary structure. (Italian. English summary) *Atti Sem. Mat. Fis. Univ. Modena* 35 (1987), no. 2, 357–363 (1988). (Z. Vorel) **89i:34095** 34K05 (34A10)
- (with Bardaro, Carlo) Some further generalizations of Knaster-Kuratowski-Mazurkiewicz theorem and minimax inequalities. *J. Math. Anal. Appl.* 132 (1988), no. 2, 484–490. (Huibertus Th. Jongen) **89i:90219** 90D05 (49B40)
- Čepulić, Vladimir** (with Esert, Mario) Biplanes (56, 11, 2) with automorphisms of order 4 fixing some point. *Discrete Math.* 71 (1988), no. 1, 9–17. (E. J. F. Primrose) **89i:05065** 05B25 (05B05, 51E05)
- (with Esert, Mario) Biplanes (56, 11, 2) with automorphism group  $Z_2 \times Z_2$  fixing some point. *J. Combin. Theory Ser. A* 48 (1988), no. 2, 239–246. (Chester J. Salwach) **89i:05046** 05B05 (05B25, 20B23)
- di Cera, Enrico** see **Di Cera, Enrico**
- Cerami, Giovanna** A note on a nonlinear eigenvalue problem. *Ann. Mat. Pura Appl.* (4) 150 (1988), 119–127. (Ricardo S. Kufner) **89i:35079** 35J65 (35P30)
- Ceranka, B.** (with Mejza, S.) Merging of treatments in certain partially efficiency balanced block designs with two different numbers of replications. *Calcutta Statist. Assoc. Bull.* 36 (1987), no. 141–142, 49–55. (R. A. Bailey) **89i:62129** 62K10
- (with Katulska, K.) New construction of optimum chemical balance weighing designs. *Calcutta Statist. Assoc. Bull.* 36 (1987), no. 143–144, 165–170. (S. Mejza) **89i:62100** 62K05 (05B05)
- (with Mejza, S.) Analysis of diallel table for experiments carried out in BIB designs—mixed model. *Biometrical J.* 30 (1988), no. 1, 3–16. (Not in MR) **62P10**
- Cerans, K.** Proof of a numerical inequality. (Russian) *Topological structures and their mappings* (Russian), 162–164, viii, *Latv. Gos. Univ., Riga*, 1987. (Yu. A. Brudnyi) **89i:26021** 26D20
- Cerchi, Marlene** (with Havenner, Arthur) Cointegration and stock prices: the random walk on Wall Street revisited. Economic time series with random walk and other nonstationary components. *J. Econom. Dynamics Control* 12 (1988), no. 2–3, 333–346. (see **89i:62004**) **90A09** (90A20)
- Cercignani, Carlo** (with Illner, Reinhard; Shinbrot, Marvin) A boundary value problem for discrete-velocity models. *Duke Math. J.* 55 (1987), no. 4, 889–900. (Paul F. Zwifelf) **89d:82068** 82A40 (35Q20, 76P05)
- Global existence of solutions for a model Boltzmann equation. *J. Statist. Phys.* 49 (1987), no. 5–6, 1083–1091. (V. Protopenescu) **89i:82032** 82A40
- Nonlinear problems in the kinetic theory of gases. *Trends in applications of mathematics to mechanics* (Wassenaar, 1987), 351–360, Springer, Berlin-New York, 1988. (see **89i:80004**) **82A40** (35Q20, 76P05)
- (with Illner, Reinhard; Shinbrot, Marvin) A boundary value problem for the two-dimensional Broadwell model. *Comm. Math. Phys.* 114 (1988), no. 4, 687–698. (Cor van der Meer) **89i:82031** 82A40 (76P05)
- Small data existence for the Enskog equation in  $L^1$ . *J. Statist. Phys.* 51 (1988), no. 1–2, 291–297. (Luia Arlotti) **89i:82032** 82A40 (45K05)
- (with Illner, Reinhard; Pulvirenti, Mario; Shinbrot, Marvin) On nonlinear stationary half-space problems in discrete kinetic theory. *J. Statist. Phys.* 52 (1988), no. 3–4, 885–896. (François Golse) **89i:82033** 82A40 (35Q20)
- Existence of homoeenergetic affine flows for the Boltzmann equation. *Arch. Rational Mech. Anal.* 105 (1989), no. 4, 377–387. (V. Protopenescu) **89i:82034** 82A40
- Cercone, Nick** see **Knowledge frontier**, **89a:68200**
- Medrano-Cerdá, G. A.** see **Medrano-Cerdá, G. A.**
- Cerdá, Joan** Extension of interpolation methods by means of projective limits. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 161–167, Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (Fernando Cobos) **89m:46114** 46M35
- Velilla Cerdán, Santiago** see **Velilla Cerdán, Santiago**
- Cerdeira, J. Orestes** (with Coelho, J. Dias) Some theorems on the equivalence of the multiple traveling salesman problem and the traveling salesman problem. (Portuguese) *Portugal. Math.* 45 (1988), no. 1, 5–12. (Summary) **89i:90093** 90B10 (90C35)
- On the complexity of covering nodes by  $K$  node-disjoint cycles. *Portugal. Math.* 45 (1988), no. 1, 25–27. (Narsingh Deo) **89i:05066** 05C38 (68Q25)
- Ceri, Stefano** (with Gottlob, Georg; Wiederhold, Gio) Efficient database access from PROLOG. *IEEE Trans. Software Engng.* 15 (1989), no. 2, 153–164. (Not in MR) **68T25** (68P15)
- Cerimele, M. M.** (with Bulgarelli, U.; Zaretti, A.) A numerical method for a mathematical model in gravitational hydrodynamics. *Appl. Math. Comput.* 27 (1988), no. 3, part I, 251–264. (V. Soundalgekar) **89i:76009** 76–08 (76N15, 85A30)
- Cerin, Z.** (with Gianella, Gian Mario) Natural equivalence of graph related bifunctors. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 16 (1986), no. 1, 181–195. (Jerzy Dydak) **89i:55023** 55Q99 (05C99)
- (with Watanabe, Tadashi) Borsuk fixed point theorem for multivalued maps. *Geometric topology and shape theory* (Dubrovnik, 1986), 30–37, *Lecture Notes in Math.*, 1283, Springer, Berlin-New York, 1987. (L. Górniewicz) **89i:55004** 55M20 (54C60, 54H25)
- (with Ivanić, I.; Rubin, Leonard R.) Recognition of certain classes of closed maps. *Czechoslovak Math. J.* 38(113) (1988), no. 2, 319–323. (John J. Walsh) **89i:54039** 54C56 (55P55)
- Cerrioli, A.** (with Bongiovanni, G.; Bovet, Daniel P.) Comments on a paper of R. A. Brualdi: "Notes on the Birkhoff algorithm for doubly stochastic matrices" [*Canad. Math. Bull.* 25 (1982), no. 2, 191–199; MR 83k:15019]. *Canad. Math. Bull.* 31 (1988), no. 4, 394–398. (Thomas H. Foregger) **89m:15013** 15A51 (05C50)
- Cerlione, L.** (with Mignotte, Maurice; Piras, F.) Computing the measure of a polynomial. *J. Symbolic Comput.* 4 (1987), no. 1, 21–33. (Joachim von zur Gathen) **89a:12001** 12–04 (11J99, 11Y16, 30–04, 68Q40)
- Čermák, Hana** Über einige spezielle Systeme der dreidimensionalen Räume im projektiven Raum  $P_q$ . (Russian and Czech summaries) [On some special systems of three-dimensional spaces in the projective space  $P_q$ ] *Časopis Pěst. Mat.* 113 (1988), no. 3, 232–245. (Lieven Vanhecke) **89i:53039** 53A20
- Černohorský, Martin** The rotation in Newton's wording of his first law of motion. *Isaac Newton's Philosophiæ naturalis principia mathematica* (Lublin, 1987), 28–46, *World Sci. Publishing, Singapore*, 1988. (see **89m:01042**) **01A45**
- Ceron, Sueli do Carmo Siqueira** Convergence to equilibrium of hyperbolic equations and systems. (Portuguese. English summary) *Rev. Mat. Estatist.* 3 (1985), 13–17. (C. P. Gupta) **89i:47061** 47D05 (35L99, 47H99)
- Cerrada, C.** (with Feliu, V.; Cerrada, J. A.) An algorithm to compute the continuous state model from its equivalent discrete model. *Control Theory Adv. Tech.* 4 (1988), no. 2, 231–241. (Not in MR) **93B30** (93B60, 93C35)
- (with Feliu, V.; Cerrada, J. A.) An algorithm for obtaining a multiperiodic discrete system from the corresponding discrete system. (Spanish) *Rev. Inform. Automat.* 21 (1988), no. 3, 31–39. (Not in MR) **93C55** (49D50)
- Cerrada, J. A.** (with Feliu, V.; Cerrada, C.) An algorithm to compute the continuous state model from its equivalent discrete model. *Control Theory Adv. Tech.* 4 (1988), no. 2, 231–241. (Not in MR) **93B30** (93B60, 93C35)
- (with Feliu, V.; Cerrada, C.) An algorithm for obtaining a multiperiodic discrete system from the corresponding discrete system. (Spanish) *Rev. Inform. Automat.* 21 (1988), no. 3, 31–39. (Not in MR) **93C55** (49D50)
- Cerrito, P. B.** An improved stochastic model allowing interaction among individuals. *J. Appl. Probab.* 25 (1988), no. 3, 492–500. (Andrew D. Barbour) **89i:60141** 60J20 (60B99, 92A20)
- Limits of convolution iterates and properties of random walks defined on regular semigroups with applications to matrix semigroups. *J. Math. Anal. Appl.* 131 (1988), no. 1, 282–294. (Summary) **89i:60009** 60B15 (60J15)
- Markov chains on completely regular semigroups. *Stochastic Process. Appl.* 28 (1988), no. 1, 23–30. (Wolfgang Woess) **89i:60089** 60J05 (60B99)
- Fariñas del Cerro, Luis** see **Fariñas del Cerro, Luis**
- Cervantes, L.** (with Fenn, R. A.) Boundary links are homotopy trivial. *Quart. J. Math. Oxford Ser. (2)* 39 (1988), no. 154, 151–158. (G. Burde) **89i:57007** 57M25
- Cerveau, Dominique** (with Cano, F.) Le problème de la séparatrice: une conséquence de la réduction des singularités de feuilletages. (English summary) [Existence of a separatrix: a consequence of reducing the singularities of foliations] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 8, 387–390. (Dietrich Flockerzi) **89m:58151** 58F14 (57R30)
- Cerveró, José M.** (with Villarroel, J.) Contact symmetries and integrable nonlinear dynamical systems. *J. Phys. A* 20 (1987), no. 18, 6203–6209. (Mayer Humi) **89d:70019** 70H35 (58F35, 70–08)
- Cervini, L.** (with Farinato, R.; Loreto, L.) The interactive computer graphics (ICG) production of the 17 two-dimensional crystallographic groups, and other related topics. *M. C. Escher: art and science* (Rome, 1985), 269–284, North-Holland, Amsterdam-New York, 1986. (see **89m:00011**) **00A05** (00A08, 20H15)
- Čerých, Jan** On linear codimensions of function algebras. *Complex analysis and applications '85* (Varna, 1985), 141–146, *Bulg. Acad. Sci., Sofia*, 1986. (Krzyżtof Jarosz) **89a:46109** 46J10
- Cesar, Mauro O.** (with Barone Netto, Ângelo) Nonconservative positional systems—stability. *Dynamics Stability Systems* 2 (1987), no. 3–4, 213–221. (Ram Krishan Sharma) **89i:70029** 70K20

- (with Zampieri, Gaetano) On Liapunov stability for  $\ddot{x} + x f(x) = 0$ ,  $\dot{y} + y w(x) = 0$ . *Dynamics Stability Systems* 3 (1988), no. 3-4, 177-185. (Anthony N. Michel) **89j:34067** 34D20 (70K15)
- Cesare, S. (with Del Duca, V.) Tensor algebra for the icosahedral group. *Riv. Nuovo Cimento* (3) 10 (1987), no. 4, 33 pp. (Nigel B. Backhouse) **89b:20041** 20C35 (81C40)
- Cesari, Lamberto (with Pucci, Patrizia) Further results in nonlinear analysis. *Atti Sem. Mat. Fis. Univ. Modena* 35 (1987), no. 2, 231-248 (1988). (K. R. Schneider) **89e:47088** 47H15 (34A34)
- Cessenat, Michel see Dautray, Robert, **89m:00001**; **89m:00002**; **89m:00003a** and **89m:00003b**
- Çetin, A. Enis (with Ansari, Rashid) Convolution-based framework for signal recovery and applications. *J. Opt. Soc. Amer. A* 5 (1988), no. 8, 1193-1200. (B. D. Donevski) **89i:94008** 94A12 (42A38, 94A11)
- Ceulemans, A. (with Fowler, P. W.) SO(4) symmetry and the static Jahn-Teller effect in icosahedral molecules. *Phys. Rev. A* (3) 39 (1989), no. 2, 481-493. (Summary) **89j:81281** 81G50
- Ceuppens, P. R. (with Lane, J. A.; Peel, D. A.) Critical bounds for MA(2) and MA(3) processes. *Econom. Lett.* 27 (1988), no. 2, 133-140. (Title) **89f:62148** 62M10
- gholes Ch., Eric see Gholes Ch., Eric
- Cha, Hyung Koo On the essential spectrum of an irreducible hyponormal operator. *Bull. Korean Math. Soc.* 24 (1987), no. 2, 159-164. (Wacław Szymański) **89h:47035** 47B20 (47A10, 47C15)
- Chaibane, F. Approximation d'un flot brownien sur le cercle. (English summary) [Approximation of a Brownian flow on the circle] *Ann. Sci. Univ. Clermont-Ferrand II Probab. Appl.* no. 7 (1988), 31-45. (Jacques Vauthier) **89m:60189** 60J65
- Chaban, A. V. Intensional data model. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 2, 171-177; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 5, 113-119, 222 (Russian). (Marc Gysseens) **89m:68020** 68P15 (03B45, 03B70)
- Chabanyuk, V. S. ★ Одна задача Скорохода и диффузионная аппроксимация систем массового обслуживания. (Russian) [A problem of Skorokhod and the diffusion approximation of queueing systems] *Препринт [Preprint]*, 87-56. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. 23 pp. (Summary) **89d:60171** 60K25 (60F05, 90B22)
- Gaussian diffusion approximation of a multiprocessor computer system. (Russian) *Data processing in multiprocessor distributed computer systems (Russian)*, 24-30, ii, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (Summary) **89e:65164** 65U05
- Chabard, J.-P. (with Cahouet, J.) An efficient 3D finite element solver for a generalized Stokes problem. *The mathematics of finite elements and applications, VI (Uxbridge, 1987)*, 379-386, *Academic Press, London-New York*, 1988. (see **89c:65004**) 65N30 (76D07)
- (with Cahouet, J.) Some fast 3D finite element solvers for the generalized Stokes problem. *Internat. J. Numer. Methods Fluids* 8 (1988), no. 8, 869-895. (M. M. Sussman) **89i:76005** 76-08 (65P05, 76D07)
- Chabas, F. (with Soize, C.) Modeling mechanical subsystems by boundary impedance in the finite element method. *Rech. Aéropat. (English Edition)* 1987, no. 5, 59-75 (1988); translated from *Rech. Aéropat.* 1987, no. 5, 59-75 (English summary). (Summary) **89d:73036** 73K25 (73D30)
- Chabás, José (with Roca, Antoni; Rodríguez, Xavier) The problem of the antecedents (Alfonso X, Levi ben Gerson) of the astronomical tables composed by Jacob ben David Bonjorn. (Spanish) *De astronomia Alphonsi Regis (Berkeley, CA, 1985)*, 97-104, *Univ. Barcelona, Barcelona*, 1987. (see **89m:01026**) 01A35
- Chabauty, Ronan Étude de la semi-simplicité d'opérateurs appartenant à certaines classes remarquables. (English summary) [Semisimplicity of operators belonging to certain remarkable classes] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 12, 513-516. (Summary) **89a:47041** 47B38
- Chaber, J. More nondevoid spaces in MOBI. *Proc. Amer. Math. Soc.* 103 (1988), no. 1, 307-313. (Heikki J. K. Junnila) **89k:54030** 54C10 (54D18)
- (with Bennett, H. R.) Scattered spaces and the class MOBI. *Proc. Amer. Math. Soc.* 106 (1989), no. 1, 215-221. (W. Stephen Watson) **89k:54029** 54C10 (54D18, 54E30)
- Chabert, Jean-Luc Idéaux de polynômes et idéaux de valeurs. (English summary) [Polynomial ideals and ideals of values] *Manuscripta Math.* 60 (1988), no. 3, 277-298. (David C. Lantz) **89j:13007** 13B25 (11C08)
- Chaboche, J. L. A review of computational methods for cyclic plasticity and viscoplasticity. *Computational plasticity, Part I, II (Barcelona, 1987)*, 379-411, *Pineridge, Swansea*, 1987. (see **89c:73030**) 73-08 (73E99)
- Chabrowski, J. H. On positive solutions for a class of elliptic boundary value problems. *Tōhoku Math. J. (2)* 38 (1986), no. 3, 343-350. (From the introduction) **89a:35085** 35J65 (35B05)
- The Dirichlet problem in half-space for elliptic equations with unbounded coefficients. *Rend. Sem. Mat. Univ. Padova* 77 (1987), 15-36. (Jiri Rákosník) **89b:35036** 35J25
- On positive solutions of quasilinear elliptic equations. *Hokkaido Math. J.* 17 (1988), no. 1, 93-99. (Ross Pinsky) **89a:35084** 35J65 (35B05)
- On solvability of boundary value problem for elliptic equations with Bitsadze-Samarskii condition. *Internat. J. Math. Math. Sci.* 11 (1988), no. 1, 101-113. (Gary M. Lieberman) **89c:35035** 35J25 (35J67)
- On the solvability of the Dirichlet problem for nonlinear elliptic equations. *J. Analyse Math.* 50 (1988), 65-78. (Gary M. Lieberman) **89i:35060** 35J65
- (with Thompson, H. B.) Singular and quasi-bounded functions associated with the heat equation. *Math. Z.* 199 (1988), no. 1, 81-98. (Neil A. Watson) **89k:31007** 31B35 (31B10, 35C15, 35K05)
- Chachibaya, Ts. Sh. (with Agrest, M. M.) Asymptotic representations of some classes of special functions that depend on two variables. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 3, 60-63, 85; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 3, 82-87. (E. Riekstīns) **89i:33009** 33A40 (41A60)
- (with Agrest, M. M.) Expansions for Bessel exponential-integral functions and related functions. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 4, 3-12; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 4, 1-13. (R. G. Langebartel) **89k:33008** 33A40
- Chacón, E. (with Moshinsky, M.) Matrix representation of the generators of symplectic algebras. II. The general case with explicit results for  $sp(6, \mathbb{R})$ . *J. Phys. A* 20 (1987), no. 14, 4595-4612. (C. Burdick) **89a:22024** 22E46 (22E70, 81C40)
- Chacon, Paul (with Iranpour, Reza) ★ Basic stochastic processes. The Mark Kac lectures. *Macmillan Publishing Company, New York; Collier Macmillan Publishers, London*, 1988. xiv+258 pp. ISBN 0-02-359820-4 (Paul Embrechts) **89i:60002** 60-01
- Chacón Rebollo, Tomás Invariance group of the periodic Euler problem. (Spanish) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish)* (Badajoz, 1986), 397-403, *Publ. Dep. Mat. Univ. Extremadura*, 18, *Univ. Extremadura, Badajoz*, 1987. (Summary) **89j:35106** 35Q10 (58G16, 65P05, 76N15)
- Oscillations due to the transport of microstructures. *SIAM J. Appl. Math.* 48 (1988), no. 5, 1128-1146. (Summary) **89j:76052** 76F05 (76-08)
- Chadaev, V. I. (with Minaev, G. A.; Bulgakov, A. I.; Sazonov, A. Yu.) Jet flow in a high granular layer, taking into account the shape of the flame. (Russian) *Boundary value problems (Russian)*, 117-121, 161, *Perm. Politekh. Inst., Perm*, 1984. (see **89b:00008**) 76N99
- Chadan, Khosrow (with Kobayashi, Reido) Le problème inverse en constante de couplage. III. (English summary) [The inverse problem in the coupling constant. III] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* 303 (1986), no. 5, 329-332. (Pierre C. Sabatier) **89m:81173** 81F05 (34A55, 34B15)
- Chadha, S. S. Duality in nonlinear programming. *J. Combin. Inform. System Sci.* 10 (1985), no. 1-2, 57-61. (Introduction) **89h:90191** 90C30
- Hyperbolic programming—a new criteria. *Econom. Comput. Econom. Cybernet. Stud. Res.* 22 (1987), no. 4, 83-88. (Summary) **89b:90213** 90C32
- Chadha, T. K. (with Kumar, Rajneesh) Lamb's plane problem in micropolar elastic half-space with stretch. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* 34 (1986), no. 1-2, 59-72. (Summary) **89d:73003** 73B25 (73D99)
- (with Kumar, Rajneesh; Debnath, Lokenath) Corrigendum: "Lamb's plane problem in a thermoelastic micropolar medium with stretch" [Internat. J. Math. Math. Sci. 10 (1987), no. 1, 187-198; MR 87m:73070]. *Internat. J. Math. Math. Sci.* 11 (1988), no. 4, 768. (Editors) **89f:73074** 73U05
- Chadwick, P. Aspects of the behaviour of surface waves in transversely isotropic elastic media. *Recent developments in surface acoustic waves (Nottingham, 1987)*, 80-90, *Springer Ser. Wave Phenomena*, 7, *Springer, Berlin-New York*, 1988. (see **89g:73001**) 73D20
- Chae, Gyu-Ihn (with Maheshwari, Sheo Narayan; Thakur, S. S.) Quasi semiopen sets. (Croatian summary) *Univ. Ulsan Rep.* 17 (1986), no. 1, 133-137. (Introduction) **89g:54069** 54E55
- Chae, Suchan Short run core equivalence in an overlapping generations model. *J. Econom. Theory* 43 (1987), no. 1, 170-183. (Murat R. Sertel) **89f:90024** 90A14
- Existence of competitive equilibrium with incomplete markets. *J. Econom. Theory* 44 (1988), no. 1, 179-188. (Rubin Saposnik) **89b:90042** 90A14
- Chaffy-Camus, Claudine Convergence uniforme d'une nouvelle classe d'approximants de Padé à plusieurs variables. (English summary) [Uniform convergence of a new kind of multivariate Padé approximants] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 8, 387-392. (J. Della Dora) **89m:41012** 41A21
- Chaganti, Narasinga Rao (with Sethuraman, Jayaram) Limit theorems in the area of large deviations for some dependent random variables. *Ann. Probab.* 15 (1987), no. 2, 628-645. (Stefano Olla) **89a:60072** 60F10 (60K35, 82A05, 82A25)
- Chagina, O. M. (with Lakeev, A. V.) The method of Lyapunov functions in control synthesis problems. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems (Irkutsk, 1985)* (Russian), 272-280, 327, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Ivan Ginchev) **89i:93010** 93B05 (34D20, 93B50)
- Chagrov, A. V. Two theorems on equational logics in the signature of two unary symbols. (Russian) *Logical-algebraic constructions (Russian)*, 90-96, *Kalinin. Gos. Univ., Kalinin*, 1987. (P. Štěpánek) **89e:03044** 03C05
- Chagrova, L. A. An algorithm for constructing a first-order equivalent in stages for disjunction-free intuitionistic formulas. (Russian) *Logical-algebraic constructions (Russian)*, 96-100, *Kalinin. Gos. Univ., Kalinin*, 1987. (Pet'o P. Petkov) **89i:03014** EA **89m** 03B20 (03F55)
- Chahal, J. S. ★ Topics in number theory. The University Series in Mathematics. *Plenum Press, New York-London*, 1988. xiv+191 pp. ISBN 0-306-42866-0 (Helmut Koch) **89m:11001** 11-01
- Chai, Ching-Li Siegel moduli schemes and their compactifications over  $\mathbb{C}$ . *Arithmetic geometry (Storr, Conn., 1984)*, 231-251, *Springer, New York-Berlin*, 1986. (see **89f:14029**) 32N15 (11F46, 14K10)
- Chai, Gen Xiang (with Lu, Jiang) On the strong consistent conditions of the nearest neighbor density estimate in general kernel case. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 2, 139-147. (Jan Mielniczuk) **89a:62091** 62G05
- Chai, Jun (with Huang, Dan Run) On the Riesz-Schauder theory for systems of compact operators. (Chinese. English summary) *Dongbei Shuxue* 3 (1987), no. 3, 350-358. (Shan Li Sun) **89k:47006** 47A10 (47B05)
- Chai, Tian You A new self-tuning feedforward controller. (Chinese. English summary) *Control Theory Appl.* 5 (1988), no. 3, 30-37. (Not in MR) 93C40
- A self-tuning decoupling controller for a class of multivariable systems and global convergence analysis. *IEEE Trans. Automat. Control* 33 (1988), no. 8, 767-771. (Summary) **89c:93136** 93C40 (39A10, 49D27, 93B50, 93C35)
- Globally convergent self-tuning controllers. *Internat. J. Control* 48 (1988), no. 2, 417-434. (Summary) **89c:93231** 93E25 (93C35, 93C40)
- Deterministic convergence of a multivariable self-tuning controller. (Chinese. English summary) *J. Northeast Univ. Tech.* 9 (1988), no. 2, 173-177. (Ye-Hwa Chen) **89i:93070** 93C40
- Chai, Z. S. (with Startsev, A. N.) A generalized probability model for epidemics. (Russian) *Asymptotic methods in mathematical statistics (Russian)*, 108-119, 161, "Fan", Tashkent, 1987. (K. Dietz) **89a:92051** 92A15
- (with Startsev, A. N.) Limit theorems for the size of an epidemic in a generalized probability model. (Russian) *Probabilistic models and mathematical statistics (Russian)*, 92-105, 175, "Fan", Tashkent, 1987. (Summary) **89m:92046** 92A15 (60F05, 60J99)
- Chaichian, Masud (with Fischer, Jan) Unitarity of the scattering amplitude in higher dimension. *Proceedings of the Johns Hopkins Workshop on Current Problems in Particle Theory. 11. Frontiers in Particle Theory*, 303-318, *World Sci. Publishing, Singapore*, 1988. (Summary) **89f:81163** 81E99 (81E30)
- (with Fischer, Jan) Higher-dimensional space-time and unitarity bound on the scattering amplitude. *Nuclear Phys. B* 303 (1988), no. 3, 557-568. (Summary) **89b:81251** 81F20
- Chaiken, Seth Extremal length and width of blocking polyhedra, Kirchhoff spaces and multiport networks. *SIAM J. Algebraic Discrete Methods* 8 (1987), no. 4, 635-645. (Kenji



- Onaga. **89a:90165** 90C35 (05B35, 90B10, 94C30)
- Chaikovskii, Yu. V.** Vague regularities in planetary astronomy (on the evolution of the understanding of the laws of nature). (Russian) *Istor.-Astronom. Issled.* No. 19 (1987), 69–86. (E. Stipanich) **89a:01018** 01A45 (01A50, 85–03)
- Chait, Yossi** (with Radcliffe, Clark J.) Control of flexible structures with spillover using an augmented observer. *J. Guidance Control Dynamics* 12 (1989), no. 2, 155–161. (Not in MR) **93B05** (93B07)
- Chaitin, Gregory J.** Information, randomness & incompleteness. Papers on algorithmic information theory. Series in Computer Science, 8. World Scientific Publishing Co., Singapore, 1987. x+272 pp. ISBN 971-50-479-0; 971-50-480-4 (Editors) **89f:01089** 01A75 (00A10, 03D20, 68Q30)
- **Algorithmic information theory.** With a foreword by J. T. Schwartz. Cambridge Tracts in Theoretical Computer Science, 1. Cambridge University Press, Cambridge-New York, 1987. xii+175 pp. ISBN 0-521-34306-2 (Marius Zimand) **89g:68022** 68Q25 (60A05, 94A15)
- Chajda, Ivan** A localization of some congruence conditions in varieties with nullary operations. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 30 (1987), 17–23. (H. Peter Gumm) **89a:08006** 08B05 (08A30)
- On the one principal congruence identity. *Arch. Math. (Brno)* 23 (1987), no. 4, 187–190. (H. Peter Gumm) **89a:08007** 08B05 (08A30)
- Examples of local uniformity of congruences. *Acta Sci. Math. (Szeged)* 52 (1988), no. 1–2, 81–84. (Joel Berman) **89i:08001** 08A30 (06D20)
- (with Zelinka, B.) Tolerances and congruences on implication algebras. *Czechoslovak Math. J.* 38(113) (1988), no. 2, 207–217. (M. G. Stone) **89k:08001** 08A30 (92A27)
- Tolerances in congruence permutable algebras. *Czechoslovak Math. J.* 38(113) (1988), no. 2, 218–225. (Jaromir Duda) **89f:08005** 08A30
- Algebras whose principal congruences form a sublattice of the congruence lattice. *Czechoslovak Math. J.* 38(113) (1988), no. 4, 585–588. (Pavol Zlatos) **89i:08002** 08A30 (06D05)
- The egg-box property of congruences. (Russian summary) *Math. Slovaca* 38 (1988), no. 3, 243–247. (B. Zelinka) **89m:08003** 08A30
- Chak, A. M.** (with Akhlaghi, M. R.; Sharma, Ambikeshwar) (0, 2, 3) interpolation on the zeros of  $\pi_n(x)$ . *Approx. Theory Appl.* 4 (1988), no. 2, 55–74. (Len Bos) **89i:41004** 41A05
- Chakalov, Vladimir L.** Extremal elements of normed spaces and some related extremal problems. I. (Russian) *Serdica* 12 (1986), no. 3, 250–264. (A. I. Vasil'ev) **89b:41040** 41A65 (46E40, 90C48, 93C05)
- Extremal elements of normed spaces and some related extremal problems. II. (Russian) *Serdica* 12 (1986), no. 4, 332–350 (1987). (A. I. Vasil'ev) **89i:41032**; **EA 89m** 41A65 (46B20)
- Chakerian, Don** (with Logothetti, Dave) Minimal regular polygons serving as universal covers in  $\mathbb{R}^2$ . *Geom. Dedicata* 26 (1988), no. 3, 281–297. (Marek Lassak) **89f:52035** 52A45 (52A10)
- Chakhvadze, E. Sh.** The Cauchy problem for a class of quasilinear equations. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 125 (1987), no. 3, 465–468. (Genowefa Majcher) **89c:35110** 35L80 (35L70)
- Chaki, B.** (with Chaki, M. C.) On pseudosymmetric manifolds admitting a type of semisymmetric connection. *Soochow J. Math.* 13 (1987), no. 1, 1–7. (Franco Tricerri) **89d:53034** 53B05
- Chaki, M. C.** On pseudo symmetric manifolds. *An. Stiint. Univ. "Al. I. Cuza" Iasi Sect. I a Mat. (N.S.)* 33 (1987), no. 1, 53–58. (Valentin Boju) **89b:53078** 53C20 (53C42)
- (with Chaki, B.) On pseudosymmetric manifolds admitting a type of semisymmetric connection. *Soochow J. Math.* 13 (1987), no. 1, 1–7. (Franco Tricerri) **89d:53034** 53B05
- (with Tarafdar, M.) On conformally flat pseudo-Ricci symmetric manifolds. *Period. Math. Hungar.* 19 (1988), no. 3, 209–215. (Kouei Sekigawa) **89i:53027** 53C20
- Chakmazyan, A. V.** The local structure of a submanifold  $M_m$  with a parallel vector field. *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 245–254. *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Valentin Boju) **89b:53057** 53B25
- Chakrabarti, Alakanath** A tractable pair of the Cauchy singular integral equations. *J. Indian Inst. Sci.* 66 (1986), no. 5, 331–336. (R. K. Raina) **89c:45006** 45E05
- Approximate solution of an integral equation of interface crack. *J. Indian Inst. Sci.* 67 (1987), no. 5–6, 195–201. (Steen Krenk) **89j:73087** 73M05 (73C35)
- (with Mandal, B. N.) The plane vertical wavenumber problem—revisited. *Appl. Math. Lett.* 1 (1988), no. 3, 255–258. (Not in MR) **76B15**
- Capillary-gravity waves against a corrugated vertical cliff. *Appl. Sci. Res.* 45 (1988), no. 4, 303–317. (Summary) **89k:76015** 76B15 (76B45)
- Chakrabarti, Amitabha** Spinors in periodic self-dual gauge field backgrounds. *J. Math. Phys.* 29 (1988), no. 2, 481–486. (Henrik Pedersen) **89b:81100** 81E13 (53C80)
- Fermions in a finite-action SU(2) gauge field in Minkowski space: isospin flip. *Phys. Lett. B* 203 (1988), no. 4, 437–440. (A. Comtet) **89j:81023** 81C05 (81E13)
- Propagators in periodic gauge field backgrounds. *Phys. Lett. B* 210 (1988), no. 1–2, 181–187. (Dennis B. Creamer) **89k:81071** 81E13 (35Q20, 58G40)
- Fermions and gauge fields in the Einstein static universe. *Phys. Lett. B* 212 (1988), no. 2, 145–146. (Summary) **89f:83061** 83C47 (81E20)
- Chakrabarti, B. K.** (with Dhar, Deepak; Barma, Mustansir; Taraphder, A.) The travelling salesman problem on a randomly diluted lattice. *J. Phys. A* 20 (1987), no. 15, 5289–5298. (Michel Troyon) **89a:90059** 90B15 (82A67)
- Chakrabarti, C. G.** (with Talapatra, R. N.) Nonequilibrium fluctuation in Ginzburg-Landau growth. *Bull. Calcutta Math. Soc.* 79 (1987), no. 2, 89–92. (From the introduction) **89d:92020** 92A09
- (with Baishya, M. C.) Stochastic linearization approach to some nonlinear processes. *Bull. Calcutta Math. Soc.* 79 (1987), no. 3, 127–133. (Yoram Schiffmann) **89j:92020** 92A09 (34F05, 60H10, 92A40)
- On nonequilibrium entropy and irreversibility. *Bull. Calcutta Math. Soc.* 79 (1987), no. 5, 293–297. (T. W. Barrett) **89d:82059** 82A35
- (with Mukhopadhyay, Violet) On the statistics of open system with slowly varying processes. *Bull. Calcutta Math. Soc.* 79 (1987), no. 6, 383–388. (Introduction) **89f:82026** 82A30 (82A35)
- Maximum-entropy and related estimation principles. *Festschrift for Professor Mahadev Dutta (Calcutta, 1985–1986)*. *Bull. Calcutta Math. Soc.* 1987, 129–136. (L. L. Campbell)
- 89k:94027** 94A17
- Chakrabarti, P. P.** (with Ghose, S.; Pandey, A.; De Sarkar, S. C.) Increasing search efficiency using multiple heuristics. *Inform. Process. Lett.* 30 (1989), no. 1, 33–36. (Not in MR) **68P10**
- Chakrabarti, R.** (with Vasudevan, R.) Quantum Langevin equation for a harmonic oscillator with memory-dependent damping. *J. Phys. A* 21 (1988), no. 6, 1457–1465. (Summary) **89d:82027** 82A15
- Chakrabarti, S. K.** see **Chakrabarti, Subir K.**
- Chakrabarti, Sadasiv** (with Lahiri, B. K.) Local measurability in topological groups. (Serbo-Croatian summary) *Glas. Mat. Ser. III* 22(42) (1987), no. 1, 15–23. (W. W. Comfort) **89c:28014** 28C10 (22A10, 28A12, 54A10)
- Chakrabarti, Subir K.** Refinements of the  $\beta$ -core and the strong equilibrium and the Aumann proposition. *Internat. J. Game Theory* 17 (1988), no. 3, 205–224. (Olga M. Kosheleva) **89j:90291** 90D12
- Chakrabarty, N. K.** Some multidimensional operational relations. *Univ. Nac. Tucumán Rev. Ser. A* 29 (1979), no. 1, 61–69 (1987). (Not in MR) **44A10**
- Chakrabarty, Sasanka Sekhar** Development of pure mathematics, Calcutta University. *Math. Ed. (Siwan)* 20 (1986), no. 2, 65–69. (Summary) **89a:01093** 01A73
- William Henry Young and mathematics. *Ganita Bhārat* 9 (1987), no. 1–4, 41–44. (U. D'Ambrosio) **89f:01059** 01A70
- Works of native Muslim mathematicians in India (1857–1970). *Ganita Bhārat* 9 (1987), no. 1–4, 45–48. (Summary) **89c:01014** 01A32 (01A55)
- Chakrabarti, S.** (with Desu, M. M.) A class of distribution-free tests for testing homogeneity against ordered alternatives. *Statist. Probab. Lett.* 6 (1988), no. 4, 251–256. (Summary) **89f:62062** 62G10
- Chakrabarty, A. B.** (with Choudhury, F. P.; Khare, S. S.) A note on fuzzy subgroups and fuzzy homomorphism. *J. Math. Anal. Appl.* 131 (1988), no. 2, 537–553. (Prabir Bhattacharya) **89m:20086** 20N99 (03E72)
- Chakrabarty, T. K.** see **Chakrabarty, Tushar Kanti**
- Chakrabarty, Tapes** (with Rand, Richard H.) The transition from phase locking to drift in a system of two weakly coupled van der Pol oscillators. *Internat. J. Non-Linear Mech.* 23 (1988), no. 5–6, 369–376. (W.-H. Steeb) **89m:70056** 70K99 (58F14)
- Chakrabarty, Tushar Kanti** A single sampling attribute plan of given strength based on fuzzy goal programming. *Opsearch* 25 (1988), no. 4, 259–271. (Not in MR) **90B50** (90B25)
- Chakravarty, Srinivasaraghavan** Analysis of production line systems with two unreliable machines with phase type processing times and a finite storage buffer. *Comm. Statist. Stochastic Models* 3 (1987), no. 3, 369–391. (F. Beichelt) **89b:60209** 60K25 (90B25)
- (with Neuts, Marcel F.) Algorithms for the design of finite-capacity service units. *Naval Res. Logist.* 36 (1989), no. 2, 147–165. (Summary) **89m:90069** 90B22
- Chakravarti, I. M.** The generalized Goppa codes and related discrete designs from Hermitian surfaces in  $PG(3, s^2)$ . *Coding theory and applications (Cachan, 1986)*, 116–124. *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (J. A. Thiong-Ly) **89m:94017** 94B25 (05B10, 11T71, 94B05)
- (with Morgan, J. P.) Block designs for first and second order neighbor correlations. *Ann. Statist.* 16 (1988), no. 3, 1206–1224. (Kishan Lal Sharma) **89j:62104** 62K10 (05B05)
- Chakravarty, Amiya K.** (with Martin, Gene E.) Optimal multiproduct inventory grouping for coordinated periodic replenishment under stochastic demand. *Comput. Oper. Res.* 15 (1988), no. 3, 263–270. (Summary) **89d:90078** 90B05
- Chakravarty, N. K.** (with Roy Paladhi, Swapna) Errata: "On the spectral resolution of a differential operator. II" [*J. Indian Inst. Sci.* 66 (1986), no. 3, 127–153; MR 88d:34025]. *J. Indian Inst. Sci.* 66 (1986), no. 11–12, 719–722. (Editors) **89a:34031** 34B25 (47E05)
- (with Roy Paladhi, Swapna) On the spectral resolution of a differential operator. III. *J. Indian Inst. Sci.* 67 (1987), no. 5–6, 163–194. (E. Müller-Pfeiffer) **89f:34031** 34B25 (47A70, 47E05)
- Chakravarty, Sarharish** (with Mason, L. J.; Newman, E. T.) Bäcklund transformations for the anti-self-dual Yang-Mills equations. *J. Math. Phys.* 29 (1988), no. 4, 1005–1013. (R. S. Ward) **89d:81064** 81E13 (58G37)
- Chakravarty, Satya R.** Extended Gini indices of inequality. *Internat. Econom. Rev.* 29 (1988), no. 1, 147–156. (From the introduction) **89e:90029** 90A10 (62P20)
- Chakravarty, Sudip** Quantum mechanics on a macroscopic scale. *New techniques and ideas in quantum measurement theory (New York, 1986)*, 25–35. *Ann. New York Acad. Sci.*, 480, New York Acad. Sci., New York, 1986. (see **89m:81005**) **81B05**
- Chakroun, Nasr** (with Manoussakis, Yannis) Degrees, diameter and structure of oriented graphs. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), C, 81–96. (Bradley W. Jackson) **89f:05088** 05C20 (05C35)
- Chak'ryan, Keropé B.** (with Gentchev, Ts. R.) Products of finite simple groups. *C. R. Acad. Bulgare Sci.* 40 (1987), no. 2, 5–8. (M. E. Harris) **89b:20054** 20D40
- (with Alnader, N. G.) Factorizations of finite simple groups. *C. R. Acad. Bulgare Sci.* 40 (1987), no. 2, 9. (M. E. Harris) **89b:20055** 20D40
- see also **Algebra—some current trends**, **89b:00002**
- Chalabi, Abdallah** A self-consistent finite-difference treatment of the moving boundary for long waves in shallow water. *Mathematical analysis and its applications (Kuwait, 1985)*, 243–249. *KFAS Proc. Ser.*, 3, Pergamon, Oxford-Elmsford, NY, 1988. (Summary) **89f:76003** 76-08 (65N05, 76B15)
- Chalam, V. V.** Adaptive control—recent trends. (Russian summary) *Systems Sci.* 12 (1986), no. 1–2, 55–73 (1987). (Not in MR) **93C40**
- Chalatzis, A.** (with Theohari-Apostolidi, Th.) On integral representations of crossed-product orders. *Comm. Algebra* 16 (1988), no. 10, 2013–2022. (Jan van Geel) **89i:11126** 11R54 (11S45, 16A18)
- (with Theohari-Apostolidi, Th.) Maximal orders containing local crossed-products. *J. Pure Appl. Algebra* 50 (1988), no. 3, 211–222. (Jean-Pierre Tignol) **89i:11078** 11S45 (16A18)
- Chaleyat-Maurel, M.** (with Baldi, Paolo) Sur l'équivalent du module de continuité des processus de diffusion. [On the equivalent of the modulus of continuity of diffusion processes] *Séminaire de Probabilités, XXI*, 404–427. *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (Rémi Léandre) **89c:60147** 60G17
- Continuity in nonlinear filtering. Some different approaches. *Stochastic partial differential equations and applications (Trento, 1985)*, 25–39. *Lecture Notes in Math.*, 1236, Springer, Berlin-New York, 1987. (F. W. Stallingmann) **89d:93100** 93E11 (60G35, 60H15)

- (with Baldi, Paolo) An extension of Ventsef-Freidlin estimates. *Stochastic analysis and related topics (Silivri, 1986)*, 305–327. *Lecture Notes in Math.*, 1316, Springer, Berlin-New York, 1988. (V. Mackevičius) **89i:60121** 60H10 (34F05, 58F30, 60F10, 60J60)
- (with Michel, Dominique) The support of the law of a filter in  $C^\infty$  topology. *Stochastic differential systems, stochastic control theory and applications (Minneapolis, Minn., 1986)*, 395–407. *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (Maurizio Pratelli) **89f:60044** 60G35 (58D25, 60H10, 60J60, 93E20)
- Chalhoub, Sami** see al-Karaji, Abd Bakr Muhammad Ibn al-Husain, **89c:01011**
- Chalidze, A. K.** Boundary value problems for an exponentially inhomogeneous elastic ellipsoid of revolution. (Russian) *Current problems in mathematical physics, Vol. II (Russian) (Tbilisi, 1987)*, 374–378, 399, Tbilis. Gos. Univ., Tbilisi, 1987. (see **89j:00031**) 73C40 (73C03)
- Chaljub-Simon, Alice** Majoration a priori pour les solutions positives d'équations elliptiques semi-linéaires dans  $\mathbb{R}^n$ . (English summary) [An a priori bound for positive solutions of semilinear elliptic equations in  $\mathbb{R}^n$ ] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 20, 869–872. (Stavros A. Belbas) **89c:35041** 35J60
- Solution positive à décroissance gaussienne pour une équation différentielle non linéaire à coefficient trinôme. (English summary) [Positive solution with Gaussian decay for a nonlinear differential equation with a trinomial coefficient] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 1, 43–46. (Thierry Cazenave) **89d:35147** 35Q20 (81C05)
- Chalk, J. H. H.** On incomplete character sums to a prime-power modulus. *Canad. Math. Bull.* **30** (1987), no. 3, 257–266. (Ming Gao Lu) **89b:11070** 11L40
- On Hua's estimates for exponential sums. *Mathematika* **34** (1987), no. 2, 115–123. (Zun Shan) **89d:11067** 11L40
- see also Heilbronn, Hans Arnold, **89i:01140**
- Challifour, J. L.** (with Wood, W. A.) Path-space formulas for covariant gauges in Krein spaces. *J. Math. Phys.* **28** (1987), no. 11, 2763–2774. (Claus Montonen) **89i:81079** 81E08 (81E13)
- Chalmers, B. L.** Absolute projection constant of the linear functions in a Lebesgue space. *Constr. Approx.* **4** (1988), no. 2, 107–110. (C. Franchetti) **89g:41023** 41A65 (46B99)
- (with Phillips, G. M.; Taylor, P. J.) Polynomial approximation using projections whose kernels contain the Chebyshev polynomials. *J. Approx. Theory* **53** (1988), no. 3, 321–334. (Geng Zhe Chang) **89f:41008** 41A10
- Cham, W. K.** (with Clarke, Roger John) The principle of dyadic symmetry and the generation of simple, high efficiency transforms for image processing. *Mathematics in signal processing (Bath, 1985)*, 409–419, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (B. D. Donevski) **89d:94007** 94A11 (94A05)
- Chamarié, M.** (with Stafford, J. T.) When rings of differential operators are maximal orders. *Math. Proc. Cambridge Philos. Soc.* **102** (1987), no. 3, 399–410. (Marie-Paule Malliavin) **89d:16007** 16A18 (13H10, 17B35, 32C38, 58G99)
- Chambat, M.** (with Bayada, G.) On the various aspects of the thin film equation in hydrodynamic lubrication when the roughness occurs. *Applications of multiple scaling in mechanics (Paris, 1986)*, 14–30, *Rech. Math. Appl.*, 4, Masson, Paris, 1987. (Charles J. Amick) **89f:76043** 76D08
- (with Bayada, G.; Faure, J. B.) Some effects of the boundary roughness in a thin film. *Boundary control and boundary variations (Nice, 1986)*, 96–115, *Lecture Notes in Comput. Sci.*, 100, Springer, Berlin-New York, 1988. (Charles J. Amick) **89f:76044** 76D08
- gisbert-Chambaz, Hélène** see Gispert-Chambaz, Hélène
- Chamberlain, Gary** Asymptotic efficiency in estimation with conditional moment restrictions. *J. Econometrics* **34** (1987), no. 3, 305–334. (Summary) **89b:62098** 62G20
- Chamberlain, R. M.** (with Powell, M. J. D.) QR factorization for linear least-squares problems on a hypercube multiprocessor. *IMA J. Numer. Anal.* **8** (1988), no. 4, 401–413. (From the summary) **89c:65042** 65F20 (65W05)
- Chamberlain, Robert F.** Solvable groups with certain finite homomorphic images cyclic. *Arch. Math. (Basel)* **51** (1988), no. 1, 1–12. (Patrizia Longobardi) **89c:20058** 20F18 (20F16)
- (with Brodie, M. A.; Kappe, Luise-Charlotte) Finite coverings by normal subgroups. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 669–674. (H. Heineken) **89e:20062** 20F26 (20F24)
- Chambers, L. G.** Note on the stability of motion in a circle under a central force. *Appl. Math. Lett.* **1** (1988), no. 3, 219–220. (Not in MR) 70D05 (70K20)
- Chambers, R. L.** Design-adjusted regression with selectivity bias. *J. Roy. Statist. Soc. Ser. C* **37** (1988), no. 3, 323–334. (Not in MR) 62D05
- Chamliothoris, G.** (with Renaud, P. Y.; Sévely, Y.; Vigie, P.) Adaptive predictive control of a multicaste fermentation process. *Internat. J. Control* **48** (1988), no. 3, 1089–1105. (Summary) **89g:92008** 92A06 (93B25, 93C40, 9. C75)
- Chamle, V. T.** (with Madhekar, H. C.) Note on the  $q$ -Konhauser polynomials. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 3, 357–365. (W. A. Al-Salam) **89d:33018** 33A65 (05A30)
- Chamorro, Alberto** A Kerr cavity with a small rotation parameter embedded in Friedmann universes. *Gen. Relativity Gravitation* **20** (1988), no. 12, 1309–1323. (Nora Bretón Báez) **89m:83012** 83C15 (83C25)
- Champagne, B.** (with Winternitz, P.) On the infinite-dimensional symmetry group of the Davey-Stewartson equations. *J. Math. Phys.* **29** (1988), no. 1, 1–8. (M. I. Monastyrskii) **89d:58053** 58F07 (17B99, 22E65, 35Q20, 58G35)
- Champney, D. C.** ★ A handbook of Fourier theorems. *Cambridge University Press, Cambridge-New York, 1987*. xii+185 pp. ISBN 0-521-26503-7 (Colin C. Graham) **89c:42001** 42-01
- Chamseddine, A. H.** (with Derendinger, J.-P.) Twisted superstrings in four dimensions. *Nuclear Phys. B* **301** (1988), no. 3, 381–425. (Aleksandar R. Bogojević) **89e:81087** 81E13 (81E30)
- (with Derendinger, J.-P.; Quirós, M.) Nonsupersymmetric four-dimensional strings. *Nuclear Phys. B* **311** (1988/89), no. 1, 140–170. (Summary) **89k:81135** 81E99 (81E30, 81G20)
- (with Awada, M. A.) Superstring and graded Grassmannians. *Phys. Lett. B* **206** (1988), no. 3, 437–443. (Sergey Merkulov) **89f:81157** 81E99 (58A50, 58B25, 58F07, 81E30)
- nguen Chan** see Nguen Chan
- Chan, Andrew H. C.** (with Zienkiewicz, O. C.; Pastor, M.) Transformation of incremental plasticity relation from defining space to general Cartesian stress space. *Comm. Appl. Numer. Methods* **4** (1988), no. 4, 577–580. (Summary) **89d:73023** 73E99
- Chan, C. C.** see Chen, Qing Quan
- Chan, Chin K'o** (with Chang, Chén Ch'eng) Addressing for letter-oriented keys. *J. Chinese Inst. Engrs.* **11** (1988), no. 3, 279–284. (Summary) **89b:68029** 68P20
- Chan, Chiu Yung** (with Hon, Y. C.) Computational methods for generalized Thomas-Fermi models of neutral atoms. *Quart. Appl. Math.* **46** (1988), no. 4, 711–726. (Jiaqi Mo) **89j:81274** 81G45 (34A50, 34B15, 34B27, 65L10)
- Chan, Derek Y. C.** (with Hughes, Barry D.) Ion diffusion in a Coulombic field. *J. Statist. Phys.* **52** (1988), no. 1–2, 383–394. (Summary) **89i:82107** 82A70 (60J15, 82A40, 82A41)
- (with Hughes, Barry D.; Paterson, Lincoln; Sirakoff, Christina) Simulating flow in porous media. *Phys. Rev. A* **38** (1988), no. 8, 4106–4120. (Summary) **89h:76036** 76S05 (76-04, 76E99, 76T05, 82A42)
- Chan, F. Y.** (with Chan, Lai Kow; Lin, Kuo Tung) On consecutive-k-out-of-n: F systems. *European J. Oper. Res.* **36** (1988), no. 2, 207–216. (Summary) **89e:90109** 90B25
- (with Brooks, R. J.; Stone, Mervyn; Chan, Lai Kow) Cross-validatory graduation. *Insurance Math. Econom.* **7** (1988), no. 1, 59–66. (Summary) **89i:62169** 62P05
- Chan, Hue Sun** (with Dill, Ken A.) Intrachain loops in polymers: effects of excluded volume. *J. Chem. Phys.* **90** (1989), no. 1, 492–509. (Summary) **89c:82066** 82A51 (92A40)
- Chan, Jean B.** A Krasnosel'skii-type theorem involving  $p$ -arcs. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 667–676. (G. D. Chakerian) **89c:52018** 52A35 (52A30)
- Chan, K. Y.** (with Chen, Yung-ming) Generalization of an oscillation criterion for sublinear differential equations. *J. Math. Anal. Appl.* **127** (1987), no. 2, 585–594. (Keren Liao) **89b:34084** 34C15 (34C10)
- Chan, Lai Kow** (with Cheng, Smiley W.) Linear estimation of the location and scale parameters based on selected order statistics. *Comm. Statist. Theory Methods* **17** (1988), no. 7, 2259–2278. (S. K. Katti) **89k:62039** 62F10
- (with Chan, F. Y.; Lin, Kuo Tung) On consecutive-k-out-of-n: F systems. *European J. Oper. Res.* **36** (1988), no. 2, 207–216. (Summary) **89e:90109** 90B25
- (with Brooks, R. J.; Stone, Mervyn; Chan, F. Y.) Cross-validatory graduation. *Insurance Math. Econom.* **7** (1988), no. 1, 59–66. (Summary) **89i:62169** 62P05
- Chan, Ling-Yau** Optimal design for a linear log contrast model for experiments with mixtures. *J. Statist. Plann. Inference* **20** (1988), no. 1, 105–113. (Gregory M. Constantine) **89m:62074a** 62K05
- Erratum: "Optimal design for a linear log contrast model for experiments with mixtures". *J. Statist. Plann. Inference* **21** (1989), no. 1, 129. (Gregory M. Constantine) **89m:62074b** 62K05
- Chan, Mee Yee** (with Chung, W. L.) Optimal multidisk partial match file designs. *Inform. Process. Lett.* **28** (1988), no. 3, 149–155. (Not in MR) 68P20 (68N99)
- Chan, N. H.** (with Wei, C. Z.) Asymptotic inference for nearly nonstationary AR(1) processes. *Ann. Statist.* **15** (1987), no. 3, 1050–1063. (B. Dimitrov) **89c:62151** 62M10
- (with Wei, C. Z.) Limiting distributions of least squares estimates of unstable autoregressive processes. *Ann. Statist.* **16** (1988), no. 1, 367–401. (I. V. Basawa) **89b:62186** 62M10 (62E20)
- Chan, Paul C.-H.** (with Retzlaff, David G.; Mohamed, R.; Offin, D.; Chicone, Carmen) Maximal multiplicity of the critical points of the CR equation modeling a constant flow stirred tank reactor. *J. Math. Anal. Appl.* **124** (1987), no. 2, 327–338. (From the introduction) **89g:58042** 58E07 (80A32)
- (with Retzlaff, David G.; Bisbis, B. Youssef) Sequential bifurcations, maximum multiplicity, and chaos for a first order reaction. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 370–374. (see **89d:00007**) 80A32 (58F13, 58F14)
- Chan, R. H.** Iterative methods for overflow queueing models. I. *Numer. Math.* **51** (1987), no. 2, 143–180. (Summary) **89b:60210** 60K25 (90B22)
- Iterative methods for overflow queueing models. II. *Numer. Math.* **54** (1988), no. 1, 57–78. (Summary) **89g:90108** 90B22 (60K25)
- Chan, Tai Hung** On two-way weak counter machines. *Math. Systems Theory* **20** (1987), no. 1, 31–41. (E. B. Kinber) **89a:68047** 68Q05 (03D05, 68Q15)
- The boundedness problem for three-dimensional vector addition systems with states. *Inform. Process. Lett.* **26** (1988), no. 6, 287–289. (From the introduction) **89b:68028** 68Q15 (68Q90)
- Pushdown automata with reversal-bounded counters. *J. Comput. System Sci.* **37** (1988), no. 3, 269–291. (Summary) **89k:68037** 68Q05 (03D05)
- Chan, Tony F.** (with Shen, Long Jun) Stability analysis of difference schemes for variable coefficient Schrödinger type equations. *SIAM J. Numer. Anal.* **24** (1987), no. 2, 336–349. (J. T. Oden) **89b:65211** 65M10
- (with Tuminaro, Ray S.) Design and implementation of parallel multigrid algorithms. *Multigrid methods (Copper Mountain, CO, 1987)*, 101–115, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (David C. Arney) **89i:65144** 65W05 (68Q25)
- An optimal circulant preconditioner for Toeplitz systems. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 4, 766–771. (Summary) **89c:65046** 65F35
- (with Foulser, David E.) Effectively well-conditioned linear systems. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 6, 963–969. (J. Rokne) **89k:65046** 65F35 (15A12, 65G05)
- Boundary probe domain decomposition preconditioners for fourth order problems. *Domain decomposition methods (Los Angeles, CA, 1988)*, 160–167, *SIAM, Philadelphia, PA*, 1989. (see **89j:65010**) 65N99
- see also Domain decomposition methods, **89j:65010**
- Chan, W. L.** (with Yung, S. P.) Duality theory for the linear-convex optimal control problem with delays. *IMA J. Math. Control Inform.* **4** (1987), no. 3, 251–262. (Józef Kalinowski) **89f:49006** 49A27 (34K35, 49A55)
- (with Jin, Xiao Qing) Singular extremal control problem with time delay. *Internat. J. Control* **47** (1988), no. 6, 1795–1810. (Summary) **89d:34123** 34K35 (49B36, 93B25)
- (with Zheng, Yu Kun) Gauge transformation and the higher order Korteweg-de Vries equation. *J. Math. Phys.* **29** (1988), no. 2, 308–314. (C. Rogers) **89a:35216** 35Q20 (58G37)
- (with Zheng, Yu Kun) Gauge and Bäcklund transformations for the variable coefficient higher-order modified Korteweg-de Vries equation. *J. Math. Phys.* **29** (1988), no. 12, 2570–2575. (Summary) **89k:35240** 35Q20 (58G37)
- Chan, Wai** (with D'Abadie, Catherine; Proschan, Frank) Stochastic rearrangement inequalities. *J. Multivariate Anal.* **23** (1987), no. 2, 257–275. (Kong-Ming Chong) **89f:60019** 60E15
- Chan, Y. M.** (with Srivastava, M. S.) Comparison of powers for the sphericity tests using both the asymptotic distribution and the bootstrap method. *Comm. Statist. Theory*



- Methods* 17 (1988), no. 3, 671-690. (Summary) **89b:62113** 62H15 (62F05)
- Chana, M. S.** (with Daniels, P. G.) Onset of Rayleigh-Bénard convection in a rigid channel. *J. Fluid Mech.* 199 (1989), 257-279. (Summary) **89m:76035** 76E15
- Channe, B.** (with Banks, S. P.) A generalized frequency response for nonlinear systems. *IMA J. Math. Control Inform.* 5 (1988), no. 2, 147-166. (Summary) **89c:93034** 93B15 (93C10)
- Chancey, C. C.** (with O'Brien, M. C. M.) Berry's geometric quantum phase and the  $T_1 \otimes (s_2 \otimes t_2)$  Jahn-Teller effect. *J. Phys. A* 21 (1988), no. 16, 3347-3353. (Summary) **89i:10413** 81C99
- Chand, Mahesh** (with Pandey, H. B.) On metric semisymmetric connexion. *Pure Appl. Math. Sci.* 26 (1987), no. 1-2, 113-117. (V. C. Gupta) **89c:53025** 53B15
- Chand, Suresh** (with Schneeberger, Hans M.) Single machine scheduling to minimize weighted earliness subject to no tardy jobs. *European J. Oper. Res.* 34 (1988), no. 2, 221-230. (Summary) **89a:90066** 90B35
- Decision/forecast horizon results for a single facility dynamic location/relocation problem. *Oper. Res. Lett.* 7 (1988), no. 5, 247-251. (Summary) **89g:90094** 90B10
- Chanda, Pranab K.** (with Roy Chowdhury, A.) On a Painlevé test of a coupled system of Boussinesq and Schrödinger equations. *J. Math. Phys.* 29 (1988), no. 4, 843-850. (Summary) **89h:35279** 35Q20 (58F07)
- singh Chandel, R. C.** see **Singh Chandel, R. C.**
- Chandel, Raghendra Singh** Fixed point theorem in 2-metric spaces under functional inequality. *Acta Cienc. Indica Math.* 13 (1987), no. 2, 124-128. (I. A. Rus) **89f:54079** 54H25
- (with Ganguly, Ashok) Some results on general topology. *J. Indian Acad. Math.* 9 (1987), no. 4, 87-91. (B. T. Sims) **89i:54029** 54D10 (54D15)
- Chandirava, F. G.** A singular Cauchy problem with a nonlinear perturbation. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 7 (1986), no. 6, 9-13 (1987). (V. A. Sobolev) **89c:34062** 34A10
- Chandler, David** ★ Introduction to modern statistical mechanics. The Clarendon Press, Oxford University Press, New York, 1987. xiv+274 pp. ISBN 0-19-504276-X; 0-19-504277-8 (Darko Kapor) **89d:82001** 82-01 (82A25, 82A30)
- Chandler, G. A.** (with Graham, I. G.) The convergence of Nyström methods for Wiener-Hopf equations. *Numer. Math.* 52 (1988), no. 3, 345-364. (Jose Cuminato) **89j:65089** 65R20
- Chandler, H. W.** A variational principle for granular materials. *Internat. J. Numer. Anal. Methods Geomech.* 12 (1988), no. 4, 371-378. (N. Gass) **89i:73068** 73S05 (45K05, 49D29)
- Chandler, K. A.** Groups formed by redefining multiplication. *Canad. Math. Bull.* 31 (1988), no. 4, 419-423. (Michael E. Mays) **89m:20021** 20D60
- Chandler, Marthe** Models of voting behavior in survey research. *Synthese* 76 (1988), no. 1, 25-48. (Not in MR) **92A25** (90A08)
- Chandler-Wilde, S. N.** (with Hotherhall, D. C.) Integral equations in traffic noise simulation. *Computers in mathematical research (Cardiff, 1986)*, 207-235. *Inst. Math. Appl. Conf. Ser. New Ser.*, 14, Oxford Univ. Press, New York, 1988. (see **89c:00032**) 76-08 (76-05, 76Q05)
- Chandna, O. P.** (with Toews, H.; Rudraiah, N.) Solutions for steady plane aligned electro-magneto-fluid-dynamics. (Turkish summary) *İstanbul Tek. Üniv. Bül.* 39 (1986), no. 3-4, 351-370. (Summary) **89a:76064** 76X05 (35Q20)
- (with Sattar, M. A.) Steady plane MHD flows with constant speed along each streamline. *J. Math. Phys.* 32 (1988), no. 3, 321-333. (E. Infeld) **89h:76047** 76W05
- Chandra, Jagdish** (with Ladde, G. S.; Sirisaengsakon, O.) Multi-time method for large-scale filtering. *Internat. J. Systems Sci.* 19 (1988), no. 8, 1579-1604. (M. Sambandham) **89g:93096** 93E11 (34E15, 49D27)
- see also *Constitutive models of deformation*, **89f:73004**
- Chandra, M. Jaya** (with Hong, Jae-Dong; Cavalier, Tom M.) The assignment of minimum crews among bases in an airport operation. *European J. Oper. Res.* 38 (1989), no. 2, 208-212. (Not in MR) **90B35**
- Chandra, Prem** (with Barve, S.) On the absolute equivalence of  $T$ -matrices for a sequence space. *Math. Student* 47 (1979), no. 2-4, 215-221 (1985). (S. M. Mazhar) **89m:40002** 40D25 (15A57, 40C05, 40C99)
- (with Sharma, M. M.) Corrigenda to: "Some applications of the absolute Euler summability to Legendre series" [*J. Indian Math. Soc. (N.S.)* 47 (1983), no. 1-4, 123-138]. *J. Indian Math. Soc. (N.S.)* 49 (1985), no. 1-2, 125-126 (1987). (Not in MR) **40G05**
- On the degree of approximation of continuous functions. *J. Analabha* 17 (1987), 121-128. (Tikam Singh) **89d:42005** 42A10
- Functions belonging to  $Lip \alpha$  and  $Lip(\alpha, p)$  spaces and their approximations. *Soochow J. Math.* 13 (1987), no. 1, 9-22. (S. Aljančić) **89a:42005** 42A10 (40G10, 42A24)
- Absolute summability factors. *Indian J. Pure Appl. Math.* 19 (1988), no. 5, 477-487. (B. L. Gupta) **89i:42017** 42A28 (40F05)
- Chandra, Ramesh** A broken-symmetry theory of gravity. *Gen. Relativity Gravitation* 20 (1988), no. 5, 437-450. (Summary) **89c:83087** 83F05
- Chandra, Suresh** (with Bector, C. R.; Husain, I.) Second order duality in continuous-time nonlinear programming. Sixteenth Manitoba conference on numerical mathematics and computing (Winnipeg, Man., 1986). *Congr. Numer.* 56 (1987), 121-134. (B. Mond) **89b:90224** 90C48 (49A55, 49D37, 90C25)
- (with Bector, C. R.) (Generalized)-bonvexity and higher order duality for fractional programming. *Opsearch* 24 (1987), no. 3, 143-154. (Siegfried Schaible) **89b:90212** 90C32
- (with Bector, C. R.; Durga Prasad, M. V.) Nonlinear fractional programming duality for Hanson-Mond class of functions with nondifferentiable terms. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 165-170. (Summary) **89b:90235** 90C32
- (with Craven, B. D.; Husain, I.) A class of nondifferentiable control problems. *J. Optim. Theory Appl.* 56 (1988), no. 2, 227-243. (Halina Frankowska) **89g:49021** 49A52 (49A55, 90C48)
- (with Bector, Meena K.; Husain, I.; Bector, C. R.) A duality model for a generalized minmax program. *Naval Res. Logist.* 35 (1988), no. 5, 493-501. (Dorel Duca) **89j:90214** 90C30 (90C25, 90C32)
- Chandran, Sharat** (with Rosenfeld, Azriel) Order statistics on a hypercube. *Inform. Process. Lett.* 27 (1988), no. 3, 129-132. (Not in MR) **68Q20** (68R05)
- Chandrasekar, B.** An optimality criterion for vector unbiased statistical estimation functions. *J. Statist. Plann. Inference* 18 (1988), no. 1, 115-117. (Tadashi Nakamura) **89b:62107** 62H12 (62F10)
- Chandrasekaran, G.** (with Bhutani, O. P.; Mital, Poornima) On the exact solutions of nonlinear differential equations of nuclear engineering system via invariant variational principles. *Internat. J. Engng. Sci.* 26 (1988), no. 3, 243-248. (Jesús Hernández) **89h:80007** 80A20 (82A70)
- (with Bhutani, O. P.; Mital, Poornima) On invariant solutions of the generalised Boussinesq equation. *Internat. J. Engng. Sci.* 26 (1988), no. 3, 307-310. (Summary) **89c:76027** 76B15
- Chandrasekaran, K. R.** (with Rao, Geetha S.) Characterizations of elements of best coapproximation in normed linear spaces. *Pure Appl. Math. Sci.* 26 (1987), no. 1-2, 139-147. (Pier Luigi Papini) **89c:41047** 41A65
- Chandrasekaran, R.** (with Pang, Jong-Shi; Stone, Richard E.) Two counterexamples on the polynomial solvability of the linear complementarity problem. *Math. Programming* 39 (1987), no. 1, 21-25. (J. Parida) **89b:90215** 90C33
- (with Kabadi, Santosh N.) Pseudomatroids. *Discrete Math.* 71 (1988), no. 3, 205-217. (Ulrich Faigle) **89i:05077** 05B35
- see also Murty, Katta G., **89g:90227**
- Chandrasekhar, Subrahmanyan** (with Xanthopoulos, Basilis C.) On colliding waves that develop time-like singularities: a new class of solutions of the Einstein-Maxwell equations. *Proc. Roy. Soc. London Ser. A* 410 (1987), no. 1839, 311-336. (Summary) **89a:83012** 83C15 (83C35, 83C75)
- (with Xanthopoulos, Basilis C.) The effect of sources on horizons that may develop when plane gravitational waves collide. *Proc. Roy. Soc. London Ser. A* 414 (1987), no. 1846, 1-30. (Peter Szekeres) **89c:83030** 83C35 (83C50, 83C55, 83C75)
- On Ramanujan. *Ramanujan revisited (Urbana-Champaign, Ill., 1987)*, 1-6, Academic Press, Boston, MA, 1988. (S. D. Bajpai) **89e:91042** 01A70
- On Weyl's solution for space-times with two commuting Killing fields. *Proc. Roy. Soc. London Ser. A* 415 (1988), no. 1849, 329-345. (Enric Verdaguer) **89c:83012** 83C15 (83C20, 83C40)
- The two-centre problem in general relativity: the scattering of radiation by two extreme Reissner-Nordström black-holes. *Proc. Roy. Soc. London Ser. A* 421 (1989), no. 1861, 227-258. (J. B. Griffiths) **89m:83032** 83C30 (83C15, 83C25)
- Chandrasekhariah, D. S.** Naghdi-Hsu type solution in elastodynamics. *Acta Mech.* 76 (1989), no. 3-4, 235-241. (V. P. Madan) **89m:73011** 73C05 (73B05, 73C35, 73C99)
- Chandrasekharan, K.** see **Weyl, Hermann**, 1885-1985, **89a:01046**
- Chandrasekharan, N.** (with Laskar, R.; Veni Madhavan, C. E.) Chromatic polynomials of chordal graphs. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 61 (1988), 133-142. (Larry Basenšpíer) **89h:05028** 05C15 (05C70)
- (with Iyengar, S. Sitharama) NC algorithms for recognizing chordal graphs and  $k$ -trees. *IEEE Trans. Comput.* 37 (1988), no. 10, 1178-1183. (Summary) **89j:68119** 68R10 (05C99, 68Q25)
- Chandrasekhara Rao, K.** The Cesàro space of null sequences. *Comm. Fac. Sci. Univ. Ankara Ser. A1 Math. Statist.* 35 (1986), no. 1-2, 94-99. (Shri Nivas Bhatt) **89c:40003** 40D25 (40C15)
- Chandra, Vijaya** (with Kochar, Bipin S.) Analytic techniques for geometric intersection problems. *Geometric modeling*, 305-318, SIAM, Philadelphia, PA, 1987. (see **89b:65010**) 65D10
- Chandwani, G. N.** Comment on: "On a polynomial of the form  $F_n$ " [*Indian J. Pure Appl. Math.* 6 (1975), no. 11, 1326-1334; MR 57 #3468] by A. Srivastava and A. B. Rao. *Math. Student* 47 (1979), no. 2-4, 252-256 (1985). (From the introduction) **89h:33005** 33A30
- Chaney, Robin W.** Second-order directional derivatives for nonsmooth functions. *J. Math. Anal. Appl.* 128 (1987), no. 2, 495-511. (Ebu Tamm) **89c:90092** 90C30 (26B05, 49A52, 58C20)
- Second-order necessary conditions in constrained semismooth optimization. *SIAM J. Control Optim.* 25 (1987), no. 4, 1072-1081. (Summary) **89d:90183** 90C30 (49A52)
- Second-order necessary conditions in semismooth optimization. *Math. Programming* 40 (1988), no. 1 (Ser. A), 95-109. (W. W. Breckner) **89c:90093** 90C30 (49A27, 49A52)
- Chang, C. C.** see **Chang, Ch'ing**
- Chang, Chao-hsi** see **Zhang, Zhao Xi**
- Chang, Ch'ien Ch'eng** (with Chang, Tz'u Hsien) Optimal Cartesian product files for orthogonal range queries. (Chinese summary) *J. Chinese Inst. Engrs.* 10 (1987), no. 6, 727-731. (Summary) **89a:68036** 68P15
- (with Chen, C. Y.) A recursive performance formula of the disc modulo allocation method for binary Cartesian product files. *Comput. J.* 31 (1988), no. 6, 565-566. (Summary) **89k:68014** 68N25 (68R05)
- (with Chan, Chin K'o) Addressing for letter-oriented keys. *J. Chinese Inst. Engrs.* 11 (1988), no. 3, 279-284. (Summary) **89h:68029** 68P20
- (with Chang, Tz'u Hsien) Correction to: "Optimal Cartesian product files for orthogonal range queries" [*J. Chinese Inst. Engrs.* 10 (1987), no. 6, 727-731; MR 89a:68036]. *J. Chinese Inst. Engrs.* 11 (1988), no. 3, 317-318. (Summary) **89i:68017** 68P15
- Chang, Ch'ien Hua** (with Lin, Yen Ch'uan) On the abstraction of linear duality. *Chinese J. Math.* 15 (1987), no. 4, 207-213. (Rainer Burkard) **89j:90269** 90C48 (49A55)
- The  $k$ -path packing and the  $k$ -covering problems. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), A, 11-20. (W. H. Mills) **89d:05138** 05C70
- Labeling algorithms for domination problems in sun-free chordal graphs. *Discrete Appl. Math.* 22 (1988/89), no. 1, 21-34. (B. Zelinka) **89i:05155** 05C35 (68R10)
- Chang, Chien-Cheng** Random vortex methods for the Navier-Stokes equations. *J. Comput. Phys.* 76 (1988), no. 2, 281-300. (Summary) **89c:76004** 76-08 (76D05)
- Chang, Chih** An absorbing set for cooperative games. *Oper. Res. Lett.* 7 (1988), no. 3, 149-153. (Ki Hang Kim) **89g:90249** 90D12
- Chang, Chin-Chen** see **Chang, Ch'ien Ch'eng**
- Chang, Chin Fu** (with Chang, Chung Ju) Performance evaluation of a finite queue with random routing. (Chinese summary) *J. Chinese Inst. Engrs.* 10 (1987), no. 6, 671-680. (Summary) **89c:90098** 90B22
- Chang, Chin-Huei** see **Chang, Ch'ing Hui**

- Chang, Chin Liang** (with Lee, Richard C. T.) ★ Symbolic logic and mechanical theorem proving. Reprint of the 1973 original. Computer Science Classics. Academic Press, Inc., Boston, MA, 1987. xvi+331 pp. ISBN 0-12-170350-9 (Editors) **89i:68112** 68T15 (03B35, 68-02)
- Chang, Ch'ing Hui** (with Hu, Mên Cháng; Li, Hsüan Pei) Extremal analytic discs with prescribed boundary data. *Trans. Amer. Math. Soc.* **310** (1988), no. 1, 355-369. (John P. D'Angelo) **89f:32043** 32H15 (32D15, 32H20)
- Chang, Ching-Lung** see **Chang, Qing Long**
- Chang, Ch'iu Chün** On generalized Lavrent'ev-Bitsadze problems. *Mixed type equations*, 55-63, *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) **89b:35105** 35M05
- (with Srivastava, Hari M.) Some generating functions for the Gegenbauer polynomials. *Chinese J. Math.* **15** (1987), no. 3, 153-161. (B. D. Agrawal) **89b:33014** 33A50 (33A65)
- Chang, Chung Ju** (with Chang, Chin Fu) Performance evaluation of a finite queue with random routing. (Chinese summary) *J. Chinese Inst. Engrs.* **10** (1987), no. 6, 671-680. (Summary) **89e:90098** 90B22
- Chang, D. C.** see **Chang, Der-Chen E.**
- Chang, Darwin** (with Kumar, Alok<sup>2</sup>) Uniqueness of 10-dimensional superstring models in the fermionic construction. *Modern Phys. Lett. A* **3** (1988), no. 1, 81-90. (Helmut Rumpf) **89g:81070** 81E99 (81E30, 83E30)
- (with Kumar, Alok<sup>2</sup>) Gauge symmetry breaking by Thirring interaction in fermionic construction of superstring models. *Phys. Lett. B* **211** (1988), no. 1-2, 76-80. (B. Spence) **89i:11105** 81E99 (81E30, 81E40)
- Chang, Der-Chen E.** (with Nagel, Alexander; Stein, E. M.) Estimates for the  $\bar{\partial}$ -Neumann problem for pseudoconvex domains in  $\mathbb{C}^2$  of finite type. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 23, 8771-8774. (From the text) **89i:32041** 32F20 (32N15)
- Optimal  $L^p$  and Hölder estimates for the Kohn solution of the  $\bar{\partial}$ -equation on strongly pseudoconvex domains. *Trans. Amer. Math. Soc.* **315** (1989), no. 1, 273-304. (David S. Tartakoff) **89m:32033** 32F20 (32N15)
- Chang, Derek K.** Recurrence relations and integer sequences. *Utilitas Math.* **32** (1987), 95-99. (Jau-Shyong Shiue) **89a:11020** 11B37 (11B75)
- (with Rao, M. M.) Special representations of weakly harmonizable processes. *Stochastic Anal. Appl.* **6** (1988), no. 2, 169-189. (Summary) **89m:60087** 60G12
- Chang, Fan Jen** (with Shieh, L. S.; Bao, Yuan L.) State-space self-tuning regulators for general multivariable stochastic systems. *Proc. IEEE-D* **136** (1989), no. 1, 17-27. (Benjamin Goldys) **89k:93231** 93E20 (93B17, 93B50, 93C40)
- Chang, Fan-Reng** see **Cheng, Fan Jen**
- Chang, Feng Cheng** Power-series unification and reversion. *Appl. Math. Comput.* **23** (1987), no. 1, 7-23. (A. Bultheel) **89c:30003** 30B10 (41A58, 65B99, 65E05)
- Chang, Fu Ch'ieh** (with T'u, Shih Hsiung; Ch'ên, Wu T'ung; Chang, Hsiang) Chattering alleviation of variable structure control for a certain class of nonlinear systems. (Chinese summary) *J. Chinese Inst. Engrs.* **11** (1988), no. 5, 573-579. (Not in MR) **93B50**
- Chang, Gerard J.** see **Chang, Chên Hua**
- Chang, H. Y.** (with Utku, S.; Salama, M.; Rapp, D.) Simultaneous iterations algorithm for general eigenvalue problems on parallel processors. *Proceedings of the 1986 International Conference on Parallel Processing*, 59-66, IEEE Comput. Soc. Press, Washington, DC, 1986. (see **89b:68010**) 65W05 (65F15)
- (with Utku, S.; Salama, M.) Eigenvalue computation of large symmetric tridiagonal matrices on concurrent processors. *Comput. & Structures* **29** (1988), no. 2, 323-329. (Summary) **89c:65043** 65F15 (65W05)
- (with Utku, S.; Salama, M.; Rapp, D.) A parallel Householder tridiagonalization algorithm using scattered row decomposition. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 4, 857-873. (Yves Robert) **89c:65143** 65W05 (65F15, 68Q10)
- Chang, Hanbel** see **Zhang, Han Bo**
- Chang, Horng Jin** see **Chang, Hung Chü**
- Chang, Hsiang** (with T'u, Shih Hsiung; Ch'ên, Wu T'ung; Chang, Fu Ch'ieh) Chattering alleviation of variable structure control for a certain class of nonlinear systems. (Chinese summary) *J. Chinese Inst. Engrs.* **11** (1988), no. 5, 573-579. (Not in MR) **93B50**
- Chang, Hsueh-Chia** (with Hwang, Shyh-Hong) Turbulent and inertial roll waves in inclined film flow. *Phys. Fluids* **30** (1987), no. 5, 1259-1268. (Summary) **89a:76040** 76F99 (58F14)
- Chang, Hung Chü** (with Li, Chia Shêng) The general Tribonacci sequence. *Tamkang J. Management Sci.* **7** (1986), no. 2, 37-47. (Heiko Harborth) **89a:11025** 11B39
- (with Li, Chia Shêng) On a finite sum of products of the two general Fibonacci sequences. *Tamkang J. Management Sci.* **9** (1988), no. 1, 27-31. (A. N. Philippou) **89k:11007** 11B39
- Chang, I. Shou** (with Hsiung, Chao Agnes) Likelihood process in parametric model of censored data with staggered entry—asymptotic properties and applications. *J. Multivariate Anal.* **24** (1988), no. 1, 31-45. (Tapas K. Chandra) **89k:62023** 62E20 (60G44, 62F12)
- (with Shapir, Y.) Tricritical points of trails, their Euler digraphs and graphs: exact results on the Sierpiński gasket. *J. Phys. A* **21** (1988), no. 18, L903-L909. (Summary) **89j:82051** 82A51 (82A25, 82A41)
- (with Hsiung, Chao Agnes) Counting process approach to time-sequential and sequential point estimation with censored data. *Sequential Anal.* **7** (1988), no. 2, 127-148. (Summary) **89j:62109** 62L10 (62L12)
- Chang, Ib** (with Tiao, George C.; Chen, Chung) Estimation of time series parameters in the presence of outliers. *Technometrics* **30** (1988), no. 2, 193-204. (Not in MR) **62M10**
- Chang, Jen-Tsueh** Special  $K$ -types, tempered characters and the Beilinson-Bernstein realization. *Duke Math. J.* **56** (1988), no. 2, 345-383. (David Collingwood) **89k:22028** 22E46 (22E47, 32C38)
- Chang, Jian C.** A mathematical model for the survival of cancer patients. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations* (Budapest, 1987), 796-803, *János Bolyai Math. Soc., Budapest*, 1987. (Introduction) **89d:92054** 92A15 (92A07)
- Chang, Jik H.** (with Ibarra, Oscar H.; Ravikumar, Bala) Erratum: "Some observations concerning alternating Turing machines using small space" [Inform. Process. Lett. **25** (1987), no. 1, 1-9; MR **88e:68026**] by the authors and L. Berman. *Inform. Process. Lett.* **27** (1988), no. 1, 53. (Editors) **89a:68048** 68Q05 (03D10, 03D15, 68Q15)
- (with Ibarra, Oscar H.; Vergis, Anastasios) On the power of one-way communication. *J. Assoc. Comput. Mach.* **35** (1988), no. 3, 697-726. (D. M. Campbell) **89j:68037** 68Q05 (68Q45)
- Chang, Jin-Fu** see **Chang, Chin Fu**
- Chang, Jiong** (with Xu, Lei; Yan, Ping Fan) Studying semibind inverse convolution problems by methods of nonlinear programming. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 2, 102-105. 90C99
- (with Xu, Lei; Yan, Ping Fan) Reconstructing discrete finite time width signals from their end points and amplitude spectrum. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 11, 819-822. (Not in MR) **94A12**
- Chang, Joo Sup** Stability theorems for the Feynman integral: the  $\mathcal{L}(L_1(\mathbb{R}), C_0(\mathbb{R}))$  theory. Functional integration with emphasis on the Feynman integral (Sherbrooke, PQ, 1986). *Rend. Circ. Mat. Palermo (2) Suppl. No. 17* (1987), 135-151 (1988). (Cécile Dewitt-Morette) **89f:81056** 81C35 (46G12, 58D30)
- (with Chang, Kun Soo; Ahn, Jae Moon) Notes on the analytic Yeh-Feynman integrable functionals. *Rocky Mountain J. Math.* **18** (1988), no. 1, 157-165. (A. Badrikian) **89f:28035** 28C20
- Chang, Jui Hsiung** (with Lee, Richard C. T.) On a scheduling problem where a job can be executed only by a limited number of processors. *Comput. Oper. Res.* **15** (1988), no. 5, 471-478. (Summary) **89h:90123** 90B35
- Chang, Jung Yü** (with Wang, Mao Ling; Jan, Yih-Jena) Analysis and parameter identification of time-delay linear systems via generalized orthogonal polynomials. *Internat. J. Systems Sci.* **18** (1987), no. 9, 1645-1658. (Summary) **89d:93038** 93B30 (34K35, 93B25, 93C05)
- (with Wang, Mao Ling; Yang, Shwu Yien) Double generalized orthogonal polynomial series for the solution of integral equations. *Internat. J. Systems Sci.* **19** (1988), no. 3, 459-470. (Summary) **89m:65117** 65R20 (45L05)
- (with Yang, Shwu Yien; Wang, Mao Ling) Parameter identification of time-varying system via generalized orthogonal polynomials. *Internat. J. Systems Sci.* **19** (1988), no. 3, 471-485. (Summary) **89e:93064** 93B30 (93B25)
- Chang, K. L.** see **Chang, Kuo Lung**
- Chang, K. S.** see **Chang, Kun Soo**
- Chang, K. W.** (with Howes, Frederick A.) ★ Нелинейные сингулярно возмущенные краевые задачи. (Russian) [Nonlinear singularly perturbed boundary value problems] Теория и приложения. [Theory and applications] Translated from the English by V. G. Sushko. Translation edited and with a preface by N. Kh. Rozov. "Mir", Moscow, 1988. 248 pp. (Editors) **89b:34035** 34Bxx (34E15)
- Chang, Kun Soo** (with Johnson, Gerald W.; Skoug, David) Functions in the Banach algebra  $S(\nu)$ . *J. Korean Math. Soc.* **24** (1987), no. 2, 151-158. (L. L. Lee) **89g:46081** 46G12 (60H05)
- (with Lee, Kwang Soon) Discrete-time modelling of distributed parameter systems for state estimator design. *Internat. J. Control* **48** (1988), no. 3, 929-948. (Not in MR) **93C55** (93C20, 93D, 93E10)
- (with Ryu, K. S.) A generalized converse measurability theorem. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 835-839. (Z. G. Gorgadze) **89e:28021** 28C20
- (with Ahn, Jae Moon; Chang, Joo Sup) Notes on the analytic Yeh-Feynman integrable functionals. *Rocky Mountain J. Math.* **18** (1988), no. 1, 157-165. (A. Badrikian) **89f:28035** 28C20
- Chang, Kung-Ching** see **Zhang, Gong Qing**
- Chang, Kuo Lung** A gauge independent diagrammatic approach to Slavnov-Taylor identities. *Conformal field theory, anomalies and superstrings* (Singapore, 1987), 461-470, *World Sci. Publishing, Singapore*, 1988. (Summary) **89f:81116** 81E15 (81C30)
- Chang, Lay-Nam** (with Chang, Ngee-Pong) Renormalisation programme and dynamical symmetry breaking. *Quantum field theory and quantum statistics*, Vol. 2, 37-45, Hilger, Bristol, 1987. (see **89b:81008**) 81G25 (81D20, 81E15)
- (with Liang, Yi Gao) Conservation of topological quantum numbers in energy bands. *Modern Phys. Lett. A* **3** (1988), no. 18, 1839-1845. (Summary) **89k:81204** 81H20 (58G10)
- Chang, M. C.** see **Chang, Mei Chu**
- Chang, M. D.** (with Engquist, M.; Finkel, Rafael A.; Meyer, R. R.) A parallel algorithm for generalized networks. *Ann. Oper. Res.* **14** (1988), no. 1-4, 125-145. (Summary) **89g:90225** 90C35 (68M10, 90B10)
- Chang, Mei Chu** (with Ran, Z.) Deformations and smoothing of complete linear systems on reducible curves. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 63-75, *Proc. Sympos. Pure Math.*, 46, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Ciro Ciliberto) **89f:14020** 14H10 (14C20)
- (with Ran, Z.) Divisors on  $\mathcal{A}_g$  and the cosmological constant. *Mathematical aspects of string theory* (San Diego, Calif., 1986), 386-393, *Adv. Ser. Math. Phys.*, 1, World Sci. Publishing, Singapore, 1987. (see **89m:81001**) 14H10 (14H15, 81E30)
- (with Ran, Z.) A note on the slope of subvarieties of  $\overline{\mathcal{A}}_{15}$  ( $6 \leq S_{15} \leq 6 \frac{1}{2}$ ). *Mathematical aspects of string theory* (San Diego, Calif., 1986), 408-411, *Adv. Ser. Math. Phys.*, 1, World Sci. Publishing, Singapore, 1987. (see **89m:81001**) 14H10
- Some good unirational families of space curves. *Ark. Mat.* **26** (1988), no. 1, 55-65. (Monica Idà) **89k:14054** 14H45 (14C05, 14H50)
- Buchsbaum subvarieties of codimension 2 in  $\mathbb{P}^n$ . *Bull. Amer. Math. Soc. (N.S.)* **19** (1988), no. 1, 269-272. (Wolfgang Vogel) **89d:14062** 14M07 (14F05, 14M05)
- Chang, Myron N.** (with Yang, Grace L.) Strong consistency of a nonparametric estimator of the survival function with doubly censored data. *Ann. Statist.* **15** (1987), no. 4, 1536-1547. (Kumar Joag-Dev) **89c:62070** 62G05 (62E20, 62G30)
- Chang, Nam Su** A new probability distribution  $C$ , and the periodic queueing system  $M(t)|G(t)|1$ . II. *Cho-sön In-min Kong-hwa-kuk Kwa-hak-wôn T'ong-bo* **1987**, no. 5, 5-7. (Not in MR) **60K25**
- A new probability distribution  $C$ , and the periodic queueing system  $M(t)|G(t)|1$ . III. (Korean. English summary) *Cho-sön In-min Kong-hwa-kuk Kwa-hak-wôn T'ong-bo* **1987**, no. 6, 8-9. (Not in MR) **60K25**
- Chang, Ngee-Pong** (with Chang, Lay-Nam) Renormalisation programme and dynamical symmetry breaking. *Quantum field theory and quantum statistics*, Vol. 2, 37-45, Hilger, Bristol, 1987. (see **89b:81008**) 81G25 (81D20, 81E15)
- (with León, Juan; Pérez-Mercader, Juan)  $StrM^2$  sum rule for a general class of Kähler potentials. *Modern Phys. Lett. A* **2** (1987), no. 12, 937-943. (Joan Soto) **89e:83068** 83E15 (81E30, 81G25, 83E50)



- Bifurcation theory and dynamical symmetry breaking: a colloquium. *Conformal field theory, anomalies and superstrings* (Singapore, 1987), 419–438. *World Sci. Publishing, Singapore*, 1988. (Summary) **89f:58104** 58F14 (58C28, 81G05)
- (with Li, Da-Xi) Models of nonabelian orbifolds. *Phys. Lett. B* **206** (1988), no. 1, 51–56. (Marcos D. Maia) **89f:81250** 81G20 (22E40, 57S30, 81E30, 83E30)
- (with Li, Da-Xi; Pérez-Mercader, Juan) Cosmological constant and asymmetric orbifolds. *Phys. Rev. Lett.* **60** (1988), no. 10, 882–884. (Daniel G. Caldi) **89i:83055** 83E15 (81E30, 81G20, 83E30, 83F05)
- Chang, P. R. (with Lee, C. S. G.) Efficient parallel algorithms for robot forward dynamics computation. *IEEE Trans. Systems Man Cybernet.* **18** (1988), no. 2, 238–251. (Not in MR) **93C75** (49D07)
- Chang, Pei-Kun (with DeTurck, D.) On hearing the shape of a triangle. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 1033–1038. (Andreas Juhl) **89h:58194** 58G25 (35P99, 35R30)
- Chang, Ping Kuang see Zhang, Ping Guang
- Chang, Qian Shun Difference scheme for one type of nonlinear parabolic equation. *J. Math. Res. Exposition* **6** (1986), no. 4, 105–109. (J. Miklitzek) **89e:65094** 65M10
- Chang, Qing A sort of polynomial identities of  $M_n(F)$  with  $\text{char } F \neq 0$ . A Chinese summary appears in Chinese Ann. Math. Ser. A **9** (1988), no. 2, 241. *Chinese Ann. Math. Ser. B* **9** (1988), no. 2, 161–166. (E. Formanek) **89j:16027** 16A38
- The tensor products of nilrings with bounded index of nilpotence. *J. Math. Res. Exposition* **8** (1988), no. 1, 6–10. (Bogdan J. Oslowski) **89j:16011** 16A22
- Some consequences of the standard polynomial. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 707–710. (Amiram Braun) **89j:16014** 16A38
- Chang, Qing Long (with Gunzburger, Max D.) A finite element method for first order elliptic systems in three dimensions. *Appl. Math. Comput.* **23** (1987), no. 2, 171–184. (Summary) **89m:65100** 65N30
- Finite element method for the solution of Maxwell's equations in multiple media. *Appl. Math. Comput.* **25** (1988), no. 2, part II, 89–99. (Summary) **89e:65165** 65N30
- Chang, R. S. see Chang, Jui Hsiung
- Chang, Rong-Yue see Chang, Jung Yü
- Chang, S.-C. see Chang, Shao-Chien
- Chang, S.-J. (with Lin, K'ê Ying) Rigorous results for the number of convex polygons on the square and honeycomb lattices. *J. Phys. A* **21** (1988), no. 11, 2635–2642. (Ira Gessel) **89i:05022** 05A15 (05B50, 52A43, 82A67)
- Chang, Shao-Chien (with Beekmann, W.) Summability domains not containing  $\varphi$ . *Analysis* **8** (1988), no. 1–2, 145–164. (Jozef Antoni) **89k:40011** 40D20 (40D09)
- Chang, Shao-Jin (with Friedberg, R.) Elliptical billiards and Poncelet's theorem. *J. Math. Phys.* **29** (1988), no. 7, 1537–1550. (Horst Knörrer) **89j:58043** 58F07 (14K20)
- (with Shi, Kang Jie) Billiard systems on quadric surfaces and the Poncelet theorem. *J. Math. Phys.* **30** (1989), no. 4, 798–804. (Horst Knörrer) **89m:58091** 58F07 (14K99)
- Chang, Sheldon Xu-Dong Two-dimensional area minimizing integral currents are classical minimal surfaces. *J. Amer. Math. Soc.* **1** (1988), no. 4, 699–778. (Harold Parks) **89i:49028** 49F20 (49F10, 49F22, 58E12, 58E15)
- Chang, Sheng-Lin (with Kao, Edward P. C.) Modeling time-dependent arrivals to service systems: a case in using a piecewise-polynomial rate function in a nonhomogeneous Poisson process. *Management Sci.* **34** (1988), no. 11, 1367–1379. (Not in MR) **60K25** (90B22)
- Chang, Shi Chung (with Chang, Tsu Shuan; Luh, Peter B.) A hierarchical decomposition for large-scale optimal control problems with parallel processing structure. *Automatica—J. IFAC* **25** (1989), no. 1, 77–86. (Summary) **89k:93009** 93A13 (49D15, 93B40)
- (with Luh, Peter B.; Miao, Xi-Yi; Castañon, David A.) Stochastic task selection and renewable resource allocation. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 335–339. (Summary) **89j:90160** 90B30 (90A30, 90B35)
- Chang, Shi Wei (with Lin, Fu Rong) Extension of linearly independent systems of vectors. (Chinese) *Math. Practice Theory* **1987**, no. 4, 25–29. (Yik-Hoi Au-Yeung) **89c:15011** 15A15 (15A03, 65F30, 65K05)
- Chang, Shih-sen see Zhang, Shi Sheng
- Chang, Shyang see Chang, Hsiang
- Chang, Stephen F. (with Kennedy, William J.) Error-free computer solution of certain systems of linear equations. *J. Comput. Appl. Math.* **18** (1987), no. 3, 279–287. (Alfonso Laratta) **89c:65036** 65F05 (65G05)
- Chang, Suk-gwon Optimal trade-off among delay, throughput and fairness in flow controlled networks. *System modelling and optimization* (Tokyo, 1987), 307–317, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (see **89f:00029**) **90B10** (68R10)
- Chang, Sun-Yung A. Extremal functions in a sharp form of Sobolev inequality. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 715–723. *Amer. Math. Soc., Providence, RI*, 1987. (Michael T. Anderson) **89e:53060** 53C20 (26B35, 32A35, 58G30)
- (with Yang, Paul C.) Conformal deformation of metrics on  $S^2$ . *J. Differential Geom.* **27** (1988), no. 2, 259–296. (John M. Lee) **89h:53079** 53C20 (58G30)
- Chang, Syh-Shyan see Chang, Ts'ê Hsien
- Chang, T. S. see Chang, Tsu Shuan
- Chang, Tong (with Xu, Lei; Yan, Ping Fan) Semibind deconvolution of finite length sequence. I. Linear problem. *Sci. Sinica Ser. A* **30** (1987), no. 12, 1318–1332. (L. L. Campbell) **89f:94007a** 94A13 (93E10, 94A12)
- (with Xu, Lei; Yan, Ping Fan) Semibind deconvolution of finite length sequence. II. Nonlinear problem. *Sci. Sinica Ser. A* **30** (1987), no. 12, 1333–1344. (L. L. Campbell) **89f:94007b** 94A13 (93E10, 94A12)
- Chang, Tsu Kung (with Lai, Han Ch'ing) Translation invariant operators and multipliers of Banach-valued function spaces. *Proceedings of the analysis conference, Singapore 1986*, 151–162, *North-Holland Math. Stud.*, 150, North-Holland, Amsterdam-New York, 1988. (G. P. Johnson) **89h:43002** 43A22 (47B38)
- Chang, Tsu Shuan (with Luh, Peter B.; Ning, T.) Pricing problems with a continuum of customers as stochastic Stackelberg games. *J. Optim. Theory Appl.* **55** (1987), no. 1, 119–131. (O. A. Malafeev) **89c:90024** 90A12 (90D15)
- (with Chang, Shi Chung; Luh, Peter B.) A hierarchical decomposition for large-scale optimal control problems with parallel processing structure. *Automatica—J. IFAC* **25** (1989), no. 1, 77–86. (Summary) **89k:93009** 93A13 (49D15, 93B40)
- Chang, Ts'ê Hsien (with Chang, Chên Ch'eng) Optimal Cartesian product files for orthogonal range queries. (Chinese summary) *J. Chinese Inst. Engrs.* **10** (1987), no. 6, 727–731. (Summary) **89a:68036** 68P15
- (with Chang, Chên Ch'eng) Correction to: "Optimal Cartesian product files for orthogonal range queries" [*J. Chinese Inst. Engrs.* **10** (1987), no. 6, 727–731; MR **89a:68036**]. *J. Chinese Inst. Engrs.* **11** (1988), no. 3, 317–318. (Summary) **89i:68017** 68P15
- Chang, Wei (with Guo, Qing Yu) Fuzzy recognition and its application in long-range weather forecasting. (Chinese. English summary) *Fuzzy Math.* **7** (1987), no. 2, 59–64. (Summary) **89g:03079** 03E72 (86A10)
- Chang, Weita (with Carrion, Philip; Beylkin, G.) Wavefront sets of solutions to linearised inverse scattering problems. *Inverse Problems* **3** (1987), no. 4, 683–690. (A. G. Ramm) **89c:86001** 86A15 (35R30)
- Chang, X. M. see Zhang, Xian Mo
- Chang, Y. see Chang, H. Y.
- Chang, Y. F. (with Karliner, Marek; Sharpe, Stephen R.) Zeroing in on  $SU(3)$ . *Nuclear Phys. B* **302** (1988), no. 2, 204–250. (Summary) **89e:81125** 81E25 (81–08, 81G20)
- Chang, Zhongyuan (with Sansen, Willy M. C.) Stability and noise performance of constant transimpedance amplifier with inductive source. *IEEE Trans. Circuits and Systems* **36** (1989), no. 2, 264–271. (Not in MR) **94C05**
- Chang Yuh Lin see Zhang, Yu Lin
- Chani, A. S. Integral representation of the exponential product of stochastic semigroups. (Russian) *Theory of random processes*, No. 15 (Russian), 106–110, 120, "Naukova Dumka", Kiev, 1987. (I. Cuculescu) **89a:60170** 60J30 (60H99)
- The index of exponential growth for a class of stochastic semigroups. (Russian) *Theory of random processes*, No. 16 (Russian), 78–84, 110, "Naukova Dumka", Kiev, 1988. (Di He Hu) **89m:60166** 60J25 (47D05, 60J35)
- Chankaver, M. Kh. On a uniqueness theorem. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 3, 80–82, 87–88; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 3, 118–121. (R. P. Boas, Jr.) **89c:30004** 30B50 (30D10)
- Chankvetadze, O. E. Some criteria for the  $\Omega$ -calculus and corresponding criteria for the  $\tau$ -calculus of N. Bourbaki. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **26** (1988), 216–224, 230. (Summary) **89d:03007** 03B10
- Chanod, Jean-Pierre (with Segond, Frédérique) Grammaire applicative: traitement informatique de la composante morpho-syntaxique. (English summary) [Applicative grammar: computerization of the morphosyntactic component] *Math. Sci. Humaines* **10** (1988), 23–43, 113. (Marcus Kracht) **89j:68125** 68S15
- Chanov, A. V. (with Denisov, A. M.) An inverse problem for a model of nonequilibrium dynamics of sorption with mixed kinetics. (Russian) *Numerical methods for solving inverse problems of mathematical physics* (Russian), 21–29, 261, *Moskov. Gos. Univ., Moscow*, 1988. (Summary) **89g:35113** 35R30
- Chanter, A. J. Some periodic  $SL(2, p^n)$ -modules. *J. Algebra* **115** (1988), no. 2, 261–275. (Karin Erdmann) **89g:20022** 20C20 (16A64)
- Chan Tkhil Le (with Magaril-Ilyayev, G. G.) On the problem of the optimal recovery of functionals. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 2(254), 237–238. (B. T. Polyak) **89a:41046** 41A99 (42A38, 44A15, 47A99)
- Chanturiya, T. A. Positive decreasing solutions of differential equations of Emden-Fowler type with retarded argument. (Russian) *Current problems in mathematical physics. Vol. I* (Russian) (Tbilisi, 1987), 411–415, 497–498, *Tbilis. Gos. Univ., Tbilisi*, 1987. (see **89j:00030**) **34K15**
- Positive decreasing solutions of nonlinear differential equations with retarded argument. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 6, 993–999, 1099; translated in *Differential Equations* **24** (1988), no. 6, 653–658. (M. K. Grammatikopoulos) **89g:34104** 34K15 (34C11)
- Chanyshv, A. D. 2-generated Engel Lie algebras over the field  $F_2$ . (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 4, 70–72; translated in *Moscow Univ. Math. Bull.* **43** (1988), no. 4, 62–64. (From the text) **89k:17024** 17B30
- Chan Zuan Fu see Tran Doan Phu
- Chao, Chong-Yun (with Li, Nian Zu; Zhang, Mou Cheng) On digraphs with nilpotent adjacency matrices. *Bull. Malaysian Math. Soc.* (2) **10** (1987), no. 1, 29–37. (Martin W. Liebeck) **89k:05067** 05C50 (05C20)
- On Pólya-de Bruijn's theorem. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **60** (1987), 71–80. (R. A. Brualdi) **89i:05015** 05A15
- (with Wang, Tian Ming) On the matrix equation  $A^2 = J$ . *J. Math. Res. Exposition* **7** (1987), no. 2, 207–215. (Anna Lee) **89b:15018** 15A24 (05B20, 05C30, 15A51)
- A remark on symmetric circulant matrices. *Linear Algebra Appl.* **103** (1988), 133–148. (R. A. Brualdi) **89e:15007** 15A09
- Chao, K. A. (with Wahlström, G.) Hierarchical spectra in systems with incommensurate potentials. *J. Phys. A* **21** (1988), no. 3, L135–L139. (Summary) **89d:82022** 82A05
- Chao, Li see Cao, Li
- Chao, Min Te (with Lo, Shaw-Hwa) Some representations of the nonparametric maximum likelihood estimators with truncated data. *Ann. Statist.* **16** (1988), no. 2, 661–668. (Hung Trung Nguyen) **89e:62044** 62G05 (62E20)
- Chao, R. M. (with Rajagopal, K. R.; Wineman, A. S.) Nonhomogeneous tension-torsion of neo-Hookean and Mooney-Rivlin materials. (Russian and Polish summaries) *Arch. Mech.* (Arch. Mech. Stat.) **39** (1987), no. 5, 551–559 (1988). (Summary) **89i:73019** 73C50
- Chao, Yung-Cheng (with Huang, Hsiao-Ping; Chen, Cheng-Liang) Identification of MIMO continuous-time models by indirect methods. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1281–1297. (Not in MR) **93B30** (93C55)
- Chaparro, L. F. (with Boudaoud, M.) Composite modeling of nonstationary signals. *J. Franklin Inst.* **324** (1987), no. 1, 113–124. (D. Stanomir) **89d:94013** 94A12 (62H12, 93E25)
- Chapellat, Hervé (with Bhattacharyya, Shankar Prasad) An alternative proof of Kharitonov's theorem. *IEEE Trans. Automat. Control* **34** (1989), no. 4, 448–450. (B. Ross Barmish) **89g:93182** 93D99
- Chaperon, Marc An old-fashioned method in the calculus of variations. *Periodic solutions of Hamiltonian systems and related topics* (Il Ciocco, 1986), 93–98, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 209, Reidel, Dordrecht-Boston, MA, 1987. (Quach thi Cẩm Vân) **89g:58062** 58F05 (58E05, 58E30)

- Generating phase functions and Hamiltonian systems. *Proceedings of the international conference on recent advances in Hamiltonian systems (L'Aquila, 1986)*, 147–153, *World Sci. Publishing, Singapore*, 1987. (From the text) **89f:58053** 58F05
- (with D'Onofrio, Biancamaria) Sur un théorème de Claude Viterbo. (English summary) [On a theorem of Claude Viterbo] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 14, 597–600. (Themistocles M. Rassias) **89e:58045** 58F05 (58F22)
- Chapline, George F. Unification of Yang-Mills theory and superstrings. *Internat. J. Modern Phys. A* **3** (1988), no. 7, 1663–1673. (Summary) **89c:81108** 81E99 (81E30)
- Chaplinkskii, Yu. P. (with Volkovich, V. L.) Algorithms for system optimization in linear models when the directive region is given by balance relationships. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 6, 46–54 (1988); translated from *Avtomatika* **1987**, no. 6, 45–53, 96 (Russian. English summary). (Not in MR) **90B30**
- Chapman, G. R. On the Poincaré series of  $H^*(GL(2, \mathbb{Z}), \mathbb{Z}/2)$ . *Publ. Sec. Mat. Univ. Autònoma Barcelona* **30** (1986), no. 1, 17–28. (C. B. Thomas) **89b:20109** 20J05
- Chapron, S. (with Storey, L. R. O.) Conditions for the existence and uniqueness of solutions to a constrained linear inverse problem. *Inverse Problems* **4** (1988), no. 1, 249–271. (M. Z. Nashed) **89f:86009** 86A20 (65R99)
- Chapsiadis, A. (with Michalodimitrakakis, M.) Bounded motion in a two-body system consisting of a solid body and a material point. *Celestial Mech.* **41** (1987/88), no. 1–4, 53–63. (Summary) **89d:70010** 70F15
- Chaptal, J. A. see Bourguet, Marie-Noëlle, **89b:01018**
- Char, Ming-I (with Chen, Chao Kuang) Heat transfer of a continuous, stretching surface with suction or blowing. *J. Math. Anal. Appl.* **135** (1988), no. 2, 568–580. (Summary) **89i:80001** 80A20 (76N05)
- Charakhchyan, A. A. (with Ivanenko, S. A.) An algorithm for constructing curvilinear grids consisting of convex quadrangles. (Russian) *Dokl. Akad. Nauk SSSR* **295** (1987), no. 2, 280–283; translated in *Soviet Math. Dokl.* **36** (1988), no. 1, 51–54. (B. M. Herbst) **89b:65148** 65M50 (65N50)
- (with Ivanenko, S. A.) Curvilinear grids from convex quadrangles. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 4, 503–514, 622. (Gerhard Telschow) **89f:65129** 65N50
- Charalambakis, Nicolas Ch. (with Boudourides, M. A.) Asymptotic stability of a stratified multicomponent flow with temperature-dependent viscosities. (French summary) *J. Mécan. Théor. Appl.* **7** (1988), no. 1, 65–77. (L. Debnath) **89h:76016** 76E15 (76F10, 76V05, 80A20)
- Nonuniformalities and stability in thermal fluid mechanics. *J. Thermal Stresses* **11** (1988), no. 4, 325–340. (Adelina Georgescu) **89h:76056** 76E30 (76D05)
- Charalambides, Ch. A. (with Singh, Jagbir) A review of the Stirling numbers, their generalizations and statistical applications. *Comm. Statist. Theory Methods* **17** (1988), no. 8, 2533–2595. (Summary) **89d:62017** 62E15 (11B73)
- Charalambous, M. G. Universal spaces for locally finite-dimensional Tychonoff spaces. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 507–514. (K. Nagami) **89i:54084** 54F45
- Charap, J. M. (with Henneaux, M.; Nelson, J. E.) Explicit form of the constraint algebra in tetrad gravity. *Classical Quantum Gravity* **5** (1988), no. 11, 1405–1414. (Agostino Prastaro) **89k:83049** 83C99 (58F05, 83E50)
- Charatonik, J. J. Openness properties of mappings on some connected spaces. *Rend. Mat.* (7) **6** (1986), no. 1–2, 105–118 (1988). (W. Stephen Watson) **89m:54017** 54C10 (54C30, 54D05)
- On retractible continua. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 83–90, *R. E. Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (Edwin Duda) **89e:54065** 54F20 (54C15)
- Some problems of selections and contractibility. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* **18** (1988), 27–30. (see **89c:54001**) **54F20** (54C65, 54F50)
- (with Charatonik, W. J.) Generalized homogeneity of finite and of countable topological spaces. *Rocky Mountain J. Math.* **18** (1988), no. 1, 195–210. (Hisao Kato) **89b:54015** 54C05
- (with Charatonik, W. J.) Fans with the property of Kelley. *Topology Appl.* **29** (1988), no. 1, 73–78. (Lewis Lum) **89c:54073** 54F50 (54B25)
- Charatonik, W. J. An open Whitney map for the hyperspace of a circle. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 91–94, *R. E. Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (Alejandro Illanes Mejia) **89k:54023** 54B20 (54F25)
- Continua homeomorphic to all their confluent images. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* **18** (1988), 249–253. (Edward D. Tymchatyn) **89j:54035** 54F15 (54C10)
- (with Charatonik, J. J.) Generalized homogeneity of finite and of countable topological spaces. *Rocky Mountain J. Math.* **18** (1988), no. 1, 195–210. (Hisao Kato) **89b:54015** 54C05
- (with Charatonik, J. J.) Fans with the property of Kelley. *Topology Appl.* **29** (1988), no. 1, 73–78. (Lewis Lum) **89c:54073** 54F50 (54B25)
- Charbonnel, Anne-Marie Comportement semi-classique du spectre conjoint d'opérateurs pseudodifférentiels qui commutent. (English summary) [Semiclassical behaviour of the joint spectrum of commuting pseudodifferential operators] *Asymptotic Anal.* **1** (1988), no. 3, 227–261. (V. Ivrii) **89j:35100** 35P20 (35S05, 47G05, 58G25)
- Charek, Dennis J. (with Moore, Albert H.; Coleman, Joseph W.) A comparison of estimation techniques for the three parameter Pareto distribution. *Comm. Statist. Simulation Comput.* **17** (1988), no. 4, 1395–1407. (Not in MR) **62F10**
- Chargoy-Corona, J. (with Glazebrook, J. F.) Nil-instantons associated with the classical torus CP<sup>2</sup>-model. *Lett. Math. Phys.* **15** (1988), no. 3, 213–217. (John C. Wood) **89i:58026** 58E20 (81E13)
- Chari, Vijayanthi (with Pressley, A. N.) Unitary representations of the Virasoro algebra and a conjecture of Kac. *Compositio Math.* **67** (1988), no. 3, 315–342. (Kailash C. Misra) **89h:17025** 17B65 (17B10, 17B70)
- (with Pressley, A. N.) Integrable representations of twisted affine Lie algebras. *J. Algebra* **113** (1988), no. 2, 438–464. (Alex Jay Feingold) **89h:17035** 17B67
- Charlier, U. (with Levin, B. V.) Behavior of the solutions of some integro-difference equations. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **30** (1987), no. 5, 267–272. (From the text) **89b:45008** 45J05 (11K65, 39A10)
- Charin, V. S. (with Pavlova, L. D.) Second-order curves on the Lobachevskii plane. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 49, 40 pp. (Summary) **89e:53017** 53A35
- (with Zaitsev, D. I.) Groups with finiteness conditions and other restrictions for subgroups. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 3, 277–287, 405; translated in *Ukrainian Math. J.* **40** (1988), no. 3, 233–242. (J. Wiegold) **89i:20050** 20E25 (20F99)
- Charles, Anthony T. In-season fishery management: a Bayesian model. *Natur. Resource Modeling* **2** (1988), no. 4, 599–629. (Summary) **89j:90075** 90A30 (92A15)
- Charlet, B. Le problème de Bernstein sphérique. (English summary) [The spherical Bernstein problem] *Théorie des variétés minimales et applications (Palaiseau, 1983–1984). Astérisque* **No. 154–155** (1987), 10, 221–243, 351 (1988). (see **89g:58052**) **53C42** (53A10, 58E15)
- (with Levine, Jean; Marino, Riccardo) Two sufficient conditions for dynamic feedback linearization of nonlinear systems. *Analysis and optimization of systems (Antibes, 1988)*, 181–192, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Guy Jumarie) **89e:93039** 93B17 (93C10)
- Charlier, J.-P. (with Vanbegin, M.; Van Dooren, Paul) On efficient implementations of Kogbetliantz's algorithm for computing the singular value decomposition. *Numer. Math.* **52** (1988), no. 3, 279–300. (Colette Lebaud) **89h:65092** 65F15 (65N05)
- Charlot, F. Sur la démonstration des formules en théorie discrète du potentiel. [On the proof of formulas in discrete potential theory] *Séminaire de Probabilités, XX*, 1984/85, 612–613, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (Yves Derriennic) **89h:31011** 31C20 (60J45)
- Charlwood, Gerald W. (with Daniels, Charles B.; Freeman, James B.) ★ Toward an ontology of number, mind and sign. *Scots Philosophical Monograph Series*, 10. *Aberdeen University Press, Aberdeen; Humanities Press, Atlantic Highlands, NJ*, 1986. viii+155 pp. ISBN 0-08-032462-2; 0-08-032461-4 (John Bacon) **89f:03003** 03A05 (00A25)
- Charnes, A. (with Golany, B.; Keane, Michael; Rousseau, John James) Extremal principle solutions of games in characteristic function form: core, Chebyshev and Shapley value generalizations. *Econometrics of planning and efficiency*, 123–133, *Adv. Stud. Theoret. Appl. Econometrics*, 11, Kluwer Acad. Publ., Dordrecht, 1988. (Akira Okada) **89e:90232** 90D12 (90C20, 90C50)
- (with Cooper, W. W.; Golany, B.; Masters, J.) Optimal design modifications by geometric programming and constrained stochastic network models. *Internat. J. Systems Sci.* **19** (1988), no. 6, 825–844. (Summary) **89d:90240** 90C50 (90B15, 90C99)
- (with Ben-Tal, A.; Teboulle, M.) The role of duality in optimization problems involving entropy functionals with applications to information theory. *J. Optim. Theory Appl.* **58** (1988), no. 2, 209–223. (Jin De Wang) **89g:90238** 90C48 (49A55, 94A17, 94A40)
- (with Ben-Tal, A.; Golany, B.) On  $n$ -person game solutions and convex programs with essentially unconstrained duals. *Optimization* **19** (1988), no. 1, 71–84. (Guang Ya Chen) **89b:90237** 90D10 (90C25)
- Charney, Ruth A generalization of a theorem of Vogtmann. *Proceedings of the Northwestern conference on cohomology of groups (Evanston, Ill., 1985)*. *J. Pure Appl. Algebra* **44** (1987), no. 1–3, 107–125. (Ross Staffeldt) **89h:18010** 18F25 (11E70, 19D55, 19G99, 20J05)
- (with Lee, Ronnie) Characteristic classes for the classifying spaces of Hopf structures. *K-Theory* **1** (1987), no. 3, 237–270. (Summary) **89h:32046** 32G20 (14C30, 18F25, 19M05)
- Charnov, Eric L. Hermaphroditic sex allocation with overlapping generations. *Theoret. Population Biol.* **34** (1988), no. 1, 38–46. (Peter D. Taylor) **89h:92039** 92A12 (92A15, 92A18)
- Charpin, Pascale Une généralisation de la construction de Berman des codes de Reed et Muller p-aires. (English summary) [A generalization of Berman's construction of  $p$ -ary Reed-Muller codes] *Comm. Algebra* **16** (1988), no. 11, 2231–2246. (H. F. Mattson, Jr.) **89m:94013** 94B05
- Charretton, Christine Description de l'ordre des modèles d'Ehrenfeucht-Mostowski. [Description of the order of Ehrenfeucht-Mostowski models] *Séminaire Général de Logique 1983–1984 (Paris, 1983–1984)*, 135–147, *Publ. Math. Univ. Paris VII*, 27, Univ. Paris VII, Paris, 1986. (Daniel Lascar) **89k:03035** 03C30
- Charrier, P. (with Dacorogna, Bernard; Hanouzet, B.; Laborde, P.) An existence theorem for slightly compressible materials in nonlinear elasticity. *SIAM J. Math. Anal.* **19** (1988), no. 1, 70–85. (From the introduction) **89m:73013** 73C50 (73C60)
- Charrière, H. Existence de bases opérateurs pour l'espace des solutions des équations aux dérivées partielles linéaires à coefficients constants. I. [Existence of operator bases for the space of solutions of linear partial differential equations with constant coefficients. I] *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 8, 311–314. (Kimimasa Nishiwada) **89f:35046** 35E20
- Charron, R. J. Adapting rational approximants for Fourier series to data representation problems. (German summary) *Computing* **40** (1988), no. 3, 217–228. (R. Franke) **89k:65015** 65D10 (41A21, 42A10)
- Chartrand, G. (with Harary, Frank; Oellermann, O. R.) On the regulation number of a multigraph. *Graphs Combin.* **1** (1985), no. 2, 137–144. (L. W. Beineke) **89g:05060** 05C35 (05C20)
- (with Holbert, Karen S.; Oellermann, O. R.; Swart, Henda C.)  $F$ -degrees in graphs. *Ars Combin.* **24** (1987), 133–148. (Koduvayur R. Parthasarathy) **89a:05125** 05C99
- (with Alavi, Yousef; Boals, A. J.; Erdős, Paul; Oellermann, O. R.) The ascending subgraph decomposition problem. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 7–14. (H. Joseph Straight) **89d:05136** 05C70
- (with Bagga, K. S.; Beineke, L. W.; Oellermann, O. R.) Variations on a theorem of Petersen. *Period. Math. Hungar.* **19** (1988), no. 3, 241–247. (Seymour Schuster) **89i:05208** 05C70
- Charushnikov, V. D. Two-sided estimates for the solutions of linear elliptic equations. (Russian) *Differential and integral equations (Russian)*, 39–41, 125, *Gorkov. Gos. Univ., Gorki*, 1985. (Summary) **89f:35059** 35J15 (35B45)
- Charzyński, Zygmunt (with Kaczmarek, Ludwika) Bounds of univalent functions in terms of iterated extrema. (Polish summary) *Bull. Soc. Sci. Lett. Łódź* **37** (1987), no. 3, 8 pp. (T. H. MacGregor) **89k:30016** 30C50 (30C75)
- (with Skibiński, Przemysław) A criterion for explicit dependence of polynomials. (Polish summary) *Bull. Soc. Sci. Lett. Łódź* **37** (1987), no. 8, 3 pp. (Summary) **89j:12007** 12E05
- Chashchin, G. V. (with Mazurov, V. D.; Startseva, N. N.) Group decision and the cyclical dynamics of a conflicting problem of the choice of a strategy for treatment. (Russian) *Mathematical models in medicine and biology (Russian)*, 48–56, 69–70, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1986. (Summary) **89d:90005** 90A05 (92A07)



- Chaskalovic, Joël** Un résultat d'unicité des solutions de Navier-Stokes modélisant une tornade. (English summary) [A uniqueness result for Navier-Stokes equations applied to tornado phenomena] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 18, 923-926. (Summary) **89k:76031** 76D05 (35Q10, 86A99)
- Chasovskikh, A. A.** A description of all precomplete classes in the class of linear automata. (Russian) *Proceedings of the All-Union seminar on discrete mathematics and its applications* (Moscow, 1984), 166-169, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (E. B. Kinber) **89e:68089** 68Q70 (03D05)
- Chastang, Jean** (with Vallet, Claude; Huet, Jean-Didier) Autoréférence partielle dans des modèles de systèmes naturels et insuffisance du référentiel spatiotemporel des physiciens. [Partial self-reference in some models of natural systems and insufficiency of the referential space-time of physicists] *10<sup>e</sup> Congrès International de Cybernétique* (Namur, 1983), 353-368, *Assoc. Internat. Cybernét., Namur*, 1984. (see **89a:93003**) 92A05 (00A71, 93A10)
- Chassé, Hugues** (with Manneville, Paul) Intermittence spatio-temporelle et automates cellulaires probabilistes. (English summary) [Spatiotemporal intermittency and probabilistic cellular automata] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **304** (1987), no. 12, 609-613. (Summary) **89k:76064** 76F99 (58F13, 88Q80, 82A99)
- (with Manneville, Paul) Spatio-temporal intermittency in coupled map lattices. *Phys. D* **32** (1988), no. 3, 409-422. (Summary) **89k:76065** 76F99 (58F13, 82-08, 82A43)
- du Châtelet, Émile** see **Teo, G. J.** (**89j:01071**)
- Chatelet, Françoise** (with Ahues, Mario; Telias, M.) Computing a set of eigenvalues. *Methods of functional analysis in approximation theory* (Bombay, 1985), 325-336, *Internat. Schriftenreihe Numer. Math.*, **76**, Birkhäuser, Basel-Boston, MA, 1986. (Ludwig Elsner) **89c:65044** 65F15 (15A18)
- (with Belaid, D.) Numerical analysis for factorial data analysis. I. Numerical software—the package INDIA for microcomputers. *Appl. Stochastic Models Data Anal.* **3** (1987), no. 4, 193-206. (Not in MR) 62H25 (62-07)
- (with Porta, T.) Numerical analysis for factorial data analysis. II. Special purpose hardware—the programmable systolic array SARDA. *Appl. Stochastic Models Data Anal.* **3** (1987), no. 4, 237-246. (Not in MR) 62H25 (62-07)
- ★ Valeurs propres de matrices. (French) [Eigenvalues of matrices] *Collection Mathématiques Appliquées pour la Maîtrise*. [Collection of Applied Mathematics for the Master's Degree] Masson, Paris, 1988. 224 pp. ISBN 2-225-80968-2 (Alan L. Andrew) **89g:65038** 65F15 (15A18, 65F50)
- Chatteraj, P. K.** (with Rao Koneru, S.; Deb, B. M.) Stability analysis of finite difference schemes for quantum mechanical equations of motion. *J. Comput. Phys.* **72** (1987), no. 2, 504-512. (Randall J. LeVeque) **89e:65144** 65P05
- (with Deb, B. M.) Generalized nonlinear Schrödinger equations in quantum fluid dynamics. *Solitons* (Tiruchirappalli, 1987), 359-365, *Springer Ser. Nonlinear Dynamics*, Springer, Berlin-New York, 1988. (Summary) **89c:81218** 81J05 (35Q20)
- Chatterjee, S. K.** Fixed point theorems in Banach spaces. *Pure Math. Manuscript* **5** (1986), 59-61. (B. E. Rhoades) **89h:47076** 47H10
- (with Srivastava, Hari M.) Some operational representations for the Laguerre polynomials. *Nat. Acad. Sci. Lett.* **11** (1988), no. 1, 19-21. (R. C. Varma) **89m:33021** 33A65
- Chatterjee, Aditya** (with Mukherjee, S. P.) A new MIFRA class of life distributions. *Calcutta Statist. Assoc. Bull.* **37** (1988), no. 145-146, 67-80. (Ramesh C. Gupta) **89m:62108** 62N05 (62E15)
- Chatterjee, Anindita** (with Das, Jyoti) On the equiconvergence of the eigenfunction expansion associated with certain 2nd order differential equations. *Indian J. Pure Appl. Math.* **19** (1988), no. 11, 1054-1059. (Teruo Ikebe) **89m:34030** 34B25
- Chatterjee, J.** (with Mukherjee, Rathindra Nath) Verification of the global controllability for a certain class of time optimal control problems. *Modern analysis and its applications* (New Delhi, 1983), 369-378, *Prentice-Hall of India, New Delhi*, 1986. (Zdzisław Wyderka) **89e:93128** 93C25 (49B27, 49E15, 49E30, 93B05, 93C05)
- Chatterjee, Kalyan** (with Harrison, Terry P.) The value of information in competitive bidding. *European J. Oper. Res.* **36** (1988), no. 3, 322-333. (Summary) **89e:90240** 90D35 (90A30, 92A17)
- (with Samuelson, Larry) Bargaining under two-sided incomplete information: the unrestricted offers case. *Oper. Res.* **36** (1988), no. 4, 605-618. (Summary) **89m:90029** 90A14 (90D10)
- Chatterjee, S. K.** (with Adhikary, Basudeb) Professor R. C. Bose: 1901-1987. *Calcutta Statist. Assoc. Bull.* **36** (1987), no. 143-144, 109-124. (Editors) **89e:01060** 01A70
- Chatterjee, Sampriti** (with Hadi, Ali S.) ★ Sensitivity analysis in linear regression. *Wiley Series in Probability and Mathematical Statistics: Applied Probability and Statistics*. John Wiley & Sons, Inc., New York, 1988. xvi+315 pp. ISBN 0-471-82216-7 (Kenneth N. Berk) **89i:62002** 62-02 (62J05)
- (with Hadi, Ali S.) Impact of simultaneous omission of a variable and an observation on a linear regression equation. *Comput. Statist. Data Anal.* **6** (1988), no. 2, 129-144. (Not in MR) 62J05
- Chatterjee, T. K.** (with Dutta, T. K.) Green's equivalences on T-semigroup. *Bull. Calcutta Math. Soc.* **80** (1988), no. 1, 30-35. (John M. Howie) **89i:20092** 20M10
- Chatterjee, U.** (with Mukherjee, S. P.) Two bulk queueing models with vacation periods. *Cahiers Centre Études Rech. Opér.* **29** (1987), no. 1-2, 85-93. (J. G. C. Templeton) **89f:60108** 60K25 (90B22)
- Chatters, A. W.** Noncommutative regular local rings of dimension 2. *J. Algebra* **115** (1988), no. 1, 219-237. (C. R. Hajarnavis) **89f:16021** 16A33 (16A10)
- Chattopadhyay, K. C.** Nearnesses, extensions of closure spaces and a problem of F. Riesz concerning proximities. *Indian J. Math.* **30** (1988), no. 3, 187-212. (H. L. Bentley) **89k:54061** 54E17 (54D35, 54E05)
- Chaturvedi, Ajit** (with Ramkaran; Akbar, S. A.) Sequential estimation of a linear function of k-normal means. *J. Indian Soc. Agricultural Statist.* **38** (1986), no. 3, 395-402. (Paul Cabilio) **89j:62112** 62L12
- Chaturvedi, S.** (with Sriram, M. S.; Srinivasan, V.) Berry's phase for coherent states. *J. Phys. A* **20** (1987), no. 16, L1071-L1075. (David J. Rowe) **89e:81074** 81D30
- (with Balakrishnan, Venkataraman) Persistent diffusion on a line. *Phys. A* **148** (1988), no. 3, 581-596. (Philip J. Feinsilver) **89f:60093** 60J15 (82A41)
- Chaty, Guy** On signed digraphs with all cycles negative. *Discrete Appl. Math.* **20** (1988), no. 1, 83-85. (Robin J. Wilson) **89d:05148** 05C75 (05C38)
- Chatzidakis, Zoé** Model theory of profinite groups having IP. III. *Mathematical logic and theoretical computer science* (College Park, Md., 1984-1985), 161-195, *Lecture Notes in Pure and Appl. Math.*, **106**, Dekker, New York, 1987. (U. Feigner) **89j:03028** 03C45 (03C60, 20A10, 20A15, 20E18)
- Chau, Ling-Lie** (with Milewski, Bartosz) Linear system and conservation laws for  $d = 10$  super-Yang-Mills. *Phys. Lett. B* **198** (1987), no. 3, 356-358. (R. S. Ward) **89b:53111** 53C80 (81D27, 81E13)
- Linear systems and conservation laws of gravitational fields in four plus extended superspace. *Phys. Lett. B* **202** (1988), no. 2, 238-242. (R. S. Ward) **89d:83071** 83E50 (58E99, 58G35, 83E15)
- Chau, Siu-Cheung** (with Liestman, Arthur L.) Constructing minimal broadcast networks. *J. Combin. Inform. System Sci.* **10** (1985), no. 3-4, 110-122. (Summary) **89h:90081** 90B10 (05C99, 68M10)
- (with Liestman, Arthur L.) Constructing fault-tolerant minimal broadcast networks. *J. Combin. Inform. System Sci.* **11** (1986), no. 1, 1-18. (Summary) **89h:90082** 90B10 (05C99, 68M10)
- Chaubey, Y. P.** (with Srivastava, Triloki Nath) Characterization of the logistic distribution. *Indian J. Math.* **29** (1987), no. 2, 211-213. (J. S. Huang) **89c:62030** 62E10
- (with Singh, Balvir) Almost unbiased estimation in multiplicative models. *Metrika* **35** (1988), no. 1, 13-28. (Summary) **89h:62066** 62F10 (62F12)
- Chaudhuri, N. S.** (with Phatak, D. B.; Sarda, N. L.) On characterizing a clique by paths in a digraph. *J. Combin. Inform. System Sci.* **11** (1986), no. 2-4, 129-137. (Ortrud R. Oellermann) **89j:05039** 05C20 (05C38)
- (with Sarda, N. L.; Phatak, D. B.) An invariant for a subspace of the finite-dimensional vector space and automorphism partition of a real symmetric matrix. *Indian J. Pure Appl. Math.* **19** (1988), no. 3, 217-249. (R. A. Brualdi) **89g:15012** 15A21 (05B05, 05C50)
- Chaudhary, M. S.** (with Dange, Snehali) Distributional Abelian theorems for the generalized Itô's transforms. *J. Math. Anal. Appl.* **128** (1987), no. 1, 125-137. (Jean Lavoine) **89a:44008** 44A15 (46F12)
- Chaudhary, S. S.** (with Pratap, Mahendra; Singh, S. P.) A simple method of construction of partially variance balanced block designs. *J. Indian Soc. Agricultural Statist.* **38** (1986), no. 2, 148-152. (Not in MR) 62K10
- Chaudhary, G. M.** (with Bedi, J. S.) Multi-dimensional state-space model for memory management. *Internat. J. Systems Sci.* **20** (1989), no. 1, 121-128. (Not in MR) 68N25
- Chaudhry, M. L.** (with Madill, B. R.; Briere, G.) Computational analysis of steady-state probabilities of  $M/G^{a,b}/1$  and related nonbulk queues. *Queueing Systems Theory Appl.* **2** (1987), no. 2, 93-114. (Summary) **89g:60278** 60K25 (90B22)
- (with Briere, G.) Computational analysis of single-server bulk-arrival queues:  $GI^x/M/1$ . *Queueing Systems Theory Appl.* **2** (1987), no. 2, 173-185. (B. R. K. Kashyap) **89c:60102** 60K25 (90B22)
- (with Medhi, J.; Sim, S. H.; Templeton, J. G. C.) On a two-heterogeneous-server Markovian queue with general bulk service rules. *Sankhya Ser. B* **49** (1987), no. 1, 36-50. (Richard F. Serfozo) **89a:60212** 60K25 (90B22)
- (with Briere, G.) Computational analysis of single-server bulk-arrival queues  $M^x/G/1$ . *Comput. Oper. Res.* **15** (1988), no. 3, 283-292. (Summary) **89d:90100** 90B22
- A letter from Dr. Chaudhry: "On the connection between the stationary distributions of the states of a bulk queueing system" [Tamkang J. Management Sci. **7** (1986), no. 2, 23-30; MR 87k:60232] by G. S. Mokaddis. *Tamkang J. Management Sci.* **9** (1988), no. 1, 41. (Editors) **89c:60185** 60K25 (90B22)
- Chaudhry, Muhammad Anwar** (with Ahmad, B.) On BCI-algebras satisfying  $x * (x + y) = y$ . *J. Natur. Sci. Math.* **28** (1988), no. 1, 153-156. (Editors) **89d:06017** 06D99 (03G25)
- (with Ahmad, B.; Bhatti, Shaban A.) On kernels and annihilators in BCK-algebras. *Math. Japon.* **33** (1988), no. 3, 339-343. (Marek Palasiński) **89i:06019** 06D99 (03G25)
- (with Ahmad, B.) On a class of BCI-algebras. *Math. Japon.* **33** (1988), no. 6, 827-830. (Summary) **89j:06010** 06D99 (03G25)
- Chaudhry, Nazir Ahmed** A generalisation of the weighted jackknife for the linear model. *Pakistan J. Statist.* **4** (1988), no. 1, 41-50. (Rahul Mukerjee) **89f:62085** 62J05
- Chaudhuri, Arjit** (with Adhikary, Arun Kumar; Vijayan, Kaipillil) Optimum sampling strategies for randomized response trials. (French summary) With discussion by P. K. Sen, S. M. Tam and M. E. Thompson, and a reply by the authors. *Internat. Statist. Rev.* **52** (1984), no. 2, 115-125. (Summary) **89h:62008** 62D05
- (with Mukerjee, Rahul) ★ Randomized response. Theory and techniques. With a foreword by Pranab Kumar Sen. *Statistics: Textbooks and Monographs*, **85**, Marcel Dekker, Inc., New York, 1988. xviii+162 pp. ISBN 0-8247-7785-9 (Kenneth R. W. Brewer) **89f:62092** 62P25 (62D05)
- (with Vos, J. W. E.) ★ Unified theory and strategies of survey sampling. With a foreword by J. N. K. Rao. *North-Holland Series in Statistics and Probability*, **4**, North-Holland Publishing Co., Amsterdam-New York, 1988. xviii+414 pp. ISBN 0-444-70357-8 (David Bellhouse) **89g:62016** 62D05
- ray-Chaudhuri, D. K.** see **Ray-Chaudhuri, D. K.**
- Chaudhuri, Pranay** An algorithm for finding all triangles in a digraph in parallel. *Pure Appl. Math. Sci.* **25** (1987), no. 1-2, 27-35. (P. Ungar) **89a:05001** 05-04 (05C38)
- Fast parallel graph searching with applications. *BIT* **28** (1988), no. 1, 2-18. (Summary) **89a:68083** 68Q20 (68R10)
- Chaudhuri, R. N.** False eigenvalues of the Hill determinant method. *J. Phys. A* **21** (1988), no. 2, 567-568. (Summary) **89c:81029** 81C05
- Chaudhuri, Ranjan** (with Höft, Hartmut) On rational solution of the state equation of a finite automaton. *Internat. J. Math. Math. Sci.* **11** (1988), no. 2, 355-364. (Summary) **89h:03062** 03D05 (68Q70)
- Chaudhuri, Shyamoli** (with Kawai, Hikaru; Tye, S.-H. H.) Path-integral formulation of closed strings. *Phys. Rev. D* **36** (1987), no. 4, 1148-1168. (Andrew A. Bytsenko) **89d:81088** 81E99 (81E30)
- Chaudhuri, Sujat K.** (with Gladwell, Graham M. L.; Dods, Steven R. A.) Nonuniform transmission-line synthesis using inverse eigenvalue analysis. *IEEE Trans. Circuits and Systems* **35** (1988), no. 6, 659-666. (Not in MR) 94C05 (34B25)
- Chauhan, C. K.** A class of single replicate orthogonal designs. *Comm. Statist. Simulation Comput.* **17** (1988), no. 2, 537-547. (Summary) **89m:62084** 62K15
- On partial-regularity in single replicate factorial experiments. *Utilitas Math.* **33** (1988), 205-210. (E. Seiden) **89c:62129** 62K15

- Chaum, David** (with de Jonge, Wiebren) Some variations on RSA signatures & their security. *Advances in cryptography—CRYPTO '86* (Santa Barbara, Calif., 1986), 49–59. *Lecture Notes in Comput. Sci.*, 263, Springer, Berlin-New York, 1987. (Do Long Van) **89b:94025** 94A60 (68P25)
- (with Evertse, J.-H.; van de Graaf, Jeroen; Peralta, René) Demonstrating possession of a discrete logarithm without revealing it. *Advances in cryptography—CRYPTO '86* (Santa Barbara, Calif., 1986), 200–212. *Lecture Notes in Comput. Sci.*, 263, Springer, Berlin-New York, 1987. (Albrecht Beutelspacher) **89d:94037** 94A60
- The dining cryptographers problem: unconditional sender and recipient untraceability. *J. Cryptology* **1** (1988), no. 1, 65–75. (Yvo Desmedt) **89f:94014** 94A60
- Chamat, Jacques** (with Chollet, Anne-Marie) Noyaux pour résoudre l'équation  $\bar{\partial}u = v$  dans des classes indéfiniment différentiables. (English summary) [Kernels to solve the equation  $\bar{\partial}u = v$  in infinitely differentiable classes] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 14, 585–588. (Joaquim Bruna) **89i:32036** 32F15 (35N15)
- Chaurasia, A. R.** Convergence of measure in separable Banach space. (Hindi. English summary) *Vijnana Parishad Anusandhan Patrika* **29** (1986), no. 3, 195–200. (T. Thrivikraman) **89a:28005** 28A33 (28C15, 46E27, 46G12)
- Chauvin, Brigitte** Martingales produits et lignes d'arrêt pour un processus de branchement brownien. (English summary) [Product martingales and stopping lines for a branching Brownian motion] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 12, 499–502. (Summary) **89b:60191** 60J65 (60G44)
- Chavel, Isaac** (with Feldman, Edgar A.; Rosen, Jay) Fluctuations of the Wiener sausage for surfaces. *Geometry of random motion* (Ithaca, N.Y., 1987), 1–7. *Contemp. Math.*, 73, Amer. Math. Soc., Providence, RI, 1988. (Jean-Louis Ducourtioux) **89i:58154** 58G32 (60J65)
- (with Feldman, Edgar A.) Spectra of manifolds less a small domain. *Duke Math. J.* **56** (1988), no. 2, 399–414. (R. Schimming) **89i:58195** 58G25 (60J65)
- Chavent, Guy** On parameter identifiability. *International workshop on applied differential equations* (Beijing, 1985), 32–48. *World Sci. Publishing, Singapore*, 1986. (R. E. Fennell) **89b:93046** 93B30 (93C25)
- Quesada Chaverri, Francisco** see **Quesada Chaverri, Francisco**
- Chaves, Máximo** Superstrings and the quantization of gravity. (Spanish. English summary) *Cienc. Tecn.* **10** (1986), no. 2, 73–79 (1987). (Summary) **89c:83035** 83C45 (81E30, 83E30)
- Chaves Neto, Anselmo** Bootstrap and regression: an alternative to generalized least squares. (Portuguese) *Bol. Soc. Paran. Mat.* (2) **8** (1987), no. 2, 325–350. (Julio Peixoto) **89g:62098** 62J05 (62F10)
- castillo-Chávez, C.** see **Castillo-Chavez, C.**
- ruiz de Chávez, J.** see **Ruiz de Chávez, J.**
- jaime Chavez, M.** see **Jaime Chavez, M.**
- Chawla, J. S.**  $\delta$ -information function,  $\delta$ -entropy and their properties. *J. Inform. Optim. Sci.* **8** (1987), no. 3, 323–333. (J. Aczél) **89b:94013** 94A17 (39B20, 54H20)
- Isomorphism of measure preserving transformations. *Kybernetika* (Prague) **23** (1987), no. 3, 239–244. (B. S. Pickel) **89c:28029** 28D20 (94A17)
- A note on general ridge estimator. *Comm. Statist. Theory Methods* **17** (1988), no. 3, 739–744. (W. E. Griffiths) **89b:62116** 62J07
- Chawla, M. M.** (with Rao, Ponakala Srinivasa) Corrigendum: "High-accuracy  $P$ -stable methods for  $y'' = f(t, y)$ " [IMA J. Numer. Anal. **5** (1985), no. 2, 215–220; MR 87c:65078]. *IMA J. Numer. Anal.* **6** (1986), no. 2, 252. (Editors) **89b:65080** 65L05
- (with Subramanian, R.; Sathi, H. L.) A fourth order method for a singular two-point boundary value problem. *BIT* **28** (1988), no. 1, 88–97. (G. F. Raggett) **89b:65185** 65L10
- (with Subramanian, R.; Sathi, H. L.) A fourth-order spline method for singular two-point boundary value problems. *J. Comput. Appl. Math.* **21** (1988), no. 2, 189–202. (Gheorghe Micula) **89j:65056** 65L10
- Chay, Teresa Ree** (with Cook, Daniel L.) Endogenous bursting patterns in excitable cells. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1–2, 139–153. (see **89c:92002**) 92A09
- Chayes, J. T.** (with Chayes, L.) Percolation and random media. *Phénomènes critiques, systèmes aléatoires, théories de jauge, Part I, II* (Les Houches, 1984), 1001–1142. North-Holland, Amsterdam-New York, 1986. (From the introduction) **89c:82041** 82A43 (60K35, 82A42)
- (with Chayes, L.; Fisher, Daniel S.; Spencer, Thomas Crawford) Finite-size scaling and correlation lengths for disordered systems. *Phys. Rev. Lett.* **57** (1986), no. 24, 2999–3002. (Aernout C. D. van Enter) **89a:82026** 82A57 (82A05, 82A42)
- (with Chayes, L.) On the upper critical dimension of Bernoulli percolation. *Comm. Math. Phys.* **113** (1987), no. 1, 27–48. (Massimo Campanino) **89c:82042** 82A43 (60K35)
- (with Chayes, L.; Schonmann, R. H.) Exponential decay of connectivities in the two-dimensional Ising model. *J. Statist. Phys.* **49** (1987), no. 3–4, 433–445. (Tony C. Dorlas) **89k:82008** 82A05 (82A43, 82A68)
- (with Aizenman, Michael; Chayes, L.; Newman, C. M.) Discontinuity of the magnetization in one-dimensional  $1/x - y|^2$  Ising and Potts models. *J. Statist. Phys.* **50** (1988), no. 1–2, 1–40. (Mary Lunn) **89f:82072** 82A68 (82A25)
- (with Chayes, L.; Durrett, Rick) Connectivity properties of Mandelbrot's percolation process. *Probab. Theory Related Fields* **77** (1988), no. 3, 307–324. (Massimo Campanino) **89d:60193** 60K35 (82A43)
- see also **Singh, Rajiv R. P.**, **89c:82012**
- Chayes, L.** (with Chayes, J. T.) Percolation and random media. *Phénomènes critiques, systèmes aléatoires, théories de jauge, Part I, II* (Les Houches, 1984), 1001–1142. North-Holland, Amsterdam-New York, 1986. (From the introduction) **89c:82041** 82A43 (60K35, 82A42)
- (with Chayes, J. T.; Fisher, Daniel S.; Spencer, Thomas Crawford) Finite-size scaling and correlation lengths for disordered systems. *Phys. Rev. Lett.* **57** (1986), no. 24, 2999–3002. (Aernout C. D. van Enter) **89a:82026** 82A57 (82A05, 82A42)
- (with Chayes, J. T.) On the upper critical dimension of Bernoulli percolation. *Comm. Math. Phys.* **113** (1987), no. 1, 27–48. (Massimo Campanino) **89c:82042** 82A43 (60K35)
- (with Chayes, J. T.; Schonmann, R. H.) Exponential decay of connectivities in the two-dimensional Ising model. *J. Statist. Phys.* **49** (1987), no. 3–4, 433–445. (Tony C. Dorlas) **89k:82008** 82A05 (82A43, 82A68)
- (with Aizenman, Michael; Chayes, J. T.; Newman, C. M.) Discontinuity of the magnetization in one-dimensional  $1/|x - y|^2$  Ising and Potts models. *J. Statist. Phys.* **50** (1988), no. 1–2, 1–40. (Mary Lunn) **89f:82072** 82A68 (82A25)
- (with Chayes, J. T.; Durrett, Rick) Connectivity properties of Mandelbrot's percolation process. *Probab. Theory Related Fields* **77** (1988), no. 3, 307–324. (Massimo Campanino) **89d:60193** 60K35 (82A43)
- see also **Singh, Rajiv R. P.**, **89c:82012**
- Chazelle, Bernard** (with Edelsbrunner, Herbert) Linear space data structures for two types of range search. *Discrete Comput. Geom.* **2** (1987), no. 2, 113–126. (Summary) **89a:68204** 68U05 (52–04, 68P05)
- (with Aggarwal, Alok; Guibas, Leonidas J.; Ó'Dúnlaing, Colm; Yap, Chee-Keng) Parallel computational geometry. *Algorithmica* **3** (1988), no. 3, 293–327. (Franz Aurenhammer) **89b:68141** 68U05 (68Q10, 68Q25)
- Chaban, D. N.** On the structure of the Levinson center of a dissipative dynamical system. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 9, 1564–1576, 1653; translated in *Differential Equations* **24** (1988), no. 9, 1031–1040. (Andrzej Trzpiezur) **89k:54094** 54H20 (34C35, 58F25)
- The principle of averaging on the semi-axis for dissipative systems. (Russian) *Mat. Issled.* **99** (Dinam. Sistemy Uravn. Mat. Fiz. (1988), 149–161, 174. (A. A. Martynuk) **89h:34038** 34C29
- Chaban, V. G.** (with Filippov, I. G.) ★ Математическая теория колебаний упругих и вязкоупругих пластин и стержней. (Russian) [Mathematical theory of the oscillations of elastic and viscoelastic plates and rods] "Shtiintsa", Kishinev, 1988. 190 pp. ISBN 5-376-00330-2 (J. L. Nowinski) **89i:73049** 73K12 (73–02, 73F99)
- Chabanuk, Yu. M.** (with Gasanov, I. I.) ★ Многокритериальная стохастическая задача управления водохранилищем сезонного регулирования. (Russian) [A multicriterial stochastic problem of the control of a seasonal control reservoir] Сообщения по Прикладной Математике. [Reports in Applied Mathematics] *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1988. 34 pp. (Summary) **89i:90041** 90B30 (60K99, 90B05)
- Cheborin, O. G.** (with Verbitskaya, L. V.; Kozorez, V. V.) Analysis of a dynamical system of free physical pendulums. (Russian) *Kibernet. i Vychisl. Tekhn.* **77** (1988), 90–97, 111. (Summary) **89i:70017** 70E99 (70K20, 78A99)
- Chebotarev, A. M.** Approximately complete sets of the generalized Feynman measure. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 1, 52–57; translated in *Soviet Math. Dokl.* **37** (1988), no. 1, 46–51. (A. V. Uglanov) **89c:35129** 35Q20 (28C20, 35R15, 46F25, 81C35)
- Sufficient conditions for the regularity of jump Markov processes. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 1, 25–39; translated in *Theory Probab. Appl.* **33** (1988), no. 1, 22–35. (Sheng Wu He) **89d:60149** 60J75 (60J25)
- The fast Fourier transform in a problem with multiple nodes. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 2, 278–281, 304. (Manfred Tasche) **89b:65324** 65T05 (42A15, 65D05)
- Chebotarev, A. N.** A method for the abstract design of automata with finite memory. (Russian) *Methods and means for designing discrete systems* (Russian), 4–12, i. *Akad. Nauk Ukrain. SSR, Inst. Kibernet.*, Kiev, 1988. (see **89j:68009**) 68Q70 (68Q05)
- Chebotarev, A. Ya.** Solvability of a unilateral steady-state flow problem for equations of an ideal fluid. (Russian) *Dinamika Sploshn. Sredy* **79** (1987), 129–135, 159. (Summary) **89e:76025** 76B99 (76D05)
- Optimal control in a flow problem for the equations of an ideal fluid. (Russian) *Dinamika Sploshn. Sredy* **81** (1987), 138–150, 154. (Summary) **89c:49006** 49A22 (76C95, 93C20)
- Chebyshev, P. L.** see **Golovinski, I. A.**, **89a:01032** and **Ermoleva, N. S.**, **89d:01038**
- Checa, Emilio** (with Romaguera, Salvador) Some fixed-point theorems in metric spaces. Applications. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 72–79. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (I. A. Rus) **89k:54103** 54H25
- chumillas Checa, Valerio** see **Chumillas Checa, Valerio**
- Chechel, I. L.** (with Klabukova, L. S.) A variational-difference method for solving boundary value problems of the theory of shells of I. N. Vekua's moment theory. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 3, 375–389, 478. (L. P. Lebedev) **89g:73041** 73L99
- Chechetkin, V. R.** (with Lutovinov, V. S.) Perturbation theory for continuous stochastic equations. *Fortschr. Phys.* **35** (1987), no. 12, 831–859. (A. Weron) **89g:82026** 82A31 (35R60, 60H15)
- (with Lutovinov, V. S.) Quantum motion of particles in random dynamic fields and quantum dissipation: Schrödinger equation with Gaussian fluctuating potentials. *J. Phys. A* **20** (1987), no. 14, 4757–4788. (K. Wódkiewicz) **89b:82039** 82A31 (81K05)
- Cechin, G. M.** (with Kraizman, I. L.; Sakhenko, V. P.) Symmetry classification of multicomponent order parameters taking into account the incommensurable phases. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (*Jarmala*, 1985), 590–598, "Nauka", Moscow, 1986. (see **89d:81001**) 82A25
- (with Koptsik, V. A.) Color symmetry and representations of space groups in the theory of phase transitions. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (*Jarmala*, 1985), 695–710, "Nauka", Moscow, 1986. (see **89d:81001**) 82A25 (20C35, 20H15)
- Chee, P. S.** Projective geometry. I. (Malay. English summary) *Menemui Mat.* **9** (1987), no. 2, 53–98. (Summary) **89a:51001** 51–01 (51Axx, 51M15)
- Cheeger, Jeff** On the formulas of Atiyah-Patodi-Singer and Witten. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 515–521. *Amer. Math. Soc., Providence, RI*, 1987. (Howard D. Rees) **89g:58224** 58G99 (53C80, 81E30)
- $\eta$ -invariants, the adiabatic approximation and conical singularities. I. The adiabatic approximation. *J. Differential Geom.* **26** (1987), no. 1, 175–221. (Jürgen Eichhorn) **89c:58123** 58G11 (58G30)
- (with Bismut, Jean-Michel)  $\eta$ -invariants and their adiabatic limits. *J. Amer. Math. Soc.* **2** (1989), no. 1, 33–70. (Jürgen Eichhorn) **89h:58269** 58G10 (58C50, 58G12, 58G20)
- Cheer, A. Y.** (with Goldston, D. A.) Longer than average intervals containing no primes. *Trans. Amer. Math. Soc.* **304** (1987), no. 2, 469–486. (H. G. Diamond) **89d:11073** 11N05
- Chee-Seng, Lim** see **Lim, Chee Seng**



- Chefranov, A. G.** (with Bakert, V. Yu.) On the quality of list dispatchers. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 3, 118–119, 135. (Not in MR) 90B35 (68B20)
- Chengredy, Chandra R.** (with Hamacher, Horst W.) Algorithms for finding  $K$ -best perfect matchings. Rio conference on combinatorial optimization (Rio de Janeiro, 1985). *Discrete Appl. Math.* 18 (1987), no. 2, 155–165. (Summary) 89j:90209 90C27 (68Q25, 68R10)
- Chęgis, Raimondas** see Čiegis, Raimondas
- Chen, C. G.** (with Nashed, L.; Sherif, H. H.) Extensions of operator groups. *Studia Sci. Math. Hungar.* 22 (1987), no. 1–4, 299–303. (S. Andreadakis) 89b:20060 20E06
- Chen, O. H.** (with Oudadess, M.) On a commutativity question in Banach algebras. (Arabic summary) *Arab Gulf J. Sci. Res. A. Math. Phys. Sci.* 6 (1988), no. 2, 173–179. (R. Arens) 89i:46053 46H20 (46J05)
- Chen, Orla** (with Goodaire, E. G.) Moufang loops with limited commutativity and one commutator. *Arch. Math. (Basel)* 51 (1988), no. 1, 92–96. (Karl H. Robinson) 89i:20110 20N05
- Chernikov, N. A.** (with Boletín, Yu. L.; Gonchar, V. Yu.; Tarasov, V. N.) The transition "regularity-chaos-regularity" and statistical properties of energy spectra. *Phys. Lett. A* 135 (1989), no. 1, 29–31. (Summary) 89m:58060 58F05 (70K50)
- Cherkass, G. P.** Local finiteness of certain algebras. (Russian) *Izv. Akad. Nauk Moldav. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 1987, no. 3, 18–24, 78. (Iuliu Crivei) 89i:16027 16A38
- Cherklov, A. R.** Quasiper injective torsion-free abelian groups. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 6, 80–83; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 6, 114–118. (A. I. Moskalenko) 89i:20062 20K20
- Cherkov, Viktor Nikolaevich** The effect of a surface load on the stability of layered bodies. (Russian) *Prikl. Mekh.* 24 (1988), no. 9, 10–17, 132. (Summary) 89j:73025 73H99
- Cherkmarov, T. V.** A nonlocal problem for a system of equations of Helmholtz type. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 4, 724–726, 736. (B. P. Belinskii) 89b:35105 35J55 (35J05)
- Cherkun, V. F.** (with Burak, Ya. I.) ★ Физико-механические поля в полупроводниках. (Russian) [Physical-mechanical fields in semiconductors] Математические основы теории. [Mathematical bases of the theory] "Naukova Dumka", Kiev, 1987. 264 pp. (Vladimir Šipa) 89i:82068 82A55 (73R05, 78A60, 82-02)
- Chelazzi, Guido** (with Focardi, Stefano; Paveri-Fontana, S. L.; Deneubourg, Jean Louis) A mathematical framework for the life-cycle of planktonic-benthonic invertebrates. *Biomathematics and related computational problems (Naples, 1987)*, 145–163, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) 89j:20511 92A15
- Chellali, Mustapha** (with Salinier, Alain) Sur les zéros des polynômes de Bessel. (English summary) [On the roots of Bessel polynomials] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 18, 765–767. (M. E. Muldoon) 89b:33011 33A40
- Accélération de calcul de nombres de Bernoulli. [Acceleration of the calculation of Bernoulli numbers] *J. Number Theory* 28 (1988), no. 3, 347–362. (Louis Shapiro) 89b:05002 05A10 (11B68)
- Chellathurai, V.** (with Kulkarni, Ravi; Dadhich, Naresh) The effective mass of the Kerr spacetime. *Classical Quantum Gravity* 5 (1988), no. 11, 1443–1445. (Jorge A. Pullin) 89m:83039 83C40 (83C15)
- Chelminski, K.** A mixed boundary value problem in linear thermoviscoelasticity. (Russian and Polish summaries) *Arch. Mech. (Arch. Mech. Stos.)* 39 (1987), no. 1–2, 95–102. (K. S. Harinath) 89f:73032 73F15 (73U05)
- Chemillier, Marc** Monoïde libre et musique. I. Les musiciens ont-ils besoin des mathématiques? (English summary) [The free monoid and music. I. Do musicians need mathematics?] *RAIRO Inform. Théor. Appl.* 21 (1987), no. 3, 341–371. (Boris M. Schein) 89b:00045a 00A71 (00A69, 20M35, 68Q99, 92A90)
- Monoïde libre et musique. II. (English summary) [The free monoid and music. II] *RAIRO Inform. Théor. Appl.* 21 (1987), no. 4, 379–417. (Boris M. Schein) 89b:00045b 00A71 (00A69, 20M35, 68Q99, 92A90)
- Chemin, J.-Y.** Interactions totalement non linéaires. [Totally nonlinear interactions] *Journées "Équations aux dérivées partielles" (Saint Jean de Monts, 1987)*, Exp. No. XII, 8 pp., *École Polytech., Palaiseau*, 1987. (Patrick Esser) 89b:35109 35L75 (35A27, 35S10)
- Ondes lentes et interaction contrôlée pour les équations strictement hyperboliques non linéaires. [Slow waves and controlled interaction for strictly hyperbolic nonlinear equations] *Séminaire sur les équations aux dérivées partielles 1986–1987*, Exp. No. IV, 16 pp., *École Polytech., Palaiseau*, 1987. (Patrick Esser) 89b:35099 35L75 (35A27)
- Problème de Cauchy non linéaire d'ordre 2 à données singulières en un point. (English summary) [Nonlinear Cauchy problem of order 2 with data singular at a point] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 11, 465–468. (Patrick Esser) 89b:35093 35L70 (35A27)
- Interaction de trois ondes dans les équations semi-linéaires strictement hyperboliques d'ordre 2. [Three-wave interaction in second-order strictly hyperbolic semilinear equations] *Comm. Partial Differential Equations* 12 (1987), no. 11, 1203–1225. (Philippe-A. Dionne) 89f:35119 35L10 (35L67, 58G17)
- Calcul paradifférentiel précisé et applications à des équations aux dérivées partielles non semilinéaires. ["Specified" paradifferential calculus and applications to nonsemilinear partial differential equations] *Duke Math. J.* 56 (1988), no. 3, 431–469. (Peter R. Popivanov) 89b:35362 35S05 (35A20, 35F20, 35L99)
- Chemla, Karine** (with Pahaut, Serge) Préhistoires de la dualité: explorations algébriques en trigonométrie sphérique (1753–1825). [The prehistory of duality: algebraic explorations in spherical trigonometry (1753–1825)] *Sciences à l'époque de la Révolution Française*, 151–201, *Lib. Bientenaire Révolution Française, Lib. Sci. Tech. Albert Blanchard, Paris*, 1988. (see 89m:01050) 01A50
- Chen, A. L.** (with DiCarlo, D. A.; Hotes, S. A.) Self-intersections in a three-parameter space of cosmic strings. *Phys. Rev. D* (3) 37 (1988), no. 4, 863–868. (Summary) 89d:83082 83F05
- Chen, An Yue** (with Zhang, Han Jun) Criterion for the existence of reversible  $Q$ -processes. *Acta Math. Sinica (N.S.)* 3 (1987), no. 2, 133–142. (Alan G. Cornish) 89d:60133 60J27
- Chen, B.-S.** see Ch'en, Po Hsien
- Chen, Bang-Yen** (with Barros, Manuel; Garay, Oscar J.) Spherical finite type hypersurfaces. *Algebras Groups Geom.* 4 (1987), no. 1, 58–72. (Y. Tashiro) 89b:53092 53C40 (53A05, 53A10)
- (with Morvan, Jean-Marie) Géométrie des surfaces lagrangiennes de  $C^2$ . [Geometry of Lagrangian surfaces of  $C^2$ ] *J. Math. Pures Appl.* (9) 66 (1987), no. 3, 321–325. (Jean-Claude Sikorav) 89d:58038 58F05 (53C57)
- (with Barros, Manuel) Stationary 2-type surfaces in a hypersphere. *J. Math. Soc. Japan* 39 (1987), no. 4, 627–648. (Leopold Verstraëlen) 89b:53091 53C40
- (with Lü, Hui Hsiung) Some 2-type submanifolds and applications. (French summary) *Ann. Fac. Sci. Toulouse Math.* (5) 9 (1988), no. 1, 121–131. (Y. Tashiro) 89m:53092 53C40
- Mean curvature of 2-type spherical submanifolds. *Chinese J. Math.* 16 (1988), no. 1, 1–9. (Oscar J. Garay) 89m:53093 53C40 (53C42)
- (with Wu, Bao Qiang) Mixed foliate CR-submanifolds in a complex hyperbolic space are nonproper. *Internat. J. Math. Math. Sci.* 11 (1988), no. 3, 507–515. (Paolo Piccinini) 89f:53074 53C40
- Null 2-type surfaces in  $E^3$  are circular cylinders. *Kodai Math. J.* 11 (1988), no. 2, 295–299. (Johan Deprez) 89g:53003 53A05 (53B25)
- (with Nagano, Tadashi) A Riemannian geometric invariant and its applications to a problem of Borel and Serre. *Trans. Amer. Math. Soc.* 308 (1988), no. 1, 273–297. (O. Kowalski) 89j:53046 53C35 (32M15, 53C20)
- Chen, Bao Xing** (with Zhang, Xiang Zhou) Thermoelasticity problem of an orthotropic plate with two collinear cracks. *Internat. J. Fracture* 38 (1988), no. 3, 161–192. (Summary) 89i:73072 73U05 (73C25, 73C30, 73K10, 73M05)
- Chen, Bao Yao** Nonexistence results and existence theorems of positive solutions of Dirichlet problems for a class of semilinear elliptic systems of second order. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 3, 299–309. (Philip W. Schaefer) 89b:35117 35J65
- (with Xu, Yong Zhi; Mai, Zhi Ben) The existence and uniqueness of solutions of Dirichlet problems for second-order linear elliptic systems in Petrovskii's sense. (Chinese. English summary) *Acta Sci. Natur. Univ. Sunyatseni* 1987, no. 4, 21–28. (Yong Geng Gu) 89i:35046 35J25
- Chen, Bing Mu** (with Zhu, You Lan; Zhong, Xi Chang; Zhang, Zuo Min) ★ Difference methods for initial-boundary value problems and flow around bodies. Translated from the Chinese. *Springer-Verlag, Berlin-New York; Science Press, Beijing*, 1988. viii+600 pp. ISBN 3-540-10887-4 (Editors) 89i:76019 76-08 (65M05, 65M25)
- Chen, Bo Shan** Asymptotic behavior of a class of nonautonomous delay differential equations. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 6, 413–415. (Not in MR) 34K25
- Chen, Bor Liang** (with Li, Kuo Wei) Hamiltonian uniform subset graphs. *J. Combin. Theory Ser. B* 42 (1987), no. 3, 257–263. (Arthur M. Hobbs) 89a:05100 05C45 (05C38)
- Chen, Bor-Sen** see Ch'en, Po Hsien
- Chen, C. Y.** (with Chang, Ch'en Ch'eng) A recursive performance formula of the disc modulo allocation method for binary Cartesian product files. *Comput. J.* 31 (1988), no. 6, 565–566. (Summary) 89k:68014 68N25 (68R05)
- Chen, Chan Fu** (with Zelterman, Daniel) Homogeneity tests against central-mixture alternatives. *J. Amer. Statist. Assoc.* 83 (1988), no. 401, 179–182. (Friedrich Liese) 89f:62019 62F03
- Chen, Chang Chun** (with Chen, Chang Ji) The distribution center of the zero points of a complex polynomial and the coordinate transformation algorithm. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* 10 (1988), no. 1, 88–91. (Editors) 89k:30006 30C15 (65E05)
- Chen, Chang Ji** (with Chen, Chang Chun) The distribution center of the zero points of a complex polynomial and the coordinate transformation algorithm. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* 10 (1988), no. 1, 88–91. (Editors) 89k:30006 30C15 (65E05)
- Chen, Chang Song** Database normalization and an improved synthesis algorithm. (Chinese. English summary) *Hunan Daxue Xuebao* 14 (1987), no. 4, 82–88. (Summary) 89k:68031 68P15
- Chen, Chang Xiang** A double logarithm procedure for dividing the life cycle of a product. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 16 (1988), no. 1, part 1, 7–12. (Summary) 89b:90109 90B25
- Chen, Chao Kuang** (with Chen, Han Taw) Hybrid Laplace transform/finite difference method for transient heat conduction problems. *Internat. J. Numer. Methods Engrg.* 26 (1988), no. 6, 1433–1447. (Summary) 89f:80002 80-08 (80A20)
- (with Yang, Ching Yu) Solution of variational problems via Taylor series. *Internat. J. Systems Sci.* 19 (1988), no. 1, 33–39. (Françoise Berquier) 89b:93045 93B28
- (with Yang, Ching Yu; Chen, Chieh-Li) Solutions of integral equations via Taylor series. *Internat. J. Systems Sci.* 19 (1988), no. 2, 265–273. (Summary) 89a:45023 45L10 (65R20, 93B25)
- (with Char, Ming-I) Heat transfer of a continuous, stretching surface with suction or blowing. *J. Math. Anal. Appl.* 135 (1988), no. 2, 568–580. (Summary) 89i:80001 80A20 (76N05)
- Chen, Cheng-Liang** (with Huang, Hsiao-Ping; Chao, Yung-Cheng) Identification of MIMO continuous-time models by indirect methods. *Internat. J. Systems Sci.* 19 (1988), no. 7, 1281–1297. (Not in MR) 93B30 (93C55)
- Chen, Cheng Ming** (with Gao, Xiao Chun; Wang, Yong) An infinite set of nonlocal conserved currents in a two-dimensional nonlinear  $\sigma$ -model. (Chinese. English summary) *Zhejiang Daxue Xuebao* 21 (1987), no. 5, 63–72. (Summary) 89e:81063 81D15 (81E40)
- Ch'en, Ch'i Chung** (with Huang, Ch'i; Shih, Yen P'ing) Analysis and optimal control of discrete time-varying systems via Hahn polynomials. (Chinese summary) *J. Chinese Inst. Engrs.* 11 (1988), no. 5, 519–532. (T. Kaczorek) 89k:93140 93C55 (65Q05, 93B25, 93B40)
- Chen, Chi Hau** see Signal processing and pattern recognition in nondestructive evaluation of materials, 89a:94002
- Ch'en, Chia Hsin** The indecomposable elements of the mod 2 cohomology of  $P^{\infty} \times P^{\infty}$  and  $BO(2)$  over the Steenrod algebra. *Chinese J. Math.* 15 (1987), no. 3, 195–205. (J. F. Adams) 89a:55028 55R40 (55S10)
- Chen, Chiang-Pu** (with Chen, Goong; Aronov, Irina) A boundary element method based on Cauchy integrals for some linear quadratic boundary control problems on a circle. *Optimal Control Appl. Methods* 9 (1988), no. 1, 93–100. (Elvira Mascolo) 89c:49014 49B22 (49D40)
- Chen, Chieh-Li** (with Yang, Tai Cheng; Munro, N.) Output feedback pole-assignment procedure. *Internat. J. Control* 48 (1988), no. 4, 1503–1518. (Srinivasu Moka) 89m:93031 93B55 (93C05)

- (with Yang, Ching Yu; Chen, Chao Kuang) Solutions of integral equations via Taylor series. *Internat. J. Systems Sci.* 19 (1988), no. 2, 265–273. (Summary) **89a:45023** 45L10 (65R20, 93B25)
- Ch'en, Chien Hui** (with Kuo, M. T.; Sheu, J. P.) An optimal time algorithm for finding a maximum weight independent set in a tree. *BIT* 28 (1988), no. 2, 353–356. (Jürgen Ebert) **89c:68100** 68R10 (05C70, 68Q25)
- (with Yu, M. S.; Liu, Lung T'ien) Two algorithms for constructing a binary tree from its traversals. *Inform. Process. Lett.* 28 (1988), no. 6, 297–299. (Summary) **89i:68048** 68Q20 (68P05)
- Chen, Chong Hong** (with Cheng, Kuang Fu) Estimation of the Weibull parameters with grouped data. *Comm. Statist. Theory Methods* 17 (1988), no. 2, 325–341. (I. D. Dhariyal) **89c:62055** 62F10
- Chen, Chuan Chong** On edge-Hamiltonian property of Cayley graphs. Proceedings of the First Japan Conference on Graph Theory and Applications (Hakone, 1986). *Discrete Math.* 72 (1988), no. 1–3, 29–33. (David Riley Witte) **89m:05081** 05C45 (05C25)
- Chen, Chuan Dan** (with Dai, Wei Zhong) A family of explicit difference schemes for solving two-dimensional parabolic differential equations with variable coefficients and mixed derivatives. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* 9 (1987), no. 3, 235–242. (Hong Yuan Fu) **89i:65086** 65M05
- (with Chen, Shun Long) The stability of difference approximations for two-boundary initial value problems for hyperbolic partial differential equations and its relation to stability for single-boundary problems. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* 27 (1988), no. 1, 35–40. (Zeng Rong Chen) **89c:65095** 65M10
- Chen, Chun Hui** On a numerical method for robust pole assignment by output feedback. (Chinese. English summary) *Math. Numer. Sinica* 10 (1988), no. 1, 59–67. (Fu En Zhang) **89j:93039** 93B40 (93B35, 93B55)
- An algorithm for pole assignment by output feedback. (Chinese. English summary) *Math. Numer. Sinica* 10 (1988), no. 2, 138–145. (Not in MR) 93B60
- Chen, Chung** (with Chang, Ih; Tiao, George C.) Estimation of time series parameters in the presence of outliers. *Technometrics* 30 (1988), no. 2, 193–204. (Not in MR) 62M10
- Chen, Chyi-Tsong** see Ch'en, Ch'i Chung
- Chen, Dao Qi** A trace inequality for positive semidefinite Hermitian matrices. (Chinese) *Acta Math. Sinica* 31 (1988), no. 4, 565–569. (Winston T. Lin) **89i:15026** 15A45 (15A57)
- Approximating function derivatives by multiple spline-on-spline interpolations. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* 9 (1988), no. 3, 183–188. (Summary) **89m:65025** 65D25
- Chen, Dao Qing** A solution to the Chinese postman problem by the branch and bound method. (Chinese) *Chinese J. Oper. Res.* 4 (1985), no. 1, 60–62. (Not in MR) 90B10
- Chen, De Cheng** (with Yu, Nian Cai; Zheng, Wan Gan) Necessary and sufficient conditions for the decoupling of a pencil of complex mode matrices in a complete space. (Chinese. English summary) *Beijing Daxue Xuebao* 1987, no. 3, 28–34. (Summary) **89d:70020** 70J10
- Chen, De Meng** (with Zhu, Lie<sup>1</sup>) Existence of resolvable balanced incomplete block designs with  $k = 5$  and  $\lambda = 1$ . *Ars Combin.* 24 (1987), 185–192. (Summary) **89h:05015** 05B05
- Chen, De Quan** (with Ji, Xin Hua) The Tricomi's problem of the nonhomogeneous equation of mixed type in the real projective plane. *Mixed type equations*, 280–300, *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) **89b:35113** 35M05
- Chen, De Xiu** Discrimination of strong [weak] differentiability of vector functions and characterizations of continuity of their derivatives. (Chinese. English summary) *Hunan Shifan Daxue Ziran Kexue Xuebao* 10 (1987), no. 2, 14–19. (Shu-Tang Wang) **89c:26020** 26B12 (26B05)
- Chen, Dong** (with Tu, Feng Sheng) Jordan invariants and canonical forms for linear multivariable systems. (Chinese. English summary) *J. Systems Sci. Math. Sci.* 7 (1987), no. 3, 252–263. (Zhaolin Cheng) **89b:93029** 93B10 (93B17, 93C05, 93C35)
- Chen, Dong Ling** The binding number of the Cartesian product of a cycle and a complete bipartite graph. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 14 (1988), no. 3, 35–38. (Hugo S. Sun) **89b:05087** 05C75 (05C99)
- Chen, Fang Yue** The reduction principle of global stability of nonlinear system and its application to direct control system. *Ann. Differential Equations* 3 (1987), no. 3, 253–266. (V. M. Popov) **89h:58092** 58F10 (34D20, 93D15)
- A smooth solution of the Feigenbaum functional equation. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 12, 956–957. (Not in MR) 58F14 (39B20)
- Chen, Feng Su** (with Hsieh, Din Yu) A model study of stability of Couette flow. (Chinese. English summary) *Comm. Appl. Math. Comput.* 1 (1987), no. 2, 22–33. (Summary) **89i:76056** 76E30
- Chen, G. H.** see Ch'en, Chien Hui
- Chen, G. L.** (with Wheaton, J. H.; Raridon, R. J.; McGaffey, R. W.; Jaeger, E. F.; Bell, M. A.; Hoffman, D. J.) A 3D analysis of Maxwell's equations for cavities of arbitrary shape. *J. Comput. Phys.* 75 (1988), no. 1, 168–189. (W. L. Ko) **89g:78006** 78–08
- Chen, Gen-Huey** see Ch'en, Chien Hui
- Chen, Gong Ning** Some results on Banach algebra-valued holomorphic functions. (Chinese. English summary) *Beijing Shifan Daxue Xuebao* 1987, no. 4, 9–12. (Summary) **89c:46053** 46H30 (46J05)
- Chen, Goong** (with Krantz, Steven G.; Ma, D. W.; Wayne, C. Eugene; West, Harry H.) The Euler-Bernoulli beam equation with boundary energy dissipation. *Operator methods for optimal control problems* (New Orleans, La., 1986), 67–96, *Lecture Notes in Pure and Appl. Math.*, 108, Dekker, New York, 1987. (Introduction) **89d:35148** 35Q20 (35B35, 73K05)
- (with Tsai, Ying-Liang) The boundary element numerical method for two-dimensional linear quadratic elliptic problems. I. Neumann control. *Math. Comp.* 49 (1987), no. 180, 479–498. (J. T. Oden) **89a:65145** 65M60 (49D40, 93B40)
- (with Zhou, Jian-Xin) Diagonal convexity conditions for problems in convex analysis and quasi-variational inequalities. *J. Math. Anal. Appl.* 132 (1988), no. 1, 213–225. (Francesco Scarpini) **89f:90121** 90C25 (49A29)
- (with Krantz, Steven G.; Russell, David L.; Wayne, C. Eugene; West, Harry H.; Zhou, Jian-Xin) Modelling, analysis and testing of dissipative beam joints—experiments and data smoothing. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 1011–1016. (see **89d:90007**) 73K12 (73K30)
- (with Chen, Chiang-Pu; Aronov, Irina) A boundary element method based on Cauchy integrals for some linear quadratic boundary control problems on a circle. *Optimal Control Appl. Methods* 9 (1988), no. 1, 93–100. (Elvira Mascolo) **89c:49014** 49B22 (49D40)
- Chen, Guan-Ing** (with Lai, Ten Hwang) Preemptive scheduling of independent jobs on a hypercube. *Inform. Process. Lett.* 28 (1988), no. 4, 201–206. (Summary) **89h:68038** 68Q10 (68M20, 68Q25, 90B35)
- Chen, Guan Lun** On a kind of nonlinear boundary value problem of third order differential equation. *Ann. Differential Equations* 4 (1988), no. 4, 381–389. (Afaf A. Saleh Zaghrout) **89c:34020** 34B15
- Chen, Guan Rong** (with Chui, C. K.) ★ Kalman filtering with real-time applications. Springer Series in Information Sciences, 17. Springer-Verlag, Berlin-New York, 1987. xvi+191 pp. ISBN 3-540-18395-7 (Joseph D. Cole) **89d:93093** 93E10 (93E11, 93Exx)
- (with Chui, C. K.) ★ Linear systems and optimal control. Springer Series in Information Sciences, 18. Springer-Verlag, Berlin-New York, 1989. viii+155 pp. ISBN 3-540-18737-5 (Edward Jezierski) **89m:93001** 93–01 (49–01, 93C05)
- Chen, Guan-zhun** see Chen, Guang Rong
- Chen, Guan Jun** Families of point-to-set maps for optimization algorithms. (Chinese) *Chinese J. Oper. Res.* 3 (1984), no. 1, 63–64. (Not in MR) 90C30
- A gradient projection algorithm constructed using generating functions. (Chinese) *Chinese J. Oper. Res.* 6 (1987), no. 1, 69–70. (Not in MR) 90C30
- A gradient projection algorithm for optimization problems with general constraints. (Chinese. English summary) *Math. Numer. Sinica* 9 (1987), no. 4, 356–364. (Quan Zheng) **89i:90133** 90C30 (65K05)
- Chen, Guang Rong** (with Meng, Bo Qin) Interpolation of  $B_d$  spaces. *Acta Math. Sci. (English Ed.)* 8 (1988), no. 1, 65–70. (Hans G. Feichtinger) **89j:46027** 46E30 (46M35)
- (with Men, Bo-tsin) Interpolation of linear operators in Orlicz spaces. (Russian) *Funktsional. Anal. i Prilozhen.* 22 (1988), no. 2, 95; translated in *Functional Anal. Appl.* 22 (1988), no. 2, 166–167. (Yu. A. Brudnyi) **89m:46052** 46E30 (46M35)
- Chen, Guang Ya** A vector variational inequality and its application to multi-objective optimization. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 8, 561–563. (Not in MR) 90C31
- Chen, Gui Jing** (with Hong, Sheng Yan; Hu, Shu He) Some convergence problems about the increments of a Wiener process. *Acta Math. Sinica (N.S.)* 3 (1987), no. 1, 38–44. (M. Csörgő) **89b:60192** 60J65 (60G17)
- (with Guo, Ji Yang; Stephens, Michael A.) Further study of asymptotic distribution of estimated empirical processes in truncated distribution families. (Chinese. English summary) *J. Systems Sci. Math. Sci.* 8 (1988), no. 1, 32–41. (Lin-Cheng Zhao) **89i:62160** 62M99
- Chen, Gui Qiang** (with Ding, Xia Xi; Luo, Pei Zhu) Convergence of the Lax-Friedrichs scheme for isentropic gas dynamics. I, II. *Acta Math. Sci. (English Ed.)* 5 (1985), no. 4, 415–432, 433–472. (F. Milinazzo) **89f:76006** 76–08 (65L05, 65M10, 76N15)
- Convergence of the Lax-Friedrichs scheme for isentropic gas dynamics. III. *Acta Math. Sci. (English Ed.)* 6 (1986), no. 1, 75–120. (F. Milinazzo) **89f:76007** 76–08 (65M10, 76L05, 76N15)
- (with Zhang, Tong) Some fundamental concepts about system of two spatial dimensional conservation laws. *Acta Math. Sci. (English Ed.)* 6 (1986), no. 4, 463–474. (Denis Serre) **89a:35136** 35L65 (76N15)
- Overtaking of shocks of the same kind in the isentropic steady supersonic plane flow. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 3, 311–327. (R. M. Gundersen) **89e:76058** 76L05 (76J99)
- (with Lu, Yun Guang) A study of approaches to applying the theory of compensated compactness. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 9, 641–644. (Not in MR) 35B25 (35–02)
- Chen, Guo Quan** (with Yu, Eden S. H.) On the properties of fuzzy production correspondence. *Fuzzy Sets and Systems* 27 (1988), no. 2, 115–129. (Summary) **89b:90030** 90A11 (03E72)
- Chen, Guo Wei** Some bounded cubic system. I. The  $E_1^2$  system with one finite singular point. *Ann. Differential Equations* 4 (1988), no. 3, 265–301. (François Aribaud) **89m:34044** 34C11 (34C05, 58F21)
- Chen, H. B.** (with Lin, Sung P.; Tobak, M.) Nonlinear stability of a reversed flow over a flat plate with suction. *Applied mathematics, fluid mechanics, astrophysics* (Cambridge, MA, 1987), 164–167, *World Sci. Publishing, Singapore*, 1988. (see **89f:76002**) 76E30
- Chen, H.-X.** see Chen, Hui Xin
- Chen, Han Fu** (with Zhu, Yun Min) Asymptotic properties of a stochastic truncation algorithm. (Chinese) *Acta Math. Sci. (Chinese)* 7 (1987), no. 4, 431–441. (K. F. Yu) **89g:62141** 62L20
- (with Wu, Chun Tao; Zhu, Yun Min) Continuous-time stochastic approximation procedure with randomly varying truncations. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 1, 43–55. (Jacek Koronacki) **89b:62179** 62L20
- (with Guo, Lei) Adaptive control via consistent estimation for deterministic systems. *Internat. J. Control* 45 (1987), no. 6, 2183–2202. (Edward Jezierski) **89b:93068** 93C40 (93B30, 93C55)
- (with Guo, Lei) Robust identification of discrete-time stochastic systems. *Discrete event systems: models and applications* (Sopron, 1987), 239–251, *Lecture Notes in Control and Inform. Sci.*, 103, Springer, Berlin-New York, 1988. (R. Haber) **89j:93125** 93E12 (93C55, 93E10)
- (with Guo, Lei) A robust stochastic adaptive controller. *IEEE Trans. Automat. Control* 33 (1988), no. 11, 1035–1043. (Boženna Pasik-Duncan) **89j:93071** 93C40 (93B35, 93C55)
- (with Lei, Guo; Gao, Ai Jun) Convergence and robustness of the Robbins-Monro algorithm truncated at randomly varying bounds. *Stochastic Process. Appl.* 27 (1988), no. 2, 217–231. (Kurt Marti) **89b:62180** 62L20
- Chen, Han Lin** (with Hu, Ying Sheng) The bell-shaped property of the fundamental function for cardinal  $L$ -spline interpolation. Proceedings of China-U.S. Joint Conference on Approximation Theory (Hangzhou, 1985). *Approx. Theory Appl.* 3 (1987), no. 4, 24–31. (Avraham A. Melkman) **89b:41032** 41A17 (65D07)
- Chen, Han Taw** (with Chen, Chao Kuang) Hybrid Laplace transform/finite difference method for transient heat conduction problems. *Internat. J. Numer. Methods Engrg.* 26 (1988), no. 6, 1433–1447. (Summary) **89f:80002** 80–08 (80A20)
- Chen, Hao** (with Guo, Shuo Hong) Exact solutions for the topological charge in  $1 + 1$ -dimensional lattice gauge theory. (Chinese. English summary) *High Energy Phys. Nuclear Phys.* 11 (1987), no. 6, 844–848. (Summary) **89e:81124** 81E25 (81E13)



- Chen, Hong** *see* **Chen, Hong<sup>2</sup>**
- Chen, Hong Qiu** The rationality of the discrete-ordinates method in computing the pile thickness critical scale for a slab geometry reactor. (Chinese. English summary) *J. Systems Sci. Math. Sci.* 8 (1988), no. 2, 107-112. (Summary) **89j:82087** 82A75 (45J05)
- Chen, Hong Tao** (with Zhu, Shao Wen) Initial value computation of the derivatives of all orders of the network response. (Chinese. English summary) *Lanzhou Daxue Xuebao* 24 (1988), no. 2, 54-60. (Not in MR) 94C05
- Chen, Hong<sup>2</sup>** (with Lu, Quan Kang) A new method for calculating the correlation function of an electromagnetic system. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* 26 (1987), no. 3, 257-264. (Summary) **89d:2086** 82A45
- Chen, Hsin Hsiung** (with Peng, C. K.) Size dependence of virial coefficients for classical gases. *J. Phys. A* 21 (1988), no. 2, 419-426. (Summary) **89c:82020** 82A30 (82A05)
- Chen, Hsing Hen** (with Tracy, E. R.) Nonlinear self-modulation: an exactly solvable model. *Phys. Rev. A* 37 (1988), no. 3, 815-839. (Summary) **89a:35207** 35Q20 (82A45)
- Chen, Hua** Paley-Wiener type theorems for Gevrey function classes and ultradistributions, and their applications. (Chinese. English summary) *J. Math. Res. Exposition* 8 (1988), no. 2, 245-254. (Qing Yi Chen) **89j:46041** 46F12 (46E10, 46F05)
- Perfect factorizations of totally characteristic operators in Gevrey classes. (Chinese. English summary) *J. Wuhan Univ. Natur. Sci. Ed.* 1988, no. 1, 9-18. (Min You Qi) **89j:35012** 35A25
- Chen, Hual Hui** (with Lü, Yi Nian) On the existence of Nevanlinna direction of an abeloid function. *Analysis of one complex variable* (Laramie, Wyo., 1985), 125-135, *World Sci. Publishing, Singapore*, 1987. (Chung-Chun Yang) **89c:30060** 30D35
- Chen, Hudong** (with Chen, Shi Yi; Doolen, Gary D.; Lee, Yee Chun) Simple lattice gas models for waves. *Complex Systems* 2 (1988), no. 3, 259-267. (From the text) **89g:82005** 82-08
- Chen, Hui Hua** (with Chen, De Ching; Hsu, Rue Ron; Nester, James M.; Yeung, Wai Bong) Asymptotically Newtonian conditions for Poincaré gauge theory. *Progr. Theoret. Phys.* 79 (1988), no. 1, 77-85. (P. K. Smerz) **89c:83053** 83D05
- Chen, Hui Xin** (with Ruan, Rong Yao) Strong consistency and convergence rate of extended least squares method. *Control Theory Adv. Tech.* 3 (1987), no. 2, 149-162. (Zbigniew Nahorski) **89c:93203** 93E12 (93C55, 93E25)
- Chen, Hung** Convergence rates for parametric components in a partly linear model. *Ann. Statist.* 16 (1988), no. 1, 136-146. (N. Gaffke) **89c:62082** 62J02 (62F12)
- Lower rate of convergence for locating a maximum of a function. *Ann. Statist.* 16 (1988), no. 3, 1330-1334. (V. Dupac) **89c:62135** 62L20
- Ch'iu, Huang I** Comparison and nonoscillation results for Volterra-Stieltjes integral equations. *J. Math. Anal. Appl.* 130 (1988), no. 1, 257-270. (V. Lakshmikantham) **89a:45003** 45D05 (34C10)
- Chen, Hungtao** *see* **Chen, Hong Tao**
- Chen, J. W.** (with Clark, John W.; Kürten, K. E.) Modelling of neural systems in continuous time. *Math. Comput. Modelling* 10 (1988), no. 7, 503-513. (Summary) **89d:92021** 92A09 (92A25)
- Chen, Jah-Sing** *see* **Ch'én, Chia Hsin**
- Chen, James** (with Lee, Yee Chun) A quadratic-form analysis of the collisionless tearing mode. *Phys. Fluids* 31 (1988), no. 10, 2944-2950. (Summary) **89h:76018** 76E25 (76X05, 82A45)
- Effects of toroidal forces in current loops embedded in a background plasma. *Astrophys. J.* 338 (1989), no. 1, 453-470. (Not in MR) 85A30 (76E20, 76W05)
- Chen, Jason S. J.** (with Li, Victor O. K.) Optimizing joins in fragmented database systems on a broadcast local network. *IEEE Trans. Software Engrg.* 15 (1989), no. 1, 26-38. (Not in MR) 68P15 (68M10, 68R10)
- Chen, Joesen** (with Rubin, Herman) Some stochastic processes related to random density functions. *J. Theoret. Probab.* 1 (1988), no. 2, 227-237. (M. Csörgö) **89j:60029** 60E05 (60A10)
- Chen, Ji Xiang** ★ Daishu tuopu jichu jiangyi. (Chinese) [Lectures on the foundations of algebraic topology] Gaodeng Xuexiao Jiaoxue Cankao Shu. [Advanced Textbooks and Reference Works] Gaodeng Jiaoyu Chubanshe (Higher Education Press), Beijing, 1987. xii+316 pp. (Yi-Gao Liang) **89g:55001** 55-01
- Connected branches of reversible spaces need not be reversible. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 24, 1844-1846. (Not in MR) 54F99
- On the comparison of the weak and very weak homotopy extension properties. (Chinese) *Acta Math. Sinica* 31 (1988), no. 1, 108-116. (Summary) **89h:55013** 55P05
- Chen, Jiande** (with Vandewalle, Joos; Sansen, Willy M. C.; Vantrappen, Gaston; Janssens, Jozef) Detection of gastric signals from cutaneous abdominal measurements. *Analysis and optimization of systems* (Antibes, 1988), 1117-1128, *Lecture Notes in Control and Inform. Sci.* 111, Springer, Berlin-New York, 1988. (see **89c:00031**) 92A07 (93E10)
- Chen, Jin** *see* **Cheng, Jin<sup>2</sup>**
- Chen, Jin Can** (with Yan, Zi Jun) Characteristic functions of the deviation functions—internal pressure energy and deviation volume enthalpy. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* 27 (1988), no. 5, 517-521. (Not in MR) 80A10
- (with Yan, Zi Jun) An equivalent theorem of the Nernst theorem. *J. Phys. A* 21 (1988), no. 13, L707-L709. (Summary) **89c:80005** 80A10
- Chen, Jin Quan** (with Lü, Zi Min; Pan, Xin Wan; Chen, Xuan Gen; Feng, Da-huan) Correspondence between the fermion dynamic symmetry model and the interacting boson model in wave functions. *Phys. Rev. C* 37 (1988), no. 6, 2789-2801. (Summary) **89f:81262** 81G30
- Chen, Ju Fang** The influence of high dimension terms on the qualitative structure of solutions to a second-order linear difference system with constant coefficients in the neighborhood of a singular point. (Chinese. English summary) *Acta Math. Appl. Sinica* 11 (1988), no. 3, 299-311. (Ding Jun Luo) **89c:34028** 34C05 (39A10, 58F08, 58F30)
- Chen, Jue Ting** (with Jiang, Li Zhi) A model of fuzzy quantification discrimination and its application. (Chinese. English summary) *Math. Appl.* 1 (1988), no. 4, 47-54. (Not in MR) 62H30 (03E99)
- Chen, Jun** Fixed point theorems for metric spaces and their applications. (Chinese. English summary) *Hunan Jiaoyu Xueyuan Ziran Kexue Xuebao* 6 (1988), no. 1, 15-22. (Not in MR) 54H25 (47H10)
- Chen, Jun Ya** (with Zhu, Cheng Xi; Wei, Wen Yuan) The strong law of large numbers for functions of nonhomogeneous Markov chains. (Chinese) *Acta Math. Sinica* 31 (1988), no. 4, 464-474. (Zheng Yan Lin) **89i:60072** 60F15 (60J10)
- Chen, Jun Zhen** The maximum order of linear multistep methods for initial value problems for systems of ordinary differential equations. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* 9 (1987), no. 3, 253-257. (Zeng Fu Qin) **89g:65083** 65L05
- Chen, Kai Ming** (with Yu, Wen Ci) A coordinate direction method with varying step-length. (Chinese) *Chinese J. Oper. Res.* 3 (1984), no. 1, 69-70. (Not in MR) 90C30
- Chen, Kai Zhou** (with Wang, Kong Ming) A new continued fraction algorithm and its convergence. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 20, 1530-1533. (Not in MR) 65H05
- (with Wang, Kong Ming) A new continued fraction algorithm and its convergence. (Chinese. English summary) *Math. Numer. Sinica* 10 (1988), no. 1, 35-43. (Summary) **89j:65049** 65K05 (90C05)
- Chen, Ke Wei** The asymptotic periodicity of the age structure of a population in a changeable environment. (Chinese) *Beijing Shifan Daxue Xuebao* 1987, no. 3, 70-72. (Joseph So) **89c:92051** 92A15
- Chen, Keh-Wei** (with Zheng, Zhong Guo) Admissible minimax model selection rule. *Comm. Statist. Theory Methods* 16 (1987), no. 11, 3393-3401. (V. Olman) **89a:62052** 62F03 (62C15)
- Chen, Kuo-Chieh** (with Wu, Wen T'eng; Ou, Wei-Hsiung) On-line system identification with an adjustable estimation interval. *Internat. J. Systems Sci.* 19 (1988), no. 10, 1955-1967. (Not in MR) 93B30
- Ch'én, Kuo Hsien** (with Chuang, Yao T'ang) Robust pole-assignment for dynamic systems with uncertain parameters. (Chinese summary) *J. Chinese Inst. Engrs.* 12 (1989), no. 1, 149-154. (Summary) **89k:93101** 93B55 (93B35, 93B60)
- Chen, Lan Sun** (with Cao, Xian Tong) A note on the uniqueness of limit cycles in two species predator-prey system. *Ann. Differential Equations* 2 (1986), no. 4, 415-417. (Summary) **89h:92042** 92A15 (34C05)
- (with Cao, Xian Tong) The problem of limit cycles of generalized Volterra equations. (Chinese) *J. Math. Res. Exposition* 6 (1986), no. 3, 53-56. (Yang Kuang) **89d:92053** 92A15 (34C05, 58F14, 58F21)
- (with Dai, Guo Ren) Boundedness and stability of a food chain system with several resources. (Chinese) *Acta Math. Appl. Sinica* 11 (1988), no. 2, 253-256. (Wei-Min Liu) **89h:92059** 92A17
- (with Liu, Ping Zhou; Xiao, Zao) Permanence in ecosystems. (Chinese. English summary) *J. Biomath.* 3 (1988), no. 1, 18-32. (Joseph So) **89h:92043** 92A15 (92A17)
- Chen, Lan Xiang** (with Eichenauer, Jürgen) Two point priors and  $\Gamma$ -minimax estimating in families of uniform distributions. *Statist. Hefte* 29 (1988), no. 1, 45-57. (Kurt Hoffmann) **89j:62011** 62C20
- Chen, Lian Chang** (with Cheng, Li Xin) Comment: "LP-orthogonality in Banach spaces" [*J. Math. Res. Exposition* 4 (1984), no. 4, 31-35; MR 87d:46022] by Z. Liu. (Chinese) *J. Math. Res. Exposition* 7 (1987), no. 1, 175-176. (Editors) **89a:46036** 46B20
- Chen, Liang** *see* **Chen, Liang<sup>2</sup>**
- Chen, Liang Fan** (with Zhou, Min Yao) Partition function and energy density of a scalar field at finite temperature in Robertson-Walker spacetime. *Sci. Sinica Ser. A* 30 (1987), no. 12, 1292-1306. (Summary) **89c:83041** 83C47 (83F05)
- Chen, Liang<sup>2</sup>** (with Mei, Changjiang) Study of the interaction between two electrons in the single band Hubbard model. *Z. Phys. B* 72 (1988), no. 4, 429-432. (Summary) **89i:82090** 82A68
- Chen, Louis H. Y.** The central limit theorem and Poincaré-type inequalities. *Ann. Probab.* 16 (1988), no. 1, 300-304. (F. T. Wright) **89b:60051** 60F05 (26D20, 60E15)
- Chen, Lung-Ke** On the maximal Riesz-transforms along surfaces. *Proc. Amer. Math. Soc.* 103 (1988), no. 2, 487-496. (Takahide Kurokawa) **89f:42014** 42B25
- Chen, M.-Q.** *see* **Chen, Mei-Qin**
- Chen, M.-S.** *see* **Ch'én, Miao Shéng**
- Chen, Mang** (with Wang, Ai) A fixed-point algorithm for the analysis of nonlinear resistor networks. (Chinese. English summary) *J. Shanghai Jiaotong Univ.* 22 (1988), no. 5, 83-89, 118. (Not in MR) 94C05
- Chen, Mei-Qin** (with Han, Shih-Ping) A parallel quasi-Newton method for partially separable large scale minimization. *Ann. Oper. Res.* 14 (1988), no. 1-4, 195-211. (Summary) **89j:90215** 90C30
- Ch'én, Miao Shéng** (with Li, Tsu T'ien) Performance improvement of optimal regulators incorporating Kalman filters. *Control Theory Adv. Tech.* 4 (1988), no. 2, 171-188. (Summary) **89c:93086** 93B50 (93E11)
- Chen, Ming Hai** (with Fan, Wei Min) Strict optimum confidence bounds on the reliability of a complex system with exponential component lives. (Chinese. English summary) *J. Shanghai Jiaotong Univ.* 1987, no. 5, 87-98, 128. (Summary) **89c:90110** 90B25
- Chen, Ming Jun** (with Chen, Zhong Ying) Generalized solutions for a class of evolution equations containing second derivatives with respect to time. (Chinese. English summary) *Acta Sci. Natur. Univ. Sunyatseni* 1988, no. 2, 47-54. (H. R. Shen) **89j:34086** 34G10
- Ch'én, Ming Po** (with Lan, I Jén) On  $\alpha$ -convex function of order  $\beta$ . *Tamkang J. Math.* 18 (1987), no. 3, 109-112. (Albert E. Livingston) **89c:30024** 30C45
- Chen, Ming Ting** (with Kurata, Yoshiki) On the double centralizer of the injective hull relative to a torsion theory. *Math. J. Okayama Univ.* 29 (1987), 159-165 (1988). (M. Teply) **89c:16007** 16A08 (16A63, 16A65)
- Chen, Mingyuan** (with Kusiak, Andrew) Expert systems for planning and scheduling manufacturing systems. *European J. Oper. Res.* 34 (1988), no. 2, 113-130. (Not in MR) 90B30
- Chen, Mu Fa** Existence theorems for interacting particle systems with noncompact state spaces. *Sci. Sinica Ser. A* 30 (1987), no. 2, 148-156. (Richard Holley) **89a:60236** 60K35
- Ch'én, Mu Yang** (with Huang, Ch'i) Stable reduction of linear discrete-time systems via multipoint squared-magnitude CFE. *Internat. J. Systems Sci.* 19 (1988), no. 6, 945-951. (Not in MR) 93B17 (93C30)
- (with Huang, Ch'i) Stable linear system reduction via a multipoint squared-magnitude continued-fraction expansion. *Proc. IEEE-D* 135 (1988), no. 6, 441-444. (Not in MR) 93B17
- Chen, Pei De** (with Zhuang, Xing Wu) On local comparability among families of sub- $\sigma$ -fields. *Acta Math. Appl. Sinica (English Ser.)* 4 (1988), no. 2, 136-144. (Marta Sanz Solé) **89m:60109** 60G48
- Chen, Pei Xian** Convergence of SIP. *SIAM J. Numer. Anal.* 25 (1988), no. 2, 342-350. (P. Bontoux) **89c:65111** 65N20 (65M10)

- Chen, Peter J. (with Bailey, Paul B.) On the local and global behavior of weak shocks and induced discontinuities in a class of materials with internal state variables. *Rend. Circ. Mat. Palermo* (2) **36** (1987), no. 1, 5–26. (L. Debnath) **89g:73017** 73D40 (73F99)
- Chen, Ping Multiperiodicity and irregularity in growth cycles: a continuous model of monetary attractors. *Math. Comput. Modelling* **10** (1988), no. 9, 647–660. (Summary) **89h:90060** 90A17 (58F13, 58F40)
- Chen, Pin-yuen The  $k$ -in-a-row procedure in selection theory. *Ann. Inst. Statist. Math.* **39** (1987), no. 2, 325–330. (H. K. Hsieh) **89b:62060** 62F07
- Comparison of multinomial cells with a control. *Statist. Decisions* **5** (1987), no. 1–2, 33–45. (D. Y. Huang) **89a:62057** 62F07 (62L05)
- (with Sobel, Marc J.; Sobel, Milton) Selection problem for a modified multinomial (voting) model. *Statistical decision theory and related topics, IV, Vol. 2* (West Lafayette, Ind., 1986), 23–31, Springer, New York-Berlin, 1988. (K. M. Lal Saxena) **89a:62058** 62F07
- Closed inverse sampling procedure for selecting the largest multinomial cell probability. *Comm. Statist. Simulation Comput.* **17** (1988), no. 3, 969–994. (S. Panchapakesan) **89j:62036** 62F07
- Ch'en, Po Hsien (with Wang, Shun Hsiang) Multivariable model matching control: perfect and imperfect cases. *Internat. J. Control* **46** (1987), no. 5, 1579–1588. (Yong-Zai Lu) **89d:93057** 93C35 (93B50, 93C05)
- (with Wang, Sin Syung) The stability of feedback control with nonlinear saturating actuator: time domain approach. *IEEE Trans. Automat. Control* **33** (1988), no. 5, 483–487. (Summary) **89b:93087** 93D15 (93D25)
- (with Wang, Wen June) Stability of large-scale systems with saturating actuators. *Internat. J. Control* **47** (1988), no. 3, 827–850. (Krzysztof Kuźmiński) **89e:93010** 93A15 (93C10, 93D25)
- (with Kuo, Chih Tsung) Multivariable control design for stochastic systems with saturated driving: LQG optimal approach. *Internat. J. Control* **47** (1988), no. 3, 851–865. (Summary) **89a:93026** 93B50 (93C35, 93E03, 93E15)
- (with Wang, Shun Hsiang; Lu, Hung Ching) Stabilization of time-delay systems containing saturating actuators. *Internat. J. Control* **47** (1988), no. 3, 867–881. (Summary) **89a:93039** 93D10 (34K35)
- (with Wang, Shun Hsiang) Optimal model-matching control for time-delay systems. *Internat. J. Control* **47** (1988), no. 3, 883–894. (Summary) **89b:34177** 34K35 (93B28)
- (with Lu, Hung Ching) State estimation of large-scale systems. *Internat. J. Control* **47** (1988), no. 6, 1613–1632. (J. C. Geromel) **89f:93004** 93A15 (93B07, 93D15, 93D20)
- (with Wong, Ching Chang) Stabilization of large-scale systems via observer-controller compensators: frequency domain approach. *Internat. J. Control* **47** (1988), no. 6, 1633–1647. (A. S. C. Sinha) **89h:93043** 93D10 (93B07)
- (with Dong, Tay Yuh) Robust stability analysis of Kalman-Bucy filter under parametric and noise uncertainties. *Internat. J. Control* **48** (1988), no. 6, 2189–2199. (Summary) **89k:93202** 93E11 (93E99)
- (with Chiang, Chiang-Cheng) Robust compensator synthesis for dynamic systems subjected to parameter perturbations. *Internat. J. Systems Sci.* **19** (1988), no. 1, 125–137. (Andrzej Świerniak) **89d:93073** 93D10 (34A40, 93B50, 93D20, 93D25)
- (with Chiang, Chiang-Cheng) Robust stabilization against nonlinear time-varying uncertainties. *Internat. J. Systems Sci.* **19** (1988), no. 5, 747–760. (Chao Shun Zhou) **89e:93164** 93D15 (93B35, 93C10, 93C40)
- (with Lu, Hung Ching) Stabilization of multivariable feedback systems with multiple time delays. *Internat. J. Systems Sci.* **19** (1988), no. 6, 953–966. (Jian Hong Wu) **89g:93075** 93D15 (34K35, 93C35, 93D20)
- (with Hsiao, Feng Hsiang) Robustness optimization in LQG multivariate systems with time-varying nonlinear perturbations. *Internat. J. Systems Sci.* **19** (1988), no. 10, 2019–2046. (Engin Yaz) **89h:49031** 49D40 (93B35, 93D15, 93E20)
- (with Hsiao, Feng Hsiang) LQG optimal and robust controller design for nonlinear stochastic systems: multivariable case. *J. Franklin Inst.* **325** (1988), no. 2, 189–206. (Summary) **89b:93081** 93D10 (49D40, 93B50, 93C10, 93C35, 93E20)
- (with Lin, Chih Min) Multipurpose adaptive control in deterministic multivariable systems. *Proc. IEEE-D* **135** (1988), no. 4, 282–288. (Not in MR) **93C40** (93B50, 93B55)
- (with Hwang, C. L.) Adaptive control of optimal model matching in  $H^\infty$ -norm space. *Proc. IEEE-D* **135** (1988), no. 4, 295–301. (Summary) **89e:93139** 93C40 (93B35, 93D15)
- Chen, Qi (with Kang, Sheng Liang) Singular perturbation of nonlinear vector boundary value problem. *Appl. Math. Mech. (English Ed.)* **9** (1988), no. 9, 873–880; translated from *Appl. Math. Mech.* **9** (1988), no. 9, 817–824 (Chinese. English summary). (Shu Mei Miao) **89k:34099** 34E15 (34B15)
- Chen, Qi Keith (with Meiss, J. D.; Percival, I. C.) Orbit extension method for finding unstable orbits. *Phys. D* **29** (1987), no. 1–2, 143–154. (M. Yu. Lyubich) **89b:58066** 58F05 (58F20, 65H10)
- Area as a devil's staircase in twist maps. *Phys. Lett. A* **123** (1987), no. 9, 444–450. (From the text) **89b:58183** 58F30 (58F05, 82A99)
- (with Mestel, B. D.) Taylor-Chirikov map package. *Comput. Phys. Comm.* **51** (1988), no. 3, 463–476. (From the text) **89k:58085** 58F05 (65H05)
- Chen, Qi Long A gradient acceleration method for solving unconstrained minimization problems. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **8** (1987), no. 4, 193–197. (Summary) **89e:90172** 90C30 (65K05)
- Chen, Qi Zhou (with Guo, Shuo Hong; Liu, Jin Ming<sup>1</sup>) The improved Hamiltonian and  $p$ - $\omega$  mass difference in lattice gauge theory. *Comm. Theoret. Phys.* **7** (1987), no. 3, 263–273. (Not in MR) **81E25** (81G25)
- Chen, Qiang The Liapunov-Razumikhin type theorems of instability for functional-differential equations with infinite delay. *Ann. Differential Equations* **4** (1988), no. 4, 391–397. (Afaf A. Saleh Zaghrout) **89k:34129** 34K20 (34K99)
- Chen, Qing Tensor products of Banach spaces, and their conjugate spaces. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **4** (1987), no. 3, 32–37. (Summary) **89c:46093** 46M05
- Chen, Qing Quan (with Wu, Jie<sup>2</sup>; Luo, Qi Xia) Decoupling-adaptive control of induction motors. (Chinese. English summary) *Control Theory Appl.* **5** (1988), no. 2, 60–68. (Summary) **89g:93065** 93C75 (49D27, 93C40)
- Chen, Qing Yi (with Liu, Xun Ming) Oscillatory functions and second order linear equations. *Acta Math. Sci. (English Ed.)* **6** (1986), no. 4, 445–452. (Introduction) **89i:34010** 34A30 (34C10)
- (with Liu, Xun Ming) The problem of relative oscillations of second-order equations. (Chinese) *Acta Math. Sci. (Chinese)* **7** (1987), no. 4, 425–429. (Not in MR) **34C15**
- Oscillating functions and reduced wave equations. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 6, suppl., 1–6. (Summary) **89m:35019** 35B05 (35J05)
- (with Zou, Feng Wu) Relative oscillation on an active Josephson junction line. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 6, suppl., 11–15. (Lumin Jiang) **89m:35020** 35B05 (35B25, 35C20, 35L70, 81J05)
- (with Liu, Xun Ming) Some linear integro-differential equations. (Chinese. English summary) *J. Math. Res. Exposition* **7** (1987), no. 2, 296–300. (Summary) **89c:45015** 45J05 (45D05)
- (with Liu, Xun Ming) Oscillatory functions and second-order linear equations. (Chinese) *J. Math. Res. Exposition* **8** (1988), no. 2, 255–260. (Cheh-Chih Yeh) **89j:34047** 34C10 (34A30)
- On nonlinear heat conduction. (Chinese. English summary) *Math. Appl.* **1** (1988), no. 1–2, 93–96. (Summary) **89k:80013** 80A20 (80–08)
- Chen, R. J. see Chen, Rong Jaye
- Chen, Ren Zhao (with Gao, Hang) Some results on the critical value of the time-varying specific fertility rate  $\beta(t)$ . (Chinese. English summary) *Dongbei Shida Xuebao* **1987**, no. 3, 1–8. (Summary) **89a:92031** 92A12 (92A15)
- Chen, Reuven Conditional minimax and minimax location-allocation problems in Euclidean space. *Transportation Sci.* **22** (1988), no. 2, 157–160. (Not in MR) **90B10**
- Chen, Robert L. W. Derivation of the real form of Schrödinger's equation for a nonconservative system and the unique relation between  $\text{Re}(\psi)$  and  $\text{Im}(\psi)$ . *J. Math. Phys.* **30** (1989), no. 1, 83–86. (N. D. Sengupta) **89m:81033** 81C05
- Chen, Robert W. (with Hwang, F. K.) Stronger players win more balanced knockout tournaments. *Graphs Combin.* **4** (1988), no. 2, 95–99. (J. W. Moon) **89d:05061** 05C05 (05C20, 90D99)
- (with Erdős, Paul) Random walks on  $Z_n^2$ . *J. Multivariate Anal.* **25** (1988), no. 1, 111–118. (Göran Högnäs) **89d:60124** 60J15 (60C05)
- Chen, Rong Jaye (with Meyer, R. R.) Parallel optimization for traffic assignment. *Math. Programming* **42** (1988), no. 2 (Ser. B), 327–345. (Summary) **89j:90201** 90C25 (65K99, 90C10)
- Chen, Rong-Liang (with Varaiya, P.) Degenerate Hopf bifurcations in power systems. *IEEE Trans. Circuits and Systems* **35** (1988), no. 7, 818–824. (Summary) **89f:58098** 58F14 (34C15)
- Chen, Rong Si (with Zheng, Mao Lin) A maximal cover of hexagonal systems. *Graphs Combin.* **1** (1985), no. 3, 295–298. (Summary) **89f:92085** 92A40 (05C70)
- (with Zhang, Fu Ji; Guo, Xiao Feng) Perfect matchings in hexagonal systems. *Graphs Combin.* **1** (1985), no. 4, 383–386. (Summary) **89g:92091** 92A40 (05C70)
- The enumeration of Kekulé structures of rectangle-shaped benzenoids. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 552–556. *Stud. Phys. Theoret. Chem.*, **51**, Elsevier, Amsterdam-New York, 1987. (Summary) **89d:92093** 92A40
- (with Cyvin, S. J.; Cyvin, B. N.) On the number of Kekulé structures for rectangle-shaped benzenoids. III, IV. *Match No. 22* (1987), 111–127, 129–139. (N. Trinajstić) **89c:92096** 92A40 (05A15)
- (with Cyvin, S. J.; Cyvin, B. N.; Brunvoll, J.; Su, Lin Xian) The number of Kekulé structures for rectangle-shaped benzenoids. V. *Match No. 22* (1987), 141–150. (N. Trinajstić) **89c:92097** 92A40 (05A15)
- (with Cyvin, S. J.; Cyvin, B. N.) On the number of Kekulé structures for rectangle-shaped benzenoids. VI. *Match No. 22* (1987), 151–156. (N. Trinajstić) **89c:92098** 92A40 (05A15)
- (with Zhang, Fu Ji; Guo, Xiao Feng) The connectivity of Z-transformation graphs of perfect matchings of hexagonal systems. *Acta Math. Appl. Sinica (English Ser.)* **4** (1988), no. 2, 131–135. (N. Trinajstić) **89i:92082** 92A40 (05C40, 05C70)
- (with Guo, Xiao Feng; Zhang, Fu Ji) The edge connectivity of interchange graphs of classes of matrices of zeros and ones. *J. Xinjiang Univ. Natur. Sci.* **5** (1988), no. 1, 17–25. (Ji Cheng Chen) **89k:05068** 05C50 (05C40, 15A36, 15A48)
- Chen, Shao Hua Large time existence and behavior of solution for systems of nonlinear reaction-diffusion equations. *Acta Math. Sci. (English Ed.)* **8** (1988), no. 1, 35–44. (Gunter Bengel) **89j:35067** 35K57 (35B40, 35B45, 35K35)
- The existence of global and periodic solutions of nonlinear parabolic equations. (Chinese. English summary) *J. Hangzhou Univ.* **15** (1988), no. 1, 15–24. (Ya Zhe Chen) **89j:35116** 35K60 (35B10)
- Existence of global solutions to evolution equations with completely nonlinear perturbations. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 1, 11–12. (Not in MR) **35G25**
- Chen, Shao Zhong (with Liu, Zuo Shu) On fixed point theorems for random multivalued mappings. (Chinese) *J. Math. Res. Exposition* **6** (1986), no. 3, 35–40. (Xie Ping Ding) **89e:54094** 54H25 (47H10, 54C60)
- (with Gu, Fu Wen) Some measurable selection theorems for topological spaces. (Chinese. English summary) *J. Math. Res. Exposition* **7** (1987), no. 2, 179–184. (Summary) **89g:54041** 54C65 (28A99)
- Chen, Shao Zhu Existence and uniqueness of solutions of limit boundary value problems for second-order differential systems. (Chinese. English summary) *Acta Math. Appl. Sinica* **10** (1987), no. 3, 324–332. (Long-Yi Tsai) **89a:34022** 34B15
- Chen, Sheng<sup>2</sup> (with Billings, S. A.) Recursive maximum likelihood identification of a nonlinear output-affine model. *Internat. J. Control* **48** (1988), no. 4, 1605–1629. (Lei Guo) **89k:93208** 93E12 (93C10, 93C30, 93C55)
- (with Billings, S. A.; Korenberg, M. J.) Identification of nonlinear output-affine systems using an orthogonal least-squares algorithm. *Internat. J. Systems Sci.* **19** (1988), no. 8, 1559–1568. (Not in MR) **93B30** (93C55)
- Chen, Shi Yi (with Zhou, Pei Yuan) On the theory of turbulence for incompressible fluids. *Applied mathematics, fluid mechanics, astrophysics* (Cambridge, MA, 1987), 59–80, *World Sci. Publishing, Singapore*, 1988. (Summary) **89j:76053** 76F05 (76F10)
- (with Chen, Hudong; Doolen, Gary D.; Lee, Yee Chun) Simple lattice gas models for waves. *Complex Systems* **2** (1988), no. 3, 259–267. (From the text) **89g:82005** 82–08
- Chen, Shi Zhong A mathematical description of primary structure sequences in DNA. (Chinese. English summary) *Sci. Exploration* **5** (1985), no. 3, 107–110. (Summary) **89k:92036** 92A12 (92A40)
- Chen, Shu Hui (with Zhang, You Qi; Lau, S. L.) On the internal resonance of multi-degree-of-freedom systems with cubic nonlinearity. *J. Sound Vibration* **128** (1989),



- no. 1, 13-24. (Summary) **89m:70045** 70K30 (70K40)
- Chen, Shu-Mei** (with Bhattacharyya, G. K.) Exact confidence bounds for an exponential parameter under hybrid censoring. *Comm. Statist. Theory Methods* 17 (1988), no. 6, 1837-1870. (Summary) **89c:62172** 62N05 (62F25)
- Chen, Shu Tao** (with Wang, Yu Wen) Best approximation operators in Orlicz spaces. (Chinese. English summary) *Pure Appl. Math.* 1986, no. 1, 44-51. (Summary) **89c:41031** 41A65 (46E30)
- Smoothness of Orlicz spaces. *Comment. Math. Prace Mat.* 27 (1987), no. 1, 49-58. (K. Sundaresan) **89b:46036** 46E30 (46B20)
- Extreme points and strict convexity of vector valued Orlicz spaces. *J. Math. (Wuhan)* 7 (1987), no. 1, 20-31. (K. Sundaresan) **89b:46037** 46E30 (46B20)
- On the properties of locally  $K$ -uniform rotundity and uniform rotundity in every direction for Banach spaces. (Chinese. English summary) *Natur. Sci. J. Harbin Normal Univ.* 3 (1987), no. 3, 1-7. (Xin Tai Yu) **89k:46022** 46B20
- (with Bai, Yu Lan) The problem of interchanging the order for doubly iterated generalized integrals. (Chinese) *Natur. Sci. J. Harbin Normal Univ.* 3 (1987), no. 3, 13-18. (Not in MR) 26B15
- (with Hudzik, Henryk) On some convexities of Orlicz and Orlicz-Bochner spaces. *Comment. Math. Univ. Carolin.* 29 (1988), no. 1, 13-29. (K. Sundaresan) **89g:46054** 46E30
- (with Wu, Cong Xin) Extreme points and rotundity of Orlicz-Musielak sequence spaces. *J. Math. Res. Exposition* 8 (1988), no. 2, 195-200. (K. Sundaresan) **89k:46013** 46A45 (46E30)
- Chen, Shu Xing** Regularity estimates for solutions of semilinear hyperbolic equations of higher space dimensions. *Acta Math. Sinica (N.S.)* 3 (1987), no. 1, 66-76. (Alain Bachelot) **89d:35119** 35L75 (35B65)
- (with Shi, Jia Hong; Qiu, Qing Jiu) Asymptotic expansions of oscillatory integrals and their applications. (Chinese) *J. Math. Res. Exposition* 7 (1987), no. 3, 419-427. (Min You Qi) **89b:35363** 35S05 (47F05, 58G15)
- Necessary and sufficient conditions for the Cauchy problem of a system of equations of Schrödinger type to be  $L^2$  well-posed. (Chinese. English summary) *Adv. in Math. (Beijing)* 17 (1988), no. 3, 303-308. (Summary) **89i:35042** 35J10
- Chen, Shui Lian** (with Shao, Ming Feng; Pu, Fu Quan) Sign changes of solutions to boundary value problems for second-order linear equations. (Chinese) *J. Math. Res. Exposition* 6 (1986), no. 3, 65-69. (Long-Yi Tsai) **89c:34018** 34B05 (34A30, 34C10)
- Chen, Shun Long** (with Chen, Chuan Dan) The stability of difference approximations for two-boundary initial value problems for hyperbolic partial differential equations and its relation to stability for single-boundary problems. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoi.* 27 (1988), no. 1, 35-40. (Zeng Rong Chen) **89c:65095** 65M10
- Chen, Shun Yu** (with Berger, J. O.) Minimality of empirical Bayes estimators derived from subjective hyperpriors. *Advances in multivariate statistical analysis*, 1-12, *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (Klaus-J. Miescke) **89a:62031** 62C20 (62H12)
- Chen, Shunlung** see **Chen, Shun Long**
- Chen, Shuta** see **Chen, Shu Tao**
- Chen, So-Chin** Global real analyticity of solutions to the  $\bar{\partial}$ -Neumann problem on Reinhardt domains. *Indiana Univ. Math. J.* 37 (1988), no. 2, 421-430. (Makhlof Derridj) **89i:32042** 32F20 (32N15)
- Global analytic hypoellipticity of the  $\bar{\partial}$ -Neumann problem on circular domains. *Invent. Math.* 92 (1988), no. 1, 173-185. (Mei Chi Shaw) **89b:35240** 35N15 (32F20, 35H05)
- Global real analyticity of solutions to the  $\bar{\partial}$ -Neumann problem. *Math. Z.* 198 (1988), no. 2, 239-259. (Makhlof Derridj) **89g:35079** 35N15 (32F20)
- Chen, So-Huan** (with Pan, H. H.) Guyan reduction. *Comm. Appl. Numer. Methods* 4 (1988), no. 4, 549-556. (Summary) **89d:65094** 65N20
- Chen, Sui Yang** (with Guo, Ben Yu; Mitchell, Andrew Ronald) On a one-dimensional difference scheme in reaction diffusion. *J. Comput. Math.* 5 (1987), no. 3, 191-202. (Brian D. Sleeman) **89a:65188** 65P05 (92A09)
- Chen, T. W.** see **Ch'en, T'ien Wên**
- Chen, Tian Ping** An error estimate for H-B interpolation splines and its application. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* 27 (1988), no. 2, 137-142. (Jian Zhong Wang) **89k:41011** 41A15 (41A05, 65D07)
- The residual term of Chebyshev interpolation and its application to  $T$ -splines. (Chinese) *J. Math. Res. Exposition* 8 (1988), no. 1, 111-118. (Yu Yu Feng) **89k:41004** 41A05 (65D05)
- Ch'en, T'ien Wên** (with Tin, Y. B.) Laguerre series estimate of a regression function. *Tamkang J. Management Sci.* 8 (1987), no. 1, 13-19. (W. Greblicki) **89a:62092** 62G05 (62J02)
- Chen, Ting Hui** (with Kang, Tai; Yao, Rong) The connectivity of hypergraphs and the design of a fault-tolerant multibus. *Si. Sinica Ser. A* 31 (1988), no. 5, 597-610. (Oleg Taraszow) **89m:68109** 68R10 (05C65, 68M15, 90B25, 94C30)
- Chen, Tu Hao** (with Xie, Ping Min) A new proof of the positive definiteness on the sample covariance matrix. (Chinese. English summary) *Acta Sci. Natur. Univ. Sunyatseni* 1988, no. 1, 113-114. (Summary) **89i:62085** 62H05 (62H12)
- Chen, Tu Yun** (with Zheng, Ming Zhu) Orderings based on paired comparisons. (Chinese. English summary) *Fuzzy Math.* 6 (1986), no. 4, 47-52. (Summary) **89m:92054** 92A25 (03E72, 06A05, 90D12)
- Chen, Wei-Kai** (with Zhu, Yi-Sheng) Unified theory of compatibility impedances. *IEEE Trans. Circuits and Systems* 35 (1988), no. 6, 667-674. (B. Hazeltine) **89k:94099** 94C05
- (with Tong, Mao Da) Analysis and computation of feedback matrices in multivariable and multiloop feedback networks. *IEEE Trans. Circuits and Systems* 35 (1988), no. 9, 1123-1128. (Mitsuhiko Kameyama) **89i:94051** 94C05 (93C35)
- (with Sengoku, Masakazu) An operator in signal flow graphs and its applications. *IEEE Trans. Circuits and Systems* 35 (1988), no. 11, 1383-1392. (W.-K. Chen) **89i:94062** 94C15 (94C05)
- (with Zhu, Yi-Sheng) On the design of a diplexer having Butterworth characteristics. *IEEE Trans. Circuits and Systems* 35 (1988), no. 11, 1455-1457. (Not in MR) 94C05
- (with Wan, Jin Liang; Fei, Zonglian) On complex-normalized reflection coefficients. *J. Franklin Inst.* 325 (1988), no. 5, 559-564. (Not in MR) 94C05
- Chen, Wei** (with Guo, Han Ying; Hu, Hong Liang; Yu, Yue) Remarks on superstring field theories. II. *Modern Phys. Lett. A* 2 (1987), no. 11, 835-845. (Danny Birmingham)
- 89b:81172** 81E99 (81E30, 83E30)
- (with Guo, Han Ying; Hu, Hong Liang; Yu, Yue) Symmetry, cohomology and string field theories—a Fock space formalism. *Conformal field theory, anomalies and superstrings* (Singapore, 1987), 391-418, *World Sci. Publishing, Singapore*, 1988. (Tou Sheung Tsun) **89k:81072** 81E13 (81-02, 81E20, 81E30)
- (with Huang, Chao Shang; Zhao, Wei Dong) Modular invariance of twisted string theories on group manifolds. *Phys. Lett. B* 201 (1988), no. 1, 54-58. (Summary) **89b:81173** 81E99 (17B67, 58G35, 81E30)
- Chen, Wei Feng** A quadratic system with second-order weak focus. (Chinese. English summary) *Zhejiang Daxue Xuebao* 22 (1988), no. 1, 141-155. (Yang Kuang) **89k:34042** 34C05 (34C25, 58F21)
- Chen, Wei Huan** The geometry of Grassmann manifolds as submanifolds. *Adv. in Math. (Beijing)* 16 (1987), no. 3, 334-335. (Samuel I. Goldberg) **89c:53085** 53C42 (53C40)
- The differential geometry of Grassmann manifolds as submanifolds. (Chinese) *Acta Math. Sinica* 31 (1988), no. 1, 46-53. (Y. L. Xin) **89b:53116** 53C42 (53C40)
- (with Wu, Guang Lei) A matrix inequality and its geometric applications. (Chinese) *Acta Math. Sinica* 31 (1988), no. 3, 348-355. (Chung Lie Wang) **89k:15029** 15A45
- Chen, Wei Xia**  $\alpha$ -unity elements and  $\alpha$ -division rings for  $\Gamma$ -rings. (Chinese. English summary) *Zhejiang Daxue Xuebao* 21 (1987), no. 5, 120-127. (Summary) **89b:17006** 17A65 (16A39)
- $\Gamma$ -rings in retrospect and prospect. (Chinese. English summary) *J. Math. Res. Exposition* 8 (1988), no. 4, 637-642. (Summary) **89m:16083** 16A78 (08A99)
- The conditions under which  $\Gamma$ -rings have a strong unity. (Chinese. English summary) *J. Math. Res. Exposition* 9 (1989), no. 1, 115-120. (Not in MR) 16A78
- Chen, Wen Chen** (with DeGroot, Morris H.) Optimal search for new types. *Bayesian inference and decision techniques*, 443-458, *Stud. Bayesian Econometrics Statist.*, 6, North-Holland, Amsterdam-New York, 1986. (Chandra M. Gulati) **89c:62109** 62L15 (62C10)
- Chen, Wen De** An algorithm to analyze nonlinear shift registers. (Chinese) *Math. Practice Theory* 1988, no. 1, 26-29. (Zhao Zhi Zhang) **89k:94066** 94B15
- Chen, Wen Den** (with Tseng, Hsen-Che; Lai, Wu Yih; Hu, Chin Kun) Renormalization-group method for transitions to chaos via period doubling and intermittency in the chaotic region. *Phys. Lett. A* 134 (1989), no. 7, 417-420. (Summary) **89k:58201** 58F13 (26A18, 58F08)
- Chen, Wen Ping** A generalization and improvement of some inequalities of A. Aziz. (Chinese) *J. Math. Res. Exposition* 8 (1988), no. 4, 555-557. (Not in MR) 30C10 (30A10)
- Chen, Wen Tsuen** (with Liu, Lung Lung) A parallel approach for theorem proving in propositional logic. *Inform. Sci.* 41 (1987), no. 1, 61-76. (Summary) **89c:68086** 68T15 (03B05, 03B35)
- Chen, Wen Xiong** (with Wang, Chuan Fang) Existence of multiple solutions to nonlinear elliptic equations with critical exponents. (Chinese) *Acta Math. Sci. (Chinese)* 7 (1987), no. 3, 349-352. (Xin Kang Guo) **89b:35123** 35B65 (35B99)
- (with Ding, Wei Yue) A problem concerning the scalar curvature on  $S^2$ . *Kexue Tongbao (English Ed.)* 33 (1988), no. 7, 533-537. (John M. Lee) **89j:53038** 53C20 (35J99, 58G30)
- Chen, Wen Zhong** A pointwise "o" saturation theorem. *J. Math. Res. Exposition* 7 (1987), no. 3, 457-462. (Jinghuang Tian) (Zbl 633:41023) **89m:41017** 41A40
- (with Guo, Shun Sheng) The degree of pointwise convergence of some positive linear operators on functions of bounded variation. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* 9 (1987), no. 3, 243-252. (Yu Yu Feng) **89b:41047** 41A36 (41A25)
- (with Hou, Xiang Qian) Approximation properties of Bernstein type operators in the space  $C_q$ . (Chinese. English summary) *Acta Sci. Natur. Univ. Amoi.* 27 (1988), no. 1, 28-34. (Summary) **89d:41010** 41A10 (41A35)
- Chen, Wu Fan** The over implicit difference scheme and its analysis of stability for an improved Pragneshu system. (Chinese. English summary) *J. Biomath.* 3 (1988), no. 1, 70-74. (Summary) **89c:92052** 92A15 (65L20)
- Ch'en, Wu T'ung** (with Tu, Shih Hsiung; Chang, Fu Ch'ueh; Chang, Hsiang) Chattering alleviation of variable structure control for a certain class of nonlinear systems. (Chinese summary) *J. Chinese Inst. Engrs.* 11 (1988), no. 5, 573-579. (Not in MR) 93B50
- Ch'en, Wu Yung** Hardy and Lipschitz spaces of holomorphic functions and pluriharmonic functions over bounded symmetric domains in  $\mathbb{C}^n$ . *Chinese J. Math.* 15 (1987), no. 3, 31-41. (J. Mitchell) **89b:32041** 32M15 (31C10, 46E15, 46J15)
- Chen, Xi Yao** (with Pan, C. Y.) Numerical study of the  $q$ -color problem on a lattice. *Internat. J. Modern Phys. B* 1 (1987), no. 1, 111-119. (Peter J. Forrester) **89d:82136** 82A68 (05A15, 05C15, 82-04)
- (with Pan, C. Y.) Finite temperature entropy of the antiferromagnetic Potts model. *Internat. J. Modern Phys. B* 2 (1988), no. 6, 1495-1501. (Summary) **89k:82082** 82A67 (82-08, 82A68)
- (with Pan, C. Y.)  $q$ -color problem in  $D$  dimensions. *Internat. J. Modern Phys. B* 2 (1988), no. 6, 1503-1511. (Summary) **89k:82083** 82A67 (82-08, 82A68)
- Chen, Xi Ying** Some fundamental metric properties of Gauss mappings. (Chinese. English summary) *Natur. Sci. J. Harbin Normal Univ.* 4 (1988), no. 1, 26-32. (Bang-yen Chen) **89i:53004** 53A05
- Chen, Xiang Dong** A characterization of the direct product of a family of fuzzy chains. (Chinese. English summary) *Fuzzy Math.* 6 (1986), no. 4, 7-10. (Summary) **89j:06007** 06B99 (03E72)
- Chen, Xiangkun** Design of IIR pulseshaping filters. *IEEE Trans. Circuits and Systems* 35 (1988), no. 9, 1190-1191. (Not in MR) 94A05
- Chen, Xiao Hong** (with Guo, Bao Qi) A class of free boundary problems for a system of hyperbolic equations. (Chinese. English summary) *J. Harbin Inst. Tech.* 1988, no. 2, 1-9. (Summary) **89k:35255** 35R35 (35L60)
- Chen, Xiao Jun** (with You, Zhao Yong) A two-sided interval iterative method for the finite-dimensional nonlinear systems. *J. Comput. Math.* 5 (1987), no. 4, 307-315. (M. A. Wolfe) **89i:65058** 65H10 (65G10)
- (with You, Zhao Yong) Interval iterative methods under partial ordering. I. *J. Comput. Math.* 6 (1988), no. 1, 39-47. (Miodrag Petković) **89k:65060** 65G10 (65H10)
- (with You, Zhao Yong) A continuation-interval method for nonlinear systems. *Kexue Tongbao (English Ed.)* 33 (1988), no. 4, 270-273. (Florica Luban) **89k:65059** 65H10 (65G10)
- Chen, Xiao Man** (with Huang, Chao Cheng) On the representation of the joint spectrum for a commuting  $n$ -tuple of nonnormal operators. *Acta Math. Sinica (N.S.)* 3 (1987), no. 3,

- 215-226. (Raúl E. Curto) **89e:47030** 47B20 (47A10)
- Mosaic and Pincus functions of hyponormal and semihyponormal operators. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B **8** (1987), no. 3, 383. *Chinese Ann. Math. Ser. A* **8** (1987), no. 2, 195-204. (Peng Fan) **89c:47030** 47B20
- Chen, Xiong** Uniqueness of trajectories of solutions to stochastic differential equations of Poisson type with two inducts. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 9, 649-652. (Not in MR) 60H10
- Chen, Xuan Gen** (with Lü, Zi Min; Pan, Xin Wan; Chen, Jin Quan; Feng, Da-hsuan) Correspondence between the fermion dynamic symmetry model and the interacting boson model in wave functions. *Phys. Rev. C* (3) **37** (1988), no. 6, 2789-2801. (Summary) **89f:81262** 81G30
- Chen, Xue Bo** (with Li, Shu Sheng<sup>1</sup>) Stability analysis of multivariable systems. (Chinese. English summary) *Acta Automat. Sinica* **13** (1987), no. 5, 388-392. (Summary) **89d:93071** 93D05 (93C35)
- Chen, Y. H.** see **Chen, Ye-Hwa**
- Chen, Ya Ling** WSP systems and identification. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* **27** (1988), no. 1, 1-7. (Summary) **89e:93061** 93B28 (46N05, 93B30, 93C20, 93C25)
- Chen, Ya Zhe** Hölder continuity of the gradient of solutions of nonlinear degenerate parabolic systems. *Acta Math. Sinica (N.S.)* **2** (1986), no. 4, 309-331. (From the introduction) **89m:35036** 35B65 (35K35)
- Hölder continuity of the gradient of the solutions of certain degenerate parabolic equations. A Chinese summary appears in Chinese Ann. Math. Ser. A **8** (1987), no. 3, 534. *Chinese Ann. Math. Ser. B* **8** (1987), no. 3, 343-356. (Michael Wiegner) **89d:35098** 35K65 (35B65)
- (with di Benedetto, E.) On the local behavior of solutions of singular parabolic equations. *Arch. Rational Mech. Anal.* **103** (1988), no. 4, 319-345. (Michiel Bertsch) **89k:35107** 35K55 (35B65, 35K65)
- Chen, Yang** (with Edwards, S. F.) The statistics of polymers on rough surfaces. *J. Phys. A* **21** (1988), no. 13, 2963-2969. (Summary) **89d:82093** 82A51
- (with Lee, D. K. K.) Functional bosonisation of the Tomonaga-Luttinger model. *J. Phys. A* **21** (1988), no. 22, 4155-4171. (Summary) **89k:81205** 81H20 (82A15)
- (with Guyer, R. A.) A polymer in a fractal pore space. *J. Phys. A* **21** (1988), no. 22, 4173-4181. (Not in MR) 82A51
- Chen, Ye-Hwa** Robust output feedback controller: direct design. *Internat. J. Control* **46** (1987), no. 3, 1083-1091. (From the introduction) **89h:93021** 93B50 (93D99)
- Decentralized robust output and estimated state feedback controls for large-scale uncertain systems. *Internat. J. Control* **46** (1987), no. 6, 1979-1992. (Andrzej W. Olsbrot) **89b:93015** 93A15 (93C40, 93C50, 93D10, 93D15)
- Design of robust controllers for uncertain dynamical systems. *IEEE Trans. Automat. Control* **33** (1988), no. 5, 487-491. (Zong Ji Chen) **89e:93154** 93D05 (58F30, 93B50, 93C15, 93C40)
- (with Tomizuka, Masayoshi) Design of adaptive observer for plant under input disturbance and measurement noise. *Internat. J. Control* **47** (1988), no. 2, 625-632. (Summary) **89a:93031** 93C40 (93B07, 93B50)
- Decentralized robust control system design for large-scale uncertain systems. *Internat. J. Control* **47** (1988), no. 5, 1195-1205. (Not in MR) 93B50 (93A15, 93C40)
- Errata: "Deterministic control of large-scale uncertain dynamical systems" [J. Franklin Inst. **323** (1987), no. 2, 135-144; MR **88g:93012**]. *J. Franklin Inst.* **325** (1988), no. 2, 293. (Editors) **89b:93016** 93A15 (93B50, 93C40)
- (with Pandey, Sandeep) Robust control strategy for take-off performance in a windshear. *Optimal Control Appl. Methods* **10** (1989), no. 1, 65-79. (Summary) **89m:93058** 93C75 (93B35)
- Chen, Ye-Sho** Exponential recurrence distribution in the Simon-Yule model of text. *Cybernet. Systems* **19** (1988), no. 6, 521-545. (Summary) **89m:92070** 92A90 (62P99)
- Chen, Yi-Chao** Stability of pure homogeneous deformations of an elastic plate with fixed edges. *Quart. J. Mech. Appl. Math.* **41** (1988), no. 2, 249-264. (Stan Chiriță) **89f:73038** 73G10 (73H99, 73K10)
- Chen, Yi Cheng** A simple method of finding an analytic function from its real or imaginary part. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* **22** (1988), no. 3, 379-382. (Not in MR) 30A99
- Chen, Yi Xiang** Semiregularization of para-S-closed spaces. (Chinese) *J. Math. Res. Exposition* **6** (1986), no. 4, 76. (Hao Xuan Zhou) **89c:54047** 54D18 (54A10)
- Chen, Yi Xin** (with Liu, Bang Gui) A new gauge- and BRST-invariant interacting closed bosonic string field theory. *Classical Quantum Gravity* **5** (1988), no. 8, L119-L122. (George Siopsis) **89f:81193** 81E99 (81E30)
- (with Yue, Rui Hong; Zhang, Yao Zhong) Chiral Jacobian and Wess-Zumino-Witten term in the hybrid chiral bag model. *Phys. Lett. B* **202** (1988), no. 4, 587-590. (From the text) **89d:81089** 81E99 (81G25)
- (with Hou, Bo Yu; Zhang, Yao Zhong) Cohomological analysis in Skyrme model and boundary effect of chiral bag model. *Sci. Sinica Ser. A* **31** (1988), no. 2, 172-182. (J. Stasheff) **89k:81146** 81E99 (58B05, 58D99, 58G40, 81G25)
- (with Liu, Bang Gui) A covariant open bosonic string field theory including the endpoint and midpoint interaction. *Z. Phys. C* **39** (1988), no. 4, 547-551. (George Siopsis) **89k:81160** 81E99 (81E30)
- Chen, Yi-Ying** The nonlinear desingularization phenomenon in the abelian Higgs model for isotropic solutions. *J. Math. Phys.* **29** (1988), no. 8, 1896-1900. (S. Sakai) **89k:81073** 81E13 (58G40)
- Chen, Yi Yuan** P-vectorfields on plane. *Ann. Differential Equations* **4** (1988), no. 4, 405-409. (Yang Kuang) **89j:58111** 58F21 (34C05)
- On rotated vector fields in higher-dimensional spaces. A Chinese summary appears in Chinese Ann. Math. Ser. A **9** (1988), no. 1, 103. *Chinese Ann. Math. Ser. B* **9** (1988), no. 1, 112-117. (Jan Andres) **89f:34064** 34C30 (34C05, 34D30)
- Chen, Yong Chuan** A short proof of Kundu's  $k$ -factor theorem. *Discrete Math.* **71** (1988), no. 2, 177-179. (Prabir Das) **89i:05209** 05C70
- (with Shastri, Aditya) On joint realization of  $(0, 1)$  matrices. *Linear Algebra Appl.* **112** (1989), 75-85. (Larry Basenšpiller) **89j:15027** 15A33 (05B20)
- Chen, Yong-Cong** A new method for quantum processes in fermionic heat baths. *J. Statist. Phys.* **49** (1987), no. 3-4, 811-826. (Jerzy Luczka) **89d:82028** 82A15
- Chen, Yong Lin** Computing the generalized inverses of a matrix by modification methods. (Chinese. English summary) *J. Math. Res. Exposition* **7** (1987), no. 2, 194-198. (Zeng Rong Chen) **89c:65053** 65F20 (15A09)
- A simpler proof of Kantorovich's inequality and of a generalization of it. (Chinese) *Math. Practice Theory* **1987**, no. 4, 78-79. (Chung Lie Wang) **89c:26033** 26D15
- Chen, Yong Shao** On the oscillation of the differential equations  $x'' + f(t, x) = 0$ . *Differential Equations* **3** (1987), no. 1, 1-11. (H. A. DeKleine) **89c:34062** 34C10
- Chen, Yong Yi** (with You, Chuan Hua) A nonblocked stack protocol of CTM type with quartet feedback. (Chinese. English summary) *Lanzhou Daxue Xuebao* **24** (1988), no. 2, 1-7. (Not in MR) 94A40
- (with He, Wen Qing; You, Chuan Hua) Computation of the period of a homogeneous finite Markov chain. (Chinese. English summary) *Lanzhou Daxue Xuebao* **24** (1988), no. 3, 1-6. (Mu Fa Chen) **89m:60153** 60J10
- Chen, You Gen** (with Wang, Ru Qu) Optimal incomplete state feedback control for discrete systems. (Chinese. English summary) *Control Theory Appl.* **5** (1988), no. 1, 78-83. (Not in MR) 93B17 (49D37, 93B50, 93C55)
- Chen, Yu** On the representations of skew linear groups. *Bull. London Math. Soc.* **21** (1989), no. 3, 267-269. (Helmut Völklein) **89m:20013** 20C32 (20G05, 20H25)
- Chen, Yu-zhong** (with Timonen, J.; Pilling, D. J.; Bullough, R. K.) Recent results on the statistical mechanics of integrable models in  $1+1$  dimensions. *Plasma theory and nonlinear and turbulent processes in physics*, Vol. 1, 2 (Kiev, 1987), 878-896. *World Sci. Publishing, Singapore*, 1988. (Anjan Kundu) **89k:82017** 82A05 (81C25, 81E40, 82A69)
- Chen, Yu Zong** Riemann-Hilbert problem of the quantum nonlinear Schrödinger model. *Comm. Theoret. Phys.* **7** (1987), no. 2, 137-147. (Tuncay Aktosun) **89j:81167** 81E99 (35Q15, 35Q20)
- Chen, Yue Qing** Answer to a problem of Miller. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 775-776. (O. P. Ahuja) **89c:30014** 30C45 (30A10, 30C80)
- Chen, Yun-Gang** (with Suzuki, Takashi) Single-point blow-up for semilinear parabolic equations in some nonradial domains. *Proc. Japan Acad. Ser. A Math. Sci.* **64** (1988), no. 3, 57-60. (Song Mu Zheng) **89f:35035** 35B40 (35B05, 35K55)
- Chen, Yun Mei** Global existence of the solution of the nonlinear parabolic equation in exterior domains. *International workshop on applied differential equations (Beijing, 1985)*, 210-247. *World Sci. Publishing, Singapore*, 1986. (J. Kačur) **89a:35116** 35K60
- The initial-boundary value problem for a class of nonlinear Schrödinger equations. *Acta Math. Sci. (English Ed.)* **6** (1986), no. 4, 405-418. (Nakao Hayashi) **89a:35175** 35Q20
- The existence of global solutions to systems consisting of a complex Schrödinger equation coupled to a real Klein-Gordon equation. (Chinese. English summary) *Tongji Daxue Xuebao* **15** (1987), no. 1, 101-114. (Xun Cheng Huang) **89a:35176** 35Q20 (81C05)
- (with Li, Da Qian) Initial value problems for nonlinear wave equations. *Comm. Partial Differential Equations* **13** (1988), no. 4, 383-422. (Paul L. Davis) **89c:35102** 35L70
- Ch'en, Yung Ch'iu** (with Chu, Hua; Kang, Ming Chang) The corestriction of  $p$ -symbols. *Comm. Algebra* **16** (1988), no. 4, 735-741. (Jan van Geel) **89d:11101** 11R34 (11R70, 12G05, 16A16)
- Remarks on free Bieberbach groups. *Manuscripta Math.* **60** (1988), no. 4, 477-486. (R. Stöhr) **89e:20056** 20E22 (20F05, 20J05)
- Chen, Yung-ming** (with Chan, K. Y.) Generalization of an oscillation criterion for sublinear differential equations. *J. Math. Anal. Appl.* **127** (1987), no. 2, 585-594. (Keren Liao) **89b:34084** 34C15 (34C10)
- Chen, Yung Ming** Parallelism by hierarchy of GPST inversion algorithm for elastic wave equation. *Appl. Numer. Math.* **4** (1988), no. 1, 83-95. (Heinz W. Engl) **89b:65221** 65M30 (86A20)
- (with Liu, Xi Yuan<sup>1</sup>) Convergence of a generalized pulse-spectrum technique (GPST) for inverse problems of 1-D diffusion equations in space-time domain. *Math. Comp.* **51** (1988), no. 184, 477-489. (N. L. Vulchanov) **89k:65157** 65P05 (35R30)
- Chen, Zhao Ping** (with He, Lian Fa) Necessary and sufficient conditions for embedding a mapping on a circle into a semiflow. (Chinese) *Acta Math. Sinica* **30** (1987), no. 6, 729-732. (Lian Fa He) **89f:54075** 54H20
- Chen, Ze Peng** The numerical realization of some simplicial homotopy algorithms. (Chinese. English summary) *Acta Sci. Natur. Univ. Sunyatseni* **1987**, no. 2, 81-85. (T. Y. Li) **89b:65132** 65H99 (58C30, 90C30)
- Chen, Zeng Rong** Inversion of general tridiagonal matrices. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **8** (1987), no. 3, 158-164. (Zuhe Shen) **89b:65068** 65F05 (65W05)
- Problem-decomposition and structural recursion. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **8** (1987), no. 4, 214-221. (Summary) **89c:65145** 65Q05
- Chen, Zhao Guo** The asymptotic properties of the multichannel autoregressive spectral estimates. *Acta Math. Appl. Sinica (English Ser.)* **4** (1988), no. 1, 1-12. (Jif Andél) **89j:62119** 62M10
- Consistent estimates for hidden frequencies in a linear process. *Adv. in Appl. Probab.* **20** (1988), no. 2, 295-314. (E. J. Hannan) **89d:62100** 62M15 (60F15)
- Chen, Zhao Jiang** A note on a fixed point theorem for product spaces. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **4** (1987), no. 2, 174-180. (Xie Ping Ding) **89j:54050** 54H25
- Remarks on  $\mathbb{R}_\infty$ -compactness. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* **23** (1987), no. 2, 384-386. (Shu-Tang Wang) **89i:54039** 54E35 (54D30)
- The  $m$ -accumulation points in topological molecular lattices. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **5** (1988), no. 1, 42-49. (Run Sheng Yang) **89m:54006** 54A40 (03E72, 06B30)
- Errata: "S-filters and fuzzy compactness in fuzzy topological spaces" [Nanjing Daxue Xuebao Shuxue Bannian Kan **2** (1985), no. 1, 50-52; MR **87d:54010**]. *Nanjing Daxue Xuebao Shuxue Bannian Kan* **5** (1988), no. 2, 248. (Editors) **89m:54007** 54A40 (03E72)
- Chen, Zhao Lin** (with Hong, Hui Min; Zhang, Ji Feng) Controllability of generalised dynamical systems with constrained control. *J. Austral. Math. Soc. Ser. B* **30** (1988), no. 1, 69-78. (Tsu-Tian Lee) **89i:93008** 93B05 (93B17, 93C30)
- Chen, Zheng Hong** The error code rate of relatively phase shifted relative demodulation under Gaussian white noise. (Chinese) *Heilongjiang Daxue Ziran Kexue Xuebao* **1988**, no. 1, 69-71, 8. (Not in MR) 94A14
- Chen, Zhi Bai** (with Zhang, Fu Ji) Connectivity of (adjacency) tree graphs. (Chinese summary) *J. Xinjiang Univ. Nat. Sci.* **3** (1986), no. 4, 1-5. (Seymour Schuster) **89j:05031** 05C05 (05C40)



- (with Zhang, Fu Ji) Bounds of the longest directed cycle length for minimal strong digraphs. *Discrete Math.* **68** (1988), no. 1, 9–13. (M. C. Heydemann) **89d:05117** 05C38 (05C20, 05C35)
- (with Zhang, Fu Ji) The bound of the maximum number of end vertices of spanning trees. *Kexue Tongbao (English Ed.)* **33** (1988), no. 14, 1149–1151. (R. E. Pippert) **89j:05032** 05C05 (05C70)
- Chen, Zhi Hua** Some theorems on totally geodesic mappings. *Sci. Sinica Ser. A* **30** (1987), no. 3, 225–232. (Renato Tribuzy) **89a:53067** 53C42 (58E20)
- Chen, Zhi Qiang** Continuous selections of set-valued mappings and fixed point theorems. (Chinese) *Acta Math. Sinica* **31** (1988), no. 4, 456–463. (Guang Ya Chen) **89k:54046** 54C65 (28D20, 49A50, 54H25)
- An equivalent condition of continuous metric selection. *J. Math. Anal. Appl.* **136** (1988), no. 1, 298–303. (Kazimierz Nikodem) **89k:41038** 41A65 (54C60, 54C65)
- Chen, Zhi Xiang** A note on the relativized  $P = NP$  problem. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 3, 175–176. (Not in MR) **68Q15** (03D15)
- Chen, Zhi Xin** (with Li, Ren Hou) An algorithm for hierarchical control of large scale dynamic systems and its implementation. (Chinese. English summary) *Inform. and Control (Shenyang)* **17** (1988), no. 5, 21–25. (Not in MR) **93A13** (49D27)
- Chen, Zhi Yin** (with Zhao, Shen Qi; Yan, Zhong; Sun, Jian Hua; Luo, Ding Jun) The qualitative-numerical method in the study of limit cycle problems of planar systems. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **4** (1987), no. 1, 99–105, 86. (Author's review (D.J.L.)) **89d:34058** 34C05 (58F14, 58F21)
- Chen, Zhi Zeng** A generalization of Bodendiek's conjecture concerning graceful graphs. (Chinese) *Neimenggu Shida Xuebao Ziran Kexue Ban* **1987**, no. 1, 1–15. (N. Z. Li) **89f:05151** 05C99
- Chen, Zhi Zhong** The problem of Matlis concerning the Krull-Schmidt theorem. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 7, 491–493. (Not in MR) **16A65**
- Chen, Zhibo** see **Chen, Zhi Bai**
- Chen, Zhong Ma** On orders of finite simple groups. (Chinese) *Acta Math. Sinica* **30** (1987), no. 5, 605–613. (Kee Wai Lau) **89b:11024** 11D41 (20D05, 20D60)
- Chen, Zhong Shi** A table method for transportation problems without initial solution. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **9** (1988), no. 1, 32–36. (Summary) **89f:90087** 90C08
- Chen, Zhong Ying** (with Chen, Ming Jun) Generalized solutions for a class of evolution equations containing second derivatives with respect to time. (Chinese. English summary) *Acta Sci. Natur. Univ. Sunyatseni* **1988**, no. 2, 47–54. (H. R. Shen) **89i:34086** 34G10
- Chen, Zong Yun** (with Huang, Nian Ning; Xiao, Yi) Method for finding soliton solutions of the nonlinear Schrödinger equation. *Phys. Rev. A* **38** (1988), no. 8, 4355–4358. (Summary) **89k:35199** 35Q20 (81C05)
- Chen, Zu Chi** (with Shen, Yao Tian) Nontrivial solutions of the Dirichlet problem for a class of nonlinear elliptic equations. *Acta Math. Sci. (English Ed.)* **7** (1987), no. 1, 63–74. (Filomena Pacella) **89c:35058** 35J65 (58E05)
- Inequalities for eigenvalues of a class of polyharmonic operators. *Appl. Anal.* **27** (1988), no. 4, 289–314. (Ognjan Kounchev) **89g:31009** 31B30 (35P15)
- Chenais, D.** (with Rousselet, Bernard; Benedict, R.) Design sensitivity for arch structures with respect to midsurface shape under static loading. *J. Optim. Theory Appl.* **58** (1988), no. 2, 225–239. (Petr Procházka) **89f:73056** 73K40 (49A51)
- Chenciner, Alain** Bifurcations de points fixes elliptiques. III. Orbits périodiques de "petites" périodes et élimination résonnante des couples de courbes invariantes. [Bifurcations of elliptic fixed points. III. Periodic orbits with "small" periods and resonant elimination of pairs of invariant curves] *Inst. Hautes Études Sci. Publ. Math.* **66** (1988), 5–91. (P. Brunovsky) **89g:58146** 58F14 (34C35)
- Cheney, Margaret** (with Kristenson, Gerhard) Three-dimensional inverse scattering: layer-stripping formulae and ill-posedness results. *Inverse Problems* **4** (1988), no. 3, 625–642. (Fouad A. Mohamed) **89i:35128** 35R30 (35J05, 73D50)
- (with Rose, James H.) Generalized eigenfunction expansions for scattering in inhomogeneous three-dimensional media. *J. Math. Phys.* **29** (1988), no. 6, 1347–1355. (R. G. Newton) **89h:35245** 35P10 (34B25, 81F05)
- (with Rose, James H.) Generalization of the Fourier transform: implications for inverse scattering theory. *Phys. Rev. Lett.* **60** (1988), no. 13, 1221–1224. (Summary) **89d:35036** 35J05 (76Q05, 81F99)
- (with Rose, James H.; DeFacio, B.) A fundamental integral relation of scattering theory. *SIAM J. Math. Anal.* **19** (1988), no. 5, 1090–1102. (Yoshimi Saito) **89k:35058** 35J05 (35P25)
- Cheng, Bao Long** The coefficients of inverse functions of the class  $\Sigma_k^*$  with quasiconformal extensions. (Chinese) *J. Math. Res. Exposition* **6** (1986), no. 3, 27–29. (Fuyao Ren) **89a:30011** 30C50 (30C60, 30C75)
- Chaotic behavior of the measure-preserving mappings with odd dimension. *Appl. Math. Mech. (English Ed.)* **8** (1987), no. 9, 883–888; translated from *Appl. Math. Mech.* **8** (1987), no. 9, 833–838 (Chinese). (From the introduction) **89h:58112** 58F13
- Cheng, Benny N.** Area-minimizing cone-type surfaces and colat calibrations. *Indiana Univ. Math. J.* **37** (1988), no. 3, 505–535. (Michael Grüter) **89m:49074** 49F10 (53A10)
- Cheng, C. M.** (with Fung, P. C. W.) The evolution operator technique in solving the Schrödinger equation, and its application to disentangling exponential operators and solving the problem of a mass-varying harmonic oscillator. *J. Phys. A* **21** (1988), no. 22, 4115–4131. (Summary) **89k:81022** 81C05 (22E70)
- Cheng, Ching-Shui** (with Coster, Daniel C.) Minimum cost trend-free run orders of fractional factorial designs. *Ann. Statist.* **16** (1988), no. 3, 1188–1205. (S. K. Tharthare) **89m:62085** 62K15 (62K05)
- (with Majumdar, Dibyen; Stufken, John; Türe, Tahsin Erkan) Optimal step-type designs for comparing test treatments with a control. *J. Amer. Statist. Assoc.* **83** (1988), no. 402, 477–482. (K. Afsharnejad) **89m:62075** 62K05 (62K10)
- Cheng, Dai Zhao** Noninteracting decomposition of linear systems. *Linear algebra in signals, systems, and control (Boston, MA, 1986)*, 512–521, *SIAM*, Philadelphia, PA, 1988. (see **89f:00025**) 49D27 (93B10)
- Cheng, Daoping** see **Chen, Dao Qing**
- Cheng, Fan Jen** (with Ling, Yen Lei; Wang, Bor Chyun) Partial fraction expansions for transfer matrices and matrix fraction descriptions of multivariable systems. *Internat. J. Control* **48** (1988), no. 4, 1409–1421. (Not in MR) **93B25** (15A24)
- Cheng, Jian Gang** The Hopf classification theorem for set-contractive mappings. (Chinese. English summary) *Lanzhou Daxue Xuebao* **23** (1987), no. 2, 1–5. (Summary) **89m:47065** 47H99
- Cheng, Jih Hsin** On the curvature of CR-structures and its covariant derivatives. *Math. Z.* **196** (1987), no. 2, 203–209. (Gregory Fredricks) **89b:32023** 32F25 (53B35)
- Graded Lie algebras of the second kind. *Trans. Amer. Math. Soc.* **302** (1987), no. 2, 467–488. (O. Kowalski) **89a:17029** 17B70 (32F25, 53C35)
- Chain-preserving diffeomorphisms and CR equivalence. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 75–80. (H. Jacobowitz) **89h:32036** 32F25
- Cheng, Jin<sup>2</sup>** (with Zeng, Yue Sheng) Riemann-Hilbert boundary value problems for a class of systems of elliptic first-order partial differential equations in the plane. (Chinese. English summary) *Huailua Shizhuan Xuebao* **7** (1988), no. 2, 6–13. (Summary) **89m:35067** 35J55
- Cheng, K. F.** see **Cheng, Kuang Fu**
- Cheng, Kai Nah** (with Bier, Thomas; Hartley, Brian) A remark on association schemes on finite groups. *Arch. Math. (Basel)* **51** (1988), no. 6, 481–484. (Roderick Gow) **89j:20010** 20C15 (05B30)
- see also **Gow theory**, **89j:20001**
- Cheng, Kan** (with Hu, Yi Min) Limiting behavior of a PH distribution and its application in a reliability model. *Asia-Pacific J. Oper. Res.* **5** (1988), no. 1, 90–97. (F. Beichelt) **89h:60148** 60K10 (60J20, 90B25)
- (with Hu, Yi Min) Some inequalities under certain stochastic orders. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* **4** (1988), no. 1, 64–70. (Summary) **89d:60031** 60E15 (62E10, 90B25)
- Cheng, Kuang Fu** Nonparametric inference on the difference of location parameters of correlated variables from fragmentary samples. *Ann. Inst. Statist. Math.* **39** (1987), no. 2, 331–347. (Vishnu Dayal Jha) **89e:62045** 62G05
- (with Cheng, Philip E.) Robust nonparametric estimation of a regression function. *Sankhya Ser. B* **49** (1987), no. 1, 9–22. (Richard L. Dykstra) **89b:62131** 62J02 (62F35, 62G99)
- (with Chen, Chong Hong) Estimation of the Weibull parameters with grouped data. *Comm. Statist. Theory Methods* **17** (1988), no. 2, 325–341. (I. D. Dhariyal) **89c:62055** 62M10
- Cheng, Kuo Shun** Positive solutions of semilinear elliptic equations. *Chinese J. Math.* **15** (1987), no. 2, 99–126. (C. A. Swanson) **89a:35076** 35J60 (35B05)
- (with Liou, Lii Perng) Global stability of a predator-prey system. *J. Math. Biol.* **26** (1988), no. 1, 65–71. (John H. Swart) **89d:92072** 92A15
- (with Liou, Lii Perng) On the uniqueness of a limit cycle for a predator-prey system. *SIAM J. Math. Anal.* **19** (1988), no. 4, 867–878. (L. E. Bobisud) **89d:92073** 92A15 (34C05, 34D05)
- Cheng, Li Chun** Solutions of strong fuzzy number function equations. (Chinese. English summary) *Fuzzy Math.* **6** (1986), no. 4, 1–6. (Summary) **89k:03063** 03E72
- Cheng, Li Xin** (with Chen, Lian Chang) Comment: "L<sup>2</sup>-orthogonality in Banach spaces" [J. Math. Res. Exposition **4** (1984), no. 4, 31–35; MR 87d:46022] by Z. Liu. (Chinese) *J. Math. Res. Exposition* **7** (1987), no. 1, 175–176. (Editors) **89a:46036** 46B20
- Cheng, Li Zhi** A fast discrete Hartley transform algorithm. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **9** (1988), no. 3, 162–168. (Summary) **89m:65119** 65T05
- Cheng, Louis Y.** (with Murray, James D.; Odell, Garret M.; Oster, George F.) The cortical tractor: a new model for epithelial morphogenesis. *Mathematical topics in population biology, morphogenesis and neurosciences (Kyoto, 1985)*, 209–216, *Lecture Notes in Biomath.*, **71**, Springer, Berlin-New York, 1987. (From the introduction) **89a:92018** 92A09
- Cheng, Pei Ji** (with Zhang, Ji Zu) The calculation of the fixed points of the nonlinear equation  $\ddot{x} + \delta\dot{x} - x + x^3 = f \cos \omega t$ . (Chinese. English summary) *J. Guizhou Inst. Tech.* **16** (1987), no. 4, 32–39. (Jiaqi Mo) **89h:58086** 58F08 (34A34, 58F21, 65L99)
- Cheng, Peng** An  $(n-l)$ th order compensator using eigenstructure assignment. (Chinese. English summary) *Acta Automat. Sinica* **14** (1988), no. 3, 234–236. (Summary) **89c:93118** 93B60
- Cheng, Philip E.** Hazard rate estimation under the simple proportional hazards model. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 2, 153–162. (G. K. Bhattacharyya) **89h:62059** 62G05 (62N05)
- (with Cheng, Kuang Fu) Robust nonparametric estimation of a regression function. *Sankhya Ser. B* **49** (1987), no. 1, 9–22. (Richard L. Dykstra) **89b:62131** 62J02 (62F35, 62G99)
- Cheng, Ping** (with Zhu, Li Xing) The convergence rates of sums of weighted random variables with applications to regression models. *Kexue Tongbao (English Ed.)* **33** (1988), no. 6, 445–447. (Toshio Mori) **89m:60074** 60F15 (62J10)
- Cheng, Qingyi** see **Chen, Qing Yi**
- Cheng, Shi Hong** Records of exchangeable sequences. (Chinese. English summary) *Acta Math. Appl. Sinica* **10** (1987), no. 4, 464–471. (Summary) **89a:60100** 60G09 (62G30)
- Cheng, Shiu Yuen** (with Tysk, Johan) An index characterization of the catenoid and index bounds for minimal surfaces in  $\mathbb{R}^n$ . *Pacific J. Math.* **134** (1988), no. 2, 251–260. (Friedrich Sauvigny) **89i:53068** 53A10 (49F10)
- Cheng, Smiley W.** (with Chan, Lai Kow) Linear estimation of the location and scale parameters based on selected order statistics. *Comm. Statist. Theory Methods* **17** (1988), no. 7, 2259–2278. (S. K. Katti) **89k:62039** 62F10
- Cheng, Sui Sheng** Optimal fundamental frequencies of the loaded vibrating string. *Tamkang J. Math.* **18** (1987), no. 4, 23–32. (Walter Eberhard) **89j:34030** 34B25 (39A12, 70J10, 73D30)
- Cheng, T. C. E.** Optimal replacement planning by geometric programming. *IMA J. Math. Management* **1** (1986/87), no. 2, 91–97. (Summary) **89a:90062** 90B25
- On a single-machine optimal constant due-date assignment and sequencing problem. *Appl. Math. Lett.* **1** (1988), no. 3, 295–298. (Not in MR) **90B35**
- An alternative proof of optimality for the common due-date assignment problem. *European J. Oper. Res.* **37** (1988), no. 2, 250–253. (Gábor Hegedűs) **89k:90085a** 90B35 (90C27)
- Optimal constant due-date assignment and sequencing. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1351–1354. (Not in MR) **90B35**
- Integration of priority dispatching and due-date assignment in a job shop. *Internat. J. Systems Sci.* **19** (1988), no. 9, 1813–1825. (Summary) **89h:90124** 90B35

- Corrigendum: "An alternative proof of optimality for the common due-date assignment problem". *European J. Oper. Res.* **38** (1989), no. 2, 259. (Gábor Hegedűs) **89k:90085b** 90B35 (90C27)
- Cheng, T. P. (with Li, Ling-Fong) Resource letter: GI-1 gauge invariance. *Amer. J. Phys.* **56** (1988), no. 7, 586–600. (Summary) **89e:81088** 81E13 (81–00, 81G20)
- Cheng, Unjung (with Huth, Gaylord K.) Bounds on the bit error probability of a linear cyclic code over  $GF(2^t)$  and its extended code. *IEEE Trans. Inform. Theory* **34** (1988), no. 4, 776–785. (Arne Dür) **89i:94049** 94B70 (94B05, 94B15, 94B35)
- Cheng, Wei Min (with Song, An Lan) A method for multihuman and multi-criteria decision making. *Systems analysis and simulation* 1988, 1 (Berlin, 1988), 213–216, *Math. Res.*, 46, Akademie-Verlag, Berlin, 1988. (Summary) **89j:90243** 90C31
- Cheng, Wen Hao (with Chern, De Ching; Nester, James M.) Canonical analysis of the one-parameter teleparallel theory. *Phys. Rev. D* (3) **38** (1988), no. 8, 2656–2658. (Summary) **89i:83060** 83D05
- Cheng, Xing Xin Convergence of the EM algorithm. (Chinese. English summary) *Beijing Daxue Xuebao* **1987**, no. 3, 1–8. (Summary) **89c:62056** 62F10 (62E30)
- Cheng, Yi see Cheng, Yi<sup>1</sup>
- Cheng, Yi Bao Inverse functions in calculus. (Chinese) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1988), no. 1, 78–79. (Shu-Tang Wang) **89i:26001** 26A06
- Cheng, Yi Xin Nilpotency of BRST charge in weak background fields. *Phys. Lett. B* **218** (1989), no. 1, 39–45. (Summary) **89k:81136** 81E99 (81E30)
- Cheng, Yi<sup>1</sup> The discrete version of gauge transformations, Bäcklund transformations and the nonlinear superposition formula. (Chinese) *Acta Math. Sinica* **31** (1988), no. 1, 67–71. (Guo Cheng Zhu) **89h:35280** 35Q20 (58F07, 58G37)
- (with Li, Yi Shen; Bullough, R. K.) Integrable nonispectral flows associated with the Kadomtsev-Petviashvili equations in 2 + 1 dimensions. *J. Phys. A* **21** (1988), no. 8, L443–L449. (J. J. C. Nimmo) **89i:58048** 58F07 (17B65, 35Q20, 58G35)
- On hierarchies of equations for the Benjamin-Ono equation. *Phys. Lett. A* **127** (1988), no. 4, 205–208. (Summary) **89d:35149** 35Q20 (58F37, 58G37)
- (with Li, Yi Shen) Symmetries and constants of motion for the new KdV hierarchies. *Sci. Sinica Ser. A* **31** (1988), no. 7, 769–776. (Summary) **89h:35305** 35Q20 (12H20, 35A30, 58F07, 58G37)
- Cheng, Ying (with Hwang, F. K.) Diameters of weighted double loop networks. *J. Algorithms* **9** (1988), no. 3, 401–410. (Summary) **89k:90051** 90B10 (68M10, 94C15)
- A solution method for fuzzy multigoal programming with nested priorities. (Chinese. English summary) *J. Dalian Inst. Tech.* **27** (1988), no. 2, 119–125. (Not in MR) **90C31** (03E72)
- Cheng, Yizong (with Kashyap, R. L.) Comparison of Bayesian and Dempster's rules in evidence combination. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 2 (Laramie, WY, 1985 and Seattle, WA, 1986/1987), 427–433, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (see **89f:62002**) **62C10**
- Cheng, Zheming (with Savit, Robert) Dynamics of infinite-range ballistic aggregation. *J. Phys. A* **20** (1987), no. 18, 6391–6396. (Summary) **89h:82138** 82A99 (82–04)
- Chentsov, A. G. (with Khodakovskii, A. N.) On a problem of programmed control with a nonsmooth criterion. (Russian) *Methods for nonsmooth optimization and control problems* (Russian), 118–125, 152, *Acad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1986. (A. B. Németh) **89c:49004** 49A10 (49A52)
- Game-theoretic controllable systems. (Russian) *Differential equations and applications*, I, II (Russian) (Ruse, 1985), 457–463, *Angel Kanchev' Tech. Univ., Ruse*, 1987. (A. Azamov (translated from RZhMat 1988:5 B812)) **89f:90216** 90D25 (49A45)
- (with Ivanov, V. M.) Control of discrete systems on an infinite time interval. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 12, 1780–1789, 1918. (O. A. Malafeev) **89c:90120** 90D20 (93C55)
- Finitely additive measures and problems on the minimum. (Russian) *Kibernetika (Kiev)* **1988**, no. 3, 67–70, 133; translated in *Cybernetics* **24** (1988), no. 3, 353–357. (A. A. Fonarev) **89k:49032** 49F22 (28A33, 49A99)
- (with Sesekin, A. N.) An infinite-dimensional mathematical programming problem. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 2, 115–116, 136. (Nguyen Dong Yen) **89j:90272** 90C48 (90C05)
- (with Tarasova, S. I.) Minimization of maximal deviation from a system of convex sets. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 3, 119–121, 135. (Dinh Thé Luc) **89i:49020** 49B99 (49A55, 93C05, 93C15)
- Chentsov, N. N. (with Zabrodin, A. V.) Approximate solutions in the Lagrange ballistic problem and its generalizations. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 58, 24 pp. (Summary) **89i:76079** 76N15
- (with Afendikov, A. L.; Volevich, L. R.; Voskresenskii, G. P.; Gelfand, I. M.; Zabrodin, A. V.; Lokutsievskii, O. V.; Oleinik, O. A.; Tikhomirov, V. M.) Konstantin Ivanovich Babenko. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 2(260), 115–123; translated in *Russian Math. Surveys* **43** (1988), no. 2, 139–151. (Editors) **89k:01027** 01A70
- see also Devroye, Luc; **89c:62071**
- Chenyaev, D. M. (with Gal'perin, I. I.) Dynamical systems of automation. (Russian) *Systems for the control of turbines in nuclear power plants* (Russian), 61–70, 112, *Energoatomizdat*, Moscow, 1988. (see **89i:00023**) **93A10** (00A69)
- Chepoi, V. D. (with Soltan, V. P.) Characterization of hypercubes and Hamming graphs by means of  $d$ -convexity. (Russian) *Metody Diskret. Analiz.* No. 45 (1987), 77–93, 97. (E. J. F. Primrose) **89f:05158** 05C99
- Isometric subgraphs of Hamming graphs and  $d$ -convexity. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 1, 6–9, 15, 133; translated in *Cybernetics* **24** (1988), no. 1, 6–11. (A. Ádám) **89i:05100** 05C10
- Centers of triangulated graphs. (Russian) *Mat. Zametki* **43** (1988), no. 1, 143–151, 155; translated in *Math. Notes* **43** (1988), no. 1–2, 82–86. (Martin Skoviera) **89d:05149** 05C75
- Chepurnoi, N. D. Necessary and sufficient conditions for the convergence of algorithms to the set of fixed points of upper-semicontinuous multivalued mappings. (Russian) *Kibernetika (Kiev)* **1987**, no. 6, 116–117, 136. (From the text) **89d:90184** 90C30 (65K99)
- Monotone methods with averaging of subgradients and their stochastic finite-difference analogues. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 1, 62–66, 134; translated in *Cybernetics* **24** (1988), no. 1, 76–82. (Alexei Gaivoronski) **89g:90186** 90C30
- Combined subgradient monotone methods for minimizing nonsmooth functions. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 3, 59–63, 132; translated in *Cybernetics* **24** (1988), no. 3, 343–348. (Asen L. Dontchev) **89i:90069** 90C30 (49D07, 90C25)
- Chepzyzhov, V. V. Unbounded invariant sets and attractors of some quasilinear equations and of some systems of parabolic type. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 5(257), 219–220. (Piotr Biler) **89d:35091** 35K57 (35B40, 58F12)
- Unbounded attractors of some parabolic systems of differential equations, and estimates for their dimension. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 1, 46–49; translated in *Soviet Math. Dokl.* **38** (1989), no. 1, 39–42. (Piotr Biler) **89j:35026** 35B40 (35K55, 58F12)
- khe kan Cher see Khe Kan Cher
- Cherans, K. Kh. see Čeráns, K.
- Cherbit, G. see Fractals; **89f:00046**
- Cherchas, Dale B. (with Marchand, Pauline A.; Lawrence, Peter D.) A discrete-time optimal adaptive control law for a robot arm. *Optimal Control Appl. Methods* **10** (1989), no. 1, 1–20. (Not in MR) **93C75** (70B15, 70Q05, 93C40, 93C55)
- Cherdak, V. B. Some algebras generated by a multidimensional analogue of the Bitsadze operator. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 5, 196–197. (N. K. Karapetyants) **89e:47044** 47B38 (47G05)
- Cherednichenko, V. G. (with Verevkin, G. V.) On the solvability of the generalized Riemann boundary value problem for analytic functions. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 12, 2179–2181, 2208. (P. Yu. Alekna) **89c:30070** 30E25
- Cherednichenko, V. S. (with Zhikharskii, A. V.; Eremenko, G. P.) Distribution functions for charged particles in a nonequilibrium plasma. I, II. (Russian) *Izv. Sibirsk. Otdel. Akad. Nauk SSSR Ser. Tekhn. Nauk* **1988**, no. 4, 48–57, 58–67, 113. (M. Dragana) **89m:82047** 82A45
- Cherednik, I. V.  $R$ -matrix quantization of the group of formal currents. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jarmala*, 1985), 218–232, "Nauka", Moscow, 1986. (see **89d:81002**) **58F06** (22E65)
- On  $R$ -matrix quantization of formal loop groups. *Group theoretical methods in physics*, Vol. II (*Jurmala*, 1985), 161–180, *VNU Sci. Press, Utrecht*, 1986. (Andrew Pressley) **89e:22034** 22E65 (16A24, 17B65, 82A15)
- (with Vysloukh, V. A.; Ivanov, Aleksandr Vasil'evich) Statistics of the fluctuations of one-soliton solutions of the nonlinear Schrödinger equation. (Russian. English summary) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* **30** (1987), no. 8, 980–990. (Woodford W. Zachary) **89g:35105** 35Q20 (81K05)
- (with Vysloukh, V. A.) Modeling of the restoration of the envelope of supershort optical impulses from the characteristics of their nonlinear interaction with single-soliton test impulses. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 1, 110–114; translated in *Soviet Phys. Dokl.* **33** (1988), no. 3, 182–184. (From the text) **89h:78015** 78A55 (58G35, 58G40, 81K05)
- Cheremenskii, Aleksandr G. Control systems with negligibly small delay. (Russian. English summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **76** (1982), no. 2, 247–257 (1987). (Summary) **89c:34086** 34K35 (93A10)
- Technical stabilization of linear control systems. (Russian. English summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **77** (1983), no. 2, 61–67 (1987). (Summary) **89j:93183** 93D99 (34K20, 93B05, 93C05)
- Stabilization of linear stationary distributed systems with fixed space variables. (Russian. English and Bulgarian summaries) *Godishnik Vyssh. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 1, 9–18 (1987). (Not in MR) **93D15** (93B25, 93C05)
- Cheremnykh, Yu. N. (with Bank, Bernd; Belousov, E. G.; Mandel, Reinhard; Shironin, V. M.) ★ МАТЕМАТИЧЕСКАЯ ОПТИМИЗАЦИЯ: ВОПРОСЫ РАЗРЕШИМОСТИ И УСТОЙЧИВОСТИ. (Russian) [Mathematical optimization: questions of solvability and stability] *Moskov. Gos. Univ., Moscow*, 1986. 216 pp. (Publisher's description) **89c:90069** 90Cxx (90C31)
- Cheremushkin, A. V. Canonical decomposition of  $n$ -ary quasigroups. (Russian) *Mat. Issled.* No. 102 *Issled. Oper. i Kvazigrupp* (1988), 97–105, 120. (Smile Markovski) **89g:20113** 20N15
- Cherenack, P. The topology of ind-affine sets. *Nonlinear analysis*, 99–125, *World Sci. Publishing, Singapore*, 1987. (Summary) **89f:14003** 14A99
- Cherenkov, A. P. Optimal partitioning of data into blocks by means of semi-Markov processes. (Russian) *Asymptotic methods in the investigation of stochastic models* (Russian), 126–129, 147, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (see **89b:60003**) **68P99** (60K20)
- Cherenkov, V. S. A representation of the solution of Helmholtz's equation and its application to diffraction problems. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 7, 15–22 (1988); translated from *Radiotekhn. i Elektron.* **32** (1987), no. 3, 481–489 (Russian). (Summary) **89i:78010** 78A45
- Chererp, A. A. The set of elements of finite order in a biprimatively finite group. (Russian) *Algebra i Logika* **26** (1987), no. 4, 518–521, 527. (H. Heineken) **89m:20029** 20E25
- Cherepakhin, A. V. (with Meerov, M. V.; Akhmetzhanov, A. V.) Modelling of nonstationary flows in closed-loop systems of oil and gas pipelines. *Control Theory Adv. Tech.* **4** (1988), no. 1, 137–152. (Not in MR) **00A71** (90B10, 93A10)
- Cherepanov, A. G. (with Cherepanov, G. P.) Fracture mechanics of coverings and films. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* **1988**, no. 4, 130–140, 167; translated in *J. Appl. Mech. Tech. Phys.* **29** (1988), no. 4, 574–583. (Summary) **89h:73036** 73M05
- Cherepanov, A. I. (with Kafarov, V. V.; Shumikhin, A. G.; Shcherbakova, S. V.) Self-organization of spatial structures in radical polymerization processes. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 1, 144–149. (From the text) **89a:92085** 92A40
- Cherepanov, G. P. (with Cherepanov, A. G.) Fracture mechanics of coverings and films. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* **1988**, no. 4, 130–140, 167; translated in *J. Appl. Mech. Tech. Phys.* **29** (1988), no. 4, 574–583. (Summary) **89h:73036** 73M05
- Cherepennikov, V. B. The method of functional parameters in the theory of integration of ordinary differential equations. (Russian) *Asymptotic methods* (Russian), 63–94, 384, "Nauka" *Sibirsk. Otdel., Novosibirsk*, 1987. (J. F. Heyda) **89d:34089** 34E05 (34A25)
- Analytic solutions of a class of functional-differential equations. (Russian) *Mathematical physics* (Russian), 74–77, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (see **89c:00019**) **34K05**
- Analytic solutions of some systems of functional-differential equations. (Russian) *Partial differential equations* (Russian), 17–21, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Tadeusz Dłotko) **89g:34098** 34K05 (34A10)



- Cheres, E.** Hypersurface attractivity for systems with delays driven by min-max controller. Comment to: "Model reference control of uncertain systems with time delays in plant state and control" [Internat. J. Systems Sci. **18** (1987), no. 9, 1609-1626] by A. M. H. Basher and R. Mukundan. *Internat. J. Systems Sci.* **19** (1988), no. 10, 2145. (Not in MR) 34K35 (93D05)
- Chéret, Roger** Représentation quasi polytropique de la surface d'état des produits de détonation d'un explosif condensé. (English summary) [Quasipolytropic representation of the equation of state of the detonation products of a condensed explosive] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **305** (1987), no. 17, 1337-1340. (Summary) **89m:80010** 80A25 (76L05)
- Cherevko, I. M.** Stability of the solutions of singularly perturbed systems with delay. (Russian) *Boundary value problems* (Russian), 38-41, 193, Perm. Politekh. Inst., Perm, 1983. (see **89c:00008**) 34K20 (34E15)
- Cherif, Habib** (with de Mathan, Bernard) Mesure d'irrationalité de la valeur en 1 de la fonction zeta de Carlitz, relative à  $F_2(T)$ . (English summary) [An irrationality measure of the Carlitz zeta function for  $F_2(T)$  at 1] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 18, 761-763. (David Goss) **89b:11093** 11R58 (11J82, 11M41)
- Cheriyas, J.** (with Maheshwari, Sachindranath) Finding nonseparating induced cycles and independent spanning trees in 3-connected graphs. *J. Algorithms* **9** (1988), no. 4, 507-537. (Michael B. Richey) **89b:05055** 05C38 (05C05, 68Q25, 90B10)
- Cherkaev, L. A.** (with Gaiko, V. A.) Bifurcations of limit cycles of a quadratic system with two singular points and two parameters that rotate the field. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 9, 1544-1553, 1652. (W. S. Loud) **89g:58147** 58F14 (34C05)
- Cherkashin, M. Yu.** (with Gachinskiy, E. E.) A system of continuous search optimization with identification. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 2, 47-56; translated in *Automat. Remote Control* **49** (1988), no. 2, part 1, 157-164. (Yu. A. Nikolaev) **89c:93065** 93B30 (93B35, 93C40)
- Cherkasov, I. D.** (with Yastrebo, B. S.; Emel'yanov, V. F.) Series of operators and modeling of random variables. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Sarator, 1984), 146-149, Sarator. Gos. Univ., Sarator, 1986. (see **89j:00036**) 47A60 (60E99)
- Transformation of one-dimensional diffusion fields on the plane. (Russian) *Serdica* **14** (1988), no. 1, 106-118. (N. M. Zinchenko) **89j:60067** 60G60 (60H15, 60J60)
- Cherkasov, R. S.** The methodological legacy of Aleksei Ivanovich Markushevich (on the 80th anniversary of his birth). (Russian) *Mat. v Shkole* **1988**, no. 2, 71-74. (Editors) **89d:10611** 01A70
- Cherkasova, L. A.** (with Kotov, V. E.) On properties of nets for modelling of systems and generalized processes. *Ann. Univ. Sci. Budapest. Sect. Comput.* **6** (1985), 91-101 (1987). (Summary) **89c:68028** 68Q10 (93A10, 93C55)
- Cherkasskiy, B. V.** A new algorithm for the generation of spanning trees. (Russian. English summary) *Kibernetika (Kiev)* **1987**, no. 1, 85-89, 135. (H. N. Djidjev) **89a:05052** 05C05 (68R10, 94C15)
- An algorithm for the decomposition of a tree into chains of bounded length. (Russian) *Ekonom. i Mat. Metody* **24** (1988), no. 3, 528-533. (Oleg Tarasow) **89m:90059** 90B10 (05C05)
- (with Nesterov, Yu. E.) Lexicographic rules for the differentiation of nonsmooth functions. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 1, 32-34; translated in *Soviet Math. Dokl.* **36** (1988), no. 2, 233-235. (Marcin Studniarski) **89b:90190** 90C30 (26B05, 49A52, 58C20, 90C48)
- Cherkassky, Vladimir** (with Malek, Miroslaw) Partitioning and permuting properties of CC-banyan networks. *IEEE Trans. Comput.* **38** (1989), no. 2, 274-278. (Summary) **89b:68004** 68M10 (68R10)
- Cherkasov, G. N.** Use of spare time in single-server systems with two types of failure. *Soviet J. Comput. Systems Sci.* **25** (1987), no. 3, 51-56; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1986**, no. 6, 73-78, 220 (Russian). (F. Beichtel) **89a:60206** 60K20 (90B25)
- Cherlin, Gregory** Homogeneous tournaments revisited. *Geom. Dedicata* **26** (1988), no. 2, 231-239. (O. V. Belegradek) **89b:05039** 05C20 (03C10)
- Chernykh, S. V.** Normal forms of holomorphic mappings, differential equations and infinite matrices. (Russian) *Analysis and synthesis of control systems* (Russian), 150-157, 183, *Voprosy Mekh. Protsess. Upravl.*, 10, Leningrad. Univ., Leningrad, 1987. (G. R. Belitskii) **89b:32018** 32B30 (34C20, 58C27)
- Chern, De Ching** (with Cheng, Wen Hao; Nester, James M.) Canonical analysis of the one-parameter teleparallel theory. *Phys. Rev. D* (3) **38** (1988), no. 8, 2656-2658. (Summary) **89j:83060** 83D05
- (with Chen, Hui Hua; Hsu, Rue Ron; Nester, James M.; Yeung, Wai Bong) Asymptotically Newtonian conditions for Poincaré gauge theory. *Progr. Theoret. Phys.* **79** (1988), no. 1, 77-85. (P. K. Smerz) **89c:83053** 83D05
- Chern, S. S.** (with Cecil, Thomas E.) Tautness and Lie sphere geometry. *Math. Ann.* **278** (1987), no. 1-4, 381-399. (Wolfgang Kühnel) **89c:53084** 53C42
- see also Blaschke, Wilhelm, **89a:01097**; **89a:01098**; **89a:01099**; **89a:01100** and **89a:01101**
- Chernavskii, A. V.** (with Abdusamatov, R. M.; Berkinblit, M. B.; Fel'dman, A. G.) Motility and intellect. (Russian) *Intellectual processes and their modeling* (Russian), 5-38, 394, "Nauka", Moscow, 1987. (see **89b:92032**) 92A09 (92A25)
- see also *Intellectual processes and their modeling*, **89b:92032**
- Chernavskii, D. S.** (with Vasil'ev, V. A.; Romanovskii, Yu. M.; Yakhno, V. G.) ★ Autowave processes in kinetic systems. Spatial and temporal self-organization in physics, chemistry, biology, and medicine. Mathematics and its Applications (Soviet Series), 11. D. Reidel Publishing Co., Dordrecht-Boston, MA, 1987. 262 pp. ISBN 90-277-2379-6 (Frederick A. Hoves) **89j:92001** 92-02 (00A69, 35Q99, 92A08)
- Chernenko, I. V.** (with Chermourenko, V. M.; Yan'kov, V. V.) Two-dimensional vortices in plasma and fluid. *Plasma theory and nonlinear and turbulent processes in physics*, Vol. 1, 2 (Kiev, 1987), 175-242, World Sci. Publishing, Singapore, 1988. (John Adam) **89g:76022** 76C05 (76E25, 76X05, 82A45)
- (with Chermourenko, V. M.; Chernyshenko, S. V.) The dynamics of two-dimensional vortex motion. *Phys. Scripta* **38** (1988), no. 5, 721-723. (Summary) **89b:86004** 86A05 (76W05)
- Chernenko, V. G.** (with Buslaev, V. S.) Spectral identities for a system of many quantum particles. (Russian. English summary) *Vestnik Leningrad. Univ. Fiz. Khim.* **1987**, vyp. 2, 16-21, 134. (Summary) **89a:81024** 81C10
- On spectral identities for the Schrödinger operator in the presence of a virtual level. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1988**, vyp. 2, 125-127, 135; translated in *Vestnik Leningrad Univ. Math.* **21** (1988), no. 2, 96-98. (Summary) **89b:81022** 81C05 (35J10)
- Chernetskaya, L. N.** Stability on a finite interval. (Russian) *Prikl. Mekh.* **23** (1987), no. 7, 92-97, 135. (O. S. Chernikova) **89b:34115** 34D10
- Chernetskii, V. I.** Application of the Banach-Steinhaus theorem for proving the convergence of an interpolation method for the investigation of equations with a random parameter. (Russian) *Problems in functional analysis* (Russian), 85-95, 119, Petrozavodsk. Gos. Univ., Petrozavodsk, 1985. (From the introduction) **89g:41001** 41A05 (41A65, 46N05, 93E25)
- Cherneva-Popova, Z.** (with Genov, Yu.) Optimal control of an active vibration-resistant system. (Russian) *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 465-468, "Angel Kanchev" Tech. Univ., Ruse, 1987. (É. G. Albrecht) **89b:49025** 49D07 (93B40, 93C75)
- Cherniarsky, John C.** (with Smith, Carl H.) A recursion theoretic approach to program testing. *IEEE Trans. Software Engrg.* **13** (1987), no. 7, 777-784. (Michael Bauer) **89a:68018** 68N05 (03B70, 03D80, 68Q60)
- Chernick, M. R.** (with Daley, D. J.; Littlejohn, R. P.) A time-reversibility relationship between two Markov chains with exponential stationary distributions. *J. Appl. Probab.* **25** (1988), no. 2, 418-422. (Ed McKenzie) **89j:60090** 60J10
- Chernigovskii, S. V.** (with Ardelyan, N. V.) Stability of difference schemes of gasdynamics with viscosity and heat conductivity. *Moscow Univ. Comput. Math. Cybernet.* **1988**, no. 1, 7-13; translated from *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1988**, no. 1, 8-14, 76 (Russian). (Max D. Gunzburger) **89j:65061** 65M10 (76-08, 76N15)
- Chernikov, A. A.** Application of asymmetric schemes on triangular grids for the solution of the heat equation. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 12, 2175-2178, 2208. (Stavros A. Belbas) **89d:65091** 65N05 (65N10, 80A20)
- Chernikov, Aleksandr Antonovich** (with Zaslavskii, G. M.) Group resonance, universal mapping and the stochastic dynamics of particles. (Russian) *Nonlinear waves* (Russian), 213-227, 395-396, "Nauka", Moscow, 1987. (Summary) **89g:58143** 58F13 (82A40, 82A45)
- (with Zaslavskii, G. M.; Sagdeev, R. Z.; Usikov, O. A.) Stochastic web and structure generation. *Soviet Phys. Uspekhi* **30** (1987), no. 5, 436-438; translated from *Uspekhi Fiz. Nauk* **152** (1987), no. 1, 166-168 (Russian). (Editors) **89a:58077** 58F13
- (with Natanzon, M. Ya.; Petrovichev, B. A.; Sagdeev, R. Z.; Zaslavskii, G. M.) Strong changing of adiabatic invariants, KAM-tori and web-tori. *Phys. Lett. A* **129** (1988), no. 7, 377-380. (Summary) **89g:58180** 58F30 (58F13, 70K40)
- (with Beloshapkin, V. V.; Sagdeev, R. Z.; Zaslavskii, G. M.) Structures and 2D fluid flow symmetry. *Phys. Lett. A* **133** (1988), no. 7-8, 395-398. (Summary) **89i:76035** 76D05 (58F13, 76-04, 76F99)
- (with Zaslavskii, G. M.; Sagdeev, R. Z.) Stochastic nature of streamlines in steady-state flows. *Soviet Phys. JETP* **67** (1988), no. 2, 270-277; translated from *Zh. Éksper. Teoret. Fiz.* **94** (1988), no. 2, 102-115 (Russian). (Jean Pierre Brancher) **89k:76030** 76C99 (58F13, 76F99, 76W05)
- Chernikov, N. A.** ★ Вариационный метод Гильберта и тензор Паппа-Петру. (Russian) [The Hilbert variational method and the Papapetrou tensor] With an English summary. (Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R2-87-683. *Joint Inst. Nuclear Res., Dubna*, 1987. 13 pp. (Summary) **89b:83063** 83C99 (53C80)
- Difficult questions of relativity theory. *Soviet J. Particles and Nuclei* **18** (1987), no. 5, 427-440 (1988); translated from *Fiz. Élementar. Chastits i Atom. Yadra* **18** (1987), no. 5, 1000-1034, 1166 (Russian. English summary). (Carl Brans) **89d:83004** 83A05 (53B50, 83C99)
- Chernikov, N. S.** Some conditions for the solvability of factorable locally graded groups. (Russian) *The structure of groups and the properties of their subgroups* (Russian), 42-49, ii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1986. (V. N. Remeslennikov) **89f:20032** 20D40 (20F16)
- ★ Группы, разложимые в произведение перестановочных подгрупп. (Russian) [Groups that decompose into a product of permutable subgroups] Edited and with a preface by V. P. Shunkov. "Naukova Dumka", Kiev, 1987. 206 p. (B. Hartley) **89b:20075** 20F16 (20E15)
- Factorizations of groups of automorphisms of a finitely generated module over a commutative ring. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 5, 670-671, 681. (O. H. Kegel) **89a:20034** 20E34
- (with Petravchuk, A. P.) Characterization of periodic locally solvable groups with solvable and finite-exponential Sylow  $\pi$ -subgroups. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 6, 761-767, 815. (D. I. Zaitsev) **89b:20055** 20F50 (20F14)
- Factorization of linear groups and of groups that have a normal system with linear factors. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 3, 362-369, 407; translated in *Ukrainian Math. J.* **40** (1988), no. 3, 311-317. (A. E. Zaleskii) **89i:20078** 20H20 (20F50)
- Infinite locally finite simple groups with a nontrivial kernel of a centralizer of an elementary abelian 2-subgroup. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 5, 668-670, 680; translated in *Ukrainian Math. J.* **40** (1988), no. 5, 570-572. (M. J. Tomkinson) **89k:20053** 20F50 (20E32)
- Chernikov, S. N.** See Ershov, Yu. L. et al., **89i:01074** and *Dedication to S. N. Chernikov*, **89i:01130**
- Chernin, A. D.** Fridman's Universe. (Russian) *Priroda* **1988**, no. 5, 87-97. (Not in MR) 01A70
- Chernoff, Herman** (with Barnard, G. A.; Louis, Thomas A.; Peto, Richard; Whitehead, John Raymond) Discussion of: "On the allocation of treatments in sequential medical trials" [Internat. Statist. Rev. **53** (1985), no. 1, 1-13; MR **89i:62171**] by J. A. Bather and "The search for optimality in clinical trials" [ibid. **53** (1985), no. 1, 15-24; MR **89i:62172**] by P. Armitage. With replies by Bather and Armitage. *Internat. Statist. Rev.* **53** (1985), no. 1, 25-36. (Per Kragh Andersen) **89i:62173** 62P10 (62L10, 92A07)
- Chernoff, W. W.** (with Bouwer, I. Z.) The toroidal graphs  $\{6, 3\}_\Delta$  are Hamiltonian. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), A, 179-186. (Andrew Vince) **89d:05126** 05C45 (05C10, 05C25)
- see also Foster, Ronald M., **89c:05067**

- Chernomordik, O. M.** Nonparametric criteria for testing the homogeneity of some samples. (Russian) *Probability distributions and mathematical statistics* (Russian) (Fergana, 1983), 467-484, 500, "Fan", Tashkent, 1986. (M. Hušková) **89b:62091** 62G10 (62E20)
- Chernomzar, I. Z.** (with Vaiman, M. Ya.) An estimate of dynamic stability of a power system using the Lyapunov function and an analogous model. (Russian) *Systems for the control of turbines in nuclear power plants* (Russian), 96-100, 113, *Energoatomizdat*, Moscow, 1988. (see **89i:00023**) 93C75 (93D05)
- Chernopazov, S. A.** Solution of a contact problem. (Russian) *Boundary value problems* (Russian), 96-99, 160, *Perm. Politekh. Inst.*, Perm, 1984. (see **89b:00008**) 73T05
- An approach to the solution of contact elastoplastic problems. (Russian) *Boundary value problems* (Russian), 122-130, xi, *Perm. Politekh. Inst.*, Perm, 1986. (see **89c:00005**) 73T05
- Chernousenko, V. M.** (with Chernenko, I. V.; Yan'kov, V. V.) Two-dimensional vortices in plasma and fluid. *Plasma theory and nonlinear and turbulent processes in physics*, Vol. 1, 2 (Kiev, 1987), 175-242, *World Sci. Publishing*, Singapore, 1988. (John Adam) **89g:76022** 76C05 (76E25, 76X05, 82A45)
- (with Chernenko, I. V.; Chernyshenko, S. V.) The dynamics of two-dimensional vortex motion. *Phys. Scripta* **38** (1988), no. 5, 721-723. (Summary) **89b:36004** 86A05 (76W05)
- see also **Plasma theory and nonlinear and turbulent processes in physics**, **89c:00041**
- Chernous'ko, F. L.** Approximation of the attainability sets of controllable systems. (Russian) *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 469-474, "Angel Kanchev" Tech. Univ., Ruse, 1987. (Vadim Z. Tsalyuk) **89b:49021** 49A60 (34C11, 49E15)
- ★ Оценки фазового состояния динамических систем. (Russian) (Estimation of the phase state of dynamical systems) *Метод эллипсоидов* [The method of ellipsoids] "Nauka", Moscow, 1988. 320 pp. ISBN 5-02-013899-1 (From the preface) **89b:49028** 49E15 (49-02, 58F40, 90D25, 93B40, 93E10)
- Asymptotic methods in the dynamics of systems with elastic elements. (Russian) *Asymptotic methods in mathematical physics* (Russian), 270-277, 304, "Naukova Dumka", Kiev, 1988. (Summary) **89b:70024** 70F20 (34C29, 34E15, 70B15)
- Estimation of the phase state of controllable dynamical systems. (Russian) *Problems in the qualitative theory of differential equations* (Russian) (Irkutsk, 1986), 266-270, 288, "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (see **89j:34002**) 49E15
- Construction of constrained control in oscillatory systems. (Russian) *Prikl. Mat. Mekh.* **52** (1988), no. 4, 549-558. (From the summary) **89m:70068** 70Q05 (34C15, 49E15)
- (with Yangin, A. A.) Approximation of attainable sets using intersections and unions of ellipsoids. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 1, 128-136; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 4, 145-152, 223 (Russian). (Zdzisław Wyderka) **89g:49048** 49E15
- Chernousov, V. I.** The structure of groups of rational points of algebraic groups of type  $D_r$ . (Russian. English summary) *Dokl. Akad. Nauk BSSR* **31** (1987), no. 7, 593-596, 668. (Summary) **89e:20082** 20G15 (11E57, 14L10)
- The projective simplicity of algebraic groups that are split over a quadratic extension of a number field. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 6, 1301-1305; translated in *Soviet Math. Dokl.* **36** (1988), no. 2, 388-392. (From the text) **89i:20070** 20G30 (11E57, 11R52)
- Chernov, D. E.** (with Malyshev, V. V.; Kibzun, A. I.) Two approaches to the solution of probabilistic optimization problems. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 3, 20-25 (1988); translated from *Avtomatika* **1987**, no. 3, 29-36, 94 (Russian. English summary). (I. M. Stancu-Minasian) **89i:90110** 90C15
- Chernov, I. A.** Solution of Tricomi equation and transonic expansions in gas dynamics. *Mixed type equations*, 64-83, *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) **89b:35106** 35M05 (76H05)
- (with Brezhnev, A. L.) On transonic expansions. *J. Appl. Math. Mech.* **51** (1987), no. 4, 537-539 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 4, 688-690 (Russian). (Not in MR) 76H05
- Chernov, I. V.** (with Palagin, Yu. I.) Error analysis and the choice of model parameters in statistical modeling of random fields and processes. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 8, 83-96; translated in *Avtomat. Remote Control* **49** (1988), no. 8, part 1, 1023-1033. (Lutz Peter Klotz) **89b:65009** 65C20 (60G60, 65U05)
- Chernov, N. I.** (with Sinai, Ya. G.) Ergodic properties of some systems of two-dimensional disks and three-dimensional balls. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 3(255), 153-174, 256. (Luchezar Stojanov) **89c:80097** 58F15 (28D05, 58F11, 82A05)
- (with Ioseliani, Ts. I.; Kurbatov, V. S.; Ososkov, G. A.) ★ Efficiency of the estimators of multivariate distribution parameters from the one-dimensional observed frequencies. With a Russian summary. *Сообщения Объединенного Института Ядерных Исследований. Дубна* [Communications of the Joint Institute for Nuclear Research. Dubna], E5-88-98. *Joint Inst. Nuclear Res., Dubna*, 1988. 9 pp. (Summary) **89e:62065** 62H12
- Chernov, V. M.** A class of Dirichlet series with a finite Lindelöf function. (Russian) *Investigations in number theory* (Russian), 92-95, *Saratov. Gos. Univ., Saratov*, 1982. (see **89a:11006**) 11M41
- Chernov, Yu. G.** (with Vedenov, A. A.; Ezhov, A. A.; Knizhnikova, L. A.; Levchenko, E. B.) Nonlinear systems with memory and the modeling of the functions of neural nets. (Russian) *Intellectual processes and their modeling* (Russian), 229-248, 395, "Nauka", Moscow, 1987. (Summary) **89j:92040** 92A09 (58F40)
- Chernyaev, A. P.** Fundamental solutions of differential equations of a certain class in anisotropic spaces of generalized functions. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 4, 661-672, 732-733; translated in *Differential Equations* **24** (1988), no. 4, 465-474. (Min You Qi) **89j:35045** 35G05 (35D05, 46F05)
- Fundamental solutions of differential equations of a certain class in anisotropic spaces of generalized functions. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 1(259), 215-216; translated in *Russian Math. Surveys* **43** (1988), no. 1, 235-236. (L. Cattabriga) **89b:35071** 35G05 (46E99, 46F10)
- Chernyaev, A. V.** (with Sadovnikov, A. D.) Comparison of difference schemes for the modeling of transient processes in bipolar semiconductors. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 7, 1262-1268. (G. W. Hedstrom) **89a:65191** 65P05
- Chernyak, A. A.** Degree sets of graphs and Hamiltonicity. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **31** (1987), no. 12, 1065-1068, 1149. (Summary) **89g:05073** 05C45 (05C35)
- (with Tyshkevich, R. I.; Chernyak, Zh. A.) Graphs and degree sequences. I. (Russian. English summary) *Kibernetika* (Kiev) **1987**, no. 6, 12-19, 133. (Qiao Li) **89e:05188** 05C99
- (with Tyshkevich, R. I.; Chernyak, Zh. A.) Graph and degree sequences. II. (Russian. English summary) *Kibernetika* (Kiev) **1988**, no. 2, 1-12, 45, 133; translated in *Cybernetics* **24** (1988), no. 2, 137-152. (Qiao Li) **89i:05265** 05C99
- Minimal graphs with a given degree set and girth. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 2, 21-25, 123. (Ioan Tomescu) **89m:05062** 05C35 (05C38)
- Pseudodominant-threshold graphs. I. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 4, 37-43, 124. (B. Zelinka) **89k:05047** 05C35 (05C75, 68R10, 94C15)
- Chernyak, V. S.** Space diversity detectors of fluctuating signals in the presence of spatially correlated interference. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 9, 10-20 (1988); translated from *Radiotekhn. i Elektron.* **32** (1987), no. 2, 334-346 (Russian). (Summary) **89d:94019** 94A13
- Chernyak, V. V.** Mathematical methods for optimizing the number of workers of a control apparatus. (Russian) *Issled. Operatsii i ASU* No. 31 (1988), 41-46, 113. (Summary) **89e:90099** 90B22
- Chernyak, V. Ya.** (with Mineeva, O. V.) A method for solving a system of nonlinear equations. (Russian) *Approximate methods for analysis and their applications* (Russian), 130-135, *Akad. Nauk SSSR Sibirsk. Otdel., Energet. Inst., Irkutsk*, 1985. (V. G. Korneev) **89g:65070** 65H10
- Chernyak, Zh. A.** (with Tyshkevich, R. I.; Chernyak, A. A.) Graphs and degree sequences. I. (Russian. English summary) *Kibernetika* (Kiev) **1987**, no. 6, 12-19, 133. (Qiao Li) **89e:05188** 05C99
- (with Tyshkevich, R. I.; Chernyak, A. A.) Graph and degree sequences. II. (Russian. English summary) (Russian) *Kibernetika* (Kiev) **1988**, no. 2, 1-12, 45, 133; translated in *Cybernetics* **24** (1988), no. 2, 137-152. (Qiao Li) **89i:05265** 05C99
- Chernyatin, V. A.** On the problem of the existence of a solution to a mixed problem for the one-dimensional wave equation. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 6, 9-21, 97. (Summary) **89a:35048** 35C99 (35L05)
- On the solvability of a mixed problem for an inhomogeneous hyperbolic equation. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 4, 717-720, 736. (A. Dzhruev) **89b:35180** 35L20
- Chernyavskaya, N. A.** On the properties of an embedding operator. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1988**, no. 1, 60-63. (V. M. Gol'dshstein) **89b:46043** 46E35 (47B38)
- Chernyavskaya, S. S.** On a study of the dynamics of systems of bodies that contain stretched elastic elements in a central force field. (Russian) *Space science and technology*, No. 2 (Russian), 28-31, 98, "Naukova Dumka", Kiev, 1987. (see **89i:70003**) 73K99 (70E99)
- Chernyi, G. G.** see **Mechanics and scientific-technological progress**, **89b:76001**
- Chernykh, S. I.** (with Myasnikov, A. G.)  $L_p$  spaces with mixed norm on locally compact groups. (Russian) *Funktsional. Anal. i Prilozhen.* **19** (1985), no. 3, 73-74. (J. Gil de Lamadrid) **89a:43012** 43A70
- Chernyshenko, S. V.** (with Chernyshenko, V. M.) Necessary conditions for optimality in the method of stepwise linearization in the control of nonlinear systems. (Russian) *Methods for solving nonlinear problems, and data processing* (Russian), 86-92, 111, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1986. (see **89f:00011**) 93B17 (93C10)
- (with Chernousenko, V. M.; Chernenko, I. V.) The dynamics of two-dimensional vortex motion. *Phys. Scripta* **38** (1988), no. 5, 721-723. (Summary) **89b:86004** 86A05 (76W05)
- Chernyshenko, V. M.** (with Chernyshenko, S. V.) Necessary conditions for optimality in the method of stepwise linearization in the control of nonlinear systems. (Russian) *Methods for solving nonlinear problems, and data processing* (Russian), 86-92, 111, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1986. (see **89f:00011**) 93B17 (93C10)
- see also **Methods for solving nonlinear problems, and data processing**, **89f:00011**
- Chernyshov, K. I.** Stability and asymptotic expansions of the solutions of an operator-differential equation that is not solved with respect to the derivative. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 129-143, 324, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Josef Diblík) **89i:34003** 34A08 (34D20, 34E10, 34G10, 47A50)
- Cherowitzo, William** Hyperovals in Desarguesian planes of even order. *Combinatorics '86* (Trento, 1986), 87-94, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (Giorgio Faina) **89c:51011** 51E20 (05B30)
- Closed arcs in finite projective planes. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **62** (1988), 69-77. (Giorgio Faina) **89m:51014** 51E20 (05B25, 51E15)
- Cherrier, P.** Équations de Monge-Ampère sur les variétés hermitiennes compactes. (English summary) [Monge-Ampère equations on compact Hermitian manifolds] *Bull. Sci. Math.* (2) **111** (1987), no. 4, 343-385. (John M. Lee) **89d:58131** 58G30 (32C10, 35J60, 53C55)
- (with Berger, M. S.) A new variational method for finding Einstein metrics on compact Kähler manifolds. *I. J. Funct. Anal.* **79** (1988), no. 1, 103-135. (John M. Lee) **89e:53098** 53C25 (32F99, 32J99, 53C25, 58E30)
- Chernuault, Y.** Présentation du problème de la modélisation. [Presentation of the modelling problem] *10<sup>e</sup> Congrès International de Cybernétique* (Namur, 1983), 1334-1341, *Assoc. Internat. Cybernét., Namur*, 1984. (Introduction) **89a:92004** 92A05 (92A07)
- (with Guillez, A.) Identification des systèmes compartimentaux ordinaires. Les programmes FELICITY et SOPHIE-ALICE. [Identification of ordinary compartmental systems. The programs FELICITY and SOPHIE-ALICE] *10<sup>e</sup> Congrès International de Cybernétique* (Namur, 1983), 1394-1402, *Assoc. Internat. Cybernét., Namur*, 1984. (M. E. Wise) **89b:92002** 92-08 (92A07, 92A09, 93B30)
- Optimisation et contrôle optimal appliqués à la détermination de thérapeutiques médicamenteuses. [Optimization and optimal control applied to the determination of medicinal therapies] *11<sup>e</sup> congrès international de cybernétique* (Namur, 1986), 1300-1312, *Assoc. Internat. Cybernét., Namur*, 1986. (see **89a:94001**) 92A07
- (with Kerpouzias, I.) Application of mathematical models in pharmaceutical industry: identification and optimal control applied to therapeutics. (French summary) *Proceedings of the First European Symposium on Mathematics in Industry* (Amsterdam, 1985), 11-30, *European Consort. Math. Indust.*, 1, Teubner, Stuttgart, 1988. (Summary) **89g:92009** 92A07
- A new numerical method applied to biomedical systems. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988),



- 490-492. (see **89d:00007**) 92A07
- Cherai, France** Weak convergence of measures and dynamical systems on noncompact spaces. (Italian summary) *Boll. Un. Mat. Ital. A* (7) 2 (1988), no. 1, 109-117. (Ivan Dobrakov) **89g:28023** 28D05 (28C05, 54H20)
- Cherskii, Ya. I.** A multidimensional dual equation on coordinated sets. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 6, 25-26, 87. (Summary) **89f:45005** 45F10
- Cherubini, Alessandra** (with Varisco, Ada) On  $E_k$ -rings. *Czechoslovak Math. J.* 38(113) (1988), no. 3, 456-463. (Mohan S. Putcha) **89e:16055** 16A99
- Cheruy, A.** (with Lakrori, M.) Une commande nonlinéaire de bioprocédés fedbatch. (English summary) [A nonlinear control for fedbatch bioprocesses] *Analysis and optimization of systems* (Antibes, 1988), 1164-1175, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89c:00031**) 92A09 (93C40, 93C75, 93D15)
- Chervinskaya, E.** (with Zapryanov, Z.) The slow motion of droplets perpendicular to a deformable flat fluid interface. *Quart. J. Mech. Appl. Math.* 41 (1988), no. 3, 419-444. (Josef Bemelmans) **89m:76026** 76D07 (76B45)
- Chervinskii, R. A.** \* Методы синтеза систем в целевых программах. (Russian) [Methods for the design of systems in objective programs] *Экономико-Математическая Библиотека*. [Library of Mathematical Economics] "Nauka", Moscow, 1987. 224 pp. (From the publisher's description) **89d:90241** 90C30 (90A17)
- Chervon, S. V.** (with Ivanov, G. G.) Exact solutions in the  $SO(3)$ -invariant nonlinear sigma-model that are connected with isometric and homothetic symmetries. (Russian) *Gravitatsiya i Teor. Otnositel'nosti* No. 24 (1987), 37-45. (Anjan Kundu) **89i:81069** 81E13 (53C80, 58D10, 58E20, 81E40)
- Cherryakov, A. M.** (with Barbashov, B. M.) A geometric method for solving a boundary value problem in the theory of a relativistic string with masses on the ends. (Russian. English summary) *Teoret. Mat. Fiz.* 74 (1988), no. 3, 430-439; translated in *Theoret. and Math. Phys.* 74 (1988), no. 3, 292-299. (Sorin Marculescu) **89j:81157** 81E99 (53B50, 81E30)
- Chesali, V. I.** The Cauchy problem for some integro-differential equations in a Hilbert space. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 9, 1644-1646, 1656. (Xiao Xin Liao) **89m:45009** 45J05
- Chesher, Andrew** (with Jewitt, Ian) The bias of a heteroskedasticity consistent covariance matrix estimator. *Econometrica* 55 (1987), no. 5, 1217-1222. (S. K. Tharthare) **89g:62099** 62J05 (62P20)
- Chesnokov, S. V.** The effect of semantic freedom in the logic of natural language. *Fuzzy Sets and Systems* 22 (1987), no. 1-2, 121-154. (Anita Wasilewska) **89b:03046** 03B52 (03B65, 68S10)
- Chess, Daniel S.** A categorical context for the James-Hopf maps. *Comm. Algebra* 15 (1987), no. 10, 2025-2072. (Frederick Cohen) **89b:55006** 55P35 (18A99, 18F25, 55P47, 55Q25)
- Chesser, H. G.** (with Rimrott, F. P. J.) Attitude drift of torque-free flexible gyros using the viscous damping model. *Quart. J. Mech. Appl. Math.* 41 (1988), no. 4, 619-638. (Summary) **89k:70015** 70E99 (70M05, 73K99)
- Chester, G. V.** (with Leung, P. W.; Henley, Christopher L.) Dodecagonal order in a two-dimensional Lennard-Jones system. *Phys. Rev. B* (3) 39 (1989), no. 1, 446-458. (Summary) **89j:82064** 82A57 (82-04, 82A60)
- Chetouani, L.** (with Guechi, L.; Hammann, T. F.) Exact path integral for the ring potential. *Phys. Lett. A* 125 (1987), no. 6-7, 277-281. (Takashi Miura) **89d:81037** 81C35
- Chetverikov, G. G.** (with Kirilenko, T. V.) A generalized method for minimizing the totality of finite predicates. (Russian) *Problems of bionics*, No. 39 (Russian), 44-49, ii, "Vishcha Shkola", Kharkov, 1987. (Korolov Gilezan) **89i:03101** 03G05 (06E30, 94C10)
- (with Shubin, I. Yu.) An algorithm for the minimization of weakly defined formulas of the algebra of finite predicates. (Russian) *Problems of bionics*, No. 41 (Russian), 13-16, i, "Vishcha Shkola", Kharkov, 1988. (Neculai Certeanu) **89i:03018** 03B35 (03B65, 03B70, 68T15)
- Chetverikov, V. M.** (with Maslov, V. P.) Dynamic equations of the quasi-plane domain wall in a uniaxial magnetic bubble film. (Russian. English summary) *Teoret. Mat. Fiz.* 77 (1988), no. 2, 253-265; translated in *Theoret. and Math. Phys.* 77 (1988), no. 2, 1180-1189. (Darko Kapor) **89k:82115** 82A99
- Chetverikov, V. N.** Backlund transformations of evolution equations. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1(259), 217-218; translated in *Russian Math. Surveys* 43 (1988), no. 1, 237-238. (From the text) **89f:35016** 35A30 (35Q20, 58G37)
- Chetverishkin, B. N.** An  $\alpha$ - $\beta$ -iterative method. (Russian) *Computational methods in linear algebra* (Russian) (Moscow, 1982), 233-237, *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1983. (J. Segethová) **89b:65074** 65F10
- (with Vabishchevich, P. N.; Pavlov, A. N.) Numerical generation of boundary-fitted grids. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 158, 27 pp. (Summary) **89j:65029** 65E05
- (with Klevtsov, S. V.; Latyshev, K. S.) A cyclic variant of the  $\alpha$ - $\beta$ -iterative algorithm. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 7, 1213-1218, 1286; translated in *Differential Equations* 24 (1988), no. 7, 789-792. (Summary) **89b:65166** 65N20 (76-08, 76X05, 86A35)
- Chetwynd, A. G.** (with Hilton, A. J. W.) Critical star multigraphs. *Graphs Combin.* 2 (1986), no. 3, 209-221. (J. Sheehan) **89f:05077** 05C15
- (with Hilton, A. J. W.) The existence of multigraphs with a given degree sequence and given chromatic index. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 247-255. (Prabir Das) **89c:05088** 05C15
- (with Hilton, A. J. W.) Snarks and  $k$ -snarks. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), C, 39-54. (Robin J. Wilson) **89d:05070** 05C15 (05B15)
- (with Hilton, A. J. W.) The edge-chromatic class of graphs with maximum degree at least  $|V| - 3$ . *Graph theory in memory of G. A. Dirac* (Sandberg, 1985), 91-110, *Ann. Discrete Math.*, 41, North-Holland, Amsterdam-New York, 1989. (H. Joseph Straight) **89m:05050** 05C15
- Chetyrkin, K. G.** Multiloop calculations and the renormalization group. (Russian. English summary) *Conference "Renormalization Group—86"* (Russian) (Dubna, 1986), 60-80, 405, *Joint Inst. Nuclear Res., Dubna*, 1987. (see **89a:81002**) 81E15
- (with Smirnov, Vladimir Aleksandrovich) \*  $R^*$ -операция: техника ренормгрупповых вычислений и другие приложения. (Russian) [ $R^*$ -operation: techniques for renormalization-group calculations and other applications] *Лекции для Молодых Ученых* [Lectures for Young Scientists], R2-88-190. *Ob'ed. Inst. Yadernykh Issled., Dubna*, 1988. 27 pp. (A. L. Rebenko) **89i:81084** 81E15
- Operator expansions in the minimal subtraction scheme. I. The gluing method. (Russian. English summary) *Teoret. Mat. Fiz.* 75 (1988), no. 1, 26-40; translated in *Theoret. and Math. Phys.* 75 (1988), no. 1, 346-356. (Henryk Arodz) **89h:81130** 81E15
- Operator expansions in the minimal subtraction scheme. II. Explicit formulas for the coefficients of functions. (Russian. English summary) *Teoret. Mat. Fiz.* 76 (1988), no. 2, 207-218; translated in *Theoret. and Math. Phys.* 76 (1988), no. 2, 809-817. (Henryk Arodz) **89m:81104** 81E15
- Cheung, Alan** (with Crapo, Henry) On relative position in extensions of combinatorial geometries. *J. Combin. Theory Ser. B* 44 (1988), no. 2, 201-229. (Nicolas Percsy) **89k:51009** 51D20 (05B35, 06C10, 51D25)
- Cheung, C. Sherman** (with Kwan, Clarence C. Y.) A note on simple criteria for optimal portfolio selection. *J. Finance* 43 (1988), no. 1, 241-245. (Not in MR) 90A09
- Cheung, Y. K.** see **Zhang, You Qi**
- Chevart, B.** A nonparametric model for multiple recurrences. *J. Roy. Statist. Soc. Ser. C* 37 (1988), no. 2, 157-168. (Summary) **89i:62174** 62P10
- Chevallier, Georges** Semiprime ideals in orthomodular lattices. *Comment. Math. Univ. Carolin.* 29 (1988), no. 2, 379-386. (Manfred Stern) **89i:06013** 06C15
- Chevallier, Jacques** Sur le calcul des contraintes thermiques en service. (English summary) [Calculating operational thermal stresses] *Bull. Soc. Roy. Sci. Liège* 57 (1988), no. 6, 619-635. (N. Gass) **89m:80001** 80A20 (65P05, 73C25)
- Chevallier, Y.** Dispersion of harmonic waves in elastic and viscoelastic periodic composite materials. *Recent developments in surface acoustic waves* (Nottingham, 1987), 260-268, *Springer Ser. Wave Phenomena*, 7, Springer, Berlin-New York, 1988. (see **89g:73001**) 73D25 (73F99, 73K20)
- Chevallier, Claude** see **Dieudonné, Jean**, **89a:01056a** and **89a:01056b**
- Chevallier, Benoit** Courbes maximales de Harnack et discriminant. [Maximal Harnack curves and the discriminant] *Séminaire sur la géométrie algébrique réelle, Tome I, II*, 41-65, *Publ. Math. Univ. Paris VII*, 24, Univ. Paris VII, Paris, 1986. (Introduction) **89h:14022** 14G30 (14F45, 57N05)
- Chevreau, B.** (with Pearcy, C.) Membership in  $A_\infty$  and invariant subspaces. *Operators in indefinite metric spaces, scattering theory and other topics* (Bucharest, 1985), 41-49, *Oper. Theory: Adv. Appl.*, 24, Birkhäuser, Basel-Boston, MA, 1987. (Gr. Arsene) **89a:47008** 47A15 (47A65, 47D25)
- (with Albrecht, E.) Invariant subspaces for  $P$ -operators having Bishop's property ( $\beta$ ) on a large part of their spectrum. *J. Operator Theory* 18 (1987), no. 2, 339-372. (B. Nagy) **89b:47007** 47A15 (47A10, 47B99)
- (with Pearcy, C.) On Sheung's theorem in the theory of dual operator algebras. *Special classes of linear operators and other topics* (Bucharest, 1986), 43-49, *Oper. Theory: Adv. Appl.*, 28, Birkhäuser, Basel-Boston, MA, 1988. (Lawrence Williams) **89f:47025** 47A65 (47A15, 47D25)
- (with Exner, G.; Pearcy, C.) Structure theory and reflexivity of contraction operators. *Bull. Amer. Math. Soc. (N.S.)* 19 (1988), no. 1, 299-301. (Hari Bercovici) **89j:47011** 47A65 (47A15)
- (with Brown, Scott W.) Toute contraction à calcul fonctionnel isométrique est réflexive. (English summary) [Every contraction with isometric functional calculus is reflexive] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 5, 185-188. (László Kérchy) **89f:47007** 47A15 (47A65, 47C05, 47D25)
- Chew, C. K.** see **Conformal field theory, anomalies and superstrings**, **89c:81004**
- Chew, G. F.** (with Stapp, Henry P.) Three-space from quantum mechanics. *Found. Phys.* 18 (1988), no. 8, 809-831. (Matej Pavšič) **89j:81006** 81B05
- Chew, James** A note on closure continuity. *Amer. Math. Monthly* 95 (1988), no. 8, 744-745. (Janina Ewert) **89f:54011** 54C08
- Chew, Kim Lin** (with Tung, Chi Tung) A bicriterion Pareto-optimal path algorithm. *Asia-Pacific J. Oper. Res.* 5 (1988), no. 2, 166-172. (Summary) **89j:90245** 90C31 (90B10)
- Chew, Soo Hong** (with Epstein, Larry G.; Zilcha, Itzhak) A correspondence theorem between expected utility and smooth utility. *J. Econom. Theory* 46 (1988), no. 1, 186-193. (Maurice Sallés) **89i:90011** 90A10
- Chew, Tuan Seng** On nonlinear integrals. *Proceedings of the analysis conference, Singapore 1986*, 57-62, *North-Holland Math. Stud.*, 150, North-Holland, Amsterdam-New York, 1988. (George Cross) **89a:26011** 26A39
- On the generalised dominated convergence theorem. *Bull. Austral. Math. Soc.* 37 (1988), no. 2, 165-171. (George Cross) **89a:26012** 26A39
- Chhikara, Raj S.** (with Deng, Lih-Yuan) Conditional inference in finite population sampling under a calibration model. *Comm. Statist. Simulation Comput.* 17 (1988), no. 2, 663-681. (Not in MR) 62D05
- nguen min' Chi** see **Nguyen Min' Chi**
- Chi, M. Y.** see **Qi, Min You**
- Chi, Zhong Xian** (with Lu, Chang Shun; Mao, Yu Cui; Zuo, Kai) The design and implementation of the graph theory language GTL. (Chinese. English summary) *J. Dalian Inst. Tech.* 27 (1988), no. 1, 113-119. (Not in MR) **68R10** (05C, 68N25)
- Chia, Gek Ling** (with Lim, Chong Keang) On supercompact graphs. IV.  $(n, m)$ -graphs. *Ars Combin.* 25 (1988), 203-220. (J. Sedláček) **89k:05088** 05C75
- Chiachio, Ary O.** (with Prola, João B.; Roversi, Maria Sueli M.) Chebyshev centers in spaces of continuous functions. *Arch. Math. (Basel)* 50 (1988), no. 4, 371-379. (C. Franchetti) **89f:46085** 46E40 (41A65, 46B20)
- Chiampi, M.** (with Negro, Angelo L.; Serra, E.) Multiple scales expansions for eddy current computation in layered media. *Math. Methods Appl. Sci.* 11 (1989), no. 1, 125-138. (Summary) **89j:78019** 78A30 (78-08)
- Chianese, R. B.** (with Erdlac, R. J.) The general solution to the distribution of stresses in a circular ring compressed by two forces acting along a diameter. *Quart. J. Mech. Appl. Math.* 41 (1988), no. 2, 239-247. (Summary) **89g:73010** 73C02 (73-04)
- Chiang, Chiang-Cheng** (with Ch'en, Po Hsien) Robust compensator synthesis for dynamic systems subjected to parameter perturbations. *Internat. J. Systems Sci.* 19 (1988), no. 1, 125-137. (Andrzej Świerniak) **89d:93073** 93D10 (34A40, 93B50, 93D20, 93D25)
- (with Ch'en, Po Hsien) Robust stabilization against nonlinear time-varying uncertainties. *Internat. J. Systems Sci.* 19 (1988), no. 5, 747-760. (Chao Shun Zhou) **89e:93164** 93D15 (93B35, 93C10, 93C40)

- Chiang, Dalen** (with Flynn, James; Chung, Chia-Shin) Optimal replacement policies for a multicomponent reliability system. *Oper. Res. Lett.* 7 (1988), no. 4, 167-172. (Summary) **89c:90111** 90B25
- Chiang, Hsiao-Dong** (with Hirsch, Morris W.; Wu, Felix F.) Stability regions of nonlinear autonomous dynamical systems. *IEEE Trans. Automat. Control* 33 (1988), no. 1, 16-27. (P. Talpalaru) **89c:58064** 58F10 (93C10, 93D05)
- (with Wu, Felix F.) Stability of nonlinear systems described by a second-order vector differential equation. *IEEE Trans. Circuits and Systems* 35 (1988), no. 6, 703-711. (R. L. Clerc) **89d:34086** 34D40 (34A34, 58F10)
- (with Wu, Felix F.; Varaiya, P.) Foundations of the potential energy boundary surface method for power system transient stability analysis. *IEEE Trans. Circuits and Systems* 35 (1988), no. 6, 712-728. (Summary) **89c:93054** 93C75 (34D10, 58F10, 58F30)
- Chiang, Hsing Ya** (with Lin, Chung Ch'è) Adaptive model following control with variable structure control system. (Chinese summary) *J. Chinese Inst. Engrs.* 11 (1988), no. 1, 65-72. (Not in MR) 93B50
- Chiang, Martin Y. M.** (with Stolarski, Henryk K.) The mode-decomposition,  $C^0$  formulation of curved, two-dimensional structural elements. *Internat. J. Numer. Methods Engrg.* 28 (1989), no. 1, 145-154. (Summary) **89j:73007** 73-08 (73K15, 73K25)
- Chiang, Tsu Shu** (with Chow, Yun Shyong) On the convergence rate of a special class of annealing processes. *Soochow J. Math.* 13 (1987), no. 1, 23-30. (Summary) **89b:60116** 60J27
- (with Sheu, Shuenn Jyi) Large deviation of some infinite-dimensional Markov processes. *Stochastics* 23 (1988), no. 2, 159-178. (François Bronner) **89a:60180** 60J60 (60B12, 60F10)
- Chiang, Yi-Ling F.** A modified Remes algorithm. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 6, 1058-1072. (Summary) **89b:65027** 65D15
- Chiantini, Luca** A remark on the cohomology of curves in  $P^3$ . *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* 118 (1984), no. 5-6, 302-307. (Ciro Ciliberto) **89a:14068** 14M10 (14C20, 14H50)
- (with Valabrega, Paolo) On some properties of subcanonical curves and unstable bundles. *Comm. Algebra* 15 (1987), no. 9, 1877-1887. (Monica Ida) **89a:14038** 14H45 (14F05, 14H50)
- Chiao, Raymond Y.** (with Jordan, Thomas F.) Lorentz-group Berry phases in squeezed light. *Phys. Lett. A* 132 (1988), no. 2-3, 77-81. (Summary) **89j:81296** 81K05 (81D30)
- (with Garrison, J. C.) Geometrical phases from global gauge invariance of nonlinear classical field theories. *Phys. Rev. Lett.* 60 (1988), no. 3, 165-168. (Summary) **89a:70016** 70G50 (58F05, 81E13)
- Chiappinelli, R.** Comparison methods for eigenvalues of semilinear elliptic operators. *Mathematical analysis and its applications (Kuwait, 1985)*, 119-124, *KFAS Proc. Ser.* 3, Pergamon, Oxford-Elmsford, NY, 1988. (Zuchi Chen) **89b:35255** 35P30 (35J65)
- dalla Chiara, M. L.** see Dalla Chiara, M. L.
- Chiasson, John** A method for computing the interval of delay values for which a differential-delay system is stable. *IEEE Trans. Automat. Control* 33 (1988), no. 12, 1176-1178. (Krishnan Balachandran) **89k:34130** 34K20
- Chiaracci, Rossana** (with Escamilla-Castillo, Juan) Schubert calculus and enumerative problems. (Italian summary) *Boll. Un. Mat. Ital. A (7)* 2 (1988), no. 1, 119-126. (Summary) **89g:14041** 14N10 (14M15)
- Chib, Siddhartha** (with Jammalamadaka, S. Rao; Tiwari, Ram C.) Bayes prediction in the linear model with spherically symmetric errors. *Econom. Lett.* 24 (1987), no. 1, 39-44. (Summary) **89g:62047** 62F15 (62J05)
- (with Tiwari, Ram C.; Jammalamadaka, S. Rao) Bayes prediction in regressions with elliptical errors. *J. Econometrics* 38 (1988), no. 3, 349-360. (R. W. Farebrother) **89j:62144** 62P20 (62J05)
- Chiba, Keiko** On  $\sigma$ -products. *Math. Japon.* 32 (1987), no. 3, 373-378. (C. E. Aull) **89c:54043** 54D15 (54B10)
- A note on the weak  $\mathcal{P}$ -property. *Math. Japon.* 33 (1988), no. 1, 39-48. (B. T. Sims) **89g:54051** 54D15 (54D18)
- A remark on the normality of infinite products. *Proc. Amer. Math. Soc.* 105 (1989), no. 2, 510-512. (Gino Tironi) **89f:54043** 54D15 (54B10)
- Chiba, N.** (with Nishizeki, T.) ★ Planar graphs: theory and algorithms. North-Holland Mathematics Studies, 140. *Annals of Discrete Mathematics*, 32. North-Holland Publishing Co., Amsterdam-New York, 1988. xiv+232 pp. ISBN 0-444-70212-1 (Mukai S. Krishnamoorthy) **89f:05068** 05C10 (68R10, 90B10)
- Chibisov, D. M.** (with van Zwet, W. R.) Correction: "On the Edgeworth expansion for the logarithm of the likelihood ratio. I" [Teor. Veroyatnost. i Primenen. 29 (1984), no. 3, 417-439; MR 86i:62024]. *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 1, 211. (Editors) **89d:62018** 62E20
- Equivalence of two forms of asymptotic expansion. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 2, 396-400; translated in *Theory Probab. Appl.* 33 (1988), no. 2, 373-377. (J. Albrycht) **89g:60059** 60E99 (41A60)
- Chibisova, E. D.** A scheme for partial summation. (Russian) *Teor. Veroyatnost. i Primenen.* 32 (1987), no. 3, 569-573. (Eugenius Rychlik) **89a:60055** 60F05
- Chilrikova, L. I.** (with Pleshchinskii, N. B.) Integral equation with generalized power kernel and its application to the theory of boundary value problems for the generalized Tricomi equation. *Mixed type equations*, 84-104, *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) **89b:45005** 45E05 (35M05)
- Chico, Maurizio** On the elliptic equations of V. Itimie. (Italian) *Ricerche Mat.* 36 (1987), suppl., 1-9. (Angelo Alvino) **89a:35058** 35J25
- Chiccoli, C.** (with Lorenzutta, S.; Maino, G.) On the evaluation of generalized exponential integrals  $E_n(x)$ . *J. Comput. Phys.* 78 (1988), no. 2, 278-287. (Summary) **89b:65030** 65D20 (33A70)
- Chichagov, V. V.** (with Shekhovtsova, M. G.) Two problems in the comparison of point estimates. Statistical methods. *J. Soviet Math.* 40 (1988), no. 2, 250-255. (A. P. Basu) **89i:62038** 62F10
- Chichilnitsky, Graciela** A general equilibrium theory of North-South trade. *Equilibrium analysis*, 3-56, *Cambridge Univ. Press, Cambridge-New York, 1986*. (Wolfgang Mayer) **89g:90078** 90A17 (90A14, 90A16)
- Chichinadze, R. K.** Boundary value problems for the Stokes equations in the case of a domain with a spherical boundary. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruzii. SSR* 87 (1987), 136-149. (Summary) **89a:35162** 35Q10 (35C15, 76D05)
- Chichoyan, S. F.** Smoothness of generalized solutions of the Dirichlet problem for the Navier-Stokes equation in nonsmooth two-dimensional domains. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 1, 82-84. (Lumin Jiang) **89d:35139** 35Q10 (35B45, 35D10, 35J30)
- Chicone, Carmen** (with Retzlaff, David G.; Chan, Paul C.-H.; Mohamed, R.; Offin, D.) Maximal multiplicity of the critical points of the CR equation modeling a constant flow stirred tank reactor. *J. Math. Anal. Appl.* 124 (1987), no. 2, 327-338. (From the introduction) **89g:58042** 58E07 (80A32)
- Geometric methods for two-point nonlinear boundary value problems. *J. Differential Equations* 72 (1988), no. 2, 360-407. (James M. D'Archangelo) **89c:34032** 34B15 (58F14)
- (with Dumortier, Freddy) A quadratic system with a nonmonotonic period function. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 706-710. (J. O. C. Ezeilo) **89d:58106** 58F22 (34C25)
- (with Jacobs, Marc) Bifurcation of critical periods for plane vector fields. *Trans. Amer. Math. Soc.* 312 (1989), no. 2, 433-486. (Ding Jun Luo) **89b:58139** 58F14 (34C25, 58F05, 58F30)
- Chida, Kanako** (with Hosoya, Haruo; Uchiyama, Atsuko; Kadota, Misa; Aida, Misako; Yamaguchi, Tamie) Tables of the nonadjacent number, topological index, and characteristic polynomials of heptahex graphs. *Natur. Sci. Rep. Ochanomizu Univ.* 37 (1986), no. 2, 133-168. (N. Trinajstić) **89d:92097** 92A40 (05C99)
- Chidambaram, M. R.** (with Satyanarayana, P. S.) Sub-optimal control via lower order generalized aggregated models. *Control Theory Adv. Tech.* 3 (1987), no. 3, 239-261. (Not in MR) 93A15 (93B20, 93C05)
- Chidambarasamy, J.** (with Krishnaiah, P. V.) An identity for a class of arithmetical functions of two variables. *Internat. J. Math. Math. Sci.* 11 (1988), no. 2, 351-354. (S. Audinayana Moorthy) **89j:11006** 11A25
- Chidume, C. E.** Fixed point iterations for certain classes of nonlinear mappings. *Appl. Anal.* 27 (1988), no. 1, 3-45. (Summary) **89b:47086** 47H10 (47H09)
- Chieh, Chung** Polyhedra and crystal structures. *Shaping space (Northampton, Mass., 1984)*, 93-105, *Design Sci. Collect., Birkhäuser Boston, Boston, MA, 1988*. (see **89b:52016**) 92A40 (20H15, 52A25, 82A60)
- tran quoc Chien** see Tran Quoc Chien
- Chien, Cheng Sheng** (with Allgower, E. L.) Continuation and local perturbation for multiple bifurcations. *SIAM J. Sci. Statist. Comput.* 7 (1986), no. 4, 1265-1281. (Summary) **89a:65095** 65J15 (58C15, 58E07)
- Multiple bifurcations on 3D eigenvalue problems. *Chinese J. Math.* 15 (1987), no. 3, 181-194. (S. Buryšek) **89g:58038** 58E07 (47H17, 58C40, 65J15, 65N25)
- Chien Wei-zang** see Qian, Wei Chang
- Chierchia, Luigi** (with Celletti, Alessandra) On rigorous stability results for low-dimensional KAM surfaces. *Phys. Lett. A* 128 (1988), no. 3-4, 166-168. (Richard C. Churchill) **89c:58103** 58F27 (58F05, 58F10, 58F30)
- Chiew, Y. C.** (with Torquato, S.; Beasley, J. D.) Two-point cluster function for continuum percolation. *J. Chem. Phys.* 88 (1988), no. 10, 6540-6547. (P. A. Kuchment) **89k:82061** 82A43
- Chigogidze, A.** A characterization of Polish  $AE(n)$ -spaces. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1987, no. 5, 32-35, 105. (Summary) **89f:54037** 54C55
- (with Valov, V.) Set-valued maps and  $AE(0)$ -spaces. *C. R. Acad. Bulgare Sci.* 41 (1988), no. 4, 13-14. (From the text) **89d:54009** 54C55
- (with Valov, V.) Universal maps and surjective characterizations of completely metrizable  $LC^n$ -spaces. *C. R. Acad. Bulgare Sci.* 41 (1988), no. 5, 9-10. (John J. Walsh) **89g:54038** 54C55 (54C99)
- Compact spaces lying in the  $n$ -dimensional universal Menger compact space and having homeomorphic complements in it. (Russian) *Mat. Sb. (N.S.)* 133(175) (1987), no. 4, 481-496, 559; translated in *Math. USSR-Sb.* 61 (1988), no. 2, 471-484. (Vesko Valov) **89c:54071** 54F43 (54C56, 55P55, 55Q07)
- On compacta lying in an  $n$ -dimensional universal Menger compactum and having homeomorphic complements in it. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 3, 552-556; translated in *Soviet Math. Dokl.* 37 (1988), no. 1, 122-125. (A. I. Bashkirov) **89d:54024** 54F43 (54C25, 55P55)
- Chihara, Charles S.** Some problems for Bayesian confirmation theory. *British J. Philos. Sci.* 38 (1987), no. 4, 551-560. (Zeno G. Swijtink) **89a:03047** 03B48 (62A15)
- (with Gillies, Donald A.) An interchange on the Popper-Miller argument. *Philos. Stud.* 54 (1988), no. 1, 1-8. (Not in MR) 03B48
- Chihara, Laura** (with Stanton, Dennis) Association schemes and quadratic transformations for orthogonal polynomials. *Graphs Combin.* 2 (1986), no. 2, 101-112. (David M. Bressoud) **89f:05048** 05B30 (05A30, 33A30)
- Chikhanov, Kh. A.** Integral representations of solutions of linear systems with noncommuting coefficients. (Russian) *Differential equations and mathematical physics (Russian)*, 43-44, *Kuibyshev. Gos. Ped. Inst., Kuibyshev, 1985*. (see **89f:35006**) 35C15
- Group analysis of some fourth-order equations. (Russian) *Analytic methods for solving differential equations (Russian)*, 133-141, 151, *Kuibyshev. Gos. Univ., Kuibyshev, 1986*. (Summary) **89b:35016** 35A30 (35Q99, 58G37)
- Double hypergeometric series and matrix groups. (Russian) *Analytic methods in the theory of differential and integral equations (Russian)*, 122-126, *Kuibyshev. Gos. Univ., Kuibyshev, 1987*. (Alexander V. Rozenblyum) **89k:33016** 33A75
- see also *Analytic methods for solving differential equations*, **89c:00004** and *Analytic methods in the theory of differential and integral equations*, **89c:00005**
- Chikin, D. O.** Convergence of stochastic approximation procedures in the presence of dependent noise. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 3, 50-61; translated in *Automat. Remote Control* 49 (1988), no. 3, part 1, 305-313. (V. Dupač) **89g:62142** 62L20 (93E25)
- Chikin, M. G.** Systems with phase constraints. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 10, 38-46. (Ivan Ginchev) **89d:49040** 49E10 (49A10)
- On the existence of a right derivative in the solutions of a class of discontinuous systems. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 1, 170-171. (Not in MR) 49A52 (34A34)
- Chikosh, B.** The topology of the dual object and exponential Lie groups. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 4(262), 225-226; translated in *Russian Math. Surveys* 43 (1988), no. 4, 207-208. (From the text) **89m:22012** 22E27



- Chikrii, A. A.** (with Prokopovich, P. V.) Interaction of groups of controllable objects. (Russian) *Theory of optimal decisions* (Russian), 71-75, v-vi, Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev, 1987. (Milan Mareš) **89d:90267** 90D26 (49A45, 90D12)
- (with Khomin, A. V.) A discrete pursuit problem. (Russian) *Kibernet. i Vychisl. Tekhn. No. 75* (1987), 25-28, 95. (Summary) **89c:90124** 90D26 (49A45, 93C55)
- (with Kalashnikova, S. F.) Pursuit by a controllable object of a group of evading objects. (Russian. English summary) *Kibernetika (Kiev)* 1987, no. 4, 1-8, 133. (Phan Huy Khai) **89b:90250** 90D26 (49A45, 90D25)
- (with Sobolenko, L. A.; Kalashnikova, S. F.) A numerical method for solving a problem of successive pursuit. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 1, 44-49, 134; translated in *Cybernetics* 24 (1988), no. 1, 53-59. (Not in MR) **90D42** (90D26)
- Chikrii, G. Ts.** A class of controllable processes. (Russian) *Theory of optimal decisions* (Russian), 60-63, iv-v, Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev, 1987. (G. Zatiashvili) **89m:90089** 90B40 (90D25)
- A problem of search for controllable objects. (Russian) *Methods for the investigation of extremal problems* (Russian), 66-70, v-vi, Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev, 1988. (O. A. Malafeev) **89i:90199** 90D26 (49A45)
- Chikuse, Yasuko** Methods for constructing top order invariant polynomials. *Econometric Theory* 3 (1987), no. 2, 193-207. (Summary) **89c:62083** 62H05 (62P20)
- Chikuya, Tetsumiko** (with Suzuki, Masuo) A simple example of exactly solvable models with reentrant phenomena. *Progr. Theoret. Phys. 78* (1987), no. 6, 1242-1249. (Jacques H. H. Perk) **89g:82065** 82A68 (82A05, 82A25, 82A69)
- Chilakamuri, Kiran B.** Decomposition of bipartite graphs into paths. *Amer. Math. Monthly* 95 (1988), no. 7, 634-636. (H. Joseph Straight) **89m:05087** 05C70
- Unit-distance graphs in rational  $n$ -spaces. *Discrete Math.* 69 (1988), no. 3, 213-218. (N. Hindman) **89d:05120** 05C40
- Childs, Lindsay N.** Taming wild extensions with Hopf algebras. *Trans. Amer. Math. Soc.* 304 (1987), no. 1, 111-140. (Jürgen Ritter) **89a:11119** 11R33 (16A24)
- Childs, P. N.** (with Morton, K. W.; Rudgyard, M. A.) The cell vertex method for steady compressible flow. *Numerical methods for fluid dynamics, III* (Oxford, 1988), 137-152, *Inst. Math. Appl. Conf. Ser. New Ser.*, 17, Oxford Univ. Press, New York, 1988. (see **89j:76004**) 76-08 (65N99)
- (with Morton, K. W.) Characteristic Galerkin methods for hyperbolic systems. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 435-455, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 65M60 (76-08)
- Chilin, V. I.** (with Sukochev, F. A.) Nonisomorphy of normed ideal spaces on commutative and noncommutative von Neumann algebras. (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 8, 8-10. (A. Bartoszewicz) **89c:46084** 46L50
- (with Sukochev, F. A.) Description of closed convex symmetric sets of measurable operators. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 10, 31-37, 75. (Carlo Cecchini) **89b:46075** 46L50 (47D40)
- (with Sukochev, F. A.) Isomorphic classification of separable noncommutative  $L_p$ -spaces on atomic von Neumann algebras. (Russian) *Dokl. Akad. Nauk UzSSR* 1988, no. 1, 9-11. (D. Petz) **89f:46125** 46L50
- Chilling, David** Characters, nonnegative matrices, and generalized circulants. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 33-40, *Proc. Sympos. Pure Math.*, 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Roderick Gow) **89b:20028** 20C15 (15A48)
- (with Mann, Avinoam; Scoppola, Carlo M.) Generalized Frobenius groups. II. *Israel J. Math.* 62 (1988), no. 3, 269-282. (A. R. Camina) **89b:20040** 20E34
- Generalized circulants and class functions of finite groups. II. *Linear Algebra Appl.* 108 (1988), 199-212. (Roderick Gow) **89j:20011** 20C15 (15A30)
- Chimento, Luis P.** (with Jakubi, Alejandro S.) How to get Casimir effect and trace anomaly results without use of regularization. *SILARG, VI* (Rio de Janeiro, 1987), 196-207, *World Sci. Publishing, Singapore*, 1988. (Summary) **89e:81103** 81E15 (83C47)
- Exact solutions of the Einstein equations including quantum effects. *Classical Quantum Gravity* 5 (1988), no. 8, 1137-1151. (Yu. N. Obukhov) **89b:83025** 83C47 (83C05)
- Chimer, K. N.** (with Gyudzenov, I. D.) Functions with three strongly essential variables. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 21 (1985), no. 3, 153-163 (1986). (Editors) **89c:04001** 04A05 (03B50, 03G05, 06E30)
- Strongly essential variables and separable sets of arguments of functions. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 1, 143-149 (1987). (Summary) **89c:04002** 04A05 (03B50, 03G05, 94C10)
- (with Shtrakov, Slavcho V.) Generalized orders of variables and  $\epsilon$ -equivalence in some algebras of functions. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 1, 151-158 (1987). (Summary) **89c:04003** 04A05 (06A99)
- (with Aslanski, M. S.) A class of functions of seven variables. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 1, 159-166 (1987). (Summary) **89f:04001** 04A05
- Strongly essential variables and separable sets of arguments of function. (Russian summary) Proceedings of the joint Bulgarian-Hungarian workshop on mathematical cybernetics and data processing ("Gyulechitsa", Bulgaria, 1985). *Tanulmányok—MTA Számítástech. Automat. Kutató Int. Budapest* No. 182 (1986), 11-20. (From the text) **89b:26017** 26B35
- (with Gyudzenov, I. D.) Subfunctions of functions with three strongly essential variables. (Russian. English summary) Proceedings of the joint Bulgarian-Hungarian workshop on mathematical cybernetics and data processing ("Gyulechitsa", Bulgaria, 1985). *Tanulmányok—MTA Számítástech. Automat. Kutató Int. Budapest* No. 182 (1986), 21-30. (Summary) **89b:26016** 26B35
- (with Shtrakov, Slavcho V.) On the dominant sets of variables for the functions. (Russian summary) Proceedings of the joint Bulgarian-Hungarian workshop on mathematical cybernetics and data processing ("Gyulechitsa", Bulgaria, 1985). *Tanulmányok—MTA Számítástech. Automat. Kutató Int. Budapest* No. 182 (1986), 37-42. (Summary) **89c:26024** 26B35
- (with Gyudzenov, I. D.; Shtrakov, Slavcho V.; Aslanski, M. S.) Separable and dominating sets of variables for the functions. *Mathematics and mathematical education* (Bulgarian) (Sunny Beach (Slivnchev Bryag), 1987), 61-71, *Bulgar. Acad. Sci., Sofia*, 1987. (see **89c:00038**) 03B50
- Separable, dominating, annulling, and eliminating sets of variables. (Hungarian summary) *Közl. MTA Számítástech. Automat. Kutató Int. Budapest* 1988, no. 38, 11-18. (Editors) **89c:04001** 04A05
- López Chimil, Marcos** see López Chimil, Marcos
- Yue Chi Ming, Roger** see Yue Chi Ming, Roger
- Ch'in, Chin Shao** see Zharov, V. K. **89a:01015**
- Chin, Philip S. M.** Stability of nonlinear systems via the intrinsic method. *Internat. J. Control* 48 (1988), no. 4, 1561-1567. (Not in MR) **93D05** (93C10)
- Extension to the intrinsic method and its application to stability problems. *Internat. J. Control* 48 (1988), no. 5, 2139-2146. (Summary) **89i:34073** 34D20 (34A34)
- Chin, R. C. Y.** (with Manteuffel, Thomas A.) An analysis of block successive overrelaxation for a class of matrices with complex spectra. *SIAM J. Numer. Anal.* 25 (1988), no. 3, 564-585. (F. Szidarovszky) **89c:65037** 65F10 (65N20)
- Chin, S. B.** (with Bradley, Derek; Missaghi, M.) A Taylor-series approach to numerical accuracy and a third-order scheme for strong convective flows. *Comput. Methods Appl. Mech. Engrg.* 69 (1988), no. 2, 133-151. (Summary) **89d:76029** 76R05 (76-08)
- Chin, Wei-Pang** (with Ntafos, Simeon) Optimum watchman routes. *Inform. Process. Lett.* 28 (1988), no. 1, 39-44. (Summary) **89f:68063** 68U05 (68Q25, 90B10)
- Chin, William** Prime ideals in restricted differential operator rings. *Israel J. Math.* 60 (1987), no. 2, 236-256. (K. R. Goodearl) **89e:17010** 17B35 (16A05, 16A66, 17B50)
- (with Quinn, Declan) Rings graded by polycyclic-by-finite groups. *Proc. Amer. Math. Soc.* 102 (1988), no. 2, 235-241. (G. Krause) **89a:16001** 16A03 (16A27, 16A33, 16A55)
- Chin, Yazhe** see Chen, Ya Zhe
- Chin, Yuanshun** see Qin, Yuan Xun
- Chinak, M. A.** Imbedding of hyperbolic manifolds into a projective space. (Russian) *Differentsial'naya Geom. Mnogooobraz. Figur* No. 18 (1987), 109-111, 142. (V. T. Fomenko) **89m:53119** 53C55 (32H20, 53C40)
- Complex manifolds of negative curvature. (Russian) *Funktsional. Anal. i Prilozhen.* 22 (1988), no. 3, 93; translated in *Functional Anal. Appl.* 22 (1988), no. 3, 250-251. (J. S. Joel) **89b:32056** 32J99 (53C20, 53C55)
- Weakly hyperbolic manifolds. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 1, 209-212, 226; translated in *Siberian Math. J.* 29 (1988), no. 1, 161-163. (Valentin Zdravkov Hristov) **89c:32035** 32H15 (32H20)
- Chinak, R. B.** The group of automorphisms of a projective manifold. (Russian) *Differentsial'naya Geom. Mnogooobraz. Figur* No. 18 (1987), 112-114, 142. (Vladislav Goldberg) **89c:32079** 32M05 (22E10)
- Chinburg, T.** An introduction to Arakelov intersection theory. *Arithmetic geometry* (Storrs, Conn., 1984), 289-307, *Springer, New York-Berlin*, 1986. (see **89b:14029**) 11G35 (14H25)
- Minimal models for curves over Dedekind rings. *Arithmetic geometry* (Storrs, Conn., 1984), 309-326, *Springer, New York-Berlin*, 1986. (see **89b:14029**) 11G30
- Errata: "Exact sequences and Galois module structure" [Ann. of Math. (2) 121 (1985), no. 2, 351-376; MR 86j:11115]. *Mem. Amer. Math. Soc.* 77 (1989), no. 395, 154. (Editors) **89i:11119** 11R32
- Errata: "The Galois structure of  $S$ -units" [in *Seminar on number theory, 1982-1983* (Talence, 1982/1983), Exp. No. 40, Univ. Bordeaux I, Talence, 1983; MR 86b:11076]. *Mem. Amer. Math. Soc.* 77 (1989), no. 395, 154-155. (Editors) **89i:11121** 11R33 (11R32)
- Chinchaladze, S. V.** The existence of solutions in problems of optimal control in a Banach space. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* 27 (1988), 163-181, 184. (Ewa Bednarczuk) **89m:49009** 49A27
- Chinchilli, Vernon M.** BLUS residuals in multivariate linear models. *Multivariate statistical modeling and data analysis* (Harrisonburg, Va., 1986), 61-75, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston, MA*, 1987. (Summary) **89a:62156** 62J05 (62J10)
- (with Choi, Sung C.) Analysis of within- and across-subject correlations. *Multivariate statistical modeling and data analysis* (Harrisonburg, Va., 1986), 77-93, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston, MA*, 1987. (Summary) **89b:62120** 62H20
- (with Rode, Richard A.) The use of Box-Cox transformations in the development of multivariate tolerance regions with applications to clinical chemistry. *Amer. Statist.* 42 (1988), no. 1, 23-30. (Not in MR) **62F25**
- Chinea, Domingo** ★ Subvariedades invariantes y semi-invariantes de variedades casi contacto y casi complejas. (Spanish) [Invariant and semi-invariant submanifolds of almost contact and almost complex manifolds] Dissertation, Universidad de La Laguna, La Laguna, 1983. Colección Monografías [Collection of Monographs], 17. *Universidad de La Laguna, Secretariado de Publicaciones, La Laguna*, 1985. 211 pp. ISBN 84-600-4301-0 (Juan de D. Pérez) **89b:53061** 53C15 (53C40)
- (with González Dávila, José Carmelo) Almost contact homogeneous structures in hyperbolic spaces. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2* (Spanish) (Badajoz, 1986), 80-87, *Publ. Dep. Mat. Univ. Extremadura, Badajoz*, 1987. (Luis A. Cordero) **89m:53080** 53C30 (53C15)
- Almost contact metric submersions and structure equations. *Publ. Math. Debrecen* 34 (1987), no. 3-4, 207-213. (Ion Mihai) **89f:53056** 53C15
- Chinea, F. J.** Symmetries in tetrad theories. *Classical Quantum Gravity* 5 (1988), no. 1, 135-145. (R. J. McKellar) **89d:83032** 83C40 (83C20)
- Twisting, type- $N$  vacuum gravitational fields with symmetries. *Phys. Rev. D* (3) 37 (1988), no. 10, 3080-3082. (Enric Verdaguer) **89g:83017** 83C20 (83C30, 83C40)
- Chinea Miranda, Domingo** see Chinea, Domingo
- Chinedu, O. S.** Initial manifold of the Cauchy problem for a degenerate system of linear homogeneous stochastic equations. (Russian) *Vestnik Kharkov. Gos. Univ. No. 298* *Mat. Mekh. i Voprosy Uprav.* (1987), 53-56. (D. Bobrowski) **89d:34095** 34F05 (34A30, 60H10)
- Chinn, P. Z.** (with Thoelecke, P. A.; Richter, Robert Bruce) Families of primal graphs. *Ars Combin.* 26 (1988), 45-52. (B. Manvel) **89m:05088** 05C70
- (with Brigham, Robert C.; Dutton, Ronald D.) Vertex domination-critical graphs. *Networks* 18 (1988), no. 3, 173-179. (Michael Jacobson) **89i:05152** 05C35
- Chin' Ngok Mir'** see Trinh Ngoc Minh

- Chiocchia, G.** (with Gabutti, B.) A new transformation for computing hypergeometric series and the exact evaluation of the transonic adiabatic flow over a smooth hump. Special issue in honour of Gino Moretti on the occasion of his 70th birthday (Farmingdale, NY, 1987). *Comput. & Fluids* 17 (1989), no. 1, 13–23. (Summary) **89h:76003** 76-08 (33A30, 65D20, 76G05, 76H05)
- Chiodo, Claudia** (with Criscuolo, Giuliana) On the convergence of a rule by Monegato for the numerical evaluation of Cauchy principal value integrals. (German summary) *Computing* 40 (1988), no. 1, 67–74. (Walter Gautschi) **89h:65034** 65D30
- Chionades, Gregory** see Pingree, David, **89e:01013**
- Chioresan, Ioana** (with Groze, Victoria) A generalization of projective space. *Seminar on geometry (Cluj-Napoca, 1986)*, 37–50, Preprint, 86-10, Univ. "Babeş-Bolyai", Cluj-Napoca, 1986. (Pavel Burda) **89h:51004** 51A05 (51A25)
- (with Groze, Sever) On the Steffensen's method in Fréchet spaces. *Seminar on Numerical and Statistical Calculus (Cluj-Napoca, 1987)*, 134–142, Preprint, 87-9, Univ. "Babeş-Bolyai", Cluj-Napoca, 1987. (J. W. Schmidt) **89h:65097** 65J15 (47H17)
- (with Groze, Sever) On the solving of operator equations defined in Fréchet spaces by a modified chord method. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* 32 (1987), no. 4, 36–40. (J. Daneš) **89h:65071** 65J15 (47H17)
- Chipalkatti, Renu** (with Arbib, Michael A.) The cue interaction model of depth perception: a stability analysis. *J. Biol. Biol.* 26 (1988), no. 3, 235–262. (T. W. Barrett) **89g:92072** 92A27 (92A20)
- Chipchakov, I. D.** Normality of locally finite associative division algebras over classical fields. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 2, 15–17, 101; translated in *Moscow Univ. Math. Bull.* 43 (1988), no. 2, 18–21. (Jusuf Alajbegović) **89e:16030** 16A39 (12E15, 16A46, 16A48)
- Chipot, Michel** Some results on the compressible Reynolds equation. *Contributions to nonlinear partial differential equations, Vol. II* (Paris, 1985), 79–90, Pitman Res. Notes Math. Ser., 155, Longman Sci. Tech., Harlow, 1987. (Howard Swann) **89a:35177** 35Q20 (76N10)
- (with Eymard, Pierre; Tahani, Taoufik) Sur les fonctions propres de l'opérateur de Laplace-Beltrami dont le carré est fonction propre. (English summary) [On the eigenfunctions of the Laplace-Beltrami operator whose squares are eigenfunctions] *Symposia Mathematica, Vol. XXIX (Cortona, 1984)*, 111–129, *Sympos. Math.*, 29, Academic Press, New York-London, 1987. (Gerald B. Folland) **89i:43007** 43A85 (35J05, 58C40, 58G25)
- On the Reynolds lubrication equation. *Nonlinear Anal.* 12 (1988), no. 7, 699–718. (J. R. Ockendon) **89h:35281** 35Q20 (35J70, 76D08)
- (with Rodrigues, José-Francisco) Comparison and stability of solutions to a class of quasilinear parabolic problems. *Proc. Roy. Soc. Edinburgh Sect. A* 110 (1988), no. 3–4, 275–285. (Piero de Mottoni) **89h:35016** 35B05 (35K55, 35K85)
- Chirich, Lyubomir** see Čirić, Ljubomir B.
- Chirikalov, V. A.** Solution of the Cauchy problem by a matrix method using Chebyshev nodes for systems of differential equations. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 115–118, 129. (Not in MR) 65L05
- Chirikov, B. V.** (with Shepelyanskii, D. L.) Boundary of chaos and statistical anomalies. (Russian. English summary) *Conference "Renormalization Group—86"* (Russian) (Dubna, 1986), 184–202, 397, 407, *Joint Inst. Nuclear Res., Dubna*, 1987. (see **89a:81002**) 58F13
- Dynamic mechanisms of noise. (Russian) *IV International Symposium on Selected Topics in Statistical Mechanics (Russian)* (Dubna, 1987), 415–422, *Joint Inst. Nuclear Res., Dubna*, 1988. (From the text) **89h:58174** 58F13 (58F30)
- (with Izrailev, F. M.; Shepelyanskii, D. L.) Quantum chaos: localization vs. ergodicity. Progress in chaotic dynamics. *Phys. D* 33 (1988), no. 1–3, 77–88. (Summary) **89h:81048** 81C99 (58F13)
- see also *Progress in chaotic dynamics*, (Not in MR) and Arnold, V. I. et al., (Not in MR)
- Chirijă, Stan** Continuous data dependence in the dynamical theory of nonlinear thermoelasticity on unbounded domains. *J. Thermal Stresses* 11 (1988), no. 1, 57–72. (D. G. Natsroshvili) **89a:73061** 73U05 (35B30)
- Chirka, E. M.** (with Sadullayev, A.) On the continuation of functions with polar singularities. (Russian) *Mat. Sb. (N.S.)* 132(174) (1987), no. 3, 383–390, 445; translated in *Math. USSR-Sb.* 60 (1988), no. 2, 377–384. (Marek Jarmicki) **89a:32014** 32D15
- (with Pinchuk, S. I.) On the symmetry principle for analytic sets. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 52 (1988), no. 1, 200–211; translated in *Math. USSR-Izv.* 32 (1989), no. 1, 205–216. (M. Klimek) **89d:32014** 32B15 (32D15)
- Chirkov, A. Yu.** (with Shevchenko, V. N.) Determination of the successive minima of an integer lattice and of the vector of the lattice closest to the given one. (Russian. English summary) *Kibernetika (Kiev)* 1987, no. 4, 46–49, 134. (Jürgen Köhler) **89a:90088** 90C10 (11D75, 68Q25)
- Chirkunov, Yu. A.** (with Prudnikov, V. Yu.) Group properties of equations in classical elasticity theory. (Russian) *Dokl. Akad. Nauk SSSR* 302 (1988), no. 6, 1353–1356; translated in *Soviet Phys. Dokl.* 33 (1988), no. 10, 733–735. (Introduction) **89h:73010** 73C02 (58G35)
- Chirlian, Paul M.** (with Amirat, Cherif) Effective bandwidth of 2-D functions that can be expressed as a linear combination of orthogonal functions. *IEEE Trans. Circuits and Systems* 36 (1989), no. 3, 452–454. (Not in MR) 94A11
- Chisci, Luigi** High speed RLS parameter estimation by systolic-like arrays. *Advanced computing concepts and techniques in control engineering (II Ciocco, 1987)*, 471–485, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 47, Springer, Berlin-New York, 1988. (see **89g:93002**) 93E10 (68Q80, 93C40)
- Chisholm, J. S. R.** (with Common, A. K.) A class of second-order differential equations and related first-order systems. *J. Phys. A* 20 (1987), no. 16, 5459–5472. (Zai-Feng Song) **89h:34025** 34A34
- (with Farwell, R. S.) Electroweak spin gauge theories and the frame field. *J. Phys. A* 20 (1987), no. 18, 6561–6580. (G. Vitiello) **89g:81104** 81G15
- (with Farwell, R. S.) Gravity and the frame field. *Gen. Relativity Gravitation* 20 (1988), no. 4, 371–382. (Yu. N. Obukhov) **89g:83038** 83D05 (81E20, 83C05)
- Complex Clifford algebra formulation of Hamiltonian theory. Proceedings of the Workshop on Clifford Algebra, Clifford Analysis and their Applications in Mathematical Physics (Ghent, 1988). *Simon Stevin* 62 (1988), no. 3–4, 201–207. (Introduction) **89j:58028** 58F05 (15A66, 70G99)
- Chisholm, Paul** Derivation of a parsing algorithm in Martin-Löf's theory of types. *Sci. Comput. Programming* 8 (1987), no. 1, 1–42. (Summary) **89a:68146** 68Q55 (03B15, 03B70, 03F50, 68N05, 68Q60)
- Chisholm, Roderick M.** see Brentano, Franz, **89e:01051**
- Chislenko, Yu. S.** Decompositions of simple singularities of real functions. (Russian) *Funktsional. Anal. i Prilozhen.* 22 (1988), no. 4, 52–67, 96; translated in *Functional Anal. Appl.* 22 (1988), no. 4, 297–310. (Piotr Jaworski) **89m:58023** 58C27 (14B07, 32B30, 32C40)
- Chistyakov, Aleksandr Vladimirovich** On the set of roots of a quasi-polynomial with incommensurable exponents. (Russian) *Boundary value problems (Russian)*, 32–35, iii–iv, *Perm. Politekh. Inst., Perm*, 1986. (see **89c:00009**) 30C15 (30C10)
- Chistyakov, G. P.** Stability of the decompositions of lattice infinitely divisible distribution functions of Yu. V. Linnik's class  $\mathcal{L}$ . (Russian) *Stability problems for stochastic models (Russian)* (Varna, 1985), 84–107, *Vsesoyuz. Nauch.-Issled. Inst. Sistem. Issled., Moscow*, 1986. (S. G. Maloshevskii) **89h:60031** 60E05 (60E07)
- Factorization of the probability distributions of Yu. V. Linnik's class  $L$ . I. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 47 (1987), 3–25. (S. G. Maloshevskii) **89a:60042a** 60E07 (60E10)
- Factorization of the probability distributions of Yu. V. Linnik's class  $L$ . II. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 48 (1987), 3–26. (S. G. Maloshevskii) **89a:60042b** 60E07 (60E10)
- On the problem of  $\alpha$ -decompositions of the normal distribution. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 1, 163–166; translated in *Theory Probab. Appl.* 33 (1988), no. 1, 152–155. (Gábor J. Székely) **89c:60019** 60E10
- Chistyakov, V. F.** On singular systems of ordinary differential equations and their integral analogues. (Russian) *Lyapunov functions and their applications (Russian)*, 231–240, 248, "Nauka" Sibirsk. Otdel., Novosibirsk, 1986. (P. Brunovsky) **89a:45004** 45D05 (34A45, 34E10)
- Chistyakov, V. P.** (with Dorogov, V. I.) ★ Вероятностные модели превращения частиц. (Russian) [Probabilistic models of the transformation of particles] *Проблемы Науки и Технического Прогресса*. [Problems of Science and Technological Progress] "Nauka", Moscow, 1988. 111 pp. ISBN 5-02-013758-8 (Summary) **89f:81050** 81C20 (60R85, 82A75)
- Chistyakov, Yu. E.** (with Bunakov, A. E.; Kononenko, A. F.) Hierarchical differential (dynamic) games and their applications. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 140–153, "Nauka", Moscow, 1987. (Boleslaw Tolwinski) **89f:90214** 90D20 (90D25, 90D45, 93A13)
- Chiswell, I. M.** Right-angled Coxeter groups. *Low-dimensional topology and Kleinian groups (Coventry/Durham, 1984)*, 297–304, *London Math. Soc. Lecture Note Ser.*, 112, Cambridge Univ. Press, Cambridge-New York, 1986. (From the text) **89g:20053** 20F05
- Chitashvili, R. Ya.** (with Mania, M. G.) On optimal controls in the problem of locally absolutely continuous change of measure (compact sets of decisions). *Probability theory and mathematical statistics*, Vol. I (Vilnius, 1985), 331–356, *VNU Sci. Press, Utrecht*, 1987. (Yu. M. Kabanov) **89a:93056** 93E20 (49A60, 60H05)
- Chigescu, Ion** (with Calude, Cristian) Random sequences according to P. Martin-Löf. *Found. Control Engrg.* 12 (1987), no. 2, 75–84. (Ludwig Staiger) **89c:68059** 68Q30
- (with Calude, Cristian) Random sequences: some topological and measure-theoretical properties. *An. Univ. Bucureşti Mat.* 37 (1988), no. 2, 27–32. (J. C. Oxtoby) **89m:60004** 60A05 (03D80, 68Q30)
- Chitropakar, S. S.** Some observations on the EOQ models. *J. Inform. Optim. Sci.* 9 (1988), no. 3, 421–426. (Summary) **89h:90072** 90B05
- Chitra, A.** (with Subrahmanyam, P. V.) A generalization of a section theorem of Ky Fan and its applications to variational inequalities. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 17 (1987), no. 1, 17–37. (George Isaac) **89d:47120** 47H10 (49A29)
- Chiu, Chichia** (with Nicolaides, R. A.) Convergence of a higher-order vortex method for two-dimensional Euler equations. *Math. Comp.* 51 (1988), no. 184, 507–534. (David C. Arney) **89c:65117** 65N30 (76-08, 76C05)
- Chiu, H. M.** (with Hsu, Chieh Su) Global analysis of a system with multiple responses including a strange attractor. *J. Sound Vibration* 114 (1987), no. 2, 203–218. (Summary) **89c:58078** 58F13 (70K50)
- Chiu, Huan Neng** (with Lin, Tsong Ming) An optimal lot-sizing model for multi-stage series/assembly systems. *Comput. Oper. Res.* 15 (1988), no. 5, 403–415. (Summary) **89h:90118** 90B30 (90B05)
- Chiu, Lin** (with Liu, Ming T.) Variable timestamps: performance analysis. *Inform. Sci.* 46 (1988), no. 1–2, 3–25. (Erol Gelenbe) **89m:68021** 68P15 (68M20)
- Chiu, Sen** see Qiu, Sen
- Chiu, Shean-Tsong** Weighted least squares estimators on the frequency domain for the parameters of a time series. *Ann. Statist.* 16 (1988), no. 3, 1315–1326. (J. G. de Gooijer) **89i:62145** 62M10 (62F12)
- Chiyonobu, T.** (with Kusuoka, Shigeo) The large deviation principle for hypermixing processes. *Probab. Theory Related Fields* 78 (1988), no. 4, 627–649. (Esa Nummelin) **89i:60061** 60F10 (60G10)
- Chizeck, Howard J.** (with Voss, G. I.; Katona, P. G.) Self-tuning controller for drug delivery systems. *Internat. J. Control* 47 (1988), no. 5, 1507–1520. (Not in MR) 93C75 (92A06, 93C40)
- (with Ji, Yuandong) Controllability, observability and discrete-time Markovian jump linear quadratic control. *Internat. J. Control* 48 (1988), no. 2, 481–498. (Engin Yaz) **89g:93111** 93E20 (93B05, 93B07, 93C55)
- (with Ji, Yuandong) Optimal quadratic control of jump linear systems with separately controlled transition probabilities. *Internat. J. Control* 49 (1989), no. 2, 481–491. (George Yin) **89h:93224** 93E20 (49D40, 93B05, 93C55)
- Chkadua, O. O.** (with Khamza, F.) Investigation of basic problems of the moment theory of elasticity for anisotropic media. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 128 (1987), no. 3, 469–472 (1988). (Summary) **89h:73012** 73C30 (73B25, 73C35)
- Chkhre Khen Ir** Optimality and suboptimality criteria in a problem of the optimization of a dynamical system with a variable set of controls. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* 1988, no. 2, 54–57, 81. (E. S. Chichkin) **89j:49013** 49B10
- Chlebus, Bogdan S.** Proving NP-completeness using bounded tiling. (German and Russian summaries) *Mathematical aspects of informatics (Mädgesprung, 1986)*. *J. Inform.*



- Process. Cybernet.* **23** (1987), no. 8-9, 479-484. (Toshimasa Watanabe) **89c:05034** 05C15 (68Q15, 68Q20, 68R10)
- A parallel bucket sort. *Inform. Process. Lett.* **27** (1988), no. 2, 57-61. (Summary) **89a:68031** 68P10 (68Q25)
- Chmielewski, Tadeusz** Reliability analysis of discrete dynamic systems under nonstationary random excitations. *Reliability and optimization of structural systems* (Aalborg, 1987), 45-65, *Lecture Notes in Engrg.*, 33, Springer, Berlin-New York, 1987. (See **89g:73038**) 73K35
- Chmielewski, Piotr** A class of models of the universe filled with multidimensional objects. *J. Math. Phys.* **29** (1988), no. 9, 2122-2126. (M. Sachs) **89f:83112** 83F05
- (with Page, Don N.) Probability of Bianchi type-I inflation. *Phys. Rev. D* (3) **38** (1988), no. 8, 2392-2398. (Gheorghe Zet) **89k:83081** 83F05 (83C20)
- Cho, B. H.** (with Park, S. U.; Myung, Y. S.)  $Z_3$ -symmetric conformal algebra from KdV-type equation. *J. Phys. A* **21** (1988), no. 5, 1167-1171. (Allan P. Fordy) **89k:58129** 58F07 (35Q20, 81D15, 81E40)
- (with Park, D. K.; Kim, H. S.; Yi, S. H.) Extended Sugawara model with anomaly. *Modern Phys. Lett. A* **3** (1988), no. 1, 41-45. (Summary) **89b:81085** 81D15 (81E99)
- (with Kim, W. T.; Park, D. K.) BRS analysis of the nonabelian chiral Schwinger model. *Phys. Rev. D* (3) **38** (1988), no. 8, 2586-2590. (Summary) **89j:81101** 81E13
- (with Park, S. U.) The extended Virasoro algebras from  $Z_N$  symmetric spectral equations. *Phys. Lett. B* **218** (1989), no. 2, 200-202. (Summary) **89m:58216** 58G37 (17B65, 58F07, 81E40)
- Cho, Chang-Man** Best approximation by certain compact operators on  $L^p([-1, 1]^N)$ . *J. Korean Math. Soc.* **24** (1987), no. 2, 239-245. (G. Godini) **89b:41028** 41A35 (41A65)
- Cho, Chang-Hyun** (with Chung, Kyung Tae) On the  $n$ -dimensional SE-connection and its conformal change. (Italian and Russian summaries) *Nuovo Cimento B* (11) **100** (1987), no. 4, 537-550. (Peter Basarab-Horwath) **89g:53047** 53C05 (83C99)
- Cho, L.-H.** (with Kim, J. Y.; Lim, J. I.; Park, D. Y.) Compressibility and annihilator conditions. *J. Korean Math. Soc.* **25** (1988), no. 2, 303-308. (S. K. Berberian) **89i:16016** 16A40 (16A39, 16A42)
- Cho, In-Koo** A refinement of sequential equilibrium. *Econometrica* **55** (1987), no. 6, 1367-1389. (Summary) **89b:90043** 90A14 (90D10)
- Cho, Jung R.** Idempotent medial  $n$ -groupoids defined on fields. *Algebra Universalis* **25** (1988), no. 3, 235-246. (Wiesław A. Dudek) **89i:20106** 20N15 (03C05, 08B05)
- Chô, Manee** Joint spectra of commuting normal operators on Banach spaces. *Glasgow Math. J.* **30** (1988), no. 3, 339-345. (Jörg Eschmeier) **89i:47006** 47A10 (47A12, 47B15)
- Cho, Nak Eun** (with Owa, Shigeyoshi) Certain class of analytic functions with negative coefficients. *J. Korean Math. Soc.* **24** (1987), no. 1, 105-111. (Mauriso Alves) **89a:30010** 30C45
- (with Lee, Sang Hun; Owa, Shigeyoshi) A class of meromorphic univalent functions with positive coefficients. *Kobe J. Math.* **4** (1987), no. 1, 43-50. (Stephen M. Zemyan) **89b:30008** 30C45
- (with Owa, Shigeyoshi) A note on analytic  $p$ -valent functions. *Kyungpook Math. J.* **27** (1987), no. 2, 169-171. (O. P. Juneja) **89m:30028** 30C45 (30A10)
- Cho, Sang** (with Huyên, Dũng T.) On a complexity hierarchy between L and NL. *Inform. Process. Lett.* **29** (1988), no. 4, 177-182. (Marius Zimand) **89m:68038** 68Q15 (03D15)
- Cho, Seung-cheol** (with Kim, Sehun) A shadow price in integer programming for management decision. *European J. Oper. Res.* **37** (1988), no. 3, 328-335. (Summary) **89b:90157** 90C10 (90A05, 90B50)
- Cho, Sung Je** (with Kye, Seung-Hyeok; Lee, Sa Ge) Intersection properties for the tensor products of  $C^*$ -algebras. *Bull. Korean Math. Soc.* **24** (1987), no. 2, 103-108. (A. J. Lazar) **89a:46121** 46L05 (46M05)
- (with Kim, Sang Og; Lee, Sa Ge) On linear maps preserving projections. *Bull. Korean Math. Soc.* **25** (1988), no. 1, 83-85. (Steve Wright) **89j:46062** 46L05 (46K05, 46L70)
- Cho, Swann** (with Swanson, D. G.) Mode conversion and absorption of lower hybrid waves in inhomogeneous magnetic fields. *Phys. Fluids* **31** (1988), no. 7, 1968-1978. (Summary) **89d:76038** 76X05
- Cho, Yeol Je** (with Khan, Mohd. Saeed) Common fixed points of compatible mappings. *Bull. Malaysian Math. Soc.* (2) **10** (1987), no. 1, 9-14. (Livia D'Apuzzo) **89k:54107** 54H25 (47H10)
- (with Ha, Ki Sik; White, Albert George, Jr.) Strictly convex and strictly 2-convex 2-normed spaces. *Math. Japon.* **33** (1988), no. 3, 375-384. (A. Alexiewicz) **89m:46006** 46A13
- Cho, Yu Je** Research of a pursuit differential game in Hilbert space. (Korean. English summary) *Su-hak* **1987**, no. 4, 4-9. (Not in MR) 90D26 (49A45, 90D25)
- Research of a pursuit differential game in Hilbert space. II. (Korean. English summary) *Su-hak* **1988**, no. 1, 11-14. (Not in MR) 90D26 (49A45, 90D25)
- Chobanov, G. S.** see Dobrushin, R. L., **89g:82007**
- Chobanov, Georgi Iv.** (with Chobanov, Ivan) Lagrange's and Appell's equations for rigid bodies deduced from Euler's dynamical axioms. (Bulgarian summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **72** (1978), 81-97 (1986). (Gh. Silas) **89d:70004** 70E15 (70A05)
- (with Chobanov, Ivan) An apparent dynamic paradox. I. Lagrangian mechanics? (Bulgarian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Méc.* **76** (1982), no. 2, 3-32 (1987). (B. Vujanović) **89g:70013** 70H35 (70A05)
- (with Chobanov, Ivan) An apparent dynamic paradox. II. Paradoxes? (Bulgarian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Méc.* **76** (1982), no. 2, 33-57 (1987). (B. Vujanović) **89g:70014** 70H35 (70E15)
- Variational inequalities with Landesman-Lazer conditions. (Russian summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **77** (1983), no. 1, 25-31 (1988). (Jing Yue Lin) **89m:49013** 49A29 (47H05, 47H15)
- A note on the existence for a nonresonance elliptic problem. (Russian summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **77** (1983), no. 1, 33-36 (1988). (Philip W. Schaefer) **89k:35090** 35J65 (35J20)
- Semilinear elliptic equation with asymptotes. Some multiplicity and existence results. *Math. Balkanica (N.S.)* **1** (1987), no. 1, 3-13. (John Urbas) **89c:35056** 35J65
- see also Gindikin, S. G., **89i:01076**
- Chobanov, Ivan** (with Chobanov, Georgi Iv.) Lagrange's and Appell's equations for rigid bodies deduced from Euler's dynamical axioms. (Bulgarian summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **72** (1978), 81-97 (1986). (Gh. Silas) **89d:70004** 70E15 (70A05)
- Complex standard vector spaces. (Russian summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **75** (1981), no. 2, 3-26 (1985). (Summary) **89h:15002** 15A03 (51G05, 70A05)
- (with Chobanov, Georgi Iv.) An apparent dynamic paradox. I. Lagrangian mechanics? (Bulgarian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Méc.* **76** (1982), no. 2, 3-32 (1987). (B. Vujanović) **89g:70013** 70H35 (70A05)
- (with Chobanov, Georgi Iv.) An apparent dynamic paradox. II. Paradoxes? (Bulgarian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Méc.* **76** (1982), no. 2, 33-57 (1987). (B. Vujanović) **89g:70014** 70H35 (70E15)
- (with Dokova, Rossitza) Other dynamical "paradoxes". (Bulgarian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Méc.* **76** (1982), no. 2, 209-231 (1987). (B. Vujanović) **89g:70006** 70D99 (70E99)
- Analytic geometries in complex standard vector spaces. (Russian summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **77** (1983), no. 1, 73-138 (1988). (K. Strubecker) **89k:51038** 51N20
- see also Gindikin, S. G., **89d:01031** and Ginzburg, V. L., **89i:01033**
- Choc, P.** (with Schreiber, I.; Dolnik, M.; Marek, M.) Resonance behaviour in two-parameter families of periodically forced oscillators. *Phys. Lett. A* **128** (1988), no. 1-2, 66-70. (Summary) **89c:70053** 70K30 (34C15, 34C25, 58F14)
- Choda, Marie** The conjugacy classes of subfactors and the outer conjugacy classes of the automorphism group. *Math. Japon.* **32** (1987), no. 3, 379-388. (Cho Ho Chu) **89a:46131** 46L35 (46L40)
- Choe, Boe Rim** An elementary proof of  $\sum_{n=1}^{\infty} 1/n^2 = \pi^2/6$ . *Amer. Math. Monthly* **94** (1987), no. 7, 662-663. (Not in MR) 40A25
- Cauchy integral equalities and applications. *Trans. Amer. Math. Soc.* **315** (1989), no. 1, 337-352. (Daowei Ma) **89m:32010** 32A35
- Choe, Hi Chol** Study on the even-order spline function. (Korean. English summary) *Su-hak* **1988**, no. 2, 32-38. (From the summary) **89k:41012** 41A15
- Choe, Sang Hyun** On admissible estimation in a semiorthogonal linear model. (Korean. English summary) *Cho-sôn In-min Kong-hwa-kuk Kwa-hak-wôn T'ong-bo* **1987**, no. 5, 1-3. (Summary) **89c:62106** 62J05 (62C15, 62H12)
- On admissibility of linear estimators for a linear function of parameters. (Korean. English summary) *Cho-sôn In-min Kong-hwa-kuk Kwa-hak-wôn T'ong-bo* **1987**, no. 6, 6-8. (Summary) **89c:62107** 62J05 (62C15, 62H12)
- Choe, Tae Ho** (with Han, Yong-Hyeon; Hong, Sung Sa) Separated locales. II. *Kyungpook Math. J.* **27** (1987), no. 2, 109-114. (Jiri Rosický) **89j:54002** 54A05 (06D99)
- (with Hong, Sung Sa) The duality between frames and ordered topological spaces. *J. Korean Math. Soc.* **25** (1988), no. 1, 115-123. (Jiri Rosický) **89g:54002** 54A05 (06D20, 06F30)
- Choe, Yeong-Wu** (with Nam, Hyung-Che) Sasakian submanifolds of codimension 2 in a Sasakian manifold with harmonic curvature. *J. Korean Math. Soc.* **24** (1987), no. 2, 247-255. (Kouei Sekigawa) **89f:53075** 53C40 (53C25)
- Choffrut, Christian** An introduction to automata network theory. *Automata networks* (Argenteuil-Village, 1986), 1-18, *Lecture Notes in Comput. Sci.*, 316, Springer, Berlin-New York, 1988. (see **89c:68078**) 68Q80 (90B10)
- Unavoidable subsets of words. (Spanish. French summary) *Rev. Mat. Apl.* **9** (1988), no. 2, 36-41. (François Blanchard) **89b:68081** 68Q45 (20M35, 28D99, 68P10)
- (with Schützenberger, Marcel-Paul) Counting with rational functions. (French summary) Thirtieth International Colloquium on Automata, Languages and Programming (Rennes, 1986). *Theoret. Comput. Sci.* **58** (1988), no. 1-3, 81-101. (Anna Bagyinszkiné-Orosz) **89j:68110** 68Q70 (68Q45)
- see also Automata networks, **89c:68078**
- Choi, Bong Dae** (with Sung, Soo Hak) On Chung's strong law of large numbers in general Banach spaces. *Bull. Austral. Math. Soc.* **37** (1988), no. 1, 93-100. (A. Bozorgnia) **89b:60018** 60B12 (60B11, 60F15)
- (with Sung, Soo Hak) On convergence of weighted sum for pairwise independent identically distributed random variables. *Bull. Korean Math. Soc.* **25** (1988), no. 1, 77-82. (Lajos Horváth) **89g:60102** 60F15
- Choi, Byoung Seon** (with Császár, I.; Cover, Thomas M.) Conditional limit theorems under Markov conditioning. *IEEE Trans. Inform. Theory* **33** (1987), no. 6, 788-801. (M. Iosifescu) **89c:60074** 60J10 (60F99, 62E20, 62M99)
- Choi, Hi Chol** see Choe, Hi Chol
- Choi, Hyeon-Ah** (with Hakim, S. Louis) Data transfers in networks. *Algorithmica* **3** (1988), no. 2, 223-245. (J. Bond) **89j:68016** 68M10 (68Q25, 90B35)
- (with Nakajima, Kazuo; Rim, Chong S.) Graph bipartization and via minimization. *SIAM J. Discrete Math.* **2** (1989), no. 1, 38-47. (Karl Weber) **89m:90132** 90C27 (05C35, 68Q25, 94C15)
- Choi, Hyeon In** (with Treibergs, Andrejs) New examples of harmonic diffeomorphisms of the hyperbolic plane onto itself. *Manuscripta Math.* **62** (1988), no. 2, 249-256. (John C. Wood) **89h:58045** 58E20
- Choi, Hyung Jin** (with Agui, Takeshi; Nakajima, Masayuki) A method of license plate extraction using a fast pyramid hierarchical Hough transformation. *Systems Comput. Japan* **19** (1988), no. 8, 69-76. (Not in MR) 68T10
- Choi, Jeong-Yeol** (with Kim, Tae-Sung) Weak association of random variables, with applications. *Honam Math. J.* **9** (1987), no. 1, 113-119. (Teresa Kowalczyk) **89c:62085** 62H05 (62H20)
- Choi, Jo Ho** (with Kwak, Byung Man) Boundary integral equation method for shape optimization of elastic structures. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 7, 1579-1595. (Summary) **89d:73039** 73K40
- Choi, K.** see Choi, Kyung K.
- Choi, K. P.** Some sharp inequalities for martingale transforms. *Trans. Amer. Math. Soc.* **307** (1988), no. 1, 279-300. (D. L. Burkholder) **89b:60132** 60H05 (60G42, 60G46)
- Choi, Keh-Kun** (with Hong, Yeon-Chan; Kim, Jong-Hwan) Discrete adaptive observer with exponential weighting properties. *IEEE Trans. Automat. Control* **34** (1989), no. 2, 229-231. (Not in MR) 93B07
- Choi, Kil Nam** A note on the Grassmann manifolds  $G(k, n)$ . (Korean summary) *Univ. Ulsan Rep. Natur. Sci. Engrg.* **18** (1987), no. 1, 51-53. (Basil J. Papantoniou) **89b:57016** 57R25 (14M15, 53C30, 57R75)
- Choi, Kyung K.** (with Haug, Edward J.; Komkov, V.) ★ Design sensitivity analysis of structural systems. Mathematics in Science and Engineering, 177. Academic Press,

- Inc., Orlando, FL, 1986. xvi+381 pp. ISBN 0-12-332920-5; 0-12-332921-3 (Z. Mróz) 89b:73061 73K40 (73-02, 73-08, 90C50)
- (with Haug, Edward J.; Komkov, V.) ★ *Анализ чувствительности при проектировании конструкций*. (Russian) [Sensitivity analysis in the design of structures] Translated from the English by S. Yu. Ivanova and A. D. Larichev. Translation edited and with a preface by N. V. Banichuk. "Mir", Moscow, 1988. 430 pp. (Editors) 89b:73062 73K40 (73-02, 73-08, 90C50)
- Choi, M. Y. Dynamic model of neural networks. *Phys. Rev. Lett.* **61** (1988), no. 24, 2809–2812. (Summary) 89b:92012 92A09 (68Q75, 82A57)
- Choi, Man Duen (with Laurie, C.; Radjavi, H.; Rosenthal, Peter M.) On the congruence numerical range and related functions of matrices. *Linear and Multilinear Algebra* **22** (1987), no. 1, 1–5. (Yik-Hoi Au-Yeung) 89b:15030 15A60 (15A15)
- Almost commuting matrices need not be nearly commuting. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 529–533. (Claude Schochet) 89b:47021 47A55 (15A27, 47B47)
- see also Pop, Florin, 89m:47040
- Choi, Sung C. (with Chinchilli, Vernon M.) Analysis of within- and across-subject correlations. *Multivariate statistical modeling and data analysis* (Harrisonburg, Va., 1986), 77–93. *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (Summary) 89b:62120 62H20
- Choi, Y. K. (with Bien, Zeungnam) Decentralized adaptive control scheme for control of a multi-arm-type robot. *Internat. J. Control* **48** (1988), no. 4, 1715–1722. (Not in MR) 93C40 (93A15)
- Choi, Yeon Sun (with Noah, S. T.) Forced periodic vibration of unsymmetric piecewise-linear systems. *J. Sound Vibration* **121** (1988), no. 1, 117–126. (Summary) 89a:70022 70K40
- Choi, Yun Sung A generalization of Cartan's uniqueness theorem on locally convex spaces. *Bull. Korean Math. Soc.* **25** (1988), no. 1, 1–4. (Richard M. Aron) 89b:46059 46G20 (32H99, 46A99)
- Chojnacki, Wojciech Spectral analysis of Schrödinger operators in nonseparable Hilbert spaces. Functional integration with emphasis on the Feynman integral (Sherbrooke, PQ, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* **17** (1987), 173–184 (1988). (Rainer Hempel) 89j:81037 81C10 (46N05, 47F05)
- Some nontrivial cocycles. *J. Funct. Anal.* **77** (1988), no. 1, 9–31. (K. Yale) 89e:43015 43A60 (22D40)
- Choksi, J. R. (with Eigen, Stanley; Prasad, V. S.) In general a stochastic operator does not preserve a measure. *Indiana Univ. Math. J.* **36** (1987), no. 3, 617–630. (Janusz Wos) 89d:47014 47A35 (28D15, 47B38)
- (with Hawkins, J. M.; Prasad, V. S.) Abelian cycles for nonsingular ergodic transformations and the genericity of type III<sub>1</sub> transformations. *Monatsh. Math.* **103** (1987), no. 3, 187–205. (Motosige Osikawa) 89a:28019 28D99 (46L55)
- (with Alpern, Steve; Prasad, V. S.) Conjugates of infinite measure preserving transformations. *Canad. J. Math.* **40** (1988), no. 3, 742–749. (Nathaniel Friedman) 89m:28026 28D05 (58F11)
- Cholewa, Piotr W. Almost approximately polynomial functions. *Nonlinear analysis*, 127–136. *World Sci. Publishing, Singapore*, 1987. (L. Losonczi) 89c:39019 39C05
- Cholewinski, Frank M. ★ The finite calculus associated with Bessel functions. *Contemporary Mathematics*, 75. *American Mathematical Society, Providence, RI*, 1988. xii+122 pp. ISBN 0-8218-5083-0 (David M. Bressoud) 89m:05013 05A40 (33A40)
- Chollet, Anne-Marie Propriétés de recouvrement des sous-ensembles de la frontière d'un domaine strictement pseudo-convexe. [Covering properties of subsets of the boundary of a strictly pseudoconvex domain] *Complex analysis, II* (College Park, Md., 1985–86), 67–78. *Lecture Notes in Math.*, 1276. *Springer, Berlin-New York*, 1987. (Julia Cuff) 89b:32013 32A40 (32E35, 32F15)
- (with Chaumat, Jacques) Noyaux pour résoudre l'équation  $\bar{\partial}u = v$  dans des classes indéfiniment différentiables. (English summary) [Kernels to solve the equation  $\bar{\partial}u = v$  in infinitely differentiable classes] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 14, 585–588. (Joaquim Bruna) 89j:32036 32F15 (35N15)
- Chomet, S. see Sokolov, A. A., 89b:81003
- Chommeloux, L. (with Tabbara, W.; Duchêne, B.; Pichot, Ch.; Lesselier, D.; Joachimowicz, N.) Diffraction tomography: contribution to the analysis of some applications in microwaves and ultrasonics. *Inverse Problems* **4** (1988), no. 2, 305–331. (Summary) 89f:76074 76Q05 (78A55, 92-08, 92A07)
- Chomut, Tuvai (with Inselberg, Alfred; Reif, Mordechai) Convexity algorithms in parallel coordinates. *J. Assoc. Comput. Mach.* **34** (1987), no. 4, 765–801. (H. W. Guggenheimer) 89a:68207 68U05 (68R10)
- Chong, B. W. (with Hang, C. C.; Lim, K. W.) A dual-rate adaptive digital Smith predictor. *Automatica—J. IFAC* **25** (1989), no. 1, 1–16. (Not in MR) 93C40 (93E10)
- Chong, C. T. 1-generic degrees and minimal degrees in higher recursion theory. *Japan. J. Math. (N.S.)* **13** (1987), no. 2, 381–392. (R. A. Di Paola) 89g:03062 03D60 (03D30)
- Chong, Chee-Yee (with Malhamé, Roland) On the statistical properties of a cyclic diffusion process arising in the modeling of thermostat-controlled electric power system loads. *SIAM J. Appl. Math.* **48** (1988), no. 2, 465–480. (Summary) 89a:60244 60K99 (82A99)
- Chong, Chin Myung see Recipients of the Korean Mathematical Society prizes for 1987, 89b:01098
- Chongdar, Asit Kumar On generating functions of Laguerre polynomials. *Bull. Calcutta Math. Soc.* **79** (1987), no. 1, 48–56. (Summary) 89a:33006 33A65 (33A75)
- Errata: "A Lie-algebra and generating functions of modified Laguerre polynomials" [Bull. Calcutta Math. Soc. **78** (1986), no. 4, 219–226; MR 88h:33033]. *Bull. Calcutta Math. Soc.* **79** (1987), no. 2, 127. (Editors) 89d:33022 33A75
- Lie algebra and modified Bessel polynomials. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 4, 417–431. (R. K. Saxena) 89m:33010 33A40 (33A75)
- On the unification of a class of bilateral generating functions for certain special functions. *Tamkang J. Math.* **18** (1987), no. 3, 53–59. (S. K. Chatterjee) 89g:33015 33A99
- Chopard, Bastien (with Droz, Michel) Cellular automata model for thermo-hydrodynamics. *Chaos and complexity* (Torino, 1987), 302–306. *World Sci. Publishing, Singapore*, 1988. (Summary) 89f:76036 76D05 (76-08, 80A20, 82A40)
- (with Droz, Michel) Nonequilibrium phase transitions and cellular automata. *Chaos and complexity* (Torino, 1987), 307–317. *World Sci. Publishing, Singapore*, 1988. (Summary) 89f:82114 82A99 (68Q80, 82-08, 82A25, 92A40)
- (with Droz, Michel) Cellular automata model for heat conduction in a fluid. *Phys. Lett. A* **126** (1988), no. 8–9, 476–480. (Summary) 89a:80002 80A20 (65C20, 76N15)
- Chopik, V. I. Group-theoretic properties of linear equations of parabolic type with nonlinear complementary conditions. (Russian) *Symmetry and solutions of nonlinear equations of mathematical physics* (Russian), 63–66, iii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (From the text) 89j:35058 35K25 (35A30, 58G35)
- Chopra, D. V. On the existence and construction of trim balanced arrays. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), A, 211–214. (William I. Notz) 89b:05063 05B30 (62K15)
- Chopterier, Ch. T. see Khopterier, Khr. T.
- Choquet, Annie (with Finkel, Alain) FIFO nets without order deadlock. *Acta Inform.* **25** (1988), no. 1, 15–36. (Summary) 89a:68167 68Q90
- Choquet, Gustave see Citation for Gustave Choquet, 89i:01129
- Choquet-Bruhat, Yvonne Spin  $\frac{1}{2}$  fields in arbitrary dimensions and the Einstein-Cartan theory. *Gravitation and geometry*, 83–106. *Monographs Textbooks Phys. Sci.*, 4. *Bibliopolis, Naples*, 1987. (Andrzej Trautman) 89e:53107 53C80 (35L99, 53A50, 58D30, 83C60)
- Non existence de solutions globales de certaines équations d'onde non linéaires sur une variété. (English summary) [Nonexistence of global solutions of some nonlinear wave equations on a manifold] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 19, 817–821. (Mauro Francaviglia) 89f:58024 58D25 (35L70, 58D30)
- (with Novello, Mario) Systeme conforme régulier pour les équations d'Einstein. (English summary) [Regular conformal system for Einstein equations] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **305** (1987), no. 3, 155–160. (Norbert Noutchegueme) 89m:53073 53C25 (35L99, 53A50, 58G16, 58G30)
- Les travaux de André Lichnerowicz en relativité générale. [The works of André Lichnerowicz in general relativity] *Physique quantique et géométrie* (Paris, 1986), 1–10. *Travaux en Cours*, 32. *Hermann, Paris*, 1988. (Editors) 89i:01068 01A70 (83-03)
- Global problems in general relativity. *SILARG, VI* (Rio de Janeiro, 1987), 3–27. *World Sci. Publishing, Singapore*, 1988. (Norbert Noutchegueme) 89g:83006 83C05 (58D30, 83C75)
- Cas d'existence globale de solutions de l'équation  $\square u = A|u|^p$ . (English summary) [Case of global existence of solutions of the equation  $\square u = A|u|^p$ ] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 8, 359–364. (P. Günther) 89j:35070 35L70 (58D30, 58G16)
- Probleme de Cauchy pour les modèles gravitationnels avec termes de Gauss-Bonnet. (English summary) [The Cauchy problem for gravitational models with Gauss-Bonnet terms] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 10, 445–450. (Agostino Prastaro) 89i:58146 58G20 (58A17, 58D25, 83C05, 83E99)
- see also Differential geometry, 89c:00035 and Quantum physics and geometry, 89c:00044
- Chor, Benny (with Rivest, Ronald L.) A knapsack-type public key cryptosystem based on arithmetic in finite fields. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part I, 901–909. (Min Qiang Huang) 89k:94043 94A60 (11T71)
- (with Alexi, Werner; Goldreich, Oded; Schnorr, C.-P.) RSA and Rabin functions: certain parts are as hard as the whole. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 194–209. (Melvin M. Sweet) 89j:11120 11Y11 (11T71, 11Y16, 68P25, 68Q15, 94A60)
- (with Goldreich, Oded) Unbiased bits from sources of weak randomness and probabilistic computation complexity. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 230–261. (Claus-Peter Schnorr) 89e:68044 68Q25
- Chorin, Alexandre Joel Vortex methods and turbulence theory. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1348–1352. *Amer. Math. Soc., Providence, RI*, 1987. (Ram Babu Mishra) 89d:76003 76-08 (76C05, 76F99)
- Scaling laws in the vortex lattice model of turbulence. *Comm. Math. Phys.* **114** (1988), no. 1, 167–176. (William C. Meecham) 89m:76048 76F99 (76-08, 76L05)
- Chornoboy, E. S. (with Schramm, L. P.; Karr, A. F.) Maximum likelihood identification of neural point process systems. *Biol. Cybernet.* **59** (1988), no. 4–5, 265–275. (Summary) 89i:92012 92A09 (62F10)
- Chorny, V. Z. (with Gromyak, M. I.; Khoma, G. P.) Periodic solutions of second-order nonlinear wave ordinary integro-differential equations. (Russian) *Some problems in the theory of asymptotic methods in nonlinear mechanics* (Russian), 79–83, iv, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1986. (Summary) 89a:45017 45J05 (34C25)
- Chossat, P. (with Golubitsky, M.; Keyfitz, Barbara Lee) Hopf-Hopf mode interactions with O(2) symmetry. *Dynamics Stability Systems* **1** (1986), no. 4, 255–292. (D. H. Sattinger) 89b:58147 58F14 (80A25)
- (with Demay, Y.; Iooss, G.) Competition of azimuthal modes and quasiperiodic flows in the Couette-Taylor problem. *Dynamics of infinite-dimensional systems* (Lisbon, 1986), 45–56. *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 37. *Springer, Berlin-New York*, 1987. (Introduction) 89m:35176 35Q10 (58F14, 58F27, 76E30)
- (with Golubitsky, M.) Symmetry-increasing bifurcation of chaotic attractors. *Phys. D* **32** (1988), no. 3, 423–436. (Summary) 89j:58089 58F14 (58F35, 76F99)
- (with Golubitsky, M.) Iterates of maps with symmetry. *SIAM J. Math. Anal.* **19** (1988), no. 6, 1259–1270. (F. Visentin) 89b:58207 58F14 (34C35)
- (with Lauterbach, Reiner) The instability of axisymmetric solutions in problems with spherical symmetry. *SIAM J. Math. Anal.* **20** (1989), no. 1, 31–38. (D. H. Sattinger) 89b:58208 58F14 (34D20, 35B32)
- Chotai, A. (with Owens, D. H.) Nonadaptive control of unknown multivariable systems. (Russian summary) *Systems Sci.* **12** (1986), no. 1–2, 75–92 (1987). (Yue-Yun Wang) 89e:93087 93B50 (93C35, 93C40)
- Chotai, J. (with Lathrop, G. M.; Ott, Jane J.; Lalouel, J. M.) Tests of gene order from three-locus linkage data. *Ann. Human Genetics* **51** (1987), no. 3, 235–249. (Summary) 89b:92031 92A10
- Chou, Arthur W. On the optimality of Krylov information. *J. Complexity* **3** (1987), no. 1, 26–40. (Summary) 89a:65051 65F10 (65F15)
- Chou, Chin Feng Estimation of means of multivariate normal mixtures. *Bull. Inst. Math. Acad. Sinica* **16** (1988), no. 1, 49–55. (Lionel Weiss) 89b:62088 62H12 (62C20)
- An identity for multidimensional continuous exponential families and its applications. *J. Multivariate Anal.* **24** (1988), no. 1, 129–142. (N. Giri) 89g:62022 62E10 (62F11, 62F15)
- Chou, D. S. (with Swarder, D. D.) Passive adaptation in control system design. *Control and dynamic systems*, Vol. 24, 315–356. *Academic Press, Orlando, FL*, 1986. (Zong Ji Chen)



- 89a:93035** 93C40 (49C20, 93B50, 93C10, 93C20)
- Chou, Jine-Phone** *see* Chou, Chin Feng
- Chou, Jyh Horng** (with Horng, Ing Rong) Shifted Jacobi series analysis of linear two-point boundary value problems. *Internat. J. Systems Sci.* **19** (1988), no. 1, 161–169. (Summary) **89b:34037** 34B05 (34K05)
- (with Horng, Ing Rong) Algebraic method for the design of output deadbeat controller. *Internat. J. Systems Sci.* **19** (1988), no. 6, 1031–1037. (Summary) **89e:93046** 93B25 (93B50)
- (with Horng, Ing Rong) On sufficient conditions for the stability of interval matrices. *J. Franklin Inst.* **326** (1989), no. 1, 19–25. (Mohamed Mansour) **89k:93184** 93D99 (34D99)
- Chou, Kuang Chao** *see* Zhou, Guang Zhao
- Chou, Philip A.** (with Lookabaugh, Tom; Gray, Robert M.) Entropy-constrained vector quantization. *IEEE Trans. Acoust. Speech Signal Process.* **37** (1989), no. 1, 31–42. (Ved Priya) **89k:94031** 94A29 (94A12)
- Chou, Shang-Ching** (with Schelter, William F.; Yang, Jin Gen) Characteristic sets and Gröbner bases in geometry theory proving. *Computer aided geometric reasoning, Vol. II (Sophia-Antipolis, 1987)*, 27–56, *INRIA, Rocquencourt*, 1987. (Bernd Graw) **89d:63069** 03B35 (14A04, 51A04)
- A method for the mechanical derivation of formulas in elementary geometry. *J. Automat. Reason.* **3** (1987), no. 3, 291–299. (J. A. Kalman) **89b:63021** 03B35 (12H05, 51A04, 51N20, 68T15)
- Chou, Tai-Shian** (with Datta, Ajay K.; Ghosh, Sukumar) A new algorithm for deadlock avoidance. *Inform. Sci.* **46** (1988), no. 1–2, 47–72. (Raymond Devillers) **89k:68015** 68N25
- Chou, Tsai-Chia** (with Kanatani, Ken-ichi) Shape from texture: general principle. *Artificial Intelligence* **38** (1989), no. 1, 1–48. (Summary) **89m:68140** 68U10
- Chou, Weiren** (with Duffin, R. J.) An additive eigenvalue problem of physics related to linear programming. *Adv. in Appl. Math.* **8** (1987), no. 4, 486–498. (Summary) **89e:81049** 81C99 (82A99, 90C50)
- (with Yokoi, Carlos S. O.; Tang, Lei-Han) Ground state of the one-dimensional chiral XY model in a field. *Phys. Rev. B* (3) **37** (1988), no. 4, 2173–2198. (Summary) **89a:82055** 82A68 (82A25)
- Chou, Wun-Seng** Binomial permutations of finite fields. *Bull. Austral. Math. Soc.* **38** (1988), no. 3, 325–327. (János Bagyinszki) **89m:11117** 11T06 (13M10)
- Chou, Y. S.** *see* Zhou, Yun Shi
- Chou, Yi-Shyong** (with Liu, Ch'ing T'ien) Successive parameter estimation of continuous dynamic systems. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1149–1158. (Summary) **89f:93010** 93B30 (93B25, 93C15, 93C60)
- Chou, Yuan-Min** One-sided simultaneous prediction intervals for the order statistics of  $l$  future samples from an exponential distribution. *Comm. Statist. Theory Methods* **17** (1988), no. 11, 3995–4003. (Not in MR) **62G30**
- Choudary, A. D. R.** (with Dimca, A.) Hypersurface singularities, codimension two complete intersections and tangency sets. *Geom. Dedicata* **24** (1987), no. 3, 255–260. (Tomás Sánchez-Giralda) **89d:14017** 14E15 (14B05)
- Choudhary, Alok N.** (with Kohler, Walter H.; Stankovic, John A.; Towsley, Don) A modified priority based probe algorithm for distributed deadlock detection and resolution. *IEEE Trans. Software Engrg.* **15** (1989), no. 1, 10–17. (Summary) **89m:68010** 68N25 (68P15)
- Choudhary, B.** An extension of Knopp's core theorem. *J. Math. Anal. Appl.* **132** (1988), no. 1, 226–233. (B. K. Tripathy) **89d:40005** 40C05 (40J05, 46A45)
- Choudhary, M. S.** *see* Chaudhary, M. S.
- Choudhary, S. B.** (with Prasad, G. S.) Some relation between generalized  $H_{p,q}^{\alpha}(z)$  and hypergeometric functions. *Ranchi Univ. Math. J.* **18** (1987), 27–37 (1988). (From the introduction) **89m:33006** 33A30
- Choudhary, Ajal** On Fermat's last theorem. *Elem. Math.* **43** (1988), no. 6, 182–183. (Takashi Agoh) **89m:11025** 11D41
- Choudhury, Dipa** (with Horn, Roger A.; Pierce, Stephen) Quasi-positive definite operators and matrices. *Linear Algebra Appl.* **99** (1988), 161–176. (George P. Barker) **89b:15010** 15A18 (15A69, 47B99)
- (with Horn, Roger A.) An analogue of the Schur triangular factorization for complex orthogonal similarity and commutability. *SIAM Conference on Linear Algebra in Signals, Systems, and Control* (Boston, Mass., 1986). *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 1, 90–95. (Shao Kuan Li) **89b:15013** 15A21
- Choudhury, F. P.** (with Chakraborty, A. B.; Khare, S. S.) A note on fuzzy subgroups and fuzzy homomorphism. *J. Math. Anal. Appl.* **131** (1988), no. 2, 537–553. (Prabir Bhattacharya) **89m:20006** 20N99 (03E72)
- Choudhury, Samita Roy** (with Bhakta, P. C.) Some existence theorems for functional equations arising in dynamic programming. *II. J. Math. Anal. Appl.* **131** (1988), no. 1, 217–231. (Introduction) **89b:90248** 90C39 (39B20, 54H25)
- Choukha, Raouf** Nouveau développement de fonctions elliptiques. (English summary) [New expansion for elliptic functions] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 15, 655–658. (H. Hochstadt) **89c:33002** 33A25 (11F11, 34B05, 34C25)
- Choukairi, A.** Sur la convergence d'espérances conditionnelles de multiapplications. [Convergence of conditional expectations of multivalued mappings] *Séminaire d'analyse convexe, Vol. 17, Exp. No. 10, 19 pp., Univ. Sci. Tech. Languedoc, Montpellier*, 1987. (Dominik Szynal) **89c:60014** 60B12 (60F99)
- $M$ -convergence, et régularité des martingales multivoques. Épi-martingales. [ $M$ -convergence, and regularity of multivalued martingales. Épi-martingales] *Séminaire d'analyse convexe, Vol. 17, Exp. No. 5, 41 pp., Univ. Sci. Tech. Languedoc, Montpellier*, 1987. (Annie Millet) **89m:60110** 60G48 (28A20, 28B20)
- Chouksey, Surendra K.** (with Sharma, Chandra K.) A note on the generating functions for classical polynomials. *Ranchi Univ. Math. J.* **17** (1986), 33–34 (1987). (From the introduction) **89b:33007** 33A35
- Choulakian, V.** Exploratory analysis of contingency tables by loglinear formulation and generalizations of correspondence analysis. *Psychometrika* **53** (1988), no. 2, 235–250. (Alan Agresti) **89j:62075** 62H17
- Analyse factorielle des correspondances de tableaux multiples. (English summary) [Factor analysis of correspondences of multiple tables] *Rev. Statist. Appl.* **36** (1988), no. 4, 33–41. (Summary) **89k:62076** 62H17
- Chourasia, Ka. Geeta** Fixed point theorem for quasi-contractive mapping in pseudocompact Tichonov space. *Math. Ed. (Siwan)* **22** (1988), no. 1, 19–20. (Livia D'Apuzzo) **89j:54051** 54H25 (47H10)
- Chovanec, Ferdinand** (with Dvurečenskij, Anatolij) Fuzzy quantum spaces and compatibility. *Internat. J. Theoret. Phys.* **27** (1988), no. 9, 1069–1082. (S. Gudder) **89k:81013** 81B10 (03E72)
- Chow, Alan C.** (with Beatty, Millard F.) Finite amplitude vibrations of a Mooney-Rivlin oscillator. *Arch. Rational Mech. Anal.* **102** (1988), no. 2, 141–166. (W. Kec) **89f:73041** 73K03 (73D35, 73P10)
- Chow, Gregory C.** ★ Analysis and control of dynamic economic systems. Reprint of the 1975 original. *Robert E. Krieger Publishing Co., Inc., Melbourne, FL*, 1986. xviii+316 pp. ISBN 0-89874-969-7 (Editors) **89d:90060** 90A16 (39A10, 49D29, 93C30, 93E05)
- Chow, J. H.** (with Othman, H. A.; Pai, M. A.) Block diagonalization for decoupling energies of power systems with weakly connected areas. *Large Scale Systems* **12** (1987), no. 1, 23–33. (Summary) **89c:92069** 92A15 (49D27)
- (with Bingular, S.; Winkelman, J. R.) Simultaneous generation of sensitivity functions—transfer function matrix approach. *Automatica—J. IFAC* **24** (1988), no. 2, 239–242. (P. Sannuti) **89i:93036** 93B35 (93B30, 93B40, 93C35)
- Chow, P. L.** Travel-time problems for waves in random media. *Random media (Minneapolis, Minn., 1985)*, 67–88, *IMA Vol. Math. Appl.*, 7, Springer, New York-Berlin, 1987. (H. Kesten) **89g:35122** 35R60 (35L05, 60F17, 60H25, 82A42)
- Expectation functionals associated with some stochastic evolution equations. *Stochastic partial differential equations and applications (Trento, 1985)*, 40–56, *Lecture Notes in Math.*, 1236, Springer, Berlin-New York, 1987. (Yu. L. Daleskii) **89c:60111** 60H10
- (with Bancora-Imbert, M. C.; Menaldi, José-Luis) On the numerical approximation of an optimal correction problem. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 6, 970–991. (George Yin) **89i:93127** 93E25 (49D25, 65K10, 93E20)
- Chow, S.-N.** (with Lauterbach, Reiner) On bifurcation for variational problems. *Dynamics of infinite-dimensional systems (Lisbon, 1986)*, 57–60, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 37, Springer, Berlin-New York, 1987. (Editors) **89c:58024** 58E07 (47H15)
- (with Li, Xun Jing) Maximum principle of optimal control for functional-differential systems. *J. Optim. Theory Appl.* **54** (1987), no. 2, 335–360. (Józef Kalinowski) **89a:34088** 34K35 (49B36, 49D50)
- (with Lu, Ke Ning) Invariant manifolds for flows in Banach spaces. *J. Differential Equations* **74** (1988), no. 2, 285–317. (Jean Mawhin) **89b:58163** 58F25 (34D30, 35R20, 47H20, 58F10)
- (with Lauterbach, Reiner) A bifurcation theorem for critical points of variational problems. *Nonlinear Anal.* **12** (1988), no. 1, 51–61. (A. Vanderbauwhede) **89d:58026** 58E07 (58E05)
- (with Walther, Hans-Otto) Characteristic multipliers and stability of symmetric periodic solutions of  $\dot{x}(t) = g(x(t-1))$ . *Trans. Amer. Math. Soc.* **307** (1988), no. 1, 127–142. (Jian Hong Wu) **89d:34115** 34K20 (34C25, 58F14)
- (with Li, Cheng Zhi; Wang, Duo) A simple proof of the uniqueness of periodic orbits in the 1:3 resonance problem. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 1025–1032. (J. Angel Rodríguez) **89b:58140** 58F14 (58F21)
- Chow, Shein-Chung** (with Shao, Jun) A new procedure for the estimation of variance components. *Statist. Probab. Lett.* **6** (1988), no. 5, 349–355. (I. Guttman) **89d:62063** 62J10
- Chow, Y. M.** (with Agarwal, Ravi Prakash) Initial-value methods for computing eigenvalues of two point boundary value problem. *Arch. Math.* **23** (1987), no. 1, 1–8. (A. G. Baskakov) **89c:34040** 34B25
- Chow, Yuan-Chieh** (with Lee, Chung-Yee; Hwang, Jing Jang; Anger, Frank D.) Multiprocessor scheduling with interprocessor communication delays. *Oper. Res. Lett.* **7** (1988), no. 3, 141–147. (Summary) **89g:90130** 90B35
- Chow, Yuan Shih** (with Teicher, Henry) ★ Probability theory. Independence, interchangeability, martingales. Second edition. Springer Texts in Statistics. Springer-Verlag, New York-Berlin, 1988. xviii+467 pp. ISBN 0-387-96695-1 (From the preface) **89c:60001** 60-02 (60Exx, 60Fxx, 60G42, 60G44)
- Chow, Yun Shyong** Estimating trajectories. *Ann. Statist.* **15** (1987), no. 2, 552–567. (Mir Maswood Ali) **89a:62093** 62G05 (12J99)
- On the number of regular configurations. *Discrete Math.* **66** (1987), no. 1–2, 51–58. (G. R. Grimmett) **89b:05111** 05C38 (05C20, 82A05)
- (with Chiang, Tsu Shu) On the convergence rate of a special class of annealing processes. *Soochow J. Math.* **13** (1987), no. 1, 23–30. (Summary) **89b:60116** 60J27
- roy Chowdhury, A.** *see* Roy Chowdhury, A.
- Chowdhury, K. L.** (with Suhubi, E. S.) On the conservation laws of the BBM equation. *Internat. J. Engrg. Sci.* **25** (1987), no. 11–12, 1397–1402. (Summary) **89a:58119** 58G35 (35Q20, 58A17, 76B15)
- Chowdhury, Khanindra Chandra** (with Kumar Tamuli, Binoy) Goldie near rings. *Bull. Calcutta Math. Soc.* **80** (1988), no. 4, 261–269. (J. R. Clay) **89m:16076** 16A76
- Goldie modules. *Indian J. Pure Appl. Math.* **19** (1988), no. 7, 641–652. (C. R. Hajarnavis) **89i:16011** 16A34
- Artinian (Noetherian) part of a Goldie ring. *Indian J. Pure Appl. Math.* **20** (1989), no. 1, 49–57. (M. Djabali) **89k:16028** 16A34
- Chowdhury, Salim U.** An automated design of minimum-area IC power/ground nets. *24th ACM/IEEE Design Automation Conference (Miami Beach, FL, 1987)*, 223–229, *ACM, New York*, 1987. (Summary) **89k:94083** 94C05 (94C15)
- (with Breuer, M. A.) Optimization algorithms for a class of nonlinear programming problems. *Comput. Math. Appl.* **15** (1988), no. 3, 175–184. (Summary) **89b:90179** 90C30
- Chowla, S.** *see* Heilbronn, Hans Arnold, 89i:01140
- Choy, T. C.** (with Baxter, Rodney James) Spontaneous magnetizations of the Ising model on the Union Jack lattice. *Phys. Lett. A* **125** (1987), no. 8, 365–368. (H. N. V. Temperley) **89b:82113** 82A68 (82A25)
- (with Baxter, Rodney James) Spontaneous magnetisations of the Ising model on the bathroom tile lattice. *J. Phys. A* **21** (1988), no. 9, 2143–2150. (Peter J. Forrester) **89c:82082** 82A68
- Chrastina, Jan** Recent results on formal calculus of variations and formal theory of differential equations. *Differential geometry and its applications, communications (Brno,*

- 1986), 71–80, *Univ. J. E. Purkyně, Brno*, 1987. (H. S. P. Grässer) **89:58038** 58E99 (49A99, 49B99, 49F05, 58E30, 58F99)
- On a theorem of J. Peetre. *Arch. Math. (Brno)* **23** (1987), no. 2, 71–75. (G. Albinus) **89:58122** 58G99 (47F05, 58A20)
- Another approach to the classical calculus of variations. III. *Arch. Math. (Brno)* **23** (1987), no. 3, 131–145. (Hans P. Künzle) **89:49004** 49A21 (49B21, 49C20, 58E30)
- Chrelashvili, A. G.** A new document for the scientific biography of A. M. Razmadze. (Georgian. English and Russian summaries) *Trudy Tbiliss. Univ. Mat. Mekh. Astronom.* No. 22-23 (1987), 248–255. (Summary) **89:01051** 01A70
- Christ, Michael** (with Journé, J.-L.) Polynomial growth estimates for multilinear singular integral operators. *Acta Math.* **159** (1987), no. 1-2, 51–80. (Alberto Torchinsky) **89:42024** 42B20 (47G05)
- (with Sogge, C. D.) On the  $L^1$  behavior of eigenfunction expansions and singular integral operators. *Miniconferences on harmonic analysis and operator algebras (Canberra, 1987)*, 29–50, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (Steven George Krantz) **89:42024** 42C05 (35P10, 42C15, 58G15)
- Weak type  $(1, 1)$  bounds for rough operators. *Ann. of Math. (2)* **128** (1988), no. 1, 19–42. (José García-Cuerva) **89:42013** 42B20
- (with Sogge, C. D.) The weak type  $L^1$  convergence of eigenfunction expansions for pseudodifferential operators. *Invent. Math.* **94** (1988), no. 2, 421–453. (G. V. Rozenblyum) **89:35096**; **EA 89m** 35P10 (35S05, 47G05, 58G25)
- Regularity properties of the  $\bar{\partial}_b$  equation on weakly pseudoconvex CR manifolds of dimension 3. *J. Amer. Math. Soc.* **1** (1988), no. 3, 587–646. (Hideaki Kazama) **89:32027** 32F99 (32F20, 32F25)
- Pointwise estimates for the relative fundamental solution of  $\bar{\partial}_b$ . *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 787–792. (Andrei Iordan) **89:35126** 35N15 (32F20, 32F30)
- Christakos, George** A simple approach to nonlinear estimation of physical systems. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 583–588. (see **89:00007**) **93E10** (93E11)
- Christara, C. C.** (with Houstis, E. N.; Rice, John Rischard) Quadratic-spline collocation methods for two-point boundary value problems. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 4, 935–952. (M. M. Chawla) **89:65103** 65L10
- Christe, P.** On exceptional operator algebras in the conformally invariant  $SU(2)$  Wess-Zumino-Witten model. *Phys. Lett. B* **198** (1987), no. 2, 215–220. (Daniel Altschüler) **89:81179** 81E99 (17B67, 81E40)
- Christen, Claude A.** (with Hwang, F. K.) Detecting the two complementary defectives with a balance scale. *Comm. Statist. Theory Methods* **16** (1987), no. 10, 3025–3032. (H. Bandemer) **89:45023** 05A99 (62N10, 94A13)
- Optimal contention among three senders. *IEEE Trans. Inform. Theory* **34** (1988), no. 4, 851–857. (Gur Dial) **89:94019** 94A13 (94A40)
- Christensen, Erik** (with Effros, Edward G.; Sinclair, Allan) Completely bounded multilinear maps and  $C^*$ -algebraic cohomology. *Invent. Math.* **90** (1987), no. 2, 279–296. (Vern Paulsen) **89:46084** 46L80 (46M20)
- (with Sinclair, Allan) Representations of completely bounded multilinear operators. *J. Funct. Anal.* **72** (1987), no. 1, 151–181. (Autorreferat [Zbl 622:46040]) **89:46113** 46L05 (47A99, 47D99)
- Christensen, G. S.** (with Soliman, S. A.) ★ Optimal long-term operation of electric power systems. Mathematical Concepts and Methods in Science and Engineering, 38. Plenum Press, New York-London, 1988. xx+303 pp. ISBN 0-306-42875-X (From the preface) **89:90119** 90B30 (93C75)
- (with Soliman, S. A.) Optimization of hydropower systems operation with a quadratic model. *Automatica—J. IFAC* **24** (1988), no. 2, 249–256. (Not in MR) **93C75** (49D40)
- (with Soliman, S. A.; Rouhi, A.) A new technique for curve fitting based on minimum absolute deviations. *Comput. Statist. Data Anal.* **6** (1988), no. 4, 341–351. (I. S. Alalouf) **89:62090** 62J05
- (with Soliman, S. A.) Optimization of reservoirs in series on a river with a nonlinear storage curve for long-term regulation. *J. Optim. Theory Appl.* **58** (1988), no. 1, 109–126. (Summary) **89:93151** 93C75 (49D29, 49D40, 93B17, 93C55, 93E20)
- (with Soliman, S. A.) Minimum norm approach to optimal long-term operation of multireservoir power systems with specified monthly generation. *J. Optim. Theory Appl.* **58** (1988), no. 3, 501–524. (Not in MR) **90B30** (93C75)
- Christensen, Jens Peter Reus** (with Fischer, Pal) Small sets and a class of general functional equations. *Aequationes Math.* **33** (1987), no. 1, 18–22. (Zbigniew Gajda) **89:43002** 43A05 (28C10, 39B70)
- (with Oommen, B. J.)  $\epsilon$ -optimal discretized linear reward-penalty learning automata. *IEEE Trans. Systems Man Cybernet.* **18** (1988), no. 3, 451–458. (Răzvan Andonice) **89:68113** 68Q75 (68T05, 92A25)
- (with Berg, Christian; Maserick, P. H.) Sequences with finitely many negative squares. *J. Funct. Anal.* **79** (1988), no. 2, 260–287. (W. A. J. Luxemburg) **89:30034** 30E05 (39A10, 44A60, 46N05, 47B50)
- (with Fischer, Pal) Linear independence of iterates and entire solutions of functional equations. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1120–1124. (L. S. O. Liverpool) **89:30051** 30D05 (30D20, 39B10)
- (with Fischer, Pal) Joint continuity of measurable biadditive mappings. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1125–1128. (M. P. Heble) **89:43006** 43A46 (22A10, 28C10, 39B70)
- Christensen, Ole Bøssing** (with Bohr, Tomas) Universal aspects of the escape from strange sets. *Phys. Scripta* **38** (1988), no. 5, 641–644. (Summary) **89:58077** 58F13
- thoft-Christensen, P.** see **Thoft-Christensen, P.**
- Christensen, S. K.** (with Kallianpur, G.) Stochastic differential equations for neuronal behavior. *Adaptive statistical procedures and related topics (Upton, N.Y., 1985)*, 400–416, *IMS Lecture Notes—Monograph Ser.*, 8, Inst. Math. Statist., Hayward, CA, 1986. (Robert L. Wolpert) **89:60070** 60H15 (60G20, 60H10, 60H20, 92A09)
- Christian, Curt K.** The life and work of Kurt Gödel. (Bulgarian) Translated from the German. *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* **30**(63) (1988), no. 1, 25–32. (Editors) **89:01031** 01A70
- Christian, Ulrich** Über gewisse Poincaré-Reihen zu elliptischen Modulgruppen. (English summary) [On certain Poincaré series for elliptic modular groups] *Manuscripta Math.* **59** (1987), no. 4, 423–440. (Marvin I. Knopp) **89:11062** 11F11 (11F30)
- Christiansen, Bo** (with Alström, Preben; Levinson, Mogens T.) Nonchaotic transition from quasiperiodicity to complete phase locking. *Phys. Rev. Lett.* **61** (1988), no. 15, 1679–1682. (Summary) **89:58073** 58F13 (58F27, 92A09)
- Christiansen, C.** (with Barndorff-Nielsen, O. E.) Erosion, deposition and size distributions of sand. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1853, 335–352. (Summary) **89:60111** 60A60
- Christiansen, F. B.** Epistasis in the multiple locus symmetric viability model. *J. Math. Biol.* **26** (1988), no. 6, 595–618. (Klaus Hinkelmann) **89:92026** 92A10 (60D05, 62P10, 92A15)
- Christiansen, Hanne Dalgas** Uniformly distributed sums of Bernoulli variables. *BIT* **28** (1988), no. 3, 671–677. (Ram Shanmugam) **89:60032** 60E99
- Christiansen, P. L.** Coherent excitations in some physical and biochemical systems. *Ordinary and partial differential equations (Dundee, 1986)*, 1–15, *Pitman Res. Notes Math. Ser.*, 157, Longman Sci. Tech., Harlow, 1987. (Introduction) **89:92080** 92A40 (35Q99)
- (with Andersson, A. E.; Casti, J.; Karlqvist, A.) Emerging paradigms in applied mathematical modelling—an introduction. Special issue on emerging paradigms in applied mathematical modelling. *J. Comput. Appl. Math.* **22** (1988), no. 2-3, 143–181. (David Yeung) **89:92001** 92-01 (58F40, 90A16, 93A10)
- (with Cruzeiro-Hansson, L.; Elgin, J. N.) Comment on “Self-trapping on a dimer: time-dependent solutions of a discrete nonlinear Schrödinger equation”. *Phys. Rev. B* (3) **37** (1988), no. 13, 7896–7897. (From the text) **89:92061** 92A40 (58F40, 82A99)
- see also **Special issue: Emerging paradigms in applied mathematical modelling**, **89:00028**
- Christiansen, Søren** A stability analysis of a Eulerian method for some surface gravity wave problems. *Nonlinear hyperbolic equations—theory, computation methods, and applications (Aachen, 1988)*, 75–84, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89:35007**) **76-08** (76B15)
- Christodoulou, D.** (with Yau, S.-T.) Some remarks on the quasi-local mass. *Mathematics and general relativity (Santa Cruz, CA, 1986)*, 9–14, *Contemp. Math.*, 71, Amer. Math. Soc., Providence, RI, 1988. (K. P. Tod) **89:83050** 83C99 (58E12)
- Christodoulou, M. A.** (with Mertzios, B. G.; Syrmos, B. L.; Lewis, F. L.) Direct controllability and observability time domain conditions of singular systems. *IEEE Trans. Automat. Control* **33** (1988), no. 8, 788–791. (Summary) **89:93011** 93B05 (93B07)
- (with Vachtsevanos, G.; Mertzios, B. G.) Simplified realization for generalized transfer functions using modified Markov parameters. *Internat. J. Control* **47** (1988), no. 5, 1227–1234. (Not in MR) **93B15** (93B25)
- (with Mertzios, B. G.) Decoupling and pole placement in singular systems using state and output feedback. *J. Franklin Inst.* **325** (1988), no. 1, 1–15. (Edward Jezewski) **89:49049** 49D27 (93B17, 93B50, 93B55, 93C05)
- Pole placement for generalized MFDs. *Kybernetika (Prague)* **24** (1988), no. 2, 98–109. (Mikolaj Budowicz) **89:93018** 93B55 (93B50, 93C05, 93C30, 93C35)
- Christoffel, E. B.** see **Leichtweiß, K.**, **89:91036**
- Christoffersen, J.** A class of initially isotropic elastic materials. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1852, 133–154. (Summary) **89:73026** 73G05
- Christol, G.** see **Study Group: Ultrametric Analysis**, **89:11003**
- Christoph, G.** A series criterion for the convergence rate to a stable law. *Limit theorems in probability theory and related fields*, 59–67, *Wiss. Theorie Prax., Tech. Univ. Dresden, Dresden, 1987*. (Shūya Kanagawa) **89m:60047** 60F05
- Strong approximations for partial sums of random variables attracted to a stable law. *Math. Nachr.* **134** (1987), 289–294. (M. Csörgő) **89:60043** 60F17 (60F15)
- Christophersen, Jan Arthur** Monomial curves and obstructions on cyclic quotient singularities. *Singularities, representation of algebras, and vector bundles (Lambrecht, 1985)*, 117–133, *Lecture Notes in Math.*, 1273, Springer, Berlin-New York, 1987. (Kurt Behnke) **89:14009** 14D07 (14D15)
- Christophoridou, Ch.** Geodätischer Fluß auf Mannigfaltigkeiten vom hyperbolischen Typ. [Geodesic flow on manifolds of hyperbolic type] *Arch. Math. (Basel)* **51** (1988), no. 3, 247–254. (Y. Muto) **89:58235** 58F17
- Christor, Christo I.** Poisson-Wiener expansion in nonlinear stochastic systems. (Russian summary) *Annuaire Univ. Sofia Fac. Math. Mec.* **75** (1981), no. 2, 143–165 (1985). (Not in MR) **60G20** (76F99)
- Determination of the interaction between the particulate and continuous phase in an emulsion via stochastic functional expansion. (Russian summary) *Annuaire Univ. Sofia Fac. Math. Mec.* **77** (1983), no. 2, 115–132 (1987). (Summary) **89:76102** 76T05
- (with Georgiev, Ch. Kh.) The Fourier method in  $L^2(-\infty, +\infty)$  for an integro-differential equation arising in the theory of surface dilatational viscometry. (Russian. English and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Prirozhna Mat.* **22** (1986), no. 4, 191–198 (1987). (Summary) **89:76079** 76T05 (45J05)
- (with Bekyarov, K. L.) The Fourier method for the calculation of solitons. (Russian. English and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Prirozhna Mat.* **22** (1986), no. 4, 199–209 (1987). (Summary) **89:65156** 65P05
- The method of variational imbedding for parabolic incorrect problems of coefficient identification. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 2, 21–24. (Heinz W. Engl) **89:35222** 35R30 (35K10)
- Christor, Nicolai D.** see **Khristor, Nikolai D.**
- Chrobak, Marek** Hierarchies of one-way multihed automata languages. *Theoret. Comput. Sci.* **48** (1986), no. 2-3, 153–181 (1987). (Summary) **89:68111** 68Q70 (03D05, 68Q45)
- (with Poljak, Svatopluk) A generalization of Smith's theorem. Proceedings of the International Conference on Combinatorial Analysis and its Applications (Pokrzywna, 1985). *Zastos. Mat.* **19** (1987), no. 3-4, 371–374 (1988). (A. G. Thomason) **89:05133** 05C70 (68R10)
- (with Altman, Tom; Truszczyński, Mirosław) Generating  $k$ -combinations from a family of sets. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **61** (1988), 211–220. (Helmut Prodinger) **89:05002** 05A05 (68R05)
- (with Poljak, Svatopluk) On common edges in optimal solutions to traveling salesman and other optimization problems. *Discrete Appl. Math.* **20** (1988), no. 2, 101–111. (Kenji Onaga) **89:90083** 90B10 (90C27)
- (with Harter, Richard) A note on random sampling. *Inform. Process. Lett.* **29** (1988), no. 5, 255–256. (A. D. Booth) **89m:68047** 68Q20 (62-04, 68Q25)
- Chronowski, Antoni** Extensions of inverse loops. *Demonstratio Math.* **20** (1987), no. 1-2, 45–55 (1988). (Edgar G. Goodaire) **89:20117** 20N05



- Chrusciel, Piotr T.** (with Kondracki, W.) Some global charges in classical Yang-Mills theory. *Phys. Rev. D* (3) **36** (1987), no. 6, 1874-1881. (C. Cronström) **89b:81119** 81E13 (58F40)
- On the invariant mass conjecture in general relativity. *Comm. Math. Phys.* **120** (1988), no. 2, 233-248. (Richard Hansen) **89m:83033** 83C30 (83C40)
- Chrysaphinou, Ourania** (with Papastavridis, S.) A limit theorem on the number of overlapping appearances of a pattern in a sequence of independent trials. *Probab. Theory Related Fields* **79** (1988), no. 1, 129-143. (P. Révész) **89g:60069** 60F05 (60C05)
- (with Papastavridis, S.) A limit theorem for the number of nonoverlapping occurrences of a pattern in a sequence of independent trials. *J. Appl. Probab.* **25** (1988), no. 2, 428-431. (Endre Csáki) **89g:60070** 60F05 (60C05)
- Chrysosakis, Thanassis** Numerical range and Gateaux differential in topological algebras. *Bull. Soc. Math. Grèce (N.S.)* **28** (1987), part A, 7-14. (Robert S. Doran) **89c:46062** 46H05 (46K05)
- Chu, Cho-Ho** On a Schwarz inequality. *Exposition. Math.* **6** (1988), no. 1, 65-69. (Bruno Iochum) **89b:46084** 46L70
- Extreme positive linear maps on  $C^*$ -algebras. *Math. Z.* **199** (1988), no. 1, 129-131. (Sze-Kai Tsui) **89f:46063** 46L05 (46L40)
- Chu, Fu Ming** (with Fang, Fu Kang; Jiang, Lu) The operator method for solving the moment equation of Fokker-Planck equation. *Comm. Theoret. Phys.* **7** (1987), no. 2, 187-194. (Summary) **89d:82060** 82A35 (35Q20)
- Chu, Hsin** A note on the existence of periodic solutions of a differential system. *Dynamical systems* (College Park, MD, 1986-87), 94-99, *Lecture Notes in Math.*, **1342**, Springer, Berlin-New York, 1988. (Maria Letizia Bertotti) **89j:34056** 34C25 (34C20, 58F22)
- Chu, Hua** (with Kang, Ming Chang; Ch'en, Yung Ch'iu) The corestriction of  $p$ -symbols. *Comm. Algebra* **16** (1988), no. 4, 735-741. (Jan van Geel) **89d:11101** 11R34 (11R70, 12G05, 16A16)
- Chu, King-wah Eric** Exclusion theorems and the perturbation analysis of the generalized eigenvalue problem. *SIAM J. Numer. Anal.* **24** (1987), no. 5, 1114-1125. (R. J. Plemmons) **89a:15017** 15A42 (15A18, 65F35, 93B60)
- Chu, Moody T.** A note on the homotopy method for linear algebraic eigenvalue problems. *Linear Algebra Appl.* **105** (1988), 225-236. (M. Znojil) **89g:65039** 65F15 (65W05)
- (with Li, Tien-Yien; Sauer, Tim) Homotopy method for general  $\lambda$ -matrix problems. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 4, 528-536. (Zhong Wu Chu) **89m:65052** 65H10 (15A15, 55M25, 58C30, 90C30)
- On the continuous realization of iterative processes. *SIAM Rev.* **30** (1988), no. 3, 375-387. (T. Y. Li) **89b:65072** 65Hxx (34C35, 39A10, 58F08, 90C30)
- Chu, Wen Chang** Counting alternating arrangements and multiple runs. (Chinese. English summary) *Sci. Exploration* **5** (1985), no. 3, 55-60. (Jing Zhong Mao) **89m:05007** 05A15
- On an extension of a partition identity and its Abel-analog. *J. Math. Res. Exposition* **6** (1986), no. 4, 37-39. (G. L. Alexanderson) **89b:05021** 05A17
- Explicit expressions for the run polynomials. (Chinese. English summary) *J. Dalian Inst. Tech.* **26** (1987), no. 4, 14, 74, 124. (Ru Shu Luan) **89e:05006** 05A05
- On the number of combinations without  $k$ -separations. (Chinese. English summary) *J. Math. Res. Exposition* **7** (1987), no. 3, 511-520. (Hugo S. Sun) **89c:05004** 05A15 (05A05, 05A10, 05A19)
- On the evaluation of some determinants with Gaussian  $q$ -binomial coefficients. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **8** (1988), no. 4, 361-366. (Ru Shu Luan) **89m:05011** 05A30 (05A17)
- Chu, Xiao-Lin** (with Velarde, Manuel G.) The harmonic oscillator approach to sustained gravity-capillary (Laplace) waves at liquid interfaces. *Phys. Lett. A* **131** (1988), no. 7-8, 430-432. (Summary) **89f:76047** 76D33 (76T05)
- Chu, Xue Dao** (with Jiang, Tao) A fast identification method for the SISO CARMA model. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1988), no. 3, 8-15. (George Yin) **89f:93211** 93E12 (93E25)
- Chua, Leon O.** (with Tanaka, Satoshi; Matsumoto, Takashi) Bifurcation scenario in a driven R-L-diode circuit. *Phys. D* **28** (1987), no. 3, 317-344. (François Aribaud) **89b:58141** 58F13 (94C05)
- (with Sugawara, T.) Three-dimensional rotation instrument for displaying strange attractors. *Dynamical systems approaches to nonlinear problems in systems and circuits* (Henniker, NH, 1986), 75-116, *SIAM, Philadelphia, PA*, 1988. (Summary) **89m:58136** 58F13
- (with Deng, An-Chang) Canonical piecewise-linear representation. *IEEE Trans. Circuits and Systems* **35** (1988), no. 1, 101-111. (Zdeněk Ertlinger) **89c:58015** 58C25 (94C05)
- (with Kennedy, Michael Peter) Neural networks for nonlinear programming. *IEEE Trans. Circuits and Systems* **35** (1988), no. 5, 554-562. (Summary) **89d:90192** 90C30 (92A09, 94C05)
- (with Lin, Tao) Chaos in digital filters. *IEEE Trans. Circuits and Systems* **35** (1988), no. 6, 648-658. (François Aribaud) **89j:58076** 58F13 (39A10, 54H20, 94C05)
- (with Matsumoto, Takashi; Ayaki, Kenichiro) Reality of chaos in the double scroll circuit: a computer-assisted proof. *IEEE Trans. Circuits and Systems* **35** (1988), no. 7, 909-925. (François Aribaud) **89b:58125** 58F13 (65H99, 94C05)
- (with Endo, Tetsuro) Chaos from phase-locked loops. *IEEE Trans. Circuits and Systems* **35** (1988), no. 8, 987-1003. (Summary) **89d:58081** 58F13 (94A14, 94C05)
- (with Endo, Tetsuro) Multimode oscillator analysis via integral manifolds. I. Nonresonant case. *Internat. J. Circuit Theory Appl.* **16** (1988), no. 1, 25-58. (François Aribaud) **89b:34085a** 34C15 (34C29, 34C45, 58F40, 94C05)
- (with Endo, Tetsuro) Multimode oscillator analysis via integral manifolds. II. Resonant case. *Internat. J. Circuit Theory Appl.* **16** (1988), no. 1, 59-92. (François Aribaud) **89b:34085b** 34C15 (34C29, 34C45, 58F40, 94C05)
- (with Silva, Christopher P.) The overdamped double-scroll family. I. Piecewise-linear geometry and normal form. *Internat. J. Circuit Theory Appl.* **16** (1988), no. 3, 233-302. (Gikio Ikegami) **89b:58198** 58F13 (70K50, 94C05)
- (with Tokunaga, R.; Komuro, Motomasa; Matsumoto, Takashi) "Lorenz attractor" from an electrical circuit with uncoupled continuous piecewise-linear resistor. *Internat. J. Circuit Theory Appl.* **17** (1989), no. 1, 71-85. (Summary) **89j:58085** 58F13 (94C05)
- see also Hasler, Martin J., **89g:58152**
- Chuang, Cheng Liang** The additive subgroup generated by a polynomial. *Israel J. Math.* **59** (1987), no. 1, 98-106. (Miguel Ferrero) **89a:16024** 16A38 (16A72)
- GPIs having coefficients in Utumi quotient rings. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 723-728. (Charles Lanski) **89e:16028** 16A38 (16A08, 16A12)
- On nilpotent derivations of prime rings. *Proc. Amer. Math. Soc.* **107** (1989), no. 1, 67-71. (Andrzej Trzepizur) **89m:16066** 16A72
- Chuang, Chi-Tai** see Zhuang, Qi Tai
- Chuang, Chien-Hsiung** (with Speyer, Jason L.; Breakwell, John V.) An asymptotic expansion for an optimal relaxation oscillator. *SIAM J. Control Optim.* **26** (1988), no. 3, 678-696. (Krystyn Styczeń) **89d:49037** 49D50 (34E10, 41A60)
- Chuang, Christy** (with Agresti, Alan) Model-based Bayesian methods for estimating cell proportions in cross-classification tables having ordered categories. *Comput. Statist. Data Anal.* **7** (1989), no. 3, 245-258. (Not in MR) **62H17**
- Chuang, Chung Chu** Fuzzy weighted average present value index: a fuzzy set methodology of project set evaluation in capital budgeting. *Tamsui Oxford J. Management Sci.* **3** (1987), 52-98. (Summary) **89k:90018** 90A09 (03E72)
- Chuang, Yao T'ang** (with Wang, Sheng T.; Kuo, Tê Sheng; Lin, Yu-Hwan; Hsü, Chên Fa) Robust control design for linear systems with uncertain parameters. *Internat. J. Control* **46** (1987), no. 5, 1557-1567. (Mikolaj Duslowicz) **89a:93028** 93B50 (49D37, 93C05, 93C40)
- (with Hsü, Chên Fa; Kuo, Tê Sheng; Wu, Chin Fu) Allowable perturbations for the stability robustness of systems with uncertain parameters. (Chinese summary) *J. Chinese Inst. Engrs.* **10** (1987), no. 6, 665-669. (Chao Shun Zhou) **89a:93040** 93D10 (49D37, 93C05, 93C35, 93C40, 93C50)
- A fundamental multivariable robustness theorem for robust eigenvalue assignment. *IEEE Trans. Automat. Control* **33** (1988), no. 10, 940-941. (Summary) **89g:49055** 49E20 (93B60)
- (with Lin, Shui Hsiu; Feng, I Kang; Kuo, Tê Sheng) Dynamic interval systems analysis and design. *Internat. J. Control* **48** (1988), no. 5, 1807-1818. (Yun Qing Shi) **89m:93074** 93D99 (93B55, 93B60)
- (with Chên, Kuo Hsien) Robust pole-assignment for dynamic systems with uncertain parameters. (Chinese summary) *J. Chinese Inst. Engrs.* **12** (1989), no. 1, 149-154. (Summary) **89k:93101** 93B55 (93B35, 93B60)
- Chuaqui, Benedito** (with Hucklenbroich, Peter) Thesen und Probleme zu den Begriffen von Ordnung, Information und Emergenz. [Theses and problems on the concepts of order, information and emergence] *Modelle der Pathologischen Physiologie*, 57-70, *Veröffentl. Forschungsstelle Theoret. Pathol. Heidelb. Akad. Wiss., Springer, Berlin-New York*, 1987. (T. W. Barrett) **89c:92043** 92A12 (80A05, 92A05)
- Chuaqui, Rolando** (with da Costa, Newton C. A.) Interpretations and models in science. (Portuguese) *Bol. Soc. Paran. Mat.* (2) **8** (1987), no. 2, 257-275. (Yehuda Rav) **89d:00013** 00A25 (00A71, 03A05)
- Sets of relational systems as models for stochastic processes. *Methods and applications of mathematical logic* (Campinas, 1985), 117-148, *Contemp. Math.*, **69**, Amer. Math. Soc., Providence, RI, 1988. (Tomáš Havránek) **89f:60005** 60A99 (03B48, 03C68, 60G05)
- Chubarikov, V. N.** (with Arkhipov, G. I.; Karatsuba, A. A.) Теория кратных тригонометрических сумм. (Russian) [Theory of multiple trigonometric sums] "Nauka", Moscow, 1987. 368 pp. (Matti Jutila (Zbl 638:10037)) **89b:11050** 11L03 (11L15)
- (with Arkhipov, G. I.) On some summation formulas. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 5, 29-32, 104. (Aleksandar Ivić) **89a:11008** 11A25 (11L03, 40A25)
- see also Hooley, Christopher, **89c:11145**
- Chubb, Charles** (with Sperling, George) Drift-balanced random stimuli: a general basis for studying non-Fourier motion perception. *J. Opt. Soc. Amer. A* **5** (1988), no. 11, 1986-2007. (Summary) **89j:20088** 92A27 (78A99)
- Chubukov, D. V.** (with Khveshchenko, D. V.) Properties of one-dimensional antiferromagnets with integer and half-integer spins. *Soviet Phys. JETP* **66** (1987), no. 5, 1088-1094 (1988); translated from *Zh. Éksp. Teoret. Fiz.* **93** (1987), no. 5, 1904-1916 (Russian). (Nicolae Angelescu) **89b:82018** 82A15 (81H99, 82A67)
- Chudáček, Ivo** The quantitative evaluation of image quality and definition of an image. *Acta Univ. Carolin.—Math. Phys.* **29** (1988), no. 1, 3-18. (Not in MR) **68T10** (92A25)
- Chudakov, N. G.** see *Investigations in number theory*, **89a:11006** and *Berdikhin, B. M. et al.*, **89b:01037**
- Chudakov, V. V.** (with Golovizin, V. M.; Samarskaya, E. A.) Locally-one-dimensional Rothe schemes for the heat equation in arbitrary curvilinear coordinates. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 37, 16 pp. (Summary) **89c:65133** 65P05
- Chudinova, V. G.** (with Bukov, V. N.) Optimization of the motion of a nonlinear object on the basis of a forecasting model. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 1, 38-45; translated in *Automat. Remote Control* **49** (1988), no. 1, part 1, 28-33. (Not in MR) **93C75** (93C10)
- Chudinovich, I. Yu.** Averaging of cylindrical shells weakened by a large number of holes. (Russian) *Operators in function spaces and problems in function theory* (Russian), 43-57, **144**, "Naukova Dumka", Kiev, 1987. (Summary) **89c:73069** 73L99
- Chudnovskii, E. M.** (with Gunther, L.) Quantum tunneling of magnetization in small ferromagnetic particles. *Phys. Rev. Lett.* **60** (1988), no. 8, 661-664. (Summary) **89a:81036** 81C99
- Chudnovsky, D. V.** (with Chudnovsky, G. V.) Computer assisted number theory with applications. *Number theory* (New York, 1984-1985), 1-68, *Lecture Notes in Math.*, **1240**, Springer, Berlin-New York, 1987. (Hale F. Trotter) **89a:11130** 11Y16 (14-04, 30-04, 30B10, 68Q40)
- (with Chudnovsky, G. V.) Approximations and complex multiplication according to Ramanujan. *Ramanujan revisited* (Urbana-Champaign, Ill., 1987), 375-472, *Academic Press, Boston, MA*, 1988. (Maurice Mignotte) **89f:11099** 11J81 (11F99, 11G15, 11J04, 11J89)
- (with Chudnovsky, G. V.) Elliptic modular functions and elliptic genera. *Topology* **27** (1988), no. 2, 163-170. (P. S. Landweber) **89b:57020** 57R20 (11F11)
- Chudnovsky, E. M.** see *Chudnovskii, E. M.*
- Chudnovsky, G. V.** (with Chudnovsky, D. V.) Computer assisted number theory with applications. *Number theory* (New York, 1984-1985), 1-68, *Lecture Notes in Math.*, **1240**, Springer, Berlin-New York, 1987. (Hale F. Trotter) **89a:11130** 11Y16 (14-04, 30-04, 30B10, 68Q40)
- (with Chudnovsky, D. V.) Approximations and complex multiplication according to Ramanujan. *Ramanujan revisited* (Urbana-Champaign, Ill., 1987), 375-472, *Academic*

- Press, Boston, MA, 1988. (Maurice Mignotte) **89f:11099** 11J81 (11F99, 11G15, 11J04, 11J89)
- (with Chudnovsky, D. V.) Elliptic modular functions and elliptic genera. *Topology* **27** (1988), no. 2, 163–170. (P. S. Landweber) **89h:57020** 57R20 (11F11)
- Chueshev, I. D.** Construction of solutions of a stochastic modified system of von Kármán equations. (Russian) *Operators in function spaces and problems in function theory* (Russian), 32–43, 144, "Naukova Dumka", Kiev, 1987. (Summary) **89h:35282** 35Q20 (35R60, 60H15, 73K35, 73L20)
- The structure of the maximal attractor of a modified system of von Kármán equations. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 47 (1987), 99–104. (Yu. V. Kostarchuk) **89c:35016** 35B40 (35J40)
- Properties of an attractor in a problem on nonlinear oscillations of an infinite panel. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 50 (1988), 108–115, iv. (Summary) **89k:58159** 58F12 (34C15, 73J10)
- Chugainova, A. P.** Formation of a self-similar solution in a problem of nonlinear waves in an elastic semispace. (Russian) *Prikl. Mat. Mekh.* **52** (1988), no. 4, 692–697. (Not in MR) **73D35**
- Chugreev, Yu. V.** (with Logunov, A. A.) Special theory of relativity and centrifuge experiments. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **29** (1988), no. 1, 3–11, 106; translated in *Moscow Univ. Phys. Bull.* **43** (1988), no. 1, 1–9. (Vitaly N. Mel'nikov) **89j:83004** 83A05 (83B05)
- (with Logunov, A. A.; Mestvirishvili, M. A.) Graviton mass and the development of the Friedmann universe. (Russian. English summary) *Teoret. Mat. Fiz.* **74** (1988), no. 1, 3–15; translated in *Theoret. and Math. Phys.* **74** (1988), no. 1, 1–10. (N. V. Mitskevich) **89i:83053** 83D05 (83F05)
- Chugunov, V. A.** (with Kornev, K. G.) Determination of the equilibrium form of bodies that are formed during the solidification of a filtration flow. (Russian) *Prikl. Mat. Mekh.* **52** (1988), no. 6, 991–996. (Summary) **89k:76088** 76S05 (35R35, 76T05, 80A20)
- Chui, C. K.** (with Chen, Guan Rong) ★ Kalman filtering with real-time applications. Springer Series in Information Sciences, 17. Springer-Verlag, Berlin-New York, 1987. xvi+191 pp. ISBN 3-540-18395-7 (Joseph D. Cole) **89d:93093** 93E10 (93E11, 93Exx)
- (with Lai, Mingjun) On multivariate vertex splines and applications. *Topics in multivariate approximation* (Santiago, 1986), 19–36, Academic Press, Boston, MA, 1987. (Summary) **89h:41024** 41A15 (41A63, 65D07)
- (with Green, Robert E.) Adaptive Kalman filtering for instrumentation radar. *Transactions of the fourth Army conference on applied mathematics and computing* (Ithaca, N.Y., 1986), 953–978, ARO Rep., 87-1, U.S. Army Res. Office, Research Triangle Park, NC, 1987. (H. Vincent Poor) **89h:93105** 93E11
- (with He, Tian Xiao; Wang, Ren Hong) The  $C^2$  quartic spline space on a four-directional mesh. Proceedings of China-U.S. Joint Conference on Approximation Theory (Hangzhou, 1985). *Approx. Theory Appl.* **3** (1987), no. 4, 32–36. (K. Jetter) **89i:41015** 41A15 (41A63, 65D07)
- (with Lai, Mingjun) Computation of box splines and B-splines on triangulations of nonuniform rectangular partitions. Proceedings of China-U.S. Joint Conference on Approximation Theory (Hangzhou, 1985). *Approx. Theory Appl.* **3** (1987), no. 4, 37–62. (Stephen Demko) **89c:65012** 65D07
- (with Diamond, Harvey; Raphael, Louise) Convexity-preserving quasi-interpolation and interpolation by box spline surfaces. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 301–310, ARO Rep., 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Summary) **89c:65015** 65D07
- (with He, Tian Xiao) On minimal and quasiminimal supported bivariate splines. *J. Approx. Theory* **52** (1988), no. 2, 217–238. (Gerhard Meitz) **89a:41067** 41A15 (65D07)
- (with Shi, Xian Liang) Characterization of weights in best rational weighted approximation of piecewise smooth functions. I. *II. J. Approx. Theory* **54** (1988), no. 2, 180–195, 196–209. (J. Szabados) **89i:41021** 41A20
- (with He, Tian Xiao; Xu, Li Zhi) Asymptotic properties of positive summation-integral operators. *J. Approx. Theory* **55** (1988), no. 1, 49–60. (Harvir Singh Kasana) **89k:41028** 41A36 (41A25)
- (with Diamond, Harvey; Raphael, Louise) Interpolation by multivariate splines. *Math. Comp.* **51** (1988), no. 183, 203–218. (Yu Yu Feng) **89j:41002** 41A05 (41A15, 65D07)
- (with Chen, Guan Rong) ★ Linear systems and optimal control. Springer Series in Information Sciences, 18. Springer-Verlag, Berlin-New York, 1989. viii+155 pp. ISBN 3-540-18737-5 (Edward Jezierski) **89m:93001** 93-01 (49-01, 93C05)
- Chukova, N. A.** Transition from the Mittag-Leffler expansion to the expansion of the potential of an arbitrary body in the domain of its analyticity. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **28** (1987), no. 6, 56–61, 88. (Summary) **89c:31011** 31B99
- On the optimal choice of Mittag-Leffler expansion parameters for a given region of observation. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **29** (1988), no. 1, 81–86, 109; translated in *Moscow Univ. Phys. Bull.* **43** (1988), no. 1, 88–93. (Summary) **89c:86012** 86A99
- Chukhar, K. V.** A universal wave equation with a nonlocal nonlinearity. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 6, 1375–1379; translated in *Soviet Phys. Dokl.* **33** (1988), no. 8, 620–622. (Pavel Krejčí) **89m:35147** 35L99 (35Q20, 45K05)
- Chukhrov, I. P.** (with Sapozhenko, A. A.) Minimization of Boolean functions in the class of disjunctive normal forms. (Russian) *Probability theory. Mathematical statistics. Theoretical cybernetics*, Vol. 25 (Russian), 68–116, 119, *Itogi Nauki i Tekhniki*, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow, 1987. (Jerzy Kotas) **89d:94061** 94C10 (03G05, 06E30, 90C09)
- Chukwu, E. N.** The time optimal control theory of nonlinear systems of neutral type. *Nonlinear analysis and applications* (Arlington, Tex., 1986), 127–132, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (From the summary) **89f:34115** 34K35 (49E15, 93B05, 93C10)
- The time-optimal control of nonlinear delay equations. *Operator methods for optimal control problems* (New Orleans, La., 1986), 97–130, *Lecture Notes in Pure and Appl. Math.*, 108, Dekker, New York, 1987. (From the introduction) **89c:34132** 34K35 (49A10, 49E15)
- Global null controllability of nonlinear delay equations with controls in a compact set. *J. Optim. Theory Appl.* **53** (1987), no. 1, 43–57. (Author's review) **89a:93010** 93B05 (34K35, 49E15)
- (with Underwood, Robert G.) Null controllability of nonlinear neutral differential equations. *J. Math. Anal. Appl.* **129** (1988), no. 2, 326–345. (M. G. Frost) **89b:34175** 34K35 (49E15, 93B05)
- Chukwumah, G. C.** Iwasawa factorization of the pseudo-orthogonal group  $SO(5, 1)$  and its corresponding Lie algebra  $so(5, 1)$ . *Internat. J. Theoret. Phys.* **27** (1988), no. 1, 89–105. (A. U. Klimyk) **89c:22024** 22E46
- Chumak, M. L.** The integrability of invariant Hamiltonian systems and homogeneous spaces with a simple spectrum for nilpotent groups. (Russian) *Geometry and the theory of singularities in nonlinear equations* (Russian), 176–181, 186, *Novoe Global. Anal.*, Voronezh. Gos. Univ., Voronezh, 1987. (J. S. Joel) **89g:22011** 22E27 (22E25, 58F05, 58F06)
- Chumakov, O. V.** (with Sagintev, B. S.) Evolution of an ensemble of arbitrary orbits in gravitational systems in the presence of an irregular field. (Russian) *Akad. Nauk Kazakh. SSR Trudy Astrofiz. Inst.* **47** (1987), 83–90, 124. (Constantin Simirad) **89j:70018** 70F15 (85A05)
- (with Chumak, Z. N.) The probability of binary stars coming together in a homogeneous gravitating layer of finite width. (Russian) *Akad. Nauk Kazakh. SSR Trudy Astrofiz. Inst.* **49** (1988), 126–141, 152. (Summary) **89k:85002** 85A05
- Chumak, Z. N.** (with Chumakov, O. V.) The probability of binary stars coming together in a homogeneous gravitating layer of finite width. (Russian) *Akad. Nauk Kazakh. SSR Trudy Astrofiz. Inst.* **49** (1988), 126–141, 152. (Summary) **89k:85002** 85A05
- Chumakov, F. V.** (with Rogozin, S. V.) A generalized Carleman equation on a symmetric interval. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1987**, no. 3, 50–53, 81. (A. P. Soldatov) **89g:45017; EA 89m 45E10**
- Chumakov, S. M.** (with Leznov, A. N.; Man'ko, V. I.) Solitons as a purely algebraic construction. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (*Jarmala*, 1985), 394–412, "Nauka", Moscow, 1986. (see **89d:81001**) **58G37** (35Q20, 58F07)
- (with Dodonov, V. V.; Man'ko, V. I.) An exactly solvable model of the interaction of an  $n$ -level molecule with the quantum mode of an electromagnetic field. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jarmala*, 1985), 536–547, "Nauka", Moscow, 1986. (see **89d:81002**) **81K05** (81G55)
- Chumakov, V. V.** (with Kononenko, A. F.) Decision making in a two-level hierarchical control system in the presence of exogenous noncontrollable factors. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 1, 92–101; translated in *Automat. Remote Control* **49** (1988), no. 1, part 2, 73–80. (B. L. Ovsievich) **89j:90159** 90B50 (90D35, 93A13)
- Chuman, Yasuhiro** On the Fourier coefficients of Eisenstein series of Nebentypus for  $\Gamma_0(N)$ . *Bull. Univ. Osaka Prefect. Ser. A* **34** (1985), no. 1, 129–136. (Daniel Bump) **89k:11027** 11F11 (11F30)
- (with Ishii, Noburo) On the quartic residue of quadratic units of negative norm. *Math. Japon.* **32** (1987), no. 3, 389–420. (Norikata Nakagoshi) **89a:11106** 11R11 (11R20, 11R27)
- Chumburidze, G. G.** (with Kikvadze, T. F.) An approach to the solution of a discrete minimax problem with constraints. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **129** (1988), no. 2, 277–280. (Summary) **89c:90173** 90C30
- On the solution of optimization problems in a space of continuous functions. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **129** (1988), no. 3, 501–504. (Summary) **89c:90211** 90C48
- Chumillas Checa, Valerio** (with Montesinos, José María) The homology of cyclic and irregular dihedral coverings branched over homology spheres. *Math. Ann.* **280** (1988), no. 3, 483–500. (Yaichi Shinohara) **89i:57001** 57M12 (57M25, 57Q45)
- Chun, C. S.** (with Freedman, A. R.) Inclusions for classes of lacunary sets. *Canad. J. Math.* **40** (1988), no. 2, 459–476. (Georges Grekos) **89j:11021** 11B75
- (with Freedman, A. R.) Inclusions for classes of lacunary sets. *J. Korean Math. Soc.* **25** (1988), no. 1, 93–107. (C. L. Stewart) **89i:11018** 11B05
- Chun, D. S.** (with Lee, K. A.; Lee, Hong Jae; Lee, He. J.; Jeon, W.-K.; Kim, Yong-Woon; Kim, I. S.) A note on the Chern classes. *Honam Math. J.* **9** (1987), no. 1, 135–147. (Elmer G. Rees) **89a:57030** 57R20
- Chun, J.** (with Kailath, Thomas; Lev-Ari, H.) Fast parallel algorithms for QR and triangular factorization. *SIAM J. Sci. Statist. Comput.* **8** (1987), no. 6, 899–913. (E. L. Yip) **89c:65035** 65F05 (15A06, 65F30)
- Chun, Youngsub** The equal-loss principle for bargaining problems. *Econom. Lett.* **26** (1988), no. 2, 103–106. (Summary) **89d:90044** 90A14
- Nash solution and timing of bargaining. *Econom. Lett.* **28** (1988), no. 1, 27–31. (Summary) **89j:90283** 90D10 (90A14)
- (with Thomson, William L.) Monotonicity properties of bargaining solutions when applied to economics. *Math. Social Sci.* **15** (1988), no. 1, 11–27. (Roy Gardner) **89d:90252** 90D12 (90A08, 90A14)
- Chung, Chia-Shin** (with Mohanty, Bidhu B.) Minimizing expected makespan in a two-machine stochastic open shop with Poisson arrival. *J. Math. Anal. Appl.* **133** (1988), no. 2, 498–508. (Summary) **89c:90123** 90B35
- (with Lin, Chien-Hua Mike) An  $O(T^2)$  algorithm for the  $NI/G/N1/ND$  capacitated lot size problem. *Management Sci.* **34** (1988), no. 3, 420–426. (Summary) **89a:90065** 90B30
- (with Hung, Ming S.; Rom, Walter O.) A hard knapsack problem. *Naval Res. Logist.* **35** (1988), no. 1, 85–98. (Rainer Burkard) **89c:90076** 90C10
- (with Flynn, James; Chiang, Dalen) Optimal replacement policies for a multicomponent reliability system. *Oper. Res. Lett.* **7** (1988), no. 4, 167–172. (Summary) **89c:90111** 90B25
- Chung, Ching-Fan** (with Theil, Henri) Information-theoretic measures of fit for univariate and multivariate linear regressions. *Amer. Statist.* **42** (1988), no. 4, 249–252. (Summary) **89m:62070** 62J05 (90A19)
- Chung, F. R. K.** (with Graham, R. L.; Saks, M. E.) Dynamic search in graphs. *Discrete algorithms and complexity* (Kyoto, 1986), 351–387, *Perspect. Comput.*, 15, Academic Press, Boston, MA, 1987. (Henry Martyn Mulder) **89c:05183** 05C99 (68P10, 68R03, 68R10)
- Diameters of graphs: old problems and new results. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1987). *Congr. Numer.* **60** (1987), 295–317. (L. Caccetta) **89i:05156** 05C35



- (with Frankl, Peter) The maximum number of edges in a 3-graph not containing a given star. *Graphs Combin.* 3 (1987), no. 2, 111–126. (Dominique Gouyou-Beauchamps) **89e:05113** 05C35
- (with Füredi, Z.; Graham, R. L.; Seymour, Paul D.) On induced subgraphs of the cube. *J. Combin. Theory Ser. A* 49 (1988), no. 1, 180–187. (O. D'Antona) **89i:05101** 05C10 (03G05, 05C35, 06E30, 68Q25)
- (with Hajela, D.; Seymour, Paul D.) Self-organizing sequential search and Hilbert's inequalities. 17th Annual ACM Symposium on the Theory of Computing (Providence, RI, 1985). *J. Comput. System Sci.* 36 (1988), no. 2, 148–157. (Allen Klinger) **89i:68012** 68P05 (68P10, 68Q25)
- (with Cohen, Joel E.; Graham, R. L.) Pursuit-evasion games on graphs. *J. Graph Theory* 12 (1988), no. 2, 159–167. (Stefan A. Burr) **89k:05069** 05C30 (05C99, 90D26, 90D42)
- The average distance and the independence number. *J. Graph Theory* 12 (1988), no. 2, 229–235. (R. A. Meller) **89b:05148** 05C99
- (with Graham, R. L.; Wilson, R. M.) Quasirandom graphs. *Proc. Nat. Acad. Sci. U.S.A.* 85 (1988), no. 4, 969–970. (Zbigniew Palka) **89a:05116** 05C80
- (with Füredi, Z.; Garey, M. R.; Graham, R. L.) On the fractional covering number of hypergraphs. *SIAM J. Discrete Math.* 1 (1988), no. 1, 45–49. (W. H. Mills) **89e:05153** 05C70 (05C65)
- (with Bollobás, B.) The diameter of a cycle plus a random matching. *SIAM J. Discrete Math.* 1 (1988), no. 3, 328–333. (Mark R. Jerrum) **89j:05062** 05C80 (05C35)
- Diameters and eigenvalues. *J. Amer. Math. Soc.* 2 (1989), no. 2, 187–196. (Ralph Faudree) **89k:05070** 05C50 (05C38)
- Chung, Han Young** (with Jeon, Jong Woo; Bae, Jong Sig) Chances of Simpson's paradox. *J. Korean Statist. Soc.* 16 (1987), no. 2, 117–127. (Not in MR) **62H17**
- Chung, Hung Yuan** (with Sun, Yu I.) Taylor series direct method for variational problems. *Control Theory Adv. Tech.* 3 (1987), no. 4, 375–379. (Summary) **89a:49010** 49A29 (93B25)
- (with Sun, Yu I.) Analysis and parameter estimation of scaled systems via the Taylor series approach. *Control Theory Adv. Tech.* 3 (1987), no. 4, 381–385. (Not in MR) **93B30** (93C25)
- (with Sun, Yu I.) Analysis of time-delay systems using an alternative technique. *Internat. J. Control* 46 (1987), no. 5, 1621–1631. (Alfredo Gómez) **89e:34133** 34K35 (93B25)
- (with Sun, Yu I.) Analysis and parameter estimation of nonlinear systems with Hammerstein model using Taylor series approach. *IEEE Trans. Circuits and Systems* 35 (1988), no. 12, 1539–1541. (Not in MR) **93B30**
- Erratum: "System identification via Fourier series" [*Internat. J. Systems Sci.* 18 (1987), no. 6, 1191–1194; MR 88c:93021]. *Internat. J. Systems Sci.* 19 (1988), no. 3, 517. (Editors) **89b:93047** 93B30
- Chung, J. K.** (with Kannappan, P.; Ng, C. T.) On two trigonometric functional equations. *Math. Rep. Toyama Univ.* 11 (1988), 153–165. (Shigeru Haruki) **89j:39010** 39B30 (39B50)
- Chung, Jack C. H.** (with Litt, Maria; Leininger, Gary G.; Scher, Harvey) Closed loop identification in diffusion-limited aggregation processes. *Complex Systems* 1 (1987), no. 3, 401–416. (Summary) **89b:82004** 82-08 (58F40)
- Chung, K. P.** Steady state solution and convergence rate of time-dependent Markov chains of queueing networks. *Comput. Math. Appl.* 15 (1988), no. 5, 351–358. (Bent Natvig) **89g:90109** 90B22 (60J10, 60K25, 93E25)
- Steady state solution and convergence rate of time-dependent Markov chains of queueing networks. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 481–485. (see **89d:60007**) **90B22** (60K25)
- Chung, K.-W.** (with Sudbery, A.) Octonions and the Lorentz and conformal groups of ten-dimensional space-time. *Phys. Lett. B* 198 (1987), no. 2, 161–164. (Nigel B. Backhouse) **89a:81169** 81G20 (81D27, 81E30)
- Chung, Kai Lal** Conditional gauges. *Seminar on stochastic processes*, 1983 (Gainesville, Fla., 1983), 17–22. *Progr. Probab. Statist.*, 7, Birkhäuser Boston, Boston, MA, 1984. (Kazuaki Taira) **89g:60236** 60J45
- (with Liao, Ming; Rao, Murali) Duality under a new setting. *Seminar on stochastic processes*, 1983 (Gainesville, Fla., 1983), 23–38. *Progr. Probab. Statist.*, 7, Birkhäuser Boston, Boston, MA, 1984. (Mamoru Kanda) **89b:60176** 60J45 (60J40)
- Notes on the inhomogeneous Schrödinger equation. *Seminar on stochastic processes*, 1984 (Evanston, Ill., 1984), 55–62. *Progr. Probab. Statist.*, 9, Birkhäuser Boston, Boston, MA, 1986. (Kazuaki Taira) **89b:60136** 60J65 (35J10, 60J15)
- (with Hsu, Pei) Gauge theorem for the Neumann problem. *Seminar on stochastic processes*, 1984 (Evanston, Ill., 1984), 63–70. *Progr. Probab. Statist.*, 9, Birkhäuser Boston, Boston, MA, 1986. (O. Enchev (Zbl 585:60064)) **89i:60157** 60J65 (60H25, 60J55)
- (with Li, Peter; Williams, Ruth J.) Comparison of probability and classical methods for the Schrödinger equation. *Exposition. Math.* 4 (1986), no. 3, 271–278. (Michael Cranston) **89c:60095** 60J65 (81C20)
- Probability methods in potential theory. *Potential theory—surveys and problems* (Prague, 1987), 42–54. *Lecture Notes in Math.*, 1344, Springer, Berlin-New York, 1988. (see **89m:31001**) **60J45** (31C99)
- (with Rao, Murali) General gauge theorem for multiplicative functionals. *Trans. Amer. Math. Soc.* 306 (1988), no. 2, 819–836. (Michael Cranston) **89d:60136** 60J40 (60J57)
- see also *Seminar: Stochastic Processes*, **89j:60005**
- Chung, Ki Soo** (with Han, Chang Woo; Kim, Jae Kwan; Koh, I. G.) Becchi-Rouet-Stora structure and gauge-invariant actions for higher-spin fields. *Phys. Rev. D* (3) 37 (1988), no. 4, 1079–1082. (Richard H. Capps) **89j:81096** 81E13 (81E30, 83E15)
- Chung, Kyung Tae** (with Cho, Chung Hyun) On the  $n$ -dimensional SE-connection and its conformal change. (Italian and Russian summaries) *Nuovo Cimento B* (11) 100 (1987), no. 4, 537–550. (Peter Basarab-Horwath) **89g:53047** 53C05 (83C99)
- Chung, Moon Jung** (with Krishnamoorthy, M. S.) Algorithms of placing recovery points. *Inform. Process. Lett.* 28 (1988), no. 4, 177–181. (Summary) **89f:68010** 68N05 (68Q25)
- lin-Chung, P. J.** see **Lin-Chung, P. J.**
- Chung, S.** (with Deng, S. M.; Kermévez, J.-P.; Liu, Yu<sup>3</sup>; Wang, Zirong) Shape optimization and continuation method. *Boundary control and boundary variations* (Nice, 1986), 137–152. *Lecture Notes in Comput. Sci.*, 100, Springer, Berlin-New York, 1988. (see **89b:93006**) **49F10**
- Chung, S. G.** Thermodynamics of the classical massive-Thirring-sine-Gordon model. *Phys. Rev. Lett.* 62 (1989), no. 7, 708–711. (Summary) **89k:81137** 81E99 (82A97)
- Chung, S. K.** Numerical solutions of nonlinear boundary value problems. *Bull. Korean Math. Soc.* 25 (1988), no. 1, 107–113. (Pietro Marzulli) **89b:65127** 65L10
- Chung, Sangwoo** (with Padovan, Joe; Guo, Y. H.) Asymptotic steady state behavior of fractionally damped systems. *J. Franklin Inst.* 324 (1987), no. 3, 491–511. (Summary) **89b:34003** 34A05 (34E05, 47G05, 70J05, 73K99)
- Chung, Seon-Young** A development of the local constancy principle in  $\mathbb{R}^n$  and its applications. *Bull. Korean Math. Soc.* 24 (1987), no. 2, 135–138. (R. N. Pederson) **89a:35052** 35F05
- Chung, W. L.** (with Chan, Mee Yee) Optimal multidisk partial match file designs. *Inform. Process. Lett.* 28 (1988), no. 3, 149–155. (Not in MR) **68P20** (68N99)
- nguyên minh Chu'ong** see **Nguyễn Minh Chu'ong**
- Chuong, Nguyen Hong** (with Fedorov, F. I.; Minkevich, A. V.) Spontaneous symmetry breaking by gravitational field and regular isotropic models with torsion. *Classical Quantum Gravity* 5 (1988), no. 3, 515–519. (Yu. N. Obukhov) **89d:83052** 83D05 (83F05)
- Chupin, V. G.** (with Marshak, V. D.; Antsy, S. M.) A model of the process of the composition of local decisions, taking cooperation into account. (Russian) *Optimizatsiya* No. 41(58) (1987), 102–113. (Not in MR) **90A08** (90A05)
- Chupina, E. I.** Lattice determinacy of semisimple finite-dimensional alternative algebras. (Russian) *Sibirsk. Mat. Zh.* 28 (1987), no. 5, 198–202. (Harry F. Smith) **89a:17032** 17D05
- Chuprov, A. A.** see **Seneta, E.** **89g:01040**
- Chuprakov, E. V.** (with Kuntsevich, T. S.; Tarkhova, T. N.) On the symmetry of regular systems of points of  $n$ -dimensional space groups. (Russian) *Crystallography and crystal chemistry* (Russian), 71–78, 322, "Nauka", Moscow, 1986. (Vojtěch Kopský) **89k:20068** 20H15 (51F15, 82A60)
- Chueat, Nicolas** see **Moss, Barbara**, **89i:01022**; **Beaujourn, Guy**, **89j:01021**; **L'Huillier, Hervé**, **89m:01022** and **Flegg, Graham**, **89m:01028**
- Church, P. T.** (with Timourian, J. G.) The singular set of a nonlinear elliptic operator. *Michigan Math. J.* 35 (1988), no. 2, 197–213. (Andrzej Szulkin) **89i:58020** 58E07 (35J65, 47H15, 58C25, 58G05)
- (with Berger, M. S.; Timourian, J. G.) Folds and cusps in Banach spaces with applications to nonlinear partial differential equations. II. *Trans. Amer. Math. Soc.* 307 (1988), no. 1, 225–244. (Norman Dancer) **89d:35056** 35J65 (47H15, 58C27)
- Churchhouse, R. F.** Computers in number theory. 1987 CERN School of Computing (Troia, 1987), 357–377. CERN, 88-03, CERN, Geneva, 1988. (W. W. Adams) **89f:11166** 11Yxx (11-02, 11-04)
- Fractals. 1987 CERN School of Computing (Troia, 1987), 378–385. CERN, 88-03, CERN, Geneva, 1988. (Editors) **89g:58103** 58F08 (28A75, 54F20)
- Churchill, Gary A.** Stochastic models for heterogeneous DNA sequences. *Bull. Math. Biol.* 51 (1989), no. 1, 79–94. (Summary) **89k:92027** 92A10
- Churchill, R. C.** (with Rod, David L.) On the applicability of Ziglin's nonintegrability theorem. *Finite-dimensional integrable nonlinear dynamical systems* (Johannesburg, 1988), 94–109. *World Sci. Publishing, Singapore*, 1988. (Gerard Thompson) **89m:58075** 58F05 (70H05)
- (with Baider, A.) The Campbell-Hausdorff group and a polar decomposition of graded algebra automorphisms. *Pacific J. Math.* 131 (1988), no. 2, 219–235. (Summary) **89h:17039** 17B70 (16A03, 58F99)
- (with Baider, A.) Uniqueness and nonuniqueness of normal forms for vector fields. *Proc. Roy. Soc. Edinburgh Sect. A* 108 (1988), no. 1-2, 27–33. (Carmen Chicone) **89e:58109** 58F99 (58F05, 58F35)
- Churchill, Ruel V.** (with Brown, James Ward) ★ Fourier series and boundary value problems. Fourth edition. *McGraw-Hill Book Co., New York*, 1987. x+292 pp. ISBN 0-07-010881-1 (Editors) **89h:35001** 35-01 (42-01)
- Churchyard, Peter** (with Spring, David) Proper knot theory in open 3-manifolds. *Trans. Amer. Math. Soc.* 308 (1988), no. 1, 133–142. (Charles Livingston) **89k:57008** 57M25 (57M99)
- Churikov, V. A.** Solution of a boundary value problem for a system of four linear ordinary differential equations with holomorphic coefficients. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 3, 55–59, 88; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 3, 77–81. (M. Tvrdý) **89c:34028** 34B05
- Churilov, S. M.** (with Shukhman, I. G.) The nonlinear development of disturbances in a zonal shear flow. *Geophys. Astrophys. Fluid Dynamics* 38 (1987), no. 3, 145–175. (John S. Robertson) **89m:76041** 76E30 (76E25, 76F10, 86A05)
- Churin, Yu. V.** Closure of a set of systems with singular periodic solutions. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 6, 999–1004, 1099; translated in *Differential Equations* 24 (1988), no. 6, 658–662. (L. Reizigā) **89m:58171** 58F22 (58F09, 58F10)
- Churkin, V. A.** see **Kourouka notebook**, **89f:20002**
- Chuvakov, V. P.** On the heredity of radicals in the class of right alternative almost alternative rings. (Russian) *Algebra i Logika* 25 (1986), no. 6, 687–695, 752. (Harry F. Smith) **89f:17042** 17D15
- Chu Van Dong** Self-decomposable probability measures on locally convex topological vector spaces. *Probab. Math. Statist.* 8 (1987), 177–181. (Dong M. Chung) **89e:60009** 60B11 (46G12)
- Chuyan, O. R.** A relationship between the guaranteed results of active and passive algorithms. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 3, 420–428, 478. (Summary) **89c:65073** 65J99
- see also **Traub, Joseph Frederick et al.**, **89i:68062**
- Chrátal, V.** (with Sbihi, N.) Bull-free Berge graphs are perfect. *Graphs Combin.* 3 (1987), no. 2, 127–139. (Alan Tucker) **89a:05063** 05C15
- On the  $P_4$ -structure of perfect graphs. III. Partner decompositions. *J. Combin. Theory Ser. B* 43 (1987), no. 3, 349–353. (Alan Tucker) **89a:05062** 05C15
- (with Sbihi, N.) Recognizing claw-free perfect graphs. *J. Combin. Theory Ser. B* 44 (1988), no. 2, 154–176. (Koduvayur R. Parthasarathy) **89e:05165** 05C75 (05C15)
- Chvalatova, J.** (with Opatrný, J.) The bandwidth of theta graphs. *Utilitas Math.* 33 (1988), 9–22. (G. W. Peck) **89e:05184** 05C99
- Chvoj, J.** Description of nonstationary processes in the framework of stochastic theory and its application on the phase transformation. *Czechoslovak J. Phys. B* 37 (1987), no. 12, 1340–1347. (Summary) **89c:82023** 82A31 (82A25)
- Chynoweth, S.** (with Porter, David; Sewell, M. J.) The parabolic umbilic and atmospheric fronts. *Proc. Roy. Soc. London Ser. A* 419 (1988), no. 1857, 337–362. (Jürgen Scheurle)

- 89i:58010** 58C27 (76C15, 86A10)
- Chzhou, S. P.** On the simultaneous approximation of a function and its derivatives. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 32 (1988), no. 6, 493–495, 572. (Summary) **89j:41029** 41A28
- Chzhou, Sunpin** see **Zhou, Song Ping**
- Ciacca, Paolo** (with Maio, Dario; Tiberio, Paolo) A unifying approach to evaluating block accesses in database organizations. *Inform. Process. Lett.* 28 (1988), no. 5, 253–257. (Summary) **89j:68034** 68P20 (68P15)
- Ciach, Leszek Jan** Some remarks on the noncommutative Lorentz spaces. *Comment. Math. Prace Mat.* 26 (1986), no. 2, 201–217. (Summary) **89c:46080** 46L50 (47D40)
- Some remarks on the convergence in measure and on a dominated sequence of operators measurable with respect to a semifinite von Neumann algebra. *Colloq. Math.* 55 (1988), no. 1, 109–121. (S. Gudder) **89k:46078** 46L50 (46L10)
- Ciampi, Antonio** (with Sagman, Uri; Thiffault, Johanne) Classification, hypothesis formulation and model evaluation. *Data analysis and informatics, V (Versailles, 1987)*, 29–36, North-Holland, Amsterdam-New York, 1988. (see **89g:62009**) 62H30 (62H15)
- procesi Ciampi, Rita** see **Procesi Ciampi, Rita**
- Cianci, Roberto** (with Bruzzo, Ugo) Mathematical foundations of supermanifold field theories: action functional and reduction to spacetime. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 1 (1987), no. 2, 491–507. (Paolo Teofilatto) **89g:58011** 58A50 (58E30, 81E13, 83E50)
- Ciarlo, Gianfranco** (with Dugan, Joanne Bechia) Stochastic Petri net analysis of a replicated file system. *IEEE Trans. Software Engng.* 15 (1989), no. 4, 394–401. (Not in MR) **88P99** (68N99, 68Q90)
- Ciarlet, Philippe G.** ★ Mathematical elasticity. Vol. I. Three-dimensional elasticity. Studies in Mathematics and its Applications, 20. North-Holland Publishing Co., Amsterdam-New York, 1988. xlii+451 pp. ISBN 0-444-70259-8 (Cornelius O. Horgan) **89c:73001** 73-02 (73Cxx)
- (with Bourquin, Frédéric) Modélisation des vibrations d'une multi-structure formée d'un corps élastique tridimensionnel et d'une plaque. (English summary) [Modeling of the vibrations of a multistructure composed of a three-dimensional elastic body and a plate] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 9, 435–438. (Summary) **89j:73055** 73K20 (73C40, 73K12)
- (with Le Dret, Hervé) Justification de la condition aux limites d'encastrement d'une plaque par une méthode asymptotique. (English summary) [Justification of the boundary conditions for a clamped plate by an asymptotic analysis] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 20, 1015–1018. (Claude Surry) **89k:73045** 73K10 (73C40)
- Ciarletta, Michele** (with Matarazzo, Giovanni) On the thermodynamical potentials of simple electromagnetic systems. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 80 (1986), no. 6, 384–393 (1987). (Summary) **89k:78030** 78A99 (80A99)
- Cibils, Claude** 2-nilpotent and rigid finite-dimensional algebras. *J. London Math. Soc.* (2) 36 (1987), no. 2, 211–218. (Hagen Melzter) **89a:16030** 16A46 (16A61, 16A64)
- Complexes simpliciaux et carquois. (English summary) [Simplicial complexes and quivers] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 19, 929–934. (Timothy Porter) **89m:18020** 18G99 (16A64)
- On the Hochschild cohomology of finite-dimensional algebras. *Comm. Algebra* 16 (1988), no. 3, 645–649. (Hagen Melzter) **89c:16027** 16A46 (16A61, 18G55)
- Cibils, M. B.** (with Amrein, W. O.; Sinha, K. B.) Configuration space properties of the S-matrix and time delay in potential scattering. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* 47 (1987), no. 4, 367–382. (Xue-Ping Wang) **89d:35135** 35P25 (47F05, 81F05)
- Cibulis, A.** On the influence of the method of approximation of a discontinuous nonlinearity on the qualitative behavior of solutions of problems of Stefan type. (Russian) *Lav. Mat. Ezhegodnik* No. 31 (1988), 91–94, 252. (Summary) **89h:35056** 35B99 (35R35)
- On the passage to the limit in a system of elliptic equations with smoothing of discontinuous nonlinearities. (Russian) *Lav. Mat. Ezhegodnik* No. 32 (1988), 50–54, 240. (Siegfried Carl) **89m:35207** 35R05 (35J50, 35J65)
- The solvability of a parabolic equation with discontinuous nonlinearities. (Russian) *Lav. Mat. Ezhegodnik* No. 32 (1988), 55–59, 240. (Siegfried Carl) **89m:35208** 35R05 (35K60)
- Cicala, Placido** (with Bigi, Dante) Weighted residuals as a basis of a general solution method in elasticity. (Italian summary) *Meccanica—J. Ital. Assoc. Theoret. Appl. Mech.* 19 (1984), no. 1, 34–37. (Summary) **89k:73018** 73C99 (73K25)
- Ciccotti, G.** see **Molecular-dynamics simulation of statistical-mechanical systems**, **89c:58032**
- Cichoński, B.** (with Felderhof, B. U.) Dielectric constant of polarizable, nonpolar fluids and suspensions. *J. Statist. Phys.* 53 (1988), no. 1–2, 499–521. (Summary) **89j:82050** 82A50
- Cichoń, J.** (with Morayne, M.) Universal functions and generalized classes of functions. *Proc. Amer. Math. Soc.* 102 (1988), no. 1, 83–89. (James Foran) **89c:26003** 26A21 (04A15)
- Cicogna, G.** (with Gaeta, G.) A Hopf bifurcation breaking rotation symmetry. *J. Phys. A* 21 (1988), no. 18, L875–L878. (From the text) **89j:58090** 58F14 (34C25, 58F35)
- The onset of chaos, a soluble model, and the Josephson-junction equation. *Phys. Lett. A* 131 (1988), no. 2, 98–100. (Summary) **89i:58078** 58F13
- Cicognani, M.** (with Corli, A.) Propagation of singularities for operators with constant coefficient hyperbolic-elliptic principal part. *Ann. Mat. Pura Appl.* (4) 147 (1987), 303–341. (Min You Qi) **89f:35009** 35A20 (35G05, 35L67, 35M05)
- Cicuta, G. M.** (with Molinari, Luca; Montaldi, E.; Riva, F.) Large rectangular random matrices. *J. Math. Phys.* 28 (1987), no. 8, 1716–1718. (W. Th. F. den Hollander) **89d:82012** 82A05 (15A52, 82A31)
- (with Molinari, Luca; Montaldi, E.) Ising models on Feynman graphs. *Nuclear Phys. B* 300 (1988), no. 2 FS22, 197–206. (Claude Itzykson) **89k:82091** 82A68
- Cidon, Israel** (with Sidi, Moshe) Conflict multiplicity estimation and batch resolution algorithms. *IEEE Trans. Inform. Theory* 34 (1988), no. 1, 101–110. (Summary) **89g:94022** 94A40 (68M10)
- Cieciura, Grzegorz** (with Szczyrba, Igor) Physical relations and the Weyl group. *J. Math. Phys.* 28 (1987), no. 9, 2115–2127. (F. Berdjis) **89c:22040** 22E70 (17B10, 22E45)
- Čiegis, Raimondas** (with Kairytė, Genė; Norvaiša, Saulius) On the problem of the numerical integration of an ordinary differential equation. (Russian. English and Lithuanian summaries) *Diferencial'nye Uravneniya i Primenen.* No. 41 (1987), 9–15. (E. S. Chichkin) **89h:65174** 65L05
- (with Norvaiša, Saulius) Solvability of a stationary problem of the nonlinear interaction of waves coming from opposite directions. (Russian. English and Lithuanian summaries) *Diferencial'nye Uravneniya i Primenen.* No. 41 (1987), 16–26. (Summary) **89d:35115** 35L70 (78A40)
- (with Kanapėnas, Rimantas; Norvaiša, Saulius; Petruškevičius, Raimondas) Numerical solution of a problem of the laser heating of metals. (Russian. English and Lithuanian summaries) *Diferencial'nye Uravneniya i Primenen.* No. 43 (1988), 49–67. (Summary) **89k:65155** 65P05 (80-08)
- Cierzyński, T. C.** (with von Weber, Stefan Michael) Canonical sequences and simulation. *Systems Anal. Modelling Simulation* 5 (1988), no. 2, 165–170. (Summary) **89c:11116** 11K31 (65C10)
- Ciesielski, K.** (with Galvin, F.) Cylinder problem. *Fund. Math.* 127 (1987), no. 3, 171–176. (F. R. Drake) **89c:03079** 03E05 (03E10, 03E35)
- Martin's axiom and a regular topological space with uncountable net weight whose countable product is hereditarily separable and hereditarily Lindelöf. *J. Symbolic Logic* 52 (1987), no. 2, 396–399. (Andrzej Szymański) **89d:03047** 03E35 (03E50, 54A25, 54A35, 54D20)
- Intersections of trajectories and transversals in dynamical systems. *Univ. Iagel. Acta Math.* No. 26 (1987), 115–125. (Waldyr M. Oliva) **89g:58188** 58F99 (34C40)
- A short ordered commutative domain whose quotient field is not short. *Algebra Universalis* 25 (1988), no. 1, 1–6. (Melvin Henriksen) **89d:06035** 06F25 (13J25)
- (with Pogoda, Zdzisław) Conversation with Andrzej Turowski. *Math. Intelligencer* 10 (1988), no. 4, 13–20. (F. Smithies) **89j:01060** 01A70
- Ciesielski, Z.** Nonparametric polynomial density estimation. *Probab. Math. Statist.* 9 (1988), no. 1, 1–10. (Jan Mielnicki) **89i:62056** 62G05 (41A10)
- Cieslak, Waldemar** (with Mozgawa, Witold) Quelques remarques sur les flots riemanniens singuliers. [Some remarks on singular Riemannian flows] *An. Univ. Timisoara Ser. Stiin. Mat.* 25 (1987), no. 2, 15–20. (James J. Hebda) **89h:53088** 53C20 (53C12, 57R25)
- Crofton-type integral formulas for star domain. *Geom. Dedicata* 28 (1988), no. 3, 251–258. (L. A. Santaló) **89k:52010** 52A30 (53A04)
- borucka-Cieslewicz, Anna** see **Borucka-Cieslewicz, Anna**
- Cieslik, D.** The Fermat-Steiner-Weber problem in Minkowski spaces. *Optimization* 19 (1988), no. 4, 485–489. (Constantin Zălinescu) **89f:90114** 90C25 (52A20, 90B10)
- Cifarelli, Donato M.** (with Regazzini, Eugenio) Priors for exponential families which maximize the association between past and future observations. *Probability and Bayesian statistics (Innsbruck, 1986)*, 83–95, Plenum, New York-London, 1987. (J. M. Bernardo) **89b:62077** 62F15
- Çiftçi, Süleyman** (with Kaya, Rustem; Ferrar, Joseph C.) On 4-transitivity in the Moufang plane. *J. Geom.* 31 (1988), no. 1–2, 65–68. (Elena Brožiková) **89f:51015** 51A35 (17A35, 17D05, 51A25)
- Cifuentes, Patricia** A characterization of  $H^2$  classes on rank one symmetric spaces of noncompact type. *Proc. Amer. Math. Soc.* 106 (1989), no. 2, 519–525. (A. Korányi) **89k:43008** 43A85 (22E30)
- Cigler, J.** Some remarks on Catalan families. *European J. Combin.* 8 (1987), no. 3, 261–267. (Ira Gessel) **89a:05010** 05A15 (05A10)
- Cikanek, Dana Grinstead** (with Slater, P. J.) The  $k$ -processing center of a graph. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 60 (1987), 199–210. (B. Zelinka) **89c:05114** 05C35 (90B35)
- Ciliberto, Ciro** Hilbert functions of finite sets of points and the genus of a curve in a projective space. *Space curves (Rocca di Papa, 1985)*, 24–73, *Lecture Notes in Math.*, 1266, Springer, Berlin-New York, 1987. (H. Lange) **89c:14039** 14H10 (14H45)
- On rationally determined line bundles on a family of projective curves with general moduli. *Duke Math. J.* 55 (1987), no. 4, 909–917. (Mei Chu Chang) **89a:14030** 14H10 (14C22, 14F05)
- Errata corrigé to: "Rationally determined line bundles on families of curves" [in *The Curves Seminar at Queen's, Vol. IV* (Kingston, ON, 1985–1986), Exp. No. D, Queen's Univ., Kingston, ON, 1986; MR 88j:14032]. *The Curves Seminar at Queen's, Vol. V* (Kingston, ON, 1987–1988), Exp. No. F, 2 pp., *Queen's Papers in Pure and Appl. Math.*, 80, Queen's Univ., Kingston, ON, 1988. (Editors) **89k:14045** 14H10 (14C22, 14H40, 14H50)
- (with Harris, Joseph Daniel; Miranda, Rick) On the surjectivity of the Wahl map. *Duke Math. J.* 57 (1988), no. 3, 829–858. (I. Dolgachev) **89m:14010** 14H10 (14J28)
- (with Harris, Joseph Daniel; Miranda, Rick) General components of the Noether-Lefschetz locus and their density in the space of all surfaces. *Math. Ann.* 282 (1988), no. 4, 667–680. (Marco Andreatta) **89k:14061** 14J25 (14C22)
- Ciliberto, S.** (with Rubio, M. A.; Bigazzi, P.) Transition between localized oscillations and traveling waves in thermal convection. *Chaos and complexity (Torino, 1987)*, 157–170, *World Sci. Publishing, Singapore*, 1988. (Summary) **89i:76051** 76E15
- (with Bagnoli, F.; Francescato, A.; Livi, R.; Ruffo, Stefano) Cellular automaton model for a fluid experiment. *Chaos and complexity (Torino, 1987)*, 318–327, *World Sci. Publishing, Singapore*, 1988. (see **89g:58144**) 76E15 (68U20, 76-05, 76-08)
- see also **Chaos and complexity**, **89g:58144**
- Cima, Joseph A.** (with Suffridge, Ted) Proper mappings between balls in  $C^n$ . *Complex analysis (University Park, Pa., 1986)*, 66–82, *Lecture Notes in Math.*, 1268, Springer, Berlin-New York, 1987. (Franc Forstneric) **89h:32051** 32H35 (32E35)
- (with Janson, Svante; Yale, Keith) Completely continuous Hankel operators on  $H^\infty$  and Bourgain algebras. *Proc. Amer. Math. Soc.* 105 (1989), no. 1, 121–125. (Carl C. Cowen) **89g:30065** 30D55 (46J15, 47B35)
- (with Suffridge, Ted) Proper holomorphic mappings from the two-ball to the three-ball. *Trans. Amer. Math. Soc.* 311 (1989), no. 1, 227–239. (Masaki Suzuki) **89h:32050** 32H35
- Cimatti, Giovanni** A rigorous justification of the Reynolds equation. *Quart. Appl. Math.* 45 (1987), no. 4, 627–644. (Howard Swann) **89a:76043** 76N10 (35Q10, 76D08)
- Cimetière, A.** (with Geymonat, G.; Le Dret, Hervé; Raoult, A.; Tutek, Z.) Asymptotic theory and analysis for displacements and stress distribution in nonlinear elastic straight slender rods. *J. Elasticity* 19 (1988), no. 2, 111–161. (D. Ieşan) **89f:73042** 73K05 (34E05, 73C10, 73C50)
- Čimev, K. N.** see **Chimev, K. N.**



- Cimmino, Gianfranco** An unusual way of solving linear systems. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **80** (1986), no. 1-2, 6-7 (1987). (Anna Lee) **89e:15005** 15A06 (15A15, 65F40)
- Dante and mathematics. (Italian) *Atti Accad. Pontaniana (N.S.)* **36** (1987), 5-16 (1988). (From the text) **89h:01013** 01A35
- Ciolar, E.** see Seminar: Stochastic Processes, **89j:60005**
- Cinquegrani, Maria Grazia** Some properties of divided domains. (Italian) *Matematiche (Catania)* **38** (1983), no. 1-2, 133-143 (1987). (Marco Fontana) **89b:13040** 13J15 (13B20)
- Nonsingular curves passing through a zero-dimensional subscheme of  $\mathbb{P}^2$ . *Comm. Algebra* **16** (1988), no. 2, 325-338. (A. Hirschowitz) **89f:14028** 14H45 (14C20, 14N05)
- On singularities of the curves belonging to some linear system in  $\mathbb{P}^2$ . *Manuscripta Math.* **61** (1988), no. 2, 131-144. (Philippe Carbone) **89e:14025** 14H20 (14C20)
- Cinquini, Silvio** On two existence theorems for the solution of the Cauchy problem for systems of partial differential equations. (Italian) *Istit. Lombardo Accad. Sci. Lett. Rend. A* **120** (1986), 125-134 (1987). (Genowefa Majcher) **89b:35004** 35A05
- Cioeci, F.** (with Dattoli, G.; Dipace, A.; Torre, Amalia) Erratum: "A simple derivation of new sum rules of Bessel functions" [*Nuovo Cimento B* (11) **90** (1985), no. 2, 138-142; MR 87d:33016]. *Nuovo Cimento B* (11) **100** (1987), no. 3, 441. (Editors) **89d:33011** 33A40
- Ciocan, Renata** (with Szynal, D.) On the convergence rate in terms of the Trotter operator in the central limit theorem without moment conditions. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 9-10, 617-627. (L. Hahn) **89g:60071** 60F05
- Cioffi-Revilla, Claudio** (with Dacey, Raymond) The probability of war in the  $n$ -crises problem: modeling new alternatives to Wright's solution. Formal analysis in international relations. *Synthese* **76** (1988), no. 2, 285-305. (see **89e:90218**) **92A90** (90D40, 90D45)
- Cioranescu, Dolina** (with Saint Jean Paulin, Jeannine) Tall structures—problem of towers and cranes. *Applications of multiple scaling in mechanics* (Paris, 1986), 77-92, *Rech. Math. Appl.*, 4, Masson, Paris, 1987. (J. Murzewski) **89k:73054** 73K99 (35B40, 35J30, 73C99)
- (with Saint Jean Paulin, Jeannine) Elastic behaviour of very thin cellular structures. *Material instabilities in continuum mechanics* (Edinburgh, 1985-1986), 65-75, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1988. (see **89f:73005**) **73U05** (73K20)
- (with Saint Jean Paulin, Jeannine) Global behaviour of very thin cellular structures. Applications to networks. *Trends in applications of mathematics to mechanics* (Wassenaar, 1987), 26-34, *Springer, Berlin-New York*, 1988. (see **89g:58004**) **73U05** (73K20)
- (with Donato, Patrizia) Homogénéisation du problème de Neumann non homogène dans des ouvertures perforées. (English summary) [Homogenization of the nonhomogeneous Neumann problem in perforated open sets] *Asymptotic Anal.* **1** (1988), no. 2, 115-138. (Wei Tao Zhang) **89j:35021** 35B25 (35B20, 35J99)
- Cioranescu, Ioana** (with Neumann, Ulrich) Stieltjes vectors and cosine functions generators. *Studia Math.* **87** (1987), no. 1, 1-7. (G. F. Webb) **89d:47087** 47D05
- (with Lizama, Carlos) Spectral properties of cosine operator functions. *Aequationes Math.* **36** (1988), no. 1, 80-98. (Dieter Lutz) **89h:47071** 47D05 (34G10)
- Cioslowski, Jerzy** (with Gutman, I.) Bounds for the number of perfect matchings in hexagonal systems. *Publ. Inst. Math. (Beograd) (N.S.)* **42**(56) (1987), 21-27. (N. Trinajstić) **89e:05157** 05C70
- (with Balaban, Alexandru T.; Brunvoll, J.; Cyvin, B. N.; Cyvin, S. J.; Gutman, I.; He, Wen Chen; He, Wen Jie; Knop, J. V.; Kovacević, M.; Müller, W. R.; Szymanski, K.; Tosić, Ratko; Trinajstić, N.) Enumeration of benzenoid and coronoid hydrocarbons. *Z. Naturforsch. A* **42** (1987), no. 8, 863-870. (Summary) **89d:92090** 92A40 (05A15)
- Cipra, Barry A.** An introduction to the Ising model. *Amer. Math. Monthly* **94** (1987), no. 10, 937-959. (Peter J. Forrester) **89g:82001** 82-01 (82A68)
- On a zeta function associated to ternary zero forms. *Proc. Amer. Math. Soc.* **101** (1987), no. 4, 602-604. (O. M. Fomenko) **89a:11035** 11E45
- To have and have knot: when are knots alike? *Science* **241** (1988), no. 4871, 1291-1292. (Quach thi Cam Van) **89k:57009** 57M25
- Cipra, T.** Autoregressive processes in optimization. *J. Appl. Probab.* **25** (1988), no. 2, 302-312. (M. S. Shitlman) **89h:90163** 90C15 (60J25, 62M10)
- Gaussian processes in linear programs with random right-hand sides. *Z. Angew. Math. Mech.* **68** (1988), no. 5, T438-T439. (Not in MR) **90C15**
- Ćirić, Dušan M.** On the category of ordered sets. (Serbo-Croatian summary) *Zb. Rad. No. 2* (1988), 9-14. (Jan Reiterman) **89k:18020** 18F20 (06A10, 54F05)
- Ćirić, Ljubomir B.** A problem of Ivanov related to nonlinear quasicontractive mappings. (Russian) *Publ. Inst. Math. (Beograd) (N.S.)* **41**(55) (1987), 149-150. (I. A. Rus) **89a:54053** 54H25
- Ćirić, Miroslav**  $c$ -( $m, n$ )-ideal semigroups. *Proceedings of the Conference "Algebra and Logic", Cetinje 1986, 23-32, Univ. Novi Sad, Novi Sad, 1987.* (Francis Pastijn) **89c:20088** 20M10 (20M12)
- Cirulis, Jānis** Convexity in betweenness spaces. (Russian) *Topological structures and their mappings* (Russian), 152-161, vii-viii, *Latv. Gos. Univ., Riga*, 1987. (W. J. Firey) **89h:52001** 52A01
- Definitions in protothetics. (Russian) *Latv. Mat. Ezhegodnik* **No. 32** (1988), 90-101, 241-242. (Jerzy Kotas) **89h:30021** 03B60
- Cismagla, Cristina S.** Some properties of the linear positive operators of probabilistic type. *Seminar on Numerical and Statistical Calculus* (Cluj-Napoca, 1987), 129-133, *Preprint*, 87-9, *Univ. "Babeş-Bolyai", Cluj-Napoca*, 1987. (Heinz H. Gonska) **89j:41036** 41A36 (41A25)
- Citron, T. K.** (with Bruckstein, Alfred M.; Kailath, Thomas) Inverse scattering and minimal partial realizations. *Internat. J. Control* **48** (1988), no. 4, 1537-1550. (Vimal Singh) **89k:93032** 93B15 (93A20, 93C05)
- Citti, Giovanna** Positive solutions for a quasilinear degenerate elliptic equation in  $\mathbb{R}^n$ . *Rend. Circ. Mat. Palermo* (2) **35** (1986), no. 3, 364-375 (1987). (C. A. Swanson) **89e:35007** 35B05 (35J60, 35J70)
- Existence of infinitely many solutions for a quasilinear degenerate elliptic equation in  $\mathbb{R}^n$ . *Nonlinear Anal.* **12** (1988), no. 9, 871-879. (Long-Yi Tsai) **89j:35052** 35J60
- Cincar, G.** (with Păun, Gh.) On the syntactical complexity of pure languages. *Found. Control Engng.* **12** (1987), no. 2, 69-74. (Rani Siromoney) **89c:68069** 68Q50
- Clares, E.** Two simple versions of dynamic flow algorithms. (Romanian summary) *Bul. Univ. Braşov Ser. C* **29** (1987), 19-22 (1988). (Not in MR) **90B10**
- Civalani, Nino** (with Bonetti, Flavio) On the product of two tolerances. (Italian summary) *Ann. Univ. Ferrara Sez. VII (N.S.)* **33** (1987), 189-205 (1988). (Ivan Chajda) **89g:08002** 08A30 (04A05, 05C99, 92A27)
- Čížek, Jiří Karel** (with Vinette, F.) Perturbation energy expansion using hypervirial theorem and symbolic computation for the  $N$ -dimensional hydrogen atom in an external spherically symmetric field. *Comput. Phys. Comm.* **52** (1988), no. 1, 35-41. (Summary) **89j:81279** 81G45 (81-04)
- ruiz-Clayssens, Julio Cesar** see Ruiz-Clayssens, Julio Cesar
- Clagett, Marshall** see Bibliography: Clagett, Marshall, **89b:01067**
- Clairaut, A.-C.** see Greenberg, John L., **89j:01031**
- Clapham, C.** (with Exoo, G.; Harborth, Heiko; Mengersen, I.; Sheehan, John) The Ramsey number of  $K_5 - e$ . *J. Graph Theory* **13** (1989), no. 1, 7-15. (Linda Lesniak) **89m:05085** 05C55
- Clapp, Mónica** (with Puppe, Dieter) Improving categorical coverings of spaces. *Geometric topology and shape theory* (Dubrovnik, 1986), 38-42, *Lecture Notes in Math.*, 1283, *Springer, Berlin-New York*, 1987. (Shiroshi Saito) **89f:55002** 55M30
- Clarizia, A.** (with Pezzella, F.)  $N$ -reggeon vertex for the Neveu-Schwarz string. *Nuclear Phys. B* **298** (1988), no. 3, 636-652. (Enore Guadagnini) **89c:81109** 81E99 (81E30, 81G25, 83E30)
- (with Pezzella, F.) BRST invariant mixed string vertex for the bosonic string. *Nuclear Phys. B* **301** (1988), no. 3, 499-516. (Tsu Sheng Tsun) **89j:81097** 81E13 (17B65, 81E30)
- Clark, Andy** Meaning, publicity and epistemology. *Theoria* **53** (1987), no. 1, 19-30. (Not in MR) **03A05**
- Clark, C. W.** Fisheries as renewable resources. *Economic-ecological modeling*, 73-86, *Stud. Regional Sci. Urban Econom.*, 16, *North-Holland, Amsterdam-New York*, 1987. (see **89d:90076**) **90A30** (92A17)
- Clark, Dean S.** Stability in a system of difference equations. *Quart. Appl. Math.* **45** (1987), no. 3, 441-453. (Bernd Aulbach) **89a:39005** 39A11
- Clark, Gordon M.** (with Taaffe, Michael R.) Approximating nonstationary two-priority nonpreemptive queueing systems. *Naval Res. Logist.* **35** (1988), no. 1, 125-145. (Winfried K. Grassmann) **89a:60232** 60K25 (41A63, 90B22)
- Clark, J. M. C.** Convergent martingales of asymptotically minimal fluctuation. *Probab. Theory Related Fields* **75** (1987), no. 4, 531-543. (Nareesh K. Jain) **89b:60119** 60G44
- Clark, John** The centre of an FPF ring need not be FPF. *Bull. Austral. Math. Soc.* **37** (1988), no. 2, 235-236. (S. S. Page) **89c:16004** 16A03
- Clark, John W.** (with Chen, J. W.; Kürten, K. E.) Modelling of neural systems in continuous time. *Math. Comput. Modelling* **10** (1988), no. 7, 503-513. (Summary) **89d:92021** 92A09 (92A25)
- Statistical mechanics of neural networks. *Phys. Rep.* **158** (1988), no. 2, 91-157. (Koichiro Matsuno) **89g:92013** 92A09 (82A35, 82A99)
- Clark, Lane H.** (with Entringer, R. C.; Fellows, Michael R.) Computational complexity of integrality. *J. Combin. Math. Combin. Comput.* **2** (1987), 179-191. (Selim G. Akl) **89c:05046** 05C35 (68Q15, 68R10)
- (with Entringer, R. C.) The minimum number of cycles in graphs with given cycle rank and small connectivity. *J. Combin. Math. Combin. Comput.* **3** (1988), 169-181. (Barry Piazza) **89e:05124** 05C38 (05C35, 05C40)
- Clark, P. A.** (with Westberg, A. W.) A note on the optimality conditions for the bilevel programming problem. *Naval Res. Logist.* **35** (1988), no. 5, 413-418. (Summary) **89g:90187** 90C30
- Clark, Stephen A.** An extension theorem for rational choice functions. *Rev. Econom. Stud.* **55** (1988), no. 3, 485-492. (O. N. Bondareva) **89g:90010** 90A06
- Clark, T. E.** (with Love, S. T.) Supersymmetric chiral normal coordinates. *Nuclear Phys. B* **301** (1988), no. 3, 439-459. (Joan Soto) **89g:81054** 81E15 (81E20)
- (with Lee, C.-H.; Love, S. T.) Anti-symmetric tensor gauge theories. *Nuclear Phys. B* **308** (1988), no. 2-3, 379-396. (S. Deser) **89i:81067** 81E13 (81D20)
- Clark, Terry L.** (with Balaji, V.) Scale selection in locally forced convective fields and the initiation of deep cumulus. *J. Atmospheric Sci.* **45** (1988), no. 21, 3188-3211. (From the summary) **89k:86009** 86A35
- Clark, W. A. V.** (with van Lierop, W. F. J.) Residential mobility and household location modelling. *Handbook of regional and urban economics*, Vol. 1, 97-132, *Handbooks in Econom.*, 7, *North-Holland, Amsterdam-New York*, 1986. (see **89m:90047**) **90A30**
- Clarke, Bertrand S.** (with Mittenthal, Jay E.; Arcuri, Phillip A.) An extremal criterion for epimorphic regeneration. *Bull. Math. Biol.* **50** (1988), no. 6, 595-634. (Summary) **89g:92014** 92A09
- Clarke, Bruce L.** (with Aguda, Baltazar D.) Dynamic elements of chaos in the Willamowski-Rössler network. *J. Chem. Phys.* **89** (1988), no. 12, 7428-7434. (Wei-Min Liu) **89j:92019** 92A09 (34C35, 58F13)
- Clarke, C. J. S.** (with Joshi, Pankaj S.) On reflecting spacetimes. *Classical Quantum Gravity* **5** (1988), no. 1, 19-25. (J. K. Beem) **89b:83061** 83C75 (53C50)
- A condition for forming trapped surfaces. *Classical Quantum Gravity* **5** (1988), no. 7, 1029-1032. (J. K. Beem) **89c:83046** 83C75 (53C50)
- Clarke, D. W.** (with Liann, F. R.) Application of explicit criterion minimization in adaptive control. *Internat. J. Systems Sci.* **19** (1988), no. 4, 551-571. (Not in MR) **93B40** (93C40)
- (with Tsang, T. T. C.) Generalised predictive control with input constraints. *Proc. IEE-D* **135** (1988), no. 6, 451-460. (Not in MR) **93B40** (49B36)
- Clarke, E. M.** (with Grümborg, O.) Research on automatic verification of finite-state concurrent systems. *Annual review of computer science*, Vol. 2, 269-290, *Annual Reviews, Palo Alto, CA*, 1987. (Neculai Curteanu) **89k:68042** 68Q10 (03B70, 68Q60)
- (with Browne, M. C.; Grümborg, O.) Characterizing finite Kripke structures in propositional temporal logic. *International Joint Conference on Theory and Practice of Software Development* (Pisa, 1987). *Theoret. Comput. Sci.* **59** (1988), no. 1-2, 115-131. (Neculai Curteanu) **89k:03030** 03B70 (03B45, 68Q10, 68Q55, 68Q60)
- Clarke, Frank H.** Optimization and periodic trajectories. *Periodic solutions of Hamiltonian systems and related topics* (Il Ciocco, 1986), 99-110, *NATO Adv. Sci. Int. Ser. C: Math. Phys. Sci.*, 209, *Reidel, Dordrecht-Boston, MA*, 1987. (Dariusz Zagrodny) **89c:49011** 49A52 (49C20, 49D50, 58E99, 58F05, 58F22)
- Regularity of solutions to the isoperimetric problem. *Proceedings of the International Workshop on Integral Functionals in the Calculus of Variations* (Trieste, 1985). *Rend. Circ. Mat. Palermo* (2) **Suppl. No. 15** (1987), 27-35. (T. Giec) **89g:49029** 49B21 (49A52)

- (with Vinter, R. B.) The relationship between the maximum principle and dynamic programming. *SIAM J. Control Optim.* **25** (1987), no. 5, 1291–1311. (A. I. Subbotin) **89f:49021** 49B10 (49C20)
- (with Loewen, Philip D.) State constraints in optimal control: a case study in proximal normal analysis. *SIAM J. Control Optim.* **25** (1987), no. 6, 1440–1456. (Péter Tallós) **89a:49019** 49B10 (49A52, 49E10)
- ★ Оптимизация и негладкий анализ. (Russian) [Optimization and nonsmooth analysis] Translated from the English by Yu. S. Ledyayev. Translation edited and with a foreword by V. I. Blagodat-skikh. "Nauka", Moscow, 1988. 280 pp. ISBN 5-02-013781-2 (Editors) **89m:49028** 49A52 (58C20, 90C48)
- (with Loewen, Philip D.) Intermediate existence and regularity in the calculus of variations. *Appl. Math. Lett.* **1** (1988), no. 2, 193–195. (Not in MR) 49A05
- Clarke, Joseph H. (with Delale, Can F.) Expansion flows on walls with nonequilibrium condensation. *Quart. Appl. Math.* **46** (1988), no. 1, 121–143. (Summary) **89e:76056** 76J99 (76J10, 76L05, 80A20)
- Clarke, Judith A. (with Giles, David E. A.; Wallace, T. Dudley) Preliminary-test estimation of the error variance in linear regression. *Econometric Theory* **3** (1987), no. 2, 299–304. (Kajal Lahiri) **89d:62111** 62P20 (62J05)
- Clarke, Martin (with Birkin, Mark) Comprehensive dynamic urban models: integrating macro- and micro-approaches. *Transformations through space and time* (Hansholm, 1985), 165–191, *NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci.*, 29, Nijhoff, Dordrecht, 1986. (see **89e:90072**) 92A20
- Clarke, Robert John Almost split sequences in a functor category. *J. Algebra* **116** (1988), no. 2, 271–293. (William Crawley-Boevey) **89m:16056** 16A64 (18A25)
- Clarke, Roger John (with Cham, W. K.) The principle of dyadic symmetry and the generation of simple, high efficiency transforms for image processing. *Mathematics in signal processing* (Bath, 1985), 409–419, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (B. D. Doneski) **89d:94007** 94A11 (94A05)
- Clarkson, Douglas B. (with Jennrich, Robert I.) Quartic rotation criteria and algorithms. *Psychometrika* **53** (1988), no. 2, 251–259. (Not in MR) 62H30
- Clarkson, Kenneth L. A randomized algorithm for closest-point queries. *SIAM J. Comput.* **17** (1988), no. 4, 830–847. (Helmut Alt) **89b:68143** 68U05 (68P10, 68Q25)
- Clarkson, P. M. Analysis of the LMS adaptive filter applied to periodic signals. *Mathematics in signal processing* (Bath, 1985), 593–605, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (Summary) **89c:94011** 94A12 (94A11)
- Clarkson, Peter A. (with Cosgrove, Christopher M.) Painlevé analysis of the nonlinear Schrödinger family of equations. *J. Phys. A* **20** (1987), no. 8, 2003–2024. (Summary) **89c:35136** 35Q20 (58F37)
- (with McLeod, J. Bryce) A connection formula for the second Painlevé transcendent. *Arch. Rational Mech. Anal.* **103** (1988), no. 2, 97–138. (Reinhard Schäfke) **89c:34010** 34A20 (34E99, 35Q20)
- Painlevé analysis of the damped, driven nonlinear Schrödinger equation. *Proc. Roy. Soc. Edinburgh Sect. A* **109** (1988), no. 1–2, 109–126. (Rafael José Lóio, Jr.) **89b:35200** 35Q20 (34A20, 58F07)
- Clarotti, C. A. (with Solonnikov, V. A.; Spizzichino, F.) Reliability equations for nonexponential systems with repairable components. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 4, 979–997. (Summary) **89b:60149** 60K10 (62N05, 90B25)
- Clausen, Jens (with Krarup, Jakob) Arranging apples in an array. *BIT* **28** (1988), no. 3, 552–568. (Dominique Gouyou-Beauchamps) **89b:68120** 68R10 (05C20, 68Q25, 68R05, 94C15)
- Clausen, M. see Applicable algebra, error-correcting codes, combinatorics and computer algebra, **89b:94002**
- Clausing, Achim Polynomial two-point expansions. *Aequationes Math.* **35** (1988), no. 2–3, 213–231. (R. P. Boas, Jr.) **89j:41044** 41A58 (26C99)
- Clauwens, F. J. B. J. K-theory,  $\lambda$ -rings, and formal groups. *Compositio Math.* **65** (1988), no. 2, 223–240. (Jan Stienstra) **89c:18010** 18F25 (11R70, 14L05, 19C20)
- Clavelli, L. Parity odd effects in open superstring theory. *International Workshop on Superstrings, Cosmology, Composite Structures* (College Park, MD, 1987), 41–50, *World Sci. Publishing, Singapore*, 1987. (see **89a:81005**) 81–02 (81E30)
- (with Cox, P. H.; Harms, B.) Operatorial Chan-Paton factors. *Phys. Rev. D* (3) **36** (1987), no. 12, 3747–3754. (Tsou Sheung Tsun) **89e:81140** 81E99 (81E30)
- (with Harms, B.) Excited-state vertices for type-I superstrings. *Phys. Rev. D* (3) **37** (1988), no. 12, 3622–3627. (Summary) **89b:81249** 81F15 (81D15, 81E30, 81E99)
- (with Cox, P. H.; Harms, B.) Finiteness of lower-dimensional open-string theories. *Phys. Rev. Lett.* **61** (1988), no. 7, 787–790. (Summary) **89f:81164** 81E99 (81E30)
- Clavier, Pierre (with Caffarel, Michel) Development of a pure diffusion quantum Monte Carlo method using a full generalized Feynman-Kac formula. I. Formalism. *J. Chem. Phys.* **88** (1988), no. 2, 1088–1099. (Summary) **89b:81010a** 81–08 (81G45, 81G55)
- (with Caffarel, Michel) Development of a pure diffusion quantum Monte Carlo method using a full generalized Feynman-Kac formula. II. Applications to simple systems. *J. Chem. Phys.* **88** (1988), no. 2, 1100–1109. (Summary) **89b:81010b** 81–08 (81G45, 81G55)
- Clavin, Paul (with d'Humières, D.; Lallemand, P.; Pomeau, Y.) Automates cellulaires pour les problèmes à frontières libres en hydrodynamique à deux et trois dimensions. (English summary) [Cellular automata for hydrodynamics with free boundaries in two and three dimensions] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Terre* **303** (1986), no. 13, 1169–1174. (Iuliana Oprea) **89k:76004** 76–08 (68Q80, 76D25, 76E05, 82–04)
- Diffuse interfaces. *Propagation in systems far from equilibrium* (Les Houches, 1987), 78–87, *Springer Ser. Synergetics*, 41, Springer, Berlin-New York, 1988. (see **89f:76003**) 80A30
- Clay, James R. Circular block designs from planar near-rings. *Combinatorics '86* (Trento, 1986), 95–105, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (G. Betsch) **89b:05019** 05B05 (05–04, 16A76)
- Tactical configurations from a planar near-ring can also generate balanced incomplete block designs. *J. Geom.* **32** (1988), no. 1–2, 13–20. (William I. Notz) **89f:05026** 05B05 (16A76, 62K10)
- Clayton, Murray K. (with Witmer, Jeffrey A.) Two-stage bandits. *Ann. Statist.* **16** (1988), no. 2, 887–894. (Alexander V. Gnedenko) **89m:62091** 62L05
- Clayton, Richard On twofold triple systems and their automorphism groups. *J. Combin. Theory Ser. A* **46** (1987), no. 2, 306–313. (Charles J. Colbourn) **89a:05026** 05B05
- Cleary, Joan (with Morris, Sidney A.) Trinity... a tale of three cardinals. *Miniconference on operator theory and partial differential equations* (North Ryde, 1986), 117–127, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 14, Austral. Nat. Univ., Canberra, 1986. (W. W. Comfort) **89a:22002** 22A05 (22C05, 54A25)
- (with Morris, Sidney A.) Topologies on locally compact groups. *Bull. Austral. Math. Soc.* **38** (1988), no. 1, 105–111. (Douglass L. Grant) **89j:22004** 22D05 (22D35, 54A25, 54H10)
- Cleary, Paul W. Periodic orbits in the Schwarzschild galactic potential. *Astrophys. J.* **337** (1989), no. 1, part 1, 108–124. (Summary) **89j:58113** 58F22 (58F13, 58F14, 85A05)
- Lyapunov exponents as a measure of the size of chaotic regions. *J. Math. Phys.* **30** (1989), no. 3, 689–695. (Summary) **89k:58175** 58F13
- Clemens, Herbert The local geometry of the Abel-Jacobi mapping. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 223–233, *Proc. Sympos. Pure Math.*, 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (James D. Lewis) **89b:14011** 14C30 (14D05, 14H15)
- Curves on higher-dimensional complex projective manifolds. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 634–640, *Amer. Math. Soc., Providence, RI*, 1987. (Sheldon H. Katz) **89e:14007** 14C30 (14C10, 14J30)
- Clement, Ph. (with Heijmans, H. J. A. M.; Angenent, S. B.; van Duijn, C. J.; de Pagter, B.) ★ One-parameter semigroups. *CWI Monographs*, 5, North-Holland Publishing Co., Amsterdam-New York, 1987. x+312 pp. ISBN 0-444-70284-9 (R. J. Nagel) **89b:47058** 47D05 (34Gxx, 47B55, 47H20)
- (with Sweets, G.) Existence and multiplicity results for a semilinear elliptic eigenvalue problem. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **14** (1987), no. 1, 97–121. (Robert Stephen Cantrell) **89j:35053** 35J65
- (with Da Prato, G.) Existence and regularity results for an integral equation with infinite delay in a Banach space. *Integral Equations Operator Theory* **11** (1988), no. 4, 480–500. (D. Przeworska-Rolewicz) **89f:45019** 45N05 (34K15, 34K30, 45P05, 47G05)
- (with Diekmann, O.; Gyllenberg, M.; Heijmans, H. J. A. M.; Thieme, Horst R.) Perturbation theory for dual semigroups. II. Time-dependent perturbations in the sun-reflexive case. *Proc. Roy. Soc. Edinburgh Sect. A* **109** (1988), no. 1–2, 145–172. (S. Kantorovitz) **89j:47072** 47D05 (34G10, 47A55, 92A15)
- Clement, Thierry (with Gentil, Sylviane) Reformulation of parameter identification with unknown-but-bounded errors. *Math. Comput. Simulation* **30** (1988), no. 3, 257–270. (Not in MR) 93C30 (93B30, 93E12)
- Clementi, E. (with Logan, D.; Sonnad, V.) Solution of large scale engineering problems using a loosely coupled array of processors. *Numerical algorithms for modern parallel computer architectures* (Minneapolis, MN, 1986–87), 11–27, *IMA Vol. Math. Appl.*, 13, Springer, New York-Berlin, 1988. (see **89j:65093**) 65W05
- Clementino, M. Manuel Ribeiro Factorizations in categories. (Portuguese) *Proceedings of the Second Meeting of Portuguese Algebraists* (Porto, 1987), 59–68, *Univ. Porto, Porto*, 1987. (Summary) **89b:18003** 18A32
- Clements, D. L. Green's functions for the boundary element method (invited contribution). *Boundary elements IX*, Vol. 1 (Stuttgart, 1987), 13–20, *Comput. Mech., Southampton*, 1987. (see **89e:00008**) 73–08
- (with Larsson, Ashley) On some boundary integral equations for systems of second-order elliptic equations. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 149–154, *North-Holland, Amsterdam-New York*, 1988. (see **89b:00021**) 65N99
- Clements, G. F. On multisets  $k$ -families. *Discrete Math.* **69** (1988), no. 2, 153–164. (D. J. Kleitman) **89b:05002** 05A05
- Multiset antichains having minimal downsets. *J. Combin. Theory Ser. A* **48** (1988), no. 2, 255–258. (J. E. Graver) **89e:05007** 05A05
- Clements, M. A. (with Hayes, M. H.; Wilkes, D. M.) Iterative harmonic decomposition of nonstationary random processes: theory and application to spectral line tracking. *Mathematics in signal processing* (Bath, 1985), 105–119, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see **89b:94004**) 93E25
- Clements, Minot (with Blau, Steven K.; Della Pietra, Stephen; Carlip, Steven; Della Pietra, Vincent) The string amplitude on surfaces with boundaries and crosscaps. *Nuclear Phys. B* **301** (1988), no. 2, 285–303. (Tsou Sheung Tsun) **89b:81168** 81E99 (32G15, 53C80, 81E30)
- Clelland, C. W. (with Turner, P. R.) The symmetric level-index system. *IMA J. Numer. Anal.* **8** (1988), no. 4, 517–526. (Summary) **89b:65025** 65D99 (65G99)
- Clerc, Jean-Louis Bochner-Riesz means of  $H^p$  functions ( $0 < p < 1$ ) on compact Lie groups. *Noncommutative harmonic analysis and Lie groups* (Marseille-Luminy, 1985), 86–107, *Lecture Notes in Math.*, 1243, Springer, Berlin-New York, 1987. (Fulvio Ricci) **89a:43014** 43A55 (22E30)
- Transformées de Fourier des mesures orbitales dans l'espace tangent d'un espace symétrique. (English summary) [Fourier transforms of orbital measures in the tangent space of a symmetric space] *Symposia Mathematica*, Vol. XXIX (Cortona, 1984), 63–77, *Sympos. Math.*, 29, Academic Press, New York-London, 1987. (Jorge A. Vargas) **89b:22014** 22E30 (43A85)
- Fonctions sphériques des espaces symétriques compacts. (English summary) [Spherical functions of compact symmetric spaces] *Trans. Amer. Math. Soc.* **306** (1988), no. 1, 421–431. (Mogens Flønsted-Jensen) **89j:43011** 43A90 (22E46)
- Clerc, René-Louis (with Hartmann, Christian) Invariant curves as solutions of functional equations. *Functional equations: history, applications and theory*, 217–226, *Math. Appl. Reidel, Dordrecht-Boston, MA*, 1984. (György Targonski) **89g:58104** 58F08 (34C35, 39B40)
- (with Belhaq, Mohamed; Hartmann, Christian) Étude numérique d'une 4-résonance d'une équation de Liénard forcée. (English summary) [Numerical study of a 4-resonance of a forced Liénard equation] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Terre* **303** (1986), no. 10, 873–876. (Summary) **89k:58206** 58F14 (70K40)
- (with Belhaq, Mohamed; Hartmann, Christian) Bifurcations homocliniques pour des équations de Liénard forcées périodiquement. (English summary) [Homoclinic bifurcations for periodically forced Liénard equations] *J. Méc. Théor. Appl.* **6** (1987), no. 6, 865–877. (W. S. Loud) **89f:58096** 58F14 (34C35, 58F15, 70K40)
- (with Belhaq, Mohamed; Hartmann, Christian) Méthodes d'échelles multiples pour la recherche de solutions invariantes par une transformation de  $\mathbb{R}^2$  et applications. [Multiple-scale methods for determining solutions invariant under a transformation



- of  $\mathbb{R}^2$ , and applications] *Mech. Res. Comm.* **15** (1988), no. 6, 361-370. (Introduction) **89j:58053** 58F08 (34C20)
- de Clerck, F.** *see* De Clerck, F.
- Clermont, Ph.** (with Apt, Krzysztof R.; Bougé, Luc) Two normal form theorems for CSP programs. *Inform. Process. Lett.* **26** (1987), no. 4, 165-171. (Dirk Janssens) **89k:68039** 68Q10
- Cléro, Jean-Pierre** Remarques philosophiques sur l'essai de Bayes "En vue de résoudre un problème de la doctrine des chances". [Philosophical remarks on "An essay towards the solution of a problem in the doctrine of chances" by Bayes] *Sciences, histoire, société*, 1-32, *Publ. Inst. Rech. Math. Rennes*, 1986-2, Univ. Rennes I, Rennes, 1986. (Zeno G. Swijtink) **89i:01035** 01A50
- Clérouin, Jean** (with Alastuey, Angel; Hansen, Jean-Pierre) Mean field kinetic theory of a classical electron gas in a periodic potential. III. The high-temperature limit in two dimensions. *J. Statist. Phys.* **52** (1988), no. 1-2, 395-421. (Summary) **89h:82028** 82A45 (82A40)
- Cleveland, William S.** (with Devlin, Susan J.; Grosse, Eric) Regression by local fitting. Methods, properties, and computational algorithms. *J. Econometrics* **37** (1988), no. 1, 87-114. (Summary) **89a:62157** 62J05
- *see also* Tukey, John W., **89b:01080**
- Cliff, Eugene M.** (with Burns, John A.; Herdman, Terry L.; Turi, Janos) On integral transforms appearing in the derivation of the equations of an aeroelastic system. *Nonlinear analysis and applications* (Arlington, Tex., 1986), 89-98, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (H. K. Cheng) **89g:76013** 76B05 (73J05)
- (with Ben-Asher, Joseph; Kelley, Henry J.) Optimal evasion with a path-angle constraint and against two pursuers. *J. Guidance Control Dynamics* **11** (1988), no. 4, 300-304. (Summary) **89j:90303** 90D26 (49A45)
- Memorial for Henry J. Kelley. *Optimal Control Appl. Methods* **9** (1988), no. 3, 225-227. (Editors) **89i:01069** 01A70
- Cliff, Gerald** (with Plesken, W.; Weiss, Alfred R.) Order-theoretic properties of the center of a block. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 413-420, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Olaf Manz) **89b:20033** 20C20 (20C11)
- (with Weiss, Alfred R.) Moody's induction theorem. *Illinois J. Math.* **32** (1988), no. 3, 489-500. (Donald S. Passman) **89h:16009** 16A27 (19A31, 20C07)
- Cliffe, K. A.** (with Winters, K. H.; Plesner, Th.) The onset of convection in a finite container due to surface tension and buoyancy. *Phys. D* **29** (1988), no. 3, 387-401. (Summary) **89f:76045** 76E15
- William of Clifford** *see* William of Clifford
- Clifton, Yeaton** (with Cohen, Jeffrey Marshall; Rosenblum, Arnold) On the use of clocks in satellites for the testing of dragging of inertial frames in Einstein's general relativity. *Phys. Lett. A* **131** (1988), no. 3, 163-164. (Vitaly N. Mel'nikov) **89k:83005** 83B05
- Climaco, J. C. N.** (with Antunes, C. H.) Erratum: "TRIMAP—an interactive triteric linear programming package" [*Found. Control Engrg.* **12** (1987), no. 3, 101-119; MR **88m:90133**]. *Found. Control Engrg.* **13** (1988), no. 1, 53-54. (Editors) **89h:90220** 90C31 (90C05)
- Cline, Daren B. H.** Convolutions of distributions with exponential and subexponential tails. *J. Austral. Math. Soc. Ser. A* **43** (1987), no. 3, 347-365. (Charles M. Goldie) **89a:60049** 60E99 (62E10, 62E20)
- Admissible kernel estimators of a multivariate density. *Ann. Statist.* **16** (1988), no. 4, 1421-1427. (Lesław Gajek) **89k:62053** 62G05 (62C15)
- (with Carroll, Raymond J.) An asymptotic theory for weighted least-squares with weights estimated by replication. *Biometrika* **75** (1988), no. 1, 35-43. (Nariaki Sugiyama) **89c:62105** 62J05 (62F12)
- Joint stable attraction of two sums of products. *J. Multivariate Anal.* **25** (1988), no. 2, 272-285. (E. Omev) **89d:60038** 60F05
- Cline, Ed** Simulating algebraic geometry with algebra. III. The Lusztig conjecture as a  $TG_1$ -problem. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 149-161, *Proc. Sympos. Pure Math.*, 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (H. H. Andersen) **89c:20062** 20C05 (18E30)
- Cline, James M.** The conformal Killing anomaly of the Polyakov string. *Phys. Lett. B* **201** (1988), no. 4, 447-453. (Summary) **89h:81174** 81E99 (58G40, 81E30)
- Clinton, Roy J.** (with Trout, Marvin D.) Toward optimal scaling in the method of abstract forces for interactive multi-criteria optimization. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 589-594. (see **89d:90007**) 90B50 (92A25)
- Clocksin, W. F.** A technique for translating clausal specifications of numerical methods into efficient programs. *J. Logic Programming* **5** (1988), no. 3, 231-242. (Julian Padgett) **89j:68019** 68N20 (65V05, 68T25)
- Cloître, M.** (with Allain, C.) Spatial spectrum of a general family of self-similar arrays. *Phys. Rev. A* (3) **36** (1987), no. 12, 5751-5757. (Hanna Nencka) **89k:82086** 82A68 (28A75, 78A45, 82A99)
- Cloot, A.** (with Herbst, B. M.) Grid resonances, focusing and Benjamin-Feir instabilities in leapfrog time discretizations. *J. Comput. Phys.* **75** (1988), no. 1, 31-53. (David C. Arney) **89c:65096** 65M10 (65Q05)
- Clossas, L.** (with Fernández Rubio, J.) Rapid computation of the modified Bessel functions  $K_\nu(x)$  and  $I_\nu(x)$  and their derivatives. (Spanish) *Stochastica* **11** (1987), no. 1, 53-61. (Siegfried Filippi) **89k:65017** 65D20 (33A40, 65D25)
- Clote, Peter** Théorème de Cantor-Bendixson. [The Cantor-Bendixson theorem] *Séminaire Général de Logique* 1983-1984 (Paris, 1983-1984), 73-87, *Publ. Math. Univ. Paris VII*, 27, Univ. Paris VII, Paris, 1986. (Roman Murawski) **89d:03061** 03F35
- martin-Claouère, Roger** *see* Martin-Claouère, Roger
- Cloud, Michael** (with Drachman, B.; Nyquist, Dennis P.) Accurate evaluation of Sommerfeld integrals using the fast Fourier transform. *IEEE Trans. Antennas and Propagation* **37** (1989), no. 3, 403-406. (Summary) **89m:78002** 78-08
- du Clox, Fokko** Jets de fonctions différentiables sur le dual d'un groupe de Lie nilpotent. [Jets of differentiable functions on the dual of a nilpotent Lie group] *Invent. Math.* **88** (1987), no. 2, 375-394. (Jonathan M. Rosenberg) **89g:22012** 22E27 (16A10, 16A64, 22E47)
- (with Brown, K. A.) On the representation theory of solvable Lie algebras. *Proc. London Math. Soc.* (3) **57** (1988), no. 2, 284-300. (S. Paul Smith) **89k:17026** 17B35 (16A08, 17B30)
- Clozel, Laurent** Base change for  $GL(n)$ . *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 791-797, *Amer. Math. Soc., Providence, RI*, 1987. (A. B. Venkov) **89i:22034** 22E55 (11F70)
- Progrès récents vers la classification du dual unitaire des groupes réductifs réels. [Recent progress towards the classification of the unitary dual of real reductive groups] *Séminaire Bourbaki*, Vol. 1986/87, *Astérisque* No. 152-153 (1987), 5, 229-252 (1988). (D. Milčević) **89i:22026** 22E46
- (with Blasius, Don; Ramakrishnan, Dinakar) Opérateurs de Hecke et formes de Maass: application de la formule des traces. (English summary) [Hecke operators and Maass forms: application of the trace formula] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 2, 59-62. (J. Szmidt) **89g:11042** 11F70 (11S37, 22E55)
- Cloett, W. R.** (with Martín-Sánchez, J. M.; Shah, S. L.; Fisher, D. Grant) Stable discrete-time adaptive control in the presence of unmodeled dynamics. *IEEE Trans. Automat. Control* **33** (1988), no. 4, 410-414. (Kazuhiko Terashima) **89d:93074** 93D10 (93C40, 93C55)
- (with Shah, S. L.; Fisher, D. Grant) Robustness analysis of discrete-time adaptive control systems using input-output stability theory: a tutorial. *Proc. IEEE-D* **135** (1988), no. 2, 133-141. (B. G. Pachpatte) **89b:93097** 93D25 (93B35, 93C40, 93C55)
- Some comments on the use of normalization in robust adaptive control. *Systems Control Lett.* **11** (1988), no. 2, 135-138. (R. Haber) **89k:93129** 93C40 (93B30, 93B35, 93C55)
- Clunie, J. G.** (with Anderson, James Milne; Rosenblum, M.; Rovnyak, J.) Some problems of best approximation with constraints. *J. Approx. Theory* **52** (1988), no. 1, 82-106. (Marco P. Baronti) **89j:41038** 41A50 (41A65, 46C99, 47A99, 49D15)
- Coan, Brian A.** A compiler that increases the fault tolerance of asynchronous protocols. *IEEE Trans. Comput.* **37** (1988), no. 12, 1541-1553. (Not in MR) **68N20** (68M10, 68M15)
- Čobanov, Georgi I.** *see* Chobanov, Georgi Iv.
- Cobb, J. Daniel** Fundamental properties of the manifold of singular and regular linear systems. *J. Math. Anal. Appl.* **120** (1986), no. 1, 328-353. (J. Gregor) **89d:93001** 93A10 (93C05, 93C15)
- Linear compensator designs based exclusively on input-output information are never robust with respect to unmodeled dynamics. *IEEE Trans. Automat. Control* **33** (1988), no. 6, 559-563. (Edward Jezierski) **89c:93069** 93B35 (93B50, 93D99)
- Toward a theory of robust compensation for systems with unknown parasitics. *IEEE Trans. Automat. Control* **33** (1988), no. 12, 1130-1138. (Asen L. Dontchev) **89m:93024** 93B35 (93B25, 93C30)
- Cobelli, Claudio** (with Thomaseth, Karl) On optimality of the impulse input for linear system identification. *Math. Biosci.* **89** (1988), no. 2, 127-133. (Onésimo Hernández Lerma) **89g:93101** 93E12 (62M10, 93C05)
- Cobos, Fernando** Interpolation and operator ideals. (Spanish) *Colloquium* 1985-86 (Badajoz, 1985-86), 11-43, *Publ. Dep. Mat. Univ. Extremadura*, 15, Univ. Extremadura, Badajoz, 1987. (Mario Milman) **89d:47098** 47D25 (46E30, 46M35)
- Entropy and Lorentz-Marcinkiewicz operator ideals. *Ark. Mat.* **25** (1987), no. 2, 211-219. (Bernd Carl) **89c:47053** 47D30 (41A46, 46M35, 47B10)
- Subspaces of Lorentz-Marcinkiewicz operator spaces. *Math. Japon.* **32** (1987), no. 6, 871-876. (A. Pietsch) **89d:47099** 47D25 (46B20, 46M35, 47B10)
- On the structure of Lorentz operator spaces. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* **81** (1987), no. 3, 501-507. (Introduction) **89c:47068** 47D15 (46E30, 46M35)
- (with Fernandez, Dicesar Lass) Hardy-Sobolev spaces and Besov spaces with a function parameter. *Function spaces and applications* (Lund, 1986), 158-170, *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (Mario Milman) **89c:46063** 46E35 (46E30, 46M35)
- (with Kühn, Thomas) Entropy and eigenvalues of weakly singular integral operators. *Integral Equations Operator Theory* **11** (1988), no. 1, 64-86. (Hermann König) **89a:47073** 47G05 (45C05, 47B10)
- Cobos, José**  $l_p$ -stability for partial difference equations. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 168-172, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (J. W. Neuberger) **89m:39003** 39A10 (39A11)
- *see also* Colloquium: 1986-1988, **89c:46001**
- Coburn, L. A.** (with Berger, C. A.; Zhu, Ke He) Toeplitz operators and function theory in  $n$ -dimensions. *Pseudodifferential operators* (Oberwolfach, 1986), 28-35, *Lecture Notes in Math.*, 1256, Springer, Berlin-New York, 1987. (Carl C. Cowen) **89a:47039** 47B35
- (with Berger, C. A.; Zhu, Ke He) Function theory on Cartan domains and the Berezin-Toeplitz symbol calculus. *Amer. J. Math.* **110** (1988), no. 5, 921-953. (J. Mitchell) **89m:32053** 32M10 (46J15, 47B35)
- Cocan, Alexandrina** On some problems of estimation in graph theory. (Romanian summary) *Bul. Univ. Braşov Ser. C* **29** (1987), 23-28 (1988). (B. Zelinka) **89c:05096** 05C20 (05C40, 62P25)
- Cocan, Moise** On the accessibility indicator. (Romanian summary) *Bul. Univ. Braşov Ser. C* **29** (1987), 29-34 (1988). (D. Kalin) **89m:60154** 60J10
- Cochran, James A.** A successive substitution procedure for eigenvalue approximation. *J. Math. Anal. Appl.* **127** (1987), no. 2, 388-408. (Werner Kratz) **89a:34032** 34B25 (45C05, 45D05)
- (with Lukas, M. A.) Differentiable positive definite kernels and Lipschitz continuity. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 2, 361-369. (John W. Lee) **89i:45002** 45C05 (45P05, 47G05)
- Cochran, Tim D.** Link concordance invariants and homotopy theory. *Invent. Math.* **90** (1987), no. 3, 635-645. (D. W. L. Summers) **89f:57033** 57Q45 (55P99)
- Cochrane, John H.** (with Shordone, Argia M.) Multivariate estimates of the permanent components of GNP and stock prices. Economic time series with random walk and other nonstationary components. *J. Econom. Dynamics Control* **12** (1988), no. 2-3, 255-296. (see **89j:62004**) 90A19 (62P20, 90A09, 90A16)
- Cochrane, Louise** (with Burnett, Charles) Adelaar and the Mappae clavicular. *Adelaar of Bath*, 29-32, *Warburg Inst. Surveys Texts*, XIV, Warburg Inst., London, 1987. (see **89c:01017**) 01A35
- Cochrane, Todd** (with Dressler, Robert E.) Consecutive triples of sums of two squares. *Arch. Math. (Basel)* **49** (1987), no. 4, 301-304. (O. H. Körner) **89i:11057** 11E25

- Trigonometric approximation and uniform distribution modulo one. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 695–702. (Jean-Pierre Borel) **89f:11071** 11K06 (11A07)
- Small solutions of cubic congruences. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 333–334. (D. J. Lewis) **89h:11018** 11D79 (11D25)
- Cock, John C.** Toroidal tilings from de Bruijn–Good cyclic sequences. *Discrete Math.* **70** (1988), no. 2, 209–210. (C. R. J. Clapham) **89f:05057** 05B45 (52A45)
- Cockayne, E. J.** (with Spencer, P. H.) On the independent queens covering problem. *Graphs Combin.* **4** (1988), no. 2, 101–110. (B. Zelinka) **89f:05098** 05C35
- (with MacGillivray, G.) Rotation numbers for unions of stars. *Utilitas Math.* **33** (1988), 195–204. (Ortrud R. Oellermann) **89b:05149** 05C99
- Cockburn, Bernardo** (with Joly, Patrick) Maxwell equations in polarizable media. *SIAM J. Math. Anal.* **19** (1988), no. 6, 1372–1390. (L. G. Chambers) **89j:78023** 78A40
- Cockerham, C. Clark** (with Tachida, H.) Quantitative genetic variation in an ecological setting. *Theoret. Population Biol.* **32** (1987), no. 3, 393–429. (Klaus Hinkelmann) **89b:92030** 92A17 (92A10)
- Cockett, J. Robin B.** Discrete choice theory: manipulations. *Theoret. Comput. Sci.* **54** (1987), no. 2–3, 215–236. (Z. Ras) **89h:68105** 68Q60 (68N05, 68P05, 68T20)
- Aspects of expert systems. *Advanced computing concepts and techniques in control engineering* (Il Ciocco, 1987), 3–30. NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 47, Springer, Berlin-New York, 1988. (see **89g:93002**) 68T30
- Coellito, Mario Michele** An existence result for variational problems and applications to some nonlinear hyperbolic and elliptic equations involving critical Sobolev exponents. *Ann. Mat. Pura Appl.* (4) **148** (1987), 207–226. (Alfonso Castro) **89g:47082** 47H15 (35J60, 35L99, 49A29, 58E05)
- Singular perturbations of some semilinear Dirichlet problems. (Italian summary) *Boll. Un. Mat. Ital.* B (7) **2** (1988), no. 1, 177–200. (Dietrich Göhde) **89e:35016** 35B25 (35J65)
- Cocu, Marius** (with Radoslevska, Anca) Regularity properties for the solutions of a class of variational inequalities. *Nonlinear Anal.* **11** (1987), no. 2, 221–230. (Bernhard Kawohl) **89a:35098** 35J85 (49A29)
- Codaccioni, Jean-Pierre** (with Loiseau, Jean-François; Caboz, Régis) Hyperelliptic integrals and multiple hypergeometric series. *Math. Comp.* **50** (1988), no. 182, 501–512. (H. Hochstadt) **89a:33002** 33A25 (33A35)
- Codeček, P.** (with Perelli, Alberto) On the uniform distribution (mod 1) of the Farey fractions and  $\mathbb{P}$  spaces. *Math. Ann.* **279** (1988), no. 3, 413–422. (Robert F. Tichy) **89b:11065** 11K06 (11M06)
- Codenotti, B.** Error analysis of an APA algorithm for the parallel solution of some special Toeplitz linear systems. *Calcolo* **23** (1986), no. 1, 1–11. (Summary) **89b:65069** 65F05 (65W05)
- On the VLSI complexity of some arithmetic and numerical problems. *Calcolo* **24** (1987), no. 2, 101–128 (1988). (Summary) **89d:68038** 68Q35
- (with Favati, P.) Iterative methods for the parallel solution of linear systems. *Comput. Math. Appl.* **13** (1987), no. 7, 631–633. (I. Norman Katz) **89b:65075** 65F10 (65W05)
- The bit-cost of some algorithms for the solution of linear systems. *Comput. Math. Appl.* **15** (1988), no. 11, 933–937. (Summary) **89d:65121** 65V05
- (with Bevilacqua, Roberto; Romani, F.) Parallel solution of block tridiagonal linear systems. *Linear Algebra Appl.* **104** (1988), 39–57. (David C. Arney) **89g:65024** 65F05 (65W05)
- (with Lotti, G.) A fast algorithm for the division of two polynomial matrices. *IEEE Trans. Automat. Control* **34** (1989), no. 4, 446–448. (Not in MR) **89f:65F30** (15A09, 93B25)
- Codreanu, Steliana** Considerations on the evolution to chaos of simple dynamical systems. (Romanian. English summary) *Stud. Cerc. Fiz.* **39** (1987), no. 9, 810–826. (Iuliana Oprea) **89i:58079** 58F13 (58F14)
- Codsi, G.** (with Pearson, K. R.) GEMPACK: general-purpose software for applied general equilibrium and other economic modellers. *Comput. Sci. Econom. Management* **1** (1988), no. 3, 189–207. (Not in MR) **90A14**
- Coelho, J. Dias** (with Cerdeira, J. Orestes) Some theorems on the equivalence of the multiple traveling salesman problem and the traveling salesman problem. (Portuguese) *Portugal. Math.* **45** (1988), no. 1, 5–12. (Summary) **89g:90093** 90B10 (90C35)
- Coelli, Tim J.** (with Battese, George E.) Prediction of firm-level technical efficiencies with a generalized frontier production function and panel data. *J. Econometrics* **38** (1988), no. 3, 387–399. (Not in MR) **62P20** (90A11)
- Coen, Salvatore** Some properties of the canonical mapping of a complex space into its spectrum. *Complex analysis, II* (College Park, Md., 1985–86), 79–107, *Lecture Notes in Math.*, 1276, Springer, Berlin-New York, 1987. (Andrei Baran) **89c:32023** 32C15 (32C35)
- see also Seminar: Geometry, **89f:32001** and **89f:32002**
- Coenenberg, Adolf Gerhard** (with Bamberg, G.) ★ Betriebswirtschaftliche Entscheidungslehre. (German) [Decision theory in industrial management] Fourth edition. WiSo-Kurzlehrbücher. Reihe Betriebswirtschaft. [WiSo Short Textbooks. Series Economics] Verlag Franz Vahlen, Munich, 1985. viii+264 pp. ISBN 3-8006-1140-6 (Eric Van Damme) **89h:90001** 90A05 (90A06, 90A07, 90D45)
- Couré, Gérard** Structure kählérienne sur les variétés homogènes semi-simples. [Kählerian structure on semisimple homogeneous manifolds] *Représentations des groupes et analyse complexe* (Luminy, 1986), 17–20, *Journées SMF*, 24, Univ. Poitiers, Poitiers, 1986. (From the text) **89a:32037** 32M10 (32C10)
- (with Loeb, Jean-Jacques) Le théorème des tubes de Bochner pour les groupes de Lie. [Bochner's tube theorem for Lie groups] *Représentations des groupes et analyse complexe* (Luminy, 1986), 21–33, *Journées SMF*, 24, Univ. Poitiers, Poitiers, 1986. (Peter Pflug) **89c:32018** 32D10 (32A07)
- Coffa, José Alberto** Carnap, Tarski and the search for truth. *Noûs* **21** (1987), no. 4, 547–572. (Charles F. Kielkopf) **89a:03001** 03-03 (01A60, 03A05)
- Coffey, Mark W.** On a potential with the spectrum of the hydrogen atom. *J. Phys. A* **21** (1988), no. 14, 3183–3185. (Summary) **89m:81201** 81G40
- Coffey, Mary A.** Random effects model for binary data from dependent samples. (French summary) *Biometrics* **44** (1988), no. 3, 787–801. (Summary) **89h:62166** 62P10
- Coffman, Charles V.** (with Bandle, C.; Marcus, Moshe M.) Nonlinear elliptic problems in annular domains. *J. Differential Equations* **69** (1987), no. 3, 322–345. (Ester Giarrusso) **89a:35082** 35J65 (35B05)
- Lyusternik–Schnirelman theory: complementary principles and the Morse index. *Nonlinear Anal.* **12** (1988), no. 5, 507–529. (Jing Xian Sun) **89g:58037** 58E05 (34B25)
- Coffman, E. G., Jr.** (with Garey, M. R.; Johnson, David Stifler) Bin packing with divisible item sizes. *J. Complexity* **3** (1987), no. 4, 406–428. (Richard D. Ringeisen) **89b:90172** 90C27 (90B99)
- (with Mitrani, I.) Storage of the single-server queue. *Queueing theory and its applications*, 193–205, *CWI Monographs*, 7, North-Holland, Amsterdam-New York, 1988. (C. E. M. Pearce) **89m:60219** 60K25 (90B22)
- (with Calderbank, A. R.; Flatto, Leopold) Optimal directory placement on disk storage devices. *J. Assoc. Comput. Mach.* **35** (1988), no. 2, 433–446. (Not in MR) **68M20**
- (with Lueker, G. S.; Rinnooy Kan, A. H. G.) Asymptotic methods in the probabilistic analysis of sequencing and packing heuristics. Focussed issue on heuristics. *Management Sci.* **34** (1988), no. 3, 266–290. (Micha Hofri) **89e:68045** 68Q25 (05A99, 90B35, 93E99)
- Cogdell, J. W.** (with Pietetski-Shapiro, Ilja Iosifovitch) Base change for  $SL_2$ . *J. Number Theory* **27** (1987), no. 3, 285–303. (Joe Repka) **89i:11163** 11R39 (11F70, 22E55)
- Coghlan, Leslie** Tight stable surfaces. I. *Proc. Roy. Soc. Edinburgh Sect. A* **107** (1987), no. 3–4, 213–232. (Thomas E. Cecil) **89b:57018** 57R42 (53C42, 58C25)
- Cognola, Guido** (with Zerbini, S.) Some physical applications of the heat kernel expansion. *Modern Phys. Lett. A* **3** (1988), no. 6, 599–605. (Summary) **89d:81090** 81E99 (58G11)
- Novick-Cohen, A.** see Novick-Cohen, A.
- Cohen, A. Clifford** (with Whitten, Betty Jones; Sundaraiyer, Vani) A pseudo-complete sample technique for estimation from censored samples. *Comm. Statist. Theory Methods* **17** (1988), no. 7, 2239–2258. (Summary) **89e:62058** 62G30 (62F10)
- Cohen, Alan Max** Some computations relating to the Riemann zeta function. *Computers in mathematical research* (Cardiff, 1986), 15–29, *Inst. Math. Appl. Conf. Ser. New Ser.*, 14, Oxford Univ. Press, New York, 1988. (H. J. Godwin) **89j:11086** 11M26 (01A60, 11Y35)
- (with Longman, I. M.) The summation of power series having positive coefficients. *Appl. Numer. Math.* **4** (1988), no. 6, 471–476. (Not in MR) **65D15** (40)
- Cohen, Amy** (with Kappeler, Thomas) The asymptotic behavior of solutions of the Korteweg-de Vries equation evolving from very irregular data. *Ann. Physics* **178** (1987), no. 1, 144–185. (Alan Jeffrey) **89e:35020** 35B40 (35Q20)
- Cohen, Arjel M.** (with Helminck, Aloysius G.) Trilinear alternating forms on a vector space of dimension 7. *Comm. Algebra* **16** (1988), no. 1, 1–25. (James F. Hurley) **89h:20060** 20G10 (15A69, 15A75, 20G15)
- (with Cooperstein, Bruce N.) The 2-spaces of the standard  $E_6(q)$ -module. Geometries and groups (Noordwijkerhout, 1986). *Geom. Dedicata* **25** (1988), no. 1–3, 467–480. (Ernie Shult) **89c:51013** 51E25 (20F29, 51B25)
- Cohen, Arthur** (with Sackrowitz, H. B.) An approach to inference following model selection with applications to transformation-based and adaptive inference. *J. Amer. Statist. Assoc.* **82** (1987), no. 400, 1123–1130. (L. J. Good) **89a:62024** 62C10
- (with Sackrowitz, H. B.) A decision theory formulation for population selection followed by estimating the mean of the selected population. *Statistical decision theory and related topics, IV*, Vol. 2 (West Lafayette, Ind., 1986), 33–36, Springer, New York-Berlin, 1988. (Thomas J. Santner) **89b:62061** 62F07 (62C05)
- Cohen, Dan** (with Zohari, Daniel) The selection operating on the evolution equilibrium of the frequency of sexual reproduction in predominantly asexual populations. *Evolutionary processes and theory* (Israel, 1985), 765–782, Academic Press, Orlando, FL, 1986. (Summary) **89e:92027** 92A12 (90D45)
- (with Motro, Uzi) A note on vigilance behavior and stability against recognizable social parasites. *J. Theoret. Biol.* **136** (1989), no. 1, 21–25. (Not in MR) **92A12**
- Cohen, Daniel E.** ★ Computability and logic. Ellis Horwood Series: Mathematics and its Applications. Ellis Horwood Ltd., Chichester; Halsted Press [John Wiley & Sons, Inc.], New York, 1987. 243 pp. ISBN 0-7458-0034-3 (John P. Helm) **89b:03001** 03-01 (03Dxx, 68-01)
- Closure relations. Buchberger's algorithm, and polynomials in infinitely many variables. *Computation theory and logic*, 78–87, *Lecture Notes in Comput. Sci.*, 270, Springer, Berlin-New York, 1987. (Summary) **89a:68113** 68Q40 (13B99)
- Cohen, Daniel H.** The problem of counterpossibles. *Note Dame J. Formal Logic* **29** (1988), no. 1, 91–101. (N. B. Cocchiarella) **89c:03026** 03B45
- Cohen, E. G. D.** (with Ruijgrok, Th. W.) Deterministic lattice gas models. *Phys. Lett. A* **133** (1988), no. 7–8, 415–418. (Summary) **89k:82053** 82A40 (82-04)
- (with de Schepper, I. M.; Kamgar-Parsi, B.) On the calculation of equilibrium time correlation functions in hard-sphere fluids. *J. Statist. Phys.* **54** (1989), no. 1–2, 273–313. (Carlo Cercignani) **89m:82039** 82A40 (82A50)
- (with Morris, G. P.; Evans, Dennis J.; van Beijeren, H.) Linear response of phase-space trajectories to shearing. *Phys. Rev. Lett.* **62** (1989), no. 14, 1579–1582. (Summary) **89m:82063** 82-08 (58F13, 82A40)
- Cohen, Fred R.** (with Moore, John C.; Neisendorfer, Joseph A.) Exponents in homotopy theory. *Algebraic topology and algebraic K-theory* (Princeton, N.J., 1983), 3–34, *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (Paul Selick) **89d:55035** 55Q52
- (with Campbell, H. E. A.; Peterson, F. P.; Selick, Paul) The space of maps of Moore spaces into spheres. *Algebraic topology and algebraic K-theory* (Princeton, N.J., 1983), 72–100, *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (J. F. Adams) **89a:55012** 55P35
- A course in some aspects of classical homotopy theory. *Algebraic topology* (Seattle, Wash., 1985), 1–92, *Lecture Notes in Math.*, 1286, Springer, Berlin-New York, 1987. (Paul Selick) **89e:55027** 55Qxx (55-02, 55Pxx)
- (with Mahowald, Mark E.) The splitting of  $\Omega^{2^k}S^{2^{k+1}}$ . *Algebraic topology* (Seattle, Wash., 1985), 188–192, *Lecture Notes in Math.*, 1286, Springer, Berlin-New York, 1987. (A. V. Shukurov) **89b:55007** 55P42
- (with Taylor, Laurence R.) Homology of function spaces. *Math. Z.* **198** (1988), no. 3, 299–316. (Donald M. Davis) **89d:55017** 55P35 (54C35, 55Q25)
- (with Davis, Donald M.; Goerss, Paul G.; Mahowald, Mark E.) Integral Brown-Gitler spectra. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1299–1304. (Richard John Steiner) **89h:55018** 55P42 (55P35)
- Cohen, Gérard Denis** (with Beveraggi, M.) On the density of best coverings in Hamming spaces. (French summary) *Coding theory and applications* (Cachan, 1986), 39–44, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (H. F. Mattson, Jr.) **89m:94012** 94B05 (11H31)
- (with Fang, Jaing; Godlewski, P.; Battail, G.) On the inherent intractability of soft decision decoding of linear codes. *Coding theory and applications* (Cachan, 1986),



- 141–149, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (see 89c:94004) 94B05 (94B35)
- Un aperçu sur les codes correcteurs d'erreurs. (Spanish summary) [A brief sketch of error-correcting codes] *Rev. Mat. Apl.* 9 (1988), no. 2, 20–35. (Wolfgang Knapp) 89c:94057 94B05 (20K01, 68P25, 94B25)
- see also Coding theory and applications, 89c:94004
- Cohen, Graeme L.** (with Smith, G. H.) A simple verification of Ilieff's conjecture for polynomials with three zeros. *Amer. Math. Monthly* 95 (1988), no. 8, 734–737. (Thomas McCoy) 89c:30002 30C10 (30C15)
- (with Brent, Richard P.) A new lower bound for odd perfect numbers. *Math. Comp.* 53 (1989), no. 187, 431–437, S7–S24. (Samuel S. Wagstaff, Jr.) 89m:11008 11A25 (11Y05, 11Y70)
- Cohen, Guy** Nash equilibria: gradient and decomposition algorithms. *Large Scale Systems* 12 (1987), no. 2, 173–184. (Akira Okada) 89g:90247 90D10 (90C30, 90C48)
- Cohen, H. Floris** Simon Stevin's equal division of the octave. *Ann. of Sci.* 44 (1987), no. 5, 471–488. (Summary) 89i:01028 01A45
- Cohen, Harley** (with Muncaster, Robert G.) ★ The theory of pseudo-rigid bodies. Springer Tracts in Natural Philosophy, 33. Springer-Verlag, New York-Berlin, 1988. x+183 pp. ISBN 0-387-96635-8 (Gérard A. Maugin) 89i:73002 73-02 (73E99, 73G05)
- (with Wang, Chao Chen) On the stored energy functions of hyperelastic materials with internal constraints. *Arch. Rational Mech. Anal.* 102 (1988), no. 2, 119–140. (L. Jentsch) 89h:73007 73B99
- (with Wilms, E. V.) A 3-N degree of freedom system with two natural frequencies. *Mech. Res. Comm.* 16 (1989), no. 1, 59–63. (Mary L. Boas) 89m:70037 70J05 (70J10)
- Cohen, Henri** (with Allouche, Jean-Paul; Mendes France, M.; Shallit, Jeffrey) De nouveaux curieux produits infinis. [Some new curious infinite products] *Acta Arith.* 49 (1987), no. 2, 141–153. (R. G. Stoneham) 89f:11022 11A63
- (with Dress, F.) Estimations numériques du reste de la fonction sommatoire relative aux entiers sans facteur carré. [Numerical estimates of the remainder of the sum function relative to squarefree numbers] *Colloque de Théorie Analytique des Nombres "Jean Coquet"* (Marseille, 1985), 73–76, *Publ. Math. Orsay*, 88-02, Univ. Paris XI, Orsay, 1988. (Joseph Sándor) 89f:11103 11N37 (11Y35)
- q-identities for Maass waveforms. *Invent. Math.* 91 (1988), no. 3, 409–422. (S. W. Graham) 89f:11072 11F35 (11F27, 11P72)
- Cohen, I. Bernard** Scientific revolutions, revolutions in science, and a probabilistic revolution 1800–1930. *The probabilistic revolution*, Vol. 1, 23–44, *Bradford Book, MIT Press*, Cambridge, MA-London, 1987. (A. Rapoport) 89e:01056 01A80
- Megory-Cohen, Igal** see Megory-Cohen, Igal
- Cohen, J. W.** A two-queue, one-server model with priority for the longer queue. *Queueing Systems Theory Appl.* 2 (1987), no. 3, 261–283. (U. Narayan Bhat) 89d:60172 60K25 (90B22)
- Boundary value problems in queueing theory. *Queueing Systems Theory Appl.* 3 (1988), no. 2, 97–128. (K. M. Ramachandran) 89f:60109 60K25 (90B22)
- see also Queueing theory and its applications, 89c:60004; Boxma, O. J., 89m:01078 and Le Gall, Pierre, 89m:60239
- Cohen, Jacques** (with Hickey, Timothy) Automating program analysis. *J. Assoc. Comput. Mach.* 35 (1988), no. 1, 185–220. (Michael Bauer) 89h:68101 68Q55 (68N05, 68Q60)
- Cohen, Jeffrey Marshall** (with Mustafa, Errol; Pechenick, Kay R.) Angular momentum, magnetic moment, and g-factor in general relativity. *Internat. J. Theoret. Phys.* 26 (1987), no. 12, 1189–1217. (Garry Ludwig) 89b:83057 83C50
- (with Rosenblum, Arnold; Clifton, Yeaton) On the use of clocks in satellites for the testing of dragging of inertial frames in Einstein's general relativity. *Phys. Lett. A* 131 (1988), no. 3, 163–164. (Vitaly N. Mel'nikov) 89k:83005 83B05
- Cohen, Jo-An** (with Koh, Kwangil) The group of units in a compact ring. *J. Pure Appl. Algebra* 54 (1988), no. 2–3, 167–179. (Frank Röhrl) 89j:16057 16A80 (16A25)
- Cohen, Joel E.** The sensitivity of expected spanning trees in anisotropic random graphs. *Random graphs '85 (Poznań, 1985)*, 9–16, *North-Holland Math. Stud.*, 144, North-Holland, Amsterdam-New York, 1987. (Zbigniew Palka) 89b:05146 05C80 (05C05, 80C05)
- Threshold phenomena in random structures. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* 19 (1988), no. 1–3, 113–128. (Jaroslav Nešetřil) 89g:92078 92A40 (05C99, 82A42)
- (with Chung, F. R. K.; Graham, R. L.) Pursuit-evasion games on graphs. *J. Graph Theory* 12 (1988), no. 2, 159–167. (Stefan A. Burr) 89k:05069 05C50 (05C99, 90D26, 90D42)
- Subadditivity, generalized products of random matrices and operations research. *SIAM Rev.* 30 (1988), no. 1, 69–86. (Philippe Bouverol) 89g:60300 60K30 (58F11, 90B15)
- Cohen, Joel M.** (with Zoltek, Stanley M.) Decomposing curvature operators. *Seminar in Complex Analysis and Geometry 1987 (Rende, 1987)*, 81–98, *Sem. Conf.*, 1, EditEl, Rende, 1988. (Samuel I. Goldberg) 89k:53025 53B20 (15A04)
- Bounded spherical functions for abstract operators. *J. Austral. Math. Soc. Ser. A* 45 (1988), no. 2, 195–203. (Christopher Meaney) 89j:43012 43A90 (42C15, 47C15)
- (with Figà-Talamanca, Alessandro) Idempotents in the reduced  $C^*$ -algebra of a free group. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 779–782. (Bola O. Balogun) 89g:46095 46L05 (22D25)
- $L^2$ -cohomology in topology, algebra, and analysis. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* No. 18 (1988), 31–36. (J. S. Joel) 89h:58181 58G12 (22E41, 46L80, 46M20, 55N35, 57R20, 58G10)
- Cohen, Jonathan P.** (with Menjoge, Shaileendra S.) One-sample run tests of symmetry. *J. Statist. Plann. Inference* 18 (1988), no. 1, 93–100. (J. V. Deshpande) 89a:62107 62G10
- Cohen, L. Jonathan** Twelve questions about Keynes's concept of weight. *British J. Philos. Sci.* 37 (1986), no. 3, 263–278. (Philip L. Quinn) 89a:03048 03B48 (03A05)
- Cohen, Leon** Joint quantum probabilities and the uncertainty principle. *New techniques and ideas in quantum measurement theory* (New York, 1986), 283–291, *Ann. New York Acad. Sci.*, 480, New York Acad. Sci., New York, 1986. (see 89m:81005) 81B05
- Cohen, Michael A.** Dedekind completion of positive concatenation structures: necessary and sufficient conditions. *J. Math. Psychol.* 32 (1988), no. 1, 64–71. (Ki Hang Kim) 89c:92083 92A25 (06A99)
- Cohen, Michèle** (with Jaffray, Jean-Yves) Preponderance of the certainty effect over probability distortion in decision making under risk. *Risk, decision and rationality* (Aix-en-Provence, 1986), 173–187, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel*, Dordrecht-Boston, MA, 1988. (M. Iosifescu) 89f:90017 90A10 (62C05, 92A25)
- Cohen, Paul R.** see Handbook: Artificial intelligence, 89c:68104c
- Cohen, Paula S.** (with Regev, Amitai) On maximal degrees for Young diagrams. *European J. Combin.* 9 (1988), no. 6, 607–610. (R. A. Askey) 89c:05016 05A15
- (with Regev, Amitai) Asymptotics of combinatorial sums and the central limit theorem. *SIAM J. Math. Anal.* 19 (1988), no. 5, 1204–1215. (A. N. Philippou) 89k:05012 05A19 (05A17, 20C30, 60F05)
- Cohen, Ralph L.** (with Brown, Edgar H., Jr.) The Adams spectral sequence of  $\Omega^2 S^3$  and Brown-Gitler spectra. *Algebraic topology and algebraic K-theory* (Princeton, N.J., 1983), 101–125, *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (R. M. F. Moss) 89d:55020 55P42 (55P35, 55T15)
- A decomposition of the space of generalized Morse functions. *Algebraic topology and algebraic K-theory* (Princeton, N.J., 1983), 365–391, *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (A. A. Ranicki) 89c:57044 57R70 (57R52, 58C27)
- A model for the free loop space of a suspension. *Algebraic topology* (Seattle, Wash., 1985), 193–207, *Lecture Notes in Math.*, 1286, Springer, Berlin-New York, 1987. (N. J. Kuhn) 89d:55018 55P35 (19D10)
- Pseudo-isotopies, K-theory, and homotopy theory. *Homotopy theory* (Durham, 1985), 35–71, *London Math. Soc. Lecture Note Ser.*, 117, Cambridge Univ. Press, Cambridge-New York, 1987. (Ross Staffeldt) 89f:57028 57N37 (18F25, 19D10, 55P47, 57R50)
- (with Lin, Wen Hsiung; Mahowald, Mark E.) The Adams spectral sequence of the real projective spaces. *Pacific J. Math.* 134 (1988), no. 1, 27–55. (Vincent Giambalvo) 89f:55019 55T15 (55P42, 55Q10)
- Cohen, Richard J.** (with Kaplan, Daniel T.; Smith, Joseph M.; Saxberg, Bo E. H.) Nonlinear dynamics in cardiac conduction. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* 90 (1988), no. 1–2, 19–48. (Raphael Zahler) 89j:92014 92A07
- Cohen, Robert** A filtering formula for a nonlinear system having a continuous observation, and a discrete observation at random times. *Stochastic analysis and related topics (Silivri, 1986)*, 352–371, *Lecture Notes in Math.*, 1316, Springer, Berlin-New York, 1988. (Wilfried Grecksch) 89c:93193 93E11 (60G35, 60H10)
- Cohen, Robert S.** see Tamás, György, 89g:03006
- Cohen, Ruben D.** Equilibrium state of aggregation in suspensions comprising linear clusters. *J. Statist. Phys.* 51 (1988), no. 3–4, 559–567. (Summary) 89f:82100 82A99 (92A40)
- Cohen, Stephen D.** Functions and polynomials in vector spaces. *Arch. Math. (Basel)* 48 (1987), no. 5, 409–419. (J. Isbell (Zbl 624:12012)) 89f:11161 11T06
- Polynomials over finite fields with large order and level. *Bull. Korean Math. Soc.* 24 (1987), no. 2, 83–96. (Philip A. Leonard) 89a:11125 11T06 (11T21)
- Clique numbers of Paley graphs. *Questiones Math.* 11 (1988), no. 2, 225–231. (Robert C. Brigham) 89f:05099 05C35 (05C75)
- Cohen, Susan I.** (with Starks, Laura T.) Estimation risk and incentive contracts for portfolio managers. *Management Sci.* 34 (1988), no. 9, 1067–1079. (Summary) 89f:90014 90A09 (90A14)
- Cohen, Thomas D.** Explicit  $\sigma$  meson, topology, and the large- $N$  limit of Skyrmin. *Phys. Rev. D* (3) 37 (1988), no. 11, 3344–3347. (Summary) 89f:81251 81G20
- Cohen, Wim** see Jensen, Arne, 89i:01086
- Cohendet, O.** (with Combe, Ph.; Sirugue, M.; Sirugue-Collin, M.) A stochastic treatment of the dynamics of an integer spin. *J. Phys. A* 21 (1988), no. 13, 2875–2883. (Philip J. Feinsilver) 89k:81036 81C20
- Cohn, Harry** Limit behaviour for stochastic monotonicity and applications. *Adv. in Appl. Probab.* 20 (1988), no. 2, 331–347. (Uwe Röslér) 89c:60091 60I60 (60I80)
- Cohn, Harvey** (with Deutsch, Jesse) An explicit modular equation in two variables for  $Q(\sqrt{3})$ . *Math. Comp.* 50 (1988), no. 182, 557–568. (Shigeaki Tsuyumine) 89d:11040 11F41
- Fricke's two-valued modular equations. *Math. Comp.* 51 (1988), no. 184, 787–807. (Toyokazu Hiramatsu) 89f:11064 11F03 (11F27)
- Cohn, J. D.** (with Friedman, D.) Super characters and chiral asymmetry in superconformal field theory. *Nuclear Phys. B* 296 (1988), no. 4, 779–799. (Belal E. Baaquie) 89c:81110 81E99 (17B65, 81E40)
- Modular geometry of superconformal field theory. *Nuclear Phys. B* 306 (1988), no. 2, 239–270. (Paolo Teofilatto) 89m:32035 32G13 (32G15, 58A50, 81E30, 81E99, 81G20)
- Cohn, J. H. E.** On an oscillation criterion of de la Vallée-Poussin. *Quart. J. Math. Oxford Ser. (2)* 39 (1988), no. 154, 173–174. (Not in MR) 34C10
- Cohn, Leslie** (with Comer, Stephen D.) An abstract theory of invertible relations. *Algebra Universalis* 25 (1988), no. 2, 131–146. (Leo Esakia) 89b:06001 06A10 (03G15)
- Cohn, P. M.** On coproducts of ordered systems. *Algebra and order* (Luminy-Marseille, 1984), 3–12, *R. E. Res. Exp. Math.*, 14, Heldermann, Berlin, 1986. (James J. Madden) 89d:06030 06F15 (12E15, 12J15, 16A39)
- Correction to: "Puisseux's theorem revisited" [*J. Pure Appl. Algebra* 31 (1984), no. 1–3, 1–4; MR 85d:14035]. *J. Pure Appl. Algebra* 52 (1988), no. 1–2, 197–198. (Editors) 89e:14022 14H05
- Cohn, Stephen E.** (with Dee, Dick P.) Observability of discretized partial differential equations. *SIAM J. Numer. Anal.* 25 (1988), no. 3, 586–617. (B. I. Anan'ev) 89i:93012 93B07 (39A12, 60H15, 65M10, 65N10, 93E11)
- Cohn, William S.** On fractional derivatives and star invariant subspaces. *Michigan Math. J.* 34 (1987), no. 3, 391–406. (Michael von Renteln) 89a:30029 30D50 (46E15)
- (with Berman, Robert D.) Phragmén-Lindelöf theorems for subharmonic functions on the unit disk. *Math. Scand.* 62 (1988), no. 2, 269–293. (W. K. Hayman) 89j:31004 31A20 (31A10)
- Cohn, Jared L.** (with Scavone, Giuseppe; Solanki, Rajendra) Multicriterion optimization in resources planning. *Multicriteria optimization in engineering and in the sciences*, 117–160, *Math. Concepts Methods Sci. Engrg.*, 37, Plenum, New York-London, 1988. (see 89f:90171) 90A17 (90C31)
- Coifman, Mendel** The oblique Descartes folium. (Portuguese) *Bol. Soc. Paran. Mat.* (2) 9 (1988), no. 1, 131–132. (H. W. Guggenheimer) 89i:51024 51N20
- Coifman, Ronald R.** (with Beals, Richard) Scattering and inverse scattering for first-order systems. II. *Inverse Problems* 3 (1987), no. 4, 577–593. (David J. Kaup) 89c:34023 34A55 (34B25)
- (with Rubio de Francia, José Luis; Semmes, Stephen W.) Multiplicateurs de Fourier de  $L^p(\mathbb{R})$  et estimations quadratiques. (English summary) [Fourier multipliers on  $L^p(\mathbb{R})$

- and quadratic estimates] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 8, 351–354. (Fulvio Ricci) **89c:42009** 42A45 (42B25)
- (with Murai, Takafumi) Commutators on the potential-theoretic energy spaces. *Tôhoku Math. J. (2)* **40** (1988), no. 3, 397–407. (Johannes Elschner) **89c:42029** 42B25 (45E05, 46E15, 47G05)
- (with Murray, Margaret A. M.) Uniform analyticity of orthogonal projections. *Trans. Amer. Math. Soc.* **312** (1989), no. 2, 779–817. (Gerald B. Folland) **89j:42001** 42A05 (33A65, 42C10, 46N05, 47B38, 58F07)
- Coimbra, C. A.** Scalar steady-state in population biology as a nonlinear eigenvalue problem. *Biomathematics and related computational problems (Naples, 1987)*, 429–438, *Kluwer Acad. Publ., Dordrecht*, 1988. (O. Diekmann) **89m:58036** 58E05 (92A15)
- Coimbra, Elvira** ★ Strictly convex seminorms and best approximations in vectorially normed spaces. *Trabalhos de Investigação [Research Monographs]*, 86-2. *Universidade Nova de Lisboa, Departamento de Matemática, Lisbon*, 1986. 12 pp. (F. Deutsch) **89c:41043** 41A65 (46B99)
- Cojocaru, Ion** *m-d*-convex functions. (Romanian) *An. Univ. Craiova Mat. Fiz.-Chim.* **14** (1986), 43–49. (W. W. Breckner) **89c:26028** 26B25
- Çoker, Doğan** (with Eş, A. Haydar) On fuzzy *S*-closed spaces. (Turkish summary) *Doğa Mat.* **11** (1987), no. 3, 145–152. (O. Costinescu) **89c:54014** 54A40 (03E72)
- Colaneri, Patrizio** (with Bittanti, Sergio; De Nicolao, Giuseppe) Two techniques for the solution of the discrete-time periodic Riccati equation. *Linear algebra in signals, systems, and control (Boston, MA, 1986)*, 315–331, *SIAM, Philadelphia, PA*, 1988. (Summary) **89i:93022** 93B25 (39A10, 39A12, 93E10, 93E11)
- (with Bittanti, Sergio; De Nicolao, Giuseppe) The difference periodic Riccati equation for the periodic prediction problem. *IEEE Trans. Automat. Control* **33** (1988), no. 8, 706–712. (B. G. Pachpatte) **89h:93049** 93E03 (39A10, 39A12)
- (with Bolzern, Paolo) The periodic Lyapunov equation. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 4, 499–512. (P. Talpalaru) **89j:34005** 34A10 (39A10, 39A11)
- Colares, A. Gervasio** (with Kenmotsu, Katsuei) Isometric deformation of surfaces in  $R^3$  preserving the mean curvature function. *Pacific J. Math.* **136** (1989), no. 1, 71–80. (Friedrich Sauvigny) **89m:53011** 53A10
- Colbourn, Charles J.** Exact algorithms for network reliability. Proceedings of the fifteenth Manitoba conference on numerical mathematics and computing (Winnipeg, Man., 1985). *Congr. Numer.* **51** (1986), 7–57. (Summary) **89b:68014** 68M15 (05C35, 68–02, 68M10, 68Q20, 90B25)
- (with Rosa, Alexander) Quadratic leaves of maximal partial triple systems. *Graphs Combin.* **2** (1986), no. 4, 317–337. (Frank E. Bennett) **89i:05054** 05B07 (05B05)
- ★ The combinatorics of network reliability. The International Series of Monographs on Computer Science. *The Clarendon Press, Oxford University Press, New York*, 1987. xii+160 pp. ISBN 0-19-504920-9 (Z. Khalil) **89b:68001** 68M10 (05–02, 68–02, 68Q25, 68R05, 90B25)
- (with Harms, Janelle J.) Partitions into indecomposable triple systems. *Combinatorial design theory*, 107–118, *North-Holland Math. Stud.*, 149, *North-Holland, Amsterdam-New York*, 1987. (Summary) **89c:05020** 05B05
- (with McKay, Brendan D.) Cubic neighbourhoods in triple systems. *Combinatorial design theory*, 119–136, *North-Holland Math. Stud.*, 149, *North-Holland, Amsterdam-New York*, 1987. (Summary) **89c:05021** 05B05 (05C70)
- (with Ramesh, Aparna; Ball, Michael O.) Bounds for all-terminal reliability in planar networks. *Random graphs '85 (Poznań, 1985)*, 261–273, *North-Holland Math. Stud.*, 144, *North-Holland, Amsterdam-New York*, 1987. (A. T. Amin) **89c:68012** 68M15 (05C80, 68M10, 68R10, 90B10, 94C15)
- Leaves, excesses, and neighbourhoods. 15th winter school in abstract analysis (Srni, 1987). *Acta Univ. Carolin.—Math. Phys.* **28** (1987), no. 2, 41–47. (Sharad S. Sane) **89h:05020** 05B30 (05C70, 05C75)
- (with Rosa, Alexander) Quadratic excesses of coverings by triples. *Ars Combin.* **24** (1987), 23–30. (D. P. Roselle) **89c:05027** 05B40 (05C70)
- (with Ramanathan, Aparna) Counting almost minimum cutsets with reliability applications. *Math. Programming* **39** (1987), no. 3, 253–261. (I. A. Klijper) **89c:05071** 05C40 (68M15, 90B25)
- Network resilience. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 3, 404–409. (Summary) **89j:68067** 68Q25 (68M15, 68R10)
- (with Curran, Donald Joseph; Vanstone, S. A.) Recursive constructions for Kirkman squares with block size three. *Utilitas Math.* **32** (1987), 169–174. (Rudolf Mathon) **89d:05045** 05B30
- (with Stinson, D. R.) Edge-coloured designs with block size four. *Aequationes Math.* **36** (1988), no. 2-3, 230–245. (Ferenc Wettl) **89k:05020** 05B30 (05B05)
- (with El-Mallah, Ehab S.) Edge detection problems: properties defined by weakly connected forbidden graphs. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **61** (1988), 275–285. (Toshimasa Watanabe) **89i:05159** 05C35 (05C75, 68Q15, 68R10)
- (with Debroni, Bradley M.; Myrvold, Wendy J.) Estimating the coefficients of the reliability polynomial. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **62** (1988), 217–223. (Summary) **89h:90084** 90B10 (05C05, 65C05)
- (with Jungnickel, Dieter; Rosa, Alexander) The strong chromatic number of partial triple systems. *Discrete Appl. Math.* **20** (1988), no. 1, 31–38. (K. T. Phelps) **89c:05021** 05B30 (05C15, 05C65, 68R10)
- (with Brecht, Timothy B.) Lower bounds on two-terminal network reliability. *Discrete Appl. Math.* **21** (1988), no. 3, 185–198. (J. J. Stiffler) **89m:68008** 68M15 (68R10, 90B25)
- Edge-packings of graphs and network reliability. Proceedings of the First Japan Conference on Graph Theory and Applications (Hakone, 1986). *Discrete Math.* **72** (1988), no. 1-3, 49–61. (Pawel Winter) **89k:05081** 05C70 (68R10, 90B25, 94C15)
- (with El-Mallah, Ehab S.) The complexity of some edge deletion problems. *IEEE Trans. Circuits and Systems* **35** (1988), no. 3, 354–362. (Toshimasa Watanabe) **89d:68068** 68R10 (05C35, 05C75, 68Q15, 68Q25, 68Q35)
- Repeated edges in 3-factorizations. *J. Combin. Math. Combin. Comput.* **4** (1988), 133–153. (W. D. Wallis) **89m:05089** 05C70
- (with Pulleyblank, William R.; Rosa, Alexander) Hybrid triple systems and cubic feedback sets. *Graphs Combin.* **5** (1989), no. 1, 15–28. (K. T. Phelps) **89m:05015** 05B05 (05C20)
- Colby, R. R.** Tilting modules, dominant dimension and exactness of duality functors. *Tsukuba J. Math.* **12** (1988), no. 2, 441–449. (Ibrahim Assem) **89m:16032** 16A46 (16A36)
- Cole, Julian D.** Early transonic ideas in the light of later developments. *Perspectives in fluid mechanics (Pasadena, CA, 1985)*, 66–90, *Lecture Notes in Phys.*, 320, *Springer, Berlin-New York*, 1988. (see **89j:76005**) 76H05 (76L05)
- Cole, Richard** (with Vishkin, Uzi) The accelerated centroid decomposition technique for optimal parallel tree evaluation in logarithmic time. *Algorithmica* **3** (1988), no. 3, 329–346. (Dirk Janssens) **89g:68012** 68Q10 (68R10)
- (with Vishkin, Uzi) Approximate parallel scheduling. I. The basic technique with applications to optimal parallel list ranking in logarithmic time. *SIAM J. Comput.* **17** (1988), no. 1, 128–142. (Ondrej Šykora) **89k:68062** 68Q25
- Parallel merge sort. *SIAM J. Comput.* **17** (1988), no. 4, 770–785. (Victor S. Grinberg) **89m:68015** 68P10 (68Q10)
- Lowen-Colebunders, Eva** see **Lowen-Colebunders, Eva**
- Colegrave, R. K.** (with Mannan, M. A.) Invariants for the time-dependent harmonic oscillator. *J. Math. Phys.* **29** (1988), no. 7, 1580–1587. (P. G. L. Leach) **89i:70026** 70H99 (58F05, 70H15, 81C05, 81K05)
- (with Croxson, P.; Mannan, M. A.) Complex invariants for the time-dependent harmonic oscillator. *Phys. Lett. A* **131** (1988), no. 7-8, 407–410. (P. G. L. Leach) **89m:70025** 70G35 (81C05)
- mas-Colell, Andreu** see **Mas-Colell, Andreu**
- Coleman, A. J.** The top root of a simple Lie algebra. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 4, 171–173. (Zi-Xin Hou) **89h:17009** 17B20
- Coleman, Bernard D.** (with Hodgdon, Marion L.) A theory of shear bands. *Constitutive models of deformation (Blacksburg, VA, 1986)*, 27–36, *SIAM, Philadelphia, PA*, 1987. (see **89f:73004**) 73E99
- Approximation of fluids with vanishing memory in slow motions. (Italian. English summary) *Rend. Circ. Mat. Palermo (2)* **36** (1987), no. 2, 182–193. (Summary) **89c:76013** 76A10
- Coleman, Courtney S.** Dynamical equivalence and unbounded polynomial differential systems. *Nonlinear Anal.* **12** (1988), no. 11, 1257–1261. (V. Lakshmikantham) **89k:34111** 34G20 (58F10, 58F12)
- Coleman, James S.** Social structure and the emergence of norms among rational actors. *Paradoxical effects of social behavior*, 55–83, *Physica, Heidelberg*, 1986. (see **89d:90019**) 92A20 (90D35, 92A18)
- Coleman, John P.** Characterisation of a class of *P*-stable methods for differential equations of second order. *J. Comput. Appl. Math.* **22** (1988), no. 1, 137–141. (Abbas I. Abdel-Karim) **89k:65104** 65L20
- Coleman, Joseph W.** (with Charek, Dennis J.; Moore, Albert H.) A comparison of estimation techniques for the three parameter Pareto distribution. *Comm. Statist. Simulation Comput.* **17** (1988), no. 4, 1395–1407. (Not in MR) **62F10**
- Coleman, Norman P.** (with Shieh, L. S.; Bao, Yuan L.) Model transformations for state-space self-tuning control of multivariable stochastic systems. *Stochastic Anal. Appl.* **6** (1988), no. 1, 91–101. (Bohdan Maslowski) **89d:93023** 93B17 (93E20)
- Coleman, Robert Alan** (with Korte, Herbert) Any physical, monopole equation of motion structure uniquely determines a projective inertial structure and an  $(n-1)$ -force. *J. Math. Phys.* **28** (1987), no. 7, 1492–1498. (Summary) **89f:83081** 83E10 (83D05)
- Coleman, Robert F.** The Gross-Koblitz formula. *Galois representations and arithmetic algebraic geometry (Kyoto, 1985/Tokyo, 1986)*, 21–52, *Adv. Stud. Pure Math.*, 12, *North-Holland, Amsterdam-New York*, 1987. (Neal Koblitz) **89i:11073** 11S80 (11L05, 11S85)
- Torsion points on curves. *Galois representations and arithmetic algebraic geometry (Kyoto, 1985/Tokyo, 1986)*, 235–247, *Adv. Stud. Pure Math.*, 12, *North-Holland, Amsterdam-New York*, 1987. (Joseph H. Silverman) **89d:11050** 11G30 (14G25, 14H25)
- Ramified torsion points on curves. *Duke Math. J.* **54** (1987), no. 2, 615–640. (Kazuya Kato) **89c:14033** 14G25 (11G30, 14H25)
- On the Galois groups of the exponential Taylor polynomials. *Enseign. Math.* (2) **33** (1987), no. 3-4, 183–189. (K. Kiyek) **89c:12007** 12E12 (11R21)
- (with de Shalit, Ehud) *p*-adic regulators on curves and special values of *p*-adic *L*-functions. *Invent. Math.* **93** (1988), no. 2, 239–266. (V. Kumar Murty) **89k:11041** 11G05 (11G15, 11Q25, 11S40, 19F27)
- (with McCallum, William) Stable reduction of Fermat curves and Jacobi sum Hecke characters. *J. Reine Angew. Math.* **385** (1988), 41–101. (Joe P. Buhler) **89h:11026** 11G30 (11L10, 11R18, 14G25, 14H25)
- On the Frobenius endomorphisms of Fermat and Artin-Schreier curves. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 463–466. (Sheldon Kamienny) **89c:11099** 11G20 (14G15)
- Coleman, Sidney** (with Safian, Alex M.; Axenides, Mimos) Some nonabelian *Q*-balls. *Nuclear Phys. B* **297** (1988), no. 3, 498–514. (M. Martinis) **89m:81192** 81G20 (81E99)
- Quantum tunneling and negative eigenvalues. *Nuclear Phys. B* **298** (1988), no. 1, 178–186. (Philip J. Feinsilver) **89f:81046** 81C15 (81C35)
- Black holes as red herrings: topological fluctuations and the loss of quantum coherence. *Nuclear Phys. B* **307** (1988), no. 4, 867–882. (C. Gauthier) **89i:83037** 83C45 (81B05, 83C47, 83F05)
- Coleman, Thomas F.** (with Pothen, Alex) The null space problem. II. Algorithms. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 4, 544–563. (Summary) **89i:65043** 65F30 (05C99, 15A99, 68Q25)
- (with Van Loan, Charles) ★ Handbook for matrix computations. *Frontiers in Applied Mathematics*, 4. *Society for Industrial and Applied Mathematics (SIAM)*, Philadelphia, PA, 1988. viii+264 pp. ISBN 0-89871-227-0 (From the preface) **89d:65001** 65-00 (15-04, 65-04, 65Fxx)
- (with Li, Guang Ye) Local convergence of the multi-secant method for the parallel solution of systems of nonlinear equations. *Appl. Math. Lett.* **1** (1988), no. 2, 141–145. (Michał Tadeusiewicz) **89i:65056** 65H10 (65W05)
- A chordal preconditioner for large-scale optimization. *Math. Programming* **40** (1988), no. 3 (Ser. A), 265–287. (Summary) **89d:90141** 90C06 (15A23, 65K05)
- (with Li, Guang Ye) A parallel triangular solver for a distributed-memory multiprocessor. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 3, 485–502. (Bruno Codenotti) **89b:65333** 65W05 (65F05)
- Coles, Donald** see **Perspectives in fluid mechanics**, **89j:76005**



- Coley, Alan A. (with Sarmiento Galán, Antonio F.) Nonmetric theories of gravity and the gravitational frequency shift. *Astrophys. J.* **331** (1988), no. 2, part 1, 773-783. (W. M. Baker) **89i:83047** 83D05 (83B05)
- Colgate, J. E. (with Hogan, N.) Robust control of dynamically interacting systems. *Internat. J. Control* **48** (1988), no. 1, 65-88. (Andrzej Świerniak) **89i:93086** 93B50 (93B35, 93D15)
- Collin de Verdière, Y. Spectres de variétés riemanniennes et spectres de graphes. [Spectra of Riemannian manifolds and spectra of graphs] *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 522-530, Amer. Math. Soc., Providence, RI, 1987. (Haruo Kitahara) **89i:58140** 58G25 (58C40)
- Construction de laplaciens dont une partie finie (avec multiplicités) du spectre est donnée. [Construction of Laplacians, a finite part (with multiplicities) of whose spectrum is given] *Séminaire sur les équations aux dérivées partielles 1986-1987, Exp. No. VII, 6 pp., École Polytech., Palaiseau, 1987*. (Marc Burger) **89i:58216** 58G25 (05C99, 35P99)
- Coll, Bartolomé (with Ferrando, Joan Josep) Sur les vitesses des fluides parfaits barotropes. (English summary) [On the velocity of the barotropic perfect fluids] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 13, 573-576. (Gérard A. Maugin) **89i:83026** 83C55 (58A15)
- (with Morales, Juan Antonio) Sur les repères symétriques lorentziens. (English summary) [Lorentzian symmetric frames] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 19, 791-794. (Paul E. Ehrlich) **89i:53024** 53C05
- (with San José, Fernando) Sur l'exponentielle des 2-formes en relativité. (English summary) [On the exponential of 2-forms in relativity] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 7, 367-370. (J. R. Vanstone) **89i:83003** 83A05 (15A24, 53C50, 58A10)
- (with Ferrando, Joan Josep) On the permanence of the null character of Maxwell fields. *Gen. Relativity Gravitation* **20** (1988), no. 1, 51-64. (K. P. Tod) **89i:83038** 83C50 (78A25)
- (with Bona Garcia, Carles) On the Stephani universes. *Gen. Relativity Gravitation* **20** (1988), no. 3, 297-303. (Nora Bretón Báez) **89i:83006** 83C15 (83C40, 83F05)
- (with Bona Garcia, Carles) Classification of the space-times admitting a constant curvature synchronization. *J. Math. Phys.* **29** (1988), no. 2, 327-331. (F. J. Flaherty) **89i:83020** 83C20 (83C40)
- Collado, Joaquín M. (with Petersen, Ian R.) Correction to: "A stabilization algorithm for a class of uncertain linear systems" [Systems Control Lett. **8** (1987), no. 4, 351-357; MR **88i:93081**] by Petersen. *Systems Control Lett.* **11** (1988), no. 1, 83. (Summary) **89i:93165** 93D15 (93C40)
- von Collani, Elart Economic control of continuously monitored production processes. *Rep. Statist. Appl. Res. Un. Japan. Sci. Engrs.* **34** (1987), no. 2, 1-18. (Summary) **89i:62188** 62P20
- Collatz, Lothar Representation of some types of one- and two-parametric bifurcation diagrams. *Ordinary and partial differential equations (Dundee, 1986)*, 16-36, Pitman Res. Notes Math. Ser., 157, Longman Sci. Tech., Harlow, 1987. (J. Angel Rodríguez) **89i:58148** 58F14 (34C99, 34K15, 45M99)
- Strukturen und Klassifikation geometrischer Ornamente. [Structures and classification of geometrical ornaments] *Mitt. Math. Ges. Hamburg* **11** (1987), no. 4, 487-507. (Béla Uhria) **89i:52016** 52A25 (00A69, 05C10, 51M20)
- Bifurcation problems in different parts of mathematics. *Numerical methods (Miskolc, 1986)*, 13-49, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (Jürgen Scheurle) **89i:58002** 58-01 (00A05, 58F14, 65H99)
- Strukturen geometrischer Ornamente. (English summary) [Structures of geometrical ornaments] *J. Geom.* **31** (1988), no. 1-2, 42-64. (J. M. Wills) **89i:05059** 05B45 (52A45)
- Cole, R. (with Fortunelli, A.; Simonucci, S.) A mixed basis set of plane waves and Hermite Gaussian functions. Analytic expressions of prototype integrals. (Italian summary) *Nuovo Cimento D* **1** (9) (1987), no. 8, 969-977. (Summary) **89i:81205** 81G55
- Collet, Michel (with Griso, Georges) \* Le cercle d'Euler. (French) [The Euler circle] *Maths en Plus. Librairie Vuibert, Paris*, 1987. 176 pp. ISBN 2-7117-1363-6 (H. W. Guggenheimer) **89i:51043** 51M05
- Collet, Pierre (with Eckmann, J.-P.) The stability of modulated fronts. *Helv. Phys. Acta* **60** (1987), no. 8, 969-991. (From the introduction) **89i:35102** 35K55 (58F14, 58G17)
- (with Lebowitz, Joel L.; Porzio, Anna) The dimension spectrum of some dynamical systems. Proceedings of the symposium on statistical mechanics of phase transitions—mathematical and physical aspects (Trebou, 1986). *J. Statist. Phys.* **47** (1987), no. 5-6, 609-644. (M. Thaler) **89i:58061** 58F08 (28A75, 58F11, 82A99)
- Collett, M. J. Exact density-matrix calculations for simple open systems. *Phys. Rev. A* **3** (38) (1988), no. 5, 2233-2247. (Summary) **89i:81010** 81B05 (81K05)
- Colley, Susan Jane Enumerating stationary multiple-points. *Adv. in Math.* **66** (1987), no. 2, 149-170. (Sebastià Xambó Descamps) **89i:14042** 14N10 (14C17)
- Correction: "The tumbling box" [Amer. Math. Monthly **94** (1987), no. 1, 62-68; MR **88b:53010**]. *Amer. Math. Monthly* **94** (1987), no. 7, 646. (Editors) **89i:53018** 53A17 (70B10)
- Coll, Pierluigi Some remarks on a problem of percolation in gently sloping beaches. (Italian summary) *Itit. Lombardo Accad. Sci. Lett. Rend. A* **118** (1984), 143-151 (1987). (From the introduction) **89i:35155** 35R35 (35K20, 76S05)
- (with Kenmochi, Nobuyuki) Nonlinear semigroup approach to a class of evolution equations arising from percolation in sandbanks. *Ann. Mat. Pura Appl.* **4** (149) (1987), 113-133. (Jan Prüss) **89i:47103** 47H20 (35K85, 35R35, 47H05, 76S05)
- (with Comincioli, V.; Naldi, Giovanni; Reggiani, Carlo) Mathematical modelling for contracting muscle. *Biomathematics and related computational problems (Naples, 1987)*, 603-613, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89i:92003** 92A06 (92A09)
- (with Allain, Geneviève) A mathematical study of a muscle contraction model in which the fibre is a continuum of elements. *Adv. in Appl. Math.* **9** (1988), no. 1, 104-126. (Mario Primicerio) **89i:92011** 92A09 (35L60, 92A06)
- (with Oswald, Luc) An existence result for the electropainting problem. *SIAM J. Math. Anal.* **19** (1988), no. 6, 1314-1323. (Summary) **89i:35349** 35R35 (35J05)
- Coll Franzone, P. (with Guerri, L.; Rovida, S.) Macroscopic cardiac source model and propagation waves in excitable media. *Biomathematics and related computational problems (Naples, 1987)*, 615-627, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89i:92013** 92A09 (92A07)
- Sirugue-Collin, M. see Sirugue-Collin, M.
- Collina, R. (with Becchi, C.; Biasi, Alberto; Bonneau, Guy; Delduc, F.) Renormalizability and infrared finiteness of nonlinear  $\sigma$ -models: a regularization-independent analysis for compact coset spaces. *Comm. Math. Phys.* **120** (1988), no. 1, 121-148. (Olivier Piguet) **89i:81085** 81E15 (58E20, 81E13)
- (with Biasi, Alberto) Stability of nonlinear homogeneous  $\sigma$  models. *Phys. Lett. B* **200** (1988), no. 1-2, 98-102. (Summary) **89i:81061** 81E13 (81E15)
- Collings, John B. (with Wollkind, David J.; Logan, Jesse A.) Metastability in a temperature-dependent model system for predator-prey mite outbreak interactions on fruit trees. *Bull. Math. Biol.* **50** (1988), no. 4, 379-409. (Summary) **89i:92054** 92A15
- Collingwood, David H. (with Irving, Ronald S.; Shelton, Brad) Filtrations on generalized Verma modules for Hermitian symmetric pairs. *J. Reine Angew. Math.* **383** (1988), 54-86. (D. Milićić (Zbl 631:22014)) **89i:22030** 22E47 (17B10)
- Representations of rank one Lie groups. II.  $n$ -cohomology. *Mem. Amer. Math. Soc.* **74** (1988), no. 387, iv+101 pp. (Floyd L. Williams) **89i:22031** 22E47 (17B20, 17B56, 22E45)
- Collingwood, P. C. (with Crouch, P. E.) The observation space and realizations of finite Volterra series. *SIAM J. Control Optim.* **25** (1987), no. 2, 316-333. (Valeriu Prepelita) **89i:93019** 93B15 (93B10, 93B27, 93C10)
- Collini Lanzi, Tiziana Solutions of Navier-Stokes inequalities in a time-dependent domain, under nonlinear boundary conditions. (Italian) *Itit. Lombardo Accad. Sci. Lett. Rend. A* **120** (1986), 85-112 (1987). (Alberto Valli) **89i:35165** 35Q10 (35I85, 49A29, 76D05)
- Periodic solutions for Navier-Stokes inequalities with nonlinear boundary conditions. (Italian. English summary) *Riv. Mat. Univ. Parma* **4** (12) (1986), 19-29 (1987). (Moses A. Boudourides) **89i:35163** 35Q10 (35B10, 76D05)
- Collino, Alberto Evidence for a conjecture of Ellingsrud and Strömme on the Chow ring of Hilb<sub>4</sub>(P<sup>2</sup>). *Illinois J. Math.* **32** (1988), no. 2, 171-210. (Susan J. Colley) **89i:14004** 14C15 (14C05, 14C17)
- Collins, C. B. (with Lang, J. M.) Observationally homogeneous shear-free perfect fluids. *Gen. Relativity Gravitation* **20** (1988), no. 7, 683-710. (S. Kichenassamy) **89i:83020** 83C20 (83C15, 83C55)
- Homogeneous and hypersurface-homogeneous shear-free perfect fluids in general relativity. *Gen. Relativity Gravitation* **20** (1988), no. 8, 847-855. (Jorge A. Pullin) **89i:83060** 83C55 (83C20)
- Collins, D. A. (with Maslowe, S. A.) Vortex pairing and resonant wave interactions in a stratified free shear layer. *J. Fluid Mech.* **191** (1988), 465-480. (Summary) **89i:76038** 76E20 (76E30, 76F10, 86A05)
- Collins, Donald J. The automorphism group of a free product of finite groups. *Arch. Math. (Basel)* **50** (1988), no. 5, 385-390. (F. Levin) **89i:20092** 20J05 (20F28, 57S30)
- (with Turner, Edward C.) Free product fixed points. *J. London Math. Soc.* **2** (38) (1988), no. 1, 67-76. (Martin Edjvet) **89i:20037** 20E06 (20E36)
- (with Zieschang, Heiner) On the Nielsen method in free products with amalgamated subgroups. *Math. Z.* **197** (1988), no. 1, 97-118. (A. H. M. Hoare) **89i:20061** 20E06
- Collins, E. M. (with Collins, Richard) Cardiovascular dynamics. 11<sup>e</sup> congrès international de cybernétique (Namur, 1986), 1255-1268, *Assoc. Internat. Cybernét., Namur*, 1986. (see **89i:94001**) 92A09 (92A06)
- Collins, John C. ★ Перенормировка. (Russian) [Renormalization] Введение в теорию перенормировки, ренормализационной группы и операторных разложений. [Introduction to the theory of renormalizations, the renormalization group and operator expansions] Translated from the English by V. A. Smirnov. Translation edited and with a preface by O. I. Zav'yalov. "Mir", Moscow, 1988. 448 pp. (Editors) **89i:81072** 81E15 (81-02, 81G25, 82A15)
- Collins, John David Belief, desire, and revision. *Mind* **97** (1988), no. 387, 333-342. (Philip L. Quinn) **89i:03003** 03A05 (03B45, 90A05)
- Collins, Michael J. Characters of finite groups having a self-normalising cyclic subgroup. *J. Algebra* **119** (1988), no. 2, 282-297. (Roderick Gow) **89i:20019** 20C15
- Collins, P. J. On monotonically normal spaces. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo* **2** (Suppl. No. 18) (1988), 37-40. (see **89i:54001**) 54D15 (54D18, 54E25)
- Collins, Richard (with Collins, E. M.) Cardiovascular dynamics. 11<sup>e</sup> congrès international de cybernétique (Namur, 1986), 1255-1268, *Assoc. Internat. Cybernét., Namur*, 1986. (see **89i:94001**) 92A09 (92A06)
- Collins, Robert Geostationary orbits around a rotating rigid body of arbitrary shape. *Proc. Roy. Soc. London Ser. A* **420** (1988), no. 1858, 125-130. (Summary) **89i:70065** 70M05 (70M10)
- Collinson, C. D. Proper affine collineations in Robertson-Walker space-times. *J. Math. Phys.* **29** (1988), no. 9, 1972-1973. (Summary) **89i:83010** 83C15
- see also García Díaz, Alberto, **89i:83014**
- Collet-Théfène, J.-L. Surfaces cubiques diagonales. [Diagonal cubic surfaces] *Séminaire de théorie des nombres, Paris 1984-85*, 51-66, *Progr. Math.*, **63**, Birkhäuser Boston, Boston, MA, 1986. (Autorreferat (Zbl 595:14029)) **89i:11068** 11G35 (11D25, 11E72, 14G25, 14J20)
- (with Kanevsky, Dimitri; Sansuc, Jean-Jacques) Arithmétique des surfaces cubiques diagonales. [Arithmetic of diagonal cubic surfaces] *Diophantine approximation and transcendence theory (Bonn, 1985)*, 1-108, *Lecture Notes in Math.*, **1290**, Springer, Berlin-New York, 1987. (Andrew Bremner) **89i:11051** 11G35 (11D25, 14J20)
- Arithmétique des variétés rationnelles et problèmes birationnels. [Arithmetic of rational varieties and birational problems] *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 641-653, Amer. Math. Soc., Providence, RI, 1987. (Andrew Bremner) **89i:11051** 11G35 (11E76, 14G05, 14J26)
- (with Sansuc, Jean-Jacques) La descente sur les variétés rationnelles. II. [Descent on rational varieties. II] *Duke Math. J.* **54** (1987), no. 2, 375-492. (Daniel Coray) **89i:11082** 11G35 (14G25)
- Collomb, Gérard Analyse d'une série temporelle et prédiction non paramétriques: méthodes de la fenêtre mobile et des  $k$  points les plus proches en estimation de régression pour des observations dépendantes. [Nonparametric time series analysis and prediction: the window and nearest- $k$  points methods in regression estimation for dependent observations] *Asymptotic theory for non i.i.d. processes (Luminy-Marseille, 1984)*, 37-75, *Travaux Rech.*, **8**, Publ. Fac. Univ. Saint-Louis, Brussels, 1986. (P. A. Moretton) **89i:62036** 62G05 (62M20)
- Collet, Francis Introduction au symposium: la complexité et les différents emplois du concept d'entropie. [Introduction to the symposium: complexity and the various uses of the concept of entropy] 11<sup>e</sup> congrès international de cybernétique (Namur, 1986), 45-57, *Assoc. Internat. Cybernét., Namur*, 1986. (Pl. Kannappan) **89i:94026** 94A17

- Colman, W. J. A.** On certain semiperfect cuboids. *Fibonacci Quart.* **26** (1988), no. 1, 54–57. (From the text) **89a:11027** 11D09 (05B30)
- Some observations on the classical cuboid and its parametric solutions. *Fibonacci Quart.* **26** (1988), no. 4, 338–343. (Zhen Fu Cao) **89m:11024** 11D09
- Colmenar López-Colmenar, Juan Antonio** see **Mesa López-Colmenar, Juan Antonio**
- Colmez, Pierre** Résidu en  $s = 1$  des fonctions zêta  $p$ -adiques. (English summary) [Residue at  $s = 1$  of  $p$ -adic zeta functions] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 1, 5–8. (Lawrence Washington) **89g:11115** 11S40
- Résidu en  $s = 1$  des fonctions zêta  $p$ -adiques. [The residue at  $s = 1$  of  $p$ -adic zeta functions] *Invent. Math.* **91** (1988), no. 2, 371–389. (Leslie Jane Federer) **89d:11104** 11R42 (11R80)
- Colojară, Ion** An imprimitivity theorem for hypergroups. *Math. Z.* **197** (1988), no. 3, 395–402. (K. A. Ross) **89a:22007** 22A25 (22D30)
- Colomb, Annie-Laure** (with Bernhard, Pierre) Saddle point conditions for a class of stochastic dynamical games with imperfect information. *IEEE Trans. Automat. Control* **33** (1988), no. 1, 98–101. (Yaakov Yavin) **89a:90175** 90D15 (90D26, 93E05)
- Colombeau, J.-F.** Generalized functions; multiplication of distributions; applications to elasticity, elastoplasticity, fluid dynamics and acoustics. *Generalized functions, convergence structures, and their applications* (Dubrovnik, 1987), 13–27, Plenum, New York-London, 1988. (see **89i:00025**) 46F10 (73D05, 73D40, 73E50, 76L05, 76Q05)
- (with LeRoux, A. Y.) Multiplications of distributions in elasticity and hydrodynamics. *J. Math. Phys.* **29** (1988), no. 2, 315–319. (Gopi Ahuja) **89b:46056** 46F10 (35A99, 35L67, 35Q99)
- Colombini, Ferruccio** (with Jannelli, Enrico; Spagnolo, S.) Nonuniqueness in hyperbolic Cauchy problems. *Ann. of Math.* (2) **126** (1987), no. 3, 495–524. (C. Wagschal) **89c:35086** 35L15 (35A07)
- see also **Recent developments in hyperbolic equations**, **89i:35001**
- Colombo, Giovanni** (with Cellina, Arrigo; Fonda, Alessandro) A continuous version of Liapunov's convexity theorem. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **5** (1988), no. 1, 23–36. (J. P. R. Christensen) **89c:28005** 28A10 (54C65)
- (with Fonda, Alessandro; Ornelas, António) Lower semicontinuous perturbations of maximal monotone differential inclusions. *Israel J. Math.* **61** (1988), no. 2, 211–218. (Dan Butnariu) **89g:34017** 34A60 (49A50)
- (with Bressan, Alberto) Extensions and selections of maps with decomposable values. *Studia Math.* **90** (1988), no. 1, 69–86. (Michel Valadier) **89j:54021** 54C65 (46E40, 47H99, 54C20, 54C60)
- (with Bressan, Alberto; Cellina, Arrigo) Upper semicontinuous differential inclusions without convexity. *Proc. Amer. Math. Soc.* **106** (1989), no. 3, 771–775. (Zvi Artstein) **89m:34023** 34A60 (49E10)
- Colombo, V.** (with Ravetto, P.; Sumini, M.) Variational determination of the neutron integral transport equation eigenvalues using space asymptotic trial functions. *J. Comput. Phys.* **77** (1988), no. 2, 318–329. (Janusz Mika) **89j:82088** 82A75 (45C05, 49G05, 65R20)
- (with Monegato, G.) Erratum: "Product integration for the linear transport equation in slab geometry" [Numer. Math. **52** (1988), no. 2, 219–240; MR 88k:65133]. *Numer. Math.* **53** (1988), no. 6, 739. (Editors) **89g:65169** 65R20 (65D32, 82A70)
- Colomias, F.** ★ Optimal periodic control. Lecture Notes in Mathematics, 1313. Springer-Verlag, Berlin-New York, 1988. vi+177 pp. ISBN 3-540-19249-2 (Andrzej W. Olbrot) **89c:49062** 49D50 (34K35, 49B10)
- Poincaré-Bendixson theory for control problems with continuous optimal controls. *Optimal control theory and economic analysis*, 3 (Vienna, 1987), 21–28, North-Holland, Amsterdam-New York, 1988. (Introduction) **89j:90062** 90A16
- Optimal periodic control: a scenario for local properness. *SIAM J. Control Optim.* **26** (1988), no. 2, 452–464. (A. Halanay) **89b:49052** 49D50 (34K35, 49B36)
- (with Kunisch, K.) Output least squares stability in elliptic systems. *Appl. Math. Optim.* **19** (1989), no. 1, 33–63. (Jan Sokolowski) **89k:49019** 49B50 (35B35, 35J99, 93B30)
- Colloju, Mihnea** A remark on a theorem of Vo Van Tan. *Trans. Amer. Math. Soc.* **307** (1988), no. 2, 857–859. (Mathias Peternell) **89c:32026** 32F30 (32F10)
- Colton, David** ★ Partial differential equations. An introduction. The Random House/Birkhäuser Mathematics Series. Random House, Inc., New York, 1988. x+308 pp. ISBN 0-394-35827-9 (Volker Vogelsang) **89j:35002** 35-01
- Optimal methods for determining the shape of an obstacle. *Theory and applications of inverse problems* (Helsinki, 1985), 1–7, Pitman Res. Notes Math. Ser., 167, Longman Sci. Tech., Harlow, 1988. (Summary) **89m:76057** 76Q05 (65P05)
- (with Päivrinta, Lassi) Far field patterns and the inverse scattering problem for electromagnetic waves in an inhomogeneous medium. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 3, 561–575. (Pierre C. Sabatier) **89c:78007** 78A40
- (with Kirsch, Andreas) Karp's theorem in acoustic scattering theory. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 783–788. (V. M. Isakov) **89b:35334** 35R30 (35J05, 35P25, 76Q05)
- (with Kress, Rainer) Karp's theorem in electromagnetic scattering theory. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 764–769. (Piero Bassanini) **89k:78019** 78A45
- (with Monk, P. B.) The inverse scattering problem for time-harmonic acoustic waves in an inhomogeneous medium. *Quart. J. Mech. Appl. Math.* **41** (1988), no. 1, 97–125. (R. F. Millar) **89i:76080** 76Q05 (35R25)
- Colwell, R. K.** Population structure and sexual selection for host fidelity in the speciation of hummingbird flower mites. *Evolutionary processes and theory* (Israel, 1985), 475–495, Academic Press, Orlando, FL, 1986. (see **89b:92001**) 92A15 (92A12)
- Coman, G.** (with Gănscă, I.) On blending interpolation and cubature formulas. (Romanian. English summary) *Bul. Ştiinţ. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Maş.* **28** (1985), 35–40. (Not in MR) **89D32** (41A05, 65D05)
- (with Rus, Ioan A.) On the sixtieth birthday of Professor D. D. Stancu. *Seminar on Numerical and Statistical Calculus* (Cluj-Napoca, 1987), 1–20, Preprint, 87-9, Univ. "Babeş-Bolyai", Cluj-Napoca, 1987. (Editors) **89i:01070** 01A70
- On the efficiency of parallel computation in numerical quadrature. *Seminar on Numerical and Statistical Calculus* (Cluj-Napoca, 1987), 49–56, Preprint, 87-9, Univ. "Babeş-Bolyai", Cluj-Napoca, 1987. (see **89c:00027**) 65W05 (65D32)
- Optimal quadratures with regard to the efficiency. *Calcolo* **24** (1987), no. 1, 85–100. (Stephen W. Brady) **89k:65022** 65D32
- The remainder of certain Shepard type interpolation formulas. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* **32** (1987), no. 4, 24–32. (T. Hermann) **89j:41003** 41A05 (41A36, 41A80)
- Comay, E.** Foundations of quantum mechanics versus the electric Aharonov-Bohm effect. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **48** (1988), no. 3, 253–265. (Summary) **89c:81007** 81B05
- Erratum to: "A test of Lorentz-Dirac and Liénard-Wiechert equations" [Phys. Lett. A **126** (1987), no. 3, 155–158; MR 88i:78015]. *Phys. Lett. A* **129** (1988), no. 8-9, 424–425. (From the text) **89g:78014** 78A35
- Comments on the charge-monopole canonical formalism. *Phys. Lett. B* **207** (1988), no. 1, 56–58. (B. Spence) **89f:81095** 81E13 (15A66)
- Combarnous, Michel** (with Caltagirone, Jean-Paul; Fabrie, Pierre) De la convection naturelle oscillante en milieu poreux au chaos temporel? (English summary) [From oscillating natural convection in porous media to chaos?] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **305** (1987), no. 7, 549–553. (Not in MR) **76E15** (58F13, 76S05)
- Combe, Ph.** (with Blanchard, Ph.; Sirugue, M.; Sirugue-Collin, M.) Jump processes. An introduction and some applications to quantum physics. Functional integration with emphasis on the Feynman integral (Sherbrooke, PQ, 1986). *Rend. Circ. Mat. Palermo* (2) *Suppl. No. 17* (1987), 47–104 (1988). (Jacques Vauthier) **89b:81042** 81C20 (60J75, 81-02)
- (with Cohendet, O.; Sirugue, M.; Sirugue-Collin, M.) A stochastic treatment of the dynamics of an integer spin. *J. Phys. A* **21** (1988), no. 13, 2875–2883. (Philip J. Feinsilver) **89k:81036** 81C20
- Combes, J. M.** (with Briet, Ph.; Duclos, P.) Spectral properties of Schrödinger operators with trapping potentials in the semiclassical limit. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 55–72, Lecture Notes in Math., 1285, Springer, Berlin-New York, 1987. (Shu Nakamura) **89c:35150** 35P05 (35J10, 81C10, 81C99)
- (with Briet, Ph.; Duclos, P.) On the location of resonances for Schrödinger operators in the semiclassical limit. II. Barrier top resonances. *Comm. Partial Differential Equations* **12** (1987), no. 2, 201–222. (Arne Jensen) **89c:81028b** 81C15 (35J10, 47F05)
- (with Briet, Ph.; Duclos, P.) On the location of resonances for Schrödinger operators in the semiclassical limit. I. Resonances free domains. *J. Math. Anal. Appl.* **126** (1987), no. 1, 90–99. (Arne Jensen) **89c:81028a** 81C15 (35J10, 47F05)
- (with Briet, Ph.; Duclos, P.) Erratum for: "On the location of resonances for Schrödinger operators in the semiclassical limit. II. Barrier top resonances". *Comm. Partial Differential Equations* **13** (1988), no. 3, 377–381. (Arne Jensen) **89c:81028c** 81C15 (35J10, 47F05)
- see also **Dautray, Robert**, **89m:00001**; **89m:00002** and **89m:00003a**
- Combes, R.** (with Hakim, V.; Dombre, T.; Pomeau, Y.; Pumir, A.) Analytic theory of the Saffman-Taylor fingers. *Phys. Rev. A* (3) **37** (1988), no. 4, 1270–1283. (Summary) **89c:76103** 76T05 (76B45)
- Combes, M.** The quantum stability problem for time-periodic perturbations of the harmonic oscillator. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **47** (1987), no. 1, 63–83. (Edward R. Vrsay) **89d:81031a** 81C15 (58F11)
- Erratum: "The quantum stability problem for time-periodic perturbations of the harmonic oscillator". *Ann. Inst. H. Poincaré Phys. Théor.* **47** (1987), no. 4, 451–454. (Edward R. Vrsay) **89d:81031b** 81C15 (58F11)
- Combridge, J. T.** see **Kilmister, C. W.**, **89a:01066**
- Comeau, Marc A.** (with Thulasiraman, K.) Maximum-weight markings in marked graphs: algorithms and interpretations based on the simplex method. *IEEE Trans. Circuits and Systems* **34** (1987), no. 12, 1535–1545. (H. T. Lau) **89b:05095** 05C20 (90B10)
- Comer, C. M.** (with Dowd, J. P.) The neural basis of orienting behavior: a computational approach to the escape turn of the cockroach. *Biol. Cybernet.* **60** (1988), no. 1, 37–48. (Summary) **89i:92059** 92A18
- Comer, Stephen D.** (with Cohn, Leslie) An abstract theory of invertible relations. *Algebra Universalis* **25** (1988), no. 2, 131–146. (Leo Esakia) **89b:06001** 06A10 (03G15)
- Comes, Mercè** On the Alfonsine origin of a celestial globe. (Spanish) *De astronomia Alphonsi Regis* (Berkeley, CA, 1985), 139–152, Univ. Barcelona, Barcelona, 1987. (see **89m:01026**) 01A35
- see also **Astronomia Alfonsi Regis**, **89m:01026**
- Comets, Francis** Nucleation for a long range magnetic model. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **23** (1987), no. 2, 135–178. (T. M. Liggett) **89c:82004** 82A05 (60K35)
- (with Eisele, Th.) Asymptotic dynamics, noncritical and critical fluctuations for a geometric long-range interacting model. *Comm. Math. Phys.* **118** (1988), no. 4, 531–567. (Massimo Campanino) **89m:60250** 60K35 (82A25)
- Comfort, W. W.** Some progress and problems in topological groups. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 95–108, *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (V. V. Mishkin) **89b:22001** 22A05 (54A25, 54C25, 54D30)
- (with Robertson, Lewis C.) Extremal phenomena in certain classes of totally bounded groups. *Dissertationes Math. (Rozprawy Mat.)* **272** (1988), 48 pp. (K. H. Hofmann) **89i:22001** 22A05 (22B05, 22C05, 54D30)
- Small spaces which "generate" large spaces. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 973–980. (R. Grant Woods) **89j:54015** 54C20 (22A05, 54C25)
- Ćomić, Irena** Some relations for curvature tensors in a Finsler space. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **16** (1986), no. 2, 145–161. (Ramhit Ojha) **89g:53031** 53B40
- Some remarks on connection coefficients of Finsler and recurrent Finsler spaces. *Differential geometry and its applications, communications* (Brno, 1986), 81–90, Univ. J. E. Purkyně, Brno, 1987. (S. Watanabe) **89b:53045** 53B40
- Family of subspaces in a Finsler space. II. (Serbo-Croatian summary) *Mat. Vesnik* **39** (1987), no. 1, 13–25. (Aurel Bejancu) **89c:53033** 53B40
- Some special cases of parallel displacements in recurrent Finsler spaces. *Publ. Inst. Math. (Beograd) (N.S.)* **42(56)** (1987), 131–141. (Elena Macovei) **89d:53048** 53B40
- Curvature tensors of a recurrent Finsler space. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 255–275, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Makoto Matsumoto) **89b:53107** 53C60
- Recurrent curvature tensors in Finsler spaces with generalised connection. *Publ. Math. Debrecen* **35** (1988), no. 1-2, 83–91. (L. Tamásy) **89j:53018** 53B40
- Ćomić, Lidiya** (with Stojmenović, I.) Parallel algorithms for finding the measure of the union of intervals. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **17** (1987), no. 1, 261–267. (Not in MR) **68Q20** (68U05)



- Comincioli, V.** (with Colli, Pierluigi; Naldi, Giovanni; Reggiani, Carlo) Mathematical modelling for contracting muscle. *Biomathematics and related computational problems* (Naples, 1987), 603–613, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89i:92003** 92A06 (92A09)
- (with Torelli, A.) A mathematical study of a continuum-state cross-bridge model of muscle contraction. *Math. Methods Appl. Sci.* **10** (1988), no. 3, 289–302. (Bonita Bowman) **89j:92025** 92A09 (92A06)
- (with Torelli, A.) A mathematical model of contracting muscle with viscoelastic elements. *SIAM J. Math. Anal.* **19** (1988), no. 3, 593–612. (Hilmi Demiryay) **89d:92005** 92A06 (73P99, 92A09)
- Cominetti, Roberto** (with Correa, Rafael) A useful characterization of Clarke derivatives. *Differential Integral Equations* **1** (1988), no. 4, 381–390. (Barbara Kaskosz) **89e:49022** 49A52 (58C20, 90C48)
- Commandino, Federico** see Neville, Pamela, **89e:01016**
- Commalet, C.** (with Descusse, J.; Dion, J. M.; Lafay, J. F.; Malabre, M.) Influence de la structure à l'infini des systèmes linéaires sur la solution des problèmes de commande. (English summary) [Influence of the structure at infinity of linear systems on the solution of control problems] *RAIRO Automat.-Prod. Inform. Ind.* **20** (1986), no. 3, 207–252. (Summary) **89k:93087** 93B50 (93B10, 93B27, 93C05, 93C35)
- (with Dion, J. M.) The minimal delay decoupling problem: feedback implementation with stability. *SIAM J. Control Optim.* **26** (1988), no. 1, 66–82. (W. M. Wonham) **89a:49034** 49D27 (93C05, 93C35, 93D15)
- Common, A. K.** (with Chisholm, J. S. R.) A class of second-order differential equations and related first-order systems. *J. Phys. A* **20** (1987), no. 16, 5459–5472. (Zai-Feng Song) **89k:34025** 34A34
- Erratum: "Uniform inequalities for ultraspherical polynomials and Bessel functions of fractional order" [J. Approx. Theory **49** (1987), no. 4, 331–339; MR 88j:33005]. *J. Approx. Theory* **53** (1988), no. 3, 367–368. (Editors) **89e:33011** 33A45 (26D20)
- Comodi, M. I.** The Hellan-Herrmann-Johnson method: some new error estimates and postprocessing. *Math. Comp.* **52** (1989), no. 185, 17–29. (N. Gass) **89f:65120** 65N30 (73C35)
- Comon, Hubert** An effective method for handling initial algebras. *Algebraic and logic programming* (Gaussig, 1988), 108–118, *Math. Res.*, 49, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) 68Q50
- Compagner, A.** (with Hoogland, A.) Maximum-length sequences, cellular automata, and random numbers. *J. Comput. Phys.* **71** (1987), no. 2, 391–428. (M. Mendès France) **89a:65009** 65C10 (11K45, 58F08, 68Q80)
- Comparini, Elena** (with Ricci, Riccardo) Convergence to the pseudo-steady-state approximation for the unreacted core model. *Appl. Anal.* **26** (1988), no. 4, 305–325. (Peter Knabner) **89a:35226** 35R35 (35K05, 76S05)
- Compiani, Mario** Complexity and self-organization in enzyme catalysis: non-Kramers behaviour of the reaction rate. *Biomathematics and related computational problems* (Naples, 1987), 629–638, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89i:92014** 92A09
- Compton, Kevin J.** (with Henson, C. Ward; Shelah, Saharon) Nonconvergence, undecidability, and intractability in asymptotic problems. *Ann. Pure Appl. Logic* **36** (1987), no. 3, 207–224. (Charles Steinhorn) **89f:03021** 03C13 (03C52)
- Comrie, Leslie John** see Tee, G. J., **89a:01086**
- Comte, Claude** (with Barroso Filho, Wilton) La formalisation de la dynamique par Lagrange (1736–1813). [The formalization of dynamics by Lagrange (1736–1813)] *Sciences à l'époque de la Révolution Française*, 329–348, *Lib. Bicentenaire Révolution Française*, Lib. Sci. Tech. Albert Blanchard, Paris, 1988. (see **89m:01050**) 01A50
- Comte, Pierre** (with Lesieur, Marcel; Staquet, Chantal; Le Roy, Pascal) The mixing layer and its coherence examined from the point of view of two-dimensional turbulence. *J. Fluid Mech.* **192** (1988), 511–534. (Not in MR) 76F10 (76-04)
- Comtet, A.** (with Gibbons, Gary) Bogomolnyi bounds for cosmic strings. *Nuclear Phys. B* **299** (1988), no. 4, 719–733. (Asghar Qadir) **89h:83042** 83F05 (81E30, 83C15)
- Conca, Carlos** (with Aguirre, Freddy) Eigenfrequencies of a tube bundle immersed in a fluid. *Appl. Math. Optim.* **18** (1988), no. 1, 1–38. (Charles J. Amick) **89h:35024** 35J05 (35P05, 35Q20, 76D05)
- (with Donato, Patrizia) Nonhomogeneous Neumann problems in domains with small holes. (French summary) *RAIRO Modél. Math. Anal. Numér.* **22** (1988), no. 4, 561–607. (Dietrich Gohde) **89m:35023** 35B25 (35B40, 35J05, 73C40)
- Conceição, Eduardo Pinto** (with Curi, Paulo Roberto) Least-squares solutions using the Penrose generalized inverse matrix. (Portuguese. English summary) *Rev. Mat. Estatist.* **4/5** (1986/87), 105–118. (Not in MR) 65F05 (62J05)
- Concha, Fernando** (with Bustos, María Cristina) On the construction of global weak solutions in the Kynch theory of sedimentation. *Math. Methods Appl. Sci.* **10** (1988), no. 3, 245–264. (Fouad A. Mohamed) **89i:76090** 76T05 (35R35, 80A20)
- di Concilio, Anna** see Di Concilio, Anna
- de Concini, C.** see De Concini, C.
- Comde, Luis** (with Fairén, Victor; López, Vicente) Power series approximation to solutions of nonlinear systems of differential equations. *Amer. J. Phys.* **56** (1988), no. 1, 57–61. (J. F. Heyda) **89a:34018** 34A45 (34A25, 34A34)
- Conde, Salvador** (with Kalla, S. L.; Al-Saqabi, Bader) Some results related to radiation-field problems. *Hadronic J.* **10** (1987), no. 4, 221–230. (Wolfgang Bühring) **89d:78023** 78A40 (33A30)
- Conder, Marston** Groups of minimal genus including  $C_2$  extensions of  $PSL(2, q)$  for certain  $q$ . *Quart. J. Math. Oxford Ser. (2)* **38** (1987), no. 152, 449–460. (David Riley Witte) **89a:20043** 20F32 (05C10, 05C25)
- An infinite family of 5-arc-transitive cubic graphs. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), A, 95–108. (Ming-Yao Xu) **89f:05092** 05C25
- (with McKay, John) A necessary condition for transitivity of a finite permutation group. *Bull. London Math. Soc.* **20** (1988), no. 3, 235–238. (David Singerman) **89b:20007** 20B05 (20H10, 30F10)
- Maximal automorphism groups of symmetric Riemann surfaces with small genus. *J. Algebra* **114** (1988), no. 1, 16–28. (David Singerman) **89c:20049** 20F05 (05C10, 20H10, 30F10)
- On the group  $G^{AA}$ . *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 154, 175–183. (Stephen J. Pride) **89e:20061** 20F05 (20B30)
- Condorcet, Antoine, Marquis de** see Gillain, Christian, (89m:01050); Crépel, Pierre, (89m:01050) and Morange, Michel, (89m:01050)
- see also Daston, Lorraine J., **89b:01015**
- Condurache, Daniel** Integral transforms on Sobrero algebras. (Romanian summary) *Bul. Inst. Politehn. Iași Sec. I* **33**(37) (1987), no. 1–4, 5–8. (Elias Deeba) **89k:44001** 44A05
- Conerly, Michael D.** (with Mansfield, Edward R.) An approximate test for comparing heteroscedastic regression models. *J. Amer. Statist. Assoc.* **83** (1988), no. 403, 811–817. (Not in MR) 62J05
- Conforti, D.** (with Grandinetti, L.) Numerical comparisons of nonlinear programming algorithms on serial and vector processors using automatic differentiation. *Math. Programming* **42** (1988), no. 2 (Ser. B), 375–389. (Summary) **89k:90166** 90C35 (65K05, 65W05)
- Conforti, Michele** (with Corneil, D. G.; Mahjoub, Ali Ridha)  $K_1$ -covers. II.  $K_1$ -perfect graphs. *J. Graph Theory* **11** (1987), no. 4, 569–584. (I. A. Klipker) **89i:05210** 05C70 (05C75, 68R10)
- (with Hochberg, Yosef) Sequentially rejective pairwise testing procedures. *J. Statist. Plann. Inference* **17** (1987), no. 2, 193–208. (René Flavigny) **89c:62124** 62J15
- (with Rao, M. R.) Structural properties and recognition of restricted and strongly unimodular matrices. *Math. Programming* **38** (1987), no. 1, 17–27. (Uwe Zimmermann) **89b:90144** 90C10 (05C50, 68R10)
- (with Cornuejols, Gerard) An algorithmic framework for the matching problem in some hypergraphs. *Networks* **17** (1987), no. 4, 365–386. (Summary) **89f:05130** 05C65 (05C70, 90C10)
- (with Laurent, Monique) A characterization of matroidal systems of inequalities. *Discrete Math.* **69** (1988), no. 2, 165–171. (Ulrich Faigle) **89d:05053** 05B35
- Nguyễn Dharinh Công** see Nguyễn Dharinh Công
- Cong, Loan** (with Feng, Guo Chen) Simplicial methods and approximation of several solutions. *J. Comput. Math.* **5** (1987), no. 1, 50–57. (Beny Neta) **89h:65121** 65H10 (58C30, 90C30)
- Nguyễn Công Bình** see Nguyễn Công Bình
- Concogo, Giuseppe** Equilibrium of a rotating fluid mass. (Italian. English summary) *Ann. Univ. Ferrara Sez. VII (N.S.)* **33** (1987), 1–21 (1988). (S. Cinquini) **89i:49003** 49A21 (76U05)
- Coniglio, Antonio** (with Poole, Peter H.; Jan, Naem; Stanley, H. E.) Universality classes of the  $\theta$  and  $\theta'$  points. *Phys. Rev. B* (3) **39** (1989), no. 1, 495–504. (Summary) **89j:82054** 82A51 (82-04, 82A25, 82A41)
- de Coninck, Joël** see De Coninck, Joël
- Conley, William Cleland** Traveling salesman problem solved with simulation techniques. *Internat. J. Systems Sci.* **19** (1988), no. 10, 2115–2122. (Summary) **89h:90085** 90B10
- Conlisk, John** Simple bounds for the dominant eigenvalue of a generalized Leslie matrix. *Math. Population Stud.* **1** (1988), no. 2, 131–135. (Marc Artztouni) **89f:92036** 92A15
- Conlon, Joseph G.** A matrix diagonalisation problem in quantum mechanics. *J. Phys. A* **20** (1987), no. 18, 6281–6291. (Summary) **89h:82030** 82A50 (15A21, 82-08)
- (with Lieb, Elliott H.; Yau, Horng-Tzer) The  $N^{7/5}$  law for charged bosons. *Comm. Math. Phys.* **116** (1988), no. 3, 417–448. (Claude Itzykson) **89d:81125** 81G35
- Conlon, Lawrence** (with Cantwell, John) Every surface is a leaf. *Topology* **26** (1987), no. 3, 265–285. (Introduction) **89d:57039** 57R30
- (with Cantwell, John) The theory of levels. *Index theory of elliptic operators, foliations, and operator algebras* (New Orleans, LA/Indianapolis, IN, 1986), 1–10, *Contemp. Math.*, 70, Amer. Math. Soc., Providence, RI, 1988. (Claude Lamoureux) **89m:58196** 58G12 (46L55, 57R30, 58F18)
- Conn, A. R.** (with Gould, N. I. M.) An exact penalty function for semi-infinite programming. *Math. Programming* **37** (1987), no. 1, 19–40. (J. Abrahm) **89b:90180** 90C30 (49D39)
- (with Calamai, Paul H.) A projected Newton method for  $l_p$  norm location problems. *Math. Programming* **38** (1987), no. 1, 75–109. (James G. Morris) **89d:90230** 90C35 (65K10, 90B10)
- (with Gould, N. I. M.; Toint, Ph. L.) Testing a class of methods for solving minimization problems with simple bounds on the variables. *Math. Comp.* **50** (1988), no. 182, 399–430. (Joachim Hirsche) **89c:65061** 65K05 (90C30)
- (with Gould, N. I. M.; Toint, Ph. L.) Global convergence of a class of trust region algorithms for optimization with simple bounds. *SIAM J. Numer. Anal.* **25** (1988), no. 2, 433–460. (Krzysztof C. Kiwiel) **89h:90192** 90C30 (65K05)
- Connelly, R.** (with Bezdek, K.; Kertész, G.) On the average number of neighbors in a spherical packing of congruent circles. *Intuitive geometry* (Siofok, 1985), 37–52, *Colloq. Math. Soc. János Bolyai*, 48, North-Holland, Amsterdam-New York, 1987. (A. Florian) **89a:52034** 52A45 (05B40, 52A40)
- Juxtapositions rigides de cercles et de sphères. I. Juxtapositions finies. [Rigid circle and sphere packings. I. Finite packings] Dual French-English text. *Structural Topology* No. 14 (1988), 43–60. (A. Florian) **89i:52022** 52A45
- Connes, Alain** Analyse et géométrie. [Analysis and geometry] *Ann. Collège France* **86** (1985/86), 113–120. (Editors) **89h:58183** 58G12 (18G15, 19D55, 19K56, 57R30)
- Cyclic cohomology and noncommutative differential geometry. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 879–889, Amer. Math. Soc., Providence, RI, 1987. (Steven E. Hurder) **89f:58182** 58G12 (19D55, 19K56, 46L80, 57R20, 57R30)
- (with Narnhofer, H.; Thirring, W. E.) Dynamical entropy of  $C^*$  algebras and von Neumann algebras. *Comm. Math. Phys.* **112** (1987), no. 4, 691–719. (Sze-Kai Tsui) **89b:46078** 46L55 (58F11, 82A15)
- Cyclic cohomology and noncommutative differential geometry. *Géométrie différentielle* (Paris, 1986), 33–50, *Travaux en Cours*, 33, Hermann, Paris, 1988. (Steven E. Hurder) **89i:58138** 58G12 (18G10, 18G25, 19K56, 46L80, 46M20)
- (with Cuntz, J.) Quasi homomorphismes, cohomologie cyclique et positivité. (English summary) [Quasihomomorphisms, cyclic homology and positivity] *Comm. Math. Phys.* **114** (1988), no. 3, 515–526. (Jonathan M. Rosenberg) **89h:46098** 46L80 (19K99, 58B15, 58G12)
- see also Kastler, Daniel, **89h:18013**

- Connett, William C. (with Schwartz, Alan L.) A Hardy-Littlewood maximal inequality for Jacobi type hypergroups. *Proc. Amer. Math. Soc.* **107** (1989), no. 1, 137-143. (Richard C. Vrem) **89m:43002** 43A10
- Connor, J. J. see Beteche **86**, **89a:73003**
- Connor, J. S. The statistical and strong  $p$ -Cesàro convergence of sequences. *Analysis* **8** (1988), no. 1-2, 47-63. (T. Šalát) **89k:40013** 40G05
- Conolly, Brian W. Topics in the theory of queues. *Proceedings of the Second International Seminar on Operational Research in the Basque Provinces (San Sebastian, 1987)*, 77-104, Univ. País Vasco-Euskal Herriko Unib., Bilbao, 1988. (Masao Mori) **89k:60130** 60K25 (90B22)
- Conover, William J. (with Salsburg, David S.) Locally most powerful tests for detecting treatment effects when only a subset of patients can be expected to "respond" to treatment. (French summary) *Biometrics* **44** (1988), no. 1, 189-196. (Joel E. Michalek) **89g:62161** 62P10 (62G10)
- Conrad, Francis (with Cortey-Dumont, Philippe) Nonlinear eigenvalue problems in elliptic variational inequalities: some results for the maximal branch. I. Approximation of solutions. *Numer. Funct. Anal. Optim.* **9** (1987), no. 9-10, 1059-1090. (Igor Bock) **89h:35134** 35J85 (49A29)
- (with Cortey-Dumont, Philippe) Nonlinear eigenvalue problems in elliptic variational inequalities: some results for the maximal branch. II. Estimates for the free boundaries and "stability" results. *Numer. Funct. Anal. Optim.* **9** (1987), no. 9-10, 1091-1114. (Igor Bock) **89h:35135** 35J85 (49A29)
- Conrad, Michael (with Home, D.; Josephson, Brian) Beyond quantum theory: a realist psycho-biological interpretation of physical reality. *Microphysical reality and quantum formalism*, Vol. 1, 2 (Urbino, 1985), 285-293, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89m:92001** 92A05 (81B99)
- Conrath, D. W. (with Irving, R. H.) The social context of multiperson, multiattribute decisionmaking. *IEEE Trans. Systems Man Cybernet.* **18** (1988), no. 3, 348-357. (Summary) **89h:92068** 92A25 (90A05)
- Conrey, J. B. (with Ghosh, Amit; Gonek, S. M.) Simple zeros of zeta functions. *Colloque de Théorie Analytique des Nombres "Jean Coquet" (Marseille, 1985)*, 77-83, *Publ. Math. Orsay*, 88-02, Univ. Paris XI, Orsay, 1988. (Masako Izumi) **89h:11056** 11M26
- (with Ghosh, Amit) Simple zeros of the Dirichlet series formed with Ramanujan's tau-function. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 2, 95-99. (Don Redmond) **89h:11043** 11F35 (11F66)
- (with Ghosh, Amit) Simple zeros of the Ramanujan  $\tau$ -Dirichlet series. *Invent. Math.* **94** (1988), no. 2, 403-419. (Bruce C. Berndt) **89k:11078** 11M41 (11F35)
- (with Rubel, Lee A.) Erratum to: "On the location of the zeros of the derivative of a polynomial" [*Proc. Amer. Math. Soc.* **86** (1982), no. 1, 37-41; MR **83h:30066**]. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 1002. (Editors) **89c:30011** 30C15
- The fourth moment of derivatives of the Riemann zeta-function. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 153, 21-36. (Yasushi Matsuoka) **89e:11050** 11M06
- At least two fifths of the zeros of the Riemann zeta function are on the critical line. *Bull. Amer. Math. Soc. (N.S.)* **20** (1989), no. 1, 79-81. (Daniel A. Goldston) **89k:11077** 11M26 (11M06)
- Consoli, M. (with Agodi, A.; Castorina, P.) Renormalization group equations and the continuum limit of some renormalizable quantum field theories. *Phys. Lett. B* **202** (1988), no. 1, 127-130. (Summary) **89a:81080** 81E15
- Constable, R. L. (with Knoblock, T. B.; Bates, J. L.) Writing programs that construct proofs. *J. Automat. Reason.* **1** (1985), no. 3, 285-326. (Summary) **89i:68113** 68T15 (03B35, 68Q55, 68T20)
- Constales, Denis (with Brackx, F.; Delanghe, R.; Serras, Herman) Clifford algebra with REDUCE. *Proceedings of the Winter School on Geometry and Physics (Srní, 1987)*. *Rend. Circ. Mat. Palermo (2) Suppl.* **16** (1987), 11-19. (Horia Scutaru) **89i:15035** 15A66 (68Q40, 68U30)
- A conjugate harmonic to the Poisson kernel in the unit ball of  $\mathbb{R}^n$ . *Proceedings of the Workshop on Clifford Algebra, Clifford Analysis and their Applications in Mathematical Physics (Ghent, 1988)*. *Simon Stevin* **62** (1988), no. 3-4, 289-291. (Pertti Lounesto) **89m:30098** 30G35 (15A66)
- Constanda, Christian Fonctions de tension dans un problème de la théorie de l'élasticité. (English summary) [Stress functions in a problem of elasticity theory] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **303** (1986), no. 16, 1405-1408. (Summary) **89j:73012** 73C05 (73C03, 73K10)
- Constantin, Peter (with Majda, A.) The Beltrami spectrum for incompressible fluid flows. *Comm. Math. Phys.* **115** (1988), no. 3, 435-456. (Alberto Valli) **89g:35089** 35Q10 (76D05, 76F99)
- (with Titi, E. S.) On the evolution of nearly circular vortex patches. *Comm. Math. Phys.* **119** (1988), no. 2, 177-198. (Charles J. Amick) **89i:76033** 76C05 (76E30)
- (with Saut, Jean-Claude) Local smoothing properties of dispersive equations. *J. Amer. Math. Soc.* **1** (1988), no. 2, 413-439. (Ralph Saxton) **89d:35150** 35Q20 (35D10)
- (with Foias, Ciprian; Temam, Roger) On the dimension of the attractors in two-dimensional turbulence. *Phys. D* **30** (1988), no. 3, 284-296. (Andrew C. Fowler) **89j:76056** 76F99 (58F12, 76D05)
- (with Barclon, Victor; Titi, E. S.) Existence of solutions to the Stommel-Charnay model of the Gulf Stream. *SIAM J. Math. Anal.* **19** (1988), no. 6, 1355-1364. (Summary) **89k:35241** 35Q99 (76U05, 86A05)
- Constantinescu, Corneliu Some properties of spaces of measures (summary). *Atti Sem. Mat. Fis. Univ. Modena* **35** (1987), no. 2, 365-388 (1988). (C. W. Swartz) **89c:46041** 46E27 (28A60, 46A40)
- Simion Stoilow. *Libertas Math.* **7** (1987), 3-21. (U. D'Ambrosio) **89e:01043** 01A70 (30-03, 32-03)
- Constantinescu, E. Riemannian manifolds with curvature tensor invariant to the projective transformations. *Proceedings of the National Conference on Geometry and Topology (Romanian) (Tirgoviste, 1986)*, 49-53, Univ. Bucuresti, Bucharest, 1988. (K. L. Duggal) **89m:53039** 53B20 (53B05)
- Constantinescu, F. The supersymmetric transfer matrix for linear chains with nondiagonal disorder. *J. Statist. Phys.* **50** (1988), no. 5-6, 1167-1177. (Summary) **89j:82068** 82A68
- Constantinescu, T. Schur analysis for matrices with a finite number of negative squares. *Advances in invariant subspaces and other results of operator theory (Timișoara and Herculane, 1984)*, 87-108, *Oper. Theory. Adv. Appl.*, **17**, Birkhäuser, Basel-Boston, MA, 1986. (D. Sarason) **89b:47036** 47B35 (47A68)
- Schur analysis of positive block-matrices. I. Schur methods in operator theory and signal processing, 191-206, *Oper. Theory. Adv. Appl.*, **18**, Birkhäuser, Basel-Boston, MA, 1986. (L. Rodman) **89a:47027** 47A65 (15A48, 47B99)
- (with Arsene, Gr.; Ceausescu, Zoia) Multiplicative properties in the structure of contractions. *Operator theory and systems (Amsterdam, 1985)*, 9-22, *Oper. Theory. Adv. Appl.*, **19**, Birkhäuser, Basel-Boston, MA, 1986. (E. Durszt) **89a:47025** 47A65 (47A20)
- On a general extrapolation problem. *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 6, 509-521. (D. Sarason) **89b:47008** 47A20
- (with Arsene, Gr.; Ceausescu, Zoia) Schur analysis of some completion problems. *Linear Algebra Appl.* **109** (1988), 1-35. (Joseph A. Ball) **89a:47010** 47A20 (15A48, 30E05, 93C50)
- rodriguez Consuegra, Francisco see Rodriguez Consuegra, Francisco
- Consul, P. C. (with Shoukri, M. M.) Some chance mechanisms related to a generalized Poisson probability model. *Amer. J. Math. Management Sci.* **8** (1988), no. 1-2, 181-202. (Summary) **89g:92037** 92A15 (60J80, 62E10)
- (with Fayome, Felix) Maximum likelihood estimation for the generalized Poisson distribution when sample mean is larger than sample variance. *Comm. Statist. Theory Methods* **17** (1988), no. 1, 299-309. (Chuan Yi Wu) **89h:62044** 62F10
- On some models leading to the generalized Poisson distribution. *Comm. Statist. Theory Methods* **17** (1988), no. 2, 423-442. (Mir Maswood Ali) **89c:62034** 62E15
- ★ Generalized Poisson distributions. Properties and applications. *Statistics: Textbooks and Monographs*, **99**, Marcel Dekker, Inc., New York, 1989. xii+302 pp. ISBN 0-8247-7863-4 (Javad Behboodiani) **89m:62002** 62-02 (60E05, 62E10)
- Contardi, Simone The collection of letters of Giovanni Gualberto De Soria: index and structure of the correspondence. (Italian. English summary) *Nuncius Ann. Storia Sci.* **3** (1988), no. 2, 183-191. (Summary) **89i:01040** 01A75 (01A50)
- Conte, A. (with Murre, J. P.) On the definition and on the nature of the singularities of Fano threefolds. *Conference on algebraic varieties of small dimension (Turin, 1985)*. *Rend. Sem. Mat. Univ. Politec. Torino* **1986**, Special Issue, 51-67 (1987). (A. S. Tikhomirov) **89h:14057** 14J30 (14E15)
- Conte, Giuseppe (with Di Benedetto, M. D.; Isidori, A.; Perdon, A.-M.) An input-output characterization of the structure at infinity for a nonlinear system. *Theory and applications of nonlinear control systems (Stockholm, 1985)*, 301-312, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:93029** 93B27 (93C10)
- (with Moog, Claude H.; Perdon, A.-M.) Un théorème sur la représentation entrée-sortie d'un système non linéaire. (English summary) [A theorem on the input-output representation of a nonlinear system] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 7, 363-366. (Peter A. Cook) **89j:93017** 93B15 (93C10, 93C45)
- (with Perdon, A.-M.) A geometric approach to the theory of 2-D systems. *IEEE Trans. Automat. Control* **33** (1988), no. 10, 946-950. (T. Kaczorek) **89g:93028** 93B27 (93C55)
- Conte, Robert Universal invariance properties of Painlevé analysis and Bäcklund transformation in nonlinear partial differential equations. *Phys. Lett. A* **134** (1988), no. 2, 100-104. (Summary) **89k:35201** 35Q20 (58A17, 58G37)
- le Conte de Poly-Barbut, C. see Le Conte de Poly-Barbut, C.
- Contessa, Maria A note on Baer rings. *J. Algebra* **118** (1988), no. 1, 20-32. (S. S. Page) **89k:16022** 16A30
- Conti, Franco see Steinhaus, Hugo, **89f:01095**
- Conti, Giuseppe (with Iannacci, Rita) Some results on boundary value problems for multivalued differential equations. *Ann. Polon. Math.* **47** (1987), no. 3, 319-329. (B. L. Shekhter) **89c:34022** 34B15 (34A60)
- Conti, Roberto Centers of quadratic systems. *Ricerche Mat.* **36** (1987), suppl., 117-126. (B. M. Garay) **89m:58176** 58F25
- On a class of cubic systems with two centers. *Resultate Math.* **14** (1988), no. 1-2, 30-37. (Peter Smith) **89g:34037** 34C05 (58F21)
- Contopoulos, G. Critical cases of 3-dimensional systems. *Celestial Mech.* **42** (1987/88), no. 1-4, 239-250. (Richard C. Churchill) **89m:70019** 70F15 (34C25, 58F05, 58F14)
- Short and long period orbits. Long term evolution of planetary systems (Ramsau, 1988). *Celestial Mech.* **43** (1987/88), no. 1-4, 147-162. (Summary) **89m:70020** 70F15 (58F14, 58F22, 70F07, 85A05)
- The 4:1 resonance in barred galaxies. *Astronom. and Astrophys.* **201** (1988), no. 1, 44-50. (From the summary) **89e:85001** 85A05 (58F05)
- Conti, P. (with Schreffler, B. A.) A geometrically nonlinear finite element analysis of wrinkled membrane surfaces by a no-compression material model. *Comm. Appl. Numer. Methods* **4** (1988), no. 1, 5-15. (Summary) **89g:73058** 73K25 (65N30, 73K15)
- Conway, Adrian E. Insensitivity in models of flexible manufacturing systems with zero-buffer stations and reversible routing. *Oper. Res. Lett.* **7** (1988), no. 4, 163-166. (Summary) **89e:90118** 90B30
- (with de Souza e Silva, Edmundo; Lavenberg, S. S.) Mean value analysis by chain of product form queueing networks. *IEEE Trans. Comput.* **38** (1989), no. 3, 432-442. (Summary) **89k:90080** 90B30 (68M20, 90B22)
- Conway, Edward D. see Conway, John B., **89a:01055**; Goldstein, Jerome A., **89c:01060** and Bibliography: Conway, Edward D., **89c:01091**
- Conway, J. H. (with Sloane, N. J. A.) ★ Sphere packings, lattices and groups. With contributions by E. Bannai, J. Leech, S. P. Norton, A. M. Odlyzko, R. A. Parker, L. Queen and B. B. Venkov. *Grundlehren der Mathematischen Wissenschaften [Fundamental Principles of Mathematical Science]*, **290**, Springer-Verlag, New York-Berlin, 1988. xxviii+663 pp. ISBN 0-387-96617-X (J. M. Wills) **89a:11067** 11H31 (05B40, 11H06, 20E32, 52A43, 52A45, 94C30)
- (with Kleidman, Peter B.; Wilson, Robert A.) New families of ovoids in  $O_q^*$ . *Geom. Dedicata* **26** (1988), no. 2, 157-170. (Ulrich Dempwolff) **89b:51014** 51E20 (05B25)
- Conway, John B. Biographical sketch of Edward D. Conway. *Mathematics applied to science (New Orleans, La., 1986)*, xiii-xiv, Academic Press, Boston, MA, 1988. (Editors) **89c:01055** 01A70
- see also Surveys of some recent results in operator theory, **89b:47004** and **89g:47002**
- Conyers, R. A. J. (with James, A. T.; Wiskich, J. T.) Statistical modelling of mitochondrial power supply. *J. Math. Biol.* **27** (1989), no. 1, 29-48. (Summary) **89j:92018** 92A09
- Conze, Jean-Pierre (with Lesigne, Emmanuel) Sur un théorème ergodique pour des mesures diagonales. (English summary) [On an ergodic theorem for diagonal measures] *C. R.*



- Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 12, 491–493. (Pierre Michel) **89e:22012** 22D40 (28D05)
- Cook, Alan H.** Experiments on gravitation. *Three hundred years of gravitation*, 50–79. Cambridge Univ. Press, Cambridge-New York, 1987. (see **89b:83007**) **83B05** (83–05)
- A Hamiltonian with linear kinetic energy for systems of many bodies. *Proc. Roy. Soc. London Ser. A* **415** (1988), no. 1848, 35–59. (A. O. Barut) **89d:81132** 81H99
- Cook, Daniel L.** (with Chay, Teresa Ree) Endogenous bursting patterns in excitable cells. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1–2, 139–153. (see **89c:92002**) **92A09**
- Cook, R. Dennis** (with Peña, Daniel; Weisberg, Sanford) The likelihood displacement: a unifying principle for influence measures. *Comm. Statist. Theory Methods* **17** (1988), no. 3, 623–640. (Summary) **89c:62108** 62J05
- Cook, Stephen A.** (with McKenzie, Pierre) The parallel complexity of abelian permutation group problems. *SIAM J. Comput.* **16** (1987), no. 5, 880–909. (Claus-Peter Schnorr) **89a:68104** 68Q25 (68Q15)
- Short propositional formulas represent nondeterministic computations. *Inform. Process. Lett.* **26** (1988), no. 5, 269–270. (John Michael Robson) **89c:68028** 68Q05 (03D15, 68Q15)
- (with Luby, Michael) A simple parallel algorithm for finding a satisfying truth assignment to a 2-CNF formula. *Inform. Process. Lett.* **27** (1988), no. 3, 141–145. (Joseph Ja'Ja') **89b:68039** 68Q10 (03B05, 03B35, 68Q20, 68Q25)
- Cook, Wade D.** (with Kress, Moshe) Tournament ranking and score difference. *Cahiers Centre Études Rech. Opér.* **29** (1987), no. 3–4, 215–222. (Kunwarjit Bagga) **89d:05084** 05C20 (90D99)
- (with Golan, Igal; Kress, Moshe) Heuristics for ranking players in a round robin tournament. *Comput. Oper. Res.* **15** (1988), no. 2, 135–144. (Summary) **89d:90270** 90D35 (05C20)
- (with Kress, Moshe) Deriving weights from pairwise comparison ratio matrices: an axiomatic approach. *European J. Oper. Res.* **37** (1988), no. 3, 355–362. (Summary) **89f:92065** 92A25
- (with Kress, Moshe) Partial and multiple match tournaments. *Math. Social Sci.* **15** (1988), no. 3, 303–306. (J. W. Moon) **89c:05097** 05C20 (90D99)
- Cooke, Justin** (with Ludwig, D.; Walters, C. J.) Comparison of two models and two estimation methods for catch and effort data. *Natur. Resource Modeling* **2** (1988), no. 3, 457–498. (Summary) **89c:90045** 90A30 (90A19)
- Cooke, Kenneth** (with Wiener, Joseph) Neutral differential equations with piecewise constant arguments. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 2, 321–346. (Harian W. Stech) **89c:34107** 34K05 (34K25, 92A15)
- (with Nusse, Helena E.) Analysis of the complicated dynamics of some harvesting models. *J. Math. Biol.* **25** (1987), no. 5, 521–542. (S. Levin) **89d:92055** 92A15 (58F14, 90A30, 92A17)
- (with Carvalho, L. A. V.) A nonlinear equation with piecewise continuous argument. *Differential Integral Equations* **1** (1988), no. 3, 359–367. (Daoyi Xu) **89d:34114** 34K20 (34K15, 34K25, 92A15)
- (with Elderkin, Richard; Witten, Matthew) Harvesting procedures with management policy in iterative density-dependent population models. *Natur. Resource Modeling* **2** (1988), no. 3, 383–420. (D. O. Logofet) **89f:92037** 92A15 (90A30)
- (with Busenberg, Stavros; Iannelli, Mimmo) Endemic thresholds and stability in a class of age-structured epidemics. *SIAM J. Appl. Math.* **48** (1988), no. 6, 1379–1395. (H. W. Hethcote) **89k:92048** 92A15 (35Q99)
- (with Busenberg, Stavros) The population dynamics of two vertically transmitted infections. *Theoret. Population Biol.* **33** (1988), no. 2, 181–198. (H. W. Hethcote) **89c:92034** 92A15
- Cooke, Roger Marvin** (with van Lambalgen, Michiel) Lattice-valued commutativity measures. *Recent developments in quantum logic* (Cologne, 1984), 147–159. *Grundlagen Exakt. Naturwiss.*, 6, Bibliographisches Inst., Mannheim, 1985. (see **89b:81008**) **06C15** (03G12)
- (with Keane, Michael; Moran, William) An elementary version of Gleason's theorem. *Recent developments in quantum logic* (Cologne, 1984), 299–313. *Grundlagen Exakt. Naturwiss.*, 6, Bibliographisches Inst., Mannheim, 1985. (see **89b:81008**) **81B10** (46L50)
- Coelen, A. C. C.** (with Ruijgrok, Th. W.) Image evolution in Hopfield networks. *Phys. Rev. A* (3) **38** (1988), no. 8, 4253–4255. (Summary) **89j:92026** 92A09 (68Q90, 82A68)
- Coels, Ronald** (with Haegemans, Ann) Construction of three-dimensional cubature formulae with points on regular and semiregular polytopes. *Numerical integration* (Halifax, N.S., 1986), 153–163. *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 203, Reidel, Dordrecht-Boston, MA, 1987. (K. Jetter) **89a:65039** 65D32
- (with Haegemans, Ann) Construction of sequences of embedded cubature formulae for circular symmetric planar regions. *Numerical integration* (Halifax, N.S., 1986), 165–172. *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 203, Reidel, Dordrecht-Boston, MA, 1987. (K. Jetter) **89a:65037** 65D32
- (with Haegemans, Ann) Automatic computation of knots and weights of cubature formulae for circular symmetric planar regions. Proceedings of the 2nd international conference on computational and applied mathematics (Leuven, 1986). *J. Comput. Appl. Math.* **20** (1987), Special Issue, 153–158. (Avram Sidi) **89c:65028** 65D32 (65V05)
- (with Haegemans, Ann) An embedded pair of cubature formulae of degree 5 and 7 for the triangle. *BIT* **28** (1988), no. 2, 357–359. (David K. Kahaner) **89d:65024** 65D32
- (with Haegemans, Ann) Another step forward in searching for cubature formulae with a minimal number of knots for the square. (German summary) *Computing* **40** (1988), no. 2, 139–146. (Christian Coatmelec) **89b:65038**; **EA 89m** 65D32 (41A55)
- Coombes, Kevin R.** Every rational surface is separably split. *Comment. Math. Helv.* **63** (1988), no. 2, 305–311. (Steven E. Landsburg) **89d:14055** 14J26 (14E05)
- On the K-theory of curves over finite fields. *J. Pure Appl. Algebra* **51** (1988), no. 1–2, 79–87. (Jan Stienstra) **89d:14010** 14C35 (11G40, 19E08)
- Cooper, Colin** (with Ahn, Sang; Cornuejols, Gerard; Frieze, A. M.) Probabilistic analysis of a relaxation for the k-median problem. *Math. Oper. Res.* **13** (1988), no. 1, 1–31. (Alexander H. G. Rinnooy Kan) **89c:90048** 90B10 (90C05, 90C35)
- Cooper, Curtis N.** (with Kennedy, Robert E.) A partial asymptotic formula for the Niven numbers. *Fibonacci Quart.* **26** (1988), no. 2, 163–168. (Graham Lord) **89c:11036** 11B83 (11A25, 11B05)
- Cooper, Daryl** Automorphisms of free groups have finitely generated fixed point sets. *J. Algebra* **111** (1987), no. 2, 453–456. (Andrew Vince) **89a:20024** 20E05 (20E36)
- (with Pignataro, Thea) On the shape of Cantor sets. *J. Differential Geom.* **28** (1988), no. 2, 203–221. (Hermann Haase) **89k:58160** 58F12 (28A75, 54F45, 58F13)
- (with Thurston, W. P.) Triangulating 3-manifolds using 5 vertex link types. *Topology* **27** (1988), no. 1, 23–25. (Martin Scharlemann) **89d:57028** 57Q15
- Cooper, Fred** (with Ginocchio, Joseph N.; Wipf, Andreas) Derivation of the S-matrix using supersymmetry. *Phys. Lett. A* **129** (1988), no. 3, 145–147. (Summary) **89c:81030** 81C05
- Cooper, G. J.** On the existence of solutions for algebraically stable Runge-Kutta methods. *IMA J. Numer. Anal.* **6** (1986), no. 3, 325–330. (Summary) **89b:65110** 65L05
- Cooper, J. B.** ★ Saks spaces and applications to functional analysis. Second edition. North-Holland Mathematics Studies, 139. Notas de Matemática [Mathematical Notes], 116. North-Holland Publishing Co., Amsterdam-New York, 1987. x+372 pp. ISBN 0-444-70219-9 (E. Gerlach) **89b:46002** 46-02 (46A99, 46E99)
- Cooper, J. E.** (with Juang, J.-N.; Wright, J. R.) An eigensystem realization algorithm using data correlations (ERA/DC) for modal parameter identification. *Control Theory Adv. Tech.* **4** (1988), no. 1, 5–14. (Not in MR) **93B15** (93B30, 93C55)
- Cooper, Jeffery** The acoustic approximation for compressible flow in the presence of a surface undergoing small amplitude vibrations. *SIAM J. Math. Anal.* **19** (1988), no. 1, 60–69. (Denis Serre) **89d:35140** 35Q10 (76N10)
- Cooper, Martha C.** (with Milligan, Glenn W.) A study of standardization of variables in cluster analysis. *J. Classification* **5** (1988), no. 2, 181–204. (Not in MR) **62H30**
- Cooper, Necla Grant** see From cardinals to chaos, **89m:01133b**
- Cooper, Robin** Preliminaries to the treatment of generalized quantifiers in situation semantics. *Generalized quantifiers* (Lund, 1985), 73–91. *Stud. Linguist. Philos.*, 31, Reidel, Dordrecht-Boston, MA, 1987. (see **89m:03003**) **03B65**
- Cooper, Russel J.** (with McLaren, Keith R.) Functional forms in intertemporal duality. *Specification analysis in the linear model*, 197–216. *Internat. Lib. Econom.*, Routledge & Kegan Paul, London, 1987. (P. Kischka) **89c:90042** 90A16 (90C39)
- Cooper, Russell** Labor contracts and the role of monetary policy in an overlapping generations model. *J. Econom. Theory* **44** (1988), no. 2, 231–250. (Summary) **89d:90061** 90A16
- (with John, Andrew) Coordinating coordination failures in Keynesian models. *Quart. J. Econom.* **103** (1988), no. 3, 441–463. (Not in MR) **90A16**
- Cooper, S. Barry** (with Epstein, Richard L.) Complementing below recursively enumerable degrees. *Ann. Pure Appl. Logic* **34** (1987), no. 1, 15–32. (Michael Stob) **89f:03035** 03D25
- Enumeration reducibility using bounded information: counting minimal covers. *Z. Math. Logik Grundlag. Math.* **33** (1987), no. 6, 537–560. (Decheng Ding) **89a:03082** 03D30
- Cooper, S. Clement** (with Jones, William B.; Magnus, Arne) General T-fraction expansions for ratios of hypergeometric functions. *Appl. Numer. Math.* **4** (1988), no. 2–4, 241–251. (E. P. Merkes) **89c:33005** 33A30 (30B70)
- Cooper, Vanessa** (with Staniswalis, Joan G.) Kernel estimates of dose response. (French summary) *Biometrics* **44** (1988), no. 4, 1103–1119. (Not in MR) **62P10** (92A07)
- Cooper, W. W.** (with Charnes, A.; Golany, B.; Masters, J.) Optimal design modifications by geometric programming and constrained stochastic network models. *Internat. J. Systems Sci.* **19** (1988), no. 6, 825–844. (Summary) **89d:90240** 90C50 (90B15, 90C99)
- Cooperstein, Bruce N.** (with Cohen, Arjeh M.) The 2-spaces of the standard  $E_6(q)$ -module. Geometries and groups (Noordwijkerhout, 1986). *Geom. Dedicata* **25** (1988), no. 1–3, 467–480. (Ernie Shult) **89c:51013** 51E25 (20F29, 51B25)
- Copas, J. B.** Cross-validation shrinkage of regression predictors. *J. Roy. Statist. Soc. Ser. B* **49** (1987), no. 2, 175–183. (Summary) **89c:62114** 62J07
- Copeland, E.** (with Haws, D.; Kibble, T. W. B.; Mitchell, David; Turok, Neil) Monopoles connected by strings and the monopole problem. *Nuclear Phys. B* **298** (1988), no. 3, 445–457. (Summary) **89b:83100** 83F05 (81G25)
- Copernicus, Nicolaus** ★ Erster Entwurf seines Weltsystems. (German) [First draft of his world system] Sowie eine Auseinandersetzung Johannes Keplers mit Aristoteles über die Bewegung der Erde. (Together with a discussion between Johannes Kepler and Aristotle concerning the motion of the Earth) Dual Latin-German, Greek-German texts. Translated, edited, with a preface and commentary by Fritz Rossmann. *Wissenschaftliche Buchgesellschaft, Darmstadt*, 1986. 100 pp. ISBN 3-534-03336-1 (William R. Shea) **89m:01027** 01A40
- see also Hally, Fernand, **89c:01019**; Gurshtein, A. A., **89j:01009** and Zimmermann, Gunter, **89m:01030**
- Copestake, Kate** 1-genericity in the enumeration degrees. *J. Symbolic Logic* **53** (1988), no. 3, 878–887. (C. G. Jockusch, Jr.) **89c:03081** 03D30
- Coppens, Marc** On G. Martens' characterization of smooth plane curves. *Bull. London Math. Soc.* **20** (1988), no. 3, 217–220. (R. F. Lax) **89b:14048** 14H45 (14C20)
- Smooth curves having infinitely many linear systems  $g_d^1$ . *Bull. Soc. Math. Belg. Sér. B* **40** (1988), no. 2, 153–176. (R. F. Lax) **89c:14022** 14H45 (14C20)
- Coppersmith, Don** Methods and results in cryptography. *Applications of discrete mathematics* (Clemson, SC, 1986), 24–31. *SIAM, Philadelphia, PA*, 1988. (Yvo Desmedt) **89b:94044** 94A60 (11T71, 11Y16)
- (with Alon, Noga; Bergmann, E. E.; Odlyzko, A. M.) Balancing sets of vectors. *IEEE Trans. Inform. Theory* **34** (1988), no. 1, 128–130. (K. Seitz) **89j:94034** 94B05 (94A12)
- (with Raghavan, Prabhakar) Multidimensional on-line bin packing: algorithms and worst-case analysis. *Oper. Res. Lett.* **8** (1989), no. 1, 17–20. (Summary) **89c:68053** 68Q20
- Coppersmith, S. N.** Overdamped Frenkel-Kontorova model with randomness as a dynamical system: mode locking and derivation of discrete maps. *Phys. Rev. A* (3) **36** (1987), no. 7, 3375–3382. (Summary) **89i:70031** 70K40 (58F08, 58F13, 82A99)
- Coppi, Renato** Simultaneous analysis of a set of multidimensional contingency tables. *Data analysis and informatics, V* (Versailles, 1987), 431–439. North-Holland, Amsterdam-New York, 1988. (Summary) **89i:62089** 62H17
- Coppo, Barbara** (with Gombani, Andrea; Pavon, Michele) On Hankel-norm approximation of stationary increment processes. *Modelling, identification and robust control* (Stockholm, 1985), 307–323. North-Holland, Amsterdam-New York, 1986. (see **89b:93008**) **93B28**
- roelly-Coppoletta, Sylvie** see Roelly-Coppoletta, Sylvie
- Coquand, Thierry** (with Ehrhard, Thomas) An equational presentation of higher order logic. *Category theory and computer science* (Edinburgh, 1987), 40–56. *Lecture Notes in*

- Comput. Sci.*, 283, Springer, Berlin-New York, 1987. (From the introduction) **89k:03006** 03B15 (03B40, 68Q55)
- (with Huet, Gérard) The calculus of constructions. *Inform. and Comput.* **76** (1988), no. 2-3, 95–120. (R. P. Nederpelt) **89j:68096** 68Q55 (03B15, 03B35, 03B40, 03B70)
- Couquereaux, Robert** Comments about the geometry of nonlinear sigma models. *Internat. J. Modern Phys. A* **2** (1987), no. 6, 1763–1772. (David E. Betounes) **89f:81165** 81E99 (53C80, 58C25, 58E20, 58G11, 81E20)
- (with Jadczyk, Arkadiusz Z.) ★ Riemannian geometry, fiber bundles, Kaluza-Klein theories and all that... World Scientific Lecture Notes in Physics, 16. *World Scientific Publishing Co., Singapore*, 1988. xiv+345 pp. ISBN 9771-50-426-X; 9771-50-427-8 (Thomas Schücker) **89e:53108** 53C80 (22E45, 81G20, 83E15)
- Coquet, Jean** (with Liardet, Pierre) A metric study involving independent sequences. *J. Analyse Math.* **49** (1987), 15–53. (Daniel Berend) **89e:11043** 11K06 (11K35, 22D40, 28D05, 54H20)
- Corach, G.** (with Suárez, Fernando D.) Thin spectra and stable range conditions. *J. Funct. Anal.* **81** (1988), no. 2, 432–442. (Robin Harte) **89k:46061** 46H05
- (with McGowan, J.; Porta, Horacio) Some inequalities for the triangle. *Elem. Math.* **44** (1989), no. 1, 1–15. (H. W. Guggenheimer) **89k:51022** 51M05 (26D05, 52A40)
- Coray, D. F.** (with Tsfasman, M. A.) Arithmetic on singular Del Pezzo surfaces. *Proc. London Math. Soc.* (3) **57** (1988), no. 1, 25–87. (Noriko Yui) **89f:11083** 11G35 (11E04, 11E95, 11G25, 14J17, 14J20, 14J26)
- Corbett, Aaron B.** Suppression of chaos in 1-D maps. *Phys. Lett. A* **130** (1988), no. 4-5, 267–270. (Summary) **89g:58128** 58F13
- Corchón, Luis C.** Cost-prices with variable returns. *Metroeconomica* **39** (1988), no. 1, 93–99. (Summary) **89j:90042** 90A12 (90A14)
- Corclove, A.** (with Ghika, Gr.) Static solutions for the sigma-model coupled to gravity in the case of a compact space-like slice. *Rev. Roumaine Phys.* **32** (1987), no. 8, 827–835. (Kotik K. Lee) **89a:83043** 83C99 (53C80, 58E20)
- Corcos, G. M.** The role of cartoons in turbulence. *Perspectives in fluid mechanics (Pasadena, CA, 1985)*, 48–65, *Lecture Notes in Phys.*, 320, Springer, Berlin-New York, 1988. (see **89j:76005**) 76Fxx
- Cordani, B.** Quantization of the Kepler manifold. *Comm. Math. Phys.* **113** (1988), no. 4, 649–657. (Martin Kummer) **89f:81074** 81D07 (58F05, 58F06, 70F05)
- (with Fehér, L. Gy.; Horváth, P. A.) Monopole scattering spectrum from geometric quantisation. *J. Phys. A* **21** (1988), no. 12, 2835–2837. (Richard Montgomery) **89k:58310** 58G40 (53C80, 58F06, 81E20)
- (with Fehér, L. Gy.; Horváth, P. A.)  $O(4,2)$  dynamical symmetry of the Kaluza-Klein monopole. *Phys. Lett. B* **201** (1988), no. 4, 481–486. (L. M. Sokolowski) **89f:83084** 83E15 (81E20, 83C40)
- Cordaro, P.** On the range of the Lewy complex. *Comm. Partial Differential Equations* **13** (1988), no. 2, 131–221. (Mei Chi Shaw) **89c:32052** 32F20 (35N15, 58G05)
- (with Bergamasco, Adalberto P.; Hounie, J.) Global properties of a class of vector fields in the plane. *J. Differential Equations* **74** (1988), no. 2, 179–199. (Makhlof Derridj) **89h:58175** 58G05 (35A05)
- Corduneanu, Cristina** Tolerance limits for a distribution of Burr type. (Romanian. English summary) *Stud. Cerc. Mat.* **39** (1987), no. 6, 489–492. (Summary) **89f:62078** 62F25
- Cordero, Luis A.** (with Fernández, Marisa) Some compact solvmanifolds of  $G_2$ -coassociative type. *An. Univ. București Mat.* **36** (1987), 16–19. (Introduction) **89g:53075** 53C40 (53C25)
- (with Moreiras, B. R.) On some compact four-dimensional parallelizable nilmanifolds. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **1** (1987), no. 3, 343–350. (Mark J. Gotay) **89h:57015** 57R15 (58R10)
- (with Fernández, Marisa; Gray, Alfred) The Frölicher spectral sequence and complex compact nilmanifolds. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 17, 753–756. (Yusuke Sakane) **89c:32081** 32M10 (22E25, 53C30)
- (with Fernández, Marisa; de León, Manuel) Examples of compact complex manifolds with no Kähler structure. *Portugal. Math.* **44** (1987), no. 1, 49–62. (Elsa Abbena) **89f:32082** 53C15 (32C10, 32J99, 53C55)
- Cordero, P.** (with Hojman, S.) Symmetry transformations in quantum mechanics. (Italian and Russian summaries) *Nuovo Cimento B* (11) **100** (1987), no. 1, 1–15. (Frans Conrjijn) **89b:58229** 58G35 (81C99)
- Cordes, D.** (with Adams, Ernst Wilhelm) Test for uniform boundedness for dynamic problems admitting parameter and combination resonance. *Computational arithmetic*, 115–132, *Teubner, Stuttgart*, 1987. (Walter G. Kelley) **89c:34003** 34A10 (34A30, 34A34, 34C11, 65L05)
- (with Adams, Ernst Wilhelm; Lohner, Rudolf Josef) Enclosure of solutions of ordinary initial value problems and applications. *Discretization in differential equations and enclosures* (Weissig, 1986), 9–28, *Math. Res.*, 36, Akademie-Verlag, Berlin, 1987. (Eckehard Wagenführer) **89i:65068** 65L05 (65G10)
- Cordes, H. O.** (with Melo, S. T.) An algebra of singular integral operators with kernels of bounded oscillation, and application to periodic differential operators. *J. Differential Equations* **75** (1988), no. 2, 216–238. (A. S. Dynin) **89i:47088** 47G05 (34B25, 46L99, 47E05, 58B15)
- Cordier, Jean-Marc** (with Porter, Timothy) Maps between homotopy coherent diagrams. *Topology Appl.* **28** (1988), no. 3, 255–275. (A. J. Berrick) **89m:55008** 55P99 (18G55, 55U35)
- Córdoba, Antonio** ★ Lecciones de teoría de los números. (Spanish) [Lessons in number theory] Publicaciones del Departamento de Matemáticas, Universidad de Extremadura [Publications of the Mathematics Department of the University of Extremadura], 20. *Universidad de Extremadura, Facultad de Ciencias, Departamento de Matemáticas, Badajoz*, 1987. viii+155 pp. ISBN 84-600-5099-8 (Duncan A. Buell) **89b:11001** 11-01 (11M06, 11Nxx)
- (with Barceló, Juan Antonio) Band-limited functions:  $L^p$ -convergence. *Bull. Amer. Math. Soc. (N.S.)* **18** (1988), no. 2, 163–166. (Philip Heywood) **89c:42012** 42A38 (42B25, 44A15)
- La formule sommatoire de Poisson. (English summary) [The Poisson summation formula] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 8, 373–376. (Hans-Jürgen Glaeske) **89c:46059** 46F12
- Cordova, Jeffrey Q.** (with Pearson, Carl E.) On a modified streamline curvature method for the Euler equations. *Comm. Appl. Numer. Methods* **4** (1988), no. 3, 327–333. (Summary)
- 89h:76023** 76G20 (65P05, 76-08, 76J99)
- Corderil, R.** (with Dias da Silva, J. A.; Fonseca, Amélia) On the notion of transversal of a sum of matroids. *Portugal. Math.* **45** (1988), no. 3, 317–325. (András Recski) **89j:05027** 05B35
- Corduneanu, Adrian** A discrete integral inequality of the convolution type. (Romanian summary) *Bul. Inst. Politehn. Iași Sect. I* **33**(37) (1987), no. 1-4, 35–40. (B. G. Pachpatte) **89m:26031** 26D15
- Corduneanu, C.** Periodic solutions of certain integro-differential systems. *Libertas Math.* **7** (1987), 149–154. (Nicolae Luca) **89c:45016** 45J05
- Isaac J. Schoenberg. *Libertas Math.* **8** (1988), 3–10. (Editors) **89m:01000** 01A70
- Cordwell, William R.** (with Gruber, Ronald P.; Price, Richard H.; Matthews, Stephen M.; Wagner, Lawrence F.) The impossibility of a simple derivation of the Schwarzschild metric. *Amer. J. Phys.* **56** (1988), no. 3, 265–269. (Summary) **89b:83023** 83C15 (83A05)
- Cordy, Clifford B.** On the relationship between the external intersection condition and the intersection condition for path derivatives. *Real Anal. Exchange* **13** (1987/88), no. 2, 420–431. (Richard J. O'Malley) **89f:26003** 26A24
- Corsh, Josef** (with Goldman, Noreen) The effect of variability in the fertility schedule on numbers of kin. *Math. Population Stud.* **1** (1988), no. 2, 137–156. (Summary) **89g:92038** 92A15
- Cori, Robert** (with Sopena, Eric; Latteux, M.; Roos, Yves) 2-asynchronous automata. *Theoret. Comput. Sci.* **61** (1988), no. 1, 93–102. (Ernst-Erich Doberkat) **89m:68095** 68Q70
- see also STACS 88, **89b:68011**
- alonso y Coria, Alberto** see Alonso y Coria, Alberto
- Coriell, S. R.** (with McFadden, G. B.; Alexander, J. Iwan D.) Hydrodynamic and free boundary instabilities during crystal growth: the effect of a plane stagnation flow. *Comm. Pure Appl. Math.* **41** (1988), no. 5, 683–706. (D. A. Nield) **89f:76042** 76E15 (80A20)
- Corless, M. J.** (with Walcott, B. L.; Zak, S. H.) Comparative study of nonlinear state-observation techniques. *Internat. J. Control* **45** (1987), no. 6, 2109–2132. (Pramod Kumar Sharma) **89b:93027** 93B07 (93B25, 93B50, 93C10)
- (with Leitmann, G.) Deterministic control of uncertain systems. *Modelling and adaptive control (Sopron, 1986)*, 108–133, *Lecture Notes in Control and Inform. Sci.*, 105, Springer, Berlin-New York, 1988. (see **89c:93002**) 93D99
- see also Zeit, M., **89b:93028**
- Corlette, Kevin** Gauge theory and representations of Kähler groups. *Geometry of group representations (Boulder, CO, 1987)*, 107–124, *Contemp. Math.*, 74, Amer. Math. Soc., Providence, RI, 1988. (Robert J. Fisher, Jr.) **89k:32040** 32G05 (32L05, 53C05, 53C55, 58D17, 58E20)
- Flat G-bundles with canonical metrics. *J. Differential Geom.* **28** (1988), no. 3, 361–382. (John C. Wood) **89k:58066** 58E20 (32L99, 53C10)
- Corley, H. W.** Optimality conditions for maximizations of set-valued functions. *J. Optim. Theory Appl.* **58** (1988), no. 1, 1–10. (F. Giannessi) **89f:90134** 90C30 (26E25)
- Corli, A.** (with Cicognani, M.) Propagation of singularities for operators with constant coefficient hyperbolic-elliptic principal part. *Ann. Mat. Pura Appl.* (4) **147** (1987), 303–341. (Min You Qi) **89f:35009** 35A20 (35G05, 35L67, 35M05)
- Cornack, Donald E.** (with Vijayakumar, Sinnathurai) An invariant imbedding method for singular integral evaluation on finite domains. *SIAM J. Appl. Math.* **48** (1988), no. 6, 1335–1349. (Johannes Elschner) **89m:45004** 45E05 (65D30)
- Cornack, Gordon V.** (with Ryabko, B. Ya.; Horspool, R. Nigel) Comments to: "A locally adaptive data compression scheme" [Comm. ACM **29** (1986), no. 4, 320–330; MR 87e:68020] by J. L. Bentley, D. D. Sleator, R. E. Tarjan and V. K. Wei. *Comm. ACM* **30** (1987), no. 9, 792–794. (Editors) **89a:68045** 68P99 (94A29)
- Corn, David** (with Singerman, David) Regular hypermaps. *European J. Combin.* **9** (1988), no. 4, 337–351. (Marston Conder) **89e:05075** 05C10 (20B25, 57M15)
- Cornalba, Maurizio** On the locus of curves with automorphisms. (Italian summary) *Ann. Mat. Pura Appl.* (4) **149** (1987), 135–151. (R. F. Lax) **89b:14038** 14H10 (14H30)
- (with Harris, Joseph Daniel) Divisor classes associated to families of stable varieties, with applications to the moduli space of curves. *Ann. Sci. École Norm. Sup.* (4) **21** (1988), no. 3, 455–475. (Eckart Viehweg) **89j:14019** 14H10 (14D20)
- Cornes, Aurel** (with Loeb, Peter A.) On semiregular points of the Martin boundary. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 117–124. (Summary) **89m:31010** 31D05 (31C35)
- Cornell, D. G.** (with Kamula, P. A.) Extensions of permutation and interval graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 267–275. (Alan Tucker) **89e:05076** 05C10
- (with Conforti, Michele; Mahjoub, Ali Ridha)  $K_1$ -covers. II.  $K_1$ -perfect graphs. *J. Graph Theory* **11** (1987), no. 4, 569–584. (I. A. Klipker) **89i:05210** 05C70 (05C75, 68R10)
- Cornell, Gary** (with Rosen, Michael) The class group of an absolutely abelian  $l$ -extension. *Illinois J. Math.* **32** (1988), no. 3, 453–461. (Lindsay N. Childs) **89j:11017** 11R29
- (with Rosen, Michael) A note on the splitting of the Hilbert class field. *J. Number Theory* **28** (1988), no. 2, 152–158. (H. Yokoi) **89f:11156** 11R37
- see also Arithmetic geometry, **89b:14029**
- Cornell, John A.** (with Khuri, André I.) ★ Response surfaces. Designs and analyses. Statistics: Textbooks and Monographs, 81. *Marcel Dekker, Inc., New York; ASQC Quality Press, Milwaukee, WI*, 1987. xiv+405 pp. ISBN 0-8247-7653-4 (Anant M. Kshirsagar) **89d:62079** 62K99 (62-01)
- Cornes, Richard** (with Sandler, Todd) ★ The theory of externalities, public goods, and club goods. Reprint of the 1986 original. *Cambridge University Press, Cambridge-New York*, 1987. xii+303 pp. ISBN 0-521-30184-X; 0-521-31774-6 (Hiroaki Osana) **89g:90056** 90A14 (90-01)
- Cornier, Marianne** (with Gratias, Denis; Portier, Richard) Symmetries and beam reduction in the matrix formulation of the dynamical theory of fast electrons. *Acta Cryst. Sect. A* **44** (1988), no. 6, 789–798. (Summary) **89j:81244** 81F99 (82A55, 82A60)
- Cornille, Henri** Nouvelles solutions exactes à 1 + 1 dimensions de modèles discrétisés de l'équation de Boltzmann. (English summary) [New exact solutions in 1 + 1 dimensions of discrete models of the Boltzmann equation] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **304** (1987), no. 18, 1091–1095. (François Golse) **89m:82031** 82A40
- Exact  $(2 + 1)$ -dimensional solutions for two discrete velocity Boltzmann models with four independent densities. *J. Phys. A* **20** (1987), no. 16, L1063–L1067. (Stefano L.



- Paveri-Fontana) **89f:82033** 82A40 (76P05)
- Exact  $1+1$  dimensional solutions of the discrete velocity Broadwell-Boltzmann model. *Phys. Lett. A* **125** (1987), no. 5, 253–257. (Carlo Cercignani) **89c:82032** 82A40 (35C05, 76P05)
  - Construction of positive  $(2+1)$ -dimensional solutions for three discrete Boltzmann models. *Some topics on inverse problems* (Montpellier, 1987), 104–133, *World Sci. Publishing, Singapore*, 1988. (Carlo Cercignani) **89j:82035** 82A40 (35Q20, 76P05)
  - Exact solutions for discrete kinetic models with ternary collisions. *J. Math. Phys.* **29** (1988), no. 7, 1667–1677. (Gert Due Billing) **89f:82034** 82A40 (76P05)
  - Construction of positive exact  $(2+1)$ -dimensional shock wave solutions for two discrete Boltzmann models. *J. Statist. Phys.* **52** (1988), no. 3–4, 897–949. (Klaus Dressler) **89j:82036** 82A40 (76L05, 76P05)
  - Exact solutions for the discrete Boltzmann models with specular reflection. *Lett. Math. Phys.* **16** (1988), no. 3, 245–250. (Carlo Cercignani) **89i:82034** 82A40 (76P05)
- Cornille, Patrick The twin paradox and the Hafele and Keating experiment. *Phys. Lett. A* **131** (1988), no. 3, 156–162. (Reza Mansouri) **89h:83002** 83A05
- Cornish, W. H. ★ Antimorphic action. Categories of algebraic structures with involutions or anti-endomorphisms. R & E Research and Exposition in Mathematics, 12. *Heldermann Verlag, Berlin*, 1986. xx+189 pp. ISBN 3-88538-212-1 (T. S. Blyth (Zbl 609:18003)) **89a:18009** 18C10 (06D99, 20M50)
- (with Noor, A. S. A.) Around a neutral element in a nearlattice. *Comment. Math. Univ. Carolin.* **28** (1987), no. 2, 199–210. (M. Kolibri) **89b:06003** 06A12 (06B10)
- Cornu, Françoise (with Jancovici, Bernard) On the two-dimensional Coulomb gas. *J. Statist. Phys.* **49** (1987), no. 1–2, 33–56. (Nicolas Angelescu) **89d:82113** 82A67
- (with Jancovici, Bernard; Blum, Lesser) The two-dimensional one-component plasma in a doubly periodic background: exact results. *J. Statist. Phys.* **50** (1988), no. 5–6, 1221–1243. (W. I. Skrypnik) **89i:82056** 82A45 (82A05)
  - Two-dimensional models for an electrode with adsorption sites. *J. Statist. Phys.* **54** (1989), no. 3–4, 681–706. (Summary) **89m:82066** 82A65 (82A05, 82A45)
- Cornu, Philippe (with Monna, Gilbert) Variétés de Poisson et structures associées. (English summary) [Poisson manifolds and associated structures] *Bull. Soc. Math. France* **115** (1987), no. 3, 241–255. (George Virsik) **89b:58067** 58F05 (53C10, 53C12, 53C15)
- Cornuejols, Gérard (with Conforti, Michele) An algorithmic framework for the matching problem in some hypergraphs. *Networks* **17** (1987), no. 4, 365–386. (Summary) **89f:05130** 05C65 (05C70, 90C10)
- General factors of graphs. *J. Combin. Theory Ser. B* **45** (1988), no. 2, 185–198. (Mirko Klivánek) **89i:05211** 05C70 (68Q25)
  - (with Ahn, Sang; Cooper, Colin; Frieze, A. M.) Probabilistic analysis of a relaxation for the  $k$ -median problem. *Math. Oper. Res.* **13** (1988), no. 1, 1–31. (Alexander H. G. Rinnooy Kan) **89c:90048** 90B10 (90C05, 90C35)
- Coron, François (with Golse, François; Sulem, C.) A classification of well-posed kinetic layer problems. *Comm. Pure Appl. Math.* **41** (1988), no. 4, 409–435. (A. Elcrat) **89g:76038** 76P05 (82A40)
- Coron, J.-M. (with Bahri, Abbas) Équation de Yamabe sur un ouvert non contractile. (English and Italian summaries) [The Yamabe equation on a noncontractible open set] *Rend. Istit. Mat. Univ. Trieste* **18** (1986), no. 1, 1–15. (Sadakazu Aizawa) **89a:35081** 35J65
- On the singularities of harmonic maps from a domain in  $\mathbb{R}^3$  into  $S^2$ . *Séminaire sur les équations aux dérivées partielles 1986–1987*, Exp. No. XII, 15 pp., *École Polytech., Palaiseau*, 1987. (G. Tóth) **89c:58029** 58E20
  - (with Bahri, Abbas) On a nonlinear elliptic equation involving the critical Sobolev exponent: the effect of the topology of the domain. *Comm. Pure Appl. Math.* **41** (1988), no. 3, 253–294. (J. V. A. Gonçalves) **89c:35053** 35J65 (58E05, 58G30)
- Chargoy-Corona, J. see Chargoy-Corona, J.
- Corones, James (with Karlsson, Anders) Transient direct and inverse scattering for inhomogeneous viscoelastic media: obliquely incident SH mode. *Inverse Problems* **4** (1988), no. 3, 643–660. (Summary) **89m:73016** 73D25 (73D50, 73F15)
- Corovel, I. Relations between the homomorphisms of  $(m+1)$ -semigroups and the homomorphisms of their  $(n+1)$ -ary extensions. *Proceedings of the Conference on Algebra (Romanian) (Timisoara, 1986)*, 11–16, *Univ. Timisoara, Timisoara*, 1987. (Wieslaw A. Dudek) **89m:20085** 20N15
- Corradi, Keresztelyi (with Szabó, Sándor) Some special cases of Keller's conjecture. *J. Pure Appl. Algebra* **49** (1987), no. 3, 247–252. (Michael E. Mays) **89b:20113** 20K01 (20D60)
- (with Szabó, Sándor) Keller's conjecture for certain  $p$ -groups. *J. Algebra* **119** (1988), no. 1, 213–217. (Gernot Stroth) **89m:20022** 20D60 (20K25)
- Corradi, Leone (with Poggi, Carlo) Estimates of the post-shakedown response of hardening structures by means of simplified computations. (Italian summary) *Meccanica—J. Ital. Assoc. Theoret. Appl. Mech.* **22** (1987), no. 4, 193–202. (N. Cristescu) **89g:73021** 73E99
- Correa, Rafael (with Cominetti, Roberto) A useful characterization of Clarke derivatives. *Differential Integral Equations* **1** (1988), no. 4, 381–390. (Barbara Kaskosz) **89g:49022** 49A52 (58C20, 90C48)
- Correa Rodriguez, Jairo Some Ricci-zero infinitesimal deformations of the standard Euclidean metric. (Russian) *Webs and quasigrassians*, 124–127, *Kalinin. Gos. Univ., Kalinin*, 1988. (A. Kh. Khakimov) **89i:53018** 53B20
- Corrias, A. (with Navarro, G.; Seatzu, Sebastiano; Utreras, Florencio I.) Two-phase regularisation method in Hilbert spaces: description and application to EXAFS problems. *Inverse Problems* **4** (1988), no. 2, 449–470. (V. V. Vasin) **89k:45001** 45B05 (49D15, 65R20, 92A07)
- Corrigan, G. (with Salimbeni, D.; Sanna, S.; Usai, G.) An optimal control problem in forest management. *Appl. Math. Modelling* **12** (1988), no. 3, 328–332. (Summary) **89e:92043** 92A17 (49C05, 90A30, 93C75)
- Corrigan, E. (with Hollowood, T. J.) A bosonic representation of the twisted string emission vertex. *Nuclear Phys. B* **303** (1988), no. 1, 135–148. (Peter Bouwknegt) **89h:81175** 81E99 (17B10, 81E30)
- (with Hollowood, T. J.) Comments on the algebra of straight, twisted and intertwining vertex operators. *Nuclear Phys. B* **304** (1988), no. 1, 77–107. (Peter Bouwknegt) **89h:81176** 81E99 (17B67, 81D15, 81E30)
  - (with Hollowood, T. J.) A string construction of a commutative nonassociative algebra related to the exceptional Jordan algebra. *Phys. Lett. B* **203** (1988), no. 1–2, 47–51. (Aleksandar R. Bogojević) **89i:81106** 81E99 (17A30, 17C40, 81E30)
- Corriveau, Jean Enumeration of balanced tournament designs. *Ars Combin.* **25** (1988), 93–105. (A. Rosa) **89d:05046** 05B30 (05C70)
- Corsi, Giovanna Weak logics with strict implication. *Z. Math. Logik Grundlag. Math.* **33** (1987), no. 5, 389–406. (Jan Bernert) **89c:03015** 03B20 (03B45)
- Quantified modal logic with rigid terms. *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 3, 251–259. (Marcus Kracht) **89d:03013** 03B45
- Corsini, Piergiulio Finite canonical hypergroups with partial scalar identities. (Italian. English summary) *Rend. Circ. Mat. Palermo (2)* **36** (1987), no. 2, 205–219. (Umberto Cerruti) **89j:20114** 20N99
- Cortazar, Carmen (with Elgueta, Manuel) Large time behaviour of solutions of a nonlinear reaction-diffusion equation. *Houston J. Math.* **13** (1987), no. 4, 487–497. (Zi Qian Yan) **89d:35092** 35K57 (35B40)
- balbás de la Corte, A. see Balbás de la Corte, A.
- Lazo Cortés, Manuel see Lazo Cortés, Manuel
- Cortet, J.-C. (with Arnal, D.) Déformations algébriques sur le dual  $g^*$  d'une algèbre de Lie. [Algebraic deformations on the dual  $g^*$  of a Lie algebra] *Actes du colloque Jean Braconnier* (Lyon, 1986), 147–162, *Publ. Dép. Math. Nouvelle Sér. B*, 87–1, *Univ. Claude-Bernard, Lyon*, 1987. (Alberto Medina) **89a:17019** 17B65 (58F06)
- Cortey-Dumont, Philippe Sur l'analyse numérique des équations de Hamilton-Jacobi-Bellman. (English summary) [On the numerical analysis of the Hamilton-Jacobi-Bellman equations] *Math. Methods Appl. Sci.* **9** (1987), no. 2, 198–209. (Francesco Zirilli) **89d:65065** 65K10 (49A29, 49C20, 65N30)
- (with Conrad, Francis) Nonlinear eigenvalue problems in elliptic variational inequalities: some results for the maximal branch. I. Approximation of solutions. *Numer. Funct. Anal. Optim.* **9** (1987), no. 9–10, 1059–1090. (Igor Bock) **89h:35134** 35J85 (49A29)
  - (with Conrad, Francis) Nonlinear eigenvalue problems in elliptic variational inequalities: some results for the maximal branch. II. Estimates for the free boundaries and "stability" results. *Numer. Funct. Anal. Optim.* **9** (1987), no. 9–10, 1091–1114. (Igor Bock) **89h:35135** 35J85 (49A29)
- Cortois, J. (with Zinoun, A.) Algebra of operators for a system of composite and elementary particles. *J. Math. Phys.* **28** (1987), no. 9, 2187–2191. (Vladimir K. Dobrev) **89h:81090** 81D99 (17B70)
- hing Cortón, Rosina see Hing Cortón, Rosina
- Cortzen, Barbara (with Small, L. W.) Finite extensions of rings. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1058–1062. (E. A. Whelan) **89f:16020** 16A38 (16A21, 16A33, 16A56)
- Corwin, Lawrence Approximation of prime elements in division algebras over local fields and unitary representations of the multiplicative group. *Pacific J. Math.* **130** (1987), no. 2, 223–251. (Ernst-Wilhelm Zink) **89c:11173** 11S45 (11S37, 22E50)
- (with Greenleaf, F. P.; Grelaud, G.) Direct integral decompositions and multiplicities for induced representations of nilpotent Lie groups. *Trans. Amer. Math. Soc.* **304** (1987), no. 2, 549–583. (Hidenori Fujiwara) **89b:22013** 22E25 (22E27)
  - (with Greenleaf, F. P.) Complex algebraic geometry and calculation of multiplicities for induced representations of nilpotent Lie groups. *Trans. Amer. Math. Soc.* **305** (1988), no. 2, 601–622. (Gail Ratcliff) **89f:22012** 22E27 (22E45)
- Corwin, Stephen P. The number of indecomposable sequences over an Artin algebra of finite type. *Proc. Amer. Math. Soc.* **105** (1989), no. 2, 301–304. (Zygmunt Pogorzały) **89f:16040** 16A64 (16A35, 16A46)
- Cosgrove, Christopher M. (with Clarkson, Peter A.) Painlevé analysis of the nonlinear Schrödinger family of equations. *J. Phys. A* **20** (1987), no. 8, 2003–2024. (Summary) **89c:35136** 35Q20 (58F37)
- Cosler, Richard A. (with Dalton, Dan R.) Presenting information under conditions of uncertainty and availability: some recommendations. *Behavioral Sci.* **33** (1988), no. 4, 272–281. (Not in MR) 90B50
- Cosmadakis, Stavros S. The word and generator problems for lattices. *Inform. and Comput.* **77** (1988), no. 3, 192–217. (Rodney G. Downey) **89b:03069** 03D15 (03D40, 06B99, 68Q25)
- Cosnard, Michel (with Moumida, Driss; Goues Ch., Eric; de St. Pierre, Thierry) Dynamical behavior of a neural automaton with memory. *Complex Systems* **2** (1988), no. 2, 161–176. (Steven Matthyse) **89h:68109** 68Q80 (58F21, 68Q75, 92A09)
- (with Goues Ch., Eric; Moumida, Driss) Bifurcation structure of a discrete neuronal equation. *Discrete Appl. Math.* **21** (1988), no. 1, 21–34. (F. Ventriglia) **89k:92013** 92A09 (39A10, 58F40)
- Cosner, Chris (with Schaefer, Philip W.) On the development of functionals which satisfy a maximum principle. *Appl. Anal.* **26** (1987), no. 1, 45–60. (Siegfried Carl) **89a:35037** 35B50 (35B45)
- (with Cantrell, Robert Stephen) On the steady-state problem for the Volterra-Lotka competition model with diffusion. *Houston J. Math.* **13** (1987), no. 3, 337–352. (Mario Primicerio) **89d:92052** 92A15 (35J99, 35K99)
  - Spectrum, generalized spectrum, and eigenfunctions for second order elliptic systems. *Maximum principles and eigenvalue problems in partial differential equations* (Knoxville, TN, 1987), 94–110, *Pitman Res. Notes Math. Ser.*, 175, *Longman Sci. Tech., Harlow*, 1988. (Yoshimi Saito) **89m:35161** 35P05 (35J25)
  - Bifurcation from higher eigenvalues in nonlinear elliptic equations: continua that meet infinity. *Nonlinear Anal.* **12** (1988), no. 3, 271–277. (J. López Gómez) **89d:58027** 58E07 (34B25, 35B32, 35J60)
  - (with Schmitt, Klaus) On the geometry of level sets of positive solutions of semilinear elliptic equations. *Nonlinear Partial Differential Equations Conference* (Salt Lake City, UT, 1986). *Rocky Mountain J. Math.* **18** (1988), no. 2, 277–286. (Filomena Pacella) **89h:35020** 35B05 (35J65, 58E05, 58G99)
  - (with Lenhart, Suzanne M.; Prottopescu, V.) Transport equations with second-order differential collision operators. *SIAM J. Math. Anal.* **19** (1988), no. 4, 797–813. (Janusz Mika) **89h:35283** 35Q20 (35K55, 35M05, 82A70)
- Cossey, John (with Bryce, R. A.; Ormerod, E. A.) Fitting classes after Dark. *Group theory* (Singapore, 1987), 293–321, *de Gruyter, Berlin-New York*, 1989. (T. O. Hawkes) **89m:20017** 20D10 (20F19)
- Costa, Antonio F. (with González-Gascón, Francisco; González-López, A.) On codimension one submersions of Euclidean spaces. *Invent. Math.* **93** (1988), no. 3, 545–555. (Yi-Sui Sun) **89h:58093** 58F10 (34C35, 58F05, 70G99)
- Costa, B. V. (with Silva, N. P.; Pires, A. S. T.) Statistical mechanics of a quasiperiodic one-dimensional magnetic chain. *Z. Phys. B* **71** (1988), no. 4, 491–493. (Summary)

- 89f:82076** 82A68 (82A30)  
**Costa, David Goldstein** (with Liao, Guo Jun) On removability of a singular submanifold for weakly harmonic maps. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **35** (1988), no. 2, 321–344. (J. Eells) **89g:58054** 58E20
- Costa, Douglas L.** Zero-dimensionality and the  $GE_2$  of polynomial rings. *J. Pure Appl. Algebra* **50** (1988), no. 3, 223–229. (L. N. Vaserstein) **89b:20106** 20H25 (13F07)
- (with Keller, Gordon E.) On the normal subgroups of  $SL(2, A)$ . *J. Pure Appl. Algebra* **53** (1988), no. 3, 201–226. (L. N. Vaserstein) **89b:20069** 20H05
- da Costa, F. A.** (with de Oliveira, M. J.; Salinas, S. R.) Asymmetric Baxter phase in the symmetric Ashkin-Teller model. *Phys. Rev. B* (3) **36** (1987), no. 13, 7163–7165. (Summary) **89b:82104** 82A68
- Costa, Gerardo** (with Stirling, Colin) Weak and strong fairness in CCS. *Inform. and Comput.* **73** (1987), no. 3, 207–244. (Summary) **89g:68013** 68Q10 (68Q55)
- da Costa, J.** see **da Costa, José Manuel N.**
- Costa, Jesus Adjalma, Jr.** Plate vibrations using BEM. *Appl. Math. Modelling* **12** (1988), no. 1, 78–85. (N. Gass) **89a:65166** 65N30 (73K12, 73K25)
- da Costa, José Manuel N.** (with Hall, G. S.) Affine collineations in space-time. *J. Math. Phys.* **29** (1988), no. 11, 2465–2472. (A. H. Bokhari) **89m:83038** 83C40 (53C80, 83C20)
- Costa, Max H. M.** (with Han, Te Sun) Broadcast channels with arbitrarily correlated sources. *IEEE Trans. Inform. Theory* **33** (1987), no. 5, 641–650. (Kaicheng Lu) **89f:94013** 94A40 (94A29)
- da Costa, Newton C. A.** (with Puga, Leila Z.) Deontic logic and law. (Portuguese) *Bol. Soc. Paran. Mat.* (2) **8** (1987), no. 2, 141–154. (David Makinson) **89f:03011** 03B45 (03B60)
- (with Chuquai, Rolando) Interpretations and models in science. (Portuguese) *Bol. Soc. Paran. Mat.* (2) **8** (1987), no. 2, 257–275. (Yehuda Rav) **89d:00013** 00A25 (00A71, 03A05)
- (with de Alcantara, Luiz Paulo) The scientific work of A. I. Arruda. *Methods and applications of mathematical logic* (Campinas, 1985), 1–15, *Contemp. Math.*, **69**, Amer. Math. Soc., Providence, RI, 1988. (Editors) **89c:01052** 01A70 (03-03)
- (with Puga, Leila Z.) On the imaginary logic of N. A. Vasiliev. *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 3, 205–211. (Mieczyslaw Omyla) **89c:03038** 03B60 (03-03)
- Costa, O. L. V.** (with Davis, M. H. A.) Approximations for optimal stopping of a piecewise-deterministic process. *Math. Control Signals Systems* **1** (1988), no. 2, 123–146. (L. C. Thomas) **89h:90249** 90C40 (60G40)
- Costabel, M.** Symmetric methods for the coupling of finite elements and boundary elements (invited contribution). *Boundary elements IX, Vol. 1* (Stuttgart, 1987), 411–420, *Comput. Mech., Southampton*, 1987. (Weimin Han) **89f:65068** 65N30
- (with Lusikka, I.; Saranen, J.) Comparison of three boundary element approaches for the solution of the clamped plate problem. *Boundary elements IX, Vol. 2* (Stuttgart, 1987), 19–34, *Comput. Mech., Southampton*, 1987. (Summary) **89f:73004** 73-08 (73C02, 73K10)
- Principles of boundary element methods. *Finite elements in physics* (Lausanne, 1986), 243–274, *North-Holland, Amsterdam-New York*, 1987. (Hartmut Strese) **89a:65167** 65N30 (65N99)
- (with Stephan, E. P.) Coupling of finite elements and boundary elements for transmission problems of elastic waves in  $\mathbb{R}^2$ . *Advanced boundary element methods* (San Antonio, Tex., 1987), 117–124, *Springer, Berlin-New York*, 1988. (Summary) **89c:73025** 73D25 (73-08)
- A symmetric method for the coupling of finite elements and boundary elements. *The mathematics of finite elements and applications, VI* (Uxbridge, 1987), 281–288, *Academic Press, London-New York*, 1988. (see **89c:65004**) 65N30
- (with Stephan, E. P.) Coupling of finite elements and boundary elements for inhomogeneous transmission problems in  $\mathbb{R}^2$ . *The mathematics of finite elements and applications, VI* (Uxbridge, 1987), 289–296, *Academic Press, London-New York*, 1988. (see **89c:65004**) 65N30 (73-08)
- (with Ervin, V. J.; Stephan, E. P.) On the convergence of collocation methods for Symm's integral equation on open curves. *Math. Comp.* **51** (1988), no. 183, 167–179. (R. S. Anderssen) **89h:65218** 65R20 (45E99, 45L10)
- (with Stephan, E. P.) Strongly elliptic boundary integral equations for electromagnetic transmission problems. *Proc. Roy. Soc. Edinburgh Sect. A* **109** (1988), no. 3–4, 271–296. (R. C. MacCamy) **89k:35066** 35J25 (35Q99, 45F15, 78A25)
- Boundary integral operators on Lipschitz domains: elementary results. *SIAM J. Math. Anal.* **19** (1988), no. 3, 613–626. (Summary) **89h:35090** 35J25 (45K05, 45P05)
- Costabel, Pierre** L'atomisme, face cachée de la condamnation de Galilée? [Atomism: the hidden side of the condemnation of Galileo?] *C. R. Acad. Sci. Sér. Gén. Vie Sci.* **4** (1987), no. 4, 349–365. (William R. Shea) **89d:01019** 01A45
- see also **Bernoulli, Johann I.** **89k:01039**
- Costa de Beauregard, O.** On the zigzagging causality EPR model: answer to Vigier and coworkers and to Sutherland. *Found. Phys.* **17** (1987), no. 8, 775–785. (Summary) **89f:81009** 81B05
- Sur le couplage entre une particule de spin zéro de Proca et le champ gravitationnel d'Einstein. (English summary) [On the coupling of a spin zero Proca particle and Einstein's gravitational field] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **306** (1988), no. 12, 747–749. (Carl Brans) **89j:83006** 83C10 (81D25)
- Sur le couplage entre une particule de spin  $\frac{1}{2}$  de Dirac ou spin 1 de Kemmer et le champ gravitationnel d'Einstein. (English summary) [On the coupling of a spin  $\frac{1}{2}$  Dirac or a spin 1 Kemmer particle with Einstein's gravitational field] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **307** (1988), no. 5, 457–459. (Philippe-A. Dionne) **89m:83006** 83C05
- On the zigzagging causality model of EPR correlations and on the interpretation of quantum mechanics. *Found. Phys.* **18** (1988), no. 9, 913–938. (Summary) **89m:81011** 81B05
- Costa e Silva, Maria C.** (with Micali, Artibano; Campos, Tânia M. M.; Ferreira, Silvia M. M.) Dérivations dans les algèbres gamétiques. III. (English summary) [Derivations in gametic algebras. III] *Linear Algebra Appl.* **113** (1989), 79–99. (H. Gonsior) **89k:17059** 17D92
- Costantini, Cristina** (with Calzolari, Antonella; Marchetti, Federico) A confidence interval for Monte Carlo methods with an application to simulation of obliquely reflecting Brownian motion. *Stochastic Process. Appl.* **29** (1988), no. 2, 209–222. (B. L. Granovskii) **89h:65011** 65C05 (60J65)
- Costantini, Paolo** Co-monotone interpolating splines of arbitrary degree—a local approach. *SIAM J. Sci. Statist. Comput.* **8** (1987), no. 6, 1026–1034. (N. Papamichael) **89a:65014** 65D05 (65D07)
- An algorithm for computing shape-preserving interpolating splines of arbitrary degree. *J. Comput. Appl. Math.* **22** (1988), no. 1, 89–136. (Summary) **89c:65165** 65V05 (65D07)
- da Costa Werlang, Sérgio Ribeiro** (with Dow, James) The consistency of welfare judgments with a representative consumer. *J. Econom. Theory* **44** (1988), no. 2, 269–280. (Summary) **89c:90018** 90A10
- (with Tan, Tommy Chin-Chiu) The Bayesian foundations of solution concepts of games. *J. Econom. Theory* **45** (1988), no. 2, 370–391. (Theo Driessen) **89j:90288** 90D10 (62C10)
- Costé, Alain** (with Lust-Piquard, Françoise) Opérateurs sur un espace  $L^1$ . [Operators on an  $L^1$ -space] *Colloq. Math.* **51** (1987), 43–66. (P. Saphar) **89j:47021** 47B38
- Coste, J.** (with Peyraud, J.) Wave propagation in a one-dimensional quasiperiodic medium: localization and intermittency. *Phys. Rev. B* (3) **37** (1988), no. 8, 3979–3995. (Summary) **89b:82146** 82A99 (76Q05, 78A45)
- saloff-Coste, L.** see **Saloff-Coste, L.**
- Coste, M.** (with Roy, Marie-Françoise) Thom's lemma, the coding of real algebraic numbers and the computation of the topology of semi-algebraic sets. *J. Symbolic Comput.* **5** (1988), no. 1–2, 121–129. (Jean-Jacques Risler) **89c:12002** 12D10 (14G30)
- Costello, Daniel J., Jr.** (with Rouanne, Marc) A lower bound on the minimum Euclidean distance of trellis codes. *Coding theory and applications* (Cachan, 1986), 130–140, *Lecture Notes in Comput. Sci.*, **311**, Springer, Berlin-New York, 1988. (see **89c:94004**) 94B10 (94A14)
- (with Herro, Mark A.; Hu, Lai Zhao) Capacity and cutoff rate calculations for a concatenated coding system. *IEEE Trans. Inform. Theory* **34** (1988), no. 2, 212–222. (Not in MR) **94B35** (94A40, 94B70)
- see also *Coding techniques and coding theory*, **89j:94002**
- Costello, Patricia S.** see **David, H. A.**, (Not in MR)
- Costenoble, Steven R.** Unoriented bordism for odd-order groups. *Topology Appl.* **28** (1988), no. 3, 277–287. (R. E. Stong) **89a:57048** 57R85
- The structure of some equivariant Thom spectra. *Trans. Amer. Math. Soc.* **315** (1989), no. 1, 231–254. (Donald M. Davis) **89m:57038** 57R85 (55P42)
- Coster, Daniel C.** (with Cheng, Ching-Shui) Minimum cost trend-free run orders of fractional factorial designs. *Ann. Statist.* **16** (1988), no. 3, 1188–1205. (S. K. Tharthare) **89m:62085** 62K15 (62K05)
- Coster, Matthijs** Generalisation of a congruence of Gauss. *J. Number Theory* **29** (1988), no. 3, 300–310. (T. Metsänkylä) **89i:11005** 11A07 (11B65, 11S80)
- Costovici, Gh.** (with Popovici, Elena; Popovici, Constantin Ioan) The calculation of sums of harmonic series of even power. (Romanian summary) *Bul. Inst. Politehn. Iasi Sec. I* **33** (37) (1987), no. 1–4, 9–11. (Anton Hut'a) **89m:65024** 65D20 (40A25)
- Rings and algebras obtained from other algebraic structures. (Romanian summary) *Bul. Inst. Politehn. Iasi Sec. I* **34** (38) (1988), no. 1–4, 1–3. (S. S. Page) **89m:17005** 17A99 (16A45)
- Cote, Louis J.** (with Gleser, Leon Jay; Gupta, Shanti S.; Puri, Prem; Samuels, Stephen) K. C. Sreedharan Pillai 1920–1985. *Advances in multivariate statistical analysis*, vii, xv–xvi, *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (Editors) **89c:01053** 01A70
- Coti Zelati, Vittorio** Errata to: "Perturbations of second order Hamiltonian systems via Morse theory" [Boll. Un. Mat. Ital. C (6) **4** (1985), no. 1, 307–322; MR 87d:58058]. *Boll. Un. Mat. Ital. C* (6) **5** (1986), no. 1, 455 (1987). (Editors) **89h:58068** 58F05 (58E05, 58F22)
- (with Ambrosetti, Antonio) Critical points with lack of compactness and singular dynamical systems. *Ann. Mat. Pura Appl.* (4) **149** (1987), 237–259. (Michel Willem) **89c:58023** 58E05 (34C35, 58F22)
- (with Ambrosetti, Antonio) Solutions périodiques sans collision pour une classe de potentiels de type keplerien. (English summary) [Noncollision periodic orbits for a class of Keplerian potentials] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 19, 813–815. (Andrea Milani) **89h:70004** 70F05 (34C25, 70M05)
- (with Ambrosetti, Antonio) Oscillations non linéaires pour des problèmes de la mécanique céleste. (English summary) [Nonlinear oscillations for a class of problems arising in celestial mechanics] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 11, 569–571. (Summary) **89i:70036** 70K99 (58F05, 58F22, 70F05, 70F15)
- Dynamical systems with effective-like potentials. *Nonlinear Anal.* **12** (1988), no. 2, 209–222. (Tong Ren Ding) **89c:58034** 58F05 (58F22, 70H05)
- Cottlar, Mischa** (with Sadosky, Cora) Prolongements des formes de Hankel généralisées en formes de Toeplitz. (English summary) [Toeplitz extensions of generalized Hankel forms: the discrete and continuous cases] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 5, 167–170. (Jeffrey R. Butz) **89a:47036** 47B35 (47A20)
- (with Sadosky, Cora) Toeplitz liftings of Hankel forms. *Function spaces and applications* (Lund, 1986), 22–43, *Lecture Notes in Math.*, **1302**, Springer, Berlin-New York, 1988. (Rodrigo Arocena) **89k:47039** 47B35 (42A70, 42A85, 47A20)
- Cotsakis, S.** (with Barrow, John D.) Inflation and the conformal structure of higher-order gravity theories. *Phys. Lett. B* **214** (1988), no. 4, 515–518. (Summary) **89j:83058** 83D05 (83F05)
- Cotsiolis, Athanase** (with Oskolkov, A. P.; Akhmatov, M. M.) The equations of motion of linear viscoelastic fluids and the equations of filtration of fluids with delay. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **163** (1987), *Kraev. Zadachi Mat. Fiz. i Smezhn. Vopr. Teor. Funktsii* **19**, 132–137, 189. (From the introduction) **89f:35188** 35Q20 (76A10, 76S05)
- (with Karazeeva, N. A.; Oskolkov, A. P.) A dynamical system generated by the equations of the motion of Oldroyd fluids of order  $L$ . (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **164** (1987), *Differentsial'naya Geom. Gruppy Li i Mekh. IX*, 46–53, 197. (Summary) **89c:76022** 76A10 (58D25, 58F12)
- Cotta-Ramusino, P.** (with Bonora, L.; Rinaldi, M.; Stasheff, James) The evaluation map in field theory, sigma-models and strings. I. *Comm. Math. Phys.* **112** (1987), no. 2, 237–282. (Akira Asada) **89d:53120** 53C80 (58D30, 58E20, 81E20, 81E30)
- (with Bonora, L.; Rinaldi, M.) Generalized Wess-Zumino terms and global anomalies in string sigma models. *Proceedings of the Johns Hopkins Workshop on Current Problems in Particle Theory*, 11, *Frontiers in Particle Theory*, 225–247, *World Sci. Publishing, Singapore*, 1988. (Aleksandar R. Bogojević) **89h:81141** 81E20 (58G25, 81E30, 81E40)



- (with Bonora, L.; Rinaldi, M.) Generalized Wess-Zumino terms. *Renormalization of quantum field theories with nonlinear field transformations* (Tegense, 1987), 232–239, *Lecture Notes in Phys.*, 303, Springer, Berlin-New York, 1988. (see **89g:81058**) 81E20 (81E30)
- (with Bonora, L.; Rinaldi, M.; Stasheff, James) The evaluation map in field theory, sigma-models and strings. II. *Comm. Math. Phys.* **114** (1988), no. 3, 381–437. (Akira Asada) **89d:53121** 53C80 (58D30, 58E20, 81E20, 81E30)
- (with Bonora, L.; Bregola, M.; Martellini, M.) Virasoro-type algebras and BRST operators on Riemann surfaces. *Phys. Lett. B* **205** (1988), no. 1, 53–56. (Summary) **89d:17020** 17B65 (32G15, 81E99)
- Cottet, Georges-Henri** Convergence of a vortex in cell method for the two-dimensional Euler equations. *Math. Comp.* **49** (1987), no. 180, 407–425. (Max D. Gunzburger) **89b:65303** 65P05 (35Q10, 76-08, 76N15)
- A new approach for the analysis of vortex methods in two and three dimensions. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **5** (1988), no. 3, 227–285. (Alberto Valli) **89m:35177** 35Q10 (76-08, 76C05)
- Cottrell, M.** Stability and tractability in associative memory networks. *Biol. Cybernet.* **58** (1988), no. 2, 129–139. (F. Ventriglia) **89d:92022** 92A09
- Couch, W. E.** (with Torrence, R. J.) Progressing waves on spherical spacetimes. *Gen. Relativity Gravitation* **20** (1988), no. 4, 343–358. (J. D. Finley III) **89k:83045** 83C50 (58G16, 58G17, 83C20)
- (with Torrence, R. J.) Note on Kantowski-Sachs spacetimes. *Gen. Relativity Gravitation* **20** (1988), no. 6, 603–606. (Jan Novotný) **89i:83024** 83C15
- Coughlin, James P.** (with Baran, Robert H.) Stochastic models of information obsolescence. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 760–765. (see **89d:00007**) 90B25
- Cougnard, Jean** Conditions nécessaires de monogénéité. Application aux extensions cycliques de degré premier  $l \geq 5$  d'un corps quadratique imaginaire. [Necessary conditions for monogeneity. Application to cyclic extensions of prime degree  $l \geq 5$  of an imaginary quadratic field] *J. London Math. Soc.* (2) **37** (1988), no. 1, 73–87. (Teruo Takeuchi) **89c:11157** 11R20 (11R33)
- Congo-Pinto, M. V.** The construction of  $B^1$  in terms of vertex operators and a Lie-admissible non associative algebra. *J. Math. Phys.* **29** (1988), no. 2, 275–280. (Vladimir K. Dobrev) **89m:17039** 17B67 (81D15, 81E30)
- Coulbeck, B.** (with Brdyš, M.; Orr, C. H.; Rance, J. P.) A hierarchical approach to optimized control of water distribution systems. II. Lower-level algorithm. *Optimal Control Appl. Methods* **9** (1988), no. 2, 109–126. (Not in MR) 90A30 (49D29, 93A13, 93C73)
- Coulhon, Thierry** Suites d'opérateurs à puissances bornées dans les espaces ayant la propriété de Dunford-Pettis. [Sequences of operators with bounded powers in spaces having the Dunford-Pettis property] *Séminaire d'Analyse Fonctionnelle* 1984/1985, 141–153, *Publ. Math. Univ. Paris VII*, 26, Univ. Paris VII, Paris, 1986. (D. G. Tacon) **89d:47002** 47A05
- (with Lamberton, D.) Régularité  $L^p$  pour les équations d'évolution. [ $L^p$ -regularity for evolution equations] *Séminaire d'Analyse Fonctionnelle* 1984/1985, 155–165, *Publ. Math. Univ. Paris VII*, 26, Univ. Paris VII, Paris, 1986. (E. Barvinek) **89c:34100** 34G10
- Coullard, Collette R.** (with Bixby, Robert E.) Adjoints of binary matroids. *European J. Combin.* **9** (1988), no. 2, 139–147. (Jiří Tuma) **89d:05051** 05B35
- Couillet, P.** (with Repaux, D.) Models of pattern formation from a singularity theory point of view. *Instabilities and nonequilibrium structures* (Valparaíso, 1985), 179–195, *Math. Appl.*, 33, Reidel, Dordrecht-Boston, MA, 1987. (D. R. J. Chillingworth) **89g:58148** 58F14 (34C35, 35K57, 58C27)
- (with Gil, L.; Lega, J.) Transitions in systems far from equilibrium: a Ginzburg-Landau approach. *Chaos and complexity* (Torino, 1987), 99–112, *World Sci. Publishing*, Singapore, 1988. (Iuliana Oprea) **89m:76036** 76E15 (58F13, 80A50)
- (with Spiegel, E. A.) Evolution equations for extended systems. *Energy stability and convection* (Capri, 1986), 22–43, *Pitman Res. Notes Math. Ser.*, 168, Longman Sci. Tech., Harlow, 1988. (Introduction) **89c:76057** 76E30 (76E15)
- (with Elphick, Christian; Repaux, D.) Dynamics of codimension-one defects. *Propagation in systems far from equilibrium* (Les Houches, 1987), 185–193, *Springer Ser. Synergetics*, 41, Springer, Berlin-New York, 1988. (Editors) **89k:58176** 58F13 (82A99)
- Coulmy, G.** (with Luu, T. S.) Design problem relating to a profile or a cascade of profiles and construction of orthogonal networks using the Riemann surfaces for the multimorph singularities. *Advanced boundary element methods* (San Antonio, Tex., 1987), 223–232, Springer, Berlin-New York, 1988. (G. T. Symm) **89c:65035** 65E05
- Coulon, J. L.** (with Coulon, Josette) Is the category  $JTF$  a topos? Mathematics and fuzziness. Part I (Palma, 1985). *Fuzzy Sets and Systems* **27** (1988), no. 1, 11–19. (Kimmo I. Rosenthal) **89b:18003** 18B25 (03E72, 03G30)
- (with Coulon, Josette) Morphisms in the category  $JTF^{\infty}$ . Weak classifier of monomorphisms. *Portugal. Math.* **45** (1988), no. 1, 29–47. (Kimmo I. Rosenthal) **89b:18004** 18B25 (03E72, 03G30)
- Coulon, Josette** (with Coulon, J. L.) Is the category  $JTF$  a topos? Mathematics and fuzziness. Part I (Palma, 1985). *Fuzzy Sets and Systems* **27** (1988), no. 1, 11–19. (Kimmo I. Rosenthal) **89b:18003** 18B25 (03E72, 03G30)
- (with Coulon, J. L.) Morphisms in the category  $JTF^{\infty}$ . Weak classifier of monomorphisms. *Portugal. Math.* **45** (1988), no. 1, 29–47. (Kimmo I. Rosenthal) **89b:18004** 18B25 (03E72, 03G30)
- Coulson, T. J.** (with Sharma, C. S.) Quantum theory in real Hilbert space. *Nuovo Cimento B* (11) **100** (1987), no. 3, 417–420. (M. J. Mącznyński) **89f:81023** 81B10 (46N05)
- Coulton, Patrick** An invariant formula for orthogonal distributions. *Ann. Global Anal. Geom.* **6** (1988), no. 1, 47–53. (A. P. Stone) **89m:58011** 58A30
- Coupet, Bernard** Construction de disques analytiques et applications. (English summary) [Construction of analytic discs and applications] *C. R. Acad. Sci. Paris Sér. I Math.* **304** (1987), no. 14, 427–430. (R. Michael Range) **89a:32033** 32H99 (32D99)
- Régularité de fonctions holomorphes sur des wedges. [Regularity of holomorphic functions on wedges] *Canad. J. Math.* **40** (1988), no. 3, 532–545. (Burglind Jörické) **89m:32011** 32A40 (32E30)
- Le dual des fonctions holomorphes intégrables sur un domaine strictement pseudo-convexe. (English summary) [The dual of the space of integrable holomorphic functions in a strictly pseudoconvex domain] *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 493–501. (Steven R. Bell) **89c:32034** 32H10 (46E15, 46J15)
- Courant, Ted** (with Weinstein, Alan) Beyond Poisson structures. *Action hamiltoniennes de groupes. Troisième théorème de Lie* (Lyon, 1986), 39–49, *Travaux en Cours*, 27, Hermann, Paris, 1988. (Richard Montgomery) **89b:58054** 58F05 (17B65)
- Courcelle, Bruno** A representation of graphs by algebraic expressions and its use for graph rewriting systems. *Graph grammars and their application to computer science* (Warrenton, VA, 1986), 112–132, *Lecture Notes in Comput. Sci.*, 291, Springer, Berlin-New York, 1987. (see **89b:68009**) 68Q50 (05C99)
- On context-free sets of graphs and their monadic second-order theory. *Graph grammars and their application to computer science* (Warrenton, VA, 1986), 133–146, *Lecture Notes in Comput. Sci.*, 291, Springer, Berlin-New York, 1987. (see **89b:68009**) 68Q50 (03B15, 03B25, 03D05, 05C99)
- Proofs of partial correctness for iterative and recursive computations. *Logic colloquium '85* (Orsay, 1985), 89–110, *Stud. Logic Found. Math.*, 122, North-Holland, Amsterdam-New York, 1987. (Introduction) **89g:68045** 68Q60 (03B70, 68Q50)
- (with Bauderon, Michel) Graph expressions and graph rewritings. *Math. Systems Theory* **20** (1987), no. 2–3, 83–127. (Stephen L. Bloom) **89f:68038** 68Q50 (05C75, 08B05, 68R05)
- (with Gallier, Jean H.) Decidable subcases of the equivalence problem for recursive program schemes. (French summary) *RAIRO Inform. Théor. Appl.* **21** (1987), no. 3, 245–286. (From the summary) **89j:68054** 68Q15 (03B70, 68Q55)
- An axiomatic definition of context-free rewriting and its application to NLC graph grammars. *Theoret. Comput. Sci.* **55** (1987), no. 2–3, 141–181. (Dirk Janssens) **89c:68071** 68Q50 (03B25, 03D05)
- An axiomatic definition of context-free rewriting and its application to NLC graph grammars. *STACS 88* (Bordeaux, 1988), 237–247, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (Summary) **89c:68070** 68Q50 (03D05, 68Q45)
- Courcoubet, C. A.** (with Baccelli, F.; Reiman, Martin I.) Construction of the stationary regime of queues with locking. *Stochastic Process. Appl.* **26** (1987), no. 2, 257–265. (M. Dal Cin) **89g:60277** 60K25 (68M20)
- Cournet, Antoine-Augustin** see Krüger, Lorenz, **89f:01036**
- Cousineau, G.** (with Curien, P.-L.; Mauny, M.) The categorical abstract machine. *Sci. Comput. Programming* **8** (1987), no. 2, 173–202. (G. Berry) **89a:68147** 68Q55 (03B40, 03B70, 68Q05)
- Coussy, Olivier** Un modèle de viscoélasticité confinée en mécanique de la rupture. Propagation subcritique. (English summary) [A small-scale viscoelastic model in fracture mechanics. Subcritical growth] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **302** (1986), no. 2, 53–56. (Summary) **89j:73088** 73M05 (73F99)
- Coutinho, F. A. B.** (with Perez, J. Fernando; Malta, C. P.) A lower bound for the ground-state energy of many particles moving in one dimension. *J. Phys. A* **21** (1988), no. 8, 1847–1856. (M. Combes) **89f:81232** 81F05 (35P15, 81F10)
- Coutinho, S. C.** (with Holland, M. P.) Module structure of rings of differential operators. *Proc. London Math. Soc.* (3) **57** (1988), no. 3, 417–432. (Marie-Paule Malliavin) **89i:32021** 32C38 (16A19, 16A54, 17B35)
- Coutinho-Filho, Maurício D.** (with Nemirovsky, Adolfo M.) Packing flexible polymer chains on a lattice. *Phys. Rev. A* (3) **39** (1989), no. 6, 3120–3129. (Summary) **89m:82053** 82A51 (82A41, 82A67)
- Coutiris, Nicole** (with Monavon, Arnault) Nonlinear plate theory: dimensional analysis and asymptotic formulation of the large scale problem. *Internat. J. Engrg. Sci.* **26** (1988), no. 11, 1189–1215. (Summary) **89j:73045** 73K10
- Coutsias, Evangelos A.** (with Kazarinoff, Nicholas D.) On Cornu spirals. Disorder, self-similarity, and Jacobi's  $\theta_3(v, \tau)$ . *Bifurcation: analysis, algorithms, applications* (Dortmund, 1986), 139–152, *Internat. Schriftenreihe Numer. Math.*, 79, Birkhäuser, Basel-Boston, MA, 1987. (From the text) **89d:58084** 58F13 (11F27, 11L03, 58F08)
- Couty, Raymond** (with Akbar-Zadeh, Hassan) Transformations projectives des variétés munies d'une connexion métrique. (English summary) [Projective transformations of manifolds equipped with a metric connection] *Ann. Mat. Pura Appl.* (4) **148** (1987), 251–275. (Jean Wouafou Kanga) **89d:53056** 53C05 (53C21)
- Coveney, P. V.** Some superoperator identities in the time-dependent formulation of nonequilibrium statistical mechanics. *Acad. Roy. Belg. Bull. Cl. Sci.* (5) **72** (1986), no. 12, 500–524. (B. H. Lavenda) **89g:82032** 82A35
- Statistical mechanics of a large dynamical system interacting with an external time-dependent field: generalised correlation subdynamics. *Phys. A* **143** (1987), no. 3, 507–534. (Robert Alicki) **89b:82012** 82A05 (82A30)
- Cover, J. A.** (with Hartz, Glenn A.) Space and time in the Leibnizian metaphysics. *Noûs* **22** (1988), no. 4, 493–519. (Not in MR) 01A45 (00A25)
- Cover, Thomas M.** (with Csizsár, I.; Choi, Byoung Seon) Conditional limit theorems under Markov conditioning. *IEEE Trans. Inform. Theory* **33** (1987), no. 6, 788–801. (M. Iosifescu) **89c:60074** 60J10 (60F99, 62E20, 62M99)
- (with Algoet, Paul H.) Asymptotic optimality and asymptotic equipartition properties of log-optimum investment. *Ann. Probab.* **16** (1988), no. 2, 876–898. (Lorenzo Peccati) **89b:90025** 90A09 (93C55, 94A15)
- (with Algoet, Paul H.) A sandwich proof of the Shannon-McMillan-Breiman theorem. *Ann. Probab.* **16** (1988), no. 2, 899–909. (Summary) **89c:94011** 94A17 (28D20, 60F15)
- (with Barron, Andrew R.) A bound on the financial value of information. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part I, 1097–1100. (Summary) **89k:90016** 90A09
- (with Bell, Robert) Game-theoretic optimal portfolios. *Management Sci.* **34** (1988), no. 6, 724–733. (Summary) **89c:90013** 90A09
- (with Thomas, Joy A.) Determinant inequalities via information theory. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 3, 384–392. (Thomas M. Cover) **89k:15028** 15A45 (15A15)
- see also **Open problems in communication and computation**, **89c:94003**
- Čović, V.** On the first integrals of rheonomic holonomic mechanical systems. *Z. Angew. Math. Mech.* **67** (1987), no. 5, T416–T419. (From the text) **89c:70022** 70F20
- (with Lukačević, M.) Jourdain's principle as a principle of least constraint. *Z. Angew. Math. Mech.* **68** (1988), no. 5, T452–T453. (Zhong-heng Guo) **89g:70012** 70H30 (70F20)
- Covington, Jacinta** A universal structure for  $N$ -free graphs. *Proc. London Math. Soc.* (3) **58** (1989), no. 1, 1–16. (Michael Albert) **89m:03028** 03C65 (05C75)
- Cowan, Richard** A bivariate exponential distribution arising in random geometry. *Ann. Inst. Statist. Math.* **39** (1987), no. 1, 103–111. (Franz Retz) **89c:62031** 62E10 (62M99)

- Cowell, R. G. (with Wright, F. J.) Computer algebraic tools for applications of catastrophe theory. *The physics of structure formation* (Tübingen, 1986), 402-415, Springer Ser. Synergetics, 37, Springer, Berlin-New York, 1987. (Jean-Jacques Gervais) **89k:58043** 58C28 (68Q40)
- Cowen, Carl C. Linear fractional composition operators on  $H^2$ . *Integral Equations Operator Theory* 11 (1988), no. 2, 151-160. (Warren R. Wogen) **89b:47044** 47B38 (47B35)
- Hyponormality of Toeplitz operators. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 809-812. (Sheldon Axler) **89f:47038** 47B35 (47B20)
- Cowen, Michael J. Automorphisms of Grassmannians. *Proc. Amer. Math. Soc.* 106 (1989), no. 1, 99-106. (Martin A. Guest) **89k:14089** 14M15 (32M10)
- Cowen, Tyler (with High, Jack) Time, bounded utility, and the St. Petersburg paradox. *Theory and Decision* 25 (1988), no. 3, 219-223. (Summary) **89m:90172** 90D05 (90A10)
- Normative population theory. *Soc. Choice Welf.* 6 (1989), no. 1, 33-43. (Not in MR) 90A08 (90D30, 92A25)
- Cowin, Stephen C. Form adaptation of individual biological structures to mechanical stress. *Science on form* (Sakura, 1985), 353-362, Reidel, Dordrecht-Boston, MA, 1987. (see **89g:82013**) 92A06 (92A09)
- Cowley, Stephen J. (with Page, Michael A.) On the rotating-fluid flow near the rear stagnation point of a circular cylinder. *J. Fluid Mech.* 194 (1988), 79-99. (Summary) **89m:76028** 76D10
- Cowling, Michael On isomorphisms of algebras of operators. *Miniconference on operator theory and partial differential equations* (North Ryde, 1986), 11-20, Proc. Centre Math. Anal. Austral. Nat. Univ., 14, Austral. Nat. Univ., Canberra, 1986. (Pierre Eymard) **89c:22013** 22D35 (46L10)
- (with Disney, Shaun) Oscillatory integrals. *Miniconference on harmonic analysis and operator algebras* (Canberra, 1987), 45-54, Proc. Centre Math. Anal. Austral. Nat. Univ., 15, Austral. Nat. Univ., Canberra, 1987. (C. Carton-Lebrun) **89g:42026** 42B10 (58G15)
- (with Mauceri, Giancarlo) Oscillatory integrals and Fourier transforms of surface carried measures. *Trans. Amer. Math. Soc.* 304 (1987), no. 1, 53-68. (Summary) **89e:42013** 42B10 (42B25)
- Rigidity, von Neumann algebras, and semisimple groups. *Miniconferences on harmonic analysis and operator algebras* (Canberra, 1987), 51-57, Proc. Centre Math. Anal. Austral. Nat. Univ., 16, Austral. Nat. Univ., Canberra, 1988. (From the text) **89g:22013** 22E30 (22D25, 46L10, 46L55)
- On the characters of unitary representations. *J. Austral. Math. Soc. Ser. A* 45 (1988), no. 1, 62-65. (Satoshi Kawakami) **89e:22009** 22D10 (22D25)
- (with Price, John F.; Sitarum, Alladi) A qualitative uncertainty principle for semisimple Lie groups. *J. Austral. Math. Soc. Ser. A* 45 (1988), no. 1, 127-132. (Rebecca Herb) **89d:43005** 43A30 (22E30)
- (with Haagerup, Uffe; Howe, Roger E.) Almost  $L^2$  matrix coefficients. *J. Reine Angew. Math.* 387 (1988), 97-110. (Rebecca Herb) **89e:22008** 22D10 (22E46)
- see also Conference: Harmonic analysis and operator algebras, **89g:00009** and Miniconference: Harmonic Analysis and Operator Algebras, **89b:00024**
- Cox, David A. Generic Torelli and infinitesimal variation of Hodge structure. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 235-246, Proc. Sympos. Pure Math., 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Sheldon H. Katz) **89d:14014** 14D20 (14C30, 14D05, 32G13)
- Quadratic reciprocity: its conjecture and application. *Amer. Math. Monthly* 95 (1988), no. 5, 442-448. (Not in MR) 11A15
- Cox, David Roxbee Interaction. (French summary) With discussion and a reply by the author. *Internat. Statist. Rev.* 52 (1984), no. 1, 1-31. (Summary) **89b:62118** 62J10
- (with Barndorff-Nielsen, O. E.; Reid, N.) The role of differential geometry in statistical theory. (French summary) *Internat. Statist. Rev.* 54 (1986), no. 1, 83-96. (Javad Behboodani) **89b:62001** 62A99 (01A65, 53A55)
- (with Oakes, David) ★ Анализ данных типа времени жизни. (Russian) [Analysis of survival data] Translated from the English by O. V. Seleznev. Translation edited and with a preface by Yu. K. Belyaev. Математико-Статистические Методы за рубежом. [Mathematical-Statistical Methods Abroad] "Finansy i Statistika", Moscow, 1988. 192 pp. ISBN 5-279-00059-0 (Editors) **89i:62163** 62N05
- (with Solomon, P. J.) On testing for serial correlation in large numbers of small samples. *Biometrika* 75 (1988), no. 1, 145-148. (Not in MR) 62H20
- A note on design when response has an exponential family distribution. *Biometrika* 75 (1988), no. 1, 161-164. (Not in MR) 62K99
- (with Isham, Valerie) A simple spatial-temporal model of rainfall. *Proc. Roy. Soc. London Ser. A* 415 (1988), no. 1849, 317-328. (Summary) **89b:86004** 86A35 (60G55, 92A90)
- (with Rodriguez-Iturbe, I.; Isham, Valerie) A point process model for rainfall: further developments. *Proc. Roy. Soc. London Ser. A* 417 (1988), no. 1853, 283-298. (Summary) **89i:86022** 86A99 (60G55)
- Cox, Dennis D. (with Koh, Eunmee; Wahba, Grace; Yandell, Brian S.) Testing the (parametric) null model hypothesis in (semiparametric) partial and generalized spline models. *Ann. Statist.* 16 (1988), no. 1, 113-119. (Wilfried Grossmann) **89f:62037** 62G05 (62F03)
- Approximation of method of regularization estimators. *Ann. Statist.* 16 (1988), no. 2, 694-712. (Lajos Horvath) **89f:62038** 62G05 (47A50, 65J10)
- Approximation of least squares regression on nested subspaces. *Ann. Statist.* 16 (1988), no. 2, 713-732. (I. Guttman) **89e:62076** 62J02
- Cox, E. A. (with Reynolds, D. W.) Periodic solutions of an integrodifferential equation modelling resonant sloshing. *IMA J. Appl. Math.* 38 (1987), no. 3, 243-253. (Summary) **89k:76011** 76B10 (45J05, 47H15, 76B15)
- Cox, Gertrude Mary see Nichols, Maryjo, (**89b:01071**)
- Cox, J. Theodore (with Griffiths, David) Recent results for the stepping stone model. *Percolation theory and ergodic theory of infinite particle systems* (Minneapolis, Minn., 1984-1985), 73-83, *IMA Vol. Math. Appl.*, 8, Springer, New York-Berlin, 1987. (K. Fleischmann (Zbl 650.115)) **89f:60118** 60K35 (92A15)
- Some limit theorems for voter model occupation times. *Ann. Probab.* 16 (1988), no. 4, 1559-1569. (Maury D. Bramson) **89d:60251** 60K35
- (with Bramson, Maury; Griffiths, David) Occupation time large deviations of the voter model. *Probab. Theory Related Fields* 77 (1988), no. 3, 401-413. (T. M. Liggett) **89c:60116** 60K35 (60F10)
- Cox, M. A. A. (with Cox, T. F.) Multidimensional scaling on the sphere. *COMPSTAT 1988* (Copenhagen, 1988), 323-328, *Physica, Heidelberg*, 1988. (see **89i:62004**) 62H99
- Cox, M. G. Data approximation by splines in one and two independent variables. *The state of the art in numerical analysis* (Birmingham, 1986), 111-138, *Inst. Math. Appl. Conf. Ser. New Ser.*, 9, Oxford Univ. Press, New York, 1987. (K. Jetter) **89a:65017** 65D07
- Advances in reliable numerical computation: a summary. *Bull. Inst. Math. Appl.* 24 (1988), no. 7-8, 104-110. (Summary) **89b:65007** 65-06 (65-06)
- Cox, P. H. (with Clavelli, L.; Harms, B.) Operatorial Chan-Paton factors. *Phys. Rev. D* (3) 36 (1987), no. 12, 3747-3754. (Tsou Sheng Tsun) **89e:81140** 81E99 (81E30)
- (with Clavelli, L.; Harms, B.) Finiteness of lower-dimensional open-string theories. *Phys. Rev. Lett.* 61 (1988), no. 7, 787-790. (Summary) **89f:81164** 81E99 (81E30)
- Cox, Raymond G. (with Koch, Donald L.; Brenner, Howard; Brady, John F.) The effect of order on dispersion in porous media. *J. Fluid Mech.* 200 (1989), 173-188. (Summary) **89m:76063** 76S05 (76R50, 82A42, 82A57)
- Cox, T. F. (with Cox, M. A. A.) Multidimensional scaling on the sphere. *COMPSTAT 1988* (Copenhagen, 1988), 323-328, *Physica, Heidelberg*, 1988. (see **89i:62004**) 62H99
- Coxeter, H. S. M. Coloured symmetry. *M. C. Escher: art and science* (Rome, 1985), 15-33, North-Holland, Amsterdam-New York, 1986. (see **89m:00011**) 52A45 (01A70, 20H15, 51M20)
- Alicia Boole Stott (1860-1940). *Women of mathematics*, 220-224, Greenwood, Westport, CT, 1987. (see **89b:01071**) 01A70
- Regular and semiregular polyhedra. *Shaping space* (Northampton, Mass., 1984), 67-79, *Design Sci. Collect.*, Birkhäuser Boston, Boston, MA, 1988. (see **89b:52016**) 52A25
- Regular and semi-regular polytopes. III. *Math. Z.* 200 (1988), no. 1, 3-45. (J. S. Frame) **89m:52005** 52A25 (20H15, 51M20)
- Escher's lizards. Escher. Dual English-French text. *Structural Topology* No. 15 (1988), 23-30. (see **89k:52002**) 01A60 (01A30, 52A45)
- see also Foster, Ronald M., **89c:05067** and Escher: art and science, **89m:00011**
- Coyne, G. V. Newton's controversy with Leibniz over the invention of the calculus. *Newton and the new direction in science* (Cracow, 1987), 109-115, *Specola Vaticana, Vatican City*, 1988. (see **89b:01014**) 01A45
- see also Newton and the new direction in science, **89b:01014**
- Czarna, C. Some properties of three-phase displacement. (Romanian) *Stud. Cerc. Mec. Apl.* 46 (1987), no. 6, 491-497. (Summary) **89e:76076** 76S05 (76T05)
- Cozzens, Margaret B. (with Leibowitz, Rochelle) Multidimensional scaling and threshold graphs. *J. Math. Psych.* 31 (1987), no. 2, 179-191. (Fumiko Samejima) **89a:92069** 92A25 (06A99)
- (with Wu, Shu Shih Y.) On minimum critically  $n$ -edge-connected graphs. *SIAM J. Algebraic Discrete Methods* 8 (1987), no. 4, 659-669. (Felix Lazebnik) **89a:05099** 05C40 (05C35, 05C75, 68Q25, 68R10)
- (with Kelleher, Laura L.) Dominating sets in social network graphs. *Math. Social Sci.* 16 (1988), no. 3, 267-279. (K. B. Reid) **89j:02075** 92A20 (05C99)
- (with Roberts, Fred S.) On dimensional properties of graphs. *Graphs Combin.* 5 (1989), no. 1, 29-46. (Hiroshi Machara) **89m:05103** 05C99
- van de Craats, J. Hexagons and conic sections. (Dutch) *Nieuw Tijdschr. Wisk.* 75 (1987), no. 2, 55-68. (H. S. M. Coxeter) **89f:51012** 51A20 (51A30)
- Crabb, Michael C. On the stable splitting of  $U(n)$  and  $\Omega U(n)$ . *Algebraic topology, Barcelona, 1986*, 35-53, *Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (M. Mahowald) **89d:55019** 55P35
- (with Knapp, Karlheinz) On the codegree of negative multiples of the Hopf bundle. *Proc. Roy. Soc. Edinburgh Sect. A* 107 (1987), no. 1-2, 87-107. (Lionel Schwartz) **89d:55042** 55R25 (55R50)
- (with Knapp, Karlheinz) Central Adams operators. *Manuscripta Math.* 60 (1988), no. 2, 131-137. (Haynes R. Miller) **89g:55015** 55P42 (55N15)
- (with Mitchell, S. A.) The loops on  $U(n)/O(n)$  and  $U(2n)/Sp(n)$ . *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 1, 95-103. (Andrew Pressley) **89h:55019** 55P42 (22E65, 55P35)
- Crăciun, Ion A. Fundamental solutions in micropolar thermoelasticity. (French summary) *Mem. Sect. Ştiinţ. Acad. Repub. Soc. România Ser. IV* 8 (1985), no. 1, 65-83 (1987). (Ranjit S. Dhaliwal) **89f:73075** 73U05
- Reciprocity theorem in the linear thermoelasticity theory of the solids with microstructure having a symmetric stress tensor. (French summary) *Mem. Sect. Ştiinţ. Acad. Repub. Soc. România Ser. IV* 8 (1985), no. 1, 85-95 (1987). (Ranjit S. Dhaliwal) **89f:73076** 73U05
- On fundamental solutions in the plane micropolar thermoelasticity. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* 35 (1987), no. 9-10, 489-503. (Summary) **89c:73089** 73U05
- Craggs, R. On the algebra of handle operations in 4-manifolds. *Topology Appl.* 30 (1988), no. 3, 237-252. (Frank Quinn) **89k:57034** 57N13 (20F05, 57R65)
- Craig, I. J. D. (with Sneyd, A. D.) An alternating-direction implicit scheme for parabolic equations with mixed derivatives. *Comput. Math. Appl.* 16 (1988), no. 4, 341-350. (Summary) **89g:65124** 65M99
- Craig, William Lane (with Andr ka, Hajnal; N meti, I.) A system of logic for partial functions under existence-dependent Kleene equality. *J. Symbolic Logic* 53 (1988), no. 3, 834-839. (Stephen L. Bloom) **89i:03055** 03C05 (03D20, 08R05)
- Craig, Robert (with Akamatsu, Norio; Sakou, Nobuaki) Fast direct interpolation for computer graphics applications. *Systems Comput. Japan* 19 (1988), no. 3, 98-111. (Summary) **89b:65028** 65D05
- Craik, A. D. D. A note on the exact solutions for nonconservative three-wave resonance. *Proc. Roy. Soc. Edinburgh Sect. A* 106 (1987), no. 3-4, 205-207. (David J. Kaup) **89a:35178** 35Q20 (35C05)
- ★ Wave interactions and fluid flows. *Cambridge Monographs on Mechanics and Applied Mathematics*. Cambridge University Press, Cambridge-New York, 1988. xii+322 pp. ISBN 0-521-26740-4; 0-521-36829-4 (K. K. Puri) **89f:76001** 76-02 (35Q10, 35Q20, 76B15, 76D33, 76Exx, 76F10, 76V05)
- A class of exact solutions in viscous incompressible magnetohydrodynamics. *Applied mathematics, fluid mechanics, astrophysics* (Cambridge, MA, 1987), 46-48, *World Sci. Publishing, Singapore*, 1988. (see **89f:76002**) 76W05
- A class of exact solutions in viscous incompressible magnetohydrodynamics. *Proc. Roy. Soc. London Ser. A* 417 (1988), no. 1852, 235-244. (S. K. Trehan) **89f:76094** 76W05



- (with Moroz, I. M.) Temporal evolution of interacting waves in nonconservative systems: some exact solutions. *Wave Motion* 10 (1988), no. 5, 443–452. (F. Ursell) **89f:76016** 76B15 (58F14)
- Craine, R. E.** (with Beevers, C. E.) Asymptotic stability in nonlinear elastic materials with dissipation. *J. Elasticity* 19 (1988), no. 2, 101–110. (Joseph J. Roseman) **89f:73015** 73C50 (73C35)
- Craioveanu, Mircea** (with Puta, Mircea) Cohomology classes and foliated manifolds. *Nonlinear analysis*, 137–159, *World Sci. Publishing, Singapore*, 1987. (Raymond Barre) **89f:58006** 58A25 (57R30, 58A12)
- (with Puta, Mircea) Some remarks concerning the basic Laplacian. *An. Univ. Timisoara Ser. Stiint. Mat.* 25 (1987), no. 2, 3–14. (Jean Woufo Kanga) **89i:58004** 58A14 (53C12)
- Cram, G.-Martin** The multiplicative group of a local skew field as Galois group. *J. Reine Angew. Math.* 381 (1987), 51–60. (Carl Riehm) **89b:11099** 11S85 (11S20, 11S37)
- On the field of character values of finite solvable groups. *Arch. Math. (Basel)* 51 (1988), no. 4, 294–296. (Alexandre Turull) **89e:20020** 20C15
- Crama, Y.** (with Hammer, P. L.; Jaumard, Brigitte; Simeone, B.) Product form parametric representation of the solutions to a quadratic Boolean equation. (French summary) *RAIRO Rech. Oper.* 21 (1987), no. 4, 287–305. (S. Rudeanu) **89e:90141** 90C09 (03G05, 05C99, 06E30)
- Cramer, J. S.** ★ Econometric applications of maximum likelihood methods. *Cambridge University Press, Cambridge-New York*, 1986. xiv+208 pp. ISBN 0-521-25317-9 (Jan R. Magnus) **89c:62189** 62P20 (62F10)
- priss-Crampe, Sibylla** see **Priss-Crampe, Sibylla**
- Crampton, M.** Alternative Lagrangians in particle dynamics. *Differential geometry and its applications (Brno, 1986)*, 1–12, *Math. Appl. (East European Ser.)*, 27, *Reidel, Dordrecht-Boston, MA*, 1987. (Klaus Horneffer) **89b:58069** 58F05 (53B50, 58F07, 70H35)
- (with Sarlet, W.; Cantrijn, F.) Pseudosymmetries, Noether's theorem and the adjoint equation. *J. Phys. A* 20 (1987), no. 6, 1365–1376. (Summary) **89b:58187** 58F37 (58F05, 70H35)
- (with Prince, G. E.) Alternative Lagrangians for spherically symmetric potentials. *J. Math. Phys.* 29 (1988), no. 7, 1551–1554. (Frans Cantrijn) **89b:70001** 70D10 (58F05, 70H35)
- Cramton, P.** (with Gibbons, Robert Scott; Klemperer, P.) Erratum: "Dissolving a partnership efficiently" [*Econometrica* 55 (1987), no. 3, 615–632; MR 88f:90018]. *Econometrica* 56 (1988), no. 6, 1493. (Editors) **89j:90012** 90A07 (90A05)
- Crandall, Michael G.** (with Lions, Pierre-Louis) Solutions de viscosité pour les équations de Hamilton-Jacobi en dimension infinie intervenant dans le contrôle optimal de problèmes d'évolution. (English summary) [Viscosity solutions of Hamilton-Jacobi equations in infinite dimension occurring in the optimal control of evolution problems] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 6, 233–236. (T. Zolezzi) **89a:49027** 49C20 (35F20, 49A27)
- (with Lions, Pierre-Louis) Remarks on the existence and uniqueness of unbounded viscosity solutions of Hamilton-Jacobi equations. *Illinois J. Math.* 31 (1987), no. 4, 665–688. (From the introduction) **89m:35045** 35F20 (35B25)
- (with Bénéilan, P.; Sacks, Paul E.) Some  $L^1$  existence and dependence results for semilinear elliptic equations under nonlinear boundary conditions. *Appl. Math. Optim.* 17 (1988), no. 3, 203–224. (Yao Tian Shen) **89a:35055** 35J65
- (with Bénéilan, P.; Pazy, Ammon) "Bonnes solutions" d'un problème d'évolution semi-linéaire. (English summary) ["Mild solutions" of a semilinear evolution problem] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 13, 527–530. (Nicola H. Pavel) **89g:47088** 47H20 (60J60, 81C20)
- Crandall, Stephen H.** Nonlinearities in rotor dynamics. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations (Budapest, 1987)*, 44–56, *János Bolyai Math. Soc., Budapest*, 1987. (Summary) **89f:73044** 73K12
- Crane, Louis** (with Rabin, Jeffrey M.) Super Riemann surfaces: uniformization and Teichmüller theory. *Comm. Math. Phys.* 113 (1988), no. 4, 601–623. (Sergey Merkulov) **89c:32064** 32G15 (14H15, 58A50)
- Crank, Keith N.** (with Puri, Prem) A method of approximating Markov jump processes. *Adv. in Appl. Probab.* 20 (1988), no. 1, 33–58. (Summary) **89b:60122** 60J75 (60F05)
- A method for approximating the probability functions of a Markov chain. *J. Appl. Probab.* 25 (1988), no. 4, 808–814. (Kyle Siegrist) **89m:60171** 60J27 (60J35)
- Cranston, M.** On the means of approach to the boundary of Brownian motion. *Ann. Probab.* 15 (1987), no. 3, 1009–1013. (Joseph Glover) **89a:60175** 60J45 (60G17, 60J65)
- (with Zhao, Zhong Xin) Conditional transformation of drift formula and potential theory for  $\frac{1}{2}\Delta + b(\cdot) \cdot \nabla$ . *Comm. Math. Phys.* 112 (1987), no. 4, 613–625. (Ross Pinsky) **89g:35030** 35J10 (60J60, 81C20)
- (with Mueller, C.) A review of recent and older results on the absolute continuity of harmonic measure. *Geometry of random motion (Ithaca, N.Y., 1987)*, 9–19, *Contemp. Math.*, 73, *Amer. Math. Soc., Providence, RI*, 1988. (Rainer Wittmann) **89b:35088** 35J15 (31C12, 53C20, 58G30)
- (with Hsu, Pei; March, P.) Smoothness of the convex hull of planar Brownian motion. *Ann. Probab.* 17 (1989), no. 1, 144–150. (S. J. Taylor) **89m:60190** 60J65
- Crapo, Henry** (with Ash, Peter; Bolker, Ethan; Whiteley, Walter) Convex polyhedra, Dirichlet tessellations, and spider webs. *Shaping space (Northampton, Mass., 1984)*, 231–250, *Design Sci. Collect.*, *Birkhäuser Boston, Boston, MA*, 1988. (see **89b:52016**) 52A45 (52A25)
- (with Cheung, Alan) On relative position in extensions of combinatorial geometries. *J. Combin. Theory Ser. B* 44 (1988), no. 2, 201–229. (Nicolas Percsy) **89k:51009** 51D20 (05B35, 06C10, 51D25)
- Craven, B. D.** ★ Fractional programming. *Sigma Series in Applied Mathematics*, 4, *Heldermann Verlag, Berlin*, 1988. 145 pp. ISBN 3-88538-404-3 (S. S. Chaddha) **89f:90087** 90C32
- (with Chandra, Suresh; Husain, I.) A class of nondifferentiable control problems. *J. Optim. Theory Appl.* 56 (1988), no. 2, 227–243. (Halina Frankowska) **89g:49021** 49A52 (49A55, 90C48)
- Fractional programming—a survey. *Opsearch* 25 (1988), no. 3, 165–176. (S. S. Chaddha) **89j:90249** 90C32 (90C30)
- On sensitivity analysis for multicriteria optimization. *Optimization* 19 (1988), no. 4, 513–523. (Klaus Tammer) **89g:90210** 90C31 (49B50)
- Boundary conditions in optimal control. *J. Austral. Math. Soc. Ser. B* 30 (1989), no. 3, 343–349. (Ton Geerts) **89m:49033** 49B10
- Craven, Thomas C.** Fields maximal with respect to a set of orderings. *J. Algebra* 115 (1988), no. 1, 200–218. (Daiji Kijima) **89e:12004** 12D15 (11E10, 11E81)
- Crawford, Frank S.** Lowest modes of a bottle. *Amer. J. Phys.* 56 (1988), no. 8, 702–712. (J. S. Joel) **89f:76068** 76Q05
- Crawford, John David** (with Knobloch, Edgar) Classification and unfolding of degenerate Hopf bifurcations with  $O(2)$  symmetry: no distinguished parameter. *Phys. D* 31 (1988), no. 1, 1–48. (Mark Roberts) **89j:58091** 58F14 (58C27, 58E07, 76E30)
- (with Knobloch, Edgar) Symmetry-breaking bifurcations in  $O(2)$  maps. *Phys. Lett. A* 128 (1988), no. 6–7, 327–331. (B. V. Loginov) **89b:58041** 58E07 (58C27, 58F14)
- (with Hislop, Peter D.) Vlasov equation on a symplectic leaf. *Phys. Lett. A* 134 (1988), no. 1, 19–24. (D. ter Haar) **89b:58086** 58F05 (35Q20, 82A45)
- (with Riecke, Hermann; Knobloch, Edgar) Time-modulated oscillatory convection. *Phys. Rev. Lett.* 61 (1988), no. 17, 1942–1945. (Summary) **89b:76017** 76E15 (58F14)
- Crawley-Boevey, W. W.** (with Kropholler, P. H.; Linnell, P. A.) Torsion-free soluble groups, completions, and the zero divisor conjecture. *J. Pure Appl. Algebra* 54 (1988), no. 2–3, 181–196. (Donald S. Passman) **89j:16015** 16A27 (20C07)
- On tame algebras and bocses. *Proc. London Math. Soc.* (3) 56 (1988), no. 3, 451–483. (Andrzej Skowroński) **89c:16028** 16A46 (16A48, 16A64, 16A90)
- Creamer, Nelson G.** (with Jenkins, John L.) Identification method for lightly damped structures. *J. Guidance Control Dynamics* 11 (1988), no. 6, 571–576. (Not in MR) 93B30
- Creanga, Ion** see **Negescu, Nicolae C.**, **89m:01104** and **Obituary: Creanga, Ion**, **89m:01128**
- Creath, Richard** The initial reception of Carnap's doctrine of analyticity. *Notis* 21 (1987), no. 4, 477–499. (Ignacio Angelelli) **89b:03002** 03-03 (01A60, 03A05)
- see also **Carnap, Rudolf**, **89a:03007**
- Creely, Joseph W.** The length of a three-number game. *Fibonacci Quart.* 26 (1988), no. 2, 141–143. (Konrad Engel) **89e:05025** 05A99 (90D42)
- Crémer, Jacques** (with McLean, Richard P.) Full extraction of the surplus in Bayesian and dominant strategy auctions. *Econometrica* 56 (1988), no. 6, 1247–1257. (Summary) **89j:90046** 90A14 (90D10)
- Cremers, Armin B.** (with Hibbard, Thomas N.) Subspaces: factorization and communication. *Computational and combinatorial methods in systems theory (Stockholm, 1985)*, 383–396, *North-Holland, Amsterdam-New York*, 1986. (Summary) **89a:68062** 68Q10 (68M10, 68N25)
- Cremmer, E.** The vertex function in Witten's formulation of string field theory. *String theory. Quantum cosmology and quantum gravity. Integrable and conformal invariant theories (Meudon, 1986)*, 99–114, *World Sci. Publishing, Singapore*, 1987. (Pierre Gravel) **89b:81180** 81E99 (81E30)
- Cremona, J. E.** Addendum and errata: "Hyperbolic tessellations, modular symbols, and elliptic curves over complex quadratic fields" [*Compositio Math.* 51 (1984), no. 3, 275–324; MR 85j:11063]. *Compositio Math.* 63 (1987), no. 2, 271–272. (Reinhard Bölling) **89a:11058** 11G05 (11F67, 14G25, 14K07)
- On  $GL(n)$  of a Dedekind domain. *Quart. J. Math. Oxford Ser. (2)* 39 (1988), no. 156, 423–426. (Alex Hahn) **89k:20061** 20G35 (11E57)
- Crépeau, Claude** (with Brassard, Gilles) Zero-knowledge simulation of Boolean circuits. *Advances in cryptology—CRYPTO '86 (Santa Barbara, Calif., 1986)*, 223–233, *Lecture Notes in Comput. Sci.*, 263, *Springer, Berlin-New York*, 1987. (Melvin M. Sweet) **89c:94031** 94A60 (68Q15, 94C05)
- A zero-knowledge poker protocol that achieves confidentiality of the players' strategy or how to achieve an electronic poker face. *Advances in cryptology—CRYPTO '86 (Santa Barbara, Calif., 1986)*, 239–247, *Lecture Notes in Comput. Sci.*, 263, *Springer, Berlin-New York*, 1987. (Melvin M. Sweet) **89c:94024** 94A60 (90D10)
- (with Beauchemin, Pierre; Brassard, Gilles; Goutier, Claude) Two observations on probabilistic primality testing. *Advances in cryptology—CRYPTO '86 (Santa Barbara, Calif., 1986)*, 443–450, *Lecture Notes in Comput. Sci.*, 263, *Springer, Berlin-New York*, 1987. (Carl Pomerance) **89c:11180** 11Y11
- Equivalence between two favours of oblivious transfers. *Advances in cryptology—CRYPTO '87 (Santa Barbara, CA, 1987)*, 350–354, *Lecture Notes in Comput. Sci.*, 293, *Springer, Berlin-New York*, 1988. (see **89b:68005**) 68Q99 (68P25)
- (with Beauchemin, Pierre; Brassard, Gilles; Goutier, Claude; Pomerance, Carl) The generation of random numbers that are probably prime. *J. Cryptology* 1 (1988), no. 1, 53–64. (Sun Qi) **89j:11126** 11Y11 (11A51)
- Crépel, J.-M.** (with Aubry, Denis) Hybrid formulation for the Green function in stratified media: application to wave scattering against lateral heterogeneities. *Advanced boundary element methods (San Antonio, Tex., 1987)*, 9–17, *Springer, Berlin-New York*, 1988. (see **89b:65009**) 73D25
- Crépel, Pierre** Condorcet, la théorie des probabilités et les calculs financiers. [Condorcet, probability theory and financial calculations] *Sciences à l'époque de la Révolution Française*, 267–325, *Lib. Bientenaire Révolution Française, Lib. Sci. Tech. Albert Blanchard, Paris*, 1988. (see **89m:01050**) 01A50
- martínez Crespo, C. J.** see **Martínez Crespo, C. J.**
- Crespo, Rafael** Duality and barrelling in  $\lambda_0(E)$ . (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 80 (1986), no. 1–2, 17–26. (R. Aguilo-Fuster) **89a:46021** 46A45 (46A07)
- Cressie, Noel** The underlying structure of empirical Bayes methods. *Survey of statistical methods and applications*, 5 (Italian) (Cagliari, 1985), 19–31, *Coll. Atti Congr., Pitagora, Bologna*, 1987. (Yoshiko Nogami) **89k:62007** 62C12 (62F15)
- (with Laslett, G. M.) Random set theory and problems of modeling. *SIAM Rev.* 29 (1987), no. 4, 557–574. (Dietrich Stoyan) **89c:62169** 62M99 (00A71, 60D05)
- (with Morgan, Peter B.) The VPRT: optimal sequential and nonsequential testing. *Statistical decision theory and related topics, IV, Vol. 2 (West Lafayette, Ind., 1986)*, 107–118, *Springer, New York-Berlin*, 1988. (Albrecht Irlé) **89c:62135** 62L10
- Spatial prediction and ordinary kriging. New advances in geostatistics (Redwood City, CA, 1987). *Math. Geol.* 20 (1988), no. 4, 405–421. (Summary) **89d:86009** 86A20 (86-08)
- Cressman, R.** Frequency-dependent viability selection (a single-locus, multiphenotype model). *J. Theoret. Biol.* 130 (1988), no. 2, 147–165. (Peter D. Taylor) **89a:92037** 92A15
- (with Dash, A. T.) Polygamy in human and animal species. *Math. Biosci.* 88 (1988), no. 1, 49–66. (Ivar Heuch) **89d:92058** 92A15

- Frequency- and density-dependent selection: the two-phenotype model. *Theoret. Population Biol.* 34 (1988), no. 3, 378–398. (Peter D. Taylor) **89i:92036** 92A15 (90D05, 90D45)
- Cresswell, M. J. *see* Gupta, Anil, **89a:03059**
- Cret, F. (with Obădeanu, V.) Quasi-connexions linéaires. [Linear quasiconnections] *Proceedings of the National Conference on Geometry and Topology (Tirgoviste, 1986)*, 201–208. Univ. București, Bucharest, 1988. (J. J. Etayo) **89m:53034** 53B05 (53C05)
- Creutzburg, Egbert (with Hübler, Albrecht; Sýkora, O.) Geometric methods for on-line recognition of digital straight line segments. (Russian summary) *Comput. Artificial Intelligence* 7 (1988), no. 3, 253–276. (Summary) **89k:68142** 68U05 (68T10)
- Crew, Richard F-isocrystals and  $p$ -adic representations. *Algebraic geometry*, Bowdoin, 1985 (Brunswick, Maine, 1985), 111–138, *Proc. Sympos. Pure Math.*, 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Jan Stienstra) **89c:14024** 14F30
- $L$ -functions of  $p$ -adic characters and geometric Iwasawa theory. *Invent. Math.* 88 (1987), no. 2, 395–403. (Karl Rubin) **89j:11049** 11G20 (11G40, 11R23, 14F30, 14G10)
- Criado Herrero, Regino (with Tarrés, Juan)  $D$ -dimension in nonmetrizable spaces. (Spanish) *Publ. Sec. Mat. Univ. Autònoma Barcelona* 31 (1987), no. 1, 111–126. (From the text) **89a:54044** 54F45
- Crichton, D. G. (with Lee-Bapt, I. P.) Nonlinear wave motion governed by the modified Burgers equation. *Philos. Trans. Roy. Soc. London Ser. A* 323 (1987), no. 1570, 173–209. (S. K. Trehan) **89g:78018** 78A40 (35Q20, 78B15)
- Crilly, Tony The decline of Cayley's invariant theory (1863–1895). (French and German summaries) *Historia Math.* 15 (1988), no. 4, 332–347. (J. Dieudonné) **89j:01039** 01A55 (15–03, 15A72)
- Crisanti, A. (with Paladin, G.; Vulpiani, A.) Is multifractal structure relevant for the turbulent diffusion? *Phys. Lett. A* 126 (1987), no. 2, 120–122. (Summary) **89b:76014** 76F99 (76R50)
- (with Sompolsky, H.) Dynamics of spin systems with randomly asymmetric bonds: Langevin dynamics and a spherical model. *Phys. Rev. A* (3) 36 (1987), no. 10, 4922–4939. (Aernout C. D. van Enter) **89a:82027** 82A57 (82A42)
- (with Sompolsky, H.) Dynamics of spin systems with randomly asymmetric bonds: Ising spins and Glauber dynamics. *Phys. Rev. A* (3) 37 (1988), no. 12, 4865–4874. (Summary) **89d:81212** 82A68 (82–04, 82A31)
- (with Sommers, H.-J.; Sompolsky, H.; Stein, Y.) Spectrum of large random asymmetric matrices. *Phys. Rev. Lett.* 60 (1988), no. 19, 1895–1898. (Summary) **89d:82055** 82A31 (60F99)
- (with Sompolsky, H.; Sommers, H.-J.) Chaos in random neural networks. *Phys. Rev. Lett.* 61 (1988), no. 3, 259–262. (Summary) **89f:92027** 92A09 (58F13, 82A42)
- Crisanti, F. Some a priori properties of unstable flows in the homogeneous model of the ocean. (Italian and Russian summaries) *Nuovo Cimento C* (1) 11 (1988), no. 1, 105–113. (John Adam) **89i:76053** 76E20 (86A05)
- Crisuolo, Giuliana (with Mastroianni, G.) Convergence of Gaussian formulas for the approximation of derivatives of Cauchy principal value integrals. (Italian. English summary) *Calcolo* 24 (1987), no. 2, 179–192 (1988). (Luciano Biasini) **89c:65026** 65D25
- (with Mastroianni, G.) A bound for generalized Jacobi functions of the second kind. (Italian summary) *Calcolo* 24 (1987), no. 2, 193–198 (1988). (Peter A. McCoy) **89j:33017** 33A65 (26A15, 41A50)
- (with Mastroianni, G.) On the uniform convergence of modified Gaussian rules for the numerical evaluation of derivatives of principal value integrals. *Numerical methods and approximation theory, III* (Niš, 1987), 139–147, *Univ. Niš, Niš*, 1988. (D. S. Lubinsky) **89j:65022** 65D30 (41A55)
- (with Chiodo, Claudia) On the convergence of a rule by Monegato for the numerical evaluation of Cauchy principal value integrals. (German summary) *Computing* 40 (1988), no. 1, 67–74. (Walter Gautschi) **89b:65034** 65D30
- Cristfield, M. A. Consistent schemes for plasticity computation with the Newton-Raphson method. *Computational plasticity, Part I, II* (Barcelona, 1987), 133–159, *Pineridge, Swansea*, 1987. (see **89c:73030**) 73–08 (73E99)
- Cristante, V. Obituary: Iacopo Barsotti. (Italian) *Rend. Sem. Mat. Univ. Padova* 78 (1987), 285. (Editors) **89b:01040** 01A70
- Cristea, Mihai A generalization of Rouché's theorem. *An. Univ. București Mat.* 36 (1987), 13–15. (Kenneth O. Leland) **89d:30050** 30G15
- A note on the local injectivity of a function with the property of Darboux. *Stud. Cerc. Mat.* 39 (1987), no. 6, 493–495. (Jaroslav Smítal) **89a:26008** 26A30
- Some conditions of local injectivity. *Rev. Roumaine Math. Pures Appl.* 33 (1988), no. 1–2, 27–30. (P. T. Church) **89e:54023** 54C10
- Cristi, Roberto Parallel processing in the adaptive control of linear systems. *SIAM Conference on Linear Algebra in Signals, Systems, and Control* (Boston, Mass., 1986). *SIAM J. Matrix Anal. Appl.* 9 (1988), no. 1, 96–105. (R. Haber) **89d:93059** 93C40 (93B40, 93C05)
- Cristóbal Cristóbal, Alfredo Incomplete integral time series analysis. Parameter estimation. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 383–396, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (see **89d:00009**) 90A20
- Cristofano, G. (with Maiella, G.; Musto, R.; Nicodemi, F.; Pettorino, R.) Twisted bosonic strings and  $O(16) \otimes O(16)$  heterotic model. *Internat. J. Modern Phys. A* 2 (1987), no. 3, 729–738. (Helmut Rumpf) **89a:81120** 81E99 (81E30, 81G20, 83E99)
- (with Musto, R.; Nicodemi, F.; Pettorino, R.) The multipole covariant tadpole operator and amplitudes for the bosonic string. *Phys. Lett. B* 211 (1988), no. 4, 417–424. (Summary) **89j:81123** 81E15 (81E30)
- de Cristofaro, Giacinto *see* De Cristofaro, Giacinto
- Critchfield, Charles L. Computation of elliptic functions. *J. Math. Phys.* 30 (1989), no. 2, 295–297. (H. Hochstadt) **89k:33004** 33A25 (65D20)
- Critchley, Frank (with Ford, Ian; Rijal, Omar) Interval estimation based on the profile likelihood: strong Lagrangian theory with applications to discrimination. *Biometrika* 75 (1988), no. 1, 21–28. (S. John) **89e:62040** 62F25 (62H30)
- (with Heiser, Willem J.) Hierarchical trees can be perfectly scaled in one dimension. *J. Classification* 5 (1988), no. 1, 5–20. (Byron J. T. Morgan) **89b:62092** 62H30
- On certain linear mappings between inner-product and squared-distance matrices. *Linear Algebra Appl.* 105 (1988), 91–107. (Shao Kuan Li) **89b:15016** 15A21
- Cris, Y. (with Sahloul, M.; Plancke, J.) Modèle de calcul de la propagation de la houle. [A model for computing wave propagation] *Computer methods and water resources*, Vol. 2 (Rabat, 1988), 449–461, *Comput. Mech.*, Southampton, 1988. (see **89g:76003b**) 76B99
- Crivă, N. (with Bănzaru, T.) On the quasi-uniform convergence for multifunctions. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* 1986, May, 27–32. (Janina Ewert) **89c:54035** 54C60
- (with Bănzaru, T.) Characterization of continuity for multifunctions. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* 1986, November, 54–58. (Janina Ewert) **89c:54036** 54C60
- Crivă, I. Rings over which every projective submodule of a free module is a direct summand. (Romanian. English summary) *Bul. Stiinț. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Mat.* 27 (1984), 21–24. (Editors) **89i:16033** 16A45
- On a class of objects in exact categories. (Romanian. English summary) *Bul. Stiinț. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Mat.* 28 (1985), 47–52. (Summary) **89i:18012** 18E10
- Crnjac, M. (with Miller, Harry I.) Some negative results in measure theory. (Serbo-Croatian summary) *Glas. Mat. Ser. III* 22(42) (1987), no. 2, 303–308. (Jaroslav Smítal) **89i:28001** 28A12 (28A05)
- Crnković, Čedomir (with Witten, Edward) Covariant description of canonical formalism in geometrical theories. *Three hundred years of gravitation*, 676–684, *Cambridge Univ. Press*, Cambridge-New York, 1987. (see **89b:83007**) 81E13 (58D30, 83C05)
- Symplectic geometry and (super-) Poincaré algebra in geometrical theories. *Nuclear Phys. B* 288 (1987), no. 2, 419–430. (Malcolm Adams) **89b:81120** 81E13 (58F05, 81E30, 83C05)
- Croca, J. R. Can the existence of de Broglie's empty wave be proven experimentally? *Microphysical reality and quantum formalism*, Vol. 1, 2 (Urbino, 1985), 285–287, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (see **89i:81004**) 81–05 (81B05)
- Croke, Christopher B. An isobolic pinching theorem. *Invent. Math.* 92 (1988), no. 2, 385–387. (Paul E. Ehrlich) **89c:53061** 53C20
- Area and the length of the shortest closed geodesic. *J. Differential Geom.* 27 (1988), no. 1, 1–21. (Gudlaugur Thorbergsson) **89a:53050** 53C22 (58E10)
- (with Karcher, H.) Volumes of small balls on open manifolds: lower bounds and examples. *Trans. Amer. Math. Soc.* 309 (1988), no. 2, 753–762. (Victor Bangert) **89m:53060** 53C20 (53C45)
- Cromer, Thomas L. Harvesting in a seasonal environment. *Math. Comput. Modelling* 10 (1988), no. 6, 445–450. (Summary) **89d:90071** 90A30
- Seasonal control for an endemic disease with seasonal fluctuations. *Theoret. Population Biol.* 33 (1988), no. 2, 115–125. (Summary) **89c:92053** 92A15
- Cron, William L. (with DeSarbo, Wayne S.) A maximum likelihood methodology for clusterwise linear regression. *J. Classification* 5 (1988), no. 2, 249–282. (Not in MR) 62H30
- Crone, Lawrence J. (with Neuendorffer, Arthur C.) Functional powers near a fixed point. *J. Math. Anal. Appl.* 132 (1988), no. 2, 520–529. (I. N. Baker) **89c:30048** 30D05
- Cronin, Jane ★ Mathematical aspects of Hodgkin-Huxley neural theory. *Cambridge Studies in Mathematical Biology*, 7, *Cambridge University Press*, Cambridge-New York, 1987. xii+261 pp. ISBN 0-521-33482-9 (Brian D. Sleeman) **89a:92001** 92-02 (92A09)
- Singular perturbation problems in cardiac models. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations* (Budapest, 1987), 57–64, *János Bolyai Math. Soc., Budapest*, 1987. (Brian D. Sleeman) **89d:92006** 92A06 (92A07)
- Cronin, T. M. The construction of matrices with required properties over the integers. *Amer. Math. Monthly* 94 (1987), no. 7, 656–662. (William H. Gustafson) **89b:15023** 15A36 (15-01)
- Crosier, Ronald B. Multivariate generalizations of cumulative sum quality-control schemes. *Technometrics* 30 (1988), no. 3, 291–303. (Peter R. Nelson) **89b:62164** 62N10 (62H99)
- McCroskey Karr, Rosemary *see* McCroskey Karr, Rosemary
- Cross, George Generalized integrals as limits of Riemann-like sums. *Real Anal. Exchange* 13 (1987/88), no. 2, 390–403. (Ralph Henstock) **89c:26018** 26A42 (26A39)
- Cross, M. C. Theoretical methods in pattern formation in physics, chemistry and biology. *Far from equilibrium phase transitions* (Sitges, 1988), 45–74, *Lecture Notes in Phys.*, 319, Springer, Berlin-New York, 1988. (see **89j:82002**) 76E15 (80A50, 92A09)
- (with Kim, Kihong) Linear instability and the codimension-2 region in binary fluid convection between rigid impermeable boundaries. *Phys. Rev. A* (3) 37 (1988), no. 10, 3909–3920. (Summary) **89c:76060** 76E15
- Cross, R. W. Some continuity properties of linear transformations in normed spaces. *Glasgow Math. J.* 30 (1988), no. 2, 243–247. (Sandy Grabiner) **89i:47003** 47A05
- Unbounded strictly singular operators. *Nederl. Akad. Wetensch. Indag. Math.* 50 (1988), no. 3, 245–248. (Seymour Goldberg) **89i:47004** 47A05
- Crossley, John N. ★ The emergence of number. Second edition. *World Scientific Publishing Co., Singapore*, 1987. xii+222 pp. ISBN 9971-50-413-8; 9971-50-414-6 (Don Redmond) **89d:01002** 01A05 (26-03)
- Algorithms: theory and practice. *Matimys Mat.* 11 (1987), no. 2, 11–19. (Not in MR) 68-01 (03D10)
- Crouch, P. E. Hamiltonian realizations of finite Volterra series. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 247–259, *North-Holland*, Amsterdam-New York, 1986. (Agostino Villa) **89g:93011** 93B15 (58F05)
- Graded vector spaces and applications to the approximation of nonlinear systems. *Conference on linear and nonlinear mathematical control theory. Rend. Sem. Mat. Univ. Politec. Torino* 1987, Special Issue, 1–54. (Kevin A. Grasse) **89j:93057** 93C10 (41A58, 58F40, 93B15)
- (with Collingwood, P. C.) The observation space and realizations of finite Volterra series. *SIAM J. Control Optim.* 25 (1987), no. 2, 316–333. (Valeriu Prepelita) **89d:93019** 93B15 (93B10, 93B27, 93C10)
- (with Lamnabhi-Lagarigue, F.) State space realizations of nonlinear systems defined by input-output differential equations. *Analysis and optimization of systems (Antibes, 1988)*, 138–149, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (K. B. Datta) **89i:93018** 93B15
- (with Silva Leite, F.) Controllability on classical Lie groups. *Math. Control Signals Systems* 1 (1988), no. 1, 31–42. (Zbigniew Bartosiewicz) **89b:93023** 93B05 (17B99, 22E60, 58F40, 93B25)



- (with Lamnabhi-Lagarigue, F.) A formula for iterated derivatives along trajectories of nonlinear systems. *Systems Control Lett.* **11** (1988), no. 1, 1–7. (J. M. Dion) **89m:93038** 93C10 (05A19, 58F40)
- Crouzeix, J.-P.** (with Auslender, A. A.; Fédit, P.) Penalty-proximal methods in convex programming. *J. Optim. Theory Appl.* **55** (1987), no. 1, 1–21. (S. Zlobec) **89d:90161** 90C25 (49D30, 65K05)
- (with Auslender, A. A.) Global regularity theorems. *Math. Oper. Res.* **13** (1988), no. 2, 243–253. (Jacques A. Ferland) **89g:90167** 90C25
- Crouzeix, Michel** (with Thomée, Vidar) On the discretization in time of semilinear parabolic equations with nonsmooth initial data. *Math. Comp.* **49** (1987), no. 180, 359–377. (J. T. Oden) **89c:65102** 65M10
- (with Raugel, Geneviève) Invariance under the dihedral group and application to bifurcation problems. *Nonlinear Anal.* **12** (1988), no. 1, 75–99. (Thomas Bartsch) **89b:58045** 58E07 (58C25)
- (with Geymonat, G.; Raugel, Geneviève) Some remarks about the Morse lemma in infinite dimension. *SIAM J. Math. Anal.* **19** (1988), no. 2, 358–371. (E. Zeidler) **89c:58023** 58E05
- (with Falk, Richard S.) Nonconforming finite elements for the Stokes problem. *Math. Comp.* **52** (1989), no. 186, 437–456. (Markku Lindroos) **89i:65113** 65N30 (76-08, 76D07)
- Crow, Edwin L.** see Lognormal distributions, **89b:62001**
- Crowe, Michael J.** Ten misconceptions about mathematics and its history. *History and philosophy of modern mathematics* (Minneapolis, MN, 1985), 260–277. *Minnesota Stud. Philos. Sci., XI*, Univ. Minnesota Press, Minneapolis, MN, 1988. (H.-J. Volrath) **89c:00018** 00A25 (00A06, 01A05, 03A05)
- Crowell, R. H.** (with Smythe, N.) Congruences and geometric amalgamations of groupoids. *Houston J. Math.* **13** (1987), no. 4, 499–525. (Stephen J. Pride) **89c:20099** 20L10
- Crowley, Ronald J.** (with Price, Richard H.; Redmount, Ian H.; Suen, Wai-Mo; Thorne, Kip S.; Macdonald, Douglas A.) Model problems for gravitationally perturbed black holes. *Black holes: the membrane paradigm*, 235–279. *Yale Univ. Press*, New Haven, CT, 1986. (see **89b:83002**) **83C15** (83C25)
- Creuxon, P.** (with Colegrave, R. K.; Mannan, M. A.) Complex invariants for the time-dependent harmonic oscillator. *Phys. Lett. A* **131** (1988), no. 7–8, 407–410. (P. G. L. Leach) **89m:70025** 70G35 (81C05)
- Cristici, B.** (with Dragomir, Sever Silvestru) Sur une inéquation fonctionnelle. (Romanian summary) [On a certain functional inequality] *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Ser. Mat. Fiz.* **1986**, November, 30–32. (John A. Baker) **89c:39011** 39C05
- Cruceanu, Vasile** Quasiconnexions et structures de Finsler. [Quasiconnections and Finsler structures] *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces* (Brașov, 1986), 129–130. *Soc. Științe Mat. R.S. România, Bucharest*, 1986. (D. Opris) **89d:53049** 53B40 (53B15)
- (with Bantias, Gh.) Professor Radu Miron: his 60th anniversary. *An. Științ. Univ. "Al. I. Cuza" Iași Sect. I a Mat. (N.S.)* **33** (1987), no. 3, iii–vi. (Editors) **89m:01075** 01A70
- Real hypersurfaces in complex centro-affine spaces. Reprinted in *Affine Differential Geometry* [(Oberwolfach, 1986), 224–234. *Tech. Univ. Berlin, Berlin*, 1988; (S160 280)] *Res. Math.* **13** (1988), no. 3–4, 224–234. (Udo Simon) **89k:53007** 53A15
- Crumeyrolle, A.** Conjugation in spinor spaces: Majorana and Weyl spinors. *Proceedings of the 14th winter school on abstract analysis* (Smi, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* **14** (1987), 13–24. (Horia Scutaru) **89f:53024** 53A50 (15A66, 81D27)
- Planck's constant and symplectic geometry. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 277–297. *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Mircea Puta) **89c:58054** 58F06 (81D07)
- Crupi, Giovanni** The relative formulation of electrodynamics in general relativity. (Italian. English summary) *Writings in mathematical physics in honor of the ninetieth birthday of Cataldo Agostinelli* (Italian). *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **120** (1986), suppl., 87–94 (1987). (M. C. Chaki) **89m:83056** 83C50
- Cruze, T. A.** ★ Boundary element analysis in computational fracture mechanics. *Mechanics: Computational Mechanics, I. Kluwer Academic Publishers Group, Dordrecht*, 1988. xiv+162 pp. ISBN 90-247-3614-5 (Hartmut Stresse) **89b:65176** 65N30 (65R20, 73-08, 73M05)
- (with Wu, Y.-T.; Dias, B.; Rajagopal, K. R.) Probabilistic structural analysis methods and applications. *Comput. & Structures* **30** (1988), no. 1–2, 163–170. (Summary) **89g:73003** 73-08 (73-04, 73K35)
- see also Advanced boundary element methods, **89b:65009**
- Crutchfield, James P.** (with Kaneko, Kunihiko) Phenomenology of spatio-temporal chaos. *Directions in chaos, Vol. 1*, 272–353. *World Sci. Ser. Dir. Condensed Matter Phys.*, 3, World Sci. Publishing, Singapore, 1987. (Dieter H. Mayer) **89f:58087** 58F13 (58F08, 58F99)
- Spatio-temporal complexity in nonlinear image processing. *IEEE Trans. Circuits and Systems* **35** (1988), no. 7, 770–780. (Summary) **89d:58079** 58F13
- (with Kaneko, Kunihiko) Are attractors relevant to turbulence? *Phys. Rev. Lett.* **60** (1988), no. 26, 2715–2718. (Andrew C. Fowler) **89j:76057** 76F99 (58F13, 82A99)
- Cruz, J. B., Jr.** (with Stubberud, A. R.; Mulligan, J. H., Jr.) In memoriam. Gene H. Hostetter (1939–1988). *IEEE Trans. Automat. Control* **33** (1988), no. 12, 1091. (Editors) **89m:01081** 01A70
- garcía Cruz, María Antonia** see García Cruz, María Antonia
- olvera de la Cruz, Monica** see Olvera de la Cruz, Monica
- blasco de la Cruz, Oscar** see Blasco de la Cruz, Oscar
- Cruzeate, Juan** (with Díaz, Mario; Gleiser, Reinaldo; Pullin, Jorge) Soliton collision in cosmologies with matter. *Classical Quantum Gravity* **5** (1988), no. 6, 883–889. (Peter Szekeres) **89f:83037** 83C20 (83F05)
- Cruzeiro, Ana Bela** Estimations capacitaires sur l'espace de Wiener. I. (English summary) [Capacity estimates on the Wiener space. I] *Bull. Sci. Math.* (2) **110** (1986), no. 2, 139–147. (Masayoshi Takeda) **89a:60155** 60H99
- Cruzeiro-Hansson, L.** (with Christiansen, P. L.; Elgin, J. N.) Comment on "Self-trapping on a dimer: time-dependent solutions of a discrete nonlinear Schrödinger equation". *Phys. Rev. B* (3) **37** (1988), no. 13, 7896–7897. (From the text) **89c:82061** 92A40 (58F40, 82A99)
- Cryer, Colin W.** (with Schulze, Klaus) NAXPERT: a prototype expert system for numerical software. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 3, 503–515. (Not in MR) **65-04**
- Csáki, Endre** (with Földes, Antónia; Révész, P.) On the maximum of a Wiener process and its location. *Probab. Theory Related Fields* **76** (1987), no. 4, 477–497. (Simeon M. Berman) **89a:60186** 60J65 (60F15)
- (with Földes, Antónia) A note on the stability of the local time of a Wiener process. *Stochastic Process. Appl.* **25** (1987), no. 2, 203–213. (Joseph Glover) **89j:60108** 60J55 (60J65)
- (with Grill, K.) On the large values of the Wiener process. *Stochastic Process. Appl.* **27** (1987), no. 1, 43–56. (S. J. Taylor) **89d:60055** 60F15 (60J65)
- (with Földes, Antónia; Komlós, János) Limit theorems for Erdős-Rényi type problems. *Studia Sci. Math. Hungar.* **22** (1987), no. 1–4, 321–332. (Paul Deheuvels) **89b:60052** 60F05
- (with Földes, Antónia) On the length of the longest flat interval. *Probability theory and mathematical statistics with applications* (Visegrád, 1985), 23–33. *Reidel, Dordrecht-Boston, MA*, 1988. (N. H. Bingham) **89g:60234** 60J30 (60G17, 60J65)
- (with Földes, Antónia; Kasahara, Yui) Around Yor's theorem on the Brownian sheet and local time. *J. Math. Kyoto Univ.* **28** (1988), no. 2, 373–381. (Robert J. Adler) **89i:60085** 60G17 (60G60, 60J55)
- Csaplar, Wilfrid W., Jr.** (with Tower, Edward) Trade and industrial policy under oligopoly: comment to: "Optimal trade and industrial policy under oligopoly" [Quart. J. Econom. **101** (1986), no. 2, 383–406] by J. Eaton and G. M. Grossman. With a reply by Eaton and Grossman. *Quart. J. Econom.* **103** (1988), no. 3, 599–607. (Not in MR) (90A14)
- Császár, Á.** Multiplicative semigroups of continuous mappings into topological semigroups. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 109–113. *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (K. D. Magill, Jr.) **89b:54010** 54C40 (20M20, 54D35, 54H99)
- Proximities, screens, merotopies, uniformities. III. *Acta Math. Hungar.* **51** (1988), no. 1–2, 23–33. (H. Herrlich) **89c:54019a** 54B30 (18B30, 54E15)
- Proximities, screens, merotopies, uniformities. IV. *Acta Math. Hungar.* **51** (1988), no. 1–2, 151–164. (H. Herrlich) **89c:54019b** 54B30 (18B30, 54E05, 54E15)
- Császár, K.** Separation axioms for proximity and closure spaces. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **30** (1987), 223–229. (Don A. Mattson) **89f:54056** 54E05
- Csépes, Z.** (with Pipek, J.) An effective recursive algorithm for generating many-body Hugenholtz and Goldstone diagrams. *J. Comput. Phys.* **77** (1988), no. 1, 1–17. (Summary) **89f:81043** 81C12 (81H99)
- Cserny, László** The analysis of decision-making systems. *Systems analysis and simulation* 1988, I (Berlin, 1988), 53–58. *Math. Res.*, 46, Akademie-Verlag, Berlin, 1988. (see **89g:00018**) **90B50**
- Cserti, J.** (with Kertész, J.) Asymptotic number of needles in Laplacian growth. *J. Phys. A* **20** (1987), no. 13, 4561–4563. (Hanna Nencka) **89d:82045** 82A30 (35B99, 35J05)
- Csetényi, A.** (with Verhagen, J. H. G.) Analysis of a mathematical model of the disturbance diversity relation in benthic marine communities. *Papers on mathematical ecology*, I, 181–221. *DM, 86-2*, Karl Marx Univ. Econom., Budapest, 1986. (Summary) **89a:92065** 92A17
- Csibi, S.** More on the stability of a data packet flow embedded randomly into a partially active, scheduled packet flow. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **16** (1987), no. 4, 259–269. (Linn I. Sennott) **89d:60120** 60J10 (60J20, 68M20, 94A40)
- Csima, J.** (with Füredi, Z.) Colouring finite incidence structures. *Graphs Combin.* **2** (1986), no. 4, 339–346. (E. J. F. Primrose) **89f:51037** 51E15 (05C15, 51E30)
- Csirik, J.** (with Totik, V.) Online algorithms for a dual version of bin packing. *Discrete Appl. Math.* **21** (1988), no. 2, 163–167. (Antal Iványi) **89c:68063** 68Q25 (90B35)
- Csiszár, I.** (with Ahlswede, Rudolf) Hypothesis testing with communication constraints. *IEEE Trans. Inform. Theory* **32** (1986), no. 4, 533–542. (E. A. Haroutunian) **89a:94008** 94A15 (62B10)
- (with Cover, Thomas M.; Choi, Byoung Seon) Conditional limit theorems under Markov conditioning. *IEEE Trans. Inform. Theory* **33** (1987), no. 6, 788–801. (M. Iosifescu) **89c:60074** 60J10 (60F99, 62E20, 62M99)
- (with Narayan, Prakash) Arbitrarily varying channels with constrained inputs and states. *IEEE Trans. Inform. Theory* **34** (1988), no. 1, 27–34. (Summary) **89b:94023** 94A40
- (with Narayan, Prakash) The capacity of the arbitrarily varying channel revisited: positivity, constraints. *IEEE Trans. Inform. Theory* **34** (1988), no. 2, 181–193. (Robert Gray) **89k:94037** 94A40 (94A15)
- Cuška, G.** There exists a basis of minimal vectors in every  $n \leq 7$ -dimensional perfect lattice. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **30** (1987), 245–258. (J. M. Wills) **89b:11057** 11H50 (52A43, 52A45)
- Csörb, Ferenc** (with Molnár, Emil) Steiner constructions on the projective-metric plane. (Hungarian. English summary) *Mat. Lapok* **33** (1982/86), no. 1–3, 99–122. (J. Strommer) **89b:51035** 51M15
- Csordás, A.** (with Szépálasy, P.; Tél, T.; Kovács, Z.) Phase transitions associated with dynamical properties of chaotic systems. *Phys. Rev. A* (3) **36** (1987), no. 7, 3525–3528. (Summary) **89f:58098** 58F13 (82A25)
- Csordás, G.** (with Varga, Richard) Moment inequalities and the Riemann hypothesis. *Constr. Approx.* **4** (1988), no. 2, 175–198. (C. Ryavec) **89f:30010** 30C15 (11M26, 11M51, 26A51, 30D15, 30E05)
- (with Norfolk, T. S.; Varga, Richard) A lower bound for the de Bruijn-Newman constant. *A. Numer. Math.* **52** (1988), no. 5, 483–497. (G. Opfer) **89m:30054** 30D10 (11Y35, 65E05)
- Csörgő, Miklós** (with Horváth, Lajos; Steinebach, Josef) On the distribution of the supremum of weighted empirical processes. *Contributions to stochastic, 1–18*, *Physica, Heidelberg*, 1987. (Gutti J. Babu) **89c:60044** 60F17 (62G99)
- (with Deheuvels, Paul; Horváth, Lajos) An approximation of stopped sums with applications in queueing theory. *Adv. in Appl. Probab.* **19** (1987), no. 3, 674–690. (Walter A. Rosenkrantz) **89c:60045** 60F17 (60K25)
- (with Horváth, Lajos) Rates of convergence for random walk summation. *Bull. London Math. Soc.* **19** (1987), no. 6, 531–536. (Makoto Maejima) **89b:60072** 60F15 (40G99)
- (with Csörgő, Sándor) Estimation of percentile residual life. *Oper. Res.* **35** (1987), no. 4, 598–606. (Thomas W. Sager) **89d:62104** 62N05 (62G05)
- (with Horváth, Lajos; Révész, P.) Stability and instability of local time of random walk in random environment. *Stochastic Process. Appl.* **25** (1987), no. 2, 185–202. (H. Kesten) **89c:60078** 60J15 (60J55, 82A41)

- (with Horváth, Lajos) On the distributions of  $L_p$  norms of weighted uniform empirical and quantile processes. *Ann. Probab.* **16** (1988), no. 1, 142–161. (J. Steinbach) **89a:60056** 60F05 (60F17, 60F25)
- (with Horváth, Lajos) Asymptotics for  $L_p$ -norms of kernel estimators of densities. *Comput. Statist. Data Anal.* **6** (1988), no. 3, 241–250. (Lionel Weiss) **89d:62033** 62G05 (62E20)
- (with Horváth, Lajos) Asymptotic representations of self-normalized sums. *Probab. Math. Statist.* **9** (1988), no. 1, 15–24. (Makoto Maejima) **89e:60041** 60F05
- (with Horváth, Lajos) Rate of convergence of transport processes with an application to stochastic differential equations. *Probab. Theory Related Fields* **78** (1988), no. 3, 379–387. (Luis G. Gorostiza) **89k:60073** 60H10 (60H05)
- (with Horváth, Lajos) Central limit theorems for  $L_p$ -norms of density estimators. *Probab. Theory Related Fields* **80** (1988), no. 2, 269–291. (Zdzisław Rychlik) **89i:60046** 60F05 (62G05)
- (with Horváth, Lajos) A note on strong approximations of multivariate empirical processes. *Stochastic Process. Appl.* **28** (1988), no. 1, 101–109. (Georg Neuhaus) **89d:60061** 60F17 (60F15)
- Csörgő, Sándor** (with Horváth, Lajos) On the passage of a random walk from generalized balls. *Adaptive statistical procedures and related topics (Upton, N.Y., 1985)*, 1–17, *IMS Lecture Notes—Monograph Ser.*, **8**, Inst. Math. Statist., Hayward, CA, 1986. (W. E. Pruitt) **89a:60077** 60F15 (60G50)
- (with Csörgő, Miklós) Estimation of percentile residual life. *Oper. Res.* **35** (1987), no. 4, 598–606. (Thomas W. Sager) **89d:62104** 62N05 (62G05)
- (with Häusler, Erich; Mason, David M.) The asymptotic distribution of trimmed sums. *Ann. Probab.* **16** (1988), no. 2, 672–699. (R. A. Maller) **89f:60021** 60F05 (62G30)
- (with Burke, Murray D.; Horváth, Lajos) A correction to and improvement of: "Strong approximations of some biometric estimates under random censorship" [Z. Wahrsch. Verw. Gebiete **56** (1981), no. 1, 87–112; MR 83a:62102]. *Probab. Theory Related Fields* **79** (1988), no. 1, 51–57. (Niels Keiding) **89h:62058** 62G05 (62P10)
- Csuhaj-Várjú, E.** A connection between descriptive complexity of context-free grammars and grammar form theory. *Trends, techniques, and problems in theoretical computer science (Smolenice, 1986)*, 60–74, *Lecture Notes in Comput. Sci.*, **281**, Springer, Berlin-New York, 1987. (Jürgen Dassow) **89c:68071** 68Q50 (68Q45)
- see also *Proceedings: Meeting of Young Computer Scientists*, **89g:68002**
- ta khac Cu** see **Ta Khac Cu**
- Cuadras, C. M.** (with Ocaña, J.) Computer generation of a bivariate system with specified marginals and dependence parameter estimation. (Spanish. English summary) *Quæstio 11* (1987), no. 2, 3–37, 151. (Z. Sidák) **89k:62070** 62H05 (62E10, 65C10, 65U05)
- Cucker, Felipe** Sur les anneaux de sections globales du faisceau structural sur le spectre réel. (English summary) [On the global section rings of the structure sheaf on the real spectrum] *Comm. Algebra* **16** (1988), no. 2, 307–323. (Jesús M. Ruiz) **89b:14033** 14G30 (14A05, 32B15)
- Fonctions de Nash sur les variétés affines. (English summary) [Nash functions on affine varieties] *Math. Z.* **198** (1988), no. 1, 53–62. (Mario Raimondo) **89m:32017** 32C05 (14G30)
- Cucumel, Guy** (with Leclerc, Bruno) Consensus en classification: une revue bibliographique. (English summary) [Consensus in classification: a bibliographic review] *Math. Sci. Humaines* **100** (1987), 109–128, 131 (1988). (Summary) **89d:92003** 92A05 (00A15, 92A25)
- Čuda, K.** A contribution to topology in AST: compactness. *Comment. Math. Univ. Carolin.* **28** (1987), no. 1, 43–61. (L. Bukovský) **89a:03098** 03E70 (54J05)
- (with Vojtášková, B.) Minimal monads. *Comment. Math. Univ. Carolin.* **28** (1987), no. 4, 691–706. (Athanasios Tzouvaras) **89b:03089** 03E70 (54J05)
- Cuenya, H.** Padé approximants as limits of best  $L^p$  rational approximants. *Approx. Theory Appl.* **4** (1988), no. 2, 75–77. (Summary) **89j:41022** 41A21 (41A25)
- Cuer, M.** (with Zolésio, J.-P.) Control of singular problem via differentiation of a min-max. *Systems Control Lett.* **11** (1988), no. 2, 151–158. (P. Achutuan) **89g:49035** 49B40 (49A51, 93C25)
- garcía-Cuerva, José** see **García-Cuerva, José**
- alcalde-Cuesta, Fernando** see **Alcalde-Cuesta, Fernando**
- Cuesta, José Antonio** (with Brito, Ricardo; Rañada, Antonio F.) Absence of dissipative solutions of the Schrödinger and Klein-Gordon equations with logarithmic nonlinearity. *Phys. Lett. A* **128** (1988), no. 6–7, 360–366. (Gustavo Perla Menzala) **89f:35176** 35Q20 (81C05)
- Cuesta, Juan Antonio** (with Matrán, Carlos) Strong convergence of weighted sums of random elements through the equivalence of sequences of distributions. *J. Multivariate Anal.* **25** (1988), no. 2, 311–322. (M. Bhaskara Rao) **89g:60103** 60F15 (60B05, 60B12)
- (with Matrán, Carlos) The strong law of large numbers for  $k$ -means and best possible nets of Banach valued random variables. *Probab. Theory Related Fields* **78** (1988), no. 4, 523–534. (V. K. Rohatgi) **89g:60011** 60B12 (60F15)
- Cuesta Dutari, Norberto** Arithmetic of the sequences  $6n - 1$ ,  $6n + 1$  and of twin primes. (Spanish. English summary) *Collect. Math.* **37** (1986), no. 3, 211–227. (B. Richter (Zbl 639:10009)) **89i:11010** 11A41
- Cuesta Sainz de la Torre, Lylia E.** (with Soto Villaverde, Andrés) Application of Fourier series to curve fitting. (Spanish. English summary) *Investigación Oper.* **7** (1986), no. 3, 17–28. (Summary) **89f:65021** 65D10
- Cuevas, Antonio** Qualitative robustness in abstract inference. *J. Statist. Plann. Inference* **18** (1988), no. 3, 277–289. (Summary) **89h:62053** 62F35
- Cufaro Petroni, Nicola** Classical analogs for quantum systems. *Phys. Lett. A* **124** (1987), no. 9, 475–479. (A. Barchielli) **89b:81019** 81B99 (70H40)
- (with Gueret, Philippe; Vigier, J.-P.) Second-order wave equation for spin- $\frac{1}{2}$  fields: 8-spinors and canonical formulation. *Found. Phys.* **18** (1988), no. 11, 1057–1075. (Summary) **89k:81057** 81D25 (81D27)
- Cufl, J.** (with Carmona, J. J.) On the distance of an analytic function to VMO. *J. London Math. Soc.* (2) **34** (1986), no. 1, 52–66. (Autorreferat (Zbl 583:30034)) **89a:30030** 30D55 (30D40, 30E10, 30H05)
- (with Carmona, J. J.) On analytic functions with locally connected cluster sets. *Complex Variables Theory Appl.* **10** (1988), no. 1, 43–52. (Paul D. Humke) **89g:30060** 30D40
- (with Carmona, J. J.; Pommerenke, Ch.) On the angular limits of Bloch functions. *Publ. Mat.* **32** (1988), no. 2, 191–198. (J. Clunie) **89m:30071** 30D45 (30B10, 30C55, 30D40)
- Cui, Bao Tong** Some order estimates for integrals depending on a parameter. (Chinese) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **13** (1987), no. 4, 52–53. (Xianggen Xia) **89a:26013** 26A42
- Cui, Hong Bin** (with Zheng, Chong You) The structure of level-preserving fuzzy order homomorphisms and another definition of fuzzy homeomorphisms. (Chinese) *Kexue Tongbao (Chinese)* **32** (1987), no. 13, 964–966. (Not in MR) **89A40** (03E72)
- (with Fan, Lei; Zheng, Chong You) Direct product decompositions of molecular lattices and the structure of generalized order homomorphisms. (Chinese) *Kexue Tongbao (Chinese)* **32** (1987), no. 21, 1611–1614. (Not in MR) **06B99** (03E72)
- (with Zheng, Chong You) On structure of stratification-preserving fuzzy order homomorphism and another definition of fuzzy homeomorphism. *Kexue Tongbao (English Ed.)* **33** (1988), no. 6, 463–466. (From the introduction) **89m:06010** 06B30 (03E72, 54A40)
- Cui, Ming Gen** (with Deng, Zhong Xing) Formal solutions of ill-posed operator equations of the first kind. (Chinese) *Acta Math. Sci. (Chinese)* **8** (1988), no. 2, 139–145. (Shao Zhong Yan) **89j:47008** 47A50 (47B38)
- (with Deng, Zhong Xing) Estimates of upper bounds for Lebesgue constants. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **1988**, no. 1, 1–5. (Summary) **89j:41004** 41A05
- Cui, Ping Yuan** (with Wu, Guang Yu) A fast adaptive self-tuning regulator with delay compensator. (Chinese. English summary) *Control Theory Appl.* **4** (1987), no. 4, 100–104. (Not in MR) **93B50** (93C40)
- Cui, Shang Bin** Initial-boundary value problems for semilinear hyperbolic convolutional integro-differential equations. (Chinese. English summary) *Acta Math. Appl. Sinica* **11** (1988), no. 3, 271–286. (Summary) **89k:35143** 35L70 (45K05, 73F15, 73K05)
- Cui, Wen-Tian** (with Fujishige, Satoru) A primal algorithm for the submodular flow problem with minimum-mean cycle selection. (Japanese summary) *J. Oper. Res. Soc. Japan* **31** (1988), no. 3, 431–441. (Gheorghe Opris) **89k:90052** 90B10 (90B15)
- A network simplex method for the maximum balanced flow problem. (Japanese summary) *J. Oper. Res. Soc. Japan* **31** (1988), no. 4, 551–564. (Summary) **89k:90053** 90B10 (90C35)
- Cui, Xue Wei** (with Wang, Mu Qiu; Wang, Lian) The existence of periodic solutions of large-scale discrete systems under structural perturbations. (Chinese. English summary) *J. Math. Res. Exposition* **8** (1988), no. 4, 559–566. (Sui Sun Cheng) **89m:39008** 39A10 (93A15)
- Cui, Yu Ting** (with Kano, Mikio) Some results on odd factors of graphs. *J. Graph Theory* **12** (1988), no. 3, 327–333. (Dieter Kratsch) **89g:05083** 05C70
- Cui, Yun An** (with Wang, Ting Fu) Strong extreme points of Orlicz spaces. (Chinese) *J. Math. (Wuhan)* **7** (1987), no. 4, 335–340. (Bor-Luh Lin) **89m:46053** 46E30 (46A45)
- Culberson, J.** (with Munro, J. I.) Explaining the behaviour of binary search trees under prolonged updates: a model and simulations. *Comput. J.* **32** (1989), no. 1, 68–75. (Not in MR) **68U20** (68–04, 68P10, 68R10)
- Culik, Karel, II** (with Linna, Matti) The equivalence problem for  $n$ -tape finite automata with simple cycles. *Foundations of software technology and theoretical computer science (Pune, 1987)*, 15–25, *Lecture Notes in Comput. Sci.*, **287**, Springer, Berlin-New York, 1987. (Summary) **89a:68049** 68Q05 (03D05)
- On invertible cellular automata. *Complex Systems* **1** (1987), no. 6, 1035–1044. (Sheng Yu) **89c:68094** 68Q80 (03D05, 68Q45)
- (with Karhumäki, Juhani) Systems of equations over a finitely generated free monoid having an effectively findable equivalent finite subsystem. *Semigroups, theory and applications (Oberwolfach, 1986)*, 18–27, *Lecture Notes in Math.*, **1320**, Springer, Berlin-New York, 1988. (André Lentini) **89k:20084** 20M05 (68Q70)
- (with Yu, Sheng) Undecidability of CA classification schemes. *Complex Systems* **2** (1988), no. 2, 177–190. (Robert M. Baer) **89c:68095** 68Q80 (68Q45)
- (with Karhumäki, Juhani) On totalistic systolic networks. *Inform. Process. Lett.* **26** (1988), no. 5, 231–236. (J. Gruska) **89c:68096** 68Q80 (68U20)
- (with Yu, Sheng) The emptiness problem for CA limit sets. *Mathematical modelling in science and technology (St. Louis, MO, 1987)*. *Math. Comput. Modelling* **11** (1988), 363–366. (Hideki Yamasaki) **89j:68114** 68Q80 (03D05, 03D40, 68Q20)
- Variations of the firing squad problem and applications. *Inform. Process. Lett.* **30** (1989), no. 3, 153–157. (Summary) **89k:68109** 68Q80 (68Q45, 90D15)
- Cull, Paul** Stability of discrete one-dimensional population models. *Bull. Math. Biol.* **50** (1988), no. 1, 67–75. (H. I. Freedman) **89d:92078** 92A17
- Cullen, D. J.** Underlying algebraic framework of equivalence relations on linear systems. *Internat. J. Control* **45** (1987), no. 4, 1415–1425. (Edward W. Kamen) **89d:93028** 93B25 (93B17, 93B20, 93C05)
- Cullen, M. J. P.** (with Shuts, G. J.) Numerical modelling of balanced atmospheric flow. *Comput. Math. Appl.* **16** (1988), no. 1–2, 69–91. (Summary) **89c:86005** 86A10 (86–08)
- Culler, M.** (with Gordon, C. McA.; Luecke, J.; Shalen, Peter B.) Correction to: "Dehn surgery on knots" [Ann. of Math. (2) **125** (1987), no. 2, 237–300; MR 88a:57026]. *Ann. of Math.* (2) **127** (1988), no. 3, 663. (From the text) **89c:57015** 57N12 (57M25, 57M40)
- Cullis, B. R.** (with McGilchrist, C. A.) Properties of the patterned vech operator. *Austral. J. Statist.* **30** (1988), no. 1, 85–92. (Summary) **89f:62047** 62H05 (15A04)
- Cumberland, W. G.** (with Royall, R. M.) Does simple random sampling provide adequate balance? *J. Roy. Statist. Soc. Ser. B* **50** (1988), no. 1, 118–124. (Summary) **89c:62014** 62D05 (62F35)
- Cuminato, J. A.** On the uniform convergence of a collocation method for a class of singular integral equations. *BIT* **27** (1987), no. 2, 190–202. (William F. Moss) **89i:65139a** 65R20
- Erratum: "On the uniform convergence of a collocation method for a class of singular integral equations". *BIT* **27** (1987), no. 4, 627. (William F. Moss) **89i:65139b** 65R20
- Cumino, Caterina** (with Greco, Silvio; Manaresi, Mirella) Hyperplane sections of weakly normal varieties in positive characteristic. *Proc. Amer. Math. Soc.* **106** (1989), no. 1, 37–42. (N. Mohan Kumar) **89k:14014** 14E05 (14E22)
- Cumming, Andrew** (with Lindsay, Paul S.) Quasiperiodicity and chaos in a system with three competing frequencies. *Phys. Rev. Lett.* **60** (1988), no. 26, 2719–2722. (Summary) **89g:58129** 58F13 (70–04, 70K50)
- Cummings, L. J.** Aspects of synchronizable coding. *Proceedings of the first Carbondale combinatorics conference (Carbondale, Ill., 1986)*. *J. Combin. Math. Combin. Comput.* **1** (1987), 67–84. (J. J. Stiffler) **89i:94048** 94B50 (94–02, 94B45)
- Connectivity of synchronizable codes in the  $N$ -cube. *J. Combin. Math. Combin. Comput.* **3** (1988), 93–96. (Summary) **89d:94050** 94B50 (05A99)



- (with Heuvers, Konrad J.; Rao, K. P. S. Bhaskara) A characterization of the permanent function by the Binet-Cauchy theorem. *Linear Algebra Appl.* **101** (1988), 49–72. (H. Mine) **89b:15013** 15A15
- Cummins, C. J. (with King, Ronald Curtis) Young diagrams, supercharacters of  $OSp(M/N)$  and modification rules. *J. Phys. A* **20** (1987), no. 11, 3103–3120. (A. U. Klimyk) **89a:22039** 22E70 (81C40)
- (with Patera, J.) Polynomial icosahedral invariants. *J. Math. Phys.* **29** (1988), no. 8, 1736–1745. (U. Cattaneo) **89b:20023** 20C30 (17B25, 20C35)
- On Kronecker products of irreducible representations of the symmetric group. *J. Phys. A* **21** (1988), no. 8, 1907–1912. (Michael H. Peel) **89g:20029** 20C30
- Cummins, J. David Risk-based premiums for insurance guaranty funds. *J. Finance* **43** (1988), no. 4, 823–839. (Not in MR) **90A09**
- da Cunha, J. Anastácio see Queiroz, João Filipe, **89e:01025** and de Oliveira, A. J. Franco, **89c:01048**
- Cunha, Wagner Clepa (with Matsumoto, Hiroshi; Yamashita, Masafumi; Ae, Tadashi) Time complexity of response time estimation of multichannel communication networks. *Systems Comput. Japan* **19** (1988), no. 11, 25–32. (Not in MR) **88M10** (90B10)
- Cunningham-Green, R. A. (with Burkard, Rainer E.) Saddlepoints in group and semigroup minimization. *Optimization* **19** (1988), no. 4, 451–459. (Knut Richter) **89b:90184** 90C27 (06F05, 90C10)
- Cunningham, W. H. see Submodular optimization, **89g:90181**
- Cunto, Walter (with Poblete, Patricio V.) Transforming unbalanced multiway trees into a practical external data structure. *Acta Inform.* **26** (1988), no. 3, 193–211. (Summary) **89b:68019** 68P05 (68P10, 68R10)
- Cuntz, J. A new look at  $K$ -theory. *K-Theory* **1** (1987), no. 1, 31–51. (Claude Schochet) **89a:46142** 46L80 (19K99, 46M20)
- (with Connes, Alain) Quasi homomorphismes, cohomologie cyclique et positivité. (English summary) [Quasihomomorphismes, cyclic homology and positivity] *Comm. Math. Phys.* **114** (1988), no. 3, 515–526. (Jonathan M. Rosenberg) **89b:46098** 46L80 (19K99, 58B15, 58G12)
- nguyen ngoc Cuong see Nguyen Ngoc Cuong
- Čupona, G. (with Markovski, S.; Janževa, B.) Post theorem for vector-valued semigroups. *Proceedings of the Conference "Algebra and Logic", Cetinje 1986*, 33–46, *Univ. Novi Sad, Novi Sad*, 1987. (Wiesław A. Dudek) **89c:20125** 20N15
- Curado, Evaldo M. F. (with Hauser, Paulo R.) Potts ferromagnet: transformations and critical exponents in planar hierarchical lattices. *J. Statist. Phys.* **52** (1988), no. 1–2, 503–507. (James L. Monroe) **89i:82088** 82A68 (82A05, 82A25)
- Curci, Giuseppe (with Paffuti, Giampiero; Rossi, Paolo<sup>1</sup>) The hidden  $SO(4)$  symmetry of general  $SU(2)$  Thirring models. *Phys. Lett. B* **215** (1988), no. 2, 349–351. (Summary) **89k:81074** 81E13
- (with Campostrini, Massimo; Rossi, Paolo<sup>1</sup>) The Gross-Neveu model and the pseudomorphism algorithm. *Nuclear Phys. B* **314** (1989), no. 2, 467–518. (Summary) **89k:81132** 81E99 (81–08, 81E30)
- Curli, Paulo Roberto (with Conceição, Eduardo Pinto) Least-squares solutions using the Penrose generalized inverse matrix. (Portuguese. English summary) *Rev. Mat. Estatist.* **4/5** (1986/87), 105–118. (Not in MR) **89F05** (62J05)
- Curl, I. J. (with Maschler, Michael; Tijds, Stef H.) Bankruptcy games. (German summary) *Z. Oper. Res. Ser. A-B* **31** (1987), no. 5, A143–A159. (Eric Van Damme) **89b:90241** 90D12
- Curien, P.-L. (with Cousineau, G.; Mauny, M.) The categorical abstract machine. *Sci. Comput. Programming* **8** (1987), no. 2, 173–202. (G. Berry) **89a:68147** 68Q55 (03B40, 03B70, 68Q05)
- Curran, Donald Joseph (with Colbourn, Charles J.; Vanstone, S. A.) Recursive constructions for Kirkman squares with block size three. *Utilitas Math.* **32** (1987), 169–174. (Rudolf Mathon) **89d:05045** 05B30
- (with Vanstone, S. A.) Doubly resolvable designs from generalized Bhaskar Rao designs. *Proceedings of the Oberwolfach Meeting "Kombinatorik" (1986)*. *Discrete Math.* **73** (1989), no. 1–2, 49–63. (Ferenc Wettl) **89k:05016** 05B05
- Currais-Bosch, Carlos Infinitesimal transformations on noncompact manifolds. *Ann. Mat. Pura Appl.* (4) **149** (1987), 347–360. (Jürgen Eichhorn) **89c:53062** 53C20 (53C21, 53C55)
- The geometry of totally geodesic foliations admitting Killing field. *Tôhoku Math. J.* (2) **40** (1988), no. 4, 535–548. (James J. Hebda) **89k:53034** 53C12 (57R30)
- Currey, Bradley N. On the dual of an exponential solvable Lie group. *Trans. Amer. Math. Soc.* **309** (1988), no. 1, 295–307. (Jean Ludwig) **89i:22015** 22E27
- Currie, David A. (with Levine, Paul) The design of feedback rules in linear stochastic rational expectations models. *J. Econom. Dynamics Control* **11** (1987), no. 1, 1–28. (Summary) **89d:90051** 90A14
- Curle, Gregory Milne on the context principle. *Mind* **96** (1987), no. 384, 543–544. (Not in MR) **03A05** (01A60, 03–03)
- see also Milne, Peter, (Not in MR)
- Currier, Robert J. On hypersurfaces of hyperbolic space infinitesimally supported by horospheres. *Trans. Amer. Math. Soc.* **313** (1989), no. 1, 419–431. (John Bolton) **89i:53037** 53C40 (57R30, 58F17)
- Curry, C. (with Fusco, Domenico) Reduction to linear canonical forms and generation of conservation laws for a class of quasilinear hyperbolic systems. *Internat. J. Non-Linear Mech.* **23** (1988), no. 1, 25–35. (Long Wei Lin) **89c:35092** 35L65
- Curry, James H. (with Fiedler, Stuart L.) On the dynamics of Laguerre's iteration:  $Z^n - 1$ . *Phys. D* **30** (1988), no. 1–2, 124–134. (James D. Meiss) **89b:65076** 65H05 (58F08, 65D15, 70K99)
- souza de Cursi, José Eduardo see Souza de Cursi, José Eduardo
- Curtain, R. F. (with Glover, Keith) Robust stabilization of infinite-dimensional systems by finite-dimensional controllers: derivations and examples. *Modelling, identification and robust control* (Stockholm, 1985), 113–127, *North-Holland, Amsterdam-New York*, 1986. (Summary) **89d:93075** 93D10 (93B25, 93C25)
- (with Kotelenez, Peter) Stochastic bilinear spectral systems. *Stochastics* **20** (1987), no. 1, 3–15. (Editors) **89b:60145** 60H15 (73K05)
- (with Bontsema, J.; Schumacher, J. M.) Robust control of flexible structures: a case study. *Automatica—J. IFAC* **24** (1988), no. 2, 177–186. (Hartmut Logemann) **89k:93161** 93D15 (73K05, 93B35, 93C20)
- $L_\infty$ -approximations of complex functions and robust controllers for large flexible space structures. *Nieuw Arch. Wisk.* (4) **6** (1988), no. 1–2, 7–22. (Summary) **89i:93001** 93–02 (73K99, 93B35, 93B50, 93C75)
- (with Glover, Keith; Partington, J. R.) Realisation and approximation of linear infinite-dimensional systems with error bounds. *SIAM J. Control Optim.* **26** (1988), no. 4, 863–898. (Vl. Răsvan) **89i:93067** 93C25 (41A65, 47B35, 93B15, 93B28)
- (with Zwart, H. J.; Partington, J. R.; Glover, Keith) Partial fraction expansions for delay systems. *Systems Control Lett.* **10** (1988), no. 4, 235–243. (Not in MR) **34K35** (93B50, 93C25)
- (with Zwart, H. J.) A note on spectral realisations for delay systems. *Systems Control Lett.* **11** (1988), no. 4, 265–269. (Not in MR) **34K35** (93B15)
- Curtis, A. R. Analysis of covariance after nonlinear least-squares fitting. *IMA J. Numer. Anal.* **6** (1986), no. 4, 453–461. (Summary) **89k:62087** 62J05 (62J10)
- Stiff ODE initial value problems and their solution. *The state of the art in numerical analysis* (Birmingham, 1986), 433–450, *Inst. Math. Appl. Conf. Ser. New Ser.*, 9, *Oxford Univ. Press, New York*, 1987. (David R. Hill) **89b:65168** 65L05
- Curtis, Ch. ★ Representation theory of Hecke algebras. Notes taken by Peter Fleischmann. With an introduction by Fleischmann. *Vorlesungen aus dem Fachbereich Mathematik der Universität Essen* [Lecture Notes in Mathematics at the University of Essen], 15, *Universität Essen, Fachbereich Mathematik, Essen*, 1987. iv+86 pp. (G. I. Lehrer) **89g:20069** 20G05 (17B10, 22E50)
- The Hecke algebra of a finite Coxeter group. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 51–60, *Proc. Sympos. Pure Math.*, 47, Part 1, *Amer. Math. Soc., Providence, RI*, 1987. (David B. Surowski) **89c:20018b** 20C15 (20G05, 20G40)
- A further refinement of the Bruhat decomposition. *Proc. Amer. Math. Soc.* **102** (1988), no. 1, 37–42. (Brian J. Parshall) **89d:20038** 20G15
- Curtis, D. W. A hyperspace retraction theorem for a class of half-line compactifications. *Proceedings of the 1986 topology conference* (Lafayette, La., 1986). *Topology Proc.* **11** (1986), no. 1, 29–64. (Charles R. Traina) **89f:54019** 54B20 (54D35)
- (with van Mill, Jan) The compact extension property. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 115–119, *R & E Res. Exp. Math.*, 16, *Heldermann, Berlin*, 1988. (Jack Girollo) **89k:54043** 54C55 (54F45)
- (with Miklos, S.) Nonexistence of local expansions on certain continua. *Fund. Math.* **129** (1988), no. 3, 207–210. (Edward D. Tymchatyn) **89k:54031** 54C10 (54F20, 57M10)
- (with Patching, D. S.) Hyperspaces of direct limits of locally compact metric spaces. *Topology Appl.* **29** (1988), no. 1, 55–60. (Alejandro Illanes Mejia) **89g:54020** 54B20 (54B25)
- Curtis, W. D. Global uniformly expanding finite amplitude waves. *Rocky Mountain J. Math.* **18** (1988), no. 1, 13–24. (Yusuke Kato) **89d:35111** 35L60 (76N15)
- Curtis, Raul E. (with Muhly, Paul S.; Nakazi, Takahiko) Uniform algebras, Hankel operators and invariant subspaces. *Advances in invariant subspaces and other results of operator theory* (Timişoara and Herculane, 1984), 109–119, *Oper. Theory. Adv. Appl.*, 17, *Birkhäuser, Basel-Boston, MA*, 1986. (Stephen Power) **89k:46113** 46J15 (47B35, 47B38)
- (with Muhly, Paul S.; Nakazi, Takahiko; Yamamoto, Takahiko) On superalgebras of the polydisc algebra. *Acta Sci. Math. (Szeged)* **51** (1987), no. 3–4, 413–421. (Hákan Hedenmalm) **89g:46089** 46J15 (32E25)
- (with Dash, A. T.) Browder spectral systems. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 407–413. (F.-H. Vasilescu) **89f:47004** 47A10 (47D99)
- (with Fialkow, Lawrence A.) Similarity, quasimilarity, and operator factorizations. *Trans. Amer. Math. Soc.* **314** (1989), no. 1, 225–254. (D. A. Herrero) **89k:47001** 47A05 (47A10, 47A30, 47A53, 47A62, 47B37)
- Curtright, Thomas Counting symmetry patterns in the spectra of strings. *String theory. Quantum cosmology and quantum gravity. Integrable and conformal invariant theories* (Meudon, 1986), 304–333, *World Sci. Publishing, Singapore*, 1987. (Nigel B. Backhouse) **89a:81170** 81G20 (22E46, 81E30)
- (with van Nieuwenhuizen, P.) Supersprings. *Nuclear Phys. B* **294** (1987), no. 1, 125–135. (Gary T. Horowitz) **89a:81121** 81E99 (53C80, 81E30)
- Are there any superstrings in eleven dimensions? *Phys. Rev. Lett.* **60** (1988), no. 5, 393–396. (C. Gauthier) **89b:81181a** 81E99 (53C80, 81E30, 83E30)
- Erratum: "Are there any superstrings in eleven dimensions?". *Phys. Rev. Lett.* **60** (1988), no. 19, 1990. (C. Gauthier) **89b:81181b** 81E99 (53C80, 81E30, 83E30)
- Cushing, J. M. Nonlinear matrix models and population dynamics. *Natur. Resource Modeling* **2** (1988), no. 4, 539–580. (Hal Leslie Smith) **89i:92037** 92A15
- Cushman, R. (with Sanders, J. A.) Nilpotent normal form in dimension 4. *Dynamics of infinite-dimensional systems* (Lisbon, 1986), 61–66, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 37, *Springer, Berlin-New York*, 1987. (L. Reizig) **89b:58113** 58F10 (34C20)
- (with Sanders, J. A.) Invariant theory and normal form of Hamiltonian vectorfields with nilpotent linear part. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 353–371, *CMS Conf. Proc.*, 8, *Amer. Math. Soc., Providence, RI*, 1987. (Richard C. Churchill) **89b:58070** 58F05 (17B10, 17B20)
- (with Sanders, J. A.) Splitting algorithm for nilpotent normal forms. *Dynamics Stability Systems* **2** (1987), no. 3–4, 235–246. (Gong Ning Chen) **89i:58032** 58F05 (34C20)
- (with Duistermaat, J. J.) The quantum mechanical spectral pendulum. *Bull. Amer. Math. Soc. (N.S.)* **19** (1988), no. 2, 475–479. (Frans Conrinx) **89j:58029** 58F05 (81C99)
- (with Billera, L. J.; Sanders, J. A.) The Stanley decomposition of the harmonic oscillator. *Nederl. Akad. Wetensch. Indag. Math.* **50** (1988), no. 4, 375–393. (Sergey Yuzvinsky) **89m:13013** 13H10 (05A15, 52A25)
- (with Sanders, J. A.; White, Neil L.) Normal form for the  $(2; n)$ -nilpotent vector field, using invariant theory. *Phys. D* **30** (1988), no. 3, 399–412. (Zhen Xi Dong) **89j:58092** 58F14
- Cushman-Roisin, B. (with Heil, Wolfgang; O'Brien, J. J.) Realizing two-dimensional, continuous directed fields by vector fields and an algorithm to remove dichotomous ambiguity in a discrete field. *Math. Comput. Modelling* **10** (1988), no. 11, 853–862. (Summary) **89i:86005** 86A10 (58F40)
- Cusick, T. W. (with Krass, S.) Formulas for some Diophantine approximation constants. *J. Austral. Math. Soc. Ser. A* **44** (1988), no. 3, 311–323. (F. Beukers) **89c:11105** 11J13
- (with Wolfkill, J.) Lattice octahedra and sums of powers of linear forms. *J. London Math. Soc.* (2) **38** (1988), no. 2, 207–215. (Peter M. Gruber) **89m:11062** 11H06 (11H50, 11J25, 11J52)

- Cutkosky, R. E. (with Wang, K. C.) Relativistic Landau levels in a hyperspherical finite cavity. *Czechoslovak J. Phys. B* 38 (1988), no. 8, 825-836. (Summary) **89b:81139** 81G10
- Cutkosky, Steven D. Weil divisors and symbolic algebras. *Duke Math. J.* 57 (1988), no. 1, 175-183. (Takao Fujita) **89e:14003** 14B05 (14C20, 14E30)
- Factorization of complete ideals. *J. Algebra* 115 (1988), no. 1, 144-149. (Sarah Glaz) **89d:13006** 13C05 (13H05)
- Elementary contractions of Gorenstein threefolds. *Math. Ann.* 280 (1988), no. 3, 521-525. (Harry D'Souza) **89k:14070** 14J30 (13F15, 14E35)
- Cutland, Nigel J. Nonstandard techniques in stochastic optimal control theory. *Stochastic processes in physics and engineering* (Bielefeld, 1986), 75-90, *Math. Appl.*, 42, Reidel, Dordrecht-Boston, MA, 1988. (Summary) **89e:93219** 93E20 (03H10)
- (with Kessler, Christoph; Kopp, P.; Ekkehard; Ross, David Andrew) On Cauchy's notion of infinitesimal. *British J. Philos. Sci.* 39 (1988), no. 3, 375-378. (Andreas Blass) **89k:03085** 03H05 (01A55, 01A60, 26E35)
- see also Nonstandard analysis and its applications, **89m:03060**
- Cutler, C. D. A note on equivalent interval covering systems for Hausdorff dimension on  $\mathbb{R}$ . *Internat. J. Math. Math. Sci.* 11 (1988), no. 4, 643-649. (K. E. Hirst) **89h:28008** 28A75 (11K16, 28A12)
- Cutler, Curt (with Wald, Robert M.) A new type of gauge invariance for a collection of massless spin-2 fields. I. Existence and uniqueness. *Classical Quantum Gravity* 4 (1987), no. 5, 1267-1278. (Charles Nash) **89c:81082** 81E20 (53C80, 81D25)
- Cutler, Doyle The number of separable  $p$ -groups of cardinality  $R_1$  having isometric socles. *Comm. Algebra* 16 (1988), no. 4, 797-803. (R. S. Pierce) **89g:20086** 20K10 (03E45)
- Cutler, Robert Brian (with Muroga, Saburo) Derivation of minimal sums for completely specified functions. *IEEE Trans. Comput.* 36 (1987), no. 3, 277-292. (Issam Abdul-Kader) **89b:94035** 94C10
- van Cutsem, Bernard see Van Cutsem, Bernard
- van Cutsem, Th. see Van Cutsem, Th.
- Cuyt, Annie A. M. (with Jacobsen, Lisa; Verdonk, Brigitte M.) Instability and modification of Thiele interpolating continued fractions. *Appl. Numer. Math.* 4 (1988), no. 2-4, 253-262. (Claude Brezinski) **89c:41019** 41A20 (65D05)
- (with Verdonk, Brigitte M.) A review of branched continued fraction theory for the construction of multivariate rational approximants. *Appl. Numer. Math.* 4 (1988), no. 2-4, 263-271. (Kh. I. Kuchmins'ka) **89k:41018** 41A20 (40A15, 65D15)
- A multivariate qd-like algorithm. *BIT* 28 (1988), no. 1, 98-112. (Peter Alfeld) **89c:65013** 65D05 (41A21)
- (with Verdonk, Brigitte M.) Multivariate reciprocal differences for branched Thiele continued fraction expansions. *J. Comput. Appl. Math.* 21 (1988), no. 2, 145-160. (Kh. I. Kuchmins'ka) **89f:41023** 41A21 (41A63)
- Cuzick, Jack Rank regression. *Ann. Statist.* 16 (1988), no. 4, 1369-1389. (M. Hušková) **89m:62030** 62F12 (62J02)
- Cvetič, Gorazd (with Yan, Tung-Mow) Charge exchange scattering of charged gauge bosons by 't Hooft-Polyakov monopole. *Nuclear Phys. B* 299 (1988), no. 3, 587-612. (Thomas Schücker) **89b:81121** 81E13 (81G20)
- Cvetič, Mirjam Blown-up orbifolds. *International Workshop on Superstrings, Cosmology, Composite Structures* (College Park, MD, 1987), 269-284, *World Sci. Publishing, Singapore*, 1987. (Summary) **89j:83073** 83E15 (22E40, 53C55, 81E30, 83E30)
- Exact construction of (0, 2) Calabi-Yau manifolds. *Phys. Rev. Lett.* 59 (1987), no. 25, 2829-2831. (B. Spence) **89a:53052** 53C25 (32C10, 32J99, 53C80, 81E30, 81E99, 83E30)
- (with Louis, Jan; Ovrut, Burt A.) A string calculation of the Kähler potentials for moduli of  $Z_N$  orbifolds. *Phys. Lett. B* 206 (1988), no. 2, 227-233. (Miao Li) **89j:83074** 83E15 (22E40, 32G13, 81E30, 83E30)
- How chiral are type-II superstrings? *Phys. Lett. B* 212 (1988), no. 2, 153-157. (Summary) **89i:81107** 81E99 (81E30)
- Absence of the nonrenormalizable superpotential in the  $\sigma$ -model perturbation for smooth (0, 2) compactifications. *Phys. Rev. D* (3) 37 (1988), no. 8, 2366-2368. (Summary) **89b:81153** 81E20 (81E40)
- Cvetković, Dragoljub Some projective transformations of the plane. (Serbo-Croatian. Russian summary) *Zb. Rad. (Kragujevac)* No. 4 (1983), 139-152. (Elena Brožiková) **89b:51002** 51A05
- Some transformations of projective space. (Serbo-Croatian. French summary) *Zb. Rad. (Kragujevac)* No. 4 (1983), 167-188. (Elena Brožiková) **89b:51003** 51A05
- Cvetković, Dragoš (with Rowlinson, P.) Spectra of unicyclic graphs. *Graphs Combin.* 3 (1987), no. 1, 7-23. (Wayne M. Dymacek) **89c:05054** 05C50
- (with Doob, Michael; Gutman, I.; Torgašev, Aleksandar) ★ Recent results in the theory of graph spectra. *Annals of Discrete Mathematics*, 36, North-Holland Publishing Co., Amsterdam-New York, 1988. xii+306 pp. ISBN 0-444-70361-6 (Robert C. Brigham) **89d:05130** 05C50 (05C75, 92A40)
- (with Pevac, Irena) Man-machine theorem proving in graph theory. *Artificial Intelligence* 35 (1988), no. 1, 1-23. (Alexander Leitsch) **89b:68130** 68T15 (03B35, 05-04, 05C99)
- Constructing trees with given eigenvalues and angles. *Linear Algebra Appl.* 105 (1988), 1-8. (R. E. Pippert) **89i:05195** 05C50 (05C05, 05C60)
- Cvetković, Ljiljana (with Herceg, Dragoslav) Some results on  $M$ - and  $H$ -matrices. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 16 (1986), no. 2, 121-129. (Jeffrey Stuart) **89i:15016** 15A48 (15A57)
- (with Herceg, Dragoslav) A combination of relaxation methods and method of averaging functional corrections. *Numerical methods and approximation theory, III* (Niš, 1987), 241-249, *Univ. Niš, Niš*, 1988. (Summary) **89g:65052** 65F30
- Cvijanović, R. (with Ljolić, K.) On the dual symmetrical theory of the complex vector field. (Serbo-Croatian summary) *Akad. Nauka Umjet. Bosne Hercegov. Rad. Odjel. Prirod. Mat. Nauka* No. 25 (1988), 189-200. (Adam Bechler) **89i:81108** 81E99 (81G25)
- Cvijanović, Predrag (with Gunaratne, Gemunu H.; Procaccia, Itamar) Topological and metric properties of Hénon-type strange attractors. *Phys. Rev. A* (3) 38 (1988), no. 3, 1503-1520. (Summary) **89i:58080** 58F13
- Invariant measurement of strange sets in terms of cycles. *Phys. Rev. Lett.* 61 (1988), no. 24, 2729-2732. (Summary) **89i:58081** 58F13 (70K50, 82A99)
- (with Artuso, Roberto; Kenny, Brian G.) Phase transitions on strange irrational sets. *Phys. Rev. A* (3) 39 (1989), no. 1, 268-281. (Summary) **89k:28003** 28A75 (11K55, 58F13, 82A25)
- Cwikel, Michael (with Janson, Svante) Real and complex interpolation methods for finite and infinite families of Banach spaces. *Adv. in Math.* 66 (1987), no. 3, 234-290. (Irina U. Asekritova) **89c:46082** 46M35
- (with Sagher, Y.) An extension of Fourier type to quasi-Banach spaces. *Function spaces and applications* (Lund, 1986), 171-176, *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (Jöran Bergh) **89d:46074** 46M35 (46E10)
- (with Sagher, Y.) Analytic families of operators on some quasi-Banach spaces. *Proc. Amer. Math. Soc.* 102 (1988), no. 4, 979-984. (H. Triebel) **89d:46075** 46M35 (42B30, 46E10)
- see also Function spaces and applications, **89b:46003**
- Cybenko, George Load balancing and partitioning for parallel signal processing and control algorithms. *Advanced computing concepts and techniques in control engineering* (II Ciocco, 1987), 391-408, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 47, Springer, Berlin-New York, 1988. (Guy Jumarie) **89m:68056** 68Q25 (68N25, 93B40)
- Cyert, Richard M. (with DeGroot, Morris H.) ★ Bayesian analysis and uncertainty in economic theory. Rowman & Littlefield Probability and Statistics Series. Rowman & Littlefield, Publishers, Totowa, NJ, 1987. xvi+206 pp. ISBN 0-8476-7471-1 (Manfred Kraft) **89a:90003** 90A05 (62C10)
- Cygan, Jack M. (with Richardson, Leonard F.) Globally hypoelliptic systems of vector fields on nilmanifolds. *J. Funct. Anal.* 77 (1988), no. 2, 364-371. (J. W. Jenkins) **89f:22010** 22E25 (22E30, 35H05)
- Cyrlak, David (with Barry, Michele; Kapur, Deepak; Mundy, J. L.; Nguyen, Van-Duc) A multi-level geometric reasoning system for vision. *Geometric reasoning* (Oxford, 1986), *Artificial Intelligence* 37 (1988), no. 1-3, 291-332. (see **89j:68007**) **87T10** (13-04)
- normand-Cyrot, Dorothée see Normand-Cyrot, Dorothée
- Cyvin, B. N. (with Brunvoll, J.; Cyvin, S. J.; Gutman, I.) Distribution of  $K$ , the number of Kekulé structures in benzenoid hydrocarbons. III. Kekulé structure statistics. *Match* No. 21 (1986), 301-315. (Summary) **89g:92079** 92A40 (05A15)
- (with Chen, Rong Si; Cyvin, S. J.) On the number of Kekulé structures for rectangle-shaped benzenoids. III, IV. *Match* No. 22 (1987), 111-127, 129-139. (N. Trinajstić) **89c:92096** 92A40 (05A15)
- (with Cyvin, S. J.; Brunvoll, J.; Chen, Rong Si; Su, Lin Xian) The number of Kekulé structures for rectangle-shaped benzenoids. V. *Match* No. 22 (1987), 141-150. (N. Trinajstić) **89c:92097** 92A40 (05A15)
- (with Cyvin, S. J.; Chen, Rong Si) On the number of Kekulé structures for rectangle-shaped benzenoids. VI. *Match* No. 22 (1987), 151-156. (N. Trinajstić) **89c:92098** 92A40 (05A15)
- (with Cyvin, S. J.) Enumeration of Kekulé structures: pentagon-shaped benzenoids. IV. Seven-tier pentagons and related classes. *Match* No. 22 (1987), 157-173. (Summary) **89a:92081** 92A40 (05A15)
- (with Balaban, Alexandru T.; Brunvoll, J.; Cioslowski, Jerzy; Cyvin, S. J.; Gutman, I.; He, Wen Chen; He, Wen Jie; Knop, J. V.; Kovačević, M.; Müller, W. R.; Szymanski, K.; Tošić, Ratko; Trinajstić, N.) Enumeration of benzenoid and coronoid hydrocarbons. Z. *Naturforsch. A* 42 (1987), no. 8, 863-870. (Summary) **89d:92090** 92A40 (05A15)
- Cyvin, S. J. (with Cyvin, B. N.; Brunvoll, J.; Gutman, I.) Distribution of  $K$ , the number of Kekulé structures in benzenoid hydrocarbons. III. Kekulé structure statistics. *Match* No. 21 (1986), 301-315. (Summary) **89g:92079** 92A40 (05A15)
- Extended application of an algorithm for the number of Kekulé structures. *Match* No. 22 (1987), 101-103. (Summary) **89b:92034** 92A40 (05A15)
- (with Chen, Rong Si; Cyvin, B. N.) On the number of Kekulé structures for rectangle-shaped benzenoids. III, IV. *Match* No. 22 (1987), 111-127, 129-139. (N. Trinajstić) **89c:92096** 92A40 (05A15)
- (with Cyvin, B. N.; Brunvoll, J.; Chen, Rong Si; Su, Lin Xian) The number of Kekulé structures for rectangle-shaped benzenoids. V. *Match* No. 22 (1987), 141-150. (N. Trinajstić) **89c:92097** 92A40 (05A15)
- (with Cyvin, B. N.; Chen, Rong Si) On the number of Kekulé structures for rectangle-shaped benzenoids. VI. *Match* No. 22 (1987), 151-156. (N. Trinajstić) **89c:92098** 92A40 (05A15)
- (with Cyvin, B. N.) Enumeration of Kekulé structures: pentagon-shaped benzenoids. IV. Seven-tier pentagons and related classes. *Match* No. 22 (1987), 157-173. (Summary) **89a:92081** 92A40 (05A15)
- (with Balaban, Alexandru T.; Brunvoll, J.; Cioslowski, Jerzy; Cyvin, B. N.; Gutman, I.; He, Wen Chen; He, Wen Jie; Knop, J. V.; Kovačević, M.; Müller, W. R.; Szymanski, K.; Tošić, Ratko; Trinajstić, N.) Enumeration of benzenoid and coronoid hydrocarbons. Z. *Naturforsch. A* 42 (1987), no. 8, 863-870. (Summary) **89d:92090** 92A40 (05A15)
- (with Gutman, I.) Hosoya index of fused molecules. *Match* No. 23 (1988), 89-94. (Summary) **89j:92096** 92A40 (05C99)
- Czapor, S. R. (with McLenaghan, R. G.) NP: a Maple package for performing calculations in the Newman-Penrose formalism. *Gen. Relativity Gravitation* 19 (1987), no. 6, 623-635. (Summary) **89b:83003** 83-04
- Solving algebraic equations: combining Buchberger's algorithm with multivariate factorization. *J. Symbolic Comput.* 7 (1989), no. 1, 49-53. (Summary) **89k:68081** 68Q40 (13-04)
- Czartoryski, Paweł A pre-Newtonian handbook of optics: Witelo's *Perspectiva*. Isaac Newton's *Philosophiae naturalis principia mathematica* (Lublin, 1987), 1-7, *World Sci. Publishing, Singapore*, 1988. (see **89m:01042**) 01A35
- Czech, Jerzy (with Wiczkorkiewicz, Jan K.) An application of matrices to parametrization of the equation  $3x^2 - 2y^2 = z^k$ . *Discuss. Math.* 8 (1986), 45-52 (1987). (Nikos Tzanakis) **89d:11020** 11D41
- On the equation  $x^2 - Dy^2 = z^k$  with  $D = 2, 3, 5, 7, 11, 13$ . *Funct. Approx. Comment. Math.* 16 (1988), 77-79. (Edward L. Cohen) **89i:11041** 11D41
- Czech, Z. J. Efficient implementation of detection of undefined variables. *Comput. J.* 31 (1988), no. 6, 545-549. (Summary) **89j:68020** 68N20 (68Q25)
- Crédit, Gábor Horn sentences in submodule lattices. *Acta Sci. Math. (Szeged)* 51 (1987), no. 1-2, 17-33. (Klaus Denecke) **89b:03050** 03C05 (06B99)
- (with Hutchinson, George) An irregular Horn sentence in submodule lattices. *Acta Sci. Math. (Szeged)* 51 (1987), no. 1-2, 35-38. (Klaus Denecke) **89b:03051** 03C05 (06B99)
- Czeliakowski, Janusz Algebraic aspects of deduction theorems. *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* 12 (1983), no. 3, 111-116. (Jan Bernert) **89i:03053** 03B99



- Czerwinski, Terry** On finite projective planes with a single  $(P, I)$  transitivity. *J. Combin. Theory Ser. A* **48** (1988), no. 1, 136–138. (E. J. F. Primrose) **89c:51009** 51E15 (05B25)
- Czichowski, Günter** (with Hegazi, Ahmed Sadek) Darstellungen von Heisenberg-Lie-Superalgebren. [Representations of Heisenberg-Lie superalgebras] *Math. Nachr.* **135** (1988), 85–92. (J. Löhrmus) **89k:17013** 17A70 (17B10, 17B70)
- Czirlitzky, Hans-Joachim** (with Edenhofer, Johann) Numerische Verfahren mit unitären Verstärkungsmatrizen für lineare hyperbolische Differentialgleichungssysteme. [Numerical methods with unitary strengthening matrices for systems of linear hyperbolic differential equations] *Beiträge zur angewandten Mathematik und Statistik*, 43–66, Hanser, Munich, 1987. (see **89i:80018**) 65M99
- Czitrom, Veronica** Mixture experiments with process variables: D-optimal orthogonal experimental designs. *Comm. Statist. Theory Methods* **17** (1988), no. 1, 105–121. (N. Gaffke) **89h:62125** 62K05
- Czogala, E.** On the choice of optimal alternatives for decision making in probabilistic fuzzy environment. *Fuzzy Sets and Systems* **28** (1988), no. 1, 35–43. (Summary) **89h:90004** 90A05 (03E72)
- Czuba, Stanisław T.** A new class of noncontractible continua. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 121–123, *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (Wayne Lewis) **89g:54074** 54F20 (54F30)
- On dendroids with Kelley's property. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 728–730. (Summary) **89g:54075** 54F20 (54B20)
- Czuchra, Waldemar** Allocation of discrete resource in order transmission hierarchical organization. *Internat. J. Systems Sci.* **19** (1988), no. 11, 2419–2426. (Summary) **89j:90156** 90B50
- Czyż, Janusz** On graded bundles and their geometry. *Differential geometry (Warsaw, 1979)*, 35–46, *Banach Center Publ.*, 12, PWN, Warsaw, 1984. (Ugo Bruzzo) **89k:58025** 58A50 (53C80, 57R22)
- Czyż, Józef A.** Error bounds for eigenvalues of unconstrained structures. *AIAA J.* **25** (1987), no. 12, 1638–1640. (Q. K. Ghori) **89c:70040** 70J05
- D —
- Dah, D.** (with d'Humières, D.; Lallemand, P.; Boon, J.-P.; Noullez, A.) Fluid dynamics with lattice gases. *Chaos and complexity* (Torino, 1987), 278–301, *World Sci. Publishing, Singapore*, 1988. (Summary) **89j:76016** 76-08 (65C20, 76R50, 82A40, 82A99)
- D'Abadie, Catherine** (with Chan, Wai; Proschan, Frank) Stochastic rearrangement inequalities. *J. Multivariate Anal.* **23** (1987), no. 2, 257–275. (Kong-Ming Chong) **89f:60019** 60E15
- el Dabaghi, F.** see **El Dabaghi, F.**
- Dabbous, T. E.** (with Ahmed, N. U.; Lee, Y. W.) Dynamic routing for computer queueing networks. *Internat. J. Systems Sci.* **19** (1988), no. 6, 967–977. (Summary) **89g:90106** 90B22 (90B15)
- el Dabe, Nabile T. M.** see **El Dabe, Nabile T. M.**
- Daboussi, Hédi** see **Colloquium: Analytic Number Theory**, **89a:11003**
- Dąbrowska, Dorota M.** (with Doksum, Kjell A.) Estimates and confidence intervals for median and mean life in the proportional hazard model. *Biometrika* **74** (1987), no. 4, 799–807. (M. Huková) **89a:62208** 62N05 (62F10, 62F25)
- Nonparametric regression with censored survival time data. *Scand. J. Statist.* **14** (1987), no. 3, 181–197. (G. K. Bhattacharyya) **89c:62046** 62G05
- (with Doksum, Kjell A.) Estimation and testing in a two-sample generalized odds-rate model. *J. Amer. Statist. Assoc.* **83** (1988), no. 403, 744–749. (A. P. Basu) **89j:62050** 62G05
- Dąbrowska, J. W.** (with Khare, Avinash; Sukhatme, Uday P.) Explicit wavefunctions for shape-invariant potentials by operator techniques. *J. Phys. A* **21** (1988), no. 4, L195–L200. (Henryk Arodz) **89f:81024** 81C05 (34C15, 81F05)
- Dąbrowska, Reza** Generic properties of functional-integral [integral] equations with compact convex valued solutions. *Differential equations and optimal control* (Zagreb, 1985), 35–41, *Higher College Engrg., Zielona Góra*, 1986. (Dan Butnariu) **89g:34099** 34K05 (34A60, 49E10)
- Dąbrowski, André Robert** Joint characteristic functions and associated sequences. *Dependence in probability and statistics* (Oberwolfach, 1985), 349–360, *Progr. Probab. Statist.*, 11, Birkhäuser Boston, Boston, MA, 1986. (Summary) **89c:60020** 60E10 (60F05)
- Invariance principles in probability for stable processes generated by a class of dependent sequences. (French summary) *Canad. J. Statist.* **15** (1987), no. 3, 253–267. (Adam Jakubowski) **89d:60062** 60F17 (60B12)
- Dąbrowski, Jacek** Estimators of functions in some difference equations. *Demonstratio Math.* **21** (1988), no. 2, 539–546. (Olusola Akinyele) **89m:39004** 39A10 (93E12)
- Dąbrowski, L.** (with Budinich, P.; Furlan, P.) Minimal surfaces and strings from spinors: a realization of the Cartan programme. (Italian summary) *Nuovo Cimento A* (11) **96** (1986), no. 2, 194–211. (Summary) **89b:53012** 53A10 (53A50, 81D27, 81E30)
- (with Percacci, R.) Diffeomorphisms, orientation, and Pin structures in two dimensions. *J. Math. Phys.* **29** (1988), no. 3, 580–593. (Adrian C. Albu) **89d:57033** 57R15 (32G15, 57N05, 58D05, 81E30)
- Dąbrowski, Romuald** On Fourier coefficients of a continuous periodic function of bounded entropy norm. *Bull. Amer. Math. Soc. (N.S.)* **18** (1988), no. 1, 49–51. (Walter R. Bloom) **89b:42002** 42A16 (42A20, 42B30, 46E15)
- On a natural connection between the entropy spaces and Hardy space  $Re H^1$ . *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 812–818. (Wei-yi Su) **89m:42007** 42A45 (42B30, 46E99)
- Daccach, Janey Antonio** Nonexistence of equivariant degree one maps. *Proc. Amer. Math. Soc.* **101** (1987), no. 3, 530–532. (D. Gottlieb (Zbl 633:55003)) **89f:55001** 55M25 (55M20, 55R12, 57S17)
- Dacey, Raymond** (with Clouff-Revilla, Claudio) The probability of war in the  $n$ -crises problem: modeling new alternatives to Wright's solution. Formal analysis in international relations. *Synthese* **76** (1988), no. 2, 285–305. (see **89c:90218**) 92A90 (90D40, 90D45)
- see also **Formal analysis in international relations**, **89c:90218**
- Dachev, Geno D.** Boundary value problems for equations of mixed type with Neumann boundary condition. (Bulgarian summary) *Mathematics and mathematical education (Bulgarian)* (*Sunny Beach (Slivnhev Bryag)*, 1987), 201–204, *Bulgar. Acad. Sci., Sofia*, 1987. (see **89c:00038**) 35M05
- Dacorogna, Bernard** (with Arditi, Roger) Optimal foraging in nonpatchy habitats. II. Unbounded one-dimensional habitat. *SIAM J. Appl. Math.* **47** (1987), no. 4, 800–821. (T. G. Hallam) **89c:92077** 92A17 (49B21, 92A15)
- (with Charrier, P.; Hanouzet, B.; Laborde, P.) An existence theorem for slightly compressible materials in nonlinear elasticity. *SIAM J. Math. Anal.* **19** (1988), no. 1, 70–85. (From the introduction) **89m:73013** 73C50 (73C60)
- Da Costa, F. A.** see **da Costa, F. A.**
- Da Costa, José Manuel N.** see **da Costa, José Manuel N.**
- Da Costa, Newton C. A.** see **da Costa, Newton C. A.**
- Da Costa Werlang, Sérgio Ribeiro** see **da Costa Werlang, Sérgio Ribeiro**
- ngo Dac Tan** see **Ngo Dac Tan**
- Da Cunha, J. Anastácio** see **da Cunha, J. Anastácio**
- Dacunha-Castelle, Didier** (with Gamboa, Fabrice) Maximisation de l'entropie sous contraintes linéaires et non linéaires. (English summary) [Entropy maximization under linear and nonlinear constraints] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 12, 503–506. (Summary) **89b:62014** 62B10
- D'Acunzio, B.** (with D'Anna, A.; Renno, P.) On the motion of a viscoelastic solid in the presence of a rigid wall. II. Impact laws for the hereditary case. Solution of the unilateral problem. *Internat. J. Non-Linear Mech.* **23** (1988), no. 1, 67–85. (Igor Bock) **89c:73017** 73F15 (35L85, 73F05)
- Dădărlat, Marius** Inductive limits of  $C^*$ -algebras related to some coverings. *Indiana Univ. Math. J.* **37** (1988), no. 1, 135–143. (Dana P. Williams) **89m:46096** 46L05
- On homomorphisms of matrix algebras of continuous functions. *Pacific J. Math.* **132** (1988), no. 2, 227–231. (Klaus Thomsen) **89c:46091** 46L99 (46M05)
- Dadashyan, A. S.** (with Klimashvili, M. A.) A form of representation of data files. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **129** (1988), no. 1, 37–40. (Summary) **89f:68012** 68P05
- D'Adda, A.** (with Rego Monteiro, M. A.; Sciuto, S.) BRST invariant  $N$ -reggeon vertex with bosonized ghosts. *Nuclear Phys. B* **294** (1987), no. 2, 573–594. (Summary) **89a:81122** 81E99 (81E30)
- Dade, Everett C.** Accessible characters are monomial. *J. Algebra* **117** (1988), no. 1, 256–266. (David Gluck) **89b:20012** 20C15 (11R39, 11R42, 22E55)
- Clifford theory for group-graded rings. II. *J. Reine Angew. Math.* **387** (1988), 148–181. (J. L. Alperin) **89f:16001** 16A03 (20C20)
- DaDeppo, D. A.** (with Keppel, W. J.) Betti's theorem for rotationally symmetric infinitesimal deformations superimposed on the finite deformation of a thin shell of revolution. *Indust. Math.* **38** (1988), no. 1, 71–82. (Summary) **89j:73054** 73K15 (73G05)
- Daderkin, D. O.** On the relation between the height and the register complexity of terms. (Russian) *Mathematical methods for optimization and control in systems* (Russian), 137–144, *Kalinin. Gos. Univ., Kalinin*, 1987. (Alexey P. Stolboushkin) **89c:68046** 68Q25 (03B70, 68Q40)
- Dadhić, Naresh** (with Kulkarni, Ravi; Chellathurai, V.) The effective mass of the Kerr spacetime. *Classical Quantum Gravity* **5** (1988), no. 11, 1443–1445. (Jorge A. Pullin) **89m:83039** 83C40 (83C15)
- Dadić, Žarko** Rudjer Bosković as a mathematician. (Serbo-Croatian) *Matematika (Zagreb)* **16** (1987), no. 3, 5–9. (E. Stipančić) **89b:01027** 01A50
- Dadok, J.** (with Bedford, Eric) Bounded domains with prescribed group of automorphisms. *Comment. Math. Helv.* **62** (1987), no. 4, 561–572. (Hideaki Kazama) **89c:32078** 32M05
- (with Harvey, Reese; Morgan, Frank) Calibrations on  $R^4$ . *Trans. Amer. Math. Soc.* **307** (1988), no. 1, 1–40. (Norio Ejiri) **89f:53089** 53C42 (15A75, 49F10, 58A10, 58E15)
- Dadone, Andrea** (with Moretti, Gino) Fast Euler solver for transonic airfoils. I. Theory. *AIAA J.* **26** (1988), no. 4, 409–416. (From the introduction) **89f:76005a** 76-08 (76H05)
- (with Moretti, Gino) Fast Euler solver for transonic airfoils. II. Applications. *AIAA J.* **26** (1988), no. 4, 417–424. (From the introduction) **89f:76005b** 76-08 (76H05)
- Daduña, Hans** Optimal control of a queueing system with an exponential and an Erlangian server and renewal input stream. *Optimization* **18** (1987), no. 6, 883–892. (Richard F. Serfozo) **89a:60213** 60K25 (90B22)
- Busy periods for subnetworks in stochastic networks: mean value analysis. *J. Assoc. Comput. Mach.* **35** (1988), no. 3, 668–674. (Summary) **89g:90103** 90B15 (68M20, 90B22)
- Dählén, Morten** (with Lyche, Tom) Bivariate interpolation with quadratic box splines. *Math. Comp.* **51** (1988), no. 183, 219–230. (K. Jetter) **89c:41003** 41A05 (41A15, 65D07)
- van Daele, A.** see **Van Daele, A.**
- Dafermos, C. M.** Solutions in  $L^\infty$  for a conservation law with memory. *Analyse mathématique et applications*, 117–128, *Gauthier-Villars, Paris*, 1988. (Denis Serre) **89j:35083** 35L65
- Dafni, Galia** (with Vaserstein, L. N.) Matrix zeros of quadratic equations. *J. Number Theory* **30** (1988), no. 1, 27–50. (R. A. Wiegand) **89j:13008** 13C05 (15A21)
- Da-Fu, Ding** see **Ding, Da-Fu**
- Dagan, Ido** (with Golumbic, Martin Charles; Pinter, Ron Yair) Trapezoid graphs and their coloring. *Discrete Appl. Math.* **21** (1988), no. 1, 35–46. (Chinh T. Hoang) **89i:05115** 05C15 (68Q35, 68R10, 90B10)
- Dagnino, C.** (with Palamara Orsi, A.) Product integration of piecewise continuous integrands based on cubic spline interpolation at equally spaced nodes. *Numer. Math.* **52** (1988), no. 4, 459–466. (Gheorghe Coman) **89d:65023** 65D30
- D'Agostino, Luca** see **d'Agostino, Luca**
- Dagvik, John K.** Markov chains generated by maximizing components of multidimensional extremal processes. *Stochastic Process. Appl.* **28** (1988), no. 1, 31–45. (Charles M. Goldie) **89f:60097** 60J75 (60K99)
- Dahan, Simon** (with Todor, Fabian) Divers problèmes de moments dans les modèles de files d'attente  $M/G/1$ . [Various moment problems in  $M/G/1$  queueing models] *Libertas Math.* **7** (1987), 125–139. (Walter A. Rosenkrantz) **89b:60211** 60K25 (90B22)
- Dahan-Dalmédico, Amy** Mécanique et théorie des surfaces: les travaux de Sophie Germain. (English and German summaries) [Mechanics and the theory of surfaces: the works of Sophie Germain] *Historia Math.* **14** (1987), no. 4, 347–365. (Bernard Rouxel) **89a:01030** 01A55 (53-03)

- Étude des méthodes et des "styles" de mathématisation: la science de l'élasticité. [Study of the methods and "styles" of mathematization: the science of elasticity] *Sciences à l'époque de la Révolution Française*, 349-442. *Lib. Bientenaire Révolution Française, Lib. Sci. Tech. Albert Blanchard, Paris*, 1988. (see **89m:01050**) 01A50
- Dahiya, R. S.** (with Oodoom, F. A.) Two-dimensional bilateral operational relations. *Appl. Math. Lett.* **1** (1988), no. 3, 273-276. (Not in MR) 44A10
- (with Jowhar, I. H.) Two-dimensional Laplace transforms of generalized hypergeometric functions. *Internat. J. Math. Math. Sci.* **11** (1988), no. 1, 167-175. (Summary) **89j:44001** 44A10 (33A30)
- Theorems and applications of three-dimensional Laplace transforms. (Serbo-Croatian summary) *Rad. Mat.* **4** (1988), no. 1, 181-191. (Gopi Ahuja) **89m:44002** 44A10
- Dahl, Jens Peder** (with Springborg, Michael) The Morse oscillator in position space, momentum space, and phase space. *J. Chem. Phys.* **88** (1988), no. 7, 4535-4547. (Summary) **89e:81037** 81C25 (81G55)
- Dahlberg, Björn E. J.** (with Kenig, C. E.) Nonnegative solutions of the initial-Dirichlet problem for generalized porous medium equations in cylinders. *J. Amer. Math. Soc.* **1** (1988), no. 2, 401-412. (Peter Knabner) **89e:35078** 35K60 (76S05)
- Dahlberg, Randall P.** Injective hulls of simple  $sl(2, \mathbb{C})$  modules are locally Artinian. *Proc. Amer. Math. Soc.* **107** (1989), no. 1, 35-37. (F. W. Lemire) **89m:17024** 17B35
- Dahleh, Mohammed** (with Dahleh, Munther A.) A class of adaptive controllers with application to robust adaptive control. *Analysis and optimization of systems (Antibes, 1988)*, 763-774. *Lecture Notes in Control and Inform. Sci.*, **111**, Springer, Berlin-New York, 1988. (Kazuhiko Terashima) **89k:93130** 93C40 (93B35, 93C55)
- (with Peirce, Anthony P.; Rabitz, Herschel) Optimal control of quantum-mechanical systems: existence, numerical approximation, and applications. *Phys. Rev. A* (3) **37** (1988), no. 12, 4950-4964. (J. V. Greenman) **89h:93041** 93C75 (49A22, 49D25, 49D29, 81C99, 93C20)
- Sufficient information for the adaptive stabilization of delay systems. *Systems Control Lett.* **11** (1988), no. 5, 357-363. (Andrzej Sosnowski) **89k:93163** 93D15 (34K35, 93C40)
- Dahleh, Munther A.** (with Dahleh, Mohammed) A class of adaptive controllers with application to robust adaptive control. *Analysis and optimization of systems (Antibes, 1988)*, 763-774. *Lecture Notes in Control and Inform. Sci.*, **111**, Springer, Berlin-New York, 1988. (Kazuhiko Terashima) **89k:93130** 93C40 (93B35, 93C55)
- (with Pearson, J. Boyd, Jr.) Optimal rejection of periodic disturbances, robust stability, and mixed sensitivity minimization. *IEEE Trans. Automat. Control* **33** (1988), no. 8, 722-731. (Not in MR) 93B35
- (with Pearson, J. Boyd, Jr.) Minimization of a regulated response to a fixed input. *IEEE Trans. Automat. Control* **33** (1988), no. 10, 924-930. (Not in MR) 93B35 (93C55)
- (with Ohta, Yoshito) A necessary and sufficient condition for robust BIBO stability. *Systems Control Lett.* **11** (1988), no. 4, 271-275. (M. M. Konstantinov) **89k:93178** 93D25 (93B28)
- Dahlhaus, E.** (with Duchet, P.) On strongly chordal graphs. *Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications*, Vol. 2 (Catania, 1986). *Ars Combin.* **24** (1987), B, 23-30. (Alan Tucker) **89c:05031** 05C10
- (with Israeli, A.; Makowsky, J. A.) On the existence of polynomial time algorithms for interpolation problems in propositional logic. *Notre Dame J. Formal Logic* **29** (1988), no. 4, 497-509. (Juraj Hromkovič) **89j:03006** 03B05 (03C40, 03D15, 68Q20)
- Dahlhaus, Rainer** (with Künisch, H.) Edge effects and efficient parameter estimation for stationary random fields. *Biometrika* **74** (1987), no. 4, 877-882. (Summary) **89g:62146** 62M09
- Small sample effects in time series analysis: a new asymptotic theory and a new estimate. *Ann. Statist.* **16** (1988), no. 2, 808-841. (P. A. Morettin) **89g:62149** 62M10 (62M15)
- Empirical spectral processes and their applications to time series analysis. *Stochastic Process. Appl.* **30** (1988), no. 1, 69-83. (Mohsen Pourahmadi) **89m:60048** 60F05 (62M15)
- Dahmen, Wolfgang** (with Micchelli, Charles A.) On the theory and application of exponential splines. *Topics in multivariate approximation (Santiago, 1986)*, 37-46. *Academic Press, Boston, MA*, 1987. (Summary) **89b:41017** 41A15
- (with Goodman, T. N. T.; Micchelli, Charles A.) Compactly supported fundamental functions for spline interpolation. *Numer. Math.* **52** (1988), no. 6, 639-664. (A. Bleyer) **89f:65011** 65D07
- Dahn, Bernd I.** (with Göring, Peter) Notes on exponential-logarithmic terms. *Fund. Math.* **127** (1987), no. 1, 45-50. (Summary) **89c:03062** 03C65 (12J15, 12L12)
- Boolean-valued models and incomplete specifications. *Algebraic and logic programming (Gausig, 1988)*, 119-126. *Math. Res.*, **49**, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) 68T25 (03B70, 03E40)
- Daho, K.** On Titchmarsh-Weyl's matrix function. (Arabic summary) *Arab J. Math.* **5** (1984), no. 1-2, 35-68. (J. V. Baxley) **89g:34025** 34B20
- Dai, An Ying** Levinson's theorem for Klein-Gordon equations with potential tails. (Chinese. English summary) *High Energy Phys. Nuclear Phys.* **11** (1987), no. 5, 620-628. (Tuan W. Chen) **89i:81015** 81C05
- (with Ma, Zhong Qi) On the Hermiticity of the Hamiltonian of a radial equation. (Chinese. English summary) *High Energy Phys. Nuclear Phys.* **12** (1988), no. 1, 42-49. (Summary) **89h:81030** 81C10
- (with Ma, Zhong Qi) Integral equations with symmetrical kernel applied to a system with a Dirac-type spectrum. *J. Math. Phys.* **29** (1988), no. 6, 1321-1324. (W. O. Amrein) **89m:34032** 34B25 (34A30, 34C20, 81C05)
- (with Ma, Zhong Qi) Levinson's theorem for nonlocal interactions. *J. Phys. A* **21** (1988), no. 9, 2085-2093. (Luciano Canton) **89j:81237** 81F05 (34B25, 47E05)
- Dai, Bo Xin** Assessment of influence and diagnosis of data. (Chinese) *Math. Practice Theory* **1988**, no. 2, 61-71. (Not in MR) 62-07
- Dai, Chong Ji** (with Wang, Shu Pei) On Nevanlinna's inverse problem of finite order. *Kodai Math. J.* **10** (1987), no. 3, 292-297. (S. M. Shah) **89f:30049** 30D35
- Dai, Dan Qian** The structure of a direct product system and the realization of its transfer matrix. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 6, 71-76. (Not in MR) 93B15 (20E99)
- Dai, Dao Qing** A boundary value problem for a class of composite systems of second-order equations. (Chinese. English summary) *Acta Sci. Natur. Univ. Sunyatseni* **1988**, no. 2, 40-46. (Xinhua Ji) **89j:35092** 35M05
- Dai, Guan Zhong** (with Wang, Li Xin) A survey of distributed estimation theories. (Chinese. English summary) *Control Theory Appl.* **5** (1988), no. 1, 1-11. (Summary) **89g:93093** 93E10 (93-02, 93E20)
- (with Zhu, Zhi Xiang; Wei, Jian Guo) A self-tuning control system for an optical fiber drawing process. (Chinese. English summary) *Control Theory Appl.* **5** (1988), no. 3, 117-124. (Zong Ji Chen) **89k:93138** 93C40 (93B55, 93C55, 93C75)
- Dai, Guo Ren** Limit cycles of a predator-prey system. (Chinese) *Acta Math. Sci. (Chinese)* **7** (1987), no. 1, 71-81. (Wei-Min Liu) **89d:92056** 92A15 (34C05)
- (with Leng, Zhong Jian) The separatrix cycles and integral straight lines of  $E_3$ -systems. (Chinese. English summary) *Sichuan Daxue Xuebao* **24** (1987), no. 4, 367-375. (Zai-Feng Song) **89d:34059** 34C05
- (with Chen, Lan Sun) Boundedness and stability of a food chain system with several resources. (Chinese) *Acta Math. Appl. Sinica* **11** (1988), no. 2, 253-256. (Wei-Min Liu) **89h:92059** 92A17
- Dai, H. H.** (with Jeffrey, A.) On the reflection of a solitary wave at a sloping beach: analytical results. *Wave Motion* **10** (1988), no. 4, 375-389. (F. Pempinelli) **89m:86002** 86A05 (35Q20, 76B25)
- Dai, Hua** Inverse eigenvalue problems for real symmetric banded matrices. (Chinese. English summary) *Math. Numer. Sinica* **10** (1988), no. 1, 107-111. (Summary) **89m:65037** 65F15
- A class of inverse quadratic eigenvalue problems. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **5** (1988), no. 1, 132-140. (Summary) **89m:65038** 65F15 (34B25)
- Construction of real symmetric band matrices from spectral data. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **5** (1988), no. 2, 203-211. (Summary) **89m:65042** 65F30
- Dai, Jian Hua** (with Zhang, Hong Jun; Wang, Peng Ye; Jin, Chao Ding; Hao, Bai Lin) Analytical study of a bimodal map related to optical bistability. *Comm. Theoret. Phys.* **8** (1987), no. 3, 281-294. (Summary) **89k:58203** 58F13 (78A60)
- Dai, Jian Hui** (with Zha, Chao Zheng) Torsion constraints in superspace and the geometry of superstrings propagating in a supergravity background. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **5** (1988), no. 1, 58-63. (Summary) **89h:83041** 83E50 (81E30, 83E30)
- Yang-Mills group constraints in anomaly free theories compatible with Green-Schwarz mechanism. (Chinese summary) *J. Xinjiang Univ. Natur. Sci.* **5** (1988), no. 2, 33-37. (Summary) **89m:81090** 81E13 (22E70, 58E15, 58G35)
- (with Zha, Chao Zheng) Global anomalies and Green-Schwarz mechanism. (Chinese summary) *J. Xinjiang Univ. Natur. Sci.* **5** (1988), no. 3, 33-39. (Summary) **89j:81118** 81E13 (58G10)
- The Green-Schwarz mechanism and the two-dimensional chiral Schwinger model. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **5** (1988), no. 3, 40-45. (Summary) **89m:81133** 81E99
- Dai, Jin** (with Luo, Zong Qian) A self-tuning PID controller. (Chinese. English summary) *Control Theory Appl.* **5** (1988), no. 1, 100-104. (Not in MR) 93C40
- Dai, Li Yi** (with Wang, Chao Zhu) Design of a normal dynamic compensator for generalized systems. (Chinese) *Acta Math. Sci. (Chinese)* **7** (1987), no. 3, 273-282. (Not in MR) 93B50 (93C30)
- Control problem for linear systems with input derivatives control. *Internat. J. Systems Sci.* **19** (1988), no. 8, 1645-1653. (Summary) **89j:93131** 93C30 (49A34, 93B05, 93C05)
- Structural stability for singular systems—a quantitative approach. *SIAM J. Control Optim.* **26** (1988), no. 3, 557-568. (Michael J. Field) **89g:93072** 93D15 (34D30, 93B50)
- Observer problem for linear systems with input derivatives control. *Internat. J. Systems Sci.* **20** (1989), no. 1, 55-63. (Wei Bing Gao) **89k:93022** 93B07 (34K35, 93C05)
- Dai, Ru Wei** The relations between variables of an attribute grammar. (Chinese. English summary) *Acta Automat. Sinica* **13** (1987), no. 5, 321-329. (Not in MR) 68Q50
- (with Liu, Ying Jian) A fuzzy attributed automaton for on-line recognition of handwritten Chinese characters. (Chinese. English summary) *Acta Automat. Sinica* **14** (1988), no. 2, 97-105. (Not in MR) 68T10 (03E72, 68U10)
- Dai, Shu Sen** Fiducial limits of the mission reliability of repairable systems. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **8** (1988), no. 1, 92-96. (Summary) **89f:90067** 90B25
- Dai, Tian Min** (with Fu, Min Fu; Lin, Zhong Xiang; Yang, De Pin) Variational methods for the problems of nonconservative force fields in the micropolar elastodynamics. *Appl. Math. Mech. (English Ed.)* **8** (1987), no. 11, 1003-1012; translated from *Appl. Math. Mech.* **8** (1987), no. 11, 943-952 (Chinese. English summary). (Summary) **89c:73008** 73B25 (49H05, 73C60, 73D99)
- Dai, Wei Zhong** (with Chen, Chuan Dan) A family of explicit difference schemes for solving two-dimensional parabolic differential equations with variable coefficients and mixed derivatives. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **9** (1987), no. 3, 235-242. (Hong Yuan Fu) **89i:65006** 65M05
- Stable explicit and semi-explicit three-level difference schemes for the dispersive equation  $U_t = aU_{xxx}$ . (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* **27** (1988), no. 1, 116-118. (Not in MR) 65M10
- Dai, Yong Long** (with Liu, Xi Jian) Quasi-nearest particle systems. *Acta Math. Sinica (N.S.)* **2** (1986), no. 1, 92-104. (M. Mürmann (Zbl 622:60116)) **89c:60237** 60K35
- On Kingman's inequalities. (Chinese. English summary) *Acta Sci. Natur. Univ. Sunyatseni* **1987**, no. 4, 1-4. (Zhen-ting Hou) **89k:60097** 60J25 (60K05)
- (with Zhou, Jian Wei) The relation between two-parameter and one-parameter Markov processes. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* **3** (1987), no. 3, 260-263. (Summary) **89a:60157** 60J05 (60G60)
- Dai, Yuan Ben** (with Xiong, Chuan Sheng; Zhao, Wei Dong) On stochastic quantization of Witten's field theory of interacting string. *Modern Phys. Lett. A* **2** (1987), no. 10, 753-759. (Helmut Rumpf) **89h:81131** 81E15 (81C20, 81E30)
- (with Xiong, Chuan Sheng; Zhao, Wei Dong) Stochastic quantization of covariant field theory of interacting string. *Proceedings of the Johns Hopkins Workshop on Current Problems in Particle Theory*, 11. *Frontiers in Particle Theory*, 195-206, *World Sci. Publishing, Singapore*, 1988. (Editors) **89f:81166** 81E99 (81E30)
- Dai, Zong Duo** (with Wan, Zhe Xian) A relationship between the Berlekamp-Massey and the Euclidean algorithms for linear feedback shift register synthesis. *Acta Math. Sinica (N.S.)* **4** (1988), no. 1, 55-63. (Bernard J. M. Smeets) **89i:94030** 94A60 (94B20)



- (with An, Hong Zhi) Mean and variance of longest runs. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 1, 8–10. (Not in MR) 60C05 (60E99)
- Daiana, Dan** Functional [functorial] biconvergence. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* 1985, November, 37–39. (Summary) 89c:54060 54E55 (54H99)
- On the completeness of some ordered categories. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* 1986, May, 1–6. (Kimmo I. Rosenthal) 89b:18011 18D20 (06A10)
- The left  $a$ -category of rings. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* 1986, November, 5–10. (Kimmo I. Rosenthal) 89d:18001b 18B99
- (with Boja, Nicolae) An  $a$ -category of ordered sets. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* 1986, May, 7–10. (Kimmo I. Rosenthal) 89d:18001a 18B99 (06A10)
- Projective limits in the  $a$ -category of groups. *Proceedings of the Conference on Algebra (Romanian) (Timișoara, 1986)*, 17–20, Univ. Timișoara, Timișoara, 1987. (R. H. Street) 89i:18009a 18B10 (20J15)
- (with Boja, Nicolae) Isotone correspondences. *Proceedings of the Conference on Algebra (Romanian) (Timișoara, 1986)*, 21–24, Univ. Timișoara, Timișoara, 1987. (R. H. Street) 89i:18009b 18B10 (20J15)
- (with Rendi, B.) The  $a$ -category of lattices. *Proceedings of the Conference on Algebra (Romanian) (Timișoara, 1986)*, 25–28, Univ. Timișoara, Timișoara, 1987. (Andreas Blass) 89m:18007 18B99 (06B99, 08C05)
- Dalida, Hiroaki** Population dynamics of randomly interacting self-oscillators. I. Tractable models without frustration. *Progr. Theoret. Phys.* 77 (1987), no. 3, 622–634. (Summary) 89d:92057 92A15 (82A25, 92A08)
- Dalibav, G.** Reduction of a system of differential equations with aftereffect to a countable system of differential equations. (Russian) *Some problems in functional analysis, differential equations and their applications (Russian)*, 25–33, 109, Kazakh. Gos. Univ., Alma-Ata, 1985. (see 89a:00016) 34K05
- (with Smagulov, Sh.) Estimates for a difference solution of a scheme of "cross" type for a model of a viscous heat-conducting gas. (Russian) *C. R. Acad. Bulgare Sci.* 41 (1988), no. 8, 45–47. (From the text) 89f:76077 76N15 (65N10, 76-08)
- Dalisher, R. A.** Isometric motions of an ideal charged fluid. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 30 (1987), no. 10, 25–29. (Ilija Lukatević) 89b:83059 83C55
- (with Anchikov, A. M.) Generation of static solutions of a self-consistent system of Einstein-Maxwell equations. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 31 (1988), no. 2, 98–102; translated in *Soviet Phys. J.* 31 (1988), no. 2, 167–171. (Kishore Marathe) 89i:83012 83C15
- Dajczer, Marcos** (with do Carmo, Manfredo) Conformal rigidity. *Amer. J. Math.* 109 (1987), no. 5, 963–985. (Michael T. Anderson) 89e:53016 53A30 (53A07)
- (with Rodriguez, Lucio) Substantial codimension of submanifolds: global results. *Bull. London Math. Soc.* 19 (1987), no. 5, 467–473. (Renato Tribuzy) 89a:53068 53C42 (53C40)
- (with Thorbergsson, Gudlaugur) Holomorphicity of minimal submanifolds in complex space forms. *Math. Ann.* 277 (1987), no. 3, 353–360. (Renato Tribuzy) 89b:53094 53C42 (53C55)
- (with Fornari, Susana) Isometric immersions between indefinite Riemannian spheres. *Yokohama Math. J.* 35 (1987), no. 1–2, 61–69. (Martin A. Magid) 89f:53095 53C50 (53C42)
- A characterization of complex hypersurfaces in  $\mathbb{C}^m$ . *Proc. Amer. Math. Soc.* 105 (1989), no. 2, 425–428. (Koichi Ogiue) 89f:53090 53C42
- (with Tenenblat, K.) Rigidity for complete Weingarten hypersurfaces. *Trans. Amer. Math. Soc.* 312 (1989), no. 1, 129–140. (M. Elisa G. de Oliveira) 89g:53092 53C42 (57R40)
- Dako, Martin** In defense of substitutional quantification. *Internat. Logic Rev.* No. 33–34 (1986), 50–61. (Michael Scanlan) 89d:03002 03A05
- Dalal, Siddhartha R.** (with Mudholkar, Govind S.) A conservative test and confidence region for comparing heteroscedastic regressions. *Biometrika* 75 (1988), no. 1, 149–152. (K. S. Miller) 89c:62109 62J05 (62P03, 62F10)
- (with Mallows, C. L.) When should one stop testing software? *J. Amer. Statist. Assoc.* 83 (1988), no. 403, 872–879. (Mayer Alvo) 89j:62110 62L10
- Dalalyan, S. G.** The Prym variety of a ramified double covering of a trigonal curve. (Russian. Armenian summary) *Erven. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1984, no. 1 (155), 7–13. (Not in MR) 14H40 (14H45)
- Dalang, Robert C.** (with Russo, Francesco) A prediction problem for the Brownian sheet. *J. Multivariate Anal.* 26 (1988), no. 1, 16–47. (M. Zakai) 89b:60081 60G60 (60J65)
- On infinite perfect graphs and randomized stopping points on the plane. *Probab. Theory Related Fields* 78 (1988), no. 3, 357–378. (U. Krengel) 89i:60092 60G40 (05C99)
- On stopping points in the plane that lie on a unique optional increasing path. *Stochastics* 24 (1988), no. 3, 245–268. (Nicholas Frangos) 89k:60048 60G07 (90C40)
- Optimal stopping of two-parameter processes on nonstandard probability spaces. *Trans. Amer. Math. Soc.* 313 (1989), no. 2, 697–719. (Tom L. Lindström) 89m:60099 60G40 (03H05, 60G07, 60G57)
- Dale, A. I.** Two-dimensional moment problems. *Math. Sci.* 12 (1987), no. 1, 21–29. (P. G. Rooney) 89c:44005 44A60
- On Bayes' theorem and the inverse Bernoulli theorem. (French and German summaries) *Historia Math.* 15 (1988), no. 4, 348–360. (William J. Adams) 89j:01029 01A50 (60–03, 62–03)
- Dale, A. M.** (with Candelas, P.; Lütken, C. A.; Schimmrigk, Rolf) Complete intersection Calabi-Yau manifolds. *Frontiers of high energy physics (London, 1986)*, 88–134, Hilger, Bristol, 1987. (H. Wu) 89i:14040 14J30 (14M10, 32J25, 53C25, 53C55)
- Dale, M. R. T.** (with Narayana, T. V.) The number of decision sets involving  $n$  means. *J. Statist. Plann. Inference* 18 (1988), no. 3, 371–376. (M. S. Cheema) 89a:05011 05A15 (90A05)
- The distribution of variables measuring gap and overlap in sheaves of line segments: measured by events. *Utilitas Math.* 33 (1988), 163–172. (Summary) 89c:92005 92A05
- Dale, P.** (with Vein, P. R.) Two verifications of the determinantal solutions of the Korteweg-de Vries and Kadomtsev-Petviashvili equations. *Appl. Anal.* 25 (1987), no. 1–2, 79–100. (Anthony D. Osborne) 89a:35208 35Q20 (15A15)
- D'Alembert, Jean le Rond** see **D'Alembert, Jean le Rond**
- van Dalen, D.** (with de Vries, F. J.) Intuitionistic free abelian groups. *Z. Math. Logik Grundlag. Math.* 34 (1988), no. 1, 3–12. (B. van Rootselaar) 89c:03096 03F55 (20K99)
- see also **Bibliography: Mathematical logic**, 89c:03001f
- Dales, H. G.** Local Banach algebras as Henselian rings. *Studia Math.* 87 (1987), no. 3, 281–293. (Jaroslav Zemánek) 89d:46051 46J05 (13J15, 32B05)
- Daletskii, A. Yu.** (with Samolilenko, Yu. S.) A noncommutative moment problem. (Russian) *Funktsional. Anal. i Prilozhen.* 21 (1987), no. 2, 72–73. (A. A. Lodkin) 89a:22035 22E65 (46K15, 46L99)
- (with Podkolzin, G. B.) Group approach to the integration of an infinite Toda lattice. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 4, 518–521, 544; translated in *Ukrainian Math. J.* 40 (1988), no. 4, 445–447. (B. G. Konopelchenko) 89j:58044 58F07 (35Q20)
- Daletskii, Yu. L.** (with Sokhadze, G. A.) Equivalence of measures that are shifted along the trajectories of a vector field. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 53, 16 pp. (Summary) 89f:46097 46G12 (28C20, 58C35, 58D15)
- (with Berezanskii, Yu. M.; Bogolyubov, N. N.; Kuchment, P. A.; Levin, B. Ya.; Maslov, V. P.; Novikov, S. P.; Semenov, E. M.) Selim Grigor'evich Krein (on the occasion of his seventieth birthday). (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 5 (257), 223–224. (Editors) 89b:01038 01A70
- (with Sokhadze, G. A.) Absolute continuity of smooth measures. (Russian) *Funktsional. Anal. i Prilozhen.* 22 (1988), no. 2, 77–78; translated in *Functional Anal. Appl.* 22 (1988), no. 2, 149–150. (Zbigniew Grande) 89f:28036 28C20 (28A15, 46G12, 60G30)
- (with Pipia, G. M.) Quasidistributions in function spaces connected with evolution differential equations. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 36 (1987), 37–45, 139; translated in *Theory Probab. Math. Statist.* No. 36 (1988), 41–48. (A. V. Uglanov) 89a:46099 46G12 (28C20, 35R15, 46F25, 60B11)
- Daley, D. J.** (with Vere-Jones, D.) The extended probability generating functional, with application to mixing properties of cluster point processes. *Math. Nachr.* 131 (1987), 311–319. (Alan F. Karr) 89b:60127 60G55
- Certain optimality properties of the first-come first-served discipline for  $G/G/s$  queues. *Stochastic Process. Appl.* 25 (1987), no. 2, 301–308. (U. Narayan Bhat) 89a:60214 60K25 (90B22)
- Tight bounds on the exponential approximation of some aging distributions. *Ann. Probab.* 16 (1988), no. 1, 414–423. (E. Arjas) 89d:60021 60E05 (62N05)
- (with Chernick, M. R.; Littlejohn, R. P.) A time-reversibility relationship between two Markov chains with exponential stationary distributions. *J. Appl. Probab.* 25 (1988), no. 2, 418–422. (Ed McKenzie) 89j:60090 60J10
- Daley, Robert P.** (with Smith, Carl H.) On the complexity of inductive inference. *Inform. and Control* 69 (1986), no. 1–3, 12–40. (Summary) 89a:03049 03B48 (03D20, 68Q15)
- (with Ramarao, K. V. S.; Melhem, Rami) Message complexity of the set intersection problem. *Inform. Process. Lett.* 27 (1988), no. 4, 169–174. (Not in MR) 68M10
- Dalík, Josef** An a priori error estimate for the solution of a boundary value problem for ordinary differential equations by the Petrov-Galerkin method. (Czech) *Knižnice Odborn. Véd. Spisů Vysoké. Učen. i Techn. v Brně A No.* 35 (1987), 19–28. (From the introduction) 89m:65072 65L10
- Dalín, V. Ya.** (with Tyukhtin, V. S.; Urmantsev, Yu. A.; Larin, Yu. S.; Sharapov, I. P.; Malikov, A. V.; Koptsiuk, V. A.; Zamorzaev, A. M.; Didyk, Yu. K.; Petukhov, S. V.; Artem'ev, Yu. I.) Система. Симметрия. Гармония. (Russian) [System. Symmetry. Harmony] "Mysl", Moscow, 1988. 318 pp. ISBN 5-244-00190-6 (V. Ya. Kreinovich) 89m:00045 00A69 (00A25, 20H15, 92A05, 93A05)
- Dalitz, R. H.** An outline of the life and work of Tony Hilton Royle Skyrme (1922–1987). *Internat. J. Modern Phys. A* 3 (1988), no. 12, 2719–2744. (Not in MR) 01A70 (81–03)
- Dalkey, N. C.** Updating inductive inference. *Maximum-entropy and Bayesian spectral analysis and estimation problems (Laramie, Wyo., 1983)*, 305–316, *Fund. Theories Phys., Reidel, Dordrecht-Boston, MA*, 1987. (L. L. Campbell) 89c:62011 62B10 (94A17)
- A logic of information systems. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 1 (Laramie, WY, 1985, and Seattle, WA, 1986/1987), 283–294, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) 89i:94016 94A17
- Dalla, Leoni** (with Girotopoulos, S.; Katseli, Nelli) Skeletons of the unit ball of a  $C^*$ -algebra. *Math. Balkanica (N.S.)* 1 (1987), no. 1, 83–88. (Introduction) 89b:46077 46L05
- Dalla Chiara, M. L.** Names and descriptions in quantum logic. *Recent developments in quantum logic (Cologne, 1984)*, 189–202, *Grundlagen Exakt. Naturwiss., 6, Bibliographisches Inst., Mannheim*, 1985. (see 89b:81008) 03G12 (81B10)
- An approach to intensional semantics. *Synthese* 73 (1987), no. 3, 479–496. (George F. Schumm) 89a:03031 03B45
- Dalla Pozza, Carlo** (with Cattaneo, Gianpiero; Garola, Claudio; Nisticò, Giuseppe) On the logical foundations of the Jauch-Piron approach to quantum physics. *Internat. J. Theoret. Phys.* 27 (1988), no. 11, 1313–1349. (Summary) 89j:81013 81B10
- Dalla Volta, Francesca** Sporadic groups generated by three involutions. (Italian. English summary) *Istit. Lombardo Accad. Sci. Lett. Rend. A* 119 (1985), 65–87 (1987). (F. Pérez Monasor) 89f:20023 20D08 (20D05)
- Regular sets for the affine and projective groups over the field of two elements. *J. Geom.* 33 (1988), no. 1–2, 17–26. (Ulrich Dempwolff) 89k:20008 20B25 (51A10)
- Dallier, Yves** (with Frein, Yannick; Pierrat, Jean-Jacques; David, René Marcel) Optimisation du routage des pièces dans un atelier flexible par des méthodes analytiques. (English summary) [Analytic methods for the optimal routing of parts in a flexible manufacturing system] *RAIRO Automat.-Prod. Inform. Ind.* 22 (1988), no. 5, 489–507. (Not in MR) 90B35
- Dal Maso, Gianni** (with De Giorgi, Ennio; Modica, Luciano) Weak convergence of measures on spaces of semicontinuous functions. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 79 (1985), no. 5, 98–106 (1986). (Richard A. Aló) 89g:28008 28A33 (46E27, 49A50)
- $\Gamma$ -convergence and  $\mu$ -capacities. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) 14 (1987), no. 3, 423–464 (1988). (Bernt Øksendal) 89b:31010 31C15 (28A12, 35B20, 35J25)

- (with De Giorgi, Ennio; Modica, Luciano) Weak convergence of measures on spaces of lower semicontinuous functions. *Proceedings of the International Workshop on Integral Functionals in the Calculus of Variations* (Trieste, 1985). *Rend. Circ. Mat. Palermo* (2) **Suppl. No. 15** (1987), 59–100. (C. Vinti) **89i:46028** 46E27 (28C99, 49A50)
- (with Baxter, John Robert; Mosco, U.) Stopping times and  $\Gamma$ -convergence. *Trans. Amer. Math. Soc.* **303** (1987), no. 1, 1–38. (Dominique Bakry) **89b:35061** 35K05 (35J20, 49B50, 60G40, 60J45)
- (with De Franceschi, A.) A Kellogg property for  $\mu$ -capacities. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **2** (1988), no. 1, 127–135. (W. P. Ziemer) **89g:31007** 31B15
- (with De Franceschi, A.) Limits of nonlinear Dirichlet problems in varying domains. *Manuscripta Math.* **61** (1988), no. 3, 251–278. (Luciano Modica) **89k:49007** 49A50 (31B20, 31B25, 35J65)
- Dalmasso, Robert** Solutions positives globales d'équations elliptiques semi-linéaires singulières. (English summary) [Global positive solutions of singular semilinear elliptic equations] *Bull. Sci. Math.* (2) **112** (1988), no. 1, 65–76. (J.-P. Gossez) **89k:35017** 35B05 (35J60)
- dahan-Dalmédico, Amy** see **Dahan-Dalmédico, Amy**
- D'Almeida, Filomena Dias** see **D'Almeida, Filomena Dias**
- D'Almeida, Jean** Une propriété de la courbe elliptique lisse de degré huit de  $P^3$ . [A property of the smooth elliptic curve in  $P^3$  of degree eight] *Arch. Math. (Basel)* **48** (1987), no. 6, 543–547. (A. Hirschowitz) **89i:14044** 14H45 (14H50)
- Dalrymple, Robert A.** (with Martin, Paul Andrew) Scattering of long waves by cylindrical obstacles and gratings using matched asymptotic expansions. *J. Fluid Mech.* **188** (1988), 465–490. (Summary) **89c:76035** 76B15 (76Q05)
- grobelaar-van Dalsen, Marië** see **Grobelaar-van Dalsen, Marië**
- Dalton, Dan R.** (with Cosier, Richard A.) Presenting information under conditions of uncertainty and availability: some recommendations. *Behavioral Sci.* **33** (1988), no. 4, 272–281. (Not in MR) **90B50**
- Daly, James E.** (with Phillips, Keith) On the classification of homogeneous multipliers bounded on  $H^1(\mathbb{R}^2)$ . *Proc. Amer. Math. Soc.* **106** (1989), no. 3, 685–696. (Norman J. Weiss) **89k:42016** 42B15 (42B20, 42B30)
- van Dam, H.** (with Biedenharn, L. C.; Marmo, G.; Morandi, G.; Mukunda, N.; Samuel, Joseph; Sudarshan, E. C. G.) Classical models for Regge trajectories. *Internat. J. Modern Phys. A* **2** (1987), no. 5, 1567–1589. (A. O. Barut) **89b:81071** 81C99
- (with Burgers, G. J. H.) On classical action at a distance theories which contain a cutoff. *J. Math. Phys.* **28** (1987), no. 3, 677–684. (Summary) **89c:70025** 70G50 (70H40, 81E13)
- Dam, Z. T.** (with Formanov, Sh. K.) Estimates for the concentration function of sums of random variables connected in an inhomogeneous Markov chain. (Russian) *Asymptotic methods in mathematical statistics* (Russian), 140–149, 161–162, “Fan”, Tashkent, 1987. (Summary) **89b:60104** 60J05 (60E15)
- Damamme, Gilles** (with Hellegouarch, Yves) Propriétés de transcendance des valeurs de la fonction zeta de Carlitz. (English summary) [Transcendence properties of the values of Carlitz's zeta function] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 12, 635–637. (David Goss) **89k:11115** 11R58 (11J91, 11M41)
- el-Damanawi, K. E. S.** see **El-Damanawi, K. E. S.**
- Damaskinski, E. V.** Calculation of the Berry phase in contracted states. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **169** (1988), *Voprosy Kvant. Teor. Polya i Statist. Fiz.* **8**, 51–59, 186. (Summary) **89m:81077** 81D30 (81C99)
- Dambitis, J.** (with Nešetřil, Jaroslav) Cycles and directed cuts in directed graphs. (Russian) *Latv. Mat. Ezhegodnik No. 32* (1988), 78–84, 241. (Ioan Tomescu) **89k:05044** 05C20 (05C38)
- D'Ambra, G.** Isometry groups of Lorentz manifolds. *Invent. Math.* **92** (1988), no. 3, 555–565. (Toshihiko Ikawa) **89h:53124** 53C50
- Damburg, R. Ya.** (with Propin, R. Kh.; Martyschenko, V. V.) The theory of high-order perturbations. (Russian) *Group-theoretic methods in physics, Vol. 2* (Russian) (*Jarmala*, 1985), 273–278, “Nauka”, Moscow, 1986. (see **89d:81002**) **81C15**
- Damek, Ewa** A Poisson kernel on Heisenberg type nilpotent groups. *Colloq. Math.* **53** (1987), no. 2, 239–247. (Erik P. van den Ban) **89d:22006** 22E25 (22E30, 43A80)
- Curvature of a semidirect extension of a Heisenberg type nilpotent group. *Colloq. Math.* **53** (1987), no. 2, 249–253. (Erik P. van den Ban) **89d:22007** 22E25 (53C35)
- The geometry of a semidirect extension of a Heisenberg type nilpotent group. *Colloq. Math.* **53** (1987), no. 2, 255–268. (Erik P. van den Ban) **89d:22008** 22E25 (53C35, 57S20)
- Left-invariant degenerate elliptic operators on semidirect extensions of homogeneous groups. *Studia Math.* **89** (1988), no. 2, 169–196. (Gail Ratcliff) **89k:22011** 22E25 (58G99)
- Damen, A. A. H.** (with Janssen, Peter H. M.) Comments on: “MFD models and time delays; some consequences for identification” [Internat. J. Control **45** (1987), no. 4, 1179–1196; MR 88f:93107] by Janssen. *Internat. J. Control* **46** (1987), no. 5, 1857–1859. (Norman P. Coleman, Jr.) **89e:93066** 93B30 (93E03, 93E12)
- Damgaard, B. B. C.** Nonasymptotic corrections to orbital scaling in period doubling maps. *Phys. Lett. A* **132** (1988), no. 5, 244–248. (Summary) **89i:58082** 58F13
- Damgaard, Poul H.** (with Hüffel, Helmut) Stochastic quantization. *Phys. Rep.* **152** (1987), no. 5–6, 227–398. (Demetris P. K. Ghikas) **89d:81033** 81C20 (81–02)
- Damian, F. L.** (with Makarova, K. P.; Balkan, V. V.) Groups of motions of three-dimensional locally Lobachevskian manifolds. (Russian) *Mat. Issled. No. 103 Voprosy Diskret. Geom.* (1988), 151–163, 177. (Andrey V. Tetenov) **89m:53082** 53C30 (22E40, 53A30, 57N15)
- Damian, Sergiu** (with Moldovan, Grigor) On some generalizations of an optimization problem for distributed data bases. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* **32** (1987), no. 3, 67–76. (Not in MR) **88P15** (90B10)
- (with Moldovan, Grigor) On an optimization problem for distributed data bases. *An. Univ. Bucureşti Mat.* **37** (1988), no. 2, 82–87. (Not in MR) **88P15**
- Damiani, Paul** Recherche d'une loi générale de morbidité. (English summary) [In search of a general law of morbidity] *Actes du 112<sup>e</sup> Congrès National des Sociétés Savantes* (Lyon, 1987), 109–116. *Com. Trav. Hist. Sci., Paris*, 1987. (see **89g:00016**) **92A15**
- Damianou, Charalambos** Goodness-of-fit test statistics based on Riedwyl-type deviations. *Bull. Soc. Math. Grèce (N.S.)* **27** (1986), 1–20. (Not in MR) **62G10**
- Analogies between Riedwyl-type and linear rank test statistics. *Bull. Soc. Math. Grèce (N.S.)* **28** (1987), part A, 15–38. (J. V. Deshpande) **89e:62051** 62G10 (62E15)
- Damjanović, Slobodan I. J.** (with Srivastava, Hari M.) An elementary proof of a certain transformation for an  $n$ -balanced hypergeometric  ${}_3\phi_2$  series. *Proc. Japan Acad. Ser. A Math. Sci.* **64** (1988), no. 6, 198–200. (Harold Exton) **89k:33007** 33A35
- Damianian, Alain** Le problème de la passoire de Neumann. [The Neumann sieve problem] *Rend. Sem. Mat. Univ. Politec. Torino* **43** (1985), no. 3, 427–450 (1986). (Dietrich Göhde) **89c:35014** 35B25 (35J05, 35B85)
- (with Li, Da Qian) Boundary homogenization for elliptic problems. *J. Math. Pures Appl.* (9) **66** (1987), no. 4, 351–361. (Dietrich Göhde) **89b:35026** 35J05 (35B25, 35B40)
- (with Kenmochi, Nobuyuki) Periodicity and almost periodicity of solutions to a multi-phase Stefan problem in several space variables. *Nonlinear Anal.* **12** (1988), no. 9, 921–934. (Li Shang Jiang) **89i:35131** 35R35 (35B10, 35B15, 35K60)
- (with Vogelius, Michael) Homogenization limits of diffusion equations in thin domains. (French summary) *RAIRO Modél. Math. Anal. Numér.* **22** (1988), no. 1, 53–74. (Cornelius O. Horgan) **89j:35022** 35B25 (35J99, 73C40, 73K20)
- van Damme, Eric** ★ Stability and perfection of Nash equilibria. *Springer-Verlag, Berlin-New York*, 1987. xviii+318 pp. ISBN 3-540-17101-0 (Akira Okada) **89f:90205** 90D10 (90–02, 90A14, 90D05, 90D13)
- The impossibility of stable renegotiation. *Econom. Lett.* **26** (1988), no. 4, 321–324. (C. B. Millham) **89m:90175** 90D10 (90A14)
- van Damme, Ruud** see **Van Damme, Ruud**
- Damjanović, Milan** (with Marinković, Maja) Chain measurements in quantum mechanics. *Phys. Lett. A* **125** (1987), no. 4, 173–175. (Giuseppe Nisticò) **89b:81020** 81B05
- Is the collapse a phase transition? *Phys. Lett. A* **134** (1988), no. 2, 77–80. (Summary) **89j:81007** 81B05
- Damon, James** Topological equivalence of bifurcation problems. *Nonlinearity* **1** (1988), no. 2, 311–331. (Patrick Bonckaert) **89c:58080** 58F14 (58C27)
- Damour, Thibault** The problem of motion in Newtonian and Einsteinian gravity. *Three hundred years of gravitation*, 128–198, Cambridge Univ. Press, Cambridge-New York, 1987. (see **89b:83007**) **83C10** (01A60)
- (with Schäfer, Gerhard) Le problème des deux corps en relativité générale. (English summary) [The two-body problem in general relativity] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **305** (1987), no. 10, 839–842. (Summary) **89k:83032** 83C25 (83C10)
- Damphousse, Pierre** Fondement de la description combinatoire des cartes cellulaires. (English summary) [Foundations of the combinatorial description of cellular maps] *Ann. Sci. Math. Québec* **11** (1987), no. 2, 279–294. (Roger Fenn) **89d:57003** 57M20 (52A37)
- Damyánov, B.** see **Bleuler, Konrad**, **89c:22014**
- phan Dán** see **Phan Dán**
- Dana, I.** (with Reinhardt, William P.) Adiabatic invariance in the standard map. *Phys. D* **28** (1987), no. 1–2, 115–142. (G. Benettin) **89g:58181** 58F30 (70K99)
- (with Reinhardt, William P.) Semiclassical quantization, adiabatic invariants and classical chaos. *Proc. Roy. Soc. London Ser. A* **413** (1987), no. 1844, 157–170. (Martin C. Gutzwiller) **89f:58093** 58F13 (70K30, 81C15)
- (with Murray, N. W.; Percival, I. C.) Resonances and diffusion in periodic Hamiltonian maps. *Phys. Rev. Lett.* **62** (1989), no. 3, 233–236. (Summary) **89k:58177** 58F13 (70H05, 70K30, 70K50)
- Danaev, A.** (with Evans, David J.) The solution of Burgers' equation by boundary value methods. *Numerical mathematics and applications* (Oslo, 1985), 235–239, *IMACS Trans. Sci. Comput.*—85, I, North-Holland, Amsterdam-New York, 1986. (Summary) **89f:65092** 65M05
- Dancer, E. N.** (with Hess, Peter) On stable solutions of quasilinear periodic-parabolic problems. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **14** (1987), no. 1, 123–141. (V. N. Razzevaikin) **89g:35016** 35B35 (35K55)
- Degenerate critical points, homotopy indices and Morse inequalities. II. *J. Reine Angew. Math.* **382** (1987), 145–164. (A. J. Tromba) **89h:58038** 58E05
- (with Schmitt, Klaus) On positive solutions of semilinear elliptic equations. *Proc. Amer. Math. Soc.* **101** (1987), no. 3, 445–452. (J. Kacur) **89a:35017** 35B05 (35J65)
- The effect of domain shape on the number of positive solutions of certain nonlinear equations. *J. Differential Equations* **74** (1988), no. 1, 120–156. (Jürgen Scheurle) **89h:35256** 35P30 (35B32, 35J65, 58E07, 58G20)
- Danchenko, V. I.** An estimate for variations of rational functions on rectifiable curves. (Russian) *Theory of functions and approximations, Part 1* (Russian) (Saratov, 1984), 121–124, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00035**) **41A20**
- (with Dolzhenko, E. P.) The mapping of sets of finite  $\alpha$ -measure by means of rational functions. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **51** (1987), no. 6, 1309–1321, 1359; translated in *Math. USSR-Izv.* **31** (1988), no. 3, 621–633. (L. A. Aksent'ev) **89f:30014** 30C35 (30E10)
- Danchev, D. M.** (with Brankov, I. G.) On the limit Gibbs states of the spherical model. *J. Phys. A* **20** (1987), no. 14, 4901–4913. (Nicolae Angelescu) **89c:82006** 82A05 (82A68)
- (with Brankov, I. G.) On the limit Gibbs states of the spherical and mean spherical models. *IV International Symposium on Selected Topics in Statistical Mechanics* (Russian) (Dubna, 1987), 59–65, *Joint Inst. Nuclear Res., Dubna*, 1988. (Aernout C. D. van Enter) **89i:82066** 82A57 (82A41, 82A42)
- Dancis, Jerome** On the inertias of symmetric matrices and bounded selfadjoint operators. *Linear Algebra Appl.* **105** (1988), 67–75. (Bryan E. Cain) **89j:47014** 47B15 (15A42, 15A57, 47A20)
- D'Ancona, Piero** Global solution of the Cauchy problem for a class of abstract nonlinear hyperbolic equations. *Ann. Mat. Pura Appl.* (4) **151** (1988), 17–38. (I. Gyöngy) **89k:35244** 35R20 (34G20, 35L70, 47H15)
- Dancy, Russell M.** Aristotle and existence [Synthese **54** (1983), no. 3, 409–442]. *The logic of being*, 49–80, *Synthese Hist. Lib.*, 28, Reidel, Dordrecht-Boston, MA, 1986. (see **89a:03004**) **01A20** (03–03, 03A05)
- Dandoloff, R.** (with Pomeau, Y.) Fluctuations in “metastable” systems. *Instabilities and nonequilibrium structures* (Valparaíso, 1985), 291–297, *Math. Appl.*, 33, Reidel, Dordrecht-Boston, MA, 1987. (Gongli Zhang) **89c:94047** 94C05 (82A35)
- Dandy, D. S.** (with Ascoli, E. P.; Leal, L. G.) On distortion functions for the strong constraint method of numerically generating orthogonal coordinate grids. *J. Comput. Phys.* **72** (1987), no. 2, 513–519. (Stanly L. Steinberg) **89h:65147** 65M50 (65N50)
- Danceva, T. V.** Smooth  $A$ -loops with a symmetric tangent connection of rank 1. (Russian) *Webs and quasigroups* (Russian), 155–158, *Kalinin. Gos. Univ., Kalinin*, 1988. (N. V.



- Gvozdenich **89j:53025** 53C05
- Daneš, Josef The Hilbert projective metric and an equation in a  $C^*$ -algebra. *Czechoslovak Math. J.* **37**(112) (1987), no. 4, 522–532. (Robert S. Doran) **89a:46122** 46L05 (47A05, 47A62)
- Dăneş, Nicolae Lattice  $(p, q)$ -summing operators and their conjugates. (Romanian. English summary) *Stud. Cerc. Mat.* **40** (1988), no. 1, 99–107. (George Isaac) **89b:47054** 47B55
- Danforth, Scott (with Tomlinson, Chris) Type theories and object-oriented programming. *ACM Comput. Surveys* **20** (1988), no. 1, 29–72. (Not in MR) **68-02** (58N15, 68Q65)
- Dang, Triem Bang (with Friedman, Yaakov) Classification of JBW\*-triple factors and applications. *Math. Scand.* **61** (1987), no. 2, 292–330. (Thomas J. Barton) **89g:46109** 46L70 (17C65, 46H70)
- (with Barton, Thomas Joseph; Horn, Günther) Normal representations of Banach Jordan triple systems. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 551–555. (Bruno Iochum) **89c:46065** 46H70 (17C65, 46L70, 47D99)
- Dang, Xin Yi A remark on the Poincaré-Bendixson theorem concerning annular regions, and the uniqueness of limit cycles. (Chinese) *J. Math. Res. Exposition* **8** (1988), no. 1, 85–88. (Jian Ying Zhou) **89f:34040** 34C05
- Dangalchev, Ch. A. Network interpretation of functions that contain the operations of taking the modulus. (Russian) *Vestnik Belorusk. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1988**, no. 3, 38–41, 78. (Summary) **89j:90253** 90C35
- Dang Dang Cao see Phan Dang Cao
- Dang Dinh Ang (with Keinert, F.; Stenger, Frank) A nonlinear two-phase Stefan problem with melting point gradient: a constructive approach. *J. Comput. Appl. Math.* **23** (1988), no. 2, 245–255. (Summary) **89b:35350** 35R35 (65P05)
- (with Phan Ngoc Dinh, A.) Mixed problem for some semilinear wave equation with a nonhomogeneous condition. *Nonlinear Anal.* **12** (1988), no. 6, 581–592. (Yun Mei Chen) **89b:35207** 35L70
- (with Phan Ngoc Dinh, A.) Strong solutions of a quasilinear wave equation with nonlinear damping. *SIAM J. Math. Anal.* **19** (1988), no. 2, 337–347. (Manuel Milla Miranda) **89f:35133** 35L70
- (with Phan Ngoc Dinh, A.) On the strongly damped wave equation:  $u_t - \Delta u - \Delta u_t + f(u) = 0$ . *SIAM J. Math. Anal.* **19** (1988), no. 6, 1409–1418. (Thierry Cazenave) **89j:35086** 35L70 (35B40)
- (with Phan Ngoc Dinh, A.) On some viscoelastic strongly damped nonlinear wave equations. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 499–509, Notes Numer. Fluid Mech., 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 35L70 (35J60, 73F15)
- Dang Dinh Hai On a second order periodic boundary value problem. *Differential Integral Equations* **1** (1988), no. 3, 377–379. (Russell C. Thompson) **89g:34022** 34B15 (34C25, 70M05)
- On a quasilinear wave equation with nonlinear damping. *Proc. Roy. Soc. Edinburgh Sect. A* **110** (1988), no. 3–4, 227–239. (Reinhard Racke) **89m:35139** 35L70 (35L05)
- Dange, Saehal (with Chaudhary, M. S.) Distributional Abelian theorems for the generalized Stieltjes transform. *J. Math. Anal. Appl.* **128** (1987), no. 1, 125–137. (Jean Lavoine) **89a:44008** 44A15 (46F12)
- Dangelmayr, G. (with Ambruster, D.) Corank-two bifurcations for the Brusselator with nonflux boundary conditions. *Dynamics Stability Systems* **1** (1986), no. 3, 187–200. (Pascal Chossat) **89a:58079** 58F14 (80A32)
- (with Neveling, M.; Lang, D.; Haug, P.; Gütinger, W.) Interactions of stationary modes in systems with two and three spatial degrees of freedom. *The physics of structure formation* (Tübingen, 1986), 153–165, Springer Ser. Synergetics, 37, Springer, Berlin-New York, 1987. (see **89b:58064**) 80A20 (58F14, 76R99)
- (with Knobloch, Edgar) On the Hopf bifurcation with broken  $O(2)$  symmetry. *The physics of structure formation* (Tübingen, 1986), 387–393, Springer Ser. Synergetics, 37, Springer, Berlin-New York, 1987. (Introduction) **89m:58152** 58F14 (58F35, 76E30)
- see also Physics of structure formation, **89b:58064**
- D'Angelo, John P. The notion of formal essential finiteness for smooth real hypersurfaces. *Indiana Univ. Math. J.* **36** (1987), no. 4, 897–903. (Roman Dwilewicz) **89c:32054** 32F25 (32H99)
- Polynomial proper maps between balls. *Duke Math. J.* **57** (1988), no. 1, 211–219. (Franc Forstneric) **89j:32032** 32H35 (32H05)
- Proper holomorphic maps between balls of different dimensions. *Michigan Math. J.* **35** (1988), no. 1, 83–90. (J. T. Davidov) **89g:32038** 32H35
- Dang Hong Tiem (with Cabannes, Henri) Exact solutions for some discrete models of the Boltzmann equation. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems* **1** (1987), no. 4, 575–584. (Summary) **89d:82067** 82A40
- Dang Hung Thang Random operators in Banach spaces. *Probab. Math. Statist.* **8** (1987), 155–167. (Werner Linde) **89d:60004** 60B11 (46G10, 47B38, 60B10, 60H25)
- Dang Khai On a class of holomorphic vectors in  $\mathbb{R}^m$ . (Vietnamese. English summary) *Tạp chí Toán học* **13** (1985), no. 4, 19–25 (1986). (Summary) **89a:35068** 35J45
- Dang Kuang A. An iterative method for solving a boundary value problem for a fourth-order equation. (Russian) *Mat. Fiz. Nelinein. Mekh. No. 10*(44) (1988), 54–59, 88. (M. Zlimal) **89j:65080** 65N99
- Dang Van Hung (with Knuth, Elöd) A noninterleaving semantics for communicating sequential processes: a fixed-point approach. *Acta Cybernet.* **8** (1988), no. 3, 293–311. (Ryszard Janicki) **89b:68099** 68Q55 (68Q10, 68Q90)
- Dani, S. G. (with McCrudden, M.) Factors, roots and embeddability of measures on Lie groups. *Math. Z.* **199** (1988), no. 3, 369–385. (Daniel Berend) **89j:43001** 43A05 (22D05, 60B15)
- Daniel, Edward J. Generalization to the sufficient conditions for a discrete random variable to be infinitely divisible. *Statist. Probab. Lett.* **6** (1988), no. 6, 379–382. (Noël Veraverbeke) **89c:60034** 60E07
- Daniel, Jacob K. (with Ramanarayanan, R.) An  $(s, S)$  inventory system with rest periods to the server. *Naval Res. Logist.* **35** (1988), no. 1, 119–123. (Upendra Dave) **89b:90060** 90B05
- Daniel, M. (with Sahadevan, R.) On the weak Painlevé property and linearization of the evolution equation  $u_t = u_{xxx} + u^2 u_{xx} + 3uu_x^2 + \frac{1}{2}u^2 u_x$ . *Phys. Lett. A* **130** (1988), no. 1, 19–21. (Summary) **89f:35180** 35Q20
- Daniel, Michael On the fundamental spinor fields representing massless fermions in  $d$  dimensions. *Phys. Lett. B* **197** (1987), no. 3, 363–367. (Robert Baston) **89b:81090** 81D25
- Daniela, Nistor An existence and uniqueness theorem for integral equations of Fredholm-Volterra type. *Seminar on Fixed Point Theory*, 77–78, Preprint, 88-3, Univ. "Babeş-Bolyai", Cluj-Napoca, 1988. (B. G. Pachpatte) **89m:45007** 45G10 (45D05, 47H15)
- Danieljan, Eduard A. see Danielyan, E. A.
- Daniell, G. J. (with Barnes, T.) Numerical solution of spin systems and the  $S = \frac{1}{2}$  Heisenberg antiferromagnet using guided random walks. *Phys. Rev. B* **37** (1988), no. 7, 3637–3651. (Muthiah Daniel) **89d:82006** 82-08 (82A41, 82A68)
- Daniels, Charles B. (with Freeman, James B.; Charlow, Gerald W.) ★ Toward an ontology of number, mind and sign. *Scots Philosophical Monograph Series*, 10, Aberdeen University Press, Aberdeen; Humanities Press, Atlantic Highlands, NJ, 1986. viii+155 pp. ISBN 0-08-032462-2; 0-08-032461-4 (John Bacon) **89g:03003** 03A05 (00A25)
- Nonlogical consequences. *Logique et Anal. (N.S.)* **30** (1987), no. 119, 283–290. (Kosta Doken) **89b:03048** 03B60
- "The story says that" operator in story semantics. *Studia Logica* **46** (1987), no. 1, 73–86. (George F. Schumm) **89a:03032** 03B45
- Daniels, P. G. (with Eagles, P. M.) Free-surface boundary-layer flow on a curved bed. *IMA J. Appl. Math.* **36** (1986), no. 1, 101–116. (Not in MR) **76D10**
- (with Chana, M. S.) Onset of Rayleigh-Bénard convection in a rigid channel. *J. Fluid Mech.* **199** (1989), 257–279. (Summary) **89m:76035** 76E15
- Daniels, Peg When countably paracompact, locally compact, screenable spaces are paracompact. *Topology Appl.* **26** (1987), no. 3, 271–279. (W. Stephen Watson) **89a:54026** 54D18 (54A35)
- On collectionwise Hausdorffness in countably paracompact, locally compact spaces. Special issue on set-theoretic topology. *Topology Appl.* **28** (1988), no. 2, 113–125. (C. E. Aull) **89m:54031** 54D18 (54D15)
- Pixley-Roy spaces over subsets of the reals. *Topology Appl.* **29** (1988), no. 1, 93–106. (R. M. Stephenson, Jr.) **89a:54024** 54B20 (54D20)
- Danielson, John E. Modules that have a finite  $r$ -semicritical socle series. *Comm. Algebra* **15** (1987), no. 8, 1747–1764. (Jitendra Manocha) **89a:16037** 16A63
- Danielyan, A. A. (with Margelyan, S. N.) Sequences of polynomials converging on sets of type  $F_\sigma$ . (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* **86** (1988), no. 2, 54–57. (From the introduction) **89b:30004** 30C10
- (with Levitan, B. M.) Asymptotics of the Weyl-Titchmarsh  $m$ -function. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 3, 9–14, 113; translated in *Moscow Univ. Math. Bull.* **43** (1988), no. 3, 10–15. (Zhaojun Liang) **89b:34026** 34B20
- Danielyan, E. A. (with Saakyan, V. G.) The moments of waiting times in the priority models  $M/G/1$  under a critical load. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1985**, no. 1(158), 13–20. (Not in MR) **60K25** (90B22)
- (with Grigoryan, G. S.) Multidimensional limit theorems in a model with time-categorized absolute priorities. (Russian) *Probability distributions and mathematical statistics* (Russian) (Fergana, 1983), 131–155, 491, "Fan", Tashkent, 1986. (Kh. T. Tashmanov) **89b:60153** 60K25
- A limit theorem for the waiting time in an  $M/G/1$  model when the traffic intensity is equal to one. (Russian. English and Armenian summaries) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1987**, no. 2(165), 9–16. (W. Szczotka) **89c:60103** 60K25 (90B22)
- (with Liese, Friedrich)  $M/G/1$ -queueing-model with unit traffic-intensity in continuous time. *Rostock. Math. Kolloq. No. 32* (1987), 67–86. (Martin J. Fischer) **89d:60173** 60K25 (90B22)
- Danikas, N. Über die mittlere Oszillation der logarithmischen Funktion. (English summary) [The mean oscillation of the logarithmic function] *Manuscripta Math.* **59** (1987), no. 2, 175–185. (Gradimir V. Milovanovic) **89a:26001** 26A09 (26A45, 30D50)
- Eine komplexe Ungleichung aus elementarer Sicht. [A complex inequality from an elementary viewpoint] *Elem. Math.* **43** (1988), no. 6, 180–182. (Z. Nădenik) **89i:50109** 51M05 (30A10)
- On the integrals of BMOA functions. *Indian J. Pure Appl. Math.* **19** (1988), no. 7, 672–676. (D. Protas) **89f:30056** 30D55 (30H05)
- Daniľchenko, A. F. (with Kuznetsov, Aleksandr Vladimirovich; Negru, I. S.; Pavlova, E. A.) Some combinatorial questions concerning functional constructions in  $k$ -valued logic. (Russian) *Mat. Issled. No. 95 Kvazigruppy* (1987), 66–70, 131. (I. Strazdips) **89a:03054** 03B05 (03G20, 05B25, 05C15, 06B05, 20N05)
- Some properties of the lattice of parametrically closed classes of functions of three-valued logic. (Russian) *Mat. Issled. No. 98 Neklass. Logiki* (1987), 3–9, 152. (Piotr Wojtylak) **89b:03043** 03B50
- Daniľchenko, A. M. (with Varakin, A. S.; Panishev, A. V.) Solution of the problem of job assignment on processors of a two-level system. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 2, 58–62, 134; translated in *Cybernetics* **24** (1988), no. 2, 211–217. (Not in MR) **90B35**
- Danilevich, A. B. (with Koshelev, V. N.) A method for introducing a correction to the solution of a system of differential equations in order to improve its accuracy. (Russian) *Voprosy Kibernet. (Moscow)* No. 139 (1988), 126–134. (Zeng Fu Qin) **89b:65106** 65L99 (93B27, 93B50)
- Danilin, Yu. M. (with Kovnir, V. N.) A method of exact penalties with total account of the constraints. (Russian. English summary) *Kibernetika (Kiev)* **1987**, no. 6, 42–48, 57, 134. (Summary) **89d:90185** 90C30 (65K99)
- (with Antonyuk, A. A.) The use of conjugate directions in methods of quasi-Newton type. (Russian) *Methods for the investigation of extremal problems* (Russian), 20–24, ii, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. (Summary) **89f:90131** 90C30 (65K05)
- A method of gradient type for minimization of nonsmooth penalty functions. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 4, 104–114, 125, 136; translated in *Cybernetics* **24** (1988), no. 4, 511–524. (Detlef Melzer) **89m:90137** 90C30 (65K05)
- Danilina, E. V. (with Gurman, V. I.; Baturin, V. A.; Moskalenko, A. I.; Baginov, I. P.; Bobryshev, A. G.; Butin, A. A.; Derenko, N. V.; Dushin, K. B.; Dykhta, V. A.; Kolokolnikov, G. A.; Konstantinov, G. N.; Mel'nik, V. V.; Nikiforova, L. N.; Ovsyannikova, N. A.; Rasina, I. V.; Rozenraukh, D. M.; Urbanovich, D. E.; Fedorova, E. Yu.) ★ Методы улучшения в вычислительном эксперименте. (Russian) [Methods of improving [control] in numerical experiments] "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. 184 pp. ISBN 5-02-028573-0 (Asen L. Dontchev) **89b:65099** 65Kxx (49Dxx, 93B40)
- Danilov, L. V. (with Konnik, S. I.; Kriger, L. L.) On the design of nonlinear transformers with linear input. (Russian. English summary) *Teoret. Elektrotekh. No. 39* (1985),

- 47-51, 137. (Not in MR) 94C05
- (with Pankin, V. V.; Sotnikov, D. D.) Some new applications of the Tellegen theorem in the general theory of electrical circuits and in the theory of gate circuits. (Russian. English summary) *Teoret. Elektrotekh.* No. 41 (1986), 65-72. (Adrian Adăscăliței) **89g:94044** 94C05 (94C15)
- ★ Ряды Вольтерра-Пикара в теории нелинейных электрических цепей. (Russian) [Volterra-Picard series in the theory of nonlinear electrical circuits] "*Radio i Svyaz*", Moscow, 1987. 224 pp. (Adrian Adăscăliței) **89g:94001** 94-02 (34A25, 94C05)
- Danilov, V. A. Two-sided and interval methods for solving linear ordinary differential equations with account taken of the phenomenon of the stiffness of systems. (Russian) *Approximate methods for analysis and their applications* (Russian), 82-94, *Akad. Nauk SSSR Sibirsk. Otdel., Energet. Inst., Irkutsk*, 1985. (B. Choczewski) **89b:65169** 65L05 (65G10)
- Danilov, V. G. (with Maslov, V. P.; Volosov, K. A.) ★ Математическое моделирование процессов тепломассопереноса. (Russian) [Mathematical modeling of heat- and mass-transport processes] Эволюция диссипативных структур. [Evolution of dissipative structures] With a supplementary chapter by N. A. Kolobov. "Nauka", Moscow, 1987. 352 pp. (N. L. Vulchanov) **89k:80018** 80A20 (35K57, 35L70, 92A15)
- (with Maslov, V. P.) Asymptotics of reaction-diffusion equations. (Russian) *Mat. Zametki* **44** (1988), no. 1, 152-153. (Zi Qian Yan) **89i:35080** 35K57 (35B25)
- (with Volosov, K. A.; Maslov, V. P.) The structure of a weak discontinuity in the solutions of quasilinear degenerate parabolic equations. (Russian) *Mat. Zametki* **43** (1988), no. 6, 829-839, 848; translated in *Math. Notes* **43** (1988), no. 5-6, 479-485. (Zi Qian Yan) **89i:35086** 35K65 (35C20)
- Danilov, V. I. (with Sotnikov, A. I.) Stable blockings in mechanisms of social choice. (Russian) *Ekonom. i Mat. Metody* **23** (1987), no. 5, 888-898. (Andrzej Wiecek) **89d:90020** 90A08 (90D12)
- (with Sotnikov, A. I.) Steady states and core theorems. (Russian) *Optimizatsiya* No. 41(58) (1987), 36-49. (Hans Keiding) **89j:90047** 90A14 (90D12)
- (with Sotnikov, A. I.) Coalition-stable mechanisms of group choice. (Russian) *Ekonom. i Mat. Metody* **24** (1988), no. 1, 113-124. (Roy Gardner) **89c:90009** 90A08
- Danilov, V. Ya. (with Martynuk, D. I.; Pan'kov, V. G.) On the question of the dependence of asymptotic solutions of difference equations on the parameter. (Russian) *Application of quasiperiodic methods in the theory of nonlinear differential equations* (Russian), 66-69, iv, *Akad. Nauk Ukrain. SSR, Kiev*, 1987. (P. Talpalaru) **89c:39001** 39A10 (34C27, 34C45)
- (with Tkachik, E. F.; Fedorchenko, I. S.) Determining source coordinates by the method of wave front inversion in an inhomogeneous waveguide. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 6 (1987), 18-23, 114. (D. Stanomir) **89m:76058** 76Q05
- (with Adzhubei, L. T.; Kudin, G. I.) Some problems in the control and estimation of oscillatory distributed systems with a small parameter. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 6 (1987), 85-89, 117. (Not in MR) 93C20
- (with Nakonechniy, A. G.) Problems of the optimization of wave fields in hydroacoustics. (Russian) *Kibernet. i Vychisl. Tekhn.* No. 77 (1988), 100-106, 111. (Summary) **89b:93040** 93C75 (76Q05)
- Danilov, Yu. A. (with Kuznetsov, G. I.) Nonlinear equations and differential invariants. *Group theoretical methods in physics*, Vol. 1-3 (Zvenigorod, 1982), 537-540, *Harwood Academic Publ., Chur*, 1985. (From the text) **89m:58213** 58G35 (35A30, 58A15)
- A method for finding exact solutions of the equations of mathematical physics. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (*Jarmala*, 1985), 355-360, "Nauka", Moscow, 1986. (see **89d:81001**) 35Q20
- see also Galilei, Galileo, **89a:01103** and Horsthemke, Werner, **89d:82002**
- Danilowicz, Czesław (with Nguyen Ngoc Thanh) Consensus-based partitions in the space of ordered partitions. *Pattern Recognition* **21** (1988), no. 3, 269-273. (Mukhai S. Krishnamoorthy) **89i:05033** 05A17 (68T10, 90A08)
- Danilyuk, I. I. (with Oleinik, M. V.) ★ Об управлении фронтом кристаллизации при электрошлаковом переплаве. (Russian) [Control of the crystallization front in submerged-arc smelting] Препринт [Preprint], 87-23. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. 23 pp. (Summary) **89d:80010** 80A20 (35R35)
- (with Bizhanova, G. I.) An irregular Stefan problem. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 9, 3-7, 86. (Summary) **89b:35169** 35R35 (35K05, 80A20)
- The Dirichlet problem for a two-dimensional quasilinear differential equation of elliptic type. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 12, 3-7, 85. (Jana D. Madjarova) **89c:35057** 35J65
- Danilyuk, O. I. (with Voloshina, M. S.) Some systems of integrals of simple layer potential type. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 9(43) (1988), 41-48, 86. (Summary) **89g:35107** 35Q99
- Dankanich, V. A. (with Martynuk, D. I.) Periodic solutions of nonlinear autonomous systems with delay. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 1, 64-68, 134. (V. Seda) **89b:34160** 34K15 (34C25, 65L10)
- Danković, B. (with Kocić, Ljubiša M.) Process identification using B-splines. *Numerical methods and approximation theory, III* (Niš, 1987), 257-264, *Univ. Niš, Niš*, 1988. (Summary) **89g:93033** 93B30 (41A15, 44A10, 93B40)
- D'Anna, A. (with D'Acunto, B.; Renno, P.) On the motion of a viscoelastic solid in the presence of a rigid wall. II. Impact laws for the hereditary case. Solution of the unilateral problem. *Internat. J. Non-Linear Mech.* **23** (1988), no. 1, 67-85. (Igor Bock) **89e:73017** 73F15 (35L85, 73F05)
- Danneels, C. (with Bollé, D.; Gesztesy, F.) Threshold scattering in two dimensions. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **48** (1988), no. 2, 175-204. (Arne Jensen) **89k:81184** 81F05 (35P25, 47F05)
- Dannenber, Alex Dysfunctionality methods and the effective potential. *Phys. Lett. B* **202** (1988), no. 1, 110-116. (Sorin Marčulescu) **89d:81091** 81E99 (82A15)
- Dannevik, William P. (with Yakhot, Victor; Orszag, Steven A.) Analytical theories of turbulence and the  $\epsilon$  expansion. *Phys. Fluids* **30** (1987), no. 7, 2021-2029. (Summary) **89b:76021** 76F99 (35R60, 82A25, 82A99)
- Dannon, Vitali C. (with Kartasos, Athanassios G.) The controllability of a quasilinear functional-differential system. *Ann. Polon. Math.* **47** (1987), no. 3, 371-380. (Jerzy Klamka) **89c:93017** 93B05 (34K35, 93C10, 93C50)
- Danova, N. S. Solution by Hirota's method of the generalized Boussinesq equation. (Russian) *Mathematical physics* (Russian), 3-6, 185, *Moskov. Gos. Ped. Inst., Moscow*, 1986. (From the text) **89b:35142** 35Q20
- Dante see Cimmino, Gianfranco, **89b:01013**
- Danthony, Claude Feuilletages orientés des surfaces: le problème de la section globale. (English summary) [Oriented foliations of surfaces: the global section problem] *Ann. Inst. Fourier (Grenoble)* **38** (1988), no. 2, 201-227. (N. V. Ivanov) **89g:57038** 57R30 (57M99)
- (with Nogueira, Arnaldo) Involutions linéaires et feuilletages mesurés. (English summary) [Linear involutions and measured foliations] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 8, 409-412. (N. V. Ivanov) **89k:57020** 57M99 (32G15, 57R30, 58F18, 58F20)
- The connectedness of the space of foliations by ties. *J. London Math. Soc.* (2) **38** (1988), no. 1, 166-178. (N. V. Ivanov) **89g:57039** 57R30
- D'Antoni, C. (with Doplicher, S.; Fredenhagen, Klaus; Longo, R.) Erratum: "Convergence of local charges and continuity properties of  $W^*$ -inclusions" [Comm. Math. Phys. **110** (1987), no. 2, 325-348; MR 88h:81078]. *Comm. Math. Phys.* **116** (1988), no. 1, 175-176. (From the text) **89c:81066** 81E05 (46L60)
- Dantsin, E. Ya. The algorithmics of the satisfiability problem. (Russian) *Voprosy Kibernet.* (Moscow) No. 131 (1987), 7-29. (A. Taubs) **89b:03012** 03B05 (03B25, 03B35, 68G55, 94C10)
- Dantzig, George B. Planning under uncertainty using parallel computing. *Ann. Oper. Res.* **14** (1988), no. 1-4, 1-16. (Summary) **89b:90134** 90B50 (68U20, 90Bxx, 90C31)
- (with McAllister, Patrick H.; Stone, John C.) Formulating an objective for an economy. *Math. Programming* **42** (1988), no. 1 (Ser. B), 11-32. (From the summary) **89b:90041** 90A14 (90A10)
- Danzner, L. Zur Lösung des Gallaischen Problems über Kreisscheiben in der Euklidischen Ebene. (English summary) [On the solution of the Gallai problem on circular disks in the Euclidean plane] *Studia Sci. Math. Hungar.* **21** (1986), no. 1-2, 111-134. (Summary) **89d:52022** 52A37
- Dan, Rong Tun see Tong, Dao Rong
- Danjil, Meng see Meng, Dao Ji
- Danod, S. Entire functions represented by Dirichlet series of two complex variables. *Portugal. Math.* **43** (1985/86), no. 4, 407-415 (1987). (P. Agranovich) **89c:32007** 32A15
- On the class of entire Dirichlet functions of several complex variables having finite order point. *Portugal. Math.* **43** (1985/86), no. 4, 417-427 (1987). (P. Agranovich) **89c:32008** 32A15
- On the space of integral Dirichlet functions of several complex variables. *Portugal. Math.* **44** (1987), no. 3, 333-340. (P. Agranovich) **89c:32009** 32A15
- Dappa, H. (with Trebels, W.) Pointwise multiplication on anisotropic Bessel potential spaces. *A Haar memorial conference, Vol. I, II* (Budapest, 1985), 263-272, *Colloq. Math. Soc. János Bolyai, 49, North-Holland, Amsterdam-New York*, 1987. (Cora Sadosky) **89c:42022** 42B15 (26A33, 42B10, 46E35, 47B38)
- (with Trebels, W.) A difference quotient norm for anisotropic Bessel potential spaces. *Math. Nachr.* **132** (1987), 163-174. (Summary) **89m:46063** 46E35 (42B10)
- Da Prato, G. (with Ichikawa, Akira) Bounded solutions on the real line to nonautonomous Riccati equations. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **79** (1985), no. 5, 107-112 (1986). (H. J. Kuiper) **89d:34098** 34G10 (47A62)
- Nonlinear stochastic evolution equations in Hilbert spaces. *Stochastic modelling and filtering* (Rome, 1984), 16-29, *Lecture Notes in Control and Inform. Sci.*, 91, Springer, Berlin-New York, 1987. (I. Gyöngy) **89a:60149** 60H20 (34F05, 34G20)
- (with Sinestrari, E.) Differential operators with nonsense domain. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **14** (1987), no. 2, 285-344 (1988). (D. E. Edmunds) **89f:47062** 47D05 (34G10, 35F10, 35G10, 35R15, 47A50)
- Synthesis of optimal control for an infinite-dimensional periodic problem. *SIAM J. Control Optim.* **25** (1987), no. 3, 706-714. (V. Popescu) **89b:49053** 49D50 (49C20, 93B50, 93C25)
- (with Kwapien, S.; Zabczyk, J.) Regularity of solutions of linear stochastic equations in Hilbert spaces. *Stochastics* **23** (1987), no. 1, 1-23. (Constantin Tudor) **89b:60148** 60H20 (47D05)
- Some results on Kolmogoroff equations for infinite-dimensional stochastic systems. *Stochastic differential systems, stochastic control theory and applications* (Minneapolis, Minn., 1986), 87-97, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (Ya. I. Bilopol'skaya) **89b:60083** 60J35 (35R60, 47H99)
- (with Lunardi, A.) Solvability on the real line of a class of linear Volterra integro-differential equations of parabolic type. *Ann. Mat. Pura Appl.* (4) **150** (1988), 67-117. (Teodor Havarneanu) **89g:45024** 45K05 (34K30, 47D05)
- (with Ichikawa, Akira) Quadratic control for linear periodic systems. *Appl. Math. Optim.* **18** (1988), no. 1, 39-66. (Francesco Zirilli) **89c:49029** 49D50 (93C05, 93E20)
- (with Lunardi, A.) Stability, instability and center manifold theorem for fully nonlinear autonomous parabolic equations in Banach space. *Arch. Rational Mech. Anal.* **101** (1988), no. 2, 115-141. (Maurice Gauthier) **89c:35019** 35B35 (34G20, 35K55, 35R20)
- (with Zabczyk, J.) A note on semilinear stochastic equations. *Differential Integral Equations* **1** (1988), no. 2, 143-155. (Constantin Tudor) **89b:60149** 60H20 (34F05, 35R60, 47H20, 93E03)
- (with Clément, Ph.) Existence and regularity results for an integral equation with infinite delay in a Banach space. *Integral Equations Operator Theory* **11** (1988), no. 4, 480-500. (D. Przeworska-Rolewicz) **89f:45019** 45N05 (34K15, 34K30, 45P05, 47G05)
- (with Zolésio, J.-P.) An optimal control problem for a parabolic equation in noncylindrical domains. *Systems Control Lett.* **11** (1988), no. 1, 73-77. (Summary) **89d:49003** 49A22 (93B17, 93C20)
- Some results on linear quadratic periodic control without detectability. *Control of partial differential equations* (Santiago de Compostela, 1987), 100-107, *Lecture Notes in Control and Inform. Sci.*, 114, Springer, Berlin-New York, 1989. (see **89j:00028**) 49D40 (49C20, 49D50, 93C25)
- (with Cannarsa, Piermarco; Zolésio, J.-P.) Dynamical shape control of the heat equation. *Systems Control Lett.* **12** (1989), no. 2, 103-109. (Summary) **89m:49047** 49C20 (76D05, 80A20, 93C20)
- Da Providência, João see da Providência, João
- D'Apuzzo, Livia Pluriattraction. (Italian) *Matemathe (Catania)* **38** (1983), no. 1-2, 99-112 (1987). (Silvio Massa) **89a:54054** 54H25



- D'Aquino, Paola** (with Bernardi, Claudio) Topological duality for diagonalizable algebras. *Notre Dame J. Formal Logic* 29 (1988), no. 3, 345-364. (Wojciech Dziuk) **89i:03114** 03G05 (03G25, 06E15)
- Darai, A.** (with Arscott, F. M.) A potential problem arising from the strip-punch problem in elasticity. *J. Engng. Math.* 22 (1988), no. 3, 203-223. (Summary) **89e:73038** 73T05 (73C35)
- Darderes, Enrique A.** (with Sorraín, O. M.; Bidner, M. S.) Numerical simulation of the one-dimensional flow of a real gas through a porous medium. (Spanish. English summary) *Rev. Internac. Métod. Numér. Calc. Diseñ. Ingr.* 4 (1988), no. 2, 151-173. (Summary) **89f:76077** 76S05 (76-08)
- Dargelko, M. M.** (with Loginov, A. A.; Samoilenko, Yu. I.) Control of rapid processes in continuous conducting media. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 6, 6-14 (1988); translated from *Avtomatika* 1987, no. 6, 11-20, 96 (Russian. English summary). (Summary) **89k:93146** 93C75 (76X05, 93C20)
- D'Ari, R.** see **d'Ari, R.**
- Darín, N. A.** (with Mazhukin, V. I.) An approach to the construction of adaptive difference grids. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 1, 64-68; translated in *Soviet Phys. Dokl.* 33 (1988), no. 1, 14-16. (Jiří Hřebíček) **89a:65144** 65M50
- (with Mazhukin, V. I.) An approach to the construction of adaptive grids for nonstationary problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 3, 454-460, 479. (Ervin Schechter) **89f:65098** 65M50
- (with Mazhukin, V. I.; Samarskii, A. A.) A finite-difference method for solving gas dynamic equations using adaptive grids that are dynamically connected with the solution. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 8, 1210-1225, 1278. (Summary) **89f:76007** 76-08 (76L05, 76N15)
- Daripa, Prabir** An exact inverse method for subsonic flows. *Quart. Appl. Math.* 46 (1988), no. 3, 503-526. (John C. Strikwerda) **89f:76059** 76G99 (35R30)
- Darkebaev, S. Z.** Convergence of series of Fourier trigonometric coefficients. (Russian) *Some problems in functional analysis, differential equations and their applications* (Russian), 33-39, 109, Kazakh. Gos. Univ., Alma-Ata, 1985. (see **89a:00016**) 42A20
- Darkhovskii, B. S.** (with Brodskii, B. E.) A nonparametric method for the fastest detection of a change in the mean of a random sequence. (Russian) *Teor. Veroyatnost. i Primenen.* 32 (1987), no. 4, 703-711. (Tenko Raykov) **89a:62180** 62L05 (62G99)
- Conditions for the structural stability of a locally optimal stabilization system. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 5, 41-51; translated in *Automat. Remote Control* 49 (1988), no. 5, part 1, 580-588. (Zdzisław Wyderka) **89f:93036** 93D99 (93C55, 93D20)
- see also **Aubin, Jean-Pierre**, **89g:58001**
- Darling, R. W. R.** Constructing stochastic flows: some examples. *Geometry of random motion* (Ithaca, N.Y., 1987), 21-24, *Contemp. Math.*, 73, Amer. Math. Soc., Providence, RI, 1988. (Jacques Vauthier) **89f:60123** 60H10 (58D25, 58G32)
- (with Le Jan, Y.) The statistical equilibrium of an isotropic stochastic flow with negative Lyapounov exponents is trivial. *Séminaire de Probabilités, XXII, 175-185, Lecture Notes in Math.*, 1321, Springer, Berlin-New York, 1988. (Daniel Ocone) **89f:60073** 60H10 (58D25, 58F25, 60J65)
- (with Mukherjee, Arunava) Stochastic flows on a countable set: convergence in distribution. *J. Theoret. Probab.* 1 (1988), no. 2, 121-147. (Yves Le Jan) **89g:60215** 60J15
- Ergodicity of a measure-valued Markov chain induced by random transformations. *Probab. Theory Related Fields* 77 (1988), no. 2, 211-229. (Yves Le Jan) **89g:60206** 60J05
- Darlington, J.** see **Jacobs, Dean**, **89f:68051**
- Darmakheev, V. P.** Relaxationsmethode zur Berechnung eines Punktes aus dem Durchschnitt der Projektionen von konvexen abgeschlossenen Mengen. [Relaxation method for computing a point from the intersection of projections of convex closed sets] 17. Jahrestagung "Mathematische Optimierung" (Rostock, 1986), 19-24, *Seminarberichte*, 85, Humboldt Univ., Berlin, 1986. (Summary) **89a:52007** 52A20 (90C20)
- Darmanto, S.** (with Mukhopadhyay, Nitis; Hamdy, H. I.) Simultaneous estimation after selection and ranking and other procedures: the negative exponential case. *Metrika* 35 (1988), no. 5, 275-286. (Lionel Weiss) **89f:62036** 62F07 (62F25)
- (with Mukhopadhyay, Nitis) Sequential estimation of the difference of means of two negative exponential populations. *Sequential Anal.* 7 (1988), no. 2, 165-190. (Jan C. Geertsema) **89f:62131** 62L10 (62F10)
- Darmawijaya, Soeparna** (with Lee, Peng Yee) The controlled convergence theorem for the approximately continuous integral of Burkil. *Proceedings of the analysis conference, Singapore 1986*, 63-68, *North-Holland Math. Stud.*, 150, North-Holland, Amsterdam-New York, 1988. (H. Burkil) **89c:26013** 26A39 (26A45, 26A46, 28A20)
- Darnell, Adrian C.** Harold Hotelling 1895-1973. *Statist. Sci.* 3 (1988), no. 1, 57-62. (Editors) **89i:01071** 01A70
- Da Rocha, Luiz Fernando Carvalho** see **da Rocha, Luiz Fernando Carvalho**
- Da Rocha Filho, G.** see **da Rocha Filho, G.**
- Daróczy, Z.** (with Járai, Antal; Kátai, I.) Interval filling sequences. *Ann. Univ. Sci. Budapest. Sect. Comput.* 6 (1985), 53-63 (1987). (M. Thaler) **89e:11004** 11A67 (11B83)
- (with Losonczy, László) Functional equations of sum type on a domain. *Ann. Univ. Sci. Budapest. Sect. Comput.* 8 (1987), 25-33 (1988). (F. W. Carroll) **89k:39013** 39B10
- (with Kátai, I.) On additive arithmetical functions with values in the circle group. *Publ. Math. Debrecen* 34 (1987), no. 3-4, 307-312. (Jean-Marie De Koninck) **89f:11008** 11A25 (11A63)
- (with Varga, László) A new approach to defining software complexity measures. *Acta Cybernet.* 8 (1988), no. 3, 287-291. (Summary) **89f:68007** 68N05
- (with Kátai, I.) On functions additive with respect to interval filling sequences. *Acta Math. Hungar.* 51 (1988), no. 1-2, 185-200. (F. Brooks) **89c:26012** 26A30 (39B05)
- Daroudeau, Ph.** Une critique de la notion de test de processus fondée sur la non séparabilité de certaines classes de langages. (English summary) [A critique of the notion of process testing based on the nonseparability of certain classes of languages] *RAIRO Inform. Théor. Appl.* 20 (1986), no. 3, 291-318. (Summary) **89a:68063** 68Q10
- Bisimulation and effectiveness. *Inform. Process. Lett.* 30 (1989), no. 1, 19-20. (From the introduction) **89m:68033** 68Q10 (68Q90)
- Darrow, J. N.** (with Jirina, Miloslav; Speed, T. P.) Sampling without replacement: approximation to the probability distribution. *J. Austral. Math. Soc. Ser. A* 44 (1988), no. 2, 197-213. (Zuzana Prásková) **89c:62023** 62D05 (60F05, 62E20)
- D'Arsonval, Arsène** see **d'Arsonval, Arsène**
- Darwish, M. G.** (with Soliman, Hisham M.) Design of decentralized reliable controllers for large-scale systems. *Internat. J. Systems Sci.* 19 (1988), no. 8, 1529-1538. (Not in MR) 93B50 (49D27, 93A15)
- Dar'yalov, A. Yu.** (with Volkodavov, V. F.) The Darboux problem for an equation of hyperbolic type of general form. (Russian) *Differential equations and mathematical physics (Russian)*, 8-12, *Kulbyshev. Gos. Ped. Inst., Kuibyshev*, 1985. (see **89f:35006**) 35L10
- Das, A. D.** (with Saha, G. M.) A note on construction of mutually balanced Youden designs. *Utilitas Math.* 33 (1988), 5-8. (E. Seiden) **89d:62074** 62K10 (05B05)
- Das, A. G.** (with Bhattacharyya, Sandhya) Functions of bounded (gk) variation. *Ranchi Univ. Math. J.* 17 (1986), 11-20 (1987). (P. C. Bhakta) **89a:26015** 26A45
- (with Das, Usha) A new characterisation of k-fold Lebesgue integral. *Soochow J. Math.* 13 (1987), no. 1, 45-58. (S. N. Mukhopadhyay) **89c:26021** 26B15 (26A46)
- (with Das, Usha) Integration by parts for some general integrals. *Bull. Austral. Math. Soc.* 37 (1988), no. 1, 1-15. (Peter Bullen) **89f:26008** 26A39
- (with Lahiri, B. K.) Bessel type functions involving Dirichlet series. *Indian J. Pure Appl. Math.* 19 (1988), no. 5, 448-463. (S. M. Shah) **89a:30031** 30D15 (30B50, 33A40)
- Das, Anadilhan** A new improper Riemann integral and the Dirac delta-function. *Indian J. Pure Appl. Math.* 18 (1987), no. 11, 997-1001. (D. K. Dutta) **89a:26014** 26A42
- Relativistic bilocal lattice meson fields, divergence-free Green's functions and parton confinement. *Z. Phys. C* 41 (1988), no. 3, 505-512. (Summary) **89k:81191** 81G20 (81E25)
- Das, Ashok** (with Biswas, S. N.) Thermo field dynamics and para-statistical mechanics. *Modern Phys. Lett. A* 3 (1988), no. 6, 549-559. (Summary) **89b:81175** 81E99 (82A15)
- (with Panigrahi, Prasanta K.; Maharana, J.) Path integral derivation of the Chern-Simons terms in string theories. *Modern Phys. Lett. A* 3 (1988), no. 8, 759-765. (Danny Birmingham) **89f:83085** 83E15 (81E30, 83E30)
- Nilpotency of  $Q_{\text{max}}$  and the vanishing  $\beta$ -function in string theories. *Phys. Lett. B* 205 (1988), no. 1, 49-52. (Robert Marnelius) **89i:81109** 81E99 (81E30)
- On the "current" algebra of the KdV equation. *Phys. Lett. B* 207 (1988), no. 4, 429-433. (From the introduction) **89f:58146** 58G35 (35Q20, 58F07, 81E40)
- (with Okubo, Susumu) The integrability condition for dynamical systems. *Phys. Lett. B* 209 (1988), no. 2-3, 311-314. (Gerard Thompson) **89g:58075** 58F05 (70H35)
- Das, Chakradhar** (with Patel, Gokulananda) Bounds for aggregated solid transportation problem and an improved disaggregation method. (Serbo-Croatian summary) *Mat. Vesnik* 40 (1988), no. 2, 117-128. (Summary) **89j:90177** 90C08 (90C06)
- Das, Chandrasekhar** On the minimum of a nonconvex inventory function. *Management Sci.* 34 (1988), no. 8, 1023-1026. (Summary) **89g:90085** 90B05
- Das, Dipali** (with Krori, K. D.; Borghain, P.; Kar, P. K.) Exact scalar and spinor solutions in some rotating universes. *J. Math. Phys.* 29 (1988), no. 7, 1645-1649. (Reinhard Illge) **89i:83010** 83C10 (83C15)
- Das, Gokulananda** (with Sava, Ekrem) Infinite matrices and summable series. *J. Orissa Math. Soc.* 4 (1985), no. 1, 5-14. (Not in MR) 40C05
- (with Mishra, M. N.) Extension of the concept of weak law of large numbers. *Proceedings of the National Seminar on Stochastic Process, Statistical Inference and Sample Survey (Sambalpur, 1985)*. *J. Orissa Math. Soc.* 5 (1986), no. 1, 1-10. (F. T. Wright) **89g:60072** 60F05 (60F15)
- Sublinear functionals and a class of conservative matrices. *Bull. Inst. Math. Acad. Sinica* 15 (1987), no. 1, 89-106. (K. Chandrasekhara Rao) **89g:40013** 40H05 (46A45)
- (with Mohanty, S. K.) Almost sure convergence of factored random Fourier series. *Bull. Inst. Math. Acad. Sinica* 15 (1987), no. 2, 221-229. (F. Móricz) **89g:60176** 60G99 (42A20, 42A61)
- (with Panda, K. C.) On a generalised absolute harmonic summability of Fourier series. *Indian J. Pure Appl. Math.* 18 (1987), no. 8, 705-722. (B. L. Gupta) **89g:42012** 42A24
- (with Debata, J. P.) Corrigendum to: "A note on fixed points of commuting mappings of contractive type" [Indian J. Math. 27 (1985), no. 1-3, 49-51; MR 87i:54091]. *Indian J. Math.* 30 (1988), no. 3, 249-250. (Editors) **89f:54052** 54H25
- Das, Jyoti** (with Banerjee, Salil K.) An alternative characterisation of the spectrum of a selfadjoint operator associated with certain fourth-order formally selfadjoint ordinary differential expression. *Indian J. Math.* 30 (1988), no. 1, 1-8. (J. B. Butler, Jr.) **89d:34046** 34B25 (34B27, 47E05)
- (with Chatterjee, Anindita) On the equiconvergence of the eigenfunction expansion associated with certain 2nd order differential equations. *Indian J. Pure Appl. Math.* 19 (1988), no. 11, 1054-1059. (Teruo Ikebe) **89m:34030** 34B25
- Das, Kanika** (with Krori, K. D.; Borghain, P.; Sarma, Arunima) Exact interior solutions in Einstein-Cartan-Yukawa theory. *Canad. J. Phys.* 66 (1988), no. 2, 126-131. (Carl Brans) **89a:83047** 83D05
- (with Krori, K. D.; Borghain, P.) Interior Schwarzschild-like solution in higher dimensions. *Phys. Lett. A* 132 (1988), no. 6-7, 321-323. (Dieter Lorenz-Petzel) **89f:83081** 83E15
- Das, M. N.** (with Shil, R. N.) Some results in Galois field and their application to obtain orthogonal main-effects plans. *J. Statist. Res.* 19 (1985), no. 1-2, 49-62. (Summary) **89m:62087** 62K15 (05B05)
- Das, Phulendru** Fuzzy vector spaces under triangular norms. *Fuzzy Sets and Systems* 25 (1988), no. 1, 73-85. (Summary) **89a:15027** 15A99 (03E72)
- Das, Premadhis** (with Adhikary, Basudeb) Construction of grouped arrays. *Calcutta Statist. Assoc. Bull.* 36 (1987), no. 143-144, 153-164. (Dibyen Majumdar) **89f:62128** 62K15 (05B15)
- Das, Sajal K.** (with Deo, Narsingh) Square-star reducibility and its forbidden graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 277-290. (Edward R. Scheinerman) **89e:05166** 05C75
- (with Deo, Narsingh) Divide-and-conquer-based optimal parallel algorithms for some graph problems on EREW PRAM model. *IEEE Trans. Circuits and Systems* 35 (1988), no. 3, 312-322. (Václav Koubek) **89d:68017** 68Q10 (05C38, 05C40, 68Q25, 68R10)
- Das, Sarama** Group-theoretic study of certain generating functions for hypergeometric polynomials. I, II. *Pure Math. Manuscript* 5 (1986), 63-69, 71-76. (From the introduction) **89j:33002** 33A30

- Das, Shuvra** (with Mitra, Ambar K.) Nonuniqueness in the integral equation formulation of the biharmonic equation in multiply connected domains. *Comput. Methods Appl. Mech. Engrg.* **69** (1988), no. 2, 205–214. (Summary) **89e:65142** 65N99 (65E05, 65R20)
- Das, Sunil R.** Adaptive scheduled experimentation and fault location in large combinational logic networks. *Cybernet. Systems* **19** (1988), no. 1, 1–12. (Not in MR) **90B25** (94A13, 94C05)
- Das, Usha** (with Das, A. G.) A new characterisation of  $k$ -fold Lebesgue integral. *Soochow J. Math.* **13** (1987), no. 1, 45–58. (S. N. Mukhopadhyay) **89e:26021** 26B15 (26A46)
- (with Das, A. G.) Integration by parts for some general integrals. *Bull. Austral. Math. Soc.* **37** (1988), no. 1, 1–15. (Peter Bullen) **89b:26008** 26A39
- Dasare, V. N.** (with Shendge, G. R.) A note on functional-differential inequalities. *Math. Student* **47** (1979), no. 2–4, 210–214 (1985). (Not in MR) **34K05** (34A40)
- Dascal, Marcelo** On knowing truths of reason. *Leibniz: questions de logique (Bruxelles/Louvain-la-Neuve, 1985)*, 27–37, *Studia Leibniana Sonderheft*, 15, Steiner, Wiesbaden, 1988. (see **89m:01041**) **01A45** (03–03, 03A05)
- DasGupta, Anirban** (with Rubin, Herman) Bayesian estimation subject to minimaxity of the mean of a multivariate normal distribution in the case of a common unknown variance: a case for Bayesian robustness. *Statistical decision theory and related topics, IV, Vol. 1 (West Lafayette, Ind., 1986)*, 325–345, Springer, New York-Berlin, 1988. (Lionel Weiss) **89b:62017** 62C10 (62H12, 62J07)
- Dasgupta, Partha** Lives and well-being. *Soc. Choice Wellf.* **5** (1988), no. 2–3, 103–126. (Summary) **89e:92050** 92A25 (90A08, 90A10)
- see also *Economic organizations as games*, **89e:90246**
- Dasgupta, Soura** (with Anderson, B. D. O.; Kaye, R. John) Identification of physical parameters in structured systems. *Automatica—J. IFAC* **24** (1988), no. 2, 217–225. (J. P. Babary) **89i:93030** 93B30
- Adaptive identification of systems with polynomial parameterizations. *IEEE Trans. Circuits and Systems* **35** (1988), no. 5, 599–603. (Not in MR) **93E12** (93C40, 93E25)
- Kharitonov's theorem revisited. *Systems Control Lett.* **11** (1988), no. 5, 381–384. (B. Ross Barmish) **89i:93185** 93D99 (30C15)
- Dasgupta, Swapan** (with Mitra, Tapan) Characterization of intertemporal optimality in terms of decentralizable conditions: the discounted case. *J. Econom. Theory* **45** (1988), no. 2, 274–287. (Summary) **89b:90055** 90A16 (90A11, 90A12)
- (with Mitra, Tapan) Intertemporal optimality in a closed linear model of production. *J. Econom. Theory* **45** (1988), no. 2, 288–315. (Summary) **89g:90047** 90A11
- Dash, A. T.** (with Cressman, R.) Polygame in human and animal species. *Math. Biosci.* **88** (1988), no. 1, 49–66. (Ivar Heuch) **89d:92058** 92A15
- (with Curto, Raul E.) Browder spectral systems. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 407–413. (F.-H. Vasilescu) **89f:47004** 47A10 (47D99)
- Dash, P. C.** Lattice solitons and nonlinear diatomic models. *Solitons (Tiruchirappalli, 1987)*, 196–211, *Springer Ser. Nonlinear Dynamics*, Springer, Berlin-New York, 1988. (David J. Kaup) **89i:70021** 70F99 (35Q20, 70K99, 82A68)
- Dashkevich, A. M.** Representation of natural numbers in the form  $n = p + \sum_{i=1}^k n_i^{k_i}$ . (Russian) *Investigations in number theory (Russian)*, 15–33, Saratov. Gos. Univ., Saratov, 1982. (see **89a:11006**) **11P45** (11P55)
- Đakić, Vučić** On  $D$ -regular near-rings. *Proceedings of the Conference "Algebra and Logic", Cetinje 1986*, 47–54, Univ. Novi Sad, Novi Sad, 1987. (C. J. Maxson) **89e:16051** 16A76
- Da Silva, A. J.** (with Gomes, Marcelo O. C.; Kurak, V.) Weyl fields, quantum integrability and conformal invariant field theories. *Nuclear Phys. B* **295** (1988), no. 2 FS21, 139–152. (Raiko Zaiikov) **89b:81080** 81D15 (81E40)
- (with Gomes, Marcelo O. C.; Kurak, V.) Superconformal invariant nonlinear  $\sigma$ -models from the bosonic ones. *Phys. Lett. B* **202** (1988), no. 4, 538–540. (Enore Guadagnini) **89c:81196** 81G20 (81E13, 81E40)
- see also Banerjee, R. S., **89k:81065** and Zhou, Huan Qiang, **89k:81066**
- Da Silva, Euripides Alves** see da Silva, Euripides Alves
- Da Silva, Luciano R.** see da Silva, Luciano R.
- Da Silva, M. Viana** see da Silva, M. Viana
- Da Silva, Manuel R.** see da Silva, Manuel R.
- Da Silva, N. R.** see da Silva, N. R.
- Da Silva Ritter, G. L.** see da Silva Ritter, G. L.
- Daskaloyannis, C.** On the approximation of the linear equations with bounded kernels. *J. Math. Anal. Appl.* **133** (1988), no. 1, 272–281. (Charles W. Groetsch) **89b:65091** 65J10 (47A50)
- D'Aspremont, Claude** see d'Aspremont, Claude
- Dass, Bal Kishan** (with Lal, Shanker) UEC codes correcting random and low-density burst errors. Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. 2 (Catania, 1986). *Ars Combin.* **24** (1987), B, 103–134. (Bal Kishan Dass) **89e:94014** 94B20
- (with Tyagi, Vinod) On duals of GRM-codes of order  $r + (r + 1)_{m,s}$ . *Bull. Calcutta Math. Soc.* **80** (1988), no. 4, 270–277. (A. Pethő) **89k:94058** 94B05 (94B20)
- Dass, J.** (with Sharma, Om Prakash) Transient analysis of an  $M/M/r$  machine interference model. *Stochastic Anal. Appl.* **6** (1988), no. 2, 205–216. (B. Dimitrov) **89k:60147** 60K25 (90B22, 90B25)
- hari Dass, N. D.** see Hari Dass, N. D.
- Dassios, George** Energy behaviour for conservative and dissipative wave processes in continuum mechanics. *Differential equations and applications, I, II (Russian) (Ruse, 1985)*, 553–560, 'Angel Kanchev' Tech. Univ., Ruse, 1987. (Sergej M. Zverev) **89b:73017** 73D99 (35Q99, 73R05, 73U05, 78A99)
- (with Kiriaki, Kiriakie) A useful application of Gauss theorem. *Bull. Soc. Math. Grèce (N.S.)* **28** (1987), part A, 40–43. (I. M. Longman) **89d:26011** 26B20
- (with Kiriaki, Kiriakie; Polyzos, Demosthenes) On the scattering amplitudes for elastic waves. *Z. Angew. Math. Phys.* **38** (1987), no. 6, 856–873. (Summary) **89a:73019** 73D25
- (with Payne, L. E.) Estimates for low-frequency elastic scattering by a rigid body. *J. Elasticity* **20** (1988), no. 3, 161–180. (Summary) **89f:73026** 73D25 (35J05, 35P25)
- On the harmonic radius and the capacity of an inverse ellipsoid. *J. Math. Phys.* **29** (1988), no. 4, 835–836. (Summary) **89d:31012** 31B15
- (with Andreou, Elias; Polyzos, Demosthenes) Korn's constant for a spherical shell. *Quart. Appl. Math.* **46** (1988), no. 3, 583–591. (Cornelius O. Horgan) **89j:73014** 73C20 (49G05, 73L20)
- (with Kostopoulos, Vassilis) The scattering amplitudes and cross sections in the theory of thermoelasticity. *SIAM J. Appl. Math.* **48** (1988), no. 1, 79–98. (Summary) **89e:73090** 73U05 (73D25)
- Dassow, Jürgen** Pure languages of regulated rewriting and their codings. *Acta Cybernet.* **8** (1988), no. 3, 227–235. (Ranjana Chaudhuri) **89e:68065** 68Q45 (68Q50)
- Convexity and simplicity of chain code picture languages. *Rostock. Math. Kolloq.* **34** (1988), 53–60. (Dominique Gouyou-Beauchamps) **89j:68147** 68U05 (68Q50, 68R99)
- Subregularly controlled derivations: context-free case. *Rostock. Math. Kolloq.* **34** (1988), 61–70. (Dominique Gouyou-Beauchamps) **89j:68088** 68Q50 (68Q45)
- Daston, Lorraine J.** The domestication of risk: mathematical probability and insurance 1650–1830. *The probabilistic revolution, Vol. 1*, 237–260, *Bradford Book, MIT Press, Cambridge, MA-London*, 1987. (Eberhard Knobloch) **89f:01025** 01A50 (01A55, 62–03)
- Rational individuals versus laws of society: from probability to statistics. *The probabilistic revolution, Vol. 1*, 295–304, *Bradford Book, MIT Press, Cambridge, MA-London*, 1987. (Summary) **89b:01015** 01A50 (01A55, 90A05)
- Fitting numbers to the world: the case of probability theory. *History and philosophy of modern mathematics (Minneapolis, MN, 1985)*, 221–237, *Minnesota Stud. Philos. Sci., XI, Univ. Minnesota Press, Minneapolis, MN*, 1988. (Bernard Bru) **89f:01026** 01A50 (00A25, 01A55, 03A05)
- Dastoor, Naorayex K.** (with Fisher, Gordon Ray) On point-optimal Cox tests. *Econometric Theory* **4** (1988), no. 1, 97–107. (V. K. Srivastava) **89b:62100** 62U05 (62P20)
- Date, E.** (with Jimoo, Michio; Kuniba, A.; Miwa, Tetsuji; Okado, Masato) Exactly solvable SOS models: local height probabilities and theta function identities. *Nuclear Phys. B* **290** (1987), no. 2, 231–273. (George E. Andrews) **89d:82114** 82A67 (05A19, 11P57, 81E25, 81E40, 82A69)
- Dateyama, Masahito** Some stability for expansive homeomorphisms with singular points. *Dynamical systems and applications (Kyoto, 1987)*, 55–60, *World Sci. Adv. Ser. Dyn. Syst., 5, World Sci. Publishing, Singapore*, 1987. (Dietrich Flockerzi) **89m:58159** 58F15 (54H20, 58F10)
- Datko, Richard** Not all feedback stabilized hyperbolic systems are robust with respect to small time delays in their feedbacks. *SIAM J. Control Optim.* **26** (1988), no. 3, 697–713. (Tamer Başar) **89e:93057** 93D15 (34K20, 49D50, 93C20)
- D'Atri, Alessandro** (with Di Felice, P.; Lakshmanan, V. S.; Moscarini, Marina) On global context dependencies and their properties (extended abstract). *MFDS 87 (Dresden, 1987)*, 71–79, *Lecture Notes in Comput. Sci.*, 305, Springer, Berlin-New York, 1988. (see **89a:68004**) **68P15**
- (with Moscarini, Marina) On hypergraph acyclicity and graph chordality. *Inform. Process. Lett.* **29** (1988), no. 5, 271–274. (Summary) **89m:68022** 68P15 (05C65, 05C75, 68R10)
- (with Moscarini, Marina) Distance-hereditary graphs, Steiner trees, and connected domination. *SIAM J. Comput.* **17** (1988), no. 3, 521–538. (Ding Zhu Du) **89f:05066** 05C10 (05C05, 68R10)
- Datsenko, N. M.** (with Zimin, N. Ye.) Dynamic manifestations of resonant excitation of long-period fluctuations in a model with seasonal thermal forcing. A translation of *Stochastic dynamics of the atmosphere and the problem of long-range weather forecasting* [(Russian)], 111–127, 1987. *Fluid Mech.—Soviet Res.* **17** (1988), no. 5, 130–144. (Summary) **89i:86013** 86A35 (58F13, 58F40)
- Datser, A. B.** Louis V. de Broglie (1892–1987). (Bulgarian) *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* **29**(62) (1987), no. 4, 303–306. (Editors) **89f:01062** 01A70
- The role of Erwin Schrödinger (1887–1961) in the creation and interpretation of quantum mechanics. (Bulgarian) *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* **30**(63) (1988), no. 3, 191–195. (Editors) **89m:01082** 01A70
- Datt, Amar** (with Prasad, Shanker) On submanifolds of codimension 2 of almost Hermite manifolds. *Acta Cienc. Indica Math.* **12** (1986), no. 1, 40–47. (Stere Ianus) **89a:53044** 53C15 (53C40)
- Datta, Ajay K.** (with Ghosh, Sukumar; Chou, Tair-Shian) A new algorithm for deadlock avoidance. *Inform. Sci.* **46** (1988), no. 1–2, 47–72. (Raymond Devillers) **89k:68015** 68N25
- Datta, Amitava** (with Home, D.; Raychaudhuri, Amitava) Is quantum mechanics with CP nonconservation incompatible with Einstein's locality condition at the statistical level? *Phys. Lett. A* **130** (1988), no. 4–5, 187–191. (Jeffrey Bub) **89m:81012** 81B05
- Datta, Basudeb** (with Nag, Subhashis) Zero-sets of quaternionic and octonionic analytic functions with central coefficients. *Bull. London Math. Soc.* **19** (1987), no. 4, 329–336. (John Ryan) **89j:30066** 30G35
- Datta, Biswa Nath** (with Datta, Karabi) The matrix equation  $XA = A^T X$  and an associated algorithm for solving the inertia and stability problems. *Linear Algebra Appl.* **97** (1987), 103–119. (Bryan E. Cain) **89b:15027** 15A42 (15A24, 65F30)
- see also *Linear algebra in signals, systems, and control*, **89f:00025**
- Datta, Karabi** (with Datta, Biswa Nath) The matrix equation  $XA = A^T X$  and an associated algorithm for solving the inertia and stability problems. *Linear Algebra Appl.* **97** (1987), 103–119. (Bryan E. Cain) **89b:15027** 15A42 (15A24, 65F30)
- Datta, Mallika** Joint pricing and ordering policy for exponentially decaying inventory with shortages. *Proc. Nat. Acad. Sci. India Sect. A* **57** (1987), no. 2, 217–223. (Summary) **89d:90079** 90B05
- Datta, Nanigopal** (with Jana, Rabindra Nath) Flow and heat transfer in an elastico-viscous liquid over an oscillating plate in a rotating frame. (Turkish summary) *İstanbul Üniv. Fen Fak. Mecm. Ser. A* **43** (1978), 121–130 (1987). (Ajit Kumar Sharma) **89f:76021** 76A10 (76U05, 80A20)
- Datta, T. K.** (with Pal, Ashis Kumar) Order level inventory system with power demand pattern for items with variable rate of deterioration. *Indian J. Pure Appl. Math.* **19** (1988), no. 11, 1043–1053. (From the introduction) **89b:90073** 90B05
- Dattatreya, C.** (with Kumar, V. Abhai; Thangaraj, D.) Dual extremum principles for a class of electrostatic field interface problems. *Internat. J. Electron.* **66** (1989), no. 1, 139–158. (Summary) **89k:78009** 78A30
- Dattoli, G.** (with Ciocci, F.; Dipace, A.; Torre, Amalia) Erratum: "A simple derivation of new sum rules of Bessel functions" [Nuovo Cimento B (11) **90** (1985), no. 2, 138–142; MR **87:33016**]. *Nuovo Cimento B* (11) **100** (1987), no. 3, 441. (Editors) **89d:33011** 33A40
- (with Richetta, M.; Torre, Amalia) Operator disentanglement. *Phys. Rev. A* (3) **37** (1988), no. 6, 2007–2011. (A. O. Barut) **89f:81061b** 81C40 (22E60, 58F35, 81K05)



- Daubechies, Ingrid** Discrete sets of coherent states and their use in signal analysis. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 73–82, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Gongli Zhang) **89c:94012** 94A12 (42A38, 94A11)
- (with Grossmann, A.) Frames in the Bargmann space of entire functions. *Comm. Pure Appl. Math.* **41** (1988), no. 2, 151–164. (Daniel H. Luecking) **89c:46028** 46E20 (30D10, 44A15)
- Time-frequency localization operators: a geometric phase space approach. *IEEE Trans. Inform. Theory* **34** (1988), no. 4, 605–612. (Not in MR) 94A11 (94A12)
- Dauben, Joseph W.** Abraham Robinson and nonstandard analysis: history, philosophy, and foundations of mathematics. *History and philosophy of modern mathematics* (Minneapolis, MN, 1985), 177–200, *Minnesota Stud. Philos. Sci.*, XI, Univ. Minnesota Press, Minneapolis, MN, 1988. (Charles F. Kielkopf) **89c:01035** 01A60 (00A25, 03-03, 03A05, 03H05, 03H10)
- D'Aubigny, G.** see **d'Aubigny, G.**
- Dauchet, M.** (with Timmerman, E.) Continuous monoids and yields of infinite trees. (French summary) *RAIRO Inform. Theor. Appl.* **20** (1986), no. 3, 251–274. (Summary) **89a:68050** 68Q05 (03D05, 20M35, 68Q45, 68Q55)
- see also **CAAP '88**, **89c:68003**
- Daudin, J.-J.** (with Duby, C.; Trécout, P.) Stability of principal component analysis studied by the bootstrap method. *Statistics* **19** (1988), no. 2, 241–258. (Yasunori Fujikoshi) **89c:62088** 62H25
- Dauer, Jerald P.** Numerically analyzing linear multicriteria optimization problems. *Multicriteria optimization in engineering and in the sciences*, 27–47, *Math. Concepts Methods Sci. Engrg.*, 37, Plenum, New York-London, 1988. (see **89f:90171**) 90C31
- Daugavet, A. I.** Estimates for the rate of convergence of numeric characteristics in limit theorems with a stable limit law. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 3, 585–589. (Gerd Christoph) **89b:60053** 60F05 (60E07, 60G50)
- Daugavet, I. K.** A class of polynomial operators. (Russian) *Metody Psichisl.* **15** (1988), 113–119, 181–182. (Summary) **89c:47123** 47H99
- D'Aujourd'hui, Marcel** see **d'Aujourd'hui, Marcel**
- Dauns, John** Metrics are Clifford algebra involutions. *Loyola Conference on Mathematical and Interpretational Problems in Relativistic Quantum Theory* (New Orleans, 1987). *Internat. J. Theoret. Phys.* **27** (1988), no. 2, 183–192. (Horia Scutaru) **89j:15042** 15A66 (53A50, 81B99)
- (with Fuchs, László) Infinite Goldie dimensions. *J. Algebra* **115** (1988), no. 2, 297–302. (S. S. Page) **89f:16034** 16A55
- Subdirect products of injectives. *Comm. Algebra* **17** (1989), no. 1, 179–196. (J. C. Robson) **89m:16039** 16A52 (16A34, 16A55)
- Dauphin-Tanguy, G.** (with Rotella, F.) Nonlinear systems: identification and optimal control. *Internat. J. Control* **48** (1988), no. 2, 525–544. (Jan Bialasiewicz) **89h:93068** 93B30 (93B25, 93C10)
- (with Rotella, F.) Improvement in near-optimum regulators for singularly perturbed systems. *J. Franklin Inst.* **325** (1988), no. 6, 745–754. (Summary) **89j:93044** 93B50 (34E15, 49D27, 49D40, 93C05)
- D'Auria, R.** (with Fré, P.) Duality in superspace and anomaly free supergravity: some remarks. *Modern Phys. Lett. A* **3** (1988), no. 7, 673–679. (Mark D. Roberts) **89f:83098** 83E50 (81E99)
- (with Fré, P.) Minimal 10D anomaly-free supergravity and the effective superstring theory. *Phys. Lett. B* **200** (1988), no. 1–2, 63–68. (W. Cox) **89g:83054** 83E50 (81E30, 83E30)
- Dautov, R. Z.** A variant of the finite element method for boundary value problems in punctured domains with periodic structure. (Russian) *Chisl. Metody Mekh. Sploshn. Sredy* **17** (1986), no. 1, 57–69. (Summary) **89c:65118** 65N30 (73K25)
- Dautray, Robert** (with Lions, J.-L.) ★ Mathematical analysis and numerical methods for science and technology. Vol. 2. Functional and variational methods. With the collaboration of Michel Artola, Marc Authier, Philippe Bénilan, Michel Cessenat, Jean Michel Combes, Hélène Lanchon, Bertrand Mercier, Claude Wild and Claude Zully. Translated from the French by Ian N. Sneddon. *Springer-Verlag, Berlin-New York*, 1988. xiv+561 pp. ISBN 3-540-19045-7 (Editors) **89m:00001** 00A05
- (with Lions, J.-L.) ★ Analyse mathématique et calcul numérique pour les sciences et les techniques. Vol. 4. (French) [Mathematical analysis and computing for science and technology. Vol. 4] Méthodes variationnelles. [Variational methods] With the collaboration of Michel Artola, Marc Authier, Michel Cessenat, Jean Michel Combes, Bertrand Mercier and Claude Wild. Reprinted from the 1984 edition. INSTN: Collection Enseignement. [INSTN: Teaching Collection] Masson, Paris, 1988. pp. i–xxiii and 1086–1411. ISBN 2-225-81298-5 (Editors) **89m:00002** 00A05 (00A69, 35-01, 47-01)
- (with Lions, J.-L.) ★ Analyse mathématique et calcul numérique pour les sciences et les techniques. Vol. 5. (French) [Mathematical analysis and computing for science and technology. Vol. 5] Spectre des opérateurs. [The operator spectrum] With the collaboration of Michel Artola, Michel Cessenat, Jean Michel Combes and Bruno Scheurer. Reprinted from the 1984 edition. INSTN: Collection Enseignement. [INSTN: Teaching Collection] Masson, Paris, 1988. xxii+552+xxiii pp. ISBN 2-225-81299-3 (Editors) **89m:00003a** 00A05 (00A69, 35-01, 47-01, 78-01, 81-01)
- (with Lions, J.-L.) ★ Analyse mathématique et calcul numérique pour les sciences et les techniques. Vol. 6. (French) [Mathematical analysis and computing for science and technology. Vol. 6] Méthodes intégrales et numériques. [Integral and numerical methods] With the collaboration of Michel Artola, Philippe Bénilan, Michel Bernadou, Michel Cessenat, Jean-Claude Nédélec and Jacques Planchard. Reprinted from the 1984 edition. INSTN: Collection Enseignement. [INSTN: Teaching Collection] Masson, Paris, 1988. pp. i–xxiii and 553–1063. ISBN 2-225-81300-0 (Editors) **89m:00003b** 00A05 (00A69, 45-01, 65-01)
- Dave, U. K.** (with Patel, L. K.; Akahari, R. P.) Radiating Demiański-type metrics and the Einstein-Maxwell fields. *J. Austral. Math. Soc. Ser. B* **30** (1988), no. 1, 120–126. (W. B. Bonnor) **89f:83028** 83C15 (83C50)
- Dave, Upendra** A discrete-in-time EOQ model under conditions of permissible delay in payments. *Cahiers Centre Etudes Rech. Opér.* **29** (1987), no. 3–4, 223–228. (Summary) **89b:90061** 90B05
- On  $(T_i, S_i)$  policy inventory system with demand changing linearly with time. *Cahiers Centre Etudes Rech. Opér.* **29** (1987), no. 3–4, 229–234. (Summary) **89b:90062** 90B05
- Inventory returns and special sales in an order-level system for deteriorating items. *Econom. Comput. Econom. Cybernet. Stud. Res.* **23** (1988), no. 2, 85–91. (Summary) **89f:90042** 90B05
- On the EOQ models with two levels of storage. *Opsearch* **25** (1988), no. 3, 190–196. (Summary) **89b:90074** 90B05
- see also **Goyal, S. K.**, **89d:90081**
- Davenport, Dennis** (with Hindman, Neil) Subprincipal closed ideals in  $\beta\mathbb{N}$ . *Semigroup Forum* **36** (1987), no. 2, 223–245. (W. W. Comfort) **89h:54031** 54H99 (54D40)
- Davenport, J. M.** see **Selected tables in mathematical statistics**, **89b:62230**
- Davenport, J. W.** (with Bezdek, J. C.; Hathaway, R. J.) Parameter estimation for finite mixture distributions. *Comput. Math. Appl.* **15** (1988), no. 10, 819–828. (Title) **89h:62045** 62F10 (65U05)
- Davenport, James H.** Integration in closed form. *Computers in mathematical research* (Cardiff, 1986), 119–134, *Inst. Math. Appl. Conf. Ser. New Ser.*, 14, Oxford Univ. Press, New York, 1988. (G. Eisenreich) **89k:12011** 12H05 (26A36, 34A05)
- (with Abbott, J. A.; Bradford, R. J.) Factorisation of polynomials: old ideas and recent results. *Trends in computer algebra* (Bad Neuenahr, 1987), 81–91, *Lecture Notes in Comput. Sci.*, 296, Springer, Berlin-New York, 1988. (Joachim von zur Gathen) **89f:12001** 12-04 (11R09, 11Y05, 68Q40)
- (with Heintz, Joos) Real quantifier elimination is doubly exponential. *J. Symbolic Comput.* **5** (1988), no. 1–2, 29–35. (A. A. Mullin) **89c:03009** 03B25 (03C10, 03D15, 12L12)
- Computer algebra applied to itself. *J. Symbolic Comput.* **6** (1988), no. 1, 127–132. (D. Z. Spicer) **89m:68072** 68Q40 (12-04, 12D10)
- (with Abbott, J. A.) Another surprising property of 42. A remark on a paper by P. S. Wang: "Factoring multivariate polynomials over algebraic number fields" [Math. Comp. **30** (1976), no. 134, 324–336; MR **58** #27887a]. *Math. Comp.* **51** (1988), no. 184, 837–839. (T. M. Apostol) **89d:11089** 11R09 (12-04)
- Davenport, Neil M.** (with Smith, Peter) A perturbation method for saddle connections and homoclinic bifurcation in Duffing's equation. *Dynamics Stability Systems* **2** (1987), no. 3–4, 167–182. (Jun Ping Chen) **89f:58115** 58F15 (34C29, 58F08, 58F14, 58F30, 70K40)
- Daverman, Robert J.** Decompositions into submanifolds of fixed codimension. *Geometric and algebraic topology*, 109–116, *Banach Center Publ.*, 18, PWN, Warsaw, 1986. (Frederick C. Tinsley) **89k:57036** 57N15 (54B15, 57-02)
- The intimate connections among decomposition theory, embedding theory, and manifold structure theory. *Geometric topology and shape theory* (Dubrovnik, 1986), 43–47, *Lecture Notes in Math.*, 1283, Springer, Berlin-New York, 1987. (Dušan Repovš) **89c:57019** 57N45 (54B15, 57N35, 57P05)
- (with Venema, G. A.) CE equivalence and shape equivalence of 1-dimensional compacta. *Topology Appl.* **26** (1987), no. 2, 131–142. (Dušan Repovš) **89b:57012** 57N25 (54C10, 54F43)
- (with Walsh, John J.) Decompositions into submanifolds that yield generalized manifolds. *Topology Appl.* **26** (1987), no. 2, 143–162. (Dennis J. Garity) **89c:57017** 57N15 (54B15, 55P55, 57P99)
- (with Edwards, R. D.) Wild Cantor sets as approximations to codimension two manifolds. *Topology Appl.* **26** (1987), no. 2, 207–218. (Morton Brown) **89a:57024** 57N45 (57N15, 57N35, 57N40)
- 1-dimensional phenomena in cell-like mappings on 3-manifolds. *Pacific J. Math.* **135** (1988), no. 2, 269–285. (D. R. McMillan, Jr.) **89j:57012** 57N60 (57N12, 57N75, 57P05)
- see also **Bing, R. H.**, **89h:01100**
- Davet, Jean-Louis** Correction du second ordre pour le calcul des fréquences propres d'une plaque en flexion. (English summary) [A second-order correction formula for the eigenfrequencies of a bending plate] *C. R. Acad. Sci. Paris Ser. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **303** (1986), no. 7, 521–524. (Summary) **89j:73067** 73K12 (73-08, 73D30)
- Davey, B. A.** (with Miles, K. R.; Schumann, V. J.) Quasi-identities, Mal'cev conditions and congruence regularity. *Acta Sci. Math. (Szeged)* **51** (1987), no. 1–2, 39–55. (H. Peter Gumm) **89a:08001** 08A30 (08B05)
- (with Priestley, H. A.) Generalised piggyback dualities and applications to Ockham algebras. *Houston J. Math.* **13** (1987), no. 2, 151–198. (T. S. Blyth) **89f:06021** 06D99 (03G10)
- David, D.** (with Levi, D.; Winternitz, P.) Integrable nonlinear equations for water waves in straits of varying depth and width. *Stud. Appl. Math.* **76** (1987), no. 2, 133–168. (F. Ursell) **89f:76025** 76B15 (58F07, 76B25)
- (with Levi, D.; Winternitz, P.) Equations invariant under the symmetry group of the Kadomtsev-Petviashvili equation. *Phys. Lett. A* **129** (1988), no. 3, 161–164. (Summary) **89c:58144** 58G35 (35A30, 35Q20, 58G37)
- David, Florin** (with Williams, Mark) Singularities of solutions to semilinear boundary value problems. *Amer. J. Math.* **109** (1987), no. 6, 1087–1109. (Pascal Laubin) **89a:35009** 35A20 (35A27, 35B65, 35L70)
- David, François Louis** (with Feldman, Joel S.; Rivasseau, V.) On the large order behavior of  $\phi_2^*$ . *Comm. Math. Phys.* **116** (1988), no. 2, 215–233. (Tony C. Dorlas) **89e:81080** 81E08 (81E15)
- (with Duplantier, Bertrand) Exact partition functions and correlation functions of multiple Hamiltonian walks on the Manhattan lattice. *J. Statist. Phys.* **51** (1988), no. 3–4, 327–434. (Cheng Xun Wu) **89m:82005** 82A05 (05C20, 05C45, 60J15, 82A41, 82A51)
- Conformal field theories coupled to 2-D gravity in the conformal gauge. *Modern Phys. Lett. A* **3** (1988), no. 17, 1651–1656. (Summary) **89k:81138** 81E99 (58G10, 81E40, 83C45)
- Comment on: "Perturbative stability of smooth strings" [Phys. Rev. Lett. **58** (1987), no. 13, 1300–1303; MR **87m**:81174] by R. D. Pisarski. With a reply by Pisarski. *Phys. Rev. Lett.* **61** (1988), no. 12, 1429–1430. (Editors) **89k:81178** 81E99 (81E30)
- David, Guy René** Opérateurs de Calderón-Zygmund. [Calderón-Zygmund operators] *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 890–899, *Amer. Math. Soc., Providence, RI*, 1987. (From the introduction) **89f:42012** 42B20 (47G05)
- Solutions de l'équation de Beltrami. [Solutions of the Beltrami equation] *Séminaire sur les équations aux dérivées partielles 1986–1987*, Exp. No. VIII, 8 pp., *Ecole Polytech., Palaiseau*, 1987. (F. W. Gehring) **89c:30037** 30C60 (58F08)
- Opérateurs d'intégrale singulière sur les surfaces régulières. [Singular integral operators on regular surfaces] *Ann. Sci. Ecole Norm. Sup. (4)* **21** (1988), no. 2, 225–258. (A. El Kohen)

- 89m:42014** 42B20
- David, H. A.** (with Andrews, D. M.) Closed adaptive sequential paired-comparison selection procedures. *J. Statist. Comput. Simulation* **27** (1987), no. 2, 127–141. (Françoise Garcia-Brouaye) **89m:62092** 62L10
- ★ The method of paired comparisons. Second edition. Griffin's Statistical Monographs & Courses, 41. Charles Griffin & Co., Ltd., London; The Clarendon Press, Oxford University Press, New York, 1988. viii+188 pp. ISBN 0-85264-290-3 (Jagbir Singh) **89k:62091** 62J15
- General bounds and inequalities in order statistics. *Comm. Statist. Theory Methods* **17** (1988), no. 7, 2119–2134. (G. S. Lingappaiah) **89j:62068** 62G30
- Note on: "An extreme null distribution approach to the problem of paired comparisons" [Comm. Statist. Theory Methods **16** (1987), no. 8, 2327–2341; MR **88j:62163**] by P. S. Costello and D. A. Wolfe. *Comm. Statist. Theory Methods* **17** (1988), no. 11, 4005–4009. (Not in MR) **62J15** (62G10)
- David, H. T.** (with Abdurachman, Edi) Cesàro limits of marked point processes on the line. *Comm. Statist. Stochastic Models* **4** (1988), no. 1, 77–98. (Alan F. Karr) **89i:60102** 60G55 (60K15)
- (with Hong, Chong Sun) Granularity and efficiency. *J. Amer. Statist. Assoc.* **83** (1988), no. 403, 880–885. (Tapas K. Chandra) **89m:62031** 62F12
- bar-David, Israel** see **Bar-David, Israel**
- David, Karl** Rencontres reencountered. *College Math. J.* **19** (1988), no. 2, 139–148. (Giuseppe Pellegrino) **89e:05012** 05A15
- David, Michel** (with Marcotte, D.) Trend surface analysis as a special case of IRF-k kriging. *Math. Geol.* **20** (1988), no. 7, 821–824. (Summary) **89h:86001** 86–08 (86A20)
- David, René Marcel** (with Frein, Yannick; Dallery, Yves; Pierrat, Jean-Jacques) Optimisation du routage des pièces dans un atelier flexible par des méthodes analytiques. (English summary) [Analytic methods for the optimal routing of parts in a flexible manufacturing system] *RAIRO Automat.-Prod. Inform. Ind.* **22** (1988), no. 5, 489–507. (Not in MR) **90B35**
- ben David, Shai** see **Ben David, Shai**
- David, Sinnou** Fonctions thêta et points de torsion des variétés abéliennes. (English summary) [Theta functions and torsion points of abelian varieties] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 6, 211–214. (D. W. Masser) **89b:11047** 11G10 (11F27, 14K15)
- ben David Bonjorn, Jacob** see **Chabás, José et al.** (89m:01026)
- Devidanu, Cătălina** Maximum principle for control problems governed by bilinear finite-dimensional inequalities. *An. Stiint. Univ. "Al. I. Cuza" Iași Sect. I a Mat. (N.S.)* **34** (1988), no. 1, 59–66. (Martin Brokate) **89k:49017** 49B34 (34H05, 49B10, 93C30)
- Davidov, J.** (with Mushkarov, Oleg K.) Existence of holomorphic functions on twistor spaces. *Bull. Soc. Math. Belg. Sér. B* **40** (1988), no. 2, 131–151. (S. M. Salamon) **89k:53037** 53C15 (32L25, 53C25)
- Davidović, D. M.** (with Marić, Z.) A note on the propensity concept in quantum mechanics. *Phys. Lett. A* **131** (1988), no. 1, 22–24. (M. J. Mączyński) **89i:81008** 81B05
- Davidson, A.** An experimental investigation of chaos in an rf driven Josephson junction. *Dynamical systems approaches to nonlinear problems in systems and circuits* (Henniker, NH, 1986), 159–165, SIAM, Philadelphia, PA, 1988. (see **89f:58049**) **58F13** (94C05)
- (with Pedersen, N. F.) Soliton experiments in annular Josephson junctions. *Dynamical systems approaches to nonlinear problems in systems and circuits* (Henniker, NH, 1986), 166–174, SIAM, Philadelphia, PA, 1988. (see **89f:58049**) **58F07** (35Q20, 94C05)
- Davidson, Aharon** (with Wali, Kameshwar) Abelian self-interaction of a test loop. *Phys. Lett. B* **213** (1988), no. 4, 439–442. (Summary) **89i:81140** 81G10 (81E30)
- Davidson, Edward S.** (with Davis, Timothy A.) Pairwise reduction for the direct, parallel solution of sparse, unsymmetric sets of linear equations. *IEEE Trans. Comput.* **37** (1988), no. 12, 1648–1654. (Summary) **89k:65043** 65F30 (65W05, 68U20)
- Davidson, Kenneth R.** (with Feeman, Timothy; Shields, Allen) Extreme points in quotients of operator algebras. *Topics in operator theory*, 67–91, *Oper. Theory: Adv. Appl.*, **32**, Birkhäuser, Basel-Boston, MA, 1988. (Stephen Power) **89k:47066** 47D25
- (with Apostol, Constantin) Isomorphisms modulo the compact operators of nest algebras. *II. Duke Math. J.* **56** (1988), no. 1, 101–127. (Stephen Power) **89g:47058** 47D25 (46L99)
- (with Holbrook, John A. R.) Numerical radii of zero-one matrices. *Michigan Math. J.* **35** (1988), no. 2, 261–267. (T. Ando) **89k:47007** 47A12 (15A60, 47A30)
- see also **Pop, Florin**, **89m:47040**
- Davidson, Mark G.** The harmonic representation of  $U(p, q)$  and its connection with the generalized unit disk. *Pacific J. Math.* **129** (1987), no. 1, 33–55. (Summary) **89c:22021** 22E45
- Davidson, Rodney F.** Waves below first cutoff in a duct. *J. Austral. Math. Soc. Ser. B* **29** (1988), no. 4, 448–460. (Summary) **89c:73026** 73D25 (35J05, 76Q05, 78A50)
- Davidson, Russell** (with MacKinnon, James G.) Implicit alternatives and the local power of test statistics. *Econometrica* **55** (1987), no. 6, 1305–1329. (R. W. Farebrother) **89a:62224** 62P20
- Davidson, W.** A note on plane-symmetric static perfect-fluid spacetimes. *Classical Quantum Gravity* **4** (1987), no. 5, 1469–1471. (Alan Barnes) **89c:83013** 83C15 (83C55)
- A nonstationary generalised Robinson-Trautman solution. *Classical Quantum Gravity* **5** (1988), no. 1, 147–153. (S. Kichenassamy) **89d:83019** 83C15 (83C20)
- Davie, A. M.** Singular minimizers in the calculus of variations. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 900–905, Amer. Math. Soc., Providence, RI, 1987. (Zvi Artstein) **89c:49003** 49A05 (49A36)
- Singular minimisers in the calculus of variations in one dimension. *Arch. Rational Mech. Anal.* **101** (1988), no. 2, 161–177. (G. Aubert) **89c:49002** 49A05
- (with Gamelin, T. W.) A theorem on polynomial-star approximation. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 351–356. (Richard M. Aron) **89k:46023** 46B20 (46G20)
- Davie, K.** (with Wallace, Robert) Solution of bound state single variable eigenproblems by the extended renormalized Numerov method. Molecular vibrations. *Comput. Phys. Comm.* **51** (1988), no. 1–2, 217–223. (Summary) **89j:65007** 65–04 (65L10)
- Davies, A. R.** (with Phillips, T. N.) On semi-infinite spectral elements for Poisson problems with re-entrant boundary singularities. *J. Comput. Appl. Math.* **21** (1988), no. 2, 173–188. (B. M. Herbst) **89h:65187** 65N30
- Davies, A. T.** (with McLachlan, A.) Gauge group breaking by Wilson loops. *Phys. Lett. B* **200** (1988), no. 3, 305–311. (Summary) **89a:81066** 81E13 (81D20)
- Davies, B. J.** (with Ding, Qiu Lin) ★ Surface engineering geometry for computer-aided design and manufacture. With a foreword by Pierre E. Bézier. Ellis Horwood Series in Mechanical Engineering. Ellis Horwood Ltd., Chichester; Halsted Press [John Wiley & Sons, Inc.], New York, 1987. 340 pp. ISBN 0-7458-0181-1 (Antonio López-Carmona) **89b:65037** 65D10 (00A69, 65–01)
- Davies, B. L.** (with Dirl, R.; Kasperkovitz, P.; Aroyo, M. I.; Kotzev, J. N.) Generating relations for reducing matrices. III. Kronecker products. *J. Math. Phys.* **28** (1987), no. 9, 1947–1971. (John J. Sullivan) **89c:20028** 20C35 (81C40)
- (with Dirl, R.) Chain adaptation of space group representations and induced space group Clebsch-Gordan matrices. *Group theoretical methods in physics* (Varna, 1987), 315–321, *Lecture Notes in Phys.*, **313**, Springer, Berlin-New York, 1988. (Summary) **89j:20019** 20C35 (81C40)
- Davies, Brian** The quantum Gelfand-Levitan equation and the nonlinear Schrödinger equation. *Inverse Problems* **4** (1988), no. 1, 47–58. (Tuncay Aktosun) **89f:81167** 81E99 (81C99)
- Davies, C. T. H.** (with Rossi, Pietro; Lepage, G. P.) A comparison of a variety of matrix inversion algorithms for Wilson fermions on the lattice. *Nuclear Phys. B* **297** (1988), no. 2, 287–314. (Introduction) **89b:81169** 81E25 (65F05, 65F10, 81–08)
- (with Batrouni, G.; Katz, G. R.; Kronfeld, A.; Lepage, G. P.; Wilson, K.; Rossi, Pietro; Svetitsky, B.) Fourier acceleration in lattice gauge theories. I. Landau gauge fixing. *Phys. Rev. D* (3) **37** (1988), no. 6, 1581–1588. (Summary) **89g:81004a** 81–08 (81E25)
- (with Katz, G. R.; Batrouni, G.; Kronfeld, A.; Lepage, G. P.; Rossi, Pietro; Svetitsky, B.; Wilson, K.) Fourier acceleration in lattice gauge theories. II. Matrix inversion and the quark propagator. *Phys. Rev. D* (3) **37** (1988), no. 6, 1589–1596. (Summary) **89g:81004b** 81–08 (81E25, 81G05)
- Davies, E. B.** (with Mandouvalos, N.) Heat kernel bounds on manifolds with cusps. *J. Funct. Anal.* **75** (1987), no. 2, 311–322. (E. A. Feldman) **89b:58200** 58G11
- (with Simon, Barry; Taylor, Michael E.)  $L^p$  spectral theory of Kleinian groups. *J. Funct. Anal.* **78** (1988), no. 1, 116–136. (A. B. Venkov) **89m:58205** 58G25 (11F72, 35P05, 47F05)
- Lipschitz continuity of functions of operators in the Schatten classes. *J. London Math. Soc.* (2) **37** (1988), no. 1, 148–157. (Lawrence Williams) **89c:47009** 47A30 (47B10)
- (with Mandouvalos, N.) Heat kernel bounds on hyperbolic space and Kleinian groups. *Proc. London Math. Soc.* (3) **57** (1988), no. 1, 182–208. (A. B. Venkov) **89i:58137** 58G11 (30F40, 35K05, 35P99)
- Kernel estimates for functions of second order elliptic operators. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 153, 37–46. (David Gurarie) **89c:35123** 35P05 (35J15, 35K05, 58G11, 58G30)
- see also **Semigroups and differential operators**, (Not in MR)
- Davies, H. G.** (with Liu, Qiang) Application of non-Gaussian closure to the nonstationary response of a Duffing oscillator. *Internat. J. Non-Linear Mech.* **23** (1988), no. 3, 241–250. (Summary) **89c:70025** 70L05
- (with Rajan, Srivatsa) Multiple time scaling of the response of a Duffing oscillator to narrow-band random excitation. *J. Sound Vibration* **123** (1988), no. 3, 497–506. (Summary) **89f:70035** 70L05 (70K40)
- (with Rajan, Srivatsa) Random superharmonic and subharmonic response: multiple time scaling of a Duffing oscillator. *J. Sound Vibration* **126** (1988), no. 2, 195–208. (Summary) **89g:70023** 70L05
- Davies, I. M.** A "Brownian motion" with constant speed. *Stochastic processes—mathematics and physics, II* (Bielefeld, 1985), 31–35, *Lecture Notes in Math.*, **1250**, Springer, Berlin-New York, 1987. (Introduction) **89m:60191** 60J65
- see also **Stochastic mechanics and stochastic processes**, **89c:60006**
- Davies, John B.** New curvature-torsion relations through decomposition of the Bianchi identities. *Found. Phys.* **18** (1988), no. 5, 563–569. (A. K. Guts) **89i:53023** 53B50 (81G15, 83D05)
- Davies, K. T. R.** (with de Aguiar, M. A. M.; Malta, C. P.; Baranger, M.) Bifurcations of periodic trajectories in nonintegrable Hamiltonian systems with two degrees of freedom: numerical and analytical results. *Ann. Physics* **180** (1987), no. 2, 167–205. (Jair Koiller) **89b:58175** 58F22 (34A50, 58F05, 65M99, 70–08, 70H05)
- (with Baranger, M.; Mahoney, J. H.) The calculation of periodic trajectories. *Ann. Physics* **186** (1988), no. 1, 95–110. (Summary) **89f:70005** 70–08 (70–04, 70D05, 70F05)
- Davies, Maurice** Newton-Raphson in reverse. *Math. Student* **47** (1979), no. 2–4, 149–150 (1985). (Not in MR) **30C15**
- Davies, Neville** (with Petrucci, Joseph D.) A portmanteau test for self-exciting threshold autoregressive-type nonlinearity in time series. *Biometrika* **73** (1986), no. 3, 687–694. (Summary) **89b:62194** 62M10
- Davies, P. C. W.** Cosmological horizons and entropy. *Classical Quantum Gravity* **5** (1988), no. 10, 1349–1355. (Markku Lehto) **89m:83062** 83C75 (83C47, 83F05)
- Davies, Robert B.** see **Le Cam, L.**, **89f:62013**
- gonzález Dávila, José Carmelo** see **González Dávila, José Carmelo**
- Davimuka, S. A.** (with Vorobkevich, A. Yu.; Mochernyuk, Yu. P.; Sovin, R. Ya.) Determination of transient characteristics from operator circuit functions. (Russian. English summary) *Teoret. Elektrotekh. No. 39* (1985), 16–19, 135. (Not in MR) **94C05**
- (with Dmitrevich, G. D.; Stekh, Yu. V.) An adaptive algorithm for continuation of the solution with respect to the parameter for problems in the analysis of electronic circuits. (Russian. English summary) *Teoret. Elektrotekh. No. 41* (1986), 100–105. (Not in MR) **94C05** (34A10)
- Da Vinci, Leonardo** see **da Vinci, Leonardo**
- Davis, A. C.** (with Mayer, E. M.) Nonperturbative effects in the  $CP^N$  model. *Nuclear Phys. B* **306** (1988), no. 1, 199–220. (Emili Elizalde) **89m:81091** 81E13 (81E08, 81E15)
- (with Gracey, J. A.; Macfarlane, A. J.) Nonperturbative effects in supersymmetric sigma models. *Phys. Lett. B* **201** (1988), no. 2, 251–255. (Summary) **89a:81067** 81E13 (81E20, 81E40)
- Davis, A. W.** Moments of linear discriminant functions and an asymptotic confidence interval for the log odds ratio. *Biometrika* **74** (1987), no. 4, 829–840. (Teresa Kowalczyk) **89c:62102** 62H30 (62H10)
- (with Speed, T. P.) An Edgeworth expansion for the distribution of the  $F$ -ratio under a randomization model for the randomized block design. *Statistical decision theory and related topics, IV*, Vol. 2 (West Lafayette, Ind., 1986), 119–130, Springer, New York-Berlin, 1988. (C. C. Heyde) **89d:62019** 62E20 (62J10, 62K10)



- Davis, Budmon R.** (with Sitaramachandra Rao, R.) Note on Legendre numbers. *Internat. J. Math. Math. Sci.* **11** (1988), no. 3, 615–618. (F. T. Howard) **89i:11032** 11B83
- Davis, Burgess** On the Barlow-Yor inequalities for local time. *Séminaire de Probabilités, XXI*, 218–220, *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (M. G. Shur) **89h:60122** 60J55 (60G40, 60J30)
- (with Salisbury, Thomas S.) Connecting Brownian paths. *Ann. Probab.* **16** (1988), no. 4, 1428–1457. (S. J. Taylor) **89j:60111** 60J65 (60G17)
- Conditioned Brownian motion in planar domains. *Duke Math. J.* **57** (1988), no. 2, 397–421. (Terry R. McConnell) **89j:60112** 60J65
- Davis, Chandler** Completing a matrix so as to minimize the rank. *Topics in operator theory and interpolation*, 87–95, *Oper. Theory: Adv. Appl.*, 29, Birkhäuser, Basel-Boston, MA, 1988. (T. Ando) **89d:47010** 47A20 (15A03)
- Davis, Charles B.** (with McNichols, Roger J.) Corrections to: "One-sided intervals for at least  $p$  of  $m$  observations from a normal population on each of  $r$  future occasions" [Technometrics **29** (1987), no. 3, 359–370]. *Technometrics* **30** (1988), no. 4, 469. (Not in MR) **62F25**
- Davis, Donald M.** (with Mahowald, Mark E.) Homotopy groups of some mapping telescopes. *Algebraic topology and algebraic K-theory* (Princeton, N.J., 1983), 126–151, *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (J. F. Adams) **89a:55013** 55P42 (55Q05)
- (with Mahowald, Mark E.; Miller, Haynes R.) Mapping telescopes and  $K$ -localization. *Algebraic topology and algebraic K-theory* (Princeton, N.J., 1983), 152–167, *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (J. F. Adams) **89a:55014** 55P42 (55P60, 55Q05)
- The  $bo$ -Adams spectral sequence: some calculations and a proof of its vanishing line. *Algebraic topology* (Seattle, Wash., 1985), 267–285, *Lecture Notes in Math.*, 1286, Springer, Berlin-New York, 1987. (Vincent Giambalvo) **89h:55021** 55T25 (55P42, 55Q40)
- (with Cohen, Fred R.; Goerss, Paul G.; Mahowald, Mark E.) Integral Brown-Gitler spectra. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1299–1304. (Richard John Steiner) **89h:55018** 55P42 (55P35)
- (with Mahowald, Mark E.)  $v_1$ -periodic Ext over the Steenrod algebra. *Trans. Amer. Math. Soc.* **309** (1988), no. 2, 503–516. (N. J. Kuhn) **89i:55032** 55T15 (55Q45, 55S10)
- Davis, Edward D.** 0-dimensional subschemes of  $\mathbb{P}^2$ : lectures on Castelnuovo's function. *The curves seminar at Queen's, Vol. IV* (Kingston, Ont., 1985–1986), Exp. No. F, 10 pp., *Queen's Papers in Pure and Appl. Math.*, 76, Queen's Univ., Kingston, ON, 1986. (From the introduction) **89i:14007** 14C25 (14M05)
- (with Geramita, Anthony V.) Bese's very ampleness theorem and punctured complete intersections. *The curves seminar at Queen's, Vol. IV* (Kingston, Ont., 1985–1986), Exp. No. G, 13 pp., *Queen's Papers in Pure and Appl. Math.*, 76, Queen's Univ., Kingston, ON, 1986. (N. Mohan Kumar) **89i:14008** 14C25 (14E25, 14J26)
- 0-dimensional subschemes of  $\mathbb{P}^2$ : new application of Castelnuovo's function. *Ann. Univ. Ferrara Sez. VII (N.S.)* **32** (1986), 93–107 (1987). (N. Mohan Kumar) **89i:14009** 14C25 (14M10)
- (with Geramita, Anthony V.) Birational morphisms to  $\mathbb{P}^2$ : an ideal-theoretic perspective. *Math. Ann.* **279** (1988), no. 3, 435–448. (Wolfgang Vogel) **89a:14014** 14E05
- de Vahl Davis, Graham** see de Vahl Davis, Graham
- Davis, Howard Tod** (with Vandervick, T. K.; Scriven, L. E.) Solution of Percus's equation for the density of hard rods in an external field. *Phys. Rev. A* (3) **34** (1986), no. 6, 5130–5131. (Summary) **89c:82047** 82A50 (82A05)
- Davis, J. H.** (with Hirschorn, Ronald M.) Global output tracking for nonlinear systems. *SIAM J. Control Optim.* **26** (1988), no. 6, 1321–1330. (D. K. Arrowsmith) **89h:93092** 93B50 (93C15)
- Davis, James Frederic** (with Ranicki, Andrew) Semi-invariants in surgery. *K-Theory* **1** (1987), no. 1, 83–109. (Summary) **89f:57045** 57R65 (18F25, 19M05)
- Relative semicharacteristic classes. *Math. Proc. Cambridge Philos. Soc.* **102** (1987), no. 2, 297–302. (Elmer G. Rees) **89a:57049** 57R85 (57S17)
- (with tom Dieck, Tammo) Some exotic dihedral actions on spheres. *Indiana Univ. Math. J.* **37** (1988), no. 2, 431–450. (Allan Edmonds) **89i:57078** 57S25 (57S17)
- Evaluation of odd-dimensional surgery obstructions with finite fundamental group. *Topology* **27** (1988), no. 2, 179–204. (A. A. Ranicki) **89h:18011** 18F25 (19M05, 57R67)
- Davis, K. M.** (with Gilbert, J. E.; Kunze, R. A.) Harmonic analysis and exceptional representations of semisimple groups. *Miniconferences on harmonic analysis and operator algebras* (Canberra, 1987), 58–78, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (Michael Cowling) **89j:22026** 22E45 (22E30)
- (with Gilbert, J. E.; Kunze, R. A.) Invariant differential operators in harmonic analysis on real hyperbolic space. *Miniconferences on harmonic analysis and operator algebras* (Canberra, 1987), 79–91, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (A. Korányi) **89j:22027** 22E45 (43A85, 58G05)
- Davis, M. H. A.** Nonlinear filtering and stochastic flows. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 1000–1010, Amer. Math. Soc., Providence, RI, 1987. (Federico Marchetti) **89h:60067** 60G35 (60H15, 93E11)
- (with Gómez M., Guillermo L.) The semimartingale approach to the optimal resource allocation in the controlled labour-surplus economy. *Stochastic processes—mathematics and physics, II* (Bielefeld, 1985), 36–74, *Lecture Notes in Math.*, 1250, Springer, Berlin-New York, 1987. (Summary) **89d:90062** 90A16 (60G48)
- (with Gómez M., Guillermo L.) The martingale maximum principle and the allocation of labour surplus. Eighth conference of the Society of Economic Dynamics and Control (Budapest, 1986). *J. Econom. Dynamics Control* **11** (1987), no. 2, 241–247. (From the introduction) **89d:90063** 90A16
- (with Costa, O. L. V.) Approximations for optimal stopping of a piecewise-deterministic process. *Math. Control Signals Systems* **1** (1988), no. 2, 123–146. (L. C. Thomas) **89h:90249** 90C40 (60G40)
- The Wiener space derivative for functionals of diffusions on manifolds. *Nonlinearity* **1** (1988), no. 1, 241–251. (David Nualart Rodón) **89i:60116** 60H07 (58G32, 60J60)
- Davis, Mark M.** (with Kwan, Stephen K.; Greenwood, Allen G.) A simulation model for determining variable worker requirements in a service operation with time-dependent customer demand. *Queueing Systems Theory Appl.* **3** (1988), no. 3, 265–275. (Summary) **89h:90101** 90B22
- Davis, Martin** Mathematical logic and the origin of modern computers. *Studies in the history of mathematics*, 137–165, *MAA Stud. Math.*, 26, Math. Assoc. America,
- Washington, DC, 1987. (see **89b:01002**) 01A60 (03-03, 68-03)
- Davis, Philip J.** Applied mathematics as social contract. *Math. Mag.* **61** (1988), no. 3, 139–147. (Michael Otte) **89d:00014** 00A25
- Davis, R. A.** see Davis, Richard Alan
- Davis, R. L.** see Davis, Richard Lynn
- Davis, Richard Alan** (with Mulrow, Edward; Resnick, Sidney) Almost sure limit sets of random samples in  $\mathbb{R}^d$ . *Adv. in Appl. Probab.* **20** (1988), no. 3, 573–599. (E. Orney) **89h:60023** 60D05 (60F99)
- (with Brockwell, Peter J.) Simple consistent estimation of the coefficients of a linear filter. *Stochastic Process. Appl.* **28** (1988), no. 1, 47–59. (Summary) **89h:62120** 62M20 (60G10, 60G15)
- (with Resnick, Sidney) Extremes of moving averages of random variables from the domain of attraction of the double exponential distribution. *Stochastic Process. Appl.* **30** (1988), no. 1, 41–68. (Paul Embrechts) **89j:60035** 60F05
- Davis, Richard Lynn** (with Shellard, E. P. S.) Antisymmetric tensors and spontaneous symmetry breaking. *Phys. Lett. B* **214** (1988), no. 2, 219–222. (Summary) **89i:81055** 81D20 (81E30, 81J05, 83F05)
- Davis, S. F.** Simplified second-order Godunov-type methods. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 3, 445–473. (Auréli Galántai) **89c:65095** 65M05
- Davis, S. H.** (with Metzener, P.) Model systems for long-scale convection. *Propagation in systems far from equilibrium* (Les Houches, 1987), 258–264, *Springer Ser. Synergetics*, 41, Springer, Berlin-New York, 1988. (see **89f:76003**) 76E15
- Davis, S. W.** (with Hart, K. P.) A property related to the strict  $p$ -space problem. Proceedings of the 1987 Topology Conference (Birmingham, AL, 1987). *Topology Proc.* **12** (1987), no. 1, 59–74. (C. R. Borges) **89c:54038** 54D15
- Davis, Simon** A constraint on the geometry of Yang-Mills theories. *J. Geom. Phys.* **4** (1987), no. 3, 405–415. (Thomas Schücker) **89f:53104** 53C80 (53C05, 81E13)
- Davis, Timothy A.** (with Davidson, Edward S.) Pairwise reduction for the direct, parallel solution of sparse, unsymmetric sets of linear equations. *IEEE Trans. Comput.* **37** (1988), no. 12, 1648–1654. (Summary) **89k:65043** 65F30 (65W05, 68U20)
- Davison, A. C.** Approximate conditional inference in generalized linear models. *J. Roy. Statist. Soc. Ser. B* **50** (1988), no. 3, 445–461. (Summary) **89f:62097** 62A10
- Davison, E. J.** (with Vaz, A. F.) A measure for the decentralized assignability of eigenvalues. *Systems Control Lett.* **10** (1988), no. 3, 191–199. (Summary) **89h:93064** 93B60 (93A15, 93B50)
- (with Vaz, A. F.) The decentralized control expanding system problem. *Systems Control Lett.* **10** (1988), no. 5, 301–308. (H. Abou-Kandil) **89j:93006** 93A15 (93D20)
- Davison, Mark L.** ★ Многомерное шкалирование. (Russian) [Multidimensional scaling] Методы наглядного представления данных. [Methods for the visual representation of data] Translated from the English and with an appendix by V. S. Kamenskii. With a preface by S. A. Aivazyan and Kamenskii. Математико-Статистические Методы за рубежом. [Mathematical-Statistical Methods Abroad] "Finansy i Statistika", Moscow, 1988, 256 pp. (Editors) **89h:62130** 62H99
- A reformulation of the general Euclidean model for the external analysis of preference data. *Psychometrika* **53** (1988), no. 3, 305–320. (Not in MR) **62P15**
- Davison, T. M. K.** Bilinear three-cycles on the projective line. *Aequationes Math.* **33** (1987), no. 1, 72–80. (From the introduction) **89g:39011** 39B40 (14H99, 51A99)
- Restricted homogeneity implies bi-additivity. *Ann. Polon. Math.* **48** (1988), no. 2, 121–125. (Summary) **89g:39012** 39B40
- Davison, Lee D.** (with Flikkema, Paul G.) Detection of baseband signals using a delta modulator. *IEEE Trans. Inform. Theory* **34** (1988), no. 3, 537–543. (Not in MR) **94A13** (94A14)
- Davitsashvili, T. D.** Some asynchronous iterative methods for solving nonlinear equations for parallel computer systems. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **25** (1988), 132–146, 278. (Summary) **89i:65052** 65H05 (65W05)
- Davoli, F.** (with Aicardi, M.; Minciardi, R.) Correction to: "Decentralized optimal control of Markov chains with a common past information set" [IEEE Trans. Automat. Control **32** (1987), no. 11, 1028–1031]. *IEEE Trans. Automat. Control* **33** (1988), no. 9, 891–892. (Not in MR) **93E20**
- Davoodi, H.** (with Noori, M.; Saffar, A.) An Itô-based general approximation method for random vibration of hysteretic systems. I. Gaussian analysis. *J. Sound Vibration* **127** (1988), no. 2, 331–342. (Summary) **89j:70040** 70L05 (70-08)
- Davtyan, L. S.** (with Mardoyan, L. G.; Pogosyan, G. S.; Sisakyan, A. N.; Ter-Antonyan, V. M.) Generalised KS transformation: from five-dimensional hydrogen atom to eight-dimensional isotropic oscillator. *J. Phys. A* **20** (1987), no. 17, 6121–6125. (Summary) **89c:81209** 81G45
- (with Pogosyan, G. S.; Sisakyan, A. N.; Ter-Antonyan, V. M.) Transformations connecting the parabolic bases of a two-dimensional hydrogen atom in the continuous spectrum. (Russian. English summary) *Teoret. Mat. Fiz.* **74** (1988), no. 2, 240–246; translated in *Theoret. and Math. Phys.* **74** (1988), no. 2, 157–161. (Summary) **89c:81210** 81G45 (33A35)
- Davtyan, O. K.** (with Karamyan, G. G.) ★ Теория инерциального поля и квантовой корреляции. (Russian) [Inertial field and quantum correlation theories] *Akad. Nauk Armyan. SSR, Erevan*, 1987, 136 pp. (Summary) **89c:81141** 81E99 (81-02)
- Davtyan, A. A.** (with Boyarinov, I. M.; Shabanov, B. M.) Error correction in the main memory of a high-speed computer. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 7, 152–165. (Petr Némec) **89c:94033** 94B05
- Singularities of limit direction fields of two-dimensional control systems. (Russian) *Mat. Sb. (N.S.)* **136** (178) (1988), no. 4, 478–499, 590. (Milan Medved' ) **89a:58209** 58F14 (93B27)
- (with Tombak, L. M.) The number of words of minimal weight in block codes. (Russian) *Problemy Peredachi Informatsii* **24** (1988), no. 1, 11–24; translated in *Problems Inform. Transmission* **24** (1988), no. 1, 7–18. (Alexander M. Barg) **89m:94018** 94B25 (90C05)
- Davtyan, A. B.** Asymptotic solutions and spectral characteristics of differential equations with turning points. (Russian) *Mathematical physics* (Russian), 115–119, Leningrad. Gos. Ped. Inst., Leningrad, 1987. (G. V. Rozenblum) **89i:34084** 34E20 (47E05)
- Davtyan, A. S.** (with Ermakov, V. N.) Soliton generation at the boundary of a molecular chain. *Phys. D* **32** (1988), no. 2, 318–323. (Summary) **89i:92074** 92A40
- (with Ermakov, V. N.) Generation of solitons and bisolitons in molecular systems. (Russian) *Dokl. Akad. Nauk SSSR* **302** (1988), no. 3, 601–604; translated in *Soviet Phys.*

- Dokl.* 33 (1988), no. 9, 692–693. (From the text) **89k:81199** 81G55 (35Q20, 92A40)  
— see also *Physics of multiparticle systems*, **89c:81005**; **89j:82004** and **89k:82001**
- Davydov, E. G.** (with Bol'shakov, S. Yu.) ★ Теоретико-групповые методы агрегирования в сетевых задачах. (Russian) [Group-theoretic methods for aggregation in network problems] Сообщения по Прикладной Математике. [Reports in Applied Mathematics] Akad. Nauk SSSR, Fizmat. Tsentr, Moscow, 1986. 64 pp. (Jacek Błażewicz) **89a:90067** 90B35 (05C35, 90B10, 90C27)
- Davydov, G. V.** (with Davydova, I. M.) Non-tree-like coverings in discrete optimization. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 3, 66–69, 85; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 3, 93–97. (Summary) **89g:90176** 90C27
- Davydov, M. G.** An algorithm for solving a problem of the elastoplastic buckling of a reinforced plate. (Russian) *Boundary value problems (Russian)*, 174–179, 203, *Perm. Politekh. Inst., Perm*, 1983. (see **89c:00008**) 73K99
- Stability of a rectilinear form and the supercritical deformation of rectangular plates under nonproportional loading. (Russian) *Boundary value problems (Russian)*, 99–104, 160, *Perm. Politekh. Inst., Perm*, 1984. (see **89b:00008**) 73K10
- Davydov, V. A.** (with Mikhailov, A. S.) Spiral waves in distributed active media. (Russian) *Nonlinear waves (Russian)*, 261–279, 396, "Nauka", Moscow, 1987. (Frederick A. Hoes) **89c:92068** 92A90 (35K99)
- (with Brazhnik, P. K.; Mikhailov, A. S.) A kinematic approach to the description of autowave processes in active media. (Russian. English summary) *Teoret. Mat. Fiz.* 74 (1988), no. 3, 440–447; translated in *Theoret. and Math. Phys.* 74 (1988), no. 3, 300–306. (Summary) **89g:80012** 80A32 (76W05, 92A08)
- Davydov, Yu. A.** Local limit theorems for functionals of random processes. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 4, 778–794. (Zheng Yan Lin) **89m:60049** 60F05
- A remark on the absolute continuity of the distributions of Gaussian functionals. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 1, 170–172; translated in *Theory Probab. Appl.* 33 (1988), no. 1, 158–161. (M. P. Eršov) **89d:60005** 60B11 (28C20, 60G30)
- Davydova, I. M.** (with Davydov, G. V.) Non-tree-like coverings in discrete optimization. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 3, 66–69, 85; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 3, 93–97. (Summary) **89g:90176** 90C27
- Dawagreh, Ahmad M.** (with Shayib, Mohammed A.; Awad, Adnan M.) Large sample prediction intervals for a future sample mean: a comparative study. *J. Statist. Comput. Simulation* 24 (1986), no. 3–4, 255–270. (S. Jeyaratnam) **89k:62048** 62F99 (62E25)
- Dawe, C. M.** (with Balzer, W.) Structure and comparison of genetic theories. I. Classical genetics. *British J. Philos. Sci.* 37 (1986), no. 1, 55–69. (C. Ulises Moulines) **89b:03016** 03B30 (92A10)
- (with Balzer, W.) Structure and comparison of genetic theories. II. The reduction of character-factor genetics to molecular genetics. *British J. Philos. Sci.* 37 (1986), no. 2, 177–191. (C. Ulises Moulines) **89b:03017** 03B30 (92A10)
- Dawe, R. A.** (with Fradkin, L. Ju.) Some a priori bounds for flows through heterogeneous media. *IMA J. Appl. Math.* 38 (1987), no. 3, 181–193. (Summary) **89m:76062** 76S05
- van Dawen, R.** Limit-optimal strategies in countable state decision problems. *Optimization* 18 (1987), no. 5, 709–714. (Summary) **89f:90183** 90C40
- Dawes, Robert L.** (with Kowalski, Jacek M.; Ansari, Ali; Prueitt, Paul S.; Gross, Gunther) On synchronization and phase locking in strongly coupled systems of planar rotators. *Complex Systems* 2 (1988), no. 4, 441–462. (Summary) **89j:70038** 70K99 (58F40, 70K20, 82A99, 92A05)
- Dawid, A. P.** A Bayesian view of statistical modelling. *Bayesian inference and decision techniques*, 391–404, *Stud. Bayesian Econometrics Statist.*, 6, North-Holland, Amsterdam-New York, 1986. (I. J. Good) **89c:62006** 62A15
- Symmetry models and hypotheses for structured data layouts. With discussion. *J. Roy. Statist. Soc. Ser. B* 50 (1988), no. 1, 1–34. (A. M. Mathai) **89i:62118** 62J10 (62A05)
- Dawidowicz, Andrzej** Spherical maps. *Fund. Math.* 127 (1987), no. 3, 187–196. (Richard P. Jerrard) **89c:54037** 54C60 (54H25, 55M20)
- Dawidowicz, Antoni Leon** (with TurSKI, Andrzej) A simple proof of a theorem on Markov operators. *Ann. Polon. Math.* 48 (1988), no. 1, 65–70. (R. J. Nagel) **89k:47014** 47A35 (28D05, 47B55)
- (with Twardowska, Krystyna) Some remarks on boundary value problems for linear stochastic differential equations. *Rend. Sem. Mat. Univ. Padova* 79 (1988), 5–9. (Ralf Manthey) **89j:60074** 60H10 (34B99, 34F05)
- Dawidowski, M.** (with Kubiacyk, I.; Rzepecki, Bogdan) An existence theorem for the hyperbolic equation  $z_{xy} = f(x, y, z)$  in Banach spaces. *Demonstratio Math.* 20 (1987), no. 3–4, 489–493 (1988). (Manfred W. Kracht) **89k:35245** 35R20 (35L15, 35L70)
- Dawood, Q. M.** (with Aziz, Abdul) Inequalities for a polynomial and its derivative. *J. Approx. Theory* 54 (1988), no. 3, 306–313. (D. A. Brannan) **89m:30009** 30C10
- Dawson, D. A.** Stochastic models of parallel systems for global optimization. *Hydrodynamic behavior and interacting particle systems (Minneapolis, Minn., 1986)*, 25–44, *IMA Vol. Math. Appl.*, 9, Springer, New York-Berlin, 1987. (Th. M. Lieblich) **89c:90089** 90C27 (82A99)
- (with Gärtner, Jürgen) Large deviations from the McKean-Vlasov limit for weakly interacting diffusions. *Stochastics* 20 (1987), no. 4, 247–308. (Maria E. Vares) **89c:60092** 60I60 (60F10, 60K35)
- (with Iscoe, I.; Perkins, Edwin A.) Sample path properties of the support process of super-Brownian motion. *C. R. Math. Rep. Acad. Sci. Canada* 10 (1988), no. 2, 83–88. (Summary) **89a:60112** 60G17 (60J65)
- Dawson, E. R.** see Arnold, V. L., (89g:58060) and Anosov, D. V. et al., (89g:58060)
- Dawson, Jeremy E.** Some necessary conditions for sums of matroids. *Quart. J. Math. Oxford Ser. (2)* 39 (1988), no. 155, 281–283. (András Reszki) **89c:05060** 05B35
- Dawson, John W., Jr.** Facets of incompleteness. *Mathematical logic and its applications (Druzhba, 1986)*, 9–21, *Plenum, New York-London*, 1987. (Roman Murawski) **89c:03008** 03-03 (01A60, 03B45, 03D20, 03F40)
- Kurt Gödel in sharper focus [Math. Intelligencer 6 (1984), no. 4, 9–17; MR 85m:01040]. *Gödel's theorem in focus*, 1–16, *Croom Helm Philos. Focus Ser.*, Croom Helm, London, 1988. (see **89m:01068**) 01A70 (03-03)
- The reception of Gödel's incompleteness theorems [Philos. Sci. Assoc. 2 (1984)]. *Gödel's theorem in focus*, 74–95, *Croom Helm Philos. Focus Ser.*, Croom Helm, London, 1988. (see **89m:01068**) 01A60 (03-03, 03D35, 03F40)
- Dawson, Robert J. MacG.** Limits and colimits of convexity spaces. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* 28 (1987), no. 4, 307–328. (Summary) **89g:18011** 18B99 (52A01)
- On the impossibility of packing space with different cubes. *J. Combin. Theory Ser. A* 48 (1988), no. 2, 174–188. (J. M. Wills) **89f:52036** 52A45 (05B45)
- A simplification of the Eilenberg-Steenrod axioms for finite simplicial complexes. *J. Pure Appl. Algebra* 53 (1988), no. 3, 257–265. (Donald M. Davis) **89h:55012** 55N40
- Ponce Dawson, Silvina** see Ponce Dawson, Silvina
- Dax, Achiya** An efficient algorithm for solving the rectilinear multifacility location problem. *IMA J. Numer. Anal.* 6 (1986), no. 3, 343–355. (Summary) **89i:90029** 90B10
- Day, Alan** (with Jónsson, Bjarni) Non-Arguesian configurations in a modular lattice. *Acta Sci. Math. (Szeged)* 51 (1987), no. 3–4, 309–318. (Christian Herrmann) **89f:06013** 06C05
- (with Kiss, Emil W.) Frames and rings in congruence modular varieties. *J. Algebra* 109 (1987), no. 2, 479–507. (Ralph Freese) **89c:08007** 08B10 (16A42)
- (with Herrmann, Christian) Gluing of modular lattices. *Order* 5 (1988), no. 1, 85–101. (E. T. Schmidt) **89m:06009** 06B05 (06C05)
- Day, B. J.** Onto Gelfand transformations. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* 28 (1987), no. 3, 227–234. (K. H. Hofmann) **89e:18015** 18D15 (18B30, 18D20, 22D35, 46M15)
- Day, Brian** (with Fitt, P.; Kimber, P.; Richardson, D.) A mathematical framework for modular simulation. *Math. Comput. Simulation* 29 (1987), no. 5, 373–383. (Summary) **89f:65011** 65C20
- Day, Jane M.** (with Weddington, Donald D.) Some conditions under which a continuous semigroup morphism is strongly differentiable. *Semigroup Forum* 36 (1987), no. 3, 371–373. (Jimmie D. Lawson) **89g:22005** 22A20 (57R35)
- (with Peterson, Brian) Growth in Gaussian elimination. *Amer. Math. Monthly* 95 (1988), no. 6, 489–513. (O. Pokorná) **89i:65032** 65F05 (15A15)
- Day, Martin V.** Boundary local time and small parameter exit problems with characteristic boundaries. *SIAM J. Math. Anal.* 20 (1989), no. 1, 222–248. (Youssef Ouknine) **89m:60185** 60J60 (60F10, 60H10, 60H15, 60J55)
- Day, Robert P. J.** Some reliability measures for 3-trees. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 60 (1987), 43–50. 68M15
- Day, W. A.** ★ A commentary on thermodynamics. Springer Tracts in Natural Philosophy, 32, Springer-Verlag, New York-Berlin, 1988. x+96 pp. ISBN 0-387-96615-3 (From the introduction) **89d:80003** 80A10
- The homogeneous field approximation of classical thermodynamics. *Arch. Rational Mech. Anal.* 101 (1988), no. 4, 349–363. (A. Morro) **89c:80003** 80A05 (80A10)
- The efficiency of an irreversible cycle. *Arch. Rational Mech. Anal.* 104 (1988), no. 2, 111–123. (A. Morro) **89h:80004** 80A10 (73B30)
- Parity, and the mechanical energy of a heated body. *Quart. Appl. Math.* 46 (1988), no. 1, 55–64. (From the introduction) **89c:73091** 73U05 (73B30)
- Thermodynamic efficiency and frequency spectra. *Quart. Appl. Math.* 46 (1988), no. 4, 691–710. (A. Morro) **89k:80003** 80A05 (73U05)
- The work done by a deformable heat conductor. *Arch. Rational Mech. Anal.* 105 (1989), no. 3, 229–242. (R. R. Huilgol) **89k:80004** 80A05 (35K05)
- ben Daya, Mohammed** see Ben Daya, Mohammed
- Dayal, Sahab** (with Jain, Sushma) Pseudonorm topology on the space of continuous multilinear operators on linear topological spaces. *Indian J. Pure Appl. Math.* 18 (1987), no. 12, 1094–1102. (Deeb Hussein) **89d:46006** 46A32 (46M99)
- Dayan, R. E.** A problem of estimating the parameter of a signal on a background of white noise. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1985, no. 2(159), 10–16. (Not in MR) 94A12
- Estimation of the drift parameter in the almost smooth case. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1986, no. 2(162), 13–21. (Valeri Stefanov) **89c:62144** 62M09 (62M05)
- Dayananda, P. W. A.** Spread of drug addiction in the presence of two competing drugs. *Biometrical J.* 30 (1988), no. 1, 113–122. (Not in MR) 92A09
- Dayantis, George** Types, modularisation and abstraction in logic programming. *Algebraic and logic programming (Gaussig, 1988)*, 127–136, *Math. Res.*, 49, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) 68T25
- Dayazwan, Wijesuriya P.** (with Boothby, W. M.) Some global aspects of the feedback linearization problem. *Differential geometry: the interface between pure and applied mathematics (San Antonio, Tex., 1986)*, 51–64, *Contemp. Math.*, 68, Amer. Math. Soc., Providence, RI, 1987. (Edward Jezierski) **89h:93035** 93B17 (93B50, 93C15)
- (with Martin, Clyde Franklin) Observing linear dynamics with polynomial output functions. *Systems Control Lett.* 9 (1987), no. 2, 141–148. (Pramod Kumar Sharma) **89a:93013** 93B07 (93B60, 93C05)
- (with Ghosh, Bijoy Kumar) Differential geometric methods in hybrid parametrization of linear dynamical systems. *SIAM J. Control Optim.* 26 (1988), no. 5, 1149–1174. (Summary) **89i:93027** 93B27 (93A10, 93C05)
- (with Martin, Clyde Franklin) Disturbance decoupling,  $(f, g)$ -invariant and controllability subspaces of a class of homogeneous polynomial systems. *SIAM J. Control Optim.* 27 (1989), no. 1, 108–119. (Summary) **89k:93057** 93B27 (93B07)
- Daybelge, Umut** General relativistic nonequilibrium statistical mechanics. (Turkish summary) *Istanbul Tek. Univ. Bil.* 40 (1987), no. 1, 105–126. (N. V. Mitskevich) **89c:83048** 83C99 (82A40, 83C25)
- Dayi, Ömer F.** Four-photon scattering amplitude in bosonic open string field theory. *Phys. Lett. B* 200 (1988), no. 4, 471–477. (Summary) **89a:81123** 81E99 (81E30)
- A note on the BFV-BRST operator quantization method. *Phys. Lett. B* 210 (1988), no. 1–2, 147–152. (B. Spence) **89m:81134** 81E99 (81D07, 81E30)
- Operator quantization of the massive superparticle. *Phys. Lett. B* 213 (1988), no. 4, 455–458. (Summary) **89j:81168** 81E99 (81D07)
- Dayton, C. Mitchell** (with Macready, George B.) Concomitant-variable latent-class models. *J. Amer. Statist. Assoc.* 83 (1988), no. 401, 173–178. (Masashi Okamoto) **89k:62078** 62H20 (62H15)
- Dazard, Pierre** Obstruction à un troisième théorème de Lie non linéaire pour certaines variétés de Poisson. (English summary) [An obstruction to a nonlinear third Lie theorem for a class of Poisson manifolds] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 5, 273–278. (Jean-Claude Sikorav) **89g:58063** 58F05 (35C57)
- see also *Hamiltonian actions of groups. Lie's third theorem*, **89a:58003**



nguyễn Dharinh Công see Nguyễn Dharinh Công

- D'niishki, Aleksandr Al.** (with Georgiev, Stoyan P.; Tomov, Toma G.) Remark on a Diophantine system. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian) (Sunny Beach (Slivnitshe Bryag), 1987)*, 632-636, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89d:11016** 11D04
- De, Mrityunjoy** (with Roy Chowdhury, A.) Riemann-Hilbert problem with higher order poles for self-induced transparency with degenerate energy levels. *Austral. J. Phys.* **41** (1988), no. 6, 735-742. (Summary) **89f:78026** 78A40
- (with Roy, Swapna; Roy Chowdhury, A.) Loop algebra of Lie symmetries for a short-wave equation. *Internat. J. Theoret. Phys.* **27** (1988), no. 1, 47-55. (Summary) **89c:58146** 58G35 (35A30, 35Q20)
- (with Roy Chowdhury, A.) On a Riemann-Hilbert approach to degenerate SIT: soliton solutions with time-dependent velocity. *Inverse Problems* **4** (1988), no. 3, 901-911. (Summary) **89g:78022** 78A45
- De, Suranjan** A knowledge-based approach to scheduling in an FMS. *Ann. Oper. Res.* **12** (1988), no. 1-4, 109-134. (Not in MR) 90B35
- De Abreu, Clovis Pompílio** see de Abreu, Clovis Pompílio
- De Abreu G., José** see de Abreu G., José
- De Abreu-García, José A.** (with Fairman, F. W.) Balanced realization via permutation symmetric Jordan realizations. *Linear algebra in signals, systems, and control (Boston, MA, 1986)*, 522-534, *SIAM, Philadelphia, PA*, 1988. (Vimal Singh) **89k:93033** 93B15 (93C55, 93C60, 94A12)
- Deaconescu, Marian** A fixed point theorem for decreasing functions. *Studia Univ. Babeş-Bolyai Math.* **31** (1986), no. 2, 22-23. (M. Kolibriar) **89a:06003** 06A05 (06A23)
- Finite groups having an automorphism with many fixed points. *Seminar on fixed point theory*, 17-18, *Preprint*, 87-3, *Univ. "Babeş-Bolyai", Cluj-Napoca*, 1987. (see **89a:00015**) 20D45 (20D10)
- On the commutativity of rings. *An. Univ. Timişoara Ser. Ştiinţ. Mat.* **25** (1987), no. 1, 33-37. (Hazar Abu-Khuzam) **89a:16044** 16A70
- Classification of finite groups with all elements of prime order. *Proc. Amer. Math. Soc.* **106** (1989), no. 3, 625-629. (M. E. Harris) **89k:20038** 20D20
- De Acosta, A.** see de Acosta, A.
- De Agostino, S.** (with Bovet, Daniel P.; Petreschi, R.) Parallelism and the feedback vertex set problem. *Inform. Process. Lett.* **28** (1988), no. 2, 81-85. (Summary) **89k:68116** 68R10 (05C20, 68Q25)
- De Aguiar, F. S.** see de Aguiar, F. S.
- De Aguiar, M. A. M.** see de Aguiar, M. A. M.
- Deakin, M. A. B.** Two faces of biomathematics. *The Hanna Neumann lectures at ICME 5 (Adelaide, 1984)*, 27-45, *Notes on Pure Math.*, 13, *Austral. Nat. Univ., Canberra*, 1986. (Roger V. Jean) **89d:92001** 92-01 (92A05)
- see also Zhang, Guo Bin, **89m:58027**
- De Alcantara, Luiz Paulo** see de Alcantara, Luiz Paulo
- De Alfaro, V.** (with Fubini, S.; Furlan, G.) Quantisation, instantons and supersymmetry. *Quantum field theory and quantum statistics, Vol. 1*, 587-599, *Hilger, Bristol*, 1987. (Gheorghe Zet) **89h:81073** 81D07 (81E13, 81G05)
- (with Fubini, S.; Furlan, G.; Roncadelli, M.) Operator ordering and supersymmetry. *Nuclear Phys. B* **296** (1988), no. 2, 402-430. (Roger Picken) **89d:81049** 81D07 (81G20)
- (with Fubini, S.; Furlan, G.; Roncadelli, M.) Quantum spinning particle in a curved metric. *Phys. Lett. B* **200** (1988), no. 3, 323-326. (Summary) **89a:81083** 81E20
- De Almeida, Rita M. C.** see de Almeida, Rita M. C.
- De Almeida da Silva, M. A.** see de Almeida da Silva, M. A.
- De Alwis, S. P.** see de Alwis, S. P.
- Dean, A. M.** see Dean, Angela M.
- Dean, Andrew P.** Characterizing impure epimorphisms and impure monomorphisms. *Comm. Algebra* **16** (1988), no. 4, 849-858. (Daniel Simson) **89a:16040** 16A64 (16A46)
- A source for the nonsplit monomorphisms from a finite-dimensional module. *Comm. Algebra* **17** (1989), no. 1, 1-9. (Zygmunt Pogorzały) **89j:16042** 16A64 (16A46)
- Dean, Angela M.** (with Voss, Daniel T.) On confounding in single replicate factorial experiments. *Utilitas Math.* **33** (1988), 59-64. (Kishore Sinha) **89c:62131** 62K15
- (with Lewis, Susan Margaret) Towards a general theory for the construction of designs with crossed blocking factors. *Utilitas Math.* **34** (1988), 33-44. (William I. Notz) **89m:62079** 62K10 (05B05, 62K15)
- Dean, Carolyn Anne** (with Stafford, J. T.) A nonembeddable Noetherian ring. *J. Algebra* **115** (1988), no. 1, 175-181. (Juliu Crivei) **89d:16016** 16A33
- The middle annihilator conjecture for embeddable rings. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 46-48. (Yuan Chun Guo) **89c:16019** 16A34
- Nonembeddable factors of the enveloping algebras of semisimple Lie algebras. *Bull. London Math. Soc.* **21** (1989), no. 1, 65-69. (S. Paul Smith) **89k:17027** 17B35 (16A33)
- Dean, Edward J.** (with Glowinski, R.; Li, Chin Hsien) Applications of operator splitting methods to the numerical solution of nonlinear problems in continuum mechanics and physics. *Mathematics applied to science (New Orleans, La., 1986)*, 13-64, *Academic Press, Boston, MA*, 1988. (G. W. Hedstrom) **89c:65060** 65J99 (76D25, 81-08, 82A57)
- (with Glowinski, R.; Li, Chin Hsien) Numerical solution of parabolic problems in high dimensions. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing (West Point, NY, 1987)*, 207-285, *ARO Rep.*, 88-01, *U.S. Army Res. Office, Research Triangle Park, NC*, 1988. (Summary) **89c:65096** 65M05 (65W05, 76D05, 82A57)
- Dean, Nathaniel** (with Hemminger, Robert L.; Toft, Bjarne) On contractible edges in 3-connected graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer. 58* (1987), 291-293. (A. Adam) **89e:05125** 05C38
- How do you decompose a graph into trees of small diameter? Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **62** (1988), 65-67. (H. Joseph Straight) **89j:05056** 05C70 (05C05)
- Dean, Thomas** (with Boddy, Mark) Reasoning about partially ordered events. *Artificial Intelligence* **36** (1988), no. 3, 375-399. (Petr Jirků) **89j:03010** 03B45 (03D15, 68T99, 92A25)
- De Andrés, Luis C.** see de Andrés, Luis C.
- Deane, A. E.** (with Knobloch, Edgar; Toomre, J.) Oscillatory doubly diffusive convection: theory and experiment. *The physics of structure formation (Tübingen, 1986)*, 117-129, *Springer Ser. Synergetics*, 37, *Springer, Berlin-New York*, 1987. (see **89b:58064**) 76V05 (76E30)
- De Angelis, Gian Fabrizio** (with de Falco, Diego; Di Genova, Glauco) Asymptotic decay of the free field covariance on a Riemannian manifold via heat kernel techniques. *J. Math. Phys.* **29** (1988), no. 2, 332-335. (Derek Raine) **89d:81079** 81E20
- De Araujo, A. L.** see de Araujo, A. L.
- De Araujo, M. E.** see de Araujo, M. E.
- De Arcangelis, Riccardo** (with Donato, Patrizia) On the convergence of Laplace-Beltrami operators associated to quasiregular mappings. *Studia Math.* **86** (1987), no. 3, 189-204. (Matti Vuorinen) **89f:30038** 30C60 (35J99, 46E35)
- (with Donato, Patrizia) Convergence of minima of integral functionals and multiplicative perturbations of the integrands. *Ann. Mat. Pura Appl.* (4) **150** (1988), 341-362. (N. Pacchiarotti) **89g:49019** 49A50
- Dearholt, D. W.** (with Schvaneveldt, R. W.; Durso, F. T.) Graph theoretic foundations of pathfinder networks. *Comput. Math. Appl.* **15** (1988), no. 4, 337-345. (Summary) **89c:92058** 92A27 (05C99, 68R10)
- Dearing, P. M.** (with Shier, D. R.; Warner, Daniel D.) Maximal chordal subgraphs. *Discrete Appl. Math.* **20** (1988), no. 3, 181-190. (Fabrizio Luccio) **89i:05176** 05C38 (68Q25, 90B10)
- Deavours, Cipher A.** see *Cryptography*, **89m:01143**
- De Azcárraga, J. A.** see de Azcárraga, J. A.
- Deb, Anindya** (with Wang, Hui-Ching) A point concerning quadratic elements in two-dimensional boundary element methods. *Comm. Appl. Numer. Methods* **4** (1988), no. 6, 821-823. (Not in MR) 65N30
- Deb, B. M.** (with Chattaraj, P. K.; Rao Koneru, S.) Stability analysis of finite difference schemes for quantum mechanical equations of motion. *J. Comput. Phys.* **72** (1987), no. 2, 504-512. (Randall J. LeVeque) **89c:65144** 65P05
- (with Chattaraj, P. K.) Generalized nonlinear Schrödinger equations in quantum fluid dynamics. *Solitons (Tiruchirappalli, 1987)*, 359-365, *Springer Ser. Nonlinear Dynamics*, *Springer, Berlin-New York*, 1988. (Summary) **89c:81218** 81J05 (35Q20)
- Deb, Rajat** (with Kelsey, David) On constructing a generalized Ostrogoriski paradox: necessary and sufficient conditions. *Math. Social Sci.* **14** (1987), no. 2, 161-174. (Maurice Salles) **89a:90014** 90A08
- Deb, T. K.** (with De Sarkar, S.) On points of  $k$ th absolute continuity. *J. Indian Inst. Sci.* **66** (1986), no. 7, 457-464. (Babu Ram) **89f:26010** 26A46
- De Baenst-Vandenbroucke, A.** see de Baenst-Vandenbroucke, A.
- De Baere, W.** Some further comments on the Sella-Tarozzi proof of the nonlocality of quantum mechanics. *Phys. Lett. A* **131** (1988), no. 1, 13-21. (Jeffrey Bub) **89m:81013** 81B05
- De Bakker, J. W.** see de Bakker, J. W.
- Debarnot, Marie-Thérèse** (with Kennedy, E. S.) Two mappings proposed by Birkhoff. *Z. Gesch. Arab.-Islam. Wiss.* **1** (1984), 145-147. (Author's review (E.S.K.)) **89g:01012** 01A30
- Debarre, Olivier** (with Beauville, Arnaud) Sur le problème de Schottky pour les variétés de Prym. [On the Schottky problem for Prym varieties] *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **14** (1987), no. 4, 613-623 (1988). (John B. Little) **89m:14014** 14H40 (14K10, 14K25)
- Annulation de thétaconstantes sur les variétés abéliennes de dimension quatre. (English summary) [Vanishing thetanulls on 4-dimensional abelian varieties] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 20, 885-888. (Gerald E. Welters) **89a:14055** 14K10 (14K25)
- Sur les variétés abéliennes dont le diviseur theta est singulier en codimension 3. [Abelian varieties whose theta divisor is singular in codimension 3] *Duke Math. J.* **57** (1988), no. 1, 221-273. (Gerald E. Welters) **89f:14047** 14K10 (14H40)
- Le théorème de Torelli pour les intersections de trois quadriques. [The Torelli theorem for the intersection of three quadrics] *Invent. Math.* **95** (1989), no. 3, 507-528. (Gerald E. Welters) **89k:14010** 14D20 (14K30, 32G20)
- (with Catanese, F.) Surfaces with  $K^2 = 2$ ,  $p_g = 1$ ,  $q = 0$ . *J. Reine Angew. Math.* **395** (1989), 1-55. (Gang Xiao) **89m:14017** 14J10 (14J29)
- De Bartolomeis, Paolo** Holomorphic generators of some ideals in  $C^\infty(\bar{D})$ . *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **14** (1987), no. 2, 199-215 (1988). (Joaquín Ma. Ortega Aramburu) **89c:32002** 32A10 (32A40, 46J15)
- (with Derridj, Makhlof) Positive vector bundles and harmonic maps. (Italian summary) *Ann. Mat. Pura Appl.* (4) **150** (1988), 21-37. (John C. Wood) **89j:58019** 58E20 (32H99, 32L15, 53C55)
- (with Burns, Daniel M., Jr.) Applications harmoniques stables dans  $P^n$ . [Stable harmonic mappings into  $P^n$ ] *Ann. Sci. École Norm. Sup.* (4) **21** (1988), no. 2, 159-177. (James F. Glazebrook) **89h:58044** 58E20 (53C55)
- (with Migliorini, Luca; Nannicini, Antonella) Espaces de twisteurs kählériens. (English summary) [Kählerian twistor spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 6, 259-261. (S. M. Salamon) **89m:53118** 53C55 (32L25, 53C25)
- (with Burns, Daniel M., Jr.) Stability of vector bundles and extremal metrics. *Invent. Math.* **92** (1988), no. 2, 403-407. (Mitsuhiko Itoh) **89d:53114** 53C55 (32L05, 53C25, 58E11)
- Debata, J. P.** (with Das, Gokulananda) Corrigendum to: "A note on fixed points of commuting mappings of contractive type" [Indian J. Math. **27** (1985), no. 1-3, 49-51; MR 87i:54091]. *Indian J. Math.* **30** (1988), no. 3, 249-250. (Editors) **89j:54052** 54H25
- De Beer, Willem** see de Beer, Willem
- De Bell, K.** (with Fujiki, N. M.; Geldart, D. J. W.) Lattice sums for dipolar systems. *Phys. Rev. B* (3) **36** (1987), no. 16, 8512-8516. (Summary) **89b:82093** 82A67 (82A60)
- (with Essam, J. W.; Guttmann, A. J.) On two-dimensional directed percolation. *J. Phys. A* **21** (1988), no. 19, 3815-3832. (Summary) **89i:82049** 82A43 (82A25)
- Debès, Pierre**  $G$ -fonctions et théorème d'irréductibilité de Hilbert. [ $G$ -functions and Hilbert's irreducibility theorem] *Acta Arith.* **47** (1986), no. 4, 371-402. (Autorreferat (Zbl 565:12012)) **89c:11112** 11J91 (12F20)
- Debever, R.** On Einstein-Maxwell null fields in type D. *Gravitation and geometry*, 107-114, *Monographs Textbooks Phys. Sci.*, 4, *Bibliopolis, Naples*, 1987. (Mario C. Diaz) **89f:83018** 83C15 (83C50)
- Debiard, Amédée** Système différentiel hypergéométrique et parties radiales des opérateurs invariants des espaces symétriques de type  $BC_p$ . [A hypergeometric differential system and the radial parts of invariant operators of symmetric spaces of type  $BC_p$ ] *Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliavin (Paris, 1986)*, 42-124, *Lecture Notes in*

- Math., 1296, Springer, Berlin-New York, 1987. (Steven George Krantz) **89e:22027** 22E47 (33A35, 33A65, 58G05)
- Debiere, Jean-Marc (with Turban, Loïc) Crossover in the one-dimensional self-directed walk. *J. Phys. A* **21** (1988), no. 6, L339-L344. (Summary) **89b:82099** 82A67 (60J15, 82A41)
- De Bievre, S. Möller operators in classical relativistic two-particle scattering. *J. Math. Phys.* **28** (1987), no. 9, 2142-2148. (Henk Broer) **89b:70019** 70H40
- (with Hislop, Peter D.) Spectral resonances for the Laplace-Beltrami operator. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **48** (1988), no. 2, 105-145. (Anne-Marie Charbonnel) **89m:58206** 58G25 (11F72, 47F05)
- De Biasi, F. S. (with Myjak, J.) Random differential inclusions with nonconvex right-hand side. *Funkcial. Ekvac.* **30** (1987), no. 1, 1-8. (Seppo Heikkilä) **89b:34137** 34F05 (34A10, 34A60, 60H10)
- (with Myjak, J.) On the random Dugundji extension theorem. *J. Math. Anal. Appl.* **128** (1987), no. 2, 305-311. (Michel Valadier) **89b:54024** 54C60 (28B20, 54C65)
- (with Myjak, J.) Sur la porosité de l'ensemble des contractions sans point fixe. (English summary) [On the porosity of the set of contractions without fixed points] *C. R. Acad. Sci. Paris Sér. I Math.* **308** (1989), no. 2, 51-54. (Summary) **89k:47110** 47H99 (47H10)
- DeBlassie, R. Dante Doob's conditioned diffusions and their lifetimes. *Ann. Probab.* **16** (1988), no. 3, 1063-1083. (L. C. G. Rogers) **89i:60153** 60J60 (60J65)
- Remark on: "Exit times from cones in  $\mathbb{R}^2$  of Brownian motion" [Probab. Theory Related Fields **74** (1987), no. 1, 1-29; MR **88d:60205**]. *Probab. Theory Related Fields* **79** (1988), no. 1, 95-97. (Summary) **89g:60250** 60J65 (60G40)
- Debnath, Lokenath Bifurcation and nonlinear instability in applied mathematics. *Nonlinear analysis*, 161-285, World Sci. Publishing, Singapore, 1987. (Yong Nian Huang) **89b:58141** 58F14 (00A69, 76Exx)
- Applications of special functions in applied mathematics. *Festschrift for Professor Mahadev Dutt* (Calcutta, 1985-1986). *Bull. Calcutta Math. Soc.* **1987**, 1-34. (Summary) **89m:33026** 33A99 (00A69, 05A17)
- Srinivasa Ramanujan (1887-1920). A centennial tribute. *Internat. J. Math. Ed. Sci. Tech.* **18** (1987), no. 6, 821-861. (Bruce C. Berndt) **89g:01048** 01A70 (01A60)
- A variational principle for nonlinear wave waves. *Acta Mech.* **72** (1988), no. 1-2, 155-160. (Summary) **89d:76007** 76B15 (49H05)
- (with Maiti, Narayan Chandra) Transient wave motions due to an asymmetric shear stress discontinuity in a layered elastic medium. *Appl. Math. Lett.* **1** (1988), no. 4, 361-365. (Summary) **89j:73030** 73D20
- (with Grum, William J.) The fractional calculus and its role in the synthesis of special functions. I. *Internat. J. Math. Ed. Sci. Tech.* **19** (1988), no. 2, 215-230. (R. Bittner) **89m:26015** 26A33 (33A99, 44A15)
- (with Grum, William J.) The fractional calculus and its role in the synthesis of special functions. II. *Internat. J. Math. Ed. Sci. Tech.* **19** (1988), no. 3, 347-362. (R. Bittner) **89m:33013** 33A40 (26A33)
- (with Pal Roy, P.) On elastic waves in a thinly-layered laminated medium with stress couples under initial stress. *Internat. J. Math. Math. Sci.* **11** (1988), no. 3, 599-612. (Summary) **89d:73013** 73D15 (73C30)
- (with Chadha, T. K.; Kumar, Rajneesh) Corrigendum: "Lamb's plane problem in a thermoelastic micropolar medium with stretch" [Internat. J. Math. Math. Sci. **10** (1987), no. 1, 187-198; MR **87m:73070**]. *Internat. J. Math. Math. Sci.* **11** (1988), no. 4, 768. (Editors) **89f:73074** 73U05
- Debnath, M. (with Roy Chowdhury, A.) Swinging Atwood machine. Far- and near-resonance region. *Internat. J. Theoret. Phys.* **27** (1988), no. 11, 1405-1410. (Summary) **89j:70032** 70K30
- De Boer, Martin J. M. see de Boer, Martin J. M.
- De Boissieu, Christian see de Boissieu, Christian
- De Boor, Carl see de Boor, Carl
- De Bra, P. Functional dependency implications, inducing horizontal decompositions. *MFDBS 87* (Dresden, 1987), 80-98, *Lecture Notes in Comput. Sci.*, 305, Springer, Berlin-New York, 1988. (Summary) **89c:68014** 68P15
- De Branges, Louis see de Branges, Louis
- De Branges, Tatiana see de Branges, Tatiana
- Debreu, Gerard Economic theory in the mathematical mode. (Chinese) *Adv. in Math.* (Beijing) **17** (1988), no. 3, 251-259. (S.-C. Fang) **89h:90005** 90A05 (01A70, 90A14)
- Debroey, V. (with Rijckaert, M. J.; Bogaerts, W.) Expert systems: the state of the art. *Mathematical models for decision support* (Val d'Isère, 1987), 487-517, NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 48, Springer, Berlin-New York, 1988. (see **89g:90136** 68T99)
- De Broglie, Louis see de Broglie, Louis
- Debroni, Bradley M. (with Colbourn, Charles J.; Myrvold, Wendy J.) Estimating the coefficients of the reliability polynomial. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **62** (1988), 217-223. (Summary) **89h:90084** 90B10 (05C05, 65C05)
- De Bruin, D. see de Bruin, D.
- De Bruin, N. G. see de Bruin, N. G.
- De Bruin, Arie see de Bruin, Arie
- De Bruin, Marcel G. see de Bruin, Marcel G.
- De Brunner, Victor E. (with Beex, A. A. (Louis)) Sensitivity analysis of digital filter structures. *Linear algebra in signals, systems, and control* (Boston, MA, 1986), 355-374, SIAM, Philadelphia, PA, 1988. (see **89f:00025** 94A12 (93B35))
- Debs, G. (with Saint-Raymond, J.) Ensembles boréliens d'unicité et d'unicité au sens large. (English summary) [Borel sets of uniqueness and uniqueness in the broad sense] *Ann. Inst. Fourier (Grenoble)* **37** (1987), no. 3, 217-239. (Janusz Pawlikowski) **89d:04007** 04A15 (42A63, 54H05)
- Effective properties in compact sets of Borel functions. *Mathematika* **34** (1987), no. 1, 64-68. (Howard Becker) **89b:03082** 03E15 (04A15, 46N05, 54C35)
- De Caen, D. see de Caen, D.
- De Campos Ibáñez, Luis Miguel see de Campos Ibáñez, Luis Miguel
- De Carvalho, F. J. Craveiro see de Carvalho, F. J. Craveiro
- De Castro, Constanço see de Castro, Constanço
- De Cecco, Giuseppe (with Palmieri, Giuliana) Harmonic forms on compact Lipschitz manifolds. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **2** (1988), no. 1, 101-108. (Yu. V. Kostarchuk) **89b:58015** 58A14 (58G05)
- Dechamps-Gondim, Myriam see ECM/87. Educational computing in mathematics, **89f:00024**
- Dechaumhai, Pramote (with Thornton, Earl A.) Finite element methodology for integrated flow-thermal-structural analysis. *Finite elements* (Hampton, VA, 1986), 292-302, ICASE/NASA LaRC Ser., Springer, New York-Berlin, 1988. (From the introduction) **89b:80001** 80-08 (65N30, 73J05, 76-08)
- Decheva, V. (with Kandilarov, B. D.) A theorem of Bloch and Bloch wave functions. (Bulgarian) *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* **30** (63) (1988), no. 1, 22-25. (From the text) **89i:01046** 01A60 (81H99)
- Dechevski, L. T.  $\tau$ -moduli and interpolation. *Function spaces and applications* (Lund, 1986), 177-190, *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (N. Ya. Kruglyak) **89k:46055** 46E99 (41A05, 46M35, 47H99)
- Dechter, Rina (with Pearl, Judea) Network-based heuristics for constraint-satisfaction problems. *Artificial Intelligence* **34** (1987), no. 1, 1-38. (Summary) **89a:68194** 68T20
- (with Pearl, Judea) Tree clustering for constraint networks. *Artificial Intelligence* **38** (1989), no. 3, 353-366. (Summary) **89m:68121** 68T20
- Declu, Elena On some properties of the adjoint operator nodes on complex Hilbert spaces. (Romanian summary) *Bul. Inst. Politehn. București Ser. Electrotehn.* **48** (1986), 9-18. (Chandler Davis) **89c:47011** 47A45
- Adjoint operator nodes, controllability and observability on complex Hilbert spaces. (Romanian summary) *Bul. Inst. Politehn. București Ser. Electron.* **49** (1987), 13-19. (Summary) **89f:47026** 47A99 (47A56, 93B05, 93B07, 93B28)
- Decker, Karsten (with Hasenfratz, Anna; Hasenfratz, Peter) Singular renormalization group transformations and first order phase transitions. II. Monte Carlo renormalization group results. *Nuclear Phys. B* **295** (1988), no. 1, 21-35. (Tony C. Dorlas) **89g:82022b** 82A25 (81E25, 82-04, 82A68)
- Decker, Naomi H. The Fourier analysis of a multigrid preconditioner. *Multigrid methods* (Copper Mountain, CO, 1987), 117-141, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (Jan Mandel) **89i:65106** 65N20 (65N50)
- Decker, W. (with Schreyer, F.-O.) Pullbacks of the Horrocks-Mumford bundle. *J. Reine Angew. Math.* **382** (1987), 215-220. (Jean-Marc Drezet) **89b:14017** 14F05 (32L05)
- Decker, Torsten see Ramlau-Hansen, Henrik, (Not in MR)
- De Clerck, F. (with Gevaert, H.; Thas, J. A.) Translation partial geometries. *Combinatorics '86* (Trento, 1986), 117-135, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (Franco Eugeni) **89e:51015** 51E30
- (with Mazzocca, F.) The classification of polarities in reducible projective spaces. *European J. Combin.* **9** (1988), no. 3, 245-247. (Francis Buekenhout) **89f:51019** 51A45
- (with Gevaert, H.; Thas, J. A.) Flocks of a quadratic cone in  $PG(3, q)$ ,  $q \leq 8$ . *Geom. Dedicata* **26** (1988), no. 2, 215-230. (Stanley E. Payne) **89d:51014** 51E25 (05B30)
- Decomps-Guilloux, Annette (with Grandet-Hugot, Marthe) Nouvelles caractérisations des nombres de Pisot et de Salem. [New characterizations of the Pisot and Salem numbers] *Acta Arith.* **50** (1988), no. 2, 155-170. (Christopher Smyth) **89j:10977** 11R06 (11K26)
- (with Amice, Y.; Bertin, M.-J.; Bertrandias, F.; Dress, F.; Grandet, M.; Mendes France, M.; Rauzy, Gérard) Charles Pisot. (French) *Acta Arith.* **51** (1988), no. 1, 1-4. (Editors) **89i:01054** 01A70
- De Concini, C. Equivariant embeddings of homogeneous spaces. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 369-377, *Amer. Math. Soc., Providence, RI*, 1987. (P. E. Newstead) **89e:14045** 14M17 (14L30, 22E47)
- (with Arbarello, E.; Kac, Victor G.; Procesi, C.) Moduli spaces of curves and representation theory. *Comm. Math. Phys.* **117** (1988), no. 1, 1-36. (Yukihiko Namikawa) **89i:14019** 14H15 (17B65, 22E65, 32G15, 58F07, 81E40)
- (with Goresky, R. Mark; MacPherson, R.; Procesi, C.) On the geometry of quadrics and their degenerations. *Comment. Math. Helv.* **63** (1988), no. 3, 337-413. (Michel Brion) **89k:14082** 14L32 (14L35, 14M17, 32G99)
- (with Lusztig, G.; Procesi, C.) Homology of the zero-set of a nilpotent vector field on a flag manifold. *J. Amer. Math. Soc.* **1** (1988), no. 1, 15-34. (Toshiaki Shoji) **89f:14052** 14L30 (14M99, 20G10, 32M05, 32M10)
- De Coninck, Joël (with Dunlop, François) Partial to complete wetting: a microscopic derivation of the Young relation. *Proceedings of the symposium on statistical mechanics of phase transitions—mathematical and physical aspects* (Trebson, 1986). *J. Statist. Phys.* **47** (1987), no. 5-6, 827-849. (C. Eugene Wayne) **89a:82005** 82A05 (82A25, 82A50)
- (with Ruiz, Jean) Fluctuations of interfaces and anisotropy. *J. Phys. A* **21** (1988), no. 3, L147-L153. (Summary) **89c:82013** 82A25
- (with Messenger, Alain; Miracle-Sole, S.; Ruiz, Jean) A study of perfect wetting for Potts and Blume-Capel models with correlation inequalities. *J. Statist. Phys.* **52** (1988), no. 1-2, 45-60. (Jacek Miękisz) **89m:82073** 82A68 (82A25)
- De Cristofaro, Giacinto see Gatto, Romano, **89a:01019**
- Decuyper, J. C. (with Musette, M.; Lambert, F.) Soliton and antisoliton resonant interactions. *J. Phys. A* **20** (1987), no. 18, 6223-6235. (Summary) **89c:35140** 35Q20
- Deddens, J. (with Peligrad, Magda; Yang, Ting) On strong consistency of kernel estimators under dependence assumptions. *Mathematical statistics and probability theory*, Vol. B (Bad Tatzmannsdorf, 1986), 33-41, *Reidel, Dordrecht-Boston, MA-London*, 1987. (Summary) **89h:62060** 62G05
- Dedekind, R. see Edwards, Harold M., (**89b:01002**)
- De Dier, Bart (with Roose, Dirk) Determination of bifurcation points and catastrophes for the Brusselator model with two parameters. *Bifurcation: analysis, algorithms, applications* (Dortmund, 1986), 38-46, *Internat. Schriftenreihe Numer. Math.*, 79, Birkhäuser, Basel-Boston, MA, 1987. (János Tóth) **89g:80010** 80A30 (34B99, 35B32, 58F14, 80-08, 92A40)
- DeDieu, J.-P. The convergence of quintic spline interpolation. *Approx. Theory Appl.* **4** (1988), no. 2, 79-95. (Stephen Demko) **89i:41016** 41A15 (41A25)
- De Doelder, P. J. see de Doelder, P. J.
- Dedok, N. N. Limit cycles of a system of differential equations. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 4, 683-684, 733. (Marian Mureşan) **89c:34057** 34C05
- De Dominicis, C. (with Mottishaw, P.) Replica symmetry breaking in weak connectivity systems. *J. Phys. A* **20** (1987), no. 18, L1267-L1273. (Summary) **89c:82051** 82A57
- (with Wong, K. Y. M.; Sherrington, D.; Mottishaw, P.; Dewar, Roderick C.) Graph partitioning and dilute spin glasses: the minimum cost solution. *J. Phys. A* **21** (1988), no. 2, L99-L105. (Summary) **89c:82053** 82A57



- De Dominicis, Rodolfo** Erratum: "Comment: 'An algorithmic approach to nonhomogeneous semi-Markov processes'" [Comm. Statist. B—Simulation Comput. 13 (1984), no. 6, 823–838; *ibid.* 15 (1986), no. 1, 287; MR 87g:60076ab] by De Dominicis and R. Manca. *Comm. Statist. Simulation Comput.* 17 (1988), no. 3, 1113–1114. (From the text) **89f:60177** 60K15 (60K20, 62P05)
- De Donato, O.** (with Carini, A.) Quadratic extremum principles for finite strain rigid-viscoplastic dynamics of continua. *Internat. J. Solids and Structures* 24 (1988), no. 6, 599–618. (Petr Procházka) **89f:73031** 73F15 (49H05, 73F30)
- De Donder, Théophile** see **Bosquet, Jean**, **89f:01088**
- De Dornale, Bernard M.** see **de Dornale, Bernard M.**
- Dedushov, A. V.** An analogue of a method of A. N. Krylov for a mixed problem. (Russian) *Mathematical analysis and its applications (Russian)*, 28–37, 163, Rostov. Gos. Univ., Rostov-on-Don, 1985. (B. A. Bondarenko) **89h:35074** 35G15
- Dee, Dick P.** (with Cohn, Stephen E.) Observability of discretized partial differential equations. *SIAM J. Numer. Anal.* 25 (1988), no. 3, 586–617. (B. I. Anan'ev) **89f:93012** 93B07 (39A12, 60H15, 65M10, 65N10, 93E11)
- Deh, W.** (with Khalil, R.)  $q$ -summing operators in Banach spaces. *J. Math. Anal. Appl.* 127 (1987), no. 2, 577–584. (Bernd Rosenberger) **89e:47027** 47B10 (47D30)
- (with Khalil, R.) Best approximation in  $L(X, Y)$ . *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 3, 527–531. (G. Godini) **89k:47064** 47D15 (41A65)
- Deha, Elias Y.** (with Goel, Sudhir K.) A note on BCI-algebras. *Math. Japon.* 33 (1988), no. 4, 517–522. (Summary) **89i:06020** 06D99 (03G25)
- el-Deen, M. I. Hossam** see **El-Deen, M. I. Hossam**
- De Faal, B.** (with Brander, O.) Information, uncertainty and the singular value decomposition of the filtered Fourier transformation. *Differential equations and mathematical physics (Birmingham, Ala., 1986)*, 83–90, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (L. L. Campbell) **89c:94009** 94A11 (62M20, 93E11)
- (with Brander, O.) Coherent-state path-integral formulation of inverse scattering theory. Functional integration with emphasis on the Feynman integral (Sherbrooke, PQ, 1986). *Rend. Circ. Mat. Palermo (2) Suppl. No. 17* (1987), 185–209 (1988). (Pierre C. Sabatier) **89h:81253** 81F99 (58D30, 81–02, 81D30)
- (with Cheney, Margaret; Rose, James H.) A fundamental integral relation of scattering theory. *SIAM J. Math. Anal.* 19 (1988), no. 5, 1090–1102. (Yoshimi Saito) **89k:35058** 35J05 (35P25)
- De Falco, Diego** see **Falco, Diego**
- De Faria, Edison** see **Faria, Edison**
- De Felice, Celia** Construction of a family of finite maximal codes. *STACS 88 (Bordeaux, 1988)*, 159–169, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (Ludwig Staiger) **89d:94049** 94B45 (68P25, 68Q20)
- Finite biprefix sets of paths in a graph. Thirteenth International Colloquium on Automata, Languages and Programming (Rennes, 1986). *Theoret. Comput. Sci.* 58 (1988), no. 1–3, 103–128. (G. Berman) **89k:68117** 68R10 (05C38, 68Q45, 94B45)
- De Fermat, Pierre** see **Fermat, Pierre**
- De Figueiredo, D. G.** see **de Figueiredo, D. G.**
- De Finis, Massimo** see **Finis, Massimo**
- De Forcrand, Philippe** see **de Forcrand, Philippe**
- Defranceschi, A.** On the stationary, compressible and incompressible Navier-Stokes equations. *Ann. Mat. Pura Appl. (4)* 149 (1987), 217–236. (Charles J. Amick) **89m:35178** 35Q10 (76D05, 76N10)
- (with Dal Maso, Gianni) A Kellogg property for  $\mu$ -capacities. (Italian summary) *Boll. Un. Mat. Ital. A (7)* 2 (1988), no. 1, 127–135. (W. P. Ziemer) **89g:31007** 31B15
- (with Dal Maso, Gianni) Limits of nonlinear Dirichlet problems in varying domains. *Manuscripta Math.* 61 (1988), no. 3, 251–278. (Luciano Modica) **89k:49007** 49A50 (31B20, 31B25, 35J65)
- De Franchis, M.** Biography of G. B. Guccia. (Italian) Documents from the life of the Circolo Matematico di Palermo (Italian). *Rend. Circ. Mat. Palermo (2) Suppl. No. 20* (1988), 74–85. (see **89k:01038**) 01A70
- The Circolo Matematico di Palermo from its foundation to today. (Italian) Documents from the life of the Circolo Matematico di Palermo (Italian). *Rend. Circ. Mat. Palermo (2) Suppl. No. 20* (1988), 87–95. (see **89k:01038**) 01A74
- Defrise, M.** (with Pike, E. R.; Bertero, M.; De Mol, C.) The use of singular systems and other inversion methods in weighted  $L^2$ -spaces. *Mathematics in signal processing (Bath, 1985)*, 167–179, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see **89b:94004**) 94A12
- Degano, Pierpaolo** (with Marchetti, Sergio) Partial ordering models for concurrency can be defined operationally. *Internat. J. Parallel Programming* 16 (1987), no. 6, 451–478. (W. Kwasowicz) **89m:68085** 68Q55 (68Q10)
- (with Montanari, Ugo) A model for distributed systems based on graph rewriting. *J. Assoc. Comput. Mach.* 34 (1987), no. 2, 411–449. (Ryszard Janicki) **89a:68064** 68Q10 (68R10)
- (with Montanari, Ugo) Concurrent histories: a basis for observing distributed systems. *J. Comput. System Sci.* 34 (1987), no. 2–3, 422–461. (Ryszard Janicki) **89a:68148** 68Q55 (68Q10)
- Degasperis, A.** Bäcklund transformations associated with a Riemann-Hilbert spectral problem. *Some topics on inverse problems (Montpellier, 1987)*, 12–22, *World Sci. Publishing, Singapore*, 1988. (An Sheng Cheng) **89m:35014** 35A30 (35Q20, 58G37)
- Degel, Bernhard** Kettenbrüche in imaginärquadratischen Zahlkörpern mit Klassenzahl 1. [Continued fractions in imaginary quadratic number fields with class number 1] *Arch. Math. (Basel)* 48 (1987), no. 3, 232–240. (Johannes Buchmann) **89a:11112** 11R27 (11J70)
- Degergie, Serge** Fonction d'autocorrélation partielle canonique d'un processus vectoriel stationnaire. (English summary) [Canonical partial autocorrelation function for a multivariate stationary time series] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 5, 287–290. (Summary) **89a:60103** 60G10 (62M10)
- Degermendzhii, A. G.** (with Adamovich, V. A.; Terskov, I. A.) The effect of growth controlling factor autostabilization and of interaction in a community. (Russian) *Dokl. Akad. Nauk SSSR* 295 (1987), no. 5, 1236–1239. (From the text) **89i:92050** 92A17
- De Ghellinck, G.** see **Ghellinck, G.**
- De Giorgi, Ennio** (with Forti, Marco) A framing theory for the foundations of mathematics. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 79 (1985), no. 5, 55–67 (1986). (N. C. A. da Costa) **89g:03069** 03E30
- (with Dal Maso, Gianni; Modica, Luciano) Weak convergence of measures on spaces of semicontinuous functions. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 79 (1985), no. 5, 98–106 (1986). (Richard A. Alb) **89g:28008** 28A33 (46E27, 49A50)
- (with Forti, Marco; Tortorelli, Vincenzo M.) On the problem of self-reference. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 80 (1986), no. 6, 363–372 (1987). (Summary) **89m:03046** 03E70 (03A05)
- (with Dal Maso, Gianni; Modica, Luciano) Weak convergence of measures on spaces of lower semicontinuous functions. Proceedings of the International Workshop on Integral Functionals in the Calculus of Variations (Trieste, 1985). *Rend. Circ. Mat. Palermo (2) Suppl. No. 15* (1987), 59–100. (C. Vinti) **89i:46028** 46E27 (28C99, 49A50)
- Degiovanni, Alain** (with Moyne, Christian; Saint Jean Paulin, Jeannine; Taous, Khalid) Conductivité thermique effective d'un milieu poreux en présence d'évaporation-condensation. (English summary) [Effective thermal conductivity of a porous medium in the presence of evaporation-condensation] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers Sci. Terre* 307 (1988), no. 18, 1845–1850. (Summary) **89k:80014** 80A20 (35Q20, 76S05)
- De Giovanni, Francesco** see **de Giovanni, Francesco**
- Degiovanni, Marco** (with Marino, Antonio) Critical points and operators with lack of monotonicity. *Ennio De Giorgi colloquium (Paris, 1983)*, 98–113, *Res. Notes in Math.*, 125, Pitman, Boston, MA-London, 1985. (Pavel Drábek) **89a:47088** 47H15 (34G20, 58E30)
- (with Giannoni, Fabio; Marino, Antonio) Periodic solutions of dynamical systems with Newtonian type potentials. *Periodic solutions of Hamiltonian systems and related topics (Il Ciocco, 1986)*, 111–115, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 209, Reidel, Dordrecht-Boston, MA, 1987. (Summary) **89a:58094** 58F22 (34C25, 58E05, 58F05)
- De Glas, Michel** see **Glas, Michel**
- Degn, H.** Perturbations of next-period functions: applications to circadian rhythms. *From chemical to biological organization*, 282–287, *Springer Ser. Synergetics*, 39, Springer, Berlin-New York, 1988. (see **89g:29002**) 92A09
- De Goede, E. D.** see **Goede, E. D.**
- Degoli, Lando** On Fermat's principle of "infinite descent". (Italian) With an English translation. *Internat. Logic Rev. No. 33–34* (1986), 39–47. (L. Beran) **89h:11013** 11D41
- On the characteristic of the Jacobian of irreducible linear systems of quadrics. (Italian. English summary) *Ann. Sci. Univ. Clermont-Ferrand II Math. No. 24* (1987), 65–79. (Jean D'Almeida) **89k:14092** 14N05 (14C20)
- On Segre varieties, the bases of linear systems of quadrics. (Romanian) *Mathematica (Cluj)* 29(52) (1987), no. 1, 19–24. (Sebastia Xambó Descamps) **89g:14040** 14N05 (14M12)
- Sur le rang de la jacobienne des systèmes linéaires de quadriques. (English summary) [On the rank of the Jacobian of linear systems of quadrics] *Proc. Indian Acad. Sci. Math. Sci.* 96 (1987), no. 1, 49–59. (Sebastia Xambó Descamps) **89f:14057** 14N05
- Un théorème sur les systèmes linéaires irréductibles de quadriques. (English and Serbo-Croatian summaries) [A theorem on irreducible linear systems of quadrics] *Rad Jugoslav. Akad. Znan. Umjet. No. 428* (1987), 1–11. (P. Abellanas) **89j:14031** 14N05 (14C20)
- Sur une application du déterminant. (English and Serbo-Croatian summaries) [On an application of the determinant] *Rad. Mat.* 3 (1987), no. 2, 185–201. (D. Gallarati) **89h:51029** 51N15 (15A15)
- On the rank of the Jacobian of linear systems of quadrics. (Italian) *Rev. Roumaine Math. Pures Appl.* 32 (1987), no. 8, 677–686. (P. Abellanas) **89h:14069** 14N05
- The base varieties of linear systems of quadrics. (Italian. English summary) *Riv. Mat. Univ. Parma (4)* 13 (1987), 161–173 (1988). (P. Abellanas) **89k:14006** 14C20 (51N35)
- Determination of the bases of linear systems of quadrics. (Italian. English summary) *Atti Sem. Mat. Fis. Univ. Modena* 36 (1988), no. 1, 7–22. (D. Gallarati) **89i:14044** 14N05 (14C20)
- Sur les transformations ponctuelles associées à un espace de Riemann. [Point transformations associated with a Riemannian space] *Serdica* 14 (1988), no. 3, 264–270. (Y. Mutô) **89i:53019** 53B20 (53C42)
- Degond, P.** (with Batt, J.; Berestycki, Henri; Perthame, Benoît) Some families of solutions of the Vlasov-Poisson system. *Arch. Rational Mech. Anal.* 104 (1988), no. 1, 79–103. (John Adam) **89j:35112** 35Q20 (45K05, 82A45, 85A05)
- De Gooijer, Jan G.** see **de Gooijer, Jan G.**
- De Graaf, J. M.** see **Graaf, J. M.**
- De Graaf, Jan** see **Graaf, Jan**
- De Grande-De Kimpe, N.** Spaces of countable type. *Proceedings of the conference on p-adic analysis (Houthalen, 1987)*, 45–57, *Vrije Univ. Brussel, Brussels*, 1986. (Dinamérico P. Pombro, Jr.) **89d:46077** 46P05
- De Gregoria, Anthony J.** (with Schwartz, Leonard W.) Two-phase flow in Hele-Shaw cells: numerical studies of sweep efficiency in a five-spot pattern. *J. Austral. Math. Soc. Ser. B* 29 (1988), no. 4, 375–400. (Summary) **89g:76109** 76T05 (76E99)
- De Gregorio, S.** (with Ardito, A.; Lamberti, L.; Ricciardi, P.) Dynamics of a lake ecosystem. *Biomathematics and related computational problems (Naples, 1987)*, 111–119, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89i:92051** 92A17
- De Groen, Pieter P. N.** see **de Groen, Pieter P. N.**
- De Groot, Joost** see **Groot, Joost**
- De Groot, M.** see **Groot, M.**
- DeGroot, Morris H.** (with Fienberg, Stephen E.) Comparing probability forecasters: basic binary concepts and multivariate extensions. *Bayesian inference and decision techniques*, 247–264, *Stud. Bayesian Econometrics Statist.*, 6, North-Holland, Amsterdam-New York, 1986. (D. V. Lindley) **89a:62018** 62B15 (62P99)
- (with Chen, Wen Chen) Optimal search for new types. *Bayesian inference and decision techniques*, 443–458, *Stud. Bayesian Econometrics Statist.*, 6, North-Holland, Amsterdam-New York, 1986. (Chandra M. Gulati) **89e:62109** 62L15 (62C10)
- (with Cyert, Richard M.) ★ Bayesian analysis and uncertainty in economic theory. *Rowman & Littlefield Probability and Statistics Series. Rowman & Littlefield, Publishers, Totowa, NJ*, 1987. xvi+206 pp. ISBN 0-8476-7471-1 (Manfred Kraft) **89a:90003** 90A05 (62C10)

- (with Bayarri, M. J.) Information in selection models. *Probability and Bayesian statistics* (Innsbruck, 1986), 39–51, Plenum, New York-London, 1987. (Summary) **89a:62016** 62B10 (62B05)
- (with Bayarri, M. J.; Kadane, Joseph B.) What is the likelihood function? With discussion by Mark Berliner [L. Mark Berliner] and R. W. Butler and a reply by the authors. *Statistical decision theory and related topics, IV, Vol. 1* (West Lafayette, Ind., 1986), 3–27, Springer, New York-Berlin, 1988. (Title) **89a:62005** 62A10
- A Bayesian view of assessing uncertainty and comparing expert opinion. Assessing uncertainty. *J. Statist. Plann. Inference* **20** (1988), no. 3, 295–306. (see **89g:62008**) 62A15
- De Gruttola, V.** (with Ware, James H.; Louis, Thomas A.) Influence analysis of generalized least squares estimators. *J. Amer. Statist. Assoc.* **82** (1987), no. 399, 911–917. (Summary) **89g:62100** 62J05 (62F35)
- (with Lagakos, S. W.; Barraj, L. M.) Nonparametric analysis of truncated survival data, with applications to AIDS. *Biometrika* **75** (1988), no. 3, 515–523. (Summary) **89i:62175** 62P10 (62G05)
- Dejter, A. N.** Complexity of theories of propositional logic. (Russian) *Some problems in differential equations and discrete mathematics* (Russian), 3–11, Novosibirsk. Gos. Univ., Novosibirsk, 1986. (Marat M. Arslanov) **89h:03072** 03D30 (03B05)
- Computable numerations to which noncomputable numerations are positively reducible. (Russian) *Mat. Zametki* **42** (1987), no. 5, 723–728, 763. (Summary) **89a:03083** 03D45
- Dejtyar, V. U.** (with Safonov, I. V.) An evolutionary mechanism for the resolution of conflicts. (Russian. English summary) *Kibernetika* (Kiev) **1988**, no. 1, 90–98, 135; translated in *Cybernetics* **24** (1988), no. 1, 114–124. (Summary) **89j:92070** 92A18 (90D10, 90D40, 92A12)
- Dejtyar, A. I.** (with Voronkov, A. A.) Automatic theorem proving. II. (Russian. English summary) *Kibernetika* (Kiev) **1987**, no. 4, 88–95, 108, 136. (Introduction) **89k:68136** 68T15 (03B35)
- Dejtyarev, L. M.** (with Drozdov, V. V.; Poshekhonov, Yu. Yu.) A three-dimensional problem of magnetohydrodynamic equilibrium: possible scalar formulations. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 102, 23 pp. (Summary) **89a:76055** 76W05 (76-08, 82A45)
- (with Drozdov, V. V.; Poshekhonov, Yu. Yu.) A discrete model of the three-dimensional magnetohydrodynamic equilibrium of a plasma on arbitrary curvilinear grids. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 137, 20 pp. (Summary) **89a:76056** 76W05 (65P03, 82A45)
- Dejtyar, V. G.** (with Dodonov, N. Yu.; Tertychnyi, V. Yu.; Shishkovskii, S. Yu.) Asymptotic analysis of stochastic oscillating motion of a rigid body. (Russian) *Proceedings of the Eleventh International Conference on Nonlinear Oscillations* (Budapest, 1987), 369–372, *János Bolyai Math. Soc., Budapest*, 1987. (From the text) **89c:70054** 70K40 (70E99)
- Deguchi, Shinichi** (with Naka, Shigefumi) Planck mass problem in the Kaluza-Klein theory with a supersymmetric extra space. II. Case of spinor fields. *Progr. Theoret. Phys.* **79** (1988), no. 1, 209–216; reprinted in *Soviet Math. Dokl.* **37** (1988), no. 2, 526–528. (Summary) **89c:81084** 81E20 (83E15)
- A nonlinear realisation of local internal supersymmetry. *J. Phys. A* **22** (1989), no. 2, 227–240. (Summary) **89k:81075** 81E13
- Deguchi, Tetsuo** (with Akutsu, Yasuhiro; Wadati, Miki) Exactly solvable models and new link polynomials. II. Link polynomials for closed 3-braids. *J. Phys. Soc. Japan* **56** (1987), no. 10, 3464–3479. (Louis H. Kauffman) **89g:20086** 82A69 (57M25)
- (with Akutsu, Yasuhiro; Wadati, Miki) Exactly solvable models and new link polynomials. III. Two-variable topological invariants. *J. Phys. Soc. Japan* **57** (1988), no. 3, 757–776. (Louis H. Kauffman) **89j:20082** 82A69 (57M25)
- De Gunst, M. C. M.** see **Gunst, M. C. M.**
- De Guzman, G. C.** see **Guzman, G. C.**
- De Haan, L.** see **Haan, L.**
- Dehay, D.** (with Moché, R.) Strongly harmonizing operators and strongly harmonizable approximations of continuous random fields on LCA groups. *Stochastic Process. Appl.* **29** (1988), no. 1, 129–139. (H. Heyer) **89j:60014** 60B15 (43A25, 60G60)
- Deheri, G. M.** (with Kamthan, P. K.) Addendum: "Extended classes of analytic functions of several variables" [Libertas Math. **4** (1984), 21–59; MR 86m:46025]. *Libertas Math.* **8** (1988), 135–139. (From the introduction) **89j:46024** 46E10 (32A15, 32E25)
- Dehesa, J. S.** (with Galvez, F. J.) On two sets of orthogonal polynomial systems encountered in nonlinear physics. *J. Phys. A* **20** (1987), no. 16, 5489–5495. (W. A. Al-Salam) **89f:33017** 33A65
- see also **Orthogonal polynomials and their applications**, **89f:00027**
- Dehevels, Paul** (with Erdős, Paul; Grill, K.; Révész, P.) Many heads in a short block. *Mathematical statistics and probability theory, Vol. A* (Bad Tatzmannsdorf, 1986), 53–67, Reidel, Dordrecht-Boston, MA-London, 1987. (J. Steinbach (Zbl 632:60027)) **89c:60073** 60F15 (60F10)
- (with Révész, P.) Weak laws for the increments of Wiener processes, Brownian bridges, empirical processes and partial sums of i.i.d. r.v.'s. *Mathematical statistics and probability theory, Vol. A* (Bad Tatzmannsdorf, 1986), 69–88, Reidel, Dordrecht-Boston, MA-London, 1987. (J. Steinbach) **89a:60057** 60F05 (60F17, 60J65, 62E20)
- (with Csörgő, Miklós; Horváth, Lajos) An approximation of stopped sums with applications in queueing theory. *Adv. in Appl. Probab.* **19** (1987), no. 3, 674–690. (Walter A. Rosenkrantz) **89c:60045** 60F17 (60K25)
- (with Mason, David M.) The asymptotic behavior of sums of exponential extreme values. (French summary) *Bull. Sci. Math.* (2) **112** (1988), no. 2, 211–233. (Slobodanka Janković) **89k:60040** 60F15 (62G30)
- (with Einmahl, John H. J.; Mason, David M.; Ruymgaart, Frits H.) The almost sure behavior of maximal and minimal multivariate  $k_n$ -spacings. *J. Multivariate Anal.* **24** (1988), no. 1, 155–176. (Luc P. Devroye) **89a:60078** 60F15
- (with Pfeifer, D.) Poisson approximations of multinomial distributions and point processes. *J. Multivariate Anal.* **25** (1988), no. 1, 65–89. (Andrew D. Barbour) **89d:60063** 60F17 (60G50)
- (with Haeusler, Erich; Mason, David M.) Almost sure convergence of the Hill estimator. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 2, 371–381. (M. D. Burke) **89i:62043** 62F12
- Strong approximations of  $k$ th records and  $k$ th record times by Wiener processes. *Probab. Theory Related Fields* **77** (1988), no. 2, 195–209. (P. Révész) **89b:60086** 60F17 (60F15, 60J65, 62G99)
- (with Steinebach, Josef) Limit laws for the modulus of continuity of the partial sum process and for the Shepp statistic. *Stochastic Process. Appl.* **29** (1988), no. 2, 223–245. (P. Révész) **89i:60066** 60F15 (60G50)
- Dehez, Pierre** (with Fitoussi, Jean-Paul) Equilibres de stagnation et indexation des salaires. [Stagflation equilibria and indexation of salaries] With comments by Jean-Pascal Benassy. *Macrodynamique et déséquilibres*, 163–184, *Économica*, Paris, 1987. (see **89d:90065**) 90A17 (90A12, 90A14)
- Dehin, D.** Constrained Lagrangians in  $N = 2$ -superspace formulations for the constant magnetic field system. *Group theoretical methods in physics* (Varna, 1987), 142–148, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (see **89g:81001**) 81C99 (81G10)
- A remark on symmetries and  $R$ -separability for the constant magnetic field system. (French summary) *Bull. Soc. Roy. Sci. Liège* **57** (1988), no. 1–2, 79–85. (Summary) **89d:81019** 81C05
- (with Beckers, J.; Hussin, V.) On the Heisenberg and orthosymplectic superalgebras of the harmonic oscillator. *J. Math. Phys.* **29** (1988), no. 7, 1705–1711. (Qi Zhi Han) **89m:17002** 17A70 (58F35, 81C40)
- (with Beckers, J.; Hussin, V.) Dynamical and kinematical supersymmetries of the quantum harmonic oscillator and the motion in a constant magnetic field. *J. Phys. A* **21** (1988), no. 3, 651–667. (A. I. Pashnev) **89k:81043** 81C40 (17B70)
- kazemi-Dehkordi, M. A.** see **Kazemi-Dehkordi, M. A.**
- Dehling, Herold** Almost sure approximations for  $U$ -statistics. *Dependence in probability and statistics* (Oberwolfach, 1985), 119–135, *Progr. Probab. Statist.*, 11, Birkhäuser Boston, Boston, MA, 1986. (Endre Csáki) **89a:60087** 60F17 (60F15)
- Dehman, B.** (with Bahouri, H.) Propagation du front d'onde  $C^p$  pour des équations non linéaires. [Propagation of the  $C^p$  wave front for nonlinear equations] *J. Math. Pures Appl.* (9) **67** (1988), no. 2, 115–130. (Peter R. Popivanov) **89i:35138** 35S99 (35A27, 35L60, 35L67)
- Dehne, Frank** (with Stojmenović, I.) An  $O(\sqrt{n})$  time algorithm for the ECDF searching problem for arbitrary dimensions on a mesh-of-processors. *Inform. Process. Lett.* **28** (1988), no. 6, 67–70. (Eric Cornet) **89c:68010** 68P10 (68Q10, 68U05)
- Dehnen, H.** (with Rose, B.; Rahmstorf, S.) Propagation of self-gravitating density waves in the De Donder gauge on a gravitational background field. *Gen. Relativity Gravitation* **20** (1988), no. 11, 1193–1201. (Carl Brans) **89m:83031** 83C25 (83C20, 83C55)
- Dehnardt, Knut** (with Harborth, Heiko) Universal tilings of the plane by 0-1-matrices. Proceedings of the Oberwolfach Meeting "Kombinatorik" (1986). *Discrete Math.* **73** (1989), no. 1–2, 65–70. (C. R. J. Clapham) **89m:05040** 05B45 (52A45)
- De Honnecourt, Villard** see **Honnecourt, Villard**
- De Hoog, F.** see **de Hoog, F.**
- De Hoop, Adrianus T.** see **de Hoop, Adrianus T.**
- Dehornoy, Patrick** Détermination  $II_1^+$  et  $II_1^-$ . [ $II_1^+$  and  $II_1^-$  determinacy] *Séminaire Général de Logique* 1983–1984 (Paris, 1983–1984), 89–101, *Publ. Math. Univ. Paris VII*, 27, Univ. Paris VII, Paris, 1986. (Yutaka Yasuda) **89c:03083** 03E15 (03E60)
- $II_1^+$ -complete families of elementary sequences. *Ann. Pure Appl. Logic* **38** (1988), no. 3, 257–287. (David E. Marker) **89i:03071** 03C62 (03E15)
- Algebraic properties of the shift mapping. *Proc. Amer. Math. Soc.* **106** (1989), no. 3, 617–623. (Irvin Roy Hentzel) **89k:17006** 17A30 (03E55, 17A50)
- Deich, V. G.** Controllers with optimal structure in systems with lumped and distributed parameters. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 9, 66–75; translated in *Avtomat. Remote Control* **49** (1988), no. 9, part 1, 1161–1168. (Russell D. Rupp) **89j:93045** 93B50 (34K35, 93C15, 93C20, 93D15)
- Deift, Percy** (with Beals, Richard; Tomei, Carlos) Inverse scattering for selfadjoint  $n$ th order differential operators on the line. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 26–38, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Basudeb Ray Paladhi) **89b:34056** 34B25 (34A55, 35Q20, 47E05)
- Deimling, Klaus** Multivalued differential equations on closed sets. *Differential Integral Equations* **1** (1988), no. 1, 23–30. (S. Raczynski) **89d:34024** 34A60 (34G20, 47H15, 49A50)
- Positive fixed points of weakly inward maps. *Nonlinear Anal.* **12** (1988), no. 3, 223–226. (Dang Dinh Ang) **89b:47077** 47H10
- (with Hu, Shou Chuan) Fixed points of weakly inward maps in conical shells. *Nonlinear Anal.* **12** (1988), no. 3, 227–230. (Xie Ping Ding) **89b:47121** 47H10
- Extremal solutions of multivalued differential equations. *Resulante Math.* **14** (1988), no. 1–2, 38–47. (G. Anichini) **89g:34018** 34A60 (49A50)
- Deineka, V. S.** (with Skopetskii, V. V.; Rybachishin, S. I.) Numerical solution of a problem of pressureless filtration based on the discretization of a variational inequality. (Russian) *Vychisl. Prikl. Mat.* (Kiev) No. 58 (1986), 45–56, 130. (Summary) **89a:65192** 65P05 (76S05)
- (with Lyashko, I. I.; Skopetskii, V. V.) Choice of the iterative parameter for some two-layer iterative processes used in the numerical solution of problems of pressure-free filtration. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 9(43) (1988), 51–56, 86. (Summary) **89c:76077** 76S05 (76-08)
- Deineka, V. G.** A recursive algorithm for the solution of the traveling salesman problem. (Russian) *Methods for solving nonlinear problems, and data processing* (Russian), 30–32, 105–106, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1986. (see **89f:00011**) 90B10 (68Q25, 90C35)
- Deistler, Manfred** Identifiability and causality in linear dynamic errors-in-variables systems. *Asymptotic theory for non i.i.d. processes* (Luminy-Marseille, 1984), 145–154, *Travaux Rech.*, 8, *Publ. Fac. Univ. Saint-Louis*, Brussels, 1986. (G. Banon) **89f:93041** 93E12 (93B15)
- (with Hannan, E. J.) ★ The statistical theory of linear systems. *Wiley Series in Probability and Mathematical Statistics: Probability and Mathematical Statistics*. John Wiley & Sons, Inc., New York, 1988. xvi+380 pp. ISBN 0-471-80777-X (J. Bokor) **89m:60085** 60G10 (62Mxx, 93-02, 93B15, 93C05, 93C35, 93E12)
- (with Gevers, M.) Properties of the parametrization of monic ARMA systems. *Automatica—J. IFAC* **25** (1989), no. 1, 87–95. (Not in MR) 93E12
- Deivison, M.** see **Davison, Mark L.**
- De Jager, P.** see **de Jager, P.**
- DeJesús, Edmund X.** (with Kaufman, C.) Routh-Hurwitz criterion in the examination of eigenvalues of a system of nonlinear ordinary differential equations. *Phys. Rev. A* (3) **35**



- (1987), no. 12, 5288-5290. (Sui Sun Cheng) **89c:34051** 34D20 (34B25)
- De Jong, Piet** *see de Jong, Piet*
- De Jong, T. J.** *see de Jong, T. J.*
- De Jonge, Wiebren** *see de Jonge, Wiebren*
- De Jongh, Dick H. J.** *see de Jongh, Dick H. J.*
- De Jongh, P. J.** *see de Jongh, P. J.*
- Dejonghe, Herwig** (with de Zeeuw, Tim) Analytic axisymmetric galaxy models with three integrals of motion. *Astrophys. J.* 333 (1988), no. 1, part 1, 90-129. (Summary) **89m:85005** 85A05
- Dejter, I. J.** (with Quintana, J. A.) Long cycles in revolving door graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 60 (1987), 163-168. (Joseph B. Klerlein) **89d:05118** 05C38 (05C45)
- Minimal Hamiltonian and non-Hamiltonian covering graphs of  $K_n$ . Eleventh British Combinatorial Conference (London, 1987). *Discrete Math.* 63 (1988), 63-71. (Aldo G. S. Ventre) **89j:05049** 05C45 (05C70)
- Dekart, René** *see Descartes, René*
- Dekel, Eddie** (with Brandenburger, Adam) Rationalizability and correlated equilibria. *Econometrica* 55 (1987), no. 6, 1391-1402. (O. A. Malafeev) **89c:90114** 90D10
- (with Brandenburger, Adam) Common knowledge with probability 1. *J. Math. Econom.* 16 (1987), no. 3, 237-245. (Erwin Klein) **89a:90187** 90D40 (90A05)
- Asset demands without the independence axiom. *Econometrica* 57 (1989), no. 1, 163-169. (Summary) **89m:90014** 90A09
- De Kepper, P.** (with Boissonaud, J.) From bistability to sustained oscillations in homogeneous chemical systems in flow reactor mode. (Russian) *Oscillations and traveling waves in chemical systems (Russian)*, 249-284, "Mir", Moscow, 1988. (see **89f:92003**) 92A40 (58F14)
- De Kerf, E. A.** *see de Kerf, E. A.*
- Deksel, Michel** (with Devijver, Pierre A.) Experiments with an adaptive hidden Markov mesh image model. *Philips J. Res.* 43 (1988), no. 3-4, 375-392. (Not in MR) **88T10**
- (with Devijver, Pierre A.) Champs aléatoires de Pickard et modélisation d'images digitales. (English summary) [Digital image modeling using Pickard random fields] *Traitement Signal* 5 (1988), no. 5, 131-150. (Not in MR) **88U10** (60G60)
- De Keyser, R. M. C.** (with Van de Velde, Ph. G. A.; Dumortier, F. A. G.) A comparative study of self-adaptive long-range predictive control methods. *Automatica—J. IFAC* 24 (1988), no. 2, 149-163. (Not in MR) **93C40**
- Dekhtonboev, N. I.** (with Radzhabov, N. R.) Representation of the manifold of solutions in the form of series and investigation of boundary value problems for second-order equations of hyperbolic type with a singular line. (Russian. Tajiki summary) *Izv. Akad. Nauk Tadzhik. SSR Otdel. Fiz.-Mat. Khim. i Geol. Nauk* 1987, no. 1(103), 14-21. (A. Haimovici) **89b:35224** 35L80 (35C10, 35L10)
- Dekhtyar, M. L.** (with Dyadyusha, Georgii G.; Kornilov, Mikhail Yu.) Inverse adjacency matrix and spectral properties of chemical graphs. *Match No.* 23 (1988), 51-63. (Summary) **89k:92009** 92A40 (05C50)
- Dekhtyarenko, V. A.** (with Vakunova, L. P.; Zlotnik, E. M.) The method of generation and multicriterial estimation of the structures of microprocessor systems. (Russian) *Decision-making methods and systems. Applied problems in the analysis of solutions in technical systems (Russian)*, 78-85, 149, Rishsk. Politekh. Inst., Riga, 1986. (see **89h:60001**) 68M99
- de grande-De Kimpse, N.** *see De Grande-De Kimpse, N.*
- Dekker, H.** Quantum mechanical barrier problems. I. Coherence and tunnelling in asymmetric potentials. *Phys. A* 146 (1987), no. 3, 375-386. (Tuan W. Chen) **89g:81011** 81C05 (81C15)
- Quantum mechanical barrier problems. II. Dissipative tunnelling at finite temperatures for the unbiased oscillator. *Phys. A* 146 (1987), no. 3, 387-395. (Tuan W. Chen) **89g:81012** 81C05 (81C15)
- Quantum mechanical barrier problems. III. Dissipative tunnelling at finite temperatures for the weakly biased oscillator. *Phys. A* 146 (1987), no. 3, 396-403. (Tuan W. Chen) **89g:81013** 81C05 (81C15)
- Dynamics of the dissipative two-state system. *Mark Kac Seminar on Probability and Physics. Syllabus 1985-1987 (Amsterdam, 1985-1987)*, 147-152, CWI Syllabi, 17, Math. Centrum, Centrum Wisk. Inform., Amsterdam, 1988. (see **89e:60005**) 81C05
- Dekker, K.** (with Liu, M. Z.; Spijker, M. N.) Suitability of Runge-Kutta methods. Proceedings of the 2nd international conference on computational and applied mathematics (Leuven, 1986). *J. Comput. Appl. Math.* 20 (1987), Special Issue, 307-315. (A. Cotju) **89a:65109** 65L05
- (with Verwer, Jan G.) ★ Устойчивость методов Рунге-Кутты для жестких нелинейных дифференциальных уравнений. (Russian) [Stability of Runge-Kutta methods for stiff nonlinear differential equations] Translated from the English by A. Yu. Zakharov, I. A. Kufchitskaya and S. S. Filippov. Translation edited and with a preface by A. A. Samarskii. "Mir", Moscow, 1988. 334 pp. (Editors) **89c:65001** 65-02 (65L05)
- Dekker, Rommert** Counterexamples for compact action Markov decision chains with average reward criteria. *Comm. Statist. Stochastic Models* 3 (1987), no. 3, 357-368. (Aleksandr A. Yushkevich) **89g:90230** 90C40 (93E20)
- (with Hordijk, Arie) Average, sensitive and Blackwell optimal policies in denumerable Markov decision chains with unbounded rewards. *Math. Oper. Res.* 13 (1988), no. 3, 395-420. (Masami Kurano) **89k:90173** 90C40
- Dekker, Th. J.** *see Algorithms and applications on vector and parallel computers*, **89f:65002**
- Dekkers, Wil** Reducibility of types in typed lambda calculus. Comment on: "On the existence of closed terms in the typed  $\lambda$ -calculus, I" [in *To H. B. Curry: essays on combinatory logic, lambda calculus and formalism*, 511-534, Academic Press, London, 1980; MR 82m:03014a] by R. Statman. *Inform. and Comput.* 77 (1988), no. 2, 131-137. (J. P. Seldin) **89h:03021** 03B40 (68Q25)
- Dekking, F. M.** On the survival probability of a branching process in a finite state i.i.d. environment. *Stochastic Process. Appl.* 27 (1987), no. 1, 151-157. (Martin I. Goldstein) **89b:60197** 60J80
- (with Grimmett, G. R.) Superbranching processes and projections of random Cantor sets. *Probab. Theory Related Fields* 78 (1988), no. 3, 335-355. (J. D. Biggins) **89f:60099** 60J80 (60G99)
- De Klerk, J. H.** Solutions of integral equations via  $L_1$ -approximations. *Internat. J. Control* 48 (1988), no. 5, 2121-2128. (Summary) **89j:45009** 45L05 (45B05, 45D05, 65R20)
- De Koninck, J.-M.** (with Galambos, Janos) The intermediate prime divisors of integers. *Proc. Amer. Math. Soc.* 101 (1987), no. 2, 213-216. (Hedi Daboussi) **89c:11127** 11K99
- (with Galambos, Janos) Some randomly selected arithmetical sums. *Acta Math. Hungar.* 52 (1988), no. 1-2, 37-43. (Z. Krizhyus) **89k:11068** 11K65 (11N37)
- (with Sitaramachandra Rao, R.) Sums involving the largest prime divisor of an integer. II. *Indian J. Pure Appl. Math.* 19 (1988), no. 10, 990-1004. (W. Narkiewicz) **89m:11090** 11N37 (11N25)
- De Koning, W. L.** *see de Koning, W. L.*
- De Korvin, A.** *see de Korvin, A.*
- De Kosinsky, V.** *see de Kosinsky, V.*
- De Koster, M. B. M.** *see de Koster, M. B. M.*
- Dekov, Delo V.** Problèmes universels relatifs aux classes polaires. [Universal problems involving polar classes] *Serdica* 14 (1988), no. 3, 223-233. (Kimmo I. Rosenthal) **89m:18008** 18B99 (05C20)
- Dekret, Anton** On quasiregular connections. *Differential geometry and its applications, communications (Brno, 1986)*, 91-100, Univ. J. E. Purkyně, Brno, 1987. (V. Cruceanu) **89f:53043** 53C05 (58A20)
- On connections on the second iterated tangent bundle. *Arch. Math. (Brno)* 23 (1987), no. 4, 215-230. (J. J. Etayo) **89d:53059** 53C05 (58A20)
- Dekster, B. V.** Differential properties of absolutely continuous functions. *Real Anal. Exchange* 13 (1987/88), no. 1, 184-193. (D. K. Dutta) **89a:26004** 26A24 (26A46)
- (with Wilker, J. B.) On almost regular simplexes. *Proceedings of the Congress of Geometry (Thessaloniki, 1987)*, 20-26, Aristotle Univ. Thessaloniki, Thessaloniki, 1988. (A. Florian) **89f:52025** 52A40 (51M20, 52A25)
- Borsuk's covering for blunt bodies. *Arch. Math. (Basel)* 51 (1988), no. 1, 87-91. (A. Florian) **89k:52015** 52A45
- Dektyarev, I. M.** Capacity and defect divisors. (Russian) *Funktsional. Anal. i Prilozhen.* 22 (1988), no. 1, 64-65; translated in *Functional Anal. Appl.* 22 (1988), no. 1, 53-54. (Alexander A. Pankov) **89g:32036** 32H30
- blasco De La Cruz, Oscar** *see Blasco De La Cruz, Oscar*
- De la Fuente, Pere** *see de la Fuente, Pere*
- De la Harpe, Pierre** *see de la Harpe, Pierre*
- Delahaye, Jean-Paul** ★ Sequence transformations. With an introduction by Claude Brezinski. Springer Series in Computational Mathematics, 11. Springer-Verlag, Berlin-New York, 1988. xxii+252 pp. ISBN 3-540-15283-0 (S. Hitotumatu) **89i:65003** 65Bxx (68Q20)
- Sémantique logique et dénotationnelle des interpréteurs PROLOG. (English summary) [Logical and denotational semantics of PROLOG interpreters] *RAIRO Inform. Théor. Appl.* 22 (1988), no. 1, 3-42. (A. Bahamonde) **89c:68077** 68Q55 (03B70, 68T25)
- De la Incera, V.** *see de la Incera, V.*
- Delale, Can F.** (with Clarke, Joseph H.) Expansion flows on walls with nonequilibrium condensation. *Quart. Appl. Math.* 46 (1988), no. 1, 121-143. (Summary) **89e:76056** 76J99 (76J10, 76L05, 80A20)
- De la Llave, Rafael** *see de la Llave, Rafael*
- Delamotte, B.** (with Ouyry, S.) Generalised Fayet-Sohnius hypermultiplet. *Classical Quantum Gravity* 5 (1988), no. 10, 1367-1372. (Not in MR) **81G25** (81E20, 83E)
- Delandtsheer, Anne** Line-primitive groups of small rank. *Discrete Math.* 68 (1988), no. 1, 103-106. (A. R. Camina) **89b:05029** 05B05 (20B15, 20B25)
- (with Buekenhout, F.; Doyen, Jean) Finite linear spaces with flag-transitive groups. *J. Combin. Theory Ser. A* 49 (1988), no. 2, 268-293. (Vikram Jha) **89k:20007** 20B25 (05B25, 51A99, 51E10)
- Delange, Hubert** Une remarque sur la dérivée logarithmique de la fonction zeta de Riemann. [A remark on the logarithmic derivative of the Riemann zeta function] *Colloq. Math.* 53 (1987), no. 2, 333-335. (A. Perelli) **89d:11070** 11M06
- Sur les moments des fonctions additives. [On the moments of additive functions] *Acta Arith.* 49 (1988), no. 3, 213-236. (Antanas Laurinćikas) **89h:11048** 11K65 (11N60)
- (with Balazard, Michel; Nicolas, J.-L.) Sur le nombre de facteurs premiers des entiers. (English summary) [On the number of prime factors of integers] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 13, 511-514. (A. Perelli) **89f:11122** 11N05
- On the real roots of Euler polynomials. *Monatsh. Math.* 106 (1988), no. 2, 115-138. (H. M. Srivastava) **89k:11009** 11B68 (33A70)
- De Lange, O. L.** *see de Lange, O. L.*
- Delanghe, R.** A note on the product of positive operator valued measures. *Bull. Soc. Roy. Sci. Liège* 55 (1986), no. 5-6, 563-567. (Autorreferat (Zbl 617:46047)) **89g:28014** 28B15 (28A35, 46G10)
- (with Van hamme, J.) Generalised spectral measures. *Proc. Roy. Irish Acad. Sect. A* 87 (1987), no. 1, 17-26. (B. Nagy) **89b:47050** 47B40
- (with Bracks, F.; Constaes, Denis; Serras, Herman) Clifford algebra with REDUCE. Proceedings of the Winter School on Geometry and Physics (Snri, 1987). *Rend. Circ. Mat. Palermo (2) Suppl. No.* 16 (1987), 11-19. (Horia Scutaru) **89i:15035** 15A66 (68Q40, 68U30)
- (with Bracks, F.; Van hamme, J.) Generalized inverses of elliptic systems of differential operators with constant coefficients and related REDUCE programs for explicit calculations. Proceedings of the Winter School on Geometry and Physics (Snri, 1987). *Rend. Circ. Mat. Palermo (2) Suppl. No.* 16 (1987), 21-28. (Summary) **89j:35004** 35-04 (35J99)
- *see also* Proceedings: Workshop on Clifford Algebra, Clifford Analysis and their Applications in Mathematical, **89g:15037**
- Delansky, J. F.** (with Bose, N. K.) Real and complex polynomial stability and stability domain construction via network realizability theory. *Internat. J. Control* 48 (1988), no. 3, 1343-1349. (Not in MR) **93D20**
- De la Peña, J. A.** *see de la Peña, J. A.*
- De La Pradelle, A.** *see de La Pradelle, A.*
- anantharaman-Delaroche, Claire** *see Anantharaman-Delaroche, Claire*
- de la Roche, Estienne** *see de la Roche, Estienne*
- De La Salle, S.** (with Grimble, M. J.; Ho, D.) Relationship between internal model control and LQG controller structures. *Automatica—J. IFAC* 25 (1989), no. 1, 41-53. (Summary) **89k:93090** 93B50 (93B35, 93E11)
- De la Sen, Manuel** *see de la Sen, Manuel*

- De las Obras-L. y Nasarre, Ma. Carmen *see* de las Obras-L. y Nasarre, Ma. Carmen
- De la Torre, A. *see* de la Torre, Alberto
- De la Torre, M. *see* de la Torre, M.
- DeLaubenfels, Ralph *see* deLaubenfels, Ralph
- DeLaurentis, J. M. Random functions and their small cycles. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 295-302. (Lyuben R. Mutaftchiev) **89d:60012** 60C05
- Components and cycles of a random function. *Advances in cryptography—CRYPTO '87* (Santa Barbara, CA, 1987), 231-242. *Lecture Notes in Comput. Sci.*, 293, Springer, Berlin-New York, 1988. (see **89b:68005**) 60C05
- Delbaen, F. (with Boogaert, P.; Haczenonck, J.) Limit theorems for the present value of the surplus of an insurance portfolio. *Insurance Math. Econom.* 7 (1988), no. 2, 131-138. (Fl. De Vylder) **89h:62165** 62P05 (60F99, 60G44, 62E20, 90A09)
- Delbourgo, R. (with Henderson, Jenny Aline) The Grassmann Euclidean group  $Sp(2) \wedge T(2)$  and its representations. *J. Phys. A* 20 (1987), no. 3, 529-535. (Lawrence P. Horwitz) **89b:22029** 22E70 (81G20)
- Grassmann wave functions and intrinsic spin. *Internat. J. Modern Phys. A* 3 (1988), no. 3, 591-602. (Anargyros Fellouris) **89k:81058** 81D25
- (with Jarvis, P. D.; Zhang, R. B.; Thompson, George) Gauge fixing of stringlike models via  $OSp(D/2)$ . *Modern Phys. Lett. A* 3 (1988), no. 3, 303-309. (Summary) **89a:81068** 81E13 (81E30)
- (with Zhang, R. B.) Fermionic dimensions and Kaluza-Klein theory. *Phys. Lett. B* 202 (1988), no. 3, 296-300. (Thomas Schücker) **89b:81122** 81E13 (81G20, 83E15)
- (with Zhang, R. B.) Grassmannian Kaluza-Klein theory and the standard model. *Phys. Rev. D* 38 (1988), no. 8, 2490-2497. (Roberto Percacci) **89k:83069** 83E15 (53C80, 81E13, 83E50)
- *see also* Kubo, Jisuke, **89i:81180** and Kosinski, P., **89e:81181**
- Del Centina, Andrea (with Recillas Pishmish, Sevin) On a characterization of elliptic-hyperelliptic curves. *J. Reine Angew. Math.* 380 (1987), 166-170. (James D. Lewis) **89c:14043** 14H40 (14H45)
- Delchambre, M. (with Bastin, H.) Sur la construction de solutions asymptotiques pour des systèmes non linéaires à multi retards. [Constructing asymptotic solutions for nonlinear systems with multiple delays] *Acad. Roy. Belg. Bull. Cl. Sci.* (5) 72 (1986), no. 5-6, 310-320. (B. Choczewski) **89i:34107** 34K25
- Delchamps, David F. New geometric approaches to parameter sensitivity in feedback systems. *Modelling, identification and robust control* (Stockholm, 1985), 445-456, North-Holland, Amsterdam-New York, 1986. (see **89b:93008**) 93B35 (93B27)
- Delcroix, Antoine Quelques propriétés asymptotiques des champs des vecteurs à surface lisse. (English summary) [Some asymptotic properties of vector fields with slow surface] *C. R. Acad. Sci. Paris Sér. I Math.* 308 (1989), no. 1, 15-20. (Jair Koiller) **89m:34065** 34D15 (03H05, 34C30, 34E05)
- Delduc, F. (with Becchi, C.; Blasi, Alberto; Bonneau, Guy; Collina, R.) Renormalizability and infrared finiteness of nonlinear  $\sigma$ -models: a regularization-independent analysis for compact coset spaces. *Comm. Math. Phys.* 120 (1988), no. 1, 121-148. (Olivier Piguet) **89k:81085** 81E15 (58E20, 81E13)
- Del Duca, V. (with Cesare, S.) Tensor algebra for the icosahedral group. *Riv. Nuovo Cimento* (3) 10 (1987), no. 4, 33 pp. (Nigel B. Backhouse) **89b:20041** 20C35 (81C40)
- (with Magnea, L.; van Nieuwenhuizen, P.) Equivalence of the Lagrangian and Hamiltonian BRST charges for the bosonic string in the harmonic and conformal gauges. *Internat. J. Modern Phys. A* 3 (1988), no. 5, 1081-1101. (Summary) **89c:81111** 81E99 (81E30)
- Deledalle, Gérard ★ Charles S. Peirce. (French) Phénoménologie et sémiotique. [Phenomenologist and semiotician] *Foundations of Semiotics*, 14, John Benjamins B.V., Amsterdam, 1987. xii+114 pp. ISBN 90-272-3285-7 (Marcel Guillaume) **89e:01028** 01A55 (03-03, 03A05)
- De Leeuw, Jan *see* de Leeuw, Jan
- Delehaie-Delefosse, M. *see* Pathiaux-Delefosse, M.
- DeLeon, M. J. The congruence equation  $x^2 \equiv a \pmod{m}$ . *Math. Student* 49 (1981), no. 2-4, 122-124 (1985). (From the text) **89h:11003** 11A07
- De León, Manuel *see* de León, Manuel
- DeLeon, Morris Jack Carlitz four-tuples. *Fibonacci Quart.* 26 (1988), no. 3, 224-232. (T. Salát) **89j:11004** 11A07 (11D09)
- De Leone, R. (with Mangasarian, O. L.) Parallel successive overrelaxation methods for symmetric linear complementarity problems and linear programs. *J. Optim. Theory Appl.* 54 (1987), no. 3, 437-446. (S.-C. Fang) **89a:90151** 90C33 (90C05)
- (with Mangasarian, O. L.) Parallel gradient projection successive overrelaxation for symmetric linear complementarity problems and linear programs. *Ann. Oper. Res.* 14 (1988), no. 1-4, 41-59. (Summary) **89i:90089** 90C33 (65K05, 68Q10, 68Q20)
- (with Mangasarian, O. L.) Asynchronous parallel successive overrelaxation for the symmetric linear complementarity problem. *Math. Programming* 42 (1988), no. 2 (Ser. B), 347-361. (Summary) **89k:90158** 90C33 (65K05)
- Delesalle, Dominique Classes de Donsker et fonction d'entropie relatives aux mesures aléatoires. (English summary) [Donsker classes and an entropy function relative to random measures] *Ann. Inst. H. Poincaré Probab. Statist.* 23 (1987), no. 3, 531-559. (R. M. Dudley) **89b:60019** 60B12
- Delest, M.-P. (with Gouyou-Beauchamps, D.; Vauquelin, B.) Enumeration of parallelogram polyominoes with given bond and site perimeter. *Graphs Combin.* 3 (1987), no. 4, 325-339. (Heiko Harborth) **89f:05058** 05B50 (05A15)
- Generating functions for column-convex polyominoes. *J. Combin. Theory Ser. A* 48 (1988), no. 1, 12-31. (Ira Gessel) **89e:05013** 05A15 (05B50, 68Q45, 68R05)
- DeLotto, Denis Toward a historical reading of A. Tarski's "Wahrheitsbegriff". (Italian) *Teoria* 6 (1986), no. 2, 151-170. (E. Mendelson) **89c:03006** 03A05 (01A60, 03-03)
- DeLofosse, Heinrich P. (with Krämer, Berthold; Reinardt, Elfriede) ★ Wolf-index. (German) Stellenindex und Konkordanz zu Christian Wolffs "Deutscher Logik". [Place index and concordance for Christian Wolff's "Deutsche Logik"] *Forschungen und Materialien zur Deutschen Aufklärung. Abteilung III: Indices* (Research and Materials on the German Enlightenment. Division III: Indices), 19. Friedrich Frommann Verlag Günther Holzboog GmbH & Co., Stuttgart, 1987. xlii+630 pp. ISBN 3-7728-0933-2 (Perry Smith) **89g:01066** 01A75 (01A50)
- Delfour, M. C. (with Payre, G.; Zolésio, J.-P.) Approximation of nonlinear problems associated with radiating bodies in space. *SIAM J. Numer. Anal.* 24 (1987), no. 5, 1077-1094. (Summary) **89g:65139** 65N30
- (with Zolésio, J.-P.) Further development in shape sensitivity analysis via penalization method. *Boundary control and boundary variations* (Nice, 1986), 153-191. *Lecture Notes in Comput. Sci.*, 100, Springer, Berlin-New York, 1988. (Jan Sokolowski) **89b:49009** 49A29 (35R35, 49A52, 49D30, 73K40, 90C50, 93B35)
- (with Zolésio, J.-P.) Shape sensitivity analysis via a penalization method. (French summary) *Ann. Mat. Pura Appl.* (4) 151 (1988), 179-212. (Jan Sokolowski) **89k:93071** 93B35 (49A29, 49B22, 49D30)
- (with Zolésio, J.-P.) Shape sensitivity analysis via min max differentiability. *SIAM J. Control Optim.* 26 (1988), no. 4, 834-862. (Jan Sokolowski) **89h:49010** 49A52 (26B05, 35R35, 49A29, 73K40, 90C50, 93B35)
- Delgado, A. E. (with Mira, José; Moreno-Díaz, R.) On cooperative languages for survival and neural decision making. 10<sup>e</sup> Congrès International de Cybernétique (Namur, 1983), 1079-1091. *Assoc. Internat. Cybernet.*, Namur, 1984. (Introduction) **89b:92018** 92A09
- Delgado, Alberto L. Amalgams of type  $F_3$ . *J. Algebra* 117 (1988), no. 1, 149-161. (Gernot Stroth) **89m:20032** 20F05
- Delgado, Juan Ramón (with Martín, J.) The isomorphism problem for torsion-free groups of rank three. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 102-107. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (see **89d:00009**) 20K15
- Delgado, M. (with Verdegay, J. L.; Vila, M. A.) Imprecise costs in mathematical programming problems. (Russian and Polish summaries) *Control Cybernet.* 16 (1987), no. 2, 113-121. (Summary) **89a:90078** 90C05 (90C31)
- (with Moral, S.) A definition of inclusion for evidences. *Fuzzy Math.* 7 (1987), no. 1, 81-87. (Summary) **89m:60009** 03B48, 03E72, 68T99, 90A05
- (with Moral, S.) Reliability concepts under the theory of evidence. *European J. Oper. Res.* 35 (1988), no. 1, 89-97. (F. Breichelt) **89h:90110** 90B25
- (with Verdegay, J. L.; Vila, M. A.) A procedure for ranking fuzzy numbers using fuzzy relations. *Fuzzy Sets and Systems* 26 (1988), no. 1, 49-62. (Summary) **89a:03101** 03E72
- (with Verdegay, J. L.; Vila, M. A.) A general model for fuzzy linear programming. *Fuzzy Sets and Systems* 29 (1989), no. 1, 21-29. (Summary) **89j:90167** 90C05 (03E72)
- Delgado de la Mata, Félix On the irreducible components of the generic polar curve of a plane curve singularity with several branches. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 108-116. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Le Rudolph) **89j:32014** 32B30 (14H20)
- The semigroup of values of a curve singularity with several branches. *Manuscripta Math.* 59 (1987), no. 3, 347-374. (Joan Elias) **89f:14022** 14H20
- Gorenstein curves and symmetry of the semigroup of values. *Manuscripta Math.* 61 (1988), no. 3, 285-296. (Jürgen Herzog) **89h:14024** 14H20 (13H10, 13J10)
- Delgado-Lorenzo, J. R. *see* Delgado, Juan Ramón
- Delgrande, James P. An approach to default reasoning based on a first-order conditional logic: revised report. *Artificial Intelligence* 36 (1988), no. 1, 63-90. (Not in MR) **68T20** (68T05)
- Del Grosso, G. (with Marra, R.) Girsanov and Feynman-Kac formulas in the discrete stochastic mechanics. *Stochastic differential systems* (Bad Honnef, 1985), 163-170. *Lecture Notes in Control and Inform. Sci.*, 78, Springer, Berlin-New York, 1986. (Francesco Guerra) **89b:81051** 81C20 (60H99, 60J99, 81C35)
- Delhaie, F. (with Moons, M.; Depaepe, E.) Elliptical Hill's problem (large and small impact parameters). Long term evolution of planetary systems (Ramsau, 1988). *Celestial Mech.* 43 (1987/88), no. 1-4, 349-359. (Summary) **89m:70015** 70F07
- Deligne, P. (with Husemoller, Dale) Survey of Drinfeld's modules. *Current trends in arithmetic algebraic geometry* (Arcata, Calif., 1985), 25-91. *Contemp. Math.*, 67, Amer. Math. Soc., Providence, RI, 1987. (Glenn Stevens) **89f:11081** 11G20 (11S37, 14G10)
- Le déterminant de la cohomologie. [The determinant of the cohomology] *Current trends in arithmetic algebraic geometry* (Arcata, Calif., 1985), 93-177. *Contemp. Math.*, 67, Amer. Math. Soc., Providence, RI, 1987. (Daniel S. Freed) **89b:32038** 32L10 (11G25, 14F12, 14H99, 32G13, 58G11)
- *see also* Oesterlé, Joseph, **89d:14029**
- De Liguori, N. Operators and observables in stochastic mechanics. (Italian and Russian summaries) *Nuovo Cimento B* (11) 100 (1987), no. 4, 501-514. (Francesco Guerra) **89j:81045** 81C20
- De Lillo, S. (with Calogero, Francesco) The Eckhaus PDE  $i\psi_t + \psi_{xx} + 2(|\psi|^2)_x \psi + |\psi|^4 \psi = 0$ . *Inverse Problems* 3 (1987), no. 4, 633-681. (M. Victor Wickerhauser) **89g:35093a** 35Q20 (35B25)
- Discretization effects on sine-Gordon solitons. (Italian and Russian summaries) *Nuovo Cimento B* (11) 100 (1987), no. 1, 105-120. (Summary) **89b:35143** 35Q20
- (with Calogero, Francesco) Corrigendum: "The Eckhaus PDE  $i\psi_t + \psi_{xx} + 2(|\psi|^2)_x \psi + |\psi|^4 \psi = 0$ ". *Inverse Problems* 4 (1988), no. 2, 571. (M. Victor Wickerhauser) **89g:35093b** 35Q20 (35B25)
- *see also* Kundu, A., **89g:35093c**
- De Lima, J. A. Sales *see* de Lima, J. A. Sales
- Del Junco, A. *see* del Junco, A.
- Dellacherie, C. Théorie générale du balayage. [General theory of balayage] *Seminar on stochastic processes*, 1983 (Gainesville, Fla., 1983), 39-67. *Progr. Probab. Statist.*, 7, Birkhäuser Boston, Boston, MA, 1984. (Michael Sharpe) **89c:60087** 60J45 (31C15, 60G05)
- (with Meyer, P.-A.) ★ Probabilities and potential. C. Potential theory for discrete and continuous semigroups. Translated from the French by J. Norris. North-Holland Mathematics Studies, 151. North-Holland Publishing Co., Amsterdam-New York, 1988. xiv+416 pp. ISBN 0-444-70386-1 (Editors) **89b:60002** 60-02 (31-02, 31C20, 60J45)
- (with Meyer, P.-A.) Erratum: *Probabilités et potentiel. Chapitres XII-XVI* [Hermann, Paris, 1987; MR 88k:60002]. *Séminaire de Probabilités, XXII*, 600. *Lecture Notes in Math.*, 1321, Springer, Berlin-New York, 1988. (Editors) **89j:60001** 60-02 (31-02, 60J45)
- Dell'Antonio, G. F. Families of periodic solutions near equilibrium. *Periodic solutions of Hamiltonian systems and related topics* (Il Ciocco, 1986), 117-130. *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 209, Reidel, Dordrecht-Boston, MA, 1987. (Michel Willem) **89e:58046** 58F05 (34C25, 58F22)



- (with Nesi, V.) A general representation for the effective dielectric constant of a composite. *J. Math. Phys.* **29** (1988), no. 12, 2688–2694. (W. Th. F. den Hollander) **89c:78031** 78A99 (82A42)
- Della Pietra, Stephen** (with Della Pietra, Vincent; Alvarez-Gaumé, L.) The chiral determinant and the eta invariant. *Comm. Math. Phys.* **109** (1987), no. 4, 691–700. (Akira Asada) **89b:58217** 58G25 (58G10, 81E20)
- (with Blau, Steven K.; Clements, Minot; Carlip, Steven; Della Pietra, Vincent) The string amplitude on surfaces with boundaries and crosscaps. *Nuclear Phys. B* **301** (1988), no. 2, 285–303. (Tsou Sheung Tsun) **89b:81168** 81E99 (32G15, 53C80, 81E30)
- Della Pietra, Vincent** (with Della Pietra, Stephen; Alvarez-Gaumé, L.) The chiral determinant and the eta invariant. *Comm. Math. Phys.* **109** (1987), no. 4, 691–700. (Akira Asada) **89b:58217** 58G25 (58G10, 81E20)
- (with Blau, Steven K.; Clements, Minot; Della Pietra, Stephen; Carlip, Steven) The string amplitude on surfaces with boundaries and crosscaps. *Nuclear Phys. B* **301** (1988), no. 2, 285–303. (Tsou Sheung Tsun) **89b:81168** 81E99 (32G15, 53C80, 81E30)
- Dell'Isola, F.** (with Romano, Antonio) On a general balance law for continua with an interface. *Ricerche Mat.* **35** (1986), no. 2, 325–337. (Dimitris C. Lagoudas) **89c:73009** 73B99
- Dellomo, Michael** The inverse limit of the fundamental groups of branched cyclic coverings. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 321–326. (Makoto Sakuma) **89c:57010** 57M25 (55P25)
- Del Omo, Mariano A.** see del Omo, Mariano A.
- Delon, Françoise** Rolle fields and rings. *Algebra and order (Luminy-Marseille, 1984)*, 155–160. *R. E. Res. Exp. Math.*, **14**, Heldermann, Berlin, 1986. (Editors) **89b:12011** 12L05 (03B25, 03C60, 12D15)
- Le principe d'Ax-Kochen-Erlov et quelques conséquences. [The Ax-Kochen-Erlov principle and some consequences] *Séminaire Général de Logique 1983–1984 (Paris, 1983–1984)*, 171–183. *Publ. Math. Univ. Paris VII*, **27**, Univ. Paris VII, Paris, 1986. (Yehuda Rav) **89d:03032a** 03C60 (12L12)
- Paires de corps réels clos. [Pairs of real closed fields] *Séminaire Général de Logique 1983–1984 (Paris, 1983–1984)*, 185–195. *Publ. Math. Univ. Paris VII*, **27**, Univ. Paris VII, Paris, 1986. (Yehuda Rav) **89d:03032b** 03C60 (12L12)
- Corps portant un nombre fini de valuations. (English summary) [Fields with a finite number of valuations] *J. Symbolic Logic* **52** (1987), no. 4, 994–1004. (S. A. Basarab) **89g:03052** 03C60 (12J10, 12L10)
- Extensions séparées et immédiates de corps valués. (English summary) [Separated and immediate extensions of valued fields] *J. Symbolic Logic* **53** (1988), no. 2, 421–428. (G. Cherlin) **89f:12011** 12J10
- De Lorena, Cristina** see de Lorena, Cristina
- De Lorenzo, Javier** see de Lorenzo, Javier
- Delorme, C.** (with Weil, Juergen W.; Hocquemiller, J.; Allouch, D.; Mézard, A.; Vaillant, J.-C.; Lavit, Christine; Raoult, J.-C.) ★ Rozpracovaná řešení úloh z vyšší algebry. (Czech) [Worked-out solutions for exercises in higher algebra] Translated from the French and with a preface by Ladislav Beran. *Academia [Publishing House of the Czechoslovak Academy of Science]*, Prague, 1987. 653 pp. (Editors) **89i:00014** 00A07 (00A05)
- (with Bond, J.) New large bipartite graphs with given degree and diameter. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), C, 123–132. (David Fisher) **89g:05058** 05C35
- Delorme, Patrick** Injection de modules sphériques pour les espaces symétriques réductifs dans certaines représentations induites. [Injection of spherical modules for reductive symmetric spaces into certain induced representations] With an appendix by Erik van den Ban and Delorme. *Noncommutative harmonic analysis and Lie groups (Marseille-Luminy, 1985)*, 108–143. *Lecture Notes in Math.*, **1243**, Springer, Berlin-New York, 1987. (Juan Tirao) **89c:22026** 22E46
- (with van den Ban, Erik P.) Quelques propriétés des représentations sphériques pour les espaces symétriques réductifs. (English summary) [Some properties of spherical representations for reductive symmetric spaces] *J. Funct. Anal.* **80** (1988), no. 2, 284–307. (Mitsuo Sugiura) **89j:22025** 22E45 (22E30)
- Delort, Jean-Marc** Problème mixte hyperbolique avec saut sur la condition aux limites. [A hyperbolic mixed problem with jump on the boundary condition] *Journées "Équations aux dérivées partielles" (Saint Jean de Monts, 1987)*, Exp. No. XXII, 9 pp., École Polytech., Palaiseau, 1987. (Alan Jeffrey) **89c:35105** 35L99
- Delorme, Jean-Marc** (with Morf, Martin) Covariance decompositions via elementary transformations. Applications to filtering. *Circuits Systems Signal Process.* **7** (1988), no. 1, 21–55. (S. Caibi) **89a:94005** 94A05 (93B17, 93E11)
- Del Pezzo, P.** see del Pezzo, P.
- Del Riego, L.** (with Dodson, C. T. J.) Sprays, universality and stability. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 3, 515–534. (J. O. Bedford) **89c:58007** 58A20
- Del Río, José Luis** see del Río, Manuel
- Del Río, Manuel** see del Río, Manuel
- Del Río-Correa, J. L.** see del Río, José Luis
- Delsharte, P.** (with Bier, Thomas) Some bounds for the distribution numbers of an association scheme. *European J. Combin.* **9** (1988), no. 1, 1–5. (Siu Lun Ma) **89c:05054** 05B30
- (with Genin, Yves) The tridiagonal approach to Szegő's orthogonal polynomials, Toeplitz linear systems, and related interpolation problems. *SIAM J. Math. Anal.* **19** (1988), no. 3, 718–735. (H. Wallin) **89d:30040** 30E05 (30D50, 42A70)
- (with Kamp, Y.) Low rank matrices with a given sign pattern. *SIAM J. Discrete Math.* **2** (1989), no. 1, 51–63. (B. Kellogg) **89m:92014** 92A09 (15A03)
- Deltete, Robert J.** (with Guy, Reed A.) Note on: "Bell's theorem and the foundations of quantum physics" [Amer. J. Phys. **53** (1985), no. 4, 306–317; MR 86f:81013] by H. P. Stapp. With a reply by Stapp. *Amer. J. Phys.* **56** (1988), no. 6, 565–567. (S. Gudder) **89g:81008** 81B10
- De Luca, Aldo** see de Luca, Aldo
- De Luca, P.** (with LeRoux, A. Y.) A velocity-pressure model for elastodynamics. *Nonlinear hyperbolic equations—theory, computation methods, and applications (Aachen, 1988)*, 374–383. *Notes Numer. Fluid Mech.*, **24**, Vieweg, Braunschweig, 1989. (see **89j:35007**) 73D40 (73-08)
- De Lucia, Paolo** see de Lucia, Paolo
- Del Vecchio, T.** On some properties of relative approximate derivatives. (Italian) *Matematice (Catania)* **39** (1984), no. 1–2, 111–120 (1988). (A. Precupanu) **89c:26010** 26A24
- The thick Neumann's sieve. *Ann. Mat. Pura Appl.* (4) **147** (1987), 363–402. (Dietrich Göhde) **89c:35036** 35J25 (35B20, 35B25, 35B40, 35J67)
- Delves, L. M.** (with Mohamed, J. L.) ★ Computational methods for integral equations. *Cambridge University Press, Cambridge-New York*, 1988. xii+376 pp. ISBN 0-521-35796-9 (Editors) **89b:65311** 65R20 (45L10, 65-01, 65D32)
- (with McQuillan, R. T.; Oliver, C. J.) A one-dimensional despeckling algorithm for SAR images. *Inverse Problems* **4** (1988), no. 2, 471–484. (Summary) **89c:92001** 92-08 (78A45, 92A07)
- Delvos, F.-J.** Convergence of interpolation by translation. *A. Haar memorial conference, Vol. I, II (Budapest, 1985)*, 273–287. *Colloq. Math. Soc. János Bolyai*, **49**, North-Holland, Amsterdam-New York, 1987. (Introduction) **89b:42008** 42A15 (41A05)
- Optimal periodic interpolation in the mean. *Numerical methods and approximation theory, III (Niš, 1987)*, 179–189. *Univ. Niš, Niš*, 1988. (G. Baszenski) **89j:41005** 41A05 (41A15, 41A65)
- Delyon, François** (with Foulon, Patrick) Adiabatic theory, Liapunov exponents, and rotation number for quadratic Hamiltonians. *J. Statist. Phys.* **49** (1987), no. 3–4, 829–840. (C. Eugene Wayne) **89f:58054** 58F05 (58F11, 70H05, 81C25)
- Delzant, Thomas** Exemple d'étude d'image convexe de l'application moment. [Example of studying the convex image of the moment mapping] *Action hamiltoniennes de groupes. Troisième théorème de Lie (Lyon, 1986)*, 51–55. *Travaux en Cours*, **27**, Hermann, Paris, 1988. (Manfred Andrie) **89i:58033** 58F05
- Delzell, Charles N.** Correction to: "Note on quantifier prefixes over Diophantine equations" [Z. Math. Logik Grundlag. Math. **32** (1986), no. 5, 395–397; MR 88c:03062]. *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 3, 283–286. (Introduction) **89b:03072** 03D35 (03D10, 03D25)
- De Magalhães, A. C. N.** see de Magalhães, A. C. N.
- Demailly, Jean-Pierre** Nombres de Lelong généralisés, théorèmes d'intégralité et d'analyticité. [Generalized Lelong numbers, integrality and analyticity theorems] *Acta Math.* **159** (1987), no. 3–4, 153–169. (Adib A. Fadlalla) **89b:32019** 32C30
- (with Laurent-Thiebaut, Christine) Formules intégrales pour les formes différentielles de type  $(p, q)$  dans les variétés de Stein. (English summary) [Integral formulas for differential forms of type  $(p, q)$  in Stein manifolds] *Ann. Sci. École Norm. Sup.* (4) **20** (1987), no. 4, 579–598. (Jürgen Leiterer) **89g:32023** 32E10 (32A25)
- Théorèmes d'annulation pour la cohomologie des puissances tensorielles d'un fibré vectoriel positif. (English summary) [Vanishing theorems for cohomology groups of tensor powers of a positive vector bundle] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 10, 419–422. (Summary) **89c:32076** 32L10 (32L15)
- Vanishing theorems for tensor powers of a positive vector bundle. *Geometry and analysis on manifolds (Katata/Kyoto, 1987)*, 86–105. *Lecture Notes in Math.*, **1339**, Springer, Berlin-New York, 1988. (Hideaki Kazama) **89b:32058** 32L20
- Vanishing theorems for tensor powers of an ample vector bundle. *Invent. Math.* **91** (1988), no. 1, 203–220. (Thomas Peternell) **89d:32066** 32L20 (32L10)
- Demaret, J.** (with De Rop, Y.) Using EXCALC to study nondiagonal multidimensional spatially homogeneous cosmologies. *Gen. Relativity Gravitation* **20** (1988), no. 11, 1127–1139. (Carl Brans) **89m:83084** 83E15 (83-04, 83F05)
- (with De Rop, Y.; Henneaux, M.) Chaos in nondiagonal spatially homogeneous cosmological models in spacetime dimensions  $\leq 10$ . *Phys. Lett. B* **211** (1988), no. 1–2, 37–41. (Stephen W. Goode) **89j:83011** 83C15 (83F05)
- De Mari, Filippo** (with Shayman, Mark A.) Generalized Eulerian numbers and the topology of the Hessenberg variety of a matrix. *Acta Appl. Math.* **12** (1988), no. 3, 213–235. (Naohisa Shimomura) **89i:05009** 05A10 (14M15, 32M10, 65F15)
- Demaria, Davide Carlo** (with Burzio, Marco) Characterization of tournaments by coned 3-cycles. 15th winter school in abstract analysis (Srní, 1987). *Acta Univ. Carolin.—Math. Phys.* **28** (1987), no. 2, 25–30. (G. Chartrand) **89f:05086** 05C20 (05C75)
- (with Burzio, Marco) On simply disconnected tournaments. Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. I (Catania, 1986). *Ars Combin.* **24** (1987), A, 149–161. (L. W. Beineke) **89f:05087** 05C20 (05C75)
- DeMarzo, Peter M.** An extension of the Modigliani-Miller theorem to stochastic economies with incomplete markets and interdependent securities. *J. Econom. Theory* **45** (1988), no. 2, 353–369. (Summary) **89g:90057** 90A14 (90A09)
- De Masi, A.** (with Boldrighini, C.; Pellegrinotti, A.; Presutti, Errico) Collective phenomena in interacting particle systems. *Stochastic Process. Appl.* **25** (1987), no. 1, 137–152. (Autorreferat (Zbl 626:60103)) **89c:60115** 60K35
- De Matas, C. M.** (with Farrell, E. J.) On the characterizing properties of star polynomials. *Utilitas Math.* **33** (1988), 33–45. (Larry Basenspiler) **89b:05140** 05C75
- De Mathan, Bernard** see de Mathan, Bernard
- De Matteis, A.** (with Pagnutti, S.) Parallelization of random number generators and long-range correlations. *Numer. Math.* **53** (1988), no. 5, 595–608. (Norbert Schmitz) **89h:65016** 65C10 (11K45, 65W05)
- Demay, Y.** (with Chossat, P.; Iooss, G.) Competition of azimuthal modes and quasiperiodic flows in the Couette-Taylor problem. *Dynamics of infinite-dimensional systems (Lisbon, 1986)*, 45–56. *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, **37**, Springer, Berlin-New York, 1987. (Introduction) **89m:35176** 35Q10 (58F14, 58F27, 76E30)
- (with Laure, P.) Symbolic computation and equation on the center manifold: application to the Couette-Taylor problem. *Comput. & Fluids* **16** (1988), no. 3, 229–238. (M. Yousuff Hussaini) **89i:76002** 76-04 (58F14, 76E15)
- Demazure, M.** Le théorème de complexité de Mayr et Meyer. [The Mayr-Meyer complexity theorem] *Géométrie algébrique et applications, I (La Rabida, 1984)*, 35–58. *Travaux en Cours*, **27**, Hermann, Paris, 1988. (Jacques Calmet) **89f:12002** 12-04 (13-04, 20M05, 68Q20)
- De' Mazzinghi, Antonio** see de' Mazzinghi, Antonio
- Dembo, A.** (with Zeitouni, O.) On the maximal achievable accuracy in nonlinear filtering problems. *IEEE Trans. Automat. Control* **33** (1988), no. 10, 965–967. (Summary) **89c:93201** 93E11
- Bounds on the extreme eigenvalues of positive-definite Toeplitz matrices. *IEEE Trans. Inform. Theory* **34** (1988), no. 2, 352–355. (Summary) **89b:15028** 15A42 (93B60)

- (with Zeitouni, O.) Exact filters for the estimation of the number of transitions of finite-state continuous-time Markov processes. *IEEE Trans. Inform. Theory* 34 (1988), no. 4, 890–893. (Summary) **89b:60068** 60G35 (60J27, 93E10, 93E11)
- (with Zeitouni, O.) General potential surfaces and neural networks. *Phys. Rev. A* (3) 37 (1988), no. 6, 2134–2143. (Summary) **89c:92012** 92A09 (82A99)
- (with Zeitouni, O.) An existence theorem and some properties of maximum a posteriori estimators of trajectories of diffusions. *Stochastics* 23 (1988), no. 2, 197–218. (Vera Lanská) **89g:93100** 93E11 (60G35, 60J60, 62M20)
- Dembo, Micah** see *Nonlinearity in biology and medicine*, **89c:92002**
- Dembo, Ron S.** (with Ahlfeld, David P.; Mulvey, John M.; Zenios, Stavros A.) Nonlinear programming on generalized networks. *ACM Trans. Math. Software* 13 (1987), no. 4, 350–367. (Summary) **89b:90218** 90C35 (90C30)
- (with Tulowitzki, Ulrich) Computing equilibria on large multicommodity networks: an application of truncated quadratic programming algorithms. *Networks* 18 (1988), no. 4, 273–284. (Summary) **89j:90216** 90C30 (90B20, 90C20)
- Demchenko, A. M.** A membership function construction method. (Chinese summary) *J. Chengdu Univ. Sci. Tech.* 1988, no. 2, 69–74, 82. (Introduction) **89f:90009** 90A06 (03E72)
- Demchenko, L. I.** (with Demchenko, V. F.; Zabolotnyi, S. N.) Difference schemes on generalized solutions of an equation of convective diffusion. (Russian) *Applied problems in mathematical physics* (Russian), 71–77, *Lav. Gos. Univ., Riga*, 1988. (see **89f:00005**) 76R50 (65M10, 76-08)
- Demchenko, V. F.** (with Lyashko, I. I.) ★ Обобщенные формулировки задач тепло- и массопереноса в слоистых средах. (Russian) [Generalized formulations of heat- and mass-transport problems in layered media] Препринт [Preprint], 87-14. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. 27 pp. (From the summary) **89c:80012** 80A20
- Difference schemes on generalized solutions of a two-point boundary value problem for an ordinary differential equation. (Russian) *Applied problems in mathematical physics* (Russian), 128–137, vi–vii, *Lav. Gos. Univ., Riga*, 1987. (Summary) **89f:65082** 65L10
- (with Demchenko, L. I.; Zabolotnyi, S. N.) Difference schemes on generalized solutions of an equation of convective diffusion. (Russian) *Applied problems in mathematical physics* (Russian), 71–77, *Lav. Gos. Univ., Riga*, 1988. (see **89f:00005**) 76R50 (65M10, 76-08)
- Demco, D. E.** (with Ursu, I.; Pop, G.; Dollinger, R.; Gligor, T. D.) Methods for obtaining tomographic images using techniques of transmission, emission and magnetic resonance. I. Convolution method. (Romanian. English summary) *Stud. Cerc. Fiz.* 39 (1987), no. 10, 909–929. (Summary) **89f:92009** 92A07
- (with Ursu, I.; Dollinger, R.; Pop, G.; Gligor, T. D.) Methods for obtaining tomographic images using techniques of transmission, emission and magnetic resonance. II. Fourier method and iterative methods. (Romanian. English summary) *Stud. Cerc. Fiz.* 39 (1987), no. 10, 931–946. (Summary) **89f:92010** 92A07
- De Melo, W.** see *de Melo, W.*
- Demengel, Françoise** (with Rauch, J.) Continuité faible des fonctions de mesures (non convexes). (English summary) [Weak continuity of functions of (nonconvex) measures] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 3, 63–66. (Summary) **89f:28010** 28A20 (35L99, 46E27)
- (with Ghidaglia, Jean-Michel) Discrétisation en temps et variétés inertielles pour des équations d'évolution aux dérivées partielles non linéaires. (English summary) [Time-discretization and inertial manifolds for nonlinear evolution partial differential equations] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 9, 453–458. (Summary) **89b:35144** 35K22 (34G20, 47H20, 58D25, 58F19)
- Demenin, A. N.** (with Diesperova, M. M.) Limit relations for characteristic functions of the solutions of a system of linear differential equations with random coefficients. (Russian) *Asymptotic methods in the investigation of stochastic models* (Russian), 28–38, 143, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (V. G. Kolomiets) **89b:60074** 60H10 (34F05)
- Dement'ev, N. P.** Estimates for the convergence of optimal trajectories in models of economic dynamics. (Russian) *Optimizatsiya* No. 41(58) (1987), 88–101. (Bojan Popović) **89j:90063** 90A16 (39A11)
- Demetrius, Lloyd** An extremal principle of macromolecular evolution. *Phys. Scripta* 36 (1987), no. 4, 693–701. (Reinhard Bürger) **89d:92046** 92A12 (80A30, 82A05, 92A09, 92A10)
- Growth rate, population entropy, and perturbation theory. *Math. Biosci.* 93 (1989), no. 2, 159–180. (Summary) **89m:92043** 92A15 (92A20)
- Demetropoulou-Psompoulou, Demetra** A prolongation of the real almost-product structure of a differentiable manifold. *Demonstratio Math.* 20 (1987), no. 3–4, 423–439 (1988). (Andrzej Bucki) **89e:53049** 53C10 (53C15)
- (with Gouli-Andreou, Florence) On connections on manifolds admitting an  $f(5,1)$ -structure. *Proceedings of the Congress of Geometry (Thessaloniki, 1987)*, 46, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1988. (see **89b:53003**) 53C05 (53C15)
- (with Gouli-Andreou, Florence) On connections on manifolds admitting an  $f(5,1)$ -structure. *Demonstratio Math.* 21 (1988), no. 1, 127–140. (Jarolim Bureš) **89b:53073** 53C05 (53C10)
- Demetrotovics, János** (with Hồ Thuân; Nguyễn Xuân Huy) Balanced relational schemes and keys in a relational scheme. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 296–316, “Nauka”, Moscow, 1987. (A. V. Anisimov) **89c:68017** 68P15
- (with Burosch, Gustav; Katona, G. O. H.) The poset of closures as a model of changing databases. *Order* 4 (1987), no. 2, 127–142. (J. Paredeas) **89f:68013** 68P15 (06A10, 68P05)
- (with Hồ Thuân) Some additional properties of keys for relation schemes. *Serdica* 13 (1987), no. 3, 267–271. (Donald P. Ballou) **89b:68023** 68P15
- (with Hannák, L.; Rónyai, Lajos) On monotone clones. *Problems of computer science* (Budapest, 1987). *Tanulmányok—MTA Számítástech. Automat. Kutató Int. Budapest* No. 202 (1987), 39–62. (I. G. Rosenberg) **89f:08008** 08A40 (06A10)
- (with Vu Duc Thi) Some results about functional dependencies. (Russian summary) *Acta Cybernet.* 8 (1988), no. 3, 273–278. (W. Marek) **89c:68015** 68P15
- (with Vu Duc Thi) Relations and minimal keys. (Russian summary) *Acta Cybernet.* 8 (1988), no. 3, 279–285. (W. Marek) **89c:68016** 68P15 (68Q30)
- see also **MFDBS** 87, **89a:68004** and *Proceedings: Meeting of Young Computer Scientists*, **89g:68002**
- Demets, David L.** (with Kim, Kyungmann) Confidence intervals following group sequential tests in clinical trials. (French summary) *Biometrics* 43 (1987), no. 4, 857–864. (Mayer Alvo) **89g:62164** 62P10 (62L10)
- DeMeyer, F. R.** (with Ford, T. J.) Homomorphisms of progenerator modules. *J. Algebra* 113 (1988), no. 2, 379–398. (David C. Lantz) **89d:13009** 13C10
- (with Molin, R. A.) Invariants of group rings. *J. Algebra* 118 (1988), no. 2, 336–345. (George Szeto) **89j:16013** 16A26 (16A16, 20C05)
- (with Ford, T. J.) Computing the Brauer–Long group of  $\mathbb{Z}/2$  dimodule algebras. *J. Pure Appl. Algebra* 54 (1988), no. 2–3, 197–208. (Stefaan Caenepeel) **89i:13005** 13A20 (16A16)
- (with Harrison, David Kent; Miranda, Rick) Quadratic forms over  $\mathbb{Q}$  and Galois extensions of commutative rings. *Mem. Amer. Math. Soc.* 77 (1989), no. 394, viii+63 pp. (Lindsay N. Childs) **89m:11036** 11E81 (11R18, 13B05, 19G12)
- De Meyer, H.** (with Vanden Bergh, G.; De Wilde, Ph.) Two programs to perform certain symbolic calculations in the enveloping algebra of a Lie algebra. *Comput. Phys. Comm.* 44 (1987), no. 1–2, 197–208. (Summary) **89m:17001** 17-04
- (with Vanthournout, J.; Van der Jeugt, Joris; Vanden Bergh, G.) Extension of the interacting boson model: higher order interactions preserving the dynamical symmetry (the  $O(6)$  limit). *Group theoretical methods in physics* (Varna, 1987), 429–433, *Lecture Notes in Phys.*, 313, Springer, Berlin–New York, 1988. (Summary) **89j:81264** 81G30
- (with Vanthournout, J.; Van der Jeugt, Joris; Vanden Bergh, G.) On the spectrum of a third-order  $SO(3)$  scalar in the enveloping algebra of  $SO(6)$ . *J. Math. Phys.* 29 (1988), no. 4, 802–805. (Nigel B. Backhouse) **89j:81265** 81G30 (17B35, 22E70, 81C40)
- Demianski, M.** (with Góda, Z. A.; Heller, Michael; Szydłowski, Marek) Kantowski–Sachs multidimensional cosmological models and dynamical dimensional reduction. *Classical Quantum Gravity* 5 (1988), no. 5, 733–742. (Dieter Lorenz-Petzold) **89f:83006** 83E15
- De-Michele, Leonede** (with Maureri, Giancarlo)  $H^p$  multipliers on stratified groups. *Ann. Mat. Pura Appl.* (4) 148 (1987), 353–366. (Gerald B. Folland) **89c:43009** 43A22 (22E30, 42B30, 43A80)
- (with Roux, Delfina) Some results about smoothing methods of Fourier series. *Ann. Mat. Pura Appl.* (4) 149 (1987), 207–216. (Summary) **89c:42003** 42A10
- Demichev, A. P.** (with Rodionov, A. Ya.) Solutions of the Freund–Rubin type for different compactifications of eleven-dimensional space. *Soviet J. Nuclear Phys.* 45 (1987), no. 4, 733–739; translated from *Yadernaya Fiz.* 45 (1987), no. 4, 1183–1191 (Russian). (L. M. Sokolowski) **89a:83057** 83E15 (22E60, 53C80, 83E50)
- Demidenko, G. V.** The Cauchy problem for equations and systems of Sobolev type. (Russian) *Boundary value problems for partial differential equations* (Russian), 69–84, 140, *Novosibirsk. Gos. Univ., Inst. Mat., Novosibirsk*, 1986. (A. Borzymowski) **89b:35136** 35Q10 (35D05, 35Q99)
- Demidov, K. V.**  $r$ -multiple capture in differential games with a variable structure controlled by the pursuers. (Russian) *Multistage, hierarchical, differential and noncooperative games* (Russian), 12–19, *Kalinin. Gos. Univ., Kalinin*, 1987. (Claudia Simionescu) **89d:90262** 90D26 (49A45)
- Demidov, M. A.** (with Mikhailov, A. P.; Stepanova, V. V.) Localized compression waves. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 129, 30 pp. (Summary) **89c:76080** 76N15
- (with Klokov, Yu. A.; Mikhailov, A. P.) Localization of the processes of compression and heating in anisotropic media. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 215, 28 pp. (Summary) **89c:76081** 76N15 (35L99)
- (with Klokov, Yu. A.; Mikhailov, A. P.) On some singular problems for second-order ordinary differential equations. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 7, 1278–1282. (Stefan Mirica) **89b:34004** 34A10 (34A34, 34B15)
- (with Klokov, Yu. A.; Mikhailov, A. P.) Shockless compression of media with arbitrary distribution of entropy. Localization, structures, spectra of the solutions. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 4, 816–819; translated in *Soviet Phys. Dokl.* 32 (1987), no. 12, 973–975. (From the text) **89c:76059** 76N15
- (with Mikhailov, A. P.) A new class of multidimensional flows of compressible media and the localization effect. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 5, 1072–1076; translated in *Soviet Phys. Dokl.* 32 (1987), no. 12, 975–978. (Introduction) **89c:35117** 35K99 (76N10)
- Demidov, S. S.** (with Barabashev, A. G.; Panov, M. I.) Regularities and modern tendencies of the development of mathematics. *Philos. Math.* (2) 2 (1987), no. 1, 32–47. (Editors) **89m:00016** 00A25
- (with Aleksandrov, A. D.; Grigor'yan, A. T.; Matvievskaia, G. P.; Sirazhdinov, S. S.; Yushkevich, A. P.) Boris A. Rozenfel'd: on the 70th anniversary of his birth. *Historia Math.* 15 (1988), no. 1, 1–8. (Editors) **89c:01041** 01A70
- Der philosophische Kontext der Herausbildung der Moskauer funktionentheoretischen Schule. [The philosophical context of the formation of the Moscow school of function theory] *NTM Schr. Geschichte Natur. Tech. Medizin* 25 (1988), no. 2, 25–31. (R. P. Boas, Jr.) **89m:01083** 01A70 (00A25)
- On an early history of the Moscow school of theory of functions. *Philos. Math.* (2) 3 (1988), no. 1, 29–35. (Peter Bullen) **89m:01059** 01A60 (01A72, 26A03)
- Demidov, V. N.** (with Golubev, Yu. F.) A method for straightening constraints. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 158, 28 pp. (Summary) **89c:49032** 49D07 (90C48)
- Demidovich, O. I.** ★ Вычисление нижних оценок в многоэкстремальной задаче о потоке минимальной стоимости. (Russian) [Calculation of lower bounds in a multi-extremal problem of minimal cost flow] Сообщения по Прикладной Математике. [Reports in Applied Mathematics] *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1988. 24 pp. (Emil Iwanow) **89j:90254** 90C35
- Demin, R. A.** A pursuit problem in linear differential games with integral constraints. (Russian) *Dokl. Akad. Nauk UzSSR* 1988, no. 6, 14–16. (From the text) **89m:90178** 90D26 (49A45)
- Demiralp, M.** (with Baykara, N. A.) Analytic evaluation of equipotential hyperangular interaction integrals. (Italian and Russian summaries) *Nuovo Cimento B* (11) 100 (1987), no. 2, 161–171. (Summary) **89a:81179** 81G55 (33A99)
- (with Tageli, H.) Studies on algebraic methods to solve linear eigenvalue problems: generalised anharmonic oscillators. *J. Phys. A* 21 (1988), no. 20, 3903–3919. (Summary) **89j:81033** 81C05 (81-04)
- Demiray, Hilmi** (with Dost, S.) A variational formulation of diatomic elastic dielectrics. *Internat. J. Engrg. Sci.* 26 (1988), no. 8, 865–871. (Summary) **89b:73040** 73R05 (73B05,



- 73C60, 73D25)
- Demirbay, Kerim** Fast state estimation scheme for multidimensional dynamic systems. *Internat. J. Control* **48** (1988), no. 1, 1–28. (Not in MR) 93E10
- Demirchyan, K. S.** (with Rakitskii, Yu. V.) Apropos of the stiff system theory. *BAIL IV* (Novosibirsk, 1986), 254–259, *Boole Press Conf. Ser.*, 8, Boole, Dún Laoghaire, 1986. (E. H. Twizell) 89c:65104 65L05
- Demircigözü, H.** (with Gawthron, P. J.) Continuous-time relay self-tuning control. *Internat. J. Control* **47** (1988), no. 4, 1061–1080. (Not in MR) 93B50
- Demirdöğ, I.** (with Perić, M.) Space conservation law in finite volume calculations of fluid flow. *Internat. J. Numer. Methods Fluids* **8** (1988), no. 9, 1037–1050. (P. C. Jain) 89j:76010 76-08
- Demirev, G. D.** (with Antonov, P. Ts.) The design of codes for detecting two-dimensional error packages in parallel-sequential discrete channels. (Bulgarian. English and Russian summaries) *Avtomat. Izchisl. Tekhn. Avtomat. Sistemi* **1988**, no. 11, 2, 3, 4, 14–16. (Not in MR) 94A13
- Demko, S. G.** (with Barnsley, M. F.; Elton, J. H.; Geronimo, J. S.) Invariant measures for Markov processes arising from iterated function systems with place-dependent probabilities. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **24** (1988), no. 3, 367–394. (Pierre Moussa) 89k:60088 60J05 (28D05, 58F11)
- (with Hill, Theodore P.) Equitable distribution of indivisible objects. *Math. Social Sci.* **16** (1988), no. 2, 145–158. (Chandra M. Gulati) 89j:90005 90A05 (90B50)
- Demkov, Yu. N.** (with Bogdanov, I. V.) Determination of the internal structure of relativistic astrophysical objects in the wave approximation. *Soviet Phys. JETP* **66** (1987), no. 1, 1–8 (1988); translated from *Zh. Éksp. Teoret. Fiz.* **93** (1987), no. 1, 3–16 (Russian). (Summary) 89c:83037 83C47 (81E20, 85A15)
- Harmonic scattering. (Russian. English summary) *Vestnik Leningrad. Univ. Fiz. Khim.* **1987**, vyp. 2, 31–40, 134. (From the summary) 89c:78013 78A45
- Demlová, Marie** (with Kouček, Václav) Minimal congruences and coextensions in semigroups. *Semigroups, theory and applications* (Oberwolfach, 1986), 28–83, *Lecture Notes in Math.*, 1320, Springer, Berlin-New York, 1988. (Katherine Johnston) 89i:20091 20M10 (08A30)
- (with Kouček, Václav) Endomorphism monoids of bands. *Semigroup Forum* **38** (1989), no. 3, 305–329. (K. D. Magill, Jr.) 89m:20067 20M07 (20M20, 20M50)
- Demmel, James W.** The probability that a numerical analysis problem is difficult. *Math. Comp.* **50** (1988), no. 182, 449–480. (Marietta J. Tretter) 89g:65062 65G99 (15A12, 60D05)
- (with Kågström, Bo) Accurate solutions of ill-posed problems in control theory. *SIAM Conference on Linear Algebra in Signals, Systems, and Control* (Boston, Mass., 1986). *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 1, 126–145. (Summary) 89b:65131 65H15 (65G99, 93B05, 93B07, 93B40, 93B60)
- De Moivre, Abraham** see de Moivre, Abraham
- De Mol, C.** (with Pike, E. R.; Bertero, M.; DeFrise, M.) The use of singular systems and other inversion methods in weighted  $L^2$ -spaces. *Mathematics in signal processing* (Bath, 1985), 167–179, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see 89c:94004) 94A12
- Demoment, G.** (with Du, X. C.; Saint-Félix, D.) Comparison between a factorization method and a partitioning method to derive invariant Kalman filters for fast image restoration. *Mathematics in signal processing* (Bath, 1985), 349–362, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (Dale H. Mugler) 89d:94020 94A15 (93E11, 94A12)
- (with Saint-Félix, D.; Du, X. C.) Image restoration using a noncausal state space model and a fast 2-D Kalman filter. *Mathematics in signal processing* (Bath, 1985), 363–378, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see 89c:94004) 94A12
- (with Houacine, A.) Stabilisation of fast RLS algorithms. *Mathematics in signal processing* (Bath, 1985), 579–591, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (Summary) 89c:94006 94A05 (93E25)
- (with Mohammad-Djafari, Ali) Image restoration and reconstruction using entropy as a regularization functional. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 2 (Laramie, WY, 1985 and Seattle, WA, 1986/1987), 341–355, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (see 89f:62002) 94A12 (94A17)
- De Monthrial, Thierry** see de Monthrial, Thierry
- De Montmollin, Maurice** see de Montmollin, Maurice
- De Moor, Bart** (with Vandewalle, Joos) An adaptive singular value decomposition algorithm based on generalized Chebyshev recursions. *Mathematics in signal processing* (Bath, 1985), 607–635, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (Yun Qing Shi) 89c:65043 65F30 (15A99, 93B25, 94A11)
- (with Vandewalle, Joos) The uncertainty principle of mathematical modelling. *Analysis and optimization of systems* (Antibes, 1988), 1051–1063, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) 89c:93204 93E12 (00A71, 62J03)
- (with Moonen, Marc; Vandenberghe, Lieven; Vandewalle, Joos) The application of the canonical correlation concept to the identification of linear state space models. *Analysis and optimization of systems* (Antibes, 1988), 1103–1114, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see 89c:00031) 93E12
- De Morgan, Augustus** see Richards, Joan L. 89f:01040
- De Motroni, P.** see de Motroni, P.
- Demp, Philip H.** A mathematical taxonomy to evaluate the biomechanical quality of the human foot. *Mathematical modelling in science and technology* (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 341–345. (see 89d:00007) 92A06 (92A09)
- Dempster, Arthur P.** Employment discrimination and statistical science. With comments and a rejoinder by the author. *Statist. Sci.* **3** (1988), no. 2, 149–195. (Summary) 89f:62010 62A15
- Dempwolf, U.** Involutive homologies on affine planes. *Abh. Math. Sem. Univ. Hamburg* **57** (1987), 37–55. (Geoffrey Mason) 89c:20005 20B25 (51E15)
- A note on 2-groups and homologies on affine planes. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **1** (1987), no. 3, 383–386. (Jürgen Bierbrauer) 89c:20006 20B25 (51E15)
- A characterization of the generalized twisted field planes. *Arch. Math. (Basel)* **50** (1988), no. 5, 477–480. (Vikram Jha) 89f:51018 51A40 (17A35, 51A35, 51E15)
- Dems, K.** (with Mróz, Z.) A variational approach to sensitivity analysis and structural optimization of plane arches. *Mech. Structures Mach.* **15** (1987), no. 3, 297–321. (Summary) 89f:73057 73K40
- Demuth, Oswald** (with Filipec, Pavel) Differentiation of constructive functions of a real variable and relative computability. *Mathematical logic and its applications* (Druzhba, 1986), 81–106, *Plenum, New York-London*, 1987. (A. Kučera) 89c:03107 03F65 (03D30, 26A24)
- A notion of semigerency. *Comment. Math. Univ. Carolin.* **28** (1987), no. 1, 71–84. (Marat M. Arslanov) 89c:03072a 03D30
- (with Kučera, Antonia) Remarks on 1-genericity, semigerency and related concepts. *Comment. Math. Univ. Carolin.* **28** (1987), no. 1, 85–94. (Marat M. Arslanov) 89c:03072b 03D30
- Reducibilities of sets based on constructive functions of a real variable. *Comment. Math. Univ. Carolin.* **29** (1988), no. 1, 143–156. (Rodney G. Downey) 89c:03073 03D30 (03F65)
- Remarks on the structure of  $\Pi$ -degrees based on constructive measure theory. *Comment. Math. Univ. Carolin.* **29** (1988), no. 2, 233–247. (A. Kučera) 89c:03049 03D30 (03F65)
- De Muynck, Willem M.** see de Muynck, Willem M.
- Dem'yanenko, V. A.** Sharp estimates for the torsion of curves of genus one. (Russian) *Structural problems in group theory* (Russian), 50–62, 139, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1986. (Reinhard Bölling) 89a:14054 14K07 (11D25, 11G05, 14G25)
- The number of divisor classes of elliptic fields. (Russian) *Ural. Gos. Univ. Mat. Zap.* **14** (1987), no. 2, Issled. Algebr. Sist. po Svoist. ikh Podst., 34–46, ii. (Robert S. Rumely) 89k:11042 11G05 (11R29, 14G25, 14K07)
- Representations of numbers by a binary cubic form. (Russian) *Mat. Zametki* **44** (1988), no. 1, 55–63, 155; translated in *Math. Notes* **44** (1988), no. 1–2, 517–522. (K. Szymczek) 89i:11037 11D25
- Dem'yanov, V. P.** ★ Геометрия и Марсельеза. (Russian) [Geometry and the Marseillaise] Second edition. Творцы Науки и Техники. [Creators of Science and Technology] "Znanie", Moscow, 1986. 256 pp. (Summary) 89k:01032 01A70
- Dem'yanovich, Yu. K.** (with Ifin, V. P.; Koshelev, A. I.; Oleinik, O. A.; Sobolev, S. L.) Solomon Grigor'evich Mikhlin (on the occasion of his eightieth birthday). (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 4 (262), 239–240; translated in *Russian Math. Surveys* **43** (1988), no. 4, 249–251. (Editors) 89m:01084 01A70
- (with Ifin, V. P.; Koshelev, A. I.; Solomyak, M. Z.; Ural'tseva, N. N.) Solomon Grigor'evich Mikhlin (on the occasion of his eightieth birthday). (Russian) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1988**, vyp. 2, 128–129. (Editors) 89h:01059 01A70
- Denardo, Eric V.** (with Rothblum, Uriel G.; Swersey, Arthur J.) A transportation problem in which costs depend on the order of arrival. *Management Sci.* **34** (1988), no. 6, 774–783. (Summary) 89c:90074 90C08
- Dencker, Peter** ★ Generative attributierte Grammatiken. (German) [Generative attribute grammars] With a foreword by Gerhard Goos. Berichte der Gesellschaft für Mathematik und Datenverarbeitung [Reports of the Society for Mathematics and Data Processing], 158. Gesellschaft für Mathematik und Datenverarbeitung m.b.H. Bonn, St. Augustin; R. Oldenbourg Verlag, Munich, 1986. viii+132 pp. ISBN 3-486-20199-9 (From the preface) 89c:68072 68Q50 (68Q55)
- Denda, M.** A complex variable Green's function representation of plane inelastic deformation in isotropic solids. *Acta Mech.* **72** (1988), no. 3–4, 205–221. (Summary) 89f:73026 73E99
- Dendrinos, Dimitrios S.** (with Sonis, Michael) The onset of turbulence in discrete relative multiple spatial dynamics. *Appl. Math. Comput.* **22** (1987), no. 1, 25–44. (György Targonski) 89d:92084 92A20 (34D30, 39A11, 58F08, 58F13)
- Denecke, Klaus** Functional completeness in pseudocomplemented De Morgan algebras. *Beiträge Algebra Geom.* **24** (1987), 135–150. (H. P. Sankappanavar) 89b:06006 06D30 (03G25, 06D15)
- A note on 3-distributivity of preprimal algebras. (German and Russian summaries) *Wiss. Z. Pädagog. Hochschule "Karl Liebknecht" Potsdam* **31** (1987), no. 1, 99–102. (David M. Clark) 89d:08003 08A40
- Squares of primal algebras. *Z. Math. Logik Grundlag. Math.* **33** (1987), no. 1, 69–77. (I. G. Rosenberg) 89f:08009 08A40 (03B50)
- Varieties and quasivarieties, generated by two-element preprimal algebras, and their equivalences. *Acta Sci. Math. (Szeged)* **52** (1988), no. 1–2, 69–79. (David M. Clark) 89i:08011 08C15 (08A40)
- (with Pöschel, Reinhard) A characterization of Sheffer functions by hyperidentities. *Semigroup Forum* **37** (1988), no. 3, 351–362. (E. W. Kiss) 89c:08004 08A40 (20M07, 20M20)
- Algebraische Eigenschaften eines funktional unvollständigen dreiwertigen Aussagenkalküls. [Algebraic properties of a functionally incomplete three-valued propositional calculus] *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 2, 177–188. (V. V. Gorlov) 89c:03035 03B50 (03G25)
- Demeen, Linda** (with Shute, Gary) Polygonizations of point sets in the plane. *Discrete Comput. Geom.* **3** (1988), no. 1, 77–87. (D. T. Lee) 89c:68113 68U05 (05B30, 52-04, 68Q25)
- Denef, J.** On the degree of Igusa's local zeta function. *Amer. J. Math.* **109** (1987), no. 6, 991–1008. (Daniel Barsky) 89d:11108 11S40
- (with van den Dries, Lou)  $p$ -adic and real subanalytic sets. *Ann. of Math.* (2) **128** (1988), no. 1, 79–138. (Max A. Dickmann) 89k:03034 03C10 (03C60, 14G20, 14G30, 32B20)
- De Nemore, Jordanus** see de Nemore, Jordanus
- Dénes, J.** (with Keedwell, A. D.) Latin squares and 1-factorizations of complete graphs. I. Connections between the enumeration of Latin squares and rectangles and  $r$ -factorizations of labelled graphs. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), A, 109–126. (Jeffrey H. Dinitz) 89i:05058 05B15 (05C50)
- Denesbourg, Jean Louis** (with Focardi, Stefano; Paveri-Fontana, S. L.; Chelazzi, Guido) A mathematical framework for the life-cycle of planktonic-benthonic invertebrates. *Biomathematics and related computational problems* (Naples, 1987), 145–163, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) 89j:92051 92A15
- Deneury, A. C.** Theoretical study and optimization of a fluid-structure interaction problem. (French summary) *RAIRO Modél. Math. Anal. Numér.* **22** (1988), no. 1, 75–92.

- (Summary) **89d:73030** 73J06 (49B22, 76Q05, 93C75)
- Deneva, Sonya** (with Boyadzhiev, Todor) The equations of motion of a flexible thread in special cases. (Russian. English summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **75** (1981), no. 2, 231–243 (1985). (Summary) **89e:73024** 73K03 (70H25)
- Deng, An-Chang** (with Chua, Leon O.) Canonical piecewise-linear representation. *IEEE Trans. Circuits and Systems* **35** (1988), no. 1, 101–111. (Zdeněk Ertinger) **89c:58015** 58C25 (94C05)
- On network partitioning algorithm of large-scale CMOS circuits. *IEEE Trans. Circuits and Systems* **36** (1989), no. 2, 294–299. (Not in MR) **94C05** (93A15)
- Deng, Dian Liang** The law of the iterated logarithm for tail sums of Banach-space-valued random variables. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin*. **1988**, no. 2, 15–24. (K. F. Yu) **89i:60015** 60B12 (60F15)
- The law of iterated logarithm of weighted sums of Banach space valued random variables. *Dongbei Shuxue* **4** (1988), no. 1, 49–68. (V. K. Rohatgi) **89j:60048** 60F15 (60B12)
- Deng, Dong Gao** Boundedness of singular integral operators. (Chinese. English summary) *Adv. in Math. (Beijing)* **17** (1988), no. 1, 52–63. (Summary) **89g:47064** 47G05 (42B20)
- Deng, Guan Tie** Une condition nécessaire et suffisante pour la quasi-analyticité de Mandelbrojt sur une demi-droite. (English summary) [A necessary and sufficient condition for quasi-analyticity in the sense of Mandelbrojt on the half line] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 19, 769–772. (Thu Pham-Gia) **89f:26026** 26E10 (30D20)
- Deng, Ju Cheng** Blow-up of the solutions of a class of reaction-diffusion equations. (Chinese. English summary) *Acta Math. Appl. Sinica* **10** (1987), no. 4, 450–456. (Song Mu Zheng) **89d:35019** 35B40 (35B05, 35K37)
- Deng, Ju Long** Three properties of GM(1, 1) grey forecasting models—optimal structure and the problem of optimal quantity of information for grey forecasting control. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 5, 1–6. (Not in MR) **93B35**
- The grey exponential law for accumulative generation—the problem of optimal processing of information in grey control systems. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 5, 7–12. (Winston T. Lin) **89j:94004** 94A05 (33A10, 49D35, 90C08)
- Deng, Lih-Yuan** (with Chhikara, Raj S.) Conditional inference in finite population sampling under a calibration model. *Comm. Statist. Simulation Comput.* **17** (1988), no. 2, 663–681. (Not in MR) **62D05**
- Deng, Lu Cheng** (with Xiao, Jin Sheng; Yu, Chang Ming) The variational principle and generalized variational principle for the heat conduction problem. (Chinese. English summary) *Math. Appl.* **1** (1988), no. 4, 99–105. (Summary) **89m:80006** 80A20 (49H05)
- Deng, Nai Yang** (with Ma, Guo Yu) The penalty function method. (Chinese) *Chinese J. Oper. Res.* **2** (1983), no. 2, 65–69. (Not in MR) **90C30**
- Deng, S. M.** (with Chung, S.; Kernévez, J.-P.; Liu, Yu; Wang, Zirong) Shape optimization and continuation method. *Boundary control and boundary variations (Nice, 1986)*, 137–152. *Lecture Notes in Comput. Sci.*, **100**, Springer, Berlin-New York, 1988. (see **89f:93006**) **49F10**
- Deng, Wei Cai** Quadratic forms under spherical distributions. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* **3** (1987), no. 4, 306–309. (Summary) **89d:62040** 62H05
- Deng, Yao Hua** Singular integral equations in Orlicz spaces. II. (Chinese) *Acta Math. Sci. (Chinese)* **7** (1987), no. 3, 283–292. (Roger Lui) **89k:47077** 47G05 (45G05, 45N05)
- On the regularity and existence of solutions for semilinear elliptic equations of second order. *Acta Math. Sci. (English Ed.)* **7** (1987), no. 2, 217–228. (Yao Tian Shen) **89c:35059** 35J65
- Deng, Yaobing** (with Mannheim, Philip D.) Self-consistent solution for a scalar field coupled conformally to a Robertson-Walker geometry. *Astrophys. J.* **324** (1988), no. 1, part 1, 1–4. (Enric Verdaguer) **89a:81088** 81E20 (83C47)
- (with Mannheim, Philip D.) Perfect Maxwell fluids in the standard cosmology. *Gen. Relativity Gravitation* **20** (1988), no. 10, 969–987. (Gh. Procopiuc) **89i:83013** 83C15 (83C50)
- Deng, Zhi Bing** Degenerate elliptic systems of class I. *Acta Math. Sci. (English Ed.)* **7** (1987), no. 1, 97–108. (Ya. A. Roitberg) **89d:35066** 35J70
- A note on an example of A. V. Bitsadze. (Chinese. English summary) *J. South China Inst. Tech.* **15** (1987), no. 2, 63–67. (Xin Kang Guo) **89h:35101** 35J45 (35M05)
- Systems of elliptic equations that are degenerate on the whole boundary. (Chinese. English summary) *J. South China Inst. Tech.* **16** (1988), no. 1, 64–74. (Guo Chun Wen) **89f:35071** 35J55 (35J70)
- Deng, Zhong Xing** (with Cui, Ming Gen) Formal solutions of ill-posed operator equations of the first kind. (Chinese) *Acta Math. Sci. (Chinese)* **8** (1988), no. 2, 139–145. (Shao Zhong Yan) **89j:47008** 47A50 (47B38)
- (with Cui, Ming Gen) Estimates of upper bounds for Lebesgue constants. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **1988**, no. 1, 1–5. (Summary) **89j:41004** 41A05
- (with Wang, Hui) On the order of approximation of Hermite-Fejér polynomials. (Chinese. English summary) *Natur. Sci. J. Harbin Normal Univ.* **4** (1988), no. 2, 1–8. (Summary) **89k:41009** 41A10 (41A05)
- Deng, Zi Ke** A certain class of Galois connections. (Chinese summary) *Hunan Daxue Xuebao* **15** (1988), no. 1 *Special Issue of Math.*, 137–141. (F. Sik) **89m:06006** 06A15
- Deng, Zi Li** (with Wang, Jian Guo) Adaptive extended Kalman filtering for nonlinear systems. (Chinese. English summary) *Acta Automat. Sinica* **13** (1987), no. 5, 375–379. (Summary) **89g:93097** 93E11 (93C10)
- (with Wang, Jian Guo) A fictitious noise compensating technique of adaptive Kalman filtering for systems with model errors. (Chinese. English summary) *Inform. and Control (Shenyang)* **17** (1988), no. 1, 1–4. (Not in MR) **93E11** (93C40, 93C55)
- Deng, Zong Qi** (with Ruan, Shi Gui) Oscillation of second-order differential systems with respect to some of the variables. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* **22** (1988), no. 3, 267–270. (Jun Ping Chen) **89m:34039** 34C10
- Denham, M. J.** A Petri-net approach to the control of discrete-event systems. *Advanced computing concepts and techniques in control engineering (II Ciocco, 1987)*, 191–214. *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, **47**, Springer, Berlin-New York, 1988. (W. M. Wonham) **89m:93044** 93C30 (68Q90, 93B50)
- see also *Advanced computing concepts and techniques in control engineering*. **89g:93002**
- Den Hollander, W. Th. F.** see *den Hollander, W. Th. F.*
- Denias, Claude** (with Oppenheim, Georges; Viano, Marie-Claude) Estimation de paramètre par échantillonnage aléatoire. (English summary) [Random sampling and parametric estimation] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 13, 565–568. (Summary) **89b:62183** 62M09
- De Nicola, Rocco** (with Aceto, Luca; Fantechi, Alessandro) Testing equivalences for event structures. *Mathematical models for the semantics of parallelism (Rome, 1986)*, 1–20. *Lecture Notes in Comput. Sci.*, **280**, Springer, Berlin-New York, 1987. (Summary) **89a:68142** 68Q55 (68Q10)
- De Nicola, Rocco** (with Bittanti, Sergio; Colaneri, Patrizio) Two techniques for the solution of the discrete-time periodic Riccati equation. *Linear algebra in signals, systems, and control (Boston, MA, 1986)*, 315–331. *SIAM, Philadelphia, PA*, 1988. (Summary) **89i:93022** 93B25 (39A10, 39A12, 93E10, 93E11)
- (with Bittanti, Sergio; Colaneri, Patrizio) The difference periodic Riccati equation for the periodic prediction problem. *IEEE Trans. Automat. Control* **33** (1988), no. 8, 706–712. (B. G. Pachpatte) **89h:93049** 93E03 (39A10, 39A12)
- Denicolò, V.** Some further results on nonbinary social choice. *Soc. Choice Welf.* **4** (1987), no. 4, 277–285. (Prasanta K. Pattanaik) **89i:90008** 90A08
- Déniau, Y.** (with Derriennic, Y.) Sur la convergence presque sûre, au sens de Césaro d'ordre  $\alpha$ ,  $0 < \alpha < 1$ , de variables aléatoires indépendantes et identiquement distribuées. (English summary) [a.s. convergence, of order  $\alpha$ ,  $0 < \alpha < 1$ , in the sense of Césaro, of i.i.d. random variables] *Probab. Theory Related Fields* **79** (1988), no. 4, 629–636. (Eugeniusz Rychlik) **89m:60070** 60F15
- Deninger, Ch.** (with Wingberg, Kay) On the Beilinson conjectures for elliptic curves with complex multiplication. *Beilinson's conjectures on special values of L-functions*, 249–272. *Perspect. Math.*, **4**, Academic Press, Boston, MA, 1988. (Noburo Ishii) **89j:11045** 11G05 (11F67, 11G40, 14K22)
- A proper base change theorem for nontorsion sheaves in étale cohomology. *J. Pure Appl. Algebra* **50** (1988), no. 3, 231–235. (Boulahia Nejib) **89i:14016** 14F20
- Denis, Remy Y.** On certain expansions of basic hypergeometric functions of  $n$  variables and  $q$ -operators. *J. Indian Math. Soc. (N.S.)* **49** (1985), no. 1–2, 25–30 (1987). (Harold Exton) **89c:33007** 33A35
- On certain expansions of basic hypergeometric function. *Vikram Math. J.* **6** (1985/86), 13–16. (Introduction) **89d:33007** 33A30 (33A35)
- On certain transformations of polybasic multiple hypergeometric functions. *Ranchi Univ. Math. J.* **17** (1986), 1–2 (1987). (Introduction) **89b:33006** 33A35
- On certain transformations of basic hypergeometric functions. *Bull. Calcutta Math. Soc.* **79** (1987), no. 3, 134–138. (Harold Exton) **89c:33008** 33A35
- (with Verma, Arun; Srinivasa Rao, K.) New continued fractions involving basic hypergeometric  ${}_2\phi_2$  functions. *J. Math. Phys. Sci.* **21** (1987), no. 6, 585–592. (H. M. Srivastava) **89c:33008** 33A30 (40A15)
- (with Lall, R. Samuel) Smallest binary sum of a graph. *Progr. Math. (Varanasi)* **21** (1987), no. 1, 1–8. (Ernie S. Solheid) **89c:05141** 05C50
- Denisenko, E. A.** (with Aleksandrov, G. A.; Armand, A. D.; Belotelov, N. V.; Vedyushkin, M. A.; Vilkova, L. P.; Voinov, A. A.; Krapivin, V. F.; Logofet, D. O.; Ovsyannikov, L. I.; Pak, S. B.; Pasekov, V. P.; Pisarenko, N. F.; Razzhevaikin, V. N.; Sarancha, D. A.; Svirzhev, Yu. M.; Semenov, M. A.; Tarko, A. M.; Fesenko, S. V.; Schmidt, D. A.) ★ Математические модели экосистем. (Russian) [Mathematical models of ecosystems] Экологические и демографические последствия ядерной войны. [Ecological and demographic consequences of a nuclear war] Edited and with a foreword by A. A. Dorodnitsyn. "Nauka", Moscow, 1986. 176 pp. (Summary) **89a:92054** 92A17
- Denisenko, Yu. I.** (with Blyumin, S. L.; Milovidov, S. P.) On the investigation and solution of integer systems of linear equations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 6, 787–792, 957. (A. M. Galperin) **89b:65055** 65F20 (90C05)
- Denis'evskii, N. A.** The strong law of large numbers for a linear process in a Banach space. (Russian) *Asymptotic problems in the theory of random processes (Russian)*, 52–57, 115. *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (Hò Dàng Phức) **89g:60012** 60B12 (60F15)
- Denisov, A. A.** (with Koldoba, A. V.; Kuznetsov, O. A.; Poveshchenko, Yu. A.) Convergence of difference schemes of the method of support operators for the Poisson equation on generalized solutions. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 46, 16 pp. (Summary) **89b:65160** 65N10
- Denisov, A. M.** Numerical methods in solving the inverse problems of scattering. *Ill-posed problems in the natural sciences*, 196–205. *Adv. Sci. Tech. USSR: Math. Mech. Ser.*, "Mir", Moscow, 1987. (Tuncay Aktosun) **89b:81230** 81F05 (34A55, 34B25, 65L99)
- (with Chanov, A. V.) An inverse problem for a model of nonequilibrium dynamics of sorption with mixed kinetics. (Russian) *Numerical methods for solving inverse problems of mathematical physics (Russian)*, 21–29, 261. *Moskov. Gos. Univ., Moscow*, 1988. (Summary) **89g:35113** 35R30
- Denisov, L. V.** Infinitely divisible Markov mappings in the quantum theory of probability. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 2, 417–420; translated in *Theory Probab. Appl.* **33** (1988), no. 2, 392–395. (A. Bartoszewicz) **89m:46104** 46L50 (81C20)
- Denisov, V. N.** (with Budak, A. B.) Some properties of the eigenfunctions of the Sturm-Liouville operator with discontinuous coefficients. (Russian) *Mat. Zametki* **42** (1987), no. 6, 819–830, 910. (Not in MR) **34B25** (47E05)
- Stabilization of means with respect to time of the solution of the Cauchy problem for a parabolic equation. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 1, 44–54, 181; translated in *Differential Equations* **24** (1988), no. 1, 33–42. (Genowefa Majcher) **89i:35017a** 35B35 (35K15)
- Stabilization of the solution of the Cauchy problem for the heat equation. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 2, 288–299, 365; translated in *Differential Equations* **24** (1988), no. 2, 219–227. (Genowefa Majcher) **89i:35017b** 35B35 (35K05)
- Stabilization of the time means of the difference of solutions to the Cauchy problem for a hyperbolic equation. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 1, 17–22; translated in *Soviet Math. Dokl.* **36** (1988), no. 3, 399–403. (A. Haimovici) **89k:35126** 35L15 (35B40)
- Denisova, G. V.** Horospherical harmonics on symmetric spaces connected with the group of motions  $SO(p, q)$ . (Russian) *Functional analysis*, no. 26 (Russian), 82–91, *Ulyanovsk. Gos. Ped. Inst., Ulyanovsk*, 1986. (Antoni Wawrzynczyk) **89k:22024** 22E45 (33A45, 43A30, 43A80)



- (with Vilenkin, N. Ya.; Kudryashova, T. G.; Rudnev, A. A.) Irreducible representations of the groups  $SO(n)$ ,  $SO(p, q)$ ,  $SU(n)$  and  $S_4$  and their matrix elements. (Russian) *Group-theoretic methods in physics, Vol. 2 (Russian) (Jarmala, 1985)*, 213–217, “Nauka”, Moscow, 1986. (see **89d:81002**) 22E45 (81C40)
- Denizeau, Y.** Compact action of a locally compact group on a  $C^*$ -algebra. *Math. Japon.* **32** (1987), no. 2, 177–215. (Yoshiyazu Katayama) **89d:46066** 46L55
- Denk, Gert** (with Metzler, Wolfgang) Nielsen reduction in free groups with operators. *Fund. Math.* **129** (1988), no. 3, 181–197. (Martin Edjvet) **89k:20048** 20F06 (20E06, 54E60, 57M99)
- Denker, John** (with Schwartz, Daniel B.; Wittner, Ben; Solia, Sara; Howard, Richard; Jackel, Lawrence; Hopfield, John) Large automatic learning, rule extraction, and generalization. *Complex Systems* **1** (1987), no. 5, 877–922. (Summary) **89k:92080** 92A25
- Denker, Manfred** (with Keller, Gerhard; Puri, Madan L.) Linear rank statistics, bounded operators, and weak convergence. *New perspectives in theoretical and applied statistics (Bilbao, 1986)*, 171–206, Wiley Ser. Probab. Math. Statist.: Probab. Math. Statist., Wiley, New York, 1987. (Rashid Ahmad) **89g:62028** 62E20 (62G10)
- (with Puri, Madan L.) Asymptotic behavior of multiresponse permutation procedures. *Adv. in Appl. Math.* **9** (1988), no. 2, 200–210. (P. W. Mielke, Jr.) **89c:60075** 60F17 (62E20, 62G10)
- (with Puri, Madan L.) An invariance principle for processes indexed by two parameters and some statistical applications. *Probab. Math. Statist.* **9** (1988), no. 1, 25–76. (Georg Neuhaus) **89g:60119** 60F17 (62G30)
- Denkowska, Zofia** (with Wacht, Krystyna) Une construction de la stratification sous-analytique avec la condition (w). (English and Russian summaries) [A construction of a subanalytic stratification under the condition (w)] *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 7–8, 401–405. (D. J. A. Trotman) **89m:32013** 32B20 (32C42)
- Stratifications sous-analytiques. [Subanalytic stratifications] *Geometry Seminars, 1986 (Italian) (Bologna, 1986)*, 43–53, Univ. Stud. Bologna, Bologna, 1988. (J. Bochnak) **89m:32014** 32B20 (32C42)
- Denkowski, Z.** (with Migorski, S.) Control problems for parabolic and hyperbolic equations via the theory of  $G$  and  $\Gamma$  convergence. *Ann. Mat. Pura Appl.* (4) **149** (1987), 23–39. (S. Rolewicz) **89c:49005** 49A22 (35K99, 35L99, 49A27, 49A50, 93C20)
- Denman, E. D.** (with Hariche, K.) On solvents and Lagrange interpolating  $\lambda$ -matrices. *Appl. Math. Comput.* **25** (1988), no. 4, 321–332. (M. Tismenetsky) **89b:15016** 15A22 (65F30)
- Den Nijs, Marcel P. M.** see **den Nijs, Marcel P. M.**
- Dennis, John E., Jr.** (with Turner, Kathryn) Generalized conjugate directions. *Linear Algebra Appl.* **88/89** (1987), 187–209. (Summary) **89c:90094** 90C30
- (with Morshedi, A. M.; Turner, Kathryn) A variable-metric variant of the Karmarkar algorithm for linear programming. *Math. Programming* **39** (1987), no. 1, 1–20. (C. B. Millham) **89a:90079** 90C05
- (with Schnabel, Robert B.) ★ Численные методы безусловной оптимизации и решения нелинейных уравнений. (Russian) [Numerical methods for unconstrained optimization and solutions of nonlinear equations] Translated from the English by O. P. Burdakov. Translation edited by Yu. G. Evtushenko. With a preface by Evtushenko and Burdakov. “Mir”, Moscow, 1988. 440 pp. ISBN 5-03-001102-1 (Editors) **89j:65002** 65–01 (49Dxx, 65K05, 90C30)
- Dennis, R. K.** (with Vaserstein, L. N.) On a question of M. Newman on the number of commutators. *J. Algebra* **118** (1988), no. 1, 150–161. (B. R. McDonald) **89k:20062** 20G35 (19B10)
- see also **Algebraic K-theory and algebraic number theory**, **89j:18010**
- Densh, M.** (with Orudzhev, G. D.) Discreteness of the spectrum of selfadjoint extensions of a minimal operator generated by a fourth-order operator-differential equation. (Russian) *Applied problems in functional analysis (Russian)*, 70–81, 117, Azerbaidzhan. Gos. Univ., Baku, 1986. (Summary) **89c:47058** 47E05 (34B25)
- Denur, Jack** (with Rindler, Wolfgang) A simple relativistic paradox about electrostatic energy. *Amer. J. Phys.* **56** (1988), no. 9, 795. (Summary) **89g:33003** 83A05
- Denzler, Jochen** Mather sets for plane Hamiltonian systems. *Z. Angew. Math. Phys.* **38** (1987), no. 6, 791–812. (Zhen Xi Dong) **89b:58055** 58F05
- Deo, Narsingh** (with Das, Sajal K.) Square-star reducibility and its forbidden graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 277–290. (Edward R. Scheinerman) **89c:05166** 05C75
- (with Das, Sajal K.) Divide-and-conquer-based optimal parallel algorithms for some graph problems on EREW PRAM model. *IEEE Trans. Circuits and Systems* **35** (1988), no. 3, 312–322. (Václav Koubek) **89d:68017** 68Q10 (05C38, 05C40, 68Q25, 68R10)
- Deo, S. G.** (with Torres, Euclides F.) Generalized variation-of-constants formula for nonlinear functional-differential equations. *Appl. Math. Comput.* **24** (1987), no. 3, 263–274. (Wazir Hasan Abdi) **89b:34152** 34K05 (34K15)
- (with Vaz, P. T.) Nonlinear integral inequality in two independent variables. *Internat. J. Math. Math. Sci.* **11** (1988), no. 1, 115–119. (L. Losonczi) **89a:26028** 26D10
- Deo, Satya** (with Roy, Atul N.) On equivariant cohomology theories. *Bull. Calcutta Math. Soc.* **79** (1987), no. 3, 170–179. (Andrzej Kozłowski) **89c:55014** 55N25 (55N05, 55N30, 55N91)
- (with Andotra, Janak Singh) On completely finitistic spaces. *Bull. Calcutta Math. Soc.* **80** (1988), no. 3, 173–177. (Kōichi Tsuda) **89k:54022** 54B17 (54F45)
- (with Mutepawar, Subhash) On cohomological dimension of a space and its Stone-Čech compactification. *Colloq. Math.* **55** (1988), no. 1, 35–39. (Andrzej Kozłowski) **89i:54046** 54F45 (55M10)
- (with Jamwal, Dalip Singh; Krishan, Ram) Cohomology with exotic supports and the generalized excision. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 3, 326–340. (Donald M. Davis) **89h:55010** 55N30 (55N40)
- (with Roy, Atul N.) Tauness and locally finitely-valued Alexander-Spanier cochains. *Proc. Amer. Math. Soc.* **102** (1988), no. 2, 426–430. (R. A. Piccinini) **89c:55007** 55N35
- De Obaldia, Elidia** see **Obaldia, Elidia**
- Deodhar, Vinay V.** On some geometric aspects of Bruhat orderings. II. The parabolic analogue of Kazhdan-Lusztig polynomials. *J. Algebra* **111** (1987), no. 2, 483–506. (James E. Humphreys) **89a:20054** 20G99 (20H15, 22E65)
- De Oliveira, A. J. Franco** see **de Oliveira, A. J. Franco**
- De Oliveira, C. G.** see **de Oliveira, C. G.**
- De Oliveira, Lúimar C.** (with Negri, Luiz J.; Teixeira, Julio M.) Canonoid transformations and constants of motion. *J. Math. Phys.* **28** (1987), no. 10, 2369–2372. (P. G. L. Leach) **89a:70017** 70H15 (58F05, 70H05)
- De Oliveira, M. J.** see **de Oliveira, M. J.**
- De Oliveira, Paula** see **de Oliveira, Paula**
- Depaepe, E.** (with Moons, M.; Delhaese, F.) Elliptical Hill's problem (large and small impact parameters). Long term evolution of planetary systems (Ramsau, 1988). *Celestial Mech.* **43** (1987/88), no. 1–4, 349–359. (Summary) **89m:70015** 70F07
- De Paep, P. J.** see **de Paep, P. J.**
- De Pagter, B.** see **de Pagter, B.**
- De Palma, André** see **de Palma, André**
- De Pascale, Espedito** (with Trombetta, Giulio) An approach to the study of topological degree for weakly continuous mappings in reflexive Banach spaces. (Italian. English summary) *Matematiche (Catania)* **39** (1984), no. 1–2, 121–132 (1988). (Christian Fenske) **89d:47135** 47H15
- De Pasquale, F.** (with Mecozzi, A.; Peliti, Luca) Unified approach to stochastic representations in reaction kinetics. (Italian and Russian summaries) *Nuovo Cimento B* (11) **100** (1987), no. 6, 733–743. (Summary) **89d:80023** 80A30 (60G07, 82A31)
- De Pater, A. D.** see **de Pater, A. D.**
- De Piero, Alvaro R.** (with Iusem, Alfredo N.) A finitely convergent “row-action” method for the convex feasibility problem. *Appl. Math. Optim.* **17** (1988), no. 3, 225–235. (J. E. Spingarn) **89a:90108** 90C25
- De Pillis, J.** see **de Pillis, J.**
- De Prada Vicente, M. A.** (with González Juarros, E.; Pérez Castrillo, J. D.) A note on fuzzy proximity spaces. *J. Math. Anal. Appl.* **133** (1988), no. 2, 355–358. (T. Thirvikraman) **89i:54004** 54A40 (03E72, 54E05)
- Deprettere, E. F. A.** (with Dewilde, Patrick M.) The generalized Schur algorithm: approximation and hierarchy. *Topics in operator theory and interpolation*, 97–116, *Oper. Theory: Adv. Appl.*, 29, Birkhäuser, Basel-Boston, MA, 1988. (L. Rodman) **89g:15040** 15A99 (47B35, 65F99)
- Deprez, J.** Semiparallel hypersurfaces. *Rend. Sem. Mat. Univ. Politec. Torino* **44** (1986), no. 2, 303–316 (1987). (J. R. Vanstone) **89d:53105** 53C42
- (with Dillen, Franki; Petrović-Torgasev, M.; Verstraeten, L.) On Weyl's projective curvature tensor of Kaehlerian hypersurfaces. *An. Stiint. Univ. “Al. I. Cuza” Iași Sect. I a Mat. (N.S.)* **33** (1987), no. 3, 233–238. (Wolfgang Kühnel) **89k:53028** 53B35 (53B25)
- (with Sekigawa, Kouei; Verstraeten, L.) Classifications of Kaehler manifolds satisfying some curvature conditions. *Sci. Rep. Niigata Univ. Ser. A No. 24* (1988), 1–12. (Wolfgang Kühnel) **89d:53045** 53B35 (53C55)
- De Prii, Nelson** Improved approximations for the aggregate claims distribution of a life insurance portfolio. Special issue for ICA 1988 Helsinki. *Scand. Actuar. J.* **1988**, no. 1–2, 61–68. (Harry H. Panjer) **89j:62137** 62P05
- Deprit, André** (with Ferrer, Sebastián) Note on Cid's radial intermediary and the method of averaging. *Celestial Mech.* **40** (1987), no. 3–4, 335–343. (Constantin Simirad) **89d:70011** 70F15
- De Queiroz, Maria Lúcia B.** see **de Queiroz, Maria Lúcia B.**
- Der, R.** Systems under colored noise: treatment by normalized operator cumulant expansions. *Phys. A* **154** (1989), no. 3, 421–451. (Summary) **89k:82038** 82A31
- (with Schumacher, W.) Operator cumulant expansions for colored noise problems: a resummation procedure. *Phys. Lett. A* **134** (1989), no. 7, 413–416. (Summary) **89k:82039** 82A31 (81E15)
- Derbasova, V. A.** Use of the Green integral formula in a problem of flow around bodies of arbitrary shape. (Russian) *Boundary value problems (Russian)*, 182–186, 204, *Perm. Politekh. Inst., Perm*, 1983. (see **89c:00008**) 76B99
- Dereli, T.** (with Mukherjee, Manash; Tucker, R. W.) Weyl invariant tensors in odd dimensions. *Classical Quantum Gravity* **5** (1988), no. 1, L21–L25. (H. Rund) **89c:53030** 53B30 (53B20, 53B50, 83E15)
- (with Tucker, R. W.) Gravitational interactions in 2 + 1 dimensions. *Classical Quantum Gravity* **5** (1988), no. 7, 951–959. (Carl Brans) **89c:83054** 83D05
- (with Arik, M.) Euler-form actions and the vanishing of the cosmological constant. *Phys. Rev. Lett.* **62** (1989), no. 1, 5–7. (L. M. Sokolowski) **89j:83068** 83E15 (53C80)
- Derendinger, J.-P.** (with Chamseddine, A. H.) Twisted superstrings in four dimensions. *Nuclear Phys. B* **301** (1988), no. 3, 381–425. (Aleksandar R. Bogojević) **89c:81087** 81E13 (81E30)
- (with Chamseddine, A. H.; Quirós, M.) Nonsupersymmetric four-dimensional strings. *Nuclear Phys. B* **311** (1988/89), no. 1, 140–170. (Summary) **89k:81135** 81E99 (81E30, 81G20)
- Derendyaev, N. V.** The Andronov-Hopf bifurcation in the dynamics of a rotor system containing a fluid. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 4, 798–801; translated in *Soviet Phys. Dokl.* **33** (1988), no. 8, 592–594. (Iuliana Oprea) **89k:76096** 76U05 (58F14, 70K99)
- Derenko, N. V.** (with Gurman, V. I.; Baturin, V. A.; Moskalenko, A. I.; Baginov, I. P.; Bobryshev, A. G.; Butin, A. A.; Danilina, E. V.; Dushin, K. B.; Dykhta, V. A.; Kolokol'nikova, G. A.; Konstantinov, G. N.; Mel'nik, V. V.; Nikiforova, L. N.; Ovsyanikova, N. A.; Rasina, I. V.; Rozenraukh, D. M.; Urbanovich, D. E.; Fedorova, E. Yu.) ★ Методы улучшения в вычислительном эксперименте. (Russian) [Methods of improving [control] in numerical experiments] “Nauka” Sibirsk. Otdel., Novosibirsk, 1988. 184 pp. ISBN 5-02-028573-0 (Asen L. Dontchev) **89b:65099** 65Kxx (49Dxx, 93B40)
- De Resmini, Maria Luisa J.** see **de Resmini, Maria Luisa J.**
- De Rezende, P. J.** see **de Rezende, P. J.**
- Derezinski, Jan** Threshold singularities of two-cluster-two-cluster scattering amplitudes for dilation analytic potentials. *J. Math. Phys.* **29** (1988), no. 5, 1171–1173. (C. R. Garibotti) **89f:81224** 81F05
- D'Erli, L.** see **Györfi, László**
- Derienko, I. I.** On a conjecture of Brualdi. (Russian) *Mat. Issled.* No. 102 *Issled. Oper. i Kvazigrupp* (1988), 53–65, 119. (Ján Duplák) **89g:20108** 20N05
- Deriglazov, A. A.** (with Bratchikov, A. V.; Tyutin, I. V.)  $1/N$ -expansions in  $U(N) \times U(k)$ -invariant  $N \times k$  matrix chiral models ( $D = 2, 3$ ). (Russian. English summary) *Teoret. Mat. Fiz.* **75** (1988), no. 3, 361–370; translated in *Theoret. and Math. Phys.* **75** (1988), no. 3, 581–587. (Summary) **89g:81044** 81E13

- Derigs, U.** The shortest augmenting path method for solving assignment problems—motivation and computational experience. *Ann. Oper. Res.* 4 (1985), no. 1-4, 57-102. (Summary) **89b:90145** 90C10
- De Ritis, R.** *see de Ritis, R.*
- Derkach, V. A.** (with Malamud, M. M.; Tsekanovskii, E. R.) Sectorial extensions of a positive operator, and the characteristic function. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 3, 537-541; translated in *Soviet Math. Dokl.* 37 (1988), no. 1, 106-110. (T. Ya. Azizov) **89f:47050** 47B44 (47A20, 47B25)
- Dermanis, Athanasios** The Bruns formula in three dimensions. *Bull. Géodésique* 61 (1987), no. 4, 297-309. (Summary) **89a:86005** 86A20
- Dermenjian, Yves** (with Guillot, Jean-Claude) Scattering of elastic waves in a perturbed isotropic half space with a free boundary. The limiting absorption principle. *Math. Methods Appl. Sci.* 10 (1988), no. 2, 87-124. (Volker Vogelsang) **89i:35109** 35P23 (73D25)
- Dermody, Jaime Cuevas** (with Prisman, Eliezer Zeev) Term structure multiplicity and clientele in markets with transactions costs and taxes. *J. Finance* 43 (1988), no. 4, 893-911. (Not in MR) 90A09 (90A14)
- Dermoune, A.** (with Krée, Paul; Wu, Li Ming) Calcul stochastique non adapté par rapport à la mesure aléatoire de Poisson. [Nonadapted stochastic calculus with respect to the Poisson random measure] *Séminaire de Probabilités, XXII*, 477-484, *Lecture Notes in Math.*, 1321, Springer, Berlin-New York, 1988. (Daniel Ocone) **89i:60112** 60H05 (60G35, 60H07)
- De Roeer, J. W.** *see de Roeer, J. W.*
- De Roeer, W. P.** *see de Roeer, W. P.*
- De Roo, M.** *see de Roo, M.*
- De Roos, André M.** *see de Roos, André M.*
- De Rop, Y.** (with Demaret, J.) Using EXCALC to study nondiagonal multidimensional spatially homogeneous cosmologies. *Gen. Relativity Gravitation* 20 (1988), no. 11, 1127-1139. (Carl Brans) **89m:83084** 83E15 (83-04, 83F05)
- (with Demaret, J.; Henneaux, M.) Chaos in nondiagonal spatially homogeneous cosmological models in spacetime dimensions  $\leq 10$ . *Phys. Lett. B* 211 (1988), no. 1-2, 37-41. (Stephen W. Goode) **89j:83011** 83C15 (83F05)
- De Rosa, Stefano** *see Nicolò Stenone in the Florence and Europe of his day*, **89m:01126**
- Derr, L.** (with Sarafyan, D.; Outlaw, C.) Continuous approximate solution of differential equations. *Numerical methods (Miskolc, 1986)*, 337-362, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (A. Cojia) **89c:65080** 65L05
- (with Outlaw, C.; Sarafyan, D.) Higher order continuous solution of  $y'' = f(x, y, y')$  and  $y'' = f(x, y)$  initial value problems. The mathematics of systems and computations (Atlanta, GA, 1986). *Comput. Math. Appl.* 16 (1988), no. 10-11, 895-902. (Summary) **89b:65081** 65L05
- Derr, V. Ya.** On the generalized de la Vallée-Poussin problem. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 11, 1861-1872, 2019. (P. S. Milojević) **89h:34017** 34B15 (34B25)
- On the determination of the solution of a linear differential equation with generalized functions in the coefficients. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 2, 269-272; translated in *Soviet Math. Dokl.* 37 (1988), no. 1, 56-59. (Zdzisław Wyderka) **89h:34009** 34A30 (34A05, 34A10)
- Derrick, G. H.** Complete orthonormal sets on the past light cone. I. Functions belonging to mass zero and helicity  $s$ . *J. Math. Phys.* 29 (1988), no. 3, 636-641. (Jules Beckers) **89e:81066** 81D25 (20C35, 81G20)
- Derrida, B.** Phase transitions in random networks of automata. *Le hasard et la matière (Les Houches, 1986)*, 611-626, North-Holland, Amsterdam-New York, 1987. (see **89j:82001**) **82A57** (68Q75)
- (with Flyvbjerg, H.) Statistical properties of randomly broken objects and of multivalley structures in disordered systems. *J. Phys. A* 20 (1987), no. 15, 5273-5288. (A. Comtet) **89c:82052** 82A57
- (with Nadal, J.-P.) Learning and forgetting on asymmetric, diluted neural networks. *J. Statist. Phys.* 49 (1987), no. 5-6, 993-1009. (Summary) **89c:92013** 92A09 (82A99, 92A25)
- (with Neumann, Avidan U.; Weisbuch, Gérard) Domains and distances in magnetic systems. *Complex Systems* 2 (1988), no. 4, 485-499. (Aernout C. D. van Enter) **89i:82072** 82A57 (82A68)
- (with Gardner, E.) Optimal storage properties of neural network models. *J. Phys. A* 21 (1988), no. 1, 271-284. (F. Ventriglia) **89j:82060** 82A57 (68M99, 92A09)
- (with Bessis, Daniel) Statistical properties of valleys in the annealed random map model. *J. Phys. A* 21 (1988), no. 9, L509-L515. (W. Th. F. den Hollander) **89k:60155** 60K35 (82A31)
- (with Golinelli, O.) Effect of thermal noise and initial conditions in the dynamics of a mean-field ferromagnet. (French summary) *J. Physique* 49 (1988), no. 10, 1663-1671. (Summary) **89i:82085** 82A68
- (with Zanon, N.) Weak disorder expansion of Liapunov exponents in a degenerate case. *J. Statist. Phys.* 50 (1988), no. 3-4, 509-528. (W. Th. F. den Hollander) **89j:82047** 82A42 (60K99)
- (with Barber, Michael N.) Dynamical phase transitions in the two-dimensional ANNNI model. New directions in statistical mechanics (Santa Barbara, CA, 1987). *J. Statist. Phys.* 51 (1988), no. 5-6, 877-891. (Summary) **89j:82017** 82A25 (82-04, 82A68)
- (with Meir, Ronny) Chaotic behavior of a layered neural network. *Phys. Rev. A* (3) 38 (1988), no. 6, 3116-3119. (Summary) **89h:92012** 92A09 (82A57)
- Derridj, Makhlof** (with De Bartolomeis, Paolo) Positive vector bundles and harmonic maps. (Italian summary) *Ann. Mat. Pura Appl.* 4 (150) (1988), 21-37. (John C. Wood) **89j:58019** 58E20 (32H99, 32L15, 53C55)
- (with Tartakoff, David S.) Analyticité locale pour le problème  $\bar{\partial}$ -Neumann en des points de faible pseudoconvexité. (English summary) [Local analyticity for the  $\bar{\partial}$ -Neumann problem at some weakly pseudoconvex points] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 10, 429-432. (Andrei Iordan) **89k:32037** 32F20 (35N15)
- (with Tartakoff, David S.) Local analyticity for  $\mathbb{C}_2$  and the  $\bar{\partial}$ -Neumann problem at certain weakly pseudoconvex points. *Comm. Partial Differential Equations* 13 (1988), no. 12, 1521-1600. (Yu. V. Egorov) **89m:35158** 35N15 (32F20, 35H05)
- Sur l'existence et la régularité de solutions radiales pour des équations de type Monge-Ampère complexe. [Existence and uniqueness of radial solutions of complex Monge-Ampère equations] *Math. Ann.* 280 (1988), no. 1, 33-43. (Peter Pflug) **89a:32019** 32F20 (35J60)
- Derriennic, Y. ★** Entropie, théorèmes limite et marches aléatoires. (French) [Entropy, limit theorems and random walks] Publications de l'Institut de Recherche Mathématique de Rennes. [Publications of the Rennes Institute of Mathematical Research] *Université de Rennes I, Institut de Recherche Mathématique de Rennes, Rennes, 1985*, i+44 pp. (M. Iosifescu (Zbl 593:60013)) **89f:60076a** 60J15 (60B15, 60F05)
- Entropie, théorèmes limite et marches aléatoires. [Entropy, limit theorems and random walks] *Probability measures on groups, VIII (Oberwolfach, 1985)*, 241-284, *Lecture Notes in Math.*, 1210, Springer, Berlin-New York, 1986. (M. Iosifescu (Zbl 593:60013)) **89f:60076b** 60J15 (60B15, 60F05)
- (with Hachem, Bachar) Sur la convergence en moyenne des suites presque sous-additives. [On the convergence in the mean of almost subadditive sequences] *Math. Z.* 198 (1988), no. 2, 221-224. (Isaac Meilijson) **89h:28024** 28D05 (60F15, 60G10)
- (with Dénél, Y.) Sur la convergence presque sûre, au sens de Cesàro d'ordre  $\alpha$ ,  $0 < \alpha < 1$ , de variables aléatoires indépendantes et identiquement distribuées. (English summary) [a.s. convergence, of order  $\alpha$ ,  $0 < \alpha < 1$ , in the sense of Cesàro, of i.i.d. random variables] *Probab. Theory Related Fields* 79 (1988), no. 4, 629-636. (Eugeniusz Rychlik) **89m:60070** 60F15
- Dershowitz, Nachum** (with Okada, Mitsuhiro; Sivakumar, G.) Canonical conditional rewrite systems. 9th International Conference on Automated Deduction (Argonne, IL, 1988), 538-549, *Lecture Notes in Comput. Sci.*, 310, Springer, Berlin-New York, 1988. (see **89c:68004**) **68Q50** (68T15)
- (with Bachmair, Leo) Critical pair criteria for completion. *J. Symbolic Comput.* 6 (1988), no. 1, 1-18. (Jürgen Dassow) **89j:68087** 68Q50 (68Q40)
- (with Marcus, Leo; Tarlecki, A.) Existence, uniqueness, and construction of rewrite systems. *SIAM J. Comput.* 17 (1988), no. 4, 629-639. (P. Deussen and Chr. Brzowska) **89k:68090** 68Q50 (03B35, 03C05, 08B05, 68T15)
- Deruelle, Nathalie** (with Madore, John) The Friedmann universe as an attractor of a Kaluza-Klein cosmology. *Modern Phys. Lett. A* 1 (1986), no. 4, 237-253. (Miao Li) **89b:83077** 83E15 (83F05)
- Cosmologies primordiales, leur variété, leurs contraintes. (English summary) [Primordial cosmologies, their variety, their constraints] *J. Geom. Phys.* 4 (1987), no. 2, 133-162. (Summary) **89f:83113** 83F05 (81G25, 83E15)
- (with Linet, B.) A cosmic string shock wave. *Classical Quantum Gravity* 5 (1988), no. 1, 55-58. (Jorge A. Pullin) **89e:83088** 83F05 (83C55)
- (with Barrow, John D.) The confrontation of no-scale supergravity with cosmology. *Nuclear Phys. B* 297 (1988), no. 4, 733-747. (W. Cox) **89b:83091** 83E50 (81E20, 83F05)
- Dervieux, Alain** (with Lallemand, Marie-Hélène) A multigrid finite element method for solving the two-dimensional Euler equations. *Multigrid methods (Copper Mountain, CO, 1987)*, 337-363, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (A. Jami) **89i:76013** 76-08 (65N30, 76H05, 76N15)
- (with Arminjon, Paul; Fezoui, Loula; Steve, Hervé; Stoufflet, Bruno) Nonoscillatory schemes for multidimensional Euler calculations with unstructured grids. *Nonlinear hyperbolic equations—theory, computation methods, and applications (Aachen, 1988)*, 1-10, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 76-08
- Deryabin, S. L.** Three-dimensional effusion in a vacuum of an inhomogeneous moving gas under conditions of the action of mass forces. (Russian) *Dinamika Sploshn. Sredy* No. 83 (1987), 60-71, 159. (Introduction) **89m:76051** 76M05 (76L05)
- Deryabina, A. V.** A problem without initial conditions for strongly degenerate hyperbolic equations with increasing coefficients. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1987, no. 6, 71-73. (A. S. Berdyshev) **89c:35111** 35L80
- De Rycker, Henry** (with Dubois, Daniel M.) Une approche critique du concept d'entropie des systèmes macroscopiques. [A critical approach to the concept of entropy in macroscopic systems] 11<sup>e</sup> congrès international de cybernétique (Namur, 1986), 82-96, *Assoc. Internat. Cybernét., Namur, 1986*. (see **89a:94001**) 94A17
- Deryugin, I. A.** (with Nagibbarova, I. A.; Bogdanov, E. I.) ★ Динамика квантовых систем. (Russian) [The dynamics of quantum systems] "Nauka i Tekhnika", Minsk, 1986. 280 pp. (J. Christina) **89j:81102** 81G10 (58C27, 58F14, 81-02, 81K05)
- Derzhavets, B. A.** Localizable submodules in a space of entire functions. (Russian) *Izv. Severo-Kavkaz. Nauchn. Tsentra Vyssh. Shkoly Estestv. Nauk.* 1987, no. 2, 31-34, 140. (Alexander Russakovskii) **89c:32010** 32A15 (46J15)
- Derzko, N. A.** (with Seidman, Thomas I.; Sethi, Suresh P.) Dynamics and optimization of a distributed sales-advertising model. *J. Optim. Theory Appl.* 52 (1987), no. 3, 443-462. (Autorreferat (Zbl 585:90055)) **89b:90057** 90A30 (90A16, 92A15)
- Desai, Dilip** (with Potter, O. E.) Use of asymptotic cases in the solution of ordinary differential equations with constant coefficients: case study of a tridiagonal system. *Computational techniques and applications: CTAC-87 (Sydney, 1987)*, 167-175, North-Holland, Amsterdam-New York, 1988. (Xu Hai Xu) **89c:65068** 65L05
- Desai, Meghnad** *see Sargan, John Denis*, **89k:62129**
- Desai, Rashmi C.** (with Heermann, Dieter W.; Binder, K.) Finite-size scaling in a microcanonical ensemble. *J. Statist. Phys.* 53 (1988), no. 3-4, 795-823. (M. Lawrence Glasser) **89k:82004** 82-08 (82A25, 82A68)
- Desai, U. B.** (with Skelton, Robert E.) Partially nested  $q$ -Markov covariance equivalent realizations. *Control Theory Adv. Tech.* 3 (1987), no. 4, 323-342. (B. G. Mertzios) **89h:93014** 93B15 (49D27, 93E25)
- (with King, A. M.; Skelton, Robert E.) A generalized approach to  $q$ -Markov covariance equivalent realizations for discrete systems. *Automatica—J. IFAC* 24 (1988), no. 4, 507-515. (Summary) **89c:93181** 93E03 (93B15, 93C05, 93C55, 93D20)
- (with Hsu, Chieh Su) Minimum phase model reduction of deterministic systems via stochastic balancing. *Control Theory Adv. Tech.* 4 (1988), no. 3, 349-358. (Summary) **89j:93012** 93B15 (93B20, 93E03)
- De Sainte-Catherine, Myriam** *see de Sainte-Catherine, Myriam*
- De Salvo, Mario** On finitely generated commutative hypergroups. (Italian. English summary) *Matematiche (Catania)* 39 (1984), no. 1-2, 87-99 (1988). (P. Corsini) **89c:20084** 20N99
- Finite hypergroups of constant length. (Italian. English summary) *Istit. Lombardo Accad. Sci. Lett. Rend. A* 120 (1986), 41-56 (1987). (P. Corsini) **89c:20129** 20N99
- Commutative finite  $A$ -hypergroups of length two. *Combinatorics '86 (Trento, 1986)*, 147-156, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (P.



- Corsini) **89f:20085** 20N99
- De Sanctis, Angela Perturbations of geodesic flows and lengths of the closed geodesics. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 1 (1987), no. 4, 1107–1128. (Summary) **89g:58168** 58F17 (53C22, 58G25)
- De Santis, Alfredo (with Miceli, Silvio; Persiano, Giuseppe) Noninteractive zero-knowledge proof systems. *Advances in cryptography—CRYPTO '87* (Santa Barbara, CA, 1987), 52–72, *Lecture Notes in Comput. Sci.*, 293, Springer, Berlin-New York, 1988. (see **89b:68005** 68Q25 (68P25))
- (with Capocelli, R. M.; Taneja, Inder Jeet) Bounds on the entropy series. *IEEE Trans. Inform. Theory* 34 (1988), no. 1, 134–138. (Summary) **89b:94012** 94A17
- De Sarbo, Wayne S. (with Cron, William L.) A maximum likelihood methodology for clusterwise linear regression. *J. Classification* 5 (1988), no. 2, 249–282. (Not in MR) 62H30
- Desargues, Girard see Field, J. V., **89g:01022**
- De Sarkar, S. (with Deb, T. K.) On points of  $k$ th absolute continuity. *J. Indian Inst. Sci.* 66 (1986), no. 7, 457–464. (Babu Ram) **89f:26010** 26A46
- De Sarkar, S. C. (with Chakrabarti, P. P.; Ghose, S.; Pandey, A.) Increasing search efficiency using multiple heuristics. *Inform. Process. Lett.* 30 (1989), no. 1, 33–36. (Not in MR) 68P10
- Desarménien, Jacques (with Foata, Dominique) Fonctions symétriques et séries hypergéométriques basiques multivariées. II. (English summary) [Symmetric functions and multivariate basic hypergeometric series. II] *Combinatoire énumérative (Montreal, Que., 1985/Quebec, Que., 1985)*, 68–90, *Lecture Notes in Math.*, 1234, Springer, Berlin-New York, 1986. (David M. Bressoud) **89c:05020** 05A17 (20C30, 33A30)
- Desbiers, Jocelyn Caractérisation d'un espace préhilbertien au moyen de la relation d'orthogonalité de Birkhoff-James. (English summary) [Characterization of a pre-Hilbert space by means of the Birkhoff-James orthogonality relation] *Ann. Sci. Math. Québec* 11 (1987), no. 2, 295–303. (A. C. Thompson) **89b:46029** 46C05
- Méthode de Mann et calcul des points fixes des applications multivoques dans les espaces de Banach. (English summary) [Mann's method and the calculation of fixed points of multivalued mappings in Banach spaces] *Ann. Sci. Math. Québec* 12 (1988), no. 1, 5–30. (Kok Keong Tan) **89g:47076** 47H10 (65J15)
- xamhó Descamps, S. see Xamhó Descamps, S.
- Descartes, René see Dorofeeva, A. V., **89c:01056**; Bissell, C. C., **89g:01020**; Sorrell, Tom, **89k:01015** and Alanen, Lilli, **89a:03064**
- Desch, W. (with Miller, Richard K.) Exponential stabilization of Volterra integro-differential equations in Hilbert space. *J. Differential Equations* 70 (1987), no. 3, 366–389. (V. Lakshmikantham) **89a:45025** 45M10 (45D05, 45J05, 45N05, 93D15)
- (with Schappacher, W.) A note on the comparison of  $C_0$ -semigroups. *Semigroup Forum* 35 (1987), no. 2, 237–243. (J. A. Goldstein) **89d:47088** 47D05
- (with Grimmer, R.; Schappacher, W.) Well-posedness and wave propagation for a class of integrodifferential equations in Banach space. *J. Differential Equations* 74 (1988), no. 2, 391–411. (Kenneth B. Hannsgen) **89e:45012** 45N05 (45K05, 47D05, 73F99)
- (with Schappacher, W.) Some perturbation results for analytic semigroups. *Math. Ann.* 281 (1988), no. 1, 157–162. (Alberto Guzman) **89e:47060** 47D05
- (with Grimmer, R.) Smoothing properties of linear Volterra integro-differential equations. *SIAM J. Math. Anal.* 20 (1989), no. 1, 116–132. (Guenter Leugering) **89m:45014** 45K05 (73F15)
- (with Grimmer, R.) Singular relaxation moduli and smoothing in three-dimensional viscoelasticity. *Trans. Amer. Math. Soc.* 314 (1989), no. 1, 381–404. (Kenneth B. Hannsgen) **89k:73031** 73F15 (45K05, 45N05, 47D05, 47G05)
- De Schampheleire, Jan (with Baert, Patrick) Autopoiesis, self-organisation and symbolic interactionism: some convergences. *Kybernetes* 17 (1988), no. 1, 60–69. (Editors) **89i:92062** 92A20
- Deschamps, Cl. (with Ramis, E.; Odoux, J.)  $\star$  Algèbre. (French) [Algebra] Exercices avec solutions. [Exercises with answers] *Classes Préparatoires aux Grandes Écoles Scientifiques*. [Preparatory Courses for the Colleges of Science] Masson, Paris, 1988. vi+194 pp. ISBN 2-225-81314-0 (F. J. Papp) **89f:00003** 00A07 (11-01, 12-01, 13-01, 15-01, 16-01, 20-01)
- Deschamps, Philippe J. A note on the maximum likelihood estimation of allocation systems. *Comput. Statist. Data Anal.* 6 (1988), no. 2, 109–112. (Not in MR) 62P20 (90A05)
- De Schepper, I. M. see de Schepper, I. M.
- Desclès, Jean-Pierre Théorème de Church-Rosser et structuration des langues naturelles. (English summary) [The Church-Rosser theorem and structuring of natural languages] *Math. Sci. Humaines* No. 103 (1988), 67–92, 115. (Summary) **89k:68125** 68S05 (03B40, 03B65)
- (with Ginisti, Jean-Pierre) Bibliographie commentée. [Annotated bibliography] *Math. Sci. Humaines* No. 103 (1988), 93–109. (Editors) **89k:03014** 03B40 (00A15, 03B65, 68Q55)
- Descloux, J. (with Caussignac, Ph.; Rappaz, J.) Study of an elliptic problem with nonlinear boundary conditions. *Math. Methods Appl. Sci.* 9 (1987), no. 3, 261–275. (R. Schumann) **89c:35057** 35J65 (47H15)
- Descusse, J. (with Commaut, C.; Dion, J. M.; Lafay, J. F.; Malabre, M.) Influence de la structure à l'infini des systèmes linéaires sur la solution des problèmes de commande. (English summary) [Influence of the structure at infinity of linear systems on the solution of control problems] *RAIRO Automat.-Prod. Inform. Ind.* 20 (1986), no. 3, 207–252. (Summary) **89k:93087** 93B50 (93B10, 93B27, 93C05, 93C35)
- (with Lafay, J. F.; Malabre, M.) Solution to Morgan's problem. *IEEE Trans. Automat. Control* 33 (1988), no. 8, 732–739. (Not in MR) 49D27 (93B50)
- Deser, S. The ubiquitous Bel-Robinson tensor. *Gravitation and geometry*, 115–129, *Monographs Textbooks Phys. Sci.*, 4, Bibliopolis, Naples, 1987. (A. H. Taub) **89e:53109** 53C80 (83C99, 83E50)
- (with Boulware, David G.; Stelle, K. S.) Properties of energy in higher derivative gravity theories. *Quantum field theory and quantum statistics*, Vol. 2, 101–117, Hilger, Bristol, 1987. (see **89b:81008**) 83C47 (81E20)
- Gravity from strings. *Unification of fundamental interactions* (Marstrand, 1986), 138–142, *Royal Swedish Acad. Sci.*, Stockholm, 1987. (see **89f:81005**) 83C45 (81E30, 83E30)
- (with Aragone, C.; Yang, Zhu) Massive higher spin from dimensional reduction of gauge fields. *Ann. Physics* 179 (1987), no. 1, 76–96. (Alexander W. Smith) **89j:83067** 83E15 (81E20)
- (with Aragone, C.; Ferrara, S.) Anti-Higgs effect in two-dimensional gauge theories. *Classical Quantum Gravity* 4 (1987), no. 4, 1003–1010. (Elcio Abdalla) **89b:81113** 81E13 (81G20, 83E50)
- (with Jackiw, R.) Comment on: "What is the most general abelian gauge theory in two spatial dimensions?" [Phys. Rev. Lett. 58 (1987), no. 11, 1074–1076; MR 88j:81038a] by C. R. Hagen. With a reply by Hagen. *Phys. Rev. Lett.* 59 (1987), no. 17, 1981–1982. (Dennis B. Creamer) **89f:81129** 81E20 (81E13, 81G10)
- Absence of regular static Einstein solutions in arbitrary dimension. *Classical Quantum Gravity* 5 (1988), no. 1, L9–L10. (S. Kichenassamy) **89d:83063** 83E15 (83C05)
- (with Jackiw, R.) Classical and quantum scattering on a cone. *Comm. Math. Phys.* 118 (1988), no. 3, 495–509. (Markku Lehto) **89k:81188** 81F20 (83C45)
- (with Redlich, A. N.) CP<sup>1</sup>-fermion correspondence in three dimensions. *Phys. Rev. Lett.* 61 (1988), no. 14, 1541–1544. (Summary) **89h:81263** 81G20 (81D15)
- Deserti, L. (with Nedda Giraldo, L.) FMS: a classification of recent literature. *Operations research models in flexible manufacturing systems* (Udine, 1987), 289–305, *CISM Courses and Lectures*, 306, Springer, Vienna, 1989. (see **89k:90082**) 90B30
- De Shalit, Ehud see de Shalit, Ehud
- Desharnais, Jules (with Mili, Ali; Mili, Fatma) Relational heuristics for the design of deterministic programs. *Acta Inform.* 24 (1987), no. 3, 239–276. (Bernhard Josko) **89a:68025** 68N99 (68Q60, 68Q99)
- Deshmukh, S. R. (with Adke, S. R.) Limit distribution of a high order Markov chain. *J. Roy. Statist. Soc. Ser. B* 50 (1988), no. 1, 105–108. (Bernard Ycart) **89k:60090** 60J10
- Deshmukh, Sharief Cohomology of CR-submanifolds of a nearly Kaehler manifold. *Math. Chronicle* 16 (1987), 47–52. (Aurel Bejancu) **89g:53076** 53C40 (53C15, 58A30)
- Submanifolds of a nearly Kaehler manifold. *Math. Chronicle* 16 (1987), 53–55. (Ion Mihai) **89g:53056** 53C15 (53C40)
- (with Ali, Shahid; Husain, S. I.) Submersions of CR-submanifolds of a Kaehler manifold. *Indian J. Pure Appl. Math.* 19 (1988), no. 12, 1185–1205. (Aurel Bejancu) **89m:53094** 53C40
- Reduction in codimension of mixed foliate CR-submanifolds of a Kaehler manifold. *Kodai Math. J.* 11 (1988), no. 2, 155–158. (Aurel Bejancu) **89f:53076** 53C40 (32F25)
- Deshouillers, Jean-Marc (with Allouche, Jean-Paul) Répartition de la suite des puissances d'une série formelle algébrique. (English summary) [Distribution of the sequence of powers of a formal algebraic series] *Colloque de Théorie Analytique des Nombres "Jean Coquer" (Marseille, 1985)*, 37–47, *Publ. Math. Orsay*, 88-02, Univ. Paris XI, Orsay, 1988. (Marie-José Bertin) **89i:11088** 11K36 (11K38, 11K55)
- (with Dress, F.) Sommes de diviseurs et structure multiplicative des entiers. [Divisor sums and multiplicative structure of the integers] *Acta Arith.* 49 (1988), no. 4, 341–375. (Don Redmond) **89e:11054** 11N37 (11P05)
- see also Colloquium: Analytic Number Theory, **89a:11003**
- Deshpande, M. N. Some operators on permutations. *Math. Ed. (Siwan)* 22 (1988), no. 2, 59–61. (Not in MR) 05A05
- Deshpande, M. V. (with Padhye, S. M.) A note on semigroups of nonlinear operators. *J. Indian Math. Soc. (N.S.)* 49 (1985), no. 1-2, 1–6 (1987). (G. F. Webb) **89d:47141** 47H20
- Deshpande, N. V. (with Ranadive, V. S.) The square of a connected bridgeless DT-graph is 1-Hamiltonian. *Math. Student* 47 (1979), no. 2-4, 317–319 (1985). (Not in MR) 05C45
- (with Kale, P. P.) A note on  $K^2$ -summability of Fourier series. *J. Indian Acad. Math.* 8 (1986), no. 2, 78–82. (Gokulnanda Das) **89g:42013** 42A24
- (with Kale, P. P.) Corrections to: "The neighbourhood number of a graph" [Indian J. Pure Appl. Math. 16 (1985), no. 2, 126–132; MR 86k:05069] by E. Sampathkumar and P. S. Neerlagi. *Indian J. Pure Appl. Math.* 19 (1988), no. 9, 927–929. (Editors) **89i:05255** 05C99
- Deshpande, S. M. (with Mandal, J. C.) Kinetic theory based new upwind methods for inviscid compressible flows. (Russian and Bulgarian summaries) *Proceedings of Euromech Colloquium 224 on Kinetic Theory Aspects of Evaporation/Condensation Phenomena. Teoret. Prirozhna Mekh.* 19 (1988), no. 3, 3, 6, 9, 32–38. (Summary) **89j:76011** 76-08 (76L05, 76N10, 76P05)
- (with Mandal, J. C.) Higher order accurate kinetic flux vector splitting method for Euler equations. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 384–392, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 76-08 (76N15, 76P05)
- De Simone, P. Analysis of Coulomb isotropic hardening media by means of characteristics. *Computational plasticity, Part I, II* (Barcelona, 1987), 81–91, *Pineridge, Swansea*, 1987. (Summary) **89i:73031** 73E99 (73E50)
- Desloge, Edward A. The Gibbs-Appell equations of motion. *Amer. J. Phys.* 56 (1988), no. 9, 841–846. (Mary L. Boas) **89i:70022** 70G10 (70F25)
- De Smedt, Ph. see de Smedt, Ph.
- De Smedt, Ronald Electric singularity near the tip of a sharp cone. *IEEE Trans. Antennas and Propagation* 36 (1988), no. 1, 152–155. (Summary) **89f:78012** 78A25
- De Snoo, Henk see de Snoo, Henk
- De Socio, L. see de Socio, L.
- Desoer, C. A. (with Boyd, Stephen) Subharmonic functions and performance bounds on linear time-invariant feedback systems. *Modelling, identification and robust control* (Stockholm, 1985), 103–111, *North-Holland, Amsterdam-New York*, 1986. (see **89b:93008**) 93B28 (31A05)
- (with Gündes, A. N.) Bicoprime factorizations of the plant and their relation to right- and left-coprime factorizations. *IEEE Trans. Automat. Control* 33 (1988), no. 7, 672–676. (Not in MR) 93B50 (93B25)
- (with Kabuli, M. G.) Right factorization of a class of time-varying nonlinear systems. *IEEE Trans. Automat. Control* 33 (1988), no. 8, 755–757. (Summary) **89d:93053** 93C10 (93B17)
- (with Gündes, A. N.) Algebraic theory of linear time-invariant feedback systems with two-input two-output plant and compensator. *Internat. J. Control* 47 (1988), no. 1, 33–51. (Giuseppe Conte) **89c:93027** 93B25 (93C45, 93D25)
- (with Kabuli, M. G.) Stabilization and robustness of nonlinear unity-feedback system: factorization approach. *Internat. J. Control* 47 (1988), no. 4, 1133–1148. (Summary) **89a:93042** 93D15 (93C10)

- De Soete, M. (with Thas, J. A.) A coordinatization of generalized quadrangles of order  $(s, s+2)$ . *J. Combin. Theory Ser. A* **48** (1988), no. 1, 1–11. (Christiane Lefevre-Percys) **89h:51015** 51E30 (05B25)
- Desolneux-Moulis, N. Linéarisation de certaines structures de Poisson de classe  $C^\infty$ . [Linearization of certain  $C^\infty$  Poisson structures] *Séminaire de géométrie*, 1985–1986, 55–68, *Publ. Dép. Math. Nouvelle Sér. B*, 86–4, Univ. Claude-Bernard, Lyon, 1986. (Manfred Andrieu) **89b:58071** 58F05
- see also Hamiltonian actions of groups. Lie's third theorem, **89a:58003**
- De Soria, Giovanni Gualberto see Contardi, Simone, **89k:01040**
- el-Desouky, B. S. see El-Desouky, B. S.
- De Sousa Pinto, J. see de Sousa Pinto, J.
- De Souza, Carlos E. see de Souza, Carlos E.
- De Souza, Geraldo Soares (with O'Neil, Richard; Sampson, G.) Several characterizations for the special atom spaces with applications. *Rev. Mat. Iberoamericana* **2** (1986), no. 3, 333–355. (Daniel H. Luecking) **89a:46066** 46E30 (42A24)
- De Souza Dutra, Álvaro see de Souza Dutra, Álvaro
- De Souza e Silva, Edmundo see de Souza e Silva, Edmundo
- nikolić-Despotović, D. see Nikolić-Despotović, D.
- Des Rivieres, Jim see des Rivieres, Jim
- Desrochers, Alan A. (with Diaz, Hernando) Modeling of nonlinear discrete-time systems from input-output data. *Automatica—J. IFAC* **24** (1988), no. 5, 629–641. (Not in MR) **93C55** (00A71, 93C10)
- Desrochers, Martin (with Soumis, François) A reoptimization algorithm for the shortest path problem with time windows. *European J. Oper. Res.* **35** (1988), no. 2, 242–254. (Summary) **89b:90102** 90B35 (90B10)
- Desrosiers, Jacques (with Sauvé, Michel; Soumis, François) Lagrangian relaxation methods for solving the minimum fleet size multiple traveling salesman problem with time windows. *Management Sci.* **34** (1988), no. 8, 1005–1022. (Summary) **89c:90083** 90B10 (90B35)
- Dessagnès, Nicole Intersections d'anneaux de Mori—exemples. [Examples of intersections of Mori rings] *Portugal. Math.* **44** (1987), no. 4, 379–392. (David C. Lantz) **89j:13017** 13E99 (13B30)
- (with Ballet, B.) Anneaux de polynômes sur un anneau de Mori. [Polynomial rings over a Mori ring] *Portugal. Math.* **45** (1988), no. 1, 13–24. (Liam O'Carroll) **89h:13024** 13F20 (13B30, 13F05)
- De Stavola, Bianca L. see de Stavola, Bianca L.
- D'Eate, Gabriella Nonadmissible genealogical trees. *Rend. Sem. Mat. Univ. Padova* **79** (1988), 71–86. (Ibrahim Assem) **89m:16057** 16A64
- De Stefano, S. (with Guidetti, Renato) On perfect ideals. (Italian. English summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **117** (1983), no. 4–6, 299–306 (1986). (Gianfranco Niesi) **89c:13030** 13H10
- Destexhe, A. (with Babloyantz, A.) The Creutzfeld-Jakob disease in the hierarchy of chaotic attractors. *From chemical to biological organization*, 307–316, *Springer Ser. Synergetics*, 39, Springer, Berlin-New York, 1988. (see **89g:92002**) **92A07** (58F13)
- (with Babloyantz, A.) Is the normal heart a periodic oscillator? *Biol. Cybernet.* **58** (1988), no. 3, 203–211. (Raphael Zahler) **89d:92008** **92A07** (58F13)
- De St. Pierre, Thierry see de St. Pierre, Thierry
- Destri, C. (with de Vega, H. J.) On the connection between the principal chiral model and the multiflavour chiral Gross-Neveu model. *Phys. Lett. B* **201** (1988), no. 2, 245–250. (Summary) **89b:81123** 81E13 (81E40)
- (with de Vega, H. J.) Integrable quantum field theories and conformal field theories from lattice models in the light-cone approach. *Phys. Lett. B* **201** (1988), no. 2, 261–268. (Nick Yu. Reshetikhin) **89b:81182** 81E99 (58F07, 81E40)
- (with de Vega, H. J.) Jacobian subtleties and the complete path-integral bosonization of the nonabelian Thirring model. *Phys. Lett. B* **208** (1988), no. 2, 255–260. (Sorin Marculescu) **89j:81169** 81E99 (58E15, 81C35)
- Destuynder, Philippe Une approche du contrôle de la propagation des fissures en dynamique des structures. (English summary) [An approach to crack propagation control in structural dynamics] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **306** (1988), no. 14, 953–956. (N. Gass) **89k:73059** 73M05 (49B22, 93C25, 93C75)
- (with Nevers, Thierry) A new finite element scheme for bending plates. *Comput. Methods Appl. Mech. Engrg.* **68** (1988), no. 2, 127–139. (N. Gass) **89c:73059** 73K25 (73K10)
- (with Nevers, Thierry) Une modification du modèle de Mindlin pour les plaques minces en flexion présentant un bord libre. (English summary) [A modification of the Mindlin model for bending thin plates with a free boundary] *RAIRO Modél. Math. Anal. Numér.* **22** (1988), no. 2, 217–242. (Claude Surry) **89f:73045** 73K10 (73K25)
- Desu, M. M. (with Chakraborti, S.) A class of distribution-free tests for testing homogeneity against ordered alternatives. *Statist. Probab. Lett.* **6** (1988), no. 4, 251–256. (Summary) **89j:62062** 62G10
- De Swart, H. E. see de Swart, H. E.
- Deszcz, Ryszard (with Grycak, Wiesław) On some class of warped product manifolds. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 3, 311–322. (Johan Deprez) **89g:53061** 53C20 (53C25)
- Deszyński, Krzysztof The canonical form of the Ricci tensor in the  $n$ -dimensional Lorentz space. *Univ. Iagel. Acta Math.* **26** (1987), 173–178. (V. G. Kopp) **89b:53058** 53B30
- DeTemple, Duane (with Robertson, Jack; Harary, Frank) Existential partition graphs. *J. Combin. Inform. System Sci.* **9** (1984), no. 4, 193–196. (Edward R. Scheinerman) **89h:05044** 05C75
- (with Harary, Frank; Robertson, Jack) Partition graphs. *Soochow J. Math.* **13** (1987), no. 2, 121–129. (Hubert de Fraysseix) **89k:05089** 05C75
- (with Jones, C. H.; Robertson, Jack) A correction for a lattice path counting formula. *Ars Combin.* **25** (1988), 167–170. (Ira Gessel) **89i:05017** 05A15 (05A10)
- The generalized polygonal cycloid. *College Math. J.* **19** (1988), no. 5, 417–419. (K. Strubecker) **89m:51035** 51M25
- De Thelin, François see de Thelin, François
- Detlefsen, Michael On interpreting Gödel's second theorem [J. Philos. Logic **8** (1979), no. 3, 297–313; MR 80h:03008]. With a postscript. *Gödel's theorem in focus*, 131–154, *Croom Helm Philos. Focus Ser.*, Croom Helm, London, 1988. (see **89m:01068**) **03A05** (03F25)
- Detlovs, V. K. Harmony and the melodic line. (Russian. English summary) *Algebra and discrete mathematics: the theoretical foundations of software (Russian)*, 54, 67–87, 161–162, *Latv. Gos. Univ., Riga*, 1986. (Summary) **89b:00043** **00A69** (00A05, 92A25, 92A90)
- De Toledo Piza, A. F. R. see de Toledo Piza, A. F. R.
- De Trenqualye, Pierre see de Trenqualye, Pierre
- Detmann, E. H. (with Sharma, Prem Lal) Multiple equilibria in modeling open-lake algal dynamics. *Math. Comput. Modelling* **12** (1989), no. 2, 227–240. (Not in MR) **92A17** (58C28, 58F14)
- DeTurck, D. (with Kamberov, Georgi) A singular problem in elasticity theory. *Differential geometry: the interface between pure and applied mathematics (San Antonio, Tex., 1986)*, 77–84, *Contemp. Math.*, 68, Amer. Math. Soc., Providence, RI, 1987. (L. P. Lebedev) **89f:73016** 73C50 (58G40)
- (with Talvacchia, J.) Connections with prescribed curvature. (French summary) *Ann. Inst. Fourier (Grenoble)* **37** (1987), no. 4, 29–44. (Keti Tenenblat) **89d:53058** 53C05 (58A15)
- (with Chang, Pei-Kun) On hearing the shape of a triangle. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 1033–1038. (Andreas Juhl) **89h:58194** 58G25 (35P99, 35R30)
- DeTurckheim, E. see de Turckheim, E.
- Deuber, W. (with Hindman, Neil) Partitions and sums of  $(m, p, c)$ -sets. *J. Combin. Theory Ser. A* **45** (1987), no. 2, 300–302. (G. L. Alexanderson) **89a:05013** 05A17
- Karl Peter Grottemeyer—60 Jahre. [Karl Peter Grottemeyer is 60 years old] *Math. Semesterber.* **35** (1988), no. 1, 1–5. (Editors) **89f:01063** 01A70
- see also Proceedings: Meeting "Kombinatorik", **89f:05004**
- Deufhard, P. (with Hairer, E.; Zugck, J.) One-step and extrapolation methods for differential-algebraic systems. *Numer. Math.* **51** (1987), no. 5, 501–516. (David Swales) **89c:65069** 65L05
- Deumens, E. (with Warchall, H.) Explicit construction of all spherically symmetric solitary waves for a nonlinear wave equation in multiple dimensions. *Nonlinear Anal.* **12** (1988), no. 4, 419–447. (Alan Jeffrey) **89m:35140** 35L70 (35-04, 35Q20)
- Deundyak, V. M. Contractibility of some homotopically nontrivial groups of invertible operators with respect to groups containing them. (Russian) *Algebra and discrete mathematics (Russian)*, 46–54, ii–iii, *Kalmytsk. Gos. Univ., Elista*, 1985. (N. L. Vasilievskii) **89m:47039** 47D25 (46L99, 47A53, 47D10, 58B05)
- The index of bielliptic operators on a product of compact manifolds. (Russian) *Differential and integral equations and complex analysis (Russian)*, 45–59, ii, *Kalmytsk. Gos. Univ., Elista*, 1986. (Jürgen Eichhorn) **89h:58272** 58G10 (58G12)
- Deuring, M. see Heilbronn, Hans Arnold, **89i:01140**
- Deuschel, J.-D. Infinite-dimensional diffusion processes as Gibbs measures on  $C[0, 1]^{\mathbb{Z}^d}$ . *Probab. Theory Related Fields* **76** (1987), no. 3, 325–340. (Anton Wakolbinger) **89m:60252** 60K35 (60G60, 60J30)
- Central limit theorem for an infinite lattice system of interacting diffusion processes. *Ann. Probab.* **16** (1988), no. 2, 700–716. (G. Leha) **89f:60022** 60F05 (60H10, 60J60)
- Deutler, T. Some remarks on the likelihood ratio test for the mean of a normal distribution with known coefficient of variation. *Comput. Statist. Data Anal.* **7** (1989), no. 3, 311–314. (Not in MR) **62F03**
- Deutsch, Claude (with Vanderhaeghe, D.) Linear radiation transport in randomly distributed binary mixtures: a one-dimensional and exact treatment for the scattering case. *J. Statist. Phys.* **54** (1989), no. 1–2, 331–360. (Not in MR) **85A25** (82A42, 82A45)
- Deutsch, Frank Best approximation in the space of continuous vector-valued functions. *J. Approx. Theory* **53** (1988), no. 1, 112–116. (Hans Strauss) **89c:41028** 41A65
- (with Indumathi, V.; Schnatz, Klaus) Lower semicontinuity, almost lower semicontinuity, and continuous selections for set-valued mappings. *J. Approx. Theory* **53** (1988), no. 3, 266–294. (Zvi Artstein) **89g:54042** 54C65
- Deutsch, J. M. (with Paladin, G.) Product of random matrices in a microcanonical ensemble. *Phys. Rev. Lett.* **62** (1989), no. 7, 695–699. (Summary) **89j:82058** 82A57
- Deutsch, Jesse (with Cohn, Harvey) An explicit modular equation in two variables for  $Q(\sqrt{3})$ . *Math. Comp.* **50** (1988), no. 182, 557–568. (Shigeaki Tsuyumine) **89d:11040** 11F41
- Deutsch, Michael Spectral representation of recursively enumerable and coenumerable predicates. *Computation theory and logic*, 107–116, *Lecture Notes in Comput. Sci.*, 270, Springer, Berlin-New York, 1987. (John P. Helm) **89d:03040** 03D25 (03B15, 03C55)
- Eine Verschärfung eines Satzes von Kostyrko zur Reduktionstheorie mit einer Anwendung auf die spektrale Darstellung von Prädikaten. [A strengthening of a theorem of Kostyrko on reduction theory with an application to the spectral representations of predicates] *Z. Math. Logik Grundlag. Math.* **33** (1987), no. 4, 347–358. (Detlef G. Seese) **89j:03008a** 03B10
- Eine Bemerkung zur spektralen Darstellung aufzählbarer und koaufzählbarer Prädikate durch Ausdrücke aus  $\forall\exists\forall^{\infty}(p, 1)$ . [A remark on the spectral representation of r.e. and co-r.e. predicates by  $\forall\exists\forall^{\infty}(p, 1)$  formulas] *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 1, 67–77. (E. Herrmann) **89f:03036a** 03D25
- Correction to the paper: "A strengthening of a theorem of Kostyrko on reduction theory with an application to the spectral representations of predicates". (German) *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 1, 78. (Detlef G. Seese) **89j:03008b** 03B10
- Eine Bemerkung zur spektralen Darstellung von  $p$ -Stelligen aufzählbaren und koaufzählbaren Prädikaten durch Ausdrücke aus  $\exists^{\infty}\forall^3(p, 1)$ ,  $\forall^{\infty}\exists(p, 1)$  und  $\forall^3(\infty, 1)$ . [A remark on the spectral representation of  $p$ -place recursively enumerable and co-enumerable predicates by expressions from  $\exists^{\infty}\forall^3(p, 1)$ ,  $\forall^{\infty}\exists(p, 1)$  and  $\forall^3(\infty, 1)$ ] *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 2, 163–176. (E. Herrmann) **89f:03036b** 03D25
- Deutscher, G. Applications of percolation. *Le hasard et la matière (Les Houches, 1986)*, 1–68, *North-Holland, Amsterdam-New York*, 1987. (see **89j:82001**) **82A43** (60K35)
- Joag-Dev, Kumar see Joag-Dev, Kumar
- Devadze, D. Sh. An optimal problem for second-order linear differential equations with boundary conditions of Bitsadze-Samarskii type. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **25** (1988), 147–152, 279. (Summary) **89g:49027** 49B10 (34B05)
- De Vahl Davis, Graham see de Vahl Davis, Graham
- De Valera, Eamon see de Valera, Eamon
- De Valk, Vincent see de Valk, Vincent
- Devaney, Robert L. Reversibility, homoclinic points, and the Hénon map. *Dynamical systems approaches to nonlinear problems in systems and circuits (Henniker, NH, 1986)*,



- 3-14, *SIAM*, Philadelphia, PA, 1988. (Katarina Jankova) **89m:58137** 58F13 (58F15)
- Devasahayam, M. Paul (with Subba Rao, V.) A monotone method for the equation  $u_{xy} = f$ . *Appl. Math. Comput.* **25** (1988), no. 3, 175-186. (Sergiu Aizicovici) **89b:35100** 35L75 (35B05)
- De Vega, H. J. see de Vega, H. J.
- Deveney, James K. (with Heerema, Nicholas) Higher derivations and distinguished subfields. *Canad. J. Math.* **40** (1988), no. 1, 131-141. (H. F. Kreimer) **89b:12009** 12F15
- The cancellation problem for function fields. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 363-364. (M. Hajja) **89g:12011** 12F20
- Usha sree Devi, M. see Usha Sree Devi, M.
- Devi, Prativa (with Samal, G.) Integral properties of a stochastic process. Proceedings of the National Seminar on Stochastic Process, Statistical Inference and Sample Survey (Sambalpur, 1985). *J. Orissa Math. Soc.* **5** (1986), no. 1, 41-48. (M. Csörgő) **89g:60126** 60F25 (60H05)
- Devijver, Pierre A. (with Dekesel, Michel) Experiments with an adaptive hidden Markov mesh image model. *Philips J. Res.* **43** (1988), no. 3-4, 375-392. (Not in MR) **88T10**
- (with Dekesel, Michel) Champs aléatoires de Pickard et modélisation d'images digitales. (English summary) [Digital image modeling using Pickard random fields] *Traitement Signal* **5** (1988), no. 5, 131-150. (Not in MR) **88U10** (60G60)
- De Villamarin, Gilma R. see de Villamarin, Gilma R.
- Deville, J.-C. (with Grosbras, Jean-Marie; Copen, N.) Efficient sampling algorithms and balanced samples. *COMPSTAT 1988* (Copenhagen, 1988), 255-266. *Physica, Heidelberg*, 1988. (see **89i:62004**) **65U05**
- see also Grosbras, Jean-Marie, **89c:62024**
- Deville, Robert (with Godefroy, G.; Hare, D. E. G.; Zizler, Václav E.) Differentiability of convex functions and the convex point of continuity property in Banach spaces. *Israel J. Math.* **59** (1987), no. 2, 245-255. (J. H. M. Whitfield) **89d:46017** 46B20 (46G05)
- A dual characterisation of the existence of small combinations of slices. *Bull. Austral. Math. Soc.* **37** (1988), no. 1, 113-120. (G. Godini) **89c:46014** 46B20
- (with Godefroy, G.; Hare, D. E. G.; Zizler, Václav E.) Phelps spaces and finite-dimensional decompositions. *Bull. Austral. Math. Soc.* **37** (1988), no. 2, 263-271. (P. Saphar) **89c:46015** 46B10
- (with Zizler, Václav E.) A note on cotype of smooth spaces. *Manuscripta Math.* **62** (1988), no. 3, 375-382. (Abderrazak Sersouri) **89i:46017** 46B20
- De Villemagne, Christian see de Villemagne, Christian
- Devillers, Raymond (with Best, Eike) Sequential and concurrent behaviour in Petri net theory. *Theoret. Comput. Sci.* **55** (1987), no. 1, 87-136. (Anna Bagyinszkiné-Orosz) **89d:68064** 68Q90 (68Q55)
- De Villiers, J. M. see de Villiers, J. M.
- De Villiers, R. see de Villiers, R.
- Devnatz, Allen (with Moeckel, Richard; Rejto, Peter) On Schrödinger operators with von Neumann-Wigner type potentials. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 91-98, *Lecture Notes in Math.*, **1285**, Springer, Berlin-New York, 1987. (B. Hellwig) **89d:35127** 35P05 (35J10, 81C12)
- A unified approach to short range scattering. *Operators in indefinite metric spaces, scattering theory and other topics* (Bucharest, 1985), 103-121. *Oper. Theory: Adv. Appl.*, **24**, Birkhäuser, Basel-Boston, MA, 1987. (Editors) **89a:35156** 35P25 (47A40)
- Devnatz, Ethan S. (with Hopkins, Michael J.; Smith, Jeffrey H.) Nilpotence and stable homotopy theory. I. *Ann. of Math.* (2) **128** (1988), no. 2, 207-241. (Frederick Cohen) **89m:55009** 55Q10 (55P42, 55Q52)
- De Vito, A. (with Bassi, L.) The transport problem in the space external to a sphere. *Transport Theory Statist. Phys.* **17** (1988), no. 4, 347-383. (Hassan Emamirad) **89i:82084** 82A70 (45P05)
- De Vito, C. L. (with Neta, B.) The transfer function analysis of various schemes for the two-dimensional shallow-water equations. *Comput. Math. Appl.* **16** (1988), no. 1-2, 111-137. (V. Soundalgekar) **89f:76024** 76B15 (76-08)
- De Vleeschauwer, Anne see de Vleeschauwer, Anne
- Devlin, Susan J. (with Cleveland, William S.; Grosse, Eric) Regression by local fitting. Methods, properties, and computational algorithms. *J. Econometrics* **37** (1988), no. 1, 87-114. (Summary) **89a:62157** 62J05
- Devloo, Philippe (with Oden, J. T.; Pattani, Pares) An  $h$ - $p$  adaptive finite element method for the numerical simulation of compressible flow. *Comput. Methods Appl. Mech. Engrg.* **70** (1988), no. 2, 203-235. (Summary) **89h:76003** 76-08 (76N10)
- De Volder, Burchard see de Volder, Burchard
- DeVore, R. A. (with Popov, Vasil Atanasov) Interpolation spaces and nonlinear approximation. *Function spaces and applications* (Lund, 1986), 191-205, *Lecture Notes in Math.*, **1302**, Springer, Berlin-New York, 1988. (Jöran Bergh) **89d:41035** 41A20 (41A15, 46E35, 46M35)
- (with Popov, Vasil Atanasov) Interpolation of Besov spaces. *Trans. Amer. Math. Soc.* **305** (1988), no. 1, 397-414. (Yu. A. Brudnyi) **89b:46044** 46E35 (41A15, 46M35)
- De Vries, F. J. see de Vries, F. J.
- De Vries, H. B. see de Vries, H. B.
- De Vries, Hans Ludwig see de Vries, Hans Ludwig
- De Vries, Hendrik see de Vries, Hendrik
- De Vries, Jakob see de Vries, Jakob
- De Vries, Jan see de Vries, Jan
- De Vries, Remco E. see de Vries, Remco E.
- De Vrijer, Roel see de Vrijer, Roel
- De Vroedt, C. see de Vroedt, C.
- Devroye, Luc A simple generator for discrete log-concave distributions. (German summary) *Computing* **39** (1987), no. 1, 87-91. (Summary) **89f:65007** 65C10 (65C05)
- (with Györfi, László) ★ Непараметрическое оценивание плотности. (Russian) [Nonparametric density estimation]  $L_1$ -подход. [The  $L_1$ -approach] Translated from the English by A. B. Tsymbakov. Translation edited with a preface by M. B. Maluytov. With appendices by N. N. Chentsov and V. N. Vapnik. "Mir", Moscow, 1988. 408 pp. ISBN 5-03-000475-0 (Editors) **89c:62071** 62G05
- Applications of the theory of records in the study of random trees. *Acta Inform.* **26** (1988), no. 1-2, 123-130. (Andrzej Ruciński) **89m:60027** 60C05 (68R10)
- Asymptotic performance bounds for the kernel estimate. *Ann. Statist.* **16** (1988), no. 3, 1162-1179. (F. T. Wright) **89j:62051** 62G05 (60E15)
- The expected size of some graphs in computational geometry. *Comput. Math. Appl.* **15** (1988), no. 1, 53-64. (D. T. Lee) **89c:68067** 68U05 (68R10)
- Devyatnikov, I. P. (with Koshlan', A. L.) Stochastic optimization methods with constraints. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 4, 3-21; translated in *Avtomat. Remote Control* **49** (1988), no. 4, part 1, 397-412. (Werner Römisch) **89b:90164** 90C15
- (with Koshlan', A. L.) A method for solving stochastic optimization problems with constraints. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 5, 99-105; translated in *Avtomat. Remote Control* **49** (1988), no. 5, part 2, 628-632. (Summary) **89c:90148** 90C15
- De Vylder, F. (with Goovaerts, M. J.) Recursive calculation of finite-time ruin probabilities. *Insurance Math. Econ.* **7** (1988), no. 1, 1-7. (Summary) **89j:62138** 62P05
- Dewan, K. K. (with Govil, N. K.) On the Eneström-Kakeya theorem. II. *Modern analysis and its applications* (New Delhi, 1983), 309-317, *Prentice-Hall of India, New Delhi*, 1986. (P. Lappan) **89c:30012** 30C15
- (with Biddham, M.) On the zeros of a polynomial. *Numerical methods and approximation theory, III* (Niš, 1987), 121-128, *Univ. Niš, Niš*, 1988. (N. K. Govil) **89k:30005** 30C15 (30C10)
- Dewar, R. L. (with Gardner, H. J.) A harmonic expansion for the magnetic field of the helical solenoid. *J. Comput. Phys.* **77** (1988), no. 2, 485-500. (L. G. Chambers) **89f:78007** 78A25
- Dewar, Roderick C. (with Wong, K. Y. M.; Sherrington, D.; Mottishaw, P.; De Dominicis, C.) Graph partitioning and dilute spin glasses: the minimum cost solution. *J. Phys. A* **21** (1988), no. 2, L99-L105. (Summary) **89c:82053** 82A57
- (with Mottishaw, P.) Equilibrium states of the spin glass on a Bethe lattice. *J. Phys. A* **21** (1988), no. 23, L1135-L1140. (Summary) **89j:82059** 82A57 (82-04, 82A68)
- Dewdney, A. K. ★ The armchair universe. An exploration of computer worlds. *W. H. Freeman and Company, New York*, 1988. xvi+330 pp. ISBN 0-7167-1938-X; 0-7167-1939-8 (A. Rapoport) **89f:00004** 00A08 (00A69)
- Dewdney, C. (with Vigier, J.-P.; Holland, P. R.; Kyriandis, A.) Causal particle trajectories and the interpretation of quantum mechanics. *Quantum implications*, 169-204, *Routledge & Kegan Paul, London*, 1987. (see **89m:81006**) **81B05**
- Nonlocally correlated trajectories in two-particle quantum mechanics. *Found. Phys.* **18** (1988), no. 9, 867-886. (Summary) **89i:81009** 81B05 (81-04)
- De Weger, B. M. M. see de Weger, B. M. M.
- Dewel, G. (with Borckmans, P.) Chemical structures and convection. *From chemical to biological organization*, 114-121, *Springer Ser. Synergetics*, **39**, Springer, Berlin-New York, 1988. (see **89g:92002**) **76E15** (80A32, 92A09)
- De Werra, D. see de Werra, D.
- Dewell, Günter Zur Weiterentwicklung des Frontenmodells der Optimierung ressourcenbeschränkter Netzplanabläufe. (English summary) [On the further development of the front model of optimization of bounded resource network production planning] *Wiss. Z. Karl-Marx-Univ. Leipzig Math.-Natur. Reihe* **37** (1988), no. 4, 326-342. (Summary) **89j:90142** 90B35 (01A74, 90C10)
- De Wet, J. A. see de Wet, J. A.
- De Wet, T. see de Wet, T.
- De Wilde, Marc Existence de déformations formelles de l'algèbre de Poisson et de star-produits sur une variété symplectique. [Existence of formal deformations of the Poisson algebra and star-products on a symplectic manifold] *Physique quantique et géométrie* (Paris, 1986), 195-203, *Travaux en Cours*, **32**, Hermann, Paris, 1988. (Simone Gutt) **89m:17030** 17B65 (58F05, 58F06)
- De Wilde, P. see de Wilde, Ph.
- Dewilde, Patrick M. (with Deprettere, E. F. A.) The generalized Schur algorithm: approximation and hierarchy. *Topics in operator theory and interpolation*, 97-116, *Oper. Theory: Adv. Appl.*, **29**, Birkhäuser, Basel-Boston, MA, 1988. (L. Rodman) **89g:15040** 15A99 (47B35, 65F99)
- De Wilde, Ph. (with De Meyer, H.; Vanden Bergh, G.) Two programs to perform certain symbolic calculations in the enveloping algebra of a Lie algebra. *Comput. Phys. Comm.* **44** (1987), no. 1-2, 197-208. (Summary) **89m:17001** 17-04
- De Wit, J. R. see de Wit, J. R.
- De Wit, J. S. J. see de Wit, J. S. J.
- DeWitt, Bryce The effective action. *Quantum field theory and quantum statistics*, Vol. 1, 191-222, *Hilger, Bristol*, 1987. (David McMullan) **89b:81101** 81E13 (81E20)
- DeWitt-Morette, Cécile Path integration. Functional integration with emphasis on the Feynman integral (Sherbrooke, PQ, 1986). *Rend. Circ. Mat. Palermo* (2) **Suppl. No. 17** (1987), 211-228 (1988). (J. S. Joel) **89f:58022** 58C35 (58D30, 81C35)
- Dewynne, J. N. (with Howison, S. D.; Ockendon, J. R.; Morland, L. C.; Watson, E. J.) Slot suction from inviscid channel flow. *J. Fluid Mech.* **200** (1989), 265-282. (Summary) **89m:76013** 76B10
- Dey, Aloke (with Singh, Murari) A note on incomplete block designs for symmetrical parallel line assays. *Comm. Statist. Theory Methods* **16** (1987), no. 12, 3555-3564. (Girdhar G. Agarwal) **89g:62128** 62K05
- Dey, Bishwajyoti KdV like equations with domain wall solutions and their Hamiltonians. *Solitons* (Tiruchirappalli, 1987), 188-194, *Springer Ser. Nonlinear Dynamics*, Springer, Berlin-New York, 1988. (Summary) **89d:35151** 35Q20 (58E30)
- Nonlinear chains and kink-impurity interactions. *Solitons* (Tiruchirappalli, 1987), 233-238, *Springer Ser. Nonlinear Dynamics*, Springer, Berlin-New York, 1988. (see **89b:00027**) **81E25**
- Dey, Charlie (with Dey, S. K.) Accurate explicit finite difference solution of the shock tube problem. *Numerical methods and approximation theory, III* (Niš, 1987), 191-197, *Univ. Niš, Niš*, 1988. (Summary) **89j:65063** 65M99 (76-08, 76L05)
- Dey, Dipak K. (with Gelfand, Alan E.) On the estimation of a variance ratio. *J. Statist. Plann. Inference* **19** (1988), no. 1, 121-131. (S. R. Patel) **89f:62004** 62C15 (62F11)
- Dey, S. K. (with Dey, Charlie) Accurate explicit finite difference solution of the shock tube problem. *Numerical methods and approximation theory, III* (Niš, 1987), 191-197, *Univ. Niš, Niš*, 1988. (Summary) **89j:65063** 65M99 (76-08, 76L05)
- Effects of boundary conditions on numerical solution of implicit hyperbolic difference equations. Hyperbolic partial differential equations. *V. Comput. Math. Appl.* **15** (1988), no. 6-8, 619-622. (From the text) **89g:65130** 65N10 (65G05)
- see also Hyperbolic partial differential equations, **89b:35002**

- Dey, Santi Sekhar** (with Ahmed, Sk. Shamim) The circle-polygon paradox in the light of the boundary-element method. *Comput. & Structures* **29** (1988), no. 5, 919-922. (Summary) **89e:73026** 73K10 (73K30)
- DeYoung, G.** (with Monk, P. B.; Othmer, Hans G.) Pacemakers in aggregation fields of *Dictyostelium discoideum*: does a single cell suffice? *J. Math. Biol.* **26** (1988), no. 5, 487-517. (N. F. Britton) **89k:92014** 92A09
- Deza, M.** (with Cameron, Peter J.; Frankl, Peter) Sharp sets of permutations. *J. Algebra* **111** (1987), no. 1, 220-247. (Johannes Siemons) **89e:20011** 20B30 (05A05, 20B05)
- (with Laurent, Monique) Bouquets of matroids,  $d$ -injection geometries and diagrams. *J. Geom.* **29** (1987), no. 1, 12-35. (Summary) **89d:51006** 51D20 (05B35, 51B25)
- (with Hamada, Noboru) Characterization of  $(2(q+1)+2, 2, t, q)$ -min-hypers in  $PG(t, q)$  ( $t \geq 3$ ,  $q \geq 5$ ) and its applications to error-correcting codes. *Discrete Math.* **71** (1988), no. 3, 219-231. (Ian Blake) **89j:51007** 51E20 (05B25, 94B05)
- (with Singhi, N. M.) Rigid pentagons in hypercubes. *Graphs Combin.* **4** (1988), no. 1, 31-42. (L. M. Kelly) **89e:52019** 52A37
- De Zeeuw, Tim** see **de Zeeuw, Tim**
- Dezin, A. A.** The two-dimensional Abel transform and applications. (Russian) *Current problems in mathematical physics, Vol. 1* (Russian) (Tbilisi, 1987), 199-206, 480-481, Tbilis. Gos. Univ., Tbilisi, 1987. (see **89j:00030**) **58A12** (35C99, 39A12, 65P05)
- (with Bitsadze, A. V.; Vinogradov, V. S.; Ifin, V. A.) Partial differential equations. (Russian) Mathematical physics and complex analysis (Russian). Translated in Proc. Steklov Inst. Math. **1988**, no. 3, 263-300. *Trudy Mat. Inst. Steklov.* **176** (1987), 259-299, 328. (Summary) **89a:35001** 35-02 (35-03)
- Spline-forms, difference equations, approximation. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 1, 32-43, 181; translated in *Differential Equations* **24** (1988), no. 1, 24-33. (Genowefa Majcher) **89g:35008** 35A35 (41A15)
- Discrete analogues of relations of mathematical hydrodynamics. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 5, 97-103, 238; translated in *Siberian Math. J.* **29** (1988), no. 5, 765-770. (Summary) **89i:76020** 76A02 (58A17)
- Dhage, B. C.** On abstract measure integro-differential equations. *J. Math. Phys. Sci.* **20** (1986), no. 5, 367-380. (B. G. Pachpatte) **89e:45009** 45J05 (45M10, 54H25)
- On common fixed point mappings in Banach spaces. *Acta Cienc. Indica Math.* **13** (1987), no. 1, 1-5. (Shaligram Singh) **89g:47077** 47H10
- Generalization of Banach contraction principle. *J. Indian Acad. Math.* **9** (1987), no. 2, 75-86. (I. A. Rus) **89f:54080** 54H25
- On some applications of lattice fixed point theorem. *J. Math. Phys. Sci.* **21** (1987), no. 4, 363-370. (Summary) **89a:47079** 47H10
- On extension of Tarski's fixed point theorem and applications. *Pure Appl. Math. Sci.* **25** (1987), no. 1-2, 37-42. (Hideaki Kaneko) **89e:47080** 47H10 (45D05)
- Remarks on a fixed point theorem of Hoimabati Chatterjee and Barada Ray. *Pure Appl. Math. Sci.* **25** (1987), no. 1-2, 49-54. (J. Matkowski) **89d:54033** 54H25
- On common fixed point mappings in Banach spaces. *J. Math. Phys. Sci.* **22** (1988), no. 3, 431-437. (Ramendra Krishna Bose) **89k:47089** 47H10
- On some variants of Schauder's fixed point principle and applications to nonlinear integral equations. *J. Math. Phys. Sci.* **22** (1988), no. 5, 603-611. (Donald Kershaw) **89i:47115** 47H15 (45G10, 47H10)
- Dhakne, M. B.** (with Pachpatte, B. G.) On a general class of abstract functional integro-differential equations. *Indian J. Pure Appl. Math.* **19** (1988), no. 8, 728-746. (V. Lakshmikantham) **89i:45012** 45J05 (45L05, 45N05, 47H15)
- (with Pachpatte, B. G.) On nonlinear functional integro-differential equations in Banach spaces. *J. Math. Phys. Sci.* **22** (1988), no. 5, 585-602. (B. G. Pachpatte) **89j:45012** 45N05 (45J05, 47H06, 47H15)
- Dhal, N. B.** Absolute  $[C, 1]$  summability factors of Fourier series. *J. Orissa Math. Soc.* **3** (1984), no. 1, 15-26. (Not in MR) **42A28**
- Dhaliwal, R. S.** (with Singh, B. M.) Dual integral equations involving Legendre functions of complex index. *J. Math. Phys. Sci.* **21** (1987), no. 4, 307-313. (Summary) **89f:45009** 45F10
- Dhanak, M. R.** Turbulent boundary layer on a circular cylinder: the low-wavenumber surface pressure spectrum due to a low-Mach-number flow. *J. Fluid Mech.* **191** (1988), 443-464. (Summary) **89m:76059** 76Q05 (76F05, 76N05)
- Dhar, Avinash** The spinning particle with extrinsic curvature. *Phys. Lett. B* **214** (1988), no. 1, 75-78. (Summary) **89m:81064** 81C99 (81E30)
- Massive superparticle in  $(2+1)$  dimensions and Polyakov's Fermi-Bose transmutations. *Phys. Lett. B* **216** (1989), no. 1-2, 137-138. (Summary) **89j:81098** 81E13
- Dhar, Deepak** (with Barma, Mustansir; Chakrabarti, B. K.; Taraphder, A.) The travelling salesman problem on a randomly diluted lattice. *J. Phys. A* **20** (1987), no. 15, 5289-5298. (Michel Troyon) **89a:90059** 90B15 (82A67)
- (with Bose, Indrani; Ray, Purusattam) Rooted spiral trees in dimensions 2, 3 and 4. *J. Phys. A* **21** (1988), no. 4, L219-L225. (Summary) **89c:82067** 82A68 (05C05, 65C05, 82A67)
- Spectral dimension of Sierpiński gasket type fractals. *J. Phys. A* **21** (1988), no. 9, 2261-2263. (Summary) **89f:28016** 28A75
- Critical exponents of self-avoiding walks on fractals with dimension  $2 - \epsilon$ . (French summary) *J. Physique* **49** (1988), no. 3, 397-403. (Cheng Xun Wu) **89f:82017** 82A25 (60J15, 60K35, 82A41, 82A68)
- First passage percolation in many dimensions. *Phys. Lett. A* **130** (1988), no. 4-5, 308-310. (Summary) **89d:82083** 82A43
- Dhar, R. K.** (with Vasudeva, H. L.) Characterisations of multipliers of  $L_1(X, \mathcal{F})$ . *J. Indian Math. Soc. (N.S.)* **49** (1985), no. 1-2, 103-112 (1987). (R. H. Cox) **89g:46086** 46J10 (43A22, 46E40)
- Dharmadhikari, A. D.** (with Gupta, Y. P.) Performance measure estimation for repairable systems. *Opersearch* **24** (1987), no. 4, 207-217. (Philip J. Boland) **89b:62204** 62N05 (90B25)
- (with Sarmah, P.) Statistical analysis of a two-unit dependent repairable system. *Comm. Statist. Theory Methods* **17** (1988), no. 5, 1385-1400. (Summary) **89c:62178** 62N05 (62F10)
- Dharmadhikari, Sudhakar** (with Joag-Dev, Kumar) ★ Unimodality, convexity, and applications. Probability and Mathematical Statistics. Academic Press, Inc., Boston, MA, 1988. xiv+278 pp. ISBN 0-12-214690-5 (Moshe Shaked) **89k:60020** 60E15 (62E15)
- Dheena, P.** On strongly regular near-rings. *J. Indian Math. Soc. (N.S.)* **49** (1985), no. 3-4, 201-208 (1987). (Gordon Mason) **89d:16048** 16A76
- A generalization of strongly regular near-rings. *Indian J. Pure Appl. Math.* **20** (1989), no. 1, 58-63. (J. R. Clay) **89k:16066** 16A76
- Dhillon, Balbir S.** (with Rayapati, Subramanyam N.) Human error modelling of parallel and standby redundant systems. *Internat. J. Systems Sci.* **19** (1988), no. 4, 589-611. (Not in MR) **90B25**
- D'Hoker, Eric** Unitarity of the closed bosonic Polyakov string. *International Workshop on Superstrings, Cosmology, Composite Structures* (College Park, MD, 1987), 51-73, World Sci. Publishing, Singapore, 1987. (C. Gauthier) **89h:81177** 81E99 (81E30)
- (with Phong, D. H.) Geometry of quantum strings. *Mathematical aspects of string theory* (San Diego, Calif., 1986), 29-59, Adv. Ser. Math. Phys., 1, World Sci. Publishing, Singapore, 1987. (see **89m:81001**) **81E99** (32G15, 32L10, 58A50, 58G10, 81E30)
- (with Phong, D. H.) The geometry of string perturbation theory. *Rev. Modern Phys.* **60** (1988), no. 4, 917-1065. (Olaf Lechtenfeld) **89m:81132** 81E99 (32G15, 58D30, 81-02, 81E30)
- Dhombres, Jean** On the historical role of functional equations. *Functional equations: history, applications and theory*, 17-31, Math. Appl., Reidel, Dordrecht-Boston, MA, 1984. (F. J. Papp) **89m:01053** 01A55 (39-03, 39B30)
- Utilisation des équations fonctionnelles pour la caractérisation des espaces préhilbertiens. (English summary) [The use of functional equations to characterize pre-Hilbert spaces] *Rend. Sem. Mat. Fis. Milano* **54** (1984), 159-186 (1987). (M. M. Day) **89e:46023a** 46C99 (39B20)
- Errata-corrige: "The use of functional equations to characterize pre-Hilbert spaces". (French) *Rend. Sem. Mat. Fis. Milano* **56** (1986), 157 (1988). (M. M. Day) **89e:46023b** 46C99 (39B20)
- Sur un texte d'Euler relatif à une équation fonctionnelle. Archaismes, pédagogie, et style d'écriture. [A text of Euler's concerning a functional equation: archaisms, pedagogy and writing style] *Historia Sci. No. 33* (1987), 77-123. (Jesper Lützen) **89d:01028** 01A50
- Les présupposés d'Euler dans l'emploi de la méthode fonctionnelle. (English summary) [Euler's presuppositions about the use of the functional method] *Rev. Histoire Sci.* **40** (1987), no. 2, 179-202. (Eberhard Knobloch) **89m:01044** 01A50
- À l'occasion du bicentenaire de la mort de Leonhard Euler (1707-1783). [On the bicentennial of the death of Leonhard Euler (1707-1783)] *Rev. Histoire Sci.* **40** (1987), no. 3-4, 383-386. (Not in MR) **01A70**
- Un texte d'Euler sur les fonctions continues et les fonctions discontinues, véritable programme d'organisation de l'analyse au 18e siècle. [A text of Euler on continuous and discontinuous functions, a practical program for the organization of analysis in the 18th century] *Cahiers du séminaire d'histoire des mathématiques*, 9, 23-97, Univ. Paris VI, Paris, 1988. (Jesper Lützen) **89d:01029** 01A50
- Relations de dépendance entre les équations fonctionnelles de Cauchy. (English summary) [Dependence relations among the Cauchy functional equations] *Aequationes Math.* **35** (1988), no. 2-3, 186-212. (John A. Baker) **89j:39011** 39B20 (39B50)
- (with Pensivy, M.) Esprit de rigueur et présentation mathématique au XVIIIème siècle: le cas d'une démonstration d'Aepinus. (English and German summaries) [Rigor and mathematical presentation in the eighteenth century: the case of a proof by Aepinus] *Historia Math.* **15** (1988), no. 1, 9-31. (Craig G. Fraser) **89g:01028** 01A50
- Dhompongsa, S.** (with Sanwong, J.) Rings in which additive mappings are multiplicative. *Studia Sci. Math. Hungar.* **22** (1987), no. 1-4, 357-359. (Günter Pilz) **89a:16050** 16A76
- Dhooghe, P. F.** The KP and more dimensional KdV equations on  $A_1^{(1)}$  and  $A_1^{(1)}$ . *J. Phys. A* **21** (1988), no. 2, 379-390. (M. C. Singh) **89b:58056** 58F05 (35Q20, 58F07)
- D'Humières, D.** see **d'Humières, D.**
- Dia, Galayé** Étude d'un estimateur de la fonction de régression pour un processus ponctuel à valeurs dans  $\mathbb{R}_+^k \times \mathbb{R}$  ( $k \geq 1$ ). [Study of the estimator of the regression function for a point process with values in  $\mathbb{R}_+^k \times \mathbb{R}$  ( $k \geq 1$ )] *Serdica* **13** (1987), no. 4, 382-395. (Theo Gasser) **89d:62085** 62M09 (62E20)
- Diaconescu, G.** (with Velicanu, M.; Bodea, Constanța) A relational operator for sorted join. *Econom. Comput. Econom. Cybernet. Stud. Res.* **23** (1988), no. 2, 33-36. (Not in MR) **68P20**
- Diaconis, P.** Application of the method of moments in probability and statistics. *Moments in mathematics* (San Antonio, Tex., 1987), 125-142, Proc. Sympos. Appl. Math., 37, Amer. Math. Soc., Providence, RI, 1987. (Ilya S. Molchanov) **89m:60006** 60A10 (44A60, 60E99, 60F05, 62-02)
- (with Bock, M. E.; Huffer, Fred W.; Perlman, Michael D.) Inequalities for linear combinations of gamma random variables. (French summary) *Canad. J. Statist.* **15** (1987), no. 4, 387-395. (G. S. Lingappaiah) **89e:62020** 62E15
- Bayesian numerical analysis. *Statistical decision theory and related topics, IV, Vol. 1* (West Lafayette, Ind., 1986), 163-175, Springer, New York-Berlin, 1988. (B. L. Granovskii) **89c:65032** 65D99 (62C10, 62F15, 65C05)
- (with Smith, Laurel) Honest Bernoulli excursions. *J. Appl. Probab.* **25** (1988), no. 3, 464-477. (Endre Csáki) **89m:60163** 60J15 (60F05)
- (with Freedman, D. A.) Conditional limit theorems for exponential families and finite versions of de Finetti's theorem. *J. Theoret. Probab.* **1** (1988), no. 4, 381-410. (David J. Aldous) **89g:60127** 60F99 (60G09, 62B05)
- Diacu, Florin Nicolae** (with Pál, Árpád) Fundamental results in the theory of real singularities in the  $n$ -body problem. *Seminar of celestial mechanics and space research*, 3-34, Preprint, 87-2, Univ. "Babeș-Bolyai", Cluj-Napoca, 1987. (Summary) **89c:70015** 70F10 (58F40)
- (with Pál, Árpád) Improbability of some special solutions in the  $n$ -body problem with generalized attraction law. *Seminar of Celestial Mechanics and Space Research*, 19-24, Preprint, 87-10, Univ. "Babeș-Bolyai", Cluj-Napoca, 1987. (Summary) **89f:70013** 70F07
- A collision theorem in the nongravitational  $N$ -body problem. *Seminar of celestial mechanics and space research*, 35-42, Preprint, 87-2, Univ. "Babeș-Bolyai", Cluj-Napoca, 1987. (Summary) **89c:70016** 70F10
- Collision and escape geometry in the 2-body problem. *Studia Univ. Babeș-Bolyai Math.* **32** (1987), no. 2, 22-27. (Jaume Llibre) **89f:70010** 70F05 (34C05)
- Dial, Gur** Shannon's random-cipher result and the  $R$ -norm information. *Inform. Sci.* **44** (1988), no. 2, 79-86. (Zhao Zhi Zhang) **89e:94008** 94A60 (94A15)
- Diallo, U. U.** (with Zabreiko, P. P.) On the Daugavet-Krasnosel'skii theorem. (Russian. English summary) *Vestsi Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* **1987**, no. 3, 26-31,



124. (Summary) **89a:47042** 47B38
- On the theory of linear integro-differential equations in a space of continuous functions. (Russian) *Vestnik Belorus. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1988**, no. 2, 40–43, 80. (J. F. Heyda) **89h:45001** 45A05 (43J05)
- Diamandiev, Vasil** Remarks on the Tsenov, Nielsen and generalized Lagrange equations for nonholonomic systems in the presence of linear constraints. (Russian. English summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **77** (1983), no. 2, 3–6 (1987). (Summary) **89c:70018** 70F25 (70H35)
- Approximate solution of a differential equation in nonholonomic mechanics. (Bulgarian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Méc.* **77** (1983), no. 2, 27–31 (1987). (Summary) **89c:70024** 70F25
- An application of the Darboux method for a nonholonomic problem. (Bulgarian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Méc.* **77** (1983), no. 2, 109–114 (1987). (Summary) **89c:70023** 70F25 (70E15)
- Diamond, Harold G.** (with Halberstam, H.; Richert, Hans-Egon) Combinatorial sieves of dimension exceeding one. *J. Number Theory* **28** (1988), no. 3, 306–346. (Grigori Kolesnik) **89g:11080** 11N35
- Diamond, Harvey** (with Chui, C. K.; Raphael, Louise) Convexity-preserving quasi-interpolation and interpolation by box spline surfaces. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 301–310, *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Summary) **89c:65015** 65D07
- (with Chui, C. K.; Raphael, Louise) Interpolation by multivariate splines. *Math. Comp.* **51** (1988), no. 183, 203–218. (Yu Yu Feng) **89j:41002** 41A05 (41A15, 65D07)
- Diamond, Phil** Fuzzy least squares. *Inform. Sci.* **46** (1988), no. 3, 141–157. (E. S. Lee) **89k:03064** 03E72 (62J05, 65D10, 90C99)
- Interval-valued random functions and the kriging of intervals. *Math. Geol.* **20** (1988), no. 3, 145–165. (Summary) **89c:86002** 86-08 (62A99, 65G10, 86A20)
- Dianich, D.** (with Arsham, H.) Consumer buying behavior and optimal advertising strategy: the quadratic profit function case. *Comput. Oper. Res.* **15** (1988), no. 4, 299–310. (Summary) **89c:90008** 90A06 (90A16)
- Dianov, V. I.** see **Data processing in multiprocessor distributed computer systems**, **89a:65206**
- Dianzani, Mario Umberto** Address at the meeting in honor of the ninetieth birthday of Professor Caltado Agostinelli. (Italian) Writings in mathematical physics in honor of the ninetieth birthday of Caltado Agostinelli (Italian). *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **120** (1986), suppl., 9–11 (1987). (Editors) **89i:01072** 01A70
- Diao, Yuan Sheng** The Dirichlet problem for systems of second-order partial differential equations with zero principal characteristic polynomial. (Chinese. English summary) *J. South China Inst. Tech.* **13** (1985), no. 4, 105–118. (Summary) **89g:35026** 35G15
- Fundamental solutions of systems of second-order elliptic partial differential equations with constant coefficients and their applications. (Chinese. English summary) *J. South China Inst. Tech.* **14** (1986), no. 2, 76–89. (Summary) **89g:35025** 35E05 (35J45)
- Diao, Zai Yun** A linear programming method for solving Fredholm integral equations of the first kind. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **9** (1987), no. 4, 298–304. (Summary) **89j:65090** 65R20 (90C50)
- Diarra, Bertin** Fonction  $\Gamma$ -p-adique. [ $p$ -adic  $\Gamma$ -functions] *Séminaire d'analyse* 1985–1986 (Clermont-Ferrand, 1985–1986), *Exp. No.* 17, 23 pp., Univ. Clermont-Ferrand II, Aubière, 1986. (Daniel Barsky) **89i:11175** 11S80
- Extensions radicielles des corps de valuation discrète complets. [Radical extensions of complete discrete valuation fields] *Comm. Algebra* **16** (1988), no. 2, 223–238. (James K. Deveney) **89c:12011** 12F15
- Dias, B.** (with Cruse, T. A.; Wu, Y.-T.; Rajagopal, K. R.) Probabilistic structural analysis methods and applications. *Comput. & Structures* **30** (1988), no. 1–2, 163–170. (Summary) **89g:73003** 73-08 (73-04, 73K35)
- rodrigues Dias, J.** see **Rodrigues Dias, J.**
- Dias, Jerry Ray** Rapid computation of the eigenvalues of small heterocycles using a functional group-like concept. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 466–475, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (Summary) **89c:92062** 92A40 (05C99)
- Dias, João Paulo** (with Figueira, Mário) Time decay for the solutions of a nonlinear Dirac equation in one space dimension. *Ricerche Mat.* **35** (1986), no. 2, 309–316. (Thierry Cazenave) **89d:35152** 35Q20 (35B40, 81C05)
- (with Figueira, Mário) Global existence of solutions with small initial data in  $H^2$  for the massive nonlinear Dirac equations in three space dimensions. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 3, 861–874. (M. S. Agranovich) **89f:35181** 35Q20
- (with Figueira, Mário) Sur l'existence d'une solution globale pour une équation de Dirac non linéaire avec masse nulle. (English summary) [On the existence of a global solution for a nonlinear Dirac equation with zero mass] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 11, 469–472. (M. S. Agranovich) **89f:35182** 35Q20
- Dias, Sandra Maria Venturini Ferreira** An analysis of a family of iterative methods for finding isolated roots. (Portuguese. English summary) *Rev. Mat. Estatist.* **4/5** (1986/87), 1–6. (V. Pereyra) **89h:65077** 65H05
- Dias da Silva, J. A.** (with Cordovil, R.; Fonseca, Amélia) On the notion of transversal of a sum of matroids. *Portugal. Math.* **45** (1988), no. 3, 317–325. (András Recski) **89j:05027** 05B35
- Diawara, O.** Sur les classes de conjugaison des sous-groupes du groupe simple sporadique Mc de J. McLaughlin. I. [On the classes of conjugate elements of the subgroups of J. McLaughlin's sporadic simple group Mc. I] *Simon Stevin* **61** (1987), no. 3–4, 217–234. (P. Fong) **89j:20023a** 20D08 (20E15)
- Sur les classes de conjugaison des sous-groupes du groupe simple sporadique Mc de J. McLaughlin. II. [On the classes of conjugate elements of the subgroups of J. McLaughlin's sporadic simple group Mc. II] *Simon Stevin* **61** (1987), no. 3–4, 235–263. (P. Fong) **89j:20023b** 20D08 (20E15)
- garcía Díaz, Alberto** see **García Díaz, Alberto**
- Díaz, Carlos G.** (with Fernández, Francisco M.; Castro, Eduardo A.) On the numerical integration of the Schrödinger equation. *J. Phys. A* **21** (1988), no. 1, L11–L13. (Summary) **89c:81008** 81-08
- díaz y Díaz, F.** see **Díaz y Díaz, F.**
- Díaz, Guy** Grands degrés de transcendance pour des familles d'exponentielles. (English summary) [Large transcendence degree for exponential families] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 5, 159–162. (D. W. Masser) **89a:11076** 11J85
- Díaz, Hernando** (with Desrochers, Alan A.) Modeling of nonlinear discrete-time systems from input-output data. *Automatica—J. IFAC* **24** (1988), no. 5, 629–641. (Not in MR) **93C35** (00A71, 93C10)
- Díaz, J. C.** see **Díaz Alcáide, Juan Carlos**
- Díaz, J. I.** see **Díaz Díaz, Jesús Ildefonso**
- Díaz, J. I.** see **Díaz Díaz, Jesús Ildefonso**
- Díaz, J. Ildefonso** see **Díaz Díaz, Jesús Ildefonso**
- Díaz, Jesús Ildefonso** see **Díaz Díaz, Jesús Ildefonso**
- díaz Díaz, Jesús Ildefonso** see **Díaz Díaz, Jesús Ildefonso**
- gallego-Díaz, José** see **Gallego-Díaz, José**
- Díaz, Josep** (with Balcazar, José L.; Gabarró, J.) On characterizations of the class PSPACE/poly. *Theoret. Comput. Sci.* **52** (1987), no. 3, 251–267. (G. Wechsung) **89c:68034** 68Q15 (03D15)
- Díaz, Katharine Perkins** The Szegő kernel as a singular integral kernel on a family of weakly pseudoconvex domains. *Trans. Amer. Math. Soc.* **304** (1987), no. 1, 141–170. (Aline Bonami) **89d:32009** 32A35 (32F15, 32H10)
- martín Díaz, M.** see **Martín Díaz, M.**
- Díaz, Mario** (with Gleiser, Reinaldo; Pullin, Jorge) No-hair theorems and solitonic instabilities of de Sitter spacetimes. *SILARG, VI* (Rio de Janeiro, 1987), 135–142, *World Sci. Publishing, Singapore*, 1988. (Nora Bretón Báez) **89f:83031** 83C30 (83C15, 83C75)
- (with Gleiser, Reinaldo; Pullin, Jorge) Brans-Dicke solitons as finite perturbations on perfect-fluid FRW models in general relativity. *Classical Quantum Gravity* **5** (1988), no. 4, 641–643. (Kenneth Dunn) **89d:83020** 83C15 (83D05)
- (with Cruzate, Juan; Gleiser, Reinaldo; Pullin, Jorge) Soliton collision in cosmologies with matter. *Classical Quantum Gravity* **5** (1988), no. 6, 883–889. (Peter Szekeres) **89f:83037** 83C20 (83F05)
- (with Gleiser, Reinaldo; Grosso, Roberto D.) Phase transitions in perturbed stiff fluid Friedmann-Robertson-Walker cosmological models. *Classical Quantum Gravity* **5** (1988), no. 7, 989–1001. (A. H. Taub) **89f:83020** 83C15 (83C55, 83F05)
- (with Gleiser, Reinaldo) On the geometric structure of nonstationary multisoliton vacuum metrics with real pole trajectories on a general background. *Gen. Relativity Gravitation* **20** (1988), no. 6, 517–526. (Jorge A. Pullin) **89k:83014** 83C15 (83C20)
- rubí Díaz, Pere** see **Rubí Díaz, Pere**
- moreno-Díaz, R.** see **Moreno-Díaz, R.**
- Díaz, Steven** Complete subvarieties of the moduli space of smooth curves. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 77–81, *Proc. Sympos. Pure Math.*, 46, Part 1, Amer. Math. Soc., Providence, RI, 1987. (R. F. Lax) **89b:14039** 14H10
- (with Harris, Joseph Daniel) Geometry of Severi varieties. II. Independence of divisor classes and examples. *Algebraic geometry (Sundance, UT, 1986)*, 23–50, *Lecture Notes in Math.*, 1311, Springer, Berlin-New York, 1988. (R. F. Lax) **89g:14014** 14H10 (14C22, 14N10)
- (with Harris, Joseph Daniel) Geometry of the Severi variety. *Trans. Amer. Math. Soc.* **309** (1988), no. 1, 1–34. (H. Lange) **89i:14018** 14H10
- (with Harris, Joseph Daniel) Ideals associated to deformations of singular plane curves. *Trans. Amer. Math. Soc.* **309** (1988), no. 2, 433–468. (Philippe Carbonne) **89m:14003** 14B07 (14H20)
- Díaz Alcáide, Juan Carlos** Unconditional bases in countable- $\mathcal{L}_1$  spaces. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 357–363. (Fritz Haslinger) **89k:46007** 46A35 (46A12)
- Díaz Bejarano, J.** (with Miró Rodríguez, C.) Evaporation of nonzero rest mass particles from a black hole. *J. Math. Phys.* **28** (1987), no. 11, 2665–2668. (Summary) **89f:83062** 83C47 (81G25)
- (with Martín Sánchez, A.) Generalized exponential, circular, and hyperbolic functions for nonlinear wave equations. *J. Math. Phys.* **29** (1988), no. 8, 1847–1853. (Summary) **89f:34014** 34A34 (33A25, 35Q20)
- Díaz Carrillo, M.** (with Olvera Peralta, M.) Supersummable functions and induced measures. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 173–178, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (N. Dincluanu) **89k:28006** 28C05
- Díaz Díaz, Jesús Ildefonso** Applications of symmetric rearrangement to certain nonlinear elliptic equations with a free boundary. *Nonlinear differential equations (Granada, 1984)*, 155–181, *Res. Notes in Math.*, 132, Pitman, Boston, MA-London, 1985. (Ricardo S. Kubrusly) **89b:35048** 35J65 (35B05, 35R35)
- (with Kersner, R.) The one-dimensional porous media equation with convection. *Nonlinear parabolic equations: qualitative properties of solutions (Rome, 1985)*, 94–102, *Pitman Res. Notes Math. Ser.*, 149, Longman Sci. Tech., Harlow, 1987. (Antonio Fasano) **89a:35119** 35K65 (35R35)
- (with Saa, José Evaristo) Existence et unicité de solutions positives pour certaines équations elliptiques quasilineaires. (English summary) [Existence and uniqueness of positive solutions of some quasilinear elliptic equations] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 12, 521–524. (J.-P. Gossez) **89c:35051** 35J60 (35B05)
- (with Mossino, Jacqueline) Inégalité isopérimétrique dans un problème d'obstacle parabolique. (English summary) [Isoperimetric inequality for a parabolic obstacle problem] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 17, 737–740. (Catherine Bandle) **89a:35123** 35K85
- (with Morel, J.-M.; Oswald, Luc) An elliptic equation with singular nonlinearity. *Comm. Partial Differential Equations* **12** (1987), no. 12, 1333–1344. (From the introduction) **89m:35077** 35J65
- (with Badii, M.; Tesi, Alberto) Existence and attractivity results for a class of degenerate functional-parabolic problems. *Rend. Sem. Mat. Univ. Padova* **78** (1987), 109–124. (Hans Engler) **89b:35325** 35R10 (35K60, 35R35, 45K05)
- (with Jiménez, Raúl Francisco) Boundary behaviour of solutions of the Signorini problem. I. The elliptic case. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **2** (1988), no. 1, 127–139. (M. Biroli) **89f:35090** 35J85 (35B99, 49B22, 73C02)
- (with Kersner, R.) On the behaviour and cases of nonexistence of the free boundary in a semibounded porous medium. *J. Math. Anal. Appl.* **132** (1988), no. 1, 281–289. (Antonio Fasano) **89b:35351** 35R35 (35K55, 76S05)
- Díaz Estévez, Emilio** Countable representative sets of uncountable sets. (Spanish) *Colloquium 1985–86* (Badajoz, 1985–86), 51–66, *Publ. Dep. Mat. Univ. Extremadura*, 15, Univ.

- Extremadura, Badajoz*, 1987. (N. C. A. da Costa) **89c:83014** 03B15 (03C85)
- Díaz Reyes, Gilberto** (with Castro Galdames, Rafael) Asymptotic solution of the problem of waves on the surface of a plane layer of stratified liquid with rotation. (Spanish. English summary) *Cienc. Mat. (Havana)* **8** (1987), no. 1, 25–36. (Summary) **89a:76052** 76V05 (35C20, 35L99, 76U05)
- Díaz y Díaz, F.** (with Llorente, Pascual; Quer, Jordi) Cubic fields, a congruential criterion for Scholz's theorem and new real quadratic fields with 3-rank equal to 4. *Arch. Math. (Basel)* **50** (1988), no. 4, 356–359. (Franz Halter-Koch) **89d:11097** 11R29 (11R11)
- Dib, H. M.** (with Shieh, L. S.; Ganesan, Sekar) Linear quadratic regulators with eigenvalue placement in a specified region. *Automatica—J. IFAC* **24** (1988), no. 6, 819–823. (Not in MR) **49D40** (93B60)
- (with Shieh, L. S.; Ganesan, Sekar; Yates, R. E.) Optimal pole-placement for state-feedback systems possessing integrity. *Internat. J. Systems Sci.* **19** (1988), no. 8, 1419–1435. (Krzysztof Kuźmiński) **89k:93107** 93B55 (93B50)
- (with Shieh, L. S.; Yates, R. E.) Sequential design of linear quadratic state regulators via the optimal root-locus techniques. *Proc. IEEE-D* **135** (1988), no. 4, 289–294. (Krishnan Balachandran) **89c:93103** 93B50 (49D40, 93B60, 93C35)
- see also Shieh, L. S., **89d:93008**
- Di Bari, Cristina** On continuous selections. (Italian. English summary) *Rend. Circ. Mat. Palermo* (2) **36** (1987), no. 1, 85–89. (A. Precupanu) **89m:28019** 28B20 (49A50, 54C60)
- Di Bella, Stefano** La substance leibnizienne: histoire individuelle et identité. [Leibnizian substance: individual history and identity] *Leibniz: questions de logique (Bruxelles/Louvain-la-Neuve, 1985)*, 117–129. *Studia Leibnitiana Sonderheft*, 15, Steiner, Wiesbaden, 1988. (see **89m:01041**) 01A45 (03–03, 03A05)
- Di Bello, C.** The nonlinearities for nearly sinusoidal oscillators. *IEEE Trans. Circuits and Systems* **35** (1988), no. 9, 1191–1192. (Not in MR) **34C15** (94C05)
- Di Benedetto, M. D.** (with Conte, Giuseppe; Isidori, A.; Perdon, A.-M.) An input-output characterization of the structure at infinity for a nonlinear system. *Theory and applications of nonlinear control systems (Stockholm, 1985)*, 301–312, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:93029** 93B27 (93C10)
- Dibiš, Josef** On conditional stability of the solutions of the systems of differential equations, not solved with respect to the derivatives. (Czech summary) *Sb. Vysoké. Učeni. Tech. v Brně* **1985**, no. 1–4, 5–9. (Xiao Xin Liao) **89m:34066** 34D20 (34A08)
- Application of the topological method of T. Ważewski to the investigation of the asymptotic behavior of the solutions of a partial differential equation. (Russian. English and Czech summaries) *Knižnice Odborn. Věd. Spisů Vysoké. Učeni. Tech. v Brně B* **108** (1986), 5–22. (Ya. V. Kurylev) **89b:35041** 35B40 (35F25)
- Dibrell, Phillip** (with Campbell, James) Hyponormal powers of composition operators. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 914–918. (Raj Kishor Singh) **89f:47045** 47B38 (47B20)
- Di Carlo, D. A.** (with Chen, A. L.; Hotes, S. A.) Self-intersections in a three-parameter space of cosmic strings. *Phys. Rev. D* (3) **37** (1988), no. 4, 863–868. (Summary) **89d:83082** 83F05
- Di Cera, Enrico** (with Gill, Stanley J.; Wyman, Jeffries) Canonical formulation of linkage thermodynamics. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 14, 5077–5081. (Summary) **89f:92012** 92A08 (92A40)
- (with Philipson, Paul E.; Wyman, Jeffries) Chemical oscillations in closed macromolecular systems. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 16, 5923–5926. (Summary) **89f:92013** 92A08 (80A30)
- Di Ciccio, T. J.** Likelihood inference for linear regression models. *Biometrika* **75** (1988), no. 1, 29–34. (I. Guttman) **89d:62005** 62A10 (62J05)
- Dick, Erik** Elliptic solution techniques for Euler and Navier-Stokes equations in steady flow. Proceedings of the 2nd international conference on computational and applied mathematics (Leuven, 1986). *J. Comput. Appl. Math.* **20** (1987), Special Issue, 199–209. (Timothy Nigel Phillips) **89a:65183** 65N99 (76–08, 76D05)
- A multigrid method for steady incompressible Navier-Stokes equations based on flux-vector splitting. *Multigrid methods (Copper Mountain, CO, 1987)*, 157–165. *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (Murlu M. Gupta) **89m:76005** 76–08 (65N50, 76D05)
- Dick, R.** Locally symmetric Riemannian spaces and solutions of Yang-Mills equations. *Lett. Math. Phys.* **14** (1987), no. 1, 63–67. (Allan M. Din) **89a:81069** 81E13 (53C80)
- Dickey, L. A.** see Dikili, L. A.
- Dickey, R. W.** Membrane caps. *Quart. Appl. Math.* **45** (1987), no. 4, 697–712. (Summary) **89a:73047a** 73K15
- Membrane caps under hydrostatic pressure. *Quart. Appl. Math.* **46** (1988), no. 1, 95–104. (Summary) **89c:73055** 73K15
- Erratum: "Membrane caps". *Quart. Appl. Math.* **46** (1988), no. 1, 192. (Editors) **89a:73047b** 73K15
- Dickinson, Bradley W.** (with Schwartz, Carla A.) Some finite-dimensional realization theory for nonlinear systems. *Theory and applications of nonlinear control systems (Stockholm, 1985)*, 223–230, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:93017** 93B15 (45D05, 93C10)
- (with Li, Shiping) Application of the lattice filter to robust estimation of AR and ARMA models. *IEEE Trans. Acoust. Speech Signal Process.* **36** (1988), no. 4, 502–512. (N. C. Mohanty) **89d:94004** 94A05 (62M10, 93E10)
- Dickman, R. F.** (with McCoy, R. A.) The Freudenthal compactification. *Dissertationes Math. (Rozprawy Mat.)* **262** (1988), 35 pp. (Olav Njåstad) **89c:54051** 54D30 (54D35)
- Dickmeis, W.** (with Nessel, R. J.; van Wickeren, E.) Quantitative extensions of the uniform boundedness principle. *Jahresber. Deutsch. Math.-Verein.* **89** (1987), no. 3, 105–134. (Summary) **89b:41001** 41–02 (46N05, 65Dxx, 65J05, 65M99)
- Dicks, Warren** A survey of recent work on the cohomology of one-relator associative algebras. *Ring theory (Granada, 1986)*, 75–81, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (L. R. Verma) **89m:16049** 16A61
- (with Schofield, A. H.) On semihiereditary rings. *Comm. Algebra* **16** (1988), no. 6, 1243–1274. (Pere Menal) **89c:16009** 16A14 (16A06, 16A27, 16A30)
- Dickson, D. G.** Factoring functions of exponential type with restrictions bounded on a line. (French summary) *Bull. Sci. Math. (2)* **112** (1988), no. 1, 77–100. (S. M. Shah) **89d:30032** 30D15 (46F10)
- Factoring Fourier transforms with zeros in a strip. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 407–413. (R. P. Boas, Jr.) **89k:30027** 30D15 (42A85, 46F12)
- Di Concilio, Anna** (with Naimpally, Somashekhar) A nearness approach to extension problems. (Italian summary) *Rend. Acad. Naz. Sci. XL Mem. Mat. (5)* **11** (1987), no. 1, 161–171. (S. J. R. Vorster) **89f:54033** 54C20 (54E17)
- Diday, E.** see Data analysis and informatics, **89c:62009**
- Didenko, V. D.** A direct method for solving the Hilbert boundary value problem. (Russian) *Math. Nachr.* **133** (1987), 317–341. (P. Yu. Alekna) **89a:30032** 30E25
- Diderot, Denis** see Wahsner, Renate, **89c:01028**
- Diderrich, George T.** Some remarks on Karmarkar's potential function. *Aequationes Math.* **36** (1988), no. 1, 57–75. (John J. Dinkel) **89m:90096** 90C05
- Dididze, Ts. E.** On radicals in linear monoid automata. (Russian) *Trudy Inst. Vychisl. Mat. Akad. Nauk Gruz. SSR* **26** (1986), no. 2, 3–21. (I. Peák) **89b:68046** 68Q70 (20M35)
- Didierjean, A.** Quelques classes de cobordisme non orienté refusant de se fibrer sur des sphères. (English summary) [Some unoriented cobordism classes that do not fiber over spheres] *Pacific J. Math.* **132** (1988), no. 2, 233–241. (R. E. Stong) **89c:57045** 57R75
- Didik, B. V.** (with Luchka, A. Yu.; Didik, V. Yu.) Solution of linear Volterra integral equations of the second kind by a projection-iteration method. *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 21, 28 pp. (Summary) **89f:65144** 65R20
- Didik, V. Yu.** (with Luchka, A. Yu.; Didik, B. V.) Solution of linear Volterra integral equations of the second kind by a projection-iteration method. *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 21, 28 pp. (Summary) **89f:65144** 65R20
- Didkovskaya, N. V.** Some nonlinear problems of the best approximation of functions. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 98–101, Saratov. Gos. Univ., Saratov, 1986. (see **89c:00036**) 41A50
- Didkovskii, I. R.** (with Sil'vestrov, D. S.; Moisa, A. I.) A characteristic and a limit theorem for processes of the attainment of a level. (Russian) *Teor. Veroyatnost. i Mat. Statist.* **39** (1988), 39–47, 126. (Gh. Oprisan) **89g:60311** 60K99 (60F05)
- Didmanidze, I. Sh.** A local algorithm for finding the diameter in an acyclic graph. (Russian. English and Georgian summaries) *Tbilis. Gos. Univ. Inst. Prikl. Mat. Trudy* **26** (1988), 23–29, 228. (B. Zelinka) **89i:05126** 05C20 (05C38, 68Q25, 68R10)
- Diduch, C. P.** (with Doraiswami, R.) Role of sample period in transients, robustness and sensitivity in optimally designed digital control systems. *Internat. J. Systems Sci.* **19** (1988), no. 6, 921–934. (Not in MR) **93B50** (93B35)
- Diduk, N. N.** Information-theoretic comparison of fuzziness and probabilistic indeterminacy. I. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 1, 84–89, 106, 135; translated in *Cybernetics* **24** (1988), no. 1, 106–113. (Korolian Gilezan) **89g:94056** 94D05 (03E72, 94A17)
- Information-theoretic comparison of fuzziness and probabilistic indeterminacy. II. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 2, 78–82, 101, 135; translated in *Cybernetics* **24** (1988), no. 2, 239–245. (Korolian Gilezan) **89g:94057** 94D05 (03E72, 94A17)
- Didyk, B. V.** see Didik, B. V.
- Didyk, V. Yu.** see Didik, V. Yu.
- Didyk, Yu. K.** (with Tyukhtin, V. S.; Urmantsev, Yu. A.; Larin, Yu. S.; Dalin, V. Yu.; Sharapov, I. P.; Malikov, A. V.; Koptsiuk, V. A.; Zamorzaev, A. M.; Petukhov, S. V.; Artem'ev, Yu. L.) ★ Система. Симметрия. Гармония. (Russian) [System. Symmetry. Harmony] "Mysl", Moscow, 1988. 318 pp. ISBN 5-244-00190-6 (V. Ya. Kreinovich) **89f:00045** 00A69 (00A25, 20H15, 92A05, 93A05)
- Dieck, Tammo** ★ Transformation groups. de Gruyter Studies in Mathematics, 8. Walter de Gruyter & Co., Berlin-New York, 1987. x+312 pp. ISBN 3-11-009745-1 (Shmuel Weinberger) **89c:57048** 57Sxx (57–02)
- Geometric representation theory of compact Lie groups. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 615–622, Amer. Math. Soc., Providence, RI, 1987. (Gunnar Carlsson) **89c:57031** 57S17 (57S15, 57S25)
- (with Hambleton, L.) ★ Surgery theory and geometry of representations. DMV Seminar, 11. Birkhäuser Verlag, Basel-Boston, MA, 1988. viii+115 pp. ISBN 3-7643-2204-7 (A. A. Ranicki) **89g:57047** 57R65 (57R67, 57S17)
- (with Davis, James Frederic) Some exotic dihedral actions on spheres. *Indiana Univ. Math. J.* **37** (1988), no. 2, 431–450. (Allan Edmonds) **89k:57078** 57S25 (57S17)
- see also Algebraic topology and transformation groups, **89g:57001**
- Dieckerhoff, R.** (with Zehnder, E.) Boundedness of solutions via the twist-theorem. *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* **14** (1987), no. 1, 79–95. (Frans Conrjijn) **89c:34066** 34C11 (58F05, 58F22, 58F27)
- Diekmann, Jan** Volume functions in general relativity. *Gen. Relativity Gravitation* **20** (1988), no. 9, 859–867. (H. Rund) **89j:83052** 83C99 (28C99)
- Cauchy surfaces in a globally hyperbolic space-time. *J. Math. Phys.* **29** (1988), no. 3, 578–579. (N. V. Mitskevich) **89c:83009** 83C05 (53C50, 53C80, 58D30)
- Diederich, K.** (with Fornæss, John Erik) Applications holomorphes propres entre domaines à bord analytique réel. (English summary) [Proper holomorphic mappings between real-analytic domains] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 7, 321–324. (Hidetaka Hamada) **89c:32052** 32H35 (32D15)
- (with Fornæss, John Erik) Proper holomorphic mappings between real-analytic pseudoconvex domains in  $\mathbb{C}^n$ . *Math. Ann.* **282** (1988), no. 4, 681–700. (John Bland) **89m:32045** 32H35 (32F15)
- Diederich, Sigurd** (with Oppen, Manfred; Anlauf, Joachim K.) Statistical mechanics of learning in neural network models. *Chaos and complexity* (Torino, 1987), 219–223, World Sci. Publishing, Singapore, 1988. (Summary) **89m:92026** 92A09 (68Q80, 82A57, 92A27)
- gonzález Diéguez, Belarmino** see González Diéguez, Belarmino
- Diehl, Sabine** (with Stute, Winfried) Kernel density and hazard function estimation in the presence of censoring. *J. Multivariate Anal.* **25** (1988), no. 2, 299–310. (Margaret P. Gessaman) **89f:62039** 62G05 (62N05)
- Dieker, Volker** (with Möbus, Axel) Hotz-isomorphism theorems in formal language theory. *STACS 88 (Bordeaux, 1988)*, 126–135, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (Summary) **89c:68056** 68Q45 (03D05)
- (with Möbus, Axel) Hotz-isomorphism theorems in formal language theory. (French summary) *STACS 88 (Bordeaux, 1988)*. *RAIRO Inform. Theor. Appl.* **23** (1989), no. 1, 29–43. (Summary) **89m:68075** 68Q45 (20M35)
- Diekmann, Andreas** Volunteer's dilemma. A social trap without a dominant strategy and some empirical results. *Paradoxical effects of social behavior*, 187–197, Physica, Heidelberg, 1986. (see **89d:90019**) 90D35 (92A20)



- (with Paterson, Iain) A paradox in decision theory and some experimental results: the relative nature of decisions. *Theory and Decision* 25 (1988), no. 2, 107–116. (Summary) **89g:90266** 90D35 (90A05, 90A10)
- see also **Paradoxical effects of social behavior**, **89d:90019**
- Diekmann, O.** Perturbed dual semigroups and delay equations. *Dynamics of infinite-dimensional systems* (Lisbon, 1986), 67–73, NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 37, Springer, Berlin-New York, 1987. (G. F. Webb) **89e:47061** 47D05 (34K05, 92A05)
- (with Clément, Ph.; Gyllenberg, M.; Heijmans, H. J. A. M.; Thieme, Horst R.) Perturbation theory for dual semigroups. II. Time-dependent perturbations in the sun-reflexive case. *Proc. Roy. Soc. Edinburgh Sect. A* 109 (1988), no. 1-2, 145–172. (S. Kantorovitz) **89i:47072** 47D05 (34G10, 47A55, 92A15)
- Dieks, D.** The formalism of quantum theory: an objective description of reality? (German summary) *Ann. Physik* (7) 45 (1988), no. 3, 174–190. (Summary) **89f:81010** 81B05
- Overlap and distinguishability of quantum states. *Phys. Lett. A* 126 (1988), no. 5-6, 303–306. (A. Barchielli) **89d:81016** 81B99 (62C99)
- vuillemin-Dien, Gudrun** see **Vuillemin-Dien, Gudrun**
- le van Dien** see **Le Van Dien**
- Dien, L. V.** see **Le Van Dien**
- Diener, F.** Fleuves et variétés centrales. (English summary) [Rivers and center manifolds] Singularités d'équations différentielles (Dijon, 1985). *Astérisque* No. 150-151 (1987), 59–66, 185. (François Aribaud) **89b:34107** 34C30 (03H05, 34E05, 58F12)
- (with Stroyan, Keith D.) Syntactical methods in infinitesimal analysis. *Nonstandard analysis and its applications* (Hull, 1986), 258–281, London Math. Soc. Stud. Texts, 10, Cambridge Univ. Press, Cambridge-New York, 1988. (see **89m:03060**) 03H05 (03E70)
- (with Diener, Marc) Some asymptotic results in ordinary differential equations. *Nonstandard analysis and its applications* (Hull, 1986), 282–297, London Math. Soc. Stud. Texts, 10, Cambridge Univ. Press, Cambridge-New York, 1988. (see **89m:03060**) 34E05 (03H05)
- Diener, Marc** (with Diener, F.) Some asymptotic results in ordinary differential equations. *Nonstandard analysis and its applications* (Hull, 1986), 282–297, London Math. Soc. Stud. Texts, 10, Cambridge Univ. Press, Cambridge-New York, 1988. (see **89m:03060**) 34E05 (03H05)
- Đi Ngô Diếp** see **Đi Ngô Diếp**
- de Dier, Bart** see **De Dier, Bart**
- Dierker, Egbert** (with Leninghaus, Jürgen) Surplus maximization and Pareto optimality. *Contributions to mathematical economics*, 143–166, North-Holland, Amsterdam-New York, 1986. (Jacob Paroush) **89b:90044** 90A14
- Dierkes, Ulrich** (with Bemelmans, Josef) On a singular variational integral with linear growth. I. Existence and regularity of minimizers. *Arch. Rational Mech. Anal.* 100 (1987), no. 1, 83–103. (T. Zolezzi) **89a:49022** 49B21 (49B36)
- A geometric maximum principle, Plateau's problem for surfaces of prescribed mean curvature, and the two-dimensional analogue of the catenary. *Partial differential equations and calculus of variations*, 116–141, *Lecture Notes in Math.*, 1357, Springer, Berlin-New York, 1988. (Themistocles M. Rassias) **89m:49075** 49F10 (53A10)
- Dierolf, Susanne** (with Bonet, José) A note on biduals of strict (LF)-spaces. *Resultate Math.* 13 (1988), no. 1-2, 23–32. (Klaus-Dieter Bierstedt) **89h:46002** 46A12 (46A06, 46A20)
- Dierstein, R.** see **Parallel computing in science and engineering**, **89j:68012**
- Dispersova, M. M.** (with Dement'ev, A. N.) Limit relations for characteristic functions of the solutions of a system of linear differential equations with random coefficients. (Russian) *Asymptotic methods in the investigation of stochastic models* (Russian), 28–38, 143, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (V. G. Kolomiets) **89k:60074** 60H10 (34F05)
- Diestel, Reinhard** Simplicial decompositions, tree-decompositions and graph minors. Eleventh British Combinatorial Conference (London, 1987). *Discrete Math.* 25 (1988), C, 97–104. (S. Zám) **89e:05154** 05C70 (05C05)
- Tree-decompositions, tree-representability and chordal graphs. *Discrete Math.* 71 (1988), no. 2, 181–184. (J. Lauri) **89k:05090** 05C75 (05C05)
- Simplicial minors and decompositions of graphs. *Math. Proc. Cambridge Philos. Soc.* 103 (1988), no. 3, 409–426. (H. Joseph Straight) **89f:05137** 05C75
- Dieter, Elaine** (with Brylawski, Thomas H.) Exchange systems. *Discrete Math.* 69 (1988), no. 2, 123–151. (Ulrich Faigle) **89f:05054** 05B35
- Dieterich, Ernst** The Auslander-Reiten quiver of an isolated singularity. *Singularities, representation of algebras, and vector bundles* (Lambrecht, 1985), 244–264, *Lecture Notes in Math.*, 1273, Springer, Berlin-New York, 1987. (Alfred G. Wiedemann) **89a:14007** 14B05 (16A64)
- Dietrich, Brenda L.** (with Bland, Robert G.) An abstract duality. *Discrete Math.* 70 (1988), no. 2, 203–208. (Joseph Kung) **89f:05052** 05B35
- Dietrich, H.** Zur c-Konvexität und c-Subdifferenzierbarkeit von Funktionalen. (English summary) [On c-convexity and c-subdifferentiability of functionals] *Optimization* 19 (1988), no. 3, 355–371. (Quan Zheng) **89j:90268** 90C48 (49A52, 49A55, 49D37, 58C20)
- Dietz, Klaus** (with Hadelar, K. P.) Epidemiological models for sexually transmitted diseases. *J. Math. Biol.* 26 (1988), no. 1, 1–25. (Pauline van den Driessche) **89f:92038** 92A15
- On the transmission dynamics of HIV. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* 90 (1988), no. 1-2, 397–414. (Summary) **89f:92039** 92A15 (92A07)
- Dietz, Klaus P.** (with Römer, H.) The role of the  $\eta$ -invariant for the description of electrons in a strong Coulomb field. *Nuclear Phys. B* 300 (1988), no. 2 FS22, 313–322. (Summary) **89f:81247** 81G10 (58G10, 81L05)
- Dietz, Werner** New exact solutions of Einstein's field equations: gravitational force can also be repulsive! *Found. Phys.* 18 (1988), no. 5, 529–547. (Shin-ichi Kitamura) **89f:83019** 83C15 (83C05)
- Dietze, Siegfried** (with Burmeister, W.; Hess, Walter Paul; Schmidt, Jochen W.) Solution of a class of weakly coupled programs via dualization, and applications. *Discretization in differential equations and enclosures* (Weissig, 1986), 57–80, *Math. Res.*, 36, Akademie-Verlag, Berlin, 1987. (C. P. Orthlieb) **89j:90200** 90C25 (65K05)
- (with Schmidt, Jochen W.) Determination of shape preserving spline interpolants with minimal curvature via dual programs. *J. Approx. Theory* 52 (1988), no. 1, 43–57. (G. Opfer) **89g:65013** 65D07 (41A15, 90C30)
- Dietzenbacher, E.** Trade imbalance in an input-output model. *Math. Comput. Modelling* 10 (1988), no. 12, 883–889. (Not in MR) **90A17** (90A11)
- Estimation of the Leontief inverse from the practitioner's point of view. *Math. Social Sci.* 16 (1988), no. 2, 181–187. (Summary) **89g:90073** 90A16
- Dieudonné, Jean** (with Tits, J.) La vie et l'œuvre de Claude Chevalley. [The life and works of Claude Chevalley] *C. R. Acad. Sci. Sér. Gén. Vie Sci.* 3 (1986), no. 6, 559–565. (Editors) **89a:01056a** 01A70
- ★ *Grundzüge der modernen Analysis*. 9. (German) [Foundations of modern analysis. 9] Translated from the French by Horst Antelmann. *VEB Deutscher Verlag der Wissenschaften, Berlin*, 1987. 380 pp. ISBN 3-326-00185-1 (Editors) **89b:58001** 58-01 (00A05, 55-01, 57-01)
- ★ *Grundzüge der modernen Analysis*. Band 9. (German) [Foundations of modern analysis. Vol. 9] Translated from the French by Horst Antelmann. *Friedr. Vieweg & Sohn, Braunschweig*, 1987. 380 pp. ISBN 3-528-08549-5 (Editors) **89b:58002** 58-01 (00A05)
- The beginnings of Italian algebraic geometry. *Studies in the history of mathematics*, 278–299, *MAA Stud. Math.*, 26, Math. Assoc. America, Washington, DC, 1987. (see **89b:01002**) 01A60 (14-03)
- (with Tits, J.) Claude Chevalley (1909–1984). *Bull. Amer. Math. Soc. (N.S.)* 17 (1987), no. 1, 1–7. (Editors) **89a:01056b** 01A70
- ★ *Treatise on analysis*. Vol. VII. Translated from the French by Laura Fainsilber. Pure and Applied Mathematics, 10-VII. Academic Press, Inc., Boston, MA, 1988. xiv+366 pp. ISBN 0-12-215507-6 (Editors) **89j:58001** 58-01 (35-01, 35Sxx)
- see also **Freitag, Eberhard**, **89f:14017**
- Diewert, Walter E.** (with Avriel, Mordecai; Schaible, Siegfried; Zang, Israel) ★ Generalized concavity. *Mathematical Concepts and Methods in Science and Engineering*, 36. Plenum Press, New York-London, 1988. x+332 pp. ISBN 0-306-42656-0 (Jean-Pierre Crouzeix) **89e:90155** 90C25 (26B25, 90A10, 90A11, 90C32)
- (with Wells, T. J.) A normalized quadratic semiflexible functional form. *J. Econometrics* 37 (1988), no. 3, 327–342. (Peter Schmidt) **89c:62190** 62P20
- Diez, F.** (with Gavete, L.; Michavila Pitarch, Francisco P.; Whiteman, J. R.) Generalization of the mapping technique of Aalto to produce finite elements for treating singularities. *The mathematics of finite elements and applications*, VI (Uxbridge, 1987), 541–553, Academic Press, London-New York, 1988. (see **89c:65004**) 65N30
- Díez Fernández, Honorato** Fourier transform of the convolution product in a nilpotent Lie group of order two. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 179–187, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Jorge A. Vargas) **89i:22017** 22E30
- Díez Martínez, O.** (with Pérez, P.; Budelli, R.; Segundo, J. P.) Locking, intermittency, and bifurcations in a periodically driven pacemaker neuron: Poincaré maps and biological implications. *Biol. Cybernet.* 60 (1988), no. 1, 49–58. (Summary) **89j:92004** 92-04 (58F13, 92-08, 92A09)
- Di Felice, P.** (with D'Atri, Alessandro; Lakshmanan, V. S.; Moscarini, Marina) On global context dependencies and their properties (extended abstract). *MFDBS 87* (Dresden, 1987), 71–79, *Lecture Notes in Comput. Sci.*, 305, Springer, Berlin-New York, 1988. (see **89a:68004**) 68P15
- Di Francesco, P.** (with Saleur, H.; Zuber, J.-B.) Relations between the Coulomb gas picture and conformal invariance of two-dimensional critical models. *J. Statist. Phys.* 49 (1987), no. 1-2, 57–79. (Philippe Christe) **89b:82024** 82A25 (81E40, 82A67, 82A69)
- (with Saleur, H.; Zuber, J.-B.) Critical Ising correlation functions in the plane and on the torus. *Nuclear Phys. B* 290 (1987), no. 4, 527–581. (M. Lawrence Glasser) **89d:82038** 82A25 (81E99, 82A68)
- Di Genova, Glauco** (with De Angelis, Gian Fabrizio; de Falco, Diego) Asymptotic decay of the free field covariance on a Riemannian manifold via heat kernel techniques. *J. Math. Phys.* 29 (1988), no. 2, 332–335. (Derek Raine) **89d:81079** 81E20
- Diggle, Peter J.** An approach to the analysis of repeated measurements. (French summary) *Biometrics* 44 (1988), no. 4, 959–971. (Not in MR) **62P10**
- Digne, François** Descente du corps de base et blocs, d'après N. Kawanaka. [Descent of the ground field and blocks, following N. Kawanaka] *Séminaire sur les groupes finis*, Tome III, i, 61–81, *Publ. Math. Univ. Paris VII*, 25, Univ. Paris VII, Paris, 1986. (James E. Humphreys) **89a:20051** 20G40 (20C15)
- Shintani descent and  $\mathcal{L}$  functions on Deligne-Lusztig varieties. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 61–68, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Toshiyuki Tanisaki) **89b:20083** 20G05
- van Dijk, G.** A Plancherel formula for the isotropic cone. *Nederl. Akad. Wetensch. Indag. Math.* 50 (1988), no. 1, 15–19. (Jacques Faraut) **89e:43022** 43A85 (22E30, 22E46)
- van Dijk, Herman K.** A product of multivariate  $T$  densities as upper bound for the posterior kernel of simultaneous equation model parameters. *Probability and Bayesian statistics* (Innsbruck, 1986), 129–138, *Plenum, New York-London*, 1987. (W. E. Griffiths) **89b:62177** 62P20
- (with Zellner, Arnold; Bauwens, Luc) Bayesian specification analysis and estimation of simultaneous equation models using Monte Carlo methods. *J. Econometrics* 38 (1988), no. 1-2, 39–72. (Esfandiar Maasoumi) **89f:62180** 62P20
- van Dijk, Nico M.** (with Puterman, Martin L.) Perturbation theory for Markov reward processes with applications to queueing systems. *Adv. in Appl. Probab.* 20 (1988), no. 1, 79–98. (Heinz-Uwe Künle) **89h:60108** 60J10 (60K25, 90B22, 90C40)
- Perturbation theory for unbounded Markov reward processes with applications to queueing. *Adv. in Appl. Probab.* 20 (1988), no. 1, 99–111. (Heinz-Uwe Künle) **89h:60109** 60J10 (60K25, 90B22, 90C40)
- (with Lamond, Bernard F.) Simple bounds for finite single-server exponential tandem queues. *Oper. Res.* 36 (1988), no. 3, 470–477. (Summary) **89e:90100** 90B22
- On Jackson's product form with "jump-over" blocking. *Oper. Res. Lett.* 7 (1988), no. 5, 233–235. (Introduction) **89h:90097** 90B22 (60K25)
- Finite source blocking systems with multi-level active and idle periods. *Oper. Res. Lett.* 7 (1988), no. 6, 315–320. (Hideo Osawa) **89m:60220** 60K25 (90B22)
- Simple bounds for queueing systems with breakdowns. *Performance Evaluation* 8 (1988), no. 2, 117–128. (Not in MR) **60K25** (68M20)
- A formal proof for the insensitivity of simple bounds for finite multiserver nonexponential tandem queues based on monotonicity results. *Stochastic Process. Appl.* 27 (1988),

- no. 2, 261–277. (Martin A. Wortman) **89h:60154** 60K25 (90B22)
- On the finite horizon Bellman equation for controlled Markov jump models with unbounded characteristics: existence and approximation. *Stochastic Process. Appl.* **28** (1988), no. 1, 141–157. (Summary) **89j:93139** 93E20 (49A60, 60J75, 90C39, 90C40)
  - A proof of simple insensitive bounds for a pure overflow system. *J. Appl. Probab.* **26** (1989), no. 1, 113–120. (U. Narayan Bhat) **89m:60221** 60K25 (90B22)
  - Blocking of finite source inputs which require simultaneous servers with general think and holding times. *Oper. Res. Lett.* **8** (1989), no. 1, 45–52. (Ralph L. Disney) **89m:60222** 60K25 (90B22)
  - (with van der Wal, Jan) Simple bounds and monotonicity results for finite multi-server exponential tandem queues. *Queueing Systems Theory Appl.* **4** (1989), no. 1, 1–15. (K. M. Ramachandran) **89m:60223** 60K25 (90B22)
  - Dijkstra, Robbert** (with Verlinde, Erik; Verlinde, Herman)  $C = 1$  conformal field theories on Riemann surfaces. *Comm. Math. Phys.* **115** (1988), no. 4, 649–690. (Mauro Bregola) **89c:81112** 81E99 (14K20, 32G15, 58E15, 81E40)
  - Dijkstra, Aalt** (with Langer, Heinz; de Snoo, Henk) Characteristic functions of unitary operator colligations in  $\pi_*$ -spaces. *Operator theory and systems* (Amsterdam, 1985), 125–194, *Oper. Theory Adv. Appl.*, **19**, Birkhäuser, Basel-Boston, MA, 1986. (T. Ya. Azizov) **89a:47053** 47B50 (47A45)
  - (with Langer, Heinz; de Snoo, Henk) Unitary colligations in Krein spaces and their role in the extension theory of isometries and symmetric linear relations in Hilbert spaces. *Functional analysis, II* (Dubrovnik, 1985), 1–42, *Lecture Notes in Math.*, **1242**, Springer, Berlin-New York, 1987. (E. R. Tsekanovskii) **89a:47055** 47B50 (47A20)
  - (with Langer, Heinz; de Snoo, Henk) Representations of holomorphic operator functions by means of resolvents of unitary or selfadjoint operators in Krein spaces. *Operators in indefinite metric spaces, scattering theory and other topics* (Bucharest, 1985), 123–143, *Oper. Theory Adv. Appl.*, **24**, Birkhäuser, Basel-Boston, MA, 1987. (T. Ya. Azizov) **89a:47054** 47B50 (47A56)
  - (with de Snoo, Henk) Symmetric and selfadjoint relations in Krein spaces. II. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **12** (1987), no. 2, 199–216. (J. Bognár) **89h:47052** 47B50 (47A10, 47B25)
  - Dijkstra, Edgar W.** Extreme solutions of equations. *Logic of programming and calculi of discrete design* (Marktredorf, 1986), 243–260, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, **36**, Springer, Berlin-New York, 1987. (Editors) **89g:68009** 68Q05 (03B70)
  - On binary operators and their derived relations. *BIT* **28** (1988), no. 3, 378–382. (Eduard Fuchs) **89m:04001** 04A05 (08A02)
  - see also Hoare, C. A. R., **89b:68003**
  - Dijkstra, J. B.** ★ Analysis of means in some nonstandard situations. *CWI Tract*, **47**, Stichting Mathematisch Centrum, Centrum voor Wiskunde en Informatica, Amsterdam, 1988. viii+138 pp. ISBN 90-6196-347-8 (Khursheed Alam) **89d:62001** 62-02 (62F03, 62J15)
  - Dikli, L. A.** On Hamiltonian and Lagrangian formalisms for the KP-hierarchy of integrable equations. *Reports from the Moscow refusenik seminar*, 131–148, *Ann. New York Acad. Sci.*, **491**, New York Acad. Sci., New York, 1987. (Takayuki Nono) **89e:58058** 58F07 (35Q20, 58F05)
  - Dikin, I. I.** Volterra's equations for the struggle for existence, and linear inequalities. (Russian) *Approximate methods for analysis and their applications* (Russian), 65–71, *Akad. Nauk SSSR Sibirsk. Otdel., Energet. Inst., Irkutsk*, 1985. (From the text) **89k:92050** 92A15 (34A34)
  - Letter to the editor: "A variation on Karmarkar's algorithm for solving linear programming problems" [*Math. Programming* **36** (1986), no. 2, 174–182; MR 88h:90120] by E. R. Barnes. *Math. Programming* **41** (1988), no. 3 (Ser. A), 393–394. (Editors) **89h:90142** 90C05
  - Dikmen, Murat** Some remarks on a problem of ergodicity. (Turkish summary) *Istanbul Tek. Univ. Bül.* **40** (1987), no. 1, 141–152. (Nathaniel Friedman) **89e:28026** 28D05 (11K55, 28D10, 58F11)
  - Dikova, S. D.** (with Shkodrov, V. G.) Transformation of the force function in the three-real-body problem. *C. R. Acad. Bulgare Sci.* **41** (1988), no. 4, 5–7. (Charles Simó) **89e:70015** 70F07
  - Dikranjan, Dikran** (with Frič, Roman; Zanolin, Fabio) On convergence groups with dense coarse subgroups. *Czechoslovak Math. J.* **37**(112) (1987), no. 3, 471–479. (Bernard L. Madison) **89c:22009** 22A30 (20K45, 54A20)
  - (with Giuli, E.) Closure operators. I. Proceedings of the 8th international conference on categorical topology (L'Aquila, 1986). *Topology Appl.* **27** (1987), no. 2, 129–143. (Summary) **89e:18002** 18A32 (18B30, 18E40, 54B30)
  - Noncompleteness measure of convergence abelian groups and completeness of the coarse abelian groups. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 125–134, *R & E Res. Exp. Math.*, **16**, Heldermann, Berlin, 1988. (C. V. Riecke) **89f:54006** 54A20 (20K35, 22A05)
  - (with Giuli, E.; Tozzi, A.) Topological categories and closure operators. *Quaestiones Math.* **11** (1988), no. 3, 323–337. (H. Herrlich) **89i:18003** 18B30 (54A10, 54B30)
  - (with Giuli, E.)  $S(n)$ - $\theta$ -closed spaces. *Topology Appl.* **28** (1988), no. 1, 59–74. (R. M. Stephenson, Jr.) **89d:54014** 54D25 (54D10)
  - Dikshit, H. P.** (with Rana, S. S.) Discrete cubic spline interpolation over a nonuniform mesh. *Rocky Mountain J. Math.* **17** (1987), no. 4, 709–718. (Yu Yu Feng) **89k:41018** 41A15 (65D05, 65D07)
  - (with Sharma, Ambikeshwar; Singh, Vikramaditya<sup>1</sup>; Stenger, Frank) Rivlin's theorem on Walsh equiconvergence. *J. Approx. Theory* **52** (1988), no. 3, 339–349. (P. Lappan) **89g:30071** 30E10 (41A20)
  - Difazio, K. A.** (with Maksudov, F. G.) Asymptotic behavior at infinity of the solutions of first-order ordinary differential systems and of equations of arbitrary order. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 11, 1897–1903, 2020. (Vojislav Marić) **89g:34082** 34E05
  - Dilcher, Karl** Zeros of Bernoulli, generalized Bernoulli and Euler polynomials. *Mem. Amer. Math. Soc.* **73** (1988), no. 386, iv+94 pp. (D. H. Lehmer) **89h:30005** 30C15 (33A70)
  - Polynomials related to expansions of certain rational functions in two variables. *SIAM J. Math. Anal.* **19** (1988), no. 2, 473–483. (M. E. Cohen) **89d:33015** 33A45 (33A70)
  - Dildaev, M. S.** Numerical solution of a self-similar problem on the permeation of stress into a compressible fluid. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 310–313, 345, "Ilim", Frunze, 1987. (see **89g:00017**) 76N10 (76-08)
  - Di Lena, G.** (with Messano, B.) Arcwise connected trees. Periodic points of a continuous function. (Italian. English summary) *Rend. Istit. Mat. Univ. Trieste* **19** (1987), no. 1, 32–43. (Aljoša Volčič) **89m:54057** 54H25 (54F20)
  - Dilger, Werner** (with Janson, Agnes) Intelligent backtracking in deduction systems by means of extended unification graphs. *J. Automat. Reason.* **2** (1986), no. 1, 43–62. (Summary) **89h:68131** 68T15 (03B35, 68R10, 68T20)
  - Dille, O. A. W.** ★ Mathematics and measurement. *Reading the Past*, **2**, University of California Press, Berkeley, CA; British Museum Publications, Ltd., London, 1987. 64 pp. ISBN 0-520-06072-5 (Richard L. Francis) **89f:01003** 01A05 (01A15, 01A20)
  - Dill, David L.** Trace theory for automatic hierarchical verification of speed-independent circuits. *Advanced research in VLSI* (Cambridge, MA, 1988), 51–65, MIT Press, Cambridge, MA-London, 1988. (Ioan Tomescu) **89e:94024** 94C10 (94C15)
  - Dill, Ken A.** (with Chan, Hue Sun) Intrachain loops in polymers: effects of excluded volume. *J. Chem. Phys.* **90** (1989), no. 1, 492–509. (Summary) **89k:82066** 82A51 (92A40)
  - Dillen, Franki** (with Deprez, J.; Petrović-Torgašev, M.; Verstraeten, L.) On Weyl's projective curvature tensor of Kaehlerian hypersurfaces. *An. Ştiinţ. Univ. "Al. I. Cuza" Iaşi Sec. I a Mat. (N.S.)* **33** (1987), no. 3, 233–238. (Wolfgang Kühnel) **89k:53028** 53B35 (53B25)
  - (with Verstraeten, L.; Vrancken, Luc) On almost complex surfaces of the nearly Kaehler 6-sphere. II. *Kodai Math. J.* **10** (1987), no. 3, 261–271. (Kouei Sekigawa) **89e:53080** 53C15 (53C15)
  - (with Verstraeten, L.) Real and complex locally symmetric affine hypersurfaces. *Affine Differentialgeometrie* (Oberwolfach, 1986), 420–432, *Tech. Univ. Berlin, Berlin*, 1988. (Udo Simon) **89k:53008** 53A15 (53-02)
  - (with Opozda, Barbara; Verstraeten, L.; Vrancken, Luc) On totally real surfaces of the nearly Kaehler 6-sphere. *Geom. Dedicata* **27** (1988), no. 3, 325–334. (Kouei Sekigawa) **89m:53053** 53C15 (53C40)
  - Locally symmetric complex affine hypersurfaces. *J. Geom.* **33** (1988), no. 1, 2–27–38. (Eugene Dmitrievich Rodionov) **89k:53009** 53A15 (32C10, 53C40)
  - Dillon, J. F.** (with Wertheimer, M. A.) Graphs, codes, and designs in quadrics. Proceedings of the seventeenth Southeastern international conference on combinatorics, graph theory, and computing (Boca Raton, Fla., 1986). *Congr. Numer.* **55** (1986), 15–22. (David G. Glynn) **89h:51012** 51E05 (05B05, 20B25, 20G40, 51E20, 94C30)
  - Dil'manov, T. B.** A problem of integral geometry in the three-dimensional space. (Russian) *Questions of well-posedness and methods for the investigation of inverse problems* (Russian), 71–75, 159, *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1986. (R. G. Mukhometov) **89k:53064** 53C65
  - Dilworth, Craig** Identity, equality and equivalence. (French summary) *Dialectica* **42** (1988), no. 2, 83–92. (Not in MR) 03A05
  - Dilworth, S. J.** (with Ransford, T. J.) Spectra in quasi-Banach algebras. *Functional analysis* (Austin, TX, 1986–87), 175–178, *Lecture Notes in Math.*, **1332**, Springer, Berlin-New York, 1988. (Krzyzstof Jarosz) **89k:46062** 46H05
  - Interpolation of intersections of  $L_p$  spaces. *Arch. Math. (Basel)* **50** (1988), no. 1, 51–55. (Irina U. Asekritova) **89e:46030** 46E30 (46M35)
  - Intersection of Lebesgue spaces  $L_1$  and  $L_2$ . *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1185–1188. (Barry Turett) **89k:46032** 46B25 (46E30)
  - (with Carothers, N. L.) Subspaces of  $L_{p,q}$ . *Proc. Amer. Math. Soc.* **104** (1988), no. 2, 537–545. (Yves Raynaud) **89m:46051** 46E30 (46B20)
  - Di Maio, Giuseppe**  $S$ -closed spaces,  $S$ -sets and  $S$ -continuous functions. (Italian summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **118** (1984), no. 3–4, 125–134. (Jack R. Porter) **89h:54017** 54D25
  - (with Russo, Assunta) Connected irresolvable Hausdorff space and compact finite Hausdorff space via open ultrafilters. (Italian summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **119** (1985), no. 5–6, 211–222 (1986). (M. Schroder) **89f:54071** 54G99 (54A10, 54A25, 54D99)
  - (with Naimpally, Somashekhar) Proximity extensions. *J. Natur. Phys. Sci.* **1** (1987), 63–66. (Ramesh Ori) **89k:54060** 54E05 (54D35)
  - (with Noiri, Takashi) Properties of  $\alpha$ -compact spaces. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* **18** (1988), 359–369. (Mohan L. Tikoo) **89i:54033** 54D20
  - Dimantov, E. A.** Correlative transformations of the complex projective plane. (Russian) *Geometric models and algorithms* (Russian), 58–63, 84, *Leningrad. Inzh.-Stroitel. Inst., Leningrad*, 1986. (Summary) **89f:51067** 51K10 (51N15)
  - Di Mai, Giovanni B.** (with Runggaldier, Wolfgang J.) Asymptotic analysis for piecewise linear filtering. *Analysis and optimization of systems* (Antibes, 1988), 752–759, *Lecture Notes in Control and Inform. Sci.*, **111**, Springer, Berlin-New York, 1988. (see **89c:00031**) 93E11
  - Dimca, A.** (with Choudary, A. D. R.) Hypersurface singularities, codimension two complete intersections and tangency sets. *Geom. Dedicata* **24** (1987), no. 3, 255–260. (Tomás Sánchez-Giralda) **89d:14017** 14E15 (14B05)
  - On analytic abelian coverings. *Math. Ann.* **279** (1988), no. 3, 501–515. (Herwig Hauser) **89c:32020** 32B30 (14B05)
  - le Dimet, François-Xavier** see **Le Dimet, François-Xavier**
  - Dimier, S. G.** (with Arnaudova, Ekaterina Ya.; Petrov, K. P.) Potentials of the fundamental 2-form of the almost complex cylindrical Heisenberg group. *Complex analysis and applications '85* (Varna, 1985), 47–60, *Bulgar. Acad. Sci., Sofia*, 1986. (Ion Mihai) **89h:53057** 53C15
  - (with Apostolova, L. N.)  $\bar{\partial}$ -type equations on almost complex manifolds. *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 507–510, "Angel Kanchev" Tech. Univ., Ruse, 1987. (P. Dolbeault) **89a:32018** 32F20 (58A15)
  - The circle or the circle group. (Bulgarian. English summary) *Mathematics and mathematical education* (Bulgarian) (Sunny Beach (Slivnitsa Breg), 1987), 645–652, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89f:57052** 57S10
  - Dimier, S. G.** Metrically homogeneous subsets of the product of metric spaces. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 2, 69–72 (1987). (Summary) **89k:54062** 54E35
  - Metric spaces of fuzzy sets. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 2, 73–81 (1987). (Summary) **89d:03053** 03E72 (54A40)



- Fuzzing functions. (Bulgarian, English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 3, 141–148 (1987). (Ilya S. Molchanov) **89i:03104** 03E72 (26E99, 54A40, 60A99)
- Diminnie, Charles R.** (with Freese, Raymond W.; Andalfte, Edward Z.) Angle bisectors in normed linear spaces. *Math. Nachr.* 131 (1987), 167–173. (K. Sundaresan) **89c:46032** 46B99 (46C99)
- Dimino, G. M.** (with Kaufman, J. H.; Melroy, O. R.) Information-theoretic study of pattern formation: rate of entropy production of random fractals. *Phys. Rev. A* (3) 39 (1989), no. 3, 1420–1428. (Summary) **89k:82071** 82A57 (58F13, 82A35)
- Dimitracopoulos, C.** (with Kaye, Richard William; Paris, Jeff B.) On parameter free induction schemas. *J. Symbolic Logic* 53 (1988), no. 4, 1082–1097. (Roman Murawski) **89k:03079** 03F30
- (with Paris, Jeff B.) A note on a theorem of H. Friedman. *Z. Math. Logik Grundlag. Math.* 34 (1988), no. 1, 13–17. (Bernd Dahn) **89c:03058** 03C62 (03H15)
- Dimitrescu, D.** Hierarchical pattern classification. *Fuzzy Sets and Systems* 28 (1988), no. 2, 145–162. (Summary) **89j:68132** 68T10 (03E72)
- Dimitric, I.** A remark on the volume of geodesic balls in the product of Kähler manifolds. *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 299–304, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Werner Ballmann) **89c:53099** 53C55 (53C22)
- Dimitric, Radoslaw** Axiomatic method and independence results. *Irish Math. Soc. Bull.* No. 19 (1987), 58–70. (Stewart Shapiro) **89c:03001** 03-01
- A note on isomorphism of endomorphism algebras of modules over valuation domains. *Arch. Math. (Basel)* 51 (1988), no. 5, 419–424. (Luigi Salce) **89k:13009** 13C05 (16A65)
- Dimitrijević, R. S.** (with Kočinac, Ljubila) On connectedness of proximity spaces. (Serbo-Croatian summary) *Mat. Vesnik* 39 (1987), no. 1, 27–35. (Ramesh Ori) **89c:54055** 54E05 (54D05)
- (with Kočinac, Ljubila) On treelike neighbourhood spaces. (Serbo-Croatian summary) *Mat. Vesnik* 39 (1987), no. 2, 129–135. (J. M. Aarts) **89c:54003** 54A05 (54D05, 54F99)
- (with Kočinac, Ljubila) On treelike proximity spaces. (Serbo-Croatian summary) *Mat. Vesnik* 39 (1987), no. 3, 257–261. (Ramesh Ori) **89c:54060** 54E05
- Base and subbase of  $R$ -proximity. (Serbo-Croatian summary) *Zb. Rad. No. 1* (1987), 11–16. (W. Kulp) **89j:54026** 54E05
- Dimitrov, B. N.** (with Tran Doan Phu) On the stochastic inventory models with incomplete demand information. *C. R. Acad. Bulgare Sci.* 40 (1987), no. 12, 11–14. (Upendra Dave) **89f:90043** 90B05
- Dimitrov, M. Ts.** A single-server  $PH/G/1$  system with an infinite buffer. (Russian, English and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 2, 167–178 (1987). (Summary) **89f:90063** 90B22
- Dimitrov, Z. I.** Directed ordered groups with the interpolation property. II. (Bulgarian, English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 2, 95–98 (1987). (Summary) **89f:06027** 06F15
- Absolutely convex subgroups of rigidly directed ordered groups. (Bulgarian, English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 3, 199–202 (1987). (Summary) **89c:06016** 06F15
- Dimitrovski, Dragan** (with Ilievski, Borko) L'équation différentielle aréolaire analytique. (Serbo-Croatian summary) [An analytic areolar differential equation] *Makedon. Akad. Nauk. Umet. Oddel. Mat.-Tehn. Nauk. Priroz. 5* (1984), no. 1–2, 25–39. (Wazir Hasan Abdi) **89h:30066** 30G99
- Dimock, Jonathan** Infrared problems for (QED)<sub>4</sub> and (Yukawa)<sub>4</sub> on a lattice. *Mathematical quantum field theory and related topics (Montreal, PQ, 1987)*, 153–159, *CMS Conf. Proc.*, 9, Amer. Math. Soc., Providence, RI, 1988. (See **89g:81002**) 81E25
- QED on a lattice. I. Infrared asymptotic freedom for bounded fields. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* 48 (1988), no. 4, 355–386. (Kornél Szlachányi) **89k:81116** 81E25 (81L05)
- tamia-Dimopoulos, P.** see **Tamia-Dimopoulos, P.**
- Dimov, G. D.** (with Tironi, G.) Some remarks on almost radiality in function spaces. 15th winter school in abstract analysis (Srni, 1987). *Acta Univ. Carolin.—Math. Phys.* 28 (1987), no. 2, 49–58. (Summary) **89f:54034** 54C40 (46E10)
- (with Isler, R.; Tironi, G.) On functions preserving almost radiality and their relations to radial and pseudoradial spaces. *Comment. Math. Univ. Carolin.* 28 (1987), no. 4, 751–781. (H. Herrlich) **89h:54007** 54C10 (54A25, 54D55)
- Dimov, G. I.** (with Arnold, V. I.; Barkov, L. M.; Belyaev, S. T.; Kadomtsev, B. B.; Kruglyakov, E. P.; Meshkov, I. N.; Rytov, D. D.; Sidorov, V. A.; Skrinkil, A. N.) Boris Valerianovich Chirikov (on his sixtieth birthday). *Soviet Phys. Uspekhi* 31 (1988), no. 7, 682–683 (1989); translated from *Uspekhi Fiz. Nauk* 155 (1988), no. 3, 543–544 (Russian). (Not in MR) 01A70
- Dimov, I.** (with Dimova, V. I.) Inverse and ill-posed problems in stochastic geomechanics. (Bulgarian, English and Russian summaries) *Teoret. Prilozhna Mekh.* 19 (1988), no. 1, 3, 6, 8, 37–45. (Summary) **89c:86007** 86A20
- Dimova, S. N.** see **Dimova-Borshukova, Stefka**
- Dimova, V. I.** (with Dimov, G.) Inverse and ill-posed problems in stochastic geomechanics. (Bulgarian, English and Russian summaries) *Teoret. Prilozhna Mekh.* 19 (1988), no. 1, 3, 6, 8, 37–45. (Summary) **89c:86007** 86A20
- Dimova-Borshukova, Stefka** (with Bakirova, M. I.; Dorodnitsyn, V. A.; Kurdyumov, S. P.; Samarskii, A. A.; Svirshchevskii, S. R.) Invariant solutions of the heat equation that describe the directed propagation of combustion and spiral waves in a nonlinear medium. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 2, 346–350; translated in *Soviet Phys. Dokl.* 33 (1988), no. 3, 187–189. (Ya Zhe Chen) **89i:35076** 35K55 (35A25, 35B40, 80A20)
- Dimovski, Dončo** Free vector-valued semigroups. *Proceedings of the Conference "Algebra and Logic"*, Cetinje 1986, 55–62, *Univ. Novi Sad, Novi Sad*, 1987. (B. Pondělíček) **89c:20126** 20N15
- On (3, 2)-groups. *Proceedings of the Conference "Algebra and Logic"*, Cetinje 1986, 63–71, *Univ. Novi Sad, Novi Sad*, 1987. (Summary) **89d:20056** 20N15
- A geometric proof that boundary links are homotopically trivial. *Topology Appl.* 29 (1988), no. 3, 237–244. (Jonathan A. Hillman) **89g:57004** 57M25
- Dimovski, I. H.** (with Kalla, S. L.) Explicit convolution for Hermite transform. *Math. Japon.* 33 (1988), no. 3, 345–351. (L. Debnath) **89m:44005** 44A15
- Dinaburg, E. I.** (with Sinai, Ya. G.) Contour models with interaction and their applications. Selected translations. *Selecta Math. Soviet.* 7 (1988), no. 3, 291–315. (Tony C. Dorlas)
- 89k:82029** 82A25 (60K35, 82A05, 82A68)
- Dinariev, O. Ya.** (with Mosolov, A. B.) On a relativistic effect in the theory of superconductivity. (Russian) *Dokl. Akad. Nauk SSSR* 295 (1987), no. 1, 98–101. (Darko Kapov) **89b:81261** 81J05 (83B05, 83C99)
- (with Mosolov, A. B.) Relativistic effects in a superconducting ring. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 4, 843–845; translated in *Soviet Phys. Dokl.* 32 (1987), no. 12, 985–986. (Mircea Crisan) **89b:83064** 83C99 (81J05)
- Di Natale, Marina** A problem involving some polynomials associated with quadrature formulas. (Italian, English summary) *Rend. Mat. Appl.* (7) 7 (1987), no. 1, 53–61 (1988). (Summary) **89j:41008** 41A10 (65D32)
- Dincă, G.** A variational method for multivalued operator equations and some applications to mechanics. *Math. Nachr.* 134 (1987), 273–287. (George Isac) **89b:47085** 47H15
- Dinculeanu, Nicolae** (with Brooks, James K.)  $H^1$  and BMO spaces of abstract martingales. *Seminar on stochastic processes, 1985 (Gainesville, Fla., 1985)*, 9–34, *Progr. Probab. Statist.*, 12, Birkhäuser Boston, Boston, MA, 1986. (Bernard Bru) **89b:60123** 60G48 (46G10)
- (with Brooks, James K.) Modifications càdlàg et décomposition de Doob-Meyer des quasimartingales à valeurs dans un espace de Banach. (English summary) [Càdlàg modifications and the Doob-Meyer decomposition of quasimartingales with values in a Banach space] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 6, 273–278. (Terry R. McConnell) **89k:60064** 60G48 (60B11)
- Vector-valued stochastic processes. I. Vector measures and vector-valued stochastic processes with finite variation. *J. Theoret. Probab.* 1 (1988), no. 2, 149–169. (Jia Gang Wang) **89h:60077a** 60G57 (60B11, 60G20)
- Vector-valued stochastic processes. II. A Radon-Nikodým theorem for vector-valued processes with finite variation. *Proc. Amer. Math. Soc.* 102 (1988), no. 2, 393–401. (Jia Gang Wang) **89h:60077b** 60G57 (60B11, 60G20)
- Dine, Michael** Renormalization and nonrenormalization in string theory. *International Workshop on Superstrings, Cosmology, Composite Structures (College Park, MD, 1987)*, 181–195, *World Sci. Publishing, Singapore*, 1987. (see **89a:81005**) 81E15 (81-02, 81E30)
- (with Seiberg, Nathan) Microscopic knowledge from macroscopic physics in string theory. *Nuclear Phys. B* 301 (1988), no. 3, 357–380. (Summary) **89c:81113** 81E99 (81E30, 83E30)
- (with Seiberg, Nathan) Are (0, 2) models string miracles? *Nuclear Phys. B* 306 (1988), no. 1, 137–159. (C. Gauthier) **89f:81171** 81E99 (81E30, 83E30)
- nlar-Dinedane, Wafaa** see **Nlar-Dinedane, Wafaa**
- Dineen, S.** (with Timoney, R. M.) Irreducible domains in Banach spaces. *Israel J. Math.* 57 (1987), no. 3, 327–346. (Richard M. Aron) **89a:46102** 46G20 (32H15, 46B20, 58B12, 58D17)
- (with Klimck, Maciej; Timoney, R. M.) Biholomorphic mappings and Banach function modules. *J. Reine Angew. Math.* 387 (1988), 122–147. (Richard M. Aron) **89j:46049** 46G20 (32H05, 46B20, 46E99, 46H25, 46M20)
- (with Timoney, R. M.) The centroid of a  $JB^*$ -triple system. *Math. Scand.* 62 (1988), no. 2, 327–342. (Bruno Ichum) **89j:46067** 46L70 (17C65, 46H70)
- Ding, Chuan Song** (with Zhao, Qiang; Lee, Peng Yee) A Riemann-type definition of Kunugi's integral. *Bull. Fac. Sci. Ibaraki Univ. Ser. A No. 20* (1988), 1–4. (D. K. Dutta) **89h:26007** 26A42
- Ding, Da Fu** (with Prigogine, Ilya) Morphological and chiral symmetry breaking in reaction-diffusion systems. *J. Theoret. Biol.* 128 (1987), no. 2, 135–157. (Summary) **89j:92015** 92A09 (35K57, 58F14)
- Ding, Da Gong** (with Ji, Hui Kang) A general discussion on multikey problems. (Chinese) *Math. Practice Theory* 1987, no. 4, 8–12. (Editors) **89k:05015** 05A99
- Ding, De Cheng** R.e. degrees of recursively inseparable sets. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B 8 (1987), no. 3, 381. *Chinese Ann. Math. Ser. A* 8 (1987), no. 2, 149–154. (Wen Qi Huang) **89b:03069** 03D25
- A splitting property of r.e. sets. (Chinese, English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* 4 (1987), no. 1, 87–90. (Bai Ying Shen) **89d:03041** 03D25
- Ding, E. Jiang** (with Hemmer, P. C.) Exact treatment of mode locking for a piecewise linear map. *J. Statist. Phys.* 46 (1987), no. 1–2, 99–110. (Jincheng Xiong) **89a:58056** 58F08
- (with Hemmer, P. C.) Winding numbers for the supercritical sine circle map. *Phys. D* 32 (1988), no. 1, 153–160. (Summary) **89j:58077** 58F13 (26A18, 54H20, 58F08)
- Structure of the parameter space for the van der Pol oscillator. *Phys. Scripta* 38 (1988), no. 1, 9–16. (Giko Ikegami) **89i:58083** 58F13 (34C15, 70K40, 70K50)
- (with Hauge, E. H.) Some analytic results for a binary fluid mixture. *Phys. A* 155 (1989), no. 2, 189–205. (Summary) **89m:82016** 82A25 (70F99)
- Ding, Fang Yun** An enclosing solution method for a class of nonlinear operator equations. (Chinese, English summary) *Lanzhou Daxue Xuebao* 23 (1987), no. 2, 6–11. (Rong Hua Li) **89f:47094** 47H17 (65J15)
- Ding, Feng** The measure on S-closed spaces. *Proceedings of the 1987 Topology Conference (Birmingham, AL, 1987)*, *Topology Proc.* 12 (1987), no. 1, 75–83. (Manuel P. Berriozabal) **89c:54040** 54D20 (28C15)
- Ding, Guang Tao** Higher order Nielsen equations. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 12, 908–911. (Not in MR) 70H35
- Ding, Hao Jiang** (with Xu, Bo Hou) General solutions of axisymmetric problems in transversely isotropic body. *Appl. Math. Mech. (English Ed.)* 9 (1988), no. 2, 143–151; translated from *Appl. Math. Mech.* 9 (1988), no. 2, 135–142 (Chinese, English summary). (A. J. M. Spencer) **89f:73010** 73C05 (31B30, 73C30)
- Ding, Hong** (with Yang, Shu Zi; Dong, Shuang Wen) Some problems in ARMA spectrum estimation. (Chinese, English summary) *J. Huazhong Univ. Sci. Tech.* 16 (1988), no. 3, 43–48. (Not in MR) 62M10 (62M15)
- Ding, Ji Yu** (with Du, Ding Zhu; Hwang, F. K.; Song, Guo Dong?) Steiner minimal trees on four points. *Discrete Comput. Geom.* 2 (1987), no. 4, 401–414. (H. N. Djidjev) **89b:05073** 05C05 (05C35)
- Ding, Ke Quan** The minimal pseudo-ordered partitions of random permutations. (Chinese) *Chinese J. Oper. Res.* 4 (1985), no. 1, 63–64. (Not in MR) 90C27 (05A05)
- On the perfect Sperner classification of the finite Boolean algebras. (Chinese, English summary) *Dongbei Shuxue* 3 (1987), no. 3, 332–338. (Bai Ying Shen) **89k:06012** 06E05
- (with Wang, Zhi Li) An improvement on the scheme-moving-down algorithm for the partition of a random permutation. (Chinese) *J. Dalian Inst. Tech.* 26 (1987), no. 4, 84, 92. (Not in MR) 68R05 (68Q20)

- (with Wang, Tian Ming) On some solutions of  $A^4 = J - I$ . *J. Math. Res. Exposition* 7 (1987), no. 4, 665–667. (Ronald L. Smith) **89c:15024** 15A24 (15A57)
- Ding, Miao** Minimal periodic orbits of continuous maps of a circle with a fixed point. (Chinese. English summary) *J. Shanghai Jiaotong Univ.* 1987, no. 4, 99–103, 125. (Jingzhong Zhang) **89c:58103** 58F20 (54H20)
- Ding, Min Fang** (with Yang, Da Sheng) Nonlinear dynamic instability of two-dimensional slab symmetric dissipative disturbances on rotating earth. *Sci. Sinica Ser. B* 31 (1988), no. 3, 371–384. (Summary) **89f:86014** 86A35 (58C28, 58F13, 58F14)
- Ding, Qiu Lin** (with Davies, B. J.) ★ Surface engineering geometry for computer-aided design and manufacture. With a foreword by Pierre E. Bézier. Ellis Horwood Series in Mechanical Engineering. Ellis Horwood Ltd., Chichester; Halsted Press [John Wiley & Sons, Inc.], New York, 1987. 340 pp. ISBN 0-7458-0181-1 (Antonio López-Carmona) **89b:65037** 65D10 (00A69, 65-01)
- Ding, Ren** (with Reay, John) Areas of lattice polygons, applied to computer graphics. Proceedings of the International Conference on Combinatorial Analysis and its Applications (Pokrzywna, 1985). *Zastos. Mat.* 19 (1987), no. 3-4, 547–556 (1988). (J. M. Wills) **89f:52033** 52A43 (05B40, 52A45, 68U05)
- (with Kolodziejczyk, K.; Reay, John) A new Pick-type theorem on the hexagonal lattice. *Discrete Math.* 68 (1988), no. 2-3, 171–177. (R. Blind) **89a:52033** 52A43
- (with Murphy, Grattan) Grünbaum's gap conjecture. *Discrete Math.* 69 (1988), no. 3, 295–300. (Stefan A. Burr) **89k:51002** 51A20 (05B99, 52A37)
- Ding, S. H.** (with Mawhin, J.) A multiplicity result for periodic solutions of higher order ordinary differential equations. *Differential Integral Equations* 1 (1988), no. 1, 31–39. (Jaume Llibre) **89f:34025** 34B15 (34C25)
- Ding, Shan Rui** A proof of Mandelbrot's fundamental inequality for two variables. (Chinese. English summary) *Zhejiang Daxue Xuebao* 21 (1987), no. 5, 85–88. (Jia Rong Yu) **89j:32006** 32A30 (30B50, 30E15)
- Ding, Shi Jin** Regularity of weak solutions of systems of nonlinear equations with singular coefficients. (Chinese. English summary) *Hunan Ann. Math.* 7 (1987), no. 2, 104–111. (Summary) **89i:35032** 35D10
- Ding, Sun Hong** Periodic solutions to a class of second-order equations with discontinuous characteristics. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 24, 1847–1849. (Not in MR) **34C25** (58E05)
- Global structure of a kind of predator-prey system. *Appl. Math. Mech. (English Ed.)* 9 (1988), no. 10, 999–1003; translated from *Appl. Math. Mech.* 9 (1988), no. 10, 939–943 (Chinese. English summary). (Anthony Leung) **89k:92051** 92A15 (34C05, 92A17)
- Ding, Tong Ren** Some problems in nonlinear oscillations. (Chinese) Topics in ordinary differential equations (Nanjing, 1986). *Nanjing Daxue Xuebao Shuxue Bannian Kan* 1987, 1–7. (Man Kam Kwong) **89i:34001** 34-02 (34A34, 34C15, 34D99)
- A response to the Birkhoff's conjecture on recurrent motions of analytic dynamical systems. *Atti Sem. Mat. Fis. Univ. Modena* 36 (1988), no. 2, 273–280. (From the text) **89m:58178** 58F27 (70K99)
- An answer to Littlewood's problem on boundedness for super-linear Duffing's equation. *J. Differential Equations* 73 (1988), no. 2, 269–287. (Mauro Marini) **89f:34049** 34C11 (34B30, 34D40)
- Ding, Wan Ding** (with Zheng, Xiao Gu) Existence theorems for linear growth processes with diffusion. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 1, 25–42. (T. M. Liggett) **89d:60197** 60K35
- Ding, Wei Yue** (with Chen, Wen Xiong) A problem concerning the scalar curvature on  $S^2$ . *Kexue Tongbao (English Ed.)* 33 (1988), no. 7, 533–537. (John M. Lee) **89j:53038** 53C20 (35J99, 58G30)
- Ding, Xia Xi** (with Chen, Gui Qiang; Luo, Pei Zhu) Convergence of the Lax-Friedrichs scheme for isentropic gas dynamics. I, II. *Acta Math. Sci. (English Ed.)* 5 (1985), no. 4, 415–432, 433–472. (F. Milinazzo) **89f:76006** 76-08 (65L05, 65M10, 76N15)
- Ding, Xie Ping** Nonzero fixed points of set-valued  $k$ - $\Phi$ -contractive mappings in locally convex topological vector spaces. (Chinese) *J. Chengdu Univ. Natur. Sci.* 5 (1986), no. 1, 10–20. (Shi Sheng Zhang) **89b:47087** 47H10 (47H09)
- Some fixed point theorems for set-valued non-self-maps. (Chinese) *J. Math. Res. Exposition* 6 (1986), no. 4, 51–56. (Shi Sheng Zhang) **89c:54084** 54H25 (47H10)
- Nonlinear stochastic operators and solutions of systems of integral equations. (Chinese) *Acta Math. Sci. (Chinese)* 7 (1987), no. 1, 1–11. (From the summary) **89d:60113** 60H20
- Existence and comparison results of solutions for nonlinear random integral and differential equations relative to weak topology. *Appl. Math. Mech. (English Ed.)* 8 (1987), no. 12, 1103–1114; translated from *Appl. Math. Mech.* 8 (1987), no. 12, 1039–1050 (Chinese. English summary). (D. Bobrowski) **89j:45003** 45D05 (34F05, 34G20, 47G05, 47H15, 60H25)
- Solutions for a system of random operator equations and some applications. *Sci. Sinica Ser. A* 30 (1987), no. 8, 785–795. (M. Z. Nashed) **89a:60153** 60H25
- (with Lan, Kun Quan) Positive solution of a class of equations involving noncompact mappings. *Appl. Math. Mech. (English Ed.)* 9 (1988), no. 8, 727–736; translated from *Appl. Math. Mech.* 9 (1988), no. 8, 675–684 (Chinese. English summary). (P. P. Zabrejko) **89i:47102** 47H09 (47H10, 47H15)
- Iteration processes for nonlinear mappings in convex metric spaces. *J. Math. Anal. Appl.* 132 (1988), no. 1, 114–122. (Schie Park) **89f:54081** 54H25 (47H10)
- Ding, Yan Heng** Nonlinear vibrations in the  $n$ -dimensional beam equation. (Chinese. English summary) *J. Systems Sci. Math. Sci.* 8 (1988), no. 1, 42–45. (Lumin Jiang) **89k:35144** 35L70 (35B10, 35Q20, 58D25, 73D35, 73K12)
- Ding, Yi Bing** On the Schrödinger radial ladder operator. *J. Phys. A* 20 (1987), no. 18, 6293–6301. (R. M. Dreizler) **89d:81020** 81C05 (81C40)
- Ding, Yu** (with Forestier, A.; Ha-Duong, T.) Space-time variational formulation for the Kirchhoff integral equation. *Boundary elements* (Beijing, 1986), 707–716, Pergamon, Oxford-Elmsford, NY, 1986. (From the introduction) **89k:76080** 76Q05
- Ding, Zhong Hai** (with Feng, De Xing) Distributed control approximation of pointwise control for hyperbolic systems. *Analysis and optimization of systems* (Antibes, 1988), 531–542, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89e:93126** 93C20 (35L99)
- Dinghas, Alexander** see Bieberbach, Ludwig, **89j:01058**
- pham ngoc Dinh, A.** see Pham Ngoc Dinh, A.
- dang Dinh Ang** see Dang Dinh Ang
- phan Dinh Dieu** see Phan Dinh Dieu
- hoàng-Dinh Dung** see Hoàng-Dinh Dung
- dang Dinh Hai** see Dang Dinh Hai
- nguyen Dinh Hoa** see Nguyen Dinh Hoa
- Dinh Nho Hao** Approximating an optimal control problem of quantum processes by the finite element method. *Acta Math. Vietnam.* 12 (1987), no. 2, 135–146. (Viorel Arnautu) **89m:49053** 49D15 (81C20)
- Dinh Phú Bồng** (with Nguyễn Đình Trí) A free boundary problem for the nonlinear second order parabolic equations. *Acta Math. Vietnam.* 12 (1987), no. 1, 55–65. (A. Visintin) **89c:35156** 35R35 (35K55)
- Dinh Quang Lu'u** The best Pettis approximations in  $L_1$ . (Vietnamese. English summary) *Tạp chí Toán học* 14 (1986), no. 1, 29–33. (Summary) **89a:46078** 46E40 (46B22)
- Summability and amarts of finite order in Fréchet spaces. *Acta Math. Hungar.* 51 (1988), no. 1-2, 71–77. (J. Diestel) **89e:47024** 47B10 (46G10, 60G48)
- Dinh Sĩ Đại** (with Phan Huy Khai) Problems of pursuit by several objects in some classes of discrete games with integral constraints. (Russian) *Acta Math. Vietnam.* 12 (1987), no. 1, 17–40. (O. A. Malafeev) **89c:90126** 90D26 (93C55)
- Dinh Thị Lạc** On scalarizing method in vector optimization. *Large-scale modelling and interactive decision analysis* (Eisenach, 1985), 46–51, *Lecture Notes in Econom. and Math. Systems*, 273, Springer, Berlin-New York, 1986. (J. Jahn [Zbl 632:90070]) **89e:90193** 90C31
- (with Phan Đình Diệu; Phạm Hữu Sách; Trần Vũ Thiệu; Đỗ Long Văn) Foreword. *Essays on nonlinear analysis and optimization problems*, 5–7, *Nat. Center Sci. Res., Inst. Math., Hanoi*, 1987. (Editors) **89j:01062** 01A70
- Scalarization of vector optimization problems. *J. Optim. Theory Appl.* 55 (1987), no. 1, 85–102. (E. G. Gol'shtein) **89b:90204** 90C31 (90C30)
- Convexity and closedness of sets with respect to cones. *Optimization* 18 (1987), no. 6, 785–789. (J. Parida) **89c:52002** 52A01 (90C31)
- nguyễn Đình Trí** see Nguyễn Đình Trí
- Dinh Van Huynh** A note on rings with chain conditions. *Acta Math. Hungar.* 51 (1988), no. 1-2, 65–70. (G. Krause) **89e:16024** 16A33 (16A34, 16A35)
- (with Nguyễn Việt Dũng<sup>2</sup>) On the cardinality of ideals in Artinian rings. *Arch. Math. (Basel)* 51 (1988), no. 3, 213–216. (Yonghua Xu) **89j:16023** 16A35
- (with Phan Dân) On rings with restricted minimum condition. *Arch. Math. (Basel)* 51 (1988), no. 4, 313–326. (C. R. Hajarnavis) **89k:16042** 16A45
- (with Nguyễn Việt Dũng<sup>2</sup>) A characterization of Artinian rings. *Glasgow Math. J.* 30 (1988), no. 1, 67–73. (T. Cheatham) **89d:16019** 16A35
- Dini, Gilberto** (with Primicerio, Angela Selvaggi) Proper holomorphic mappings between Reinhardt domains and pseudoellipsoids. *Rend. Sem. Mat. Univ. Padova* 79 (1988), 1–4. (K. T. Hahn) **89k:32053** 32H35 (32A07)
- Dinitz, J. H.** (with Archdeacon, Dan) Factorizations and orthogonal matchings. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 69–74. (Yair Caro) **89d:05137** 05C70
- Diniz, Carlos Alberto R.** (with Achcar, Jorge A.) Comparison of two treatments with censored and transformed survival data for an extreme value distribution. (Portuguese. English summary) *Rev. Mat. Estatist.* 4/5 (1986/87), 45–55. (Not in MR) **62G10**
- Dinkel, John J.** (with Tretter, Marietta J.) An interval arithmetic approach to sensitivity analysis in geometric programming. *Oper. Res.* 35 (1987), no. 6, 859–866. (Summary) **89b:90181** 90C30
- (with Tretter, Marietta J.; Wong, Danny) Interval Newton methods and perturbed problems. *Appl. Math. Comput.* 28 (1988), no. 3, part I, 211–222. (Summary) **89m:65060** 65K05 (90C30)
- Dinkel, Reiner** Declining life expectancy in a highly developed nation: paradox or statistical artifact? *Paradoxical effects of social behavior*, 311–321, *Physica, Heidelberg*, 1986. (see **89d:90019**) 92A20
- najm al-Din Khān, Muhammad** see Najm al-Dīn Khān, Muhammad
- Din' Kuang Tkhai** (with Listopad, G. I.; Monastyrnyi, P. I.) On the theory of difference shooting methods for difference boundary value problems. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 31 (1987), no. 11, 978–981, 1052. (Jiri Nedoma) **89b:65252** 65N20
- Di Nola, A.** (with Pedrycz, Witold; Sessa, Salvatore) Fuzzy relation equations with equality and difference composition operators. *Fuzzy Sets and Systems* 25 (1988), no. 2, 205–215. (Summary) **89a:03102** 03E72
- (with Guo, Si Cong; Wang, Pei Zhuang; Sessa, Salvatore) Further contributions to the study of finite fuzzy relation equations. *Fuzzy Sets and Systems* 26 (1988), no. 1, 93–104. (Summary) **89a:03107** 03E72 (15A99)
- (with Sessa, Salvatore) Finite fuzzy relation equations with a unique solution in linear lattices. *J. Math. Anal. Appl.* 132 (1988), no. 1, 39–49. (Summary) **89c:03085** 03E72 (06B99)
- Dinò-Livelo, Susana** Difference equations and their applications in the biological sciences. *Matimpy's Mat.* 11 (1987), no. 1, 1–16. (Michael E. Fisher) **89j:39001** 39A10 (92A15)
- Dinse, Gregg E.** Estimating tumor incidence rates in animal carcinogenicity experiments. (French summary) *Biometrics* 44 (1988), no. 2, 405–415. (Summary) **89f:62088** 62P10
- Din' Shi Dai** see Dinh Sĩ Đại
- Dinu, Liviu** The linearized problem in the adiabatic multidimensional gasdynamics. I. *Rev. Roumaine Math. Pures Appl.* 32 (1987), no. 9, 771–792. (C. N. Kaul) **89k:35138** 35L65 (35L67, 76L05)
- el Din Younis, Mohamed Alaa** see El Din Younis, Mohamed Alaa
- Diocles** see Neugebauer, O., **89j:01011**
- Diomeda, Lorenza** (with Lisena, Benedetta) Propagation, reflection and refraction of singularities for a hyperbolic transmission problem in two adjacent angular regions. *Rend. Sem. Mat. Univ. Padova* 78 (1987), 1–26. (V. Ivrii) **89f:35122** 35L20 (58G20)
- Dion, J. M.** (with Commault, C.; Descusse, J.; Lafay, J. F.; Malabre, M.) Influence de la structure à l'infini des systèmes linéaires sur la solution des problèmes de commande. (English summary) [Influence of the structure at infinity of linear systems on the solution of control problems] *RAIRO Automat.-Prod. Inform. Ind.* 20 (1986), no. 3, 207–252. (Summary) **89k:93087** 93B50 (93B10, 93B27, 93C05, 93C35)
- (with Giri, F.; M'Saad, M.; Dugard, L.) Robustness of pole placement direct adaptive control for time-varying plants. *Analysis and optimization of systems* (Antibes, 1988),



- 810-821, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Kazuhiko Terashima) **89k:93179** 93D25 (93B35, 93B55, 93C40)
- (with Giri, F.; Dugard, L.; M'Saad, M.) Stable pole placement direct adaptive control for systems with arbitrary zeros. *Internat. J. Control* **47** (1988), no. 5, 1443-1454. (Tsu-Tian Lee) **89e:93110** 93B55 (93C40, 93D15)
- (with Commault, C.) The minimal delay decoupling problem: feedback implementation with stability. *SIAM J. Control Optim.* **26** (1988), no. 1, 66-82. (W. M. Wonham) **89a:49034** 49D27 (93C05, 93C35, 93D15)
- (with Giri, F.; M'Saad, M.; Dugard, L.) A globally convergent pole placement indirect adaptive controller. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 353-356. (Summary) **89k:93103** 93B55 (93B05, 93C40, 93C55)
- (with Giri, F.; Dugard, L.; M'Saad, M.) Robust pole placement direct adaptive control. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 356-359. (Not in MR) 93B55 (93B35, 93C40)
- Diop, Mahmoud** Théorèmes des zéros réels et des éléments positifs avec paramètres. (English summary) [Theorems on real zeros and positive elements with parameters] *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 1, 29-34. (Jesús M. Ruiz) **89f:14019** 14G30 (14A05)
- Diordier, N. D.** (with Nozhak, G. V.) Synthesis of time-optimal impulse thermoelastic processes in a semi-infinite plate. (Russian) *Boundary value problems (Russian)*, 92-96, 159, *Perm. Politekh. Inst., Perm.*, 1984. (see **89b:00008**) 73U05 (93C75)
- (with Nozhak, G. V.) Closed sampled-data systems with distributed parameters. (Russian) *Boundary value problems (Russian)*, 117-122, xi, *Perm. Politekh. Inst., Perm.*, 1986. (see **89c:00009**) 93C37 (93C20)
- Diósi, L.** Continuous quantum measurement and Itô formalism. *Phys. Lett. A* **129** (1988), no. 8-9, 419-423. (A. Barchielli) **89j:81019** 81B99 (60H10)
- Dipace, A.** (with Ciocci, F.; Dattoli, G.; Torre, Amalia) Erratum: "A simple derivation of new sum rules of Bessel functions" [*Nuovo Cimento B* (11) **90** (1985), no. 2, 138-142; MR **87d:33016**]. *Nuovo Cimento B* (11) **100** (1987), no. 3, 441. (Editors) **89d:33011** 33A40
- Di Paola, Jane W.** Designs from a minimum blocking set of PG(2, 8). Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 303-311. (Albrecht Beutelspacher) **89f:51047** 51E20
- The structure of the hyperbolic planes  $S(2, k, k^2 + (k-1)^2)$ . Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), A, 77-87. (T. G. Ostrom) **89g:51008** 51E10 (05B05)
- DiPerna, Ronald** Nonlinear conservative system. *Differential equations and mathematical physics (Birmingham, Ala., 1986)*, 99-109, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Albert J. Milani) **89a:35133** 35L65 (35B99, 35Q10)
- Compactness of solutions to nonlinear PDE. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 1057-1063, *Amer. Math. Soc., Providence, RI*, 1987. (Darrell L. Hicks) **89i:35005** 35B05 (35B65, 35L65, 35Qxx)
- Nonuniform structures in solutions to conservative systems. *Analyse mathématique et applications*, 139-149, *Gauthier-Villars, Paris*, 1988. (Piotr Biler) **89i:35094** 35L65 (35B05, 35Qxx, 76L05)
- Concentrations in solutions to conservative systems. *Material instabilities in continuum mechanics (Edinburgh, 1985-1986)*, 107-118, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1988. (see **89f:73005**) 76C99 (35L67, 35Q10)
- (with Lions, Pierre-Louis) Solutions globales de l'équation de Boltzmann. (English summary) [Global solutions of the Boltzmann equation] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 7, 343-346. (V. Protopenescu) **89b:82048** 82A40 (35Q20)
- (with Lions, Pierre-Louis) Solutions globales d'équations du type Vlasov-Poisson. (English summary) [Global solutions of Vlasov-Poisson type equations] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 12, 655-658. (Summary) **89k:35202** 35Q20 (32A45, 43K05)
- (with Majda, A.) Reduced Hausdorff dimension and concentration-cancellation for two-dimensional incompressible flow. *J. Amer. Math. Soc.* **1** (1988), no. 1, 59-95. (Denis Serre) **89e:35126** 35Q10 (76C99)
- Di Piazza, L.** (with Maniscalco, C.) Selection theorems, based on generalized variation and oscillation. *Rend. Circ. Mat. Palermo (2)* **35** (1986), no. 3, 386-396 (1987). (Summary) **89m:26019** 26A45
- Di Pillo, G.** (with Grippo, L.) Recent results on nondifferentiable exact penalty functions. *System modelling and optimization (Tokyo, 1987)*, 212-220, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (C. A. Botsaris) **89k:90140** 90C30 (65K05)
- (with Grippo, L.) On the exactness of a class of nondifferentiable penalty functions. *J. Optim. Theory Appl.* **57** (1988), no. 3, 399-410. (Bernard Lemaire) **89h:90193** 90C30 (65K05)
- Di Prisco, A.** (with Herrera, L.; Jiménez, Juan Francisco; Galina, V.; Ibañez, J.) The Bondi metric and conformal motions. *J. Math. Phys.* **28** (1987), no. 11, 2692-2696. (Summary) **89h:83007** 83C15 (83C40)
- Di Prisco, Carlos A.** (with Marek, W.) Reflection properties induced by some large cardinal axioms. *Methods and applications of mathematical logic (Campinas, 1985)*, 19-25, *Contemp. Math.*, 69, *Amer. Math. Soc., Providence, RI*, 1988. (Eva Hartová) **89c:03082** 03E55 (03E10, 03E65)
- Dirac, G. A.** see *Graph theory in memory of G. A. Dirac*, **89g:05004**
- Dirac, P. A. M.** Memories of an extraordinary epoch. (Bulgarian) Translated from the English by D. Vachov. *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* **30**(63) (1988), no. 2, 127-133. (Not in MR) 01A70
- Memories of an extraordinary epoch. II, III. (Bulgarian) Translated from the English by D. Vachov. *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* **30**(63) (1988), no. 3, 195-209. (Not in MR) 01A70
- see also *Mukunda, N.*, **89c:01077** and *Frenkel', V. Ya.*, **89h:01050**
- Dirichlet, P. G. Lejeune** see *Rowe, David E.*, **89e:01031**
- Dirl, R.** (with Kasperkovitz, P.; Kotzev, J. N.; Aroyo, M. I.; Angelova, M. N.) The symmetry of the group representations and the reduction of the multiplicity problem. *Group-theoretic methods in physics, Vol. 1 (Russian) (Jurmala, 1985)*, 583-590, "Nauka", Moscow, 1986. (see **89d:81001**) 22E70 (20C35, 22E40)
- (with Kasperkovitz, P.; Kotzev, J. N.; Aroyo, M. I.; Angelova, M. N.) The symmetry of group representations and the reduction of the multiplicity problem. *Group theoretical methods in physics, Vol. II (Jurmala, 1985)*, 409-417, *VNU Sci. Press, Utrecht*, 1986. (Nigel B. Backhouse) **89e:20014** 20C15 (81C40)
- (with Kasperkovitz, P.; Aroyo, M. I.; Kotzev, J. N.; Davies, B. L.) Generating relations for reducing matrices. III. Kronecker products. *J. Math. Phys.* **28** (1987), no. 9, 1947-1971. (John J. Sullivan) **89c:20028** 20C35 (81C40)
- (with Davies, B. L.) Chain adaptation of space group representations and induced space group Clebsch-Gordan matrices. *Group theoretical methods in physics (Varna, 1987)*, 315-321, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (Summary) **89j:20019** 20C35 (81C40)
- (with Kasperkovitz, P.; Moshinsky, M.) Wigner distribution functions and the representation of a nonbijective canonical transformation in quantum mechanics. *J. Phys. A* **21** (1988), no. 8, 1835-1846. (Virendra Singh) **89k:81037** 81C25
- (with Kotzev, J. N.; Peev, M. K.; Aroyo, M. I.; Kasperkovitz, P.) Generating relations for reducing matrices. IV. Subduced representations. *J. Math. Phys.* **30** (1989), no. 1, 9-17. (John J. Sullivan) **89m:20014** 20C35 (22E65, 81C40)
- Dishliev, A. B.** Applicability of a regularization method to singularly perturbed systems of ordinary differential equations with impulses. (Bulgarian. English and Russian summaries) *Godishnik Vissh. Uchebn. Zaved. Plovdiv. Mat.* **22** (1986), no. 1, 43-56 (1987). (Snezana Khristova) **89c:34095** 34E15 (34C20, 93C57)
- (with Bainov, D. D.) Differentiability on a parameter and initial condition of the solution of a system of differential equations with impulses. *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **196** (1987), no. 1-3, 69-96. (József Banas) **89c:34004** 34A10 (93C57)
- (with Bainov, D. D.) Continuous dependence on the initial condition of the solution of a system of differential equations with variable structure and with impulses. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 6, 923-936. (B. G. Pachpatte) **89c:34004** 34A10 (93C57)
- (with Bainov, D. D.) Continuous dependence of the solution of a system of differential equations with impulses on the initial condition and a parameter in the presence of beating. *Internat. J. Systems Sci.* **19** (1988), no. 5, 669-682. (Summary) **89h:93074** 93C57 (34A10, 34A34)
- (with Bainov, D. D.) Continuous dependence of the solution of a system of differential equations with impulses on the impulse hypersurfaces. *J. Math. Anal. Appl.* **135** (1988), no. 2, 369-382. (O. S. Chernikova) **89m:34003** 34A10 (93C57)
- Dishon, Menachem** (with Bendler, John T.; Kesten, Harry; Weiss, G. H.) A first passage time problem for random walk occupancy. *J. Statist. Phys.* **50** (1988), no. 5-6, 1069-1087. (Cheng Xun Wu) **89m:82051** 82A51 (60J15, 60J65, 62E20, 82A41)
- Diskin, Z. B.** A set theory in which all terms of a sequence of nonpredicative extensions of ZF can be interpreted. (Russian) *Lav. Mat. Ezhegodnik* No. 31 (1988), 139-140, 253. (P. Štěpánek) **89g:03076** 03E70 (03F25)
- Disney, Ralph L.** (with Kiessler, Peter C.) ★ Traffic processes in queueing networks. A Markov renewal approach. *Johns Hopkins Series in the Mathematical Sciences, 4, Johns Hopkins University Press, Baltimore, MD*, 1987. xx+251 pp. ISBN 0-8018-3454-6 (F. J. Beutler) **89b:90081** 90B15 (60K15, 60K20, 60K25, 90B20, 90B22)
- Disney, Shaun** (with Cowling, Michael) Oscillatory integrals. *Miniconference on harmonic analysis and operator algebras (Canberra, 1987)*, 45-54, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 15, *Austral. Nat. Univ., Canberra*, 1987. (C. Carton-Lebrun) **89g:42026** 42B10 (58G15)
- Dissanayake, U. N. B.** (with Sastry, K. P. R.) Locally Lindelöf spaces. *Indian J. Pure Appl. Math.* **18** (1987), no. 10, 876-881. (B. T. Sims) **89a:54027** 54D20
- Di Stefano, Maria Elena** (with Ginepro Tinti, Marisa) The circumference as a special conic, from the viewpoint of Apollonius. (Italian. English summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **116** (1982), no. 1-2, 127-135 (1984). (Eberhard Knobloch) **89a:01006** 01A20
- Distler, Jacques** Resurrecting (2, 0) compactifications. *Phys. Lett. B* **188** (1987), no. 4, 431-436. (Daniel G. Caldi) **89a:81124** 81E99 (53C55, 81E13, 81E30, 81E40, 83E30)
- (with Greene, Brian R.; Kirklín, Kelley H.; Miron, Paul) Evaluation of  $27^3$  Yukawa couplings in a three-generation superstring model. *Phys. Lett. B* **195** (1987), no. 1, 41-49. (Andrew A. Bytsenko) **89c:81114** 81E99 (53C80, 81E30, 81G20)
- (with Greene, Brian R.) Aspects of (2, 0) string compactifications. *Nuclear Phys. B* **304** (1988), no. 1, 1-62. (Marc Henneaux) **89m:81135** 81E99 (32J05, 53C80, 81E30, 83E30)
- Ditlens, O.** Reliability computations for rigid plastic frames with general yield conditions. *Reliability and optimization of structural systems (Aalborg, 1987)*, 91-108, *Lecture Notes in Engrg.*, 33, Springer, Berlin-New York, 1987. (Summary) **89j:73080** 73K99 (73E20)
- (with Lindgren, G.) Empty envelope excursions in stationary Gaussian processes. *J. Sound Vibration* **122** (1988), no. 3, 571-587. (A. M. Hasofer) **89d:60076** 60G17 (60G15)
- Ditsas, P.** (with Antoniadis, I.; Floratos, E. G. F.; Iliopoulos, J.) New realizations of the Virasoro algebra as membrane symmetries. *Nuclear Phys. B* **300** (1988), no. 4 FS22, 549-558. (Summary) **89i:17012** 17B65 (58D30, 81E30)
- (with Floratos, E. G. F.) Finite temperature closed bosonic string in a finite volume. *Phys. Lett. B* **201** (1988), no. 1, 49-53. (Summary) **89j:81170** 81E99 (81E30)
- Ditters, E. J.** (with Hoving, Simen) Sur la composante connexe du module de Tate covariant de la famille des courbes, donnée par l'équation  $y^2 = 1 + \mu x^N$ . (English summary) [On the connected component of the covariant Tate module of the family of curves given by the equation  $y^2 = 1 + \mu x^N$ ] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 14, 621-624. (Noriko Yui) **89d:14059** 14D05 (11G20, 14L10)
- Dittmar, B.** Stekloffsche Eigenwerte und konforme Abbildungen. (English and Russian summaries) [Steklov eigenvalues and conformal mappings] *Z. Anal. Anwendungen* **7** (1988), no. 2, 149-163. (H. Renelt) **89j:30008** 30C35 (35P15)
- Zur Berechnung Stekloffscher Eigenwerte. (English summary) [On the computation of Steklov eigenvalues] *Z. Angew. Math. Phys.* **39** (1988), no. 3, 351-366. (Vladimir Janovský) **89h:35080** 35J05 (35P15, 65N25)
- Ditto, William L.** (with Pickett, Thomas J.) Nonperturbative solutions of nonlinear differential equations using continued fractions. *J. Math. Phys.* **29** (1988), no. 8, 1761-1770. (J. Della Dora) **89k:34011** 34A25 (34A45, 41A21)
- Dittrich, J.** (with Exner, P.) ★ A nonrelativistic model of two-particle decay. Relation to the scattering theory, spectral concentration, and bound states. With a Russian summary. *Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna]*, E2-87-599. *Joint Inst. Nuclear Res., Dubna*, 1987. 21 pp. (W. O. Amrein) **89g:81099** 81F99

- (with Exner, P.) A nonrelativistic model of two-particle decay. II. Reduced resolvent. *Czechoslovak J. Phys. B 37* (1987), no. 9, 1028–1034. (H. Araki) **89c:81183** 81F20 (82A15)
- Dittrich, P.** A stochastic model of a chemical reaction with diffusion. *Probab. Theory Related Fields* **79** (1988), no. 1, 115–128. (Ludwig Arnold) **89c:60156** 60K35 (60G57, 60J65, 80A30, 92A40)
- Dittrich, W.** (with Sieber, M.) On the trace anomaly of the energy-momentum tensor from the one-loop effective Lagrangian in QED. *J. Phys. A* **21** (1988), no. 13, L711–L714. (Asao Arai) **89c:81165** 81L05 (81E99)
- Ditzian, Z.** (with Totik, V.)  $\star$  Moduli of smoothness. Springer Series in Computational Mathematics, 9. Springer-Verlag, New York-Berlin, 1987. x+227 pp. ISBN 0-387-96536-X (O. Shisha) **89b:41002** 41-02 (41A10)
- (with Lubinsky, D. S.; Nevai, P.; Totik, V.) Polynomial approximation with exponential weights. *Acta Math. Hungar.* **50** (1987), no. 1-2, 165–175. (J. A. Siddiqui) **89b:41032** 41A50 (41A10)
- On the Marchaud-type inequality. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 198–202. (D. Zwick) **89d:26004** 26A15 (26D10, 41A25)
- Divanji, G.** (with Vasudeva, R.) Law of the iterated logarithm for the increments of stable subordinators. *Stochastic Process. Appl.* **28** (1988), no. 2, 293–300. (J. L. Mijneer) **89g:60116** 60F15 (60E07)
- Divari, Maria** (with Poggi, Carla) Measures of uncertainty totally composite with the branching property. (Italian. English summary) *Stochastica* **10** (1986), no. 3, 271–281. (J. Aczél) **89i:39015** 39B40 (94A17)
- Di Vecchia, P.** Covariant quantization and the three-reggeon vertex. *Unification of fundamental interactions* (Marstrand, 1986), 41–45, Royal Swedish Acad. Sci., Stockholm, 1987. (see **89f:81005**) **81E99** (81E30)
- (with Hornfeck, K.; Yu, Ming) Infinite number of conserved charges and the  $N$ -string vertex. *Phys. Lett. B* **195** (1987), no. 4, 557–562. (Helmut Rumpf) **89f:81168** 81E99 (81D15, 81E30)
- (with Frau, M.; Lerda, A.; Sciuto, S.) A simple expression for the multiloop amplitude in the bosonic string. *Phys. Lett. B* **199** (1987), no. 1, 49–56. (Tsou Sheung Tsun) **89f:81169** 81E99 (81E30)
- (with Frau, M.; Lerda, A.; Sciuto, S.)  $N$ -string vertex and loop calculation in the bosonic string. *Nuclear Phys. B* **298** (1988), no. 3, 526–556. (Sorin Marcescusa) **89f:81170** 81E99 (81E30, 83E30)
- (with Hornfeck, K.; Frau, M.; Lerda, A.; Sciuto, S.) BRST invariant operator formalism for the superstring. *Phys. Lett. B* **205** (1988), no. 2-3, 250–256. (Summary) **89f:81142** 81E99 (81E30)
- Di Vincenzo, O. M.** (with Giamburno, A.) Modular representation theory and PI-algebras. *Comm. Algebra* **16** (1988), no. 10, 2043–2067. (E. Formanek) **89j:16028** 16A38
- On the Kronecker product of  $S_n$ -cocharacters for P.I. algebras. *Linear and Multilinear Algebra* **23** (1988), no. 2, 139–143. (G. D. James) **89m:16024** 16A38 (20C30)
- Di Vincenzo, R.** (with Giusti, L.) Orlicz-Sobolev spaces and existence theorems for an optimal control problem for a hyperbolic differential equation. (Italian) *Matematiche (Catania)* **38** (1983), no. 1-2, 33–63 (1987). (L. von Wolfersdorf) **89c:49008** 49A22 (35L20, 46E35)
- Divko, R.** (with Buhmann, J.; Schulten, K.) Associative memory with high information content. *Phys. Rev. A* (3) **39** (1989), no. 5, 2689–2692. (Summary) **89m:92012** 92A09 (82A57, 82A99)
- Divoky, James J.** (with Hung, Ming S.) A computational study of efficient shortest path algorithms. *Comput. Oper. Res.* **15** (1988), no. 6, 567–576. (Summary) **89j:90093** 90B10 (68R10)
- Dixit, Avinash** Tax policy in open economies. *Handbook of public economics, Vol. I*, 313–374, *Handbooks in Economics*, 4, North-Holland, Amsterdam-New York, 1985. (see **89m:9002a**) **90A14**
- Dixit, S. P.** (with Jain, Rajendra Kumar<sup>1</sup>) A result on fixed points. *J. Sci. Res.* **9** (1987), no. 1, 45–46. (Summary) **89i:54053** 54H25
- Dixmier, Jacques** (with Erdős, Paul; Nicolas, J.-L.) Sur le nombre d'invariants fondamentaux des formes binaires. (English summary) [On the number of fundamental invariants of binary forms] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 8, 319–322. (O. H. Körner) **89a:11040** 11E76 (11N45, 15A72)
- Dixon, John D.** (with Mortimer, Brian) The primitive permutation groups of degree less than 1000. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 2, 213–238. (Wolfgang Knapp) **89b:20014** 20B10 (20B15, 20B20)
- (with Majeed, Abdul) Coset representatives for permutation groups. *Portugal. Math.* **45** (1988), no. 1, 61–68. (Martin W. Liebeck) **89i:20006** 20B05
- Dixon, L. C. W.** (with Price, R. C.) Numerical experience with the truncated Newton method for unconstrained optimization. *J. Optim. Theory Appl.* **56** (1988), no. 2, 245–255. (G. R. Wood) **89e:90174** 90C30 (49D15, 65K05)
- Dixon, Lance J.** (with Kaplunovsky, Vadim S.; Vafa, Cumrun) On four-dimensional gauge theories from type II superstrings. *Nuclear Phys. B* **294** (1987), no. 1, 43–82. (Andrew A. Bytsenko) **89g:81045** 81E13 (81E30)
- (with Banks, Thomas; Friedman, D.; Martinez, Emil) Phenomenology and conformal field theory or can string theory predict the weak mixing angle? *Nuclear Phys. B* **299** (1988), no. 3, 613–626. (B. Spence) **89b:81244** 81G15 (81E30)
- (with Ginsparg, P.; Harvey, Jeffrey A.)  $\tilde{e} = 1$  superconformal field theory. *Nuclear Phys. B* **306** (1988), no. 3, 470–496. (Raiko Zaikov) **89m:81136** 81E99 (17B65, 58A50, 58G40, 81E40)
- (with Banks, Thomas) Constraints on string vacua with spacetime supersymmetry. *Nuclear Phys. B* **307** (1988), no. 1, 93–108. (Olaf Lechtenfeld) **89b:81163** 81E99 (81E30, 81E40)
- Dixon, Martyn R.** (with Fournelle, Thomas A.) The construction of infinite finitely generated periodic groups using wreath products. *J. Algebra* **115** (1988), no. 1, 150–163. (John D. P. Meldrum) **89e:20075** 20F50 (20E22)
- Fitting classes of CC-groups. *Proc. Edinburgh Math. Soc.* (2) **31** (1988), no. 3, 475–479. (Ma. Jesús Iranzo) **89m:20041** 20F24
- Dixon, R. D.** (with Blakley, G. R.) Smallest possible message expansion in threshold schemes. *Advances in cryptography—CRYPTO '86* (Santa Barbara, Calif., 1986), 266–274, *Lecture Notes in Comput. Sci.*, 263, Springer, Berlin-New York, 1987. (Albrecht Beutelspacher) **89d:94036** 94A60
- Dizoglu, Bekir** Funktionalanalytische Theorie der linearen Differenzengleichungen. (English and Turkish summaries) [Functional analytic theory of linear difference equations] *Istanbul Tek. Üniv. Bil.* **39** (1986), no. 3-4, 371–391. (Bernd Aulbach) **89g:39001** 39A10
- mohammad-Djafari, Ali** see **Mohammad-Djafari, Ali**
- Djafari, T. E.** Robust decoupling for systems with parameters. *Modelling, identification and robust control* (Stockholm, 1985), 457–470, North-Holland, Amsterdam-New York, 1986. (see **89b:93008**) **93C40** (49D27)
- el Djaili Kateb, Mohamed** see **El Djaili Kateb, Mohamed**
- Djebbar, A.** (with Aballagh, M.) Découverte d'un écrit mathématique d'al-Haṣṣār (XIIe S.): le livre I du *Kāmil*. (English and Arabic summaries) [Discovery of a mathematical text of al-Haṣṣār (12th C.): Book I of the *Kāmil*] *Historia Math.* **14** (1987), no. 2, 147–158. (Jan P. Hogendijk) **89b:01010** 01A30
- Djerdjour, Mohamed** (with Mathur, Kamlesh; Salkin, Harvey M.) A surrogate relaxation based algorithm for a general quadratic multidimensional knapsack problem. *Oper. Res. Lett.* **7** (1988), no. 5, 253–258. (conclusion) **89j:90196** 90C20 (90C10)
- Djidjev, H. N.** Simple parallel sorting algorithms. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 9, 29–31. (Selim G. Aki) **89b:68017** 68P10 (68Q05, 68Q10, 68Q25)
- On the constants of separator theorems. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 10, 31–34. (Joan Hutchinson) **89d:05065** 05C10 (05C35, 68R10)
- New algorithms for planar graph separation. *C. R. Acad. Bulgare Sci.* **41** (1988), no. 1, 23–25. (Miro Krivánek) **89d:05160** 05C99 (68Q25)
- Design and analysis of systolic implementations. (Russian summary) *J. New Generation Comput. Systems* **1** (1988), no. 1, 7–20. (Summary) **89e:68060** 68Q35 (68Q90)
- Djordjević, V. D.** (with Redekopp, L. G.) Linear stability analysis of nonhomotropic, inviscid compressible flows. *Phys. Fluids* **31** (1988), no. 11, 3239–3245. (W. O. Crimale, Jr.) **89i:76073** 76M05 (76E05)
- Djurić, Mirjana V.** (with Stanković, Miomir S.) Weighted weak Drazin inverses. (Serbo-Croatian summary) *Zb. Rad. No. 1* (1987), 89–94. (Ar. Meenakshi) **89i:15005** 15A09
- (with Stanković, Miomir S.; Petković, D. M.) Closed form expressions for some series involving Bessel functions of the first kind. *Numerical methods and approximation theory, III* (Niš, 1987), 379–389, Univ. Niš, Niš, 1988. (Bruce C. Berndt) **89i:33013** 33A40
- Djurović, Ivo** On homotopies of  $n$ -ary groupoids with division. *Proceedings of the Conference "Algebra and Logic"*, Cetinje 1986, 89–93, Univ. Novi Sad, Novi Sad, 1987. (Summary) **89e:20127** 20N15
- Strict nuclei and pseudoautomorphisms of groupoids with division. (Serbo-Croatian summary) *Mat. Vesnik* **40** (1988), no. 1, 17–22. (Summary) **89j:20077** 20N99
- Dlab, Vlastimil** (with Ringel, Claus Michael) Every semiprimary ring is the endomorphism ring of a projective module over a quasihereditary ring. *Proc. Amer. Math. Soc.* **107** (1989), no. 1, 1–5. (Dieter Happel) **89m:16033** 16A46 (16A65)
- Dlotko, Tadeusz** Solutions of some  $n$ th order functional-differential equations. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations* (Budapest, 1987), 267–270, *Jan Bolyai Math. Soc., Budapest*, 1987. (From the text) **89c:34070** 34K05
- Dlotko, Tomasz**  $\star$  Parabolic equations in divergence form. Theory of global solutions. With Polish and Russian summaries. *Prace Naukowe Uniwersytetu Śląskiego w Katowicach* [Scientific Publications of the University of Silesia], 859, Uniwersytet Śląski, Katowice, 1987. 48 pp. ISBN 83-226-0161-1 (K. Habetha (Zbl 634:35001)) **89j:35063** 35K55
- Global solutions of reaction-diffusion equations. *Funkcial. Ekvac.* **30** (1987), no. 1, 31–43. (Reinhard Redlinger) **89b:35070** 35K57 (35B05, 35B45)
- Decay properties of global solutions of reaction-diffusion equations. *Funkcial. Ekvac.* **30** (1987), no. 1, 111–114. (Reinhard Redlinger) **89b:35071** 35K57 (35B40)
- A priori estimates for a Navier-Stokes like system. *Riv. Mat. Univ. Parma* (4) **13** (1987), 187–199 (1988). (Charles J. Amick) **89j:35107** 35Q10 (35B45, 76D05)
- Remarks on global bounds of solutions of parabolic equations in divergence form. *Rocky Mountain J. Math.* **17** (1987), no. 3, 499–510. (Introduction) **89m:35103** 35K55 (35B45)
- Dloussky, G.** Sur la classification des germes d'applications holomorphes contractantes. [The classification of germs of contracting holomorphic mappings] *Math. Ann.* **280** (1988), no. 4, 649–661. (Thomas Peternell) **89g:32042** 32J15
- Une construction élémentaire des surfaces d'Inoue-Hirzebruch. [An elementary construction of Inoue-Hirzebruch surfaces] *Math. Ann.* **280** (1988), no. 4, 663–682. (Thomas Peternell) **89g:32043** 32J15
- Długosz, Jolanta** Convolution operators on groups and multiplier theorems for Hermite and Laguerre expansions. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 919–924. (Norman J. Weiss) **89e:43010** 43A22 (22E30, 42C10)
- Dmitriev, G. D.** (with Davimuka, S. A.; Stekh, Yu. V.) An adaptive algorithm for continuation of the solution with respect to the parameter for problems in the analysis of electronic circuits. (Russian. English summary) *Teoret. Elektrotekh. No. 41* (1986), 100–105. (Not in MR) **94C05** (34A10)
- Dmitriev, A. S.** (with Panas, A. I.) Quasiperiodic, resonance and chaotic modes in ring auto-oscillatory systems. (Russian. English summary) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* **30** (1987), no. 9, 1085–1098. (Summary) **89b:58129** 58F13 (58F40)
- (with Gulyaev, Yu. V.; Kislov, V. Ya.; Panas, A. I.) Mode pulling and competition in a system with chaotic dynamics. *Phys. Lett. A* **128** (1988), no. 3-4, 172–176. (Summary) **89b:70007** 70K50 (34C15, 58F13)
- (with Gulyaev, Yu. V.; Kislov, V. Ya.; Panas, A. I.) Bifurcations of strange attractors. The connection of Lyapunov characteristic exponents with the spectrum. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 3, 593–597; translated in *Soviet Phys. Dokl.* **33** (1988), no. 1, 42–44. (From the text) **89b:58132** 58F13 (58F14)
- Dmitriev, M. G.** (with Belokopytov, S. V.; Gerasimov, V. A.; Klishevich, A. M.; Gornov, A. Yu.; Tyatyskin, A. I.; Pasyukov, V. N.) Interior and outer boundary layers in the optimal control problems. Asymptotic and numerical methods. *BAIL IV* (Novosibirsk, 1986), 216–221, *Boole Press Conf. Ser.*, 8, Boole, Dun Laoghaire, 1986. (Viorel Arnautu) **89d:49017** 49B10 (34E15, 35B25, 49B22)
- (with Klishevich, A. M.) Iterative methods for solving singularly perturbed boundary value problems of conditionally stable type. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 12, 1812–1823, 1918–1919. (Summary) **89b:65128** 65L10
- Dmitriev, O. S.** (with Shatalov, Yu. S.; Puchkov, N. P.) A refined functional-integral equation for solving an inverse coefficient problem of heat conduction. (Russian)



- Functional-differential equations (Russian)*, 86-91, vi, *Perm. Politekh. Inst., Perm*, 1985. (Summary) **89b:35167** 35R30
- Dmitriev, P. B.** On the theory of capillary waves on the surface of a rotating fluid. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 2, 247-253, 303. (Summary) **89b:76014** 76B45 (76U05)
- Dmitriev, V. F.** (with Kalinikos, B. A.) Excitation of propagating magnetization waves by microband antennas. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **31** (1988), no. 11, 24-53. (Summary) **89b:78026** 78A50
- Dmitriev, V. I.** (with Zakharov, E. V.; Il'inskiĭ, A. S.; Sveshnikov, A. G.) Inverse problems in electrodynamics. *Ill-posed problems in the natural sciences*, 233-295, *Adv. Sci. Tech. USSR: Math. Mech. Ser., "Mir", Moscow*, 1987. (I. Kay) **89d:78002** 78-08
- Dmitriev, Yu. G.** (with Koshkin, G. M.) The use of additional information for the nonparametric estimation of density functionals. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 10, 47-59. (Summary) **89a:62094** 62G05 (93E10)
- Dmitrieva, I. K.** (with Plindov, G. I.) Schrödinger equation for two-electron atomic states with conserved angular momentum and parity. (French summary) *J. Physique* **47** (1986), no. 9, 1493-1501. (Summary) **89b:81211** 81G45
- Dmitrieva, L. A.** (with Buslaev, V. S.) Adiabatic perturbation of a periodic potential. II. (Russian. English summary) *Teoret. Mat. Fiz.* **73** (1987), no. 3, 430-442. (Summary) **89c:34058** 34E20 (81H20)
- Dmitruk, A. V.** Quadratic conditions for the Pontryagin minimum in an optimal control problem linear with respect to control. II. Theorems on the relaxing of constraints on the equality. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **51** (1987), no. 4, 812-832, 911; translated in *Math. USSR Izv.* **31** (1988), no. 1, 121-141. (L. Mikolajczyk) **89b:49024** 49B10
- Dnestrovskii, Yu. N.** (with Kostomarov, D. P.) Mathematical problems on plasma diagnostics. *Ill-posed problems in the natural sciences*, 130-170, *Adv. Sci. Tech. USSR: Math. Mech. Ser., "Mir", Moscow*, 1987. (M. Dragănu) **89f:82048** 82A45
- Iran Doan Phu** see **Tran Doan Phu**
- Dobbs, David E.** (with Fedder, Richard; Fontana, Marco) Abstract Riemann surfaces of integral domains and spectral spaces. (Italian summary) *Ann. Mat. Pura Appl.* (4) **148** (1987), 101-115. (Chin-Pi Lu) **89f:14002** 14A20 (13G05)
- (with Fontana, Marco) Seminormal rings generated by algebraic integers. *Mathematika* **34** (1987), no. 2, 141-154. (W. Narkiewicz) **89c:11064** 11R11 (13B20, 13F05)
- (with Mulay, S. B.) Domains integral over each underrring. *Tokyo J. Math.* **10** (1987), no. 2, 317-325. (James A. Huckaba) **89f:13005** 13B20 (13B02)
- (with Bouvier, Alain; Fontana, Marco) Universally catenarian integral domains. *Adv. in Math.* **72** (1988), no. 2, 211-238. (David F. Anderson) **89m:13007** 13C15 (13A17, 13B25, 13G05)
- (with Mulay, S. B.) Flat underrings. *Arch. Math. (Basel)* **50** (1988), no. 4, 337-341. (James A. Huckaba) **89f:13006** 13B20 (13B02)
- (with Barucci, Valentina; Mulay, S. B.) Integrally closed factor domains. *Bull. Austral. Math. Soc.* **37** (1988), no. 3, 353-366. (Stephen McAdam) **89g:13004** 13B20
- (with Fontana, Marco) Sur les suites dimensionnelles et une classe d'anneaux distingués qui les déterminent. (English summary) [On dimension sequences and a class of distinguished rings that determines them] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 1, 11-16. (James A. Huckaba) **89f:13008** 13B25
- (with Anderson, David F.; Bouvier, Alain; Fontana, Marco; Kabbaj, Salah) On Jaffard domains. *Exposition. Math.* **6** (1988), no. 2, 145-175. (J. W. Brewer) **89c:13014** 13C15
- (with Anderson, D. D.) Flatness, LCM-stability, and related module-theoretic properties. *J. Algebra* **112** (1988), no. 1, 139-150. (Sarah Glaz) **89a:13011** 13C05
- (with Fedder, Richard; Fontana, Marco)  $G$ -domains and spectral spaces. *J. Pure Appl. Algebra* **51** (1988), no. 1-2, 89-110. (W. Heinzer) **89i:13026** 13G05
- (with Anderson, David F.; Kabbaj, Salah; Mulay, S. B.) Universally catenarian domains of  $D + M$  type. *Proc. Amer. Math. Soc.* **104** (1988), no. 2, 378-384. (Alain Bouvier) **89j:13014** 13C15 (13G05)
- Dobi, J.** A remark on the norm of the Banach space of uniformly strong convergent trigonometric series. *Acta Math. Hungar.* **51** (1988), no. 1-2, 201-203. (Hans G. Feichtinger) **89g:46055** 46E30 (42A16)
- Dobkin, David P.** Computational geometry—then and now. *Theoretical foundations of computer graphics and CAD (Il Ciocco, 1987)*, 71-109, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 40, Springer, Berlin-New York, 1988. (see **89a:68011**) 68U05
- Doblaré, M.** (with Hromádka, Th. V.; Ito, Yuusuke; O'Callaghan, M. J. A.; Onishi, K.; Pina, H.; Quinlan, P. M.; Schippers, H.; Takahashi, Shuichi; Tanaka, Masataka; Telles, J. C. F.; Wrobel, L. C.) ★ Topics in boundary element research. Vol. 3. Computational aspects. Edited and with a preface by Carlos A. Brebbia. Springer-Verlag, Berlin-New York, 1987. xiv+296 pp. ISBN 3-540-16113-9 (Johannes Elschner) **89b:65005** 65-02 (65N30)
- Dobner, H.-J.** Bounds for the solution of hyperbolic problems. (German summary) *Computing* **38** (1987), no. 3, 209-218. (David C. Arney) **89a:65135** 65M10 (65G10)
- Dobordzhidze, L. G.** A plane contact problem in elasticity theory for viscoelastic bodies. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruz. SSR* **87** (1987), 54-61. (Introduction) **89c:73082** 73T05 (73F99)
- Dobol, Jozsef** Simple continuity and cliquishness. (Russian and Slovak summaries) *Časopis Pěst. Mat.* **112** (1987), no. 4, 355-358. (De Preiss) **89f:54029** 54C10
- On determining sets for certain generalizations of continuity. (Russian summary) *Math. Slovaca* **37** (1987), no. 2, 137-145. (From the introduction) **89c:54027** 54C08
- (with Borsik, Ján) On metric preserving functions. *Real Anal. Exchange* **13** (1987/88), no. 1, 285-293. (M. Laczkovich) **89a:26007** 26A30
- Dobrákov, Ivan** On integration in Banach spaces. VIII. Polymeasures. *Czechoslovak Math. J.* **37** (112) (1987), no. 3, 487-506. (C. W. Swartz) **89a:46097** 46G10 (28B05)
- On extension of vector polymeasures. *Czechoslovak Math. J.* **38** (113) (1988), no. 1, 88-94. (Ray C. Shiflett) **89c:28011** 28B05 (46G10)
- On integration in Banach spaces. VII. *Czechoslovak Math. J.* **38** (113) (1988), no. 3, 434-449. (C. W. Swartz) **89f:28023** 28B05 (46G10)
- On integration in Banach spaces. IX. X. Integration with respect to polymeasures. *Czechoslovak Math. J.* **38** (113) (1988), no. 4, 589-601, 713-725. (C. W. Swartz) **89m:46082** 46G10 (28B05)
- Dobrev, V. K.** Characters of the unitarizable highest weight modules over the  $N = 2$  superconformal algebras. *Phys. Lett. B* **186** (1987), no. 1, 43-51. (Andrew Pressley) **89a:17020** 17B65 (81E30, 81E40)
- Characters of the irreducible highest weight modules over the Virasoro and super-Virasoro algebras. *Proceedings of the 14th winter school on abstract analysis (Srni, 1986)*. *Reed. Circ. Mat. Palermo (2) Suppl. No. 14* (1987), 25-42. (Nick Yu. Reshetikhin) **89g:17006** 17B10 (17B65, 81D15, 81E40)
- (with Ganchev, A. Ch.) Modular invariance for the  $N = 2$  twisted superconformal algebra. *Modern Phys. Lett. A* **3** (1988), no. 2, 127-137. (Claude Itzykson) **89b:81183** 81E99 (17A70, 81E40)
- Dobrić, V.** Analytically normed spaces. *Math. Scand.* **60** (1987), no. 1, 109-128. (James Bell Cooper) **89c:46014** 46A99 (46A05, 46G99, 60B11)
- The law of large numbers, examples and counterexamples. *Math. Scand.* **60** (1987), no. 2, 273-291. (Evarist Giné) **89a:60022** 60B12 (60B05)
- (with Andersen, Niels Trolle) The central limit theorem for stochastic processes. II. *J. Theoret. Probab.* **1** (1988), no. 3, 287-303. (Evarist Giné) **89b:60010** 60B12 (60F05, 60F17)
- The law of large numbers in locally convex spaces. *Probab. Theory Related Fields* **78** (1988), no. 3, 403-417. (V. K. Rohatgi) **89c:60065** 60F15 (46A99, 60B11)
- Dobris, G. V.** (with Kopytin, S. F.) Mutually correlated properties of sequences that can be obtained in multichannel pseudorandom number generators. (Russian) *Probabilistic methods and cybernetics*, No. 22 (Russian), 51-60, *Kazan. Gos. Univ., Kazan'*, 1987. (P. Neumann) **89b:65017** 65C10 (11K45, 94A40)
- Dobritsa, V. P.** Structural properties of computable classes of constructive models. (Russian) *Algebra i Logika* **26** (1987), no. 1, 36-62, 125. (O. V. Belegradek) **89j:03029** 03C57 (03C52, 03D45)
- D'o Brel, Lai** see **de Broglie, Louis**
- Dobrokhoto, S. Yu.** (with Maslov, V. P.) Boundary layer resonance effects in linear and nonlinear elliptic Steklov problems. *BAIL IV (Novosibirsk, 1986)*, 39-50, *Boole Press Conf. Ser.*, 8, Boole, Dun Laoghaire, 1986. (Dietrich Gönhe) **89b:35007** 35B25 (35B40, 35P99, 58G15)
- (with Shafarevich, A. I.) Quasiclassical asymptotics in the problem of the scattering of wave packets by a rapidly changing potential of the form  $-2|\nabla\Phi|^2/\chi^2(\Phi(x)/h) + V_0(x)$ . (Russian) *Dokl. Akad. Nauk SSSR* **295** (1987), no. 6, 1347-1351. (M. Fedoryuk (translated from *RZhMat* 1988:2 B543)) **89m:35170** 35P25 (58F05, 58G15, 81C25)
- (with Berlyand, L. V.) "Operator separation of variables" in problems of short-wave asymptotics for differential equations with rapidly oscillating coefficients. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 1, 80-84. (Rémi Vaillancourt) **89d:58132** 58G35 (35C20, 81C05)
- (with Zhevaurov, P. N.; Maslov, V. P.) An asymptotic method for studying detection in nonlinear pseudodifferential equations and its application to the theory of surface waves. (Russian) *Asymptotic methods in mathematical physics (Russian)*, 52-62, 299, *"Naukova Dumka", Kiev*, 1988. (Xue Bo Luo) **89k:35203** 35Q20 (35C20, 35S99, 76B15)
- (with Vorob'ev, Yu. M.) Completeness of the system of eigenfunctions of a nonelliptic operator on a torus, generated by a Hill operator with finite-gap potential. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 2, 65-66; translated in *Functional Anal. Appl.* **22** (1988), no. 2, 137-139. (S. Z. Levendorskii) **89m:35166** 35P10
- (with Belov, V. V.) The Maslov canonical operator on isotropic manifolds with a complex germ, and its applications to spectral problems. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 5, 1037-1042; translated in *Soviet Math. Dokl.* **37** (1988), no. 1, 180-185. (Rémi Vaillancourt) **89h:58185** 58G15 (58G25)
- Dobromyslov, V. A.** On the geometry of a  $K$ -quasiaffine space. (Russian) *Webs and quasigrupos (Russian)*, 147-155, *Kalinin. Gos. Univ., Kalinin*, 1988. (W. J. Firey) **89b:53046** 53A40
- Dobroslavskii, A. S.** see **Hoffmann, Dieter**, **89b:01049**
- Dobrotov, I. G.** (with Bugir, M. K.) A condition for the oscillation of the solutions of fourth-order partial differential equations. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 5, 9-11, 86. (S. V. Duzhin) **89b:35018** 35B05 (58G30)
- Dobrovolskii, S. M.** (with Gichev, V. M.) On some characteristic properties of Bloch functions. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 1, i, 61-64. (Grigore Stefan Salăgean) **89c:32008** 32A17
- Dobrovolskii, V. V.** Localization of the eigenvalues of stochastic matrices in the presence of a pure imaginary perturbation. (Russian) *Asymptotic methods in the investigation of stochastic models (Russian)*, 39-45, 143, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (Lajos László) **89f:15025** 15A51 (15A42)
- Construction of asymptotic expansions of distributions of additive functionals of Markov processes by methods of the theory of singularly perturbed semigroups. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 68, 3-31. (From the text) **89i:60152** 60J55 (47A55, 47D05)
- Dobrowolski, Tadeusz** Extending homeomorphisms and applications to metric linear spaces without completeness. *Trans. Amer. Math. Soc.* **313** (1989), no. 2, 753-784. (Michael M. Zarichnyi) **89j:57010** 57N17 (54C20, 58B10)
- Dobrushin, R. L.** The hydrodynamic limit. Some caricatures. (Bulgarian) Translated from the Russian by G. S. Chobanov. *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* **28** (61) (1986), no. 3, 212-221. (Vladimir K. Dobrev) **89g:82007** 82A05 (60J99, 82A97)
- Induction on volume and no cluster expansion. *VIIIth international congress on mathematical physics (Marseille, 1986)*, 73-91, *World Sci. Publishing, Singapore*, 1987. (Richard Holley) **89c:82007** 82A05 (05C80, 60K35, 82A57, 82A68)
- (with Bassalygo, L. A.) Epsilon-entropy of a Gibbs field. (Russian) *Problemy Peredachi Informatsii* **23** (1987), no. 1, 3-15. (Summary) **89b:60080** 60G60 (60K35)
- (with Berger, Toby; Bassalygo, L. A.; Pinsker, Mark S.) Andrei Nikolaevich Kolmogorov (April 25, 1903-October 20, 1987). *IEEE Trans. Inform. Theory* **34** (1988), no. 2, 173-175. (Editors) **89f:01057** 01A70
- A new approach to the analysis of Gibbs perturbations of Gaussian fields. Selected translations. *Selecta Math. Soviet.* **7** (1988), no. 3, 221-277. (Tony C. Dorlas) **89m:60253** 60K35 (60G60, 82A05, 82A68)
- (with Martirosyan, M. R.) Nonfinite perturbations of Gibbs fields. (Russian. English summary) *Teoret. Mat. Fiz.* **74** (1988), no. 1, 16-28; translated in *Theoret. and Math. Phys.* **74** (1988), no. 1, 10-20. (B. S. Nakhpapetyan) **89b:60052** 60G60 (60K35, 82A05, 82A31)
- (with Martirosyan, M. R.) The possibility of high-temperature phase transitions due to the many-particle character of the potential. (Russian. English summary) *Teoret. Mat.*

- Fig. 75 (1988), no. 2, 163–169; translated in *Theoret. and Math. Phys.* 75 (1988), no. 2, 443–448. (Hans-Otto Georgii) **89j:82005** 82A05 (82A25)
- see also Kolmogorov, A. N., **89a:01104**
- Dobrynin, A. A.** (with Skorobogatov, V. A.) The influence of structural transformations of a graph on the value of its distance. (Russian) *Vychisl. Sistemy* No. 117 *Anal. Dannykh v Ekspert. Sistemakh* (1986), 103–113, 130. (N. Trinajstić) **89f:05156** 05C99 (92A40)
- Distance of molecular graphs of polycyclic joins. (Russian) *Vychisl. Sistemy* No. 117 *Anal. Dannykh v Ekspert. Sistemakh* (1986), 114–122, 130–131. (N. Trinajstić) **89f:05157** 05C99 (92A40)
- Graphs with coincident complete matrices of layers. (Russian) *Vychisl. Sistemy* No. 119 *Voprosy Algoritm. Anal. Strukt. Inform.* (1987), 3–12, 112. (N. Trinajstić) **89f:05152a** 05C99 (92A40)
- Graphs with coincident chain-like matrices of layers. (Russian) *Vychisl. Sistemy* No. 119 *Voprosy Algoritm. Anal. Strukt. Inform.* (1987), 13–33, 113. (N. Trinajstić) **89f:05152b** 05C99
- (with Skorobogatov, V. A.) Metric analysis of graphs. *Match* No. 23 (1988), 105–151. (N. Trinajstić) **89i:05263** 05C99
- Dobrylina, N. F.** (with Boltov, I. V.) Algorithms that are optimal with respect to accuracy for the calculation of Hadamard integrals. (Russian) *Optimal computation methods and their application*, No. 7 (Russian), 14–28, 161, *Penz. Politekh. Inst., Penza*, 1985. (see **89g:65006**) 65D30
- Dobrynskiĭ, V. A.** A model for the dynamics of a phytoplankton biomass in the presence of an excess of biogenes. (Russian) *Functional-differential equations and their application to nonlinear boundary value problems* (Russian), 5–11, i, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) **89f:20256** 92A17
- Dobrzycki, Jerzy** The *Tabulae resolutae*. De astronomia Alphonsi Regis (Berkeley, CA, 1985), 71–77, *Univ. Barcelona, Barcelona*, 1987. (see **89m:01026**) 01A35
- Dobson, Gregory** Sensitivity of the EOQ model to parameter estimates. *Oper. Res.* 36 (1988), no. 4, 570–574. (Upendra Dave) **89m:90054** 90B05
- Do Carmo, Manfredo** see **Do Carmo, Manfredo**
- Docher, D. T.** see **Docher, Docho T.**
- Docher, D. Tr.** On some properties of discrete semidynamical systems generated by finite automata. I. (Russian and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 21 (1985), no. 1, 123–136 (1986). (Summary) **89b:58107** 58F08 (58F25, 68Q70)
- Docher, Docho T.** (with Stoyanova, T. G.) On a multicriteria problem in differential-difference systems. (Russian. English and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 21 (1985), no. 3, 9–22 (1986). (V. Rosa) **89d:34124** 34K35 (34H05, 49A10, 93C15)
- Dochviri, V. M.** On optimal stopping with incomplete data. *Probability theory and mathematical statistics* (Kyoto, 1986), 64–68, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (Krzysztof Szajowski) **89g:60152** 60G40 (60H10, 90C40)
- Dockner, Engelbert J.** (with Neck, Reinhard) On the optimality of cyclical stabilization policies: some variations on a model of Nordhaus. *Optimal control theory and economic analysis*, 3 (Vienna, 1987), 77–96, North-Holland, Amsterdam-New York, 1988. (Summary) **89k:90040** 90A16 (90A10, 90A30)
- Docoib, José A.** (with Abad, Alberto J.) The application of hierarchical relative coordinates to the analysis of the movement of subsystems of many-body problems. *Celestial Mech.* 41 (1987/88), no. 1–4, 333–342. (Fu Tong) **89g:70009** 70F10 (70F15)
- Dodd, F. W.** (with Mattics, L. E.) Estimating the number of multiplicative partitions. *Rocky Mountain J. Math.* 17 (1987), no. 4, 797–813. (David M. Bressoud) **89h:11064** 11P65
- Dodd, R. K.** (with Paul, S. K.) Factorization of zero curvature representations. *J. Math. Phys.* 29 (1988), no. 11, 2423–2429. (Yisong Yang) **89e:58115** 58F07 (58G37)
- Dodds, P. G.** (with de Pagter, B.) Algebras of unbounded scalar-type spectral operators. *Pacific J. Math.* 130 (1987), no. 1, 41–74. (Summary) **89e:47070** 47D40 (47B40)
- (with de Pagter, B.) Remarks on noncommutative Banach function spaces. *Miniconferences on harmonic analysis and operator algebras* (Canberra, 1987), 92–94, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (see **89b:00024**) 46L50
- Dodge, Yadolah** see *Statistical data analysis based on the  $L_1$ -norm and related methods*, **89g:62009**
- Dodonov, N. Yu.** (with Degtyar'ev, V. G.; Tertychnyi, V. Yu.; Shishkovskii, S. Yu.) Asymptotic analysis of stochastic oscillating motion of a rigid body. (Russian) *Proceedings of the Eleventh International Conference on Nonlinear Oscillations* (Budapest, 1987), 369–372, *János Bolyai Math. Soc., Budapest*, 1987. (From the text) **89c:70054** 70K40 (70E99)
- Dodonov, V. V.** (with Man'ko, V. I.) Phase eigenfunctions of multidimensional quadratic Hamiltonians. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jarmala*, 1985), 260–272, “Nauka”, Moscow, 1986. (see **89d:81002**) 81C99
- (with Kurmyshev, E. V.; Man'ko, V. I.) Correlated coherent states of a charged particle in a homogeneous magnetic field. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jarmala*, 1985), 288–297, “Nauka”, Moscow, 1986. (see **89d:81002**) 81D30 (81K05)
- (with Man'ko, O. V.) Universal invariants of paraxial optical beams. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jarmala*, 1985), 432–441, “Nauka”, Moscow, 1986. (see **89d:81002**) 78A10
- (with Man'ko, V. I.; Osipov, D. L.) Gradient-invariant generalizations of the Wigner function of a quantum system in an inhomogeneous magnetic field. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jarmala*, 1985), 465–472, “Nauka”, Moscow, 1986. (see **89d:81002**) 81C25
- (with Man'ko, V. I.; Chumakov, S. M.) An exactly solvable model of the interaction of an  $n$ -level molecule with the quantum mode of an electromagnetic field. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jarmala*, 1985), 536–547, “Nauka”, Moscow, 1986. (see **89d:81002**) 81K05 (81G55)
- (with Man'ko, V. I.; Osipov, D. L.) Gauge invariant generalization of the Wigner function of quantum system in a nonuniform magnetic field. *Group theoretical methods in physics*, Vol. II (*Jarmala*, 1985), 363–373, *VNU Sci. Press, Utrecht*, 1986. (P. G. L. Leach) **89b:81056** 81C25
- (with Man'ko, O. V.) Universal invariants of paraxial optical beams. *Group theoretical methods in physics*, Vol. II (*Jarmala*, 1985), 523–530, *VNU Sci. Press, Utrecht*, 1986. (Stanly L. Steinberg) **89d:78037** 78A50
- (with Man'ko, V. I.) Generalizations of the uncertainty relations in quantum mechanics. (Russian) *Trudy Fiz. Inst. Lebedev.* 183 (1987), 5–70, 289. (Summary) **89f:81067** 81C99 (81B05)
- (with Man'ko, V. I.) Invariants and correlated states of nonstationary quantum systems. (Russian) *Trudy Fiz. Inst. Lebedev.* 183 (1987), 71–181, 289. (V. B. Serebrennikov) **89f:81044** 81C99 (81B05, 81C40, 81D30)
- (with Man'ko, V. I.) The evolution of multidimensional systems. Magnetic properties of ideal gases of charged particles. (Russian) *Trudy Fiz. Inst. Lebedev.* 183 (1987), 182–286, 289. (Summary) **89f:81066** 81C99 (33A65, 81D07, 82A15)
- (with Man'ko, V. I.; Osipov, D. L.) The gauge invariant Wigner function: techniques and applications. (Russian) *Group-theoretic methods in fundamental and applied physics* (Russian) (*Vladivostok*, 1986), 142–154, “Nauka”, Moscow, 1988. (Summary) **89j:81050** 81C25
- Dods, Steven R. A.** (with Gladwell, Graham M. L.; Chaudhuri, Sujet K.) Nonuniform transmission-line synthesis using inverse eigenvalue analysis. *IEEE Trans. Circuits and Systems* 35 (1988), no. 6, 659–666. (Not in MR) 94C05 (34B25)
- Dodson, B.** On the Mumford-Tate group of an abelian variety with complex multiplication. *J. Algebra* 111 (1987), no. 1, 49–73. (Yasutaka Ihara) **89f:11034** 11G15 (14K22, 20B10)
- Dodson, C. T. J.** The overconnection on spaces of Finsler connections. *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces* (Brasov, 1986), 131–136, *Soc. Ştiinţe Mat. R.S. România, Bucharest*, 1986. (Makoto Matsumoto) **89h:53128** 53C60 (58D15)
- Connection geometry. *Geometrization of statistical theory* (Lancaster, 1987), 1–15, *ULDM Publ., Lancaster*, 1987. (R. J. Crittenden) **89j:53026** 53C05
- Systems of connections for parametric models. *Geometrization of statistical theory* (Lancaster, 1987), 153–169, *ULDM Publ., Lancaster*, 1987. (R. J. Crittenden) **89m:53046** 53C05 (62A99, 62F99)
- Invariant connections on  $G$ -fibrations. *Topics in differential geometry*, Vol. I, II (Debrecen, 1984), 305–325, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (V. Cruceanu) **89e:53044** 53C05 (55R05, 58A30)
- (with Del Riego, L.) Sprays, universality and stability. *Math. Proc. Cambridge Philos. Soc.* 103 (1988), no. 3, 515–534. (J. O. Bedford) **89f:58007** 58A20
- see also *Geometrization of statistical theory*, **89g:62010**
- Dodu, J. C.** (with Huard, P.) Méthodes de quasi-Newton sous contraintes non linéaires: algorithmes à convergence locale superlinéaire. (English summary) [Quasi-Newton methods in the nonlinearly constrained case: locally and superlinearly convergent algorithms] With an English introduction. *EDF Bull. Direction Études Rech. Sér. C Math. Inform.* 1988, no. 2, 64 pp. (Alfonso Laratta) **89i:90070** 90C30 (49D15, 65K05)
- hung Do Duc** see **Hung Do Duc**
- Dodunekov, Stefan M.** (with Helleseth, T.; Manev, N.; Ytrehus, Ø.) New bounds on binary linear codes of dimension eight. *IEEE Trans. Inform. Theory* 33 (1987), no. 6, 917–919. (Vera Pless) **89f:94021** 94B05 (11T71)
- Griesmer codes with a maximal covering radius. (Russian) *Problemy Peredachi Informatsii* 23 (1987), no. 4, 110–113. (N. L. Manev) **89e:94034** 94B05
- (with Manev, Krassimir N.; Tonchev, Vladimir D.) On the covering radius of binary [14, 6] codes containing the all-one vector. *IEEE Trans. Inform. Theory* 34 (1988), no. 3, 591–593. (Summary) **89g:94028** 94B05 (05B40)
- Dodunekova, Rositsa** On the estimation of a linear functional from indirect observations. (Russian. English summary) *Mathematics and mathematical education (Bulgarian)* (*Sunny Beach (Sl'nev Bryag)*, 1987), 405–408, *Bulg. Acad. Sci., Sofia*, 1987. (see **89c:00038**) 62C20
- Extremal properties of a linear minimax estimate in a stochastic model. (Russian) *Serdika* 13 (1987), no. 4, 297–302. (Valeri Stefanov) **89d:62086** 62M09 (60G35, 62C20)
- Dodonova, L. K.** On the overconvergence of universal series. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 2, 19–22, 83; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 2, 27–30. (R. P. Boas, Jr.) **89d:30003** 30B30 (30B50, 30E99)
- Dodžluk, Jozef** (with Karp, Leon) Spectral and function theory for combinatorial Laplacians. *Geometry of random motion* (Ithaca, N.Y., 1987), 25–40, *Contemp. Math.*, 73, Amer. Math. Soc., Providence, RI, 1988. (Robert Brooks) **89f:58220** 58G99 (58G25)
- Doebner, H.-D.** see *Group theoretical methods in physics*, **89f:81001**
- Doedel, E. J.** (with Aronson, D. G.; Othmer, Hans G.) An analytical and numerical study of the bifurcations in a system of linearly-coupled oscillators. *Phys. D* 25 (1987), no. 1–3, 20–104. (Summary) **89d:58091** 58F14 (34C15, 34C25, 58–04, 58F13, 70K99, 92A09)
- (with Aronson, D. G.; Othmer, Hans G.) The dynamics of coupled current-biased Josephson junctions. I. *IEEE Trans. Circuits and Systems* 35 (1988), no. 7, 810–817. (Summary) **89f:58099** 58F14 (94C05)
- de Doelder, P. J.** On the Clausen integral  $Cl_2(\theta)$  and a related integral. I, II. *Nieuw Tijdschr. Wisk.* 75 (1987/88), no. 1, 10–18. (Editors) **89b:65057** 65D30 (33A10)
- A note on: “Proof of a remarkable identity” [Simon Stevin 58 (1984), no. 3, 219–241; MR 86a:40002] by C. C. Grosjean. *Simon Stevin* 61 (1987), no. 3–4, 193–195. (R. P. Boas, Jr.) **89g:40002** 40A30 (33A10)
- Doelman, A.** (with Grasman, J.) Low order spectral models in hydrodynamics. *Trends in applications of mathematics to mechanics* (Wassenaar, 1987), 86–97, Springer, Berlin-New York, 1988. (see **89g:58004**) 76C15 (76D33, 76E30)
- Doering, C. I.** Persistently transitive vector fields on three-dimensional manifolds. *Dynamical systems and bifurcation theory* (Rio de Janeiro, 1985), 59–89, *Pitman Res. Notes Math. Ser.*, 160, Longman Sci. Tech., Harlow, 1987. (Zbigniew Nitecki) **89c:58111** 58F30 (58F25)
- Doering, Charles R.** (with Gibbon, J. D.; Holm, Darryl D.; Nicolaenko, Basil) Low-dimensional behaviour in the complex Ginzburg-Landau equation. *Nonlinearity* 1 (1988), no. 2, 279–309. (Piotr Biler) **89g:35095** 35Q20 (58D25, 58F12, 76E99)
- (with Elgin, J. N.; Gibbon, J. D.; Holm, Darryl D.) Finite-dimensionality in the laser equations in the good cavity limit. *Phys. Lett. A* 129 (1988), no. 5–6, 310–316. (K. Wódkiewicz) **89k:82110** 81K05
- Does, R. J. M. M.** (with Helmers, R.; Klaassen, C. A. J.) On the Edgeworth expansion for the sum of a function of uniform spacings. *J. Statist. Plann. Inference* 17 (1987), no. 2, 149–157. (J. A. Melamed) **89a:62047** 62E20 (60F05, 62G30)
- Doets, Kees** On  $n$ -equivalence of binary trees. *Notre Dame J. Formal Logic* 28 (1987), no. 2, 238–243. (Summary) **89a:03069** 03C65



- Dogaru, O. C.** La résolution des systèmes algébriques linéaires par l'inverse généralisée d'une matrice. [The solution of linear algebraic systems by the generalized inverse of a matrix] *An. Univ. Timişoara Ser. Ştiinţ. Mat.* **25** (1987), no. 3, 31–47. (L. Berg) **89f:65036** 65F20 (15A09)
- Dǎ Hǎng Tân** Two fixed point theorems of Krasnoselski type. *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 4, 397–400. (Summary) **89d:54034** 54H25 (47H10)
- Dai, Hideo** (with Kajimoto, Hiroshi) The first eigenvalue of the Laplacian on a certain generalized flag manifold. *Hiroshima Math. J.* **17** (1987), no. 3, 505–511. (H. D. Fegan) **89f:58134** 58G25
- Nonlinear equations on a Lie group. *Hiroshima Math. J.* **17** (1987), no. 3, 535–560. (Basilis C. Xanthopoulos) **89e:58019** 58D07 (58D30, 83C20, 83C40)
- (with Matsumoto, Yukio; Matsumoto, Takao) An explicit formula of the metric on the moduli space of BPST-instantons over  $S^4$ . *A Rte of topology*, 543–556, *Academic Press, Boston, MA*, 1988. (Mitsuhito Itoh) **89f:53044** 53C05 (58D99, 58E15)
- Dai, Hirofumi** Morphogenesis and cell specification at embryonic stage; theoretical analysis on mosaic eggs. *Science on form* (Sakura, 1985), 371–378, *Reidel, Dordrecht-Boston, MA*, 1987. (see **89g:82013**) **92A09**
- Dai, Shinji** (with Sato, Shunsuke) Regulation of differentiation in a population of cells interacting through a common pool. *J. Math. Biol.* **26** (1988), no. 4, 435–454. (Curtis C. Travis) **89j:92038** **92A15**
- Dai, Shun** (with Harada, Norio) Tridiagonal factorization algorithm: a preconditioner for nonsymmetric system solving on vector computers. *J. Inform. Process.* **11** (1987), no. 1, 38–46 (1988). (Summary) **89d:65048** 65F50 (65W05)
- Doichinov, Doichin B.** The parallel axiom and the continuum hypothesis. (Bulgarian) *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* **29**(62) (1987), no. 4, 257–264. (Kosta Došen) **89b:83008** 03A05 (00A25, 01A20, 01A60)
- On completeness of quasi-uniform spaces. *C. R. Acad. Bulgare Sci.* **41** (1988), no. 7, 5–8. (P. Fletcher) **89j:54028** 54E15
- Completeness and completions of quasi-metric spaces. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo* (2) **Suppl. No. 18** (1988), 41–50. (J. C. Oxtoby) **89g:54066** 54E52
- see also *Birthday: Doichinov, Doichin*, **89i:01125**
- Daignon, Jean-Paul** (with Falmagne, Jean-Claude) Knowledge assessment: a set-theoretic framework. *Beiträge zur Begriffsanalyse* (Darmstadt, 1986), 129–140, *Bibliographisches Inst., Mannheim*, 1987. (Fred W. Roush) **89g:92067** 92A25 (00A25, 00A69, 68T30)
- (with Falmagne, Jean-Claude) A class of stochastic procedures for the assessment of knowledge. *British J. Math. Statist. Psych.* **41** (1988), no. 1, 1–23. (R. Theodorescu) **89h:92082** 92A25 (60G99, 60J05, 68T05)
- (with Falmagne, Jean-Claude) A Markovian procedure for assessing the state of a system. *J. Math. Psych.* **32** (1988), no. 3, 232–258. (Chelsea C. White) **89i:90004** 90A05 (92A25)
- Sur les représentations minimales des semiordres et des ordres d'intervalles. (English summary) [On minimal representations of semi-orderings and orderings of intervals] *Math. Sci. Humaines* No. 101 (1988), 49–59, 77. (Peter Wakker) **89j:92080** 92A25 (05C38, 06A99, 90A06)
- Daisy, M.** Files d'attente à rejet différé. (English summary) [Queues with postponements] *Ann. Sci. Univ. Clermont-Ferrand II Probab. Appl.* No. 5 (1986), 73–89. (Walter Warmuth) **89d:60174** 60K25
- Doichinov, D.** see *Doichinov, Doichin B.*
- Doichinov, Doichin** see *Doichinov, Doichin B.*
- Dokova, Rositsa** (with Chobanov, Ivan) Other dynamical "paradoxes". (Bulgarian, English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Méc.* **76** (1982), no. 2, 209–231 (1987). (B. Vujanović) **89e:70006** 70D99 (70E99)
- Doković, Dragomir Ž.** A generalization of Witt's formulae. *J. Algebra* **111** (1987), no. 1, 262–278. (Alfy Abd el Malek) **89i:17005** 17B05 (17B35)
- The exponential image of simple complex Lie groups of exceptional type. *Geom. Dedicata* **27** (1988), no. 1, 101–111. (S. I. Gelfand) **89f:22008** 22E10
- The interior and the exterior of the image of the exponential map in classical Lie groups. *J. Algebra* **112** (1988), no. 1, 90–109. (Andy R. Magid) **89j:22011a** 22E10
- Classification of nilpotent elements in simple exceptional real Lie algebras of inner type and description of their centralizers. *J. Algebra* **112** (1988), no. 2, 503–524. (Gordon E. Brown) **89b:17010** 17B05 (17B25)
- Corrigendum: "The interior and the exterior of the image of the exponential map in classical Lie groups". *J. Algebra* **115** (1988), no. 2, 521. (Andy R. Magid) **89j:22011b** 22E10
- Classification of nilpotent elements in simple real Lie algebras  $E_{6(6)}$  and  $E_{6(-26)}$  and description of their centralizers. *J. Algebra* **116** (1988), no. 1, 196–207. (Sen Qiu) **89k:17022** 17B20 (17B05)
- On some inner derivations of free Lie algebras over commutative rings. *J. Algebra* **119** (1988), no. 1, 233–245. (Ernest Stitzinger) **89k:17037** 17B65
- Presentations of some finite simple groups. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 2, 143–168. (Gerard M. Enright) **89k:20023** 20D08 (20F05)
- (with Richards, Mark P.) On singular values and similarity classes of matrices. *Linear Algebra Appl.* **110** (1988), 1–28. (Shao Kuan Li) **89h:15014** 15A18
- Dokovski, P. D.** (with Vasileva, N. M.; Prevalska, K. G.) A method for solving systems of linear equations. (Bulgarian, English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prirochna Mat.* **22** (1986), no. 4, 221–225 (1987). (Summary) **89g:65027** 65F05
- Dokshovich, A. I.** Solutions in closed form of equations of motion of the Kovalevskaya top. (Russian) *Prikl. Mat. Mekh.* **52** (1988), no. 4, 573–578. (From the summary) **89g:70007** 70E15
- Doksum, Kjell A.** (with Dąbrowska, Dorota M.) Estimates and confidence intervals for median and mean life in the proportional hazard model. *Biometrika* **74** (1987), no. 4, 799–807. (M. Hušková) **89a:62208** 62N05 (62F10, 62F25)
- (with Dąbrowska, Dorota M.) Estimation and testing in a two-sample generalized odds-rate model. *J. Amer. Statist. Assoc.* **83** (1988), no. 403, 744–749. (A. P. Basu) **89j:62050** 62G05
- Doktorov, E. V.** "Hidden" symmetry of the self-duality equations for static axially symmetric gauge fields. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jurmala, 1985), 341–346, "Nauka", Moscow, 1986. (see **89d:81001**) **81E13** (58G35)
- (with Milovanov, M. V.) On a connection between Einstein-Maxwell equations and self-duality equations for gauge fields. (Russian, English summary) *Teoret. Mat. Fiz.* **75** (1988), no. 3, 388–395; translated in *Theoret. and Math. Phys.* **75** (1988), no. 3, 599–604. (Sergey Merkulov) **89k:83007** 83C05 (81E13, 81E20)
- Dokuchaev, N. G.** Transversality conditions for the stochastic maximum principle. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1266–1269, 1287. (Jia Gang Wang) **89h:49022** 49B60 (60H10, 93E20)
- Dolan, B. P.** (with Tchrakian, D. H.) New Lagrangians for bosonic m-branes with vanishing cosmological constant. *Phys. Lett. B* **202** (1988), no. 2, 211–216. (V. P. Akulov) **89i:81087** 81E20 (53C80, 81D20, 81E30, 83E30)
- Dolan, J. M.** (with Gilman, A. F.; Manickam, S.) A generalization of Everett's result on the Collatz  $3x + 1$  problem. *Adv. in Appl. Math.* **8** (1987), no. 4, 405–409. (D. H. Lehmer) **89a:11018** 11A99 (11B83)
- Dolbeeva, S. F.** A method for calculating the eigenvalues of the Mathieu equation. (Russian) *Mathematical physics* (Russian), 157–160, 190, *Moskov. Gos. Ped. Inst., Moscow*, 1986. (W. S. Loud) **89b:34066** 34B30 (34C25, 65L15)
- Dolbilin, N. P.** A characteristic of lattices and the inhomogeneous Minkowski problem. (Russian) *Studia Sci. Math. Hungar.* **22** (1987), no. 1–4, 107–113. (Béla Uhrin) **89b:11058** 11H50 (52A43)
- (with Bárány, I.) A stability property of the densest circle packing. *Monatsh. Math.* **106** (1988), no. 2, 107–114. (R. Blind) **89j:52011** 52A45
- (with Shtan'ko, M. A.; Shtogrin, M. I.) Problem of the parametrization of cycles modulo 2 in a three-dimensional cubic lattice. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **52** (1988), no. 2, 355–377, 447; translated in *Math. USSR-Izv.* **32** (1989), no. 2, 359–383. (Béla Uhrin) **89j:52013** 52A45
- Dolby, James L.** (with Tukey, John W.) ★ The statistics CumIndex. The Information Access Series, 1. *The R & D Press, Los Altos, CA*, 1973. xviii+498 pp. ISBN 0-88274-000-8 (From the introduction) **89a:62001a** 62-00 (00A15, 00A20)
- capuzzo-Dolcetta, I.** see *Capuzzo-Dolcetta, I.*
- Dolcetti, A.** (with Pareschi, Giuseppe) On linearly normal space curves. *Math. Z.* **198** (1988), no. 1, 73–82. (Rosa M. Miró-Roig) **89d:14037** 14H10 (14H45, 14H50)
- Dold, Albrecht** Nullhomologous words in free groups which are not nullhomologous in any proper subgroup. *Arch. Math. (Basel)* **50** (1988), no. 6, 564–569. (Stephen J. Pride) **89f:20035** 20E05 (57M05)
- Parametrized Borsuk-Ulam theorems. *Comment. Math. Helv.* **63** (1988), no. 2, 275–285. (Helga Schirmer) **89h:55001** 55M20 (55R25, 55R91)
- Dold, J. W.** Analysis of thermal runaway in the ignition process. *SIAM J. Appl. Math.* **49** (1989), no. 2, 459–480. (Summary) **89m:80011** 80A25 (35K57)
- Dolecki, Szymon** (with Guilleme, Jean; Lignola, Maria Beatrice; Malivert, Christian) Méthode des  $\Gamma$ -inégalités. (English summary) [The method of  $\Gamma$ -inequalities] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 12, 659–662. (U. D'Ambrosio) **89m:49014** 49A29 (49A50)
- Dolev, Danny** (with Broder, Andrei; Fischer, Michael) Efficient fault-tolerant routings in networks. *Inform. and Comput.* **75** (1987), no. 1, 52–64. (Joseph Y. Halpern) **89f:68007** 68M10 (68R10, 90B10, 94C15)
- (with Siegel, Alan) Some geometry for general river routing. *SIAM J. Comput.* **17** (1988), no. 3, 583–605. (Takao Nishizeki) **89h:68073** 68Q35 (05C35, 68R10)
- Dolezal, Jaroslav** Optimal control discrete-time systems. *System modelling and optimization* (Tokyo, 1987), 22–28, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (see **89f:00029**) **93C55** (49Bxx, 93-02)
- (with Hrabá, T.) On the choice of parameters in mathematical models of immunological tolerance. *System modelling and optimization* (Tokyo, 1987), 624–631, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (see **89f:00029**) **92A07**
- On-line optimal control of nonlinear systems by singular perturbation techniques. *Systems analysis and simulation 1988, I* (Berlin, 1988), 259–262, *Math. Res.*, 46, Akademie-Verlag, Berlin, 1988. (see **89g:00018**) **93C10** (93B27)
- Dolezal, Václav** Generalized solutions of semistate equations and stability. *Circuits Systems Signal Process.* **5** (1986), no. 4, 391–403. (Masao Ikeda) **89a:34005** 34A10 (34A08, 34D20)
- Dolgachev, Igor V.** Rationality of fields of invariants. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 3–16, *Proc. Sympos. Pure Math.*, 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (P. E. Newstead) **89b:14064** 14J30 (14D25, 14J35, 14M20, 20G05)
- Dolgarev, A. I.** LM-spaces. (Russian) *Riemannian spaces and methods of the theory of elliptic differential equations* (Russian), 8–25, *Leningrad. Gos. Ped. Inst., Leningrad*, 1986. (V. Oproiu) **89a:51005** 51A10
- EM-spaces. (Russian) *Investigations in the theory of surfaces in manifolds with curvature of constant sign* (Russian), 17–27, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Gr. Stanilov) **89h:53053** 53A99
- Dolgii, Yu. F.** Spectral properties of the operator of inner superposition. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 11, 66–69; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 11, 105–108. (From the text) **89m:47023** 47B38 (47A10)
- Dolgikh, V. F.** On attaining the minimal value of the functional  $M(F)$  for a family of tubes with a fixed boundary. (Russian) *Riemannian spaces and methods of the theory of elliptic differential equations* (Russian), 25–29, *Leningrad. Gos. Ped. Inst., Leningrad*, 1986. (Fulga Pop) **89b:53109** 53C65
- Dolgoplatov, V. G.** Spectral summability of functions of Sobolev classes. (Russian) *Application of functional analysis in approximation theory* (Russian), 28–37, *Kalinin. Gos. Univ., Kalinin*, 1987. (H. Triebel) **89e:46036** 46E35 (35P05, 47F05)
- Dolgopolar, A. S.** A search problem that is connected with coding theory. (Russian, English summary) *Kibernetika (Kiev)* **1988**, no. 6, 125–126, 136. (Summary) **89m:90090** 90B40 (94A24)
- Sequential decoding in a channel with orthographic errors. (Russian) *Problemy Peredachi Informatsii* **24** (1988), no. 1, 25–32; translated in *Problems Inform. Transmission* **24** (1988), no. 1, 19–24. (Petr Němec) **89f:94029** 94B35
- Dolgov, A. D.** (with Khrilovich, I. B.) Does a static solution exist for a gravitating planar wall? *Gen. Relativity Gravitation* **21** (1989), no. 1, 13–16. (Nora Bretón Báez) **89m:83007** 83C05
- Dolinszky, T.** A new WKB approach without connecting problem. *Phys. Lett. A* **132** (1988), no. 2–3, 69–71. (Summary) **89j:81040** 81C15
- D'Olive, J. C.** (with Torres, Manuel) The Weyl ordering and path integrals in curved spaces. *Path summation: achievements and goals* (Trieste, 1987), 481–497, *World Sci. Publishing, Singapore*, 1988. (Summary) **89m:81055** 81C35 (58D30)

- (with Torres, Manuel) The canonical formalism and path integrals in curved spaces. *J. Phys. A* 21 (1988), no. 16, 3355–3363. (Summary) **89f:81032** 81C35 (81D07)
- Dolk, Daniel R.** Relational data management and modeling systems: a tutorial. *Mathematical models for decision support (Val d'Isère, 1987)*, 323–345, NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 48, Springer, Berlin-New York, 1988. (see **89g:90136**) 68P15
- Dollinger, R.** (with Ursu, I.; Pop, G.; Demco, D. E.; Gligor, T. D.) Methods for obtaining tomographic images using techniques of transmission, emission and magnetic resonance. I. Convolution method. (Romanian. English summary) *Stud. Cerc. Fiz.* 39 (1987), no. 10, 909–929. (Summary) **89f:92009** 92A07
- (with Ursu, I.; Pop, G.; Demco, D. E.; Gligor, T. D.) Methods for obtaining tomographic images using techniques of transmission, emission and magnetic resonance. II. Fourier method and iterative methods. (Romanian. English summary) *Stud. Cerc. Fiz.* 39 (1987), no. 10, 931–946. (Summary) **89f:92010** 92A07
- Dolnik, M.** (with Schreiber, I.; Choc, P.; Marek, M.) Resonance behaviour in two-parameter families of periodically forced oscillators. *Phys. Lett. A* 128 (1988), no. 1–2, 66–70. (Summary) **89c:70053** 70K30 (34C15, 34C25, 58F14)
- Dolnikov, V. L.** A property of a graph of diameters in  $R^3$ . (Russian) *Qualitative and approximate methods for investigating operator equations (Russian)*, 22–26, 141, Yaroslav. Gos. Univ., Yaroslavl, 1986. (Bernd Kind) **89d:52020** 52A35 (05C38)
- The Jung constant in  $l^p$ . (Russian) *Mat. Zametki* 42 (1987), no. 4, 519–526, 622. (J. Daneš) **89g:46028** 46B20 (52A40)
- A remark on the separability of sets by a hyperplane. (Russian) *Ukrain. Mat. Zh.* 39 (1987), no. 6, 773–776, 815. (Marek Lassak) **89a:52008** 52A20 (46N05)
- A combinatorial inequality. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 3, 53–58, 219; translated in *Siberian Math. J.* 29 (1988), no. 3, 375–379. (Konrad Engel) **89k:05079** 05C65 (05C35, 05C70)
- Generalized transversals of families of sets in  $R^n$  and the connections between the Helly theorem and the Borsuk theorem. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 4, 777–780; translated in *Soviet Math. Dokl.* 36 (1988), no. 3, 519–522. (I. Ya. Gusak) **89b:52021** 52A40 (52A35)
- Dô Long Vân** (with Phan Đình Diệu; Phạm Hữu Sách; Trần Vũ Thiệu; Đinh Thế Lục) Foreword. *Essays on nonlinear analysis and optimization problems*, 5–7, Nat. Center Sci. Res., Inst. Math., Hanoi, 1987. (Editors) **89j:01062** 01A70
- (with Subramanian, K. G.; Siromoney, Rani) On ambiguity of DTOL systems. *Foundations of software technology and theoretical computer science (Pune, 1987)*, 3–14, *Lecture Notes in Comput. Sci.*, 287, Springer, Berlin-New York, 1987. (Summary) **89a:68128** 68Q45
- Dolph, C. L.** (with Howland, James S.) Dedication. *J. Math. Anal. Appl.* 127 (1987), no. 2, 298–311. (Editors) **89c:01055** 01A70
- Doltsinis, I. St.** (with Luginand, J.; Nölting, S.) Some developments in the numerical simulation of metal forming processes. *Computational plasticity, Part I, II (Barcelona, 1987)*, 875–899, Pineridge, Swansea, 1987. (see **89c:73030**) 73-08 (73E99)
- Dolveck-Guilpard, B.** Practical construction of potentials corresponding to exact rational reflection coefficients. *Some topics on inverse problems (Montpellier, 1987)*, 341–368, *World Sci. Publishing, Singapore*, 1988. (see **89f:35007**) 81F05 (34B25)
- (with Sabatier, Pierre C.) On modeling discontinuous media. One-dimensional approximations. *J. Math. Phys.* 29 (1988), no. 4, 861–868. (I. Kay) **89b:81026** 81C05 (34A45, 78A45)
- Dolzhenko, E. P.** (with Vitushkin, A. G.; Gonchar, A. A.; Napalkov, V. V.; Sedletsii, A. M.; Stechkin, S. B.; Frolov, Yu. N.) Aleksei Fedorovich Leont'ev. (Russian) *Mat. Zametki* 42 (1987), no. 4, 483–493. (Editors) **89b:01065** 01A70
- (with Danchenko, V. I.) The mapping of sets of finite  $\alpha$ -measure by means of rational functions. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 51 (1987), no. 6, 1309–1321, 1359; translated in *Math. USSR-Izv.* 31 (1988), no. 3, 621–633. (L. A. Aksent'ev) **89f:30014** 30C35 (30E10)
- Döman, D.** (with Broere, I.; Ridley, J. N.) The clique numbers and chromatic numbers of certain Paley graphs. *Quaestiones Math.* 11 (1988), no. 1, 91–93. (Yair Caro) **89b:05082** 05C15 (05C55)
- Domanskii, E. N.** The equivalence of the convergence of a regularizing algorithm to the existence of a solution of an ill-posed problem. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 5 (257), 101–118. (S. N. Krachkovskii) **89f:47016** 47A50 (45A05, 65J10)
- (with Kadets, V. M.) On the basis regularizability of inverse operators. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 5, 104–108, 238; translated in *Siberian Math. J.* 29 (1988), no. 5, 771–774. (S. Kurepa) **89f:47002** 47A05 (46B15, 47A50)
- Domanski, V. K.** Stochastic games. (Russian) *Mathematical problems in cybernetics*, No. 1 (Russian), 26–49, “Nauka”, Moscow, 1988. (M. S. Shit'man) **89b:90271** 90D15
- Domany, Eytan** Neural networks: a biased overview. New directions in statistical mechanics (Santa Barbara, CA, 1987). *J. Statist. Phys.* 51 (1988), no. 5–6, 743–775. (see **89c:82001**) 68Q75 (68U99)
- (with Kandel, Daniel; Ron, Dorit; Brandt, Achi; Loh, Eugene, Jr.) Simulations without critical slowing down. *Phys. Rev. Lett.* 60 (1988), no. 16, 1591–1594. (Summary) **89b:82007** 82-08 (82A68)
- Domaradzki, J. Andrzej** (with Orszag, Steven A.) Numerical solutions of the direct interaction approximation equations for anisotropic turbulence. *J. Sci. Comput.* 2 (1987), no. 3, 227–248. (Summary) **89c:76070** 76F10 (65P05, 76-08, 76U05)
- Domarkas, Aleksas** (with Ivanauskas, Feliksas; Sheibak, Mirosław) A mixed problem for a nonlinear nonstationary system of equations of Schrödinger type. (Russian. English and Lithuanian summaries) *Diferencial'nye Uravneniya i Primeneniye*. No. 40 (1987), 23–33. (Summary) **89b:35049** 35J65
- (with Ivanauskas, Feliksas) Solvability of a mixed problem for a nonlinear system of equations of Schrödinger type. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* 27 (1987), no. 3, 455–465. (M. Victor Wickerhauser) **89c:35130** 35Q20
- (with Ivanauskas, Feliksas) Existence of solutions of nonlinear equations of Schrödinger type. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* 27 (1987), no. 3, 466–480. (M. Victor Wickerhauser) **89f:35183** 35Q20
- Domb, C.** see *Phase transitions and critical phenomena*, **89g:82024**
- Dombre, T.** (with Combesot, R.; Hakim, V.; Pomeau, Y.; Pumir, A.) Analytic theory of the Saffman-Taylor fingers. *Phys. Rev. A* (3) 37 (1988), no. 4, 1270–1283. (Summary) **89c:76103** 76T05 (76B45)
- Dombrowski, Joanne** Spectral measures, orthogonal polynomials, and absolute continuity. *SIAM J. Math. Anal.* 19 (1988), no. 4, 939–943. (Summary) **89g:47039** 47B39 (42C05)
- Domenech, G.** (with Castagnino, Mario; Noriega, R. J.; Schifini, C. G.) On a Weyl-type theorem for higher-order Lagrangians. *J. Math. Phys.* 28 (1987), no. 8, 1854–1857. (R. J. McKellar) **89a:83044** 83D05 (83C47)
- (with Levinas, M. L.; Umerez, N.) Low energy effects in supergravity. *SILARG, VI (Rio de Janeiro, 1987)*, 349–355, *World Sci. Publishing, Singapore*, 1988. (Summary) **89c:83082** 83E50 (81G25, 83C10)
- (with Levinas, M. L.; Sánchez, Norma) Quantum field theory and the antipodal identification of space time. *Internat. J. Modern Phys. A* 3 (1988), no. 11, 2567–2588. (Yisong Yang) **89k:81099** 81E20 (83C47)
- (with Castagnino, Mario; Levinas, M. L.; Umerez, N.) Supersymmetric couplings and trajectories in  $N = 1$  supergravity. *Classical Quantum Gravity* 6 (1989), no. 1, L1–L5. (Summary) **89j:83086** 83E50
- Dormergue, Michel** (with Mathieu, Yves) Chirurgies de Dehn de pente  $\pm 1$  sur certains nœuds dans les 3-variétés. [Dehn surgeries of slope  $\pm 1$  on certain knots in 3-manifolds] *Math. Ann.* 280 (1988), no. 3, 501–508. (V. G. Turaev) **89g:57008** 57M25
- Domingues, Hygino H.** Some applications of umbral algebra to combinatorics. (Portuguese. English summary) *Rev. Mat. Estatist.* 3 (1985), 39–44. (Summary) **89h:05010** 05A40
- Dominguez, Demetrio** Sur les classes caractéristiques des sous-feuilletages. (English summary) [On the characteristic classes of subfoliations] *Publ. Res. Inst. Math. Sci.* 23 (1987), no. 5, 813–840. (Pedro Martínez Gadea) **89d:57045** 57R32 (57R30)
- Classes caractéristiques non triviales des feuilles de sous-feuilletages localement homogènes. (English summary) [Nontrivial characteristic classes of the leaves of locally subhomogeneous subfoliations] *Geom. Dedicata* 28 (1988), no. 2, 229–249. (I. Vaisman) **89m:57030** 57R32
- Classes caractéristiques non triviales de sous-feuilletages localement homogènes. [Nontrivial characteristic classes of locally homogeneous subfoliations] *Kodai Math. J.* 11 (1988), no. 2, 177–204. (Claude Roger) **89j:57026** 57R32
- Dominguez, E.** see **Dominguez Murillo, Eladio**
- Dominguez, Eladio** see **Dominguez Murillo, Eladio**
- Dominguez, Enrique** see **Outerelo Dominguez, Enrique**
- ramos Dominguez, Ma. T.** see **Ramos Dominguez, Ma. T.**
- Dominguez Murillo, Eladio** (with Ayala Gómez, Rafael; Quintero, A.) A geometric proof of Hurewicz's theorem. *An. Stiint. Univ. “Al. I. Cuza” Iași Sect. I a Mat. (N.S.)* 33 (1987), no. 3, 255–258. (Jack Weinstein) **89d:55003** 55N22 (55Q05)
- An extension of PL-cobordism. *Kobe J. Math.* 4 (1987), no. 1, 15–18. (Summary) **89f:57036** 57Q60
- (with Ayala Gómez, Rafael; Quintero, A.) Exponential law for uniformly continuous proper maps. *Publ. Mat.* 32 (1988), no. 1, 123–127. (Donald W. Kahn) **89c:54027** 54C35
- de Dominicis, Rodolfo** see **De Dominicis, Rodolfo**
- Dominique, C. René** A note on increasing returns to advertising. *Econom. Lett.* 28 (1988), no. 4, 381–385. (Not in MR) 90A07
- Domke, Gayla S.** (with Hedetniemi, S. T.; Laskar, R.; Allan, Robert) Generalized packings and coverings of graphs. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 259–270. (J. W. Moon) **89i:05212** 05C70
- Dommsch, Gerlinde** On the existence of Lipschitz-continuous and differentiable selections for multivalued functions. *Parametric optimization and related topics (Pau, 1985)*, 60–73, *Math. Res.*, 35, Akademie-Verlag, Berlin, 1987. (Michel Théra) **89b:90221** 90C31 (34A60, 49A50, 54C65, 90C48)
- Domokos, G.** Loop algebras and composite structures. *International Workshop on Superstrings, Cosmology, Composite Structures (College Park, MD, 1987)*, 456–461, *World Sci. Publishing, Singapore*, 1987. (see **89a:81005**) 17C65 (81E30, 81G20)
- (with Kövesi-Domokos, S.; Zoltani, Csaba K.) Boltzmann equation approach to two phase flow turbulence. *Phys. A* 155 (1989), no. 1, 105–115. (Summary) **89m:76067** 76T05 (76F99, 82A40)
- see also *Proceedings: Johns Hopkins Workshop on Current Problems in Particle Theory*, **89b:81006**
- kövesi-Domokos, S.** see **Kövesi-Domokos, S.**
- Domoshnitskii, A. I.** On the problem of the conditions for nonvanishing of the Wronskian for second-order equations with delay. (Russian) *Boundary value problems (Russian)*, 57–60, 195, *Perm. Politekh. Inst., Perm*, 1983. (see **89c:00008**) 34K05
- On the problem of the asymptotic properties of the solutions of second-order linear differential equations. (Russian) *Boundary value problems (Russian)*, 34–38, 155, *Perm. Politekh. Inst., Perm*, 1984. (see **89b:00008**) 34E05 (34A30)
- Sign-constancy of the Cauchy function and the stability of a linear equation of neutral type with respect to the right-hand side. (Russian) *Boundary value problems (Russian)*, 44–48, iv–v, *Perm. Politekh. Inst., Perm*, 1986. (see **89c:00009**) 34K20
- Dömbsi, P.** Turing machines with time function. *Papers on automata and languages, VIII*, 1–12, *DM, 86-3, Karl Marx Univ. Econom., Budapest*, 1986. (From the introduction) **89g:68010** 68Q05 (03D10)
- (with Ésik, Z.) On homomorphic realization of automata with  $\alpha_0$ -products. *Papers on automata and languages, VIII*, 63–97, *DM, 86-3, Karl Marx Univ. Econom., Budapest*, 1986. (Eckehart Hotzel) **89g:68049** 68Q70 (20M35)
- (with Ésik, Z.) On homomorphic simulation of automata by  $\nu_1$ -products. *Papers on automata and languages, IX*, 91–112, *DM, 87-2, Karl Marx Univ. Econom., Budapest*, 1987. (Ranjana Chaudhuri) **89c:68090** 68Q70
- (with Ésik, Z.) On the hierarchy of  $\nu_1$ -products of automata. *Acta Cybernet.* 8 (1988), no. 3, 253–257. (I. Péák) **89k:68103** 68Q70
- Domrachev, V. I.** Some Chebyshev systems. (Russian) *Application of functional analysis, in approximation theory (Russian)*, 18–23, 143, *Kalinin. Gos. Univ., Kalinin*, 1984. (see **89c:00006**) 41A50
- Domshlak, Yu. I.** (with Aliev, A. I.) Oscillation properties of solutions of first-order differential equations with retarded argument and with coefficients that do not preserve the sign. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 4, 19–24 (1988). (Binggen Zhang) **89j:34095** 34K15
- (with Aliev, A. I.) On oscillatory properties of the first order differential equations with one or two retarded arguments. *Hiroshima Math. J.* 18 (1988), no. 1, 31–46. (J. Jarník)



- 89d:34110 34K15 (34C15)
- Donald, Bruce (with Canny, John) Simplified Voronoi diagrams. Third ACM Symposium on Computational Geometry (Waterloo, Ont., 1987). *Discrete Comput. Geom.* **3** (1988), no. 3, 219–236. (Summary) 89c:68092 68U05 (52–04)
- Donald, Matthew J. Free energy and the relative entropy. *J. Statist. Phys.* **49** (1987), no. 1–2, 81–87. (Ola Bratteli) 89i:82006 82A05 (46L60, 82A15, 82A30)
- Donaldson, David (with Roemer, John E.) Social choice in economic environments with dimensional variation. *Soc. Choice Welf.* **4** (1987), no. 4, 253–276. (Prasanta K. Pattanaik) 89f:90009 90A08
- (with Blackorby, Charles) Money metric utility: a harmless normalization? *J. Econom. Theory* **46** (1988), no. 1, 120–129. (Summary) 89g:90034 90A10
- (with Weymark, John A.) Social choice in economic environments. *J. Econom. Theory* **46** (1988), no. 2, 291–308. (Mark A. Alzerman) 89m:90009 90A08
- Donaldson, Simon The geometry of 4-manifolds. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 43–54. *Amer. Math. Soc., Providence, RI*, 1987. (Ronald J. Stern) 89d:57002 57–02 (32J15, 57N13, 57R35)
- see also Atiyah, Michael, 89d:01055 and Margerin, Christophe, 89c:58034
- Donaldson, Thomas (with Doty, Karl; Engle, Steven W.; Larson, Robert E.; O'Reilly, John G.; Tandjung, Susanto) Innovative architectures for dense multi-microprocessor computers. *Comput. & Structures* **30** (1988), no. 1–2, 347–355. (Not in MR) 68M99 (68N99)
- Donato, A. (with Oliveri, F.) Instability conditions for symmetric quasilinear hyperbolic systems. *Atti Sem. Mat. Fis. Univ. Modena* **35** (1987), no. 1, 191–203. (L. Hsiao) 89c:35088 35L65
- (with Ames, William F.) On the evolution of weak discontinuities in a state characterized by invariant solutions. *Internat. J. Non-Linear Mech.* **23** (1988), no. 2, 167–174. (G. A. Narioli) 89c:35141 35L67 (35A30, 35L60, 73D40, 76L05)
- (with Oliveri, F.) On nonlinear plane vibration of a moving threadline. (Italian summary) *Z. Angew. Math. Phys.* **39** (1988), no. 3, 367–375. (G. A. Narioli) 89c:73027 73K05 (35L67, 73D40)
- de Donato, O. see De Donato, O.
- Donato, Patrizia (with Giachetti, Daniela) Unilateral problems with quadratic growth in unbounded domains. (Italian summary) *Boll. Un. Mat. Ital. A* (6) **5** (1986), no. 3, 361–369. (H. Böttger (Zbl 602:49008)) 89a:35099 35J85
- (with De Arcangelis, Riccardo) On the convergence of Laplace-Beltrami operators associated to quasiregular mappings. *Studia Math.* **86** (1987), no. 3, 189–204. (Matti Vuorinen) 89f:30038 30C60 (35J99, 46E35)
- (with De Arcangelis, Riccardo) Convergence of minima of integral functionals and multiplicative perturbations of the integrands. *Ann. Mat. Pura Appl.* (4) **150** (1988), 341–362. (N. Pacchiarotti) 89g:49019 49A50
- (with Cioranescu, Doina) Homogénéisation du problème de Neumann non homogène dans des ouvertures perforées. (English summary) [Homogenization of the nonhomogeneous Neumann problem in perforated open sets] *Asymptotic Anal.* **1** (1988), no. 2, 115–138. (Wei Tao Zhang) 89j:35021 35B25 (35B20, 35J99)
- (with Conca, Carlos) Nonhomogeneous Neumann problems in domains with small holes. (French summary) *RAIRO Modél. Math. Anal. Numér.* **22** (1988), no. 4, 561–607. (Dietrich Gohde) 89m:35023 35B25 (35B40, 35J05, 73C40)
- Donato, Santi A nonhomogeneous problem for a class of singular parabolic equations. (Italian) *Matematiche (Clanania)* **38** (1983), no. 1–2, 83–94 (1987). (Ester Giarrusso) 89c:35065 35K20
- Doncarli, C. (with Georgi, L.) Lissage-détection de signaux non stationnaires. (English summary) [Smoothing and detection of nonstationary signals] *Analysis and optimization of systems (Antibes, 1988)*, 895–906. *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see 89c:00031) 93E14 (93E10, 93E11, 94A05)
- Donchev, A. L. see Donchev, Asen L.
- Donchev, Doncho R. Coordinated trajectory planning for two manipulation robots. *Foundations of kinematics, dynamics, and control of manipulation-robots, Part 1* (Schwerin, 1986), 55–65. *Rep. MECH*, 87–3, Akad. Wiss. DDR, Karl-Marx-Stadt, 1987. (Introduction) 89a:70004 70B15
- Donchev, Zanko D. Constructed and relaxed strategies in distributed parameter systems. (Bulgarian summary) *Mathematics and mathematical education (Bulgarian)* (Sunny Beach (Slivnitshe Bryag), 1987), 409–413. *Bulgar. Acad. Sci., Sofia*, 1987. (N. U. Ahmed) 89c:93125 93C20 (49A27, 49D20)
- Donda, Arno see Dictionary: Economics, 89f:90001
- Donder, Hans-Dieter (with Koepke, Peter; Levinski, Jean-Pierre) Some stationary subsets of  $\mathcal{P}(\lambda)$ . *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 1000–1004. (Christopher C. Leary) 89d:03048 03E55 (03E05, 03E35)
- de Donder, Théophile see De Donder, Théophile
- Donda, J. (with Quartapelle, L.; Selmin, V.) An analysis of time discretization in the finite element solution of hyperbolic problems. *J. Comput. Phys.* **70** (1987), no. 2, 463–499. (Jacques Couot) 89g:65140 65N30 (76–08)
- (with Selmin, V.; Quartapelle, L.) Recent developments of the Taylor-Galerkin method for the numerical solution of hyperbolic problems. *Numerical methods for fluid dynamics, III (Oxford, 1988)*, 171–185. *Inst. Math. Appl. Conf. Ser. New Ser.*, 17, Oxford Univ. Press, New York, 1988. (see 89f:76004) 65M60 (76–08)
- (with Laval, H.) Nodal partition of explicit finite element methods for unsteady diffusion problems. *Comput. Methods Appl. Mech. Engrg.* **68** (1988), no. 2, 189–204. (Summary) 89c:80001 80–08 (65M60, 80A20)
- Doner, John (with Hodges, Wilfrid) Alfred Tarski and decidable theories. *J. Symbolic Logic* **53** (1988), no. 1, 20–35. (J. M. Plotkin (Zbl 647:03001)) 89j:01048 01A60 (01A70, 03–03, 03B25)
- Donets, G. A. Graphs defined by an analytic method. (Russian) *Theory of optimal decisions (Russian)*, 20–27, ii. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (Pavel Tomasta) 89d:05161 05C99
- Donev, A. N. (with Atkinson, A. C.) An adjustment algorithm for the construction of exact D-optimum experimental designs. *Technometrics* **30** (1988), no. 4, 429–433. (Not in MR) 62K05
- Donev, S. G. ★ Geodesic vector fields on Minkowski space-time and (3 + 1)-solitary waves. With a Russian summary. *Сообщения Объединенного Института Ядерных Исследований. Дубна* [Communications of the Joint Institute for Nuclear Research. Dubna], E2-88-107. *Joint Inst. Nuclear Res., Dubna*, 1988. 8 pp. (J. R. Vanstone) 89g:53028 53B30 (35L65, 83A05)
- Autoclosed differential forms and (3 + 1)-solitary waves. (Russian summary) *Bulgar. J. Phys.* **15** (1988), no. 5, 419–426. (C. S. Sharma) 89k:58007 58A10 (53C50, 53C80)
- Donev, R. A. (with Bingham, N. H.) On higher-dimensional analogues of the arc-sine law. *J. Appl. Probab.* **25** (1988), no. 1, 120–131. (D. V. Gusak) 89g:60249 60J65
- A large deviation local limit theorem. *Math. Proc. Cambridge Philos. Soc.* **105** (1989), no. 3, 575–577. (Jean Deshayes) 89m:60061 60F10
- On the asymptotic behaviour of first passage times for transient random walk. *Probab. Theory Related Fields* **81** (1989), no. 2, 239–246. (Paul Embrechts) 89m:60157 60J15
- chu van Dong see Chu Van Dong
- Dong, Bing Hua There are enough nonquadratic forcing strictly convex functionals in a real Hilbert space. (Chinese. English summary) *Comm. Appl. Math. Comput.* **2** (1988), no. 1, 68–73. (H. R. Shen) 89k:90128 90C25 (49A50)
- Dong, Chu Van see Chu Van Dong
- Dong, Chun Fei (with Liu, Wei Guo) The shortest path problem on a class of variable weighted networks. (Chinese) *Chinese J. Oper. Res.* **3** (1984), no. 1, 61–62. (Not in MR) 90B10
- (with Dong, Wei Quan; Shao, Jia Yu) On the exponents of primitive digraphs with the shortest elementary circuit length  $s$ . *Linear Algebra Appl.* **104** (1988), 1–27. (B. Zelinka) 89i:05127 05C20 (05C38)
- Dong, Guang Chang (with Qi, Min You) Influence of Tricomi's mathematical work in China. *Mixed type equations*, 105–111. *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) 89b:35107 35M05 (01A60, 01A72)
- Dong, Jin Tian Extension of a differential subordination theorem of Miller and Mocanu. (Chinese) *Heilongjiang Daxue Ziran Kexue Xuebao* **1987**, no. 2, 38–40. (J. S. Hwang) 89a:30020 30C80
- Dong, Kai Zhe A generalization of the Steiner center of curvature problem for an oval. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1988), no. 3, 16–20. (Ji-Ping Sha) 89m:53003 53A04
- Dong, Li Ming (with Wu, Qi Guang) Necessary and sufficient conditions for linear estimators of stochastic regression coefficients and parameters to be admissible under quadratic loss. (Chinese) *Acta Math. Sinica* **31** (1988), no. 2, 145–157. (Chuan Yi Wu) 89g:62101 62J05 (62C15)
- Dong, Lian Ke (with Zhang, Hong Tu) Dynamical conservation laws of incompatible deformation and their application. (Chinese. English summary) *Lanzhou Daxue Xuebao* **23** (1987), no. 3, 31–39. (Summary) 89f:73068 73M15
- Dong, Ming Chai Multi-objective tradeoff and weight selection. (Chinese. English summary) *J. Tsinghua Univ.* **28** (1988), no. 4, 96–105. (Not in MR) 90C31
- Dong, Shuang Wen (with Ding, Hong; Yang, Shu Zi) Some problems in ARMA spectrum estimation. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **16** (1988), no. 3, 43–48. (Not in MR) 62M10 (62M15)
- Dong, Tay Yuh (with Ch'en, Po Hsien) Robust stability analysis of Kalman-Bucy filter under parametric and noise uncertainties. *Internat. J. Control* **48** (1988), no. 6, 2189–2199. (Summary) 89k:93202 93E11 (93E99)
- Dong, Wei Min (with Wong, Felix S.) Interactive fuzzy variables and fuzzy decisions. *Fuzzy Sets and Systems* **29** (1989), no. 1, 1–19. (Summary) 89j:90157 90B50 (03E72)
- Dong, Wei Quan (with Shao, Jia Yu; Dong, Chun Fei) On the exponents of primitive digraphs with the shortest elementary circuit length  $s$ . *Linear Algebra Appl.* **104** (1988), 1–27. (B. Zelinka) 89i:05127 05C20 (05C38)
- Dong, Xue Geng (with Duan, Yi Shi; Liu, Ji Cheng) General covariant energy-momentum conservation law in general spacetime. *Gen. Relativity Gravitation* **20** (1988), no. 5, 485–496. (R. J. McKellar) 89j:83033 83C40 (83D05, 83E10)
- Dong, Xun (with Huang, Wen Zhen; Huang, Bu Yu) A matrix perturbation method in the eigenvalue problem for nonsymmetric systems. (Chinese. English summary) *J. Shanghai Jiaotong Univ.* **22** (1988), no. 2, 15–21, 112. (Man Kam Kwong) 89k:65037 65F15 (15A18)
- Dong, Ying Zhe (with Yao, Yuan) The mathematical thought of Liu Hui. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **13** (1987), no. 4, 99–108. (Summary) 89f:01009 01A25
- Dong, Yu Zi (with Ma, Zhi En; Wang, Er Nian) The bifurcation curves of the system  $E_2^2$  possessing a center of symmetry, saddle points and fine foci. (Chinese. English summary) *Xi'an Jiaotong Daxue Xuebao* **22** (1988), no. 1, 47–54. (Keren Liao) 89k:58210 58F14 (34C05)
- Dong, Ze Qing On decision analysis. (Chinese) *Chinese J. Oper. Res.* **3** (1984), no. 2, 14–22. (Not in MR) 90B50 (90A05)
- (with Liu, Ke) The structure of optimal policies for discounted models. (Chinese) *J. Math. Res. Exposition* **6** (1986), no. 3, 125–134. (Summary) 89g:90220 90C40
- (with Gan, Ying Ai) An elementary method on discounted Markovian decision programming. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 4, part I, 1–6. (Summary) 89h:90250 90C40
- (with Song, Jing Sheng) Continuous time total return Markov decision programming. (Chinese) *Kexue Tongbao (Chinese)* **32** (1987), no. 16, 1201–1205. (Not in MR) 90C40
- (with Song, Jing Sheng) A secondary approach to the discounted model in semi-Markov decision processes. *Kexue Tongbao (English Ed.)* **33** (1988), no. 6, 448–454. (Peter Kocheil) 89m:90162 90C40
- Dong, Zhen Xi On the problem of embedding self-homeomorphisms in continuous flows on two-dimensional manifolds. (Chinese. English summary) *Beijing Daxue Xuebao* **1986**, no. 5, 48–65. (Ding Jun Luo) 89i:58126 58F25 (34C40)
- Dong, Zhi Hua (with Liu, Jian Heng; Shi, Wan Zhong; Ying, Peng Cheng) Pattern of  $E_8$  symmetry breaking in the superstring theory. *Phys. Lett. B* **202** (1988), no. 4, 515–518. (Summary) 89d:81092 81E99 (81D20, 81E30)
- nguyen Dong Anh see Nguyen Dong Anh
- Dongarra, J. J. (with Sorensen, D. C.) A look at the evolution of mathematical software for dense matrix problems over the past fifteen years. *Numerical algorithms for modern parallel computer architectures (Minneapolis, MN, 1986–87)*, 29–36. *IMA Vol. Math. Appl.*, 13, Springer, New York-Berlin, 1988. (see 89j:65093) 65V05
- van Dongen, P. G. J. (with Ernst, M. H.) Scaling solutions of Smolouchowski's coagulation equation. *J. Statist. Phys.* **50** (1988), no. 1–2, 295–329. (Summary) 89h:82065 82A99 (82A25, 92A08)

- Đỗ Ngọc Diệp** On the Langlands type discrete groups. I. The Borel-Serre compactification. *Acta Math. Vietnam.* 12 (1987), no. 1, 41-54. (Joachim Schwermer) **89c:22017** 22E40
- nguyen Dong Yen** see **Nguyen Dong Yen**
- sin Don Ha** see **Sin Don Ha**
- Doni, E. G.** (with Fanidis, Ch.; Bleris, G. L.) The rhombohedral coincidence site lattices. (Russian summary) *Annuaire Univ. Sofia Fac. Phys.* 78 (1984), no. 1, 47-53 (1988). (Not in MR) 20H15 (82A60)
- Donkin, Stephen** On Schur algebras and related algebras. I. *J. Algebra* 104 (1986), no. 2, 310-328. (James E. Humphreys) **89b:20084a** 20G05
- Good filtrations of rational modules for reductive groups. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 69-80, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Shrawan Kumar) **89f:20048** 20G05
- Space groups and groups of prime-power order. VIII. Pro- $p$ -groups of finite coclass and  $p$ -adic Lie algebras. *J. Algebra* 111 (1987), no. 2, 316-342. (Gary L. Walls) **89g:20038** 20D15 (20E18)
- On Schur algebras and related algebras. II. *J. Algebra* 111 (1987), no. 2, 354-364. (James E. Humphreys) **89b:20084b** 20G05 (20C30)
- On conjugating representations and adjoint representations of semisimple groups. *Invent. Math.* 91 (1988), no. 1, 137-145. (James E. Humphreys) **89a:20047** 20G05 (17B10, 22E46)
- Skew modules for reductive groups. *J. Algebra* 113 (1988), no. 2, 465-479. (James E. Humphreys) **89g:20070** 20G05 (20C30)
- Invariants of unipotent radicals. *Math. Z.* 198 (1988), no. 1, 117-125. (James E. Humphreys) **89e:20076** 20G05 (14L30)
- Donnelly, Harold** Essential spectrum and heat kernel. *J. Funct. Anal.* 75 (1987), no. 2, 362-381. (David Gurarie) **89m:58194** 58G11 (35P05)
- (with Fefferman, Charles) Nodal sets of eigenfunctions on Riemannian manifolds. *Invent. Math.* 93 (1988), no. 1, 161-183. (P. Günther) **89m:58207** 58G25 (35B60, 35P05)
- Lower bounds for eigenfunctions on Riemannian manifolds. *Math. Ann.* 279 (1988), no. 4, 653-671. (Robert Brooks) **89g:58205** 58G25 (35P99, 58G99)
- Local index theorem for families. *Michigan Math. J.* 35 (1988), no. 1, 11-20. (From the introduction) **89j:58124** 58G10 (58G11)
- Donnelly, Peter** (with Tavaré, Simon) A genealogical description of the infinitely-many neutral alleles model. *Stochastic methods in biology* (Nagoya, 1985), 27-35, *Lecture Notes in Biomath.*, 70, Springer, Berlin-New York, 1987. (From the introduction) **89e:92023** 92A10
- (with Ball, Frank) Interparticle correlation in death processes with application to variability in compartmental models. *Adv. in Appl. Probab.* 19 (1987), no. 4, 755-766. (Peter Purdum) **89c:60081** 60J20 (60K35, 92A15)
- (with Tavaré, Simon) The population genealogy of the infinitely-many neutral alleles model. *J. Math. Biol.* 25 (1987), no. 4, 381-391. (Reinhard Bürger) **89g:92025** 92A10 (60J70)
- (with Ball, Frank) A unified approach to variability in compartmental models. (French summary) *Biometrics* 44 (1988), no. 3, 685-694. (Summary) **89j:62029** 62E15
- Donnelly, R.** (with Walsh, John) Consolidated approach to two-body electromagnetic scattering. *Phys. Rev. A* (3) 36 (1987), no. 9, 4474-4485. (N. D. Sengupta) **89f:78035** 78A45
- Donnenfeld, Shabtai** (with Besanko, David) The impact of buyers' expectations on entry deterrence. *Econom. Lett.* 26 (1988), no. 4, 375-380. (Summary) **89g:90051** 90A12 (90A05)
- Donninger, Christian** Is it always efficient to be nice? A computer simulation of Axelrod's computer tournament. *Paradoxical effects of social behavior*, 123-134, *Physica, Heidelberg*, 1986. (see **89d:90019**) 90D05
- (with Krämer, Walter) Spatial autocorrelation among errors and the relative efficiency of OLS in the linear regression model. *J. Amer. Statist. Assoc.* 82 (1987), no. 398, 577-579. (A. L. Nagar) **89b:62144** 62J05
- D'Onofrio, Biancamaria** (with Chaperon, Marc) Sur un théorème de Claude Viterbo. (English summary) [On a theorem of Claude Viterbo] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 14, 597-600. (Themistocles M. Rassias) **89e:58045** 58F05 (58F22)
- Donoho, David L.** (with Liu, Richard C.) The "automatic" robustness of minimum distance functionals. *Ann. Statist.* 16 (1988), no. 2, 552-586. (A. K. Md. Ehsanes Saleh) **89i:62051** 62F35
- (with Liu, Richard C.) Pathologies of some minimum distance estimators. *Ann. Statist.* 16 (1988), no. 2, 587-608. (Elvezio Ronchetti) **89e:62032** 62F10 (62F35)
- One-sided inference about functionals of a density. *Ann. Statist.* 16 (1988), no. 4, 1390-1420. (Margaret P. Gessman) **89i:62057** 62G05
- Donovan, P. W.** A criterion for a modular representation to be projective. *J. Algebra* 117 (1988), no. 2, 434-436. (Wolfgang Willems) **89g:20023** 20C20 (18G05)
- Donovan, William F.** Polynomial definition of discrete field point of map of diffusion equation. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 395-422, *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (see **89b:00029**) 65M05
- Donskaya, I. S.** Higher-order interactions in the linear Ising model. (Russian. English summary) *Theoret. Mat. Fiz.* 74 (1988), no. 3, 474-480; translated in *Theoret. and Math. Phys.* 74 (1988), no. 3, 324-328. (M. Lawrence Glasser) **89g:82066** 82A68
- Donskoi, V. I.** Weakly defined problems of linear Boolean programming with a partially defined set of feasible solutions. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 9, 1379-1385, 1438. (Summary) **89k:90009** 90C09
- Dontchev, Asen L.** (with Velov, V. M.) Singular perturbations in linear differential inclusions. I. Convergence of the trajectories. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 4, 9-21 (1987). (T. R. Gichev) **89h:93026a** 93C05 (34E15, 49E10)
- (with Velov, V. M.) Singular perturbations in linear differential inclusions. II. Continuity of the solution set. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 4, 23-33 (1987). (T. R. Gichev) **89h:93026b** 93C05 (34E15, 49E10)
- (with Velov, V. M.) Singular perturbations in linear differential inclusions. III. Continuity of the marginal function. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 4, 35-45 (1987). (T. R. Gichev) **89h:93026c** 93C05 (34E15, 49E10)
- The constrained linear-quadratic optimal control problem. *Mathematics and mathematical education (Bulgarian)* (Sunny Beach (Slivnitsa) Bryag), 1987, 84-89, *Bulg. Acad. Sci., Sofia*, 1987. (Summary) **89d:49033** 49D40 (49A55, 49D29)
- Duality methods for constrained best interpolation. *Math. Balkanica (N.S.)* 1 (1987), no. 1, 96-105. (Lee L. Keener) **89h:41043** 41A29 (49A55)
- (with Kalchev, B. D.) On convex and nonnegative best interpolation. *C. R. Acad. Bulgare Sci.* 41 (1988), no. 6, 21-24. (From the introduction) **89j:41006** 41A05
- (with Slavov, J. I.) Lipschitz properties of the attainable set of singularly perturbed linear systems. *Systems Control Lett.* 11 (1988), no. 5, 385-391. (Zvi Artstein) **89m:49066** 49E15 (34E15, 93C05)
- Dontová, Eva** Reflection and the Dirichlet problem on doubly connected regions. (Russian and Czech summaries) *Časopis Pěst. Mat.* 113 (1988), no. 2, 122-147. (Ú. Kuran) **89h:31002a** 31A25 (35J05)
- Reflection and the Neumann problem on doubly connected regions. (Russian and Czech summaries) *Časopis Pěst. Mat.* 113 (1988), no. 2, 148-168. (Ú. Kuran) **89h:31002b** 31A25 (35J05)
- Dontvi, Isak Kvae** Bounded and almost periodic solutions of linear systems of differential equations with generalized perturbations. (Russian) *Investigations in differential equations and mathematical analysis (Russian)*, 47-54, 172, "Shtiintsa", Kishinev, 1988. (Constantin Simirad) **89j:34015** 34A30 (34C11, 34C27)
- Solutions, bounded on the semi-axis, of linear systems of differential equations with generalized perturbations. (Russian) *Mat. Issled. No. 99 Dinam. Sistemy Uravn. Mat. Fiz.* (1988), 69-74, 171. (O. A. Kastritsa) **89k:34012** 34A30 (34C11, 34D10)
- Doob, Michael** Pseudocyclic graphs. *Graph theory (Dubrovnik, 1985)*, 107-114, *Univ. Novi Sad, Novi Sad*, 1986. (Summary) **89c:05055** 05C50
- (with Cvetković, Dragolj; Gutman, I.; Torzaev, Aleksandar) ★ Recent results in the theory of graph spectra. *Annals of Discrete Mathematics*, 36, North-Holland Publishing Co., Amsterdam-New York, 1988, xii+306 pp. ISBN 0-444-70361-6 (Robert C. Brigham) **89d:05130** 05C50 (05C75, 92A40)
- Dooleen, Gary D.** (with Montgomery, David) Two cellular automata for plasma computations. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems* 1 (1987), no. 4, 831-838. (Summary) **89a:76058** 76W05 (76-08)
- (with Chen, Hudong; Chen, Shi Yi; Lee, Yee Chun) Simple lattice gas models for waves. *Complex Systems* 2 (1988), no. 3, 259-267. (From the text) **89g:82005** 82-08
- see also **Eckhardt, Roger**, (**89m:01133a**) and **Hasslacher, Brosi**, (**89m:01133a**)
- Dooley, A. H.** (with Battisti, F. D.) Solvability of differential operators. II. Semisimple Lie groups. *Miniconference on operator theory and partial differential equations* (North Ryde, 1986), 85-94, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 14, Austral. Nat. Univ., Canberra, 1986. (Michael Cowling) **89a:22016** 22E30 (43A80, 58G99)
- (with Battisti, F. D.) Invariant differential operators on some Lie groups. *Miniconference on harmonic analysis and operator algebras* (Canberra, 1987), 6-20, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 15, Austral. Nat. Univ., Canberra, 1987. (A. S. Dynin) **89d:22009** 22E30 (22E45)
- (with Brown, Gavin) A class of ergodic measures. *Miniconferences on harmonic analysis and operator algebras* (Canberra, 1987), 8-14, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (A. L. Fedorov) **89h:28033** 28D99
- Central lacunary sets for Lie groups. *J. Austral. Math. Soc. Ser. A* 45 (1988), no. 1, 30-45. (M. Bożejko) **89j:43007** 43A46 (43A75)
- Doong, S. H.** Gelfand theory of certain  $C^*$ -algebras on nonasymptotically flat manifolds. *Integral Equations Operator Theory* 11 (1988), no. 4, 501-517. (Thierry Fack) **89k:58266** 58G05 (46L99, 47F05, 47G05, 58G12)
- van Dooren, Paul** see **Van Dooren, Paul**
- van Dooren, R.** see **Van Dooren, R.**
- van Doorn, Erik A.** The indeterminate rate problem for birth-death processes. *Pacific J. Math.* 130 (1987), no. 2, 379-393. (Uwe Röser) **89c:60098** 60J80
- (with Jagers, A. A.; de Wit, J. S. J.) A fluid reservoir regulated by a birth-death process. *Comm. Statist. Stochastic Models* 4 (1988), no. 3, 457-472. (Summary) **89j:90080** 90B05 (60J85)
- (with Mehta, Madan Lal) Inequalities for Charlier polynomials with application to teletraffic theory. *J. Math. Anal. Appl.* 133 (1988), no. 2, 449-460. (W. Szczotka) **89g:90105** 90B20 (33A70, 90B25)
- (with Regterschot, G. J. K.) Conditional PASTA. *Oper. Res. Lett.* 7 (1988), no. 5, 229-232. (Ralph L. Disney) **89j:60125** 60K25 (60K30, 90B05, 90B22)
- van Doorn, M. G. M.** (with van den Essen, A. R. P.)  $\mathcal{S}_\infty$ -modules with support on a curve. *Publ. Res. Inst. Math. Sci.* 23 (1987), no. 6, 937-953. (S. Paul Smith) **89f:58125** 58G07 (32C38)
- Doplicher, S.** (with Roberts, John E.) Duals of compact Lie groups realized in the Cuntz algebras and their actions on  $C^*$ -algebras. *J. Funct. Anal.* 74 (1987), no. 1, 96-120. (G. A. Reid) **89a:22011** 22D35 (22C05, 22E99, 46L05, 46L55)
- (with D'Antoni, C.; Fredenhagen, Klaus; Longo, R.) Erratum: "Convergence of local charges and continuity properties of  $W^*$ -inclusions" [Comm. Math. Phys. 110 (1987), no. 2, 325-348; MR 88h:81078]. *Comm. Math. Phys.* 116 (1988), no. 1, 175-176. (From the text) **89c:81066** 81E05 (46L60)
- Doppel, K.** (with Schomburg, B.) On a weakly formulated exterior problem from linear hydrodynamics. *Math. Methods Appl. Sci.* 10 (1988), no. 5, 595-608. (Charles J. Amick) **89i:76023** 76B10 (35J05)
- Doraiswami, R.** On-line identification scheme using adaptive filters. *Internat. J. Systems Sci.* 19 (1988), no. 6, 905-920. (From the introduction) **89e:93205** 93E12 (93C05, 93C55, 93E11)
- (with Diduch, C. P.) Role of sample period in transients, robustness and sensitivity in optimally designed digital control systems. *Internat. J. Systems Sci.* 19 (1988), no. 6, 921-934. (Not in MR) 93B50 (93B35)
- (with Jiang, Jin) Direct and blockwise identification of decomposable systems using recursive least-squares algorithm. *Internat. J. Systems Sci.* 19 (1988), no. 12, 2441-2447. (Summary) **89h:93064** 93B30 (93B40, 93C55)
- Doran, Andrei L.** Coordinate selection issues in the order reduction of linear systems. *Control and dynamic systems*, Vol. 25, 309-356, Academic Press, Orlando, FL, 1987. (Guy Cohen) **89h:93016** 93B17 (93C05, 93E03)
- Doran, R. S.** (with Tiller, Wayne) Pure states and  $P$ -commutative Banach  $*$ -algebras. *Manuscripta Math.* 61 (1988), no. 1, 43-47. (R. J. Loy) **89g:46092** 46K05



- Doran, R. W.** Variants of an improved carry look-ahead adder. *IEEE Trans. Comput.* 37 (1988), no. 9, 1110-1113. (Summary) **89h:68060** 68Q25  
— see also Turing's ACE report, **89a:01045**
- Dordal, Peter Lars** A model in which the base-matrix tree cannot have cofinal branches. *J. Symbolic Logic* 52 (1987), no. 3, 651-664. (Norbert Brunner) **89h:03089** 03E35 (03E05, 03E50)
- Dore, Giovanni** (with Favini, Angelo) On the equivalence of certain interpolation methods. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 1 (1987), no. 4, 1227-1238. (L. I. Nikolova) **89f:46133** 46M35
- Dorea, C. C. Y.** (with Sastroseowigno, S.) Bivariate CDF iterations and asymptotic independence. *J. Multivariate Anal.* 23 (1987), no. 2, 276-289. (Włodzimierz Bryc) **89a:60096** 60F99 (62H05)
- Dorcia, Patrick** see Borgatti, Steve, **89i:05251**
- van Doremalen, Jan** (with Wessels, Jaap) A recursive aggregation-disaggregation method to approximate large-scale closed queueing networks with multiple job types. *Queueing theory and its applications*, 325-342, *CWI Monographs*, 7, North-Holland, Amsterdam-New York, 1988. (Erik A. van Doorn) **89h:60131** 60K25 (68M20, 90B22)
- Doret, Lucia** A condition on the homology groups of the Eagon-Northcott complex. (Italian. English summary) *Boll. Un. Mat. Ital. D* (6) 5 (1986), no. 1, 171-191 (1987). (Alfio Ragusa) **89a:13018** 13D25 (13C15)
- Dörfler, Joachim H.** Treatment of singular perturbation problems with multidimensional methods. *Robust multi-grid methods* (Kiel, 1988), 86-95, *Notes Numer. Fluid Mech.*, 23, Vieweg, Braunschweig, 1989. (see **89m:65007**) 65P05
- Dorfman, I. Ya.** The  $r$ -scheme in the theory of integrable equations. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jämsä, 1985), 333-341, "Nauka", Moscow, 1986. (R. M. Kadobyan'skii) **89h:58116** 58F07 (58G37)
- $r$ -scheme in theory of integrable equations. *Group theoretical methods in physics*, Vol. 1 (Jämsä, 1985), 435-448, *VNU Sci. Press, Utrecht*, 1986. (Benno Fuchssteiner) **89f:58067** 58F07 (35Q20, 58G35)
- Dirac structures of integrable evolution equations. *Phys. Lett. A* 125 (1987), no. 5, 240-246. (Klaus Horneffer) **89h:58088** 58F07 (35Q20)
- Dorfman, Robert** (with Samuelson, Paul A.; Solow, Robert M.) ★ Linear programming and economic analysis. Reprint of the 1958 edition. *Dover Publications, Inc., New York*, 1987. xii+525 pp. ISBN 0-486-65491-5 (Editors) **89h:90001** 90-01
- Dorfman, Ya. G.** (with Sergeev, V. M.) Neuromorphogenesis and models for the world in networks of neural processors. (Russian) *Intellectual processes and their modeling* (Russian), 39-65, 394, "Nauka", Moscow, 1987. (see **89h:92032**) 92A25
- Dorfmeister, Josef** (with Nakajima, Kazufumi) The fundamental conjecture for homogeneous Kähler manifolds. *Acta Math.* 161 (1988), no. 1-2, 23-70. (B. Gilligan) **89i:32066** 32M10
- Dorlas, T. C.** Renormalization and the continuum limit. *Mark Kac Seminar on Probability and Physics*. *Syllabus* 1985-1987 (Amsterdam, 1985-1987), 53-60, *CWI Syllabi*, 17, Math. Centrum, Centrum Wisk. Inform., Amsterdam, 1988. (see **89e:60005**) 81E25
- Dorling, Jon** Schrödinger's original interpretation of the Schrödinger equation: a rescue attempt. *Schrödinger* (London, 1987), 16-40, *Cambridge Univ. Press, Cambridge-New York*, 1987. (see **89m:01069**) 81-03 (01A60)
- de Dornale, Bernard M.** Singularity of electromagnetic field near the trajectory of point particles: the general case. (French summary) *Canad. J. Phys.* 66 (1988), no. 4, 289-291. (Summary) **89d:78017** 78A35
- Dorman, David R.** Special values of the elliptic modular function and factorization formulae. *J. Reine Angew. Math.* 383 (1988), 207-220. (Autorreferat (Zbl 626:10022)) **89i:1026** 11F03 (11F27, 11G05, 14K15, 14K22)
- Dormand, J. R.** (with Prince, P. J.) Runge-Kutta-Nystrom triples. *Comput. Math. Appl.* 13 (1987), no. 12, 937-949. (Summary) **89c:65083** 65L10
- Dorn, H.** (with Otto, H.-J.) On the energy-momentum tensor in nonlinear  $\sigma$ -models with torsion. *Phys. Lett. B* 200 (1988), no. 1-2, 103-107. (Summary) **89h:81124** 81E13 (81E15, 81E40)
- Dörner, E.** (with Kloock, J.) Kostenkontrolle bei mehrstufigen Produktionsprozessen. (English summary) [Cost controls in multistage production processes] *OR Spektrum* 10 (1988), no. 3, 129-143. (Summary) **89h:90120** 90B30
- Dorning, J. J.** (with Holloway, James Paul) The dynamics of coupled nonlinear model Boltzmann equations. *J. Statist. Phys.* 49 (1987), no. 3-4, 607-660. (Carlo Cercignani) **89d:82070** 82A40 (34C35, 76P05)
- Dorning, Dietmar** On permutations of chromosomes. *Contributions to general algebra*, 5 (Salzburg, 1986), 95-103, *Hölder-Pichler-Tempsky, Vienna*, 1987. (Peter Rowlinson) **89c:20066** 20B05 (92A10, 92A12)
- (with Länger, Helmut) On a set of relations arising from the triangulation problem. *Studia Sci. Math. Hungar.* 23 (1988), no. 1-2, 289-294. (E. T. Schmidt) **89h:11010** 11C20 (04A05, 06C10, 15A57)
- Dorodnitsyn, A. A.** (with Alimov, Sh. A.; Bitsadze, A. V.; Erugin, N. P.; Moiseev, E. I.; Samarskii, A. A.; Tikhonov, A. N.) Vladimir Aleksandrovich Il'in (on the occasion of his 60th birthday). *B. (Russian) Differentsial'nye Uravneniya* 24 (1988), no. 5, 739-750. (Editors) **89h:01053** 01A70
- see also Aleksandrov, G. A. et al., **89a:92054**
- Dorodnitsyn, L. V.** (with Abalakin, L. V.; Elizaveta, T. G.) Direct numerical modeling of the Blasius problem. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 7, 1107-1113, 1283; translated in *Differential Equations* 24 (1988), no. 7, 701-706. (Summary) **89f:76057** 76J99 (76-08, 76N05, 76P05)
- Dorodnitsyn, V. A.** (with Bakirova, M. I.; Dimova-Borshukova, Stefka; Kurdyumov, S. P.; Samarskii, A. A.; Svirshchevskii, S. R.) Invariant solutions of the heat equation that describe the directed propagation of combustion and spiral waves in a nonlinear medium. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 2, 346-350; translated in *Soviet Phys. Dokl.* 33 (1988), no. 3, 187-189. (Ya Zhe Chen) **89i:35076** 35K35 (35A25, 35B40, 80A20)
- Dorofeev, G. V.** Two properties of nonassociative polynomials and an amalgamation of varieties of algebras. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 2, 60-69, 217; translated in *Siberian Math. J.* 29 (1988), no. 2, 210-218. (A. A. Iskander) **89h:17027** 17D15 (08B05, 17D05)
- Dorofeev, S. N.** Orbits of some linear combinations of weight vectors in the representation spaces of Lie groups. (Russian) *Spaces over algebras, and some problems in the theory of nets* (Russian), 155-160, *Bashkir. Gos. Ped. Inst., Ufa*, 1985. (see **89f:00017**) 22E45 (20G05)
- Dorofeeva, A. V.** Descartes and his "Geometry". (Russian) *Mat. v Shkole* 1987, no. 5, 51-53. (Doru Stăfănescu) **89c:01056** 01A70 (01A45, 51-03)
- Nicolaus Mercator (1620-1687). (Russian) *Mat. v Shkole* 1988, no. 2, i. (Editors) **89f:01064** 01A70
- From the history of the discovery of the Mercator projection. (Russian) *Mat. v Shkole* 1988, no. 3, i, 81. (Editors) **89i:01018** 01A40
- Apollonius (ca. 260-190 B.C.). (Russian) *Mat. v Shkole* 1988, no. 5, i. (Editors) **89m:01085** 01A70 (01A20)
- Dorogov, V. I.** (with Chistyakov, V. P.) ★ Вероятностные модели превращения частиц. (Russian) [Probabilistic models of the transformation of particles] *Проблемы Науки и Технологического Прогресса*. [Problems of Science and Technological Progress] "Nauka", Moscow, 1988. 111 pp. ISBN 5-02-013758-8 (Summary) **89f:61050** 81C20 (60J85, 82A75)
- Dorogovtsev, A. A.** Smoothness of the solutions of generalized linear stochastic differential equations. (Russian) *Asymptotic problems in the theory of random processes* (Russian), 67-72, 116, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (I. Gyöngy) **89i:60124** 60H10
- A representation of strong Gaussian random operators. (Russian) *Theory of random processes*, No. 16 (Russian), 19-23, 108, "Naukova Dumka", Kiev, 1988. (Shi Sheng Zhang) **89j:60084** 60H25 (47B38)
- Dorogovtsev, A. Ya.** (with Ivasishen, S. D.; Kukush, A. G.) On the asymptotic behaviour of the linear stochastic heat equation solutions. *Probability theory and mathematical statistics*, Vol. 1 (Vilnius, 1985), 419-431, *VNU Sci. Press, Utrecht*, 1987. (From the text) **89g:60192** 60H15 (35K05, 35R60)
- (with Zerek, N.; Kukush, A. G.) Weak convergence to the normal distribution of an estimator for an infinite-dimensional parameter. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 37 (1987), 39-46, 135. (Summary) **89h:62095** 62J02 (62F12)
- Asymptotic behavior of the solutions of the Cauchy problem for an abstract stochastic differential equation. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 38 (1988), 31-34, 134. (Bohdan Maslowski) **89g:60183** 60H10 (34F05, 60H15)
- Existence of periodic solutions of an abstract stochastic equation. Asymptotic periodicity of the solutions of the Cauchy problem. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 39 (1988), 47-52, 126. (Constantin Tudor) **89e:60119** 60H20
- (with Kukush, A. G.) Asymptotic behavior of the solution of the Cauchy problem for a stochastic equation of parabolic type. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 2, 162-169, 270; translated in *Ukrainian Math. J.* 40 (1988), no. 2, 136-142. (Wilfried Grecksch) **89e:60117** 60H15 (35R60)
- see also *Mathematics today* '88, **89i:00022**
- Dorsett, Charles** Feebly separation axioms, the feebly induced topology, and separation axioms and the feebly induced topology. (Turkish summary) *J. Karadeniz Univ. Fac. Arts Sci. Ser. Math.-Phys.* 8 (1985), 43-54. (Shantha Bose) **89g:54048** 54D10
- The weak almost-continuous topology and properties of product spaces with the weak almost-continuous topology. *Pure Math. Manuscript* 5 (1986), 1-11. (B. T. Sims) **89g:54005** 54A10 (54B10)
- Feebly compact and locally feebly compact  $R_1$  spaces and feebly one-point compactification spaces. *Ricerche Mat.* 35 (1986), no. 2, 175-189. (S. Gene Crossley) **89m:54035** 54D30 (54D35, 54D45)
- Pre-open sets and feebly separation axioms. *An. Univ. Timișoara Ser. Științ. Mat.* 25 (1987), no. 1, 39-48. (Olav Njåstad) **89a:54004** 54A10 (54D10)
- Nearly  $R_0$ , nearly weakly Urysohn, nearly weakly completely Hausdorff, nearly normal and other properties definable by using the semiregularization topology. *Bull. Malaysian Math. Soc.* (2) 10 (1987), no. 1, 21-28. (Helmut Ludescher) **89i:54025** 54D99
- Regular open sets and  $r$ -topological properties. *Nat. Acad. Sci. Lett.* 10 (1987), no. 1, 17-21. (S. Gene Crossley) **89c:54044** 54D15 (54E65)
- A note on locally nearly compact spaces. *Soochow J. Math.* 13 (1987), no. 1, 59-64. (Shantha Bose) **89h:54018** 54D30 (54D45)
- Dorvle, A. S. S.** (with Fulkerson, L.) Existence of a solution to the Markov renewal programming problem. *J. Math. Anal. Appl.* 131 (1988), no. 1, 22-24. (L. C. Thomas) **89f:90185** 90C40
- Dorwart, Harold L.** Point and circle configurations; a new theorem. *Math. Mag.* 61 (1988), no. 4, 253-259. (J. B. Wilker) **89h:51004** 51A20
- Dos Anjos, Adairto G.** Polynomial vector fields on the torus. *Bol. Soc. Brasil. Mat.* 17 (1986), no. 2, 1-22. (Ding Jun Luo) **89h:58114** 58F10 (34C40)
- Dosch, H. G.** (with Simonov, Yu. A.) The area law of the Wilson loop and vacuum field correlators. *Phys. Lett. B* 205 (1988), no. 2-3, 339-344. (B. Geyer) **89f:81245** 81G05 (81E15)
- Došen, Kosta** Modal duality theory. *Proceedings of the Conference "Algebra and Logic"*, Cetinje 1986, 73-88, *Univ. Novi Sad, Novi Sad*, 1987. (Stanislav J. Surma) **89e:03114** 03G25 (03B45)
- A note on Gentzen's decision procedure for intuitionistic propositional logic. *Z. Math. Logik Grundlag. Math.* 33 (1987), no. 5, 453-456. (Henry Africk) **89f:03053** 03F05 (03B20, 03B25, 03F07, 03F20, 03F35)
- (with Schroeder-Heister, Peter) Uniqueness, definability and interpolation. *J. Symbolic Logic* 53 (1988), no. 2, 554-570. (M. Makkai) **89i:03058** 03C40 (03B99)
- Normal modal logics in which the Heyting propositional calculus can be embedded (abstract). *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* 17 (1988), no. 1, 23-33. (Not in MR) 03B45
- Doshi, Bharat** Queueing systems with vacations—a survey. *Queueing Systems Theory Appl.* 1 (1986), no. 1, 29-66. (F. A. van der Duyn Schouten) **89h:60212** 60K25 (90B22)
- (with Wong, Wing Shing) Exact solution of a simple finite infinite source interaction model. *Queueing Systems Theory Appl.* 2 (1987), no. 1, 67-82. (Hans Daduna) **89c:90055** 90B22 (60K25)
- (with Kaufman, J. S.) Sojourn time in an  $M/G/1$  queue with Bernoulli feedback. *Queueing theory and its applications*, 207-233, *CWI Monographs*, 7, North-Holland, Amsterdam-New York, 1988. (Masao Mori) **89h:60132** 60K25 (90B22)
- Doshita, Shuji** (with Yamasaki, Susumu; Yoshida, Mikio) A fixpoint semantics of Horn sentences based on substitution sets. *Theoret. Comput. Sci.* 51 (1987), no. 3, 309-324. (Laurent Kott) **89f:68047** 68Q55 (68T25)

- Doskas, Mike** (with Avis, David) Algorithms for high-dimensional stabbing problems. *Theoretical foundations of computer graphics and CAD* (Il Ciocco, 1987), 199–210, NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 40, Springer, Berlin-New York, 1988. (see 89a:68011) 68U05
- Dostál, Z.** Monotonicity properties of the linear combination of derivatives of some special functions. *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 583–586, 'Angel Kanchev' Tech. Univ., Ruse, 1987. (Luis Verde-Star) 89f:33014 33A40 (33A70, 34C10)
- Dostál, Ondřej** Transformations of selfadjoint linear differential systems. *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 587–590, 'Angel Kanchev' Tech. Univ., Ruse, 1987. (James M. D'Archangelo) 89b:34088 34C20 (34C10, 47E05)
- Riccati matrix differential equation and classification of disconjugate differential systems. *Arch. Math. (Brno)* 23 (1987), no. 4, 231–241. (Vadim Komkov) 89b:34072 34C10
- Second phase matrix of differential systems  $Y'' + P(x)Y = 0$ . (Russian and Czech summaries) *Časopis Pěst. Mat.* 112 (1987), no. 4, 381–389. (E. Heil) 89a:34012 34A30 (34C10)
- On the Liouville-type transformation for differential systems. (Russian summary) *Math. Slovaca* 37 (1987), no. 4, 341–349. (Donald A. Lutz) 89b:34089 34C20 (34A30, 34C10)
- On conjugate points of solutions of nonselfadjoint differential systems. *Czechoslovak Math. J.* 38(113) (1988), no. 2, 198–206. (François Aribaud) 89a:34063 34C10 (34A30)
- Dos Reis, Genesio Lima** see **Dos Reis, Genesio Lima**
- Doss, Halim** (with Dozzi, M.) Estimations de grandes déviations pour les processus de diffusion à paramètre multidimensionnel. [Estimates of large deviations for diffusion processes with a multidimensional parameter] *Séminaire de Probabilités, XX*, 1984/85, 68–80, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (Introduction) 89g:60093 60F10 (60J60)
- Doss, Raouf** An elementary proof of Titchmarsh's convolution theorem. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 181–184. (Jack Bryant) 89g:42022 42A85 (45E10)
- Dos Santos, A. F.** (with Teixeira, F. S.) Theory of a class of Wiener-Hopf equations of the first kind: application to the Sommerfeld problem. *J. Math. Anal. Appl.* 128 (1987), no. 1, 189–204. (Cor van der Mee) 89a:45011 45E10 (73D25, 76Q05, 78A45)
- Dos Santos, Dina Maria L. F.** see **Dos Santos, Dina Maria L. F.**
- Dos Santos, Geovan Tavares** see **Dos Santos, Geovan Tavares**
- Dos Santos, N. M.** see **Moreira dos Santos, Nathan**
- Dost, S.** (with Demiray, Hilmi) A variational formulation of diatomic elastic dielectrics. *Internat. J. Engrg. Sci.* 26 (1988), no. 8, 865–871. (Summary) 89h:73040 73R05 (73B05, 73C60, 73D25)
- (with Tabarrok, B.) Application of a mixed variational principle to buckling analysis of circular cylinders. (German and Russian summaries) *Z. Angew. Math. Mech.* 68 (1988), no. 3, 131–137. (Summary) 89c:73038 73H05
- Dostál, Miloš** (with Gaveau, Bernard) Développements asymptotiques explicites d'intégrales de Fourier pour certains points critiques dégénérés. (English summary) [Explicit asymptotic expansion of Fourier integrals with certain degenerate critical points] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 20, 857–859. (Introduction) 89a:58103 58G15 (41A60, 42B10, 58C27)
- Dosumov, T. B.** (with Sabirov, T.; Khamitov, M. Kh.) Some questions of the stability of the solution of differential equations in a Banach space. (Russian) *Some problems in functional analysis, differential equations and their applications* (Russian), 40–45, 109, *Kazakh. Gos. Univ., Alma-Ata*, 1985. (see 89a:00016) 34G20 (34D05)
- Continuation of solutions of differential equations with an unbounded operator. (Russian) *Differential equations, theory of functions and their applications* (Russian), 27–33, 81, *Kazakh. Gos. Univ., Alma-Ata*, 1986. (Summary) 89k:34005 34A15 (34G20, 47H99)
- The method of Lyapunov functionals. I. Existence and uniqueness of a weak solution of the Cauchy problem. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 71–78, 323, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (P. Talpalaru) 89b:34043 34D20 (34G20)
- Theorems on the stability of a regular solution. (Russian) *Theory of functions, equations of mathematical physics and their applications* (Russian), 7–12, 84, *Kazakh. Gos. Univ., Alma-Ata*, 1988. (see 89j:00026) 34D20 (34G20)
- Generalized solution of the Cauchy problem. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1988, no. 3, 19–22. (József Banaś) 89j:34006 34A10
- Dotsenko, V. S.** 3D Ising model as a free fermion string theory: an approach to the thermal critical index calculation. *Nuclear Phys. B* 285 (1987), no. 1, 45–69. (Feodor Smirnov) 89g:82067 82A68 (81E30)
- (with Polyakov, A. M.) Fermion representations for the 2D and 3D Ising models. *Conformal field theory and solvable lattice models* (Kyoto, 1986), 171–203, *Adv. Stud. Pure Math.*, 16, Academic Press, Boston, MA, 1988. (C. A. Hurst) 89m:82075 82A68 (81E25, 81E30)
- Off the critical point by perturbation: the Ising model spin-spin correlator. *Nuclear Phys. B* 314 (1989), no. 3, 687–706. (Giuseppe Mussardo) 89j:82069 82A68 (81E25, 81E40, 82A25)
- D'Ottaviano, I. M. L.** (with López-Escobar, E. G. K.) The conditional and the compound-ing of errors. *J. Non-Classical Logic* 3 (1986), no. 2, 91–117. (Summary) 89f:03018 03B50 (03B99)
- Dotto, Oclide José** The delta function. (Portuguese) *Monograf. Soc. Paran. Mat.* No. 4 (1987), ii+73 pp. (Norbert Ortner) 89j:26002 26-01 (26A03, 26A15)
- Doty, Karl** (with Donaldson, Thomas; Engle, Steven W.; Larson, Robert E.; O'Reilly, John G.; Tandjung, Susanto) Innovative architectures for dense multi-microprocessor computers. *Comput. & Structures* 30 (1988), no. 1–2, 347–355. (Not in MR) 68M99 (68N99)
- Doty, Lynne L.** (with Buckley, Fred; Harary, Frank) On graphs with signed inverses. *Networks* 18 (1988), no. 3, 151–157. (J. Sedláček) 89i:05222 05C75 (05C50)
- Doty, Stephen R.** Composition factors of induced modules for algebraic groups and their Frobenius subgroups. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 163–170, *Proc. Sympos. Pure Math.*, 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (H. H. Andersen) 89c:20060 20G05 (20G10)
- (with Sullivan, John B.) On the geometry of extensions of irreducible modules for simple algebraic groups. *Pacific J. Math.* 130 (1987), no. 2, 253–273. (Brian J. Parshall) 89f:20049 20G05
- (with Sullivan, John B.) On the structure of the higher cohomology modules of line bundles on  $G/B$ . *J. Algebra* 114 (1988), no. 2, 286–332. (James E. Humphreys) 89d:20033 20G05 (14F05, 14M15)
- (with Sullivan, John B.) On the intertwining between higher cohomology modules of line bundles on  $G/B$ . *J. Algebra* 115 (1988), no. 2, 289–296. (James E. Humphreys) 89b:20085 20G05 (14M15)
- Douady, A.** Chirurgie sur les applications holomorphes. [Surgery on holomorphic mappings] *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 724–738, Amer. Math. Soc., Providence, RI, 1987. (Janina Kotus) 89k:58139 58F08 (30D05, 58C10)
- Disques de Siegel et anneaux de Herman. [Siegel discs and Herman rings] *Séminaire Bourbaki*, Vol. 1986/87, *Astérisque* No. 152–153 (1987), 4, 151–172 (1988). (I. N. Baker) 89g:30049 30D05 (58F11)
- (with Goldberg, Lisa R.) The nonconjugacy of certain exponential functions. *Holomorphic functions and moduli, Vol. I* (Berkeley, CA, 1986), 1–7, *Math. Sci. Res. Inst. Publ.*, 10, Springer, New York-Berlin, 1988. (Michael Hurley) 89m:58112 58F10 (58F08)
- (with Balabane, Mikhaël; Cazenave, Thierry; Merle, F.) Existence d'états excités pour une équation de Dirac non linéaire. (English summary) [Existence of excited states for a nonlinear Dirac equation] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 3, 117–120. (Gustavo Perla Menzala) 89e:81022 81C10 (35Q20)
- see also **Pelggen, Heinz-Otto**, 89j:58058
- Douady, Raphaël** (with da Silva Ritter, G. L.; Ozorio de Almeida, A. M.) Analytical determination of unstable periodic orbits in area preserving maps. *Phys. D* 29 (1987), no. 1–2, 181–190. (Jan A. Sanders) 89c:58107 58F22 (58F14)
- La théorie de Pesin. [Pesin theory] *Equations aux dérivées partielles non linéaires dissipatives et systèmes dynamiques*, 121–146, *Travaux en Cours*, 28, Hermann, Paris, 1988. (Zbigniew Nitecki) 89h:58099 58F11 (28D99)
- Stabilité ou instabilité des points fixes elliptiques. [Stability or instability of elliptic fixed points] *Ann. Sci. École Norm. Sup. (4)* 21 (1988), no. 1, 1–46. (Lúcia Helena Vilas Bôas Mendes) 89m:58113 58F10 (58F25)
- Douai, Jean-Claude** Le théorème de Tate-Poitou pour les corps de fonctions des courbes définies sur les corps de séries formelles en une variable sur un corps algébriquement clos. [The Tate-Poitou theorem for the function fields of curves defined over fields of formal power series in one variable over an algebraically closed field] *Comm. Algebra* 15 (1987), no. 11, 2379–2389. (K. Kiyek) 89c:11100 11G20 (12G05, 13A20, 14G99)
- Doubouchine, G. N.** see **Duboshin, G. N.**
- Douce, J. L.** (with Balmer, L.) Frequency response estimates using short data blocks. (Russian summary) *Systems Sci.* 12 (1986), no. 3, 21–30 (1987). (Not in MR) 93E10
- Doucha, M.** (with Reik, H. G.; Lais, P.; Stützel, M. E.) Exact solution of the  $E \otimes e$  Jahn-Teller and Rabi Hamiltonian by generalised spheroidal wavefunctions? *J. Phys. A* 20 (1987), no. 18, 6327–6340. (Summary) 89b:81078 81C99 (81K05)
- Dougalis, Vassilios A.** (with Bales, L. A.) Cosine methods for nonlinear second-order hyperbolic equations. *Math. Comp.* 52 (1989), no. 186, 299–319, S15–S33. (B. M. Herbst) 89k:65113 65M60
- Dougherty, D. J.** (with Shortt, Rae Michael; Ball, R. N.) Decomposition theorems for measures. *J. Math. Anal. Appl.* 128 (1987), no. 2, 561–580. (M. P. Eršov) 89a:28004 28A12 (15A51, 28A35)
- Dougherty, Randall L.** Monotone reducibility over the Cantor space. *Trans. Amer. Math. Soc.* 310 (1988), no. 2, 433–484. (Andreas Blass) 89f:03041 03E15 (54F05)
- (with Edelman, Alan; Hyman, James M.) Nonnegativity, monotonicity, or convexity-preserving cubic and quintic Hermite interpolation. *Math. Comp.* 52 (1989), no. 186, 471–494. (Eli Passow) 89f:41006 41A05 (65D05)
- Douglas, Craig C.** (with Ma, Shing C.; Miranker, Willard L.) Generating parallel algorithms through multigrid and aggregation/disaggregation techniques. *Computational acoustics, Vol. 2* (New Haven, Conn., 1986), 133–147, North-Holland, Amsterdam-New York, 1988. (Summary) 89b:65326 65W05 (65N20)
- (with Miranker, Willard L.) Some noniterative parallel algorithms based on serial multigrid/aggregation/disaggregation techniques. *Multigrid methods* (Copper Mountain, CO, 1987), 167–176, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (Jan Mandel) 89m:65031 65F10 (65F05)
- (with Miranker, Willard L.) Constructive interference in parallel algorithms. *SIAM J. Numer. Anal.* 25 (1988), no. 2, 376–398. (David C. Arney) 89b:65327 65W05 (15A06, 65F10)
- Douglas, Jim, Jr.** (with Santos, Juan Enrique) Approximation of waves in composite media. *The mathematics of finite elements and applications, VI* (Uxbridge, 1987), 55–74, Academic Press, London-New York, 1988. (see 89c:65004) 65M60 (73D99, 73J06)
- (with Brezzi, F.) Stabilized mixed methods for the Stokes problem. *Numer. Math.* 53 (1988), no. 1–2, 225–235. (R. N. Pandey) 89b:65138 65N30 (76-08, 76D07)
- (with Santos, Juan Enrique; Calderón, Alberto Pedro) Finite element methods for a composite model in elastodynamics. *SIAM J. Numer. Anal.* 25 (1988), no. 3, 513–532. (Summary) 89b:65277 65N30 (73-08, 73D99, 73K20)
- (with Wang, Jun Ping) An absolutely stabilized finite element method for the Stokes problem. *Math. Comp.* 52 (1989), no. 186, 495–508. (Georges A. Lebaud) 89j:65069 65N30 (76-08, 76D07)
- Douglas, Ronald G.** (with Hurder, Steven; Kaminker, Jerome) Toeplitz operators and the eta invariant: the case of  $S^1$ . *Index theory of elliptic operators, foliations, and operator algebras* (New Orleans, LA/Indianapolis, IN, 1986), 11–41, *Contemp. Math.*, 70, Amer. Math. Soc., Providence, RI, 1988. (John Roe) 89j:58132 58G12 (19K56, 46L80, 47B35, 57R32)
- On Silov resolution of Hilbert modules. *Special classes of linear operators and other topics* (Bucharest, 1986), 51–60, *Oper. Theory Adv. Appl.*, 28, Birkhäuser, Basel-Boston, MA, 1988. (Jörg Eschmeier) 89f:47002 47A05 (46H25, 46J15, 46M20)
- Douglass, J. Matthew** (with Shelton, Brad) On matrix coefficients of the reflection representation. *Proc. Amer. Math. Soc.* 105 (1989), no. 1, 62–65. (Anthony Joseph) 89e:17011 17B35 (20C30, 20G05)
- Doukhan, Paul** (with Bulinskii, A. V.) Inégalités de mélange fort utilisant des normes d'Orlicz. (English summary) [Strong mixing moment inequalities using Orlicz norms] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 19, 827–830. (Summary) 89b:60017 60B11 (60E15, 62G05)



- (with Portal, Frédéric) Principe d'invariance faible pour la fonction de répartition empirique dans un cadre multidimensionnel et mélangeant. (English summary) [The weak invariance principle for the empirical distribution function in the multidimensional mixing case] *Probab. Math. Statist.* **8** (1987), 117–132. (Joseph E. Yukich) **89d:60064** 60F17
- Formes de Toeplitz associées à une analyse multi-échelle. (English summary) [Toeplitz forms associated to a multiscale analysis] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 15, 663–666. (Summary) **89d:42020** 42A70 (62M99)
- Doup, T. M.** (with van den Elzen, A. H.; Talman, A. J. J.) Simplicial algorithms for solving the nonlinear complementarity problem on the simplex. *The computation and modelling of economic equilibria* (Tilburg, 1985), 125–153, *Contrib. Econom. Anal.*, 167, North-Holland, Amsterdam-New York, 1987. (Heinz Bernau) **89e:90204** 90C33 (90A14)
- (with van der Laan, G.; Talman, A. J. J.) The  $(2^{n+1} - 2)$ -ray algorithm: a new simplicial algorithm to compute economic equilibria. *Math. Programming* **39** (1987), no. 3, 241–252. (Summary) **89h:90042** 90A14
- Doust, Ian** Well-bounded and scalar-type spectral operators on spaces not containing  $c_0$ . *Proc. Amer. Math. Soc.* **105** (1989), no. 2, 367–370. (Sheng Wang Wang) **89f:47048** 47B40
- van Douwen, E. K.** (with Bešlagić, Amer; Merrill, John W. L.; Watson, W. Stephen) The cardinality of countably compact Hausdorff spaces. *Topology Appl.* **27** (1987), no. 1, 1–10. (Hao Xuan Zhou) **89a:54007** 54A25 (03E35, 54D30)
- Countable homogeneous spaces and countable groups. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 135–154, *R. E. Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (J. M. Aarts) **89k:54048** 54C99 (22A99, 54D40)
- Dovbush, P. V.** On the existence of admissible limits of functions of several complex variables. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 3, 73–77, 222. (E. I. Akutovtsev) **89d:32012** 32A40
- Dovbush, I. G.** Estimation of noise parameters in dynamic systems. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1986**, no. 12, 49–51. (Summary) **89h:93099** 93E10 (93B50)
- Some criteria for practical stability for systems of linear differential equations. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 62 (1987), 99–104, 132. (Mihail Voicu) **89e:34090** 34D99 (93D99)
- On the problem of the stabilization of motion up to practical stability. (Russian) *Izved. Operatsii i ASU* No. 31 (1988), 81–86, 114. (Summary) **89d:49045** 49E20 (34D99, 93C05, 93D99)
- Dovbush, S. A.** Intersection of asymptotic surfaces of the perturbed Euler-Poincaré problem. *J. Appl. Math. Mech.* **51** (1987), no. 3, 283–288 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 3, 363–370 (Russian). (Summary) **89g:70005** 70E20 (58F14, 70E15)
- Dovermann, Karl Heinz** (with Masuda, Mikiyo; Schultz, Reinhard) Conjugation involutions on homotopy complex projective spaces. *Japan. J. Math. (N.S.)* **12** (1986), no. 1, 1–35. (P. S. Landweber) **89a:57055** 57E25
- Cyclic group actions on complex projective spaces. *Algebra and topology 1986* (Taeyon, 1986), 164–271, Korea Inst. Tech., Taejeon, 1987. (Italo José Deijter) **89j:57035** 57E25 (14F20, 57R85)
- (with Schultz, Reinhard) Surgery of involutions with middle-dimensional fixed point set. *Pacific J. Math.* **130** (1987), no. 2, 275–297. (Frank Quinn) **89e:57032** 57S17 (57R55)
- (with Rothenberg, Mel) Equivariant surgery and classifications of finite group actions on manifolds. *Mem. Amer. Math. Soc.* **78** (1988), no. 379, viii+117 pp. (Sören Illman) **89h:57032** 57S17 (57R65, 57R67, 57R85)
- Dovlatova, L. I.** (with Kulieva, G. Z.) The use of historical-mathematical material in the teaching of a course in analytic geometry. (Russian) *Studies in geometry* (Russian), 61–75, *Azerbaidzhan. Gos. Univ., Baku*, 1987. (B. Rosenfeld) **89a:01005** 01A05 (00A25, 51–03)
- Dow, A.** (with Broverman, S.) A note on  $\beta D - D$ . *Rocky Mountain J. Math.* **17** (1987), no. 3, 421–430. (Hao Xuan Zhou) **89a:54030a** 54D40 (03E35, 54A25)
- (with Peters, Thomas J.) Game strategies yield remote points. *Topology Appl.* **27** (1987), no. 3, 245–256. (Hao Xuan Zhou) **89e:54045** 54D40 (03E35, 03E55, 54B10)
- Two applications of reflection and forcing to topology. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 155–172, *R. E. Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (Hao Xuan Zhou) **89d:54028** 54G05 (06E15)
- (with Balogh, Zoltán; Fremlin, David H.; Nyikos, P. J.) Countable tightness and proper forcing. *Bull. Amer. Math. Soc. (N.S.)* **19** (1988), no. 1, 295–298. (Andreas Blass) **89e:03088** 03E35 (03E55, 03E75, 54A35, 54D55)
- (with Gubbi, A. V.; Symański, Andrzej) Rigid Stone spaces within ZFC. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 745–748. (Hao Xuan Zhou) **89d:54028** 54G05 (06E15)
- (with Henriksen, M.; Kopperman, Ralph; Vermeer, J.) The space of minimal prime ideals of  $C(X)$  need not be basically disconnected. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 317–320. (W. A. Feldman) **89i:54024** 54C40 (06F25)
- An empty class of nonmetric spaces. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 999–1001. (Vesko Valov) **89j:54032** 54E35 (54E45)
- (with Broverman, S.) Erratum: "A note on  $\beta D - D$ ". *Rocky Mountain J. Math.* **18** (1988), no. 1, 211. (Hao Xuan Zhou) **89a:54030b** 54D40 (03E35, 54A25)
- PFA and  $\omega_1$ . Special issue on set-theoretic topology. *Topology Appl.* **28** (1988), no. 2, 127–140. (Hao Xuan Zhou) **89e:54046** 54D40 (03E35, 03E50, 03E65, 54A35, 54G05)
- Dow, Gregory K.** Information, production decisions, and intra-firm bargaining. *Internat. Econom. Rev.* **29** (1988), no. 1, 57–79. (Hans Keiding) **89g:90250** 90D12
- Dow, James** (with da Costa Werlang, Sérgio Ribeiro) The consistency of welfare judgments with a representative consumer. *J. Econom. Theory* **44** (1988), no. 2, 269–280. (Summary) **89c:90018** 90A10
- Dow, Stephen J.** (with Gibson, Peter M.) Permanents of  $d$ -dimensional matrices. *Linear Algebra Appl.* **90** (1987), 133–145. (G. P. Egorychev) **89a:15004** 15A15
- Dowd, J. P.** (with Comer, C. M.) The neural basis of orienting behavior: a computational approach to the escape turn of the cockroach. *Biol. Cybernet.* **60** (1988), no. 1, 37–48. (Summary) **89i:92059** 92A18
- Dowd, Martin** Questions related to the Erdős-Turán conjecture. *SIAM J. Discrete Math.* **1** (1988), no. 1, 142–150. (Torleiv Kleve) **89h:11006** 11B13
- hakim-Dowek, M.** see Hakim-Dowek, M.
- Dowell, Earl H.** (with Il'garnov, M. A.) ★ Studies in nonlinear aeroelasticity. Springer-Verlag, New York-Berlin, 1988. xvi+455 pp. ISBN 0-387-96791-5 (E. G. Broadbent) **89k:73037** 73J05 (70K50, 73-02, 73-08, 73J06, 73J10)
- Chaotic oscillations in mechanical systems. *Comput. & Structures* **30** (1988), no. 1–2, 171–184. (J. S. Joel) **89f:70035** 70K50 (58F12, 58F13, 70K40)
- (with Miyazawa, Yoshikazu) An estimator for uncertain output matrix systems. *IEEE Trans. Automat. Control* **33** (1988), no. 10, 967–969. (Not in MR) **93E10**
- (with Pezeszki, C.) On necessary and sufficient conditions for chaos to occur in Duffing's equation: an heuristic approach. *J. Sound Vibration* **121** (1988), no. 2, 195–200. (Summary) **89c:70056** 70K50 (58F13)
- (with Ferri, A. A.) Frequency domain solutions to multi-degree-of-freedom, dry friction damped systems. *J. Sound Vibration* **124** (1988), no. 2, 207–224. (Summary) **89d:70001** 70-08 (70K40)
- (with Pezeszki, C.) On chaos and fractal behavior in a generalized Duffing's system. *Phys. D* **32** (1988), no. 2, 194–209. (Summary) **89j:58081** 58F13 (34C05, 58F14, 70K50)
- Dowler, J. S.** Effect of zero modes in statistical mechanics. *Phys. Rev. D* **3** (1988), no. 1, 558–559. (Alfred Actor) **89h:81142** 81E20 (82A30)
- Dowlatabadi, F.** (with Kohout, Ladislav J.) Intentional possibilistic approach to dealing with incompleteness, vagueness and uncertainty. Interpretations of grades of membership. *Fuzzy Sets and Systems* **25** (1988), no. 3, 277–295. (Summary) **89a:03103** 03E72
- Dowling, P. N.** (with Edgar, G. A.) Some characterizations of the analytic Radon-Nikodym property in Banach spaces. *J. Funct. Anal.* **80** (1988), no. 2, 349–357. (I. Namioka) **89m:46027** 46B22
- (with Belanger, Alain) Two remarks on absolutely summing operators. *Math. Nachr.* **136** (1988), 229–232. (Hermann König) **89g:47024** 47B10 (46B22, 46G10)
- Downarowicz, Małgorzata** On series of homogeneous polynomials noncontinuable beyond their domain of convergence. *Univ. Jagel. Acta Math.* No. 26 (1987), 7–16. (Kwang Ho Shon) **89k:32028** 32D15
- Downarowicz, Tomasz** Sets of invariant measures of minimal flows: announcement. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 7–8, 521–523. (B. Kamiński) **89e:28027** 28D05 (58F11)
- A minimal 0-1 subshift with noncompact set of ergodic measures. *Probab. Theory Related Fields* **79** (1988), no. 1, 29–35. (J. C. Oxtoby) **89h:28025** 28D05
- (with Iwanik, A.) Quasi-uniform convergence in compact dynamical systems. *Studia Math.* **89** (1988), no. 1, 11–25. (F. M. Dekking) **89j:54042** 54H20 (28D05)
- Downey, Peter J.** (Probably) the minimum sum of squares. *Comm. Statist. Stochastic Models* **3** (1987), no. 3, 457–465. (Micha Hofri) **89k:05071** 05B40 (60K30, 62E20, 68Q25, 90C10)
- Downey, R. G.** Maximal theories. *Ann. Pure Appl. Logic* **33** (1987), no. 3, 245–282. (E. Herrmann) **89c:03069** 03D25
- $\Delta_1^0$  degrees and transfer theorems. *Illinois J. Math.* **31** (1987), no. 3, 419–427. (J. C. Owings, Jr.) **89c:03070** 03D25 (03D30)
- (with Remmel, J. B.; Welch, L. V.) Degrees of splittings and bases of recursively enumerable subspaces. *Trans. Amer. Math. Soc.* **302** (1987), no. 2, 683–714. (Decheng Ding) **89h:03073** 03D45 (03D25, 03D30)
- (with Remmel, J. B.) Automorphisms and recursive structures. *Z. Math. Logik Grundlag. Math.* **33** (1987), no. 4, 339–345. (Decheng Ding) **89a:03084** 03D45 (08A40)
- Two theorems on truth table degrees. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 281–287. (Barry Cooper) **89i:03082** 03D30 (03D25)
- Downham, D. Y.** (with Fotopoulos, S. B.) The transient behaviour of the simple random walk in the plane. *J. Appl. Probab.* **25** (1988), no. 1, 58–69. (Peter Arzberger) **89c:60079** 60I15 (60J27, 92A07, 92A15)
- Doyen, Jean** (with Buckenhou, F.; Delandtsheer, Anne) Finite linear spaces with flag-transitive groups. *J. Combin. Theory Ser. A* **49** (1988), no. 2, 268–293. (Vikram Jha) **89k:20007** 20B25 (05B25, 51A99, 51E10)
- Doyle, John C.** (with Glover, Keith) Relations between  $H_\infty$  and risk sensitive controllers. *Analysis and optimization of systems* (Antibes, 1988), 3–10, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (P. Sannuti) **89e:93070** 93B35
- (with Skogestad, Sigurd; Morari, Manfred) Robust control of ill-conditioned plants: high-purity distillation. *IEEE Trans. Automat. Control* **33** (1988), no. 12, 1092–1105. (Not in MR) **93C75**
- (with Lenz, Kathryn E.; Khargonekar, Pramod P.) When is a controller  $H^\infty$ -optimal? *Math. Control Signals Systems* **1** (1988), no. 2, 107–122. (Summary) **89h:93053** 93B35 (93B50)
- (with Glover, Keith) State-space formulae for all stabilizing controllers that satisfy an  $H_\infty$ -norm bound and relations to risk sensitivity. *Systems Control Lett.* **11** (1988), no. 3, 167–172. (Summary) **89e:93071** 93B35 (49D40, 93E20)
- Doyle, Peter G.** (with Snell, J. Laurie) ★ Random walks and electric networks. *Carus Mathematical Monographs*, 22. Mathematical Association of America, Washington, DC, 1984. xiv+159 pp. ISBN 0-88385-024-9 (H. Kesten) **89a:94023** 94C05 (60I15, 94C15)
- On deciding whether a surface is parabolic or hyperbolic. *Geometry of random motion* (Ithaca, N.Y., 1987), 41–48, *Contemp. Math.*, 73, Amer. Math. Soc., Providence, RI, 1988. (S. B. Klimentov) **89h:53043** 53A30
- (with Fishburn, Peter C.; Shepp, L. A.) The match set of a random permutation has the FK<sub>G</sub> property. *Ann. Probab.* **16** (1988), no. 3, 1194–1214. (Joseph Neggers) **89i:60035** 60E15 (06A10, 60B15)
- lami Dozo, E.** see Lami Dozo, E.
- Dozzi, M.** (with Doss, Halim) Estimations de grandes déviations pour les processus de diffusion à paramètre multidimensionnel. [Estimates of large deviations for diffusion processes with a multidimensional parameter] *Séminaire de Probabilités, XX*, 1984/85, 68–80, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (Introduction) **89g:60093** 60F10 (60J60)
- Drayner, J. P.** (with Castaños, O.) Contracted symplectic model with ds-shell applications. *Nuclear Phys. A* **491** (1989), no. 3, 349–372. (Summary) **89m:81195** 81G30
- Drábek, Pavel** Solvability of boundary value problems with homogeneous ordinary differential operator. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* **18** (1986), no. 2, 105–124. (Frederick A. Howes) **89b:34042** 34B15
- (with Kucera, Milan) Bifurcations of second order problems with jumping nonlinearities. *Bull. Austral. Math. Soc.* **37** (1988), no. 2, 179–187. (R. Guenther) **89a:34023** 34B15 (58F14)
- A resonance problem for nonlinear Duffing equation. *Comment. Math. Univ. Carolin.* **29** (1988), no. 2, 205–215. (Saber Elaydi) **89j:34057** 34C25 (34B25)

- (with Kučera, Milan) Reaction-diffusion systems: destabilizing effect of unilateral conditions. *Nonlinear Anal.* 12 (1988), no. 11, 1173–1192. (Reinhard Redinger) **89m:35115** 35K57 (35B35, 92A15)
- Drabkin, L.** (with Khussanov, M.) The relation between two potentials in the queuing system  $M[G|I]_{\infty}$  (Russian). *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1986, no. 4, 42–46, 90. (A. M. Zakharin) **89g:60287** 60K25 (60J15, 90B22)
- Drachman, B.** (with van Gils, S. A.; Zhang, Zhi Fen) Abelian integrals for quadratic vector fields. *J. Reine Angew. Math.* 382 (1987), 165–180. (Jinghuang Tian) **89h:34028** 34C05 (14K20, 58F21)
- (with Cloud, Michael; Nyquist, Dennis P.) Accurate evaluation of Sommerfeld integrals using the fast Fourier transform. *IEEE Trans. Antennas and Propagation* 37 (1989), no. 3, 403–406. (Summary) **89m:78002** 78-08
- Dragalin, A. G.** A completeness theorem for higher-order intuitionistic logic: an intuitionistic proof. *Mathematical logic and its applications (Druzhba, 1986)*, 107–124, *Plenum, New York-London*, 1987. (Wim Veldman) **89k:03081** 03F55 (03B15, 03B20, 03F05, 03F50)
- Dragalin, V. P.** (with Novikov, A. A.) Asymptotic solution of the Kiefer-Weiss problem for processes with independent increments. (Russian) *Teor. Veroyatnost. i Primenen.* 32 (1987), no. 4, 679–690. (R. Döhler) **89f:62069** 62M02 (62L15)
- (with Novikov, A. A.) Asymptotic expansions for 2-SPRT. *Probability theory and mathematical statistics (Kyoto, 1986)*, 366–375, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (From the introduction) **89m:62094** 62L10
- Dragan, Irinel** The multicoalitional bargaining set  $M_0$  versus the one-coalitional bargaining set  $M$ . *Libertas Math.* 7 (1987), 141–148. (J. Rosenmüller) **89a:90165** 90D12
- Drăgan, Vasile** Model reduction for exponential stability of systems of nonlinear differential equations coupled with nonlinear difference equations with small step-size. *Rev. Roumaine Sci. Tech. Sér. Electrotech. Energét.* 33 (1988), no. 1, 85–90. (Summary) **89d:93022** 93B17 (93C10, 93C55, 93D20)
- Drăgănescu, Gh. E.** (with Avram, N. M.) Coherent states for an harmonic damped oscillator associated to the  $O(2, 1)$  group. *An. Univ. Timișoara Științ. Fiz.* 24 (1986), 45–51. (A. O. Barut) **89a:81047** 81D30 (22E60, 22E70)
- Drăgăliș, P.** Nonanalytical ruled surfaces. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 327–346, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Hellmuth Stachel) **89c:53014** 53A25
- Dragomir, Anca-Dana** ★ Examples of exact categories with Serre class and Euler-Poincaré mapping. *Seminar Arhivade, 16. Universitatea din Timișoara, Facultatea de Științe ale Naturii, Secția Matematică, Timișoara*, 1986, 4 pp. (R. H. Street) **89a:18011** 18E10
- Examples of exact categories with Serre class and Euler-Poincaré mapping. *Proceedings of the Conference on Algebra (Romanian) (Timișoara, 1986)*, 29–32, Univ. Timișoara, Timișoara, 1987. (R. H. Street) **89k:18017** 18E10
- Dragomir, Sever Silvestru** (with Matei, St.) Congruences of Chebyshev type. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* 1986, November, 1–4. (Summary) **89b:13004** 13A99 (08A99)
- (with Crstici, B.) Sur une inéquation fonctionnelle. (Romanian summary) [On a certain functional inequality] *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* 1986, November, 30–32. (John A. Baker) **89c:39011** 39C05
- ★ The Gronwall type lemmas and applications. *Monografi Matematice [Mathematical Monographs]*, 29, *Universitatea din Timișoara, Facultatea de Științe ale Naturii, Secția Matematică, Timișoara*, 1987. viii+90 pp. (B. G. Pachpatte) **89c:26028** 26D10 (34A40, 45D05, 45N05)
- (with Muntean, Ioan) Linear and continuous functionals on complete  $Q$ -inner product spaces. *Seminar on mathematical analysis*, 59–68, Preprint, 87-7, Univ. "Babeș-Bolyai", Cluj-Napoca, 1987. (P. Miličević) **89a:46051** 46C99
- On Volterra integral equations with kernels of  $(L)$ -type. *An. Univ. Timișoara Ser. Științ. Mat.* 25 (1987), no. 2, 21–41. (Zai-Feng Song) **89f:45007** 45D05
- Representation of continuous linear functionals on smooth reflexive Banach spaces. *Anal. Numér. Théor. Approx.* 16 (1987), no. 1, 19–28. (G. M. Ustinov) **89f:46028** 46B20
- (with Matei, St.) Inequalities of Chebyshev-Grüss type. (Romanian summary) *Bul. Univ. Brașov Ser. C* 29 (1987), 119–122 (1988). (Liam O'Carroll) **89h:13035** 13J25 (60E15)
- (with Sándor, Iosif) Some inequalities in pre-Hilbertian spaces. (Romanian summary) *Studia Univ. Babeș-Bolyai Math.* 32 (1987), no. 1, 71–78. (E. R. Lorch) **89h:46034** 46C10
- (with Sándor, Iosif) Some inequalities in pre-Hilbertian spaces. *Proceedings of the National Conference on Geometry and Topology (Romanian) (Tirgoviste, 1986)*, 73–76, Univ. București, Bucharest, 1988. (P. Miličević) **89m:46033** 46C05
- Dragomir, Sorin** On recurrent cross sections in vector bundles over linearly connected differentiable manifolds. (Italian summary) *Boll. Un. Mat. Ital. D* (6) 5 (1986), no. 1, 43–49 (1987). (D. K. Datta) **89f:53046** 53C05
- (with Capursi, Mauro) On the topology of Landsberg spaces. (Italian summary) *Riv. Mat. Univ. Parma* (4) 13 (1987), 305–313 (1988). (H. Rund) **89m:53124** 53C60
- (with Ikeda, Satoshi) On the field equations in the theory of the gravitational fields in Finsler spaces. *Tensor (N.S.)* 44 (1987), no. 2, 157–163. (H. Rund) **89e:83055** 83D05 (53B40, 53B50)
- (with Amici, O.; Casciaro, Biagio) On the cohomology of Finsler manifolds. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 57–82, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (L. Tamásy) **89c:53101**; **EA** 89m:53C60 (58A12)
- On submanifolds of Hopf manifolds. *Israel J. Math.* 61 (1988), no. 2, 199–210. (Johan Deprez) **89g:53077** 53C40
- Dragon, N.** (with Buchmüller, W.) Einstein gravity from restricted coordinate invariance. *Phys. Lett. B* 207 (1988), no. 3, 292–294. (R. J. McKellar) **89h:83019** 83C40 (83C05, 83D05)
- Dragotti, Sara** (with Magro, Gaetano) Simplicial structures and dually conic maps. (Italian. English summary) *Ricerche Mat.* 35 (1986), no. 2, 269–278. (Jack Weinstein) **89e:57019** 57Q25 (57Q65)
- (with Magro, Gaetano)  $\mathcal{L}$ -manifolds and cone-dual maps. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1281–1289. (Gerard A. Venema) **89j:57018** 57Q55
- Dragović, B. G.** (with Arefeva, I. Ya.; Volovich, I. V.) Spontaneous reduction in multidimensional ( $D = 10, 11$ ) theories of supergravity with arbitrary signature. (Russian. English summary) *Teoret. Mat. Fiz.* 70 (1987), no. 3, 422–431. (Summary) **89c:83049** 83E50 (81G25, 83E15)
- (with Arefeva, I. Ya.; Volovich, I. V.) On the  $p$ -adic summability of the anharmonic oscillator. *Phys. Lett. B* 200 (1988), no. 4, 512–514. (Edward R. Vrscaj) **89h:81037** 81C15 (11Q25)
- Drake, David A.** (with Ho, Chat Yin) Projective extensions of Kirkman systems as substructures of projective planes. *J. Combin. Theory Ser. A* 48 (1988), no. 2, 197–208. (Chester J. Salwach) **89i:51010** 51E15 (05B25)
- Drake, J. F.** (with Mulbrandon, M.; Huba, J. D.) Three-dimensional equilibrium and stability of ionospheric plasma clouds. *Phys. Fluids* 31 (1988), no. 11, 3412–3424. (Summary) **89i:86014** 86A35 (76E25)
- Drake, J. M.** (with Harbour, M. Glez) Calculation of signal delay in integrated interconnections. *IEEE Trans. Circuits and Systems* 36 (1989), no. 2, 272–276. (Christoph Meinel) **89k:94086** 94C05
- Drake, Stillman** Galileo's constant. (Italian summary) *Nuncius Ann. Storia Sci.* 2 (1987), no. 2, 41–54. (William R. Shea) **89c:01021** 01A45
- The tower argument in the *Dialogue*. *Ann. of Sci.* 45 (1988), no. 3, 295–302. (William R. Shea) **89c:01019** 01A45
- Drakhlin, M. E.** A nonlinear inner superposition operator. (Russian) *Boundary value problems (Russian)*, 83–85, 197, *Perm. Politekh. Inst., Perm.*, 1983. (see **89c:00008**) 47H99 (46E30)
- On the problem of the stability of functional-differential equations of neutral type. (Russian) *Boundary value problems (Russian)*, 85–88, 159, *Perm. Politekh. Inst., Perm.*, 1984. (see **89b:00008**) 34K20
- A linear functional equation. (Russian) *Functional-differential equations (Russian)*, 91–111, vi–vii, *Perm. Politekh. Inst., Perm.*, 1985. (Witold Jarczyk) **89g:47033** 47B38 (39B99, 47A50)
- A nonlinear operator of inner superposition. (Russian) *Boundary value problems (Russian)*, 76–81, vii, *Perm. Politekh. Inst., Perm.*, 1986. (see **89c:00009**) 47H99
- Drakhina, N. Sh.** A modification of the Runge-Kutta method. (Russian) *Boundary value problems (Russian)*, 125–130, 199, *Perm. Politekh. Inst., Perm.*, 1983. (see **89c:00008**) 65L05
- An approach to the approximate solution of boundary value problems for functional-differential equations. (Russian) *Boundary value problems (Russian)*, 73–76, 158, *Perm. Politekh. Inst., Perm.*, 1984. (see **89b:00008**) 34K10 (34A45)
- Drakunov, Yu. M.** (with Dzholdasbekov, U. A.; Kosolov, S. B.; Moldabekov, M. M.) Synthesis of the original kinematic chains of mechanisms of higher classes. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1987, no. 3, 65–70. (Summary) **89f:70003** 70B15
- Drămbă, Constantin** see Mihăila, Ieronim, **89a:01076**
- Dranishnikov, A. N.** On resolutions of  $LC^*$ -compacta. *Geometric topology and shape theory (Dubrovnik, 1986)*, 48–59, *Lecture Notes in Math.*, 1283, Springer, Berlin-New York, 1987. (John J. Walsh) **89g:54084** 54F35 (54C10, 57N15)
- Infinite-dimensional compacta with finite cohomological dimension modulo  $p$ . *Geometric topology and shape theory (Dubrovnik, 1986)*, 60–64, *Lecture Notes in Math.*, 1283, Springer, Berlin-New York, 1987. (John J. Walsh) **89g:54085** 54F45 (55M10, 57N20)
- $Q$ -bundles without disjoint sections. (Russian) *Funktsional. Anal. i Prilozhen.* 22 (1988), no. 2, 79–80; translated in *Functional Anal. Appl.* 22 (1988), no. 2, 151–152. (Jack Weinstein) **89g:55025** 55R10 (57N20)
- On the realization of dimension functions. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 1, 32–38, 222; translated in *Siberian Math. J.* 29 (1988), no. 1, 24–29. (Vladimir T. Todorov) **89m:54048** 54F45
- Bokshtein inequalities in homology dimension theory. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 5, 1045–1048; translated in *Soviet Math. Dokl.* 37 (1988), no. 2, 505–509. (Andrzej Kozłowski) **89h:54024** 54F45 (55N99)
- On the dimension of the product of ANR-compacta. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 5, 1045–1049; translated in *Soviet Math. Dokl.* 37 (1988), no. 3, 769–773. (Jerzy Dydak) **89h:54025** 54F45 (54C55)
- Drăpal, A.** (with Bican, L.; Kepka, T.) Cancellative relations and matrices. (Russian and Czech summaries) *Acta Univ. Carolin. — Math. Phys.* 28 (1987), no. 1, 21–31. (Wiesław A. Dudek) **89b:15045** 15A99 (08A99, 13C99)
- (with Kepka, T.) Parity of orthogonal permutations. *Comment. Math. Univ. Carolin.* 28 (1987), no. 3, 427–432. (Cheryl E. Praeger) **89b:20144** 20N05 (20B99)
- Draper, David** Rank based robust analysis of linear models. I. Exposition and review. With comments and a rejoinder by the author. *Statist. Sci.* 3 (1988), no. 2, 239–271. (Summary) **89f:62106** 62J05 (62G10)
- Draper, N. R.** (with Guttman, I.) A common model selection criterion. *Probability and Bayesian statistics (Innsbruck, 1986)*, 139–150, *Plenum, New York-London*, 1987. (Title) **89a:62158** 62J05
- (with Sanders, Elizabeth R.) Designs for minimum bias estimation. *Technometrics* 30 (1988), no. 3, 319–325. (Summary) **89f:62122** 62K05
- (with John, J. A.) Response-surface designs for quantitative and qualitative variables. *Technometrics* 30 (1988), no. 4, 423–428. (Not in MR) 62K15
- (with Evans, Michael John; Guttman, I.) A Bayesian approach to system reliability when two components are dependent. *Comput. Statist. Data Anal.* 7 (1989), no. 1, 39–49. (Not in MR) 62N05 (90B25)
- Dragow, Fritz** (with Levine, Michael V.) Optimal appropriateness measurement. *Psychometrika* 53 (1988), no. 2, 161–176. (Summary) **89c:62140** 62P15 (92A25)
- Drasin, D.** Some recent successes in value-distribution theory. *Complex analysis, III (College Park, Md., 1985–86)*, 1–14, *Lecture Notes in Math.*, 1277, Springer, Berlin-New York, 1987. (Günter Frank) **89d:30034** 30D35
- see also Holomorphic functions and moduli, **89c:30001** and **89c:30002**
- Drăkovičová, Hilda** Weak direct product decomposition of algebras. *Contributions to general algebra*, 5 (Salzburg, 1986), 105–121, *Hölder-Pichler-Tempsky, Vienna*, 1987. (J. Jakubík (Zbl 632:08004)) **89c:08001** 08A30 (08A05)
- Drauschke, Gabriele** (with Tasche, Manfred) Prime factorizations for values of cyclotomic polynomials in  $\mathbb{Z}[i]$ . *Arch. Math. (Basel)* 49 (1987), no. 4, 292–300. (From the introduction) **89h:11065** 11R09
- (with Tasche, Manfred) Exact deconvolution using number-theoretic transforms. *Comput. Math. Appl.* 15 (1988), no. 9, 757–768. (Külmiz Çevik) **89e:65044** 65F30



- (11A07, 11Y16, 15A15, 94A05)
- Draux, André** On the nonnormal Padé table in a noncommutative algebra. *J. Comput. Appl. Math.* **21** (1988), no. 3, 271–288. (A. Magnus) **89d:41036** 41A21
- Dräxler, Peter**  $\mathcal{U}$ -Faserungen in darstellungstheoretischen Algebren. [U fiber sums in algebras of finite representation type] *J. Algebra* **113** (1988), no. 2, 430–437. (Alfred G. Wiedemann) **89d:16027** 16A46 (16A63, 16A64)
- Über einen Zusammenhang zwischen darstellungstheoretischen Algebren und geordneten Mengen. [On a connection between representation-finite algebras and ordered sets] *Manuscripta Math.* **60** (1988), no. 3, 349–377. (Hagen Meltzer) **89f:16041** 16A64
- Dray, Tevian** (with Manogue, Corinne A.) Bogolubov transformations and completeness. *Gen. Relativity Gravitation* **20** (1988), no. 9, 957–965. (Asao Arai) **89j:81025** 81C05 (81D05)
- Dražić, Philip G.** Perturbations of Jeffery-Hamel flows. *Applied mathematics, fluid mechanics, astrophysics* (Cambridge, MA, 1987), 129–133, World Sci. Publishing, Singapore, 1988. (see **89f:76002**) 76E05 (76E15)
- (with Banks, W. H. H.; Zatorska, M. B.) On perturbations of Jeffery-Hamel flow. *J. Fluid Mech.* **186** (1988), 559–581. (Summary) **89a:76025** 76D05
- Dröbner, K.** (with Kepka, T.; Némec, P.) Associativity semihypergroups and related problems. *Hypergroups, other multivalued structures and their applications* (Italian) (Udine, 1985), 75–86, Univ. Studi Udine, Udine, 1985. (Umberto Cerruti) **89f:20086** 20N99 (20M10)
- see also Procházka, Ladislav, **89a:01081**
- Dröbner, Cornelis** see Polunov, Yu. L., **89m:01107**
- Drechsler, Konrad** (with Stier, Ulrich) On completeness of varieties in enumerative geometry. *Beiträge Algebra Geom.* **26** (1988), 53–71. (Susan J. Colley) **89i:14045** 14N10 (14L30)
- Drenski, Veselin S.** (with Kasparian, Azniv) Polynomial identities of eighth degree for  $3 \times 3$  matrices. (Russian summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **77** (1983), no. 1, 175–195 (1988). (E. Formanek) **89h:16019** 16A38
- (with Popov, Angel P.) Prime varieties of associative algebras. *Mathematics and mathematical education* (Bulgarian) (Sunny Beach (Slivnitsa) 1987), 35–52, *Bulgar. Acad. Sci., Sofia*, 1987. (Yu. N. Maftsev) **89j:16027** 16A38
- (with Koshlukov, Plamen E.) Weak polynomial identities for a vector space with a symmetric bilinear form. (Bulgarian summary) *Mathematics and mathematical education* (Bulgarian) (Sunny Beach (Slivnitsa) 1987), 213–219, *Bulgar. Acad. Sci., Sofia*, 1987. (B. Reichstein) **89j:15043** 15A66 (16A38)
- (with Koshlukov, Plamen E.) Polynomial identities for quadratic Jordan algebras. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 9, 5–8. (Armin Thedy) **89e:17023** 17C05
- Polynomial identities for the Jordan algebra of a symmetric bilinear form. *J. Algebra* **108** (1987), no. 1, 66–87. (Introduction) **89a:17031** 17C05
- see also Wolfmann, Jacques, **89f:94020**
- Drešević, Milan** Equivalent formulations of the axiom of completeness. (Serbo-Croatian) *Matematika* (Zagreb) **14** (1985), no. 3–4, 15–27 (1986). (Djuro Kurepa) **89h:26001** 26A03 (03B30, 12J15)
- Dresner, Lawrence** Similarity solutions of nonlinear partial differential equations invariant to a family of affine groups. *Mathematical modelling in science and technology* (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 531–534. (Summary) **89h:35017** 35A30 (58G35)
- Dress, Andreas** The 37 combinatorial types of regular “Heaven and Hell” patterns in the Euclidean plane. *M. C. Escher: art and science* (Rome, 1985), 35–45, North-Holland, Amsterdam-New York, 1986. (see **89m:00011**) 52A45 (52A37)
- (with Havel, Timothy F.) The fundamental theory of distance geometry. *Computer aided geometric reasoning, Vol. I, II* (Sophia-Antipolis, 1987), 127–169, INRIA, Rocquencourt, 1987. (V. N. Berestovskii) **89c:51020** 51K05
- (with Siebeneicher, Christian) Symmetric powers of cyclic sets and the definition of A. Weil’s zeta-functions. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 407–411, *Proc. Sympos. Pure Math.*, **47**, Part 2, Amer. Math. Soc., Providence, RI, 1987. (H.-G. Rück) **89h:14030** 14G10
- (with Scharlau, Rudolf) Gated sets in metric spaces. *Aequationes Math.* **34** (1987), no. 1, 112–120. (S. V. Tsaranov) **89c:54057** 54E35 (51D20)
- (with Huson, Daniel) On tilings of the plane. *Geom. Dedicata* **24** (1987), no. 3, 295–310. (E. Hertel) **89d:52030** 52A45
- (with Franz, Reinhard) Zu einer Frage von Herrn S. Bilinski Pflasterungen von Brezellaflächen betreffend. (English and Serbo-Croatian summaries) [On a problem of S. Bilinski concerning pavings of pretzel surfaces] *Rad Jugoslav. Akad. Znan. Umjet.* **No. 428** (1987), 83–101. (J. M. Wills) **89h:52008** 52A37 (57Q15)
- (with Schulte, Egon) On a theorem of McMullen about combinatorially regular polytopes. *Simon Stevin* **61** (1987), no. 3–4, 265–273. (Antonio Pasini) **89f:52012** 52A25 (51B05, 51M20)
- (with Gerhardt, Martin; Schuster, Heike) Cellular automata simulating the evolution of structure through the synchronization of oscillators. *From chemical to biological organization*, 134–145, *Springer Ser. Synergetics*, 39, Springer, Berlin-New York, 1988. (Summary) **89m:92063** 92A40 (58F40, 68Q80, 92A12)
- (with Rumschitzki, D. S.) Evolution on sequence space and tensor products of representation spaces. *Acta Appl. Math.* **11** (1988), no. 2, 103–115. (Harold N. Ward) **89k:92037** 92A12 (05B99, 20C30, 94B25)
- (with Siebeneicher, Christian) The Burnside ring of profinite groups and the Witt vector construction. *Adv. in Math.* **70** (1988), no. 1, 87–132. (H.-G. Rück) **89m:20025** 20E18 (12C99)
- (with Havel, Timothy F.) Shortest-path problems and molecular conformation. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1–3, 129–144. (G. W. Peck) **89c:92063** 92A40 (90B10)
- On matroids which have precisely one basis in common. *European J. Combin.* **9** (1988), no. 2, 149–151. (Jiří Tůma) **89i:05078** 05B35
- (with Eigen, Manfred; Winkler-Oswatitsch, Ruthild) Statistical geometry in sequence space: a method of quantitative comparative sequence analysis. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 16, 5913–5917. (C. Cunnings) **89i:92029** 92A12
- Dress, F.** (with Cohen, Henri) Estimations numériques du reste de la fonction sommatoire relative aux entiers sans facteur carré. [Numerical estimates of the remainder of the sum function relative to squarefree numbers] *Colloque de Théorie Analytique des Nombres*
- “Jean Coquet” (Marseille, 1985), 73–76, *Publ. Math. Orsay*, 88-02, Univ. Paris XI, Orsay, 1988. (Joseph Sándor) **89i:11103** 11N37 (11Y35)
- (with Deshouillers, Jean-Marc) Sommes de diviseurs et structure multiplicative des entiers. [Divisor sums and multiplicative structure of the integers] *Acta Arith.* **49** (1988), no. 4, 341–375. (Don Redmond) **89e:11054** 11N37 (11P05)
- (with Amice, Y.; Bertin, M.-J.; Bertrandias, F.; Decomps-Guillaud, Annette; Grandet, M.; Mendes France, M.; Rauzy, Gérard) Charles Pisot. (French) *Acta Arith.* **51** (1988), no. 1, 1–4. (Editors) **89i:01054** 01A70
- Dresse, Alain** (with Fisch, Jean; Henneaux, M.; Schombond, Christiane) Consistent elimination of redundant second-class constraints. *Phys. Lett. B* **210** (1988), no. 1–2, 141–146. (George Siopsis) **89j:81171** 81E99 (81D07, 81E30)
- Dressler, K.** Stationary solutions of the Vlasov-Fokker-Planck equation. *Math. Methods Appl. Sci.* **9** (1987), no. 2, 169–176. (Nina B. Maslova) **89f:82049** 82A45 (45K05)
- Dressler, Robert E.** (with Cochrane, Todd) Consecutive triples of sums of two squares. *Arch. Math. (Basel)* **49** (1987), no. 4, 301–304. (O. H. Körner) **89f:11057** 11E25
- le Dret, Hervé** see Le Dret, Hervé
- Drew, Alison** *The deoderm et diverso. Adelard of Bath*, 17–24, Warburg Inst. Surveys Texts, XIV, Warburg Inst., London, 1987. (see **89c:01017**) 01A35
- Drew, Donald A.** Constitutive equations and the origin inequality for multiphase flows. *Constitutive models of deformation* (Blacksburg, VA, 1986), 37–58, SIAM, Philadelphia, PA, 1987. (see **89f:73004**) 76T05 (76A02)
- Drewnowski, Lech** A remark on the Amir-Cambern theorem. *Funct. Approx. Comment. Math.* **16** (1988), 181–190. (Y. Benyamini) **89f:46027** 46E25 (54C99)
- On uncountable unconditional bases in Banach spaces. *Studia Math.* **90** (1988), no. 3, 191–196. (Summary) **89i:46014** 46B15
- Dreys, Klaus-Dieter** Angebote zu ersten Verallgemeinerungen von Sätzen der elementaren Integralrechnung. [Offers on first generalizations of theorems of elementary integral calculus] *Rostock. Math. Kolloq.* **No. 34** (1988), 13–20. (Roland Fischer) **89k:26001** 26A06 (26A36, 26A42)
- Drexl, A.** A simulated annealing approach to the multiconstraint zero-one knapsack problem. (German summary) *Computing* **40** (1988), no. 1, 1–8. (Summary) **89a:90086** 90C09 (65K05)
- Dreyer, Wolfgang** Maximisation of the entropy in nonequilibrium. *J. Phys. A* **20** (1987), no. 18, 6505–6517. (Carlo Cercignani) **89c:82026** 82A35 (82A40)
- Dreyfus, G.** (with Guyon, I.; Personnaz, L.; Nadal, J.-P.) Storage and retrieval of complex sequences in neural networks. *Phys. Rev. A* **3** (1988), no. 12, 6365–6372. (Summary) **89m:92019** 92A09 (58F08, 58F40, 68T99)
- Dreze, Jacques H.** Moral expectation with moral hazard. *Contributions to mathematical economics*, 187–204, North-Holland, Amsterdam-New York, 1986. (Christian Gilles) **89g:90038** 90A10 (90A05)
- Essays on economic decisions under uncertainty. *Cambridge University Press, Cambridge-New York*, 1987. xxviii+424 pp. ISBN 0-521-26484-7 (G. Pederzoli) **89c:01098** 01A75 (90-03, 90A05, 90A10)
- Dreze, Jean** (with Stern, Nicholas) The theory of cost-benefit analysis. *Handbook of public economics, Vol. II*, 909–989, *Handbooks in Econ.*, **4**, North-Holland, Amsterdam-New York, 1987. (see **89m:90026**) 90A19
- Drezet, J.-M.** Fibrés exceptionnels et variétés de modules de faisceaux semi-stables sur  $P_2(\mathbb{C})$ . [Exceptional bundles and moduli varieties of semistable sheaves in  $P_2(\mathbb{C})$ ] *J. Reine Angew. Math.* **380** (1987), 14–58. (Alexey N. Rudakov) **89e:14016** 14F05 (14D20)
- Groupe de Picard des variétés de modules de faisceaux semi-stables sur  $P_2(\mathbb{C})$ . [The Picard group of moduli varieties of semistable sheaves over  $P_2(\mathbb{C})$ ] *Ann. Inst. Fourier (Grenoble)* **38** (1988), no. 3, 105–168. (Alexey N. Rudakov) **89m:14007** 14D22 (14C22, 14D25, 14F05, 14L30)
- Cohomologie des variétés de modules de hauteur nulle. [Cohomology of moduli varieties of height zero] *Math. Ann.* **281** (1988), no. 1, 43–85. (P. E. Newstead) **89j:14009** 14F05 (14D22)
- Dreznar, Zvi** Location strategies for satellites’ orbits. *Naval Res. Logist.* **35** (1988), no. 5, 503–512. (Not in MR) 90B99
- Conditional  $p$ -center problems. *Transportation Sci.* **23** (1989), no. 1, 51–53. (Summary) **89m:90060** 90B10
- Driankov, Dimitar** Inference with a single fuzzy conditional proposition. *Fuzzy Sets and Systems* **24** (1987), no. 1, 51–63. (Anita Wasilewska) **89b:03047** 03B52
- Driencourt, Yves** Un exemple de codes géométriques: les codes elliptiques. (English summary) [An example of geometric codes: the elliptic codes] *Traitement Signal* **4** (1987), no. 2, 147–153. (Harold N. Ward) **89c:11179** 11T71 (14G15, 94B05)
- Dries, F.** (with Moustafa, K. A.; Asfar, K.) Modelling and identification of offshore towers with general damping. *Internat. J. Systems Sci.* **19** (1988), no. 11, 2367–2379. (Summary) **89i:93114** 93E12 (00A71)
- van den Dries, Lou** (with Denef, J.)  $p$ -adic and real subanalytic sets. *Ann. of Math.* (2) **128** (1988), no. 1, 79–138. (Max A. Dickmann) **89k:03034** 03C10 (03C60, 14G20, 14G30, 32B20)
- Elimination theory for the ring of algebraic integers. *J. Reine Angew. Math.* **388** (1988), 189–205. (S. A. Basarab) **89k:03038** 03C60 (11D72, 12L05)
- Alfred Tarski’s elimination theory for real closed fields. *J. Symbolic Logic* **53** (1988), no. 1, 7–19. (Eva Hartová) **89h:01040** 01A60 (01A70, 03-03, 03C10, 12L12)
- On the elementary theory of restricted elementary functions. *J. Symbolic Logic* **53** (1988), no. 3, 796–808. (M. Yasuhara) **89i:03074** 03C65 (03C40, 03C68, 12L12)
- van den Dries, R. J. C. H.** A sufficient condition for a function to be a symbol. *Delft Progr. Rep.* **12** (1988), no. 2, 193–197. (Jorge Hounie) **89j:35135** 35S05
- Drieschner, M.** (with Gornitz, Thomas; von Weizsäcker, C.-F.) Reconstruction of abstract quantum theory. *Internat. J. Theoret. Phys.* **27** (1988), no. 3, 289–306. (Jeffrey Bub) **89k:81006** 81B05
- van den Driessche, P.** (with Jeffries, Clark) Eigenvalues of matrices with tree graphs. *Linear Algebra Appl.* **101** (1988), 109–120. (Larry Basenpiller) **89i:05198** 05C50
- Drigo Filho, E.** (with Alves, N. A.) The factorisation method and supersymmetry. *J. Phys. A* **21** (1988), no. 15, 3215–3225. (Yusuke Kato) **89j:81021** 81C05 (81D05)
- The Morse oscillator generalised from supersymmetry. *J. Phys. A* **21** (1988), no. 21, L1025–L1028. (Summary) **89k:81023** 81C05
- Drin, M. M.** Correct solvability of parabolic conjugation problems in spaces of increasing functions. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 4, 518–520, 543. (A. Borzomowski)

- 89b:35064** 35K35
- Drinfeld, V. G.** On quadratic commutation relations in the quasiclassical case. (Russian) *Mathematical physics, functional analysis* (Russian), 25–34, 143, "Naukova Dumka", Kiev, 1986. (J. S. Joel) **89c:58048** 58F07 (16A24, 17B65)
- Quantum groups. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 798–820, *Amer. Math. Soc., Providence, RI*, 1987. (Editors) **89f:17017** 17B50 (16A24, 17B65, 57T05, 58F07, 82A05, 82A15)
- Moduli varieties of  $F$ -sheaves. (Russian) *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 2, 23–41. (Ernst-Wilhelm Zink) **89b:11092** 11R39 (11F70, 11G15, 11G18, 14F05)
- Cohomology of compactified moduli varieties of  $F$ -sheaves of rank 2. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **162** (1987), Avtomorf. Funkts. i Teor. Chisel. III, 107–158, 189. (Thomas Zink) **89b:11050** 11G20 (11F67, 11F70, 11R39, 11R58, 14G99, 22E50)
- see also Verdier, Jean-Louis, **89f:17021**
- Drillet, Denise** (with Hanouzet, B.) Systèmes hyperboliques semi-linéaires conservatifs 1-D. (English summary) [One-dimensional conservative semilinear hyperbolic systems] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 6, 231–234. (Summary) **89j:35082** 35L60
- Drisch, Thomas** (with Sandler, Wolfgang) A remark on realizations of stochastic processes. *Contributions to stochastic*, 59–62, *Physica, Heidelberg*, 1987. (Summary) **89g:60129** 60G05 (60G17)
- Driscoll, Bonita Hart** Eigenvalues on a domain with discrete rotational symmetry. *SIAM J. Math. Anal.* **18** (1987), no. 4, 941–953. (M. Puta (Zbl 629:58024)) **89c:58129** 58G25 (35P10)
- Driscoll, Michael F.** (with Kaigh, W. D.) Characterizations and  $O$ -statistic representations of  $LU$ -statistics. *Comm. Statist. Theory Methods* **17** (1988), no. 8, 2763–2777. (K. D. Ling) **89j:62025** 62E10 (62G30)
- Drits, V. V.** (with Volkov, V. M.) Conservative difference methods for solving quasioptical problems. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 1, 8–15, 122. (Summary) **89c:65136** 65P05 (78-08)
- Drtschel, David G.** Contour surgery: a topological reconnection scheme for extended integrations using contour dynamics. *J. Comput. Phys.* **77** (1988), no. 1, 240–266. (Summary) **89c:76005** 76-08 (76C05)
- The repeated filamentation of two-dimensional vorticity interfaces. *J. Fluid Mech.* **194** (1988), 511–547. (Summary) **89m:76042** 76E30 (76C05)
- Drjević, Hamid** On a functional which is quadratic on  $A$ -orthogonal vectors. *Publ. Inst. Math. (Beograd) (N.S.)* **40**(54) (1986), 63–71. (Summary) **89a:46050** 46C10
- The stability of the weakly additive functional. *Nonlinear analysis*, 287–306, *World Sci. Publishing, Singapore*, 1987. (W. A. Woyczyński) **89f:46058** 46E30 (47H99)
- Drnota, Michael** Metrische Sätze über schwach gleichmäßig gleichverteilte Funktionen. [Metric theorems on weakly uniformly distributed functions] *Anz. Österreich. Akad. Wiss. Math.-Natur. Kl.* **124** (1987), 113–118 (1988). (Marthe Grandet) **89m:11073** 11K36 (11K41)
- (with Tichy, Robert F.)  $C$ -uniform distribution on compact metric spaces. *J. Math. Anal. Appl.* **129** (1988), no. 1, 284–292. (V. Losert) **89a:11078** 11K06 (28A75)
- An optimal lower bound for the discrepancy of  $c$ -uniformly distributed functions modulo 1. *Nederl. Akad. Wetensch. Indag. Math.* **50** (1988), no. 1, 21–28. (W. W. L. Chen) **89c:11114** EA **89m** 11K06
- (with Tichy, Robert F.)  $C$ -uniform distribution of entire functions. *Rend. Sem. Mat. Univ. Padova* **79** (1988), 49–58. (R. P. Boas, Jr.) **89j:30039** 30D35 (11K36)
- Drobyshev, Yu. P.** see *Mathematical models for the representation of information and data processing problems*, **89a:00010**
- Droesbeke, F.** see *Spatial processes and spatial time series analysis*, **89b:62007**
- Drogou, M.** (with Proust, C.; Foucher, J. M.; Foucheyrand, E.) Une heuristique pour le problème d'ordonnement statique de type  $n/m$  flowshop, avec prise en compte des temps de montage et démontage d'outils. (English summary) [A heuristic for the  $n/m$  flowshop static scheduling problem, with setup and removal times taken into account] *RAIRO Automat.-Prod. Inform. Ind.* **22** (1988), no. 5, 453–470. (Not in MR) **90B35** (90B22)
- Dronamraju, Krishna R.** On some aspects of the life and work of John Burdon Sanderson Haldane, F.R.S., in India. *Notes and Records Roy. Soc. London* **41** (1987), no. 2, 211–237. (Ivar Heuch) **89d:01059** 01A70 (92-03, 92A10)
- Dronov, S. G.** (with Ligin, A. A.) Duality for  $L$ -splines. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 6, 776–778, 815. (Gheorghe Micula) **89a:41008** 41A15
- Dronov, S. V.** (with Sakhanenko, A. I.) On the rate of convergence in the multidimensional invariance principle for functionals of integral type. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 3, 78–88, 222. (Summary) **89c:60076** 60F17
- Dror, M.** (with Ball, Michael O.; Golden, B.) A computational comparison of algorithms for the inventory routing problem. *Ann. Oper. Res.* **4** (1985), no. 1–4, 3–23. (Summary) **89b:90074** 90B10 (90B05, 90B35)
- Dror Farjoun, E.** (with Zabrodsky, A.) The homotopy spectral sequence for equivariant function complexes. *Algebraic topology*, Barcelona, 1986, 54–81, *Lecture Notes in Math.*, 1298, *Springer, Berlin-New York*, 1987. (John McCleary) **89f:55016** 55T15 (55P60, 55Q52, 55U10)
- Homotopy and homology of diagrams of spaces. *Algebraic topology* (Seattle, Wash., 1985), 93–134, *Lecture Notes in Math.*, 1286, *Springer, Berlin-New York*, 1987. (J. P. May) **89b:55012** 55P65
- The topology of 4-manifolds. *Proceedings of the Israel Mathematical Union Conference (Tel Aviv, 1987)*, 10–14, *Tel Aviv Univ., Tel Aviv*, 1987. (Laurence R. Taylor) **89k:57035** 57N13
- Dröbler, Jan** The psychophysical function of binocular space perception. *J. Math. Psych.* **32** (1988), no. 3, 285–297. (Summary) **89j:92071** 92A27
- Drost, F. C.** A limit theorem for some modified chi-square statistics when the number of classes increases. *Mathematical statistics and probability theory*, Vol. B (Bad Tatzmannsdorf, 1986), 43–58, *Reidel, Dordrecht-Boston, MA-London*, 1987. (Lionel Weiss) **89c:62040** 62E20 (62G10)
- ★ Asymptotics for generalized chi-square goodness-of-fit tests. *CWI Tract*, 48, *Stichting Mathematisch Centrum, Centrum voor Wiskunde en Informatica, Amsterdam*, 1988. iv+104 pp. ISBN 90-6196-348-6 (T. Bednarski) **89b:62036** 62F03 (62F05)
- Droste, Manfred** Classification and transformation of ordinal scales in the theory of measurement. *Progress in mathematical psychology*, I, 47–55, *North-Holland, Amsterdam-New York*, 1987. (Fred W. Roush) **89c:92084** 92A25
- Super-rigid families of strongly Blackwell spaces. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 803–808. (Rae M. Shortt) **89c:28006** 28A20 (28A05, 54C05, 60A99)
- Drosten, K.** Translating algebraic specifications to PROLOG programs: a comparative study. *Algebraic and logic programming* (Gaussig, 1988), 137–146, *Math. Res.*, 49, *Akademie-Verlag, Berlin*, 1988. (see **89j:68002**) **68T25**
- Drouot, R.** (with Maugin, Gérard A.) Polyelectrolyte solutions: equilibrium conformations of the microstructure without and with external fields. *Internat. J. Engrg. Sci.* **26** (1988), no. 3, 225–241. (Summary) **89c:76023** 76A99 (76E99)
- Droz, Michel** (with Chopard, Bastien) Cellular automata model for thermo-hydrodynamics. *Chaos and complexity* (Torino, 1987), 302–306, *World Sci. Publishing, Singapore*, 1988. (Summary) **89f:76036** 76D05 (76-08, 80A20, 82A40)
- (with Chopard, Bastien) Nonequilibrium phase transitions and cellular automata. *Chaos and complexity* (Torino, 1987), 307–317, *World Sci. Publishing, Singapore*, 1988. (Summary) **89i:82114** 82A99 (68Q80, 82-08, 82A25, 92A40)
- (with Chopard, Bastien) Cellular automata model for heat conduction in a fluid. *Phys. Lett. A* **126** (1988), no. 8–9, 476–480. (Summary) **89a:80002** 80A20 (65C20, 76N15)
- Droz, Yu. A.** (with Kaluzhnik, L. A.; Zavalo, S. T.) Development of the algebraic school at Kiev University. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* **27** (1985), 48–52, 125. (Editors) **89g:01064** 01A72 (01A73)
- Drozda, W.** Distortion problem for bounded convex functions normalized by Montel's conditions. (Russian and Polish summaries) *Proceedings of the 9th Conference on Analytic Functions* (Lublin, 1986). *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **40** (1986), 21–29 (1987). (Carl P. McCarty) **89b:30017** 30C45
- Drozdz, A. D.** (with Zhukhovitskii, D. M.) Stability of circular plates from ageing viscoelastic material. *J. Appl. Math. Mech.* **50** (1986), no. 2, 208–212 (1987); translated from *Prikl. Mat. Mekh.* **50** (1986), no. 2, 279–283 (Russian). (V. K. Arya) **89c:73048** 73K10 (73F20, 73H99)
- (with Arutyunyan, N. Kh.; Kolmanovskii, V. B.) Stability of viscoelastic bodies and of elements of constructions. (Russian. English summary) *Mechanics of a solid deformable body*, Vol. 19 (Russian), 3–77, 187, *Izvestiya Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (Summary) **89a:73034** 73F20 (73H99)
- Drozdz, V. V.** (with Degtyarev, L. M.; Poshekhonov, Yu. Yu.) A three-dimensional problem of magnetohydrodynamic equilibrium: possible scalar formulations. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 102, 23 pp. (Summary) **89a:76055** 76W05 (76-08, 82A45)
- (with Degtyarev, L. M.; Poshekhonov, Yu. Yu.) A discrete model of the three-dimensional magnetohydrodynamic equilibrium of a plasma on arbitrary curvilinear grids. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 137, 20 pp. (Summary) **89a:76056** 76W05 (65P05, 82A45)
- (with Galkin, S. A.) A method for the numerical solution of an elliptic problem with a free boundary. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 183, 24 pp. (Summary) **89a:65184** 65N99
- (with Galkin, S. A.) An iterative method for solving an elliptic problem with a free boundary. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1171–1175, 1284; translated in *Differential Equations* **24** (1988), no. 7, 755–758. (Jaroslaw Jelen) **89k:65125** 65N20
- Drozdz, O. M.** (with Gulik, A. V.; Kartyshov, S. V.; Koshelev, I. M.) Numerical investigation of the stability of higher-order differential-algebraic systems with delay. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 141, 23 pp. (Summary) **89b:65121** 65L07
- Drozdzowski, E. E.** (with Brusilovskii, P. M.; Gurman, V. I.) ★ Приложение математических моделей к анализу эколого-экономических систем. (Russian) [Application of mathematical models to the analysis of ecological-economic systems] Edited by I. A. Bashalkhanov and V. A. Baturin. "Nauka" Sibirsk. Otdel, Novosibirsk, 1988. 216 pp. (Editors) **89d:90069** 90A30
- Drozdzowicz, A.** (with Popena, Jerzy) Asymptotic behavior of the solutions of the second order difference equation. *Fasc. Math.* **17** (1987), 87–96. (Shigeru Haruki) **89c:39001** 39A10
- On the polynomial solutions of the finite difference equations. *Fasc. Math.* **17** (1987), 97–100. (Shigeru Haruki) **89c:39002** 39A10
- On the asymptotic behaviour of solutions of the second order difference equations. (Serbo-Croatian summary) *Glas. Mat. Ser. III* **22**(42) (1987), no. 2, 327–333. (B. M. Agrawal) **89i:39003** 39A10
- Drozhzhin, I. A.** Supremal generators of finite order. (Russian) *Application of functional analysis, in approximation theory* (Russian), 23–30, 143, *Kalinin. Gos. Univ., Kalinin*, 1984. (see **89c:00006**) **41A65**
- Approximation of continuous functions with constraints. (Russian) *Application of functional analysis in approximation theory* (Russian), 37–42, *Kalinin. Gos. Univ., Kalinin*, 1987. (S. D. Riemenschneider) **89b:41044** 41A29 (41A50, 41A52)
- Drozhzhinov, Yu. N.** (with Vladimirov, V. S.; Zavyalov, B. I.) ★ Tauberian theorems for generalized functions. Translated from the Russian. *Mathematics and its Applications* (Soviet Series), 10, *Kluwer Academic Publishers Group, Dordrecht*, 1988. xvi+293 pp. ISBN 90-277-2383-4 (Editors) **89j:46043** 46F12 (33A40, 40E05, 81E99, 81F99)
- see also Finashina, G. N., **89b:01042**
- Droz-Vincent, Philippe** New quantizations of the free Nambu string. *Phys. Lett. A* **123** (1987), no. 4, 157–161. (Summary) **89c:81115** 81E99 (81E30)
- Drozhinov, Yu. N.** see *Drozhzhinov, Yu. N.*
- Drs, L.** Drie- und zweieckige Pflaster. [Three- and two-cornered tiles] *Computergeometrie (Johanngeorgenstadt, 1986)*, 16–21, *Studientexte*, 92, *Tech. Univ. Dresden, Dresden*, 1986. (Wolfgang Boehm) **89b:65043b** 65D10 (65-06)
- Druck, Iole F.** (with Reyes, Gonzalo E.) Sur la convergence de suites de fonctions suivant des filtres. [On the convergence of sequences of functions over filters] *Categorical algebra and its applications* (Louvain-La-Neuve, 1987), 102–106, *Lecture Notes in Math.*, 1348, *Springer, Berlin-New York*, 1988. (P. A. Loeb) **89m:26024** 26B99 (26E35, 40A30)
- Druad, Arne Stulberg** Interfaces between modeling systems and solution algorithms. *Mathematical models for decision support* (Val d'Isère, 1987), 187–196, *NATO Adv. Sci.*



- Inst. Ser. F: Comput. Systems Sci., 48, Springer, Berlin-New York, 1988. (see 89g:90136) 90C99
- Drueg, H. W. (with Lewis, P. A. W.; Orav, E. J.; Linnebur, D. G.; Uribe, L.) An implementation of graphical analysis in statistical simulations. (French summary) *Internat. Statist. Rev.* 53 (1985), no. 1, 69-90. (Summary) 89f:62017 62E25
- Drusetta, Maria J. The rank in homogeneous spaces of nonpositive curvature. *Proc. Amer. Math. Soc.* 105 (1989), no. 4, 972-978. (Werner Ballmann) 89h:53106 53C30
- Drugowich de Felicio, J. R. (with Martins, Márcio J.) Phase diagram of the  $N$ -colour Ashkin-Teller model. *J. Phys. A* 21 (1988), no. 4, 1117-1121. (Summary) 89c:82074 82A68 (82A25)
- Drum, M. J. Boundary element method applied to the eddy current problem. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 185-193, North-Holland, Amsterdam-New York, 1988. (Summary) 89d:78003 78-08
- Drummond, P. D. (with Gardiner, C. W.) Causality in the Coulomb gauge: a direct proof. *Phys. Rev. A* (3) 38 (1988), no. 9, 4897-4898. (Summary) 89f:78004 78A25
- Drury, S. W. Extreme points for positive forms on  $P$ . *Linear Algebra Appl.* 97 (1987), 219-228. (R. A. Brualdi) 89c:15031 15A60 (05C05, 46N05)
- Estimates for a multilinear form on the sphere. *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 3, 533-537. (Tatjana Ostrogori) 89m:42011 42B10 (26D10, 46E99)
- Druskin, V. L. (with Knizhnerman, L. A.) A method for solving direct problems of electrical logging and prospecting with direct current. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* 1987, no. 4, 63-71. (Summary) 89m:66016 86A20 (86-08)
- Druzhkova, T. A. (with Erakhtina, G. M.) Academic research by students in a general course on ordinary differential equations. (Russian) *Mathematical analysis* (Russian), 107-110, Leningrad. Gos. Ped. Inst., Leningrad, 1988. (see 89f:00021) 00A25 (34A05)
- Druszkowski, Ludwik M. Formulae for the inverse of a polynomial automorphism of  $\mathbb{C}^2$ . (Polish summary) *Bull. Soc. Sci. Lett. Lodz* 37 (1987), no. 4, 7 pp. (L. Andrew Campbell) 89m:13002 13B10 (14E20, 32H99)
- Drygas, Hilmar (with Zmyslony, Roman) On admissible estimation for parametric functions in linear models. *Statist. Hefte* 29 (1988), no. 2, 113-123. (David Birkes) 89j:62094 62J05 (62C15)
- Dryja, M. (with Udawia, F. E.; Mantel, F.) On the optimal design of structures subjected to periodic base excitations. *SIAM J. Control Optim.* 26 (1988), no. 6, 1306-1320. (De Xing Feng) 89m:73028 73K40 (49B22, 93C20)
- An additive Schwarz algorithm for two- and three-dimensional finite element elliptic problems. *Domain decomposition methods* (Los Angeles, CA, 1988), 168-172, SIAM, Philadelphia, PA, 1989. (see 89j:65010) 65N30
- Drysdale, Robert L., III (with Jerard, Robert B.; Schaudt, Barry; Hauck, Ken) Discrete simulation of NC machining. *Computational geometry* (Waterloo, ON, 1987). *Algorithmica* 4 (1989), no. 1, 33-60. (Summary) 89m:68143 68U30 (68U05)
- Dryuma, V. S. Application of Cartan's geometric method to the study of nonlinear dynamical systems. (Russian) *Mat. Issled.* 92 *Dinamicheskie Sistemy i Kraevye Zadachi* (1987), 49-68, 182. (Zhirvko S. Athanasov) 89a:58099 58F35 (58A15)
- Geometric properties of nonlinear dynamical systems. (Russian) *Mat. Issled.* 99 *Dinam. Sistemy Uravn. Mat. Fiz.* (1988), 75-84, 171. (Li Li) 89k:58211 58F14 (34C35)
- Dshalalov, Jewgeni On a multichannel transportation loss system with controlled input and controlled service. *J. Appl. Math. Simulation* 1 (1987), no. 1, 41-55. (Summary) 89m:60224a 60K25 (90B22)
- Corrections to: "On a multichannel transportation loss system with controlled input and controlled service" [*J. Appl. Math. Simulation* 1 (1987), no. 1, 41-55]. *J. Appl. Math. Simulation* 1 (1987), no. 2, 159. (Editors) 89m:60224b 60K25 (90B22)
- On a duality principle in processes of servicing machines with double control. *J. Appl. Math. Simulation* 1 (1988), no. 3, 245-252. (M. M. Siddiqui) 89m:60225 60K25 (90B22)
- D'Souza, Harry Threefold whose hyperplane sections are elliptic surfaces. *Pacific J. Math.* 134 (1988), no. 1, 57-78. (Fumio Sakai) 89i:14028 14J10 (14C20, 14J30)
- On the monodromy group of everywhere tangent lines to the octic surface in  $\mathbb{P}^3$ . *Proc. Amer. Math. Soc.* 194 (1988), no. 4, 1010-1013. (Ragni Piene) 89d:14065 14N10
- Du, Bao-Sen see Tu, Pao Shing
- Du, Bei Liang (with Zhu, Lie; Yin, Jian Xing) Some new balanced incomplete block designs with  $k = 6$  and  $\lambda = 1$ . *Arch. Math.* 24 (1987), 167-174. (Lars Døvling Andersen) 89g:05028 05B05
- Du, Ding Zhao (with Ko, Ker-I; Long, Timothy J.) On one-way functions and polynomial-time isomorphisms. *Theoret. Comput. Sci.* 47 (1986), no. 3, 263-276. (Summary) 89c:68036 68Q15 (03D15)
- When is a monotonic grouping optimal. *Reliability theory and applications* (Shanghai, Xi'an, Beijing, 1987), 66-76, World Sci. Publishing, Singapore, 1987. (Summary) 89h:90111 90B25
- (with Hwang, F. K.; Song, Guo Dong; Ding, Ji Yu) Steiner minimal trees on sets of four points. *Discrete Comput. Geom.* 2 (1987), no. 4, 401-414. (H. N. Djidjev) 89h:05073 05C05 (05C35)
- (with Ko, Ker-I) Some completeness results on decision trees and group testing. *SIAM J. Algebraic Discrete Methods* 8 (1987), no. 4, 762-777. (Frank K. Hwang) 89a:68069 68Q15 (90B40)
- (with Hwang, F. K.) Generalized de Bruijn digraphs. *Networks* 18 (1988), no. 1, 27-38. (S. L. Hakimi) 89d:05085 05C20 (68M10)
- (with Miller, Z.) Matroids and subset interconnection design. *SIAM J. Discrete Math.* 1 (1988), no. 4, 416-424. (Daniel Turzik) 89i:05157 05C35 (05B35, 68Q25)
- Du, Hong Ke Some remarks on dominant operators. (Chinese. English summary) *J. Math. Res. Exposition* 7 (1987), no. 2, 263-268. (Summary) 89h:47054 47B47 (47A10)
- Hyponormalizable operators. (Chinese. English summary) *J. Math. Res. Exposition* 7 (1987), no. 3, 476-478. (Peng Fan) 89c:47031 47B20
- Du, Jianzhong (with Leung, Joseph Y.-T.) Scheduling tree-structured tasks with restricted execution times. *Inform. Process. Lett.* 28 (1988), no. 4, 183-188. (Summary) 89g:68023 68Q25 (68N25, 68Q15, 90B35)
- Du, Jie Tensor products of Weyl modules of type  $A_1$  and their  $\text{Ext}^1$ -groups. (Chinese. English summary) *J. Math. Res. Exposition* 7 (1987), no. 3, 403-407. (Chong Guang Cao) 89h:20091 20G10 (17B10)
- The decomposition into cells of the affine Weyl group of type  $B_3$ . *Comm. Algebra* 16 (1988), no. 7, 1383-1409. (Bhama Srinivasan) 89i:20074 20H15
- Two-sided cells of the affine Weyl group of type  $\tilde{C}_3$ . *J. London Math. Soc.* (2) 38 (1988), no. 1, 87-98. (Bhama Srinivasan) 89j:20057 20H15
- Du, Jin Yuan Some systems of orthogonal polynomials associated with singular integral equations. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 1, 85-96. (R. P. Srivastav) 89f:45004 45E05 (33A65, 42C05, 44A15)
- Du, Qiang (with Gunzburger, Max D.; Layton, W.) A low dispersion, high accuracy finite element method for first order hyperbolic systems in several space variables. Hyperbolic partial differential equations. *V. Comput. Math. Appl.* 15 (1988), no. 6-8, 447-457. (Summary) 89j:65070 65N30
- Du, Qing Hua see Boundary elements, 89f:73003
- Du, X. C. (with Saint-Félix, D.; Demoment, G.) Comparison between a factorization method and a partitioning method to derive invariant Kalman filters for fast image restoration. *Mathematics in signal processing* (Bath, 1985), 349-362, Inst. Math. Appl. Conf. Ser. New Ser., 12, Oxford Univ. Press, New York, 1987. (Dale H. Mugler) 89d:94020 94A15 (93E11, 94A12)
- (with Saint-Félix, D.; Demoment, G.) Image restoration using a noncausal state space model and a fast 2-D Kalman filter. *Mathematics in signal processing* (Bath, 1985), 363-378, Inst. Math. Appl. Conf. Ser. New Ser., 12, Oxford Univ. Press, New York, 1987. (see 89h:94004) 94A12
- Du, Xian Kun A generalization of strongly regular rings. (Chinese. English summary) *Dongbei Shuxue* 3 (1987), no. 4, 479-490. (Summary) 89k:16023 16A30
- Du, Xun On the stability of finite difference method for solving three-dimensional unsteady gasdynamic equations with artificial viscosity terms. *Acta Mech. Sinica (English Ed.)* 3 (1987), no. 4, 297-303. (P. C. Jain) 89f:76008 76-08 (65P05, 76N15)
- On the weak discontinuity surfaces and types of equation systems in fluid mechanics. *Acta Math. Appl. Sinica (English Ser.)* 4 (1988), no. 1, 75-82. (Hideo Yamagata) 89j:35013 35A30 (35Q20, 76L05, 76N15)
- Du, Y. (with Wang, Shih Ho) Control of discrete-event systems with minimal switchings. *Internat. J. Control* 48 (1988), no. 3, 981-991. (Summary) 89g:93054 93C30 (49A34, 49A36)
- Du, Yi Hong Multiple solutions of condensing increasing operator equations. (Chinese. English summary) *Dongbei Shuxue* 3 (1987), no. 3, 299-309. (Jing Xian Sun) 89f:47116 47H15 (58E07)
- Multiple solutions of eigenvalue problems with increasing operators. (Chinese) *Acta Math. Sinica* 31 (1988), no. 1, 21-28. (Zhong-Hua Yang) 89g:58033 58C40 (45N05, 47H05, 47H12)
- Total order minihedral cones. (Chinese. English summary) *J. Systems Sci. Math. Sci.* 8 (1988), no. 1, 19-24. (Summary) 89f:46022 46B99 (06F20, 46A40)
- Du, Ying On a Lyapunov function. (Chinese. English summary) *Acta Math. Appl. Sinica* 11 (1988), no. 2, 156-162. (Lian Wang) 89i:34074 34D20
- Du, Zhi Hui (with Luo, Yuan Quan) A simultaneous iteration method for factoring polynomials. (Chinese. English summary) *J. Dalian Inst. Tech.* 25 (1986), *Special Issue on Mathematics, suppl.*, 124-131. (Zuhe Shen) 89a:65080 65H05
- (with Luo, Yuan Quan) On the determination of multiple roots when an iteration method is used for solving a transcendental equation. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* 8 (1987), no. 3, 171-177. (Summary) 89a:65084 65H05
- Duan, Cheng Yao (with Zhang, Jian) An integral variational principle in Riemann form for holonomic and nonholonomic dynamical systems. (Chinese. English summary) *J. Guizhou Inst. Tech.* 16 (1987), no. 1, 18-25. (Summary) 89d:70018 70H30 (58F05, 70F25, 70H25)
- Duan, Guang Ren (with Wu, Guang Yu; Huang, Wen Hu) Analysis of the robust stability of a discrete pole assignment control system. (Chinese. English summary) *J. Harbin Inst. Tech.* 1988, no. 4, 57-64. (Summary) 89m:93032 93B55 (93B35, 93C55)
- Duan, Hai Bao The Lefschetz number of self-maps of Lie groups. *Proc. Amer. Math. Soc.* 104 (1988), no. 4, 1284-1286. (Helga Schirmer) 89d:55002 55M20 (57T10)
- Duan, Kai Chen On a problem suggested by V. I. Arnold. (Chinese) *J. Math. Res. Exposition* 7 (1987), no. 1, 171-174. (Lian Wang) 89f:58105 58F21 (34C05)
- Stable oscillations of a fourth-order equation. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* 4 (1987), no. 4, 1-4. (Summary) 89h:34086 34C15 (34A10, 34C25, 34D20)
- (with Teng, Zhi Dong) Analysis of a class of three-species systems with Hollings' type I functional response. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* 5 (1988), no. 3, 1-11. (Zhu Jun Jing) 89k:92052 92A15 (34C99)
- Duan, Ping (with Cai, Xi Yao) A real-time interprocessor synchronization algorithm for communication in distributed computer systems. *J. Comput. Sci. Tech. (English Ed.)* 2 (1987), no. 4, 292-302. (Not in MR) 68N25 (68M10)
- Duan, Xue Fu Some problems in the block theory of modular representations. *Classical groups and related topics* (Beijing, 1987), 181-190, *Contemp. Math.*, 82, Amer. Math. Soc., Providence, RI, 1989. (J. L. Alperin) 89k:20015 20C20
- Duan, Yi Shi (with Liu, Ji Cheng)  $\phi$ -mapping method, topological current, and string theory. *Proceedings of the Johns Hopkins Workshop on Current Problems in Particle Theory*, 11, *Frontiers in Particle Theory*, 183-193, World Sci. Publishing, Singapore, 1988. (P. Mitra) 89f:81130 81E20 (53C50, 81E30)
- (with Liu, Ji Cheng; Dong, Xue Geng) General covariant energy-momentum conservation law in general spacetime. *Gen. Relativity Gravitation* 20 (1988), no. 5, 485-496. (R. J. McKellar) 89j:83033 83C40 (83D05, 83E10)
- see also *Proceedings: Johns Hopkins Workshop on Current Problems in Particle Theory*, 89h:81066
- Duan, Zhi Gang New algorithm to construct dual family. *Kexue Tongbao (English Ed.)* 33 (1988), no. 9, 722-725. (G. Saucier) 89f:94056 94C10 (03G05, 06E30)
- Duarte, António Leal On the eigenvalues of  $\text{Re } A$  and  $\text{Re } A^{-1}$ . (Portuguese) *Proceedings of the Second Meeting of Portuguese Algebraists* (Porto, 1987), 69-74, Univ. Porto, Porto, 1987. (G. N. de Oliveira) 89f:15009 15A18
- Duarte, L. G. S. (with Duarte, S. E. S.; Moreira, I. C.) One-dimensional equations with the maximum number of symmetry generators. *J. Phys. A* 20 (1987), no. 11, L701-L704. (Zhu Jun Jing) 89c:58114 58F35 (34C20, 70G99)
- Duarte, S. E. S. (with Duarte, L. G. S.; Moreira, I. C.) One-dimensional equations with the maximum number of symmetry generators. *J. Phys. A* 20 (1987), no. 11, L701-L704. (Zhu Jun Jing) 89c:58114 58F35 (34C20, 70G99)

- Duba, Bruce** (with Felleisen, Matthias; Friedman, Daniel P.; Kohlbecker, Eugene) A syntactic theory of sequential control. *Theoret. Comput. Sci.* **52** (1987), no. 3, 205–237. (Dorothy Bollman) **89j:68097** 68Q55 (03B40, 68N05, 68Q65)
- Dube, K. K.** On  $R_1$  topological spaces. II. *Math. Chronicle* **16** (1987), 41–45. (C. E. Aull) **89i:54028** 54D10
- Dubau, François** (with Savoie, Jean) Généralisation de la série géométrique et applications. (English summary) [Generalization of geometric series, and applications] *Ann. Sci. Math. Québec* **11** (1987), no. 2, 305–320. (H. P. Dikshit) **89d:40003** 40A05 (15A60, 41A15)
- (with Savoie, Jean) On consistency relations for polynomial splines on a uniform partition. *BIT* **27** (1987), no. 3, 368–373. (R. K. Beaton) **89a:41009** 41A15 (65D07)
- (with Savoie, Jean) Splines périodiques avec partage uniforme de la droite réelle. [Periodic splines with uniform partitioning of the real line] *Utilitas Math.* **32** (1987), 111–120. (Christian Coattmelec) **89c:41009** 41A15 (41A25, 65D07)
- Dubey, G. S.** (with Pandey, U. S.; Singh, S. N.; Singh, D. R.) Plane-symmetric magnetofluid cosmological models. *Astrophys. and Space Sci.* **150** (1988), no. 2, 205–212. (Jan Novotny) **89k:83019** 83C15 (83C50, 83C55)
- Dubey, P.** (with Shubik, Martin) A note on an optimal garnishing rule. *Econom. Lett.* **27** (1988), no. 1, 5–6. (Summary) **89h:90026** 90A09 (90A11)
- Dubey, R. N.** Choice of tensor-rates—a methodology. *Solid Mech. Arch.* **12** (1987), no. 4, 233–244. (Gianpiero Del Piero) **89h:73006** 73B05 (73C50)
- Dubey, S. K.** (with Singh, Ram Narayan) Affine connections to the complex tangent bundle. *Math. Soc. J.* (1987), 125–129 (1988). (Josef Janyška) **89m:53035** 53B05
- Dubey, V. J.** (with Pande, H. D.; Kumar, Awdhesh) Projective curvature collineation in symmetric Finsler space. (Turkish summary) *Istanbul Üniv. Fen Fak. Mecm. Ser. A* **43** (1978), 197–203 (1987). (T. N. Srivastava) **89h:53065** 53B40
- (with Singh, D. P.) Decomposition in  $R$ -recurrent  $F_2^*$  of second order with nonsymmetric connection. II. *Acta Cienc. Indica Math.* **13** (1987), no. 1, 45–50. (Sándor Bácsó) **89j:53019** 53B40
- Dubi, A.** (with Goldfeld, A.; Burn, K.) Algorithms for the calculation of the second moment of geometrical splitting in Monte Carlo. *Transport Theory Statist. Phys.* **16** (1987), no. 8, 1149–1165. (Summary) **89a:65008** 65C05
- Dubin, V. N.** Theorems on the covering of segments under a conformal mapping of an annulus. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 9, 42–50, 82. (P. T. Mocanu) **89d:30009** 30C35 (30C45)
- Transformation of condensers in space. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 1, 18–20; translated in *Soviet Math. Dokl.* **36** (1988), no. 2, 217–219. (N. V. Rao) **89d:31003** 31A15 (30C85)
- Dubins, Lester E.** (with Schwarz, Gideon) A sharp inequality for sub-martingales and stopping-times. Colloque Paul Lévy sur les Processus Stochastiques (Palaiseau, 1987). *Astérisque* No. 157-158 (1988), 129–145. (Peter Imkeller) **89m:60101** 60G42 (60E15, 60G44)
- Dubitskas, A.** Approximations of the logarithms of some numbers. (Russian) *Diophantine approximations, Part II* (Russian). 23–34, *Moskov. Gos. Univ., Moscow*, 1986. (Jaroslav Hančl) **89h:11032** 11J13
- Approximation of  $\pi/\sqrt{3}$  by rational fractions. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 6, 73–76. (Jaroslav Hančl) **89h:11059** 11J13
- Dubner, H.** A new method for producing large Carmichael numbers. *Math. Comp.* **53** (1989), no. 187, 411–414. (Lawrence Somer) **89m:11013** 11A51 (11Y11)
- Dubner, P. N.** (with Genkin, A. V.) An aggregation algorithm in a problem of the search for informative features. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 1, 102–109; translated in *Automat. Remote Control* **49** (1988), no. 1, part 2, 81–86. (Not in MR) **88T10**
- Dubničková, Anna Zuzana** ★ Непрерывные группы для физиков. (Russian) [Continuous groups for physicists] Лекции для Молодых Ученых [Lectures for Young Scientists], R2-87-197. *Ob'ed. Inst. Yadernykh Issled., Dubna*, 1987. 110 pp. (J. Löhmus) **89h:22043** 22E70 (81C40)
- Dubnov, V. L.** (with Voropaeva, G. A.; Maslov, V. P.) Dissipative-asymptotic manifolds. (Russian) *Current problems in mathematics. Newest results*, Vol. 31 (Russian), 3–92, 195, *Itohi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (see **89b:58206**) **58G15** (58E30)
- (with Voropaeva, G. A.; Maslov, V. P.) Asymptotic Lagrangians of a manifold and the complex WKB method. (Russian) *Current problems in mathematics. Newest results*, Vol. 31 (Russian), 93–192, 195, *Itohi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (see **89b:58206**) **58G15** (58E30, 70H35, 81C15)
- Duboc, Christine** Mixed product and asynchronous automata. *Theoret. Comput. Sci.* **48** (1986), no. 2-3, 183–199 (1987). (I. M. Havel) **89a:68051** 68Q05 (68Q70)
- Dubois, Daniel M.** (with De Rycker, Henry) Une approche critique du concept d'entropie des systèmes macroscopiques. [A critical approach to the concept of entropy in macroscopic systems] 11<sup>e</sup> congrès international de cybernétique (Namur, 1986), 82–96, *Assoc. Internat. Cybernét., Namur*, 1986. (see **89a:94001**) **94A17**
- Dubois, Didier** (with Prade, Henri) Nonprobabilistic aspects of uncertainty. I. Evidence measures and possibility theory. (Chinese summary) *Fuzzy Math.* **7** (1987), no. 2, 41–58. (Summary) **89g:03080** 03E72 (60A05)
- (with Prade, Henri) The mean value of a fuzzy number. *Fuzzy Sets and Systems* **24** (1987), no. 3, 279–300. (Constantin Drossos) **89h:03092** 03E72 (03B48)
- (with Favier, G.; Rougerie, C.) On predictive control: a comparison and some extensions. *Analysis and optimization of systems (Antibes, 1988)*, 789–809, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89c:93232** 93E25
- (with Prade, Henri) Incomplete conjunctive information. *Comput. Math. Appl.* **15** (1988), no. 10, 797–810. (Summary) **89d:03054** 03E72 (03B52, 68T30)
- (with Prade, Henri) Recent literature. Fuzzy control. *Fuzzy Sets and Systems* **26** (1988), no. 2, 225–242. (Editors) **89a:03104** 03E72
- (with Prade, Henri) Recent literature. *Fuzzy Sets and Systems* **27** (1988), no. 2, 233–241. (Editors) **89f:03047** 03E72 (00A15)
- (with Prade, Henri) Recent literature. *Fuzzy Sets and Systems* **28** (1988), no. 1, 105–110. (Editors) **89f:03048** 03E72 (00A15)
- (with Prade, Henri) Recent literature. Mathematical modelling. *Fuzzy Sets and Systems* **28** (1988), no. 3, 387–396. (Editors) **89h:03065** 03E72 (00A15)
- (with Prade, Henri) On the combination of uncertain or imprecise pieces of information in rule-based systems—a discussion in the framework of possibility theory. *Internat. J. Approx. Reason.* **2** (1988), no. 1, 65–87. (Not in MR) **88T05** (68T30, 92A25)
- (with Bel, G.; Bensana, E.) Construction d'ordonnements prévisionnels: un compromis entre approches classiques et systèmes experts. (English summary) [Production scheduling: a compromise between classical approaches and expert systems] *RAIRO Automat.-Prod. Inform. Ind.* **22** (1988), no. 5, 509–534. (Not in MR) **90B35**
- Dubois, François** (with Le Floch, Philippe) Boundary conditions for nonlinear hyperbolic systems of conservation laws. *J. Differential Equations* **71** (1988), no. 1, 93–122. (A. O. Ganesyan) **89c:35099** 35L65
- (with Le Floch, Philippe) Boundary conditions for nonlinear hyperbolic systems of conservation laws. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 96–104, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) **35L65** (65N99, 76-08, 76N15)
- Dubois, Jacques** (with M'Khalfi, A.) Une intégrale de type Riemann généralisée contenant l'intégrale de Birkhoff. (English summary) [A generalized Riemann integral containing the Birkhoff integral] *Ann. Sci. Math. Québec* **12** (1988), no. 1, 31–53. (Ralph Henstock) **89h:26008** 26A42 (26A39, 28A25)
- Dubois, Jean-Guy** Solutions singulières des systèmes hyperboliques linéaires homogènes. (English summary) [Singular solutions of homogeneous linear hyperbolic systems] *Ann. Sci. Math. Québec* **11** (1987), no. 2, 321–342. (Summary) **89h:35185** 35L40 (58C27, 58G16)
- Dubois, Monique** Dynamic of Rayleigh-Benard spatial configurations in confined geometry. *Chaos and complexity* (Torino, 1987), 152–156, *World Sci. Publishing, Singapore*, 1988. (Summary) **89i:76049** 76E15 (58F13, 76-05, 76F99)
- Dubois-Violette, E.** (with Pansu, B.) Textures of  $S^3$  blue phase. (French summary) *J. Physique* **48** (1987), no. 11, 1861–1869. (James F. Glazebrook) **89h:58053** 58E15 (55Q25, 58E20, 82A57)
- Dubois-Violette, Michel** The Weil-BRS algebra of a Lie algebra and the anomalous terms in gauge theory. *J. Geom. Phys.* **3** (1986), no. 4, 525–565. (P. Michor (Zbl 627:53064)) **89h:17026** 17B65 (53C80, 58A10, 58F05)
- Structure algébrique des anomalies et cohomologies de BRS. [Algebraic structure of BRS cohomology and anomalies] *Géométrie et physique (Marseille-Luminy, 1985)*, 84–101, *Travaux en Cours*, 21, Hermann, Paris, 1987. (From the summary) **89h:53112** 53C80 (58H10, 81E13)
- Systèmes dynamiques contraints: l'approche homologique. (English summary) [Constrained dynamical systems: the homological approach] *Ann. Inst. Fourier (Grenoble)* **37** (1987), no. 4, 45–57. (Manfred Andrie) **89e:58047** 58F05 (58F06, 81E13)
- (with Rouet, Alain) A mathematical classification of the one-dimensional deterministic cellular automata. *Comm. Math. Phys.* **112** (1987), no. 4, 627–631. (Maurice Tchuente) **89a:68165** 68Q00 (54H20)
- Dérivations et calcul différentiel non commutatif. (English summary) [Derivations and noncommutative differential calculus] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 8, 403–408. (Akira Asada) **89h:58035** 58C25 (18G99, 46L99, 58A10)
- (with Rouet, Alain) Addendum: "A mathematical classification of the one-dimensional deterministic cellular automata" [Comm. Math. Phys. **112** (1987), no. 4, 627–631; MR **89a:68165**]. *Comm. Math. Phys.* **118** (1988), no. 3, 529. (Editors) **89h:68110** 68Q80 (54H20)
- Duboshin, G. N.** Newton's Principia and celestial mechanics. (Russian) *Studies in the history of physics and mechanics*, 1987 (Russian), 202–214, 246, "Nauka", Moscow, 1987. (E. Stipančić) **89g:01021** 01A45
- Deuxième cas spécial du problème restreint des plusieurs corps. [Second special case of the restricted  $N$ -body problem] *Celestial Mech.* **40** (1987), no. 3-4, 283–292. (Michel Rapaport) **89m:70017** 70F10 (70F15)
- Dubovik, V. M.** Toroidal momenta as general physical parameters. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Järnala*, 1985), 356–362, "Nauka", Moscow, 1986. (see **89d:81002**) **81G99**
- Dubovikov, M. M.** (with Tatarskii, V. I.) The spectrum of developed turbulence in a dissipation interval. (Russian) *Dokl. Akad. Nauk SSSR* **303** (1988), no. 1, 86–90. (Not in MR) **76F99**
- Dubovitskii, A. Ya.** (with Dubovitskii, V. A.) The principle of the maximum in regular optimal control problems in which the ends of the phase trajectory lie on the boundary of the phase constraint. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 12, 25–33; translated in *Automat. Remote Control* **48** (1987), no. 12, part 1, 1578–1585. (T. R. Gichev) **89c:49013** 49B10 (93C15)
- (with Dubovitskii, V. A.) Conditions for the pointwise nontriviality of the maximum principle in a regular problem of optimal control. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **27** (1988), 60–88, 183. (Russell D. Rupp) **89i:49014** 49B10 (49C05, 93C15)
- Dubovitskii, V. A.** (with Dubovitskii, A. Ya.) The principle of the maximum in regular optimal control problems in which the ends of the phase trajectory lie on the boundary of the phase constraint. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 12, 25–33; translated in *Automat. Remote Control* **48** (1987), no. 12, part 1, 1578–1585. (T. R. Gichev) **89c:49013** 49B10 (93C15)
- (with Dubovitskii, A. Ya.) Conditions for the pointwise nontriviality of the maximum principle in a regular problem of optimal control. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **27** (1988), 60–88, 183. (Russell D. Rupp) **89i:49014** 49B10 (49C05, 93C15)
- Dubovoi, V. K.** A model of a contraction operator constructed from the Taylor coefficients of its characteristic function. (Russian) *Mathematical physics, functional analysis* (Russian), 72–80, 145, "Naukova Dumka", Kiev, 1986. (E. Durst) **89h:47010** 47A45
- Dubrovina, B. A.** Theory of operators and real algebraic geometry. *Global analysis—studies and applications*, III, 42–59, *Lecture Notes in Math.*, 1334, Springer, Berlin-New York, 1988. (Alexander A. Pankov) **89j:58045** 58F07 (14K25, 47E05)
- (with Natanzon, S. M.) Real theta-function solutions of the Kadomtsev-Petviashvili equation. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **52** (1988), no. 2, 267–286, 446; translated in *Math. USSR-Izv.* **32** (1989), no. 2, 269–288. (P. A. Kuchment) **89m:58092** 58F07 (14K25, 35Q20)
- Dubrovina, N. I.** Invertibility of the group ring of a right-ordered group over a division ring. (Russian) *Mat. Zametki* **42** (1987), no. 4, 508–518, 622. (S. M. Vovsi) **89a:16012** 16A27



- (06F15, 20C07)
- Dubrovskii, D. K.** Structuring of problems of decision-making in diagnostics. (Russian) *Decision-making methods and systems. Applied problems in the analysis of solutions in technical systems (Russian)*, 86-91, 149-150, *Rizhsk. Politekh. Inst., Riga, 1986*. (see 89b:00001) 92A07
- Dubrovskii, O. V.** (with Kobzev, V. G.; Kobzev, A. G.; Manukyan, L. A.) Solution of a problem of the choice of a set of testing regimes by methods of graph theory. (Russian. Armenian summary) *Izv. Akad. Nauk Armyan. SSR Ser. Tekhn. Nauk* 40 (1987), no. 4, 16-20, 49. (Larry Basenpiller) 89d:05089 05C20 (94C15)
- Dubrovskii, V. B.** (with Mikhalevich, V. S.; Gupal, A. M.) Global character of exact nonsmooth penalties. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 2, 111-112, 136. (Summary) 89h:90284 90C30
- Dubrule, Bérénice** Method of computation of the Reynolds number for two models of lattice gas involving violation of semi-detailed balance. *Complex Systems* 2 (1988), no. 5, 577-609. (François Golse) 89m:76006 76-08 (82A40)
- Dubuc, Eduardo J.** (with Bunge, Marta) Local concepts in synthetic differential geometry and germ representability. *Mathematical logic and theoretical computer science (College Park, Md., 1984-1985)*, 93-159, *Lecture Notes in Pure and Appl. Math.*, 106, Dekker, New York, 1987. (Ieke Moerdijk) 89f:58005 58A20 (03G30, 18F15)
- Dubuc, Serge** (with Elgortobi, Abdelkader) Enveloppe convexe d'une courbe de Mandelbrot. (English summary) [The convex hull of a Mandelbrot curve] *Ann. Sci. Math. Québec* 11 (1987), no. 1, 45-64. (I. N. Baker) 89a:52003 52A10 (39B10)
- Dubucs, Jacques-Paul L. E. J.** Brouwer: topologie et constructivisme. (English summary) [L. E. J. Brouwer: topology and constructivism] *Rev. Histoire Sci.* 41 (1988), no. 2, 133-155. (Jean-Claude Pont) 89k:01023 01A60 (03-03, 03F55, 54-03)
- Duby, C.** (with Daudin, J.-J.; Trécourt, P.) Stability of principal component analysis studied by the bootstrap method. *Statistics* 19 (1988), no. 2, 241-258. (Yasunori Fujikoshi) 89c:62088 62H25
- nguyen minh Duc** see **Nguyen Minh Duc**
- Duc, Tong Van** see **Tong Van Duc**
- Duca, Dorel I.** Saddlepoint necessary criteria for nonlinear programming in complex space. *Anal. Numer. Theor. Approx.* 16 (1987), no. 1, 29-33. (Introduction) 89g:90188 90C30
- Duca, Eugenia** Some properties of primal programs and dual programs in geometric programming. *Seminar on Optimization Theory*, 41-50, *Preprint*, 87-8, Univ. "Babeş-Bolyai", Cluj-Napoca, 1987. (see 89g:90005) 90Cxx
- An inequality which is not an abstract geometric inequality. *Anal. Numer. Theor. Approx.* 16 (1987), no. 1, 35-39. (R. N. Kaul) 89f:90135 90C30
- del Duca, V.** see **Del Duca, V.**
- Ducatel, Y.** (with Bernadou, Michel; Trounev, Pascal) Approximation of a circular cylindrical shell by Clough-Johnson flat plate finite elements. *Numer. Math.* 52 (1988), no. 2, 187-217. (N. Gass) 89b:65257 65N30 (73K25)
- truong xuan Duc Ha** see **Truong Xuan Duc Ha**
- Duchamp, T.** (with Kalka, Morris) Invariants of complex foliations and the Monge-Ampère equation. *Michigan Math. J.* 35 (1988), no. 1, 91-115. (Andreas Nestike) 89h:32020 32C10 (32L99, 53C12, 57R30, 58G30)
- vlotte-Ducharme, Marguerite-Marie** see **Viotte-Ducharme, Marguerite-Marie**
- du Châtelet, Émile** see **du Châtelet, Émile**
- Duchêne, B.** (with Tabbara, W.; Pichot, C.; Lesselier, D.; Chommeloux, L.; Joachimowicz, N.) Diffraction tomography: contribution to the analysis of some applications in microwaves and ultrasonics. *Inverse Problems* 4 (1988), no. 2, 305-331. (Summary) 89f:76074 76Q05 (78A55, 92-08, 92A07)
- Duchet, P.** (with Dahlhaus, E.) On strongly chordal graphs. *Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications*, Vol. 2 (Catania, 1986). *Ars Combin.* 24 (1987), B, 23-30. (Alan Tucker) 89c:05031 05C10
- (with Berge, C.) Recent problems and results about kernels in directed graphs. *Applications of discrete mathematics (Clemson, SC, 1986)*, 200-204, *SIAM, Philadelphia, PA, 1988*. (Hortensia Galeana-Sánchez) 89i:05124 05C20
- nguyên Du'c Hiên** see **Nguyễn Du'c Hiên**
- Duchon, Jean** (with Robert, Raoul) Perturbation quasi différentielle d'un semi-groupe régularisant dans une échelle d'espaces de Banach. (English summary) [Quasidifferential perturbation of a smoothing semigroup in a scale of Banach spaces] *Ann. Inst. H. Poincaré Anal. Non Linéaire* 4 (1987), no. 4, 377-399. (Angelo Favini) 89c:35149 35R20 (34G20, 47H15)
- (with Robert, Raoul) Global vortex sheet solutions of Euler equations in the plane. *J. Differential Equations* 73 (1988), no. 2, 215-224. (Michael Wiegner) 89h:35262 35Q10 (76C05)
- Duchon, Miloslav** Vector measures and nuclearity. (Russian summary) *Math. Slovaca* 38 (1988), no. 1, 79-83. (J. Diestel) 89j:46045 46G10 (28B05, 46A12)
- Duck, Michael J.** Newton and Goethe on colour: physical and physiological considerations. *Ann. of Sci.* 45 (1988), no. 5, 507-519. (Summary) 89h:01028 01A50 (01A45)
- Duckstein, L.** (with Bartels, P. H.; Weber, J. E.) Organization of a knowledge base by Q-analysis. *Appl. Math. Comput.* 26 (1988), no. 4, 289-301. (Summary) 89c:92008 92A07
- Duclos, P.** (with Combes, J. M.; Briet, Ph.) Spectral properties of Schrödinger operators with trapping potentials in the semiclassical limit. *Differential equations and mathematical physics (Birmingham, Ala., 1986)*, 55-72, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Shu Nakamura) 89a:35150 35P05 (35J10, 81C10, 81C99)
- (with Briet, Ph.; Combes, J. M.) On the location of resonances for Schrödinger operators in the semiclassical limit. II. Barrier top resonances. *Comm. Partial Differential Equations* 12 (1987), no. 2, 201-222. (Arne Jensen) 89e:81028 81C15 (35J10, 47F05)
- (with Briet, Ph.; Combes, J. M.) On the location of resonances for Schrödinger operators in the semiclassical limit. I. Resonances free domains. *J. Math. Anal. Appl.* 126 (1987), no. 1, 90-99. (Arne Jensen) 89e:81028 81C15 (35J10, 47F05)
- (with Briet, Ph.; Combes, J. M.) Erratum for: "On the location of resonances for Schrödinger operators in the semiclassical limit. II. Barrier top resonances". *Comm. Partial Differential Equations* 13 (1988), no. 3, 377-381. (Arne Jensen) 89e:81028 81C15 (35J10, 47F05)
- Du Cloux, Fokko** see **du Cloux, Fokko**
- nguyên Du'c Nghia** see **Nguyễn Du'c Nghia**
- vu Duc Thi** see **Vu Duc Thi**
- bui Duc Thuc** see **Bui Duc Thuc**
- Duda, E.** Continuum covering mappings. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 173-175, *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (Edward D. Tymchatyn) 89i:54016 54C10 (54F20, 54F50)
- Duda, Jaromír** Mal'cev conditions for varieties of subregular algebras. *Acta Sci. Math. (Szeged)* 51 (1987), no. 3-4, 329-334. (E. W. Kiss) 89d:08007 08B05 (08A30, 08B10)
- Unified polynomials for congruence principality. (Russian summary) *Math. Slovaca* 37 (1987), no. 4, 407-416. (From the text) 89h:08001 08B10 (08A30)
- Duda, Roman** Newton and the mathematical concept of space. *Isaac Newton's Philosophiae naturalis principia mathematica* (Lublin, 1987), 72-83, *World Sci. Publishing, Singapore, 1988*. (see 89m:01042) 01A45 (51-03, 54-03)
- The place of Newton's *Principia* in the evolution of the idea of space. *Newton and the new direction in science* (Cracow, 1987), 205-213, *Specola Vaticana, Vatican City, 1988*. (see 89h:01014) 01A45
- Dudař, O. I.** (with Trusov, P. V.; Stolbov, V. Yu.) Application of the theory of mean curvature in the investigation of processes for treating metal by pressure. (Russian) *Boundary value problems (Russian)*, 88-92, 159, *Perm. Politekh. Inst., Perm, 1984*. (see 89b:00008) 73E99
- Dudek, Izabela M.** On ternary semigroups connected with para-associative rings. *Ricerche Mat.* 35 (1986), no. 2, 191-203. (Smile Markovski) 89b:20146 20N10 (17A30)
- Dudek, Józef** A note on models of identities. *Algebra Universalis* 25 (1988), no. 3, 400-401. (From the text) 89m:08005 08B05
- Dudek, Kenneth P.** (with Sain, Michael K.) A control-oriented model for cylinder pressure in internal combustion engines. *IEEE Trans. Automat. Control* 34 (1989), no. 4, 386-397. (Not in MR) 93C75
- Dudek, Wiesław A.** On group-like BCI-algebras. *Demonstratio Math.* 21 (1988), no. 2, 369-376. (Editors) 89m:06016 06D99 (03G25)
- Dudewicz, Edward J.** (with Taneja, Baldeo K.) Selection in factorial experiments with interaction, especially the  $2 \times 2$  case. *Acta Math. Sinica (N.S.)* 3 (1987), no. 3, 191-203. (Bhagwandas) 89b:62168 62K15 (62F07)
- (with Mishra, Satya N.) Simultaneous selection of extreme populations: a subset selection approach. *Biometrical J.* 29 (1987), no. 4, 471-483. (H. K. Hsieh) 89b:62064 62F07 (62L05)
- (with Mishra, Satya N.) ★ Modern mathematical statistics. *Wiley Series in Probability and Mathematical Statistics: Probability and Mathematical Statistics. John Wiley & Sons, Inc., New York, 1988*. xx+838 pp. ISBN 0-471-81472-5 (S. Panthapakesan) 89g:62002 62-01
- Dudin, A. N.** Optimal control of a two-rate queueing system with inertial switching. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 5, 90-98; translated in *Automat. Remote Control* 49 (1988), no. 5, part 2, 621-627. (Summary) 89e:90101 90B22
- Dudley, Underwood** ★ A budget of trisections. *Springer-Verlag, New York-Berlin, 1987*. xvi+169 pp. ISBN 0-387-96568-8 (Cyril W. L. Garner) 89a:51045 51M15 (01A05, 51-01)
- Dudnik, V. G.** On the approximate calculation of fixed points of continuous mappings. (Russian) *Optimizatsiya* No. 38(55) (1986), 145-154, 155. (Summary) 89a:90119 90C30 (58C30, 65H10)
- Dudnikov, P. I.** (with Samborskii, S. N.) Endomorphisms of semimodules over semirings with an idempotent operation. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 48, 34 pp. (Summary) 89f:16057 16A78 (16A65, 90C39)
- Dudyński, Marek** (with Ekiel-Jezewska, Maria L.) On the linearized relativistic Boltzmann equation. I. Existence of solutions. *Comm. Math. Phys.* 115 (1988), no. 4, 607-629. (Carlo Cercignani) 89h:82017 82A40 (76P05, 76Y05)
- The Boltzmann-Lorentz model for particles with spin. III. The Grad method of moments. *Phys. A* 152 (1988), no. 1-2, 254-272. (Carlo Cercignani) 89j:82037 82A40 (76P05)
- Dueck, G. W.** (with Miller, D. Michael) On the minimization of a Boolean function of odd weight. *Proceedings of the fifteenth Manitoba conference on numerical mathematics and computing (Winnipeg, Man., 1985)*. *Congr. Numer.* 51 (1986), 113-122. (Summary) 89f:94034 94C10 (68N99)
- see also Williams, Hugh Cowie, 89b:11085
- Duff, M. J.** Supergravity, Kaluza-Klein and superstrings. *General relativity and gravitation (Stockholm, 1986)*, 18-60, *Cambridge Univ. Press, Cambridge-New York, 1987*. (Alexander W. Smith) 89b:83078 83E15 (81E30, 83E30, 83E50)
- $E_8 \times SO(16)$  symmetry of  $d = 11$  supergravity? *Quantum field theory and quantum statistics*, Vol. 2, 209-215, *Hilger, Bristol, 1987*. (W. Cox) 89h:83037 83E50 (81E99)
- (with Bergshoeff, Eric; Pope, C. N.; Sezgin, E.) Supersymmetric supermembrane vacua and singletons. *Phys. Lett. B* 199 (1987), no. 1, 69-74. (Summary) 89f:83083 83E15 (81E30, 83E30, 83E50)
- Supermembranes: the first fifteen weeks. *Classical Quantum Gravity* 5 (1988), no. 1, 189-205. (Sorin Marčulescu) 89d:83072 83E50 (81E30, 81E40, 83E15, 83E30)
- (with Inami, T.; Pope, C. N.; Sezgin, E.; Stelle, K. S.) Semiclassical quantization of the supermembrane. *Nuclear Phys. B* 297 (1988), no. 3, 515-538. (Gheorghe Zet) 89h:81179 81E99 (81D07, 81E30, 83E30)
- (with Blencowe, M. P.) Supersingletons. *Phys. Lett. B* 203 (1988), no. 3, 229-236. (Marc Henneaux) 89j:81163 81E99 (81E30, 83E30)
- Duffie, Darrell** Stochastic equilibria with incomplete financial markets. *J. Econom. Theory* 41 (1987), no. 2, 405-416. (Beth Allen) 89f:90025 90A14 (90A09)
- An extension of the Black-Scholes model of security valuation. *J. Econom. Theory* 46 (1988), no. 1, 194-204. (Giovanni M. Zambuno) 89j:90023 90A09 (90A14)
- Duffield, N. G.** (with Pulé, J. V.) Thermodynamics of the BCS model through large deviations. *Lett. Math. Phys.* 14 (1987), no. 4, 329-331. (Summary) 89g:82008 82A05 (81J05)
- (with Pulé, J. V.) A new method for the thermodynamics of the BCS model. *Comm. Math. Phys.* 118 (1988), no. 3, 475-494. (M. Lawrence Glasser) 89j:82026 82A30 (81J05)
- The continuum limit of dissipative dynamics in H. Fröhlich's pumped phonon system. *Helv. Phys. Acta* 61 (1988), no. 3, 363-378. (Robert Alicki) 89k:82020 82A15 (46L60, 81K05)
- Global stability of condensation in the continuum limit for Fröhlich's pumped phonon system. *J. Phys. A* 21 (1988), no. 3, 625-641. (Mircea Crisan) 89j:82093 82A99

- Duffin, R. J.** (with Chou, Weiren) An additive eigenvalue problem of physics related to linear programming. *Adv. in Appl. Math.* 8 (1987), no. 4, 486-498. (Summary) **89c:81049** 81C99 (82A99, 90C50)
- Duffin, Dwight** (with Sauer, Norbert W.) Fixed points of products and the strong fixed point property. *Order* 4 (1987), no. 3, 221-231. (Margret H. Höft) **89b:06002** 06A10
- Duffy, Diane E.** (with Santner, Thomas J.) Estimating logistic regression probabilities. *Statistical decision theory and related topics, IV, Vol. 1* (West Lafayette, Ind., 1986), 177-194, Springer, New York-Berlin, 1988. (B. L. Granovskii) **89d:62052** 62J02 (62F10, 62J10)
- Dufo, Michel** (with Vergne, Michèle) Sur le foncteur de Zuckerman. (English summary) [On Zuckerman's functor] *C. R. Acad. Sci. Paris Sér. I Math.* 304 (1987), no. 16, 467-469. (A. Verona (Zbl 617:17007)) **89b:22025** 22E45
- see also **Biography: Dufo, Michel**, **89i:01114**
- Dufour, J.-P.** Intervalles de rotation pour des multi-applications du cercle. [Rotation intervals for multimaps of the circle] *Aspects dynamiques et topologiques des groupes infinis de transformation de la mécanique* (Lyon, 1986), 25-36, Travaux en Cours, 25, Hermann, Paris, 1987. (Rodrigo Bamon) **89c:58058** 58F08 (26A18)
- Dufour, Jean-Marie** (with Hallin, Marc) Tests non paramétriques optimaux pour le modèle autoregressif d'ordre un. (English summary) [Optimal nonparametric tests for a first-order autoregressive model] *Ann. Econom. Statist.* 1987, no. 6-7, 411-434. (Francesco Battaglia) **89b:62187** 62M10 (62G10, 62G20)
- Estimators of the disturbance variance in econometric models: small-sample bias and the existence of moments. *J. Econometrics* 37 (1988), no. 2, 277-292. (Lung Fei Lee) **89b:62217** 62P20 (62J02, 62J05)
- Erratum: "Estimators of the disturbance variance in econometric models: small-sample bias and the existence of moments" [J. Econometrics 37 (1988), no. 2, 277-292; MR 89b:62217]. *J. Econometrics* 39 (1988), no. 3, 397. (Editors) **89j:62145** 62P20 (62J02, 62J05)
- Dufresne, François** (with Gerber, Hans U.) The probability and severity of ruin for combinations of exponential claim amount distributions and their translations. *Insurance Math. Econom.* 7 (1988), no. 2, 75-80. (Wolf-Rüdiger Heilmann) **89b:62106** 62P05
- Dugas, Pierre** (with Yushkevich, A. P.) L'"affaire" de l'académicien Luzin de 1936. [The 1936 Luzin "affair"] *Gaz. Math. No. 38* (1988), 31-35. (R. P. Boas, Jr.) **89i:01050** 01A60 (01A70)
- see also **Proceedings: Seminar on the History of Mathematics**, **89j:01001**
- Dugan, Joanne Bechts** (with Ciardo, Gianfranco) Stochastic Petri net analysis of a replicated file system. *IEEE Trans. Software Engrg.* 15 (1989), no. 4, 394-401. (Not in MR) **88P99** (68N99, 68Q90)
- Dugard, L.** (with Giri, F.; M'Saad, M.; Dion, J. M.) Robustness of pole placement direct adaptive control for time-varying plants. *Analysis and optimization of systems* (Antibes, 1988), 810-821, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Kazuhiko Terashima) **89k:93179** 93D25 (93B35, 93B55, 93C40)
- (with Giri, F.; Dion, J. M.; M'Saad, M.) Stable pole placement direct adaptive control for systems with arbitrary zeros. *Internat. J. Control* 47 (1988), no. 5, 1443-1454. (Tsu-Tian Lee) **89c:93110** 93B55 (93C40, 93D15)
- (with Giri, F.; Dion, J. M.; M'Saad, M.) A globally convergent pole placement indirect adaptive controller. *IEEE Trans. Automat. Control* 34 (1989), no. 3, 353-356. (Summary) **89k:93103** 93B55 (93B05, 93C40, 93C55)
- (with Giri, F.; Dion, J. M.; M'Saad, M.) Robust pole placement direct adaptive control. *IEEE Trans. Automat. Control* 34 (1989), no. 3, 356-359. (Not in MR) **93B55** (93B35, 93C40)
- Dugas, Manfred** (with Göbel, Rüdiger) All infinite groups are Galois groups over any field. *Trans. Amer. Math. Soc.* 304 (1987), no. 1, 355-384. (Summary) **89e:12010** 12F10 (12F20, 20F29)
- On the Jacobson radical of some endomorphism rings. *Proc. Amer. Math. Soc.* 102 (1988), no. 4, 823-826. (B. Goldsmith) **89c:20079** 20K30 (16A21, 16A65, 20K10)
- (with Irwin, John M.; Khabbaz, S. A.) Countable rings as endomorphism rings. *Quart. J. Math. Oxford Ser. (2)* 39 (1988), no. 154, 201-211. (B. Goldsmith) **89b:20081** 20K30 (20K20)
- On some subgroups of infinite rank Butler groups. *Rend. Sem. Mat. Univ. Padova* 79 (1988), 153-161. (L. Bican) **89c:20079** 20K20
- Duggal, B. P.** On intertwining operators. *Monatsh. Math.* 106 (1988), no. 2, 139-148. (Mehdi Radjabipour) **89k:47031** 47B20 (47A62, 47B47)
- Duggal, K. L.** (with Sharma, Ramesh) Mixed foliate CR-submanifolds of indefinite complex space-forms. *Ann. Mat. Pura Appl. (4)* 149 (1987), 103-111. (Aurel Bejancu) **89c:53040** 53C40
- Relativistic fluids with shear and timelike conformal collineations. *J. Math. Phys.* 28 (1987), no. 11, 2700-2704. (Gh. Procopiuc) **89b:83044** 83C40 (83C50, 83C55)
- (with Sharma, Ramesh) Totally umbilical CR-submanifolds of locally conformal Kaehler manifolds. *Math. Chronicle* 16 (1987), 79-83. (Aurel Bejancu) **89g:53086** 53C40 (53C15)
- Duhamel, Pierre Raymond** (with Hollmann, H.) On discrete Fourier transforms (number-theoretic transforms) with minimum number of rotations (shifts). (French and German summaries) *Signal Process.* 14 (1988), no. 3, 237-241. (Dale H. Mugler) **89d:94008** 94A11 (65T05)
- (with Vetterli, Martin) Split-radix algorithms for length- $p^m$  DFTs. *IEEE Trans. Acoust. Speech Signal Process.* 37 (1989), no. 1, 57-64. (Manfred Tasche) **89k:94007** 94A11 (65T05, 94A12)
- Duhem, Pierre** see **Hentschel, Klaus**, **89c:01065** and **Correspondence: Wald, František**, **89c:01082**
- van Duin, C. J.** (with Clément, Ph.; Heijmans, H. J. A. M.; Angenent, S. B.; de Pagter, B.) ★ One-parameter semigroups. *CWI Monographs*, 5, North-Holland Publishing Co., Amsterdam-New York, 1987. x+312 pp. ISBN 0-444-70284-9 (R. J. Nagel) **89b:47058** 47D05 (34Gxx, 47B55, 47H20)
- (with Zhang, Hong Fei) Regularity properties of a doubly degenerate equation in hydrology. *Comm. Partial Differential Equations* 13 (1988), no. 3, 261-319. (Menachem Dishon) **89f:35116** 35K65 (35K55, 76S05, 86A05)
- Duistermaat, J. J.** Multiplicités de représentations de groupes et l'espace de phase réduit. [Multiplicities of representations of groups and the reduced phase space] *Action hamiltoniennes de groupes. Troisième théorème de Lie* (Lyon, 1986), 71-81, Travaux
- en Cours*, 27, Hermann, Paris, 1988. (N. J. Hitchin) **89b:22026** 22E45 (32M05, 43A85, 58F06, 81E40)
- The momentum map. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 347-392, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Kentarō Mikami) **89b:58057** 58F05 (53C57)
- (with Cushman, R.) The quantum mechanical spherical pendulum. *Bull. Amer. Math. Soc. (N.S.)* 19 (1988), no. 2, 475-479. (Frans Cantrijn) **89j:58029** 58F05 (81C99)
- Dujella, Andrej** The divisibility of Fibonacci numbers. (Serbo-Croatian) *Matematika* (Zagreb) 14 (1985), no. 3-4, 61-67 (1986). (Not in MR) **11B39**
- Dukarm, J. J.** Morita equivalence of algebraic theories. *Colloq. Math.* 55 (1988), no. 1, 11-17. (V. Topencharov) **89k:18013** 18C99
- Duke, Roger** On binary reducibility. *European J. Combin.* 9 (1988), no. 2, 109-111. (Dragan M. Acketa) **89i:05079** 05B35
- Duke, W.** Fourth moments of  $L$ -functions attached to newforms. *Comm. Pure Appl. Math.* 41 (1988), no. 6, 815-831. (A. Perelli) **89i:11060** 11F66 (11F30, 11M41)
- Hyperbolic distribution problems and half-integral weight Maass forms. *Invent. Math.* 92 (1988), no. 1, 73-90. (Mark Sheingorn) **89d:11033** 11F11 (11E32, 11F37)
- Dukek, G.** (with Rupp, D.; Nonnenmacher, T. F.) Particle transport in a host medium with an external source: exact solutions for a nonlinear homogeneous Boltzmann equation. (German summary) *Z. Angew. Math. Phys.* 39 (1988), no. 5, 605-618. (Summary) **89b:82023** 82A40 (76P05, 82A70)
- (with Spiga, G.) Similarity solutions in space dependent extended kinetic theory. (German summary) *Z. Angew. Math. Phys.* 39 (1988), no. 6, 924-930. (Summary) **89j:82038** 82A40 (58G35)
- Dukhovnyi, A. M.** Combined feedback in systems with batch arrival and service. (Russian) *Asymptotic methods in the investigation of stochastic models* (Russian), 46-54, 144, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (Summary) **89f:60110** 60K25 (90B22)
- Dulikravich, George S.** Analysis of artificial dissipation models for the transonic full-potential equation. *AIAA J.* 26 (1988), no. 10, 1238-1245. (Summary) **89f:76009** 76-08 (76H05)
- Dullemond, C.** Induced geometry and confinement. *Gen. Relativity Gravitation* 20 (1988), no. 2, 139-170. (Metin Arik) **89g:83039** 83D05 (81G05)
- Quarks and gluons in a model with induced geometry. *Gen. Relativity Gravitation* 20 (1988), no. 10, 989-1005. (Not in MR) **81G25** (81E13)
- Dul'nev, A. L.** (with Nenakhov, È. I.) A modification of the method of centers of gravity of simplexes. (Russian) *Methods for the investigation of extremal problems* (Russian), 46-50, iv, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. (Summary) **89j:90168** 90C05
- van Dulst, D.** On a question of R. G. Douglas. (Chinese. English summary) *J. East China Norm. Univ. Natur. Sci. Ed.* 1988, no. 2, 1-2. (Summary) **89k:47003** 47A05 (47B99)
- Dumas, François** Hautes dérivations dans les corps gauches, en caractéristique nulle. (English summary) [Higher derivations in skew fields of characteristic zero] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 13, 519-521. (Kazuo Kishimoto) **89f:16050** 16A72 (16A39)
- Dumas, H. S.** see **Lochak, P.**, **89k:58254**
- Duménil, Gérard** (with Lévy, Dominique) La concurrence capitaliste: un processus dynamique. [Capitalist competition: a dynamical process] With comments by Alain Lipietz. *Macrodynamique et déséquilibres*, 127-161, *Economica, Paris*, 1987. (see **89d:90065**) 90A17
- Dumer, I. I.** (with Afanas'ev, V. B.) Tabular decoding of Reed-Solomon codes. (Russian) *Noise-resistant coding and computer reliability* (Russian), 18-23, 189, "Nauka", Moscow, 1987. (From the text) **89c:94015** 94B35 (94B05)
- On the complexity of algebraic cascade decoding. (Russian) *Noise-resistant coding and computer reliability* (Russian), 55-62, 190, "Nauka", Moscow, 1987. (V. A. Zinov'ev) **89i:94042** 94B35 (94B05)
- Nonbinary codes with distances 4, 5 and 6 that have power exceeding that of BCH codes. (Russian) *Problemy Peredachi Informatsii* 24 (1988), no. 3, 42-54; translated in *Problems Inform. Transmission* 24 (1988), no. 3, 205-214. (A. Pethő) **89m:94014** 94B05 (94B35)
- Dumitrescu, Constantin** Treillis duals. Applications aux ensembles flous. [Dual lattices. Applications to fuzzy sets] *Anal. Numer. Théor. Approx.* 15 (1986), no. 2, 111-116. (Robert Lowen) **89a:06025** 06D15 (03E72)
- Dumitrescu, D.** Numerical methods in fuzzy hierarchical pattern recognition. II. Divisive hierarchical clustering. *Studia Univ. Babeş-Bolyai Math.* 32 (1987), no. 1, 24-30. (Not in MR) **62H30** (03E72, 68P10)
- (with Toader, T.) Principal components of a fuzzy class. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* 32 (1987), no. 3, 24-28. (Not in MR) **62H25** (03E72)
- Dumitru, Vincențiu** (with Luban, Florica) On the Pareto invariance of some decision functionals. *XI symposium on operations research* (Darmstadt, 1986), 3-10, *Methods Oper. Res.*, 57, Athenäum/Hain/Hanstein, Königstein/Ts., 1987. (Summary) **89h:90006** 90A05 (90C31)
- (with Luban, Florica) On the monotone functionals in multicriteria optimization. (French and Russian summaries) *Econom. Comput. Econom. Cybernet. Stud. Res.* 22 (1987), no. 1, 77-83. (Andrzej M. J. Skulimowski) **89b:90205** 90C31 (90B50)
- Dümmel, Siegfried** Uniqueness theorems for the determination of a coefficient in a quasilinear parabolic equation. (German and Russian summaries) *Z. Anal. Anwendungen* 5 (1986), no. 5, 419-424. (Summary) **89d:35181** 35R30 (35K55)
- Zur eindeutigen Bestimmung eines ortsabhängigen Koeffizienten in der Wärmeleitungsgleichung. [On the unique determination of a position-dependent coefficient in the heat equation] *Wiss. Z. Tech. Univ. Karl-Marx-Stadt* 30 (1988), no. 1, 34-37. (Summary) **89f:35199** 35R30 (35K05)
- (with Handrock-Meyer, S.) Uniqueness of the solution of an inverse problem for a quasilinear parabolic equation in divergence form. (German and Russian summaries) *Z. Anal. Anwendungen* 7 (1988), no. 3, 241-246. (Dang Dinh Ang) **89h:35335** 35R30 (35K55)
- Dummett, Michael** Replies to essays. *Michael Dummett*, 219-330, *Nijhoff Internat. Philos. Ser.*, 25, Nijhoff, Dordrecht, 1987. (see **89m:03002**) 03A05
- Causal loops. *The nature of time*, 135-169, *Blackwell, Oxford*, 1988. (see **89m:83002**) 00A25 (03A05)
- see also **Wright, Crispin**, (**89m:03002**) and **Bibliography: Dummett, Michael**, (Not in MR)
- Dummit, D. S.** (with Kisilevsky, H.) Abelian extensions generated by division points. *J. Number Theory* 29 (1988), no. 1, 21-30. (Alan Candiotti) **89j:11104** 11R20



- Dumont, Dominique** (with Kreweras, Germain) Sur le développement d'une fraction continue liée à la série hypergéométrique et son interprétation en termes de records et anti-records dans les permutations. (English summary) [Expansion of a continued fraction associated with the hypergeometric series, and its interpretation in terms of records and antirecords in permutations] *European J. Combin.* 9 (1988), no. 1, 27-32. (W. J. Thron) **89c:30007** 30B70 (05A05, 33A30, 40A15)
- Dumont, Jean-Marie** (with Thomas, Alain) Une modification multiplicative des nombres  $g$  normaux. (English summary) [A multiplicative modification of  $g$ -normal numbers] *Ann. Fac. Sci. Toulouse Math.* (5) 8 (1986/87), no. 3, 367-373. (R. G. Stoneham) **89h:11047** 11K16
- Cortey-Dumont, Philippe** see **Cortey-Dumont, Philippe**
- Dumont, Randall S.** Asymptotic statistical properties of chaotic power spectra. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 373-395, *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (Vladimir Katkovnik) **89b:58130** 58F13 (93E14)
- Dumont, Thierry** (with Hayli, Avram; Moulin Ollagnier, Jean; Strelecyn, Jean-Marie) Quelques résultats nouveaux sur les billards de Robnik. (English summary) [Some new results on Robnik billiards] *J. Phys. A* 20 (1987), no. 11, 3237-3249. (Jaroslav Smital) **89c:58082** 58F14 (30D05, 58F17)
- Dumortier, F. A. G.** (with De Keyser, R. M. C.; Van de Velde, Ph. G. A.) A comparative study of self-adaptive long-range predictive control methods. *Automatica—J. IFAC* 24 (1988), no. 2, 149-163. (Not in MR) 93C40
- Dumortier, Freddy** (with Roussarie, R.; Sotomayor, J.) Generic 3-parameter families of vector fields on the plane, unfolding a singularity with nilpotent linear part. The cusp case of codimension 3. *Ergodic Theory Dynamical Systems* 7 (1987), no. 3, 375-413. (Sebastian van Strien) **89g:58149** 58F14 (58C27)
- (with Chicone, Carmen) A quadratic system with a nonmonotonic period function. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 706-710. (J. O. C. Ezeilo) **89d:58106** 58F22 (34C25)
- Dunaev, I. M.** (with Frolon, N. N.) An algorithm for the numerical solution of a geometrically nonlinear problem on the contact between an incompressible elastic body and a rigid smooth stamp. (Russian) *Boundary value problems* (Russian), 161-165, 202, *Perm. Politekh. Inst., Perm*, 1983. (see **89c:00008**) 73T05
- Dunas, Jean-Louis** (with Sénateur, Henri) A characterization of the type of the Cauchy-Hua measure on real symmetric matrices. *J. Theoret. Probab.* 1 (1988), no. 3, 263-270. (D. N. Shanbhag) **89g:60039** 60E05 (32M15, 60B99, 62H10)
- (with Sénateur, Henri) Une caractérisation du type de la loi de Cauchy-conforme sur  $\mathbb{R}^n$ . (English summary) [A characterization of the type of the conformal Cauchy law on  $\mathbb{R}^n$ ] *Probab. Theory Related Fields* 77 (1988), no. 1, 129-135. (F. B. Knight) **89d:60032** 60E99
- Dunbar, David C.** (with Bern, Z.) Coupling of open to closed bosonic strings in four dimensions. *Phys. Lett. B* 203 (1988), no. 1-2, 109-117. (Marc Henneaux) **89f:81161** 81E99 (81E30)
- (with Bailin, David; Love, Alex) Four-dimensional heterotic string models with rank  $\leq 6$  observable gauge group. *Phys. Lett. B* 212 (1988), no. 1, 23-27. (Summary) **89i:81145** 81G20 (81E30)
- (with Bailin, David; Love, Alex) Yukawa couplings in four-dimensional fermionic string models. *Phys. Lett. B* 219 (1989), no. 1, 76-82. (Not in MR) 81E99 (81E30)
- Dunbar, William D.** Classification of solvorbifolds in dimension three. I. *Braids* (Santa Cruz, CA, 1986), 207-216, *Contemp. Math.*, 78, Amer. Math. Soc., Providence, RI, 1988. (G. Peter Scott) **89k:57027** 57N10 (22E40)
- Hierarchies for 3-orbifolds. *Topology Appl.* 29 (1988), no. 3, 267-283. (John Hempel) **89h:57006** 57N10
- Duncan, A. J.** Tests of Bell's inequality and the no-enhancement hypothesis using an atomic hydrogen source. *Microphysical reality and quantum formalism*, Vol. 1, 2 (Urbino, 1985), 345-360, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89k:81007** 81B05 (81-05)
- Duncan, Anthony** Lattice Hamiltonian in physical gauges. *Phys. Rev. D* (3) 37 (1988), no. 2, 563-566. (Summary) **89c:81092** 81E25 (81-08, 81E13)
- Pasik-Duncan, B.** see **Pasik-Duncan, B.**
- Duncan, K.** (with Ellbeck, J. C.) Numerical studies of symmetry-breaking bifurcations in reaction-diffusion systems. *Biomechanics and related computational problems* (Naples, 1987), 439-448, *Kluwer Acad. Publ., Dordrecht*, 1988. (Brian D. Sleeman) **89k:92015** 92A09 (58F14)
- Duncan, M. J.** (with Segre, G.) A simplified model for superstring compactification. *Phys. Lett. B* 195 (1987), no. 1, 36-40. (Gary T. Horowitz) **89a:81125** 81E99 (32J05, 81E30)
- (with Segre, G.; Wheeler, J. F.) Topological stability in higher-dimensional theories. *Nuclear Phys. B* 308 (1988), no. 2-3, 509-526. (Summary) **89j:83075** 83E15 (81E20, 83C47)
- (with Jensen, L. G.) The quantum cosmology of an anisotropic universe. *Nuclear Phys. B* 312 (1989), no. 3, 662-672. (Summary) **89k:83040** 83C45 (83C75, 83F05)
- Duncan, T. E.** Explicit solutions for an estimation problem in manifolds associated with Lie groups. *Differential geometry: the interface between pure and applied mathematics* (San Antonio, Tex., 1986), 99-109, *Contemp. Math.*, 68, Amer. Math. Soc., Providence, RI, 1987. (Summary) **89j:58142** 58G32 (60H99, 60J65, 93E10)
- A solvable stochastic control problem in spheres. *Geometry of random motion* (Ithaca, N.Y., 1987), 49-54, *Contemp. Math.*, 73, Amer. Math. Soc., Providence, RI, 1988. (Shin'ichi Aihara) **89f:93046** 93E20 (49C20, 58G32, 93C20)
- (with Mandl, Petr; Pasik-Duncan, B.) On the consistency of a least squares identification procedure. *Kybernetika* (Prague) 24 (1988), no. 5, 340-346. (Lei Guo) **89i:93113** 93E12 (93E10)
- (with Pasik-Duncan, B.) Adaptive control of linear delay time systems. *Stochastics* 24 (1988), no. 1, 45-74. (David J. Aldous) **89j:93068** 93C40 (34K35, 93C05)
- An estimation problem in compact Lie groups. *Systems Control Lett.* 10 (1988), no. 4, 257-263. (Kimio Kanai) **89j:60018** 60B15 (58G32, 60J65)
- Dunduchenko, Leonid Omelyanovich** On the mapping of a circular multiply connected domain onto a plane and a disk with cuts along finite rectilinear segments. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 4, 521-525, 545; translated in *Ukrainian Math. J.* 40 (1988), no. 4, 448-452. (E. Zlotkiewicz) **89i:30005** 30C20 (30E25)
- Duneau, Michel** (with Oguey, Christophe; Katz, André) A geometrical approach of quasiperiodic tilings. *Comm. Math. Phys.* 118 (1988), no. 1, 99-118. (A. G. Schlijper) **89i:52024** 52A45 (82A60)
- Duneczky, Csilla** (with Wyatt, Robert E.) Lanczos recursion, continued fractions, Padé approximants, and variational principles in quantum scattering theory. *J. Chem. Phys.* 89 (1988), no. 3, 1448-1463. (Summary) **89f:81225** 81F05 (81-08)
- Nguyễn Việt Dũng** see **Nguyễn Việt Dũng**
- Le Dũng Tráng** see **Le Dũng Tráng**
- Dunham, Charles B.** Chebyshev approximation with the local Haar condition. II. Proceedings of the fifteenth Manitoba conference on numerical mathematics and computing (Winnipeg, Man., 1985). *Congr. Numer.* 51 (1986), 123-136. (Martin Bartelt) **89g:41016** 41A50 (41A46, 41A52)
- Discretization with interpolating approximation. (Russian summary) *Anal. Math.* 13 (1987), no. 1, 41-44. (Autorreferat [Zbl 627:41015]) **89f:41030** 41A50
- (with Zhu, Chang Zhong) Varying functions, linear families and constraints. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 181-192. (Manfred v. Golitschek) **89k:41025** 41A29
- Dependence of alternants on functions. *J. Approx. Theory* 53 (1988), no. 2, 163-166. (C. Dierckx) **89i:41028** 41A50
- (with Zhu, Chang Zhong) Biased varisolvant Chebyshev approximation on subsets. *J. Approx. Theory* 55 (1988), no. 1, 12-17. (R. Smarzewski) **89i:41025** 41A29 (41A50)
- Approximation with one (or few) parameters nonlinear. *J. Comput. Appl. Math.* 21 (1988), no. 1, 115-118. (H. P. Dikshit) **89c:65024** 65D15
- Dunham, Douglas J.** Creating hyperbolic Escher patterns. *M. C. Escher: art and science* (Rome, 1985), 241-248, *North-Holland, Amsterdam-New York*, 1986. (see **89m:00011**) 52A45 (51M10)
- Dunis, S. Z.** (with Maksimov, G. A.) Propagation of Rayleigh waves in dissipative media. A linear source. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* 1988, no. 3, 141-149, 167; translated in *J. Appl. Mech. Tech. Phys.* 29 (1988), no. 3, 443-450. (Summary) **89f:86007** 86A15
- Dunkl, Charles F.** Reflection groups and orthogonal polynomials on the sphere. *Math. Z.* 197 (1988), no. 1, 33-60. (Walter Schempp) **89b:42016** 42C05 (22E45, 33A65, 33A75)
- Dunlop, François** (with De Coninck, Joël) Partial to complete wetting: a microscopic derivation of the Young relation. Proceedings of the symposium on statistical mechanics of phase transitions—mathematical and physical aspects (Trebou, 1986). *J. Statist. Phys.* 47 (1987), no. 5-6, 827-849. (C. Eugene Wayne) **89a:82005** 82A05 (82A25, 82A50)
- (with Ruiz, Jean) Noncrossing walks and interfacial wetting. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* 48 (1988), no. 3, 229-251. (Gregory F. Lawler) **89i:82078** 82A67 (82A25, 82A41)
- see also **Falkenburg, Brigitte**, (Not in MR)
- Dunn, Gerald** Tensor product of operads and iterated loop spaces. *J. Pure Appl. Algebra* 50 (1988), no. 3, 237-258. (Frederick Cohen) **89g:55012** 55P35
- Dunn, J. C.** On the convergence of projected gradient processes to singular critical points. *J. Optim. Theory Appl.* 55 (1987), no. 2, 203-216. (Pierre Loridan) **89a:90120** 90C30 (49D07, 65K10, 90C48)
- (with Gavande, M.) A projected Newton method in a Cartesian product of balls. *J. Optim. Theory Appl.* 59 (1988), no. 1, 45-69. (Alexander Shapiro) **89h:90198** 90C30 (49D07, 49D15, 93B40, 93C55)
- A projected Newton method for minimization problems with nonlinear inequality constraints. *Numer. Math.* 53 (1988), no. 4, 377-409. (T. Y. Li) **89g:90189** 90C30 (65K05)
- Dunn, J. Michael** Relevant predication. I. The formal theory. *J. Philos. Logic* 16 (1987), no. 4, 347-381. (Stephen Read) **89c:03027** 03B45
- Incompleteness of the binary semantics for R. *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* 16 (1987), no. 3, 107-110. (Wiesław Dziobiak) **89c:03025** 03B45
- Dunn, K. A.** (with Williams, Jeffrey George) de Sitter kinks. *J. Math. Phys.* 30 (1989), no. 1, 87-89. (P. Achuthan) **89m:83013** 83C15
- Dunne, Gerald V.** (with Bender, C. M.) Polynomials and operator orderings. *J. Math. Phys.* 29 (1988), no. 8, 1727-1731. (R. A. Askey) **89h:33012** 33A65 (05A19, 81D05)
- Quantum canonical invariance—a Moyal approach. *J. Phys. A* 21 (1988), no. 10, 2321-2335. (Martine J. Perrin) **89k:58108** 58F06 (17B65, 81C25, 81D07)
- (with Halliday, I. G.) Negative-dimensional oscillators. *Nuclear Phys. B* 308 (1988), no. 2-3, 589-618. (Summary) **89j:81064** 81C99
- (with Bender, C. M.) Exact operator solutions to Euler Hamiltonians. *Phys. Lett. B* 200 (1988), no. 4, 520-524. (V. B. Serebrennikov) **89f:81030** 81C05 (70H05)
- (with Halliday, I. G.; Suranyi, Peter) Generalised bosonic construction of Virasoro algebras. *Phys. Lett. B* 213 (1988), no. 2, 139-143. (Summary) **89i:17015** 17B65 (81E40)
- Dunninger, D. R.** Existence of positive solutions for fourth order nonlinear problems. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 1 (1987), no. 4, 1129-1138. (S. B. Agase) **89c:34033** 34B15
- Duns Scotus, John** see **Knuutila, Simo**, (89a:03004)
- Dunwoody, J.** (with Villaggio, P.) Self straining at the interface of two bonded hyperelastic half-spaces uniformly pre-stressed. *Quart. J. Mech. Appl. Math.* 41 (1988), no. 3, 347-361. (D. Iesan) **89j:73095** 73T05 (73C99, 73G99)
- Duong, Quang Phuc** Model selection and ranking: an AHP approach to forecasts combination. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 282-285. (see **89d:00007**) 90A20 (62M10)
- ha-Duong, T.** see **Ha-Duong, T.**
- Duorah, H. L.** see **Knutson, Henning**, 89i:83020
- Dupačová, Jitka** Asymptotic properties of restricted  $L_1$ -estimates of regression. *Statistical data analysis based on the  $L_1$ -norm and related methods* (Neuchâtel, 1987), 263-274, *North-Holland, Amsterdam-New York*, 1987. (M. Hušková) **89i:62102** 62J02
- Stochastic programming with incomplete information: a survey of results on postoptimization and sensitivity analysis. *Optimization* 18 (1987), no. 4, 507-532. (Ivar Petersen) **89d:90153** 90C15
- (with Wets, Roger J.-B.) Asymptotic behavior of statistical estimators and of optimal solutions of stochastic optimization problems. *Ann. Statist.* 16 (1988), no. 4, 1517-1549. (Ram Shanmugam) **89i:62044** 62F12 (62J05, 90C15)
- Dupain, Y.** Fonctions intérieures dans la boule unité de  $C^*$  dont les fonctions traces sont aussi intérieures. [Inner functions in the unit ball of  $C^*$  whose trace functions are also inner] *Math. Z.* 198 (1988), no. 2, 191-206. (Lawrence Gruman) **89c:32013** 32A40 (32A35, 32E25)

- Dupertuis, M. A.** Alternate orderings: a new tool for the study of phase and photon statistics. *Phys. Rev. A* (3) 37 (1988), no. 12, 4752-4764. (Summary) **89f:81072** 81D05 (81K05)
- Duplák, Ján** Identities and deleting maps on quasigroups. *Czechoslovak Math. J.* 38(113) (1988), no. 1, 1-7. (V. D. Belousov) **89e:20118** 20N05
- Duplantier, Bertrand** Critical exponents of Manhattan Hamiltonian walks in two dimensions, from Potts and  $O(n)$  models. *J. Statist. Phys.* 49 (1987), no. 3-4, 411-431. (Summary) **89b:82025** 82A25 (60J15, 82A41)
- (with Saleur, H.) Exact critical properties of two-dimensional dense self-avoiding walks. *Nuclear Phys. B* 290 (1987), no. 3, 291-326. (Cheng Xun Wu) **89g:82049** 82A51 (60K35, 82A25, 82A41)
- Intersections of random walks. A direct renormalization approach. *Comm. Math. Phys.* 117 (1988), no. 2, 279-329. (Gregory F. Lawler) **89i:60139** 60J15 (82A25, 82A41)
- Hull percolation and standard percolation. *J. Phys. A* 21 (1988), no. 20, 3969-3973. (Summary) **89i:82048** 82A43
- (with David, François Louis) Exact partition functions and correlation functions of multiple Hamiltonian walks on the Manhattan lattice. *J. Statist. Phys.* 51 (1988), no. 3-4, 327-434. (Cheng Xun Wu) **89m:82005** 82A05 (05C20, 05C45, 60J15, 82A41, 82A51)
- Tricritical disorder transition of polymers in a cloudy solvent: annealed randomness. *Phys. Rev. A* (3) 38 (1988), no. 7, 3647-3663. (Summary) **89i:82067** 82A57 (82A25, 82A51)
- (with Saleur, H.) Winding-angle distributions of two-dimensional self-avoiding walks from conformal invariance. *Phys. Rev. Lett.* 60 (1988), no. 23, 2343-2346. (Claude Itzykson) **89e:82008** 82A41
- (with Kostov, Ivan) Conformal spectra of polymers on a random surface. *Phys. Rev. Lett.* 61 (1988), no. 13, 1433-1437. (Philippe Christe) **89k:82067** 82A51 (82A25, 82A41, 82A69)
- Dupont, Johan L.** A dual simplicial de Rham complex. *Algebraic topology—rational homotopy* (Louvain-la-Neuve, 1986), 87-91, *Lecture Notes in Math.*, 1318, Springer, Berlin-New York, 1988. (Marc Aubry) **89i:55006** 55P62 (58A10, 58A12)
- (with Parry, Walter; Sah, Chih-Han) Homology of classical Lie groups made discrete. II.  $H_2$ ,  $H_3$ , and relations with scissors congruences. *J. Algebra* 113 (1988), no. 1, 215-260. (K. Vogtmann) **89h:22019** 22E40 (18F25, 19C09, 20G10, 20G20)
- Dupont, Pascal** On Problem III of the "Mémoire sur l'utilité de la méthode de prendre le milieu entre les résultats de plusieurs observations" by J. L. Lagrange: a historical framework and a critical revision. (Italian. English summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* 119 (1985), no. 5-6, 261-272 (1986). (Pierre Crépel) **89f:01027** 01A50
- Dupont, Patrick Jean** (with Bollé, D.; Roekaerts, D.) On the Nicolai map and Witten index for two-dimensional supersymmetric magnetic field systems. *J. Phys. A* 20 (1987), no. 14, 4703-4716. (A. K. Raina) **89d:81032** 81C20 (81D20, 81G20)
- (with Bollé, D.; Roekaerts, D.) Stochastic representation of nonabelian supersymmetric quantum mechanics. *Nuclear Phys. B* 300 (1988), no. 3, 455-472. (R. M. Kadobayans'kii) **89j:81044** 81C20
- Dupont, Peter** (with Koebe, Manfred) Single-layer channel routing. (German and Russian summaries) *J. Inform. Process. Cybernet.* 24 (1988), no. 7-8, 339-354. (Summary) **89m:68108** 68R05 (68Q25, 90B10)
- Dupont, Todd F.** (with Bank, R.; Yserentant, Harry) The hierarchical basis multigrid method. *Numer. Math.* 52 (1988), no. 4, 427-458. (L. W. Ehrlich) **89b:65247** 65N20 (65F10, 65N30)
- Dupuis, Paul** Large deviations analysis of some recursive algorithms with state dependent noise. *Ann. Probab.* 16 (1988), no. 4, 1509-1536. (J. Steinbach) **89i:60062** 60P10 (60J05, 62L20)
- Duquenne, Vincent** Contextual implications between attributes and some representation properties for finite lattices. *Beiträge zur Begriffsanalyse* (Darmstadt, 1986), 213-239, *Bibliographisches Inst., Mannheim*, 1987. (Jacques Lévy-Bruhl) **89h:00010** 00A25 (01A50, 06A15)
- Dür, Arne** The weight distribution of double-error-correcting Goppa codes. *Applicable algebra, error-correcting codes, combinatorics and computer algebra* (Karlsruhe, 1986), 29-42, *Lecture Notes in Comput. Sci.*, 307, Springer, Berlin-New York, 1988. (Torleiv Kløve) **89i:94036** 94B05
- On the computation of the performance probabilities for block codes with a bounded-distance decoding rule. *IEEE Trans. Inform. Theory* 34 (1988), no. 1, 70-78. (Not in MR) **94B70** (94B05, 94B35)
- Duraiwamy, S.** (with Mehata, K. M.) Interconnected population processes with family migration and emigration. *Indian J. Pure Appl. Math.* 18 (1987), no. 7, 577-593. (Werner Timischl) **89d:92082** 92A17
- Durakova, V. K.** (with Novikov, Vyacheslav Aleksandrovich; Novikov, E. A.) Explicit methods of Runge-Kutta type of first order of accuracy with a given size for the interval of stability. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 4, 603-607, 624. (H. Shintani) **89e:65070** 65L05
- montalvo Durán, Francisco** see Montalvo Durán, Francisco
- guerrero Durán, José Antonio** see Guerrero Durán, José Antonio
- Durán, R.** (with Nochetto, Ricardo H.; Wang, Jun Ping) Sharp maximum norm error estimates for finite element approximations of the Stokes problem in 2-D. *Math. Comp.* 51 (1988), no. 184, 491-506. (M. M. Sussman) **89b:65261** 65N30 (65N15, 76-08, 76D99)
- (with Álvarez, Josefina)  $L^p$  continuity of pseudo-differential operators with discontinuous symbol. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 165-168. (C. Carton-Lebrun) **89i:42026** 42B20 (42B10, 47B05)
- Error analysis in  $L^p$ ,  $1 \leq p \leq \infty$ , for mixed finite element methods for linear and quasi-linear elliptic problems. (French summary) *RAIRO Model. Math. Anal. Numér.* 22 (1988), no. 3, 371-387. (G. Maess) **89i:65114** 65N30 (65G05)
- A note on the convergence of linear finite elements. *SIAM J. Numer. Anal.* 25 (1988), no. 5, 1032-1036. (B. Kellogg) **89g:65141** 65N30 (65N15)
- canalis-Durand, Mireille** see Canalis-Durand, Mireille
- Durany, J.** (with Bermúdez de Castro, Alfredo) Numerical solution of steady-state flow through a porous dam. *Comput. Methods Appl. Mech. Engrg.* 68 (1988), no. 1, 55-65. (Summary) **89e:76006** 76-08 (76S05)
- Durban, D.** (with Stronge, W. J.) End effects in instantaneous torsion of initially stretched elastoplastic cylinders. *Quart. Appl. Math.* 46 (1988), no. 3, 499-504. (Stan Chirijă)
- 89i:73032** 73E99
- (with Fleck, N. A.) Asymptotic fields at tip of conical notches and inclusions in a power hardening solid. *J. Mech. Phys. Solids* 37 (1989), no. 2, 233-263. (Not in MR) **73M05** (73C40, 73E99)
- Durban, James** Maximum likelihood estimation of the parameters of a system of simultaneous regression equations. *Econometric Theory* 4 (1988), no. 1, 159-170. (Bert M. Steece) **89h:62178** 62P20 (62J05)
- A reconciliation of two different expressions for the first-passage density of Brownian motion to a curved boundary. *J. Appl. Probab.* 25 (1988), no. 4, 829-832. (Rong Wu) **89j:60113** 60J65 (60G15)
- Correction: "The first passage density of a continuous Gaussian process to a general boundary" [J. Appl. Probab. 22 (1985), no. 1, 99-122; MR 86h:60083]. *J. Appl. Probab.* 25 (1988), no. 4, 840. (Editors) **89i:60080** 60G15 (60J60)
- Duren, Peter** (with Schober, G.) A variational method for harmonic mappings onto convex regions. *Complex Variables Theory Appl.* 9 (1987), no. 2-3, 153-168. (Yuk Leung) **89g:30039** 30C70 (31A05)
- (with Schiffer, M. M.) Grunsky inequalities for univalent functions with prescribed Hayman index. *Pacific J. Math.* 131 (1988), no. 1, 105-117. (A. Z. Grinshpan) **89b:30014** 30C50 (30C45, 30C70)
- Dürer, Albrecht** see Harary, Frank, **89a:01016** and Matviukaya, G. P., **89k:01012**
- Durfee, Alan H.** (with Hain, Richard M.) Mixed Hodge structures on the homotopy of links. *Math. Ann.* 280 (1988), no. 1, 69-83. (Toshitake Kohno) **89c:14012** 14C30 (32B30, 32J25, 55P62, 57M25)
- Durgaprasad, K. V.** (with Narayana Rao, M. L.; Kuppuswamy Rao, K.) Flag transitive planes of dimension four over GF(3). *J. Geom.* 33 (1988), no. 1-2, 89-98. (Gary L. Ebert) **89i:51005** 51A40 (51E15)
- Durga Prasad, M. V.** (with Bector, C. R.; Chandra, Suresh) Nonlinear fractional programming duality for Hanson-Mond class of functions with nondifferentiable terms. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 165-170. (Summary) **89h:90235** 90C32
- Durbuss, Bergfinnur** (with Ambjørn, Jan; Fröhlich, Jürg; Jónsson, Thórhur) Regularized strings with extrinsic curvature. *Nuclear Phys. B* 290 (1987), no. 4, 480-506. (Claus Montonen) **89b:81164** 81E25 (81E30, 81G25, 82A05)
- (with Ambjørn, Jan; Jónsson, Thórhur) Statistical mechanics of paths with curvature-dependent action. *J. Phys. A* 21 (1988), no. 4, 981-1000. (A. Comtet) **89f:82040** 82A42 (60J15, 81E30, 82A41, 82A68)
- Durian, B.** (with Dvořák, S.) Merging by decomposition revisited. *Comput. J.* 31 (1988), no. 6, 553-556. (Summary) **89i:68014** 68P10
- Durier, R.** Meilleure approximation en norme vectorielle et théorie de la localisation. (English summary) [Best approximation in a vectorial norm and localization theory] *RAIRO Model. Math. Anal. Numér.* 21 (1987), no. 4, 605-626. (Bernard Lemaire) **89b:90206** 90C31 (41A50, 41A65, 90B10)
- Weighting factor results in vector optimization. *J. Optim. Theory Appl.* 58 (1988), no. 3, 411-430. (Juan-Enrique Martínez-Legaz) **89i:90079** 90C31 (26B25)
- sarmant-Durix, Marie Claude** see Sarmant-Durix, Marie Claude
- Durovic, Ivo** see Djurovic, Ivo
- Dürr, Detlef** (with Naroditsky, Vladimir; Zanghi, Nino) On the hydrodynamic motion of a test particle in a random harmonic chain. *Ann. Physics* 178 (1987), no. 1, 74-88. (Aernout C. D. van Enter) **89b:82055** 82A42
- (with Goldstein, Sheldon; Lebowitz, Joel L.) Asymptotic motion of a classical particle in a random potential in two dimensions: Landau model. *Comm. Math. Phys.* 113 (1987), no. 2, 209-230. (G. F. Dell'Antonio) **89k:82009** 82A05 (60K35, 82A42)
- (with Goldstein, Sheldon; Lebowitz, Joel L.) Self-diffusion in a nonuniform one-dimensional system of point particles with collisions. *Probab. Theory Related Fields* 75 (1987), no. 2, 279-290. (Summary) **89b:60235** 60K35
- (with de Smedt, Ph.; Lebowitz, Joel L.; Liverani, C.) Quantum system in contact with a thermal environment: rigorous treatment of a simple model. *Comm. Math. Phys.* 120 (1988), no. 2, 195-231. (M. Lawrence Glasser) **89i:82030** 82A35 (82A69)
- Dürr, Walter** (with Mayer, Horst) ★ Wahrscheinlichkeitsrechnung und Schließende Statistik. (German) [Calculus of probabilities and statistical inference] Second edition. Studienbücher der Wirtschaft. [Textbooks in Economics] Carl Hanser Verlag, Munich, 1987. 255 pp. ISBN 3-446-14877-9 (V. K. Rohatgi) **89k:60002** 60-01 (62-01)
- Durran, Richard** (with Truman, Aubrey) Planetsimal diffusions. *Stochastic mechanics and stochastic processes* (Swansea, 1986), 76-88, *Lecture Notes in Math.*, 1325, Springer, Berlin-New York, 1988. (Kalyan B. Sinha) **89j:81046** 81C20 (81G45, 85A20)
- (with Truman, Aubrey) Brownian motion on hypersurfaces and computer simulation. *Stochastic mechanics and stochastic processes* (Swansea, 1986), 89-100, *Lecture Notes in Math.*, 1325, Springer, Berlin-New York, 1988. (Jean-Louis Ducourtioux) **89j:60114** 60J65 (58G32, 65C20)
- Durrani, T. S.** see Mathematics in signal processing, **89b:94004**
- Durrett, Rick** (with Schonmann, R. H.) Stochastic growth models. *Percolation theory and ergodic theory of infinite particle systems* (Minneapolis, Minn., 1984-1985), 85-119, *IMA Vol. Math. Appl.*, 8, Springer, New York-Berlin, 1987. (Peter Donnelly) **89b:60236** 60K35
- Multidimensional RWRE with subcritical limiting behavior. *Random media* (Minneapolis, Minn., 1985), 109-119, *IMA Vol. Math. Appl.*, 7, Springer, New York-Berlin, 1987. (Gregory F. Lawler) **89a:60160** 60J15 (82A42)
- ★ Lecture notes on particle systems and percolation. The Wadsworth & Brooks/Cole Statistics/Probability Series. Wadsworth & Brooks/Cole Advanced Books & Software, Pacific Grove, CA, 1988. viii+335 pp. ISBN 0-534-09462-7 (R. T. Smythe) **89i:60157** 60K35 (82-02, 82A43)
- (with Liu, Xiu Fang) The contact process on a finite set. *Ann. Probab.* 16 (1988), no. 3, 1158-1173. (T. M. Liggett) **89f:60119** 60K35
- (with Schonmann, R. H.) The contact process on a finite set. II. *Ann. Probab.* 16 (1988), no. 4, 1570-1583. (T. M. Liggett) **89m:60254** 60K35
- Crabgrass, measles, and gypsy moths: an introduction to interacting particle systems. *Math. Intelligencer* 10 (1988), no. 2, 37-47. (Summary) **89a:60238** 60K35 (92A15)
- (with Chayes, J. T.; Chayes, L.) Connectivity properties of Mandelbrot's percolation process. *Probab. Theory Related Fields* 77 (1988), no. 3, 307-324. (Massimo Campanino) **89d:60193** 60K35 (82A43)



- (with Schonmann, R. H.) Large deviations for the contact process and two-dimensional percolation. *Probab. Theory Related Fields* 77 (1988), no. 4, 583–603. (John C. Wierman) **89i:60195** 60K35 (60F10)
- (with Bramson, Maury) A simple proof of the stability criterion of Gray and Griffiths. *Probab. Theory Related Fields* 80 (1988), no. 2, 293–298. (Kai Long Ren) **89m:60249** 60K35
- see also *Geometry of random motion*, **89i:58008**
- Durso, F. T. (with Schvaneveldt, R. W.; Dearholt, D. W.) Graph theoretic foundations of pathfinder networks. *Comput. Math. Appl.* 15 (1988), no. 4, 337–345. (Summary) **89i:20558** 92A27 (05C99, 68R10)
- Durst, F. (with Azevedo, J. L. T.; Pereira, J. C. F.) Comparison of strongly implicit procedures for the solution of the fluid flow equations in finite difference form. *Appl. Math. Modelling* 12 (1988), no. 1, 51–62. (Summary) **89b:65241** 65N10
- Durszt, E. On defect functions of contractions. *Special classes of linear operators and other topics* (Bucharest, 1986), 61–69, *Oper. Theory. Adv. Appl.*, 28, Birkhäuser, Basel-Boston, MA, 1988. (Arthur Lubin) **89g:47014** 47A45
- Durumeric, Oğuz C. Manifolds of almost half of the maximal volume. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 277–283. (Karsten Grove) **89b:53089** 53C20
- Düsedau, Dieter W. Adiabatic phases from an effective action. *Phys. Lett. B* 205 (1988), no. 2–3, 312–314. (Summary) **89d:81040** 81C99
- Dusenbery, David B. Ranging strategies. *J. Theoret. Biol.* 136 (1989), no. 3, 309–316. (Not in MR) **92A17**
- Dushin, B. I. An algorithm for solving the two-route Johnson problem. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 3, 53–58, 132; translated in *Cybernetics* 24 (1988), no. 3, 336–343. (Summary) **89g:90128** 90B35
- Dushin, K. B. (with Gurman, V. I.; Baturin, V. A.; Moskalenko, A. I.; Baginov, I. P.; Bobryshev, A. G.; Butin, A. A.; Danilina, E. V.; Derenko, N. V.; Dykhta, V. A.; Kolokolnikova, G. A.; Konstantinov, G. N.; Mel'nik, V. V.; Nikiforova, L. N.; Ovsyannikova, N. A.; Rasina, I. V.; Rozenraukh, D. M.; Urbanovich, D. E.; Fedorova, E. Yu.) ★ Методы улучшения в вычислительном эксперименте. (Russian) [Methods of improving [control] in numerical experiments] "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. 184 pp. ISBN 5-02-028573-0 (Asen L. Donchev) **89b:65099** 65Kxx (49Dxx, 93B40)
- Duston, Mark D. (with Verma, Ghazi R.; Wood, David H.; Gilbert, Robert P.) Direct generation of normal modes by transmutation theory. *Computational acoustics, Vol. 2* (New Haven, Conn., 1986), 389–402, North-Holland, Amsterdam-New York, 1988. (Summary) **89b:76019** 76Q05 (35C99)
- cuesta Dutari, Norberto see Cuesta Dutari, Norberto
- Dutka, Jacques On the St. Petersburg paradox. *Arch. Hist. Exact Sci.* 39 (1988), no. 1, 13–39. (Bernard Bru) **89m:61045** 01A50
- de Souza Dutra, Álvaro see de Souza Dutra, Álvaro
- Dutra do Carmo, Eduardo Gomes (with Galeão, Augusto Cesar) A consistent approximate upwind Petrov-Galerkin method for convection-dominated problems. *Comput. Methods Appl. Mech. Engrg.* 68 (1988), no. 1, 83–95. (James A. Schmitt) **89i:65099** 65M60 (76-08, 76R99)
- Dutt, Pravir Stable boundary conditions and difference schemes for Navier-Stokes equations. *SIAM J. Numer. Anal.* 25 (1988), no. 2, 245–267. (Randall J. LeVeque) **89b:65236** 65N05
- Dutt, Ranabir (with Adhikari, R.; Varshni, Y. P.) On the averaging of energy eigenvalues in the supersymmetric WKB method. *Phys. Lett. A* 131 (1988), no. 4–5, 217–221. (Summary) **89b:81032** 81C12
- Dutta, A. K. (with Wiley, R. S.) Exact analytic solutions for the quantum mechanical sextic anharmonic oscillator. *J. Math. Phys.* 29 (1988), no. 4, 892–900. (Denise Huet) **89i:81016** 81C05
- Dutta, Bhaskar Covering sets and a new Condorcet choice correspondence. *J. Econom. Theory* 44 (1988), no. 1, 63–80. (Roland Durier) **89i:90011** 90A06
- Dutta, K. On generalised negative binomial distribution. Proceedings of the National Seminar on Stochastic Process, Statistical Inference and Sample Survey (Sambalpur, 1985). *J. Orissa Math. Soc.* 4 (1985), no. 2, 67–76. (Moshe Shaked) **89b:62031** 62E15 (62F10)
- Dutta, Mahadev see Festschrift: Dutta, Mahadev, **89i:00007**
- Dutta, Prajit K. Capital deepening and impatience equivalence in stochastic aggregative growth models. *J. Econom. Dynamics Control* 11 (1987), no. 4, 519–530. (Bojan Popović) **89b:90038** 90A16 (90A14)
- (with Mitra, Tapan) Maximum theorems for convex structures with an application to the theory of optimal intertemporal allocation. *J. Math. Econom.* 18 (1989), no. 1, 77–86. (M. Ali Khan) **89m:90030** 90A14 (90A16)
- Dutta, S. K. (with Nandi, S. B.) Some generalizations of the Stevens-Craig distribution. *Pure Appl. Math. Sci.* 25 (1987), no. 1–2, 109–120. (Javad Behboodian) **89i:62018** 62E10
- Dutta, S. P. A special case of positivity. *Proc. Amer. Math. Soc.* 103 (1988), no. 2, 344–346. (P. Schenzel) **89i:13028** 13H15 (13D99, 13H05)
- Dutta, Salila (with Srivastava, P. D.) Proper Pincherle bases in the space of entire functions having fast growth. *Comm. Fac. Sci. Univ. Ankara Sér. A1 Math.* 33 (1984), no. 12, 83–94 (1985). (O. P. Juneja (Zbl 628:46014)) **89i:46024** 46E10 (30D20)
- Dutta, T. K. (with Chatterjee, T. K.) Green's equivalences on T-semigroup. *Bull. Calcutta Math. Soc.* 80 (1988), no. 1, 30–35. (John M. Howie) **89i:20092** 20M10
- Dutta-Roy, Binayak (with Ghosh, Gautam) The Berry phase and the Hannay angle. *Phys. Rev. D* (3) 37 (1988), no. 6, 1709–1711. (Summary) **89i:81025** 81C15
- Dutter, Rudolf (with Stockinger, Norbert) Robust time series analysis: a survey. *Kybernetika (Prague) Suppl.* 23 (1987), no. 1–5, 90 pp. (E. J. Hannan) **89c:62161** 62M10 (62M20)
- Dutton, Ronald D. (with Boland, James W.; Brigham, Robert C.) The difference between a neighborhood graph and a wheel. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 151–156. (George R. T. Hendry) **89i:05110** 05C35 (05C38)
- (with Brigham, Robert C.) Bounds on some graph invariants as a function of girth. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 59 (1987), 13–22. (Pavel Tomasta) **89i:05158** 05C35
- (with Brigham, Robert C.) An extremal problem for edge domination insensitive graphs. *Discrete Appl. Math.* 20 (1988), no. 2, 113–125. (George R. T. Hendry) **89d:05106** 05C35
- (with Brigham, Robert C.; Chinn, P. Z.) Vertex domination-critical graphs. *Networks* 18 (1988), no. 3, 173–179. (Michael Jacobson) **89i:05152** 05C35
- Duval, Art M. A directed graph version of strongly regular graphs. *J. Combin. Theory Ser. A* 47 (1988), no. 1, 71–100. (J. J. Seidel) **89i:05041** 05C20 (05C50)
- Duval, Christian (with Burdet, G.; Perrin, Martine-Jacqueline) A classical analogue of Yukawa coupling: presymplectic formalism. *Lett. Math. Phys.* 15 (1988), no. 1, 81–89. (A. Crumeyrolle) **89i:81072** 81E13 (58F05, 81G15)
- Duval, Jean-Pierre Génération d'une section des classes de conjugaison et arbre des mots de Lyndon de longueur bornée. (English summary) [Generation of a section of conjugation classes and tree of Lyndon words of bounded length] *Theoret. Comput. Sci.* 60 (1988), no. 3, 255–283. (Dominique Gouyô-Beauchamps) **89i:68082** 68Q45 (05A99)
- Duval, Julien Un exemple de disque polynômialement convexe. [An example of a polynomially convex disk] *Math. Ann.* 281 (1988), no. 4, 583–588. (Peter Pflug) **89i:32023** 32E20
- Du Val, P. see Heilbronn, Hans Arnold, **89i:01140**
- Duvallet, Jeanne An existence theorem for second order ordinary differential systems with nonlinear mixed boundary conditions. *Appl. Math. Lett.* 1 (1988), no. 1, 53–55. (Not in MR) **34B10**
- Duvaut, Patrick (with Picinbono, Bernard) Optimal linear-quadratic systems for detection and estimation. *IEEE Trans. Inform. Theory* 34 (1988), no. 2, 304–311. (From the text) **89i:94014** 94A13 (93E11)
- Dux, Erik (with Goda, László) On several degrees of the sensitivity of mean values. (Hungarian) *Mat. Lapok* 33 (1982/86), no. 1–3, 39–45. (L. Leindler) **89g:26019** 26D15
- hà Duy Bang see Hà Duy Bang
- ngo Duy Can see Ngo Duy Can
- van Duzer, T. see Van Duzer, T.
- Dužić, Marie (with Materna, Pavel; Staníček, Zdenko) Information capability of a database schema. *Kybernetika (Prague)* 24 (1988), no. 3, 216–226. (Not in MR) **68P15**
- Dvorak, R. (with Karch, M.) New results on the possible chaotic motion of Enceladus. Long term evolution of planetary systems (Ramsau, 1988). *Celestial Mech.* 43 (1987/88), no. 1–4, 361–369. (see **89i:76002**) 70F10 (58F13, 70K50)
- see also Long term evolution of planetary systems, **89i:76002**
- Dvořák, S. (with Durián, B.) Merging by decomposition revisited. *Comput. J.* 31 (1988), no. 6, 553–556. (Summary) **89i:68014** 68P10
- Dvořáková-Rulíková, I. Perfect codes in regular graphs. *Comment. Math. Univ. Carolin.* 29 (1988), no. 1, 79–83. (Henk van Tilborg) **89i:05077** 05C10 (94B25)
- Dvoryaninov, S. V. On the asymptotics of self-induced oscillation in singularly perturbed parabolic systems. (Russian) *Analytical methods in the theory of differential and integral equations* (Russian), 31–42, Kulbyshev. Gos. Univ., Kuybyshev, 1987. (Wei Tao Zhang) **89m:35024** 35B25 (35B20)
- Dvurečenskij, Anatolij On a discrete modified  $M/GI/c/\infty$  queue. (Russian and Slovak summaries) *Apl. Mat.* 32 (1987), no. 3, 214–223. (Summary) **89i:60104** 60K25 (90B22)
- Joint distributions of observables and measures with infinite values. *Demonstratio Math.* 20 (1987), no. 1–2, 121–139 (1988). (S. Gudder) **89i:81024** 81B10 (46N05)
- Converse of the Eilers-Horst theorem. *Internat. J. Theoret. Phys.* 26 (1987), no. 7, 609–612. (R. Piziak) **89b:81024** 81B10 (46L50)
- (with Osooskov, G. A.) On a generalized discrete queueing system with infinitely many servers. *Soviet J. Comput. Systems Sci.* 25 (1987), no. 3, 42–46; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1986, no. 6, 59–63, 420 (Russian). (Introduction) **89i:60213** 60K25 (90B22)
- Joint distribution of the busy and idle periods of a discrete modified  $GI/GI/c/\infty$  queue. (Russian and Czech summaries) *Apl. Mat.* 33 (1988), no. 1, 68–76. (P. R. Parthasarathy) **89d:60175** 60K25 (90B22)
- (with Chovanec, Ferdinand) Fuzzy quantum spaces and compatibility. *Internat. J. Theoret. Phys.* 27 (1988), no. 9, 1069–1082. (S. Gudder) **89i:81013** 81B10 (03E72)
- Completeness of inner product spaces and quantum logic of splitting subspaces. *Lett. Math. Phys.* 15 (1988), no. 3, 231–235. (S. Gudder) **89i:81021** 81B10 (03G12, 46C99)
- Dwass, M. A limit theorem for Bernoulli RVs and Feller's shoe problem. *Statist. Neerlandica* 39 (1985), no. 4, 357–360. (Endre Csáki) **89i:60042** 60F05 (60C05)
- Dwiggins, D. P. (with Burton, T. A.) An asymptotic fixed point theorem for a locally convex space. *Proc. Amer. Math. Soc.* 103 (1988), no. 1, 247–251. (D. N. Cheban) **89g:47075** 47H10 (54H25)
- Dwilewicz, R. Bergman-Szegő type theory for CR structures. *Complex analysis, III* (College Park, Md., 1985–86), 15–34, *Lecture Notes in Math.*, 1277, Springer, Berlin-New York, 1987. (R. Michael Range) **89i:32042** 32H10
- (with Boggess, A.) Subaveraging estimates for CR functions. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 117–124. (Mario Landucci) **89i:32027** 32F99
- Dwivedi, A. P. (with Shukla, B. D.; Shukla, S. C.) On the solution of simultaneous dual series equations involving the product of "r" Laguerre polynomials. *Acta Cienc. Indica Math.* 13 (1987), no. 1, 17–20. (B. M. Agrawal) **89i:33016** 33A65
- Dwivedi, V. J. (with Pandey, P. N.) On T-recurrent Finsler spaces. *Progr. Math. (Varanasi)* 21 (1987), no. 2, 101–112. (H. Rund) **89d:53053** 53B40
- Dwork, Cynthia (with Lynch, Nancy; Stockmeyer, Larry) Consensus in the presence of partial synchrony. *J. Assoc. Comput. Mach.* 35 (1988), no. 2, 288–323. (Summary) **89i:68008** 68M10 (68M15, 68Q10)
- (with Kanellakis, Paris C.; Stockmeyer, Larry) Parallel algorithms for term matching. *SIAM J. Comput.* 17 (1988), no. 4, 711–731. (Luis Fariñas del Cerro) **89m:68057** 68Q25 (03B35, 68T15)
- Dwyer, Douglas L. (with Walters, Robert W.) An efficient iteration strategy for the solution of the Euler equations. *Progress and supercomputing in computational fluid dynamics* (Jerusalem, 1984), 115–141, *Progr. Sci. Comput.*, 6, Birkhäuser Boston, Boston, MA, 1985. (Summary) **89i:76009** 76-08
- see also Finite elements, **89i:65002**
- Dwyer, Harry A. (with Matsuno, Kenichi) Adaptive methods for elliptic grid generation. *J. Comput. Phys.* 77 (1988), no. 1, 40–52. (P. Rochus) **89i:65075** 65N30
- Dwyer, W. G. (with Kan, D. M.) Equivalences between homotopy theories of diagrams. *Algebraic topology and algebraic K-theory* (Princeton, N.J., 1983), 180–205, *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (L. Gaunce Lewis, Jr.) **89d:55051** 55U35 (18A25, 18G30, 55U10)

- (with Mislin, G.) On the homotopy type of the components of  $\text{map}(BS^3, BS^3)$ . *Algebraic topology, Barcelona, 1986, 82–89, Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (Kenshi Ishiguro) **89c:55018** 55P35
- (with Miller, Haynes R.; Wilkerson, Clarence W.) The homotopic uniqueness of  $BS^3$ . *Algebraic topology, Barcelona, 1986, 90–105, Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (Kenshi Ishiguro) **89c:55019** 55P35
- (with Zabrodsky, A.) Maps between classifying spaces. *Algebraic topology, Barcelona, 1986, 106–119, Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (Donald W. Kahn) **89b:55018** 55R35
- (with Wilkerson, Clarence W.) Maps of  $B\mathbb{Z}/p\mathbb{Z}$  to  $BG$ . *Algebraic topology—rational homotopy (Louvain-la-Neuve, 1986), 92–98, Lecture Notes in Math.*, 1318, Springer, Berlin-New York, 1988. (Haynes R. Miller) **89i:55011** 55R35
- (with Wilkerson, Clarence W.) Smith theory revisited. *Ann. of Math.* (2) **127** (1988), no. 1, 191–198. (Introduction) **89g:55005** 55M35
- (with Kan, D. M.; Smith, Jeffrey H.) Towers of fibrations and homotopical wreath products. *J. Pure Appl. Algebra* **56** (1989), no. 1, 9–28. (Paul Selick) **89k:55009** 55P15 (55R35, 55S45, 55U10)
- Dyachenko, A. I.** (with Lyubimov, G. A.) Equations of the dynamics of a lung parenchyma, considered as a multiphase continuum. (Russian) *Mechanics and scientific-technological progress (Russian)*, 244–260, 287, "Nauka", Moscow, 1987. (Summary) **89c:92003** 92A06 (92A09)
- (with Rubenchik, A. M.; Sagdeev, R. Z.; Shvets, V. F.; Zakharov, V. E.) Computer simulation of the Langmuir collapse of the isolated cavity. *Plasma theory and nonlinear and turbulent processes in physics*, Vol. 1, 2 (Kiev, 1987), 573–596, World Sci. Publishing, Singapore, 1988. (M. Drăganu) **89g:76091** 76X05 (76-04, 82A45)
- Dyachenko, M. I.** Trigonometric series with monotone coefficients. (Russian) *Theory of functions and approximations, Part 2 (Russian) (Saratov, 1984)*, 101–104, Saratov. Gos. Univ., Saratov, 1986. (See **89j:00036**) 42A16 (40G05)
- The analyticity of sums of trigonometric series with infinite-monotone coefficients. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 5, 35–40, 105. (O. D. Gabisoniya) **89a:42011** 42A16 (30B40)
- (C,  $\alpha$ )-summability of multiple trigonometric Fourier series. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **131** (1988), no. 2, 261–263. (Summary) **89m:42010** 42B05
- Dyachenko, S. N.** Spectral expansion of an infinite-dimensional system with finite-dimensional input. (Russian) *Complex control systems (Russian)*, 52–57, iv, Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev, 1987. (See **89a:93001**) 93C25
- Dyachkov, A. G.** (with Rykov, V. V.) A model of associative memory. (Russian) *Problemy Peredachi Informatsii* **24** (1988), no. 3, 107–110; translated in *Problems Inform. Transmission* **24** (1988), no. 3, 257–260. (Summary) **89g:92068** 92A25 (68T05)
- Dyadyusha, Georgii G.** (with Dekhtyar, M. L.; Kornilov, Mikhail Yu.) Inverse adjacency matrix and spectral properties of chemical graphs. *Match No. 23* (1988), 51–63. (Summary) **89k:92089** 92A40 (05C50)
- Dyakon, V. V.** (with Petrukhovskii, S. I.) On the discreteness of the spectrum of some operator pencils connected with the periodic Schrödinger equation. (Russian. English summary) *Teoret. Mat. Fiz.* **74** (1988), no. 1, 94–102; translated in *Theoret. and Math. Phys.* **74** (1988), no. 1, 66–72. (Summary) **89k:35163** 35P05 (35J10, 47F05, 58F19, 81C10, 81G45)
- Dyakonov, E. G.** Some classes of saddle gradient methods. (Russian) *Computational processes and systems*, No. 5 (Russian), 101–115, "Nauka", Moscow, 1987. (Dragoslav Herceg) **89c:65041** 65F10 (49D07)
- Dyakonova, E. E.** (with Belyaev, K. P.) Estimates of the speed of convergence in the limit theorems for batch-processing systems with heavy traffic. *Moscow Univ. Comput. Math. Cybernet.* **1988**, no. 1, 65–70; translated from *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1988**, no. 1, 56–60, 77 (Russian). (Summary) **89a:60215** 60K25 (90B22)
- Dybin, V. B.** The Wiener-Hopf equation with a symbol vanishing on a countable set. (Russian) *Differential and integral equations and complex analysis (Russian)*, 59–81, ii, Kalmytsk. Gos. Univ., Elista, 1986. (Yu. D. Latushkin) **89h:45007** 45E10 (47B38, 47G05)
- One-dimensional singular integral equations with coefficients that vanish on countable sets. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **51** (1987), no. 5, 936–961, 1117; translated in *Math. USSR-Izv.* **31** (1988), no. 2, 245–271. (Yu. D. Latushkin) **89f:45005** 45E05
- The Wiener-Hopf equation with a vanishing symbol, and the limiting absorption principle. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 6, 1305–1308; translated in *Soviet Math. Dokl.* **37** (1988), no. 3, 813–816. (Yu. D. Latushkin) **89h:45008** 45E10 (47B38, 47G05)
- see also *Differential and integral equations and complex analysis*, **89b:00010**
- Dybov, P. T.** Solvability of the first boundary value problem for an equation of elliptic type in the unit disk. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 5, 844–852, 918; translated in *Differential Equations* **24** (1988), no. 5, 558–564. (Guo Chun Wen) **89f:35061** 35J25
- Dydak, Jerzy** (with Walsh, John J.) Sheaves that are locally constant with applications to homology manifolds. *Geometric topology and shape theory (Dubrovnik, 1986)*, 65–87, *Lecture Notes in Math.*, 1283, Springer, Berlin-New York, 1987. (Dušan Repovš (Zbl 631:57014)) **89d:57026** 57P99 (55N30)
- (with Kozłowski, George) A generalization of the Vietoris-Begle theorem. *Proc. Amer. Math. Soc.* **102** (1988), no. 1, 209–212. (Timothy Porter) **89a:55003** 55N05 (55N20, 55P20)
- (with Segal, J.; Spiez, Stanislaw) A nonmovable space with movable components. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 1081–1087. (Zvonko Čerin) **89c:54070** 54F43 (54F45)
- (with Geoghegan, Ross) Correction to: "The singular cohomology of the inverse limit of a Postnikov tower is representable" [*Proc. Amer. Math. Soc.* **98** (1986), no. 4, 649–654; MR **87m:55024**]. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 334. (Editors) **89d:55049** 55S45 (54E60, 55P55)
- (with Walsh, John J.) Sheaves with finitely generated isomorphic stalks and homology manifolds. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 655–660. (Nigel Martin) **89e:57017** 57P05 (18F20, 54B40)
- Dye, Christopher** (with Hasibeder, Günther) Population dynamics of mosquito-borne disease: persistence in a completely heterogeneous environment. *Theoret. Population Biol.* **33** (1988), no. 1, 31–53. (Andris Abakus) **89c:92062** 92A15
- Dye, R. H.** A quick geometrical proof that  $G_2(K)$  is maximal in  $\Omega_2^-(K)$ . *Geom. Dedicata* **26** (1988), no. 3, 361–364. (Ulrich Dempwolff) **89h:20067** 20G40 (20E28, 20F32, 51E30, 51N30)
- Twelve hexagons associated with the 10-point conic and the isomorphism  $\text{PSL}_2(9) \cong A_6$ . *J. London Math. Soc.* (2) **37** (1988), no. 3, 437–446. (Brian Mortimer) **89c:51010** 51E15 (20G40)
- Dyer, C. C.** (with McVittie, G. C.; Oattes, L. M.) A class of spherically symmetric solutions with conformal Killing vectors. *Gen. Relativity Gravitation* **19** (1987), no. 9, 887–898. (Jorge A. Pullin) **89b:83033** 83C20 (83C40)
- (with Oattes, L. M.; Starkman, G. D.) Vacuum strings in FRW models. *Gen. Relativity Gravitation* **20** (1988), no. 1, 71–75. (Dieter Lorenz-Petzold) **89b:83101** 83F05 (81E30)
- Swinnerton-Dyer, H. P. F.** see **Swinnerton-Dyer, H. P. F.**
- Dyer, J.** (with Bachmuth, S.; Baumslog, Gilbert; Mochizuki, H. Y.) Automorphism groups of two generator metabelian groups. *J. London Math. Soc.* (2) **36** (1987), no. 3, 393–406. (Ya. G. Berkovich) **89a:20040** 20F28
- Dyer, M. E.** (with Frieze, A. M.; Foulds, L. R.) On the strength of connectivity of random subgraphs of the  $n$ -cube. *Random graphs '85 (Poznań, 1985)*, 17–40, North-Holland Math. Stud., 144, North-Holland, Amsterdam-New York, 1987. (J. Spencer) **89i:05117** 05C80 (05C40, 60C05)
- Dyer, Matthew** (with Oattes, L. M.) Some generalisations of the Kazhdan-Lusztig polynomials for "universal" Coxeter systems. *J. Algebra* **116** (1988), no. 2, 353–371. (Anthony Joseph) **89f:17011** 17B35 (20G05)
- Klosek-Dygas, M. M.** see **Klosek-Dygas, M. M.**
- Dyjak, Cz.** (with Matkowski, J.) BV-solutions of nonlinear functional equations. (Serbo-Croatian summary) *Glas. Mat. Ser. III* **22(42)** (1987), no. 2, 335–342. (Summary) **89f:39006** 39B05 (39B20)
- Dyka, A.** (with Ugowski, Henryk) On a certain discrete minimax problem in deconvolution-inverse filtering. *COMPEL* **7** (1988), no. 3, 167–177. (Summary) **89k:94015** 94A12 (93E11)
- van Dyke, Milton** see **Van Dyke, Milton**
- Dykhta, V. A.** (with Gurman, V. I.; Baturin, V. A.; Moskalenko, A. I.; Baginov, I. P.; Bobryshev, A. G.; Butin, A. A.; Danilina, E. V.; Derenko, N. V.; Dushin, K. B.; Kolokol'nikova, G. A.; Konstantinov, G. N.; Mel'nik, V. V.; Nikiforova, L. N.; Ovsyannikova, N. A.; Rasina, I. V.; Rozenraukh, D. M.; Urbanovich, D. E.; Fedorova, E. Yu.) ★ Методы улучшения в вычислительном эксперименте. (Russian) [Methods of improving [control] in numerical experiments] "Nauka" Sibirsk. Otdel. Novosibirsk, 1988. 184 pp. ISBN 5-02-028573-0 (Asen L. Dontchev) **89h:65099** 65Kxx (49Dxx, 93B40)
- Dylko, T. N.** Choice of coefficients of the statistic for testing a hypothesis of identical distribution in problems of the analysis of dichotomous information. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1988**, no. 2, 36–40, 80. (T. Bednarski) **89i:62032** 62F03 (62F05)
- Dym, Harry** A maximum entropy principle for contractive interpolants. *Computational and combinatorial methods in systems theory (Stockholm, 1985)*, 309–314, North-Holland, Amsterdam-New York, 1986. (Shunhua Sun) **89c:47036** 47B35 (47A56, 93B28)
- (with Alpay, Daniel) On applications of reproducing kernel spaces to the Schur algorithm and rational  $J$  unitary factorization. *I. Schur methods in operator theory and signal processing*, 89–159, *Oper. Theory. Adv. Appl.*, 18, Birkhäuser, Basel-Boston, MA, 1986. (Heinz Langer) **89g:46051** 46E20 (15A23, 30D50, 46D05, 47B38)
- (with Gohberg, I.; Kravitsky, Naftali) Biography of M. S. Livšic. *Topics in operator theory and interpolation*, 6–15, *Oper. Theory. Adv. Appl.*, 29, Birkhäuser, Basel-Boston, MA, 1988. (Editors) **89g:01049** 01A70
- (with Gohberg, I.) A new class of contractive interpolants and maximum entropy principles. *Topics in operator theory and interpolation*, 117–150, *Oper. Theory. Adv. Appl.*, 29, Birkhäuser, Basel-Boston, MA, 1988. (D. Sarason) **89h:47022** 47A56 (46J99, 47B35)
- Dymek, Feliks** (with Dymek, Janusz Feliks) On selected Laplace transforms. (Russian and Polish summaries) *Opuscula Math.* No. 3 (1987), 9–28 (1988). (Editors) **89f:44006** 44A10
- Dymek, Janusz Feliks** (with Dymek, Feliks) On selected Laplace transforms. (Russian and Polish summaries) *Opuscula Math.* No. 3 (1987), 9–28 (1988). (Editors) **89f:44006** 44A10
- Dymnikov, V. P.** (with Skiba, Yu. N.) Barotropic instability of zone-asymmetric atmospheric flows. (Russian) *Computational processes and systems*, No. 4 (Russian), 63–104, "Nauka", Moscow, 1986. (M. A. Grinfeld) **89a:76032** 76E20
- (with Marchuk, G. I.; Zalesnyi, V. B.) ★ Математические модели в геофизической гидродинамике и численные методы их реализации. (Russian) [Mathematical models in geophysical hydrodynamics and numerical methods for their realization] With an English summary. "Gidrometeoizdat", Leningrad, 1987. 296 pp. (Vladan D. Djordjević) **89f:86001** 86-02 (65C20, 86-08, 86A05, 86A35)
- (with Skiba, Yu. N.) Spectral criteria for stability of atmospheric barotropic flows. *Izv. Acad. Sci. USSR Atmospher. Ocean. Phys.* **23** (1987), no. 12, 943–951 (1988); translated from *Izv. Akad. Nauk SSSR Ser. Fiz. Atmosf. i Okeana* **23** (1987), no. 12 (Russian). (Summary) **89m:76039** 76E20 (86A35)
- Dymnikov, I. G.** (with Gnedin, N. Yu.) Rotation of the plane of polarization of a photon in a Petrov type  $D$  space-time. *Soviet Phys. JETP* **67** (1988), no. 1, 13–15; translated from *Zh. Eksper. Teoret. Fiz.* **94** (1988), no. 1, 26–31 (Russian). (Garry Ludwig) **89k:83011** 83C10 (83B05)
- Dymond, Patrick W.** Input-driven languages are in  $\log n$  depth. *Inform. Process. Lett.* **26** (1988), no. 5, 247–250. (Helmut Alt) **89c:68035** 68Q15 (68Q45)
- Dyn, Nira** (with Edelman, Alan; Micchelli, Charles A.) On locally supported basis functions for the representation of geometrically continuous curves. *Analysis* **7** (1987), no. 3–4, 313–341. (R. K. Beatson) **89d:41022** 41A15
- (with Levin, David; Gregory, John A.) A 4-point interpolatory subdivision scheme for curve design. *Comput. Aided Geom. Design* **4** (1987), no. 4, 257–268. (Antonio López-Carmona) **89c:65022** 65D10
- (with Wong, Wing Hung) On the characterization of nonnegative volume-matching surface splines. *J. Approx. Theory* **51** (1987), no. 1, 1–10. (D. C. Handscomb) **89a:41010** 41A15 (41A63, 65D07)
- (with Ron, Amos) Recurrence relations for Tchebycheffian  $B$ -splines. *J. Analyse Math.* **51** (1988), 118–138. (L. L. Schumaker) **89k:41013** 41A15



- Dylin, Alexander** Multivariable Wiener-Hopf operators. II. Spectral topology and solvability. Special issue: Wiener-Hopf problems and applications (Oberwolfach, 1986). *Integral Equations Operator Theory* 10 (1987), no. 4, 554-576. (Raúl E. Curto) **89c:47037** 47B35 (46L35, 47D25)
- Dylin, S. M.** (with Bartoszyński, R.) Asymptotic properties of the tumor growth curve estimator. *J. Statist. Plann. Inference* 18 (1988), no. 1, 45-56. (N. R. Chaganty) **89g:62159** 62P10 (62F12)
- Dynkin, E. B.** Functionals associated with self-intersections of the planar Brownian motion. *Séminaire de Probabilités, XX*, 1984/85, 553-571, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (S. J. Taylor) **89b:60123** 60J55 (60J65)
- (with Fitzsimmons, P. J.) Stochastic processes on random domains. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* 23 (1987), no. 2, suppl., 379-396. (Joseph Glover) **89a:60098** 60G05
- Self-intersection gauge for random walks and for Brownian motion. *Ann. Probab.* 16 (1988), no. 1, 1-57. (W. E. Pruitt) **89f:60053** 60G60 (60J15, 60J55, 60J65)
- Regularized self-intersection local times of planar Brownian motion. *Ann. Probab.* 16 (1988), no. 1, 58-74. (S. J. Taylor) **89b:60181** 60J55 (60G57, 60G60, 60J65)
- Superprocesses and their linear additive functionals. *Trans. Amer. Math. Soc.* 314 (1989), no. 1, 255-282. (Klaus Fleischmann) **89k:60124** 60J80 (60G57, 60H03, 60J55)
- Dyda, Kazimiera** None of the variety  $E_n$ ,  $n \geq 2$ , is locally finite. *Demonstratio Math.* 20 (1987), no. 1-2, 215-219 (1988). (Editors) **89b:06007** 06D99 (03G25)
- Dyson, Freeman J.** A walk through Ramanujan's garden. *Ramanujan revisited (Urbana-Champaign, Ill., 1987)*, 7-28, Academic Press, Boston, MA, 1988. (Christian Radoux) **89f:01065** 01A70 (11-03)
- (with Andrews, G. E.; Hickerson, Dean) Partitions and indefinite quadratic forms. *Invent. Math.* 91 (1988), no. 3, 391-407. (S. W. Graham) **89f:11071** 11F35 (11F27, 11P72)
- Dysthe, Kristian** (with Persson, Leif; Wyller, John) A note on Whitham's method and the homogenization procedure. *Phys. Scripta* 38 (1988), no. 6, 774-776. (Summary) **89k:80019** 80A20 (35J25)
- (with Henyey, F. S.; Longuet-Higgins, M. S.; Schult, R. L.) The orbiting double pendulum: an analogue to interacting gravity waves. *Proc. Roy. Soc. London Ser. A* 418 (1988), no. 1855, 281-299. (P. C. Parks) **89j:70019** 70F20 (70H35, 76B15)
- Dyakonova, Teodora A.** (with Kyurkchiev, Nikolai V.; Atanasova, L.) Two methods for solving polynomial equations with higher rate of convergence. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian) (Sunny Beach (SP'achev Bryag), 1987)*, 482-486, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89c:65050** 65H05
- Dyumin, A. F.** (with Egorov, S. N.) Analytic methods and algorithms for solving ordinary differential equations of the theory of linear systems. (Russian) *Analytic methods for solving differential equations (Russian)*, 46-52, 145-146, *Kuibyshev. Gos. Univ., Kuibyshev*, 1986. (Stanislaw Kus) **89c:34007** 34A25 (65-04, 93B25)
- (with Egorov, S. N.) Reduction of the matrix Riccati differential equation in the problem of optimal linear estimation of the state of a partially observable dynamic object. (Russian) *Analytic methods in the theory of differential and integral equations (Russian)*, 42-49, *Kuibyshev. Gos. Univ., Kuibyshev*, 1987. (Benjamin Goldys) **89j:93115** 93E11 (15A06, 93B07, 93B25, 93E10)
- Dyrer, Albrecht** see **Dürer, Albrecht**
- Dzagnidze, O. P.** Hartogs-Fourier series. (Russian) *Theory of functions and approximations, Part 2 (Russian)* (Saratov, 1984), 97-98, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) 42B10 (40A05)
- Boundary values of the derivatives of the Poisson integral, and the representation of functions. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* 128 (1987), no. 2, 269-271. (Not in MR) 31A25
- A mixed derivative of the Poisson integral. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruzin. SSR* 86 (1987), 24-39. (Joachim Domsta) **89b:26014** 26B05
- Convergence of a Hartogs-Fourier series. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* 129 (1988), no. 2, 257-260. (Summary) **89g:42010** 42A20
- Dzhaharade, R. M.** (with Gadzhiev, A. A.) Spectral decomposition for a two-parameter system of operators. (Russian) *Spectral theory of operators and its applications*, No. 8 (Russian), 72-78, "Elm", Baku, 1987. (S. N. Krachkovskii) **89g:47023** 47A70
- (with Allahverdiev, Dzh. E.) Abstract separation of variables. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 2, 269-271; translated in *Soviet Math. Dokl.* 37 (1988), no. 3, 636-638. (D. Przeworska-Rolewicz) **89h:47014** 47A50 (47A70)
- Dzhahashvili, A. G.** (with Kutkhashvili, K. V.) A method for the optimization of a net diagram. (Russian. English summary) *Trudy Inst. Sistem Upravleniya Akad. Nauk Gruzin. SSR* 25 (1987), no. 1, 163-166. (Not in MR) 90B10
- Dzhahraev, A. D.** (with Mashayev, R. A.) Index of the differential operator of the Dirichlet problem for a quasielliptic linear equation with degeneracy. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* 43 (1987), no. 10, 3-6 (1988). (Stephan Rempel) **89b:35241** 35P05 (35J25, 47F05)
- (with Abdullaev, Ya. Yu.) A limit theorem on the embedding of weighted spaces of functions with mixed derivatives. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* 43 (1987), no. 11, 8-11 (1988). (Wojciech M. Zajączkowski) **89j:46032** 46E35
- Dzhahraev, M. S.** (with Salimov, F. G.) On the mean-square value of entire functions represented by Dirichlet series. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 3, 41-46 (1988). (R. P. Boas, Jr.) **89f:30048** 30D15 (30B50)
- Dzhafarov, Arif S.** Extremal properties of spherical and algebraic polynomials. (Russian) *Approximation by generalized analytic and spherical functions (Russian)*, 8-34, *Azerbaidzhan. Gos. Univ., Baku*, 1983. (see **89b:41001**) 41A10 (41A50)
- (with Kafarov, N. I.) The structural characterization of a class of functions. (Russian) *Approximation by generalized analytic and spherical functions (Russian)*, 55-59, *Azerbaidzhan. Gos. Univ., Baku*, 1983. (see **89b:41001**) 41A10 (41A27, 41A50)
- Dzhaisani, G. V.** Linear elliptic equations with degenerate order, and prismatic shells with a cusp. (Russian) *Current problems in mathematical physics, Vol. I (Russian)* (Tbilisi, 1987), 207-213, 481, *Tbilis. Gos. Univ., Tbilisi*, 1987. (see **89j:00030**) 73L99 (35J70)
- see also *Current problems in mathematical physics*, **89j:00030**
- Dzhalikbaev, A. M.** On the well-posedness of a model of the motion of an inhomogeneous viscous incompressible fluid. (Russian) *Dinamika Sploshn. Sredy* No. 83 (1987), 72-87, 160. (Wojciech M. Zajączkowski) **89m:76030** 76D99 (35Q10)
- Dzhakov, P.** (with Mitreva, M.) Linear operators that solve the Hermite problem on an algebraic variety in  $C^n$ . (Russian) *C. R. Acad. Bulgare Sci.* 40 (1987), no. 8, 13-16. (J. Siciak) **89d:32013** 32A99 (30E05)
- Dzhallilov, D.** (with Yakhno, V. G.) Unique solvability of the problem of determining the coefficients of a second-order ordinary differential equation from the spectral data. (Russian) *Some problems in differential equations and discrete mathematics (Russian)*, 76-82, *Novosibirsk. Gos. Univ., Novosibirsk*, 1986. (From the text) **89b:34012** 34A55 (34B25, 47E05)
- Dzhallilov, K. A.** The Dirichlet problem for nonuniformly degenerate elliptic equations in divergence form. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* 43 (1987), no. 5, 8-11. (A. Borzymowski) **89b:35128** 35J70 (35J25, 35J67)
- The Harnack inequality for solutions of second-order nonuniformly degenerate parabolic equations in divergence form. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 5, 21-28 (1988). (R. Guenther) **89m:35122** 35K65 (35B45, 35K20)
- Dzhamal', A. A.** (with Sushkov, Yu. A.) An approximation problem in multimode systems. (Russian) *Metody Vychisl.* No. 15 (1988), 169-175, 183. (Not in MR) 94C15
- Dzhamalov, M. Sh.** On a theorem of E. V. Voronovskaya. (Russian) *Operators and their applications (Russian)*, 22-27, *Leningrad. Gos. Ped. Inst., Leningrad*, 1985. (see **89f:00013**) 42A10
- Dzhamanbaev, A. A.** (with Ushakov, A. V.) A geometrical approach in the problem of finding a class of regulators that ensure zero parametric sensitivity. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 5, 84-86; translated from *Automatika* 1987, no. 5, 89-91, 97 (Russian). (Cheng Zhi Li) **89j:93038** 93B35 (93B27, 93B50, 93C05)
- Dzhaminrazov, A. A.** (with Mamurov, I. N.) A shift theorem for the central terms of an order statistics sequence. (Russian) *Dokl. Akad. Nauk UzSSR* 1988, no. 2, 6-8. (S. A. Book) **89h:60037** 60F05 (62G30)
- Dzhandzhulyan, L. E.** An estimate for the stability of the tournament ordering of control algorithms in games. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* 85 (1987), no. 5, 195-199. (From the text) **89c:90244** 90D42
- Dzhanelidze, G. Z.** The fundamental theorem of Galois theory. (Russian) *Mat. Sb. (N.S.)* 136(178) (1988), no. 3, 361-376, 431. (Chr. U. Jensen) **89k:18008** 18A99 (13B05)
- Dzhangibekov, G.** Noethericity and index of some two-dimensional singular integral operators. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* 30 (1987), no. 7, 400-405. (A. G. Myasnikov) **89i:47089** 47G05 (45P05, 47A53)
- The Noethericity and index of a class of two-dimensional singular integral equations with discontinuous coefficients. (Russian. Tajiki summary) *Izv. Akad. Nauk Tadzhik. SSR Otdel. Fiz.-Mat. Khim. i Geol. Nauk* 1987, no. 1(103), 66-70. (John W. Hilgers) **89g:45018** 45E99 (45H05)
- (with Boimatov, K. Kh.) On a singular integral operator. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 3(261), 171-172; translated in *Russian Math. Surveys* 43 (1988), no. 3, 199-200. (From the text) **89f:47076** 47G05 (47A53)
- On the Noethericity and index of a class of two-dimensional singular integral equations with discontinuous coefficients. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 2, 272-276; translated in *Soviet Math. Dokl.* 37 (1988), no. 3, 639-643. (L. Jentsch) **89k:45005** 45E05
- Dzhangveladze, T. A.** Stability of the stationary solution of a system of nonlinear partial differential equations. (Russian) *Current problems in mathematical physics, Vol. I (Russian)* (Tbilisi, 1987), 214-221, 481-482, *Tbilis. Gos. Univ., Tbilisi*, 1987. (see **89j:00030**) 35B35 (35K55)
- An averaged model of summary approximation for a system of nonlinear partial differential equations. (Russian. English and Georgian summaries) *Tbilis. Gos. Univ. Inst. Prikl. Mat. Trudy* 19 (1987), 60-73, 207. (S. S. Titov) **89c:35033** 35C99
- Dzhaparidze, G. K.** (with Artėmov, S. N.) Effective predicate logics of provability. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 3, 521-523; translated in *Soviet Math. Dokl.* 36 (1988), no. 3, 478-480. (R. A. Di Paola) **89i:03111** 03F30 (03B45, 03F40)
- Dzhasem, Amir Abdel Madzhid** Standard subalgebras of an infinite-dimensional Lie algebra of finite matrices. (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 10, 6-8. (From the text) **89a:17021** 17B65
- Dzhashishvili, G. N.** Calculation of the angular and energetic distributions of photons reflected by a homogeneous half-space in the case of a drop in monoenergetic radiation. (Russian. English and Georgian summaries) *Approximate methods for solving some problems of the transfer of neutron and gamma radiation (Russian)*, 82-97, 171, *Tbilis. Gos. Univ. Inst. Prikl. Mat., Tbilisi*, 1986. (see **89b:82003**) 81K05
- (with Bolkvadze, Zh. D.; Gongadze, Yu. A.; Nikolishvili, Sh. S.) On the approximate solution of plane parallel problems of atmospheric optics. (Russian. English and Georgian summaries) *Approximate methods for solving some problems of the transfer of neutron and gamma radiation (Russian)*, 151-169, 172-173, *Tbilis. Gos. Univ. Inst. Prikl. Mat., Tbilisi*, 1986. (see **89b:82003**) 78A15 (85A20, 86A35)
- Dzhavadov, R. M.** On the problem of the approximation of Boolean functions by Zhegalkin polynomials. (Russian) *Discrete mathematics and computer software (Russian)*, 19-21, *Azerbaidzhan. Gos. Univ., Baku*, 1986. (Karl Weber) **89d:94057** 94C10 (03G05, 06E30, 90C09)
- Dzhavadova, F. M.** A two-parameter selfadjoint boundary value problem with operator coefficients. (Russian) *Approximation by generalized analytic and spherical functions (Russian)*, 146-149, *Azerbaidzhan. Gos. Univ., Baku*, 1983. (see **89b:41001**) 34G20 (34B25)
- A difference operator equation with various parameters. (Russian) *Linear operators and their applications (Russian)*, 41-44, *Azerbaidzhan. Gos. Univ., Baku*, 1986. (see **89c:00016**) 39A70 (47B39)
- Dzhenaliev, M. T.** An absolute minimum for control problems. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1988, no. 3, 14-19. (Dan Tiba) **89m:49038** 49B27 (49A55)
- Dzhermakyay, M. G.** A theorem of Chapman in equivariant shape theory. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 2(260), 137-138; translated in *Russian Math. Surveys* 43 (1988), no. 2, 165-166. (S. Ungar) **89g:57023** 57N25 (55P55)

- A duality theory of Chapman type in spaces of orthogonal representations of a compact Lie group. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 3(261), 179–180; translated in *Russian Math. Surveys* 43 (1988), no. 3, 201–202. (Krystof Pawalowski) 89k:57074 57S15 (55P55)
- Dzhiblin, P.** see **Giblin, Peter J.**
- Dzhinchadze, T. R.** Linear connections of a tangent bundle. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzin. SSR* 129 (1988), no. 2, 253–256. (V. Cruceanu) 89h:53072 53C05
- Dzhneid, M. O.** The limit distribution of the maximum of some dependent random variables. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 37 (1987), 36–39, 135. (Slobodanka Janković) 89a:60058 60F05
- Dzhokhadze, O. M.** Global Goursat characteristic problem for one class of quasilinear hyperbolic equations. *Mixed type equations*, 136–141, *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) 89b:35108 35M05 (35R35)
- Dzholdasbekov, U. A.** (with Alsagaliyev, S. A.) On the investigation of the dynamics of the control of robots. Stabilization of motion. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1987, no. 1, 71–75. (E. G. Alpbekht) 89a:49031 49D07 (70B15, 70Q05, 93B40)
- (with Drakunov, Yu. M.; Kosolov, S. B.; Moldabekov, M. M.) Synthesis of the original kinematic chains of mechanisms of higher classes. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1987, no. 3, 65–70. (Summary) 89f:70003 70B15
- Dzhorbenadze, A. N.** An optimal control problem for systems that can be described by oscillation equations of elasticity theory. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzin. SSR* 127 (1987), no. 1, 37–39. (Henryk Górecki) 89e:49017 49B22 (73C60, 93C20)
- An optimal control problem for systems described by oscillation equations of elasticity theory with an objective functional containing a stress operator. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzin. SSR* 127 (1987), no. 2, 265–267. (Not in MR) 49B22 (93C75)
- An optimal control problem for systems that can be described by the static and oscillation equations of elasticity theory. (Russian. English and Georgian summaries) *Trudy Tbiliss. Univ. Mat. Mekh. Astronom.* No. 22-23 (1987), 120–135. (Petr Procházka) 89b:49035 49B22 (49B36, 73C60)
- Optimal control for a nonlinear problem in elasticity theory. (Russian. English and Georgian summaries) *Trudy Tbiliss. Univ. Mat. Mekh. Astronom.* No. 22-23 (1987), 136–153. (Petr Procházka) 89b:49036 49B22 (73C60)
- Dzhrbhashyan, A. E.** Classes  $A_n^0$  of harmonic functions in half-spaces, and an analogue of a theorem of M. Riesz. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* 22 (1987), no. 4, 386–398, 414. (Ü. Kuran) 89c:31002 31B05
- Dzhrbhashyan, A. M.** Parametric representations of classes of meromorphic functions with an unbounded Tsuji characteristic. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* 22 (1987), no. 5, 451–477, 515. (Summary) 89i:30037 30D35
- Dzhrbhashyan, M. M.** (with Rafayelyan, S. G.) Interpolation expansions in classes of entire functions and the Riesz bases generated by them. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* 22 (1987), no. 1, 23–63, 102. (Summary) 89c:30094 30E10 (30B60)
- (with Karapetyan, A. O.) Integral representations of some classes of functions that are analytic in a Siegel domain. (Russian) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* 22 (1987), no. 4, 399–405, 414. (Burglind Jörcke) 89c:32011 32A25
- Survey of some achievements of Armenian mathematicians in the theory of integral representations and factorization of analytic functions. (Serbo-Croatian summary) *Mat. Vesnik* 39 (1987), no. 3, 263–282. (R. P. Boas, Jr.) 89g:30063 30D50 (01A72, 30D55, 30E20, 32A20, 32A35)
- (with Gonchar, A. A.; Leont'ev, A. F.; Tumarkin, G. Ts.; Ulyanov, P. L.; Shabat, B. V.) Semen Yakovlevich Khavinson (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 2(260), 173–174; translated in *Russian Math. Surveys* 43 (1988), no. 2, 209–211. (Editors) 89i:01078 01A70
- Dzhukanova, Teodora** see **Dyukanova, Teodora A.**
- Dzhumabaev, D. S.** (with Zhaitykov, O. A.) Solution of boundary value problems on the basis of a modification of the Newton-Kantorovich method. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1987, no. 5, 19–29. (J. B. Butler, Jr.) 89j:49026 49D15 (34A50, 34B15, 47E05, 65L10)
- A parametrization method for solving boundary value problems for ordinary differential equations. (Russian) *Vestnik Akad. Nauk Kazakh. SSR* 1988, no. 1, 48–52. (G. Yu. Tamanyan) 89g:34020 34B05
- Dzhumabaev, S. A.** (with Kanguzhin, B. E.) On a nonregular problem on a finite segment. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1988, no. 1, 14–18. (Summary) 89d:34047 34B25
- Dzhumadil'daev, A. S.** (with Bakiev, M. N.) Kernel spaces for the Witt algebra. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 4(262), 199–200; translated in *Russian Math. Surveys* 43 (1988), no. 4, 203–204. (J. S. Joel) 89k:17032 17B50 (17B55)
- Cohomology and extensions of Lie algebras of characteristic  $p$ . (Russian) *Vestnik Akad. Nauk Kazakh. SSR* 1988, no. 1, 77–78. (Sen Qiu) 89d:17019 17B56 (17B50)
- Dzhuraev, A. D.** ★ Метод сингулярных интегральных уравнений. (Russian) [The method of singular integral equations] “Nauka”, Moscow, 1987, 416 pp. (V. S. Rabinovich) 89h:35106 35J55 (35K99, 45E99, 45L05)
- An initial-boundary value problem for the system  $a(x)u_{ii} = a(x)\text{grad div } a(x)u + \text{rot rot } u + b(x)u$ . (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 3, 541–544; translated in *Soviet Math. Dokl.* 37 (1988), no. 1, 111–113. (Wojciech M. Zajaczkowski) 89m:35059 35J25 (35L20)
- Some boundary value problems for second-order elliptic systems of mixed type in a plane. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 4, 797–802; translated in *Soviet Math. Dokl.* 37 (1988), no. 1, 152–156. (A. S. Berdyshev) 89f:35087 35J70 (35M05)
- Degenerate elliptic and first-order mixed-type systems in a plane. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 5, 1047–1051; translated in *Soviet Math. Dokl.* 37 (1988), no. 1, 191–194. (A. S. Berdyshev) 89e:35060 35J70 (35M05)
- Dzhuraev, I. N.** (with Kolesnik, T. V.) Accuracy of a scheme of the method of lines for a second-order singularly perturbed equation of hyperbolic type with an elliptic operator containing mixed derivatives. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 4, 3–5, 86. (Rong Hua Li) 89b:65142 65M10 (65M20)
- Dzhuraev, O.** Efficient construction of a field of algebraic functions corresponding to a four-sheeted covering of a sphere, and applications. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* 1987, no. 1, 43–46, 78. (Werner Kleint) 89c:14042 14H30 (14H05, 30E20)
- Construction of the equation of a Riemann surface that is given in the form of a three-sheeted covering surface of a sphere. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* 1988, no. 2, 57–60, 81. (A. D. Mednykh) 89c:30052 30F10 (30F30)
- Dzhuraev, T. D.** (with Sopuev, A.; Apakov, Yu. P.) Boundary value problems for a parabolic-hyperbolic equation with a characteristic line of change of type. (Russian) *Equations of mixed type and free boundary value problems (Russian)*, 56–65, 250, “Fan”, Tashkent, 1987. (Summary) 89b:35109 35M05
- (with Yakubov, S. Ya.; Takhirov, Zh. O.) A boundary value problem for a parabolic-hyperbolic equation with a given line of change of type. (Russian) *Equations of mixed type and free boundary value problems (Russian)*, 65–71, 250, “Fan”, Tashkent, 1987. (Summary) 89b:35110 35M05
- (with Kadyrov, R. R.) On the asymptotic behavior of solutions of parabolic equations as  $t \rightarrow \infty$ . (Russian) *Dokl. Akad. Nauk UzSSR* 1988, no. 1, 3–5. (Piotr Biler) 89b:35042 35B40 (35K35)
- see also **Nonclassical equations in mathematical physics and problems in branching theory**, 89j:35006
- Dzhrvarshishvili, A. G.** The Carleson measure for several complex variables. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzin. SSR* 129 (1988), no. 3, 469–471. (Burglind Jörcke) 89j:32007 32A35
- Dzhrvarshishvili, L. A.** Amarts with discrete time. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 2, 279–288; translated in *Theory Probab. Appl.* 33 (1988), no. 2, 260–268. (Dominique Lépine) 89g:60164 60G48
- Dzieliński, Andrzej** Real-time simulation of nonlinear quadratic Gaussian adaptive control system. *Systems analysis and simulation 1988, I (Berlin, 1988)*, 319–322, *Math. Res.*, 46, Akademie-Verlag, Berlin, 1988. (see 89g:00018) 93E03 (93C40)
- Simple method for two-dimensional deadbeat controller design from  $N$ - $M$  impulse response values. *Internat. J. Control* 47 (1988), no. 6, 1883–1891. (Not in MR) 93B50
- Dzinotiyevy, Heneri A. M.** The cardinality of the set of left invariant means on topological semigroups. *Bull. Austral. Math. Soc.* 37 (1988), no. 2, 247–262. (A. T.-M. Lau) 89c:43001 43A07 (22A20)
- Dziobak, Wiesław** On atoms in the lattice of quasivarieties. *Algebra Universalis* 24 (1987), no. 1-2, 32–35. (T. Katriňák) 89a:08008 08B15 (06D99, 08C15)
- Dzitkowska-Wilczewska, Joanna** Die exakte Abschätzung des Funktional  $[2A_2A_3/A_1 - A_2^2/A_1^2 - A_3/A_1 - A_4]$  in der Klasse der quasi- $\alpha$ -konvexen Funktionen. (Russian and Polish summaries) [The exact estimate of the functional  $[2A_2A_3/A_1 - A_2^2/A_1^2 - A_3/A_1 - A_4]$  in the class of quasi- $\alpha$ -convex functions] *Zeszyty Nauk. Politech. Łódź. Mat.* No. 20 (1988), 53–62. (J. G. Krzyż) 89j:30014 30C45 (30C50)
- Dzizubzila, Wiesław** A compound Poisson limit theorem for stationary mixing sequences. *Rev. Roumaine Math. Pures Appl.* 33 (1988), no. 1-2, 39–45. (M. Srechari) 89j:60036 60F05 (60G10)
- Dzizubzila, I.** (with Polubiński, Jerzy) On some method of solving linear equations. II. *Demonstratio Math.* 19 (1986), no. 4, 791–807 (1987). (Bryan E. Cain) 89c:47013 47A50 (15A06)
- Dziurba, B.** (with Newcomb, R. W.) Input-output pairing in LTV semistate systems. *IEEE Trans. Circuits and Systems* 36 (1989), no. 1, 139–141. (Not in MR) 94C05 (93C30)
- Dzilev, S. V.** (with Savkin, A. V.; Solomyak, B. M.; Yakubovich, E. D.) Periodic regimes in a system of differential inclusions that describes a special class of electrical valve schemes. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 9, 36–41, 82. (V. V. Obukhovskii) 89d:34073 34C25 (34A60, 94C05)
- Dzrbajian, M. M.** see **Dzhrbhashyan, M. M.**
- Dzurnak, A.** (with Mingarelli, A. B.) Sturm-Liouville equations with Besicovitch almost-periodicity. *Proc. Amer. Math. Soc.* 106 (1989), no. 3, 647–653. (G. B. Gustafson) 89m:34040 34C10 (34B25, 34C27)
- Dzyabchenko, A. V.** Affine normalizers of space groups and a global search for the optimal packings of a molecular crystal. (Russian) *Group-theoretic methods in physics, Vol. 1 (Russian) (Jurmala, 1985)*, 548–556, “Nauka”, Moscow, 1986. (see 89d:81001) 82A60 (20H15)
- Dzyadyk, V. K.** A simple approach to the solution of Fredholm integral equations of the second kind. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 11, 20 pp. (Summary) 89d:45001 45B05
- see also **Investigations in the theory of the approximation of functions**, 89b:41003 and **Some problems in the theory of the approximation of functions, and their applications**, 89i:41003
- Dzyuba, I. A.** (with Abrashin, V. N.; Minchenkov, Yuri) Difference schemes for the method of variable directions for a system of Maxwell equations. (Russian) *Differentsial'nye Uravneniya i Primenen.* No. 43 (1988), 9–15. (Summary) 89b:65155 65N05

— E —

mora E., Héctor M. see **Mora E., Héctor M.**

**E, Wei Nan** (with Huang, Hong Ci; Han, Wei Min) Error analysis of local refinements of polygonal domains. *J. Comput. Math.* 5 (1987), no. 1, 89–94. (H. D. Mittelmann) 89c:65119 65N30

**Eagambaram, N.** Generalized inverses with nonnegative principal minors. *Linear Algebra Appl.* 111 (1988), 293–312. (Ar. Meenakshi) 89j:15008 15A09

**graham-Eagle, James** see **Graham-Eagle, James**

**Eagles, P. M.** (with Daniels, P. G.) Free-surface boundary-layer flow on a curved bed. *IMA J. Appl. Math.* 36 (1986), no. 1, 101–116. (Not in MR) 76D10

**Eagleson, G. K.** (with Cameron, M. A.; Wilcox, M. E.; Laing, D. G.; Panhuber, H.) Testing for correlated errors in the analysis of variance. (French summary) *Biometrics* 44 (1988),



- no. 3, 695-704. (Summary) **89g:62117** 62J10
- (with Buckley, Michael James; Silverman, B. W.) The estimation of residual variance in nonparametric regression. *Biometrika* **75** (1988), no. 2, 189-199. (Winston T. Lin) **89f:62055** 62G05
- Holtz-Eakin, Douglas** see **Holtz-Eakin, Douglas**
- Ealy, Clifton E., Jr.** The computational complexity of finding subgeneralized quadrangles of a generalized quadrangle. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 23-29. (Stanley E. Payne) **89f:51055** 51E25
- Eardley, D. M.** Approximate methods for black hole collisions. *Dynamical spacetimes and numerical relativity* (Philadelphia, PA, 1985), 347-364, Cambridge Univ. Press, Cambridge-New York, 1986. (Summary) **89c:83003** 83-08 (83C75)
- Earle, Clifford J.** (with Kra, Irwin) Positive divisors and Poincaré series on variable Riemann surfaces. *Tôhoku Math. J. (2)* **39** (1987), no. 3, 429-436. (Jane Gilman) **89d:32053** 32G15
- (with McMullen, Curt) Quasiconformal isotopies. *Holomorphic functions and moduli*, Vol. I (Berkeley, CA, 1986), 143-154, *Math. Sci. Res. Inst. Publ.*, 10, Springer, New York-Berlin, 1988. (William Abikoff) **89b:30028** 30C60 (30F25, 32G15)
- (with Nag, Subhashis) Conformally natural reflections in Jordan curves with applications to Teichmüller spaces. *Holomorphic functions and moduli*, Vol. II (Berkeley, CA, 1986), 179-194, *Math. Sci. Res. Inst. Publ.*, 11, Springer, New York-Berlin, 1988. (Steffen Timmann) **89i:30019** 30C60 (30F99, 32G15)
- Some explicit real analytic trivializations of the Teichmüller curves. *Proc. Amer. Math. Soc.* **104** (1988), no. 2, 503-506. (Subhashis Nag) **89c:32045** 32G15 (30F35)
- see also *Holomorphic functions and moduli*, **89c:30001** and **89c:30002**
- Earman, John** (with Norton, John Daniel) What price spacetime substantialism? The hole story. *British J. Philos. Sci.* **38** (1987), no. 4, 515-525. (Lawrence Sklar) **89f:83005** 83A05 (03B30, 81B05)
- (with Glymour, Clark) A reply to: "Discussion: what revisions does bootstrap testing need?" [*Philos. Sci.* **53** (1986), no. 1, 101-109] by J. M. Zytow. *Philos. Sci.* **55** (1988), no. 2, 260-264. (Not in MR) 03B48
- Earnest, A. G.** Minimal discriminants of indefinite ternary quadratic forms having specified class number. *Mathematika* **35** (1988), no. 1, 95-100. (Yoshio Mimura) **89k:11023** 11E20
- Earnshaw, R. A.** see *Theoretical foundations of computer graphics and CAD*, **89a:68011**
- Earp, Ricardo** see **Sa Earp, Ricardo**
- Easdown, David** (with Praeger, Cheryl E.) On minimal faithful permutation representations of finite groups. *Bull. Austral. Math. Soc.* **38** (1988), no. 2, 207-220. (Martin W. Liebeck) **89i:20007** 20B05 (20B35)
- The minimal faithful degree of a semilattice of groups. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 3, 341-350. (John M. Howie) **89j:20073** 20M30 (20M20)
- Border-preserving coextensions of fundamental semigroups. *Proc. Edinburgh Math. Soc.* **2 **31** (1988), no. 3, 463-467. (D. C. Trueeman) **89j:20064** 20M10**
- Easley, David** (with Kiefer, Nicholas M.) Controlling a stochastic process with unknown parameters. *Econometrica* **56** (1988), no. 5, 1045-1064. (Boženna Pasik-Duncan) **89i:90003** 90A05 (90C40)
- Eastaugh, A.** (with McCarthy, J. G.) A study of the vertex in Witten's string field theory. *Nuclear Phys. B* **294** (1987), no. 4, 845-866. (Joaquín Gomis) **89b:81184** 81E99 (81E30)
- Eastep, F. E.** (with Khot, N. S.; Öz, H.; Grandhi, R. V.; Venkayya, V. B.) Optimal structural design with control gain norm constraint. *AIAA J.* **26** (1988), no. 5, 604-611. (Not in MR) 93B60 (49D40, 73K)
- Eastham, Jerome F.** (with LaRiccia, Vincent N.; Schuenemeyer, John H.) Small sample properties of the maximum likelihood estimators for an alternative parameterization of the three-parameter lognormal distribution. *Comm. Statist. Simulation Comput.* **16** (1987), no. 3, 871-884. (H. K. Hsieh) **89b:62067** 62F10 (62F11)
- (with Hastings, Kevin J.) Optimal impulse control of portfolios. *Math. Oper. Res.* **13** (1988), no. 4, 588-605. (Boženna Pasik-Duncan) **89m:90015** 90A09
- Easthope, Peter L.** (with Havel, Timothy F.) Computational experience with an algorithm for tetrahedron inequality bound smoothing. *Bull. Math. Biol.* **51** (1989), no. 1, 173-194. (Summary) **89m:92064** 92A40 (92A09)
- Eastwood, Bruce** Plinian astronomical diagrams in the early Middle Ages. *Mathematics and its applications to science and natural philosophy in the Middle Ages*, 141-172, Cambridge Univ. Press, Cambridge-New York, 1987. (Owen Gingerich) **89f:01017** 01A35
- Eastwood, Michael G.** (with Rice, John W.) Conformally invariant differential operators on Minkowski space and their curved analogues. *Comm. Math. Phys.* **109** (1987), no. 2, 207-228. (Adam Helfer) **89d:22012** 22E47 (58G35, 81D27)
- The Hill-Penrose-Sparling CR manifolds. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 627-628. (Gregory Fredricks) **89c:32025** 32F25
- Easwaran, C. V.** (with Majumdar, S. R.) The evolution of perturbations of the renormalized long wave equation. *J. Math. Phys.* **29** (1988), no. 2, 390-392. (A. A. Minzoni) **89b:35284** 35Q20
- (with Ramkissoon, H.; Majumdar, S. R.) On the uniqueness of exterior boundary value problems in viscoelastic fluids. *Z. Angew. Math. Mech.* **68** (1988), no. 1, 53-55. (Introduction) **89c:76014** 76A10 (76A05)
- Eatonck Taylor, R.** (with Wu, G. X.) Radiation and diffraction of water waves by a submerged sphere at forward speed. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1853, 433-461. (Summary) **89f:76028** 76B15 (76B20)
- Eaton, Jonathan** see **Csapiar, Wilfrid W., Jr.** (Not in MR)
- Eaton, Morris L.** Group induced orderings with some applications in statistics. *CWI Newsletter*, No. 16 (1987), 3-31. (Friedrich Pukelsheim) **89d:62004** 62A05 (62J05, 62K99)
- Concentration inequalities for Gauss-Markov estimators. *J. Multivariate Anal.* **25** (1988), no. 1, 119-138. (Lubomír Kubáček) **89d:62056** 62J05 (62H15)
- Eaves, B. Curtis** Thoughts on computing market equilibrium with SLCP. *The computation and modelling of economic equilibria* (Tilburg, 1985), 1-17, *Contrib. Econom. Anal.*, 167, North-Holland, Amsterdam-New York, 1987. (From the introduction) **89c:90051** 90A14 (90C33)
- (with Broadie, Mark N.) A variable rate refining triangulation. *Math. Programming* **38** (1987), no. 2, 161-202. (Balder von Hohenbalken) **89b:90178** 90C30 (58C30, 65H10)
- (with Rothblum, Uriel G.) A discrete time average cost flexible manufacturing and operator scheduling model solved by deconvexification of value. *Oper. Res.* **36** (1988), no. 2, 242-257. (Summary) **89d:90116** 90B35
- (with Rothblum, Uriel G.) Invariant polynomial curves of piecewise linear maps. *SIAM J. Control Optim.* **26** (1988), no. 2, 401-416. (George Isaac) **89b:47093** 47H99 (47H15, 58F08, 90C39, 90C40)
- Ebanks, Bruce** Kurepa's functional equation on Gaussian semigroups. *Functional equations: history, applications and theory*, 167-173, *Math. Appl., Reidel, Dordrecht-Boston, MA, 1984*. (A. Smajdor) **89g:39014** 39B70 (20M14)
- Measures of inset information on open domains. III. Weakly regular, semisymmetric,  $\beta$ -recursive entropies. *C. R. Math. Rep. Acad. Sci. Canada* **6** (1984), no. 3, 159-164. (Eberhard Lüdde) **89j:94016** 94A17 (28D20, 39B40, 39B50)
- (with Maska, Gy.) Measures of inset information on the open domain I. Inset entropies and information functions of all degrees. *Aequationes Math.* **30** (1986), no. 2-3, 187-201. (Eberhard Lüdde) **89j:94014** 94A17 (28D20, 39B40, 39B50, 39B70)
- Measures of inset information on open domains. II. Additive inset entropies with measurable sum property. *Probab. Theory Related Fields* **73** (1986), no. 4, 517-528. (Eberhard Lüdde) **89j:94015** 94A17 (28D20, 39B40, 39B50)
- On antisymmetric bi-additive functions and an interesting system of functional equations. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 1, 1-6. (Henryk Adamczyk) **89c:39016** 39B40
- Ebbingshaw, Heinz-Dieter** see *Bibliography: Mathematical logic*, **89c:03001c**
- Ebel, D.** (with Shen, M. C.) Linearization principle for a toroidal Hall current plasma with viscosity and resistivity. *Ann. Mat. Pura Appl. (4)* **150** (1988), 39-65. (H. Tasso) **89d:35153** 35Q20 (76X05)
- Ebeling, Werner** (with Boseniuk, T.) Evolution strategies in complex optimization: the travelling salesman problem. *Systems Anal. Modelling Simulation* **5** (1988), no. 5, 413-422. (Alexander H. G. Rinnooy Kan) **89k:90050** 90B10 (90C27)
- see also *Anisichenko, V. S.*, **89c:58058**
- Ebeling, Wolfgang** ★ The monodromy groups of isolated singularities of complete intersections. *Lecture Notes in Mathematics*, 1293. *Springer-Verlag, Berlin-New York*, 1987. xiv+153 pp. ISBN 3-540-18686-7 (Alexandru Dimca) **89d:32051** 32G11 (11E39, 14B07, 14M10, 32B30, 35C27)
- Vanishing lattices and monodromy groups of isolated complete intersection singularities. *Invent. Math.* **90** (1987), no. 3, 653-668. (Gerhard Pfister) **89b:14003** 14B05 (14B07, 32B30, 32G11)
- Ebenhöb, W.** Coexistence of an unlimited number of algal species in a model system. *Theoret. Population Biol.* **34** (1988), no. 2, 130-144. (Summary) **89h:92060** 92A17
- Ebenman, Bo** Competition between age classes and population dynamics. *J. Theoret. Biol.* **131** (1988), no. 4, 389-400. (Summary) **89h:92024** 92A15 (92A18)
- Ebergen, J. C. ★** Translating programs into delay-insensitive circuits. *CWI Tract*, 56. *Stichting Mathematisch Centrum, Centrum voor Wiskunde en Informatica, Amsterdam*, 1989. x+216 pp. ISBN 90-6196-363-X (Ronald E. Prather) **89m:68027** 68Q05 (68N05, 68Q10, 68Q50, 68Q55, 94C99)
- Eberhard, A. C.** Characterization of subgradients. *I. J. Math. Anal. Appl.* **132** (1988), no. 1, 57-74. (Wolfgang Thämett) **89g:90168** 90C25 (49A52, 90C30, 90C48)
- Eberhard, Walter** Irregular eigenvalue-problems on the half-axis. *Resultate Math.* **14** (1988), no. 1-2, 48-63. (Harold E. Benzinger) **89g:34032** 34B27 (34B25, 47E05)
- Eberlein, Patrick** Symmetry diffeomorphism group of a manifold of nonpositive curvature. *Trans. Amer. Math. Soc.* **309** (1988), no. 1, 355-374. (Werner Ballmann) **89i:53028** 53C20
- Eberly, D.** (with Troy, William C.) Existence of logarithmic-type solutions to the Kapila-Kassoy problem in dimensions 3 through 9. *J. Differential Equations* **70** (1987), no. 3, 309-324. (J. P. G. Ewer) **89d:35083** 35K55
- (with Bebernes, J.) A description of self-similar blow-up for dimensions  $n \geq 3$ . (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **5** (1988), no. 1, 1-21. (Victor A. Galaktionov) **89f:35034** 35B40 (35K55)
- Nonexistence for the Kassoy problem in dimensions 1 and 2. *J. Math. Anal. Appl.* **129** (1988), no. 2, 401-408. (Howard A. Levine) **89c:35051** 35K55 (35B40, 80A25)
- Ebert, G. L.** (with Baker, R. D.) A nonlinear flock in the Minkowski plane of order 11. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 75-81. (Norman L. Johnson) **89b:51017** 51E25 (05B25, 51E20)
- (with Baker, R. D.) A new class of translation planes. *Combinatorics '86* (Trento, 1986), 7-20, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (Vikram Jha) **89d:51010** 51E20 (51A40)
- Nests, covers, and translation planes. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), C, 213-233. (Vikram Jha) **89f:51048** 51E20 (51A40)
- (with Baker, R. D.) Construction of two-dimensional flag-transitive planes. *Geom. Dedicata* **27** (1988), no. 1, 9-14. (P. B. Kirkpatrick) **89f:51017** 51A40 (51E15)
- (with Baker, R. D.; Weida, R.) Another look at Bruen chains. *J. Combin. Theory Ser. A* **48** (1988), no. 1, 77-90. (T. G. Ostrom) **89c:51002** 51A40 (05B25, 51A35, 51E15)
- (with Baker, R. D.) Nests of size  $q-1$  and another family of translation planes. *J. London Math. Soc. (2)* **38** (1988), no. 2, 341-355. (Ferenc Wettl) **89k:51003** 51A40 (51E20)
- Ebert, Jürgen** Computing Eulerian trails. *Inform. Process. Lett.* **28** (1988), no. 2, 93-97. (Răzvan Andonici) **89i:68100** 68R10 (05C38, 05C45, 68Q25)
- Ebert, Udo** A family of aggregative compromise inequality measures. *Internat. Econom. Rev.* **29** (1988), no. 2, 363-376. (Prasanta K. Pattanaik) **89k:90045** 90A99 (90A10)
- Measurement of inequality: an attempt at unification and generalization. *Soc. Choice Welf.* **5** (1988), no. 2-3, 147-169. (T. Storcken) **89j:90033** 90A10
- Rawls and Bentham reconciled. *Theory and Decision* **24** (1988), no. 3, 215-223. (Summary) **89c:90010** 90A08 (04A05)
- Ebihara, Yukiyo** On a variational inequality to some nonlinear evolution equations. *Fukuoka Univ. Sci. Rep.* **17** (1987), no. 2, 1-6. (R. N. Mukherjee) **89a:49011** 49A29 (35K85, 76S05)
- On the semilinear heat equations and wave equations with unbounded coefficient. *Funkcial. Ekvac.* **30** (1987), no. 2-3, 251-268. (Summary) **89b:35150** 35K55 (35L70)
- Local classical solutions to degenerate and singular quasilinear wave equations. *Bull. Central Res. Inst. Fukuoka Univ.* No. 104 (1988), 1-12. (R. G. Airapetyan) **89b:35208** 35L70

- Ebin, David G.** Ill-posedness of the Rayleigh-Taylor and Helmholtz problems for incompressible fluids. *Comm. Partial Differential Equations* 13 (1988), no. 10, 1265-1295. (J. R. Ockendon) **89b:55026** 55Q10 (58D25, 76E30)
- Ebrahime, Nather Abbas** (with Biswas, Suddhendu) On an application of the diffusion approximation of the generalized birth and death process for stochastic population projection. *Comm. Statist. Theory Methods* 17 (1988), no. 3, 779-789. (Edward Pollak) **89g:60228** 60J27 (60J80, 92A15)
- Ebrahimi, Nader** (with Hosmane, Balakrishna) On shrinkage estimation of the exponential location parameter. *Comm. Statist. Theory Methods* 16 (1987), no. 9, 2623-2637. (Tadashi Nakamura) **89b:62068** 62F10 (62F11)
- Estimating the parameters of a bivariate exponential distribution from a randomly censored sample. *LAPOR Trans.* 12 (1987), no. 1, 1-15. (H. K. Hsieh) **89b:62108** 62H12 (62F12)
- (with Ramalingam, T.) On the dependence structure of hitting times of univariate processes. *J. Appl. Probab.* 25 (1988), no. 2, 355-362. (Moshe Shaked) **89b:60175** 60K10 (60E15, 60G15)
- Determining the sample size for a hybrid life test based on the cost function. *Naval Res. Logist.* 35 (1988), no. 1, 63-72. (Bo Bergman) **89b:62087** 62N05
- Écalle, Jean** Classification analytique des champs hamiltoniens locaux. Invariants holomorphes et hamiltoniens étrangers. (English summary) [Analytic classification of local Hamiltonian fields. Holomorphic invariants and strange Hamiltonians] Singularités d'équations différentielles (Dijon, 1985). *Astérisque* No. 150-151 (1987), 67-86, 185. (Robert Roussarie) **89b:58072** 58F05
- (with Martinet, Jean; Moussu, Robert; Ramis, Jean-Pierre) Non-accumulation des cycles-limites. I. (English summary) [Nonaccumulation of limit cycles. I] *C. R. Acad. Sci. Paris Sér. I Math.* 304 (1987), no. 13, 375-377. (C. S. Coleman) **89i:58121a** 58F21 (34C05, 34C25)
- (with Martinet, Jean; Moussu, Robert; Ramis, Jean-Pierre) Non-accumulation des cycles-limites. II. (English summary) [Nonaccumulation of limit cycles. II] *C. R. Acad. Sci. Paris Sér. I Math.* 304 (1987), no. 14, 431-434. (C. S. Coleman) **89i:58121b** 58F21 (34C05, 34C25)
- Eccles, Peter J.** (with Mitchell, William P. R.) Splitting  $\Sigma(\mathbb{CP}^\infty \times \mathbb{CP}^\infty)$  localized at 2. *Quart. J. Math. Oxford Ser. (2)* 39 (1988), no. 155, 285-289. (Donald M. Davis) **89b:55028** 55R40
- Echahed, Rachid** On completeness of narrowing strategies. *CAAP '88* (Nancy, 1988), 89-101, *Lecture Notes in Comput. Sci.*, 299, Springer, Berlin-New York, 1988. (Summary) **89b:68073** 68Q50
- Ecker, Gerhard** (with Grimus, Walter) Basis transformations in generation space and a criterion for the existence of standard forms for unitarily congruent matrices. *J. Phys. A* 21 (1988), no. 12, 2825-2833. (Jean Nuyts) **89k:81202** 81G99 (15A21)
- Ecker, J. G.** (with Kupferschmid, Michael) A note on solution of nonlinear programming problems with imprecise function and gradient values. *Math. Programming Stud.* No. 31 (1987), 129-138. (From the introduction) **89c:90096** 90C30
- Ecker, Klaus** (with Schütt, Dieter) Testen von AND/EXOR-Feldern. (English and Russian summaries) [Testing of AND and EXOR functions] *J. Inform. Process. Cybernet.* 24 (1988), no. 10, 521-527. (Ondrej Šýkora) **89k:94101** 94C10
- Eckhardt, Bruno** Fractal properties of scattering singularities. *J. Phys. A* 20 (1987), no. 17, 5971-5979. (Summary) **89i:82115** 82A99 (28A75, 58F11)
- (with Aref, H.) Integrable and chaotic motions of four vortices. II. Collision dynamics of vortex pairs. *Philos. Trans. Roy. Soc. London Ser. A* 326 (1988), no. 1593, 655-696. (Summary) **89k:58178** 58F13 (70K50, 76C05)
- Integrable four vortex motion. *Phys. Fluids* 31 (1988), no. 10, 2796-2801. (Richard C. Churchill) **89m:70028** 70H05 (58F07, 76C05)
- Eckhardt, Carsten** Computation of class numbers by an analytic method. *J. Symbolic Comput.* 4 (1987), no. 1, 41-52. (H. London) **89b:11089** 11R29 (11Y40)
- Eckhardt, Roger** Stan Ulam, John von Neumann, and the Monte Carlo method. Stanislaw Ulam 1909-1984. With contributions by Tony Womack, Gary D. Doolen and John Hendricks. *Los Alamos Sci. No. 15 Special Issue* (1987), 131-137. (see **89m:01133a**) 01A60 (65-03)
- Eckhardt, U.** (with Maderlechner, G.) Projections of the Radon transform. *Z. Angew. Math. Mech.* 68 (1988), no. 5, T454-T455. (Bernd Droste) **89k:44006** 44A15 (47G05, 92A07)
- Eckhaus, Wiktor** (with Calogero, Francesco) Necessary conditions for integrability of nonlinear PDEs. *Inverse Problems* 3 (1987), no. 2, L27-L32. (From the text) **89a:35174** 35Q20 (35R30, 58F07, 58G37)
- (with Calogero, Francesco) Nonlinear evolution equations, rescalings, model PDEs and their integrability. I. *Inverse Problems* 3 (1987), no. 2, 229-262. (Hong Yuan Fu) **89c:35128** 35Q20 (58G35, 76B15)
- (with Calogero, Francesco) Nonlinear evolution equations, rescalings, model PDEs and their integrability. II. *Inverse Problems* 4 (1988), no. 1, 11-33. (Hong Yuan Fu) **89c:35094** 35Q20
- see also Trends in applications of mathematics to mechanics, **89g:58004**
- Eckmann, Beno** Nilpotent group action and Euler characteristic. *Algebraic topology, Barcelona, 1986*, 120-123, *Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (Ruth Charney) **89d:57032** 57Q99 (20C07)
- Eckmann, J.-P.** The mechanism of Feigenbaum universality. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1263-1267, *Amer. Math. Soc., Providence, RI*, 1987. (Andrew Osbaldestin) **89f:58088** 58F13 (58F08, 58F14, 82A99)
- (with Epstein, Henri) Fixed points of composition operators. *VIIIth international congress on mathematical physics* (Marseille, 1986), 517-530, *World Sci. Publishing, Singapore*, 1987. (G. Benettin) **89d:58080** 58F13
- (with Collet, Pierre) The stability of modulated fronts. *Helv. Phys. Acta* 60 (1987), no. 8, 969-991. (From the introduction) **89m:35102** 35K55 (58F14, 58G17)
- (with Wittwer, Peter) A complete proof of the Feigenbaum conjectures. *J. Statist. Phys.* 46 (1987), no. 3-4, 455-475. (Frederick R. Marotto) **89b:58131** 58F13 (58F20, 82A05)
- (with Wayne, C. Eugene) Liapunov spectra for infinite chains of nonlinear oscillators. *J. Statist. Phys.* 50 (1988), no. 5-6, 853-878. (Massimo Campanino) **89m:58120** 58F11 (60K35, 70K99, 82A05)
- Eckmann, Steffen** Über die lineare Unabhängigkeit der Werte gewisser E-Funktionen. [On the linear independence of the values of certain E-functions] *Resulante Math.* 13 (1988), no. 1-2, 47-64. (Michel Waldschmidt) **89e:11038** 11J13 (11J72, 11J91)
- Eckmiller, R.** Neural nets for the management of sensory and motor trajectories. *Neural and synergetic computers* (Schloss Elmau, 1988), 229-239, *Springer Ser. Synergetics*, 42, Springer, Berlin-New York, 1988. (see **89i:92026**) 92A09
- Eckstein, Jonathan** (with Bertsekas, Dimitri P.) Dual coordinate step methods for linear network flow problems. *Math. Programming* 42 (1988), no. 2 (Ser. B), 203-243. (Yixun Lin) **89k:90164** 90C35 (68Q25, 90B10, 90C27)
- Eco, Umberto** Meaning and denotation. *Synthese* 73 (1987), no. 3, 549-568. (Chris Brink) **89a:03002** 03-03 (01A35, 03A05)
- Economides, Nicholas** Symmetric equilibrium existence and optimality in differentiated product markets. *J. Econom. Theory* 47 (1989), no. 1, 178-194. (Summary) **89k:90029** 90A14
- Economou, Athanasios** (with Tsoubelis, D.) Inertial frames and tidal forces along the symmetry axis of the Kerr spacetime. *Gen. Relativity Gravitation* 20 (1988), no. 1, 37-50. (Enric Verdaguer) **89b:83030** 83C15 (83C10, 83C75)
- (with Tsoubelis, D.) Rotating cosmic strings and gravitational soliton waves. *Phys. Rev. D* (3) 38 (1988), no. 2, 498-505. (Jorge A. Pullin) **89m:83066** 83C99 (83C40, 83F05)
- Ecsedi-Tóth, P.** Structure-filters in equality-free model theory. *Acta Sci. Math. (Szeged)* 51 (1987), no. 3-4, 387-402. (Alan Mekler) **89b:03056** 03C40
- Eda, Katsuya** A characterization of  $N_1$ -free abelian groups and its application to the Chase radical. *Israel J. Math.* 60 (1987), no. 1, 22-30. (R. Göbel) **89c:20082** 20K99 (03E40)
- (with Abe, Yoshihiro) Compact cardinals and abelian groups. *Tsukuba J. Math.* 11 (1987), no. 2, 353-360. (Manfred Dugas) **89g:20088** 20K20 (03E55, 20A15, 20K25)
- Edahiro, Masato** (with Tanaka, Katsuhiko; Hoshino, Takashi; Asano, Takao) A bucketing algorithm for the orthogonal segment intersection search problem and its practical efficiency. *Computational geometry* (Waterloo, ON, 1987). *Algorithmica* 4 (1989), no. 1, 61-76. (Summary) **89m:68132** 68U05 (68Q25)
- Edahl, Richard H.** (with Baybars, Iker) A heuristic method for facility planning in telecommunications networks with multiple alternate routes. *Naval Res. Logist.* 35 (1988), no. 4, 503-528. (Not in MR) 90B10
- Edamatsu, Takashi** Differential operators on locally compact groups. *J. Math. Kyoto Univ.* 28 (1988), no. 3, 445-503. (J. A. Wolf) **89j:22009** 22D99
- Eddington, A. S.** see Bosquet, Jean, **89f:01088**
- Eddy, R. H.** (with Sabin, G. C. W.) Inequalities in  $R, r, s$  for the inscribed circumscribed quadrilateral. *Nieuw Arch. Wisk.* (4) 6 (1988), no. 1-2, 47-56. (H. W. Guggenheimer) **89j:51015** 51M05
- Edelen, Dominic G. B.** On solving problems in the mechanics of solids and fluids by a generalized method of characteristics. *Internat. J. Engng. Sci.* 26 (1988), no. 4, 361-372. (F. Ursell) **89b:76026** 76B15 (35F20, 35Q20, 73E25)
- Bäcklund transformations, homotopy operators, and solutions of linear balance equations. *Internat. J. Engng. Sci.* 26 (1988), no. 8, 847-850. (Summary) **89b:35285** 35Q20 (58G37)
- Static vacuum solution of direct Poincaré gauge theory in ten dimensions with four external. *Internat. J. Theoret. Phys.* 27 (1988), no. 5, 641-648. (M. Carmeli) **89f:81131** 81E20
- Are symmetry groups of PDE restricted by the jet bundle formulation? *Questiones Math.* 12 (1988), no. 1, 101-113. (C. Rogers) **89k:58012** 58A15 (58G35)
- Edelman, Alan** (with Strang, Gilbert) The Toeplitz-circulant eigenvalue problem  $Ax = \lambda Cx$ . *Oakland conference on partial differential equations and applied mathematics* (Rochester, Mich., 1986), 109-117, *Pitman Res. Notes Math. Ser.*, 154, Longman Sci. Tech., Harlow, 1987. (Petr Lieb) **89a:65055** 65F10 (15A18)
- (with Dyn, Nir; Micchelli, Charles A.) On locally supported basis functions for the representation of geometrically continuous curves. *Analysis* 7 (1987), no. 3-4, 313-341. (R. K. Beatson) **89d:41022** 41A15
- (with Micchelli, Charles A.) Admissible slopes for monotone and convex interpolation. *Numer. Math.* 51 (1987), no. 4, 441-458. (Summary) **89b:65031** 65D05
- (with Micchelli, Charles A.) Orthogonal polynomials in monotone and convex interpolation. *Orthogonal polynomials and their applications* (Segovia, 1986), 20-31, *Lecture Notes in Math.*, 1329, Springer, Berlin-New York, 1988. (From the introduction) **89k:41003** 41A05
- Eigenvalues and condition numbers of random matrices. *SIAM J. Matrix Anal. Appl.* 9 (1988), no. 4, 543-560. (D. S. Tracy) **89j:15039** 15A52 (62H10)
- (with Dougherty, Randall L.; Hyman, James M.) Nonnegativity, monotonicity-, or convexity-preserving cubic and quintic Hermite interpolation. *Math. Comp.* 52 (1989), no. 186, 471-494. (Eli Passow) **89i:41006** 41A05 (65D05)
- Edelman, David** Estimation of the mixing distribution for a normal mean with applications to the compound decision problem. *Ann. Statist.* 16 (1988), no. 4, 1609-1622. (Lionel Weiss) **89k:62008** 62C12 (62C25)
- Edelman, Paul H.** On inversions and cycles in permutations. *European J. Combin.* 8 (1987), no. 3, 269-279. (Ira Gessel) **89b:05011** 05A15 (05A05, 05A20)
- Edelman, S. L.** see Obituary: Edelman, S. L. (Not in MR)
- Edelsbrunner, Herbert** Algorithms in combinatorial geometry. *EATCS Monographs on Theoretical Computer Science*, 10, Springer-Verlag, Berlin-New York, 1987. xvi+423 pp. *ISBN* 3-540-13722-X (D. T. Lee) **89a:68205** 68U05 (52-04, 68Q25)
- (with Chazelle, Bernard) Linear space data structures for two types of range search. *Discrete Comput. Geom.* 2 (1987), no. 2, 113-126. (Summary) **89a:68204** 68U05 (52-04, 68P05)
- (with Shen, Xiaojun) A tight lower bound on the size of visibility graphs. *Inform. Process. Lett.* 26 (1987), no. 2, 61-64. (D. T. Lee) **89b:68115** 68U05 (05C99, 68Q25)
- (with Preparata, F. P.) Minimum polygonal separation. *Inform. and Comput.* 77 (1988), no. 3, 218-232. (Jean-Claude Spehner) **89f:68064** 68U05 (52-04, 68Q20, 68Q25)
- (with Skiena, Steven S.) Probing convex polygons with X-rays. *SIAM J. Comput.* 17 (1988), no. 5, 870-882. (K. J. Falconer) **89i:52002** 52A10 (68U05)
- Edelson, Allan** (with Barnette, D. W.) All orientable 2-manifolds have finitely many minimal triangulations. *Israel J. Math.* 62 (1988), no. 1, 90-98. (K. S. Sarkaria) **89f:57018** 57Q15
- Edelson, David** (with Rabin, Herschel) Numerical techniques for modeling and analysis of oscillating reactions. (Russian) *Oscillations and traveling waves in chemical systems*



- (Russian), 217-248, "Mir", Moscow, 1988. (see 89f:92003) 92A40 (82-08)
- Edelstein, Michael** Isometric decompositions. *J. London Math. Soc.* (2) 37 (1988), no. 1, 158-163. (Stan Wagon) 89a:46046 46B99 (04A20, 51F20)
- Eden, Benjamin** (with Landsburg, Steven E.) On the competitive resolution of trading uncertainty. *J. Econom. Theory* 47 (1989), no. 1, 66-75. (Summary) 89m:90033 90A14 (90A12)
- Edenhofer, Johann** (with Czizwitzky, Hans-Joachim) Numerische Verfahren mit unitären Verstärkungsmatrizen für lineare hyperbolische Differentialgleichungssysteme. [Numerical methods with unitary strengthening matrices for systems of linear hyperbolic differential equations] *Beiträge zur angewandten Mathematik und Statistik*, 43-66, Hanser, Munich, 1987. (see 89i:00018) 65M99
- Eder, O. J.** (with Foidl, Ch.; Kasperkovitz, P.) Inhomogeneous hard rod systems: comparison of theoretical and numerical results. *J. Phys. A* 20 (1987), no. 9, 2497-2510. (Summary) 89b:82049 82A40 (82-04)
- (with Posch, Maximilian) Solution of the one-dimensional linear Boltzmann equation for charged Maxwellian particles in an external field. *J. Statist. Phys.* 52 (1988), no. 3-4, 1031-1060. (Luia Ariotti) 89m:82032 82A40
- Edgar, G. A.** Pi: difficult or easy? *Math. Mag.* 60 (1987), no. 3, 141-150. (D. H. Lehmer) 89f:11170 11Y60
- (with Dowling, P. N.) Some characterizations of the analytic Radon-Nikodym property in Banach spaces. *J. Funct. Anal.* 80 (1988), no. 2, 349-357. (I. Namioka) 89m:46027 46B22
- Edge, W. L.** Geometry related to the key del Pezzo surface and the associated mapping of plane cubics. *Proc. Roy. Soc. Edinburgh Sect. A* 107 (1987), no. 1-2, 75-86. (R. H. Dye) 89f:14058 14N05 (14J26)
- Edgeman, Rick L.** (with Scott, Robert C.; Pavur, Robert) A modified Kolmogorov-Smirnov test for the inverse Gaussian density with unknown parameters. *Comm. Statist. Simulation Comput.* 17 (1988), no. 4, 1203-1212. (Not in MR) 62G10
- Edidin, Aron** Discussion: from relative confirmation to real confirmation. *Philos. Sci.* 55 (1988), no. 2, 265-271. (Not in MR) 03B48
- Edigaryan, B. M.** Representation algebra of finite cyclic  $p$ -groups. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1985, no. 2(159), 21-27. (Not in MR) 20C30
- Algebra of the representation of a finite cyclic semigroup over a field of characteristic 2. (Russian. Armenian summary) *Mathematics*, No. 4 (Russian), 75-80, Erevan. Univ., Erevan, 1986. (B. Pondělíček) 89g:20099 20M30
- Edigaryan, V. M.** (with Badalyan, G. V.) On the problem of the inversion of a transformation of convolution type. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1985, no. 1(158), 3-12. (Not in MR) 44A35
- (with Badalyan, G. V.) On the problem of the best approximation of  $k$ -multiply differentiable functions by polynomials in a Müntz system in a space. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1986, no. 1(161), 3-10. (A. B. Pevnyi) 89b:41009 41A10
- Edjvet, Martin** (with Howie, James) Star graphs, projective planes and free subgroups in small cancellation groups. *Proc. London Math. Soc.* (3) 57 (1988), no. 2, 301-328. (A. H. M. Hoare) 89m:20034 20F05 (05C25, 20F06)
- On a certain class of group presentations. *Math. Proc. Cambridge Philos. Soc.* 105 (1989), no. 1, 25-35. (Stephen J. Pride) 89m:20033 20F05 (20F06)
- Edmonds, Allan L.** Involutions on odd four-manifolds. *Topology Appl.* 30 (1988), no. 1, 43-49. (M.-C. Ku) 89m:57041 57M17 (57N13)
- Edmonds, Diane E.** (with Rose, Michael R.) Reproductive wastage and the evolution of genetic systems. *J. Theoret. Biol.* 132 (1988), no. 2, 247-250. (Not in MR) 92A12
- Edmonds, D. E.** (with Evans, W. D.) ★ Spectral theory and differential operators. Oxford Mathematical Monographs. Oxford Science Publications. The Clarendon Press, Oxford University Press, New York, 1987. xviii+574 pp. ISBN 0-19-853542-2 (Hermann König) 89b:47001 47-02 (34B25, 35Pxx, 47Axx, 47Bxx, 47F05)
- (with Edmonds, R. M.) Anisotropic spaces and the distance function. *Math. Nachr.* 132 (1987), 185-189. (Introduction) 89b:46045 46E35
- (with Evans, W. D.; Harris, D. J.) Approximation numbers of certain Volterra integral operators. *J. London Math. Soc.* (2) 37 (1988), no. 3, 471-489. (Bernd Carl) 89k:47078 47G05 (41A46, 45D05, 47B10)
- (with Triebel, Hans) Entropy numbers and approximation numbers in function spaces. *Proc. London Math. Soc.* (3) 58 (1989), no. 1, 137-152. (J. S. Martins) 89m:46064 46E35 (41A46, 47B10)
- Edmonds, J.** (with Amin, R.) Confidence limits of identified frequency responses of multivariable systems. *Internat. J. Control* 48 (1988), no. 1, 117-128. (Not in MR) 93B30 (93C35)
- Edmonds, R. M.** (with Edmonds, D. E.) Anisotropic spaces and the distance function. *Math. Nachr.* 132 (1987), 185-189. (Introduction) 89b:46045 46E35
- Inequalities between entropy and approximation numbers of compact maps. (German and Russian summaries) *Z. Anal. Anwendungen* 7 (1988), no. 3, 223-227. (Hermann König) 89e:47025 47B10
- Edwards, A. W. F.** ★ Pascal's arithmetical triangle. *Charles Griffin & Co., Ltd., London; The Clarendon Press, Oxford University Press, New York*, 1987. xii+174 pp. ISBN 0-85264-283-0 (Jeremy Gray) 89e:01020 01A45 (01A30, 01A32, 01A40, 05A10)
- Edwards, David G.** see COMPSTAT, 89i:62004
- Edwards, Don** (with Berry, Jack J.) The efficiency of simulation-based multiple comparisons. (French summary) *Biometrics* 43 (1987), no. 4, 913-928. (James E. Gentle) 89g:62122 62J15 (62F25, 65C05)
- Edwards, Harold M.** Dedekind's invention of ideals. *Studies in the history of mathematics*, 8-20, *MAA Stud. Math.*, 26, Math. Assoc. America, Washington, DC, 1987. (see 89b:01002) 01A55
- Kronecker's place in history. *History and philosophy of modern mathematics* (Minneapolis, MN, 1985), 139-144, *Minnesota Stud. Philos. Sci.*, XI, Univ. Minnesota Press, Minneapolis, MN, 1988. (Stefan Porubský) 89b:01032 01A55 (00A25)
- Edwards, J. H.** The locus ordering problem. *Ann. Human Genetics* 51 (1987), no. 3, 251-258. (Summary) 89k:92028 92A10
- Edwards, R. D.** (with Davenport, Robert J.) Wild Cantor sets as approximations to codimension two manifolds. *Topology Appl.* 26 (1987), no. 2, 207-218. (Morton Brown) 89a:57024 57N45 (57N15, 57N35, 57N40)
- Edwards, Robert G.** (with Sokal, Alan D.) Generalization of the Fortuin-Kasteleyn-Swendsen-Wang representation and Monte Carlo algorithm. *Phys. Rev. D* (3) 38 (1988), no. 6, 2009-2012. (Summary) 89i:82003 82-04 (81-08, 81E25, 82-08, 82A68)
- Edwards, S. A.** see Edwards, Sarah Ann
- Edwards, S. F.** (with Olvera de la Cruz, Monica) Quantum field theory methods in polymer blends. *Quantum field theory and quantum statistics*, Vol. 1, 371-380, Hilger, Bristol, 1987. (see 89b:81007) 82A51
- (with Muthukumar, M.) The size of a polymer in random media. *J. Chem. Phys.* 89 (1988), no. 4, 2435-2441. (Summary) 89e:82009 82A51 (82A42)
- (with Chen, Yang) The statistics of polymers on rough surfaces. *J. Phys. A* 21 (1988), no. 13, 2963-2969. (Summary) 89d:82093 82A51
- (with Boué, F.; Vilgis, T. A.) The entropy of a network of rod molecules. (French summary) *J. Physique* 49 (1988), no. 10, 1635-1645. (Summary) 89i:82065 82A57 (82A51)
- Edwards, Sam** see Mathematics in oil production, 89f:76003
- Edwards, Sarah Ann** (with Wall, C. T. C.) Nets of quadrics and deformations of  $\Sigma^{(3)}$  singularities. *Math. Proc. Cambridge Philos. Soc.* 105 (1989), no. 1, 109-115. (Piotr Jaworski) 89i:58011 58C27 (14B07, 32B30, 32G11)
- ver Eecke, Paul** see Ver Eecke, Paul
- van Eekelen, M. C. J. D.** (with Barendregt, H. P.; Plasmeijer, M. J.; Glauret, J. R. W.; Kennaway, J. Richard; Sleep, M. R.) LEAN: an intermediate language based on graph rewriting. PARLE: Conference on Parallel Architectures and Languages—Europe (Eindhoven, 1987). *Parallel Comput.* 9 (1988/89), no. 2, 163-177. (see 89i:68053) 68N05 (68Q50, 68R10)
- Eells, Ellery** Learning with detachment: reply to Maher. *Theory and Decision* 22 (1987), no. 2, 173-180. (Summary) 89d:90032 90A10
- On the alleged impossibility of inductive probability. *British J. Philos. Sci.* 39 (1988), no. 1, 111-116. (D. J. Foulis) 89f:03014 03B48 (62A15)
- Eells, James** (with Zhang, Gong Qing) Unstable minimal surface coboundaries. *Acta Math. Sinica (N.S.)* 2 (1986), no. 3, 233-247. (Autorreferat (Zbl 616:58011)) 89f:58039 58E12 (49F10, 53C42, 58E20)
- (with Lemaire, L.) Another report on harmonic maps. *Bull. London Math. Soc.* 20 (1988), no. 5, 385-524. (James F. Glazebrook) 89i:58027 58E20
- Elanor, A. V.** (with Entin, M. V.) Exactly solvable problem of nonlinear two-dimensional screening. *Soviet Phys. JETP* 66 (1987), no. 4, 735-737 (1988); translated from *Zh. Eksp. Teoret. Fiz.* 93 (1987), no. 4, 1299-1303 (Russian). (Summary) 89c:81215 81H20
- Elendiev, M. R.** see Maksudov, F. G., 89m:01099
- Elendiev, A. N.** (with Iskenderov, B. A.; Elvazov, E. Kh.) Radiation principles for a higher-order elliptic equation in a tube domain. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 10, 1804-1807, 1838. (G. Wildenhain) 89c:35045 35J40 (35L35)
- Elftor, K. B.** Anderson transition on a Bethe lattice (the symplectic and orthogonal ensembles). *Soviet Phys. JETP* 66 (1987), no. 3, 634-642 (1988); translated from *Zh. Eksp. Teoret. Fiz.* 93 (1987), no. 3, 1125-1139 (Russian). (Summary) 89d:82097 82A57 (82A25, 82A65, 82A68)
- Elfinger, Gove** A Goldbach 3-primes theorem for polynomials of low degree over finite fields of characteristic 2. *J. Number Theory* 29 (1988), no. 3, 345-363. (Ronald J. Evans) 89j:11119 11T06
- Elfinger, H.** (with Grossmann, S.) Selfsimilarity of developed turbulence. *The physics of structure formation* (Tübingen, 1986), 346-351, *Springer Ser. Synergetics*, 37, Springer, Berlin-New York, 1987. (see 89b:58064) 76F99
- Ellis, Edward G.** Advances in quantized functional analysis. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 906-916, *Amer. Math. Soc., Providence, RI*, 1987. (Vern Paulsen) 89e:46064 46L05 (46M20)
- (with Kishimoto, Akitaka) Module maps and Hochschild-Johnson cohomology. *Indiana Univ. Math. J.* 36 (1987), no. 2, 257-276. (Vern Paulsen) 89b:46068 46L05 (46M05, 46M20)
- (with Christensen, Erik; Sinclair, Allan) Completely bounded multilinear maps and  $C^*$ -algebraic cohomology. *Invent. Math.* 90 (1987), no. 2, 279-296. (Vern Paulsen) 89k:46084 46L80 (46M20)
- Amenability and virtual diagonals for von Neumann algebras. *J. Funct. Anal.* 78 (1988), no. 1, 137-153. (Steve Wright) 89e:46072 46L10
- Elfenko, S. V.** The number of crossings of a level, separating inhomogeneous media, by a generalized diffusion process. (Russian) *Asymptotic problems in the theory of random processes* (Russian), 73-82, 116, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (Jörg-Uwe Löbus) 89j:60109 60J60 (60J35)
- Elfmov, A. B.** (with Strakhov, V. N.) Computations of geopotential fields. (Russian) *Mathematical modeling in geophysics* (Russian), 14-35, 131, "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (Summary) 89k:86005 86A20 (86-08)
- (with Strakhov, V. N.; Khokhryakova, M. M.) Methods for the synthesis of series in spherical functions that represent elements of potential geodesic fields. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* 1988, no. 5, 41-57. (Not in MR) 86A20 (86-04, 86-08)
- (with Labutin, S. A.) Movement of a phase boundary in the Earth with a slow and smooth change in the deep heat flow. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* 1988, no. 5, 76-79. 80A20 (86A60)
- Elfmov, Aleksandr Vasilievich** (with Golubov, B. I.; Skvortsov, V. A.) ★ Ряды и преобразования Уолша. (Russian) [Walsh series and transforms] Теория и приложения. [Theory and applications] "Nauka", Moscow, 1987. 344 pp. (F. Schipp) 89b:42031 42C10 (43A75)
- (with Pospelov, A. S.) Some properties of multiplicative Fourier transforms and their applications. (Russian) *Investigations in the theory of the approximation of functions* (Russian), 97-109, *Akad. Nauk SSSR Bashkir. Filial, Otdel Fiz. Mat., Ufa*, 1987. (W. R. Wade) 89d:42028 42C15 (42C20, 43A70)
- Elfmov, E. I.** Determinantal calculus. *Soviet J. Comput. Systems Sci.* 25 (1987), no. 3, 10-29; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1986, no. 5, 62-81, 237-238 (Russian). (Summary) 89a:68201 68T99 (03B60, 03B65)
- Elfmov, E. V.** (with Bukhalev, V. A.; Kazakov, I. E.) Complex processing of information from gauges and indicators in dynamical systems with conditionally Markov structure. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 1, 61-71; translated in

- Automat. Remote Control* 49 (1988), no. 1, part 1, 48–56. (Summary) 89c:94016 94A15 (60J27, 93C15, 93E12)
- Efimov, G. V.** Nonlocal quantum field theory and particle physics. *Quantum field theory and quantum statistics, Vol. 1*, 545–564, Hilger, Bristol, 1987. (A. L. Rebenko) 89h:81180 81E99 (81G05, 81G25)
- Efimov, O.** *see* Levitan, B. M., 89b:34001
- Efrat, Isaac** On a family of Hilbert modular Maass forms. *Arch. Math. (Basel)* 49 (1987), no. 4, 305–308. (A. B. Venkov) 89e:11029 11F41 (11F80)
- Determinants of Laplacians and a second limit formula in GL(3). *Duke Math. J.* 55 (1987), no. 2, 349–360. (Carolyn Gordon) 89a:58109 58G25 (11F66, 81E20)
- Eisenstein series and Cartan groups. *Illinois J. Math.* 31 (1987), no. 3, 428–437. (O. M. Fomenko) 89a:11053 11F37 (11F72)
- Efremov, A. V.** The Atiyah-Bott-Lefschetz formula for Hilbert bundles. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 4, 90–93; translated in *Moscow Univ. Math. Bull.* 43 (1988), no. 4, 92–95. (Krzysztof P. Wojciechowski) 89h:58273 58G10 (46L99)
- Efremov, O. A.** Development of the Tollmien-Schlichting wave in a boundary layer, on a plate. *J. Appl. Math. Mech.* 51 (1987), no. 3, 319–325 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 3, 410–416 (Russian). (Summary) 89g:76025 76D20 (76E30)
- Efremov, V. N.** (with Shchetochkin, V. N.) Application of topological ideas to the quantization of space. (Russian) *Problemy Teor. Gravitatsii i Element. Chastits No. 17* (1986), 81–92. (Introduction) 89f:81026 81B99 (57R99, 81D99)
- Efremova, L. S.** Triangular mappings with a closed set of periodic points. (Russian) *Mathematical physics (Russian)*, 54–55, Leningrad. Gos. Ped. Inst., Leningrad, 1987. (From the text) 89m:58168 58F20
- Efron, Bradley** \*Нетрадиционные методы многомерного статистического анализа. (Russian) [Nontraditional methods for multidimensional statistical analysis] Translated from the English by Yu. P. Adler, Yu. A. Koshevnik and V. N. Solntsev. Edited by Adler. "Finansy i Statistika", Moscow, 1988. 264 pp. (Summary) 89d:62003 62-06
- Three examples of computer-intensive statistical inference. *COMPSTAT 1988 (Copenhagen, 1988)*, 423–431, *Physica, Heidelberg*, 1988. (Summary) 89k:62003 62-07
- Computer-intensive methods in statistical regression. *SIAM Rev.* 30 (1988), no. 3, 421–449. (Summary) 89e:62001 62-02 (62J99)
- Efros, P. P.** Submanifolds of codimension three. (Russian) *Differentsial'naya Geom. Mnogooobraz. Figur No. 18* (1987), 28–31, 136–137. (Valentin Boju) 89b:53010 53A07
- Eftimiu, Cornel** Electromagnetic scattering by rough conducting circular cylinders. I. Angular corrugation. *IEEE Trans. Antennas and Propagation* 36 (1988), no. 5, 651–658. (Summary) 89d:78026 78A45
- Electromagnetic scattering by rough conducting circular cylinders. II. Axial corrugation. *IEEE Trans. Antennas and Propagation* 36 (1988), no. 5, 659–663. (Summary) 89d:78027 78A45
- Ėgamberdiev, O. I.** A subadditive ergodic theorem for absolute contractions of JBW-algebras. (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 9, 5–6. (A. A. Lodkin) 89k:46079 46L55 (17C30, 28D99)
- Ėgamberdiev, O. M.** (with Atakhdzhayev, M. A.) Continuation of the solution of an abstract bicolour equation. (Russian) *Equations of mixed type and free boundary value problems (Russian)*, 201–208, 254, "Fan", Tashkent, 1987. (Enrico Obrecht) 89c:35148 35R20 (34G10, 35K25)
- Ėgamberdiev, U.** A boundary value problem for parabolic equations with discontinuous coefficients. (Russian) *Equations of mixed type and free boundary value problems (Russian)*, 107–111, 252, "Fan", Tashkent, 1987. (Jan Gonczewicz) 89i:35073 35K20 (35R05, 45D05)
- Egawa, Y.** (with Enomoto, Hikoe; Saito, Akira) On component factors. *Graphs Combin.* 2 (1986), no. 3, 223–225. (Michael S. Martin) 89g:05084 05C70
- (with Enomoto, Hikoe; Saito, Akira) Factors and induced subgraphs. *Discrete Math.* 68 (1988), no. 2–3, 179–189. (J. Sheehan) 89b:05130 05C70
- *see also* Proceedings: Conference on Graph Theory and Applications, 89j:05007a and 89j:05007b
- Egecioglu, Ö. N.** (with Remmel, J. B.) A combinatorial proof of the Giambelli identity for Schur functions. *Adv. in Math.* 70 (1988), no. 1, 59–86. (J. Désarménien) 89i:20027 20C30 (05A15)
- (with Shen, Liang-Ping) A bijective proof for the number of labeled  $q$ -trees. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), B, 3–30. (R. E. Pippert) 89f:05097 05C30 (05C05)
- Egelhaaf, M.** (with Reichardt, W.; Schögl, R. W.) Movement detectors of the correlation type provide sufficient information for local computation of the 2-D velocity field. *Neural and synergetic computers (Schloss Elmau, 1988)*, 170–179, *Springer Ser. Synergetics*, 42, Springer, Berlin-New York, 1988. (see 89j:20206) 92A27
- Eger, Karl-Heinz** (with Wunderlich, Ralf) Sequentielle Tests bei klassifizierten Beobachtungen. [Sequential tests in classified observations] *Wiss. Z. Tech. Univ. Karl-Marx-Stadt* 30 (1988), no. 1, 65–68. (Walter Schlee) 89m:62093 62L10 (62G10)
- Egerland, Walter O.** (with Bhatia, Nam P.) The solution of the type-problem for  $N \leq 4$ . *Transactions of the Fifth Army Conference on Applied Mathematics and Computing (West Point, NY, 1987)*, 745–749, *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (see 89b:00029) 54C05
- (with Bhatia, Nam P.) A refinement of Šarkovskii's theorem. *Proc. Amer. Math. Soc.* 102 (1988), no. 4, 965–972. (Jaroslav Stark) 89f:58119 58F22 (26A18, 58F13)
- Egger, A.** (with Huotari, R.) The Pólya algorithm on convex sets. *J. Approx. Theory* 56 (1989), no. 2, 212–216. (Christian Coattmelec) 89m:41018 41A50
- Eggermont, Paul P. B.** On Galerkin methods for Abel-type integral equations. *SIAM J. Numer. Anal.* 25 (1988), no. 5, 1093–1117. (H. Brunner) 89k:65161 65R20 (54E10)
- Eggert, Norman** (with Jarratt, Mark; Lund, J. R.) Sinc function computation of the eigenvalues of Sturm-Liouville problems. *J. Comput. Phys.* 69 (1987), no. 1, 209–229. (Tassilo Küpper) 89c:65090 65L15
- Eggleston, R. B.** Common factors of integers: a graphic view. *Discrete Math.* 65 (1987), no. 2, 141–147. (Heiko Harborth) 89c:11002 11A05 (05C99)
- Eglazaryan, K. O.** (with Agayan, S. S.) A new class of transformations in the theory of the processing of discrete signals. (Russian. English summary) *Problems of computer science (Budapest, 1987). Tanulmányok—MTA Számítástechn. Automat. Kutató Int. Budapest No. 202* (1987), 7–23. (B. D. Donevski) 89i:94004 94A11 (42C05)
- Egikyan, R. S.** (with Zhidkov, E. P.) Solution of the inverse scattering problem on the semi-axis. (Russian) *IV International Symposium on Selected Topics in Statistical Mechanics (Russian)* (Dubna, 1987), 115–118, *Joint Inst. Nuclear Res., Dubna*, 1988. (see 89g:82003) 81F05 (34A55, 34B25)
- Eglajša, A.** Bifurcation points of eigenvalues of the Mathieu equation. (Russian) *Latv. Mat. Ezhegodnik No. 31* (1988), 200–206, 255. (Martin Hermann) 89g:34034 34B30 (34A34, 58F14, 65L15)
- Eğlit, M. E.** (with Bakhvalov, N. S.; Panasenko, G. P.; Staras, Arūnas) Numerically asymptotic methods. (Russian) *Asymptotic methods in mathematical physics (Russian)*, 18–28, 299, "Naukova Dumka", Kiev, 1988. (see 89g:00006) 35C20 (65P05)
- van Egmond, Warren** *see* Van Egmond, Warren
- Egnell, Henrik** Extremal properties of the first eigenvalue of a class of elliptic eigenvalue problems. *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* 14 (1987), no. 1, 1–48. (Jan Bochenek) 89f:35157 35P15 (35J25)
- Egorchenko, I. A.** Particular solutions of two systems of nonlinear multidimensional wave equations. (Russian) *Symmetry and solutions of nonlinear equations of mathematical physics (Russian)*, 47–54, ii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) 89f:35134 35L70
- (with Fushchich, V. I.) Symmetric properties of complex-valued nonlinear wave equations. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 2, 347–351; translated in *Soviet Phys. Dokl.* 33 (1988), no. 1, 36–38. (Tie Hu Qin) 89h:35212 35L70 (58G35)
- Egorov, Andrei** (with Abrashin, V. N.; Shkel', V. A.) On the study of symmetric difference schemes for multidimensional parabolic equations in the case of anisotropic media. (Russian) *Differentsial'nye Uravneniya i Primenen. No. 43* (1988), 16–21. (Summary) 89f:65117 65N05
- Egorov, D. F.** *see* Shields, Allen, 89b:01060
- Egorov, I. E.** Solvability of a boundary value problem for a high-order equation of mixed type. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 9, 1560–1567, 1652. (Jia Xing Hong) 89a:35145 35M05
- The first boundary value problem for a nonclassical equation. (Russian) *Mat. Zametki* 42 (1987), no. 3, 394–402, 475. (G. Wildenhain) 89d:35031 35G15
- Analyticity of solutions of singular elliptic equations. (Russian) *Mat. Sb. (N.S.)* 133(175) (1987), no. 2, 147–153, 270; translated in *Math. USSR-Sb.* 61 (1988), no. 1, 147–153. (O. John) 89d:35067 35J70 (35B65)
- Egorov, S. N.** (with Dyumin, A. F.) Analytic methods and algorithms for solving ordinary differential equations of the theory of linear systems. (Russian) *Analytic methods for solving differential equations (Russian)*, 46–52, 145–146, *Kuibyshev. Gos. Univ., Kuibyshev*, 1986. (Stanislav Kus) 89h:34007 34A25 (65-04, 93B25)
- (with Dyumin, A. F.) Reduction of the matrix Riccati differential equation in the problem of optimal linear estimation of the state of a partially observable dynamic object. (Russian) *Analytic methods in the theory of differential and integral equations (Russian)*, 42–49, *Kuibyshev. Gos. Univ., Kuibyshev*, 1987. (Benjamin Goldys) 89j:93115 93E11 (15A06, 93B07, 93B25, 93E10)
- Egorov, V. A.** A generalization of the law of the iterated logarithm. (Russian) *Probability distributions and mathematical statistics (Russian)* (Fergana, 1983), 155–170, 491, "Fan", Tashkent, 1986. (P. Révész) 89c:60035 60F15 (60F17, 60G50)
- The law of the iterated logarithm for the quadratic variation of a Wiener process. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 158 (1987), *Probl. Teor. Veroyatn. Raspred. X*, 72–80, 170; translated in *J. Soviet Math.* 43 (1988), no. 6, 2791–2796. (P. Révész) 89c:60187 60I65 (60F15)
- The strong law of large numbers for the middle part of a sample. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 166 (1988), *Issled. po Mat. Statist.* 8, 25–31, 186. (R. J. Tomkins) 89g:60104 60F15 (60G50, 62G30)
- Egorov, V. V.** (with Gut, R. Ė.) Generation of correlated Gaussian pseudorandom numbers. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 12, 1888–1889, 1920. (Summary) 89a:65010 65C10
- Egorov, Yuri Vladimirovich** (with Arnol'd, V. I.; Vishik, M. I.; Kalashnikov, A. S.; Novikov, S. P.; Sobolev, S. L.) Olga Arsen'evna Oleinik (on the occasion of her sixtieth birthday). (Russian) *Trudy Sem. Petrovsk. No. 12* (1987), 3–21. (Editors) 89f:01034 01A70
- (with Kondrat'ev, V. A.) Estimates for the eigenfunctions of elliptic operators with constant coefficients. (Russian. English summary) *Trudy Sem. Petrovsk. No. 12* (1987), 229–237, 246. (B. Hellwig) 89c:35116 35P05 (35J40)
- (with Kondrat'ev, V. A.) Estimates for the negative spectrum for the Schrödinger operator. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1(259), 195–196; translated in *Russian Math. Surveys* 43 (1988), no. 1, 239–240. (David Gurarie) 89i:35104 35P20 (35J10, 81F05)
- (with Kondrat'ev, V. A.) On the estimation of the number of points of the negative spectrum of the Schrödinger operator. (Russian) *Mat. Sb. (N.S.)* 134(176) (1987), no. 4, 556–570, 576; translated in *Math. USSR-Sb.* 62 (1989), no. 2, 551–566. (David Gurarie) 89i:35105 35P20 (35J10, 81F05)
- Egorova, I. N.** A procedure for error estimation of information transformations. (Russian) *Problems of bionics, No. 40 (Russian)*, 103–107, iv, "Vishcha Shkola", Kharkov, 1988. (see 89f:00014) 94A15
- Egorov, L. I.** *see* Marchuk, G. I., 89i:86002
- Egorova, M. V.** (with Bashkin, V. A.) An inverted Rayleigh problem in a compressible gas. (Russian) *Uchen. Zap. TsAGI* 18 (1987), no. 4, 17–25. (Summary) 89f:76058 76N15
- Egorushkin, A. A.** (with Zybrev, N. B.) One-product one-factor nonlinear programming problems with decreasing cost function and general constraints. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 122, 16 pp. (Summary) 89a:90121 90C30
- (with Tikhonov, A. N.; Zybrev, N. B.) A two-factor problem of the re-equipping of a branch for joint production. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 155, 12 pp. (Publisher's description) 89d:90114 90B30 (65K05)
- (with Zybrev, N. B.) Solution of a multifactor problem of nonlinear programming. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 52, 21 pp. (Summary) 89h:90194 90C30 (90B30)
- (with Batsagin, V. S.; Zybrev, N. B.) A multifactorial problem on the setting up of production and the production of industrial products. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 99, 18 pp. (Summary) 89m:90082 90B30
- (with Tikhonov, A. N.; Zybrev, N. B.) A multifactor optimal planning problem with decreasing cost function. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 6, 1329–1332;



- translated in *Soviet Math. Dokl.* 37 (1988), no. 2, 583-586. (K. Zimmermann) **89g:90124** 90B30
- (with Zyabrev, N. B.; Tikhonov, A. N.) A multifactor nonlinear programming problem with decreasing cost function. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 8, 1149-1162, 1277. (Summary) **89g:90195** 90C30
- Egoryan, Ed. Sh.** (with Nissimov, E.; Pacheva, S.) Anomalies in even- and odd-dimensional spaces in a stochastic quantization scheme. (Russian. English summary) *Theoret. Mat. Fiz.* 73 (1987), no. 3, 362-378. (Summary) **89d:81073** 81E15
- (with Manvelyan, R. P.) A new method for supersymmetric and gauge-invariant regularization. (Russian. English summary) *Theoret. Mat. Fiz.* 74 (1988), no. 2, 230-239; translated in *Theoret. and Math. Phys.* 74 (1988), no. 2, 150-156. (Henryk Arodz) **89f:81117** 81E15 (81E13)
- Egorychev, G. P.** (with Kytmanov, A. M.) ★ Полиномиальные тождества и представление перманента через сумму локальных вычетов. (Russian) [Polynomial identities and representation of the permanent by a sum of local residues] Препринт [Preprint], 37M. Akad. Nauk SSSR Sibirsk. Otdel., Inst. Fiz., Krasnoyarsk, 1987. 19 pp. (Anna Lee) **89f:15068** 15A15
- (with Golovanov, M. I.; Moiseenko, D. A.) ★ Геометрические неравенства для перманента как смешанного дискриминанта над алгебраическими системами. (Russian) [Geometric inequalities for the permanent as a mixed discriminant over algebraic systems] Препринт [Preprint], 39M. Akad. Nauk SSSR Sibirsk. Otdel., Inst. Fiz., Krasnoyarsk, 1987. 28 pp. (Anna Lee) **89h:15012** 15A15 (06D99, 15A33)
- Eguchi, Masaaki** (with Hashizume, Michihiko; Koizumi, Shin) The Gangoli estimates for the coefficients of the Harish-Chandra expansions of the Eisenstein integrals on real reductive Lie groups. *Hiroshima Math. J.* 17 (1987), no. 3, 457-469. (V. S. Varadarajan) **89c:22022** 22E45 (46N05)
- (with Wakayama, Masato) An elementary proof of the Trombi theorem for the Fourier transform of  $\mathcal{P}(G:F)$ . *Hiroshima Math. J.* 17 (1987), no. 3, 471-487. (V. S. Varadarajan) **89c:22023** 22E45 (46N05)
- Eguchi, Tōru** Conformal and current algebras on a general Riemann surface. *Conformal field theory, anomalies and superstrings* (Singapore, 1987), 348-371, World Sci. Publishing, Singapore, 1988. (Summary) **89f:81172** 81E99 (81E40)
- (with Taormina, Anne) Character formulas for the  $N = 4$  superconformal algebra. *Phys. Lett. B* 200 (1988), no. 3, 315-322. (From the text) **89b:81181** 81E99 (17B65, 81E40)
- (with Ooguri, Hiroshi) Differential equations for conformal algebras in moduli space. *Phys. Lett. B* 203 (1988), no. 1-2, 44-46. (Summary) **89c:58137** 58G30 (17B65, 35Q20, 81E40)
- (with Taormina, Anne) On the unitary representations of  $N = 2$  and  $N = 4$  superconformal algebras. *Phys. Lett. B* 210 (1988), no. 1-2, 125-132. (M. K. F. Wong) **89k:17019** 17B15 (17B35, 17B67, 81C40)
- Egudo, Richard R.** Proper efficiency and multiobjective duality in nonlinear programming. *J. Inform. Optim. Sci.* 8 (1987), no. 2, 155-166. (M. Mahas) **89b:90207** 90C31 (90C30)
- (with Hanson, Morgan A.) Multiobjective duality with invexity. *J. Math. Anal. Appl.* 126 (1987), no. 2, 469-477. (R. R. Egudo (Zbl 635:90086)) **89c:90194** 90C31
- Multiobjective fractional duality. *Bull. Austral. Math. Soc.* 37 (1988), no. 3, 367-378. (Petra Weidner) **89g:90211** 90C31 (90C32)
- Ehler, Herbert** (with Berghammer, Rudolf; Zierer, Hans) Towards an algebraic specification of code generation. *Sci. Comput. Programming* 11 (1988), no. 1, 45-63. (Summary) **89m:68009** 68N20 (68Q60)
- Ehlers, Cindy L.** (with Havstad, James W.) Attractor dimension of nonstationary dynamical systems from small data sets. *Phys. Rev. A* (3) 39 (1989), no. 2, 845-853. (Summary) **89k:58180** 58F13 (62M10)
- Ehlers, F.** (with Borel, Armand; Grivel, Pierre-Paul; Kaup, B.; Haeffiger, André; Malgrange, B.) ★ Algebraic D-modules. Perspectives in Mathematics, 2. Academic Press, Inc., Boston, MA, 1987. xii+355 pp. ISBN 0-12-117740-8 (Emmanuel Andronikof) **89g:32014** 32C38 (58G07)
- Ehlers, P. F.** (with Enns, E. G.) Chords through a convex body generated from within an embedded body. *J. Appl. Probab.* 25 (1988), no. 4, 700-707. (L. A. Santaló) **89j:60023** 60D05 (52A22)
- Ehrbar, Hans** (with Wyler, O.) Images in categories as reflections. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* 28 (1987), no. 2, 143-159. (Walter Tholen) **89b:18004** 18A32 (18A40)
- Ehrenfeucht, Andrzej** (with Hoogetboom, H. J.; Rozenberg, Grzegorz) Coordinated pair systems. I. Dyck words and classical pumping. (French summary) *RAIRO Inform. Théor. Appl.* 20 (1986), no. 4, 405-424. (J.-M. Autebert) **89a:68115** 68Q45
- (with Hoogetboom, H. J.; Rozenberg, Grzegorz) Coordinated pair systems. II. Sparse structure of Dyck words and Ogden's lemma. (French summary) *RAIRO Inform. Théor. Appl.* 20 (1986), no. 4, 425-439. (J.-M. Autebert) **89a:68116** 68Q45
- (with Hoogetboom, H. J.; Rozenberg, Grzegorz) On the active and full use of memory in right-boundary grammars and push-down automata. *Theoret. Comput. Sci.* 48 (1986), no. 2-3, 201-228 (1987). (M. Novotný) **89a:68133** 68Q50
- (with Blumer, A.; Blumer, J.; Haussler, D.; McConnell, R.) Complete inverted files for efficient text retrieval and analysis. *J. Assoc. Comput. Mach.* 34 (1987), no. 3, 578-595. (Armin Cremers) **89b:68028** 68P20 (68Q25, 68R10, 68T10)
- (with Foreman, M.; Malitz, J.) Taxonomic partitions. *Methods and applications of mathematical logic* (Cambridge, 1985), 27-34, *Contemp. Math.*, 69, Amer. Math. Soc., Providence, RI, 1988. (J. C. Oxtoby) **89b:52018** 52A37 (04A99, 92A12)
- (with Hoogetboom, H. J.; Rozenberg, Grzegorz) Recording the use of memory in right-boundary grammars and push-down automata. *Acta Inform.* 25 (1988), no. 2, 203-231. (Gheorghe Paun) **89d:68041** 68Q45 (68Q50)
- Ehrenmark, Ulf Torsten** A three-point formula for numerical quadrature of oscillatory integrals with variable frequency. *J. Comput. Appl. Math.* 21 (1988), no. 1, 87-99. (Stephen W. Brady) **89c:65029** 65D32
- Ehrenpreis, Leon** Reflection, removable singularities, and approximation for partial differential equations. II. *Trans. Amer. Math. Soc.* 302 (1987), no. 1, 1-45. (L. Cattabriga) **89c:35005** 35B35 (32A07, 35E20)
- Ehresmann, A. C.** (with Vanbreemsch, J.-P.) Hierarchical evolutive systems: a mathematical model for complex systems. *Bull. Math. Biol.* 49 (1987), no. 1, 13-50. (Guy Jumarie) **89a:18002** 18A10 (92A12, 93A05, 93A13)
- Ehrhard, Thomas** (with Coquand, Thierry) An equational presentation of higher order logic. *Category theory and computer science* (Edinburgh, 1987), 40-56, *Lecture Notes in Comput. Sci.*, 283, Springer, Berlin-New York, 1987. (From the introduction) **89k:03006** 03B15 (03B40, 68Q55)
- Ehrhart, Eugene** On prime numbers. *Fibonacci Quart.* 26 (1988), no. 3, 271-274. (Hans B. Sieburg) **89f:11123** 11N05
- Ehrig, H.** Tutorial introduction to the algebraic approach of graph grammars. *Graph grammars and their application to computer science* (Warrenton, VA, 1986), 3-14, *Lecture Notes in Comput. Sci.*, 291, Springer, Berlin-New York, 1987. (see **89b:68009**) **68Q50**
- (with Parisi-Presicce, Francesco; Montanari, Ugo) Graph rewriting with unification and composition. *Graph grammars and their application to computer science* (Warrenton, VA, 1986), 496-514, *Lecture Notes in Comput. Sci.*, 291, Springer, Berlin-New York, 1987. (see **89b:68009**) **68Q50** (05C99)
- (with Blum, Edward K.; Parisi-Presicce, Francesco) Algebraic specification of modules and their basic interconnections. *J. Comput. System Sci.* 34 (1987), no. 2-3, 293-339. (Julian Padgett) **89g:68042** 68Q55 (68P05)
- (with Wagner, E. G.) Canonical constraints for parameterized data types. *Theoret. Comput. Sci.* 50 (1987), no. 3, 323-349. (Horst Reichel) **89a:68157** 68Q65
- see also **Graph grammars and their application to computer science**, **89b:68009**
- Ehrlich, Amos** On the periods of the Fibonacci sequence modulo  $m$ . *Fibonacci Quart.* 27 (1989), no. 1, 11-13. (Neville Robbins) **89m:11017** 11B39
- Ehrlich, Paul E.** (with Beem, John K.) Completeness of timelike and spacelike submanifolds. *Topics in differential geometry*, Vol. I, II (Debrecen, 1984), 137-151, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Alexandr V. Levichev) **89g:53095** 53C50 (53C22)
- (with Beem, John K.; Markvorsen, Steen) Timelike isometries of space-times with nonnegative sectional curvature. *Topics in differential geometry*, Vol. I, II (Debrecen, 1984), 153-165, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Alexandr V. Levichev) **89c:53095** 53C50 (53C22)
- (with Beem, John K.; Markvorsen, Steen) Timelike isometries and Killing fields. *Geom. Dedicata* 26 (1988), no. 3, 247-258. (Alexandr V. Levichev) **89k:53058** 53C50
- Ehrlich, Philip** An alternative construction of Conway's ordered field No. *Algebra Universalis* 25 (1988), no. 1, 7-16. (J. M. Plotkin) **89d:04004a** 04A10 (03C65, 12J15)
- Errata to: "An alternative construction of Conway's ordered field No." *Algebra Universalis* 25 (1988), no. 2, 233. (J. M. Plotkin) **89d:04004b** 04A10 (03C65, 12J15)
- Ehtamo, H.** (with Ruusunen, J.; Kaitala, V.; Härmäläinen, R. P.) Solution for a dynamic bargaining problem with an application to resource management. *J. Optim. Theory Appl.* 59 (1988), no. 3, 391-405. (Theo Drissen) **89j:90292** 90D12 (90A30, 90D25)
- Elch, Margaret H.** (with Wells, David L.) Database concurrency control using data flow graphs. *ACM Trans. Database Systems* 13 (1988), no. 2, 197-227. (Not in MR) **68P15**
- Eichenauer, Jürgen** (with Grothe, Holger; Lehn, Jürgen; Topuzoglu, Alev) A multiple recursive nonlinear congruential pseudo random number generator. *Manuscripta Math.* 59 (1987), no. 3, 331-346. (P. Neumann) **89f:65008** 65C10 (11B39)
- (with Lehn, Jürgen; Topuzoglu, Alev) A nonlinear congruential pseudorandom number generator with power of two modulus. *Math. Comp.* 51 (1988), no. 184, 757-759. (J. Spanier) **89f:65007** 65C10 (11K45, 65C05)
- (with Chen, Lan Xiang) Two point priors and  $\Gamma$ -minimax estimating in families of uniform distributions. *Statist. Hefte* 29 (1988), no. 1, 45-57. (Kurt Hoffmann) **89j:62011** 62C20
- (with Grothe, Holger; Lehn, Jürgen) On the period length of pseudorandom vector sequences generated by matrix generators. *Math. Comp.* 52 (1989), no. 185, 145-148. (H. J. Godwin) **89g:65010** 65C10 (11K45)
- Eichhorn, Jürgen**  $L_2$ -cohomology. *Geometric and algebraic topology*, 215-237, *Banach Center Publ.*, 18, PWN, Warsaw, 1986. (Min-oo Maung) **89j:58005** 58A14 (14F40, 55N99, 58G05)
- Characteristic classes and numbers for fibre bundles over noncompact manifolds. *Differential geometry and its applications* (Brno, 1986), 13-30, *Math. Appl. (East European Ser.)*, 27, Reidel, Dordrecht-Boston, MA, 1987. (David E. Betounes) **89b:53049** 53C05 (57R20, 58A10, 58D15)
- The Euler characteristic and signature for open manifolds. *Proceedings of the Winter School on Geometry and Physics* (Srní, 1987). *Rend. Circ. Mat. Palermo* (2) Suppl. No. 16 (1987), 29-41. (John Roe) **89g:58189** 58G05 (53C20, 57R20)
- The essential  $p$ -form spectrum of non-simply connected open complete Riemannian manifolds. *Topics in differential geometry*, Vol. I, II (Debrecen, 1984), 393-419, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Haruo Kitahara) **89b:58196** 58G25
- Sobolev-Räume, Einbettungssätze und Normungleichungen auf offenen Mannigfaltigkeiten. [Sobolev spaces, embedding theorems and norm inequalities on open manifolds] *Math. Nachr.* 138 (1988), 157-168. (J. Eells) **89j:58012** 58D15 (46E35, 58G30)
- Eichhorn, W.** On a class of inequality measures. *Soc. Choice Welf.* 5 (1988), no. 2-3, 171-177. (Summary) **89c:90030** 90A10
- Eichler, Martin** Heinrich Brandt. Werk und Wesen. [Heinrich Brandt. His work and personality] *Algebra-Tagung Halle 1986*, 11-18, *Wissensch. Beitr.*, 33, Martin-Luther-Univ. Halle-Wittenberg, Halle (Saale), 1987. (Editors) **89a:01057** 01A70
- Eine neue Klasse von Modulformen und Modulfunktionen. II. [A new class of modular forms and modular functions. II] *Abh. Math. Sem. Univ. Hamburg* 57 (1987), 57-68. (Marvin I. Knopp) **89c:11063** 11F11 (11F27)
- Alexander Ostrowski. Über sein Leben und Werk. [Alexander Ostrowski—on his life and work] *Acta Arith.* 51 (1988), no. 4, 295-298. (Editors) **89m:01086** 01A70
- Eid, Shawkat Z.** (with Mahmoud, Magdi S.) Optimization of freeway traffic control problems. *Optimal Control Appl. Methods* 9 (1988), no. 1, 37-49. (Summary) **89b:90084** 90B20 (49D29, 93B40, 93C55, 93C75)
- Eide, Henriette** (with Natvig, Bent) Bayesian estimation of system reliability. *Scand. J. Statist.* 14 (1987), no. 4, 319-327. (Summary) **89k:62125** 62N05
- Eidelman, S. D.** (with Rozorinov, G. N.) Calculation of the energy spectra of digital signals on the output of the encoder. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1987, no. 11, 71-77, 87. (D. Stanomir) **89a:93059** 93E20 (94B35)
- (with Kushitskii, Ya. S.) Stabilization of the solutions of boundary value problems for a higher-order model parabolic equation. (Russian. English summary) *Dokl. Akad. Nauk*

- Ukrain. SSR Ser. A 1988, no. 1, 19–22, 86. (V. N. Razzhevaikin) **89f:35099** 35K35 (35B40)
- (with Korolyuk, V. S.; Pletnev, A. I.) Automata. Random walks. Games. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1 (259), 87–122, 247; translated in *Russian Math. Surveys* 43 (1988), no. 1, 103–147. (R. Skhirladze) **89k:68108** 68Q75 (60J20, 68Q05, 90D40)
- Eideman, Yu. S.** A two-point boundary value problem for an evolution equation with a parameter. (Russian) *Boundary value problems* (Russian), 75–79, 196–197, *Perm. Politekh. Inst., Perm*, 1983. (see **89c:00008**) 34B05 (34G10, 47D05)
- Eidukovičius, R.** Existence of an optimal stopping time in an optimal stopping problem for a Markov chain with discounting. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* 27 (1987), no. 4, 789–792. (Aleksandr A. Yushkevich) **89h:60069** 60G40 (60J05, 90C40)
- Eidus, D.** Asymptotical expansions of solutions of linear parabolic equations as  $t \rightarrow \infty$ . *J. Math. Anal. Appl.* 130 (1988), no. 1, 155–170. (Manfred W. Kracht) **89d:35076** 35K22 (35C20)
- Eie, Minking** see **Yü, Wên Ch'ing**
- Eiermann, Michael** (with Marek, Ivo; Niethammer, Wilhelm) On the solution of singular linear systems of algebraic equations by semi-iterative methods. *Numer. Math.* 53 (1988), no. 3, 265–283. (Zdeněk Dostál) **89h:65049** 65F10 (65F20)
- Eißler, Larry** Compactly generated cones. *Tamkang J. Math.* 18 (1987), no. 3, 41–43. (Jean-Paul Doignon) **89a:52009** 52A20 (46A55, 52A07)
- Eigen, Manfred** (with Winkler-Oswatitsch, Ruthild; Dress, Andreas) Statistical geometry in sequence space: a method of quantitative comparative sequence analysis. *Proc. Nat. Acad. Sci. U.S.A.* 85 (1988), no. 16, 5913–5917. (C. Cannings) **89i:92029** 92A12
- Eigen, Stanley** (with Hajian, Arshag) A characterization of exhaustive weakly wandering sequences for nonsingular transformations. *Comment. Math. Univ. St. Paul.* 36 (1987), no. 2, 227–233. (Nathaniel Friedman) **89a:28015** 28D05
- (with Choksi, J. R.; Prasad, V. S.) In general a stochastic operator does not preserve a measure. *Indiana Univ. Math. J.* 36 (1987), no. 3, 617–630. (Janusz Woś) **89d:47014** 47A35 (28D15, 47B38)
- (with Hajian, Arshag) Poincaré sequences in infinite measure spaces and complementing subsets of the integers. *Dynamical systems* (College Park, MD, 1986–87), 154–157, *Lecture Notes in Math.*, 1342, Springer, Berlin-New York, 1988. (F. Schweiger) **89f:28009** 28D05 (11K38, 11K55, 11P99)
- Eigenhater, G.** see **Contributions to general algebra**, **89h:00022**
- Eijkhout, Victor L.** A general formulation for incomplete blockwise factorizations. *Comm. Appl. Numer. Methods* 4 (1988), no. 2, 161–164. (Not in MR) 65F30
- (with Polman, Ben) Decay rates of inverses of banded  $M$ -matrices that are near to Toeplitz matrices. *Linear Algebra Appl.* 109 (1988), 247–277. (M. Tismenetsky) **89h:15005** 15A09 (15A23, 65F30)
- Eilbeck, J. C.** Nonlinear vibrational modes in a hexagonal molecule. (Russian summary) *Physics of multiparticle systems*, No. 12 (Russian), 41–51, 95, 97, “Naukova Dumka”, Kiev, 1987. (Summary) **89e:92064** 92A40 (35Q99)
- (with Duncan, K.) Numerical studies of symmetry-breaking bifurcations in reaction-diffusion systems. *Biomathematics and related computational problems* (Naples, 1987), 439–448, *Kluwer Acad. Publ., Dordrecht*, 1988. (Brian D. Sleeman) **89k:92015** 92A09 (58F14)
- (with Lomdahl, P. S.; Scott, A. C.) Biomolecular dynamics by computer analysis. Special issue on emerging paradigms in applied mathematical modelling. *J. Comput. Appl. Math.* 22 (1988), no. 2–3, 297–299. (Summary) **89e:92010** 92A09 (00A71, 92A40)
- (with Furter, J. E.; Grinfeld, Michael) On a stationary state characterization of transition from spinodal decomposition to nucleation behaviour in the Cahn-Hilliard model of phase separation. *Phys. Lett. A* 135 (1989), no. 4–5, 272–275. (Summary) **89k:80015** 80A20 (58E07)
- Eilenberger, G.** see **Peitgen, Heinz-Otto**, **89j:58058**
- Éiler, L.** see **Euler, Leonhard**
- Éiler, Leonard** see **Euler, Leonhard**
- Eilers, Paul** (with van Blokland-Vogeleesang, Rian; Verbeek, Albert) Iterative estimation of pattern and error parameters in a probabilistic unidimensional unfolding model. *Progress in mathematical psychology*, 1, 393–418, North-Holland, Amsterdam-New York, 1987. (C. Hayashi) **89g:92065** 92A25 (62P15)
- Autoregressive models with latent variables. *COMPSTAT 1988* (Copenhagen, 1988), 363–368, *Physica, Heidelberg*, 1988. (Summary) **89k:62114** 62M10
- Ein, Lawrence** The irreducibility of the Hilbert scheme of smooth space curves. *Algebraic geometry*, Bowdoin, 1985 (Brunswick, Maine, 1985), 83–87, *Proc. Sympos. Pure Math.*, 46, Part 1, Amer. Math. Soc., Providence, RI, 1987. (A. Hirschowitz) **89f:14006** 14C05 (14D22, 14H99)
- A remark on the syzygies of the generic canonical curves. *J. Differential Geom.* 26 (1987), no. 2, 361–365. (H. Lange) **89a:14031** 14H10
- (with Eisenbud, David; Katz, Sheldon H.) Varieties cut out by quadrics: scheme-theoretic versus homogeneous generation of ideals. *Algebraic geometry* (Sundance, UT, 1986), 51–70, *Lecture Notes in Math.*, 1311, Springer, Berlin-New York, 1988. (Luciana Picco Botta) **89f:14029** 14H45 (14H10)
- Vanishing theorems for varieties of low codimension. *Algebraic geometry* (Sundance, UT, 1986), 71–75, *Lecture Notes in Math.*, 1311, Springer, Berlin-New York, 1988. (Gennady Lyubeznik) **89g:14036** 14M07 (14M10)
- Subvarieties of generic complete intersections. *Invent. Math.* 94 (1988), no. 1, 163–169. (Paltin Ionescu) **89i:14002** 14C05 (14M10)
- Generalized null correlation bundles. *Nagoya Math. J.* 111 (1988), 13–24. (Jean-Marc Drezet) **89k:14024** 14F05
- Einevoll, G.** (with Brevik, I.) Casimir force on a solid ball when  $\varepsilon(\omega)\mu(\omega) = 1$ . *Phys. Rev. D* (3) 37 (1988), no. 10, 2977–2989. (Summary) **89e:81192** 81G10
- Einfeldt, Bernd** On Godunov-type methods for gas dynamics. *SIAM J. Numer. Anal.* 25 (1988), no. 2, 294–318. (B. M. Herbst) **89e:65086** 65M05 (76–08, 76N15)
- Einmahl, John H. J.** (with Ruymgaart, Frits H.; Wellner, Jon A.) A characterization of weak convergence of weighted multivariate empirical processes. *Acta Sci. Math. (Szeged)* 52 (1988), no. 1–2, 191–205. (Sándor Csörgő) **89g:60120** 60F17
- (with Mason, David M.) Laws of the iterated logarithm in the tails for weighted uniform empirical processes. *Ann. Probab.* 16 (1988), no. 1, 126–141. (M. Csörgő) **89c:60036** 60F15 (60G17, 62G30)
- (with Deheuvels, Paul; Mason, David M.; Ruymgaart, Frits H.) The almost sure behavior of maximal and minimal multivariate  $k_s$ -spacings. *J. Multivariate Anal.* 24 (1988), no. 1, 155–176. (Luc P. Devroye) **89a:60078** 60F15
- (with Häusler, Erich; Mason, David M.) On the relationship between the almost sure stability of weighted empirical distributions and sums of order statistics. *Probab. Theory Related Fields* 79 (1988), no. 1, 59–74. (Mir Maswood Ali) **89i:62080** 62G30 (62E10)
- Einmahl, Uwe** Strong approximations for partial sums of i.i.d.  $B$ -valued r.v.'s in the domain of attraction of a Gaussian law. *Probab. Theory Related Fields* 77 (1988), no. 1, 65–85. (Evarist Giné) **89d:60008** 60B12 (60F15, 60F17)
- Einstein, Albert** (with Bose, S. N.; Schrödinger, Erwin)  $\star$  La statistica quantistica e le onde di materia. (Italian) [Quantum statistics and matter waves] Translated from the German by Paolo Bernardini. *Saggi di Scienze e Filosofia Naturale* [Essays on Natural Philosophy and Natural Science], 3. Bibliopolis, Naples, 1986, 99 pp. ISBN 88-7088-128-8 (Editors) **89h:01075** 01A75 (81–03)
- A method for the determination of the statistical values of observations related to quantities subjected to irregular fluctuations. (Russian) Translated from the French by B. E. Yavelov. *Einstein collection*, 1982–1983 (Russian), 15–16, “Nauka”, Moscow, 1986. (D. ter Haar) **89f:01053** 01A60 (62E99)
- $\star$  The collected papers of Albert Einstein. Vol. 1. (German) The early years, 1879–1902. Edited by John Stachel, David C. Cassidy, Robert Schulmann and Jürgen Renn, with the assistance of Olga Griminger, Gary Smith and Robert Summerfield. Published with a translation into English by Anna Beck, ISBN 0-691-08475-0, which is not available separately. Consultant for the translation: Peter Havas. *Princeton University Press*, Princeton, NJ, 1987. lxviii+434 pp.; xxii+196 pp. ISBN 0-691-08407-6 (C. B. Collins) **89a:01102** 01A75
- $\star$  Über die spezielle und die allgemeine Relativitätstheorie. (German) [On special and general relativity theory] Twenty-third edition. Facetten der Physik [Facets of Physics], 26. *Friedr. Vieweg & Sohn, Braunschweig*, 1988. x+112 pp. ISBN 3-528-16059-4 (Editors) **89m:01139** 01A75 (83–03)
- see also **Bergia, S.**, **89a:01040**; **Shelton, Jim**, **89c:01036**; **von Plato, Jan**, **89d:01052**; **Albert Einstein**, **89c:01055**; **Fadner, W. L.**, **89f:01046**; **Yavelov, B. E.**, **89f:01054**; **Yaglom, A. M.**, **89f:01055**; **Pais, Abraham**, **89f:01074**; **Bosquet, Jean**, **89f:01088**; **Mehra, Jagdish**, **89g:01039**; **Schröder, Wilfried**, **89j:01037**; **Will, Clifford M.**, **(89b:83007)**; **Callear, Dirk K.**, **(89b:01014)** and **Hoffmann, Dieter**, **(89m:01002)**
- Einyl, Ezra** The Shapley value on some lattices of monotonic games. *Math. Social Sci.* 15 (1988), no. 1, 1–10. (O. N. Bondareva) **89j:90293** 90D12
- Eirola, Timo** Invariant curves of one-step methods. *BIT* 28 (1988), no. 1, 113–122. (Martin Hermann) **89g:65109** 65L99 (34A50, 34C05, 58F22)
- (with Nevanlinna, Olavi) What do multistep methods approximate? *Numer. Math.* 53 (1988), no. 5, 559–569. (L. F. Shampine) **89i:65069** 65L05
- Eisele, Th.** (with Comets, Francis) Asymptotic dynamics, noncritical and critical fluctuations for a geometric long-range interacting model. *Crit. Math. Phys.* 118 (1988), no. 4, 531–567. (Massimo Campanino) **89m:60250** 60K35 (82A25)
- (with Ellis, Richard S.) Multiple phase transitions in the generalized Curie-Weiss model. *J. Statist. Phys.* 52 (1988), no. 1–2, 161–202. (Tony C. Dorlas) **89k:82030** 82A25 (60F10, 82A68)
- Eisel, H. A.** (with Pederzoli, G.; Sandblom, C.-L.)  $\star$  Continuous optimization models. With a foreword by Heiner Müller-Merbach. *Operations Research*, 1. *Walter de Gruyter & Co.*, Berlin-New York, 1987. xx+730 pp. ISBN 3-11-008312-4 (B. Sahoo) **89d:90186** 90C30 (90–01)
- (with Laporte, Gilbert) Trading areas of facilities with different sizes. (French summary) *RAIRO Rech. Opér.* 22 (1988), no. 1, 33–44. (Summary) **89d:90126** 90B99
- (with Laporte, Gilbert; Pederzoli, G.) Optimal sizes of facilities on a linear market. *Math. Comput. Modelling* 12 (1989), no. 1, 97–103. (Not in MR) 90B10
- Eisenblätter, Dorothea** (with Bozdoğan, Hamparsum) Two-stage multi-sample cluster analysis as a general approach to discriminant analysis. *Multivariate statistical modeling and data analysis* (Harrisonburg, Va., 1986), 95–119, *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (Summary) **89a:62142** 62H30
- Eisenbud, David** (with Harris, Joseph Daniel) On varieties of minimal degree (a centennial account). *Algebraic geometry*, Bowdoin, 1985 (Brunswick, Maine, 1985), 3–13, *Proc. Sympos. Pure Math.*, 46, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Allen B. Altman) **89f:14042** 14J40 (14J26)
- On the resiliency of determinantal ideals. *Commutative algebra and combinatorics* (Kyoto, 1985), 29–38, *Adv. Stud. Pure Math.*, 11, North-Holland, Amsterdam-New York, 1987. (T. Józefiak) **89h:14040** 14M12
- (with Buchweitz, Ragnar-Olaf; Herzog, Jürgen) Cohen-Macaulay modules on quadrics. *Singularities, representation of algebras, and vector bundles* (Lambrecht, 1985), 58–116, *Lecture Notes in Math.*, 1273, Springer, Berlin-New York, 1987. (Lučeazar L. Avramov) **89f:13005** 13C05 (13D25, 13H10, 15A66)
- (with Ein, Lawrence; Katz, Sheldon H.) Varieties cut out by quadrics: scheme-theoretic versus homogeneous generation of ideals. *Algebraic geometry* (Sundance, UT, 1986), 51–70, *Lecture Notes in Math.*, 1311, Springer, Berlin-New York, 1988. (Luciana Picco Botta) **89f:14029** 14H45 (14H10)
- (with Harris, Joseph Daniel) Vector spaces of matrices of low rank. *Adv. in Math.* 70 (1988), no. 2, 135–155. (Jean-Marc Drezet) **89j:14010** 14F05 (15A03)
- (with Koh, Jee. Stillman, Michael) Determinantal equations for curves of high degree. *Amer. J. Math.* 110 (1988), no. 3, 513–539. (Ciro Ciliberto) **89g:14023** 14H45
- Linear sections of determinantal varieties. *Amer. J. Math.* 110 (1988), no. 3, 541–575. (T. Józefiak) **89h:14041** 14M12
- (with Herzog, Jürgen) The classification of homogeneous Cohen-Macaulay rings of finite representation type. *Math. Ann.* 280 (1988), no. 2, 347–352. (Andrew Kustin) **89e:13012** 13C05 (14J26, 14M20)
- Eisenstaedt, J.** Trajectoires et impasses de la solution de Schwarzschild. [Trajectories and impasses of the Schwarzschild solution] *Arch. Hist. Exact Sci.* 37 (1987), no. 4, 275–357. (André Trautman) **89f:83001** 83–03 (01A60, 83C10)
- Eisenstat, S. C.** (with Heath, M. T.; Henkel, C. S.; Romine, C. H.) Modified cyclic algorithms for solving triangular systems on distributed-memory multiprocessors. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 3, 589–600. (Zeng Rong Chen) **89e:65169** 65W05 (65F05)



- Eisler, G. Richard** (with Hull, David G.) Maximum terminal velocity turns at nearly constant altitude. *J. Guidance Control Dynamics* **11** (1988), no. 2, 131–136. (Not in MR) 49D29
- Eisner, Robert** see Artus, Patrick, (89d:90065)
- Eiss, Harry Edwin** ★ Dictionary of mathematical games, puzzles, and amusements. Greenwood Press, Westport, CT, 1988. xvi+279 pp. ISBN 0-313-24714-5 (Jeremy Gray) 89d:90004 00A08 (00A20, 01-01, 05-01)
- Eissa, H. H.** (with Amer, Mustafa Amin) On the solution of eigenvalue problems in the Hilbert space. (Arabic summary) *Delta J. Sci.* **10** (1986), no. 2, 520–534. (Lucas Jódar) 89g:65073 65J10 (49G20)
- Eitelberg, Eduard** Continuous-time system representation with exact macro-difference expressions. *Internat. J. Control* **47** (1988), no. 5, 1207–1212. (Not in MR) 93B30 (93B20)
- Étievaz, E. Kh.** (with Iskenderov, B. A.; Efendieva, A. N.) Radiation principles for a higher-order elliptic equation in a tube domain. (Russian) *Differentsialnye Uravneniya* **23** (1987), no. 10, 1804–1807, 1838. (G. Wildenhain) 89c:35045 35J40 (35L35)
- Elzenberg, Alexander** (with Kifer, Yuri) The asymptotic behavior of the principal eigenvalue in a singular perturbation problem with invariant boundaries. *Probab. Theory Related Fields* **76** (1987), no. 4, 439–476. (Ludwig Arnold) 89d:58109 58F30 (35B25, 58G25, 60H10)
- Éjiri, Norio** Willmore surfaces with a duality in  $S^n(1)$ . *Proc. London Math. Soc.* (3) **57** (1988), no. 2, 383–416. (Joel L. Weiner) 89h:53117 53C42 (53C50)
- Isotropic harmonic maps of Riemann surfaces into the de Sitter space time. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 155, 291–306. (Y. L. Xin) 89m:58047 58E20
- Əkbərov, M. S.** ★ Khətti fəzalar və khətti operatorlar. (Azerbaijani) [Linear spaces and linear operators] *Azerbaidzhan Gos. Univ., Baku*, 1984. 112 pp. (Not in MR) 47-01 (15-01, 46-01)
- Eklund, Håkan** The  $L_1$ -estimate as limiting case of an  $L_p$ - or Huber-estimate. *Statistical data analysis based on the  $L_1$ -norm and related methods* (Neuchâtel, 1987), 109–116, North-Holland, Amsterdam-New York, 1987. (see 89b:62009) 62J07
- A new algorithm for the Huber estimator in linear models. *BIT* **28** (1988), no. 1, 123–132. (Marietta J. Tretter) 89g:65175 65U05 (62J05)
- Eke, Anthony N.** Hyperdissipative operators of nonlinear functional evolution equations. *J. Nigerian Math. Soc.* **4** (1985), 51–62 (1987). (Robert H. Martin, Jr.) 89c:34131 34K30 (34A45, 34G20, 47H15)
- Ekedahl, Torsten** Foliations and inseparable morphisms. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 139–149, *Proc. Sympos. Pure Math.*, 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Yoichi Miyaoka) 89d:14049 14J10 (14E40)
- Canonical models of surfaces of general type in positive characteristic. *Inst. Hautes Études Sci. Publ. Math.* No. 67 (1988), 97–144. (Yoichi Miyaoka) 89k:14069 14J29 (14G15, 14J10)
- Ekaf, P. Ya.** Fuzzy coefficients in models of discrete optimization of electric circuits. (Russian) *Decision-making methods and systems. Applied problems in the analysis of solutions in technical systems* (Russian), 29–35, 146, *Rizhsk. Politekh. Inst.*, Riga, 1986. (see 89h:00001) 94D05 (03E72, 94C05)
- Ekeland, Ivar** Viterbo's proof of Weinstein's conjecture in  $\mathbb{R}^{2n}$ . *Periodic solutions of Hamiltonian systems and related topics* (Il Ciocco, 1986), 131–137, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 209, Reidel, Dordrecht-Boston, MA, 1987. (Mario Girardi) 89i:58034 58F05 (58E05, 58F22)
- (with Hofer, Helmut) Global and local invariants for convex energy surfaces and their periodic trajectories: a survey. *Periodic solutions of Hamiltonian systems and related topics* (Il Ciocco, 1986), 139–146, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 209, Reidel, Dordrecht-Boston, MA, 1987. (Vittorio Coti Zelati) 89g:58064 58F05 (58E05, 58F22)
- (with Lassoued, L.) Multiplicité des trajectoires fermées de systèmes hamiltoniens convexes. (English summary) [Multiplicity of the closed trajectories of convex Hamiltonian systems] *Ann. Inst. H. Poincaré Anal. Non Linéaire* **4** (1987), no. 4, 307–335. (Michele Matzeu) 89b:58073 58F05 (34C25, 58E05, 58F22)
- (with Hofer, Helmut) Convex Hamiltonian energy surfaces and their periodic trajectories. *Comm. Math. Phys.* **113** (1987), no. 3, 419–469. (Shi Tao Deng) 89c:58035 58F05 (58E05)
- (with Aubin, Jean-Pierre) ★ Прикладной нелинейный анализ. (Russian) [Applied nonlinear analysis] Translated from the English by B. S. Darkhovskii and G. G. Magaril-Ilyayev. With a preface by V. M. Tikhomirov. "Mir", Moscow, 1988. 512 pp. ISBN 5-03-000917-5 (Editors) 89g:58001 58-01 (49-02)
- ★ Mathematics and the unexpected. Translated from the French by the author. With a foreword by Felix E. Browder. *University of Chicago Press*, Chicago, IL, 1988. xiv+146 pp. ISBN 0-226-19989-4 (Jeremy Gray) 89k:00013 00A25 (00A05, 01A05, 01A60, 58Cxx, 58Fxx)
- Some variational problems arising from mathematical economics. *Mathematical economics* (Montecatini Terme, 1986), 1–18, *Lecture Notes in Math.*, 1330, Springer, Berlin-New York, 1988. (Marwan Simaan) 89i:49001 49A05 (49C05, 90A99)
- (with Hofer, Helmut) Capacités symplectiques. (English summary) [Symplectic capacities] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 1, 37–40. (Frans Cantrijn) 89i:53025 53C15 (53C57, 54C99, 58F05, 70H15)
- Ekhagere, G. O. S.** Dirichlet forms on partial  $\ast$ -algebras. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 1, 129–140. (Camillo Trapani) 89f:46121 46L50 (46K99, 47D40)
- Ekiel-Jelewska, Maria L.** (with Dudyński, Marek) On the linearized relativistic Boltzmann equation. I. Existence of solutions. *Comm. Math. Phys.* **115** (1988), no. 4, 607–629. (Carlo Cercignani) 89h:82017 82A40 (76P05, 76Y05)
- Ekland, I.** see Ekeland, Ivar
- Eklöf, Paul C.** (with Mekler, Alan H.; Shelah, Saharon) On strongly nonreflexive groups. *Israel J. Math.* **59** (1987), no. 3, 283–298. (James Baumgartner) 89c:20080 20K30 (03E05, 03E35, 20A15)
- (with Shelah, Saharon) A calculation of injective dimension over valuation domains. *Rend. Sem. Mat. Univ. Padova* **78** (1987), 279–284. (L. Fuchs) 89c:13017 13D05
- (with Fuchs, László) Baer modules over valuation domains. *Ann. Mat. Pura Appl.* (4) **150** (1988), 363–373. (Luigi Salce) 89j:13006 13C05 (13C10, 13F05)
- (with Huber, Martin) On  $\omega$ -filtered vector spaces and their application to abelian  $p$ -groups. II. *Rocky Mountain J. Math.* **18** (1988), no. 1, 123–136. (Carol L. Walker) 89d:20045 20K10 (03E50, 20K45)
- Eklund, Patrik** (with Gähler, Werner) Basic notions for fuzzy topology. I. *Fuzzy Sets and Systems* **26** (1988), no. 3, 333–356. (Zi Xiao Wang) 89g:54014 54A40 (03E72)
- (with Gähler, Werner) Basic notions for fuzzy topology. II. *Fuzzy Sets and Systems* **27** (1988), no. 2, 171–195. (J. Hüster) 89j:54005 54A40 (03E72)
- Ekwo, M. E.** (with Mukhopadhyay, Nitis) Sequential estimation problems for the scale parameter of a Pareto distribution. *Scand. Actuar. J.* **1987**, no. 1-2, 83–103. (K. F. Yu) 89b:62175 62L12 (62F25)
- Elabdalla, A. M.** (with Amin, M. H.) Parametrization of a class of deadbeat controllers via the theory of decoupling. *IEEE Trans. Automat. Control* **33** (1988), no. 12, 1185–1188. (Not in MR) 49D27 (93C55)
- (with Amin, M. H.) Minimum-gain minimum-time deadbeat controllers. *Systems Control Lett.* **11** (1988), no. 3, 213–219. (Summary) 89m:93054 93C55 (93C05)
- El-Agawany, M.** (with Micali, Artibano) Superalgèbres de Lie et le théorème de Poincaré-Birkhoff-Witt. (English summary) [Lie superalgebras and the Poincaré-Birkhoff-Witt theorem] *Algebras Geom. Geom.* **4** (1987), no. 1, 1–44. (G. Brown (Zbl 633:17002)) 89h:17002 17A70 (17B10, 17B35, 17B70)
- Algèbre mésonique d'une forme multilinéaire symétrique. [Meson algebra of a symmetric multilinear form] *Comm. Algebra* **15** (1987), no. 12, 2431–2449. (David C. Lantz) 89b:15044 15A78
- El Alami, Jamila** (with El Alami, Nouredine) Algorithme de commande pour les systèmes énergétiques "presque bilinéaires" distribués (SPB) conductifs, convectifs, radiatifs. (English summary) [Control algorithm for conductive, convective, radiative "almost bilinear" distributed energy systems] *Analysis and optimization of systems* (Antibes, 1988), 445–457, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see 89c:00031) 93B40 (93C25)
- El Alami, Nouredine** Algorithmes pour l'implémentation de la commande optimale avec critère quadratique des systèmes bilinéaires. (English summary) [Algorithms for the implementation of optimal quadratic cost control of bilinear systems] *Analysis and optimization of systems* (Antibes, 1988), 432–444, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see 89c:00031) 49D40 (93C20)
- (with El Alami, Jamila) Algorithme de commande pour les systèmes énergétiques "presque bilinéaires" distribués (SPB) conductifs, convectifs, radiatifs. (English summary) [Control algorithm for conductive, convective, radiative "almost bilinear" distributed energy systems] *Analysis and optimization of systems* (Antibes, 1988), 445–457, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see 89c:00031) 93B40 (93C25)
- El Arabawy, I. F.** (with Sebakhly, O. A.; El Singaby, M. I.) Shaping of the output response in a class of linear multivariable systems. *IEEE Trans. Automat. Control* **33** (1988), no. 5, 457–458. (Not in MR) 93B50 (93C05, 93C35)
- El-Ariny, A. K. H.** (with Osman, M. S. A.; El-Hefay, M. R.) Implementing stability results in solving large scale convex programming problems. *Analysis and optimization of systems* (Antibes, 1988), 545–556, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see 89c:00031) 90C25
- (with Osman, M. S. A.; Refaat, Talaat H. M.) An algorithm for decomposition coordination of large scale convex programming problems. *Comput. Oper. Res.* **15** (1988), no. 5, 457–469. (Summary) 89g:90173 90C25
- El-Ashwah, Rabha M.** (with Thomas, D. K.) On the derivative of some Bazilevich functions. *J. Ramanujan Math. Soc.* **2** (1987), no. 1, 69–84. (Ved Parkash Gupta) 89i:30007 30C45
- El-Assar, S.** (with Katriňák, T.)  $p$ -algebras with Stone congruence lattices. *Acta Sci. Math.* (Szeged) **51** (1987), no. 3-4, 371–386. (R. Beazer) 89f:06019 06D15 (06B10)
- Elaydi, Saber** (with Farran, H. R.) Exponentially asymptotically stable dynamical systems. *Appl. Anal.* **25** (1987), no. 4, 243–252. (G. P. Los) 89i:34064 34C35 (34D20, 54H20)
- (with Ahmad, Khader H.) Nearly periodic dynamical systems. *Appl. Anal.* **27** (1988), no. 4, 243–251. (W. R. Utz) 89d:54029 54H20
- (with Rama Mohana Rao, M.) Lipschitz stability for nonlinear Volterra integrodifferential systems. *Appl. Math. Comput.* **27** (1988), no. 3, part I, 191–199. (Daoyi Xu) 89h:45016 45M10 (45J05)
- (with Hajek, O.) Exponential trichotomy of differential systems. *J. Math. Anal. Appl.* **129** (1988), no. 2, 362–374. (A. Corduneanu) 89b:34019 34A30 (34D20)
- (with Kaul, S. K.) Semiflows with global extensions. II. Notions of negative stability. *Nonlinear Anal.* **12** (1988), no. 7, 733–746. (W. R. Utz) 89f:54076 54H20 (34C35, 54H15)
- Elazab, S. S.** (with Radwan, A. E.) Capillary instability of a viscous hollow cylinder. *Simon Stevin* **61** (1987), no. 3-4, 293–300. (Summary) 89c:76068 76E99 (76B45)
- El Azhari, M.** (with Akkar, Mohamed; Oudadess, M.) Théorèmes de structure sur certaines algèbres de Fréchet. (English summary) [Structure theorems for some Fréchet algebras] *Ann. Sci. Math. Québec* **11** (1987), no. 2, 245–252. (Athanasios Kyriazis) 89c:46054 46J05 (46A06, 46H05)
- (with Akkar, Mohamed; Oudadess, M.) On an expression of the spectrum in BP $\ast$ -algebras. *Period. Math. Hungar.* **19** (1988), no. 1, 65–67. (Abdullah H. Al-Moajil) 89k:46069 46J20 (46H99, 46K99)
- okb El-Bab, A. S.** see Okb El-Bab, A. S.
- El Badawy Yehia, S.** The blocks of the parabolic subgroups of semisimple algebraic groups. (Arabic summary) *Proc. Math. Phys. Soc. Egypt No. 60* (1985), 15–30 (1987). (Stephen Donkin) 89c:20077 20G05
- El Badia, A.** Identifiabilité d'un coefficient variable en espace dans une équation parabolique. (English summary) [Identifiability of a spatially varying parameter in a parabolic equation] *RAIRO Modél. Math. Anal. Numér.* **21** (1987), no. 4, 627–639. (I. Łojczyk-Królikiewicz) 89a:35223 35R30 (35K10)
- El Bagdouri, M.** Commande en temps optimal de l'équation non linéaire de la chaleur. (English summary) [Time-optimal control of the nonlinear heat equation] *RAIRO Automat.-Prod. Inform. Ind. 22* (1988), no. 4, 381–392. (J. P. Bahary) 89f:93022 93C20 (49A22, 49D30, 93B40)
- El-Basil, Sherif** Graphs of chemistry and physics: on data reduction of chemical information. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 557–563, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (Summary) 89d:92094 92A40 (05C99)
- Binomial-combinatorial properties of Clar structures. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1-3, 145–156. (Summary) 89f:92077 92A40 (05C15)

- Theory and computational applications of Fibonacci graphs. *J. Math. Chem.* 2 (1988), no. 1, 1–29. (E. J. Farrell) **89e:05185** 05C99
- (with Randić, M.; King, R. Bruce) On nonsymmetry equivalence. *Mathematical modelling in science and technology* (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 641–646. (see **89d:00007**) 92A40 (05C99)
- El-Bast, Zeinab Abd** (with Smith, Patrick F.) Multiplication modules. *Comm. Algebra* 16 (1988), no. 4, 755–779. (Daniel D. Anderson) **89f:13017** 13C13 (13F99)
- (with Smith, Patrick F.) Multiplication modules and theorems of Mori and Mott. *Comm. Algebra* 16 (1988), no. 4, 781–796. (Daniel D. Anderson) **89f:13018** 13C13 (13F99)
- Elbaz, Jonathan** Substitution and atomic extension on greedy posets. *Order* 3 (1986), no. 3, 235–244. (Summary) **89a:06002** 06A10
- Elbert, Á.** Isochronism problems for nonlinear second order differential equations. *Publ. Math. Debrecen* 34 (1987), no. 3–4, 163–167. (Alan R. Hausrath) **89e:34019** 34A34
- (with Laforgia, Andrea) On the power of the zeros of Bessel functions. *Rend. Circ. Mat. Palermo* (2) 36 (1987), no. 3, 507–517 (1988). (Boro Döring) **89m:33011** 33A40 (65D20)
- El Dahaghi, F.** Steady incompressible and compressible solution of Navier-Stokes equations by rotational correction. *Numerical methods for fluid dynamics, III* (Oxford, 1988), 273–281. *Inst. Math. Appl. Conf. Ser. New Ser.*, 17, Oxford Univ. Press, New York, 1988. (see **89j:76004**) 76–08 (76D05, 76N10)
- El-Dabe, Nabile T. M.** Electrohydrodynamic stability of two superposed elasticoviscous liquids in plane Couette flow. *J. Math. Phys.* 28 (1987), no. 11, 2791–2800. (Jean Pierre Brancher) **89a:76034** 76E25 (76W05)
- El-Damanawi, K. E. S.** (with Jaswon, Maurice A.) Vector potential theory. *Betech* 86 (Cambridge, Mass., 1986), 433–445. *Comput. Mech., Southampton*, 1986. 73–08
- (with Jaswon, Maurice A.) The representation of elastostatic fields by vector potentials (invited contribution). *Boundary elements IX, Vol. 2* (Stuttgart, 1987), 129–141. *Comput. Mech., Southampton*, 1987. (Summary) **89j:73006** 73–08 (31B15, 73C99)
- Eldeeb, Raouf** (with Ariño, Miguel A.; Peck, N. T.) The Lorentz sequence spaces  $d(w, p)$  where  $w$  is increasing. *Math. Ann.* 282 (1988), no. 2, 259–266. (Christian Samuel) **89i:46010** 46A45 (46E30)
- El-Deen, M. I. Hossam** (with Abdel-aal, M. A.) Asymptotic relationship between solutions of two systems of differential equations. *Proc. Pakistan Acad. Sci.* 24 (1987), no. 4, 349–360. (Walter Eberhard) **89c:34090** 34E05 (34C10)
- Eldem, Vahit** (with Selbuz, Hasan) Kleinman's controller: a further stabilizing property. *Internat. J. Control* 48 (1988), no. 6, 2297–2301. (Summary) **89i:93094** 93D15 (93C05, 93C55, 93D20)
- (with Özgüler, A. Bülent) Disturbance decoupling problems by measurement feedback: a characterization of all solutions and fixed modes. *SIAM J. Control Optim.* 26 (1988), no. 1, 168–185. (J. Kučera) **89d:93029** 93B25 (49D27, 93B50)
- (with Özgüler, A. Bülent) Set of open-loop block-diagonalizers of transfer matrices. *Internat. J. Control* 49 (1989), no. 1, 161–168. (Not in MR) 93B25
- Elden, Lars** Some remarks on algebraic inverse problems. *Special program on inverse problems*, 13–16, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 17, Austral. Nat. Univ., Canberra, 1988. (see **89m:65008**) 65F30 (65P05)
- Hyperbolic approximations for a Cauchy problem for the heat equation. *Inverse Problems* 4 (1988), no. 1, 59–70. (Howard A. Levine) **89h:35138** 35K05 (35R30, 80A20)
- Elderkin, Richard** (with Cooke, Kenneth; Witten, Matthew) Harvesting procedures with management policy in iterative density-dependent population models. *Natur. Resource Modeling* 2 (1988), no. 3, 383–420. (D. O. Logofet) **89f:92037** 92A15 (90A30)
- Eldershaev, T.** An inverse problem for a second-order degenerate hyperbolic equation. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1987, no. 3, 27–29. (R. G. Mukhometov) **89j:35129** 35R30 (35L80)
- El-Desouky, B. S.** On selecting  $k$  balls from an  $n$ -line without unit separation. *Indian J. Pure Appl. Math.* 19 (1988), no. 2, 145–148. (M. S. Cheema) **89a:05007** 05A05 (05A15)
- nour Eldin, H. A.** see **Nour Eldin, H. A.**
- El Din Younis, Mohamed Alan** (with Azmi, Zaki Ahmed) The application of fuzzy matrices and digraphs in network analysis. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics* (Poznań, 1986), 17–23. *Wydział. Politech. Poznań, Poznań*, 1987. (Summary) **89f:05085** 05C20 (03E72, 90B10)
- El Djallil Kateb, Mohamed** Itérations d'algorithmes d'accélération de la convergence. (English summary) [Iterations of algorithms for the acceleration of convergence] *Mathematical analysis and its applications* (Kuwait, 1985), 269–279. *KFAS Proc. Ser.*, 3, Pergamon, Oxford-Elmsford, NY, 1988. (L. Berg) **89g:65007** 65B05
- Eldridge, Klaus E.** (with Sagong, Seok) The determination of Kaprekar convergence and loop convergence of all three-digit numbers. *Amer. Math. Monthly* 95 (1988), no. 2, 105–112. (F. Schweiger) **89c:11037** 11B83 (11A63)
- Eldroque, Alberto** (with Abd el Malek, Alf) On the  $J$ -nucleus of a Mal'cev algebra. *Algebras Groups Geom.* 3 (1986), no. 4, 493–503. (Kiyosi Yamaguti) **89c:17040** 17D10
- A note on anticommutative algebras. (Spanish. English summary) *Proceeding of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2* (Spanish) (Badajoz, 1986), 117–121. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (P. Holgate) **89k:17007** 17A30
- On semimodular Mal'cev algebras. *Arch. Math. (Basel)* 50 (1988), no. 4, 328–336. (Alf) Abd el Malek **89d:17030** 17D10 (17B05)
- A note on modularity in Mal'cev algebras. *Arch. Math. (Basel)* 50 (1988), no. 5, 424–428. (Yuri Medvedev) **89h:17045** 17D10
- Elekto, Ya. I.** Limit distributions of time averages for processes with Markovian interference of chance. (Russian) *Ukrain. Mat. Zh.* 39 (1987), no. 6, 779–782, 816. (M. Iosifescu) **89a:60203** 60K15 (60F05)
- Elek, G.** (with Grill, K.) On a full protocol problem. *Probability theory and mathematical statistics with applications* (Visegrad, 1985), 35–41. *Reidel, Dordrecht-Boston, MA*, 1988. (Lyuben R. Mutafchiev) **89g:60027** 60C05
- Elenicwaj, G.** (with Le Barz, P.) Explicit computations in Hilb<sup>3</sup>P<sup>2</sup>. *Algebraic geometry* (Sundance, UT, 1986), 76–100. *Lecture Notes in Math.*, 1311. Springer, Berlin-New York, 1988. (A. A. Iarrobino, Jr.) **89m:14030** 14N10 (14C05, 14C25)
- Elenin, G. G.** (with Slin'ko, M. G.) ★ Математическое моделирование явления на поверхности. (Russian) [Mathematical modeling of phenomena on a surface] Новое в Жизни, Наука, Техника: Серия "Математика, Кибернетика" [Current Life, Science and Technology: Series "Mathematics and Cybernetics"], 88–8. "Znanie", Moscow, 1988. 32 pp. (Editors) **89i:92007** 92A08
- (with Krylov, Vasilii Vilenovich; Sosnin, N. V.) Exact solutions of a problem of crystallization of filterable solutions. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 4, 635–644, 732; translated in *Differential Equations* 24 (1988), no. 4, 443–450. (Summary) **89i:35116** 35Q20 (82A99)
- (with Mal'kov, K. V.) A class of nonlinear evolution systems that describe crystallization processes. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 6, 936–949, 1098; translated in *Differential Equations* 24 (1988), no. 6, 603–613. (Darko Kapor) **89i:80016** 80A20 (35Q20)
- (with Lysak, T. M.) Dissipative structures in a model reaction of the oxidation of carbon monoxide. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 7, 1186–1192, 1285; translated in *Differential Equations* 24 (1988), no. 7, 767–772. (Frederick A. Howes) **89i:92075** 92A40 (35Q20, 65P05)
- (with Krylov, Vasilii Vilenovich; Sosnin, N. V.) The problem of dissolution of a dense homogeneous crystal layer. *Moscow Univ. Comput. Math. Cybernet.* 1988, no. 1, 29–36; translated from *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* 1988, no. 1, 28–34, 76 (Russian). (Summary) **89d:80026** 80A99 (82A99)
- (with Krylov, Vasilii Vilenovich; Sosnin, N. V.) A problem on the dissolving of a dense filtering layer of crystals. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 1, 101–111, 157; translated in *U.S.S.R. Comput. Math. and Math. Phys.* 28 (1988), no. 1, 66–73. (Summary) **89d:80011** 80A20 (80–08)
- (with Kurkina, E. S.) Multiplicity of steady states in a nonideal model for a heterogeneous-catalytic reaction. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 5, 695–704, 782–783. (Summary) **89d:80022** 80A30
- Eleonskii, V. M.** (with Akhmediev, N. N.; Kulagin, N. E.) An example of a dynamical system connected with the nonlinear Schrödinger equation. (Russian) *Methods of qualitative theory of differential equations* (Russian), 30–35, 210–211. *Gorkov. Gos. Univ., Gorki*, 1986. (From the text) **89g:58083** 58F07 (35Q20)
- (with Akhmediev, N. N.; Kulagin, N. E.) First-order exact solutions of the nonlinear Schrödinger equation. (Russian. English summary) *Teoret. Mat. Fiz.* 72 (1987), no. 2, 183–196. (V. G. Samoilenko) **89h:35275** 35Q20 (58F07)
- (with Kulagin, N. E.; Silin, V. P.) Solitons: phase portrait, bifurcations. *Plasma theory and nonlinear and turbulent processes in physics, Vol. 1*, 2 (Kiev, 1987), 377–397. *World Sci. Publishing, Singapore*, 1988. (D. ter Haar) **89h:35286** 35Q20 (58G20)
- Eleuterio, S. M.** (with Vilela Mendes, Rui) Stochastic mechanics of abelian lattice theories. *J. Phys. A* 20 (1987), no. 18, 6411–6427. (Summary) **89a:81101** 81E25 (81–08)
- (with Vilela Mendes, Rui) Stochastic models for lattice gauge theories. *Z. Phys. C* 34 (1987), no. 4, 451–463. (Summary) **89c:81093** 81E25
- Elizgaray, J.** (with Argoul, F.; Arneodo, A.; Grasseau, G.; Murenzi, R.) Wavelet transform of fractal aggregates. *Phys. Lett. A* 135 (1989), no. 6–7, 327–336. (Summary) **89k:82069** 82A57 (42C05)
- Elezović, Neven** Cylindrical measures on tensor products of Banach spaces and random linear operators. *Manuscripta Math.* 60 (1988), no. 1, 1–20. (Werner Linde) **89a:60015** 60B11 (46G12, 46M05, 47B10, 60H25)
- Elezović-Hadžić, S.** (with Milošević, S.; Capel, H. W.; Wiersma, G. L.) Exact renormalization group treatment of the piecewise directed random walks on fractals. *Phys. A* 150 (1988), no. 2, 402–418. (Preben Alström) **89f:82039** 82A41 (82A25, 82A68)
- El-Fiky, Ahmed** On well-posedness of the Cauchy problem for  $p$ -parabolic systems. II. *J. Math. Kyoto Univ.* 28 (1988), no. 1, 165–172. (Introduction) **89m:35099** 35K30
- Elfvig, Tommy** (with Censor, Yair; Herman, Gabor T.) Special-purpose algorithms for linearly constrained entropy maximization. *Maximum-entropy and Bayesian spectral analysis and estimation problems* (Laramie, Wyo., 1983), 241–254. *Fund. Theories Phys., Reidel, Dordrecht-Boston, MA*, 1987. (Frank Natterer) **89d:92011** 92A07 (65K05)
- (with Andersson, Lars-Erik) An algorithm for constrained interpolation. *SIAM J. Sci. Statist. Comput.* 8 (1987), no. 6, 1012–1025. (Summary) **89f:65012** 65D05 (65D07)
- El-Gendi, S. E.** (with Ibrahim, M. A.-K.; Shamardan, A. B.) The numerical treatment of a singular integro-differential equation arising from the diffusion of discrete particles in a turbulent fluid. *J. Natur. Sci. Math.* 28 (1988), no. 1, 95–106. (Summary) **89e:65149** 65R20 (76–08)
- Elgin, J. N.** (with Doering, Charles R.; Gibbon, J. D.; Holm, Darryl D.) Finite-dimensionality in the laser equations in the good cavity limit. *Phys. Lett. A* 129 (1988), no. 5–6, 310–316. (K. Wódkiewicz) **89k:81210** 81K05
- (with Cruzeiro-Hansson, L.; Christiansen, P. L.) Comment on "Self-trapping on a dimer: time-dependent solutions of a discrete nonlinear Schrödinger equation". *Phys. Rev. B* (3) 37 (1988), no. 13, 7896–7897. (From the text) **89e:92061** 92A40 (58F40, 82A99)
- ortiz de Elguea, Lourdes** see **Ortiz de Elguea, Lourdes**
- Elgueta, Manuel** (with Cortazar, Carmen) Large time behaviour of solutions of a nonlinear reaction-diffusion equation. *Houston J. Math.* 13 (1987), no. 4, 487–497. (Zi Qian Yan) **89d:35092** 35K57 (35B40)
- El Hachimi, Abderrahmane** (with de Thelin, François) Supersolutions and stabilization of the solutions of the equation:  $(\partial u / \partial t) - \operatorname{div}((\nabla u)^{p-2} \nabla u) = f(x, u)$ . *Nonlinear Anal.* 12 (1988), no. 12, 1385–1398. (Charles J. Amick) **89k:35076** 35J60 (35B40, 76A05)
- Elhadad, Jimmy** Quantification géométrique et structure hyperfine de l'atome d'hydrogène. [Geometric quantization and hyperfine structure of the hydrogen atom] *Feuilletages riemanniens, quantification géométrique et mécanique* (Lyon, 1986), 53–70. *Travaux en Cours*, 26. Hermann, Paris, 1988. (A. Crumeyrolle) **89d:58049** 58F06 (81D07)
- El-Haji, Adnan Atef** A variational principle for complex boundary value problems. *Internat. J. Math. Math. Sci.* 11 (1988), no. 2, 315–318. (Summary) **89c:35039** 35J20
- (with El Shehawey, Elsayed F.) A variational formalism for steady flow of dusty fluid problems. I. *Quart. Appl. Math.* 46 (1988), no. 2, 275–283. (Alexandre Fedorov) **89i:76091** 76T05
- El-Haji, Ali** (with Kobeissi, Hafer; Kobeissi, Majida) On computing eigenvalues of the Schrödinger equation for symmetrical potentials. *J. Phys. A* 22 (1989), no. 3, 287–295. (Not in MR) **81C05** (81–08)
- abd El-Hakeim, K. M.** see **Abd El-Hakeim, K. M.**
- El Hasi, C. D.** see **el Hasi, C. D.**
- El Hassouni, A.** (with Oudrhiri-Safiani, E. G.; Saidi, E. H.) Generalization of the  $N = 1$  supersymmetric effective Lagrangian to arbitrary  $N$  in the absence of central charges. *J. Math. Phys.* 28 (1987), no. 10, 2457–2462. (Andrew A. Bytsenko) **89h:81246** 81G20
- (with Lhlabi, T.; Oudrhiri-Safiani, E. G.; Saidi, E. H.)  $N = 2$  SQED model in harmonic superspace. *Classical Quantum Gravity* 5 (1988), no. 2, 287–298. (Paul Howe)



- 89c:81116** 81E99 (58A50, 81G20)
- El Hatri, Mohamed** Estimation d'erreur optimale et de type superconvergence de la méthode des éléments finis pour un problème aux limites, dégénéré. (English summary) [Optimal and superconvergence-type error estimation of the finite-element method for a degenerate boundary value problem] *RAIRO Modél. Math. Anal. Numér.* **21** (1987), no. 1, 27–61. (Jacques Couot) **89a:65168; EA 89m 65N30**
- El-Hefny, M. R.** (with Osman, M. S. A.; El-Ariny, A. K. H.) Implementing stability results in solving large scale convex programming problems. *Analysis and optimization of systems (Antibes, 1988)*, 545–556, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89c:00031**) **90C25**
- El-Helaly, Sherif** (with Husain, Taqdir) Unconditionality of orthogonal bases in  $B_q$ -algebras. *Comment. Math. Prace Mat.* **27** (1988), no. 2, 237–251. (B. Yood) **89k:46063** 46H05 (46B15)
- (with Husain, Taqdir) Orthogonal bases are Schauder bases and a characterization of  $\Phi$ -algebras. *Pacific J. Math.* **132** (1988), no. 2, 265–275. (Peter Dixon) **89e:46055** 46J05 (46A33, 46A45, 46H05)
- El-Hodiri, Mohamed** (with Otani, Yoshihiko)  $\star$  Microeconomic theory. Springer-Verlag, Berlin-New York, 1987. xiv+274 pp. ISBN 3-540-17994-1 (Tatsuhiro Ichiishi) **89c:90005** 90Axx (90-01)
- Elhosh, M. M.** On successive coefficients of close-to-convex functions of order  $\beta$ . *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **30** (1987), 65–68. (O. P. Ahuja) **89c:30015** 30C45 (30C50)
- On multivalent Bazilevich functions. *Bull. Korean Math. Soc.* **24** (1987), no. 2, 97–101. (W. C. Royster) **89i:30008** 30C45
- On successive coefficients of close-to-convex functions of order  $\beta$ . *Mathematica (Cluj)* **25**(52) (1987), no. 1, 25–27. (E. P. Merkes) **89c:30016** 30C45 (30C50)
- Elia, Michele** (with Biglieri, Ezio) Multidimensional modulation and coding for band-limited digital channels. *IEEE Trans. Inform. Theory* **34** (1988), no. 4, 803–809. (L. L. Campbell) **89k:94020** 94A14 (94B05)
- Eliahov, Shalom** Symbolic powers of monomial curves. *J. Algebra* **117** (1988), no. 2, 437–456. (Wolfgang Vogel) **89k:14055** 14H45 (14M10)
- Elías, Juan** An upper bound of the singularity order for the generic projection. *J. Pure Appl. Algebra* **53** (1988), no. 3, 267–270. (Philippe Carbone) **89i:14021** 14H20
- Elías, Norma** Toeplitz operators on weighted Bergman spaces. *Integral Equations Operator Theory* **11** (1988), no. 3, 310–331. (Karim Seddighi) **89g:47027** 47B35
- Elías, Peter** Zero error capacity under list decoding. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part 1, 1070–1074. (Summary) **89k:94038** 94A40
- Elías, S. S.** (with Mokaddis, G. S.; Labih, S. W.) On a two-unit standby redundant system subject to repair and preventive maintenance. *Tamkang J. Management Sci.* **8** (1987), no. 1, 1–14. (Summary) **89d:90106** 90B25
- (with Mokaddis, G. S.; Metwally, S. A.; Soliman, E. A.) Three queues in parallel. *Tamkang J. Management Sci.* **9** (1988), no. 1, 1–11. (Masao Mori) **89c:60192** 60K25 (90B22)
- (with Mokaddis, G. S.; Tawfik, M. L.) One-stream storage model with Markovian inflows and a constant-value release policy. *Tamkang J. Management Sci.* **9** (1988), no. 2, 1–12. (Hideo Osawa) **89k:90046** 90B05
- Elías, Uri** Minors of the Wronskian of the differential equation  $L_n y + p(x)y = 0$ . II. Dominance of solutions. *Proc. Roy. Soc. Edinburgh Sect. A* **108** (1988), no. 3–4, 229–239. (Alan R. Hausrath) **89g:34042** 34C10
- Eliašberg, Ya. M.** Combinatorial methods in symplectic geometry. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 531–539, *Amer. Math. Soc., Providence, RI*, 1987. (Peter Giblin) **89h:58058** 58F05 (58C27)
- Elisson, Peter** (with Rizzi, Arthur; Andersson, H. I.) Time-marching method to solve steady incompressible Navier-Stokes equations for laminar and turbulent flow. *Nonlinear hyperbolic equations—theory, computation methods, and applications (Aachen, 1988)*, 105–114, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 76-08 (76D05)
- Élie, Laure** Noyaux potentiels associés aux marches aléatoires sur les espaces homogènes. Quelques exemples clefs dont le groupe affine. [Potential kernels associated with random walks on homogeneous spaces. Some key examples, including the affine group] *Théorie du potentiel (Orsay, 1983)*, 223–260, *Lecture Notes in Math.*, 1096, Springer, Berlin-New York, 1984. (Léonard Gallardo) **89f:60011** 60B15 (31C05, 60J15)
- Eliseev, A. G.** (with Lomov, S. A.) Asymptotic integration of singularly perturbed problems. (Russian. English summary) *Uspekhi Mat. Nauk* **43** (1988), no. 3(261), 3–53, 271, 272; translated in *Russian Math. Surveys* **43** (1988), no. 3, 1–63. (V. G. Kolomiets) **89i:34083** 34E15 (34E05)
- Elisakoff, I.** Correlation and spectral analysis—a brief outline. *Analysis and estimation of stochastic mechanical systems (Udine, 1987)*, 2–13, *CISM Courses and Lectures*, 303, Springer, Vienna, 1988. (R. J. Martin) **89i:60079** 60G12 (93E03)
- Measurement of characteristics of stationary random processes. *Analysis and estimation of stochastic mechanical systems (Udine, 1987)*, 14–21, *CISM Courses and Lectures*, 303, Springer, Vienna, 1988. (P. A. Morettin) **89g:60132** 60G10 (62M10, 94A05)
- Random vibration of multi-degree-of-freedom systems with associated effect of cross-correlations. *Analysis and estimation of stochastic mechanical systems (Udine, 1987)*, 22–31, *CISM Courses and Lectures*, 303, Springer, Vienna, 1988. (Ludwig Arnold) **89j:60059** 60G25 (34F05, 70L05, 93E03)
- Elisatov, I. V.** Some problems in the theory of summation of multiplicative functions. (Russian) *Investigations in number theory (Russian)*, 33–53, *Saratov. Gos. Univ., Saratov*, 1982. (see **89a:11006**) 11N64 (11M45)
- Elizalde, E.** (with Tarrach, R.) Interacting  $sp^4$  on a Schwarzschild background metric. (Italian and Russian summaries) *Nuovo Cimento B* (11) **100** (1987), no. 3, 371–380. (Marcos D. Maia) **89i:81088** 81E20 (81E15, 83C47)
- Casimir effects in tori and pairs of plates. *Phys. Lett. B* **213** (1988), no. 4, 477–481. (Summary) **89i:81110** 81E99 (81E20, 81G10)
- Exact solutions of the massive Klein-Gordon-Schwarzschild equation. *Phys. Rev. D* (3) **37** (1988), no. 8, 2127–2131. (Summary) **89i:81089** 81E20 (83C47)
- Elizarov, A. I.** Moments of the number of stationary points of a homogeneous Gaussian field. (Russian) *Dokl. Akad. Nauk SSSR* **302** (1988), no. 2, 265–266; translated in *Soviet Math. Dokl.* **38** (1989), no. 2, 270–271. (Lutz Peter Klotz) **89i:60105** 60G60 (60G15)
- Elizarov, A. M.** (with Avkhadiyev, F. G.; Akstent'ev, L. A.) Sufficient conditions for the finite-valence of analytic functions, and their applications. (Russian) *Mathematical analysis, Vol. 25 (Russian)*, 3–121, 200, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (Z. Lewandowski) **89c:30022** 30C45 (30C55, 30E25)
- Some extremal problems in wing theory. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 10, 71–74; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 10, 108–113. (From the summary) **89m:76010** 76B05 (49B21, 76G99)
- Elizarova, T. G.** (with Sheretov, Yu. V.) The invariant form of a system of quasi-gas-dynamic equations and the system's connection with the Navier-Stokes equations. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 230, 18 pp. (Summary) **89c:35106** 35L99 (35Q10, 76D05, 76N99)
- A class of kinetically consistent difference schemes of gas dynamics. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 11, 1748–1752, 1760. (Summary) **89a:76044** 76N15 (76-08)
- (with Abalakin, I. V.; Dorodnitsyn, L. V.) Direct numerical modeling of the Blasius problem. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1107–1113, 1283; translated in *Differential Equations* **24** (1988), no. 7, 701–706. (Summary) **89f:76057** 76J99 (76-08, 76N05, 76P05)
- Boundary conditions for kinetically consistent difference schemes of gas dynamics. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 6, 926–932, 959. (Summary) **89c:76006** 76-08 (76N15, 76P05)
- El Jal, A.** (with Belfekih, A.) Sur le choix de la répartition spatiale du contrôle dans les systèmes distribués. (English summary) [On the optimal spatial distribution of the control in distributed systems] *RAIRO Automat.-Prod. Inform. Ind.* **21** (1987), no. 5, 493–505. (Alexander P. Suetov) **89b:49037** 49B22 (93C20)
- (with Pritchard, A. J.)  $\star$  Sensors and controls in the analysis of distributed systems. Translated from the French by Catrin Pritchard and Rhian Pritchard. *Ellis Horwood Digital Series: Mathematics and its Applications. Ellis Horwood Ltd., Chichester; Halsted Press [John Wiley & Sons, Inc.], New York*, 1988. 125 pp. ISBN 0-7458-0336-9 (Editors) **89c:93002** 93-02 (93B25, 93C20)
- El-Jaouhari, Noureddine** Compactification des espaces symétriques associés aux groupes de déplacements de Cartan. (English summary) [Compactification of symmetric spaces connected with a Cartan motion group] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 9, 467–470. (Summary) **89i:32070** 32M15 (32J05)
- El Kacimi-Alaoui, A.** (with Tihani, A.) Errata to: "Bigraded cohomology of certain foliations" [Bull. Soc. Math. Belg. Sér. B **38** (1986), no. 2, 144–156; MR 88c:57029]. (French) *Bull. Soc. Math. Belg. Sér. B* **39** (1987), no. 3, 379. (Editors) **89a:57036** 57R32 (32L10)
- El Karoui, Nicole** (with Jeanblanc-Picqué, Monique) Contrôle de processus de Markov. [Control of Markov processes] *Séminaire de Probabilités, XXII*, 508–541, *Lecture Notes in Math.*, 1321, Springer, Berlin-New York, 1988. (Jean-Yves Ouyard) **89m:93089** 93E20 (49A60, 49C10)
- Elkholy, E.** (with Robertson, S. A.) Topological foldings. *Comm. Fac. Sci. Univ. Ankara Ser. A1 Math. Statist.* **35** (1986), no. 1–2, 101–107. (M. J. Sewell) **89g:57025** 57N80 (57N15)
- Elkies, Noam D.** On  $A^4 + B^4 + C^4 = D^4$ . *Math. Comp.* **51** (1988), no. 184, 825–835. (David Grant) **89h:11012** 11D25 (11G35, 11G40)
- Elkin, L. N.** (with Ilyunin, O. K.; Popov, B. V.) Majority functional operators in voting theory. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 7, 137–145; translated in *Avtomat. Remote Control* **49** (1988), no. 7, part 2, 927–933. (Andrzej Wiecezorek) **89m:90010** 90A08 (90A07)
- Elkin, V. I.** Some topological properties of two types of  $S$ ,  $T$ -isomers. *Match No.* **23** (1988), 153–162. (Summary) **89j:92095** 92A40 (05C99)
- Classification of affine controllable systems with a phase space of dimension  $n < 4$ . (Russian) *Dokl. Akad. Nauk SSSR* **302** (1988), no. 1, 18–20; translated in *Soviet Math. Dokl.* **38** (1989), no. 2, 245–247. (Wei Bing Gao) **89i:93061** 93C10 (93B10)
- El-Labany, S.** (with Haggag, M. H.; Machali, H. M.; Attia, M. T.) Chandrasekhar's  $X$ - and  $Y$ -functions. *Astrophys. and Space Sci.* **149** (1988), no. 1, 13–18. (Summary) **89i:85002** 85A25 (33A70)
- Eliaçott, S. W.** (with Saff, E. B.) On Clenshaw's method and a generalisation to Faber series. *Numer. Math.* **52** (1988), no. 5, 499–509. (R. C. Varma) **89i:34008** 34A25 (65D15, 65E05)
- Elleithy, O. A.** (with El-Owaidy, H.; Ammar, A. A.) Stability in mammillary compartmental systems. *Indian J. Pure Appl. Math.* **20** (1989), no. 2, 104–110. (Summary) **89k:92016** 92A09
- Eller, J.** (with Györi, I.; Zöllei, M.; Kriza, F.) Modelling thrombopoiesis regulation. I. Model description and simulation results. *Comput. Math. Appl.* **14** (1987), no. 9–12, 841–848. (Summary) **89a:92019** 92A09
- (with Györi, I.) Modelling thrombopoiesis regulation. II. Mathematical investigation of the model. *Comput. Math. Appl.* **14** (1987), no. 9–12, 849–859. (Summary) **89a:92020** 92A09
- Ellers, Erich W.** (with Frank, Rolfdieter) Products of quasireflections and transvections over local rings. *J. Geom.* **31** (1988), no. 1–2, 69–78. (Frieder Knüppel) **89h:51008** 51C05 (20H25, 51F25)
- (with Lausch, Huberta) Length theorems for the general linear group of a module over a local ring. *J. Austral. Math. Soc. Ser. A* **46** (1989), no. 1, 122–131. (Alex Hahn) **89m:15007** 15A23 (20G35)
- Ellia, Philippe** (with Ballico, Edoardo) Postulation of general canonical curves in  $\mathbb{P}^N$ ,  $N \geq 4$ . *Boll. Un. Mat. Ital. D* (6) **5** (1986), no. 1, 103–133 (1987). (Luca Chiantini) **89b:14046** 14H45
- (with Ballico, Edoardo) A program for space curves. Conference on algebraic varieties of small dimension (Turin, 1985). *Rend. Sem. Mat. Univ. Politec. Torino* **1986**, Special Issue, 25–42 (1987). (Sebastià Xambó Descamps) **89c:14031** 14H45 (14H50)
- (with Fiorentini, Mario) Quelques remarques sur les courbes arithmétiquement Buchsbaum de l'espace projectif. (Italian summary) [Some remarks on arithmetically Buchsbaum curves in projective space] *Ann. Univ. Ferrara Sez. VII (N.S.)* **33** (1987), 89–111 (1988). (Jean D'Almeida) **89j:14024** 14H45 (14H50, 14M05)
- (with Ballico, Edoardo) Bonnes petites composantes des schémas de Hilbert de courbes lisses de  $\mathbb{P}^n$ . (English summary) [Good components of Hilbert schemes of smooth

- curves in  $P^n$  C. R. Acad. Sci. Paris Sér. I Math. **306** (1988), no. 4, 187-190. (R. F. Lax) **89d:14038** 14H10 (14C05)
- (with Ballico, Edoardo) On space curves with maximal genus in the range  $A$ . Rev. Roumaine Math. Pures Appl. **33** (1988), no. 3, 165-174. (Jean D'Almeida) **89d:14042** 14H45 (14H50)
- Irodotoiu-Ellina, M.** see **Irodotoiu-Ellina, M.**
- Ellingham, M. N.** Recent progress in edge reconstruction. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). Congr. Numer. **62** (1988), 3-20. (J. Lauri) **89i:05203** 05C60 (90C27)
- Isomorphic factorization of  $r$ -regular graphs into  $r$  parts. Discrete Math. **69** (1988), no. 1, 19-34. (Robin J. Wilson) **89g:05139** 05C70
- Isomorphic factorization of regular graphs of even degree. J. Austral. Math. Soc. Ser. A **44** (1988), no. 3, 402-420. (Nicholas Wormald) **89g:05085** 05C70
- (with Pyber, L.; Yu, Xingxing) Free graphs are edge reconstructible. J. Graph Theory **12** (1988), no. 3, 445-451. (Thomas Andreae) **89g:05078** 05C60
- (with Wormald, Nicholas C.) Isomorphic factorization of regular graphs and 3-regular multigraphs. J. London Math. Soc. (2) **37** (1988), no. 1, 14-24. (Alan Hartman) **89d:05140** 05C70 (05C15)
- Ellinghaus, R.** (with Muschik, W.) Zur Auswertung von Dissipationsungleichungen. [On the evaluation of dissipation inequalities] Z. Angew. Math. Mech. **68** (1988), no. 4, T232-T233. (Kolumban Hutter) **89g:80001** 80A10
- Ellingsrud, Geir** (with Strømme, Stein Arild) On a cell decomposition of the Hilbert scheme of points in the plane. Invent. Math. **91** (1988), no. 2, 365-370. (A. Hirschowitz) **89f:14007** 14C05 (14C15, 14D22)
- (with Peskine, Christian) Sur les surfaces lisses de  $P_4$ . [Smooth surfaces in  $P_4$ ] Invent. Math. **95** (1989), no. 1, 1-11. (Jean D'Almeida) **89j:14023** 14J26 (14C05)
- Elliot, Charles M.** (with Herrero, M. A.; King, John Robert; Ockendon, J. R.) The mesa problem: diffusion patterns for  $u_t = \nabla \cdot (u^m \nabla u)$  as  $m \rightarrow +\infty$ . IMA J. Appl. Math. **37** (1986), no. 2, 147-154. (Summary) **89m:76061** 76D05 (35B40, 35K55, 35R35)
- (with Barrett, John W.) Total flux estimates for a finite-element approximation of parabolic equations. IMA J. Numer. Anal. **6** (1986), no. 3, 253-264. (Summary) **89h:65173** 65N30
- Elliott, David** (with McLean, William) On the  $P$ -norm of the truncated Hilbert transform. Bull. Austral. Math. Soc. **38** (1988), no. 3, 413-420. (C. Carton-Lebrun) **89m:44012** 44A15 (42A38, 47G05)
- Elliott, David L.** (with Zhang, Weijian) Stochastic time-optimal control problems. Proc. IEEE-D **135** (1988), no. 6, 395-404. (Andrei V. Panteleyev) **89k:93234** 93E20
- Elliott, G. A.** The ideal structure of the multiplier algebra of an AF algebra. C. R. Math. Rep. Acad. Sci. Canada **9** (1987), no. 5, 225-230. (A. A. Lodkin) **89a:46123** 46L05
- (with Natsume, Toshikazu) A Bott periodicity map for crossed products of  $C^*$ -algebras by discrete groups. K-Theory **1** (1987), no. 4, 423-435. (Mahmood Khoshkam) **89a:46143** 46L80 (19K99, 46L55)
- (with Natsume, Toshikazu; Nest, R.) Cyclic cohomology for one-parameter smooth crossed products. Acta Math. **160** (1988), no. 3-4, 285-305. (John Quigg) **89h:46093** 46L55 (19D55, 46L80, 58G12)
- Elliott, P. D. T. A.** A local Turán-Kubilius inequality. Acta Arith. **49** (1987), no. 2, 127-139. (Adolf Hildebrand) **89c:11124** 11K65
- The norms of compositions of arithmetic operators. Bull. London Math. Soc. **19** (1987), no. 5, 522-530. (Eugenius Manstavicius) **89c:11057** 11N64 (11K65)
- Multiplicative functions on arithmetic progressions. Mathematika **34** (1987), no. 2, 199-206. (András Sárközy) **89g:11083** 11N37
- (with Sárközy, András) The distribution of the number of prime divisors of sums  $a + b$ . J. Number Theory **29** (1988), no. 1, 94-99. (Adolf Hildebrand) **89f:11134** 11N60 (11K65, 11N37)
- Additive arithmetic functions on intervals. Math. Proc. Cambridge Philos. Soc. **103** (1988), no. 1, 163-179. (Adolf Hildebrand) **89a:11083** 11K65 (11N37)
- A localized Erdős-Wintner theorem. Pacific J. Math. **135** (1988), no. 2, 287-297. (Z. Krizhyus) **89m:11074** 11K65 (11N60)
- see also **Postnikov, A. G.** **89a:11001**
- Elliott, Robert J.** ★ Viscosity solutions and optimal control. Pitman Research Notes in Mathematics Series, 165. Longman Scientific & Technical, Harlow; John Wiley & Sons, Inc., New York, 1987. x+95 pp. ISBN 0-582-00316-4 (Stefan Mirica) **89a:49028** 49C20 (35F20, 90D25)
- (with Baras, J. S.; Kohlmann, Michael) The conditional adjoint process. Analysis and optimization of systems (Antibes, 1988), 654-662, Lecture Notes in Control and Inform. Sci., 111, Springer, Berlin-New York, 1988. (Jose Luis Menaldi) **89k:93222** 93E20 (49B60)
- An approximate minimum principle for a partially observed Markov chain. Stochastic differential systems, stochastic control theory and applications (Minneapolis, Minn., 1986), 107-117, IMA Vol. Math. Appl., 10, Springer, New York-Berlin, 1988. (Jan H. Van Schuppen) **89d:93117** 93E20 (49A29, 93B17)
- (with Al-Hussaini, Ata N.) Comments on some estimates for the empirical distribution. Rev. Roumaine Math. Pures Appl. **33** (1988), no. 8, 679-683. (Margaret P. Gessaman) **89i:62052** 62G05
- (with Kohlmann, Michael) A short proof of a martingale representation result. Statist. Probab. Lett. **6** (1988), no. 5, 327-329. (A. N. Al-Hussaini) **89a:60181** 60G60 (60H05)
- (with Antonelli, P. L.; Bradbury, R.; Buck, Rosalie Giovanna; Reichelt, R.) Nonlinear prediction of crown-of-thorns outbreaks on the Great Barrier Reef. Stochastic Anal. Appl. **6** (1988), no. 4, 349-363. (Miguel Angel Canela) **89m:92041** 92A15 (60G25)
- Ellis, A. J.** Isometries of selfadjoint complex function spaces. Math. Proc. Cambridge Philos. Soc. **105** (1989), no. 1, 133-138. (Jan Janas) **89m:46037** 46E10 (46J10, 46K10)
- Ellis, Brian** (with Bigelow, John C.; Pargetter, Robert) Forces. Philos. Sci. **55** (1988), no. 4, 619-630. (Not in MR) **89m:83001** 83-01
- Ellis, G. F. R.** (with McCarthy, Patrick J.) Arnold deformation of Petrov types. Ann. Physics **180** (1987), no. 1, 74-107. (Colin B. G. McIntosh) **89h:83012** 83C20
- (with Williams, Ruth M.; Carfora, Mauro) ★ Flat and curved space-times. The Clarendon Press, Oxford University Press, New York, 1988. x+351 pp. ISBN 0-19-851164-7; 0-19-851169-8 (C. B. Collins) **89m:83001** 83-01
- (with Stoeger, William R.) Horizons in inflationary universes. Classical Quantum Gravity **5** (1988), no. 1, 207-220. (Asghar Qadir) **89h:83043** 83F05 (83C47, 83C75)
- Does inflation necessarily imply  $\Omega = 1$ ? Classical Quantum Gravity **5** (1988), no. 6, 891-901. (C. B. Collins) **89d:83083** 83F05
- (with Tavakol, R. K.) On the question of cosmological modelling. Phys. Lett. A **130** (1988), no. 4-5, 217-224. (Summary) **89d:83085** 83F05 (85A40)
- Ellis, Graham J.** (with Brown, Ronald) Hopf formulae for the higher homology of a group. Bull. London Math. Soc. **20** (1988), no. 2, 124-128. (Stefan Jackowski) **89g:20062** 20D05 (55Q30)
- An eight term exact sequence in algebraic K-theory. Bull. London Math. Soc. **20** (1988), no. 3, 245-247. (A. J. Berrick) **89i:18006** 18F25 (19C40, 19D55)
- Homotopy classification the J. H. C. Whitehead way. Exposition. Math. **6** (1988), no. 2, 97-110. (Donald M. Davis) **89e:55017** 55P15 (55Q05)
- Multirelative algebraic K-theory: the group  $K_2(A; I_1, \dots, I_n)$  and related computations. J. Algebra **112** (1988), no. 2, 271-289. (Jan Stienstra) **89a:18016** 18F25 (19D99)
- Ellis, Jonathan Richard** Superstring phenomenology. Unification of fundamental interactions (Marstrand, 1986), 61-69, Royal Swedish Acad. Sci., Stockholm, 1987. (see **89f:81005**) **81G25** (81E30, 81G20, 83E30)
- (with Enqvist, K.; Nanopoulos, D. V.; Olive, K. A.) Can the superstring inspire the standard model? Nuclear Phys. B **297** (1988), no. 1, 103-124. (Gordon Feldman) **89f:81252** 81G20 (81E30)
- (with Jetzer, Philippe; Mizrachi, Leah) One-loop string corrections to the effective field theory. Nuclear Phys. B **303** (1988), no. 1, 1-35. (Summary) **89f:81173** 81E99 (81E30, 83E30)
- (with Enqvist, K.; Kalara, S.; Nanopoulos, D. V.; Olive, K. A.) Phenomenological studies of rank-5 Calabi-Yau models. Nuclear Phys. B **306** (1988), no. 3, 445-469. (Summary) **89f:81259** 81G25 (32C10, 53C80, 81E30, 81G05, 83E30)
- (with Antoniadis, I.; Hagelin, J. S.; Nanopoulos, D. V.) Cut model-building with fermionic four-dimensional strings. Phys. Lett. B **205** (1988), no. 4, 459-465. (Summary) **89k:81190** 81G20 (81E30)
- Ellis, Richard S.** Inequalities for multivariate compound Poisson distributions. Ann. Probab. **16** (1988), no. 2, 658-661. (Moshe Shaked) **89e:60036** 60E15 (62E10)
- (with Eisele, Th.) Multiple phase transitions in the generalized Curie-Weiss model. J. Statist. Phys. **52** (1988), no. 1-2, 161-202. (Tony C. Dorlas) **89k:82030** 82A25 (60F10, 82A68)
- Ellis, Robert L.** (with Gohberg, I.; Lay, David C.) On two theorems of M. G. Krein concerning polynomials orthogonal on the unit circle. Integral Equations Operator Theory **11** (1988), no. 1, 87-104. (J. V. Baxley) **89d:42030** 42C05 (46N05)
- Ellis, Robert Leslie** see **Krüger, Lorenz** **89f:01036**
- Ellis, Robert Mortimer** (with Nerurkar, Mahesh G.) Weakly almost periodic flows. Trans. Amer. Math. Soc. **313** (1989), no. 1, 103-119. (H. Keynes) **89i:28010** 28D15 (28D20, 54H20, 58F11, 58F27)
- Ellis, Stephen D.** (with Axenides, Minos; Kounnas, Costas) Universal behavior of  $D$ -dimensional superstring models. Phys. Rev. D (3) **37** (1988), no. 10, 2964-2976. (Summary) **89c:81101** 81E99 (81E30, 83E30)
- Ellis, Steven P.** Second-order approximation to the characteristic function of certain point-process integrals. Adv. in Appl. Probab. **19** (1987), no. 3, 546-559. (Summary) **89g:60167** 60G55 (60H05)
- Ellison, Carl M.** A solution of the Hebern messages. Cryptologia **12** (1988), no. 3, 144-158. (From the introduction) **89g:94024** 94A60
- Ellwanger, U.** Four-dimensional supersymmetric sigma models. Fortschr. Phys. **36** (1988), no. 12, 881-904. (Summary) **89k:81076** 81E13
- (with Fuchs, Jürgen) String field equations and the dual  $S$ -matrix from the exact renormalization group. Nuclear Phys. B **312** (1989), no. 1, 95-124. (Summary) **89k:81068** 81E15 (81E30, 81E40)
- (with Fuchs, Jürgen; Schmidt, Michael G.) The heterotic  $\sigma$ -model with background gauge fields. Nuclear Phys. B **314** (1989), no. 1, 175-208. (Summary) **89m:81105** 81E15 (81E13, 81E40)
- Ellyin, F.** (with Fakinlede, C. O. A.) Nonlinear dislocation model of the work-hardening crack-tip field. (French summary) Internat. J. Fracture **32** (1986), no. 1, 3-20. (G. Geymonat) **89a:73053** 73M05
- El Mabrouk, Mongi** (with Attouch, H.; Bouchitté, Guy) Formulations variationnelles pour des équations elliptiques semi-linéaires avec second membre mesure. (English summary) [Variational formulations of semilinear elliptic equations involving measures] C. R. Acad. Sci. Paris Sér. I Math. **306** (1988), no. 4, 161-164. (Summary) **89c:35055** 35J65 (35J85, 49A29)
- Elmabrouk, Badaoui** Sur l'existence de certaines configurations d'équilibre relatif dans le problème des  $n$  corps. (English summary) [On the existence of some configurations of relative equilibrium in an  $n$ -body problem] C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre **304** (1987), no. 4, 161-164. (Constantin Simirad) **89m:70018** 70F10
- Sur l'existence de certaines configurations d'équilibre relatif dans le problème des  $n$  corps. (English summary) [On the existence of certain configurations of relative equilibrium in the  $n$ -body problem] Celestial Mech. **41** (1987/88), no. 1-4, 131-151. (Yi-Sui Sun) **89j:70014** 70F10 (58F40, 70F15)
- Elmagarmid, Ahmed K.** (with Soundararajan, Neelam; Liu, Ming T.) A distributed deadlock detection and resolution algorithm and its correctness proof. IEEE Trans. Software Engrg. **14** (1988), no. 10, 1443-1452. (Not in MR) **88M10** (68Q60)
- (with Helal, Abdelsalam A.) Towards a unified model for performance evaluation of concurrency control. Inform. Sci. **47** (1989), no. 1, 77-94. (Not in MR) **68P15**
- El Makhl, Saïed Akhmed Kamil** Volumes of the orbits of the adjoint representation of compact Lie groups. (Russian) Geometry and the theory of singularities in nonlinear equations (Russian), 159-164, 185, Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh, 1987. (Summary) **89k:22023** 22E45 (53C30, 57S15)
- El Malek, Alf Abd** see **Abd el Malek, Alf**
- El-Mallah, Ehab S.** (with Colbourn, Charles J.) Edge detection problems: properties defined by weakly connected forbidden graphs. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). Congr. Numer. **61** (1988), 275-285. (Toshimasa Watanabe) **89i:05159** 05C35 (05C75, 68Q15, 68R10)
- (with Colbourn, Charles J.) The complexity of some edge deletion problems. IEEE Trans. Circuits and Systems **35** (1988), no. 3, 354-362. (Toshimasa Watanabe) **89d:68068** 68R10 (05C35, 05C75, 68Q15, 68Q25, 68Q35)



- El-Mallah, Mohamed Lamel** Absolute valued algebras with an involution. *Arch. Math. (Basel)* **51** (1988), no. 1, 39–49. (Arie H. Boers) **89i:46064** 46K05 (16A28, 16A32, 17D05)
- Elman, Richard** (with Arason, Jón Kr.; Jacob, Bill) Rigid elements, valuations, and realization of Witt rings. *J. Algebra* **110** (1987), no. 2, 449–467. (Ron Brown) **89a:11041** 11E81 (11E04)
- (with Wadsworth, Adrian R.) Hereditarily quadratically closed fields. *J. Algebra* **111** (1987), no. 2, 475–482. (From the text) **89g:12004** 12D15 (11E81)
- El Marjani, A.** (with Leboucq, F.) Boundary element method in the 3-D parabolized Navier-Stokes computation for internal flows. *Computer methods and water resources*, Vol. 5 (Rabat, 1988), 149–160, *Comput. Mech., Southampton*, 1988. (see **89g:76003d**) 76-08 (76D05)
- Elmer, F. J.** Nonlinear and nonlocal dynamics of spatially extended systems: stationary states, bifurcations and stability. *Phys. D* **30** (1988), no. 3, 321–342. (Dieter H. Mayer) **89k:35032** 35B32 (35B35, 45K05, 58F14, 76E30)
- abd El-Monsef, M. E.** see **Abd El-Monsef, M. E.**
- El-Nahhas, A.** Existence of solutions of  $n$ th order differential equation. (Arabic summary) *Bull. Fac. Sci. Assiut Univ. A* **15** (1986), no. 1, 159–166. (F. W. Stallmann) **89d:34033** 34B15
- Boundedness and continuation for  $n$ th order differential equation. *Proc. Pakistan Acad. Sci.* **24** (1987), no. 4, 319–326. (Afaf A. Saleh Zaghrout) **89g:34004** 34A15 (34C11)
- Singular perturbation for a nonautonomous  $n$ th order differential equation with retarded argument (variable retardation case). *Proc. Pakistan Acad. Sci.* **24** (1987), no. 4, 371–378. (Hussain S. Nur) **89g:34085** 34E15 (34C20, 34K15)
- Singular perturbation for a nonautonomous  $n$ th order differential equation with retarded argument (constant retardation case). *Proc. Pakistan Acad. Sci.* **25** (1988), no. 2, 143–149. (O. Diekmann) **89k:34120** 34K15 (34C25)
- Geometrical study of periodic solutions of second order differential equation. *Proc. Pakistan Acad. Sci.* **25** (1988), no. 2, 151–156. (Wei-Min Liu) **89i:34052** 34C25
- El-Namory, A. R. M.** On applying the method of iteration for solving a boundary value problem. (Arabic summary) *Delta J. Sci.* **10** (1986), no. 2, 476–487. (Summary) **89d:5072** 65L10
- On the solution of a boundary value problem with retarded argument. *J. Natur. Sci. Math.* **27** (1987), no. 2, 51–56. (M. M. Konstantinov) **89a:34075** 34K10 (34B15)
- Eloe, P. W.** (with Islam, M. N.) Periodic solutions of nonlinear integral equations with infinite memory. *Appl. Anal.* **28** (1988), no. 2, 79–93. (Zai-Feng Song) **89h:45003** 45D05 (34A10, 45J05)
- (with Saintignon, P. L.) A method of forced monotonicity for conjugate type boundary value problems for ordinary differential equations. *Canad. Math. Bull.* **31** (1988), no. 1, 79–84. (Summary) **89j:34021** 34B10 (34B27)
- Eventual disconjugacy and right disfocality of linear difference equations. *Canad. Math. Bull.* **31** (1988), no. 3, 362–373. (A. D. Mednykh) **89i:39004** 39A10
- (with Henderson, Johnny) Integral conditions for right disfocality of a linear differential equation. *J. Math. Anal. Appl.* **131** (1988), no. 2, 441–450. (Anthony Uyi Afuwape) **89k:34033** 34C10 (34A30)
- A comparison theorem for linear difference equations. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 451–457. (Jiří Nedoma) **89d:39002** 39A10
- Elomaa, Mohammed** Étude d'un problème de contrôle stochastique ergodique. (English summary) [Study of an ergodic stochastic control problem] *Cahiers Math.* **1987**, no. 2, 107–124. (Michael Kohlmann) **89m:93090** 93E20 (49C20, 90A99, 90C39)
- El-Owaidy, H.** (with Zagout, A. A.) On generalized Floquet systems. II. *Kyungpook Math. J.* **27** (1987), no. 1, 35–41. (Eckehard Wagenführer) **89k:34013** 34A30 (34B25, 34C05, 34D10)
- (with Ammar, A. A.) On predator-prey-mutualism model. *Tamkang J. Math.* **18** (1987), no. 2, 65–82. (Wei-Min Liu) **89h:92025** 92A15
- (with Ammar, A. A.) Stable oscillations in a predator-prey model with time lag. *J. Math. Anal. Appl.* **129** (1988), no. 1, 191–199. (John H. Swart) **89c:92054** 92A15 (34C05, 34C15)
- (with Ammar, A. A.; Elleithy, O. A.) Stability in mammillary compartmental systems. *Indian J. Pure Appl. Math.* **20** (1989), no. 2, 104–110. (Summary) **89k:92016** 92A09
- Elperin, T.** (with Gertsbakh, I.) Lower confidence limit for the availability of a parallel system with renewable components. *Comm. Statist. Theory Methods* **17** (1988), no. 2, 311–323. (Summary) **89e:62128** 62N05 (62F25)
- Elphick, Christian** Classes of exactly solvable nonlinear evolution equations for Grassmann variables: the normal form method. *J. Math. Phys.* **28** (1987), no. 6, 1243–1249. (Roger Picken) **89g:58089** 58F07 (34C20, 58C50, 81C05)
- (with Jeanneret, M.; Tirapegui, E.) Comment on bifurcations in fluctuating systems. *J. Statist. Phys.* **48** (1987), no. 3–4, 925–933. (V. A. Zagrebnov) **89c:58087** 58F14 (58F11)
- (with Couillet, P.; Repaux, D.) Dynamics of codimension-one defects. *Propagation in systems far from equilibrium (Les Houches, 1987)*, 185–193, *Springer Ser. Synergetics*, **41**, Springer, Berlin-New York, 1988. (Editors) **89k:58176** 58F13 (82A99)
- (with Meron, Ehud; Spiegel, E. A.) Spatiotemporal complexity in traveling patterns. *Phys. Rev. Lett.* **61** (1988), no. 5, 496–499. (Summary) **89g:58150** 58F14 (35Q20, 58F07, 58F13, 92A05, 92A09)
- Elqortobi, Abdelkader** (with Dubuc, Serge) Enveloppe convexe d'une courbe de Mandelbrot. (English summary) [The convex hull of a Mandelbrot curve] *Ann. Sci. Math. Québec* **11** (1987), no. 1, 45–64. (I. N. Baker) **89a:52003** 52A10 (39B10)
- Elrod, M.** (with Adomian, George A.; Rach, R.) The decomposition method applied to stiff systems. *Math. Comput. Simulation* **30** (1988), no. 3, 271–276. (Summary) **89c:65066** 65L05 (34A50)
- El-Sabbagh, M. F.** On the Painlevé property for the class of AKNS-Zakharov and Shabat nonlinear evolution equations. (Italian and Russian summaries) *Nuovo Cimento B* (11) **101** (1988), no. 6, 697–702. (Summary) **89k:35204** 35Q20 (58F07, 58G37)
- The Bäcklund problem and its solutions. *Proc. Pakistan Acad. Sci.* **25** (1988), no. 3, 197–201. (Summary) **89m:58210** 58G30 (35A30, 58G37)
- El-Sakary, Ahmed K.** Estimating the robust dead time for closed-loop stability. *IEEE Trans. Automat. Control* **33** (1988), no. 6, 599–601. (Not in MR) **93D15**
- New interpretation of Wiener-Hopf optimal sensitivity. *Internat. J. Control* **48** (1988), no. 1, 317–320. (Not in MR) **93B35**
- Design of  $H^\infty$ -optimal feedback controllers for model following. *Internat. J. Systems Sci.* **19** (1988), no. 5, 793–801. (Ülle Kotta) **89f:93011** 93B35 (93B50)
- El Sawi, M.** see **Fröman, Nanny** **89f:41035**
- Elsayed, A.** (with Shaked, U.; Grimbale, M. J.) Application of spectral factorization to the linear discrete-time fixed-point smoothing problem. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 333–335. (Not in MR) **93E10** (93E14)
- El-Sayed, Ahmed M.** Mixed problem of semilinear hyperbolic systems. (Arabic summary) *Bull. Fac. Sci. Assiut Univ. A* **14** (1985), no. 1, 99–104. (Manuel Milla Miranda) **89h:35086** 35L60
- Mixed problem of semilinear hyperbolic systems. *Kyungpook Math. J.* **27** (1987), no. 1, 43–46. (Alexander Doktor) **89d:35112** 35L60
- Initial value problem of a higher order parabolic equation. *Period. Math. Hungar.* **19** (1988), no. 2, 143–147. (A. Borzyskowski) **89k:35105** 35K30
- El-Sayed, E. M.** (with Fetih, N.; Abdel-Salam, M.) The use of integral cycle switching for control of three-phase induction motors. (Russian summary) *Systems Sci.* **12** (1986), no. 1–2, 123–143 (1987). (Not in MR) **93C75** (93B50)
- Elsayed, H. M.** (with Mahmoud, Magdi S.; Bilal, A. Y.; Bernussou, J.) Adaptive alternate-routing in telephone networks: optimal and equilibrium solutions. *Inform. Decision Tech.* **14** (1988), no. 1, 65–74. (Summary) **89h:90086** 90B10
- El-Sayed, Mohamed Aly** Factorization of certain quadratic operator pencils. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 3, 44–45, 110. (Heinz Langer) **89h:47024** 47A56 (47A68)
- Elischer, Johannes** On pseudodifferential operators of Mellin type. *Seminar analysis*, 1984/85 (Berlin, 1984/85), 129–146, *Akad. Wiss. DDR, Berlin*, 1985. (From the introduction) **89h:47072** 47G05 (35S05)
- On spline collocation for singular integral equations on an interval. *Seminar analysis*, 31–54, *Akad. Wiss. DDR, Berlin*, 1986. (William F. Moss) **89f:65140** 65R20
- On suboptimal convergence of finite element methods. *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 627–630, 'Angel Kanchev' Tech. Univ., Ruse, 1987. (William W. Hager) **89h:65262** 65N30 (49D15)
- On spline approximation for a class of integral equations. III. Collocation methods with piecewise linear splines. *Seminar analysis (Berlin, 1986/87)*, 25–40, *Akad. Wiss. DDR, Berlin*, 1987. (From the text) **89d:65108** 65R20
- On spline approximation for a class of integral equations. I. Galerkin and collocation methods with piecewise polynomials. *Math. Methods Appl. Sci.* **10** (1988), no. 5, 543–559. (Charles W. Groetsch) **89m:65113** 65R20 (45L05)
- abou El-Seoud, M. Samir** see **Abou El-Seoud, M. Samir**
- Elser, Veit** (with Sloane, N. J. A.) A highly symmetric four-dimensional quasicrystal. *J. Phys. A* **20** (1987), no. 18, 6161–6167. (Larry C. Grove) **89d:20042** 20H15 (11H50, 51M20, 82A60)
- Elsgolts, S. L.** (with Gutsunaev, Ts. I.; Man'ko, V. S.) New exact solutions of the static Einstein-Maxwell equations. *Classical Quantum Gravity* **6** (1989), no. 3, L41–L44. (Jorge A. Pullin) **89m:83016** 83C15
- Elshahawy, S. M.** (with Fattah, S. Abdel) On the restricted problem of three rigid bodies. *Indian J. Pure Appl. Math.* **19** (1988), no. 9, 890–895. (P. Achuthan) **89j:70013** 70F07
- El-Shafee, M. E.** (with Kandil, A.) Regularity axioms in fuzzy topological spaces and  $F_R$ -proximities. *Fuzzy Sets and Systems* **27** (1988), no. 2, 217–231. (Run Sheng Yang) **89k:54011** 54A40 (03E72)
- El-Sharkawy, Mohamed A.** (with Peikari, Behrouz) Multistage adaptive stochastic filters. *IEEE Trans. Circuits and Systems* **35** (1988), no. 8, 929–935. (Not in MR) **93E11** (93C40, 94A12)
- El-Shazly, M. S.** (with Okb El-Bab, A. S.) Characterization of convolution semigroups. *Proc. Pakistan Acad. Sci.* **24** (1987), no. 3, 249–259. (Miloslav Duchon) **89f:43007** 43A35 (43A10)
- El Shehawy, Elsayed F.** (with Zahreddine, Z.) On the stability of a system of differential equations with complex coefficients. *Indian J. Pure Appl. Math.* **19** (1988), no. 10, 963–972. (L. A. V. Carvalho) **89i:34067** 34D05 (34A30)
- (with El-Haji, Adnan Atef) A variational formalism for steady flow of dusty fluid problems. I. *Quart. Appl. Math.* **46** (1988), no. 2, 275–283. (Alexandre Fedorov) **89f:76091** 76T05
- El Sheikh, M. G.** (with Khater, A. H.; Callebaut, Dirk K.) A class of semi-analytical solutions for a rotating toroidal plasma. *Astrophys. and Space Sci.* **145** (1988), no. 2, 277–286. (R. K. Jain) **89f:76102** 76X05 (76U05)
- El Singaby, M. I.** (with Sebaky, O. A.; El Arabawy, I. F.) Shaping of the output response in a class of linear multivariable systems. *IEEE Trans. Automat. Control* **33** (1988), no. 5, 457–458. (Not in MR) **93B50** (93C05, 93C35)
- Elskens, Yves** (with Prigogine, Ilya) Irreversibility, stochasticity and nonlocality in classical dynamics. *Quantum implications*, 205–223, *Routledge & Kegan Paul, London*, 1987. (see **89m:81006**) **92A05** (58F13)
- Ergodic theory of the mixmaster universe in higher space-time dimensions. II. *J. Statist. Phys.* **48** (1987), no. 5–6, 1269–1282. (Summary) **89g:83043** 83E15 (58F11, 83F05)
- (with Frisch, Harry L.) Kinetic theory of hard spheres in infinite dimensions. *Phys. Rev. A* (3) **37** (1988), no. 11, 4351–4353. (Summary) **89d:82088** 82A50 (82A40)
- Elstner, G.** A new sequential cluster algorithm for optical lens design. *J. Optim. Theory Appl.* **59** (1988), no. 2, 165–172. (Not in MR) **90C50** (65K)
- Elstner, L.** A note on the variation of permanents. *Linear Algebra Appl.* **109** (1988), 37–39. (Peter M. Gibson) **89k:15010** 15A15 (15A45, 15A60)
- El Soufi, A.** (with Wang, Xue Ping) Some remarks on Witten's method. Poincaré-Hopf theorem and Atiyah-Bott formula. *Ann. Global Anal. Geom.* **5** (1987), no. 3, 161–178. (I. Vaisman) **89j:58125** 58G10 (57R25)
- Immersions minimales sphériques: restrictions sur la courbure et la codimension. (English summary) [Minimal spherical immersions: restrictions on the curvature and the codimension] *Théorie des variétés minimales et applications (Palaiseau, 1983–1984)*, *Astérisque* No. 154-155 (1987), 11, 255–266, 352 (1988). (see **89g:58052**) **53C42** (53C40)
- Elster, K.-H.** (with Reinhardt, Rüdiger) Über Abstiegsmethoden in Lösungsverfahren der nichtlinearen Optimierung. [On descent methods in solution procedures of nonlinear programming] *Wiss. Z. Tech. Hochsch. Ilmenau* **33** (1987), no. 6, 59–73. (Klaus Lommatzsch) **89d:90187** 90C30 (65K05)
- Elston, Robert C.** (with George, Varghese T.) Generalized modulus power transformations. *Comm. Statist. Theory Methods* **17** (1988), no. 9, 2933–2952. (Summary) **89h:62032** 62E15
- Elstodt, Jürgen** (with Grunewald, Fritz J.; Mennicke, Jens L.) Séries de Poincaré, sommes de Kloosterman et valeurs propres du laplacien pour les groupes de congruence agissant

- sur un espace hyperbolique. (French summary) [Poincaré series, Kloosterman sums and eigenvalues of the Laplacian for congruence groups acting on hyperbolic spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 13, 577–581. (Peter Sarnak) **89c:11086** 11F72 (11E57, 11L05, 11P21)
- (with Grunewald, Fritz J.; Mennicke, Jens L.) Vahlen's group of Clifford matrices and spin-groups. *Math. Z.* **196** (1987), no. 3, 369–390. (E. A. Connors) **89b:11031** 11E57 (11E88, 15A66, 20G15, 20H15)
- (with Grunewald, Fritz J.; Mennicke, Jens L.) Some remarks on discrete subgroups of  $SL_2(\mathbb{C})$ . (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **162** (1987), *Avtomorf. Funkts. i Teor. Chisel. III*, 77–106, 189. (O. V. Shvartsman) **89c:22018** 22E40 (11E32, 11E45, 11F72, 58G25)
- (with Grunewald, Fritz J.; Mennicke, Jens L.) Arithmetic applications of the hyperbolic lattice point theorem. *Proc. London Math. Soc.* (3) **57** (1988), no. 2, 239–283. (Dorothy Andreoli) **89g:11033** 11E45 (11F72)
- El Tarazi, Mouhamed Nabih** On a monotony-preserving accelerator process for the successive approximations method. *IMA J. Numer. Anal.* **6** (1986), no. 4, 439–446. (Summary) **89b:65042** 65F05 (65B99)
- (with Anwar, Mohamed Naim Yehia) Asynchronous algorithms for heat conduction in composite media. *Mathematical analysis and its applications* (Kuwait, 1985), 337–348, *KFAS Proc. Ser.*, 3, Pergamon, Oxford-Elmsford, NY, 1988. (Summary) **89c:80001** 80-08 (80A20)
- Elton, J. H.** An ergodic theorem for iterated maps. *Ergodic Theory Dynamical Systems* **7** (1987), no. 4, 481–488. (Ray C. Shifflet) **89b:60156** 60J05 (28D05, 47A35)
- (with Barnsley, M. F.; Demko, S. G.; Geronimo, J. S.) Invariant measures for Markov processes arising from iterated function systems with place-dependent probabilities. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **24** (1988), no. 3, 367–394. (Pierre Moussa) **89k:60088** 60J05 (28D05, 58F11)
- Continuity properties of optimal stopping value. *Proc. Amer. Math. Soc.* **105** (1989), no. 3, 736–746. (Adam T. Martinsek) **89g:60153** 60G40 (90C39)
- Élysheva, N. A.** Qualitative properties of the solutions of some hyperbolic systems in the plane. (Russian) *Mat. Sb. (N.S.)* **135**(177) (1988), no. 2, 186–209, 272; translated in *Math. USSR-Sb.* **63** (1989), no. 1, 181–203. (R. G. Airapetyan) **89h:35193** 35L60 (35B40, 35B65)
- Elumalai, S.** Semicontinuity properties of the strong best approximation operator. *Pure Appl. Math. Sci.* **26** (1987), no. 1-2, 103–111. (Pier Luigi Papini) **89c:41035** 41A50
- Elworthy, K. D.** Brownian motion and the ends of a manifold. *Geometry of random motion* (Ithaca, N. Y., 1987), 55–64, *Contemp. Math.*, 73, Amer. Math. Soc., Providence, RI, 1988. (Jacques Vauthier) **89i:58155** 58G32 (53C20, 58D15, 60J65)
- Brownian motion and harmonic forms. *Stochastic analysis and related topics* (Silivri, 1986), 288–304, *Lecture Notes in Math.*, 1316, Springer, Berlin-New York, 1988. (Kazuaki Taira) **89h:58180** 58G11 (58A10, 58G32, 60J65)
- (with Rosenberg, Steven) Compact manifolds with a little negative curvature. *Bull. Amer. Math. Soc. (N.S.)* **20** (1989), no. 1, 41–44. (Viktor Schroeder) **89g:53062** 53C20
- Elyakov, G. B.** (with Mazur, A. K.; Abagyan, R. A.) A new approach to modeling the structure and dynamics of biomacromolecules and their complexes. (Russian) *Dokl. Akad. Nauk SSSR* **304** (1989), no. 2, 456–460. (From the text) **89k:92090** 92A40 (92A05)
- Elyutin, P. V.** The quantum chaos problem. *Soviet Phys. Uspekhi* **31** (1988), no. 7, 597–622 (1989); translated from *Uspekhi Fiz. Nauk* **155** (1988), no. 3, 397–442 (Russian). (Summary) **89m:81065** 81C99 (58F13, 81-02)
- Elizanowski, Marek** (with Epstein, Marcello) The decay and formation of one-dimensional nonconservative shocks. *Appl. Math. Modelling* **12** (1988), no. 3, 280–284. (Summary) **89g:35066** 35L60
- El Zein, Fouad** Théorie de Hodge à coefficients: étude locale. (English summary) [Hodge theory with coefficients: a local study] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 11, 593–598. (Werner Kleiner) **89f:14006** 14C30 (14F40, 32J25)
- van den Elzen, A. H.** (with Doup, T. M.; Talman, A. J. J.) Simplicial algorithms for solving the nonlinear complementarity problem on the simpletop. *The computation and modelling of economic equilibria* (Tilburg, 1985), 125–153, *Contrib. Econom. Anal.*, 167, North-Holland, Amsterdam-New York, 1987. (Heinz Bernau) **89e:90204** 90C33 (90A14)
- Emaldi, Maurizio** Solvable groups with many maximal sensitive subgroups. (Italian. English summary) *Matematiche (Catania)* **40** (1985), no. 1-2, 3–9 (1988). (John S. Wilson) **89g:20058** 20F16
- Emam, Magdy M.** Spectral characterization of some classes of functions on abelian locally compact groups. (Arabic summary) *Proc. Math. Phys. Soc. Egypt* **59** (1985), 151–171 (1987). (S. Sankaran) **89h:43006** 43A20 (43A45)
- Emamirad, H.** Scattering theory for linearized Boltzmann equation. Survey and new results. Proceedings of the conference on mathematical methods applied to kinetic equations (Paris, 1985). *Transport Theory Statist. Phys.* **16** (1987), no. 4-6, 503–528. (Summary) **89g:82087** 82A70 (47A40, 47G05, 82A40)
- Emamy-K, M. R.** On the covering cuts of  $c^d$  ( $d \leq 5$ ). *Discrete Math.* **68** (1988), no. 2-3, 191–196. (G. Ewald) **89a:52027** 52A37 (05B40)
- Emanuel, David C.** (with Sutrick, Kenneth H.) Nonrandom shuffling strategies in blackjack. *Comm. Statist. Theory Methods* **17** (1988), no. 9, 2953–2958. (Karl Weber) **89i:60020** 60C05 (90D05)
- Emanuel, G.** (with Liu, Min-Shan) Shock wave derivatives. *Phys. Fluids* **31** (1988), no. 12, 3625–3633. (Summary) **89f:76069** 76L05 (76N15)
- Emanuilov, O. Yu.** On the uniqueness of a solution of problems of optimal control. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1989**, no. 1, 85–88. (Zbigniew Emirsajlow) **89m:49006** 49A22
- Embel, F.** (with Aichelburg, P. C.) Lightlike contractions in curved spacetime. *Gravitation and geometry*, 21–35, *Monographs Textbooks Phys. Sci.*, 4, Bibliopolis, Naples, 1987. (Niky Kamran) **89d:83045** 83C50 (83C30, 83E50)
- Free bosonic string field theory without supplementary fields. *J. Math. Phys.* **29** (1988), no. 8, 1916–1929. (Miao Li) **89j:81172** 81E99 (81E30)
- (with Aichelburg, P. C.) Supergravity solutions. I. General framework. *Phys. Rev. D* (3) **37** (1988), no. 2, 338–347. (Paul Howe) **89g:83051a** 83E50
- (with Aichelburg, P. C.) Supergravity solutions. II. The free case. *Phys. Rev. D* (3) **37** (1988), no. 4, 911–917. (Paul Howe) **89g:83051b** 83E50
- Emburek, Djilali** see Kartashev, A. P., **89i:90003**
- Embid, Pedro** The initial value problem for the nonlinear equations for zero Mach number combustion. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 110–118, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (From the introduction) **89c:80019** 80A25 (35Q99)
- Embleton, B. J. J.** (with Fisher, N. I.; Lewis, Toby) ★ Statistical analysis of spherical data. *Cambridge University Press, Cambridge-New York*, 1987. xiv+329 pp. ISBN 0-521-24273-8 (John Kent) **89b:62002** 62-02 (62H12, 62H15, 62H20)
- Emch, Gérard G.** A derivation of the Wigner-Moyal correspondence and its extension beyond flat spaces. *Quantum theory and the structures of time and space*, Vol. 5 (Tutzing, 1982), 19–33, Hanser, Munich, 1983. (see **89e:81004**) **81C25** (58F06)
- van Emde Boas, Peter** Complexity of symbolic computing. *CWI Quarterly* **1** (1988), no. 3, 3–13. (Summary) **89m:68039** 68Q15 (68Q40, 68T01)
- (with Slot, Cees) The problem of space invariance for sequential machines. *Inform. and Comput.* **77** (1988), no. 2, 93–122. (G. Wechsung) **89i:68033** 68Q05 (03D10, 03D15, 68P20, 68Q15)
- Space measures for storage modification machines. *Inform. Process. Lett.* **30** (1989), no. 2, 103–110. (M. Dal Cin) **89m:68028** 68Q05 (68Q15)
- van Emden, Maarten H.** (with Yukawa, Keitaro) Logic programming with equations. *J. Logic Programming* **4** (1987), no. 4, 265–288. (Hans-Joachim Goltz) **89d:68080** 68T25 (03B35)
- Emelichev, V. A.** (with Kravtsov, M. K.; Krachkovskii, A. P.) New results in the combinatorial theory of transportation polytopes. (Russian) *Proceedings of the All-Union seminar on discrete mathematics and its applications* (Russian) (Moscow, 1984), 16–19, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (From the text) **89e:90138** 90C08
- (with Kravtsov, M. K.) Some problems of polyhedral combinatorics in generalized transportation problems. (Russian) *Ékonom. i Mat. Metody* **24** (1988), no. 2, 319–326. (Joachim Piehler) **89f:90088** 90C08
- (with Bui Kat Tyong) A decomposition approach to the solution of quasiblock problems of discrete optimization on the basis of a method for constructing a sequence of plans. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 1, 116–118, 136. (From the text) **89c:90095** 90C30 (49D27)
- (with Perepelitsa, V. A.) Multicriteria problems on graph spanning trees. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 3, 544–547; translated in *Soviet Math. Dokl.* **37** (1988), no. 1, 114–117. (I. A. Klipker) **89f:90122** 90C27 (05C05, 90B50, 90C31)
- Emel'yanenko, I. S.** (with Pyt'eva, T. P.; Frolov, V. A.) Detectors of a boundary and a strip in problems of morphological analysis of images of mitochondria. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **29** (1988), no. 4, 33–38, 103. (Summary) **89k:92001** 92A05 (92A08, 92A09)
- Emel'yanov, A. P.** Justification of a passage to the limit in the plane theory of elasticity. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 4, 91–93, 111. (Alexander Alenitsyn) **89g:30074** 30E20 (73C03)
- Emel'yanov, K. V.** Difference schemes for singularly perturbed boundary value problems. *BAIL IV* (Novosibirsk, 1986), 51–60, *Boole Press Conf. Ser.*, 8, Boole, Dun Laoghaire, 1986. (James A. Schmitt) **89c:65112** 65N05 (65L10)
- Emel'yanov, N. R.** (with Garashchuk, M. M.) Algorithms for constructing tests. (Russian) *Metody Diskret. Analiz.* **43** (1986), 12–28, 97. (A. N. Melikhov) **89b:94037** 94C15 (94C10)
- Emel'yanov, S. V.** (with Korovin, S. K.; Nikitin, Sergei Vyacheslavovich) Controllability of nonlinear systems. Two-dimensional systems. (Russian) *Engineering cybernetics*, Vol. 21 (Russian), 3–67, 167, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform.*, Moscow, 1987. (Jerzy Klamka) **89c:93009** 93B05 (49E15, 93C10, 93C60)
- (with Korovin, S. K.; Nikitin, Sergei Vyacheslavovich) Two-dimensional bilinear systems: classification of singularities and criteria for controllability. (Russian) *Information science, control, computer technology*, No. 1 (Russian), 59–83, “Mashinostroenie”, Moscow, 1987. (V. Popescu) **89f:93006** 93B05 (49E15, 93C15)
- (with Korovin, S. K.; Mamedov, I. G.; Nikitin, Sergei Vyacheslavovich) Criterion of controllability of nonlinear dynamic systems on the plane under phase restrictions. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 4, 41–47; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 6, 108–114, 206 (Russian). (Krishnan Balachandran) **89k:49030** 49E25 (93B05)
- (with Burovov, I. A.; Levada, F. Yu.) An estimate for the norm of the control vector in binary automatic systems. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 2, 288–291; translated in *Soviet Phys. Dokl.* **33** (1988), no. 3, 162–163. (Not in MR) **93B30**
- (with Korovin, S. K.; Nikitin, Sergei Vyacheslavovich) Controllability of nonlinear systems and systems on a foliation. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 3, 573–576; translated in *Soviet Phys. Dokl.* **33** (1988), no. 3, 167–169. (Jerzy Klamka) **89g:93003** 93B05 (49E15, 57R27, 58F40, 93C10, 93C15)
- (with Burovov, I. A.; Kirilychev, V. N.) Controllability of linear dynamical systems. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 4, 832–835; translated in *Soviet Phys. Dokl.* **33** (1988), no. 4, 245–246. (Jerzy Klamka) **89j:93005** 93B05 (49E15, 93C05, 93C60)
- (with Korovin, S. K.; Nikitin, Sergei Vyacheslavovich) Investigation of controllability by methods of the theory of approximation groups and systems on a foliation. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 4, 821–823; translated in *Soviet Phys. Dokl.* **33** (1988), no. 6, 400–401. (Jerzy Klamka) **89k:93009** 93B05 (49E10, 49E15, 58F40)
- Emel'yanov, V. F.** (with Yastrebo, B. S.; Cherkasov, I. D.) Series of operators and modeling of random variables. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Sarator, 1984), 146–149, *Sarator. Gos. Univ., Sarator*, 1986. (see **89j:60036**) **47A60** (60E99)
- Emel'yanov, V. I.** see Horsthemke, Werner, **89d:82002**
- Emerson, E. Allen** (with Lei, Chin-Laung) Modalities for model checking: branching time logic strikes back. *Sci. Comput. Programming* **8** (1987), no. 3, 275–306. (Summary) **89h:68106** 68Q60 (03B45, 03B70, 68Q55, 68Q70)
- Emery, Michel** (with Bakry, Dominique) Propaganda for  $\Gamma_2$ . *From local times to global geometry, control and physics* (Coventry, 1984/85), 39–46, *Pitman Res. Notes Math. Ser.*, 150, Longman Sci. Tech., Harlow, 1986. (Heinz Langer) **89b:60182** 60J60 (47D05, 58D15, 58G32, 60J35)
- (with Yukich, J. E.) A simple proof of the logarithmic Sobolev inequality on the circle. *Séminaire de Probabilités, XXI*, 173–175, *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (J. L. Brenner) **89f:26020** 26D10 (60J35, 60J65)



- Le scrutin proportionnel: plus fort reste ou plus forte moyenne? [Proportional polling: strongest remainder or strongest mean?] *Gaz. Math. No. 33* (1987), 87–96. (Maurice Salles) **89c:90019** 90A08
- Eminyan, O. M.** Boundary uniqueness theorems for analytic functions of several complex variables. (Russian) *Dokl. Akad. Nauk SSSR* **294** (1987), no. 4, 799–802. (Harold P. Boas) **89b:32011** 32A40 (30D40, 32A30)
- Emirsajlow, Zbigislaw** Integral Riccati equations for a feedback solution of LQCP with a terminal inequality constraint. *Systems analysis and simulation 1988, I* (Berlin, 1988), 243–246, *Math. Res.*, 46, Akademie-Verlag, Berlin, 1988. (see **89g:00018**) 49D40 (45A05, 93B50)
- Emmanuele, Giovanni** On weak compactness in Banach spaces of  $E$ -valued measures and  $E$ -valued Bochner integrable functions, when  $E$  has an unconditional Schauder decomposition. *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 7, 603–609. (Barry Turetti) **89k:46039** 46E27 (46E40, 46G10)
- On the Dieudonné property. *Comment. Math. Prace Mat.* **27** (1988), no. 2, 253–256. (Pilar Cembranos) **89k:46024** 46B20 (47B05)
- On complemented copies of  $c_0$  in  $L_p^E$ ,  $1 \leq p < \infty$ . *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 785–786. (Wolfgang Lusky) **89c:46038** 46E20 (46B20)
- Emmer, M.** Movies on M. C. Escher and their mathematical appeal. *M. C. Escher: art and science* (Rome, 1985), 249–262, North-Holland, Amsterdam-New York, 1986. (see **89m:00011**) 00A05
- see also **ECM/87**. Educational computing in mathematics, **89f:00024**; Escher, **89k:52002**; Escher: art and science, **89m:00011** and Penrose, Roger, **89m:00011**
- Emmerling, F. A.** (with Axelrad, E. L.) Vector and tensor form of intrinsic shell-theory relations. *Internat. J. Non-Linear Mech.* **23** (1988), no. 1, 9–23. (Summary) **89a:73052** 73L05
- Emons, Winand** Warranties, moral hazard, and the lemons problem. *J. Econom. Theory* **46** (1988), no. 1, 16–33. (Summary) **89g:90039** 90A10 (90A09)
- Emre, E.** On globally stable adaptive stabilization/pole placement. *Modelling, identification and robust control* (Stockholm, 1985), 15–27, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:93045** 93B55 (93C35, 93C40, 93D99)
- (with Seo, Jin H.) Realization theoretic solution of two analytic matrix equations with application to stabilization of infinite-dimensional systems. *Internat. J. Control* **48** (1988), no. 5, 2011–2032. (Summary) **89k:93034** 93B15 (15A24, 93B28, 93C25, 93D15)
- Ensaïem, Michel** Sur les idéaux dont l'image par l'application d'Artin dans une  $Z_p$ -extension est triviale. [On ideals with trivial image under the Artin mapping in a  $Z_p$ -extension] *J. Reine Angew. Math.* **382** (1987), 181–198. (Yüji Kida) **89b:11086** 11R23
- Emura, Eriko** (with Morita, Kenichi; Nishihara, Noritaka) An efficient reasoning method for syllogism and its application to knowledge processing. *Systems Comput. Japan* **19** (1988), no. 3, 20–31. (Summary) **89i:03022** 03B35 (68T20)
- Enăchescu, Denis M.** Monte Carlo techniques in finite element method for elliptic equations. *An. Univ. Craiova Mat. Fiz.-Chim.* **14** (1986), 50–56. (Jacques Couot) **89i:65115** 65N30 (65C05)
- Enayat, Ali** Undefined classes and definable elements in models of set theory and arithmetic. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1216–1220. (Milan Grulović) **89j:03031** 03C62 (03C25, 03C40)
- Encasoa, David** (with Moreaux, Michel) Concurrence et monopole naturel: une approche par la théorie des jeux. (English summary) [Competition and natural monopoly: a game-theoretical approach] *Ann. Econom. Statist.* **1987**, no. 8, 89–116. (Summary) **89c:90028** 90A14
- Encher, Ognian** Hilbert-space-valued quasimartingales. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **2** (1988), no. 1, 19–39. (Bernard Bru) **89b:60124** 60G48 (60B11)
- Encheva, T. I.** (with Levin, A. Yu.) Localization of zeros of quasipolynomials that arise in a linear time-optimal control problem. (Russian) *C. R. Acad. Bulgare Sci.* **41** (1988), no. 2, 51–54. (Stanislav Walczak) **89j:49019** 49B36 (93B50, 93C05)
- Ėnder, A. Ya.** (with Kolyskhin, I. N.; Ėnder, I. A.) Numerical solution of isotropic relaxation problems by the Maxwellian expansion method. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 6, 901–916, 959. (Nina B. Maslova) **89m:82035** 82A40 (65R20)
- Ėnder, I. A.** (with Kolyskhin, I. N.; Ėnder, A. Ya.) Numerical solution of isotropic relaxation problems by the Maxwellian expansion method. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 6, 901–916, 959. (Nina B. Maslova) **89m:82035** 82A40 (65R20)
- Enders, P.** A class of solutions of nonlinear evolution equations with diffusion. (German summary) *Ann. Physik* (7) **44** (1987), no. 7, 514–518. (Summary) **89m:35104** 35K55 (82A45, 82A70)
- Endler, Otto** ★ Teoria dos números algébricos. (Portuguese) [Algebraic number theory] Projeto Euclides [Euclid Project], 15. Instituto de Matemática Pura e Aplicada, Rio de Janeiro; Conselho Nacional de Desenvolvimento Científico e Tecnológico, Brasília, 1986. ix+200 pp. ISBN 85-244-0026-9 (F. Diaz y Diaz) **89g:11002** 11-01 (11R04)
- Endo, Hiroshi** Almost cosymplectic manifolds with vanishing contact Bochner curvature tensor. *Tensor (N.S.)* **44** (1987), no. 3, 271–273. (José A. Oubiña) **89j:53034** 53C15 (53C25)
- Endo, K.** (with Zhong, Yi Sheng; Takeuchi, Tomoyoshi) Decoupling control for multivariable systems with amplitude limitation on the inputs. *Control Theory Adv. Tech.* **3** (1987), no. 2, 163–174. (Not in MR) 49D27 (93B50, 93C35)
- Endo, Ryusuke** (with Takao, Masaru) Chiral anomalies of antisymmetric tensor gauge fields in higher dimensions. *Progr. Theoret. Phys.* **78** (1987), no. 2, 440–452. (Yisong Yang) **89a:81089** 81E20 (83C47)
- Gravitational anomalies: antisymmetric tensor gauge field versus bispinor field. *Phys. Lett. B* **202** (1988), no. 1, 105–109. (Thomas Schücker) **89b:81154** 81E20 (81D27, 83C60)
- Gravitational anomaly and path integral Jacobian of antisymmetric tensor gauge field. *Progr. Theoret. Phys.* **80** (1988), no. 2, 311–329. (Summary) **89i:81090** 81E20 (83C47)
- Endo, Shuji** (with Kinouchi, Yohsuke; Ushita, Tomiyuki) A neural network model composed of multioscillators to generate low-frequency biological rhythms. *Systems Comput. Japan* **19** (1988), no. 8, 97–106. (Not in MR) 92A09
- Endo, Tetsuro** (with Chua, Leon O.) Chaos from phase-locked loops. *IEEE Trans. Circuits and Systems* **35** (1988), no. 8, 987–1003. (Summary) **89d:58081** 58F13 (94A14, 94C05)
- (with Chua, Leon O.) Multimode oscillator analysis via integral manifolds. I. Nonresonant case. *Internat. J. Circuit Theory Appl.* **16** (1988), no. 1, 25–58. (François Aribaud) **89b:34085a** 34C15 (34C29, 34C45, 58F40, 94C05)
- (with Chua, Leon O.) Multimode oscillator analysis via integral manifolds. II. Resonant case. *Internat. J. Circuit Theory Appl.* **16** (1988), no. 1, 59–92. (François Aribaud) **89b:34085b** 34C15 (34C29, 34C45, 58F40, 94C05)
- Enders, Norbert** Idempotente Quasigruppen und Gruppoide. [Idempotent quasi-groups and groupoids] *Contributions to general algebra*, 5 (Salzburg, 1986), 123–128, Holder-Pichler-Tempsky, Vienna, 1987. (Péter T. Nagy) **89c:20102** 20N05 (20K01)
- Endrikat, C.** (with Hartmann, I.) Optimal design of discrete-time MIMO systems in the frequency domain. *Internat. J. Control* **48** (1988), no. 4, 1569–1582. (Not in MR) 93B50 (93C55)
- Eneva, Gergana** Pencils of circles in the inversive non-Miquelian planes  $S(q)$ . (Bulgarian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Méc.* **76** (1982), no. 1, 51–59 (1987). (Elena Brožiková) **89b:51020** 51E25 (51B05)
- Engdahl, Erik** (with Brändas, Erkki) Resonance regions determined by a projection-operator formulation. *Phys. Rev. A* (3) **37** (1988), no. 11, 4145–4152. (W. O. Amrein) **89b:81254** 81F99
- Engel, Alejandro B.** Mathematical models in biology: an essay on description and language. (Spanish. English and Portuguese summaries) *Bol. Soc. Paran. Mat.* (2) **8** (1987), no. 2, 169–195. (Summary) **89c:92055** 92A15
- Engel, Andreas** (with Grossmann, S.; Mikhailov, A. S.) Decay and diffusion in hierarchically organized systems. *Z. Phys. B* **70** (1988), no. 1, 101–114. (B. Derrida) **89d:82158** 82A99
- Engel, Ernst** see **Hacking, Ian**, **89a:01033**
- Engel, Jan** Rank tests and random blocking of classified data. *Statist. Neerlandica* **42** (1988), no. 1, 17–27. (S. Rao Jammalamadaka) **89j:62063** 62G10 (62K10)
- Engel, Jonathan** Teaching feed-forward neural networks by simulated annealing. *Complex Systems* **2** (1988), no. 6, 641–648. (Summary) **89m:92015** 92A09 (90C27)
- Engel, Konrad** (with Gronau, H.-D. O. F.) ★ Sperner theory in partially ordered sets. With German, French and Russian summaries. *Teubner-Texte zur Mathematik* [Teubner Texts in Mathematics], 78. BSB B. G. Teubner Verlagsgesellschaft, Leipzig, 1985. 232 pp. (J. R. Griggs) **89b:06001** 06A10 (05A05, 06-02)
- Über die Varianz von endlichen partiellen Ordnungen. [On the variance of finite partial orders] *Mitt. Math. Ges. DDR* **1** (1987), 22–31. (Margret H. Hofl) **89a:06004** 06A10
- Engel, Peter** On monohedral space tilings in M. C. Escher's work. *M. C. Escher: art and science* (Rome, 1985), 47–51, North-Holland, Amsterdam-New York, 1986. (see **89m:00011**) 51M20 (01A70, 82A60)
- Engelbert, H. J.** (with Schmidt, Wolfgang Michael) On the behaviour of certain Bessel functionals. An application to a class of stochastic differential equations. *Math. Nachr.* **131** (1987), 219–234. (L. C. G. Rogers) **89b:60184** 60J60 (60H10)
- see also **Shiryayev, A. N.**, **89i:60003**
- Engelbrecht, Jüri** (with Tobias, T.; Uus, Anu) Qualitative investigation of the Liénard model equation for describing the aperiodic profile of a solitary wave. (Russian. English and Estonian summaries) *Eesti NSV Tead. Akad. Toimetised Füüs.-Mat.* **36** (1987), no. 3, 261–268, 350. (Summary) **89c:92014** 92A09 (34C05, 58F21)
- On the finite velocity of wave motion modelled by nonlinear evolution equations. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 115–127, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 35L60 (73U05)
- Engelbrecht-Wiggans, Richard** Revenue equivalence in multiobject auctions. *Econom. Lett.* **26** (1988), no. 1, 15–19. (Summary) **89d:90045** 90A14 (90A12, 90D10)
- Engelbrecht, Yü.** see **Engelbrecht, Jüri**
- Engeler, Erwin** Cumulative logic programs and modelling. *Logic colloquium '86* (Hull, 1986), 83–93, *Stud. Logic Found. Math.*, 124, North-Holland, Amsterdam-New York, 1988. (Summary) **89g:03016** 03B40 (03B70, 03C05, 68N05, 68Q55)
- Representation of varieties in combinatorial algebras. *Algebra Universalis* **25** (1988), no. 1, 85–95. (J. P. Seldin) **89f:08014** 08B99 (03B40)
- Engelfriet, Joost** (with Aalbersberg, Usbrand Jan; Rozenberg, Grzegorz) Restricting the complexity of regular DNL languages. *Graph grammars and their application to computer science* (Warrenton, VA, 1986), 147–166, *Lecture Notes in Comput. Sci.*, 291, Springer, Berlin-New York, 1987. (see **89g:68009**) 68Q45 (05C20, 68Q15, 68Q50)
- (with Leih, George; Rozenberg, Grzegorz) Apex graph grammars. *Graph grammars and their application to computer science* (Warrenton, VA, 1986), 167–185, *Lecture Notes in Comput. Sci.*, 291, Springer, Berlin-New York, 1987. (see **89g:68009**) 68Q50
- (with Vogler, Heiko) Look-ahead on pushdowns. *Inform. and Comput.* **73** (1987), no. 3, 245–279. (Ranjana Chaudhuri) **89g:68037** 68Q45 (68Q50)
- (with Vogler, Heiko) High level tree transducers and iterated pushdown tree transducers. *Acta Inform.* **26** (1988), no. 1–2, 131–192. (Karel Culik II) **89j:68089** 68Q50 (68Q05)
- (with Hoogetboom, H. J.) Prefix and equality languages of rational functions are co-context-free. *Inform. Process. Lett.* **28** (1988), no. 2, 77–79. (Maxime Crochemore) **89b:68082** 68Q45
- (with Leih, George) Nonterminal bounded NLC graph grammars. *Theoret. Comput. Sci.* **59** (1988), no. 3, 309–315. (D. M. Campbell) **89j:68090** 68Q50
- Engelhardt, Max** (with Shue, Wei Kei; Bain, Lee J.) Test of equal gamma-distribution means with unknown and unequal shape parameters. *Technometrics* **30** (1988), no. 2, 169–174. (Summary) **89c:62047** 62F03 (62F25)
- Engelis, G.** A family of polynomials of two arguments. (Russian) *Topological structures and their mappings* (Russian), 187–192, ix, *Lav. Gos. Univ., Riga*, 1987. (Summary) **89d:33016** 33A65 (35C05)
- Engell, Sebastian** (with Konik, Dieter) Decoupling techniques for decentralized control systems design. *Frequency domain and state space methods for linear systems* (Stockholm, 1985), 461–476, North-Holland, Amsterdam-New York, 1986. (Fu En Zhang) **89c:93088** 93B50 (93A15)
- Engelmann, B.** (with Tatjewski, P.) Large-scale system optimization using the augmented interaction balance method. *Systems Sci.* **12** (1986), no. 3, 43–52 (1987). (Not in MR) 93A15
- Engels, Friedrich** see **Anellis, Irving H.**, **89c:00016**
- Engels, Wolfgang** (with Stark, E. L.; Vogt, L.) On the application of an optimal spline sampling theorem. (French and German summaries) *Signal Process.* **14** (1988), no. 3, 225–236. (Not in MR) 94A12
- Engel'son, E.** Topological structures and their mappings. **89b:00019**

- Engersbach, N. Great circle stereographic trajectory representation. *Comput. Math. Appl.* 15 (1988), no. 12, 1019-1028. (Summary) **89c:86008** 86A30 (86-08)
- Engl, Heinz. (with Jagard, Dwight L.; Sun, Xiaoguang) Canonical sources and duality in chiral media. *IEEE Trans. Antennas and Propagation* 36 (1988), no. 7, 1007-1013. (Y. Hayashi) **89j:78005** 78A25 (78A40)
- Engl, P. (with Tarina, M.) Generalized recurrent Riemannian spaces. *Seminar on geometry (Cluj-Napoca, 1986)*, 77-114, Preprint, 86-10, Univ. "Babeş-Bolyai", Cluj-Napoca, 1986. (D. K. Datta) **89g:53024** 53B20 (53B05)
- (with Tarina, M.) Connections and external form classes on almost-product manifolds. *Seminar on geometry (Cluj-Napoca, 1986)*, 115-126, Preprint, 86-10, Univ. "Babeş-Bolyai", Cluj-Napoca, 1986. (J. P. Srivastava) **89k:53031** 53C05 (53C15)
- (with Moţ, G.) Sur la récurrence des torsions d'une connexion de Finsler. [The recurrence of torsions of a Finsler connection] *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces (Braşov, 1986)*, 137-144, Soc. Ştiinţe Mat. R.S. România, Bucharest, 1986. (L. Tamásy) **89d:53050** 53B40
- (with Moţ, G.) Particular semi-symmetric connections. *Proceedings of the National Conference on Geometry and Topology (Romanian) (Tirgoviste, 1986)*, 77-80, Univ. Bucureşti, Bucharest, 1988. (Andrzej Bucki) **89k:53022** 53B05 (53B15)
- Engl, N. B. (with Muradyan, M. G.) Some inverse problems in transport theory. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* 86 (1988), no. 3, 122-126. (V. Protopopescu) **89h:82058** 82A70 (85A25)
- (with Vardanyan, R. S.) Radiative transfer in a stochastic medium. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Fiz.* 23 (1988), no. 1, 9-16. (Summary) **89d:85007** 85A25 (82A70)
- Engineer, M. H. (with Ghosh, Gautam) Berry's phase as the asymptotic limit of an exact evolution: an example. *J. Phys. A* 21 (1988), no. 2, L95-L98. (Summary) **89c:81051** 81C99
- Parameter space analogue of the Aharonov-Bohm effect. *J. Phys. A* 21 (1988), no. 3, 669-677. (Summary) **89c:81052** 81C99 (81B99)
- Engl, Heinz W. (with Langthaler, Thomas; Manselli, Paolo) On an inverse problem for a nonlinear heat equation connected with continuous casting of steel. *Optimal control of partial differential equations, II (Oberwolfach, 1986)*, 67-89, Internat. Schriftenreihe Numer. Math., 78, Birkhäuser, Basel-Boston, MA, 1987. (Summary) **89g:35114** 35R30 (80A20)
- (with Neubauer, Andreas) A parameter choice strategy for (iterated) Tikhonov regularization of ill-posed problems leading to superconvergence with optimal rates. *Appl. Anal.* 27 (1988), no. 1-3, 5-18. (Anton Sudadok) **89b:65135** 65J10 (45L10, 47A50)
- (with Gfrerer, H.) A posteriori parameter choice for general regularization methods for solving linear ill-posed problems. *Appl. Numer. Math.* 4 (1988), no. 5, 395-417. (M. Z. Nashed) **89i:65060** 65J10 (47A50)
- (with Groetsch, C. W.) A higher order approximation technique for restricted linear least-squares problems. *Bull. Austral. Math. Soc.* 37 (1988), no. 1, 121-130. (J. Daneš) **89g:65074** 65J10 (45L10, 65R20)
- (with Neubauer, Andreas) Convergence rates for Tikhonov regularization in finite-dimensional subspaces of Hilbert scales. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 587-592. (M. Z. Nashed) **89c:65067** 65J10 (47A50)
- England, James W. (with Martin, Nathaniel F. G.) ★ Математическая теория энтропии. (Russian) [Mathematical theory of entropy] Translated from the English by V. A. Kaimanovich. Translation edited and with a foreword by A. M. Vershik. "Mir", Moscow, 1988. 352 pp. ISBN 5-03-000005-4 (Editors) **89m:28032** 28D20 (28-02, 94A17)
- England, Roland (with Ize, Jorge; Sabina, Federico J.) Diffraction of waves by inhomogeneous obstacles. *Ann. Mat. Pura Appl.* (4) 146 (1987), 31-63. (Rolf Leis) **89g:35027** 35J05 (73D25, 86A15)
- (with Mattheij, R. M. M.) Boundary value problems and dichotomic stability. *SIAM J. Numer. Anal.* 25 (1988), no. 5, 1037-1054. (W. H. Enright) **89k:65095** 65L10 (65L20)
- Engle, Steven W. (with Donaldson, Thomas; Doty, Karl; Larson, Robert E.; O'Reilly, John G.; Tandjung, Susanto) Innovative architectures for dense multi-microprocessor computers. *Comput. & Structures* 30 (1988), no. 1-2, 347-355. (Not in MR) **68M99** (68N99)
- Englebreten, George. Subjects. (French summary) *Studia Leibniana* 19 (1987), no. 1, 85-90. (Not in MR) **03A05**
- Preliminary notes on a new modal syllogistic. *Notre Dame J. Formal Logic* 29 (1988), no. 3, 381-395. (Ignacio Angelelli) **89i:03032** 03B45 (03A05, 03B65)
- Englefield, M. J. Superalgebras and the supersymmetric harmonic oscillator. *J. Phys. A* 21 (1988), no. 6, 1309-1319. (Andrzej K. Kwaśniewski) **89k:81063** 81D99 (17A70)
- Engler, Hans. Asymptotic properties of solutions of nonlinear Volterra integro-differential equations. *Resultate Math.* 13 (1988), no. 1-2, 65-80. (P. Talpalaru) **89d:45010** 45J05 (45D05)
- Englert, Berthold-Georg (with Schwinger, Julian; Scully, Marian O.) Is spin coherence like Humpty-Dumpty? I. Simplified treatment. *Found. Phys.* 18 (1988), no. 10, 1045-1056. (Not in MR) **81B05**
- Englert, F. Hidden superstrings. *Progr. Theoret. Phys. Suppl.* No. 86 (1986), 171-179. (Summary) **89h:81182** 81E99 (81E30)
- (with Sevrin, A.; Troost, W.; Van Proeyen, A.; Spindel, Ph.) Loop algebras and superalgebras based on  $S^7$ . *J. Math. Phys.* 29 (1988), no. 2, 281-286. (Vladimir K. Dobrev) **89i:17016** 17B65 (17A35, 17A70, 20N07, 58D15)
- Engliš, Miroslav. A note on Toeplitz operators on Bergman spaces. *Comment. Math. Univ. Carolin.* 29 (1988), no. 2, 217-219. (Carl C. Cowen) **89i:47044** 47B35
- Englisch, H. (with Šeba, P.) The stability of the Dirichlet and Neumann boundary conditions. *Rep. Math. Phys.* 23 (1986), no. 3, 341-348. (Helge Holden) **89f:81040** 81C10 (34B25, 35J10, 47E05, 47F05, 81C15)
- (with Schröder, Manfred; Šeba, P.) The free Laplacian with attractive boundary conditions. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* 46 (1987), no. 4, 373-382. (Helge Holden) **89f:81039** 81C10 (35J10, 47F05)
- (with Schröder, Manfred) Schrödinger operators with random boundary conditions. *Localization in disordered systems (Bad Schandau, 1986)*, 223-230, Teubner-Texte Phys., 16, Teubner, Leipzig, 1988. (See **89f:82003**) **35R60** (47F05, 81C10)
- (with Voight, Heinz) The inpolygon with minimal area and the circumpolygon with maximal perimeter. *Optimization* 19 (1988), no. 2, 229-233. (Constantin Zălinescu) **89f:52026** 52A40 (52A10, 90C39)
- Engquist, Björn (with Halpern, Laurence) Far field boundary conditions for computation over long time. *Appl. Numer. Math.* 4 (1988), no. 1, 21-45. (David C. Arney) **89c:65109** 65M99 (65N99)
- (with Brenan, Kathryn E.) Backward differentiation approximations of nonlinear differential/algebraic systems. *Math. Comp.* 51 (1988), no. 184, 659-676, S7-S16. (Summary) **89a:65102** 65L05
- (with Bamberger, A.; Halpern, Laurence; Joly, Patrick) Parabolic wave equation approximations in heterogeneous media. *SIAM J. Appl. Math.* 48 (1988), no. 1, 99-128. (Rishi Ram Sharma) **89h:35225** 35L99 (65P05, 73D99, 76Q05, 86A05, 86A15)
- (with Bamberger, A.; Halpern, Laurence; Joly, Patrick) Higher order paraxial wave equation approximations in heterogeneous media. *SIAM J. Appl. Math.* 48 (1988), no. 1, 129-154. (Rishi Ram Sharma) **89h:35226** 35L99 (65P05, 73D99, 76Q05, 86A05, 86A15)
- Engquist, M. (with Chang, M. D.; Finkel, Rafael A.; Meyer, R. R.) A parallel algorithm for generalized networks. *Ann. Oper. Res.* 14 (1988), no. 1-4, 125-145. (Summary) **89g:90225** 90C35 (68M10, 90B10)
- Engwerda, Jacob Christiaan ★ Regulation of linear discrete time-varying systems. Dissertation, Technische Universiteit Eindhoven, Eindhoven, 1988. Technische Universiteit Eindhoven, Eindhoven, 1988. viii+153 pp. (Takashi Yahagi) **89g:93061** 93C55 (90A16, 93B25, 93C05, 93D15)
- Enikseev, I. Kh. (with Kuznetsova, O. F.; Polyanskiĭ, V. A.; Shurgalskiĭ, È. F.) Mathematical modeling of two-phase swirling flows by the modified method of coarse particles. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 1, 90-100, 157; translated in *U.S.S.R. Comput. Math. and Math. Phys.* 28 (1988), no. 1, 58-65. (Summary) **89c:76104** 76T05 (65M99, 76-08)
- Enin, S. V. (with Shestakov, E. A.) On the decomposition of an automaton in a multistep network. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 2, 27-32, 133; translated in *Cybernetics* 24 (1988), no. 2, 170-178. (Anna Bagynszkiné-Orosz) **89h:68107** 68Q70
- Enis, P. (with Bar-Lev, S. K.) Reproducibility in the one-parameter exponential family. *Metrika* 32 (1985), no. 6, 391-394. (Syed N. U. A. Kirmani) **89c:62029** 62E10
- Ennis, Daniel M. (with Palen, Joseph J.; Mullen, Kenneth) A multidimensional stochastic theory of similarity. *J. Math. Psych.* 32 (1988), no. 4, 449-465. (Tenko Raykov) **89i:92081** 92A25
- Ennola, Veikko On a conjecture of H. J. Godwin on cubic units. *Ann. Acad. Sci. Fenn. Ser. A I Math.* 12 (1987), no. 2, 319-328. (Franz Halter-Koch) **89i:11114** 11R16 (11R27, 11Y40)
- Enns, E. G. (with Ferenstein, E. Z.) On a multiperson time-sequential game with priorities. *Sequential Analysis* 6 (1987), no. 3, 239-256. (Minoru Sakaguchi) **89b:90244** 90D20 (62L15, 90C39)
- (with Ferenstein, E. Z.) Optimal sequential selection from a known distribution with holding costs. *J. Amer. Statist. Assoc.* 83 (1988), no. 402, 382-386. (Joseph D. Petruccielli) **89m:62096** 62L15 (60G40)
- (with Ehlers, P. F.) Chords through a convex body generated from within an embedded body. *J. Appl. Probab.* 25 (1988), no. 4, 700-707. (L. A. Santaló) **89j:60023** 60D05 (52A22)
- Enns, Richard H. (with McAvity, David M.; Rangnekar, Sada S.) Bistable solitons: optical switching and large amplification behaviour. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 112-117. (See **89d:00007**) **78A60** (35Q20)
- Ennyu, Daiji (with Nakazawa, Naohito) Background field method for nonlinear  $\sigma$ -model in stochastic quantization. *Nuclear Phys. B* 305 (1988), no. 3, F523, 516-542. (Summary) **89k:81108** 81E20 (81C20)
- Enochs, Edgar E. (with Jenda, Overtoun M. G.) Homological properties of pure injective resolutions. *Comm. Algebra* 16 (1988), no. 10, 2069-2082. (T. W. Hungerford) **89i:13017** 13D05 (13C15)
- Remarks on commutative Noetherian rings whose flat modules have flat injective envelopes. *Portugal. Math.* 45 (1988), no. 2, 151-156. (Liam O'Carroll) **89h:13017** 13C11 (13H10)
- Covers by flat modules and submodules of flat modules. *J. Pure Appl. Algebra* 57 (1989), no. 1, 33-38. (Iuliu Crivei) **89m:16038** 16A50 (16A33)
- Enofskii, V. Z. (with Belokolos, E. D.) On the expression of the parameters of the solutions of algebraically integrable nonlinear equations in terms of the theta-constant. (Russian) *Funktsional. Anal. i Prilozhen.* 21 (1987), no. 1, 70-71. (Alexander A. Pankov) **89b:58086** 58F07 (14K25)
- Enomoto, Hioko (with Egawa, Y.; Saito, Akira) On component factors. *Graphs Combin.* 2 (1986), no. 3, 223-225. (Michael S. Martin) **89g:05084** 05C70
- (with Yamada, Hiromichi) The characters of  $G_2(2^a)$ . *Japan. J. Math. (N.S.)* 12 (1986), no. 2, 325-377. (B. Chang) **89d:20006** 20C15
- (with Frankl, Peter; Ito, Noboru; Nomura, Kazumasa) Codes with given distances. *Graphs Combin.* 3 (1987), no. 1, 25-38. (Vera Pless) **89a:94015** 94B05 (05C15)
- (with Egawa, Y.; Saito, Akira) Factors and induced subgraphs. *Discrete Math.* 68 (1988), no. 2-3, 179-189. (J. Sheehan) **89b:05130** 05C70
- (with Miyamoto, Takashi; Ushio, Kazuhiko)  $C_4$ -factorization of complete bipartite graphs. *Graphs Combin.* 4 (1988), no. 2, 111-113. (D. Sotteau) **89d:05141** 05C70 (05C38)
- (with Ota, Katsuhiko; Kano, Mikio) A sufficient condition for a bipartite graph to have a  $k$ -factor. *J. Graph Theory* 12 (1988), no. 1, 141-151. (H. Joseph Straight) **89b:05131** 05C70
- see also *Proceedings: Conference on Graph Theory and Applications*, **89j:05007a** and **89j:05007b**
- Enomoto, Kazuyuki Global properties of the Gauss image of flat surfaces in  $\mathbb{R}^4$ . *Kodai Math. J.* 10 (1987), no. 3, 272-284. (Carol Blomstrom) **89d:53106** 53C42
- Enomoto, Masatoshi Some aspects of free products of operator algebras. *Bull. Koshien Univ. B No. 14* (1986), 15-22. (Mahmood Khoshkam) **89d:46059** 46L05
- (with Watatani, Yasuo) Reduced group  $C^*$ -algebras with the metric approximation property by positive maps. *Proc. Japan Acad. Ser. A Math. Sci.* 63 (1987), no. 8, 304-306. (Geoffrey Price) **89f:46114** 46L05 (22D25)
- (with Watatani, Yasuo) Powers' binary shifts on the hyperfinite factor of type II<sub>1</sub>. *Proc. Amer. Math. Soc.* 105 (1989), no. 2, 371-374. (Geoffrey Price) **89h:46087** 46L10 (46L35, 46L55)



- Enqvist, K. (with Ellis, Jonathan Richard; Nanopoulos, D. V.; Olive, K. A.) Can the superstring inspire the standard model? *Nuclear Phys. B* 297 (1988), no. 1, 103-124. (Gordon Feldman) **89f:81252** 81G20 (81E30)
- (with Ellis, Jonathan Richard; Kalara, S.; Nanopoulos, D. V.; Olive, K. A.) Phenomenological studies of rank-5 Calabi-Yau models. *Nuclear Phys. B* 306 (1988), no. 3, 445-469. (Summary) **89f:81259** 81G25 (32C10, 53C80, 81E30, 81G05, 83E30)
- Earlright, Thomas J. Analogues of Kostant's u-cohomology formulas for unitary highest weight modules. *J. Reine Angew. Math.* 392 (1988), 27-36. (Brad Shelton) **89m:22022** 22E47 (17B10)
- (with Shelton, Brad) Highest weight modules for Hermitian symmetric pairs of exceptional type. *Proc. Amer. Math. Soc.* 106 (1989), no. 3, 807-819. (Brian Boe) **89m:17010** 17D10 (22E46, 22E47)
- Earlright, W. H. (with Muir, P. H.) Relationships among some classes of implicit Runge-Kutta methods and their stability functions. *BIT* 27 (1987), no. 3, 403-423. (Randall J. LeVeque) **89a:65110** 65L05 (34A50, 65L20)
- Enriques, Federico see *Pepe, Luigi*, **89c:01081**
- Ensign, Philip (with Mahanthappa, K. T.) Adler-Bardeen theorem in supersymmetric theories. *Proceedings of the Johns Hopkins Workshop on Current Problems in Particle Theory*, 11. *Frontiers in Particle Theory*, 249-263, World Sci. Publishing, Singapore, 1988. (Charles Nash) **89j:81173** 81E99
- Ems, Volker Asymptotic time evolutions for strictly outgoing multiparticle quantum systems with long-range potentials. *Partial differential equations (Rio de Janeiro, 1986)*, 63-84, *Lecture Notes in Math.*, 1324, Springer, Berlin-New York, 1988. (M. Combes) **89j:81238** 81F10 (35P25, 47A40)
- van Enter, Aernout C. D. Upper bounds on correlation decay for one-dimensional long-range spin-glass models. *Proceedings of the symposium on statistical mechanics of phase transitions—mathematical and physical aspects (Trebon, 1986)*. *J. Statist. Phys.* 47 (1987), no. 5-6, 903-910. (M. Lawrence Glasser) **89b:82086** 82A57
- (with van Hemmen, J. L.; Pospiech, C.) Mean-field theory of random-site q-state Potts models. *J. Phys. A* 21 (1988), no. 3, 791-801. (M. Lawrence Glasser) **89c:82004** 82A25 (82A68)
- Entin, M. V. (with Efanov, A. V.) Exactly solvable problem of nonlinear two-dimensional screening. *Soviet Phys. JETP* 66 (1987), no. 4, 735-737 (1988); translated from *Zh. Éksp. Teor. Fiz.* 93 (1987), no. 4, 1299-1303 (Russian). (Summary) **89c:81215** 81H20
- Entin, V. A. (with Strakhov, V. N.; Tokar', L. M.; Ovrutskii, I. G.) Transformations of potential fields on the basis of a regularized approximation by algebraic polynomials. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* 1988, no. 11, 26-42. (Summary) **89m:66018** 86A20 (86-08)
- Enting, I. G. (with Newsam, G. N.) Inverse problems in atmospheric constituent studies. I. Determination of surface sources under a diffusive transport approximation. *Inverse Problems* 4 (1988), no. 4, 1037-1054. (Summary) **89i:86015** 86A35 (92A40)
- (with Guttman, A. J.) The size and number of rings on the square lattice. *J. Phys. A* 21 (1988), no. 3, L165-L172. (Summary) **89a:82034** 82A67 (82-04, 82A41)
- (with Guttman, A. J.) The number of convex polygons on the square and honeycomb lattices. *J. Phys. A* 21 (1988), no. 8, L467-L474. (M. Lawrence Glasser) **89c:82059** 82A67 (05A15, 82A41)
- Entin-Wohlman, O. (with Kléman, M.; Pavlovitch, A.) Penrose tiling approximants. (French summary) *J. Physique* 49 (1988), no. 4, 587-598. (A. G. Schlijper) **89m:52019** 52A45 (05B45, 82A60)
- Étalaño, E. E. (with Zorin, A. V.; Kuryshkin, V. V.) ★ К построению матрицы рассеяния для локально-некоммутативных взаимодействий релятивистских полей. (Russian) [On the construction of the scattering matrix for locally noncommutative interactions of relativistic fields] With an English summary. Сообщения Объединенного Института Ядерных Исследований, Дубна [Communications of the Joint Institute for Nuclear Research, Dubna], R4-88-587. *Joint Inst. Nuclear Res., Dubna*, 1988. 17 pp. (Summary) **89i:81061** 81E05 (81F15)
- Entringer, G. (with Barefoot, Curtiss) Computer observations of cycles in cubic graphs. *Comput. Math. Appl.* 15 (1988), no. 4, 241-246. (J. J. Seidel) **89i:05174** 05C38
- Entringer, R. C. (with Clark, Lane H.; Fellows, Michael R.) Computational complexity of integrity. *J. Combin. Math. Combin. Comput.* 2 (1987), 179-191. (Selim G. Akl) **89c:05046** 05C35 (68Q15, 68R10)
- (with Schmeichel, E. F.) Edge conditions and cycle structure in bipartite graphs. *Ars Combin.* 26 (1988), 229-232. (Barry Piazza) **89m:05069** 05C38
- (with Clark, Lane H.) The minimum number of cycles in graphs with given cycle rank and small connectivity. *J. Combin. Math. Combin. Comput.* 3 (1988), 169-181. (Barry Piazza) **89c:05124** 05C38 (05C35, 05C40)
- Enz, Charles P. Nonequilibrium correlation functions. *Instabilities and nonequilibrium structures (Valparaiso, 1985)*, 217-239, *Math. Appl.*, 33, Reidel, Dordrecht-Boston, MA, 1987. (B. H. Lavenda) **89b:82042** 82A35 (82A70)
- Eom, Kie-Bum (with Kashyap, R. L.) Estimation in long-memory time series model. *J. Time Ser. Anal.* 9 (1988), no. 1, 35-41. (M. Arató) **89d:62091** 62M10
- Ephremides, Anthony (with Rao, Ramesh R.) On the stability of interacting queues in a multiple-access system. *IEEE Trans. Inform. Theory* 34 (1988), no. 5, part 1, 918-930. (Summary) **89m:90072** 90B22 (94A40)
- Epifanio, Giuseppe (with Trapani, Camillo) Partial \*-algebras of matrices and operators. *J. Math. Phys.* 29 (1988), no. 3, 536-540. (Konrad Schmüdgen) **89c:47071** 47D40 (46L99)
- Epifanov, O. V. Equations of convolution type in a complex domain. (Russian) *Theory of functions and approximations*, part 2 (Russian) (Saratov, 1984), 104-108, *Saratov Gos. Univ. Saratov*, 1986. (see **89j:00036**) 30H05
- (with Korobeinik, Yu. F.) The preservation of completely regular growth by a differential operator of infinite order. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 47 (1987), 85-89. (I. M. Spitkovskii) **89f:47046** 47B38 (30D15, 47E05)
- (with Popov, O. N.; Tsionski, A. Ya.) Justification of the method of eigenforms for solving problems of the hydroelasticity of shells of finite dimensions. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 2, 301-304; translated in *Soviet Phys. Dokl.* 33 (1988), no. 3, 205-206. (J. L. Nowinski) **89f:73039** 73J06 (73L10, 73L20, 76Q05)
- Epstein, W. J. R. A central limit theorem for cyclic rank processes. *Sankhya Ser. A* 48 (1986), no. 2, 240-246. (Summary) **89f:62011** 62E20 (60F05, 62G99)
- The dynamics of marginal equilibria. *Adv. in Appl. Math.* 8 (1987), no. 4, 410-433. (Carl P. Simon) **89g:58187** 58F40 (90A14)
- Eppen, Gary D. (with Martin, R. Kipp) Determining safety stock in the presence of stochastic lead time and demand. *Management Sci.* 34 (1988), no. 11, 1380-1390. (Not in MR) 90B05
- Epps, T. W. Testing that a stationary time series is Gaussian. *Ann. Statist.* 15 (1987), no. 4, 1683-1698. (Robert V. Foutz) **89c:62152** 62M10 (60G10)
- Épémard, L. N. Convergence of Fourier series in the space  $L$ . (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 126 (1987), no. 3, 481-483. (N. B. Pogoyan) **89a:42015** 42A20
- Convergence of Fourier-Walsh series in the space  $L$ . (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 130 (1988), no. 2, 249-251. (Summary) **89m:42023** 42C10
- Épikashvili, G. P. A special type of boundary value problem for integro-differential equations of Fredholm type with a small parameter multiplying the higher derivatives. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 127 (1987), no. 2, 249-252. (D. Bainov) **89f:45015** 45J05 (34E15)
- Épstein, I. see *Epstein, Irving R.*
- Epstein, C. L. (with Gage, Michael) The curve shortening flow. *Wave motion: theory, modelling, and computation (Berkeley, Calif., 1986)*, 15-59, *Math. Sci. Res. Inst. Publ.*, 7, Springer, New York-Berlin, 1987. (R. Osserman) **89f:58128** 58G11 (53A04)
- Asymptotics for closed geodesics in a homology class, the finite volume case. *Duke Math. J.* 55 (1987), no. 4, 717-757. (Werner Ballmann) **89c:58098** 58F17 (53C22, 58G25)
- (with Burns, Daniel M., Jr.) A global invariant for three-dimensional CR-manifolds. *Invent. Math.* 92 (1988), no. 2, 333-348. (M. Kalka) **89b:53060** 53C15 (32F25, 57R20)
- see also *Hafner, James Lee*, **89a:11056**
- Epstein, D. B. A. (with Canary, R. D.; Green, Paul) Notes on notes of Thurston. *Analytical and geometric aspects of hyperbolic space (Coventry/Durham, 1984)*, 3-92, *London Math. Soc. Lecture Note Ser.*, 111, Cambridge Univ. Press, Cambridge-New York, 1987. (William Dunbar) **89c:57008** 57N10 (32G15, 32G99, 54A20, 57M99, 58F17)
- Complex hyperbolic geometry. *Analytical and geometric aspects of hyperbolic space (Coventry/Durham, 1984)*, 93-111, *London Math. Soc. Lecture Note Ser.*, 111, Cambridge Univ. Press, Cambridge-New York, 1987. (William Dunbar) **89c:32082** 32M10 (22E40, 57N13)
- (with Marden, A.) Convex hulls in hyperbolic space, a theorem of Sullivan, and measured pleated surfaces. *Analytical and geometric aspects of hyperbolic space (Coventry/Durham, 1984)*, 113-253, *London Math. Soc. Lecture Note Ser.*, 111, Cambridge Univ. Press, Cambridge-New York, 1987. (William Dunbar) **89c:52014** 52A55 (32G15, 57N10, 57R25, 58F17)
- (with Penner, R. C.) Euclidean decompositions of noncompact hyperbolic manifolds. *J. Differential Geom.* 27 (1988), no. 1, 67-80. (N. V. Ivanov) **89a:57020** 57N15 (20H10, 22E40, 51M10)
- (with Bowditch, B. H.) Natural triangulations associated to a surface. *Topology* 27 (1988), no. 1, 91-117. (N. V. Ivanov) **89c:57004** 57M99 (32G15)
- Epstein, Henri (with Eckmann, J.-P.) Fixed points of composition operators. *VIIIth international congress on mathematical physics (Marseille, 1986)*, 517-530, *World Sci. Publishing, Singapore*, 1987. (G. Benettin) **89d:58080** 58F13
- Epstein, Irving R. (with Orban, M.) Halogen-based oscillators in a flow reactor. (Russian) *Oscillations and traveling waves in chemical systems (Russian)*, 285-318, "Mir", Moscow, 1988. (see **89f:92003**) 92A40
- Epstein, Larry G. (with Chew, Soo Hong; Zilcha, Itzhak) A correspondence theorem between expected utility and smooth utility. *J. Econom. Theory* 46 (1988), no. 1, 186-193. (Maurice Salles) **89i:90011** 90A10
- Epstein, Marcelo (with Elzanowski, Marek) The decay and formation of one-dimensional nonconservative shocks. *Appl. Math. Modelling* 12 (1988), no. 3, 280-284. (Summary) **89c:35066** 35L60
- Epstein, Richard L. (with Cooper, S. Barry) Complementing below recursively enumerable degrees. *Ann. Pure Appl. Logic* 34 (1987), no. 1, 15-32. (Michael Stob) **89f:03035** 03D25
- The algebra of dependence logic. *Rep. Math. Logic* No. 21 (1987), 19-34 (1988). (S. K. Thomason) **89c:03026** 03B45 (03G25)
- A general framework for semantics for propositional logics. *Methods and applications of mathematical logic (Campinas, 1985)*, 149-168, *Contemp. Math.*, 69, Amer. Math. Soc., Providence, RI, 1988. (W. Rautenberg) **89c:03041** 03B99 (03A05, 03B05)
- Epstein, Roy J. ★ A history of econometrics. *Contributions to Economic Analysis*, 165, North-Holland Publishing Co., Amsterdam-New York, 1987. x+254 pp. ISBN 0-444-70267-9 (Esfandiar Maasoumi) **89d:62112** 62P20 (01A60, 62-03, 90-03, 90A19)
- Er, M. C. A smooth reshuffling algorithm for solving the Bulterman's problem. *Comput. J.* 31 (1988), no. 6, 557-560. (Summary) **89j:68024** 68P10
- Ranking and unranking of nonregular trees. *J. Inform. Optim. Sci.* 9 (1988), no. 1, 57-64. (Summary) **89c:68081** 68R10 (05C05, 68P05)
- Derivation of identity equations of the order- $k$  Fibonacci numbers. *J. Inform. Optim. Sci.* 9 (1988), no. 2, 193-198. (Péter Kiss) **89i:11024** 11B39 (11B37)
- An  $O(k^2 \log(n/k))$  algorithm for computing generalized order- $k$  Fibonacci numbers with linear space. *J. Inform. Optim. Sci.* 9 (1988), no. 3, 343-353. (Béla Vizvári) **89k:11129** 11Y35 (11B37, 68Q25)
- The weakest liberal preconditions of nondeterministic machines and robust programs. *J. Inform. Optim. Sci.* 9 (1988), no. 3, 415-420. (Ranjana Chaudhuri) **89m:68086** 68Q55 (68Q75)
- A linear space algorithm for solving the Towers of Hanoi problem by using a virtual disc. *Inform. Sci.* 47 (1989), no. 1, 47-52. (Mukka S. Krishnamoorthy) **89c:68064** 68Q25
- Erakhtina, G. M. (with Druzhkova, T. A.) Academic research by students in a general course on ordinary differential equations. (Russian) *Mathematical analysis (Russian)*, 107-110, *Leningrad Gos. Ped. Inst., Leningrad*, 1988. (see **89i:00021**) 00A25 (34A05)
- Induráin Eraso, Esteban see *Induráin Eraso, Esteban*
- Eratosthenes see *Gulbekian, Edward*, **89a:01008**
- Erbe, L. H. (with Schmitt, Klaus) Boundary value problems for second order differential equations. *Nonlinear analysis and applications (Arlington, Tex., 1986)*, 179-184, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (D. Y. Kasture) **89b:34043** 34B15

- (with Zhang, Bing Gen) Oscillation for first order linear differential equations with deviating arguments. *Differential Integral Equations* 1 (1988), no. 3, 305–314. (Erwin Kozakiewicz) **89e:34116** 34K15 (34A30)
- Erber, T.** (with Guralnick, S. A.) Hysteresis and incremental collapse: the iterative evolution of a complex system. *Ann. Physics* 181 (1988), no. 1, 25–53. (Summary) **89e:73027** 73E50
- Ercal, Filizet** (with Aykanat, Cevdet; Özgüner, Füsün; Sadayappan, Ponnuswamy) Iterative algorithms for solution of large sparse systems of linear equations on hypercubes. *IEEE Trans. Comput.* 37 (1988), no. 12, 1554–1568. (Summary) **89k:65050** 65F50 (65F10, 68Q10, 68U20)
- Erdahl, R. M.** (with Ryshkov, S. S.) The empty sphere. *Canad. J. Math.* 39 (1987), no. 4, 794–824. (O. H. Körner) **89e:11053** 11H06
- Erdélyi, Arthur** see **Knight, J. H.** **89e:44001**
- Erdélyi, T.** Markov type estimates for derivatives of polynomials of special type. *Acta Math. Hungar.* 51 (1988), no. 3–4, 421–436. (I. Szalay) **89m:42001** 42A05 (41A17)
- Erdős, R. J.** (with Chianese, R. B.) The general solution to the distribution of stresses in a circular ring compressed by two forces acting along a diameter. *Quart. J. Mech. Appl. Math.* 41 (1988), no. 2, 239–247. (Summary) **89g:73010** 73C02 (73–04)
- Erdmann, Karin** On the number of simple modules of certain tame blocks and algebras. *Arch. Math. (Basel)* 51 (1988), no. 1, 34–38. (P. Donovan) **89e:20021** 20C20
- Algebras and quaternion defect groups. I. *II. Math. Ann.* 281 (1988), no. 4, 545–560, 561–582. (William Crawley-Boevey) **89j:20005** 20C05 (16A26, 16A46)
- Algebras and semidihedral defect groups. I. *Proc. London Math. Soc.* (3) 57 (1988), no. 1, 109–150. (Alfred G. Wiedemann) **89e:20010** 20C05 (16A46, 16A64, 20C20)
- Erdmann, Michael** (with Lozano-Pérez, Tomás) On multiple moving objects. Special issue on robotics. *Algorithmica* 2 (1987), no. 4, 477–521. (Summary) **89h:68144** 68U05 (52–04, 68Q25, 70B15)
- Erdman-Snow, Joanne** see **Snow, Joanne Erdman**
- Erdoğan, V.** Coprimely packed rings. *J. Number Theory* 28 (1988), no. 1, 1–5. (Paul M. Eakin) **89f:13025** 13F05
- Multiplication modules which are distributive. *J. Pure Appl. Algebra* 54 (1988), no. 2–3, 209–213. (W. V. Vasconcelos) **89h:13022** 13F05 (13C10)
- Erdős, P. L.** (with Katona, G. O. H.) Convex hulls of more-part Sperner families. *Graphs Combin.* 2 (1986), no. 2, 123–134. (J. R. Griggs) **89d:05002** 05A05
- (with Katona, G. O. H.) A 3-part Sperner theorem. *Studia Sci. Math. Hungar.* 22 (1987), no. 1–4, 383–393. (G. F. Clements) **89e:05006** 05A05
- Erdős, Paul** (with Pálfi, Péter Pál) On the order of directly indecomposable groups. (Hungarian. English and Russian summaries) *Mat. Lapok* 33 (1982/86), no. 4, 289–298 (1987). (András Sárközy) **89j:11093** 11N45 (20D60)
- (with Ivić, Aleksandar; Pomerance, Carl) On sums involving reciprocals of the largest prime factor of an integer. *Glas. Mat. Ser. III* 21(41) (1986), no. 2, 283–300. (Douglas Hensley) **89a:11090** 11N37 (11N25)
- (with Frankl, Peter; Rödl, Vojtěch) The asymptotic number of graphs not containing a fixed subgraph and a problem for hypergraphs having no exponent. *Graphs Combin.* 2 (1986), no. 2, 113–121. (Edward A. Bender) **89b:05102** 05C30 (05C65, 05C75)
- Some combinatorial and metric problems in geometry. *Intuitive geometry (Sófok, 1985)*, 167–177. *Colloq. Math. Soc. János Bolyai*, 48, North-Holland, Amsterdam-New York, 1987. (L. M. Kelly) **89i:52012** 52A37 (52–02)
- (with Deheuvels, Paul; Grill, K.; Révész, P.) Many heads in a short block. *Mathematical statistics and probability theory, Vol. A (Bad Tatzmannsdorf, 1986)*, 53–67. *Reidel, Dordrecht-Boston, MA-London, 1987*. (J. Steinbach (Zbl 632:60027)) **89b:60073** 60F15 (60F10)
- (with Révész, P.) Problems and results on random walks. *Mathematical statistics and probability theory, Vol. B (Bad Tatzmannsdorf, 1986)*, 59–65. *Reidel, Dordrecht-Boston, MA-London, 1987*. (W. E. Pruitt) **89b:60112** 60J15
- (with Pomerance, Carl) On the number of false witnesses for a composite number. *Number theory (New York, 1984–1985)*, 97–100. *Lecture Notes in Math.*, 1240, Springer, Berlin-New York, 1987. (D. H. Lehmer) **89a:11010** 11A25
- (with Dixmier, Jacques; Nicolas, J.-L.) Sur le nombre d'invariants fondamentaux des formes binaires. (English summary) [On the number of fundamental invariants of binary forms] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 8, 319–322. (O. H. Körner) **89a:11040** 11E76 (11N45, 15A72)
- (with Alavi, Yousef; Boals, A. J.; Chartrand, G.; Oellermann, O. R.) The ascending subgraph decomposition problem. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 7–14. (H. Joseph Straight) **89d:05136** 05C70
- (with Alavi, Yousef; Malde, Paresi J.; Schwenk, Allen J.) The vertex independence sequence of a graph is not constrained. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 15–23. (Prabir Das) **89e:05181** 05C99
- (with Burr, S. A.; Faudree, R. J.; Rousseau, C. C.; Schelp, R. H.; Gould, R. J.; Jacobson, Michael S.) Goodness of trees for generalized books. *Graphs Combin.* 3 (1987), no. 1, 1–6. (Zheng Sheng Wu) **89b:05122** 05C55
- (with Indlekofer, Karl-Heinz) Multiplikative Funktionen auf kurzen Intervallen. [Multiplicative functions in short intervals] *J. Reine Angew. Math.* 381 (1987), 148–160. (A. Perelli) **89a:11091** 11N37
- (with Hildebrand, Adolf; Odlyzko, A. M.; Pudaite, P.; Reznick, B.) The asymptotic behavior of a family of sequences. *Pacific J. Math.* 126 (1987), no. 2, 227–241. (Autor-referat (A.O.)) **89c:11024** 11B37 (11N37)
- (with Sárközy, András; Sós, Vera T.) Problems and results on additive properties of general sequences. III. *Studia Sci. Math. Hungar.* 22 (1987), no. 1–4, 53–63. (Georges Grekos) **89h:11015** 11B34 (11B13)
- (with Joó, István; Székely, L. A.) Some remarks on infinite series. *Studia Sci. Math. Hungar.* 22 (1987), no. 1–4, 395–400. (Amnon Jakimovski) **89g:40001** 40A05
- On the irrationality of certain series: problems and results. *New advances in transcendence theory (Durham, 1986)*, 102–109. *Cambridge Univ. Press, Cambridge-New York, 1988*. (Joseph Sándor) **89j:11057** 11J72
- (with Faudree, R. J.; Gyárfás, A.; Schelp, R. H.) Cycles in graphs without proper subgraphs of minimum degree 3. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), 8, 195–201. (George R. T. Hendry) **89e:05126** 05C38
- (with Berger, Marc A.; Feizenbaum, Alexander; Fraenkel, Aviezri S.) Nearly disjoint covering systems. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), 8, 231–246. (R. C. Mullin) **89i:11004** 11A07
- (with Salamon, Peter) The solution to a problem of Grünbaum. *Canad. Math. Bull.* 31 (1988), no. 2, 129–138. (L. M. Kelly) **89f:52022** 52A37
- (with Aharoni, Ron; Linial, Nathan) Optima of dual integer linear programs. *Combinatorica* 8 (1988), no. 1, 13–20. (Joachim Piehler) **89f:50093** 90C10
- (with Stewart, C. L.; Tijdeman, R.) Some Diophantine equations with many solutions. *Compositio Math.* 66 (1988), no. 1, 37–56. (Takashi Agoh) **89j:11027** 11D41
- Problems and results in combinatorial analysis and graph theory. Proceedings of the First Japan Conference on Graph Theory and Applications (Hakone, 1986). *Discrete Math.* 72 (1988), no. 1–3, 81–92. (R. L. Graham) **89k:05048** 05C35 (05C55)
- (with Faudree, R. J.; Ordman, Edward T.) Clique partitions and clique coverings. Proceedings of the First Japan Conference on Graph Theory and Applications (Hakone, 1986). *Discrete Math.* 72 (1988), no. 1–3, 93–101. (W. D. Wallis) **89m:05090** 05C70
- (with Godsil, C. D.; Krantz, Steven G.; Parsons, Torrence) Intersection graphs for families of balls in  $\mathbb{R}^n$ . *European J. Combin.* 9 (1988), no. 5, 501–505. (C. Peyrat) **89i:05225** 05C75 (05C15, 05C99)
- (with Nathanson, Melvyn B.) Minimal asymptotic bases with prescribed densities. *Illinois J. Math.* 32 (1988), no. 3, 562–574. (Georges Grekos) **89j:11010** 11B13
- (with Faudree, R. J.; Pach, János; Spencer, Joel) How to make a graph bipartite. *J. Combin. Theory Ser. B* 45 (1988), no. 1, 86–98. (Seymour Schuster) **89f:05134** 05C70
- (with Caccetta, L.; Vijayan, Kaipillil) Graphs with unavoidable subgraphs with large degrees. *J. Graph Theory* 12 (1988), no. 1, 17–27. (Carsten Thomassen) **89d:05105** 05C35
- (with Goldberg, Mark K.; Pach, János; Spencer, Joel) Cutting a graph into two dissimilar halves. *J. Graph Theory* 12 (1988), no. 1, 121–131. (Summary) **89e:05043** 05C35
- A tribute to Torrence Parsons. *J. Graph Theory* 12 (1988), no. 2, v–vi. (Editors) **89e:01073** 01A70 (05–03)
- (with Chen, Robert W.) Random walks on  $\mathbb{Z}_2^n$ . *J. Multivariate Anal.* 25 (1988), no. 1, 111–118. (Göran Högnäs) **89d:60124** 60J15 (60C05)
- (with Révész, P.) On the area of the circles covered by a random walk. *J. Multivariate Anal.* 27 (1988), no. 1, 169–180. (S. J. Taylor) **89m:60158** 60J15
- (with Nathanson, Melvyn B.; Sárközy, András) Sumsets containing infinite arithmetic progressions. *J. Number Theory* 28 (1988), no. 2, 159–166. (B. Garrison) **89e:11006** 11B05 (11B25)
- (with Mays, Michael E.) On nilpotent but not abelian groups and abelian but not cyclic groups. *J. Number Theory* 28 (1988), no. 3, 363–368. (M. Ram Murty) **89d:11080** 11N25 (11N35, 20D60)
- (with Nathanson, Melvyn B.) Partitions of bases into disjoint unions of bases. *J. Number Theory* 29 (1988), no. 1, 1–9. (H. G. Meijer) **89f:11025** 11B13
- (with Kiss, Péter; Sárközy, András) A lower bound for the counting function of Lucas pseudoprimes. *Math. Comp.* 51 (1988), no. 183, 315–323. (Samuel S. Wagstaff, Jr.) **89i:11011** 11B39 (11Y55)
- (with Koren, I.; Moran, Shlomo; Silberman, G. M.; Zaks, S.) Minimum-diameter cyclic arrangements in mapping data-flow graphs onto VLSI arrays. *Math. Systems Theory* 21 (1988), no. 2, 85–98. (Ondrej Sýkora) **89k:68077** 68Q35 (68R10)
- (with Spencer, Joel) Monochromatic sumsets. *J. Combin. Theory Ser. A* 50 (1989), no. 1, 162–163. (Dominique Gouyou-Beauchamps) **89j:05008** 05A05 (05A15)
- see also **Nicolas, J.-L.** **89e:01078**
- Eremeev, A. P.** A production model for representing knowledge based on a decision table. *Soviet J. Comput. Systems Sci.* 25 (1987), no. 6, 124–135 (1988); translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 2, 196–207, 224 (Russian). (Not in MR) **89T30**
- Erőmín, A.** (with Baker, I. N.) A problem on Julia sets. *Ann. Acad. Sci. Fenn. Ser. A I Math.* 12 (1987), no. 2, 229–236. (L. S. O. Liverpool) **89g:30047** 30D05 (58F08)
- (with Lyubich, M. Yu.) Examples of entire functions with pathological dynamics. *J. London Math. Soc.* (2) 36 (1987), no. 3, 458–468. (Janina Kotus) **89e:30047** 30D05 (58F11)
- Entire functions bounded on the real axis. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 3, 544–546; translated in *Soviet Math. Dokl.* 37 (1988), no. 3, 693–695. (Shlomo Streitz) **89m:30056** 30D15 (30D20)
- Eremenko, G. P.** (with Cherednichenko, V. S.; Zhikharasik, A. V.) Distribution functions for charged particles in a nonequilibrium plasma. I, II. (Russian) *Izv. Sibsk. Otdel. Akad. Nauk SSSR Ser. Tekhn. Nauk* 1988, no. 4, 48–57, 58–67, 113. (M. Drăganu) **89m:82047** 82A45
- Erőmín, A. Yu.** (with Kolotilina, L. Yu.) ★ Об одном подходе к построению неполных блочных факторизаций для разреженных матриц сложной структуры. (Russian) [An approach to the construction of incomplete block factorizations for sparse matrices of complex structure] Препринт [Preprint], 135. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1986. 32 pp. (Ilmar Arro) **89f:65032** 65F05 (65F30)
- (with Kolotilina, L. Yu.) ★ Разложение Бруа и решение систем линейных алгебраических уравнений с разреженными матрицами. (Russian) [The Bruhat decomposition and the solution of systems of linear algebraic equations with sparse matrices] Препринт [Preprint], 139. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1987. 28 pp. (Zahari Zlatev) **89a:65045** 65F05 (15A06, 65F50)
- (with Zabolotnov, D. B.) ★ Минимизация заполнения в прямых методах исключения на параллельных ЭВМ. [Fill-in minimization in direct elimination methods on parallel computers] Препринт [Preprint], 152. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1987. 36 pp. (Zeng Rong Chen) **89g:65177** 65W05 (65F05, 65F50)
- (with Kolotilina, L. Yu.) The Bruhat decomposition and the solution of systems of linear algebraic equations. (Russian) *Computational processes and systems, No. 5* (Russian), 180–194. “Nauka”, Moscow, 1987. (Gh. Adam) **89g:65025** 65F05 (65F30)
- (with Kolotilina, L. Yu.) Bruhat decomposition and solution of sparse linear algebraic systems. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* 2 (1987), no. 6, 421–436. (David R. Hill) **89b:65070** 65F05 (15A06)
- (with Kaporin, I. E.; Kerimov, M. K.) Calculation of derivatives of the Riemann zeta function in a complex domain. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 8, 1135–1148, 1277. (H. J. Godwin) **89i:11096** 11M06 (11M41, 11Y35, 65E05)



- Eremin, G. S. Partition of an arbitrary set of vertices of an acyclic digraph into convex subsets. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 8, 137-143. (D. Ya. Kessel'man) **89a:05070** 05C20 (05C70)
- Eremin, I. I. Conflicting models for planning and control. (Russian) *Conflicting models for optimization* (Russian), 28-37, 94-95, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1987. (Summary) **89c:90214** 90C50
- Methods of parametrization in the analysis of improper mathematical programming problems. *Parametric optimization and related topics* (Plaue, 1985), 82-94, *Math. Res.*, 35, *Akademie-Verlag, Berlin*, 1987. (Emil Iwanow) **89b:90208** 90C31 (90C25, 90C30)
- Duality and approximation for improper problems of mathematical programming. *Soviet J. Comput. Systems Sci.* 25 (1987), no. 5, 28-39; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 1, 70-81, 221 (Russian). (C. Illoio) **89c:90083** 90C25 (90C48)
- (with Mazurov, V. D.; Astaf'ev, N. N.) Systems of linear inequalities in mathematical programming and pattern recognition. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 3, 288-297, 405; translated in *Ukrainian Math. J.* 40 (1988), no. 3, 243-251. (Stefan Tigan) **89i:90058** 90C25 (68T10)
- see also *Conflicting models for optimization*, **89c:90075**
- Eremin, M. S. Transformation operators on the [real] axis of solutions of Sturm-Liouville equations with an arbitrarily increasing potential. (Russian) *Analytical methods in the theory of differential and integral equations* (Russian), 49-52, *Kuibyshev. Gos. Univ., Kuibyshev*, 1987. (Editors) **89i:34021** 34B25 (47A55, 47E05)
- An inverse problem of spectral analysis on the semi-axis for a differential equation of a certain type. (Russian) *Funktsional. Anal. i Prilozhen.* 22 (1988), no. 2, 81-82; translated in *Functional Anal. Appl.* 22 (1988), no. 2, 152-154. (From the text) **89c:34041** 34B25 (34A55, 47E05)
- Eremin, Yu. A. (with Sveshnikov, A. G.) On the existence of equivalent scatterers in inverse problems of diffraction theory. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 5, 1095-1099; translated in *Soviet Phys. Dokl.* 32 (1987), no. 12, 965-967. (A. G. Ramm) **89d:35037** 35J05 (76Q05, 78A45)
- Erenguc, S. Selcuk (with Tufekci, Suleyman) A transportation type aggregate production model with bounds on inventory and backordering. *European J. Oper. Res.* 35 (1988), no. 3, 414-425. (Summary) **89d:90108** 90B30
- Erez, B. The Galois structure of the trace form in extensions of odd prime degree. *J. Algebra* 118 (1988), no. 2, 438-446. (Jürgen Ritter) **89m:11104** 11R33 (11E99, 11R32)
- Erfani, S. (with Ahmadi, M.; Ramachandran, Venkat) The general biquadratic transformation of polynomials. *IEEE Trans. Circuits and Systems* 35 (1988), no. 12, 1547-1549. (Not in MR) **94A12** (30C10)
- (with Ahmadi, M.; Ramachandran, Venkat) An explicit formula for the general bilinear transformation of polynomials with its application. *J. Franklin Inst.* 325 (1988), no. 3, 385-391. (Mihail Voicu) **89c:93047** 93B25 (15A23, 93B15, 93B17)
- Erfe, Walter ★ Die Optimierung der Kontrolle regelmäßig wiederkehrender Arbeitsprozesse. (German) [The optimization of the control of regularly recurring work processes] *Physica-Schriften zur Betriebswirtschaft* (Physica Publications on Applied Economics), 13. *Physica-Verlag, Heidelberg*, 1985. xviii+249 pp. ISBN 3-7908-0334-0 (D. Bobrowski) **89g:90114** 90B25
- Ergaphalan see Burnett, Charles, **89c:01017**
- Ergasheva, M. E. (with Barkin, Yu. V.) Periodic modes of motion of a satellite-gyrost in a triangular point of libration in the circular restricted three-body problem. (Russian) *Problems in the mechanics of a rigid and a deformable body* (Russian), 12-23, "Nauka", Moscow, 1987. (see **89g:70002**) 70M05 (70F07)
- Ergun, Nurettin On regularly subsets of certain subspaces. (Turkish summary) *J. Karadeniz Univ. Fac. Arts Sci. Ser. Math.-Phys.* 9 (1986), 50-56. (B. T. Sims) **89a:54003** 54A05
- Erice Rodriguez, Javier (with García de la Torre, Amalia; Mari Beffa, Gloria) The differential SIR model and its applications to the cases of silent and supercontagious infections. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 248-261, *Publ. Dep. Mat. Univ. Extremadura*, 18, *Univ. Extremadura, Badajoz*, 1987. (Summary) **89h:92045** 92A15
- Erickson, Gary J. see *Maximum-entropy and Bayesian methods in science and engineering*, **89f:62001** and **89f:62002**
- Erickson, Ranel E. Optimality of stationary halting policies and finite termination of successive approximations. *Math. Oper. Res.* 13 (1988), no. 1, 90-98. (A. A. K. Majumdar) **89f:90184** 90C40
- Ericson, Thomas (with Györfi, László) Superimposed codes in  $\mathbb{R}^n$ . *IEEE Trans. Inform. Theory* 34 (1988), no. 4, 877-880. (Alexander M. Barg) **89k:94078** 94B60
- Eriksen, E. (with Grøn, Ø.) Translational inertial dragging. *Gen. Relativity Gravitation* 21 (1989), no. 2, 105-124. (Summary) **89m:83057** 83C50
- Eriksen, Poul Svante (with Barndorff-Nielsen, O. E.) ★ Decomposition, factorization and invariance of measures, with a view to applications in statistics. *Memoirs, 7. Aarhus University, Institute of Mathematics, Department of Theoretical Statistics, Aarhus*, 1985. 58 pp. (M. P. Erlow) **89b:28003** 28A50 (28C10, 62A99)
- Eriksson, Göran A new MHD equilibrium describing a pure z-pinch. *Phys. Scripta* 37 (1988), no. 4, 538-541. (Summary) **89c:76113** 76W05
- Eriksson, H. G. Stability properties of a toroidal z-pinch in an external magnetic multipole field. *Phys. Scripta* 37 (1988), no. 6, 876-884. (Summary) **89c:76083** 76W05 (76E25)
- Eriksson, Jan R. The simultaneous two-step entropy model. Special issue on emerging paradigms in applied mathematical modelling. *J. Comput. Appl. Math.* 22 (1988), no. 2-3, 271-283. (Tom Wansbeck) **89h:90031** 90A11
- Eriksson, Kenneth (with Johnson, Claes) An adaptive finite element method for linear elliptic problems. *Math. Comp.* 50 (1988), no. 182, 361-383. (William W. Hager) **89c:65119** 65N30 (65N50)
- Erkut, E. (with Francis, R. L.; Lowe, Timothy J.) Locating two facilities on a tree subject to distance constraints. *Transportation Sci.* 22 (1988), no. 3, 199-208. (Summary) **89f:90046** 90B10
- Erlebacher, G. (with Hussaini, M. Y.; Zang, T. A.) Spectral multigrid methods for the solution of homogeneous turbulence problems. *Multigrid methods* (Copper Mountain, CO, 1987), 177-194, *Lecture Notes in Pure and Appl. Math.*, 110, *Dekker, New York*, 1988. (Murli M. Gupta) **89m:76007** 76-08 (65N05, 76F05)
- Erlikh, I. I. (with Tarasov, S. P.; Khachiyan, L. G.) The method of inscribed ellipsoids. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 5, 1081-1085; translated in *Soviet Math. Dokl.* 37 (1988), no. 1, 226-230. (E. G. Gol'shtein) **89k:90132** 90C25 (90C30)
- Ermakov, A. E. (with Vasil'ev, A. V.; Kolosova, S. V.; Kolosov, A. I.) A problem of the theory of chemical reactions. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 8(42) (1987), 35-39, 93. (Summary) **89d:80025** 80A32
- Ermakov, A. I. A quantitative characterization of the discontinuity of a function connected with the value of its smallest Hausdorff deviations from algebraic polynomials. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 108-110, *Saratov. Gos. Univ., Saratov*, 1986. (see **89i:00036**) 41A10
- Ermakov, M. S. Asymptotically minimax criteria for testing nonparametric hypotheses on the density of a distribution. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 166 (1988), Issled. po Mat. Statist. 8, 44-53, 187. (Zuzana Práková) **89k:62061** 62G10 (62C20)
- Ermakov, S. M. (with Moskaleva, N. M.) Branching processes and the Boltzmann equation. Computational aspects. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1987, vyp. 3, 38-43, 127. (Summary) **89b:82005** 82-08 (82A70)
- (with Borevich, Z. I.; Skopin, A. I.; Yakovlev, A. V.) Dmitrii Konstantinovich Faddeev (on the occasion of his 80th birthday). (Russian) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1988, vyp. 1, 3-5. (Editors) **89f:01058** 01A70
- (with Vinogradov, S. A.; Vladimirov, D. A.; Gavurin, M. K.; Makarov, B. M.; Natanson, G. I.; Solomyak, M. Z.; Faddeev, D. K.; Khavin, V. P.) Grigorii Mikhailovich Fikhtengol'ts (on the 100th anniversary of his birth). (Russian) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1988, vyp. 3, 3-6. (Editors) **89m:01112** 01A70
- (with Zhigljavskii, A. A.; Kondratovich, M. V.) Comparison of certain procedures for random search for a global extremum. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 29 (1989), no. 2, 163-170, 317. (Summary) **89m:90148** 90C31 (65K05)
- Ermakov, V. N. (with Davydov, A. S.) Soliton generation at the boundary of a molecular chain. *Phys. D* 32 (1988), no. 2, 318-323. (Summary) **89i:92074** 92A40
- (with Davydov, A. S.) Generation of solitons and bisolitons in molecular systems. (Russian) *Dokl. Akad. Nauk SSSR* 302 (1988), no. 3, 601-604; translated in *Soviet Phys. Dokl.* 33 (1988), no. 9, 692-693. (From the text) **89k:81199** 81G55 (35Q20, 92A40)
- Ermakov, Yu. I. Curvature of a linear connection of a vector bundle. (Russian) *Differential geometry*, No. 5 (Russian), 9-31, 102, *Saratov. Gos. Univ., Saratov*, 1980. (see **89a:53001**) 58B20 (53C05)
- see also *Differential geometry*, **89j:53001**
- Ermakova, E. A. (with Pertsov, A. M.; Shnol', E. E.) Pairs of interacting vortices in two-dimensional active media. (Russian) *Dokl. Akad. Nauk SSSR* 301 (1988), no. 2, 332-335; translated in *Soviet Phys. Dokl.* 33 (1988), no. 7, 519-521. (Editors) **89j:92018** 92A08 (76C99)
- Ermakova, L. Yu. Summation of Lagrange interpolation processes of a complex variable. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 111-112, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) 30E05 (41A05)
- Ermentrout, G. B. Discrete and continuous media in the presence of a frequency gradient. *Biomathematics and related computational problems* (Naples, 1987), 639-648, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89m:92016** 92A09
- (with Kopell, N.) Coupled oscillators and the design of central pattern generators. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* 90 (1988), no. 1-2, 87-109. (Summary) **89m:92024** 92A09 (58F40)
- Erners, Rued (with Polman, Ben) On the eigenvalues of the structure matrix of matrices of zeros and ones. *Linear Algebra Appl.* 95 (1987), 17-41. (Lajos László) **89i:15023** 15A36 (15A18, 15A23)
- Ermilov, A. N. Ordering and phase transitions in the frozen Potts model. (Russian) *IV International Symposium on Selected Topics in Statistical Mechanics* (Russian) (Dubna, 1987), 129-133, *Joint Inst. Nuclear Res., Dubna*, 1988. (see **89g:82003**) 82A68 (82A25)
- (with Bakaev, A. V.; Kurbatov, A. M.) A frozen Potts model on a Cayley tree. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 3, 603-606; translated in *Soviet Phys. Dokl.* 33 (1988), no. 3, 190-191. (Feodor Smirnov) **89c:82063** 82A68
- Ermolaev, A. I. (with Andreev, O. P.; Tsvirkun, A. D.) The design of systems based on mixed-order models of optimization. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 10, 111-118; translated in *Avtomat. Remote Control* 49 (1988), no. 10, part 2, 1341-1346. (Summary) **89k:90121** 90C11
- Ermolaev, V. A. Variational synthesis of the input signals of nonlinear filters from their response at a fixed instant of time. *Soviet J. Comm. Tech. Electron.* 32 (1987), no. 10, 60-65; translated from *Radiotekhn. i Elektron.* 32 (1987), no. 6, 1199-1206 (Russian). (Summary) **89d:94014** 94A12
- Ermolaev, Yu. B. Lie algebras that preserve bilinear forms. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 11, 83-87. (K. Strambach) **89c:17013** 17B05 (11E39)
- Ermolaeva, N. S. An unpublished course on probability theory by P. L. Chebyshev. (Russian) *Voprosy Istor. Estestvoznani. i Tekhn.* 1987, no. 4, 106-112. (E. Seneta) **89d:01038** 01A55 (39-03, 60-03)
- Ermol'ev, Yu. M. (with Arthur, W. Brian; Kaniovskii, Yu. M.) Strong laws for a class of path-dependent stochastic processes with applications. *Stochastic optimization* (Kiev, 1984), 287-300, *Lecture Notes in Control and Inform. Sci.*, 81, *Springer, Berlin-New York*, 1986. (Gh. Oprisan) **89a:60076** 60F15 (60C05)
- (with Arthur, W. Brian; Kaniovskii, Yu. M.) ★ Предельные теоремы для долей шаров в обобщенной схеме урны с шарами  $N$  цветов, добавляемыми порциями случайного объема. (Russian) [Limit theorems for fractions of balls in a generalized urn scheme with balls of  $N$  colors that can be supplemented with portions of random size] *Препринт* [Preprint], 87-8. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. 25 pp. (Summary) **89d:60060** 60F17 (60C05, 60F15)
- (with Gaivoronskii, A. A.) Methods for searching for optimal submeasures (characterization of the solutions). (Russian. English summary) *Kibernetika (Kiev)* 1987, no. 5, 94-101, 135. (Quan Zheng) **89c:90109** 90C48
- (with Arthur, W. Brian; Kaniovskii, Yu. M.) Adaptive growth processes that can be modeled by urn schemes. (Russian. English summary) *Kibernetika (Kiev)* 1987, no. 6, 49-57, 134. (Lyuben R. Mutafchiev) **89d:60011** 60C05 (60F05, 60F15)
- see also *Analysis of stochastic systems by methods in operations research and reliability theory*, **89b:90004** and *Mathematical methods for the analysis of complex stochastic systems*, **89j:90164**
- Ermolaeva, T. Yu. (with Knopov, P. S.) Asymptotic properties of the estimator of the mean of a stationary process in the presence of constraints. (Russian. English summary) *Dokl.*

- Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 9, 72-74, 89. (J. M. Stoyanov) **89k:93194** 93E10 (62M10)
- Ermoliev, Yu. M.** see **Ermol'ev, Yu. M.**
- Ermolov, A. N.** Differential games in mixed strategies. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 6, 40-51; translated in *Automat. Remote Control* 49 (1988), no. 6, part 1, 719-729. (Witold Rzymowski) **89j:90301** 90D25 (49A45, 49D20)
- Erneux, Thomas** (with Reiss, Edward L.; Magnan, J. F.; Jayakumar, P. K.) Nonlinear stability control and  $\lambda$ -bifurcation. *SIAM J. Appl. Math.* 47 (1987), no. 6, 1163-1176. (D. K. Arrowsmith) **89g:73027** 73J10 (58F14, 58F40, 73H10)
- (with Mandel, Paul; Zeghlache, H.) Time-dependent phase transitions. *Far from equilibrium phase transitions (Sitges, 1988)*, 217-235, *Lecture Notes in Phys.*, 319, Springer, Berlin-New York, 1988. (see **89j:82002**) 58F14 (58E07, 78A60, 81K05)
- Ernst, Bruno** Escher's impossible figure prints in a new context. *M. C. Escher: art and design (Rome, 1985)*, 125-134, North-Holland, Amsterdam-New York, 1986. (see **89m:00011**) 00A05 (00A08)
- On the uniqueness of weighted (DF)-topologies. *Bull. Soc. Roy. Sci. Liège* 56 (1987), no. 5-6, 451-461. (José Bonet) **89b:46032** 46E10 (46A99)
- Ernst, Frederick J.** (with Hauser, Isidore) A new proof of an old conjecture. *Gravitation and geometry*, 165-214, *Monographs Textbooks Phys. Sci.*, 4, Bibliopolis, Naples, 1987. (Enric Verdaguer) **89e:83024** 83C20 (83C15, 83C40)
- (with García Díaz, Alberto; Hauser, Isidore) Colliding gravitational plane waves with noncollinear polarization. II. *J. Math. Phys.* 28 (1987), no. 12, 2951-2960. (Basilis C. Xanthopoulos) **89c:83021** 83C20 (83C15, 83C35, 83C40)
- (with García Díaz, Alberto; Hauser, Isidore) Colliding gravitational plane waves with noncollinear polarization. III. *J. Math. Phys.* 29 (1988), no. 3, 681-689. (Basilis C. Xanthopoulos) **89k:83026** 83C20 (83C35)
- Ernst, M. H.** (with van Dongen, P. G. J.) Scaling solutions of Smoluchowski's coagulation equation. *J. Statist. Phys.* 50 (1988), no. 1-2, 295-329. (Summary) **89b:82065** 82A99 (82A25, 92A08)
- (with Binder, P. M.) Lorentz lattice gases: basic theory. New directions in statistical mechanics (Santa Barbara, CA, 1987). *J. Statist. Phys.* 51 (1988), no. 5-6, 981-990. (Summary) **89i:82035** 82A40 (82A67)
- (with van Beijeren, H.; Leibowitz, Joel L.) Editors' preface. *J. Statist. Phys.* 53 (1988), no. 1-2, 1. (Not in MR) 01A70
- Ernvall, Sirpa** On the Hamming bound for nonbinary arithmetic  $AN$  codes. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), B, 31-53. (Michele Elia) **89d:94048** 94B40
- Erofeenko, V. T.** Addition theorems for the potentials of an electromagnetic field. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* 1988, no. 2, 50-53, 81. (Summary) **89f:78003** 78A25
- Erofeev, M. I.** Some limit theorems for branching processes with energy. (Russian) *Function-theoretic methods in problems of mathematical physics (Russian)*, 46-49, *Énergoatomizdat*, Moscow, 1986. (P. Jagers) **89e:60166** 60J80 (60J25)
- Ersoy, C.** see **Basar-Eroglu, C.**
- Eroglu, Mehmet Sait** The point spaces  $X^d$  and  $X^c$ . (Turkish summary) *Doğa Mat.* 12 (1988), no. 1, 6-9. (Aleksander Błaszczyk) **89c:54003** 54A40 (03E72)
- Erokhin, N. S.** see **Plasma theory and nonlinear and turbulent processes in physics**, **89c:00041**
- Erovenko, L. D.** Optimization of a dynamic control system with moving boundary conditions. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* 1987, no. 2, 33-37, 79. (V. A. Dykhita) **89e:49010** 49B10 (49D35)
- Erovenko, V. A.** The essential spectrum of Cesàro operators. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 31 (1987), no. 9, 784-787, 859. (S. Suljagic) **89a:47043** 47B38 (47A10, 47B37)
- On the essential spectrum of functions of linear operators in a Banach space. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* 1987, no. 2, 50-54, 80. (S. Suljagic) **89a:47003** 47A10
- Errico, Darrel** (with Allard, Jacques; Reed, William J.) Irreversible investment and optimal forest exploitation. *Natur. Resource Modeling* 2 (1988), no. 4, 581-597. (Not in MR) 90A30
- Ershov, A. A.** (with Gal'tsov, D. V.) Monopole-fermion systems in the complex isotropic tetrad formalism. *Soviet J. Nuclear Phys.* 47 (1988), no. 2, 355-362 (1988); translated from *Yadernaya Fiz.* 47 (1988), no. 2, 560-574 (Russian). (A. O. Barut) **89i:81091** 81E20 (83C99)
- Ershov, A. P.** see **Biography: Lyapunov, A. A.**, **89f:01080** and **Hoare, C. A. R.**, **89k:68001**
- Ershov, B. A.** The effect of the vortex wake on the perturbed motion of an elastic profile. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1988, vyp. 3, 57-61, 125. (Summary) **89j:73059** 73J06 (76B05, 76G99)
- Ershov, E. K.** On structurally stable polynomial diffeomorphisms of the unit circle. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 4, 687-689, 734. (M. Yu. Lyubich) **89j:58059** 58F10
- Ershov, S. V.** (with Malinetskii, G. G.) Solution of the direct and the inverse problem for the Perron-Frobenius equation. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 166, 36 pp. (Publisher's description) **89c:58059** 58F08 (58F11)
- (with Malinetskii, G. G.; Ruzmaikin, A. A.) Generalized model of a two-disk dynamo. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 19, 32 pp. (Summary) **89b:58149** 58F14 (58F12, 58F40, 86A25)
- Ershov, Yu. L.** On  $f_4$ -spaces. (Russian) *Algebra i Logika* 25 (1986), no. 5, 533-543, 613. (R. A. Di Paola) **89g:03061** 03D45 (03D60, 03D65)
- (with Samokhvalov, K. F.) A new approach to the methodology of mathematics. (Russian) *Patterns in the development of modern mathematics (Russian)*, 85-106, "Nauka", Moscow, 1987. (Marian Tărnău) **89c:03007** 03A05 (00A25, 03D20, 03F50)
- (with Zaitsev, D. I.; Kostrikin, Aleksei Ivanovich; Krasovskii, N. N.; Mitropol'skii, Yu. A.; Platonov, V. P.; Faddeev, D. K.; Shemetkov, L. A.) Sergei Nikolaevich Chernikov. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 2(260), 125-126; translated in *Russian Math. Surveys* 43 (1988), no. 2, 153-155. (Editors) **89i:01074** 01A70
- Invariant generability. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 5, 109-111, 238; translated in *Siberian Math. J.* 29 (1988), no. 5, 775-777. (J. Wiegold) **89m:20026** 20E18 (20E06)
- Ertinger, Z.** Singularities in the theory of electric circuits. (Czech summary) *Sb. Vysoké. Učenič. Tech. v Brně* 1985, no. 1-4, 63-68. (Editors) **89g:58025** 58C27 (94C05)
- Ergin, N. P.** (with Andreev, A. F.; Bitsadze, A. V.; Zubov, V. I.; Izobov, N. A.; Il'in, V. A.; Kiguradze, I. T.; Krasovskii, N. N.; Kudryavtsev, L. D.; Millionshchikov, V. M.; Pliss, V. A.; Samarskii, A. A.; Sibirskii, K. S.; Tikhonov, A. N.) Yuri Stanislavovich Bogdanov. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 6, 1091-1097; translated in *Differential Equations* 24 (1988), no. 6, 692-699. (Editors) **89i:01055** 01A70
- (with Andrunakievich, V. A.; Vulpe, N. I.) Konstantin Sergeevich Sibirskii (on the occasion of his 60th birthday). (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 3, 371-375. (Editors) **89k:01028** 01A70
- (with Alimov, Sh. A.; Bitsadze, A. V.; Dorodnitsyn, A. A.; Moiseev, E. I.; Samarskii, A. A.; Tikhonov, A. N.) Vladimir Aleksandrovich Il'in (on the occasion of his 60th birthday). (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 5, 739-750. (Editors) **89h:01053** 01A70
- Ervin, V. J.** (with Stephan, E. P.) Experimental convergence of boundary element methods for the capacity of the electrified square plate. *Boundary elements IX, Vol. 1 (Stuttgart, 1987)*, 167-175, *Comput. Mech., Southampton*, 1987. (Carl T. Kelley) **89j:78003** 78-08
- (with Costabel, M.; Stephan, E. P.) On the convergence of collocation methods for Symm's integral equation on open curves. *Math. Comp.* 51 (1988), no. 183, 167-179. (R. S. Anderssen) **89h:65218** 65R20 (45E99, 45L10)
- Erynn, G.** A note on the front closure topology. *Quaestiones Math.* 11 (1988), no. 2, 213-218. (Csaba Némethi) **89g:54006** 54A10 (18B30)
- Eryomina, V.** (with Kuz'menko, N.) Differential equations for matrix elements in a class of models of bound-continuum transitions. *Chem. Phys. Lett.* 141 (1987), no. 5, 397-400. (Summary) **89k:81197** 81G45
- (with Kuz'menko, N.) An example of the inverse problem for bound-continuum electronic transitions in diatomic molecules. *Inverse Problems* 5 (1989), no. 1, 7-11. (Summary) **89k:81200** 81G55
- Ezra, Ayse** (with Grossmann, S.; Hernández-Machado, Aurora) Diffusion on random hierarchical structures. *J. Phys. A* 20 (1987), no. 12, 3913-3934. (B. Derrida) **89b:82087** 82A57
- (with Pietronero, L.; Evertsz, C.) Theory of Laplacian fractals: diffusion limited aggregation and dielectric breakdown model. *Phys. A* 151 (1988), no. 2-3, 207-245. (Preben Alstrom) **89i:82073** 82A57 (82A25, 82A99)
- Erzhanov, Zh. S.** (with Kalybaev, A. A.) A condition of Betti type for mechanical systems with an energy conservation law. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1988, no. 5, 83-86. (Summary) **89j:58114** 58F27 (34C35, 70F15, 70K20)
- Eş, A. Haydar** (with Çöker, Doğan) On fuzzy  $S$ -closed spaces. (Turkish summary) *Doğa Mat.* 11 (1987), no. 3, 145-152. (O. Costinescu) **89c:54014** 54A40 (03E72)
- van Es, A. J.** (with Helmers, R.) Elementary symmetric polynomials of increasing order. *Probab. Theory Related Fields* 80 (1988), no. 1, 21-35. (Lajos Horváth) **89k:60025** 60F05 (60F10, 62G30)
- Esa, Abdul Sahib K.** Testing hypotheses for reparameterized multivariate analysis of variance. (Bulgarian summary) *Mathematics and mathematical education (Bulgarian) (Sunny Beach (Sl'nchev Bryag), 1987)*, 414-417, *Bulg. Acad. Sci., Sofia*, 1987. (Summary) **89c:62088** 62J10
- Esakia, L. L.** On the classification of elements in closure algebras. (Russian) *Methods for research in logic (Russian)*, 48-54, "Metsniereba", Tbilisi, 1987. (K. Beidar (translated from RZhMat 1988:1 A340)) **89m:06018** 06E99
- Escalada-Imaz, Gonzalo** (with Ghallab, Malik) A practically efficient and almost linear unification algorithm. *Artificial Intelligence* 36 (1988), no. 2, 249-263. (Not in MR) 68T30 (68T05)
- Escamilla-Castillo, Juan** (with Chiavacci, Rossana) Schubert calculus and enumerative problems. (Italian summary) *Boll. Un. Mat. Ital. A (7)* 2 (1988), no. 1, 119-126. (Summary) **89j:14041** 14N10 (14M15)
- Escassut, Alain** Fonctions analytiques et produits croulants. [Analytic functions and collapsing products] *Séminaire d'analyse 1985-1986 (Clermont-Ferrand, 1985-1986)*, Exp. No. 7, 15 pp., Univ. Clermont-Ferrand II, Aubière, 1986. (W. Bartenwerfer) **89d:32038** 32E27 (12J25)
- Lubin-Hensel factorization for Laurent series. *Ann. Mat. Pura Appl. (4)* 147 (1987), 73-92. (W. Bartenwerfer) **89d:32039** 32E27 (30G05)
- (with Sarment-Durix, Marie Claude) Prolongement analytique à travers un  $T$ -filtre. [Analytic continuation through a  $T$ -filter] *Studia Sci. Math. Hungar.* 22 (1987), no. 1-4, 407-444. (W. Bartenwerfer) **89k:30049** 30G05 (30B40, 30H05, 46P05)
- Eschenauer, Hans A.** Multicriteria optimization techniques for highly accurate focusing systems. *Multicriteria optimization in engineering and in the sciences*, 309-354, *Math. Concepts Methods Sci. Engrg.*, 37, Plenum, New York-London, 1988. (see **89f:90171**) 90C31 (73K40, 78A50)
- Eschenburg, J.-H.** Comparison theorems and hypersurfaces. *Manuscripta Math.* 59 (1987), no. 3, 295-323. (Karsten Grove) **89f:53062** 53C20
- The splitting theorem for space-times with strong energy condition. *J. Differential Geom.* 27 (1988), no. 3, 477-491. (Paul E. Ehrlich) **89f:53096** 53C50
- (with Tribuzi, R.) Branch points of conformal mappings of surfaces. *Math. Ann.* 279 (1988), no. 4, 621-633. (R. Osserman) **89e:53006** 53A10 (53A30, 53C42)
- Escher, George A. M. C.** Escher at work. *M. C. Escher: art and science (Rome, 1985)*, 1-11, North-Holland, Amsterdam-New York, 1986. (see **89m:00011**) 01A70
- Escher, M. C.** see **Escher, 89k:52002**; **Escher: art and science**, **89m:00011**; **Escher, George A.**, **(89m:00011)**; **Engel, Peter**, **(89m:00011)**; **Grünbaum, B.**, **(89m:00011)**; **Schattschneider, Doris**, **(89m:00011)**; **Senecchal, Marjorie**, **(89m:00011)**; **Shephard, G. C.**, **(89m:00011)**; **Penrose, Roger**, **(89m:00011)**; **Teuber, Marianne**, **(89m:00011)**; **Loeb, Arthur L.**, **(89m:00011)**; **Emmer, M.**, **(89m:00011)**; **Greene, Ned**, **(89m:00011)**; **Caglioti, Giuseppe**, **(89m:00011)**; **Bérczi, Szaniszló et al.**, **(89m:00011)**; **Maltese, Corrado**, **(89m:00011)**; **Offerhaus, Johannes**, **(89m:00011)**; **Pierantoni, R. L.**, **(89m:00011)**; **Bonaiuto, Paolo**, **(89m:00011)** and **Versluis, Edward B.**, **(89m:00011)**
- Eschmeier, Jörg** (with Albrecht, E.; Neumann, Michael M.) Some topics in the theory of decomposable operators. *Advances in invariant subspaces and other results of operator theory (Timișoara and Herculane, 1984)*, 15-34, *Oper. Theory. Adv. Appl.*, 17, Birkhäuser, Basel-Boston, MA, 1986. (F.-H. Vasilescu) **89c:47046** 47B40 (47B47)
- ★ Analytische Dualität und Tensorprodukte in der mehrdimensionalen Spektraltheorie. (German) [Analytic duality and tensor products in multidimensional spectral theory] *Schriftenreihe des Mathematischen Instituts der Universität Münster, Ser. 2* [Series of



- the Mathematical Institute of the University of Münster, Ser. 2], 42. *Universität Münster, Mathematisches Institut, Münster*, 1987. viii+132 pp. (V. Wrobel (Zbl 619:47030)) **89h:47047** 47B40 (47A10, 47D30)
- Analytic spectral mapping theorems for joint spectra. *Operators in indefinite metric spaces, scattering theory and other topics* (Bucharest, 1985), 167–181, *Oper. Theory: Adv. Appl.*, 24, Birkhäuser, Basel-Boston, MA, 1987. (Raúl E. Curto) **89h:47026** 47A60 (46H30, 47A10)
  - Analytic index formulas for tensor product systems. *Proc. Roy. Irish Acad. Sect. A* **87** (1987), no. 2, 121–135. (F.-H. Vasilescu) **89f:47020** 47A53 (46M05, 47D99)
  - (with Putinar, Mihai) Bishop's condition ( $\beta$ ) and rich extensions of linear operators. *Indiana Univ. Math. J.* **37** (1988), no. 2, 325–348. (Ridley Lange) **89k:47051** 47B40 (47A20)
  - A decomposable Hilbert space operator which is not strongly decomposable. *Integral Equations Operator Theory* **11** (1988), no. 2, 161–172. (F.-H. Vasilescu) **89h:47051** 47B40
  - Tensor products and elementary operators. *J. Reine Angew. Math.* **390** (1988), 47–66. (Volker Wrobel) **89h:47048** 47B40 (46M05, 47A10)
- Escobales, Richard H., Jr.** (with Parker, Phillip E.) Geometric consequences of the normal curvature cohomology class in umbilic foliations. *Indiana Univ. Math. J.* **37** (1988), no. 2, 389–408. (Jean Woufofo Kamga) **89m:53051** 53C12 (57R30)
- López-Escobar, E. G. K.** see López-Escobar, E. G. K.
- carreras Escobar, Francisc** see Carreras Escobar, Francisc
- Escobedo, M.** (with Aguirre, J.) A Cauchy problem for  $u_t - \Delta u = u^p$  with  $0 < p < 1$ . Asymptotic behaviour of solutions. (French summary) *Ann. Fac. Sci. Toulouse Math. (5)* **8** (1986/87), no. 2, 175–203. (Zi Qian Yan) **89d:35080** 35K55 (35B40)
- barba Escríbá, Lourdes** see Barba Escríbá, Lourdes
- frutos Escríbá, D.** see Frutos Escríbá, D.
- Escudero, L. F.** An algorithm for obtaining the multivariate stepsize in linearly constrained nonlinear programming. (Spanish. English summary) *Proceedings of the first international seminar on operational research of the Basque Provinces* (Zarautz, 1986), 127–163, *Univ. Pais Vasco, Bilbao*, 1986. (Summary) **89h:90122** 90C30 (65K05)
- General overview of integrated modelling systems for flexible manufacturing production planning. (Spanish. English summary) *Questiò* **10** (1986), no. 4, 207–269, 295. (Not in MR) **90B30**
  - An inexact algorithm for the sequential ordering problem. *European J. Oper. Res.* **37** (1988), no. 2, 236–249. (Summary) **89h:90245** 90C35 (90B10)
  - S3 sets. An extension of the Beale-Tomlin special ordered sets. *Math. Programming* **42** (1988), no. 1 (Ser. B), 113–123. (Ingo Wegener) **89f:90071** 90B35
- Escudero, M.** (with Fabrega, J.; Morillo, P.) Fault-tolerant routings in double-loop networks. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), A, 187–198. (Summary) **89c:68010** 68M15 (05C20, 68M10, 68R10, 90B10)
- Esculpi, M.** (with Herrera, L.; Jiménez, Juan Francisco) Surface phenomena in general relativistic stellar models: critical mass and stability. *Phys. Lett. A* **130** (1988), no. 4–5, 211–216. (Summary) **89d:83049** 83C99 (85A15)
- Esebbag, C.** (with Nuñez, Josue Arturo; Plastino, A.) Generalised Hill-Wheeler ansatz and the eigenfunctions of the one-dimensional Schrödinger equation. *J. Phys. A* **21** (1988), no. 4, 895–902. (Summary) **89c:81031** 81C05
- Esele, Ignatius I.** (with Onukogu, Ike B.) Response surface exploration with spline functions: biased regressors. (French and Italian summaries) *Statistica (Bologna)* **47** (1987), no. 2, 287–298. (Frederick N. Fritsch) **89h:62134** 62J02
- Esfahanian, Abdol Hossein** (with Hakimi, S. Louis) On computing a conditional edge-connectivity of a graph. *Inform. Process. Lett.* **27** (1988), no. 4, 195–199. (Ortrud R. Oellermann) **89c:05051** 05C40 (68R10)
- Esham, Benjamin F., Jr.** A singularly perturbed second order evolution equation with nonlocal nonlinearity. *Numer. Funct. Anal. Optim.* **9** (1987), no. 9–10, 969–986. (From the introduction) **89i:34081** 34E15 (34A45, 34G20)
- Eshamov, R.** The distribution of some functionals of order statistics. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 3, 47–52, 98. (W. Dziubdziela) **89a:62121** 62G30 (62E15)
- Eshdariev, B.** (with Israilov, M. I.) Sharpening of the remainder term of an interpolation spline. (Russian) *Voprosy Psichis. i Prikl. Mat. (Tashkent)* **10** (1986), 10–26, 135. (Summary) **89d:41024** 41A15
- Eshel, Ilan** (with Weinshall, Daphna; Motro, Uzi) On the evolution of altruistic cooperation. *Biomathematics and related computational problems* (Naples, 1987), 279–282, *Kluwer Acad. Publ., Dordrecht*, 1988. (see **89f:92002**) **92A12** (90D45)
- (with Weinshall, Daphna) Cooperation in a repeated game with random payment function. *J. Appl. Probab.* **25** (1988), no. 3, 478–491. (Ross Cressman) **89g:90255** 90D15 (92A12)
- Eshkuev, A. R.** (with Mustafin, T. G.)  $n$ -algebraically prime models and some forms of atomic models of a theory. (Russian) *Theory of algebraic structures* (Russian), 30–39, *Karagand. Gos. Univ., Karaganda*, 1985. (From the introduction) **89i:03062** 03C50
- Eshmamatov, B.** An evasion problem in linear differential games. (Russian) *Dokl. Akad. Nauk UzSSR* **1988**, no. 5, 8–9. (Not in MR) **90D26** (49A45)
- An evasion problem in linear differential games. (Russian) *Dokl. Akad. Nauk UzSSR* **1988**, no. 7, 6–7. (From the text) **89h:90272** 90D25 (49A45, 90D26)
- Eshmatov, Kh.** (with Mukhitdinova, M. I.; Mukhitdinov, T. M.) A modification of the freezing method for systems of integro-differential and integral equations encountered in problems of the theory of viscoelasticity. (Russian) *Problems of the stability of integral manifolds in equations of mathematical physics* (Russian), 110–116, vi, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) **89f:45012** 45G10 (45J05, 73F99)
- (with Badalov, F. B.; Yusupov, M.) On certain methods of solving systems of integro-differential equations encountered in viscoelasticity problems. *J. Appl. Math. Mech.* **51** (1987), no. 5, 683–686 (1989); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 5, 867–871 (Russian). (Not in MR) **73F15** (45J05)
  - (with Sharova, L. V.) Dynamic stability of a viscoelastic rod with a viscoelastic base. (Russian) *Dokl. Akad. Nauk UzSSR* **1988**, no. 3, 8–11. (From the introduction) **89e:73021** 73H10 (73F15, 73K05)
- Ésik, Z.** (with Dömösi, P.) On homomorphic realization of automata with  $\alpha_0$ -products. *Papers on automata and languages, VIII*, 63–97, *DM*, 86–3, *Karl Marx Univ. Econom., Budapest*, 1986. (Eckehart Hotzel) **89g:68049** 68Q70 (20M35)
- (with Gécseg, F.) On  $\alpha_0$ -products and  $\alpha_2$ -products. *Theoret. Comput. Sci.* **48** (1986), no. 1, 1–8. (O. A. Letichev'skii) **89g:68050** 68Q70
  - (with Dömösi, P.) On homomorphic simulation of automata by  $\nu_1$ -products. *Papers on automata and languages, IX*, 91–112, *DM*, 87–2, *Karl Marx Univ. Econom., Budapest*, 1987. (Ranjana Chaudhuri) **89e:68090** 68Q70
  - On isomorphic realization of automata with  $\alpha_0$ -products. *Acta Cybernet.* **8** (1987), no. 2, 119–127. (K. G. Peeva) **89a:68158** 68Q70
  - (with Gécseg, F.) On a representation of tree automata. *Theoret. Comput. Sci.* **53** (1987), no. 2–3, 243–255. (J. Paredaens) **89m:68096** 68Q70 (68Q05)
  - (with Dömösi, P.) On the hierarchy of  $\nu_i$ -products of automata. *Acta Cybernet.* **8** (1988), no. 3, 253–257. (I. Peák) **89k:68103** 68Q70
  - Independence of the equational axioms for iteration theories. *J. Comput. System Sci.* **36** (1988), no. 1, 66–76. (Summary) **89k:68094** 68Q55 (08A99)
  - On cycles of directed graphs. *Period. Math. Hungar.* **19** (1988), no. 1, 19–23. (George R. T. Hendry) **89e:05098** 05C20 (05C38)
  - An extension of the Krohn-Rhodes decomposition of automata. *Proceedings of the Fifth International Meeting of Young Computer Scientists* (Smolenice Castle, 1988). *Tanulmányok—MTA Széchenyi Int. Budapest No. 208* (1988), 9–20. (Summary) **89k:68104** 68Q70
- Eskenazi, I.** see Kilpatrick, Jeremy, **89h:90036**
- Eskin, Alex** Conformal transformations and string field redefinitions. *Phys. Lett. B* **206** (1988), no. 4, 612–618. (Marc Henneaux) **89g:81071** 81E99 (81E30, 81E40)
- Esiami, Mansour** (with Jeon, Hong Tae) Optimal time joint-trajectory planning for an industrial manipulator using linear interpolation. *Optimal Control Appl. Methods* **9** (1988), no. 2, 215–221. (Not in MR) **93C75**
- Esmağanbetov, M. G.** (with Shayakhmetova, B. K.; Smailov, E. S.) The space  $L_{p,q}[0, 2\pi]^2$ ,  $1 < p, q < +\infty$ , and structural and constructive properties of functions. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1987**, no. 5, 74–77. (Włodzimierz Lenski) **89c:42009** 42A10 (41A10)
- Esmersey, Cengiz** (with Levy, Bernard C.) Variable background Born inversion by wavefield backpropagation. *SIAM J. Appl. Math.* **48** (1988), no. 4, 952–972. (F. Ursell) **89j:73039** 73D50 (35R30, 73–08, 76Q05)
- Esnaull, Hélène** (with Viehweg, Eckart) Revêtements cycliques. II (autour du théorème d'annulation de J. Kollár). [Cyclic coverings. II (concerning J. Kollár's vanishing theorem)] *Géométrie algébrique et applications, II (La Rabida, 1984)*, 81–96, *Travaux en Cours*, 23, Hermann, Paris, 1987. (I. Dolgachev (Zbl 632:14008)) **89h:14014** 14F15 (14C30, 14E20)
- (with Viehweg, Eckart) A remark on a nonvanishing theorem of P. Deligne and G. D. Mostow. *J. Reine Angew. Math.* **381** (1987), 211–213. (Siegmund Kosarew) **89c:32075** 32L10 (14F10)
  - (with Viehweg, Eckart) Deligne-Beilinson cohomology. *Beilinson's conjectures on special values of L-functions*, 43–91, *Perspect. Math.*, 4, Academic Press, Boston, MA, 1988. (Richard M. Hain) **89k:14008** 14C35 (14F99, 19E20, 32J25)
- Esogboe, A. O.** Mathematics, computers and systems: tripartite interconnections. The mathematics of systems and computations (Atlanta, GA, 1986). *Comput. Math. Appl.* **16** (1988), no. 10–11, 773–777. (Editors) **89m:01087** 01A70
- (with Warsi, N. A.) A high level dynamic programming algorithm for processing nonserial looped systems. The mathematics of systems and computations (Atlanta, GA, 1986). *Comput. Math. Appl.* **16** (1988), no. 10–11, 801–813. (G. F. Raggett) **89k:49020** 49C20
  - see also *Mathematics of systems and computations*, (Not in MR)
- Español, Luis** The spectrum and dimension of rings in an algebra on a topos. (Spanish) Seminar and workshop on category theory and applications (Bogotá, 1983). *Rev. Colombiana Mat.* **20** (1986), no. 3–4, 105–127. (Ioan Tofan) **89g:18007** 18B25 (06D99, 13L05)
- ruiz Espejo, Mariano** see Ruiz Espejo, Mariano
- Espindola, Maria L.** (with Espindola, Oslim; Farias, J. Ronald; Teixeira, Nelson L.) Exact invariants for a general mechanical system. *Hadronic J.* **10** (1987), no. 5, 273–277. (Summary) **89c:70027** 70G99 (70F25)
- Espindola, Oslim** (with Espindola, Maria L.; Farias, J. Ronald; Teixeira, Nelson L.) Exact invariants for a general mechanical system. *Hadronic J.* **10** (1987), no. 5, 273–277. (Summary) **89c:70027** 70G99 (70F25)
- Esposito, C.** Graph graphics: theory and practice. *Comput. Math. Appl.* **15** (1988), no. 4, 247–253. (Kaicheng Lu) **89m:68110** 68R10 (05C10, 68Q25)
- Esposito, G.** (with Platania, G.) Inflationary solutions in quantum cosmology. *Classical Quantum Gravity* **5** (1988), no. 7, 937–949. (C. Gauthier) **89f:83114** 83F05 (83C45)
- Esposito, Raffaele** (with Marra, R.; Pulvirenti, Mario; Sciarretta, C.) A stochastic Lagrangian picture for the three-dimensional Navier-Stokes equation. *Comm. Partial Differential Equations* **13** (1988), no. 12, 1601–1610. (M. Sambandham) **89k:35181** 35Q10 (60H99, 76D05)
- Esposito, U.** The spectral density method for quantum and classical systems. *Quantum field theory and quantum statistics, Vol. 1*, 449–479, *Hilger, Bristol*, 1987. (A. Ventura) **89i:82007** 82A05 (82A15)
- Espeulas, Alberto** A noncoprime Shult type theorem. *Math. Z.* **196** (1987), no. 3, 323–329. (Thomas R. Berger) **89c:20015** 20C15 (20D10, 20D20, 20D30)
- A nonabelian Frobenius-Wielandt complement. *Proc. Edinburgh Math. Soc.* (2) **31** (1988), no. 1, 67–69. (M. E. Harris) **89b:20042** 20C99
- Esquinas, J.** (with López-Gómez, J.) Optimal multiplicity in local bifurcation theory. I. Generalized generic eigenvalues. *J. Differential Equations* **71** (1988), no. 1, 72–92. (Pavel Drábek) **89h:47086** 47H15 (58E07)
- Optimal multiplicity in local bifurcation theory. II. General case. *J. Differential Equations* **75** (1988), no. 2, 206–215. (Pavel Drábek) **89j:58015** 58E07 (47H15)
- Esquivel, Manuel L. ★** Sur la méthode des séries de Fourier dans les équations différentielles à coefficients constants. (French) [The Fourier-series method in differential equations with constant coefficients] *Trabalhos de Investigação [Research Monographs]*, 87–2, *Universidade Nova de Lisboa, Departamento de Matemática, Lisbon*, 1987. 35 pp. (N. Hayek Calil) **89m:34010** 34A25 (34A30, 42A16, 46F10)
- Essam, J. W.** Connectedness and connectivity in percolation theory. *Random graphs '85* (Poznań, 1985), 41–57, *North-Holland Math. Stud.*, 144, *North-Holland, Amsterdam-New York*, 1987. (H. Kesten) **89g:60303** 60K35 (82A43)

- (with Bhatti, F. M.) Low density series expansions for backbone properties of percolation clusters. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1-3, 85-112. (H. N. V. Temperley) **89c:82039** 82A43 (05C80, 82A67)
- (with de Magalhães, A. C. N.) The Potts model and flows. III. Standard and subgraph break-collapse methods. *J. Phys. A* **21** (1988), no. 2, 473-500. (Summary) **89f:82044** 82A43 (82-08, 82A68)
- (with Guttman, A. J.; De'Bell, K.) On two-dimensional directed percolation. *J. Phys. A* **21** (1988), no. 19, 3815-3832. (Summary) **89c:82049** 82A43 (82A25)
- Essannouni, Hassane** (with Kaïdi, El Amin Mokhtar) Semiprime alternative rings with a.c.c. *Ring theory (Granada, 1986)*, 82-93, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (Harry F. Smith) **89h:17044** 17D05
- Essebar, B.** (with Le Breton, Alain) Sur un modèle de série chronologique vectorielle à composantes binaires en vue d'applications en climatologie. (English summary) [A vector time series model with binary components with a view to applications in climatology] *Computer methods and water resources, Vol. 3 (Rabat, 1988)*, 199-217, *Comput. Mech., Southampton*, 1988. (Summary) **89m:86006** 86A10 (62M10)
- van den Essen, A. R. P.** Modules with regular singularities over filtered rings and algebraic microlocalization. *Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliavin (Paris, 1986)*, 125-157, *Lecture Notes in Math.*, 1296, Springer, Berlin-New York, 1987. (Emmanuel Andronikof) **89c:58110** 58G07 (16A03, 32C38)
- (with van Doorn, M. G. M.)  $\mathcal{G}_n$ -modules with support on a curve. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 6, 937-953. (S. Paul Smith) **89f:58125** 58G07 (32C38)
- Essen, Mats** Harmonic majorization, harmonic measure and minimal thinness. *Complex analysis, I (College Park, Md., 1985-86)*, 89-112, *Lecture Notes in Math.*, 1275, Springer, Berlin-New York, 1987. (Berni Øksendal) **89m:31003** 31B05 (31B15)
- Sharp estimates of uniform harmonic majorants in the plane. *Ark. Mat.* **25** (1987), no. 1, 15-28. (Albert Baerstein II) **89b:30024** 30C85
- A note on "universal" Phragmén-Lindelöf theorems and a lemma of Beurling. *J. Analyse Math.* **49** (1987), 9-14. (W. H. J. Fuchs) **89c:30057b** 30C80
- (with Lindberg, Per Olov) Optimization and estimates of harmonic measure. *J. Math. Anal. Appl.* **124** (1987), no. 2, 459-481. (Albert Baerstein II) **89c:30059** 30C85 (26D15)
- Harmonic majorization and thinness. Proceedings of the 14th winter school on abstract analysis (Srni, 1986). *Rend. Circ. Mat. Palermo (2) Suppl. No. 14* (1987), 295-304. (W. K. Hayman) **89b:31003** 31B05 (31A05)
- On Wiener conditions for minimally thin and rarefied sets. *Complex analysis*, 41-50, *Birkhäuser, Basel-Boston, MA*, 1988. (David A. Herron) **89m:31005** 31B15 (31B05, 31B25)
- Esser, Hartmut** Ethnic segmentation as the unintended result of intentional action. *Paradoxical effects of social behavior*, 281-296, *Physica, Heidelberg*, 1986. (see **89d:90019**) 92A20
- Esser, P.** Second analytic wave front set in crystal optics. *Appl. Anal.* **24** (1987), no. 3, 189-213. (Vesselin M. Petkov) **89b:35084** 35L40 (58G17, 78A05)
- Second microlocalization and propagation theorems for the wave front sets. (German and Russian summaries) *Z. Anal. Anwendungen* **6** (1987), no. 6, 505-515. (Teresa Monteiro-Fernandes) **89d:35002** 35A20 (35A27, 58G16)
- Sur la réduction de fonctions analytiques qui ne sont pas en involution. [Reduction of analytic functions which are not in involution] *Bull. Soc. Math. Belg. Sér. B* **40** (1988), no. 1, 73-79. (Jean Leray) **89b:35013** 35A27 (35A20, 58G17)
- (with Laubin, P.) Second microlocalization on involutive manifolds with regular projection property. *Resuliate Math.* **14** (1988), no. 3-4, 288-308. (V. Ivrii) **89f:58136** 58G15
- Essert, Mario** (with Čepulić, Vladimir) Biplanes (56, 11, 2) with automorphisms of order 4 fixing some point. *Discrete Math.* **71** (1988), no. 1, 9-17. (E. J. F. Primrose) **89f:05065** 05B25 (05B05, 51E05)
- (with Čepulić, Vladimir) Biplanes (56, 11, 2) with automorphism group  $Z_2 \times Z_2$  fixing some point. *J. Combin. Theory Ser. A* **48** (1988), no. 2, 239-246. (Chester J. Salwach) **89i:05046** 05B05 (05B25, 20B25)
- van Est, W. T.** (with van der Lee, M. A. M.) Enlargeability of local groups according to Mal'cev and Cartan-Smith. *Action hamiltoniennes de groupes. Troisième théorème de Lie (Lyon, 1986)*, 97-127, *Travaux en Cours*, 27, Hermann, Paris, 1988. (K. H. Hofmann) **89i:22012** 22E05 (20F99, 58H05)
- Estabrook, Frank B.** Covariance and the hierarchy of frame bundles. *Acta Appl. Math.* **8** (1987), no. 3, 293-319. (Summary) **89c:58007** 58A15 (35Q99, 53C10, 58A17, 58G35, 58H05)
- pérez Esteban, Dionisio** see **Pérez Esteban, Dionisio**
- Esteban, Juan R.** (with Vázquez, Juan Luis) Homogeneous diffusion in  $\mathbb{R}$  with power-like nonlinear diffusivity. *Arch. Rational Mech. Anal.* **103** (1988), no. 1, 39-80. (Yoshio Yamada) **89j:35064** 35K55 (35K65, 35R35)
- (with Rodríguez, Ana; Vázquez, Juan Luis) A nonlinear heat equation with singular diffusivity. *Comm. Partial Differential Equations* **13** (1988), no. 8, 985-1039. (Yoshio Yamada) **89h:35167** 35K65 (35K55)
- Esteban, M. J.** Variational approach to the existence of skyrmions. *Contributions to nonlinear partial differential equations, Vol. II (Paris, 1985)*, 112-122, *Pitman Res. Notes Math. Ser.*, 155, Longman Sci. Tech., Harlow, 1987. (Philippe-A. Dionne) **89k:81139** 81E99 (58E15)
- Existence of symmetric solutions for the Skyrme's problem. *Ann. Mat. Pura Appl.* (4) **147** (1987), 187-195. (Philippe-A. Dionne) **89c:81117** 81E99 (35Q20, 81E13)
- (with Lions, Pierre-Louis) Skyrmsions and symmetry. *Asymptotic Anal.* **1** (1988), no. 3, 187-192. (David Groussier) **89m:81092** 81E13 (58E15, 58E20)
- A remark on the existence of positive periodic solutions of superlinear parabolic problems. *Proc. Amer. Math. Soc.* **102** (1988), no. 1, 131-136. (Russell C. Thompson) **89c:35010** 35B10 (35K60)
- Ester, Jochen** ★ Systemanalyse und mehrkriterielle Entscheidung. (German) [Systems analysis and multicriterial decision] *VEB Verlag Technik, Berlin*, 1987. 215 pp. ISBN 3-341-00242-1 (Petra Weidner) **89f:90164** 90C31 (03E72, 65K05, 90A06, 90B50)
- Multicriteria fuzzy decisions. *Systems analysis and simulation 1988, I (Berlin, 1988)*, 209-212, *Math. Res.*, 46, Akademie-Verlag, Berlin, 1988. (see **89g:00018**) 90B50 (03E72)
- Esteve, F.** (with Quintanilla, Ramón) On symmetric algebras of fuzzy sets. *Fuzzy Sets and Systems* **24** (1987), no. 1, 87-92. (S. V. Ovchinnikov) **89c:03086** 03E72 (06B99)
- pérez Esteva, Salvador** see **Pérez Esteva, Salvador**
- díaz Estévez, Emilio** see **Díaz Estévez, Emilio**
- Estévez, Margarita** (with Besada, Manuel; Hervés, Carlos) Equilibria in economies with countably many commodities. *Econom. Lett.* **26** (1988), no. 3, 203-207. (Erwin Klein) **89b:90028** 90A14
- lópez Estrada, Jesús** see **López Estrada, Jesús**
- Estrada, R.** see **Estrada, Ricardo**
- alvarez-Estrada, R. F.** see **Alvarez-Estrada, R. F.**
- Estrada, Ricardo** (with Kanwal, R. P.) Moment sequences for a certain class of distributions. *Complex Variables Theory Appl.* **9** (1987), no. 1, 31-39. (J. A. Kelings) **89d:30041** 30E05 (46F20)
- (with Kanwal, R. P.) Higher order fundamental forms of a surface and their applications to wave propagation and generalized derivatives. *Rend. Circ. Mat. Palermo (2)* **36** (1987), no. 1, 27-62. (David E. Betounes) **89i:46045** 46F10 (53A07, 53A45, 73D40)
- Estrada Navas, Luis** (with Quesada Chaverri, Francisco) On bisimple bimodules over division rings. (Spanish summary) *Cienc. Tecn.* **10** (1986), no. 2, 5-9 (1987). (Summary) **89m:16042** 16A53 (16A39)
- Estrada Sariabou, J.** Higher differentials on cyclic curves. *Math. Nachr.* **135** (1988), 311-317. (R. F. Lax) **89f:14030** 14H45 (14H10)
- Estrin, Dario A.** (with Fernández, Francisco M.; Castro, Eduardo A.) Generalized Hill determinant method. *Phys. Lett. A* **130** (1988), no. 6-7, 330-332. (M. Znojil) **89i:81017** 81C05 (34A50, 34B25, 65L10)
- Esty, Warren W.** A Simpson's rule version of the Spearman-Kärber estimator. *Proc. Montana Acad. Sci.* **45** (1988), 78-90. (George W. Williams) **89g:62162** 62P10
- Eswaran, C.** (with Manivannan, K.; Antoniou, A.) Design of low-sensitivity universal wave division biquads. *IEEE Trans. Circuits and Systems* **36** (1989), no. 1, 108-113. (Not in MR) **94C05**
- (with Prasad, K. S.) Limit-cycle free complex biquad recursive digital filters. *IEEE Trans. Circuits and Systems* **36** (1989), no. 2, 280-285. (Not in MR) **94C05** (94A11)
- Et al.** see **et al.**
- Etayo, J. J.** see **Etayo Gordejuela, José Javier**
- Etayo, José Javier** see **Etayo Miqueo, José Javier**
- Etayo Gordejuela, José Javier** (with Martínez, Ernesto) Hyperbolic polygons and NEC groups. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 2, 261-272. (B. N. Apanasov) **89m:32037** 32G15 (11F06, 30F99, 51M10, 57N05)
- (with Bujalance, E.) Large automorphism groups of hyperelliptic Klein surfaces. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 679-686. (David Singerman) **89i:20072** 20H10 (14H99, 30F10)
- Etayo Miqueo, José Javier** (with Bujalance, E.; Gamboa, J. M.) Algebraic function fields in one variable over real-closed ground fields. *Géométrie algébrique et applications, III (La Rabida, 1984)*, 125-129, *Travaux en Cours*, 24, Hermann, Paris, 1987. (N. Sankaran) **89c:12009** 12F20 (12D15, 14G30, 14H05)
- 75 years of mathematical activity. (Spanish) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 1 (Spanish) (Badajoz, 1986)*, 23-42, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Editors) **89i:01134** 01A74
- Eichenmeyer, John** Tarski on truth and logical consequence. *J. Symbolic Logic* **53** (1988), no. 1, 51-79. (Lila Luce) **89g:01051** 01A70 (03-03, 03A05)
- Étessé, Jean-Yves** Complexe de de Rham-Witt à coefficients dans un cristal. [The de Rham-Witt complex with coefficients in a crystal] *Compositio Math.* **66** (1988), no. 1, 57-120. (Jan Stienstra) **89d:14022** 14E30
- Żurek-Etgens, Maria** see **Żurek-Etgens, Maria**
- Eurekington, D. W.** Errata: "Formalizing nonmonotonic reasoning systems" [Artificial Intelligence **31** (1987), no. 1, 41-85; MR 88b:68159]. *Artificial Intelligence* **34** (1988), no. 3, 395. (Editors) **89d:68074** 68T01 (03B60, 03B70)
- Ethier, S. N.** (with Kurtz, T. G.) The infinitely-many-alleles model with selection as a measure-valued diffusion. *Stochastic methods in biology (Nagoya, 1985)*, 72-86, *Lecture Notes in Biomath.*, 70, Springer, Berlin-New York, 1987. (S. Tavaré) **89c:2037** 92A10 (60J70)
- (with Griffiths, R. C.) The infinitely-many-sites model as a measure-valued diffusion. *Ann. Probab.* **15** (1987), no. 2, 515-545. (Thomas G. Kurtz) **89a:60130** 60G57 (60J70, 92A10)
- Improving on bold play at craps. *Oper. Res.* **35** (1987), no. 6, 814-819. (Summary) **89b:90245** 90D20
- (with Nagylaki, Thomas) Diffusion approximations of Markov chains with two time scales and applications to population genetics. II. *Adv. in Appl. Probab.* **20** (1988), no. 3, 525-545. (H. A. Guess) **89i:60154** 60J60 (60F17, 60J10, 92A10)
- Étienne, É.** (with Roels, J.) Deux aspects particuliers du problème des moyennes dans Pappus d'Alexandrie. [Two particular aspects of the problem of means in Pappus of Alexandria] *Rev. Questions Sci.* **157** (1986), no. 2, 179-198. (J. L. Berggren) **89a:01007** 01A20
- Eto, Hajime** (with Sano, Jun) Analyses of crime control by a total criminal justice system model of feedback type with aging effect considered. *Internat. J. Systems Sci.* **19** (1988), no. 12, 2507-2521. (Summary) **89j:92073** 92A20 (93B30, 93C75)
- Etzebarria, J. R.** (with Aguirregabiria, J. M.) Electromagnetic angular momentum radiated by two-point charges. *J. Math. Phys.* **29** (1988), no. 8, 1832-1836. (L. G. Chambers) **89f:78015** 78A35 (70F99, 70H40)
- Eubank, Randall L.** ★ Spline smoothing and nonparametric regression. *Statistics: Textbooks and Monographs*, 90, Marcel Dekker, Inc., New York, 1988. xx+438 pp. ISBN 0-8247-7869-3 (Girdhar G. Agarwal) **89g:62055** 62G05 (62J02, 65D10)
- Optimal grouping, spacing, stratification, and piecewise constant approximation. *SIAM Rev.* **30** (1988), no. 3, 404-420. (Girdhar G. Agarwal) **89j:62052** 62G05 (65D07)
- Euclid** ★ The Mediaeval Latin translation of Euclid's *Elements*. Made directly from the Greek. Edited by H. L. L. Busard. Boethius: Texte und Abhandlungen zur Geschichte der Exakten Wissenschaften [Boethius: Texts and Essays on the History of the Exact Sciences], XV. Franz Steiner Verlag GmbH, Wiesbaden, 1987. vi+411 pp. ISBN 3-515-04628-3 (A. G. Molland) **89g:01004** 01A20 (01A35, 01A75)
- see also Arrighi, Gino, **89d:01013**; Hogendijk, Jan P., **89f:01012**; Saito, Ken, **89m:01010** and Shamsi, F. A., **89m:01017**
- Endave Muñoz, Mario** Primeness and sums of tangles. *Trans. Amer. Math. Soc.* **306** (1988), no. 2, 773-790. (Charles Livingston) **89g:57005** 57M25



- Eufrazio Filho, Heronides** Simplicial algorithms and topology. (Portuguese. English summary) *Bol. Soc. Paran. Mat.* (2) **8** (1987), no. 2, 277–310. (Jack Weinstein) **89f:57031** 57Q05 (54H25, 57Q99, 58C30, 65H10, 90C30)
- Eugen, Franco** (with Innamori, Stefano) Arcs and blocking sets in symmetric designs. Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. 1 (Catania, 1986). *Ars Combin.* **24** (1987), A, 29–45. (Sharad S. Sane) **89f:05047** 05B05 (05B25, 51E20, 51E30)
- (with Berardi, Luigia) Blocking sets in the projective plane of order four. *Combinatorics '86* (Trento, 1986), 43–50, *Ann. Discrete Math.*, **37**, North-Holland, Amsterdam-New York, 1988. (Albrecht Beutelspacher) **89b:05057** 05B25 (51E20)
- (with Innamori, Stefano) On sets of fixed parity in Steiner systems. *Combinatorics '86* (Trento, 1986), 157–167, *Ann. Discrete Math.*, **37**, North-Holland, Amsterdam-New York, 1988. (Giordano Gallina) **89b:05030** 05B05
- (with Mayer, Erika) Blocking sets of index two. *Combinatorics '86* (Trento, 1986), 169–176, *Ann. Discrete Math.*, **37**, North-Holland, Amsterdam-New York, 1988. (Albrecht Beutelspacher) **89b:05058** 05B05 (05B25, 51E05)
- (with Berardi, Luigia) Blocking sets and game theory: origins and problems. (Italian) *Atti Sem. Mat. Fis. Univ. Modena* **36** (1988), no. 1, 165–196. (G. Tallini) **89j:51005** 51D20 (51E20, 90D10)
- Euler, Leonhard** ★ Introduction to analysis of the infinite. Book I. Translated from the Latin and with an introduction by John D. Blanton. Springer-Verlag, New York-Berlin, 1988. xvi+327 pp. ISBN 0-387-96824-5 (Editors) **89g:01067** 01A75 (01A50)
- see also Malykh, A. E., **89a:01026**; Yarkina, M. I., **89a:01029**; Sachs, Horst, **89c:01026**; **89c:01027**; Dhomhres, Jean, **89d:01028**; **89d:01029**; Knobloch, Eberhard, **89c:01022**; Khomenko, N. P., **89f:01035**; Dhomhres, Jean, **89m:01044** and (Not in MR)
- Euler, N.** Discrete Boltzmann equations and Painlevé test. *Finite-dimensional integrable nonlinear dynamical systems* (Johannesburg, 1988), 130–140, *World Sci. Publishing, Singapore*, 1988. (Klaus Dressler) **89k:35205** 35Q20 (58F07, 58G37, 82A40)
- (with Leach, P. G. L.; Mahomed, F. M.; Steeb, W.-H.) Symmetry vector fields and similarity solutions of a nonlinear field equation describing the relaxation to a Maxwell distribution. *Internat. J. Theoret. Phys.* **27** (1988), no. 6, 717–723. (C. Rogers) **89h:58212** 58G35 (35Q20)
- (with Steeb, W.-H.) A note on Nambu mechanics and the Painlevé test. *Progr. Theoret. Phys.* **80** (1988), no. 4, 607–610. (Summary) **89f:58049** 58F07 (34C35, 53B40, 70G99)
- Euler, Reinhardt** (with Bachem, A.) Recent trends in combinatorial optimization. I. (Chinese) Translated from the English by Jia Yu Shao. *Chinese J. Oper. Res.* **5** (1986), no. 2, 18–28. (Yixun Lin) **89m:90129** 90C27 (05B35, 68Q15, 68Q25, 90C10)
- (with Bachem, A.) Recent trends in combinatorial optimization. II. (Chinese) Translated from the English by Zhe Min Wang and Guo Hua Wei. *Chinese J. Oper. Res.* **6** (1987), no. 1, 21–35, 14. (Yixun Lin) **89m:90130** 90C27 (05B35, 68Q15, 68Q25, 90C10)
- (with Jünger, Michael; Reinelt, G.) Generalizations of cliques, odd cycles and anticycles and their relation to independence system polyhedra. *Math. Oper. Res.* **12** (1987), no. 3, 451–462. (H. T. Lau) **89e:05061** 05B35
- Odd cycles and a class of facets of the axial 3-index assignment polytope. Proceedings of the International Conference on Combinatorial Analysis and its Applications (Poznań, 1985). *Zastos. Mat.* **19** (1987), no. 3–4, 375–386 (1988). (Balder von Hohenbalken) **89d:52015** 52A25 (90B35, 90C10)
- Euvrard, Daniel** ★ Résolution numérique des équations aux dérivées partielles de la physique, de la mécanique et des sciences de l'ingénieur. (French) [Numerical solution of partial differential equations in physics, mechanics and engineering] Différences finies, éléments finis. [Finite differences, finite elements] Mathématiques pour la Physique. [Mathematics for Physics] Masson, Paris, 1988. 287 pp. ISBN 2-225-81288-8 (A. O. Garder) **89d:65002** 65-01 (65M05, 65M60, 65N05, 65N30)
- Evangelatos, D. S.** (with Nicholson, H.) Reachability matrix and relation to large-scale systems. *Internat. J. Control* **47** (1988), no. 5, 1163–1177. (D. Rosenblatt) **89g:93024** 93B25 (15A33, 49D27, 93A15)
- Evans, Anthony B.** Difference matrices, generalized Hadamard matrices and orthomorphism graphs of groups. Proceedings of the first Carbondale combinatorics conference (Carbondale, Ill., 1986). *J. Combin. Math. Combin. Comput.* **1** (1987), 97–105. (Katherine Heinrich) **89b:05054** 05B20 (05B15)
- Orthomorphism graphs of  $Z_p$ . Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), B, 141–152. (E. J. F. Prime) **89e:05104** 05C25
- Evans, Charles R.** An approach for calculating axisymmetric gravitational collapse. *Dynamical spacetimes and numerical relativity* (Philadelphia, PA, 1985), 3–39, *Cambridge Univ. Press, Cambridge-New York*, 1986. (Summary) **89d:83002** 83-08 (83-04)
- (with Centrella, Joan M.; Shapiro, Stuart L.; Hawley, John F.; Teukolsky, Saul A.) Test-bed calculations in numerical relativity. *Dynamical spacetimes and numerical relativity* (Philadelphia, PA, 1985), 328–344, *Cambridge Univ. Press, Cambridge-New York*, 1986. (see **89b:83004**) 83-08
- (with Abrahams, Andrew M.) Reading off gravitational radiation waveforms in numerical relativity calculations: matching to linearized gravity. *Phys. Rev. D* (3) **37** (1988), no. 2, 318–332. (Summary) **89b:83008** 83-08 (83C25)
- Evans, D. J.** see Evans, Dennis J.
- Evans, Dafydd** Adelard on falconry. *Adelard of Bath*, 25–27, *Warburg Inst. Surveys Texts, XIV, Warburg Inst., London*, 1987. (see **89c:01017**) 01A35
- Evans, David E.** (with Carey, A. L.) On an automorphic action of  $U(n, 1)$  on  $\mathcal{E}_n$ . *J. Funct. Anal.* **70** (1987), no. 1, 90–110. (Autorreferat Zbl 615:46062) **89a:46136** 46L55 (22E65, 46L40)
- (with Kishimoto, Akitaka) Duality for automorphisms on a compact  $C^*$ -dynamical system. *Ergodic Theory Dynamical Systems* **8** (1988), no. 2, 173–189. (C. J. K. Batty) **89m:46107** 46L55
- see also Operator algebras and applications, **89m:46003a** and **89m:46003b**
- Evans, David J.** A class of nonlinear O.D.E. methods based on Euler formulae. *BAIL IV* (Novosibirsk, 1986), 274–285, *Boole Press Conf. Ser.*, **8**, Boole, Dun Laoghaire, 1986. (A. de Castro Brzezicki) **89a:65105** 65L05 (65L20)
- (with Danae, A.) The solution of Burgers' equation by boundary value methods. *Numerical mathematics and applications* (Oslo, 1985), 235–239, *IMACS Trans. Sci. Comput.*—**85**, I, North-Holland, Amsterdam-New York, 1986. (Summary) **89f:65092** 65M05
- (with Al-Kharafi, A. A.) A finite element approach to nonlinear transient problems. *Mathematical analysis and its applications* (Kuwait, 1985), 211–228, *KFAS Proc. Ser.*, **3**, Pergamon, Oxford-Elmsford, NY, 1988. (Beny Neta) **89f:65116** 65N30
- A stable nonlinear mid-point formula for solving ODEs. *Appl. Math. Lett.* **1** (1988), no. 2, 165–169. (Not in MR) 65L99
- (with Sanugi, B. B.) Numerical solution of the Goursat problem by a nonlinear trapezoidal formula. *Appl. Math. Lett.* **1** (1988), no. 3, 221–223. (Not in MR) 65M99
- (with Sanugi, B. B.) A Fourier series method for the numerical solution of the nonlinear advection problem. *Appl. Math. Lett.* **1** (1988), no. 4, 385–389. (Summary) **89k:65158** 65P05
- (with Yousif, W. S.) The modified alternating group explicit (M.A.G.E.) method. *Appl. Math. Modelling* **12** (1988), no. 3, 262–267. (Summary) **89d:65030** 65F05
- (with Megson, G. M.) Improved matrix product computation using double-pipeline systolic arrays. *Comput. J.* **31** (1988), no. 6, 567–569. (Summary) **89j:68077** 68Q35
- (with Sanugi, B. B.) A nonlinear trapezoidal formula for the solution of initial value problems. *Comput. Math. Appl.* **15** (1988), no. 1, 77–79. (G. K. Gupta) **89c:65077** 65L05
- (with Sanugi, B. B.) A new fourth order Runge-Kutta formula for  $y' = Ay$  with stepsize control. *Comput. Math. Appl.* **15** (1988), no. 12, 991–995. (Summary) **89c:65077** 65L05
- (with Li, Chang Jun) Analysis of a symmetric extrapolated iterative method for solving linear systems. *Linear Algebra Appl.* **103** (1988), 149–173. (Corneliu Berbente) **89g:65029** 65F10
- (with Li, Chang Jun) Extrapolated Gauss-Seidel I and SOR methods for least-squares problems. *Numer. Math.* **53** (1988), no. 4, 485–498. (Zuhe Shen) **89g:65030** 65F10
- (with Bekakos, M. P.) The solution of linear systems by the QIF algorithm on a waveform array processor. *Parallel Comput.* **7** (1988), no. 1, 111–130. (Summary) **89b:65328** 65W05 (65F05)
- (with Yousif, W. S.) The solution of two-point boundary value problems by the alternating group explicit (age) method. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 3, 474–484. (Summary) **89m:34025** 34B05 (34A50, 65F10)
- (with Li, Chang Jun) Numerical aspects of the generalized CG-method applied to least squares problems. (German summary) *Computing* **41** (1989), no. 1–2, 171–178. (Summary) **89m:65043** 65F30 (65K05, 90C20)
- Evans, David M.** Infinite permutation groups and minimal sets. *Quart. J. Math. Oxford Ser. (2)* **38** (1987), no. 152, 461–471. (Michael Klemm) **89b:20015** 20B22 (03C60)
- Evans, Dennis J.** (with Morris, G. P.; Cohen, E. G. D.; van Beijeren, H.) Linear response of phase-space trajectories to shearing. *Phys. Rev. Lett.* **62** (1989), no. 14, 1579–1582. (Summary) **89m:82003** 82-08 (58F13, 82A40)
- Evans, E. Graham, Jr.** (with Griffith, Phillip) Syzygies: the codimension of zeros of a nonzero section. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 485–489, *Proc. Sympos. Pure Math.*, **46**, Part 2, Amer. Math. Soc., Providence, RI, 1987. (G. Horrocks) **89e:13014** 13D05 (14F05)
- (with Griffith, Phillip) Binomial behavior of Betti numbers for modules of finite length. *Pacific J. Math.* **133** (1988), no. 2, 267–276. (Jürgen Herzog) **89d:13014** 13C99 (13D99, 13H05)
- Evans, F. J.** (with Larsen, P. Martin) Structural design of decentralized control systems. *Advanced computing concepts and techniques in control engineering* (Il Ciocco, 1987), 257–286, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, **47**, Springer, Berlin-New York, 1988. (see **89g:93002**) 93A15 (93B05, 93B07)
- Evans, G. A.** (with Aihie, V. U.) The tanh transformation for double integrals with singularities—a progressive rule. *J. Comput. Appl. Math.* **24** (1988), no. 3, 349–354. (Summary) **89i:65025** 65D32
- Evans, Gillian R.** A note on the Regule abaci. *Adelard of Bath*, 33–35, *Warburg Inst. Surveys Texts, XIV, Warburg Inst., London*, 1987. (see **89c:01017**) 01A35
- Evans, J. M.** (with Achúcarro, A.; Townsend, P. K.; Wiltshire, D. L.) Super  $p$ -branes. *Phys. Lett. B* **198** (1987), no. 4, 441–446. (Summary) **89f:83082** 83E15 (81E30, 83E30, 83E50)
- Super  $p$ -brane Wess-Zumino terms. *Classical Quantum Gravity* **5** (1988), no. 5, L87–L90. (Roger Brooks) **89f:83087** 83E15 (53C80, 81E30, 83E30)
- Supersymmetric Yang-Mills theories and division algebras. *Nuclear Phys. B* **298** (1988), no. 1, 92–108. (Paul Baird) **89f:81096** 81E13 (17A35, 58G40)
- Evans, J. R.** Corrigendum: "Structural analysis of local search heuristics in combinatorial optimization" [Comput. Oper. Res. **14** (1987), no. 6, 465–477; MR 88i:90150]. *Comput. Oper. Res.* **15** (1988), no. 3, i. (Editors) **89d:90171** 90C27 (90C10)
- Evans, J. W.** see Evans, James William
- Evans, James Carl** On the origin of the Ptolemaic star catalogue. *I. J. Hist. Astronom.* **18** (1987), no. 3, 155–172. (Anne Tihon) **89h:01003** 01A20
- On the origin of the Ptolemaic star catalogue. II. *I. J. Hist. Astronom.* **18** (1987), no. 4, 233–278. (Anne Tihon) **89h:01004** 01A20
- Elastic scattering by a paraboloid of revolution. *Amer. J. Phys.* **56** (1988), no. 5, 423–425. (Summary) **89c:78011** 78A45
- Evans, James William** Correlated percolation: exact Bethe lattice analyses. *J. Phys. A* **20** (1987), no. 18, 6487–6500. (Summary) **89b:82063** 82A43 (82A68)
- Evans, Lawrence C.** Quasiconvexity and partial regularity in the calculus of variations. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1064–1071, *Amer. Math. Soc., Providence, RI*, 1987. (see **89c:00042**) 49A50
- (with Gariépy, R. F.) Blow-up, compactness and partial regularity in the calculus of variations. Proceedings of the International Workshop on Integral Functionals in the Calculus of Variations (Trieste, 1985). *Rend. Circ. Mat. Palermo (2) Suppl.* **15** (1987), 101–108. (Fredri Tröltzsch) **89c:49014** 49B21 (90C48)
- Evans, M. E.** Cluster points and stability. *Internat. J. Systems Sci.* **19** (1988), no. 12, 2655–2659. (Summary) **89j:39004** 39A11 (58F08, 90C30)
- Pole-assignment with periodic output feedback: computer assisted study on a 2-dimensional linear system. *Internat. J. Systems Sci.* **19** (1988), no. 12, 2661–2672. (T. Kaczorek) **89k:93102** 93B55 (93C55)
- Evans, M. J.** see Evans, Michael Jon
- Evans, M. W.** see Evans, Michael Wyndham
- Evans, Mark** (with Ovrut, Burt A.) Hyper-Kähler metrics from  $(4, 0)$  superspace. *Phys. Lett. B* **190** (1987), no. 1–2, 63–68. (S. M. Salamon) **89b:53103** 53C55 (53C25, 53C80, 81E20)
- A knowledge-based approach to cooperative problem solving. Eighteenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1988). *Congr.*

- Numer.* 68 (1989), 59–74. (see 89m:00009) 68T20
- (with Anderson, John E.) UMBBS: a blackboard development system for an educational environment. Eighteenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1988). *Congr. Numer.* 69 (1989), 167–188. (see 89m:00010) 68T20
- Evans, Martin J. A note on two-generator groups. *Rocky Mountain J. Math.* 17 (1987), no. 4, 887–889. (Gernot Stroth) 89b:20072 20F05
- (with Shin, Hyunyoung) Local conjugacy in finite groups. *Arch. Math. (Basel)* 50 (1988), no. 4, 289–291. (Koichiro Harada) 89b:20052 20D20
- Evans, Merran A. (with King, Maxwell L.) A further class of tests for heteroscedasticity. *J. Econometrics* 37 (1988), no. 2, 265–276. (Summary) 89a:62159 62J05
- Evans, Michael J. see Evans, Michael Jon
- Evans, Michael John (with Draper, N. R.; Guttman, I.) A Bayesian approach to system reliability when two components are dependent. *Comput. Statist. Data Anal.* 7 (1989), no. 1, 39–49. (Not in MR) 62N05 (90B25)
- Evans, Michael Jon High order smoothness. *Acta Math. Hungar.* 50 (1987), no. 1–2, 17–20. (From the text) 89f:26004 26A24 (26A21)
- Approximate smoothness of continuous functions. *Colloq. Math.* 54 (1987), no. 2, 307–313. (F. Miroslaw Filipczak) 89m:26011 26A27
- Qualitative derivatives and derivatives. *Rev. Roumaine Math. Pures Appl.* 33 (1988), no. 7, 575–581. (Carlo Bardaro) 89m:26009 26A24 (26A27)
- Evans, Michael Wyndham Exotic homomorphisms. *J. Pure Appl. Algebra* 49 (1987), no. 1–2, 117–131. (Marco Fontana) 89b:13018 13C11 (13A17, 13D30, 16A30)
- Evans, N. W. (with Lynden-Bell, D.) Solutions of the equations of stellar hydrodynamics for Eddington systems. *Monthly Notices Roy. Astronom. Soc.* 236 (1989), no. 4, 801–816. (Summary) 89m:85010 85A15
- Evans, Robin J. (with Soh, Y. C.) Stability analysis of interval matrices—continuous and discrete systems. *Internat. J. Control* 47 (1988), no. 1, 25–32. (Andrzej W. Olbrot) 89c:93076 93B35 (15A18, 15A42, 34D10, 93D99)
- (with Zhang, Cishen) Rate constrained adaptive control. *Internat. J. Control* 48 (1988), no. 6, 2179–2187. (Chung Li Jiang) 89k:93137 93C40 (93D15)
- (with Soh, Y. C.) Characterization of robust controllers. *Automatica—J. IFAC* 25 (1989), no. 1, 115–117. (Summary) 89k:93174 93D15 (15A45, 93B35)
- Evans, Ronald J. Ramanujan's second notebook: asymptotic expansions for hypergeometric series and related functions. *Ramanujan revisited (Urbana-Champaign, Ill., 1987)*, 537–560, Academic Press, Boston, MA, 1988. (H. M. Srivastava) 89c:33003 33A30 (01A60, 11-03, 11F11, 41A60)
- Evans, S. J. (with Thomas, Ruth Margaret) A single-step algorithm for oscillatory problems. *Comm. Appl. Numer. Methods* 5 (1989), no. 2, 113–120. (Not in MR) 65L05 (70-08, 70K99)
- Evans, Steven N. Multiple points in the sample paths of a Lévy process. *Probab. Theory Related Fields* 76 (1987), no. 3, 359–367. (Bert Fristedt) 89a:60171 60J30 (60J45)
- Continuity properties of Gaussian stochastic processes indexed by a local field. *Proc. London Math. Soc.* (3) 56 (1988), no. 2, 380–416. (Simeon M. Berman) 89c:60084 60G15 (46N05, 46P05, 60G17)
- Sample path properties of Gaussian stochastic processes indexed by a local field. *Proc. London Math. Soc.* (3) 56 (1988), no. 3, 580–624. (Robert J. Adler) 89c:60057 60G15 (60G17)
- The maximum distribution of a Gaussian stochastic process indexed by a local field. *J. Austral. Math. Soc. Ser. A* 46 (1989), no. 1, 69–87. (Simeon M. Berman) 89m:60091 60G15 (26E30, 60G10)
- Evans, W. D. (with Edmunds, D. E.) ★ Spectral theory and differential operators. Oxford Mathematical Monographs. Oxford Science Publications. The Clarendon Press, Oxford University Press, New York, 1987. xviii+574 pp. ISBN 0-19-853542-2 (Hermann König) 89b:47001 47-02 (34B25, 35Pxx, 47Axx, 47Bxx, 47F05)
- (with Edmunds, D. E.; Harris, D. J.) Approximation numbers of certain Volterra integral operators. *J. London Math. Soc.* (2) 37 (1988), no. 3, 471–489. (Bernd Carl) 89k:47078 47G05 (41A46, 45D05, 47B10)
- Èvarestov, R. A. (with Smirnov, V. P.) The local group method in the theory of the electron states of a crystal. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Järnala, 1985), 622–630, "Nauka", Moscow, 1986. (see 89d:81001) 82A60
- Evdokimov, A. A. The completeness of sets of words. (Russian) *Proceedings of the All-Union seminar on discrete mathematics and its applications* (Moscow, 1984), 112–116, Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow, 1986. (From the text) 89c:68066 68Q45 (68R05, 94B05)
- Metric properties of embeddings, and codes that preserve distance. (Russian) *Trudy Inst. Mat. (Novosibirsk)* 10 (1988), *Modeli i Metody Optim.*, 116–132, 264. (Summary) 89i:94039 94B15 (54E35, 94C10)
- Even, William E. Testing exogeneity in a probit model. *Econom. Lett.* 26 (1988), no. 2, 125–128. (Not in MR) 62P20
- Evans, Dan (with Kunstatler, G.) Hamiltonian analysis of linearised topologically massive gravity. *Classical Quantum Gravity* 5 (1988), no. 12, 1627–1645. (Jörg Frauendiener) 89k:83051 83C99 (58F40, 83D05)
- (with Kunstatler, G.) Hamiltonian analysis of topologically massive Yang-Mills theory. *Phys. Rev. D* (3) 37 (1988), no. 2, 435–440. (Summary) 89b:81102 81E13 (58F05)
- Everett, Allen E. (with Aryal, Mukunda) Comment on: "Monopoles on strings" [Phys. Rev. Lett. 55 (1985), no. 22, 2398–2400; MR 87a:81092] by M. Hindmarsh and T. W. B. Kibble. With a reply by Hindmarsh and Kibble. *Phys. Rev. Lett.* 57 (1986), no. 5, 646–647. (Editors) 89a:81070 81E13 (53C80)
- Everett, Martin G. (with Borgatti, Steve) Calculating role similarities: an algorithm that helps determine the orbits of a graph. *Social Networks* 10 (1988), no. 1, 77–91. (Stephen B. Seidman) 89g:92060 92A20 (05C99)
- Everitt, B. S. A finite mixture model for the clustering of mixed-mode data. *Statist. Probab. Lett.* 6 (1988), no. 5, 305–309. (Summary) 89a:62143 62H30
- Everitt, W. N. Linear control theory and quasidifferential equations. *Z. Angew. Math. Phys.* 38 (1987), no. 2, 193–203. (P. Brunovsky) 89c:93010 93B05 (34H05, 93C05)
- (with Gunson, J.; Zettl, A.) Some comments on Sturm-Liouville eigenvalue problems with interior singularities. *Z. Angew. Math. Phys.* 38 (1987), no. 6, 813–838. (Summary) 89b:34022 34B25 (34-04)
- (with Atkinson, Frederick V.; Zettl, A.) Regularization of a Sturm-Liouville problem with an interior singularity using quasiderivatives. *Differential Integral Equations* 1 (1988), no. 2, 213–221. (József Banás) 89b:34054 34B25
- Evertse, J.-H. (with Chaum, David; van de Graaf, Jeroen; Peralta, René) Demonstrating possession of a discrete logarithm without revealing it. *Advances in cryptography—CRYPTO '86 (Santa Barbara, Calif., 1986)*, 200–212, *Lecture Notes in Comput. Sci.*, 263, Springer, Berlin-New York, 1987. (Albrecht Beutelspacher) 89d:94037 94A60
- (with Györy, K.; Shorey, T. N.; Tijdeman, R.) Equal values of binary forms at integral points. *Acta Arith.* 48 (1987), no. 4, 379–396. (F. Beukers) 89k:11014 11D41 (11E16)
- (with Györy, K.; Stewart, C. L.; Tijdeman, R.) S-unit equations and their applications. *New advances in transcendence theory (Durham, 1986)*, 110–174, Cambridge Univ. Press, Cambridge-New York, 1988. (Lian Xiang Wang) 89j:11028 11D41 (11J85)
- (with Györy, K.) Decomposable form equations. *New advances in transcendence theory (Durham, 1986)*, 175–202, Cambridge Univ. Press, Cambridge-New York, 1988. (Lian Xiang Wang) 89k:11042 11D41 (11D57)
- (with Györy, K.) On the number of polynomials and integral elements of given discriminant. *Acta Math. Hungar.* 51 (1988), no. 3–4, 341–362. (W. Narkiewicz) 89k:12006 12E05 (11R09, 11R29)
- (with Györy, K.) On the numbers of solutions of weighted unit equations. *Compositio Math.* 66 (1988), no. 3, 329–354. (Michel Laurent) 89j:11082 11B87 (11D85)
- (with Györy, K.; Stewart, C. L.; Tijdeman, R.) On S-unit equations in two unknowns. *Invent. Math.* 92 (1988), no. 3, 461–477. (F. Beukers) 89j:11028 11D61
- Evertsz, C. (with Pietronero, L.; Siebesma, A. P.) Fractal and multifractal structures in kinetic critical phenomena. *Stochastic processes in physics and engineering (Bielefeld, 1986)*, 253–278, *Math. Appl.*, 42, Reidel, Dordrecht-Boston, MA, 1988. (Summary) 89d:82042 82A25 (82A42, 82A57)
- (with Pietronero, L.; Erzan, Ayse) Theory of Laplacian fractals: diffusion limited aggregation and dielectric breakdown model. *Phys. A* 151 (1988), no. 2–3, 207–245. (Howard Alström) 89i:82073 82A57 (82A25, 82A99)
- Eves, Howard W. ★ Mathematical circles revisited. A second collection of mathematical stories and anecdotes. The Prindle, Weber & Schmidt Series in Mathematics. PWS-KENT Publishing Co., Boston, MA, 1971. xxii+186 pp. ISBN 0-87150-121-X (E. J. Barbeau) 89g:00003 00A08 (01A99)
- ★ Return to mathematical circles. A fifth collection of mathematical stories and anecdotes. The Prindle, Weber & Schmidt Series in Mathematics. PWS-KENT Publishing Co., Boston, MA, 1988. xxii+181 pp. ISBN 0-87150-105-8 (Editors) 89j:00004 00A08 (01A99)
- Evesham, H. A. Origins and development of nomography. *Ann. Hist. Comput.* 8 (1986), no. 4, 324–333. (A. de Castro Brzezicki) 89d:01046 01A60 (65-03, 65S05)
- Evešev, E. G. (with Shoniya, V. V.) A type of coefficient inverse problem (a variational approach). (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* 25 (1988), 173–184, 279. (Summary) 89i:35101 35P05 (35R30)
- Evešev, G. S. (with Tyurlikov, A. M.) Blocked stack algorithms for multiple access to a system of parallel channels. (Russian) *Noise-resistant coding and computer reliability (Russian)*, 135–143, 191, "Nauka", Moscow, 1987. (see 89c:94001) 94A40
- Evešev, O. V. Control production system for flexible manufacturing systems. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 2, 154–170; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 5, 93–112, 222 (Russian). (Not in MR) 90B30 (93C75)
- Eveševich, A. A. (with Bagrov, V. G.; Obukhov, V. V.; Osetrin, K. E.) Stäckel spaces in an electrovacuum with isotropic complete sets. Integration of field equations for metrics that generalize spaces of type (1, 1). (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 30 (1987), no. 12, 17–20. (Vitaly N. Mel'nikov) 89i:83025 83C20
- Evstigneev, I. I. (with Vasil'kov, G. D.; Zhukovskii, M. E.) Techniques for the calculation of electromagnetic fields in a quasi-three-dimensional model. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 4, 568–579, 623. (Summary) 89e:78009 78A25
- Evstigneev, I. V. Measurable images of compact spaces and selectors of analytic sets. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 3, 538–541; translated in *Soviet Math. Dokl.* 37 (1988), no. 2, 399–402. (Vladimir L. Levin) 89g:28015 28B20
- Estève, V. P. A family of almost circular orbits in the inner version of the circular three-body problem. *J. Appl. Math. Mech.* 50 (1986), no. 5, 663–666 (1987); translated from *Prikl. Mat. Mekh.* 50 (1986), no. 5, 856–859 (Russian). (Summary) 89g:70007 70F07
- Evtushenko, Ya. G. (with Potapov, M. A.) Numerical methods for solving multicriteria problems. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 209–218, "Nauka", Moscow, 1987. (Emil Iwanow) 89c:90195 90C31 (65K05)
- (with Abdullaev, F. Sh.; Grachev, N. L.) Optimization of stiff systems. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 230–235, "Nauka", Moscow, 1987. (From the text) 89k:49022 49D25 (49B10)
- Accuracy estimates in penalty function methods. (Russian) *Problems in applied mathematics and information science (Russian)*, 199–208, 295–296, "Nauka", Moscow, 1987. (O. V. Vasil'ev) 89j:90127 90C30 (65K05)
- (with Rat'kin, V.) The method of half-divisions for global optimization of a function of many variables. *Soviet J. Comput. Systems Sci.* 25 (1987), no. 5, 75–84; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 1, 119–127, 222 (Russian). (John J. Dinkel) 89f:90136 90C30
- (with Zhadan, V. G.) ★ К вопросу о систематизации численных методов нелинейного программирования. (Russian) [Problems in systematization of numerical methods for nonlinear programming] Методы последовательной безусловной минимизации. [Methods of sequential unconditional minimization] Сообщения по Прикладной Математике. [Reports in Applied Mathematics] *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1988. 67 pp. (R. Serban) 89k:90141 90C30
- (with Mazourek, V.; Rat'kin, V.) Multicriteria optimization in the DISO system. *System modelling and optimization (Tokyo, 1987)*, 231–240, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (see 89f:00029) 90C31
- see also Dennis, John E., Jr. 89j:65002
- Evtushik, L. E. (with Arutyunyan, S. Kh.; Grushko, P. Ya.; Lumiste, Ülo) Differential-algebraic methods for geometric investigations in the work of A. M. Vasil'ev and his scientific school. (Russian) *Problems in geometry*, Vol. 20 (Russian), 3–34, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (I. Vaisman) 89k:01029 01A70 (53-03, 53C10, 58H05)



- Ewald, Günter** Blow-ups of smooth toric 3-varieties. *Abh. Math. Sem. Univ. Hamburg* 57 (1987), 193–201. (T. Oda) **89i:14065** 14L32 (14E05, 14J30)
- An embedding theorem for smooth projective toric varieties. *Aequationes Math.* 35 (1988), no. 2–3, 267–271. (T. Oda) **89i:14027** 14L32 (14E25, 52A43)
- (with Schulz, Christoph) 3-Sphären mit kleinen Eckenvalenzen. [3-spheres with small vertex valences] *Aequationes Math.* 35 (1988), no. 2–3, 277–280. (W. J. Firey) **89f:52013** 52A25
- Eweda, Eweda** (with Macchi, Odile) Convergence of the RLS and LMS adaptive filters. *IEEE Trans. Circuits and Systems* 34 (1987), no. 7, 799–803. (Zbigniew Nahorski) **89k:93209** 93E12 (93E25)
- Almost sure convergence of a decreasing gain sign algorithm for adaptive filtering. *IEEE Trans. Acoust. Speech Signal Process.* 36 (1988), no. 10, 1669–1671. (H. Vincent Poor) **89i:93108** 93E11
- (with Macchi, Odile) Compared speed and accuracy of the RLS and LMS algorithms with constant forgetting factors. *RAIRO Automat.-Prod. Inform. Ind.* 22 (1988), no. 3, 255–267. (Ching-Tsuan Pan) **89g:93115** 93E25 (93E11)
- Ewell, John A.** On sums of three triangular numbers. *Fibonacci Quart.* 26 (1988), no. 4, 332–335. (M. A. Owens) **89m:11096** 11P57
- Consequences of the triple- and quintuple-product identities. *Houston J. Math.* 14 (1988), no. 1, 51–56. (David M. Bressoud) **89j:11099** 11P57 (05A19)
- Ewert, Janina** On pairwise Hausdorff bi-topological spaces. *Math. Chronicle* 16 (1987), 57–63. (Ivan L. Reilly) **89f:54062** 54E55
- (with Lipiński, J. S.) On relations between continuity, quasi-continuity and cliquishness of maps. *General topology and its relations to modern analysis and algebra*, VI (Prague, 1986), 177–185, *R. E. Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (Ryszard J. Pawlak) **89g:54025** 54C08 (28A20)
- Fuzzy-valued maps. *Math. Nachr.* 137 (1988), 79–87. (Zike Deng) **89m:54008** 54A40 (03E72)
- Ewing, John** (with Löffler, Peter; Pedersen, Erik Kjaer) A rational torsion invariant. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 731–736. (Terry Lawson) **89c:57021** 57Q10 (55P62, 57Q12)
- Exel, Ray** (with Loring, Terry) Almost commuting unitary matrices. *Proc. Amer. Math. Soc.* 106 (1989), no. 4, 913–915. (Kenneth R. Davidson) **89m:15003** 15A15 (15A27, 47A55, 47B47, 55M25)
- Exner, G.** (with Chevreau, B.; Percy, C.) Structure theory and reflexivity of contraction operators. *Bull. Amer. Math. Soc. (N.S.)* 19 (1988), no. 1, 299–301. (Hari Bercovici) **89j:47011** 47A65 (47A15)
- (with Sullivan, Patrick) Normal operators and the classes  $A_n$ . *J. Operator Theory* 19 (1988), no. 1, 81–94. (Kenneth R. Davidson) **89b:47011** 47A45 (47B15)
- Exner, P.** (with Dittrich, J.) ★ A nonrelativistic model of two-particle decay. Relation to the scattering theory, spectral concentration, and bound states. With a Russian summary. *Сообщения Объединенного Института Ядерных Исследований. Дубна* [Communications of the Joint Institute for Nuclear Research. Dubna], E2-87-599. *Joint Inst. Nuclear Res., Dubna*, 1987. 21 pp. (W. O. Amrein) **89g:81099** 81F99
- (with Dittrich, J.) A nonrelativistic model of two-particle decay. II. Reduced resolvent. *Czechoslovak J. Phys. B* 37 (1987), no. 9, 1028–1034. (H. Araki) **89c:81183** 81F20 (82A15)
- (with Šeba, P.) ★ Trapping modes in a curved electromagnetic waveguide with perfectly conducting walls. With a Russian summary. *Сообщения Объединенного Института Ядерных Исследований. Дубна* [Communications of the Joint Institute for Nuclear Research. Dubna], E5-88-379. *Joint Inst. Nuclear Res., Dubna*, 1988. 9 pp. (Summary) **89c:78015** 78A50
- (with Šeba, P.) Mathematical models for quantum point-contact spectroscopy. *Czechoslovak J. Phys. B* 38 (1988), no. 1, 1–11. (Tuan W. Chen) **89b:81023** 81C05
- (with Šeba, P.) A simple model of thin-film point contact in two and three dimensions. *Czechoslovak J. Phys. B* 38 (1988), no. 10, 1095–1110. (I. Gottlieb) **89k:81031** 81C10 (47B25)
- (with Šeba, P.; Šlovíček, Pavel) Quantum interference on graphs controlled by an external electric field. *J. Phys. A* 21 (1988), no. 21, 4009–4019. (Summary) **89k:81024** 81C05 (81C10, 81H99)
- (with Šeba, P.) Quantum-mechanical splitters: how should one understand them? *Phys. Lett. A* 128 (1988), no. 9, 493–496. (Summary) **89c:81038** 81C10
- Exoo, G.** Constructing Ramsey graphs with a computer. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer. Ser.* 59 (1987), 31–36. (Ralph Faudree) **89c:05144** 05C55 (05-04)
- Ramsey numbers of hypergraphs. *J. Combin. Math. Combin. Comput.* 2 (1987), 5–11. (R. H. Schelp) **89a:05105** 05C55 (05C65)
- (with Harary, Frank) Animal-trees and caterpillars are equivalent. *Nat. Acad. Sci. Lett.* 10 (1987), no. 2, 67–69. (Robert C. Brigham) **89a:05111** 05C75 (05C05, 05C50)
- The Ramsey number of  $K_4$  versus  $K_3 - e$ . Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), A, 277–286. (Ralph Faudree) **89d:05131**; EA **89m** 05C55
- Some new computer generated results in Ramsey graph theory. *Comput. Math. Appl.* 15 (1988), no. 4, 255–257. (Seymour Schuster) **89i:05201** 05C55
- (with Reynolds, Donald F.) Ramsey numbers based on  $C_3$ -decompositions. *Discrete Math.* 71 (1988), no. 2, 119–127. (Michael Jacobson) **89i:05202** 05C55
- (with Clapham, C.; Harborth, Heiko; Mengersen, I.; Sheehan, John) The Ramsey number of  $K_3 - e$ . *J. Graph Theory* 13 (1989), no. 1, 7–15. (Linda Lesniak) **89m:05085** 05C55
- Exton, Harold** On the orthogonality of the Bessel polynomials. *Riv. Mat. Univ. Parma* (4) 12 (1986), 213–215 (1987). (Summary) **89c:33010** 33A40
- A new orthogonal combination of confluent hypergeometric functions. *J. Indian Acad. Math.* 9 (1987), no. 1, 11–15. (B. M. Agrawal) **89c:33004** 33A30
- On certain series which generalise the Neumann and Kapteyn series. *Riv. Mat. Univ. Parma* (4) 13 (1987), 275–279 (1988). (Summary) **89m:33012** 33A40
- Eydelañ, Alexander** (with Spruck, Joel) The inverse power method for semilinear elliptic equations. *Nonlinear diffusion equations and their equilibrium states, I* (Berkeley, CA, 1986), 273–286, *Math. Sci. Res. Inst. Publ.*, 12, Springer, New York-Berlin, 1988. (Enrique Zuazua) **89k:35077** 35J60 (35A40, 35P30, 65N25)
- (with Turkington, Bruce) A computational method of solving free-boundary problems in vortex dynamics. *J. Comput. Phys.* 78 (1988), no. 1, 194–214. (John C. Strikwerda) **89j:76037** 76C05 (65P05, 76-08)
- Eydgahi, Ali M.** State-space family realization of 2-D linear digital systems. *IEEE Trans. Circuits and Systems* 35 (1988), no. 12, 1528–1533. (Patrio Colaneri) **89k:93035** 93B15
- (with Singh, Harpreet) State-space models of 3-D transfer function matrix. *Internat. J. Systems Sci.* 20 (1989), no. 1, 19–32. (Summary) **89k:93036** 93B15
- Eykhoft, P.** A bird's-eye view on parameter and system identification. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 6, 15–38 (1988); translated from *Avtomatika* 1987, no. 6, 21–38, 96 (Russian. English summary). (Not in MR) 93B30 (93-02)
- (with Janssen, Peter H. M.; Stoica, Petre; Söderström, Torsten) Model structure selection for multivariable systems by cross-validation methods. *Internat. J. Control* 47 (1988), no. 6, 1737–1758. (Not in MR) 93B30
- Eykhoft, R.** (with Umberger, D. K.) Errata: "Characterization of fat fractals in nonlinear dynamical systems" [Phys. Rev. Lett. 57 (1986), no. 19, 2333–2336; MR 87k:82012]. *Phys. Rev. Lett.* 58 (1987), no. 9, 961. (Editors) **89b:82013** 82A05 (58F11)
- (with Umberger, D. K.) Relating the various scaling exponents used to characterize fat fractals in nonlinear dynamical systems. *Phys. D* 30 (1988), no. 1–2, 43–60. (Yong Nian Huang) **89f:58089** 58F13
- Eyler, M. Akif** A simple interpretation of perturbation analysis. *Analysis and optimization of systems* (Antibes, 1988), 954–962, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89c:00031**) 93B35
- Eymard, Pierre** (with Chipot, Michel; Tahani, Taoufik) Sur les fonctions propres de l'opérateur de Laplace-Beltrami dont le carré est fonction propre. (English summary) [On the eigenfunctions of the Laplace-Beltrami operator whose squares are eigenfunctions] *Symposia Mathematica*, Vol. XXIX (Corona, 1984), 111–129, *Sympos. Math.*, 29, Academic Press, New York-London, 1987. (Gerald B. Folland) **89i:43007** 43A85 (35J05, 58C40, 58G25)
- see also Harmonic analysis, **89f:43001**
- vanden Eynden, Charles** see Vanden Eynden, Charles
- Eyre, D.** (with Pretorius, L.) Spline-Gauss rules and the Nyström method for solving integral equations in quantum scattering. *J. Comput. Appl. Math.* 18 (1987), no. 2, 235–247. (Summary) **89d:65112** 65R20
- (with Wright, C. J.) Adaptive mesh grading for finite element solutions of an integral equation in quantum scattering. *J. Comput. Phys.* 74 (1988), no. 1, 73–84. (Summary) **89b:81236** 81F20 (65R20, 81-04)
- Eytan, Michel** Fibration et relateurs arithmétiques. [Fibration and arithmetical relators] 10<sup>e</sup> Congrès International de Cybernétique (Namur, 1983), 369–376, *Assoc. Internat. Cybernet.*, Namur, 1984. (A. Wiweger) **89f:18018** 18D30 (93A05, 93A13)
- Ezaki, Hiromi** (with Shibata, Fumiaki) Expansion formulae for time-correlation functions and transport coefficients. With an application to cyclotron resonance. *Phys. A* 149 (1988), no. 3, 472–506. (Koichiro Matsuno) **89j:82014** 82A15
- Ezawa, Hiroshi** (with Koma, Tohru) Completeness of the two-down-spin Bethe states in the one-dimensional Heisenberg model. *Progr. Theoret. Phys.* 78 (1987), no. 5, 1009–1021. (Summary) **89i:82089** 82A68
- What kinds of problems should physics consider? (Japanese) *Sūgaku* 39 (1987), no. 2, 167–173. (Yusuke Kato) **89b:81231** 81F05 (35Pxx, 81-02, 81F10)
- Ezawa, Yoshinori** Upper bound of fuzzy relation in probable fuzzy reasoning. *Tech. Rep. Kansai Univ. No. 28* (1986), 159–168. (Elie Sanchez) **89k:03023** 03B52 (68T99)
- Ezawa, Z. F.** (with Nakamura, Shigeru) Picture-changing operation and space-time supersymmetry in superstring field theory. *Nuclear Phys. B* 294 (1987), no. 2, 342–364. (Gary T. Horowitz) **89a:81126** 81E99 (81E30)
- (with Nakamura, Shigeru; Tezuka, A.) Vertex operator construction of the  $SO(9, 1)$  Majorana-Weyl spinors in the Neveu-Schwarz-Ramond model. *Nuclear Phys. B* 298 (1988), no. 1, 241–252. (Summary) **89a:81127** 81E99 (17B65, 81E30)
- (with Nakamura, Shigeru; Tezuka, A.) Space-time fermions and superghosts from the bosonic string: generation of  $OSp(9, 1) \times OSp(3, 3|6)$  affine superalgebra. *Phys. Rev. D* (3) 37 (1988), no. 8, 2243–2252. (Summary) **89b:81185** 81E99 (17A70, 81E30)
- (with Carow-Watamura, Ursula; Watamura, Satoshi) N-loop superstring amplitude from Feynman-like rules; spin structures including Ramond sector, handle operator and g-vacuum. *Nuclear Phys. B* 315 (1989), no. 1, 166–192. (Summary) **89k:81133** 81E99 (81E30)
- al-Ezeh, H.** see Al-Ezeh, H.
- Ezeilo, J. O. C.** (with Nkashama, M. N.) Resonant and nonresonant oscillations for some third order nonlinear ordinary differential equations. *Nonlinear Anal.* 12 (1988), no. 10, 1029–1046. (Kevin G. Hockett) **89i:34017** 34B15 (34C15)
- Ezhov, A. A.** (with Vedenov, A. A.; Knizhnikova, L. A.; Levchenko, E. B.; Chernov, Yu. G.) Nonlinear systems with memory and the modeling of the functions of neural nets. (Russian) *Intellectual processes and their modeling* (Russian), 229–248, 395, "Nauka", Moscow, 1987. (Summary) **89j:92040** 92A09 (58F40)
- (with Vedenov, A. A.; Levchenko, E. B.) Nonlinear dynamical systems with memory and functions of neuron ensembles. (Russian) *Nonlinear waves* (Russian), 53–67, 394, "Nauka", Moscow, 1987. (Summary) **89b:92073** 92A25 (58F40, 82A57, 82A99, 92A09)
- (with Knizhnikova, L. A.; Levchenko, E. B.) Regular and chaotic oscillations in a system of autogenerators. (Russian) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* 30 (1987), no. 9, 1167–1169. (From the text) **89c:58075** 58F13
- Ezhov, A. M.** Solution of the characteristic problem for the telegraph equation by the Volterra method. (Russian) *Differential equations and mathematical physics* (Russian), 44–50, *Kuibyshev. Gos. Ped. Inst., Kuibyshev*, 1985. (see **89f:35006**) 35L05 (35C99)
- Ezhov, S. N.** (with Girko, V. L.; Plyulko, V. A.) Integral equations for the averaged scattering matrix. (Russian. English summary) *Ukrain. Fiz. Zh.* 33 (1988), no. 10, 1451–1455, 1594. (Summary) **89b:81250** 81F15
- Ezra, Gregory S.** (with Fried, Laurence E.) PERTURB: a program for calculating vibrational energies by generalized algebraic quantization. *Molecular vibrations. Comput. Phys. Comm.* 51 (1988), no. 1–2, 103–114. (Summary) **89j:81003** 81-04 (81C12, 81G55)

## -F-

- Fabbrichesi, Marco E.** Degenerate gauge conditions, generalized Gribov ambiguity and BRST symmetry. *Phys. Lett. B* 205 (1988), no. 4, 521-524. (Summary) 89c:81073 81E13
- Fabelli, Raul V.** Natural team sharing and team productivity. *Econom. Lett.* 27 (1988), no. 2, 105-110. (Summary) 89h:90832 90A11
- Faber, Carel** Prym varieties of triple cyclic covers. *Math. Z.* 199 (1988), no. 1, 61-79. (Olivier Debarre) 89f:14026 14H40 (14H30, 14K05)
- Faber, V. (with Miller, Guthrie; White, Andrew B., Jr.)** Finding plasma equilibria with magnetic islands. *J. Comput. Phys.* 79 (1988), no. 2, 417-435. (Summary) 89i:76103 76X05 (76-08, 76E25)
- (with Wing, G. Milton) Effective bounds for the singular values of integral operators. *J. Integral Equations Appl.* 1 (1988), no. 1, 55-64. (John W. Lee) 89m:45023 45P05 (45C05, 47G05)
- Fabes, Eugene** Layer potential methods for boundary value problems on Lipschitz domains. *Potential theory—surveys and problems* (Prague, 1987), 55-80, *Lecture Notes in Math.*, 1344, Springer, Berlin-New York, 1988. (see 89m:31001) 31B20
- Fabian, M.** Each weakly countably determined Asplund space admits a Fréchet differentiable norm. *Bull. Austral. Math. Soc.* 36 (1987), no. 3, 367-374. (I. Namioka) 89c:46018 46B20
- (with Preiss, D.) On the Clarke's generalized Jacobian. Proceedings of the 14th winter school on abstract analysis (Srní, 1986). *Rend. Circ. Mat. Palermo (2) Suppl. No. 14* (1987), 305-307. (Jean-Paul Penot) 89d:58016 58C20 (49A52, 90C30)
- On classes of subdifferentiability spaces of Ioffe. *Nonlinear Anal.* 12 (1988), no. 1, 63-74. (Wolfgang Thämel) 89c:90212 90C48 (49A51, 49A52)
- Fabian, Václav** Polynomial estimation of regression functions with the supremum norm error. *Ann. Statist.* 16 (1988), no. 4, 1345-1368. (T. Robertson) 89i:62058 62G05
- The local asymptotic minimax adaptive property of a recursive estimate. *Statist. Probab. Lett.* 6 (1988), no. 6, 383-388. (V. Dupac) 89i:62136 62L20 (62C20)
- Fabis, Florian** Approximation in Orlicz space. *Funct. Approx. Comment. Math.* 15 (1986), 3-9. (Summary) 89a:42006 42A10 (41A10)
- Approximation in generalized Orlicz spaces. *Funct. Approx. Comment. Math.* 16 (1988), 113-123. (S. Coboza) 89k:41039 41A65 (46E30)
- Fabre de la Ripelle, Michel (with Fiedeldey, Harry)** An exact integro-differential equation for the ground state of a many-body system with central two-body interactions. (French summary) *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers Sci. Terre* 302 (1986), no. 13, 809-812. (Summary) 89i:81131 81F05 (81H10)
- (with Fiedeldey, Harry) An integro-differential equation describing the bound state of a many bosons system. (French summary) *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers Sci. Terre* 302 (1986), no. 14, 851-853. (Summary) 89m:81179 81F10
- Structure de la fonction d'onde des états liés à N corps. (English summary) [Structure of the many-body bound state wave function] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers Sci. Terre* 306 (1988), no. 19, 1313-1318. (Summary) 89m:81208 81H99 (81F10)
- Fabrega, J. (with Escudero, M.; Morillo, P.)** Fault-tolerant routings in double-loop networks. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), A, 187-198. (Summary) 89c:68010 68M15 (05C20, 68M10, 68R10, 90B10)
- Fabricant, A. A. (with Marinov, M. L.; Rangelov, Ts. V.)** On the estimates of the initial trace of solution of filtration equation. *C. R. Acad. Bulgare Sci.* 40 (1987), no. 2, 25-27. (Gaston E. Hernandez) 89a:35109 35K55
- Fabrie, Pierre (with Caltagirone, Jean-Paul; Combarnous, Michel)** De la convection naturelle oscillante en milieu poreux au chaos temporel? [From oscillating natural convection in porous media to chaos?] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers Sci. Terre* 305 (1987), no. 7, 549-553. (Not in MR) 76E15 (58F13, 76S05)
- Fabrikant, V. I.** Potential of several arbitrarily located disks. *J. Austral. Math. Soc. Ser. B* 29 (1988), no. 3, 342-351. (J. Vesely) 89b:31004 31B15
- Fabris, J. C. (with Baptista, J. P.; Batista, A. B.)** The zero-helicity waves in a Brans-Dicke cosmology. *Classical Quantum Gravity* 6 (1989), no. 2, 209-218. (Summary) 89k:83058 83D05
- Fabrizio, M. (with Hanyga, A.)** Solutions in the variational sense to hyperbolic systems with unbounded coefficients. (Russian and Polish summaries) *Arch. Mech. Stos.* 39 (1987), no. 1-2, 27-39. (Hidetoshi Tahara) 89f:35120 35L15 (35L55)
- (with Santi, Ettore) A uniqueness theorem for nonlinear hyperbolic systems of elasticity and electromagnetism. *J. Differential Equations* 75 (1988), no. 1, 43-52. (Reinhard Racke) 89i:35093 35L60 (73C50, 78A99)
- (with Morro, A.) Viscelastic relaxation functions compatible with thermodynamics. *J. Elasticity* 19 (1988), no. 1, 63-75. (R. R. Huilgol) 89m:73019 73F05 (73B30, 73F15)
- Fabry, C. (with Martelli, Mario)** Co-bifurcation dégénérée et problèmes aux limites. (English summary) [Degenerate cobifurcation and boundary value problems] *Ann. Soc. Sci. Bruxelles Sér. I* 100 (1986), no. 3, 105-114 (1987). (Jean Mawhin) 89d:58028 58E07 (34C25, 47H15, 58F22)
- (with Habets, P.) Existence of solutions to second order boundary value problems with nonlinear boundary conditions. *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 639-645, *'Angel Kanchev' Tech. Univ., Ruse, 1987*. (G. Anichini) 89b:34044 34B15 (34A10, 34B10)
- Fabrykowski, J.** On continued fractions and a certain example of a sequence of continuous functions. *Amer. Math. Monthly* 95 (1988), no. 6, 537-539. (André Hautot) 89i:40001 40A15 (11A55, 26A03)
- (with Subbarao, M. V.) Note on a problem of Erdős-Moser. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 79-83. (G. W. Peck) 89i:05018 05A15
- see also Hensley, Doug. 89k:40006
- Faccinetti, Gisella** Duality and stochastic convergence of minima. (Italian) *Matematiche (Catania)* 39 (1984), no. 1-2, 3-18 (1988). (Not in MR) 49A50 (49A55, 93E25)
- Faccini, Alberto** A tilting module over commutative integral domains. *Comm. Algebra* 15 (1987), no. 11, 2235-2250. (Dieter Happel) 89c:13028 13G05 (16A46)
- Relative injectivity and pure-injective modules over Prüfer rings. *J. Algebra* 110 (1987), no. 2, 380-406. (S. S. Page) 89b:16024 16A52
- Pure-injective envelope of a commutative ring and localizations. *Quart. J. Math. Oxford Ser. (2)* 39 (1988), no. 155, 307-321. (Liam O'Carroll) 89j:13009 13C11 (13B35, 13C12, 13F05)
- Facenda Aguirre, José Antonio** Stability of locally convex spaces under ultraproducts. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 80 (1986), no. 1-2, 105-109. (P. Pérez Carreras) 89c:46001 46A05 (46M99)
- Fachini, E. (with Napoli, M.)** C-tree systolic automata. *Theoret. Comput. Sci.* 56 (1988), no. 2, 155-186. (Karel Culik II) 89c:68091 68Q70 (68Q45)
- Făciu, C. (with Mihăilescu-Suliciu, M.)** The energy in one-dimensional rate-type semilinear viscoelasticity. *Internat. J. Solids and Structures* 23 (1987), no. 11, 1505-1520. (Michael Renardy) 89a:73032 73F15
- Facó, João Lauro D.** Mathematical programming solutions for fishery management. *Mathematical models for decision support (Val d'Isère, 1987)*, 197-205, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 48, Springer, Berlin-New York, 1988. (see 89g:90136) 90A30 (90C10)
- Facy, Françoise (with Ralambondrainy, Henri; Vilamot, Bernard)** Étude d'un tableau hétérogène par la classification: application à un exemple médical. [Study of a heterogeneous table by its classification: application to a medical example] *Data analysis and informatics, V (Versailles, 1987)*, 265-272, *North-Holland, Amsterdam-New York, 1988*. (see 89g:62009) 92A07
- Fadavi-Ardekani, Jalil (with Szczupak, Jacques; Mitra, Sanjit K.)** A computer-based synthesis method of structurally LBR digital allpass networks. *IEEE Trans. Circuits and Systems* 35 (1988), no. 6, 755-760. (Summary) 89c:94050 94C05 (93B15)
- Faddeev, D. K.** A class of underdetermined equations of the third degree. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1987, vyp. 3, 60-61, 128. (Dorin Andrica) 89i:11043 11D25
- On modules for quadratic extensions of Dedekind rings. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 160 (1987), Anal. Teor. Chisel i Teor. Funkts. 8, 262, 303. (From the text) 89a:13020 13F05 (11R33)
- (with Lyubich, Yu. I.; Ostrovskii, I. V.; Shafarevich, I. R.; Shor, L. A.) Samuil Davidovich Bernman. (*Uspekhi Mat. Nauk* 43 (1988), no. 1 (259), 183-184; translated in *Russian Math. Surveys* 43 (1988), no. 1, 225-226. (Editors) 89a:01070 01A70
- (with Ershov, Yu. L.; Zaitsev, D. I.; Kostrikin, Aleksei Ivanovich; Krasovskii, N. N.; Mitropolskii, Yu. A.; Platonov, V. P.; Shemetkov, L. A.) Sergei Nikolaevich Chernikov. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 2 (260), 125-126; translated in *Russian Math. Surveys* 43 (1988), no. 2, 153-155. (Editors) 89i:01074 01A70
- (with Vinogradov, S. A.; Vladimirov, D. A.; Gavurin, M. K.; Ermakov, S. M.; Makarov, B. M.; Natanson, G. I.; Solomyak, M. Z.; Khavin, V. P.) Grigori Mikhailovich Fikhtengol'ts (on the 100th anniversary of his birth). (Russian) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1988, vyp. 3, 3-6. (Editors) 89m:01112 01A70
- see also Borevich, Z. I. et al. 89f:01058
- Faddeev, L. D. (with Takhtadzhyan, L. A.)** Гамильтонов подход в теории солитонов. (Russian) [The Hamiltonian approach in soliton theory] *'Nauka', Moscow, 1986*. 528 pp. (Eugene Gutkin) 89m:58102 58F07 (35Q20)
- (with Takhtadzhyan, L. A.) ★ Hamiltonian methods in the theory of solitons. Translated from the Russian by A. G. Reyman [A. G. Reiman]. Springer Series in Soviet Mathematics. Springer-Verlag, Berlin-New York, 1987. x+592 pp. ISBN 3-540-15579-1 (Eugene Gutkin) 89m:58103 58F07 (35Q20)
- (with Alekseev, A. Yu.; Madajczyk, J.; Shatashvili, S. L.) Derivation of an anomalous commutator in the formalism of a functional integral. (Russian. English summary) *Teoret. Mat. Fiz.* 73 (1987), no. 2, 187-190. (Ziemowit Popowicz) 89g:81041 81E13 (58D30)
- Thirty years in mathematical physics. (Russian) Mathematical physics and complex analysis (Russian). Translated in Proc. Steklov Inst. Math. 1988, no. 3, 3-28. *Trudy Mat. Inst. Steklov.* 176 (1987), 4-29, 327. (Editors) 89c:01057 01A70
- (with Vitushkin, A. G.; Gonchar, A. A.; Kashin, B. S.; Kostrikin, Aleksei Ivanovich; Nikol'skii, S. M.; Novikov, S. P.; Ufyanov, P. L.) Evgenii Mikhailovich Nikishin. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 5 (257), 183-188. (Editors) 89b:01066 01A70
- (with Buslaev, V. S.; Ladyzhenskaya, O. A.; Merkur'ev, S. P.) Vladimir Ivanovich Smirnov. (Russian) *Vestnik Leningrad. Univ. Fiz. Khim.* 1987, vyp. 2, 3-8. (Editors) 89c:01046 01A70
- (with Jackiw, R.) Hamiltonian reduction of unconstrained and constrained systems. *Phys. Rev. Lett.* 60 (1988), no. 17, 1692-1694. (Alan L. Carey) 89i:81051 81D07 (58F05, 70H05)
- (with Buslaev, V. S.; Gelfand, I. M.; Ladyzhenskaya, O. A.; Pavlov, B. S.; Solomyak, M. Z.; Yafaev, D. R.) Mikhail Shlemovich Birman (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 3 (261), 201-202; translated in *Russian Math. Surveys* 43 (1988), no. 3, 233-235. (Editors) 89i:01066 01A70
- see also Gaudin, Michel. 89c:82001
- Faddeev, M. M.** Contraction operators that are similar to isometric operators. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1987, vyp. 4, 31-36, 110. (Gr. Arsene) 89c:47020 47A65 (47B99)
- Fadeev, V. M. (with Slepian, L. I.)** Reflection, refraction and radiation of waves in a piecewise homogeneous elastic system that interacts with a fluid. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 2, 325-329; translated in *Soviet Phys. Dokl.* 33 (1988), no. 3, 236-238. (Introduction) 89c:73044 73J06 (73D25)
- Fadeeva, E. P.** Explicit linear filtering formulas when the receivable signal is L-Markovian. (Russian) *Probabilistic methods and cybernetics*, No. 22 (Russian), 74-79, *Kazan. Gos. Univ., Kazan', 1987*. (J. M. Stoyanov) 89i:93109 93E11 (60G35, 93E10)
- Linear filtering of a two-dimensional process with stationary components that have a joint quasirational spectral density. (Russian) *Issled. Prikl. Mat.* No. 14 (1987), 160-165. (Not in MR) 93E11 (60G35)
- Solution of the extrapolation problem for a class of stochastic processes. Investigations in applied mathematics, No. 5. *J. Soviet Math.* 42 (1988), no. 3, 1706-1718. 60G10
- Extrapolation from a finite interval for a stationary process of a particular form. Investigations in applied mathematics, No. 5. *J. Soviet Math.* 42 (1988), no. 3, 1718-1720. 60G10
- Fadell, Edward (with Husseini, Sufian)** Index theory for G-bundle pairs with applications to Borsuk-Ulam type theorems for G-sphere bundles. *Nonlinear analysis*, 307-336, *World*



- Sci. Publishing, Singapore, 1987. (David Handel)* **89j:55029** 55R91 (55M20, 55N91)  
— (with Hussein, Suhan) An ideal-valued cohomological index theory with applications to Borsuk-Ulam and Bourgin-Yang theorems. *Ergodic Theory Dynamical Systems* **8** (1988), Charles Conley Memorial Issue, 73–85. (Christian Fenske) **89k:55002** 55M20 (55M30, 58F99)
- (with Wong, Peter Ngai-Sing) On deforming G-maps to be fixed point free. *Pacific J. Math.* **132** (1988), no. 2, 277–281. (Helga Schirmer) **89d:55003** 55M20 (57S15)
- Fadner, W. L. Did Einstein really discover " $E = mc^2$ "? *Amer. J. Phys.* **56** (1988), no. 2, 114–122. (H. Treder) **89f:01046** 01A60 (83–03)
- Faessler, Amand (with Kyrchev, G.; Nojarov, R.) Boson quasispin in the generalised Bohr-Mottelson model. *Nuclear Phys. A* **487** (1988), no. 1, 37–61. (R. Mirman) **89k:81194** 81G30 (20C35, 22E70)
- Fagan, James T. (with Greenberg, Brian V.) Making tables additive in the presence of zeros. *Amer. J. Math. Management Sci.* **7** (1987), no. 3–4, 359–383. (Summary) **89a:62135** 62H17
- Fage, M. K. (with Nagnibida, N. I.) \* Проблема эквивалентности обыкновенных линейных дифференциальных операторов. (Russian) [The problem of equivalence of ordinary linear differential operators] "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. 280 pp. (E. Gerlach) **89c:47001** 47–02 (34A30, 35Cxx, 46N05, 47B38, 47E05)
- Fages, François Associative-commutative unification. *J. Symbolic Comput.* **3** (1987), no. 3, 257–275. (G. E. Peterson) **89a:68098** 68Q25 (03B35, 68T15)
- Fagin, Ronald (with Halpern, Joseph Y.) I'm OK if you're OK: on the notion of trusting communication. *J. Philos. Logic* **17** (1988), no. 4, 329–354. (Summary) **89m:68034** 68Q10 (68M10, 68Q55, 68T25)
- Fagnola, Franco (with Letta, Giorgio) Sur la représentation intégrale des martingales du processus de Poisson. [On the integral representation of martingales of the Poisson process] *Séminaire de Probabilités, XX*, 1984/85, 28–29, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (I. Cuculescu) **89f:60056** 60H05 (60G44)
- Une caractérisation de la filtration naturelle d'un processus ponctuel marqué. (English and Italian summaries) [A characterization of the natural filtration of a marked point process] *Rend. Accad. Naz. Sci. XL Mem. Mat. (5)* **11** (1987), no. 1, 285–291. (Dominique Lepingle) **89d:60087** 60G44 (60G35)
- Fahneh, Mohd. (with Rama Mohana Rao, M.) A boundary value problem for nonautonomous nonlinear functional-differential equations of delay type with  $L_2$ -initial functions. *Funkcial. Ekvac.* **30** (1987), no. 2–3, 237–249. (M. Trvdý) **89b:34156** 34K10 (49D25)
- Fahlaoui, Rachid Stabilité du fibré tangent des surfaces de del Pezzo. [Stability of the tangent bundle of del Pezzo surfaces] *Math. Ann.* **283** (1989), no. 1, 171–176. (Yoichi Miyaoka) **89k:14063** 14J26 (14F05, 32J15, 53C55)
- Fahmy, M. H. see Fahmy, Mohamed Hussein
- Fahmy, Mahmoud M. (with O'Reilly, John) Multistage parametric eigenstructure assignment by output-feedback control. *Internat. J. Control* **48** (1988), no. 1, 97–116. (Summary) **89c:93119** 93B60 (93B50, 93C35)
- (with O'Reilly, John) Parametric eigenstructure assignment by output-feedback control: the case of multiple eigenvalues. *Internat. J. Control* **48** (1988), no. 4, 1519–1535. (Arno Linnemann) **89f:93058** 93B60 (15A18, 93B55)
- (with O'Reilly, John) Parametric eigenstructure assignment for continuous-time descriptor systems. *Internat. J. Control* **49** (1989), no. 1, 129–143. (Summary) **89c:93111** 93B60 (93C30)
- Fahmy, Mamdouh F. (with Abo-Zahhad, Mohammed; Sobhy, M. I.) Design of selective linear phase bandpass switched-capacitor filters with equiripple passband amplitude response. *IEEE Trans. Circuits and Systems* **35** (1988), no. 10, 1220–1229. (Not in MR) **94A12**
- Fahmy, Mohamed Hussein Fixed center of Jordan automorphisms of rings. (Arabic summary) *Proc. Math. Phys. Soc. Egypt* **59** (1985), 197–200 (1987). (Kazuo Kishimoto) **89f:16051** 16A72 (16A74)
- (with Hussein, G. M.) A Galois algebra satisfying a condition of Jacobson. (Arabic summary) *Proc. Math. Phys. Soc. Egypt* **60** (1985), 11–14 (1987). (P. Abellanas) **89f:16019** 16A45
- Fahmy, Moustafa M. (with Wan, Yongbing) Design of N-D digital filters with finite wordlength coefficients. *IEEE Trans. Circuits and Systems* **36** (1989), no. 3, 375–382. (Not in MR) **94A05**
- (with Peters, S. Douglas) Synthesis of recursive LTV digital filters using the frozen-time approximation. *IEEE Trans. Circuits and Systems* **36** (1989), no. 3, 448–451. (Not in MR) **94A12**
- Fahner, Gerald (with Grassberger, P.) Entropy estimates for dynamical systems. *Complex Systems* **1** (1987), no. 6, 1093–1098. (Summary) **89c:58060** 58F08 (54H20)
- Fahrig, L. A general model of populations in patchy habitats. *Appl. Math. Comput.* **27** (1988), no. 1, 53–66. (Summary) **89d:92079** 92A17
- Fahrmeir, L. A note on asymptotic testing theory for nonhomogeneous observations. *Stochastic Process. Appl.* **28** (1988), no. 2, 267–273. (Lionel Weiss) **89f:62020** 62F05
- Faibusovich, L. E. Generalized Toda flows, the Riccati equations on a Grassmannian and the QR-algorithm. (Russian) *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 2, 88–89. (V. G. Samoilenko) **89m:58093** 58F07
- Matrix Riccati inequality: existence of solutions. *Systems Control Lett.* **9** (1987), no. 1, 59–64. (Summary) **89c:93048** 93B25 (58F05, 93B05)
- Fahrmann, M. (with Roach, G. F.) Linear elliptic eigenvalue problems involving an indefinite weight. *J. Math. Anal. Appl.* **126** (1987), no. 2, 516–528. (Robert M. Kauffman) **89c:47059** 47F05 (34B25, 35J99, 47B50, 47E05)
- (with Roach, G. F.) Eigenfunction expansions associated with a multiparameter system of differential equations. *Differential Integral Equations* **2** (1989), no. 1, 45–56. (A. D. Wood) **89k:34029** 34B25 (47E05)
- Falgout, Ulrich (with Schrader, Rainer) Setup optimization problems with matroid structure. *Order* **4** (1987), no. 1, 43–54. (Gábor Hegedüs) **89a:90116** 90C27 (05B35, 06A10)
- (with Schrader, Rainer) On the convergence of stationary distributions in simulated annealing algorithms. *Inform. Process. Lett.* **27** (1988), no. 4, 189–194. (Summary) **89b:90173** 90C27 (60J99, 65K05, 90B15)
- (with Turán, György) Sorting and recognition problems for ordered sets. *SIAM J. Comput.* **17** (1988), no. 1, 100–113. (Bernd Graw) **89c:68011** 68P10 (06A10, 68Q25)
- Fain, B. L. A counterexample to the extension theorem with preservation of class for anisotropic Sobolev spaces. (Russian) *Differential equations and functional analysis (Russian)*, 96–99, Univ. Druzhby Narodov, Moscow, 1986. (Title) **89a:46073** 46E35
- Fainberg, E. A. Sufficient classes of strategies in discrete dynamic programming. II. Locally stationary strategies. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 3, 478–493. (Vilam Makis) **89f:90179** 90C39 (90C40)
- Fainberg, V. Ya. (with Maliev, I. N.; Spiridonov, V. P.) Stochastic quantization, supersymmetry and renormalization. (Russian) *Group-theoretic methods in physics, Vol. 1 (Russian) (Jarmala, 1985)*, 276–280, "Nauka", Moscow, 1986. (see **89d:81001**) **81E99** (81C20)
- The contributions of E. S. Fradkin to quantum field theory and statistics. *Quantum field theory and quantum statistics, Vol. 1*, 1–102, Hilger, Bristol, 1987. (R. Delbourgo) **89h:81002** 81–02 (01A70, 81–03, 82–02, 82–03)
- (with Marshakov, A. V.) Local supersymmetry and Dirac particle propagator as a path integral. *Nuclear Phys. B* **306** (1988), no. 3, 659–676. (A. I. Pashnev) **89j:81249** 81G10 (81C35, 81E99)
- Fainleib, A. S. (with Tulyaganova, M. I.) Asymptotic expansion of the density functions for prime vectors in integer lattices. (Russian) *Dokl. Akad. Nauk UzSSR* **1988**, no. 6, 7–9. (From the text) **89m:11064** 11H41 (11N05, 11N37)
- Fainstein, A. S. On the spectral mapping theorem for the Taylor joint spectrum. (Russian) *Spectral theory of operators and its applications, No. 8 (Russian)*, 212–236, "Elm", Baku, 1987. (F.-H. Vasilescu) **89c:47018** 47A60
- Fainsilber, Laura see Dieudonné, Jean, 89j:58001
- Fair, Ray C. (with Andrews, Donald W. K.) Inference in nonlinear econometric models with structural change. *Rev. Econom. Stud.* **55** (1988), no. 4, 615–639. (Manfred Kraft) **89m:62114** 62P20 (62J02)
- Fairbanks, Kenneth A two-stage life test for the exponential parameter. *Technometrics* **30** (1988), no. 2, 175–180. (Summary) **89c:62173** 62N05 (62L05)
- Fairclough, Diane L. (with Helms, Ronald W.) A mixed linear model with linear covariance structure: a sensitivity analysis of maximum likelihood estimators. *J. Statist. Comput. Simulation* **25** (1986), no. 3–4, 205–236. (Not in MR) **62J05**
- Fairén, Victor (with López, Vicente; Conde, Luis) Power series approximation to solutions of nonlinear systems of differential equations. *Amer. J. Phys.* **56** (1988), no. 1, 57–61. (J. F. Heyda) **89a:34018** 34A45 (34A25, 34A34)
- Fairley, David (with Pearl, Dennis K.; Verducci, Joseph S.) The penalty for assuming that a monotone regression is linear. *Ann. Statist.* **15** (1987), no. 1, 443–448. (A. L. Nagar) **89b:62132** 62J02 (62E10)
- Fairlie, D. B. (with Nuyts, J.; Zachos, C. K.) A presentation for the Virasoro and super-Virasoro algebras. *Comm. Math. Phys.* **117** (1988), no. 4, 595–614. (Ronald C. King) **89f:17017** 17B65 (17A70)
- (with Siegwart, D. K.) Classical billiards in a rotating boundary. *J. Phys. A* **21** (1988), no. 5, 1157–1165. (Klaus Horneffer) **89c:58077** 58F13 (70–04)
- (with Nuyts, J.; Zachos, C. K.) Construction of classical Virasoro algebras as  $SU(1, 1)$  extensions. *Phys. Lett. B* **202** (1988), no. 3, 320–324. (Y. Lehrer-Ilamed) **89h:17027** 17B65 (81E30)
- (with Fletcher, Paul; Zachos, C. K.) Trigonometric structure constants for new infinite-dimensional algebras. *Phys. Lett. B* **218** (1989), no. 2, 203–206. (From the text) **89k:17038** 17B65 (17B67, 81D15)
- Fairman, F. W. (with De Abreu-Garcia, Jose A.) Balanced realization via permutation symmetric Jordan realizations. *Linear algebra in signals, systems, and control (Boston, MA, 1986)*, 522–534, SIAM, Philadelphia, PA, 1988. (Vimal Singh) **89k:93033** 93B15 (93C55, 93C60, 94A12)
- Jordan form realization via singular value decomposition. *IEEE Trans. Circuits and Systems* **35** (1988), no. 11, 1431–1434. (Not in MR) **93B15** (15A21, 93B25)
- Faith, Carl On the Galois theory of commutative rings. II. Automorphisms induced in residue rings. *Canad. J. Math.* **39** (1987), no. 5, 1025–1037. (F. DeMeyer) **89c:13007** 13B05
- Faiziev, R. F. Two identities for multiplicative functions. (Russian) *Izv. Akad. Nauk Tadzhik. SSR Otdel. Fiz.-Mat. Khim. i Geol. Nauk* **1986**, no. 4(102), 125 (1987). (From the text) **89d:11002** 11A25
- Fajardo Caldera, Miguel A. (with Gutiérrez Jáimez, Ramón) Characterization of some discrete distributions by linear regression. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish) (Badajoz, 1986)*, 404–410, Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89f:62008** 62E10 (62J05)
- Fajtlowicz, Siemion On conjectures of Graffiti. II. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, FL, 1987). *Congr. Numer.* **60** (1987), 189–197. (R. C. Entringer) **89k:05049** 05C35
- Fakhakh, Jamal (with Bentsman, Joseph; Hvostov, Harry; Lehman, Bradley) Vibrational stabilization of linear systems with time delay. *Analysis and optimization of systems (Antibes, 1988)*, 72–79, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89f:34105** 34K20
- Fakhrudin, Syed M. On the category of S-posets. *Acta Sci. Math. (Szeged)* **52** (1988), no. 1–2, 85–92. (Václav Koubek) **89f:06003** 06A10 (08B30, 18B30, 18C15)
- Fakinlede, C. O. A. (with Ellyin, F.) Nonlinear dislocation model of the work-hardening crack-tip field. (French summary) *Internat. J. Fracture* **32** (1986), no. 1, 3–20. (G. Geymonat) **89a:73053** 73M05
- Fakinos, D. Duality relations for certain single server queues. *Queueing Systems Theory Appl.* **4** (1989), no. 1, 77–83. (Hans Daduna) **89m:60226** 60K25 (68M20, 90B22)
- Faktorovich, I. Ya. Geometry-induced long-range orientational order in a solid. (Russian. English summary) *Teoret. Mat. Fiz.* **76** (1988), no. 3, 471–476; translated in *Theoret. and Math. Phys.* **76** (1988), no. 3, 995–999. (Vladimir Šips) **89m:82054** 82A55
- Falade, Adebawale (with Brenner, Howard) First-order wall curvature effects upon the Stokes resistance of a spherical particle moving in close proximity to a solid wall. *J. Fluid Mech.* **193** (1988), 533–568. (Summary) **89k:76044** 76D99 (76T05, 76W05)
- Falaev, L. P. (with Syusyukalov, A. I.) Asymptotic behavior of the Lebesgue constants. (Russian) *Application of functional analysis, in approximation theory (Russian)*, 122–126, 148, Kalinin. Gos. Univ., Kalinin, 1984. (see **89c:00006**) **42A20** (41A60)
- Falaev, M. V. (with Sidorov, N. A.) Generalized solutions of degenerate differential and integral equations in Banach spaces. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems (Irkutsk, 1985) (Russian)*, 308–318, 328, "Nauka"

- Sibirsk. Otdel., Novosibirsk*, 1987. (A. Corduneanu) **89i:45018** 45N05 (34G10, 45D05, 47A50)
- Falceto, Fernando** (with Asorey, Manuel) Geometric regularization of Yang-Mills theory. *Phys. Lett. B* **206** (1988), no. 3, 485–490. (Summary) **89e:81086** 81E13 (58D15, 58G40, 81E15)
- Falcitelli, Maria** Lifts to the frame bundle of a differentiable manifold and linear pseudodifferential connections. (Italian. English summary) *Rend. Mat.* (7) **5** (1985), no. 3–4, 439–468 (1988). (J. J. Etayo) **89m:53047** 53C05
- (with Pastore, A. M.) Deformations of the  $q$ -fold covered great circles on the sphere  $S^3$ . *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 421–446, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Victor Bangert) **89g:58043** 58E10
- Falck, N. K.** Fermionic Jacobian and gauge invariance in the chiral Schwinger model. *Phys. Lett. B* **207** (1988), no. 4, 478–481. (Summary) **89f:81174** 81E99
- (with Bartels, J.) Path integral on a group manifold and the lattice gauge theory Hamiltonian. *Z. Phys. C* **38** (1988), no. 3, 483–493. (Kornél Szlachányi) **89j:81055** 81C35 (58B99, 58D30, 81E25)
- de Falco, Diego** The stochastic mechanics of fields in a general relativistic context: problems and perspectives. *J. Phys. A* **20** (1987), no. 15, L935–L943. (Emilio Santos) **89c:81042** 81C20 (81E20)
- (with Pulignano, Eugenio) Sample paths in stochastic mechanics: some numerical exercises. (Portuguese summary) *European J. Phys.* **9** (1988), no. 1, 32–40. (Summary) **89a:81026** 81C20 (81–04)
- (with De Angelis, Gian Fabrizio; Di Genova, Glauro) Asymptotic decay of the free field covariance on a Riemannian manifold via heat kernel techniques. *J. Math. Phys.* **29** (1988), no. 2, 332–335. (Derek Raine) **89d:81079** 81E20
- Falco, E. E.** (with Ferrari, J. A.; Griego, J.) The Kaluza-Klein theory and four-dimensional spacetime. *Gen. Relativity Gravitation* **21** (1989), no. 1, 69–78. (L. M. Sokolowski) **89m:83085** 83E15 (53B50)
- Falcóni, Corrado** (with Celletti, Alessandra; Porzio, Anna) Rigorous numerical stability estimates for the existence of KAM tori in a forced pendulum. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **47** (1987), no. 1, 85–111. (Jan A. Sanders) **89e:58105** 58F30 (58–04, 70K40)
- (with Celletti, Alessandra; Porzio, Anna) Rigorous KAM stability statements for nonautonomous one-dimensional Hamiltonian systems. *Rend. Sem. Mat. Univ. Politec. Torino* **45** (1987), no. 1, 43–70 (1988). (Helmut Rüssmann) **89k:58084** 58F05 (58F27, 70H05)
- Falcón, C. A.** (with Reinhold, C. O.) On the quantum foundations of some classical approximations for ion-atom collisions. *J. Phys. B* **21** (1988), no. 10, 1829–1843. (Summary) **89f:81238** 81F20 (81C25)
- Falconer, K. J.** (with Marsh, D. T.) The dimension of affine-invariant fractals. *J. Phys. A* **21** (1988), no. 3, L121–L125. (J. Král) **89b:28009** 28A75 (58F12, 82A99)
- A subadditive thermodynamic formalism for mixing repellers. *J. Phys. A* **21** (1988), no. 14, L737–L742. (Summary) **89k:58154** 58F11 (28A75)
- The Hausdorff dimension of self-affine fractals. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 2, 339–350. (Summary) **89k:28010** 28A75
- Falcón Rodríguez, Carlos M.** (with García Cruz, María Antonia) Association of an  $L$ -analytic function to every multivalued complex function. (Spanish. English summary) *Cienc. Mat. (Havana)* **8** (1987), no. 2, 15–24. (Julia Cufi) **89e:30002** 30B40 (46J99)
- Falicov, L. M.** (with Reich, Ariel) Heavy-fermion system: an exact many-body solution to a periodic-cluster Hubbard model. *Phys. Rev. B* (3) **37** (1988), no. 10, part B, 5560–5570. (Summary) **89a:82051** 82A68 (82A69)
- Fallicheva, E. G.** (with Zaitsev, V. F.) Transformations of a third-order nonlinear equation. (Russian) *Mathematical physics (Russian)*, 49–54, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (see **89c:00019**) 34C20
- (with Zaitsev, V. F.) Nonlocal transformations of the equation  $y''' = Ax^a y^b y'^c y''^d$ . (Russian) *Partial differential equations (Russian)*, 133–137, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Alois Klíž) **89i:34051** 34C20
- Falin, G. I.** Multichannel queueing systems with repeated calls under high intensity of repetition. (German and Russian summaries) *J. Inform. Process. Cybernet.* **23** (1987), no. 1, 37–47. (Martin A. Wortman) **89e:60186** 60K25 (90B22)
- The convergence of queueing processes in structurally complex systems with losses to stationary processes. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 3, 577–580. (S. Foss (translated from RZhMat 1988:3 V49)) **89b:60155** 60K25 (90B22)
- On a multiclass batch arrival retrial queue. *Adv. in Appl. Probab.* **20** (1988), no. 2, 483–487. (G. Sankaranarayanan) **89g:60279** 60K25 (90B22)
- Ergodicity, stability and insensitivity for a class of networks with channel switching. (Russian) *Problemy Peredachi Informatsii* **24** (1988), no. 1, 74–88; translated in *Problems Inform. Transmission* **24** (1988), no. 1, 56–67. (L. A. Grinshpan) **89j:60126** 60K25 (90B22)
- Calculation of a hybrid switching system with a floating threshold in the presence of buffers. (Russian) *Problemy Peredachi Informatsii* **24** (1988), no. 4, 77–83; translated in *Problems Inform. Transmission* **24** (1988), no. 4, 318–323. (Summary) **89k:90067** 90B22 (90B20, 94A05)
- Monotonicity of random walks over partially ordered sets. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 2(260), 155–156; translated in *Russian Math. Surveys* **43** (1988), no. 2, 167–168. (Not in MR) 60J15
- Ergodicity of some communications systems. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 2, 210–211, 220; translated in *Siberian Math. J.* **29** (1988), no. 2, 328–329. (Not in MR) 94A40 (28D05, 60K20)
- Comparability of migration processes. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 2, 392–396; translated in *Theory Probab. Appl.* **33** (1988), no. 2, 370–372. (William Barnard Krebs) **89e:60139** 60J27 (60I80)
- Quasi-input stream for an  $M/G/1/\infty$  system. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 2, 260–263, 273; translated in *Ukrainian Math. J.* **40** (1988), no. 2, 226–229. (L. A. Grinshpan) **89k:60133** 60K25 (90B22)
- Falk, H.** Dynamical spin system: exact solution and mean recurrence time. *Phys. D* **31** (1988), no. 3, 389–396. (Jacek Miękisz) **89i:82084** 82A68 (58F08, 68Q80)
- Falk, Michael** (with Reiss, R.-D.) Independence of order statistics. *Ann. Probab.* **16** (1988), no. 2, 854–862. (I. Vincze) **89f:62045** 62G30
- Falk, Michael J.** The minimal model of the complement of an arrangement of hyperplanes. *Trans. Amer. Math. Soc.* **309** (1988), no. 2, 543–556. (P. Orlik) **89d:32024** 32C40
- Falk, Richard S.** (with Arnold, D. N.) A new mixed formulation for elasticity. *Numer. Math.* **53** (1988), no. 1–2, 13–30. (N. Gass) **89f:73020** 73C60 (65N05, 73–08, 73C35, 73K25)
- (with Crouzeix, Michel) Nonconforming finite elements for the Stokes problem. *Math. Comp.* **52** (1989), no. 186, 437–456. (Markku Lindroos) **89i:65113** 65N30 (76–08, 76D07)
- Falkenburg, Brigitte** The unifying role of symmetry principles in particle physics. Translated from the German by François Dunlop. *Ratio (N.S.)* **1** (1988), no. 2, 113–134. (Not in MR) **81N05** (81G20)
- Falkenstein, P.** (with Grosse, H.) Fermions in interaction with time-dependent fields. *Nuclear Phys. B* **305** (1988), no. 1 FS23, 126–142. (C. A. Hurst) **89j:81087** 81E05 (46N05, 81C05)
- Falkner, A. H.** Iterative technique in the identification of a nonlinear system. *Internat. J. Control* **48** (1988), no. 1, 385–396. (Not in MR) **93B30** (93C10)
- Falkner, J. C.** (with Ryan, D. M.) On the integer properties of scheduling set partitioning models. *European J. Oper. Res.* **35** (1988), no. 3, 442–456. (Summary) **89d:90144** 90C09 (90C08)
- Falkner, Neil** Approximation of debuts. *Seminar on stochastic processes*, 1983 (Gainesville, Fla., 1983), 85–96, *Progr. Probab. Statist.*, 7, Birkhäuser Boston, Boston, MA, 1984. (Bruce W. Atkinson) **89k:60098** 60J25
- Falko, N. S.** On the problem of the existence of global Lyapunov-Krasovskii functions that are dependent on two vector arguments. (Russian) *Mat. Issled.* No. 92 *Dinamicheskie Sistemy i Kraevye Zadachi* (1987), 137–142, 184. (J. W. Macki) **89b:34116** 34D20
- (with Shcherbakov, B. A.; Stakhi, A. M.) Classification of Lyapunov-stable dynamical systems of perturbed motions. (Russian) *Investigations in differential equations and mathematical analysis (Russian)*, 153–169, 176, “Shtiintsa”, Kishinev, 1988. (L. Janos) **89f:54048** 54H20
- Falkovich, I. M.** The spectrum of strongly converging operators. (Russian) *Algebra and discrete mathematics (Russian)*, 39–46, ii, *Kalmytsk. Gos. Univ., Elista*, 1985. (Summary) **89j:47009** 47A55 (47A10)
- Falkowski, B.-J.** Current group and 1-cohomology for  $SL(2; \mathbb{C})$ . *J. Indian Math. Soc. (N.S.)* **46** (1982), no. 1–4, 101–106 (1985). (S. Prishchepionok (Zbl 611:22007)) **89a:22025** 22E46 (81D15)
- İbn Fālūs, İsmâ'il b. İbrâhîm** see *Brentjes, Sonja*, **89f:01011**
- Falmagne, Jean-Claude** (with Doignon, Jean-Paul) Knowledge assessment: a set-theoretic framework. *Beiträge zur Begriffsanalyse (Darmstadt, 1986)*, 129–140, *Bibliographisches Inst., Mannheim*, 1987. (Fred W. Roush) **89g:92067** 92A25 (00A25, 00A69, 68T30)
- (with Doignon, Jean-Paul) A class of stochastic procedures for the assessment of knowledge. *British J. Math. Statist. Psych.* **41** (1988), no. 1, 1–23. (R. Theodorescu) **89k:92082** 92A25 (60G99, 60J05, 68T05)
- (with Doignon, Jean-Paul) A Markovian procedure for assessing the state of a system. *J. Math. Psych.* **32** (1988), no. 3, 232–258. (Chelsea C. White) **89i:90004** 90A05 (92A25)
- Propos sur la théorie du mesurage. (English summary) [Proposal on the theory of measurement] *Math. Sci. Humaines* No. 101 (1988), 7–34, 75. (Fred W. Roush) **89e:92055** 92A27 (06F05)
- Faloutsos, Christos** Gray codes for partial match and range queries. *IEEE Trans. Software Eng.* **14** (1988), no. 10, 1381–1393. (Summary) **89b:68030** 68P20
- Faltas, M. S.** Asymptotic analysis of surface waves due to oscillatory wave maker. *Quart. Appl. Math.* **46** (1988), no. 3, 489–494. (J. Thomas Beale) **89f:76027** 76B15
- Falter, C.** (with Ludwig, W.) ★ Symmetries in physics. Group theory applied to physical problems. Springer Series in Solid-State Sciences, 64. Springer-Verlag, Berlin-New York, 1988. xii+461 pp. ISBN 3-540-18021-4 (Gordon Feldman) **89h:81001** 81–01 (22E70, 81C40, 81E13, 81G30, 81G40, 82A60)
- Faltings, Gerd** Some historical notes. *Arithmetic geometry (Storrs, Conn., 1984)*, 1–8, Springer, New York-Berlin, 1986. (see **89b:14029**) 11D41 (11G35)
- Finiteness theorems for abelian varieties over number fields. Translated from the German original [Invent. Math. **73** (1983), no. 3, 349–366; ibid. **75** (1984), no. 2, 381; MR **85j:11026ab**] by Edward Shipz. *Arithmetic geometry (Storrs, Conn., 1984)*, 9–27, Springer, New York-Berlin, 1986. (see **89b:14029**) 11G10 (14K15)
- Report on arithmetic intersections. *Mathematical aspects of string theory (San Diego, Calif., 1986)*, 412–415, *Adv. Ser. Math. Phys.*, 1, World Sci. Publishing, Singapore, 1987. (see **89m:81001**) 14C17 (14G99, 14H25)
- Arithmetic theory of Siegel modular forms. *Number theory (New York, 1984–1985)*, 101–108, *Lecture Notes in Math.*, 1240, Springer, Berlin-New York, 1987. (Siegfried Böcherer) **89d:11042** 11F46 (11G15, 11G18)
- Neucere Entwicklungen in der arithmetischen algebraischen Geometrie. [Recent developments in arithmetic algebraic geometry] *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 55–61, *Amer. Math. Soc., Providence, RI*, 1987. (From the text) **89d:11045** 11Gxx (11–02, 14G25)
- Hodge-Tate structures and modular forms. *Math. Ann.* **278** (1987), no. 1–4, 133–149. (Introduction) **89e:11033** 11F85 (11G25, 14G20)
- $p$ -adic Hodge theory. *J. Amer. Math. Soc.* **1** (1988), no. 1, 255–299. (Thomas Zink) **89g:14008** 14F30 (14G20)
- see also Andersen, Henning Haahr, **89a:01050** and Mazur, Barry C., **89d:01063**
- Fam Ki An** see *Pham Ky Anh*
- Fam Le Kien** see *Pham Le Kien*
- Famoye, Felix** (with Consul, P. C.) Maximum likelihood estimation for the generalized Poisson distribution when sample mean is larger than sample variance. *Comm. Statist. Theory Methods* **17** (1988), no. 1, 299–309. (Chuan Yi Wu) **89b:62044** 62F10
- Fam Van At** see *Pham Van At*
- Fam Viet Khung** see *Pham Viet Hung*
- Fan, Ai Hua** Complicated boundary singularities of some analytic functions. (Chinese. English summary) *Adv. in Math. (Beijing)* **16** (1987), no. 3, 317–320. (J. S. Hwang) **89c:30055** 30D40
- Fan, Da Shan** Spherical Riesz means of Fourier series at the critical index on semisimple compact Lie groups. (Chinese. English summary) *J. Math. Res. Exposition* **7** (1987), no. 1, 27–34. (Summary) **89c:43011** 43A35 (43A80)



- (with Xie, Jia Hai) Asymptotic properties of Fourier coefficients on rotation groups. *Kexue Tongbao (English Ed.)* 32 (1987), no. 23, 1590–1591. (Not in MR) 43A30
- The uniform convergence of Riesz spherical means of Fourier series on compact Lie groups. (Chinese) *J. Math. Res. Exposition* 8 (1988), no. 1, 51–54. (C. Chou) 89m:43016 43A77
- Fan, Da Yin** On the reasonableness of parametric best tests in applications. (Chinese. English summary) *Zhejiang Daxue Xuebao* 21 (1987), no. 5, 157–166. (Not in MR) 62F03
- Variation of the lower confidence limits of a pass-fail component. (Chinese. English summary) *Zhejiang Daxue Xuebao* 22 (1988), no. 4, 149–152. (Summary) 89i:62164 62N05
- Fan, Geng Hua** On diameter 2-critical graphs. *Discrete Math.* 67 (1987), no. 3, 235–240. (Ioan Tomescu) 89a:05086 05C35 (05C40)
- Degree sum for a triangle in a graph. *J. Graph Theory* 12 (1988), no. 2, 249–263. (L. Caccetta) 89i:05160 05C35
- Fan, Hai Tao** (with Pu, Fu Ke; Zhao, Bao Heng) Bethe ansatz equations for the multicompartment nonlinear Schrödinger model with supermatrices. *Nuclear Phys. B* 299 (1988), no. 1, 52–66. (Sung G. Chung) 89j:81174 81E99 (81F99)
- Fan, Hong Yi** Normal product representation for SU<sub>3</sub> group. *Comm. Theoret. Phys.* 6 (1986), no. 4, 377–383. (Raj Wilson) 89e:81075 81D30 (22E70)
- Normal product expansion of rotation operators gained by coherent state method. *Comm. Theoret. Phys.* 7 (1987), no. 2, 125–135. (David J. Rowe) 89m:81078 81D30
- New applications of the coherent state to quantum rotation. *Kexue Tongbao (English Ed.)* 32 (1987), no. 13, 880–886. (A. O. Barut) 89a:81048 81D30
- New state vector representation for the two-dimensional harmonic oscillator. *Phys. Lett. A* 126 (1987), no. 3, 145–149. (A. O. Barut) 89b:81097a 81D30 (81C05)
- A convenient representation for describing an electron in a uniform magnetic field. *Phys. Lett. A* 126 (1987), no. 3, 150–154. (A. O. Barut) 89b:81097b 81D30 (81C05)
- (with Ruan, Tu Nan; Jing, Si Cong) A regularization scheme for obtaining Bardeen anomaly. *Comm. Theoret. Phys.* 9 (1988), no. 2, 227–234. (Summary) 89m:81112 81E15
- (with Ren, Yong) New applications of the coherent state in calculating the class operator of rotation group. *J. Phys. A* 21 (1988), no. 9, 1971–1976. (Raj Wilson) 89b:81055 81C40 (22E70, 81D30)
- (with Klauder, John R.) Canonical coherent-state representation of some squeeze operators. *J. Phys. A* 21 (1988), no. 14, L725–L730. (Summary) 89i:81058 81D30 (81K05)
- Application of IWOP technique to quantum-classical correspondence for spherical polar coordinate system. *Phys. Lett. A* 127 (1988), no. 8–9, 403–409. (R. M. Dreizler) 89b:81098 81D30
- Errata: "New state vector representation for the two-dimensional harmonic oscillator". *Phys. Lett. A* 128 (1988), no. 9, 513. (A. O. Barut) 89b:81097c 81D30 (81C05)
- Squeeze operator and the single-complex-variable representation in two-mode Fock space. *Phys. Lett. A* 129 (1988), no. 1, 4–8. (Summary) 89b:81061 81D30
- Differential forms of fundamental completeness relations in quantum mechanics. *Phys. Lett. A* 129 (1988), no. 5–6, 273–277. (A. O. Barut) 89g:81037 81D30
- Fan, Jian Qing** (with Fang, Kai Tai; Xu, Jian Lun) The distributions of quadratic forms of random idempotent matrices and their applications. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* 3 (1987), no. 4, 289–297. (Summary) 89g:62076 62H10
- (with Fang, Kai Tai) Inadmissibility of usual estimators of location parameters of spherically symmetric distributions. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 18, 1361–1364. (Not in MR) 62C15
- Fan, Ky** Inequalities for proper contractions and strictly dissipative operators. *Linear Algebra Appl.* 105 (1988), 237–248. (T. Ando) 89d:47023 47A56 (30A10, 47A60, 47B44)
- Fan, Lei** (with Cai, Hong Bin; Zheng, Chong You) Direct product decompositions of molecular lattices and the structure of generalized order homomorphisms. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 21, 1611–1614. (Not in MR) 06B99 (03E72)
- Fan, Michael Ko Hui** (with Tits, André L.) On the generalized numerical range. *Linear and Multilinear Algebra* 21 (1987), no. 3, 313–320. (Yik-Hoi Au-Yeung) 89b:16031 16A60 (15A57, 47A12)
- (with Tits, André L.)  $m$ -form numerical range and the computation of the structured singular value. *IEEE Trans. Automat. Control* 33 (1988), no. 3, 284–289. (Andrzej Świerniak) 89b:93051 93B35 (15A18, 15A60)
- (with Fu, Jyun-Hong) On block limiting norm and structured singular value. *Systems Control Lett.* 12 (1989), no. 1, 45–51. (Hsi-han Yeh) 89m:93019 93B28 (47A10)
- Fan, Ming** Some properties of operators of class  $\Theta$ . (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* 26 (1987), no. 1, 67–72. (Sheng Wang Wang) 89d:47083 47B99
- An asymmetric Putnam-Fuglede theorem for  $\theta$ -class operators and some related topics. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* 26 (1987), no. 3, 347–350. (Jin-Chuan Hou) 89d:47034 47B20
- On joint numerical ranges of nonnormal operators. (Chinese) *Acta Math. Sinica* 31 (1988), no. 4, 448–455. (Jin-Chuan Hou) 89m:47003 47A12 (47B20)
- Fan, Peng** (with Fong, C. K.) Operators similar to zero diagonal operators. *Proc. Roy. Irish Acad. Sect. A* 87 (1987), no. 2, 147–153. (M. M. Malamud) 89i:47035 47A99 (47B05)
- A function-theoretic proof of a theorem of Stampfli. *Colloq. Math.* 55 (1988), no. 1, 97–99. (Michael J. Hoffman) 89j:47015 47B20 (47B37)
- Note on subnormal weighted shifts. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 801–802. (Pavel Knyazev) 89j:47016 47B20 (47B37)
- Fan, Su Zhen** (with Cai, Da Yong) A component of NS-ITPACK—L101. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* 9 (1988), no. 2, 115–119. (Summary) 89b:65234 65V05 (65F50, 68U30)
- Fan, Wei Min** (with Chen, Ming Hui) Strict optimum confidence bounds on the reliability of a complex system with exponential component lives. (Chinese. English summary) *J. Shanghai Jiaotong Univ.* 1987, no. 5, 87–98, 128. (Summary) 89e:90110 90B25
- Fan, Xian Ling**  $A$ -proper functionals on Banach-Finsler manifolds. (Chinese. English summary) *Lanzhou Daxue Xuebao* 23 (1987), no. 3, 1–5. (Summary) 89k:47108 47H17 (58B20, 58C40)
- Fan, Xu Dong** (with Bursill, L. A.; Peng, Ju Lin) Spiral lattice concepts. *Modern Phys. Lett. B* 1 (1987), no. 5–6, 195–206. (M. Mendès France) 89b:82034 82A57
- Fan, Y.** (with Sarkar, Swapan Kumar; Lasdon, L. S.) Experiments with successive quadratic programming algorithms. *J. Optim. Theory Appl.* 56 (1988), no. 3, 359–383. (Summary) 89b:90161 90C20
- Fan, Yan** (with Yu, Wen Ci) A penalty function method for a delivery problem. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 14 (1988), no. 3, 108–113. (Summary) 89k:90138 90C27
- Fan, Yun** (with Li, Chang Chun) On the orders of  $p$ -closed groups. (Chinese. English summary) *J. Math. (Wuhan)* 7 (1987), no. 4, 371–372. (Not in MR) 20D20
- A characterization of elementary abelian  $p$ -groups by counting subgroups. (Chinese) *Math. Practice Theory* 1988, no. 1, 63–65. (Jian Hua Huang) 89b:20030 20D15 (20D60, 20K01)
- The centrality, normality and cohomology associated with a formation. *Sci. Sinica Ser. A* 31 (1988), no. 3, 257–264. (T. O. Hawkes) 89b:20028 20D10 (20F17)
- Block covers and module covers of finite groups. *Group theory (Singapore, 1987)*, 357–366, de Gruyter, Berlin-New York, 1989. (J. L. Alperin) 89k:20016 20C20
- On groups of odd order and  $p$ -rank  $\leq 2$ . *Arch. Math. (Basel)* 52 (1989), no. 1, 12–18. (W. E. Deskins) 89k:20027 20D10
- Fan, Zhi Hua** Brief loops and redundant loops. *Sci. Sinica Ser. A* 30 (1987), no. 11, 1215–1225. (Summary) 89b:68017 68N15
- Fandiño Arbeláez, Ramón E.** Geometric and matrix-theoretic interpretations of Fermat's last theorem. (Spanish) *Bol. Mat.* 20 (1986), no. 1, 47–67. (P. Bundschuh) 89b:11025 11D41 (15A36, 51N20)
- Fang, Bi Qi** (with Fang, Kai Tai) Maximum likelihood estimates and likelihood ratio criteria for location and scale parameters of the multivariate  $l_1$ -norm symmetric distributions. *Acta Math. Appl. Sinica (English Ser.)* 4 (1988), no. 1, 13–22. (Kurt Hoffmann) 89k:62071 62H12 (62H15)
- (with Fang, Kai Tai) Order statistics of multivariate symmetric distributions related to an exponential distribution and their applications. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* 4 (1988), no. 1, 44–52. (Summary) 89g:62075 62H10 (62G30)
- Fang, Chong Zhi** (with Tao, Luo Wen) Observers for a class of nonlinear distributed parameter systems. (Chinese. English summary) *Control Theory Appl.* 4 (1987), no. 4, 48–55. (Not in MR) 93B07 (93C20)
- (with Ge, Wei) Existence conditions for a class of robust observers. (Chinese. English summary) *Acta Automat. Sinica* 14 (1988), no. 1, 31–37. (Chung Li Jiang) 89i:93013 93B07 (93B35)
- (with Tao, Luo Wen) Design of nonlinear observers on the basis of optimization methods. (Chinese. English summary) *Acta Automat. Sinica* 14 (1988), no. 1, 45–50. (Not in MR) 93B07 (93C55, 93C75)
- Fang, Ding Fa** A new algorithm for parameter estimation for time-varying systems. (Chinese. English summary) *Control Theory Appl.* 5 (1988), no. 2, 135–143. (Jifeng Zhang) 89j:93126 93E12 (93C30)
- A simplified proof of the Wielandt-Hoffman theorem. (Chinese) *Math. Practice Theory* 1988, no. 2, 82–84. (Ji-guang Sun) 89k:15014 15A18 (15A42)
- Fang, Fu Kang** (with Chu, Fu Ming; Jiang, Lu) The operator method for solving the moment equation of Fokker-Planck equation. *Comm. Theoret. Phys.* 7 (1987), no. 2, 187–194. (Summary) 89d:82060 82A35 (35Q20)
- Fang, Gen Sun** Some extremal problems on  $W^*H^{\infty}$ . (Chinese. English summary) *Beijing Shifan Daxue Xuebao* 1987, no. 4, 25–30. (Summary) 89e:41044 41A65 (41A46, 42A10, 46E99)
- PF density, Chakhiev's condition and some related extreme value problems. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 6, 404–408. (Not in MR) 41A55 (41A46)
- Fang, Hao Jian** Fuzzy number matrices. (Chinese) *Comm. Appl. Math. Comput.* 1 (1987), no. 2, 93–95. (Summary) 89g:03081 03E72
- (with Huang, Zhi Qiang) Regular fuzzy matrices. (Chinese. English summary) *Shanghai Keji Daxue Xuebao* 11 (1988), no. 2, 5–11. (Summary) 89k:15047 15A99 (03E72)
- Fang, Hong Jin** A module characterization of quasiradicals. (Chinese) *Yangzhou Shiyan Ziran Kexue Xuebao* 1985, no. 2, 6–8. (Yonghua Xu) 89g:16013 16A21
- (with Cai, Chuan Ren) A note on the paper: "On the Köthe problem and the nilpotent problem" [Sci. Sinica Ser. A 26 (1983), no. 9, 901–908; MR 85k:16007] by Y. H. Xu. (Chinese. English summary) *J. Math. Res. Exposition* 8 (1988), no. 4, 493–494. (Summary) 89m:16011 16A12 (16A22)
- Fang, Jaing** (with Cohen, Gérard Denis; Godlewski, P.; Battail, G.) On the inherent intractability of soft decision decoding of linear codes. *Coding theory and applications (Cachan, 1986)*, 141–149, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (see 89c:94004) 94B05 (94B35)
- Fang, Jing Long** (with Wang, Neng Chao) A note on the accelerated overrelaxation method. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 6, suppl., 103–108. (Zhimin Zhang) 89b:65050 65F10
- (with Wang, Neng Chao) Error analysis of the asynchronous parallel algorithm for block tridiagonal linear equations. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 6, suppl., 109–113. (Summary) 89i:65146 65W05 (65F30)
- Fang, Joong** The "Needham question": toward a "sociology of mathematics". *Philos. Math.* (2) 2 (1987), no. 2, 180–210. (Albert C. Lewis) 89b:01111 01A80
- Fang, Kai Tai** (with Fan, Jian Qing; Xu, Jian Lun) The distributions of quadratic forms of random idempotent matrices and their applications. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* 3 (1987), no. 4, 289–297. (Summary) 89g:62076 62H10
- (with Fan, Jian Qing) Inadmissibility of usual estimators of location parameters of spherically symmetric distributions. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 18, 1361–1364. (Not in MR) 62C15
- (with Fang, Bi Qi) Maximum likelihood estimates and likelihood ratio criteria for location and scale parameters of the multivariate  $l_1$ -norm symmetric distributions. *Acta Math. Appl. Sinica (English Ser.)* 4 (1988), no. 1, 13–22. (Kurt Hoffmann) 89k:62071 62H12 (62H15)
- (with Fang, Bi Qi) Order statistics of multivariate symmetric distributions related to an exponential distribution and their applications. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* 4 (1988), no. 1, 44–52. (Summary) 89g:62075 62H10 (62G30)
- Fang, Pei De** (with Kang, Lian Cheng) The general heat conduction problem with moving boundary in three-dimensional space. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 13 (1987), no. 4, 19–23. (Summary) 89a:35227 35R35 (35K05, 80A20)
- Fang, S. C.** (with Peterson, Elmor L.; Rajasekera, J. R.) Controlled dual perturbations for posynomial programs. *European J. Oper. Res.* 35 (1988), no. 1, 111–117. (Gábor

- Hegedüs 89f:90115 90C25 (90C30)
- Fang, Shizhan Une inégalité isopérimétrique sur l'espace de Wiener. (English summary) [An isoperimetric inequality on Wiener space] *Bull. Sci. Math.* (2) 112 (1988), no. 3, 345–355. (Daniel Ocone) 89m:60131 60H07 (28C20)
- Fang, Wei Fu Boundary value problems for systems of second-order partial differential equations with zero characteristic polynomial. (Chinese. English summary) *J. South China Inst. Tech.* 15 (1987), no. 2, 68–78. (Min You Qi) 89j:35046 35G15
- Fang, Zhen Zhen Necessary conditions for the existence of positive solutions to boundary value problems for a class of semilinear Laplace equations. (Chinese. English summary) *J. Lanzhou Railway College* 7 (1988), no. 1, 28–33. (Summary) 89k:35018 35B05 (35J65)
- Fania, Maria Lucia (with Sato, Ei-ichi; Sommes, Andrew John) On the structure of 4-folds with a hyperplane section which is a  $P^1$  bundle over a surface that fibres over a curve. *Nagoya Math. J.* 108 (1987), 1–14. (Takao Fujita) 89a:14049 14J35
- Fandis, Ch. (with Doni, E. G.; Bleris, G. L.) The rhombohedral coincidence site lattices. (Russian summary) *Annuaire Univ. Sofia Fac. Phys.* 78 (1984), no. 1, 47–53 (1988). (Not in MR) 20H15 (82A60)
- Fannes, Mark (with Verbeure, A.) Equilibrium conditions for coupled classical-quantum systems. *J. Phys. A* 20 (1987), no. 17, 6037–6046. (Ola Bratteli) 89j:82010 82A15 (82A05)
- Nontranslation invariant product states of classical lattice systems. *Publ. Res. Inst. Math. Sci.* 23 (1987), no. 5, 895–908. (From the text) 89m:82006 82A05 (46L60, 82A67)
- (with Nachtergaele, B.; Verbeure, A.) The equilibrium states of the spin-boson model. *Comm. Math. Phys.* 114 (1988), no. 4, 537–548. (Julio Alcantara-Bode) 89b:81251 81G45 (81D20, 81K05)
- (with Nachtergaele, B.; Verbeure, A.) Tunneling in the equilibrium state of a spin-boson model. *J. Phys. A* 21 (1988), no. 8, 1759–1768. (Julio Alcantara-Bode) 89j:82011 82A15
- (with Lewis, John Trevor; Verbeure, A.) Symmetric states of composite systems. *Lett. Math. Phys.* 15 (1988), no. 3, 255–260. (H. Araki) 89m:46102 46L30 (46L60, 82A15)
- Fantechi, Alessandro (with Aceto, Luca; De Nicola, Rocco) Testing equivalences for event structures. *Mathematical models for the semantics of parallelism* (Rome, 1986), 1–20, *Lecture Notes in Comput. Sci.*, 280, Springer, Berlin-New York, 1987. (Summary) 89a:68142 68Q55 (68Q10)
- Fanti, Maria Pia (with Maione, Bruno; Turchiano, Biagio) Structurally fixed modes of systems described by Rosenbrock's polynomial matrices. *Internat. J. Control* 48 (1988), no. 5, 1947–1965. (Summary) 89j:93063 93C30 (05C99, 93B55)
- Fan Zui Khai see Phan Huy Khai
- Faour, N. Toeplitz operators on Bergman spaces. *Rend. Circ. Mat. Palermo* (2) 35 (1986), no. 2, 221–232. (Summary) 89d:47042 47B35 (46J15)
- (with Khalil, R.) On the spectrum of weighted operator shifts. *Houston J. Math.* 13 (1987), no. 4, 549–556. (Hong W. Kim) 89d:47049 47B37
- A factorization theorem for Bergman spaces. *Indian J. Math.* 30 (1988), no. 1, 17–27. (James Li Ming Wang) 89c:46054 46E40 (30H05, 46J15)
- see also Mathematical analysis and its applications, 89b:14002
- al-Farabi, Abu Naṣr Muḥammad ibn Muḥammad ibn Tarkhān ★ Историко-философские трактаты. (Russian) [Historical-philosophical treatises] Translated from the Arabic. Edited and with an introduction by M. S. Burabev. "Nauka" Kazakh. SSR, Alma-Ata, 1985. 624 pp. (Editors) 89b:01105 01A75 (01A30)
- ★ Естественно-научные трактаты. (Russian) [Treatises in the natural sciences] Translated from the Arabic. Edited and with an introduction by M. S. Burabev. "Nauka" Kazakh. SSR, Alma-Ata, 1987. 496 pp. (Editors) 89c:01041 01A75
- see also Schramm, Matthias, 89g:01013 and Shamsi, F. A., 89m:01017
- Faradzev, I. A. Cellular subrings of the symmetric square of a cellular ring of rank 3. (Russian) *Investigations in the algebraic theory of combinatorial objects* (Russian), 76–95, *Vsesoyuz. Nauch.-Issled. Inst. Sistem. Issled.*, Moscow, 1985. (A. A. Ivanov (translated from RZhMat 1986:11 A242)) 89c:05013 05A99 (05C99)
- Cellular subrings of a symmetric Cartesian square of cellular rings of rank 3. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 113–114, 129. (Not in MR) 20C05 (05C, 16)
- Faradzev, R. G. see Discrete mathematics and computer software, 89b:00011
- ben Farah, Salim see Ben Farah, Salim
- Farahmand, K. On the number of real zeros of a random trigonometric polynomial: coefficients with nonzero infinite mean. *Stochastic Anal. Appl.* 5 (1987), no. 4, 379–386. (G. Cenuşă) 89b:42003 42A05 (42A61, 60G99)
- The average number of level crossings of a random algebraic polynomial. *Stochastic Anal. Appl.* 6 (1988), no. 3, 247–272. (G. Samal) 89m:60122 60G99
- On the average number of crossings of an algebraic polynomial. *Indian J. Pure Appl. Math.* 20 (1989), no. 1, 1–9. (Ken-ichi Yoshihara) 89m:60123 60G99
- Faran, James J., V. Local invariants of foliations by real hypersurfaces. *Michigan Math. J.* 35 (1988), no. 3, 395–404. (M. Kalka) 89j:53030 53C12 (32F25)
- The nonembeddability of real hypersurfaces in spheres. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 902–904. (Kensho Takegoshi) 89i:32037 32F15 (32H35)
- Farassat, F. (with Myers, M. K.) The moving boundary problem for the wave equation: theory and application. *Computational acoustics, Vol. 2* (New Haven, Conn., 1986), 21–44, North-Holland, Amsterdam-New York, 1988. (Summary) 89b:76020 76Q05 (35R35)
- (with Myers, M. K.) Extension of Kirchhoff's formula to radiation from moving surfaces. *J. Sound Vibration* 123 (1988), no. 3, 451–460. (Summary) 89c:76070 76Q05
- Faraut, Jacques Séries de Taylor sphériques sur une algèbre de Jordan. [Spherical Taylor series on a Jordan algebra] *Représentations des groupes et analyse complexe* (Luminy, 1986), 35–46, *Journées SMF*, 24, Univ. Poitiers, Poitiers, 1986. (From the text) 89c:32088 32M15 (17C35, 22E30, 33A45)
- Farber, Martin (with Jamison, Robert E.) On local convexity in graphs. *Discrete Math.* 66 (1987), no. 3, 231–247. (Henry Martyn Mulder) 89c:05167 05C75
- Bridged graphs and geodesic convexity. *Discrete Math.* 66 (1987), no. 3, 249–257. (Henry Martyn Mulder) 89c:05168 05C75
- (with Anstee, R. P.) On bridged graphs and cop-win graphs. *J. Combin. Theory Ser. B* 44 (1988), no. 1, 22–28. (Summary) 89b:05053 05C99 (90D42)
- Farcaş, Gh. Definition des demi-treillis par 2500 systèmes d'axiomes. [Definition of semi-lattices by 2500 axiom systems] *Proceedings of the Conference on Algebra* (Romanian)
- (Timişoara, 1986), 41–44, Univ. Timişoara, Timişoara, 1987. (see 89f:00028) 06A12 (20M10)
- Treillis non-commutatifs de type (S). (English summary) [(S)-type noncommutative lattices] *Studia Univ. Babeş-Bolyai Math.* 32 (1987), no. 2, 44–48. (I. Gy. Maurer) 89b:06011 06B99
- Farbrother, R. W. The historical development of the  $L_1$  and  $L_\infty$  estimation procedures: 1793–1930. *Statistical data analysis based on the  $L_1$ -norm and related methods* (Neuchâtel, 1987), 37–63, North-Holland, Amsterdam-New York, 1987. (C. C. Heyde) 89j:61040 01A55 (62-03, 90-03)
- A remark on Magdalinos's  $k$ -class instrumental variable estimator. *Econometric Theory* 3 (1987), no. 2, 297–298. (Summary) 89b:62218 62P20
- ★ Linear least squares computations. *Statistics: Textbooks and Monographs*, 91, Marcel Dekker, Inc., New York, 1988. xiv+293 pp. ISBN 0-8247-7661-5 (James E. Gentle) 89b:62101 62J05 (65-02, 65U05)
- Elementar location shift estimators in the constrained linear model. *Comm. Statist. Theory Methods* 17 (1988), no. 1, 79–85. (Summary) 89c:62110 62J05
- al-Fargani see Martínez Gázquez, José, (89m:01026)
- de Faria, Edilson (with Várilly, Joseph C.; Gracia-Bondía, José M.) Some useful formulas for twisted products. (Spanish. English summary) *Cienc. Tecn.* 10 (1986), no. 2, 81–90 (1987). (Summary) 89b:81057 81C25 (46E10, 46M20)
- Farias, J. Ronald (with Espindola, Oslim; Espindola, Maria L.; Teixeira, Nelson L.) Exact invariants for a general mechanical system. *Hadronic J.* 10 (1987), no. 5, 273–277. (Summary) 89c:70027 70G99 (70F25)
- Faridi, Abbas M. Einstein-Maxwell equations and the conformal Ricci collineations. *J. Math. Phys.* 28 (1987), no. 6, 1370–1376. (B. K. Datta) 89a:83033 83C40 (83C50)
- Farin, Gerald (with Piper, B.; Worsey, A. J.) The octant of a sphere as a nondegenerate triangular Bézier patch. *Comput. Aided Geom. Design* 4 (1987), no. 4, 329–332. (Summary) 89b:65038 65D10
- (with Worsey, A. J.) An  $n$ -dimensional Clough-Tocher interpolant. *Constr. Approx.* 3 (1987), no. 2, 99–110. (G. Baszenski) 89f:41007 41A05 (41A15, 41A63)
- Geometry in design: the Bézier method. *Mathematical aspects of scientific software* (Minneapolis, Minn., 1986/87), 89–99, *IMA Vol. Math. Appl.*, 14, Springer, New York-Berlin, 1988. (Summary) 89b:65039 65D10
- see also Geometric modeling, 89b:65010
- Farina, J. E. G. Transmission probability and traversal time in scattering by a one-dimensional potential of finite range. *J. Phys. A* 21 (1988), no. 11, 2547–2558. (Summary) 89f:81226 81F05
- Farina-Busto, Luis Some new cosmological results of quadratic Lagrangians. *Phys. Rev. D* (3) 38 (1988), no. 6, 1741–1753. (Summary) 89i:83048 83D05
- Farinas del Cerro, Luis (with Souhli, Said) A note on mutual belief logic for processing definite reference. *Comm. Cognition* 17 (1984), no. 2-3, 43–48. (Not in MR) 03B65
- (with Herzog, Andreas) Linear modal deductions. *9th International Conference on Automated Deduction* (Argonne, IL, 1988), 487–499, *Lecture Notes in Comput. Sci.*, 310, Springer, Berlin-New York, 1988. (see 89c:68004) 03B45 (03B35)
- Farinato, R. (with Cervini, L.; Loreto, L.) The interactive computer graphics (ICG) production of the 17 two-dimensional crystallographic groups, and other related topics. *M. C. Escher: art and science* (Rome, 1985), 269–284, North-Holland, Amsterdam-New York, 1986. (see 89m:00011) 00A05 (00A08, 20H15)
- (with Loreto, L.) Geometric crystallography and computing in geometry. *ECM/87. Educational computing in mathematics* (Rome, 1987), 31–41, North-Holland, Amsterdam-New York, 1988. (R. L. E. Schwarzenberger) 89i:51001 51-04 (20H15, 52-04)
- Farinola, A. (with Amici, O.) Pseudoconnection and pseudoderivation forms of a pseudoconnection. (Italian. English summary) *Rend. Mat.* (7) 5 (1985), no. 3-4, 203–215 (1988). (V. Cruceanu) 89j:53023 53C05 (53C10)
- A characterization of the Kaehler condition on Finsler spaces. (Italian summary) *Boll. Un. Mat. Ital.* A (7) 2 (1988), no. 1, 59–64. (Sándor Bácsó) 89c:53053 53C60
- Farinone, Jean-Marc (with Pierre, Laurent) Rational index of context-free languages in  $\exp(\mathcal{O}(n))$  and  $n^{\mathcal{O}(\log n)}$ . *Theoret. Comput. Sci.* 57 (1988), no. 2-3, 185–204. (Karel Culik II) 89b:68088 68Q45 (68Q30)
- Faris, William G. Localization estimates for a random discrete wave equation at high frequency. *J. Statist. Phys.* 46 (1987), no. 3-4, 477–491. (Summary) 89b:82056 82A42 (82A05, 82A25)
- Farison, J. B. (with Kolla, S. R.) Counter-examples to: "Sufficient and necessary condition for the asymptotic stability of discrete linear interval systems" [Internat. J. Control 47 (1988), no. 5, 1563–1565] by C. L. Jiang. *Internat. J. Control* 48 (1988), no. 4, 1751–1752. (Not in MR) 93D20 (93C05, 93C40, 93C55)
- dror Farjoun, E. see Dror Farjoun, E.
- Farkas, A. (with Farkas, M.; Szabó, G.) Multiparameter bifurcation diagrams in predator-prey models with time lag. *J. Math. Biol.* 26 (1988), no. 1, 93–103. (Wei-Min Liu) 89d:92059 92A15 (34K15, 58F14)
- Farkas, Daniel R. Noetherian group rings: an exercise in creating folklore and intuition. *Noetherian rings and their applications* (Oberwolfach, 1983), 99–118, *Math. Surveys Monographs*, 24, Amer. Math. Soc., Providence, RI, 1987. (D. A. R. Wallace) 89a:16013 16A27 (16A33)
- The Diophantine nature of some constructions at infinity. *Geometry of group representations* (Boulder, CO, 1987), 125–129, *Contemp. Math.*, 74, Amer. Math. Soc., Providence, RI, 1988. (J. R. J. Groves) 89m:20008 20C07 (11J13, 14A99)
- Groups acting on affine algebras. *Trans. Amer. Math. Soc.* 310 (1988), no. 2, 485–497. (Susan Montgomery) 89i:16029 16A72
- Farkas, E. J. (with Szabo, M. E.) On the programs-as-formulas interpretation of parallel programs in Peano arithmetic. *Ann. Pure Appl. Logic* 37 (1988), no. 2, 111–127. (László Csirmaz) 89d:68018 68Q10 (03B70, 68N05)
- Farkas, H. M. Unramified coverings of hyperelliptic Riemann surfaces. *Complex analysis, I* (College Park, Md., 1985–86), 113–130, *Lecture Notes in Math.*, 1275, Springer, Berlin-New York, 1987. (E. Bujalance) 89c:30112 30F20 (14H30)
- Remarks on Clifford indices. *J. Reine Angew. Math.* 391 (1988), 213–220. (R. F. Lax) 89j:14018 14H05 (14C20, 30F99)
- Farkas, M. (with Garay, B.; Szabó, G.; Székuti, L.; V. Nagy, L.) Modelling of depth filtration. *Ann. Univ. Sci. Budapest. Sect. Comput.* 7 (1987), 67–73 (1988). (Summary) 89j:76081 76S05



- (with Farkas, A.; Szabó, G.) Multiparameter bifurcation diagrams in predator-prey models with time lag. *J. Math. Biol.* **26** (1988), no. 1, 93–103. (Wei-Min Liu) **89a:92059** 92A15 (34K15, 58F14)
- see also Szabó, G., **89b:92027**
- Farkas, Tamas F.** (with Bérczi, Szaniszló; Nagy, Dénes) From M. C. Escher to multidimensional thinking. With notes. *M. C. Escher: art and science (Rome, 1985)*, 315–320, North-Holland, Amsterdam-New York, 1986. (see **89m:00011**) 92A25 (00A05)
- Farkov, Yu. A.** Widths of classes of analytic functions with bounded derivatives. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 4, 84–86; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 4, 123–126. (Not in MR) **30E10** (41A46)
- Farley, Arthur M.** Reliable minimum-time broadcast networks. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 37–48. (Ioan Tomescu) **89f:94035** 94C15 (90B25)
- Farley, R. W.** (with Boyd, J. N.; Raychowdhury, P. N.) Invariance of geometric equations in convex coordinates. *Pure Appl. Math. Sci.* **25** (1987), no. 1–2, 11–26. (W. J. Firey) **89d:51037** 51N20
- Farmaki, Vasiliki A.** The structure of Eberlein, uniformly Eberlein and Talagrand compact spaces in  $\mathbb{R}^{\mathbb{R}}$ . *Fund. Math.* **128** (1987), no. 1, 15–28. (I. Blum) **89f:54053** 54D55 (46B20, 54E45)
- $C_0$ -subspaces and fourth dual types. *Proc. Amer. Math. Soc.* **102** (1988), no. 2, 321–328. (Yves Raynaud) **89a:46037** 46B20 (46B10)
- Farmakis, Nikos** (with Kounias, S.) On the excess of Hadamard matrices. *Discrete Math.* **68** (1988), no. 1, 59–69. (Jennifer Seberry) **89a:05041** 05B20
- Farmer, C. L.** The generation of stochastic fields of reservoir parameters with specified geostatistical distributions. *Mathematics in oil production (Cambridge, 1987)*, 235–252, *Inst. Math. Appl. Conf. Ser. New Ser.*, 18, Oxford Univ. Press, New York, 1988. (see **89j:76003**) **86A60**
- Farmer, William M.** A unification algorithm for second-order monadic terms. *Ann. Pure Appl. Logic* **39** (1988), no. 2, 131–174. (A. Tauts) **89k:03010** 03B35 (03B15, 03D40, 08A50, 20F10, 68T15)
- Farnsteiner, Rolf** Dual space derivations and  $H^2(L, F)$  of modular Lie algebras. *Canad. J. Math.* **39** (1987), no. 5, 1078–1106. (Gordon E. Brown) **89a:17015** 17B40 (17B50, 17B56)
- (with Strade, Helmut)  $\star$  Modular Lie algebras and their representations. Monographs and Textbooks in Pure and Applied Mathematics, 116. Marcel Dekker, Inc., New York, 1988. x+301 pp. ISBN 0-8247-7594-5 (Gordon E. Brown) **89h:17021** 17B50 (17-02, 17B05, 17B10)
- Derivations and central extensions of finitely generated graded Lie algebras. *J. Algebra* **118** (1988), no. 1, 33–45. (Gordon E. Brown) **89b:17018** 17B40 (17B56, 17B67, 17B70)
- On the vanishing of homology and cohomology groups of associative algebras. *Trans. Amer. Math. Soc.* **306** (1988), no. 2, 651–665. (L. N. Vaserstein) **89g:16035** 16A61 (17B56)
- Farnsworth, David** (with Orr, Richard) Transformation of power means and a new class of means. *J. Math. Anal. Appl.* **129** (1988), no. 2, 394–400. (Zsolt Páles) **89f:26021** 26D15
- lo Faro, Giovanni** see **Lo Faro, Giovanni**
- Faro Rivas, Ricardo**  $\star$  Aproximación de cuerpos convexos simétricos. (Spanish) [Approximation of symmetric convex bodies] Publicaciones del Departamento de Matemáticas, Universidad de Extremadura [Publications of the Mathematics Department of the University of Extremadura], 11. Universidad de Extremadura, Facultad de Ciencias, Departamento de Matemáticas, Badajoz, 1986. viii+147 pp. ISBN 84-600-4000-3 (J. M. Wills) **89c:52005** 52A20 (41A17, 41A50, 52A37, 52A40)
- Faroughi, Nikrouz** (with Shanblatt, Michael A.) An improved systematic method for constructing systolic arrays from algorithms. *24th ACM/IEEE Design Automation Conference (Miami Beach, FL, 1987)*, 26–34, ACM, New York, 1987. (see **89f:68003**) **68Q80**
- Farouki, R. T.** Direct surface section evaluation. *Geometric modeling*, 319–334, *SIAM, Philadelphia, PA*, 1987. (see **89b:65010**) **65D10**
- (with Rajan, V. T.) On the numerical condition of polynomials in Bernstein form. *Comput. Aided Geom. Design* **4** (1987), no. 3, 191–216. (Gheorghe Coman) **89a:65028** 65D15 (65D10)
- (with Rajan, V. T.) Algorithms for polynomials in Bernstein form. *Comput. Aided Geom. Design* **5** (1988), no. 1, 1–26. (Summary) **89c:65033** 65D99
- Computational issues in solid boundary evaluation. *Inform. Sci.* **44** (1988), no. 2, 87–171. (Summary) **89a:65042** 65D99 (52-04)
- Farquhar, Peter H.** (with Nakamura, Yutaka) Constant exchange risk properties. *Oper. Res.* **35** (1987), no. 2, 206–214. (Summary) **89f:90015** 90A09 (90A10)
- (with Nakamura, Yutaka) Utility assessment procedures for polynomial-exponential functions. Multiple criteria decision making. *Naval Res. Logist.* **35** (1988), no. 6, 597–613. (Summary) **89k:90021** 90A10 (90A05)
- Farr, Graham** The complexity of multicolouring. *Discrete Math.* **69** (1988), no. 3, 219–223. (Saul Stahl) **89d:68027** 68Q25 (05C15, 68R10)
- The subgraph homeomorphism problem for small wheels. *Discrete Math.* **71** (1988), no. 2, 129–142. (O. D'Antona) **89i:05226** 05C75
- Farr, William** see **Lécuyer, Bernard-Pierre**, **89c:01032**
- Farrag, A. S.** (with Mashhour, A. S.; Abd El-Monsef, M. E.) On the number of topologies on a finite set. (Arabic summary) *Delta J. Sci.* **10** (1986), no. 1, 41–65. (N. Hindman) **89c:54004** **EA 89m** 54A10 (05A15)
- (with Mashhour, A. S.; Abd El-Monsef, M. E.) Remarks on maximum cardinality for topologies on finite sets. (Arabic summary) *Delta J. Sci.* **10** (1986), no. 2, 496–512. (Andreas Blass) **89g:54003** 54A05 (04A20, 05A99)
- Farran, H. R.** (with Elaydi, Saber) Exponentially asymptotically stable dynamical systems. *Appl. Anal.* **25** (1987), no. 4, 243–252. (G. P. Los) **89i:34064** 34C35 (34D20, 54H20)
- (with Robertson, S. A.) Integrable spreads and spaces of constant curvature. *Proc. Roy. Soc. Edinburgh Sect. A* **109** (1988), no. 3–4, 225–229. (Iri Bivens) **89m:53095** 53C40 (53C12, 58A30)
- Farrell, B. E.** (with Tranquillo, R. T.; Fisher, E. S.; Lauffenburger, D. A.) A stochastic model for chemosensory cell movement: application to neutrophil and macrophage persistence and orientation. Nonlinearity in biology and medicine (Los Alamitos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1–2, 287–303. (see **89c:92002**) **92A09** (76Z10)
- Farrell, E. J.** Matchings in square animals. *J. Combin. Inform. System Sci.* **9** (1984), no. 4, 197–206. (Charles H. C. Little) **89c:05155** 05C70
- (with Grell, J. C.) Cycle decompositions of linear benzene chains. *Match No.* **21** (1986), 325–337. (N. Trinajstić) **89a:92082** 92A40 (05C99)
- On the matching polynomial and its relation to the rook polynomial. *J. Franklin Inst.* **325** (1988), no. 4, 527–543. (Larry Basenspiler) **89c:05156** 05C70 (90D42)
- (with De Matas, C. M.) On the characterizing properties of star polynomials. *Utilitas Math.* **33** (1988), 33–45. (Larry Basenspiler) **89b:05140** 05C75
- On a class of polynomials associated with the cliques in a graph and its applications. *Internat. J. Math. Math. Sci.* **12** (1989), no. 1, 77–84. (Larry Basenspiler) **89k:05082** 05C70
- see also Gutman, I., **89a:92083**
- Farrell, F. T.** (with Jones, Lowell Edwin)  $K$ -theory and dynamics. II. *Ann. of Math.* (2) **126** (1987), no. 3, 451–493. (Christopher W. Stark) **89f:57029a** 57N37 (19D10, 57R30, 58F17)
- (with Jones, Lowell Edwin) Foliated control with hyperbolic leaves. *K-Theory* **1** (1987), no. 4, 337–359. (Christopher W. Stark) **89f:57029b** 57N37 (19D10, 57R30, 58F17)
- (with Jones, Lowell Edwin) Topological rigidity for hyperbolic manifolds. *Bull. Amer. Math. Soc. (N.S.)* **19** (1988), no. 1, 277–282. (Frank Quinn) **89f:57042** 57R52 (22E40, 57R67)
- (with Jones, Lowell Edwin) The surgery  $L$ -groups of poly-(finite or cyclic) groups. *Invent. Math.* **91** (1988), no. 3, 559–586. (A. A. Ranicki) **89d:57049** 57R65 (19G24, 19L99)
- Farrell, J. A.** (with Michel, A. N.; Porod, W.) Qualitative analysis of neural networks. *Inform. Decision Tech.* **14** (1988), no. 3, 169–194. (Guy Marrie) **89k:93188** 93D99 (93A15, 93C75)
- Farrell, Joseph** Communication, coordination and Nash equilibrium. *Econom. Lett.* **27** (1988), no. 3, 209–214. (Dan Butnariu) **89i:90094** 90D05 (90D10)
- (with Scotchmer, Suzanne) Partnerships. *Quart. J. Econom.* **103** (1988), no. 2, 279–297. (Summary) **89d:90015** 90A07 (90D12)
- (with Shapiro, Carl) Dynamic competition with switching costs. *Rand J. Econom.* **19** (1988), no. 1, 123–137. (Summary) **89b:90052** 90A16
- Farrell, K.** (with Grove, E. A.; Ladas, G.) Neutral delay differential equations with positive and negative coefficients. *Appl. Anal.* **27** (1988), no. 1–3, 181–197. (T. Chanturiya) **89a:34076** 34K15 (34C05)
- Farrell, P. G.** (with Bate, S. D.; Honary, B. K.) Soft and hard decision decoding of product codes for communication systems. (Russian and Polish summaries) *Systems Sci.* **12** (1986), no. 4, 79–85 (1987). (Not in MR) **93B35**
- Farrell, Paul A.** Criteria for uniform convergence. *BAIL IV (Novosibirsk, 1986)*, 286–291, *Boole Press Conf. Ser.*, 8, Boole, Dún Laoghaire, 1986. (Summary) **89m:65073** 65L10
- (with Gartland, Eugene C., Jr.) A uniform convergence result for a turning point problem. *BAIL V (Shanghai, 1988)*, 127–132, *Boole Press Conf. Ser.*, 12, Boole, Dún Laoghaire, 1988. (see **89j:65008**) **34E20** (65L10)
- Sufficient conditions for the uniform convergence of a difference scheme for a singularly perturbed turning point problem. *SIAM J. Numer. Anal.* **25** (1988), no. 3, 618–643. (G. S. Tabidze) **89g:65100** 65L10 (34E20)
- Farrell, R. A.** (with Gray, E. P.; Hart, R. W.) An infinite sum of products of Jacobi polynomials. *J. Math. Phys.* **29** (1988), no. 10, 2175–2177. (J. V. Baxley) **89k:33011** 33A65
- Farrell, R. H.** (with Brown, Lawrence D.) Proof of a necessary and sufficient condition for admissibility in discrete multivariate problems. *J. Multivariate Anal.* **24** (1988), no. 1, 46–52. (James Berger) **89f:62003** 62C07 (62F10)
- Farreny, Henri** see **Nilsson, Nils J.**, **89c:68103**
- Farris, Frank** Classifying curves in space and space-time. *Exposition. Math.* **6** (1988), no. 1, 81–89. (J. Hoschek) **89a:53006** 53A04 (53A55)
- Farris, Steven L.** Completely classifying all vertex-transitive and edge-transitive polyhedra. I. Necessary class conditions. *Geom. Dedicata* **26** (1988), no. 1, 111–124. (Peter Gritzmann) **89c:52008** 52A25
- Farrou, S.** see **Furrow, Stanley D.**
- Farwell, R. S.** (with Chisholm, J. S. R.) Electroweak spin gauge theories and the frame field. *J. Phys. A* **20** (1987), no. 18, 6561–6580. (G. Vitiello) **89g:81104** 81G15
- (with Chisholm, J. S. R.) Gravity and the frame field. *Gen. Relativity Gravitation* **20** (1988), no. 4, 371–382. (Yu. N. Obukhov) **89g:83038** 83D05 (81E20, 83C05)
- Farzan, Ruszlan** An integral equation for the electro-magnetic vector potential. *Ann. Univ. Sci. Budapest. Sect. Comput.* **8** (1987), 53–68 (1988). (B. G. Pachpatte) **89k:78004** 78A25 (45J05)
- On approximate solution of one integral equation in electromagnetic sounding. *Numerical methods (Miskolc, 1986)*, 429–438, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (see **89b:65012**) **86A20** (65R20)
- Fasanelli, Florence D.** Ruth Aaronson Bari (1917–). *Women of mathematics*, 13–16, *Greenwood, Westport, CT*, 1987. (see **89b:01071**) **01A70**
- Sheila Scott Macintyre (1910–1960). *Women of mathematics*, 140–143, *Greenwood, Westport, CT*, 1987. (see **89b:01071**) **01A70**
- Pauline Sperry (1885–1967). *Women of mathematics*, 217–219, *Greenwood, Westport, CT*, 1987. (see **89b:01071**) **01A70**
- Fasano, Antonio**  $\star$  Las zonas pastosas en el problema de Stefan. (Spanish) [Mushy regions in the Stefan problem] A paper from the second seminar on the Stefan problem and its applications held in Rosario, October 13–17, 1986. Cuadernos del Instituto de Matemática “Beppo Levi” [Notes of the Beppo Levi Institute of Mathematics], 13. Universidad Nacional de Rosario, Facultad de Ciencias Exactas e Ingeniería, Rosario, 1987. 60 pp. (Jesús Hernández) **89f:35218** 35R35 (35K05, 80A20)
- Fasano, F.** (with Serra, Roberto; Zanarini, G.) Generalized Hopfield learning rules. *Chaos and complexity (Torino, 1987)*, 230–234, *World Sci. Publishing, Singapore*, 1988. (Summary) **89j:92038** 92A09 (82A57)
- Fasel, H.** (with Laurien, E.) Numerical investigation of the onset of chaos in the flow between rotating cylinders. *Z. Angew. Math. Mech.* **68** (1988), no. 5, T311–T313. (Introduction) **89k:76059** 76E30 (58F13)
- Fateev, V. A.** (with Lykhanov, S. L.) The models of two-dimensional conformal quantum field theory with  $Z_2$  symmetry. *Internat. J. Modern Phys. A* **3** (1988), no. 2, 507–520. (Philippe Christe) **89b:81186** 81E99 (81D15, 81E40, 82A25, 82A69)
- Fathi, Albert** The Poisson bracket on the space of measured foliations on a surface. *Duke Math. J.* **55** (1987), no. 3, 693–697. (N. A. Gusevskii) **89c:57032** 57R30 (57N10, 58F18)
- An orbit closing proof of Brouwer’s lemma on translation arcs. *Enseign. Math.* (2) **33** (1987), no. 3–4, 315–322. (Edward Slaminka) **89d:55004** 55M20 (54H20, 54H25, 58F25)

- Faticoni, Theodore G.** Semiperfect FPF rings and applications. *J. Algebra* **107** (1987), no. 2, 297–315. (Victor Camillo) **89c:16017** 16A32 (16A34, 16A35, 16A51)
- On the lattice of right ideals of the endomorphism ring of an abelian group. *Bull. Austral. Math. Soc.* **38** (1988), no. 2, 273–291. (A. I. Moskalenko) **89k:20082** 20K40 (16A89, 20K30)
- Localization in finite-dimensional FPF rings. *Pacific J. Math.* **134** (1988), no. 1, 79–99. (S. S. Page) **89f:16035** 16A55 (16A08, 16A33, 16A34)
- Fatmi, H. A.** (with Resconi, G.) A new computing principle. *Nuovo Cimento B* (11) **101** (1988), no. 2, 239–242. (Summary) **89g:68123** 68U99
- Fattah, S. Abdel** (with Elshaboury, S. M.) On the restricted problem of three rigid bodies. *Indian J. Pure Appl. Math.* **19** (1988), no. 9, 890–895. (P. Achuthan) **89j:70013** 70F07
- Fattorini, H. O.** Optimal control of nonlinear systems: convergence of suboptimal controls. II. *Control problems for systems described by partial differential equations and applications* (Gainesville, Fla., 1986), 230–246, *Lecture Notes in Control and Inform. Sci.*, 97, Springer, Berlin-New York, 1987. (Jati K. Sengupta) **89g:49008** 49A27 (49A50)
- Optimal control of nonlinear systems: convergence of suboptimal controls. I. *Operator methods for optimal control problems* (New Orleans, La., 1986), 159–199, *Lecture Notes in Pure and Appl. Math.*, 108, Dekker, New York, 1987. (Jati K. Sengupta) **89b:93066** 93C25 (46N05, 49A10, 93C20)
- (with Frankowska, H.) Necessary conditions for infinite-dimensional control problems. *Analysis and optimization of systems* (Antibes, 1988), 381–392, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (J. E. Rubio) **89b:90256** 90C48 (49B27, 93C25)
- Fattorosi-Barnaba, M.** (with Amati, G.) Modal operators with probabilistic interpretations. I. *Studia Logica* **46** (1987), no. 4, 383–393. (Tomáš Havráněk) **89g:03031** 03B48 (03B45)
- Fattorusso, Luisa** Differentiability of the weak solutions of nonlinear parabolic systems of order  $2m$  with quadratic growth. (Italian. English summary) *Matematiche (Catania)* **40** (1985), no. 1–2, 199–215 (1988). (Jesús Hernández) **89j:35034** 35B65 (35K55)
- The differentiability of solutions of second-order parabolic nonlinear systems with quadratic growth. (Italian. English summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 3, 741–764. (Marco Degiovanni) **89b:35065** 35K55 (35B65)
- Fatunla, Simeon Olu** ★ Numerical methods for initial value problems in ordinary differential equations. *Computer Science and Scientific Computing*. Academic Press, Inc., Boston, MA, 1988. xii+295 pp. ISBN 0-12-249930-1 (David C. Arney) **89j:65053** 65L05 (65-01, 65L20)
- Fatya, B. W.** (with Kostecký, V. Alan; Truax, D. Rodney) Baker-Campbell-Hausdorff relations for the orthosymplectic group  $OSP(1/2)$ . *J. Math. Phys.* **30** (1989), no. 2, 291–294. (Summary) **89j:22040** 22E65 (81D30)
- Fatykhov, M. A.** (with Smirnov, G. P.) On the problem of the determination of the right-hand side of the heat equation. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 4, 711–714, 735. (Igor Malyshev) **89k:35251** 35R30 (35K05)
- Fauconnier, H.** Sémantique asynchrone et comportements infinis en CSP. (English summary) [Asynchronous semantics and infinite behavior in CSP] *Theoret. Comput. Sci.* **54** (1987), no. 2–3, 277–298. (Andrea Masini) **89c:68024** 68Q05 (68Q55)
- Faudree, R. J.** (with Gyárfás, A.; Schelp, R. H.) Graphs which have an ascending subgraph decomposition. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 49–54. (Ortrud R. Oellermann) **89d:05142** 05C70
- (with Gould, R. J.; Schelp, R. H.) Neighborhood conditions and edge disjoint Hamiltonian cycles. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 55–68. (Michael Jacobson) **89c:05137** 05C45
- (with Burr, S. A.; Erdős, Paul; Rousseau, C. C.; Schelp, R. H.; Gould, R. J.; Jacobson, Michael S.) Goodness of trees for generalized boxes. *Graphs Combin.* **3** (1987), no. 1, 1–6. (Zheng Sheng Wu) **89b:05122** 05C55
- (with Ordman, Edward T.; Schelp, R. H.; Jacobson, Michael S.; Tuza, Zsolt) Menger's theorem and short paths. *J. Combin. Math. Combin. Comput.* **2** (1987), 235–253. (C. Peyrat) **89c:05050** 05C38 (05C40)
- (with Gould, R. J.; Jacobson, Michael S.; Schelp, R. H.) Extremal problems involving neighborhood unions. *J. Graph Theory* **11** (1987), no. 4, 555–564. (Felix Lazebnik) **89a:05087** 05C35 (05C38, 05C70)
- (with Erdős, Paul; Gyárfás, A.; Schelp, R. H.) Cycles in graphs without proper subgraphs of minimum degree 3. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), B, 195–201. (George R. T. Hendry) **89c:05126** 05C38
- (with Erdős, Paul; Ordman, Edward T.) Clique partitions and clique coverings. Proceedings of the First Japan Conference on Graph Theory and Applications (Hakone, 1986). *Discrete Math.* **72** (1988), no. 1–3, 93–101. (W. D. Wallis) **89m:05090** 05C70
- (with Erdős, Paul; Pach, János; Spencer, Joel) How to make a graph bipartite. *J. Combin. Theory Ser. B* **45** (1988), no. 1, 86–98. (Seymour Schuster) **89f:05134** 05C70
- Faulkner, Gary D.** Compactifications whose remainders are retracts. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 984–988. (J. van Mill) **89f:54049** 54D35 (54C10, 54D40)
- Faulkner, John R.** Finding octonion algebras in associative algebras. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1027–1030. (Joseph C. Ferrar) **89j:17003** 17A75
- Fauntleroy, Amassa** Unipotent group actions. Corrections to: "Linear  $G_n$  actions on affine spaces and associated rings of invariants" [*J. Pure Appl. Algebra* **9** (1976/77), no. 2, 195–206; MR **56** #5583]. *J. Pure Appl. Algebra* **50** (1988), no. 2, 209–210. (Editors) **89d:14061** 14L30 (14D25)
- Faure, J. B.** (with Chambat, M.; Bayada, G.) Some effects of the boundary roughness in a thin film. *Boundary control and boundary variations* (Nice, 1986), 96–115, *Lecture Notes in Comput. Sci.*, 100, Springer, Berlin-New York, 1988. (Charles J. Amick) **89f:76044** 76D08
- Faust, Katherine** Comparison of methods for positional analysis: structural and general equivalences. *Social Networks* **10** (1988), no. 4, 313–341. (Summary) **89k:92077** 92A20
- Faustino, A. M.** (with Júdeice, J. J.) An experimental investigation of enumerative methods for the linear complementarity problem. *Comput. Oper. Res.* **15** (1988), no. 5, 417–426. (Summary) **89h:90238** 90C33
- Fauvel, John** see History of mathematics: a reader, **89m:01006**
- Fava, N. A.** (with Capri, O. N.) A generalization of Yano's extrapolation theorem. *Portugal. Math. AA* (1987), no. 4, 371–378. (Summary) **89i:42028** 42B25 (28A99, 47H99)
- Favara, Odile**  $k$ -domination and  $k$ -independence in graphs. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), C, 159–167. (J. R. Griggs) **89j:05044** 05C35
- Two relations between the parameters of independence and irredundance. *Discrete Math.* **70** (1988), no. 1, 17–20. (A. G. Thomason) **89c:05121** 05C35
- (with Kouider, M.) Path partitions and cycle partitions of Eulerian graphs of maximum degree 4. *Studia Sci. Math. Hungar.* **23** (1988), no. 1–2, 237–244. (H. Joseph Straight) **89i:05213** 05C70 (05C38)
- Favati, P.** (with Codenotti, B.) Iterative methods for the parallel solution of linear systems. *Comput. Math. Appl.* **13** (1987), no. 7, 631–633. (I. Norman Katz) **89b:65075** 65F10 (65W05)
- Favella, L.** (with Balossino, N.; Reineri, M. T.) Electrical excitation propagation front in the cardiac muscle. *Biomathematics and related computational problems* (Naples, 1987), 649–658, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89f:92015** 92A09
- Favier, G.** (with Dubois, Didier; Rougerie, C.) On predictive control: a comparison and some extensions. *Analysis and optimization of systems* (Antibes, 1988), 789–809, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89c:93232** 93E25
- Numerically efficient adaptive identification algorithms. (French summary) *RAIRO Automat.-Prod. Inform. Ind.* **22** (1988), no. 1, 27–52. (Han Fu Chen) **89c:93206** 93E12 (90B22, 93E10, 93E25)
- Favini, Angelo** (with Plazzi, Piero) Some results concerning the abstract degenerate nonlinear equation  $D_t u(t) + Lu(t) = f(t, Ku(t))$ . *Circuits Systems Signal Process.* **5** (1986), no. 2, 261–274. (Tomás Domínguez Benavides) **89c:47077** 47H15 (34G20, 35K55)
- (with Dore, Giovanni) On the equivalence of certain interpolation methods. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 4, 1227–1238. (L. I. Nikolova) **89f:46133** 46M35
- An operational method for abstract degenerate evolution equations of hyperbolic type. *J. Funct. Anal.* **76** (1988), no. 2, 432–456. (Ioana Ciorănescu) **89d:47018** 47A50 (34G10, 35L99, 47D05)
- Favorskii, A. P.** (with Vyaznikov, K. V.; Tishkin, V. F.) Quasimonotone difference schemes for solutions of gas dynamics. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 175, 24 pp. (Summary) **89a:65133** 65M05 (76N15)
- (with Solov'ev, A. V.; Solov'eva, E. V.; Tishkin, V. F.; Shashkov, M. Yu.) Difference schemes of the method of "Dirichlet particles", which preserve the one-dimensionality of gas dynamic flows in Cartesian, cylindrical and spherical coordinates. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 12, 2133–2147, 2206. (V. D. Glushenkov) **89g:65114** 65M05
- (with Solov'ev, A. V.; Tishkin, V. F.; Shashkov, M. Yu.) Approximation of the continuity equation in the method of "Dirichlet particles". (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 124, 21 pp. (Summary) **89c:65160** 65P05
- (with Solov'ev, A. V.; Tishkin, V. F.; Shashkov, M. Yu.) Geometric properties of domains of correspondence in "free-Lagrange" methods. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 144, 25 pp. (Summary) **89i:65133** 65N99
- Fawcett, Karen R.** (with Walls, Gary) Groups generated by two  $p$ -cycles. *Arch. Math. (Basel)* **50** (1988), no. 5, 391–393. (Marston Conder) **89c:20004** 20B10
- Fawcett, R. J. B.** (with Bracken, A. J.) Simple orthogonal and unitary compact quantum systems and the İnönü-Wigner contraction. *J. Math. Phys.* **29** (1988), no. 7, 1521–1528. (Nigel B. Backhouse) **89k:81044** 81C40 (17B10)
- Fawzy, Th.** (with Holail, F. S.) (0, 2) lacunary interpolation with splines of degree 6. *Ann. Univ. Sci. Budapest. Sect. Comput.* **6** (1985), 27–35 (1987). (Len Bos) **89d:41023** 41A15 (41A05)
- Fay, N. A.** (with Glazebrook, K. D.) On the scheduling of alternative stochastic jobs on a single machine. *Adv. in Appl. Probab.* **19** (1987), no. 4, 955–973. (Kunsi Lin) **89b:90105** 90B35
- (with Glazebrook, K. D.) Evaluating strategies for generalized bandit problems. *Internat. J. Systems Sci.* **19** (1988), no. 8, 1605–1613. (John C. Gittins) **89b:90251** 90C40 (90B35)
- Fay, Temple H.** Compact models. *Comm. Algebra* **16** (1988), no. 6, 1209–1219. (Summary) **89m:16051** 16A63 (16A90, 18A20)
- Fayers, F. J.** An introduction to some of the mathematical and physical problems of modelling oil displacement in porous media. *Mathematics in oil production* (Cambridge, 1987), 1–51, *Inst. Math. Appl. Conf. Ser. New Ser.*, 18, Oxford Univ. Press, New York, 1988. (see **89j:76003**) 76T05 (76-04, 76-08, 76S05)
- Fayet, Pierre** Supersymmetric theories of particles and interactions. *Unification of fundamental interactions* (Marstrand, 1986), 46–60, *Royal Swedish Acad. Sci., Stockholm*, 1987. (see **89f:81005**) 81G20 (81G25)
- Fayolle, G.** (with Baccelli, F.) Analysis of models reducible to a class of diffusion processes in the positive quarter plane. *SIAM J. Appl. Math.* **47** (1987), no. 6, 1367–1385. (Walter A. Rosenkrantz) **89b:60168** 60J25 (60J70, 60K25, 90B15, 90B22)
- (with Brun, M. A.) On a system with impatience and repeated calls. *Queueing theory and its applications*, 283–305, *CWI Monographs*, 7, North-Holland, Amsterdam-New York, 1988. (Ralph L. Disney) **89i:60179** 60K25 (90B22)
- Fazekas, I. A.** Strong law of large numbers in Banach spaces of type  $\Phi$ . *Mathematical statistics and probability theory*, Vol. A (Bad Tatzmannsdorf, 1986), 89–97, *Reidel, Dordrecht-Boston, MA-London*, 1987. (J.-T. Lapresté) **89a:60023** 60B12 (46B20, 60F15)
- On the convergence of regression type martingale fields. *Probability theory and mathematical statistics with applications* (Visegrád, 1985), 43–52, *Reidel, Dordrecht-Boston, MA*, 1988. (L. Cuculescu) **89j:60063** 60G48 (60G42)
- hernández Fdez., Ma. Luisa Teresa** see Hernández Fdez., Ma. Luisa Teresa
- Fdez. Castillo, Jesús M.** ★ La estructura de los S-espacios. (Spanish) [The structure of S-spaces] Dissertation, Universidad de Extremadura, Badajoz, 1986. Publicaciones del Departamento de Matemáticas, Universidad de Extremadura [Publications of the Mathematics Department of the University of Extremadura], 16. *Universidad de Extremadura, Facultad de Ciencias, Departamento de Matemáticas, Badajoz*, 1987. 91 pp. ISBN 84-600-4818-7 (R. Aguilo-Fuster) **89f:46008** 46A12 (46A22)
- On Schwartz spaces satisfying the equation  $\Delta(E \times E) = \Delta(E)$ . (Turkish summary) *Doğa Mat.* **11** (1987), no. 2, 93–99. (Christian Fenske) **89a:46013** 46A12
- An internal characterization of G-spaces. *Portugal. Math. AA* (1987), no. 1, 63–67. (Asuman Aksoy) **89d:46003** 46A12



- Sums and products of Hilbert spaces. *Proc. Amer. Math. Soc.* **105** (1989), no. 2, 362–366. (H. Jarchow) **89f:46002** 46A05 (46C99, 46M05)
- see also Colloquium: 1986–1988, **89g:46001**
- Fearn, D. R.** (with Roberts, P. H.; Soward, A. M.) Convection, stability and the dynamo. *Energy stability and convection* (Capri, 1986), 60–324, *Pitman Res. Notes Math. Ser.*, **168**, Longman Sci. Tech., Harlow, 1988. (Salvatore Rionero) **89f:76095** 76W05 (76E25, 86A25)
- Feather, Martin** (with Jacobs, Dean) Corrections to: "A synthesis of several sorting algorithms" [Acta Inform. **11** (1978/79), no. 1, 1–30; MR **80c:68024**] by J. Darlington. *Acta Inform.* **26** (1988), no. 1–2, 19–23. (Summary) **89f:68051** 68Q20 (68P10, 68R05)
- Feautrier, Paul** Parametric integer programming. (French summary) *RAIRO Rech. Opér.* **22** (1988), no. 3, 243–268. (Knut Richter) **89m:90112** 90C10 (90C05)
- Fechner, Gustav Theodor** see Heidelberg, Michael, **89a:01034**
- Fecko, Marián** A representation of  $SO(p+q, p+q)$  on  $SO(p, q)$ . *J. Math. Phys.* **29** (1988), no. 5, 1079–1082. (M. K. F. Wong) **89b:22027** 22E45 (81C40)
- Fedchenko, I. I.** see Fedchenya, I. I.
- Fedchenko, M. S.** (with Petrovskii, G. N.) Asymptotic representation of solutions of linear systems of differential equations. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 12, 2115–2118, 2205. (From the text) **89k:34095** 34E05 (34A30)
- Fedchenya, I. I.** Local methods for constructing stationary distribution functions of systems of stochastic differential Langevin-type equations: noise influence on simple bifurcation. *J. Statist. Phys.* **50** (1988), no. 5–6, 1043–1068. (Ludwig Arnold) **89g:60184** 60H10 (34F05, 58G40, 82A31)
- A two-dimensional Fokker-Planck equation degenerating on a straight line. *J. Statist. Phys.* **52** (1988), no. 3–4, 1005–1029. (Klaus Dressler) **89k:82040** 82A31
- Fedder, Richard** (with Dobbs, David E.; Fontana, Marco) Abstract Riemann surfaces of integral domains and spectral spaces. (Italian summary) *Ann. Mat. Pura Appl.* (4) **148** (1987), 101–115. (Chin-Pi Lu) **89f:14002** 14A20 (13G05)
- (with Dobbs, David E.; Fontana, Marco)  $G$ -domains and spectral spaces. *J. Pure Appl. Algebra* **51** (1988), no. 1–2, 89–110. (W. Heinzer) **89i:13026** 13G05
- Fedechev, A. F.** A coupled problem of thermoelasticity with a finite rate of heat propagation. (Russian) *Analytic methods for solving differential equations* (Russian), 119–124, 151, *Kulbyshv. Gos. Univ., Kuybyshev*, 1986. (Summary) **89g:73045** 73U05
- On the justification of the Fourier method in generalized problems of coupled thermoelasticity. (Russian) *Analytical methods in the theory of differential and integral equations* (Russian), 112–117, *Kulbyshv. Gos. Univ., Kuybyshev*, 1987. (From the introduction) **89f:73073** 73U05
- Fedenia, M. M.** (with Stojic, M. R.; Stojic, R.) Sensitivities of the prescribed pole spectrum in a closed-loop control system. *Automatica—J. IFAC* **24** (1988), no. 2, 257–260. (Summary) **89i:93041** 93B35 (49E25, 93B05, 93B55)
- Fedenko, A. S.** (with Akivis, M. A.; Galin, G. Ya.; Kirichenko, V. F.; Morozova, E. A.; Novikov, S. P.) Anatolii Mikhailovich Vasil'ev. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 4(262), 159–160; translated in *Russian Math. Surveys* **43** (1988), no. 4, 191–193. (Editors) **89m:01073** 01A70
- Fedenko, V. I.** (with Yanko, V. I.) A continuum model of a porous medium with an elastically deforming matrix material. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 10, 31–34, 85. (Summary) **89c:73080** 73S05
- Feder, Jens** ★ Fractals. With a foreword by Benoit B. Mandelbrot. *Physics of Solids and Liquids*. Plenum Press, New York-London, 1988. xxvi+283 pp. ISBN 0-306-42851-2 (J. S. Joel) **89f:76001** 76-02 (00A69, 28A75, 58F13, 76S05, 82A43)
- (with Aharony, Amnon; Oxaal, U.; Murat, M.; Meir, Yigal; Boger, F.; Jøssang, T.) Growth and viscous fingers on percolating porous media. *Random fluctuations and pattern growth* (Cargèse, 1988), 83–86, *NATO Adv. Sci. Inst. Ser. E: Appl. Sci.*, **157**, *Kluwer Acad. Publ., Dordrecht*, 1988. (see **89j:00034**) **82A43** (76S05)
- (with Furberg, Liv; Aharony, Amnon; Jøssang, T.) Dynamics of invasion percolation. *Phys. Rev. Lett.* **61** (1988), no. 18, 2117–2120. (Summary) **89i:82050** 82A43
- Federbush, Paul** A phase cell approach to Yang-Mills theory. VI. Nonabelian lattice-continuum duality. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **47** (1987), no. 1, 17–23. (C. A. Hurst) **89b:81103** 81E13 (81E08, 81E25)
- (with Battie, Guy) Ondes et phase cell cluster expansions, a vindication. *Comm. Math. Phys.* **109** (1987), no. 3, 417–419. (Summary) **89b:81105** 81E08
- On the quantum Yang-Mills field theory. *Mathematical quantum field theory and related topics* (Montreal, PQ, 1987), 29–36, *CMS Conf. Proc.*, **9**, Amer. Math. Soc., Providence, RI, 1988. (see **89g:81002**) **81E13** (81E08)
- A phase cell approach to Yang-Mills theory. IV. The choice of variables. *Comm. Math. Phys.* **114** (1988), no. 2, 317–343. (Alan D. Sokal) **89f:81090** 81E08 (81E13, 81E15)
- Federer, Herbert** ★ Геометрическая теория меры. (Russian) [Geometric measure theory] Translated from the English by S. P. Balborodov, L. D. Ivanov and V. V. Trofimov. Translation edited and with a preface by A. G. Vitushkin. With appendices by Ivanov and A. T. Fomenko. "Nauka", Moscow, 1987. 760 pp. (J. S. Joel) **89c:49034** 49F20 (28A75, 49F22, 58E15)
- Federer, W. T.** (with Wright, James T.) Construction of lattice square designs. *Biometrical J.* **30** (1988), no. 1, 77–85. (Not in MR) **62K10** (05B05)
- Federgruen, Awi** (with Green, Linda) Queueing systems with service interruptions. *Oper. Res.* **34** (1986), no. 5, 752–768 (1987). (Summary) **89a:60216** 60K25 (90B22)
- (with Anily, S.) Simulated annealing methods with general acceptance probabilities. *J. Appl. Probab.* **24** (1987), no. 3, 657–667. (Brian Conolly) **89h:90183** 90C27 (82A99)
- (with Anily, S.) Ergodicity in parametric nonstationary Markov chains: an application to simulated annealing methods. *Oper. Res.* **35** (1987), no. 6, 867–874. (Eleonora Ciurea) **89g:90102** 90B15
- (with Groenevelt, H.)  $M/G/c$  queueing systems with multiple customer classes: characterization and control of achievable performance under nonpreemptive priority rules. *Management Sci.* **34** (1988), no. 9, 1121–1138. (Summary) **89f:90064** 90B22
- (with Green, Linda) Queueing systems with service interruptions. II. *Naval Res. Logist.* **35** (1988), no. 3, 345–358. (Jacqueline Loris-Teghem) **89h:60156** 60K25 (90B22)
- (with Groenevelt, H.) Polymatroidal flow network models with multiple sinks. *Networks* **18** (1988), no. 4, 285–302. (Edward Minieka) **89k:90054** 90B10
- Federickson, Greg N.** Fast algorithms for shortest paths in planar graphs, with applications. *SIAM J. Comput.* **16** (1987), no. 6, 1004–1022. (Narsingh Deo) **89g:68024** 68Q25 (05C10, 05C38, 68R10, 90B10)
- Fedit, P.** (with Auslender, A. A.; Crouzeix, J.-P.) Penalty-proximal methods in convex programming. *J. Optim. Theory Appl.* **55** (1987), no. 1, 1–21. (S. Zlobec) **89d:90161** 90C25 (49D30, 65K05)
- Fed'kina, V. R.** see Oscillations and traveling waves in chemical systems, **89f:92003**
- Fedorchenko, A. T.** Equations for the acoustics of a nonstationary subsonic flow. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 6, 1332–1336; translated in *Soviet Phys. Dokl.* **33** (1988), no. 8, 552–554. (Ilie Popescu) **89k:76081** 76Q05 (35Q10, 76G15)
- Fedorchenko, I. S.** (with Danilov, V. Ya.; Tkachik, E. F.) Determining source coordinates by the method of wave front inversion in an inhomogeneous waveguide. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* **6** (1987), 18–23, 114. (D. Stanomir) **89m:76058** 76Q05
- Fedorchuk, I. M.** Some exact solutions of the relativistic Hamilton equation. (Russian) *Symmetry and solutions of nonlinear equations of mathematical physics* (Russian), 76–79, iv, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (S. V. Duzhin) **89k:35042** 35C05 (58G35)
- (with Fedorchuk, V. M.) Reduction and exact solutions of five-dimensional nonlinear wave equations. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1988**, no. 21, 28 pp. (Summary) **89j:35115** 35Q20 (35C05, 58G37)
- Fedorchuk, V. M.** Some exact solutions of the five-dimensional nonlinear wave equation. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jämsä, 1985), 495–497, "Nauka", Moscow, 1986. (see **89d:81001**) **35L70**
- Reduction and some exact solutions of a nonlinear wave equation. (Russian) *Symmetry and solutions of nonlinear equations of mathematical physics* (Russian), 73–76, iv, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) **89f:35135** 35L70 (35C05, 58G35)
- (with Fedorchuk, I. M.) Reduction and exact solutions of five-dimensional nonlinear wave equations. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1988**, no. 21, 28 pp. (Summary) **89j:35115** 35Q20 (35C05, 58G37)
- Fedorchuk, A. V.** (with Arkhangel'skii, A. V.) Basic concepts and constructions of general topology. (Russian) *Current problems in mathematics. Fundamental directions*, Vol. 17 (Russian), 5–110, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (see **89m:54001**) **54-01**
- Principles of dimension theory. (Russian) *Current problems in mathematics. Fundamental directions*, Vol. 17 (Russian), 111–224, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (see **89m:54001**) **54F45**
- Fibrations of spaces of probability measures and the geometry of infinite iterations of some monadic functors. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 1, 41–45; translated in *Soviet Math. Dokl.* **38** (1989), no. 1, 35–38. (S. A. Peregrudov) **89g:54022** 54B25 (54E99, 54F25, 60B05)
- Fedorenko, A. D.** (with Karpinskaya, L. V.; Onishchenko, S. M.) A mathematical model of the motion of a rigid body along a spheroid under the action of central forces. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1988**, no. 23, 39 pp. (Summary) **89k:70016** 70E99 (70-04)
- Fedorenko, R. P.** On numerical integration of stiff systems. *BAIL IV* (Novosibirsk, 1986), 61–68, *Boole Press Conf. Ser.*, **8**, Boole, Dún Laoghaire, 1986. (Reinhard Scholz) **89b:65170** 65L05
- Fedorenko, V. V.** Simple one-dimensional dynamical systems. (Russian) *Functional-differential equations and their application to nonlinear boundary value problems* (Russian), 94–96, iv, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) **89i:58059** 58F08 (28D20, 34C70, 58F20)
- Fedorov, A. L.** (with Veksler, A. S.) On the homomorphisms of locally compact groups in the exterior group of a measurable equivalence relation. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 2, 16–21, 78. (D. Petz) **89c:28028** 28D15 (22D40, 28A60)
- (with Vinokurov, V. G.; Rubshtein, B. A.) Normal subgroups and extensions of measure groupoids. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 3(261), 175–176; translated in *Russian Math. Surveys* **43** (1988), no. 3, 231–232. (N. N. Ganikhodzhayev) **89k:22009** 22D40 (28D99, 46L55)
- (with Veksler, A. S.) A statistical ergodic theorem in nonseparable symmetric function spaces. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 3, 183–185, 222; translated in *Siberian Math. J.* **29** (1988), no. 3, 483–485. (Anzelm Iwanik) **89b:28031** 28D05 (46E30, 47A35)
- Fedorov, A. V.** Excitation of instability waves of the secondary flow in a boundary layer on a sliding wing. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* **1988**, no. 5, 46–52, 173; translated in *J. Appl. Mech. Tech. Phys.* **29** (1988), no. 5, 643–648. (Summary) **89k:76072** 76N05 (76E99)
- Fedorov, F. I.** (with Kuvshinov, V. I.) Use of Noether identities for the construction of supergravity models. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jämsä, 1985), 82–87, "Nauka", Moscow, 1986. (see **89d:81001**) **83E50** (81E99)
- (with Radyuk, A. F.) A polarizing scalar product in constant magnetic and electrical fields and in a plane wave field. (Russian. English summary) *Vesti Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 5, 45–52, 126. (Adam Bechler) **89i:81193** 81G10 (81L05)
- (with Minkevich, A. V.; Chuong, Nguyen Hong) Spontaneous symmetry breaking by gravitational field and regular isotropic models with torsion. *Classical Quantum Gravity* **5** (1988), no. 3, 515–519. (Yu. N. Obukhov) **89d:83052** 83D05 (83F05)
- (with Glazkov, D. Yu.)  $T$ -invariance of first-order relativistic equations. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **31** (1988), no. 12, 5–9; translated in *Soviet Phys. J.* **31** (1988), no. 12, 955–959. (Summary) **89m:81076** 81D25
- Fedorov, I. P.** Prediction methods on the basis of fuzzy original information. (Russian) *Decision-making methods and systems. Applied problems in the analysis of solutions in technical systems* (Russian), 22–28, 146, *Rizhsk. Politekh. Inst., Riga*, 1986. (see **89h:00001**) **03E72**
- Fedorov, S. E.** (with Mart'yanov, A. N.) Potential noise immunity of a quantum channel with a noncoherent source of radiation. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 9, 28–32 (1988); translated from *Radiotekhn. i Elektron.* **32** (1987), no. 2, 356–360 (Russian). (Summary) **89c:81050** 81C99 (94B70)
- Fedorov, S. I.** On the passage to the limit with respect to the parameter of incompressibility for some mathematical models in nonlinear elasticity. (Russian) *Lav. Mat. Ezhegodnik* **30** (1988), 42–49, 240. (R. Kodnár) **89j:73021** 73C50
- Existence of a solution of a boundary value problem of a class of models of geometrically nonlinear elasticity for incompressible media. (Russian) *Dokl. Akad. Nauk SSSR* **296**

- (1987), no. 5, 1065–1068; translated in *Soviet Math. Dokl.* **36** (1988), no. 2, 370–373. (Introduction) **89a:73036** 73Q05 (35Q20)
- (with Lyashenko, N. N.; Nikulin, M. S.) A prediction problem for random processes taking into account the duration of calculations. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 3, 613–616. (Jifí Anděl) **89i:60088** 60G25
- Fedorov, S. Ye.** see **Fedorov, S. E.**
- Fedorov, V. K.** Formation of stable structures for the probability density of deviations in frequency in electrical power systems. (Russian) *Izv. Sibirsk. Otdel. Akad. Nauk SSSR Ser. Tekhn. Nauk* **1988**, no. 15, 39–46, 142. (Summary) **89j:94038** 94C05 (34F05)
- Fedorov, Valeri Vladimirovich** (with Tovmachenko, N. N.) Regression analysis in problems of the design of experiments. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 60 (1986), 84–89, 127. (H. Bandemer) **89a:62176** 62K05 (62J05)
- Various discrepancy measures in model testing (two competing regression models). *Statistical data analysis based on the  $L_1$ -norm and related methods* (Neuchâtel, 1987), 357–366, North-Holland, Amsterdam-New York, 1987. (Bhagwandas) **89g:62125** 62K05
- Properties of optimal designs of regression experiments in singular cases. *Statistical methods*. *J. Soviet Math.* **40** (1988), no. 2, 245–246. (H. Bandemer) **89m:62076** 62K05
- Fedorov, Ya. V.** Order-parameter function in a spin glass on a Bethe lattice. *JETP Lett.* **46** (1987), no. 7, 340–343 (1988); translated from *Pis'ma Zh. Eksper. Teoret. Fiz.* **46** (1987), no. 7, 270–272 (Russian). (M. Lawrence Glasser) **89f:82056** 82A57 (82A25)
- Fedorov, Yu. N.** Integration of a generalized problem on the rolling of a Chaplygin ball. (Russian) *Geometry, differential equations and mechanics* (Russian) (Moscow, 1985), 151–155, Moscow. Gos. Univ., Mekh.-Mat. Fak., Moscow, 1986. (Introduction) **89c:70005** 70E15
- Fedorova, E. Ya.** (with Gurman, V. I.; Baturin, V. A.; Moskalenko, A. I.; Baginov, I. P.; Bobryshev, A. G.; Butin, A. A.; Danilina, E. V.; Derenko, N. V.; Dushin, K. B.; Dykhta, V. A.; Kolokolnikova, G. A.; Konstantinov, G. N.; Mel'nik, V. V.; Nikiforova, L. N.; Ovsyannikova, N. A.; Rasina, I. V.; Rozenaukh, D. M.; Urbanovich, D. E.) ★ Методы улучшения в вычислительном эксперименте. (Russian) [Methods of improving [control] in numerical experiments] “*Nauka*” *Sibirsk. Otdel. Novosibirsk*, 1988. 184 pp. ISBN 5-02-028573-0 (Asen L. Dontchev) **89h:65099** 65Kxx (49Dxx, 93B40)
- Fedorova, V. P.** Hypercompleteness criteria for a uniform space. (Russian) *Topological structures and their mappings* (Russian), 139–143, vii, Latv. Gos. Univ., Riga, 1987. (Gert Kneis) **89e:54050** 54E15 (54C40)
- Fedorov, S. P.** (with Tsybakov, B. S.) Characteristics of a random multiple access stack algorithm for its use in a local network. (Russian) *Problemy Peredachi Informatsii* **23** (1987), no. 4, 87–101. (Summary) **89h:68005** 68M10
- Fedoryuk, M. V.** ★ Обыкновенные дифференциальные уравнения. (Russian) [Ordinary differential equations] Second edition. Избранные главы Высшей Математики для Инженеров и Студентов ВТУЗов. [Selected Chapters in Higher Mathematics for Engineers and Students at Technical Schools] “*Nauka*”, Moscow, 1985. 448 pp. (From the preface) **89h:34001** 34-01 (35-01, 49-01)
- Asymptotic methods in analysis. (Russian) *Current problems of mathematics. Fundamental directions*, Vol. 13 (Russian), 93–210, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform.*, Moscow, 1986. (Vlajko Lj. Kocić) **89b:34134** 34E20 (34A25, 34E05, 41A60, 58F19)
- ★ Асимптотика: интегралы и ряды. (Russian) [Asymptotics: integrals and series] Справочная Математическая Библиотека. [Mathematical Reference Library] “*Nauka*”, Moscow, 1987. 544 pp. (J. S. Joel) **89j:41045** 41A60 (41-02, 58C27)
- Lamé wave functions in Jacobi form. I. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 10, 1715–1724, 1835. (A. Haimovici) **89c:33014** 33A55 (33A65, 34A20)
- Lamé wave functions in Jacobi form. II. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 11, 1913–1922, 2020. (A. Haimovici) **89c:33015** 33A55 (33A65, 34A20, 34E05)
- Asymptotics of radial Lamé wave functions. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 5, 635–646, 782. (R. G. Langebartel) **89i:33016** 33A55 (34A20)
- Fedosova, I. L.** (with Koptisk, V. A.; Kuzhukeev, Zh. N. M.) Eight-color space  $P$ -symmetry groups (programmed derivation). *Group theoretical methods in physics*, Vol. 1–3 (Zvenigorod, 1982), 715–723, Harwood Academic Publ., Chur, 1985. (R. L. E. Schwarzenberger) **89m:20056** 20H15 (82A60)
- Fedosov, V. G.** Conservation laws and transverse motion of energy on reflection and transmission of electromagnetic waves. *J. Phys. A* **21** (1988), no. 9, 2045–2059. (M. Martinis) **89k:78005** 78A25
- Fedotov, A. M.** Construction of optimal procedures for solving operator equations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 7, 963–970, 1117. (Anton Suhadolc) **89i:65061** 65J10 (47A50)
- Fedotov, V. P.** The reason for the variety of methods in mathematical physics. (Russian) *Mathematical analysis* (Russian), 89–91, Leningrad. Gos. Ped. Inst., Leningrad, 1988. (see **89i:00021**) 00A25 (00A69)
- Fedri, V.** (with Serena, L.) Finite soluble groups with supersoluble Sylow normalizers. *Arch. Math. (Basel)* **50** (1988), no. 1, 11–18. (Gerhard Pazderski) **89c:20034** 20D10
- Fedrizzi, Mario** Introduction to fuzzy sets and possibility theory. *Optimization models using fuzzy sets and possibility theory*, 13–26, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston, MA*, 1987. (Robert Lowen) **89a:03105** 03E72
- (with Kacprzyk, Janusz) A “soft” measure of consensus in the setting of partial (fuzzy) preferences. *European J. Oper. Res.* **34** (1988), no. 3, 316–325. (Summary) **89a:90011** 90A06
- Fedulova, T. M.** The smoothing method in seminary problems with polynomials. (Russian) *Additive problems in number theory* (Russian), 37–41, *Kuibyshev. Gos. Ped. Inst., Kuibyshev*, 1985. (see **89f:11004**) 11P45
- Fedyanin, V. K.** (with Osipov, V. A.) Solitons in a model of linear biatomic polymers. (Russian) *IV International Symposium on Selected Topics in Statistical Mechanics* (Russian) (Dubna, 1987), 272–279, Joint Inst. Nuclear Res., Dubna, 1988. (see **89g:82003**) 82A51
- Feeman, Timothy** A note on  $M$ -summands in dual spaces. *Canad. Math. Bull.* **30** (1987), no. 4, 393–398. (Peter Greim) **89f:46029** 46B20 (46B10, 47D15)
- (with Davidson, Kenneth R.; Shields, Allen) Extreme points in quotients of operator algebras. *Topics in operator theory*, 67–91, *Oper. Theory: Adv. Appl.*, 32, Birkhäuser, Basel-Boston, MA, 1988. (Stephen Power) **89k:47066** 47D25
- Feferman, Solomon** Kurt Gödel: conviction and caution [Philos. Natur. **21** (1984), no. 2–4, 546–562; MR 87c:01021]. *Gödel's theorem in focus*, 96–114, *Croom Helm Philos. Focus Ser.*, Croom Helm, London, 1988. (see **89m:01068**) 01A60 (03A05)
- Hilbert's program relativized: proof-theoretical and foundational reductions. *J. Symbolic Logic* **53** (1988), no. 2, 364–384. (Carlo Cellucci) **89k:03074** 03Fxx (01A60, 03-03, 03F25) — see also Takeuti, Gaisi, **89a:03115**
- Fefferman, Charles** (with Kohn, Joseph J.) Hölder estimates on domains of complex dimension two and on three-dimensional CR manifolds. *Adv. in Math.* **69** (1988), no. 2, 223–303. (John P. D'Angelo) **89g:32027** 32F20 (32A25, 32F25, 35N15, 47G05)
- (with Donnelly, Harold) Nodal sets of eigenfunctions on Riemannian manifolds. *Invent. Math.* **93** (1988), no. 1, 161–183. (P. Günther) **89m:58207** 58G25 (35B60, 35P05) — see also Lerner, Nicolas, **89h:35014**
- Fefferman, Robert** Multiparameter Fourier analysis. *Beijing lectures in harmonic analysis* (Beijing, 1984), 47–130, *Ann. of Math. Stud.*, 112, Princeton Univ. Press, Princeton, NJ, 1986. (Introduction) **89a:42001** 42-02 (42Bxx)
- Some recent developments in Fourier analysis and  $H^p$  theory on product domains. II. *Function spaces and applications* (Lund, 1986), 44–51, *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (Burglind Jörjice) **89g:42036** 42B30 (46E15)
- Fehér, L. Gy.** Conformal  $O(3, 2)$  symmetry of the two-dimensional inverse square potential. *J. Phys. A* **21** (1988), no. 2, 375–378. (Ivailo M. Mladenov) **89e:58107** 58F35 (70F05, 70H15, 70H40)
- (with Cordani, B.; Horváthy, P. A.) Monopole scattering spectrum from geometric quantisation. *J. Phys. A* **21** (1988), no. 12, 2835–2837. (Richard Montgomery) **89f:58310** 58G40 (53C80, 58F06, 81E20)
- (with Cordani, B.; Horváthy, P. A.)  $O(4, 2)$  dynamical symmetry of the Kaluza-Klein monopole. *Phys. Lett. B* **201** (1988), no. 4, 481–486. (L. M. Sokolowski) **89f:83004** 83E15 (81E20, 83C40)
- Fehlmann, Richard** (with Agard, Stephen) An addendum: “On the extremality and unique extremality of affine mappings in space” [Ann. Acad. Sci. Fenn. Ser. A I Math. **11** (1986), no. 1, 87–110; MR 87h:30042]. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **12** (1987), no. 2, 299–301. (From the text) **89f:30035** 30C60 (30C70)
- Extremal problems for quasiconformal mappings in space. *J. Analyse Math.* **48** (1987), 179–215. (K. Strebel) **89c:30050** 30C60 (30C75)
- A remark on angular complex dilatations of quasiconformal mappings. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1071–1077. (K. Strebel) **89h:30029** 30C60 (30C75)
- Fehribach, Joseph D.** Perturbation methods for solid diffusion in a Stefan problem. *SIAM J. Math. Anal.* **19** (1988), no. 1, 86–99. (Rolando Magnanini) **89f:35219** 35R35 (80A20)
- Fei, Xue Bo** Appell's equations with undetermined multipliers. (Chinese. English summary) *Zhejiang Daxue Xuebao* **21** (1987), no. 5, 89–94. (Summary) **89f:70012** 70F25 (70G10)
- Fei, Zonglian** (with Chen, Wai-Kai; Wan, Jin Liang) On complex-normalized reflection coefficients. *J. Franklin Inst.* **325** (1988), no. 5, 559–564. (Not in MR) **94C05**
- Feichtinger, Gustav** Periodic optimal control: can oscillations be optimal in autonomous economic control models? *XI symposium on operations research* (Darmstadt, 1986), 349–366, *Methods Oper. Res.*, 57, Athenäum/Hain/Hanstein, Königstein/Ts., 1987. (Bojan Popović) **89b:90053** 90A16 (90A17)
- (with Sorger, Gerhard) Periodic research and development. *Optimal control theory and economic analysis*, 3 (Vienna, 1987), 121–141, North-Holland, Amsterdam-New York, 1988. (A. A. Piontovskii) **89j:90064** 90A16
- see also *Optimal control theory and economic analysis*, **89d:90002**
- Feichtinger, Hans G.** An elementary approach to Wiener's third Tauberian theorem for the Euclidean  $n$ -space. *Symposia Mathematica*, Vol. XXIX (Cortona, 1984), 267–301, *Sympos. Math.*, 29, Academic Press, New York-London, 1987. (Michael Cowling) **89i:42023** 42A85 (42B99, 43A15, 46E99, 46F10)
- (with Schachermayer, W.) Local nonfactorization of functions on locally compact groups. *Arch. Math. (Basel)* **49** (1987), no. 1, 72–78. (Introduction) **89c:43003** 43A15
- Banach spaces of distributions defined by decomposition methods. II. *Math. Nachr.* **132** (1987), 207–237. (Klaus-Dieter Bierstedt) **89a:46053** 46Exx (22D15, 43A15, 46F05, 46H05, 46J05, 46N05)
- Minimal Banach spaces and atomic representations. *Publ. Math. Debrecen* **34** (1987), no. 3–4, 231–240. (Pierre Eymard) **89c:43005** 43A15 (46E35)
- (with Gröchenig, Karlheinz) A unified approach to atomic decompositions via integrable group representations. *Function spaces and applications* (Lund, 1986), 52–73, *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (Mario Milman) **89h:46035** 46Exx (22D10, 43A95, 46F05, 46M35)
- Feig, Douglas G.** (with Wittig, Timothy A.) Ridge estimated confidence intervals: a Monte Carlo evaluation. *J. Statist. Comput. Simulation* **29** (1988), no. 2, 127–142. (Not in MR) **62J07** (62E25)
- Feiglman, M. V.** (with Vinokur, V. M.; Ioffe, L. B.; Larkin, A. I.) System of Josephson junctions as a model of a spin glass. *Soviet Phys. JETP* **66** (1987), no. 1, 198–210 (1988); translated from *Zh. Eksper. Teoret. Fiz.* **93** (1987), no. 1, 343–365 (Russian). (Summary) **89k:82076** 82A57 (82A25)
- Feiglstock, Sha'om** On distributively generated near-rings. *Math. Student* **47** (1979), no. 2–4, 141–148 (1985). (J. L. Zemmer) **89m:16072** 16A76
- Some embedding theorems for rings. *Portugal. Math.* **44** (1987), no. 4, 354–359. (Bogdan J. Osłowski) **89j:16058** 16A99
- ★ Additive groups of rings. Vol. II. *Pitman Research Notes in Mathematics Series*, 169. *Longman Scientific & Technical*, Harlow; *John Wiley & Sons, Inc.*, New York, 1988. x+100 pp. ISBN 0-582-01370-4 (B. J. Gardner) **89j:20061** 20K99 (16A99, 20-02)
- (with Raphael, R.) Fissible and  $p$ -fissible rings. *Arch. Math. (Basel)* **50** (1988), no. 1, 25–28. (L. Fuchs) **89b:20121** 20K99 (16A45)
- Rings isomorphic to their unbounded left ideals. *Bull. Austral. Math. Soc.* **38** (1988), no. 1, 93–94. (T. S. Ravisankar) **89m:16029** 16A45 (16A48)
- Rings whose additive endomorphisms are multiplicative. *Period. Math. Hungar.* **19** (1988), no. 4, 257–260. (Fred W. Roush) **89k:16056** 16A65
- Rings whose additive endomorphisms are  $N$ -multiplicative. *Bull. Austral. Math. Soc.* **39** (1989), no. 1, 11–14. (Fred W. Roush) **89j:16043** 16A65
- Feigenbaum, Edward A.** see *Handbook: Artificial intelligence*, **89e:68104a**; **89e:68104b** and **89e:68104c**
- Feigenbaum, Lenore** Leibniz and the Taylor series. *300 Jahre Nova methodus von G. W. Leibniz* (1684–1984) (Noordwijkerhout, 1984), 258–267, *Studia Leibnitiana Sonderheft*,



- 14, Steiner, Wiesbaden, 1986. (E. Keith Lloyd) **89m:01035** 01A45 (01A50)
- Feigenbaum, Mitchell J.** (with Mermin, N. David)  $E = mc^2$ . *Amer. J. Phys.* **56** (1988), no. 1, 18–21. (V. S. Ofkhovskii) **89a:3005** 83A05 (83–01)
- Feigin, Mark E.** Separation properties of codimension-1 immersions. *Topology* **27** (1988), no. 3, 319–321. (Donald M. Davis) **89g:57044** 57R42
- Feigin, B. L.** (with Tsyan, B. L.) Additive  $K$ -theory. *K-theory, arithmetic and geometry* (Moscow, 1984–1986), 67–209, *Lecture Notes in Math.*, 1289, Springer, Berlin-New York, 1987. (L. N. Vaserstein) **89a:18017** 18F25 (17B56, 19D55, 58H10)
- (with Tsyan, B. L.) Cyclic homology of algebras with quadratic relations, universal enveloping algebras and group algebras. *K-theory, arithmetic and geometry* (Moscow, 1984–1986), 210–239, *Lecture Notes in Math.*, 1289, Springer, Berlin-New York, 1987. (Zbigniew Marciniak) **89c:17020** 17B35 (16A03, 17B56, 18G15, 18G55, 19D55, 58H10)
- (with Fialowski, A.) Cohomology of the infinite-dimensional Lie algebra  $L_1$  with nontrivial coefficients. *Bull. Amer. Math. Soc. (N.S.)* **17** (1987), no. 2, 333–337. (Janusz Grabowski) **89b:17016** 17B56 (17B10, 17B65, 58H10)
- (with Fuchs, D. B.; Retakh, V. S.) Massey operations in the cohomology of the infinite-dimensional Lie algebra  $L_1$ . *Topology and geometry—Rohlin Seminar*, 13–31, *Lecture Notes in Math.*, 1346, Springer, Berlin-New York, 1988. (Janusz Grabowski) **89m:17031** 17B65 (17B56)
- (with Frenkel, E. V.) A family of representations of affine Lie algebras. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 5(263), 227–228. (From the text) **89k:17016** 17B10 (17B67)
- Feljo, B.** (with Meyer, R. R.) Piecewise-linear approximation methods for nonseparable convex optimization. *Management Sci.* **34** (1988), no. 3, 411–419. (Summary) **89d:90162** 90C25
- Feljo, R. A.** (with Zouain, N.) Variational formulations for rates and increments in plasticity. *Computational plasticity, Part I, II* (Barcelona, 1987), 33–57, *Pineridge, Swansea*, 1987. (Summary) **89f:73027** 73E99 (73–08, 73E20)
- (with Zouain, N.) Formulations in rates and increments for elastic-plastic analysis. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 9, 2031–2048. (Summary) **89e:73002** 73–08 (73E05)
- Fellmeier, Manfred** Entwicklung der Lebensversicherungsmathematik im Rahmen von Datenbanken. [Development of life insurance mathematics in the framework of data banks] *Beiträge zur angewandten Mathematik und Statistik*, 103–138, *Hanser, Munich*, 1987. (see **89i:00018**) 90A09 (01A65)
- Fein, B.** (with Schacher, M.; Sonn, J.) Brauer groups of fields of genus zero. *J. Algebra* **114** (1988), no. 2, 479–483. (Manuel Ojanguren) **89f:12008** 12F20
- (with Arason, Jón Kr.; Schacher, M.; Sonn, J.) Cyclic extensions of  $K(\sqrt{-1})/K$ . *Trans. Amer. Math. Soc.* **313** (1989), no. 2, 843–851. (Richard Massy) **89j:12005** 12F10 (11R20)
- Feinberg, E. L.** The importance of (sometimes) being conservative. *Quantum field theory and quantum statistics, Vol. 2*, 3–14, *Hilger, Bristol*, 1987. (see **89b:81008**) 81–03 (01A70)
- Feinberg, V. Z.** (with Kaluzhnin, L. A.; Beletskii, P. M.) ★ *Kranzprodukte*. (German) [Wreath products] With English, French and Russian summaries. Teubner-Texte zur Mathematik [Teubner Texts in Mathematics], 101. *RSB B. G. Teubner Verlagsgesellschaft, Leipzig*, 1987. 167 pp. ISBN 3-322-00425-2 (Ya. G. Berkovich) **89g:20001** 20–02 (20E22)
- Feingold, Graham** (with Tzivion, Shalva; Levin, Zev) Evolution of raindrop spectra. I. Solution to the stochastic collection/breakup equation using the method of moments. *J. Atmospheric Sci.* **45** (1988), no. 22, 3387–3399. (Summary) **89k:86010** 86A35 (86–08)
- Feingold, Marcia** A more powerful test for incomplete block designs. *Comm. Statist. Theory Methods* **17** (1988), no. 9, 3107–3119. (Not in MR) **62K10**
- Feingold, Mario** (with Kadanoff, Leo P.; Piro, Oreste) Passive scalars, three-dimensional volume-preserving maps, and chaos. *J. Statist. Phys.* **50** (1988), no. 3–4, 529–565. (G. Benettin) **89h:58167** 58F30 (70K50, 76E99, 82A50)
- (with Piro, Oreste) Diffusion in three-dimensional Liouvillian maps. *Phys. Rev. Lett.* **61** (1988), no. 16, 1799–1802. (Summary) **89i:58096** 58F13 (58F05, 76F99, 82A99)
- Felinsilver, Philip** Discrete analogues of the Heisenberg-Weyl algebra. *Monatsh. Math. 104* (1987), no. 2, 89–108. (Autoreferat (Zbl 627:39003)) **89j:17013** 17B35 (05A30, 39A70, 81D05)
- Felstein, Alexander** Late-time behavior of primordial gravitational waves in expanding universe. *Gen. Relativity Gravitation* **20** (1988), no. 2, 183–190. (Summary) **89g:83057** 83F05 (83C30, 83C35)
- Felutich, A.** (with Francis, B. A.) Minimal sensitivity for linear time varying systems. *Modelling, identification and robust control* (Stockholm, 1985), 129–136, *North-Holland, Amsterdam-New York*, 1986. (Summary) **89c:93038** 93B35 (93C45, 93C50)
- (with Francis, B. A.) Distance formulas for operator algebras arising in optimal control problems. *Topics in operator theory and interpolation*, 151–170, *Oper. Theory: Adv. Appl.*, 29, *Birkhäuser, Basel-Boston, MA*, 1988. (Stephen Power) **89h:47007** 47A30 (47B35, 47D99, 93B28)
- Realization theory for time-varying, discrete-time linear systems. *Adv. in Appl. Math.* **9** (1988), no. 2, 211–225. (Alexander V. Gnedin) **89g:93013** 93B15 (93B28, 93C55)
- Feltriel, Eduard** Small time-periodic solutions to a nonlinear equation of a vibrating string. (Russian and Czech summaries) *Apl. Mat.* **32** (1987), no. 6, 480–490. (Reza Malek-Madani) **89c:35009** 35B10 (35L70, 58C15, 73K03)
- Free vibrations for the equation of a rectangular thin plate. (Russian and Czech summaries) *Apl. Mat.* **33** (1988), no. 2, 81–93. (Takashi Narazaki) **89h:35209** 35L70 (35B10, 58E05, 73K12)
- On the existence of free vibrations for a beam equation when the period is an irrational multiple of the length. (Russian and Czech summaries) *Apl. Mat.* **33** (1988), no. 2, 94–102. (Takashi Narazaki) **89h:35210** 35L70 (35B10, 58E05, 73K12)
- Time-periodic solutions of a quasilinear beam equation via accelerated convergence methods. (Russian and Czech summaries) *Apl. Mat.* **33** (1988), no. 5, 362–373. (Mitsuhiko Nakao) **89j:35019** 35B10 (35L75, 58C15, 73K05)
- On the existence of periodic solutions of a semilinear wave equation with a superlinear forcing term. *Czechoslovak Math. J.* **38(113)** (1988), no. 1, 78–87. (Kazunaga Tanaka) **89e:35011** 35B10 (35L70, 58E05, 58F22)
- Time periodic solutions to a semilinear beam equation. *Nonlinear Anal.* **12** (1988), no. 3, 279–290. (O. Vejvoda) **89a:35021** 35B10 (35Q20, 58E05)
- Felting, Bruce R.** Some properties of the solution space of the  $N$ -city traveling-salesman problem. *Appl. Math. Comput.* **23** (1987), no. 4, 291–340. (Summary) **89f:90047** 90B10
- A knapsack procedure for solving integer programming problems. *Asia-Pacific J. Oper. Res.* **4** (1987), no. 2, 123–130. (M. Chandramohan) **89c:90077** 90C10
- Feistauer, Miloslav** (with Nečas, Jindřich) Viscosity method in a transonic flow. *Comm. Partial Differential Equations* **13** (1988), no. 7, 775–812. (Denis Serre) **89f:35022** 35B10 (35B25, 35L67, 35M05, 76H05)
- (with Nečas, Jindřich) Remarks on the solvability of transonic flow problems. *Manuscripta Math.* **61** (1988), no. 4, 417–428. (A. Elcrat) **89f:76061** 76H05 (35Q20)
- (with Ženíšek, Alexander) Compactness method in the finite element theory of nonlinear elliptic problems. *Numer. Math.* **52** (1988), no. 2, 147–163. (Viorel Arnautu) **89b:65263** 65N30
- Feistauerová, J.** An entropic test of uniformity and optimality of codebooks. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **17** (1988), no. 5, 319–325. (Not in MR) **94A17** (62N99, 94A29, 94A60)
- Felt, Walter** Extensions of cuspidal characters of  $GL_n(q)$ . *Publ. Math. Debrecen* **34** (1987), no. 3–4, 273–297. (David B. Surowski) **89d:20007** 20C15
- On large Zsigmondy primes. *Proc. Amer. Math. Soc.* **102** (1988), no. 1, 29–36. (J. B. Roberts) **89h:11009** 11A41
- Felix, M. R.** (with Leach, P. G. L.; Bouquet, S.) Analysis and solution of a nonlinear second-order differential equation through rescaling and through a dynamical point of view. *J. Math. Phys.* **29** (1988), no. 12, 2563–2569. (Manfred Andrie) **89m:34015** 34A34 (34C20, 58F35, 70K99)
- Felix, Rainer** On a property of graphs containing infinitely many isomorphic copies of themselves. *Discrete Math.* **68** (1988), no. 2–3, 197–209. (Thomas Andreae) **89a:05112** 05C75 (05C05)
- Feizullayev, R. B.** Simplicity and subdirect indecomposability of some transformation semi-groups. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 1, 3–6. (Summary) **89k:20097** 20M20
- Fejer, Peter A.** (with Shore, Richard A.) Infima of recursively enumerable truth table degrees. *Notre Dame J. Formal Logic* **29** (1988), no. 3, 420–437. (Barry Cooper) **89j:03034** 03D30 (03D25)
- Fejes Tóth, G.** (with Kemnitz, A.) Characterization of centrally symmetric convex domains in planes of constant curvature. *Intuitive geometry* (Sifkov, 1985), 179–189, *Colloq. Math. Soc. János Bolyai*, 48, *North-Holland, Amsterdam-New York*, 1987. (Peter M. Gruber) **89a:52004** 52A10 (52A55)
- Note to a paper of [R. P.] Bambach, [C. A.] Rogers and [H.] Zassenhaus: “On coverings with convex domains” [*Acta Arith.* **9** (1964), 191–207; MR **29**:3959]. *Acta Arith.* **50** (1988), no. 2, 119–122. (A. Florian) **89m:11063** 11H06 (52A43, 52A45)
- (with Gritzmann, Peter; Wills, J. M.) Finite sphere packing and sphere covering. *Discrete Comput. Geom.* **4** (1989), no. 1, 19–40. (B. Blind) **89k:52016** 52A45
- Fejnberg, Valerij Zalmanovič** see Feinberg, V. Z.
- Fekete, Otto** Some integral operators and Hardy spaces. *Mathematica (Cluj)* **29(52)** (1987), no. 1, 29–31. (Fuyao Ren) **89c:30061** 30D55 (47G05)
- Felcyn, Paweł** Liminal number of a convex body with a smooth boundary. *Demonstratio Math.* **21** (1988), no. 2, 393–398. (J. M. Wills) **89m:52020** 52A45 (52A40)
- Feld, Ya. N.** Current synthesis on closed surfaces in terms of a given directivity pattern. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 10, 8–13; translated from *Radiotekhn. i Elektron.* **32** (1987), no. 6, 1137–1143 (Russian). (Summary) **89f:78023** 78A50
- A criterion for the realizability of direction diagrams by currents distributed on curvilinear surfaces. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 3, 583–587; translated in *Soviet Phys. Dokl.* **33** (1988), no. 5, 340–342. (Sergej M. Zverev) **89k:78006** 78A25
- Felder, Eric** Un modèle de frottement solide anisotrope. (English summary) [A model of anisotropic solid friction] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **303** (1986), no. 8, 643–646. (Summary) **89f:73007** 73B99
- Felder, G.** (with Gawędzki, K.; Kupiainen, A.) Spectra of Wess-Zumino-Witten models with arbitrary simple groups. *Comm. Math. Phys.* **117** (1988), no. 1, 127–158. (Andrew Pressley) **89k:81077** 81E13 (22E65, 58B20, 58D15, 81E40)
- (with Gawędzki, K.; Kupiainen, A.) The spectrum of Wess-Zumino-Witten models. *Nuclear Phys. B* **299** (1988), no. 2, 355–366. (Jouko Mickelsson) **89c:22031** 22E65 (58D15, 58G40, 81E08, 81G20)
- Felderhof, B. U.** (with Jones, Robert B.) Convective motion and transfer of force by many-body hydrodynamic interaction. *Phys. A* **146** (1987), no. 3, 404–416. (R. M. Kadobans'kii) **89c:76105** 76T05 (76D99, 82A99)
- (with Jones, Robert B.) Linear response theory of the viscosity of suspensions of spherical Brownian particles. *Phys. A* **146** (1987), no. 3, 417–432. (R. M. Kadobans'kii) **89h:82139** 82A99
- (with Cichocki, B.) Dielectric constant of polarizable, nonpolar fluids and suspensions. *J. Statist. Phys.* **53** (1988), no. 1–2, 499–521. (Summary) **89j:82050** 82A50
- The contribution of Brownian motion to the viscosity of suspensions of spherical particles. *Phys. A* **147** (1988), no. 3, 533–543. (Summary) **89a:82058** 82A70
- Many-body hydrodynamic interactions in suspensions. *Phys. A* **151** (1988), no. 1, 1–16. (Jacques Mauss) **89f:76040** 76D07 (76A99, 82A99)
- Feldman, A. G.** (with Abdusamatov, R. M.; Berkinblit, M. B.; Chernavskii, A. V.) Motility and intellect. (Russian) *Intellectual processes and their modeling* (Russian), 5–38, 394, “Nauka”, Moscow, 1987. (see **89b:92032**) 92A09 (92A25)
- Feldman, Edgar A.** (with Chavel, Isaac; Rosen, Jay) Fluctuations of the Wiener sausage for surfaces. *Geometry of random motion* (Ithaca, N.Y., 1987), 1–7, *Contemp. Math.*, 73, *Amer. Math. Soc., Providence, RI*, 1988. (Jean-Louis Dacourtioux) **89i:58154** 58G32 (60J65)
- (with Chavel, Isaac) Spectra of manifolds less a small domain. *Duke Math. J.* **56** (1988), no. 2, 399–414. (R. Schimming) **89h:58195** 58G25 (60J65)
- Feldman, G. M.** The Pólya characterization of a Gaussian measure on groups. *Studia Math.* **87** (1987), no. 1, 9–21. (Eberhard Siebert) **89g:60023** 60B15
- A characterization of a Gaussian distribution on abelian groups. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 3, 623–626. (V. M. Maksimov) **89c:60019** 60B15
- Gaussian measures in Urbanik's sense and a characterization theorem for abelian groups. *Studia Math.* **90** (1988), no. 2, 165–174. (H. Heyer) **89m:60022** 60B15
- Feldman, I. A.** (with Bradler, I.) A difference method for solving some elliptic boundary value problems. (Russian. English summary) *Seminar analysis* (Berlin, 1986/87), 17–23, *Akad. Wiss. DDR, Berlin*, 1987. (J. Miklitzek) **89g:65098** 65L10 (65N10)

- (with Russu, G. I.) On the connection between the properties of operators that are conjugate with respect to a bilinear form. (Russian) *Investigations in differential equations and mathematical analysis (Russian)*, 119–123, 175, "Shtiintsa", Kishinev, 1988. (Shao Zhong Yan) **89h:47053** 47B50 (47A53)
- A variant of the double sweep method. (Russian) *Mat. Issled. No. 101 Priblizh. Chisl. Metody Reshen. Kraev. Zadach* (1988), 136–145, 151. (Zdeněk Dostál) **89f:65038** 65F10 (15A06, 15A15)
- Feldman, Jacob** (with Sutherland, C. E.; Zimmer, Robert J.) Normal subrelations of ergodic equivalence relations. *Miniconferences on harmonic analysis and operator algebras* (Canberra, 1987), 95–102, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (G. A. Elliott) **89m:28035** 28D99 (46L10)
- Feldman, Joel S.** (with Magnen, J.; Rivasseau, V.; Sénéor, Roland) Infra-red  $\Phi_2^+$ . *Phénomènes critiques, systèmes aléatoires, théories de jauge, Part I, II* (Les Houches, 1984), 505–537, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:81081** 81E08 (81E15)
- (with Magnen, J.; Rivasseau, V.; Sénéor, Roland) Construction and Borel summability of infrared  $\Phi_2^+$  by a phase space expansion. *Comm. Math. Phys.* **109** (1987), no. 3, 437–480. (Claus Montonen) **89a:81052** 81E08 (81E15)
- The large order behaviour of  $\Phi^4$  perturbation theory. *Mathematical quantum field theory and related topics* (Montreal, PQ, 1987), 47–53, *CMS Conf. Proc.*, 9, Amer. Math. Soc., Providence, RI, 1988. (see **89g:81002**) 81E08 (81E15)
- (with David, François Louis; Rivasseau, V.) On the large order behavior of  $\phi_2^4$ . *Comm. Math. Phys.* **116** (1988), no. 2, 215–233. (Tony C. Dorlas) **89c:81080** 81E08 (81E15)
- see also *Mathematical quantum field theory and related topics*, **89g:81002**
- Feldman, M. A.** (with Samborskii, S. N.) Connected systems of partial differential equations (initial-boundary value problems and propagation of singularities). (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 10, 14–23, 75. (Rémi Vaillancourt) **89h:35005** 35A05 (35S15, 58G17)
- Coercive boundary value problems for parabolic overdetermined systems with variable coefficients. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 4, 493–500, 543. (Stephan Rempel) **89c:35122** 35N10 (35K40, 58G05)
- Feldman, Marcus W.** (with Cavalli-Sforza, Luigi L.) Towards a theory for the evolution of learning. *Evolutionary processes and theory* (Israel, 1985), 725–741, *Academic Press, Orlando, FL*, 1986. (Summary) **89g:92033** 92A12 (92A10)
- (with Peck, Joel R.) Kin selection and the evolution of monogamy. *Science* **240** (1988), no. 4859, 1672–1674. (Summary) **89d:92048** 92A12 (92A10)
- (with Lewontin, R. C.) A general asymptotic property of two-locus selection models. *Theoret. Population Biol.* **34** (1988), no. 2, 177–193. (Summary) **89h:92037** 92A10
- Feldman, Mark** An example of convergence to rational expectations with heterogeneous beliefs. *Internat. Econom. Rev.* **28** (1987), no. 3, 635–650. (From the introduction) **89h:90043** 90A14 (90A10)
- Bayesian learning and convergence to rational expectations. *J. Math. Econom.* **16** (1987), no. 3, 297–313. (Erwin Klein) **89b:90045** 90A14 (62C10, 90A10)
- Feldman, N. I.** (with Bykovskii, V. A.; Vinogradov, A. I.; Lokutsievskii, O. V.) Nikolai Mikhailovich Korobov (on the occasion of his seventieth birthday). (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 1(259), 221–222; translated in *Russian Math. Surveys* **43** (1988), no. 1, 265–267. (Editors) **89c:01049** 01A70
- Feldman, Paul** (with Friedman, Joel; Pippenger, Nicholas) Wide-sense nonblocking networks. *SIAM J. Discrete Math.* **1** (1988), no. 2, 158–173. (Ingo Wegener) **89g:94052** 94C15 (68M10, 90B10)
- Feldman, S. I.** (with Tisul'skii, A. V.; Nikonova, F. I.) Numerical solutions of direct problems in gravimetry for complex layered media. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1987**, no. 4, 46–55. (Summary) **89k:86006** 86A20 (86–08)
- Feldstein, Alan** (with Turner, P. R.) Overflow, underflow, and severe loss of significance in floating-point addition and subtraction. *IMA J. Numer. Anal.* **6** (1986), no. 2, 241–251. (Summary) **89h:65065** 65G05
- Feldstein, Martin** see *Handbook: Public economics*, **89m:90002a** and **89m:90002b**
- Fel'genhauer, Ursula** Eine Variante der ableitungsfreien Quadratsummenminimierung. [A variant of derivative-free minimization of square sums] *Wiss. Z. Tech. Univ. Magdeburg* **31** (1987), no. 5, 22–25. (Summary) **89m:90124** 90C20 (65K05)
- Fellachi, Ali** Linear feedback control with prespecified performance measure. *Internat. J. Systems Sci.* **19** (1988), no. 6, 979–984. (Summary) **89d:49034** 49D40 (93B25, 93B35, 93B50)
- Output feedback control using reduced order models. *Internat. J. Systems Sci.* **19** (1988), no. 11, 2169–2177. (Summary) **89j:93048** 93B55 (93B60, 93C05)
- de Felice, Clelia** see *De Felice, Clelia*
- di Felice, P.** see *Di Felice, P.*
- drugowich de Felicio, J. R.** see *Drugowich de Felicio, J. R.*
- Felínska, H.** Sur les champs  $V$ -torse et presque principal. [ $V$ -torse and almost principal fields] *Proceedings of the National Conference on Geometry and Topology (Romanian)* (Tirgoviste, 1986), 81–86, Univ. Bucuresti, Bucharest, 1988. (J. J. Etayo) **89m:53031** 53B05
- On isometry group of some pseudo-Riemannian manifold. *Serdica* **14** (1988), no. 1, 44–55. (H. Rund) **89d:53111** 53C50 (53C20)
- Geometry of the tangent bundle over 2-dimensional hyperbolic space. *Serdica* **14** (1988), no. 1, 46–51. (K. Strubecker) **89f:53020** 53A35 (53C05, 53C22)
- Feliu, V.** (with Cerrada, J. A.; Cerrada, C.) An algorithm to compute the continuous state model from its equivalent discrete model. *Control Theory Adv. Tech.* **4** (1988), no. 2, 231–241. (Not in MR) **93B30** (93B60, 93C35)
- (with Cerrada, J. A.; Cerrada, C.) An algorithm for obtaining a multiperiodic discrete system from the corresponding discrete system. (Spanish) *Rev. Inform. Automat.* **21** (1988), no. 3, 31–39. (Not in MR) **93C55** (49D50)
- saint-Félix, D.** see *Saint-Félix, D.*
- Felix, Rainer** Zentrale Distributionen auf Exponentialgruppen. [Central distributions on exponential groups] *J. Reine Angew. Math.* **389** (1988), 133–156. (Detlef Horst Müller) **89f:22013** 22E27 (43A45)
- Félix, Yves** (with Tanré, Daniel) Formalité d'une application et suite spectrale d'Eilenberg-Moore. [Formality of a mapping and the Eilenberg-Moore spectral sequence] *Algebraic topology—rational homotopy* (Louvain-la-Neuve, 1986), 99–123, *Lecture Notes in Math.*, 1318, Springer, Berlin-New York, 1988. (Marc Aubry) **89i:55007** 55P62 (55S35, 55T20)
- (with Thomas, Jean-Claude) An Euler-Poincaré characteristic for 1-connected spaces with Noetherian rational cohomology. *Algebraic topology—rational homotopy* (Louvain-la-Neuve, 1986), 124–137, *Lecture Notes in Math.*, 1318, Springer, Berlin-New York, 1988. (Marc Aubry) **89k:57051** 57R20 (16A54, 55P62)
- (with Halperin, Stephen; Thomas, Jean-Claude) Gorenstein spaces. *Adv. in Math.* **71** (1988), no. 1, 92–112. (Marc Aubry) **89k:55019** 55P62 (18G15, 55M30, 55T20)
- (with Halperin, Stephen; Jacobsson, Carl; Löfwall, Clas; Thomas, Jean-Claude) The radical of the homotopy Lie algebra. *Amer. J. Math.* **110** (1988), no. 2, 301–322. (Lex Renner) **89d:55029** 55P62 (13H99, 17B56, 55P50)
- (with Thomas, Jean-Claude) The fibre-cofibre construction and its applications. *J. Pure Appl. Algebra* **53** (1988), no. 1–2, 59–69. (John F. Oprea) **89h:55022** 55P62
- (with Thomas, Jean-Claude) The formal dimension of a topological space. *Math. Z.* **197** (1988), no. 4, 595–598. (Daniel Tanré) **89g:55002** 55M10 (54F45)
- (with Lemaire, Jean-Michel) Corrections to: "On the mapping theorem for Lusternik-Schnirelmann category" [Topology **24** (1985), no. 1, 41–43; MR 86m:55005]. *Topology* **27** (1988), no. 2, 177. (Editors) **89d:55005** 55M30 (55P62)
- (with Halperin, Stephen; Lemaire, Jean-Michel; Thomas, Jean-Claude) Mod  $p$  loop space homology. *Invent. Math.* **95** (1989), no. 2, 247–262. (John F. Oprea) **89k:55010** 55P35 (55P62)
- see also *Algebraic topology—rational homotopy*, **89h:55001**
- Fell, David A.** (with Small, J. Rankin) The matrix method of metabolic control analysis: its validity for complex pathway structures. *J. Theoret. Biol.* **136** (1989), no. 2, 181–197. (Not in MR) **92A09** (92A40)
- Felleisen, Matthias** (with Friedman, Daniel P.; Kohlbecker, Eugene; Duba, Bruce) A syntactic theory of sequential control. *Theoret. Comput. Sci.* **52** (1987), no. 3, 205–237. (Dorothy Ballman) **89j:68097** 68Q55 (03B40, 68N05, 68Q65)
- Fellmann, E. A.** The *Principia* and continental mathematicians. Newton's *Principia* and its legacy. *Notes and Records Roy. Soc. London* **42** (1988), no. 1, 13–34. (J. V. Field) **89d:01020** 01A45 (01A50, 70–03)
- Fellouris, Anargyros** On super Lie groups. *Bull. Soc. Math. Grèce (N.S.)* **28** (1987), part A, 45–62. (Ugo Bruzzo) **89f:58008** 58A50 (22E15)
- Fellows, Frederick** Comment on: "Bell's theorem and the foundations of quantum physics" [Amer. J. Phys. **53** (1985), no. 4, 306–317; MR 86f:81013] by H. P. Stapp. With a reply by Stapp. *Amer. J. Phys.* **56** (1988), no. 6, 567–569. (S. Gudder) **89j:81009** 81B10
- Fellows, Michael R.** (with Hickling, F.; Syslo, Maciej M.) A topological parameterization and hard graph problems (extended abstract). Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 69–78. (Narsingh Deo) **89i:05102** 05C10 (57M15, 68Q25, 68R10)
- (with Langston, Michael A.) Nonconstructive advances in polynomial-time complexity. *Inform. Process. Lett.* **26** (1987), no. 3, 157–162. (Narsingh Deo) **89c:68035** 68Q15 (03D15, 05C99, 68Q25, 68Q35)
- (with Clark, Lane H.; Entringer, R. C.) Computational complexity of integrity. *J. Combin. Math. Combin. Comput.* **2** (1987), 179–191. (Selim G. Akl) **89c:05046** 05C35 (68Q15, 68R10)
- (with Friesen, Donald K.; Langston, Michael A.) On finding optimal and near-optimal lineal spanning trees. *Algorithmica* **3** (1988), no. 4, 549–560. (Antal Iványi) **89m:68040** 68Q15 (68Q25, 68R10, 90B10)
- (with Kleitman, D. J.) Radius and diameter in Manhattan lattices. *Proceedings of the Oberwolfach Meeting "Kombinatorik"* (1986). *Discrete Math.* **73** (1989), no. 1–2, 119–125. (D. P. Roselle) **89k:05003** 05A05 (52A43)
- Felsen, Leopold B.** (with Heyman, Ehud) Weakly dispersive spectral theory of transients. I. Formulation and interpretation. *IEEE Trans. Antennas and Propagation* **35** (1987), no. 1, 80–86. (J. A. Bennett) **89h:78009** 78A40
- (with Heyman, Ehud) Weakly dispersive spectral theory of transients. II. Evaluation of the spectral integral. *IEEE Trans. Antennas and Propagation* **35** (1987), no. 5, 574–580. (J. A. Bennett) **89h:78010** 78A40
- (with Heyman, Ehud; Steinberg, B. Z.) Spectral analysis of focus wave modes. *J. Opt. Soc. Amer. A* **4** (1987), no. 11, 2081–2091. (R. F. Millar) **89h:78007** 78A40
- (with Lu, I. T.) Range-dependent canonical solutions for shallow ocean acoustics. *Computational acoustics, Vol. 1* (New Haven, Conn., 1986), 33–56, North-Holland, Amsterdam-New York, 1988. (Summary) **89c:76092** 76Q05 (86A05)
- (with Ishihara, T.) Hybrid (ray)-(parabolic equation) analysis of propagation in ocean acoustic guiding environments. *J. Acoust. Soc. Amer.* **83** (1988), no. 3, 950–960. (Summary) **89f:76069** 76Q05 (86A05)
- Felsenstein, K.** (with Pötzlberger, K.) Robust Bayesian regression analysis with HPD-regions. *COMPSTAT 1988* (Copenhagen, 1988), 349–354, *Physica, Heidelberg*, 1988. (see **89i:62004**) 62J05
- Felsenthal, Dan S.** (with Brams, Steven J.; Maoz, Zeev) New chairman paradoxes. *Paradoxical effects of social behavior*, 243–256, *Physica, Heidelberg*, 1986. (see **89d:90019**) 90A08
- (with Maoz, Zeev) A comparative analysis of sincere and sophisticated voting under the plurality and approval procedures. *Behavioral Sci.* **33** (1988), no. 2, 116–130. (Summary) **89h:90018** 90A08
- On combining approval with disapproval voting. *Behavioral Sci.* **34** (1989), no. 1, 53–60. (Summary) **89j:90016** 90A08
- Fel'shtyn, A. L.** The Nielsen, Artin-Mazur and Lefschetz zeta functions. (Russian) *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 437–440, "Angel Kanchev" Tech. Univ., Ruse, 1987. (Jerzy Ombach) **89h:58155** 58F20
- (with Pilyugin, V. B.) Two theorems on the Nielsen zeta function. (Russian) *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 441–444, "Angel Kanchev" Tech. Univ., Ruse, 1987. (Jerzy Ombach) **89h:58156** 58F20
- Zeta-functions in Nielsen theory. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 1, 87–88; translated in *Functional Anal. Appl.* **22** (1988), no. 1, 76–77. (Georgii Osipenko) **89g:58173** 58F20 (57M99)
- szasz-Felten, Irmgard** see *Szasz-Felten, Irmgard*
- Felyshytyn, O. I.** (with Sinitskii, L. A.) An accelerated search for periodic regimes in autonomous circuits. (Russian. English summary) *Teoret. Elektrotekh. No. 39* (1985),



- 93-103, 138. (Not in MR) 94C05 (34C15, 49D15)
- Felzenbaum, Alexander** (with Berger, Marc A.; Fraenkel, Aviezri S.) Remark on the multiplicity of a partition of a group into cosets. *Fund. Math.* 128 (1987), no. 3, 139-144. (F. Pérez Monasor) **89e:20047** 20D60 (20D20)
- (with Berger, Marc A.; Fraenkel, Aviezri S.) Improvements to the Newman-Znám result for disjoint covering systems. *Acta Arith.* 50 (1988), no. 1, 1-13. (S. Znám) **89f:11013** 11A07 (11B25)
- (with Berger, Marc A.; Fraenkel, Aviezri S.) Disjoint covering systems with precisely one multiple modulus. *Acta Arith.* 50 (1988), no. 2, 171-182. (S. Znám) **89f:11019** 11B25 (11A07)
- (with Berger, Marc A.; Erdős, Paul; Fraenkel, Aviezri S.) Nearly disjoint covering systems. Eleventh British Combinatorial Conference (London, 1987). *Art. Combin.* 25 (1988), B, 231-246. (R. C. Mullin) **89f:11004** 11A07
- (with Berger, Marc A.; Fraenkel, Aviezri S.) Covers of product sets and the Korec-Znám result. *European J. Combin.* 9 (1988), no. 2, 131-138. (Ivan Korec) **89g:11014** 11B25
- Fenchel, Käte** see Hayrup, Else, **89b:01071**
- Fenech, Alan P.** (with Westfall, Peter H.) The power function of conditional log-linear model tests. *J. Amer. Statist. Assoc.* 83 (1988), no. 401, 198-203. (E. H. Lehman) **89g:62034** 62F05
- Feneyrol-Perrin, Yvette** Interprétation non standard d'une probabilité standard. [Non-standard interpretation of a standard probability] *Séminaire d'analyse* 1985-1986 (Clermont-Ferrand, 1985-1986), Exp. No. 1, 10 pp., Univ. Clermont-Ferrand II, Aubière, 1986. (S. Foglio) **89g:03098** 03H05 (26E35, 60A99)
- Un théorème de Nelson sur la loi des grands nombres. [A theorem of Nelson on the law of large numbers] *Séminaire d'analyse* 1985-1986 (Clermont-Ferrand, 1985-1986), Exp. No. 2 and 3, 26 pp., Univ. Clermont-Ferrand II, Aubière, 1986. (S. Foglio) **89d:03067** 03H05 (60F15)
- (with Cartier, Pierre) Comparaison des diverses théories d'intégration en analyse non standard. (English summary) [Comparison among various integration theories in nonstandard analysis] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 7, 297-301. (W. A. J. Luxemburg) **89m:28036** 28E05 (03H05, 26A42, 26E35, 28A25)
- Feng, Bao Cheng** Applications of fuzzy mathematics in input-output analysis. (Chinese. English summary) *Fuzzy Math.* 7 (1987), no. 1, 19-28. (Not in MR) 03E72
- Feng, Bei Ye** Condition for generating limit cycles by bifurcation of the loop of a saddle-point separatrix. *Acta Math. Sinica (N.S.)* 3 (1987), no. 4, 373-382. (Peter E. Kloeden) **89j:34040** 34C05
- Feng, Cheng Min** (with Anas, Alex) Invariance of expected utilities in logit models. *Econom. Lett.* 27 (1988), no. 1, 41-45. (Summary) **89g:90032** 90A10
- Feng, Cheng Tian** Symmetries in nuclei. *Group theoretical methods in physics* (Varna, 1987), 401-407, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (Summary) **89k:81195** 81G30
- Feng, Chun Bo** (with Liu, Bing) Piecewise identification for frequency characteristic of dynamic system. *Modelling, identification and robust control* (Stockholm, 1985), 605-614, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:93078** 93E12
- (with Luo, Ning Su; Li, Xiao Ming) Robustness of adaptive control systems. (Chinese. English summary) *Acta Automat. Sinica* 13 (1987), no. 6, 463-472. (Summary) **89c:93049** 93C40 (93B35, 93D10)
- Theory and applications of adaptive control. (Chinese. English summary) *Control Theory Appl.* 5 (1988), no. 3, 1-12. (Not in MR) 93C40 (93-02)
- Feng, Ci Huang** Extensions of two theorems of Serfling. (Chinese. English summary) *J. Hangzhou Univ.* 15 (1988), no. 1, 25-30. (Editors) **89c:60080** 60F99
- The convergence regions of a class of modified Newton methods. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* 10 (1988), no. 1, 92-96. (Summary) **89m:65053** 65H10
- Feng, Da-hsuan** (with Lü, Zi Min; Pan, Xin Wan; Chen, Jin Quan; Chen, Xuan Gen) Correspondence between the fermion dynamic symmetry model and the interacting boson model in wave functions. *Phys. Rev. C* (3) 37 (1988), no. 6, 2789-2801. (Summary) **89f:81262** 81G30
- (with Zhang, Wei Min; Wu, Cheng Li; Ginocchio, Joseph N.; Guidry, Mike W.) Geometrical structure and critical phenomena in the fermion dynamical symmetry model: Sp(6). *Phys. Rev. C* (3) 38 (1988), no. 3, 1475-1487. (Summary) **89j:81267** 81G30
- (with Zhang, Wei Min; Martens, Craig C.; Yuan, Jian Min) Dynamical symmetry breaking and quantum nonintegrability. *Phys. Rev. Lett.* 61 (1988), no. 19, 2167-2170. (Richard H. Capps) **89j:81078** 81D20 (58F35, 81G20)
- Feng, De Xing** (with Li, Shu Jie) A class of nonlinear models of population growth. (Chinese. English summary) *J. Systems Sci. Math. Sci.* 7 (1987), no. 4, 360-365. (Yang Kuang) **89c:92056** 92A15 (35K99)
- (with Ding, Zhong Hai) Distributed control approximation of pointwise control for hyperbolic systems. *Analysis and optimization of systems* (Antibes, 1988), 531-542, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89c:93126** 93C20 (35L99)
- (with Zhang, Bing Yu) Optimal control of a system governed by a parabolic equation under domain perturbation. (Chinese. English summary) *Acta Math. Appl. Sinica* 11 (1988), no. 1, 68-78. (Guang Ya Chen) **89j:49020** 49B50 (49A55, 93C20)
- Stability of nonlinear population evolution equations. (Chinese) *Acta Math. Sci. (Chinese)* 8 (1988), no. 2, 159-167. (Summary) **89h:92044** 92A15
- (with Lin, You Hao; Huang, Hou Ben) Stability of nonlinear age-dependent models of mutualism. (Chinese. English summary) *J. Biomath.* 3 (1988), no. 1, 57-61. (Summary) **89d:92060** 92A15
- Feng, Guo Chen** (with Cong, Luan) Simplicial methods and approximation of several solutions. *J. Comput. Math.* 5 (1987), no. 1, 50-57. (Beny Neta) **89b:65121** 65H10 (58C30, 90C30)
- Feng, Hwa-chung** (with Fujimoto, Richard M.) A shared memory algorithm and proof for the generalized alternative construct in CSP. *Internat. J. Parallel Programming* 16 (1987), no. 3, 215-241. (Not in MR) 68Q10
- Feng, I. Kang** (with Lin, Shui Hsiu; Chuang, Yao T'ang; Kuo, Tê Shêng) Dynamic interval systems analysis and design. *Internat. J. Control* 48 (1988), no. 5, 1807-1818. (Yun Qing Shi) **89m:93074** 93D99 (93B55, 93B60)
- (with Su, Te-Jen; Kuo, Tê Shêng; Sun, Yü I.) Robust stability for linear time-delay systems with linear parameter perturbations. *Internat. J. Systems Sci.* 19 (1988), no. 10,
- 2123-2129. (M. M. Konstantinov) **89i:93100** 93D99 (34D10, 34K35, 93C05)
- Feng, Kang** Asymptotic radiation conditions for reduced wave equation. *J. Comput. Math.* 2 (1984), no. 2, 130-138. (Summary) **89f:65134** 65P05 (35J05, 76-08)
- (with Qin, Meng Zhao) The symplectic methods for the computation of Hamiltonian equations. *Numerical methods for partial differential equations* (Shanghai, 1987), 1-37, *Lecture Notes in Math.*, 1297, Springer, Berlin-New York, 1987. (James D. Meiss) **89e:70003** 70-08 (58F05, 65L99, 70H05, 70H15)
- (with Ge, Zhong) On the approximation of linear Hamiltonian systems. *J. Comput. Math.* 6 (1988), no. 1, 88-97. (Luis A. Ibort) **89m:70029** 70H05 (58F05, 65L99, 65M05, 70-08)
- Feng, Ke Qin** On the Birch-Tate conjecture for cyclic number fields. *J. Pure Appl. Algebra* 48 (1987), no. 3, 223-228. (J. Browkin) **89b:11095** 11R70 (18F25, 19F15)
- Feng, Li Gui** On Shen Kuo's mathematical thinking. (Chinese. English summary) *Dongbei Shida Xuebao* 1987, no. 3, 31-40. (Summary) **89d:01009** 01A25
- Feng, Long Long** (with Li, Miao) Wave function of the universe with quantum correction of matter fields. *Comm. Theoret. Phys.* 7 (1987), no. 2, 175-185. (Summary) **89e:83040** 83C47 (83F05)
- Feng, Qi** On the Rowbottom  $M$ -ultrafilters. *J. Symbolic Logic* 52 (1987), no. 4, 990-993. (James Baumgartner) **89c:03083** 03E55
- On weakly stationary sets. *Proc. Amer. Math. Soc.* 105 (1989), no. 3, 727-735. (Jan Tryba) **89i:03089** 03E05 (03E35, 03E55)
- Feng, Soo Fu** A generalized pole placement self-tuning controller for a class of multivariable systems. (Chinese. English summary) *J. Guizhou Inst. Tech.* 16 (1987), no. 1, 131-138. (Summary) **89d:93048** 93B55 (49D27, 93C35, 93C40)
- Feng, Weiming** Characterization and computation for the bound  $e^*$  in linear time-invariant singularly perturbed systems. *Systems Control Lett.* 11 (1988), no. 3, 195-202. (Jian Hong Wu) **89i:93096** 93D20 (34E15, 93C05)
- Feng, Yu Lin** Hierarchical protocol analysis by temporal logic. *J. Comput. Sci. Tech.* (English Ed.) 3 (1988), no. 1, 56-69. (Summary) **89c:68085** 68Q60 (03B45, 03B70)
- Feng, Zaichun** (with Sethna, P. R.) Symmetry-breaking bifurcations in resonant surface waves. *J. Fluid Mech.* 199 (1989), 495-518. (F. Ursell) **89m:76015** 76B15
- Fenn, R. A.** (with Cervantes, L.) Boundary links are homotopy trivial. *Quart. J. Math. Oxford Ser. (2)* 39 (1988), no. 154, 151-158. (G. Burde) **89k:57007** 57M25
- Fennelly, A. J.** (with Bradas, James C.; Smalley, Larry L.) Inflation in Einstein-Cartan theory with energy-momentum tensor with spin. *Phys. Lett. A* 129 (1988), no. 4, 195-200. (Maurizio Gasperini) **89e:83089** 83F05 (83D05)
- Fennema, Jan** Contingency and lawfulness: conditions for encounter. *Microphysical reality and quantum formalism*, Vol. 1, 2 (Urbino, 1985), 309-322, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89m:01060** 01A60 (81-03, 81B99)
- Fenner, T. I.** (with Bollobás, B.; Frieze, A. M.) An algorithm for finding Hamilton paths and cycles in random graphs. *Combinatorica* 7 (1987), no. 4, 327-341. (A. G. Thomason) **89h:05049** 05C80 (05C45, 68R10, 90B15)
- Fenoglio, Paul B.** (with Mitchell, Sidney S.) Congruence-free commutative semirings. *Semigroup Forum* 37 (1988), no. 1, 79-91. (H. J. Weinert) **89a:16056** 16A78 (12K10)
- Fenske, Christian C.** A simple-minded approach to the index of periodic orbits. *J. Math. Anal. Appl.* 129 (1988), no. 2, 517-532. (Summary) **89g:54090** 54H20 (58F25)
- Fenstad, Jens Erik** The discrete and the continuous in mathematics and the natural sciences. *Proceedings of the conferences on mathematical logic*, Vol. 3 (Italian) (Siena, 1985; Padova, 1985; and Siena, 1986), 107-130, Univ. Siena, Siena, 1987. (Albert E. Hurd) **89b:03107** 03H05 (00A25, 03A05, 03H10)
- Natural language systems. *Advanced topics in artificial intelligence* (Oslo, 1987), 189-233, *Lecture Notes in Comput. Sci.*, 345, Springer, Berlin-New York, 1988. (see **89j:68126**) 68S05 (68-02, 68S10)
- Infinities in mathematics and the natural sciences. *Methods and applications of mathematical logic* (Campinas, 1985), 79-92, *Contemp. Math.*, 69, Amer. Math. Soc., Providence, RI, 1988. (Pavol Zlatoš) **89f:03005** 03A05 (00A25, 01A05, 03H05, 03H10, 60G05, 81E99)
- Fényes, Tamás** On a second-order algebraic differential equation. II. (Hungarian) *Mat. Lapok* 33 (1982/86), no. 1-3, 27-33. (Not in MR) 34A25
- On a nonlinear operational differential equation system. *Studia Sci. Math. Hungar.* 22 (1987), no. 1-4, 213-221. (E. Gesztelyi) **89g:44005** 44A40 (34A25, 34A34)
- On a discrete nonlinear operational differential equation system based on the Dirichlet product. *Studia Sci. Math. Hungar.* 22 (1987), no. 1-4, 471-484. (E. Gesztelyi) **89g:44006** 44A40 (34A25, 34A34)
- Fenýš, L. S.** Leonardo da Vinci and mathematics. (Italian. English summary) *Rend. Sem. Mat. Fis. Milano* 54 (1984), 101-125 (1987). (P. Bockstaal) **89a:01058** 01A70 (01A40)
- see also Rássa, P., **89j:01066** and Paganoni, L., **89m:01105**
- Fes, Thomas A.** (with Bard, Jonathan F.) Operations sequencing in discrete parts manufacturing. *Management Sci.* 35 (1989), no. 2, 249-255. (Summary) **89m:90081** 90B30 (90B35)
- Feodorova, O. B.** (with Zhukov, V. T.) Interpolation schemes for the numerical solution of the heat equation. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 80, 28 pp. (Summary) **89h:65209** 65N99 (80-08)
- blanc-Feraud, L.** see Blanc-Feraud, L.
- Ferenc, Zsigeti** see Zsigeti, Ferenc
- Ferenstein, E. Z.** On the maximum likelihood method for censored bivariate samples. *Mathematical statistics and probability theory*, Vol. B (Bad Tatzmannsdorf, 1986), 67-74, *Reidel, Dordrecht-Boston, MA-London*, 1987. (František Rublík) **89a:62074** 62F12 (62E20)
- (with Enns, E. G.) On a multiperson time-sequential game with priorities. *Sequential Anal.* 6 (1987), no. 3, 239-256. (Minoru Sakaguchi) **89b:90244** 90D20 (62L15, 90C39)
- (with Enns, E. G.) Optimal sequential selection from a known distribution with holding costs. *J. Amer. Statist. Assoc.* 83 (1988), no. 402, 382-386. (Joseph D. Petrucci) **89m:62096** 62L15 (60G40)
- Fergola, P.** (with Tenneriello, C.) Partial stability of large scale systems via comparison method. *Large scale systems: theory and applications* 1983 (Warsaw, 1983), 323-327, *IFAC Proc. Ser.*, 10, IFAC, Laxenburg, 1984. (Summary) **89h:93047** 93D99 (49D27, 93A15, 93B05)
- Ferguson, Helman** Generalization of some algorithms of Euler. *Amer. Math. Monthly* 94 (1987), no. 7, 647-652. (H. J. Godwin) **89d:11057** 11J69 (11Y16)

- Ferguson, Pamela A. (with Olazábal, J. M.) On  $F'$ -closure of  $\hat{F}$ -homogeneous groups. *Publ. Sec. Mat. Univ. Autònoma Barcelona* 30 (1986), no. 1, 29–40. (F. Pérez Monasterio) **89f:20026** 20D10
- (with Kelley, Patricia) Hall  $\pi$ -subgroups which are direct products of nonabelian simple groups. *J. Algebra* 120 (1989), no. 1, 40–46. (M. E. Harris) **89k:20039** 20D20
- Character restriction and relative normal complements. *J. Algebra* 120 (1989), no. 1, 47–53. (David Gluck) **89k:20011** 20C15 (20D20)
- Ferland, J. A. (with Benadada, Y.) Partial linearization for generalized fractional programming. (German summary) *Z. Oper. Res.* 32 (1988), no. 2, 101–106. (Siegfried Schaible) **89f:90172** 90C32
- Ferland, R. (with Giroux, Gaston) The  $p$ - $q$  model Boltzmann equation: convergence of the solution. *Utilitas Math.* 33 (1988), 51–58. (Introduction) **89d:82069** 82A40 (60B99, 60E99)
- Ferm, Lars (with Gustafsson, Bertil) Far field boundary conditions for steady state solutions to hyperbolic systems. *Nonlinear hyperbolic problems* (St. Etienne, 1986), 238–252, *Lecture Notes in Math.*, 1270, Springer, Berlin-New York, 1987. (Darrell L. Hicks) **89c:35095** 35L60 (35B99, 76B99)
- Open boundary conditions for stationary inviscid flow problems. *J. Comput. Phys.* 78 (1988), no. 1, 94–113. (Summary) **89f:76008** 76-08 (76N10)
- de Fermat, Pierre see Bissell, C. C. **89g:01020**
- Fernandes, Edite M. G. P. Choice of step length. A crucial factor in the performance of some algorithms based on least square techniques. *OR models on microcomputers* (Lisbon, 1985), 147–152, North-Holland, Amsterdam-New York, 1986. (Summary) **89g:90182** 90C30
- Fernandes, Maria de Lourdes C. On some remarks about persistence for differential systems. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations* (Budapest, 1987), 390–393, *János Bolyai Math. Soc., Budapest*, 1987. (G. W. Harrison) **89g:92039** 92A15 (34C11, 34C15, 58F10)
- (with Zanolin, Fabio) Remarks on strongly flow-invariant sets. *J. Math. Anal. Appl.* 128 (1987), no. 1, 176–188. (O. Kastritsa) **89b:34122** 34D30 (58F10)
- (with Zanolin, Fabio) Periodic solutions of a second order differential equation with one-sided growth restrictions on the restoring term. *Arch. Math. (Basel)* 51 (1988), no. 2, 151–163. (Maria Letizia Bertotti) **89i:34053** 34C25 (34B15)
- monteiro Fernandes, Teresa see Monteiro Fernandes, Teresa
- Fernández, Ariel Self-organisation in the centre manifold of a dissipative system. *J. Phys. A* 21 (1988), no. 5, L295–L300. (Dieter H. Mayer) **89h:92009** 92A08 (58F14, 82A99)
- Phase-ordering dynamics for the onset of a center manifold. *Phys. Rev. A* (3) 38 (1988), no. 8, 4256–4260. (Summary) **89i:58084** 58F13 (82A99)
- Fernández, César (with Best, Eike) ★ Nonsequential processes. A Petri net view. *EATCS Monographs on Theoretical Computer Science*, 13, Springer-Verlag, Berlin-New York, 1988. x+112 pp. ISBN 3-540-19030-9 (Rüdiger Valk) **89i:68035** 68Q10 (68Q55, 68Q90)
- (with Merceron, Agathe) Bases and lattices in nonsequential processes. *Fund. Inform.* 11 (1988), no. 2, 143–169. (Hideki Yamasaki) **89h:68040** 68Q10 (06B35)
- Fernández, Dicesar Lass (with Cobos, Fernando) Hardy-Sobolev spaces and Besov spaces with a function parameter. *Function spaces and applications* (Lund, 1986), 158–170, *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (Mario Milman) **89g:46063** 46E35 (46E30, 46M35)
- Interpolation of  $2^d$  Banach spaces and the Calderón spaces  $X(E)$ . *Proc. London Math. Soc.* (3) 56 (1988), no. 1, 143–162. (N. Ya. Kruglyak) **89f:46134** 46M35 (46E40)
- garcía-rodeja Fernández, Eduardo see García-Rodeja Fernández, Eduardo
- Fernández, Fernando (with Recio Muñoz, Tomás J.; Ruiz, Jesús M.) Generalized Thom's lemma in semianalytic geometry. (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 5–6, 297–301. (J. Bochnak) **89h:32015** 32B20 (32C42)
- Fernández, Francisco M. (with Artega, Gustavo A.; Castro, Eduardo A.) Critical parameters from power series expansions. *J. Math. Chem.* 1 (1987), no. 3, 267–280. (Summary) **89a:82012** 82A25
- (with Castro, Eduardo A.) Eigenvalues from the Riccati equation. *J. Phys. A* 20 (1987), no. 16, 5541–5547. (Ernest R. Davidson) **89b:34057** 34B25 (34B05, 65L15, 81-08, 81C05)
- (with Díaz, Carlos G.; Castro, Eduardo A.) On the numerical integration of the Schrödinger equation. *J. Phys. A* 21 (1988), no. 1, L11–L13. (Summary) **89c:81008** 81-08
- Time-evolution operator and propagator for quadratic Hamiltonians. *J. Phys. A* 21 (1988), no. 6, 1357–1359. (Summary) **89c:81023** 81C10
- (with Estrin, Dario A.; Castro, Eduardo A.) Generalized Hill determinant method. *Phys. Lett. A* 130 (1988), no. 6–7, 330–332. (M. Znojil) **89i:81017** 81C05 (34A50, 34B25, 65L10)
- (with Frydman, Gabriel I.; Castro, Eduardo A.) Tight bounds to the Schrödinger equation eigenvalues. *J. Phys. A* 22 (1989), no. 6, 641–645. (Summary) **89m:81034** 81C05 (81-08)
- Fernández, G. see Fernández, Guillermo
- Fernández, Gilles (with Larroustou, B.) Hyperbolic schemes for multi-component Euler equations. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 128–138, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 76-08 (65P05)
- Fernández, Guillermo (with Begovich, Ofelia; Ortega, Romeo; Lozano Leal, Rogelio) On the destabilizing effects of unmodeled plant delay in a simple adaptive controller: simulation and local stability results. *Control Theory Adv. Tech.* 3 (1987), no. 2, 141–148. (Not in MR) **34K20** (93C40)
- (with Ortega, Romeo; Begovich, Ofelia) Conditions for preservation of stability of adaptive controllers for systems with unmodeled delay. *IEEE Trans. Automat. Control* 33 (1988), no. 6, 601–603. (Zong Ji Chen) **89c:93137** 93C40 (34K20, 93D05)
- diez Fernández, Honorato see Diez Fernández, Honorato
- alcázar-Fernández, J. see Alcázar-Fernández, J.
- Fernández, J.-C. (with Taki, M.; Reinisch, G.) Collective-coordinate description of chaotic sine-Gordon breathers and zero-frequency breathers: the nondissipative case. *Phys. Rev. A* (3) 38 (1988), no. 6, 3086–3097. (Summary) **89i:58132** 58F40 (34C35, 58F05, 58F07, 58F13)
- (with Passot, Th.; Politano, H.; Reinisch, G.; Taki, M.) Sturm-Liouville description of sine-Gordon soliton dynamics. *Phys. Rev. B* (3) 37 (1988), no. 13, 7342–7347. (Summary) **89d:35154** 35Q20 (81C05)
- Fernández, J. L. (with Pommerenke, Ch.) On the boundary behavior of Bloch functions. *Holomorphic functions and moduli*, Vol. 1 (Berkeley, CA, 1986), 75–78, *Math. Sci. Res. Inst. Publ.*, 10, Springer, New York-Berlin, 1988. (David Minda) **89j:30046** 30D45 (30C35)
- A boundedness theorem for  $L^1/H^1_2$ . *Michigan Math. J.* 35 (1988), no. 2, 227–231. (Takahiko Nakazi) **89i:30043** 30D55 (30H05, 46E15, 46F15)
- vilar Fernández, J. M. see Vilar Fernández, J. M.
- Gómez Fernández, Juan Alfredo see Gómez Fernández, Juan Alfredo
- Fernández, L. M. A note on  $F$ -sectional curvatures of  $S$ -manifolds. *Rev. Acad. Cienc. Zaragoza* (2) 42 (1987), 11–17. (David Blair) **89f:53057** 53C15
- Fernández, Luis A. (with Casas Rentería, Eduardo) Optimal control of quasilinear multistate elliptic systems. *Analysis and optimization of systems* (Antibes, 1988), 395–406, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89c:00031**) 49A22 (49B22, 93C20)
- (with Casas Rentería, Eduardo) Optimal control of quasilinear elliptic equations. *Control of partial differential equations* (Santiago de Compostela, 1987), 92–99, *Lecture Notes in Control and Inform. Sci.*, 114, Springer, Berlin-New York, 1989. (see **89j:00028**) 49B22 (49E05)
- molina Fernández, M. see Molina Fernández, M.
- Fernández, Manuel J. (with Suárez García, Fermín)  $t$ -compositions of fuzzy relations. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 122–131, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89f:03049** 03E72 (94D05)
- (with Gil, María Angeles; Martínez, I.) The choice of sample size in estimating mutual information. *Appl. Math. Comput.* 27 (1988), no. 3, part 1, 201–216. (S. Gabler) **89j:62014** 62D05
- Fernández, Marisa (with Cordero, Luis A.) Some compact solvmanifolds of  $G_2$ -coassociative type. *An. Univ. București Mat.* 36 (1987), 16–19. (Introduction) **89g:53075** 53C40 (53C25)
- (with Cordero, Luis A.; Gray, Alfred) The Frölicher spectral sequence and complex compact nilmanifolds. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 17, 753–756. (Yusuke Sakane) **89c:32081** 32M10 (22E25, 53C30)
- An example of a compact calibrated manifold associated with the exceptional Lie group  $G_2$ . *J. Differential Geom.* 26 (1987), no. 2, 367–370. (Autorreferat (Zbl 604:53013)) **89f:53058** 53C15 (53C65)
- (with Cordero, Luis A.; de León, Manuel) Examples of compact complex manifolds with no Kähler structure. *Portugal. Math.* 44 (1987), no. 1, 49–62. (Elsa Abbena) **89h:53082** 53C15 (32C10, 32J99, 53C55)
- A new example of compact Riemannian manifold with structure group  $\text{Spin}(7)$ . *Portugal. Math.* 44 (1987), no. 2, 161–165. (Samuel I. Goldberg) **89a:53047** 53C20
- (with de Andrés, Luis C.; Mencía, José J.; Rozas, Juan I.) Four-dimensional compact locally conformal Kähler solvmanifolds. (Italian summary) *Boll. Un. Mat. Ital. A* (7) 2 (1988), no. 3, 377–382. (Manuel De León) **89m:53117** 53C55 (53C15, 53C30)
- Fernández, Roberto (with Aizenman, Michael; Basky, David J.) The phase transition in a general class of Ising-type models is sharp. *J. Statist. Phys.* 47 (1987), no. 3–4, 343–374. (Alan D. Sokal) **89f:82013** 82A25 (81E25, 82A43, 82A68)
- (with Aizenman, Michael) Critical exponents for long-range interactions. *Lett. Math. Phys.* 16 (1988), no. 1, 39–49. (Koichiro Matsuno) **89h:82041** 82A68 (82A15, 92A25)
- Fernández, Rosa M. see Fernández Rodríguez, Rosa M.
- Fernández Andrés, Manuel (with Alcaraz, Antonio) Polynomial structures of kind  $(h, k)$ . *Bull. Math. Soc. Sci. Math. R. S. Roumanie (N.S.)* 30(78) (1986), no. 4, 295–299. (C. S. Houh) **89a:53039** 53C10 (53C15)
- Fernández Arias, Arturo Some results about the size of the exceptional set in Nevanlinna's second fundamental theorem. *Collect. Math.* 37 (1986), no. 3, 229–238. (N. V. Rao) **89c:30078** 30D35
- fernández y Fernández-Arroyo, Fidel José see Fernández y Fernández-Arroyo, Fidel José
- Fernández-Baca, David (with Slutski, Giora) Solving parametric problems on trees. *STACS 88* (Bordeaux, 1988), 52–60, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (Peter Eades) **89c:68099** 68R05 (05C70, 68R10, 90C27)
- Nonserial dynamic programming formulations of satisfiability. *Inform. Process. Lett.* 27 (1988), no. 6, 323–326. (Juraj Hromkovič) **89m:68048** 68Q20 (03B05, 03D15, 68R10, 90C39)
- Fernández C., César see Fernández, César
- Fernández Camacho, M. I. Average size of simplified trees. (Spanish. English summary) *Qüestió 11* (1987), no. 2, 93–116, 153. (Summary) **89d:68028** 68Q25 (68P05)
- Fernández-Carmena, F. Correction: "On the injectivity of the map of the Witt group of a scheme into the Witt group of its function field" [*Math. Ann.* 277 (1987), no. 3, 453–468; MR 88h:11027]. *Math. Ann.* 280 (1988), no. 4, 697–698. (From the text) **89b:11033** 11E81 (14C35, 19C99, 19E20, 19G12)
- Fernández de la Véga, W. Induced trees in sparse random graphs. *Graphs Combin.* 2 (1986), no. 3, 227–231. (Zbigniew Palka) **89g:05094** 05C80
- Fernández García-Hierro, Manuel  $\epsilon$ -approximations in normed product spaces. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 188–196, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89j:41050** 41A65 (46B99)
- (with Benítez, Carlos) Functional characterization of best and good approximation in normed product spaces. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 2 (1988), no. 2, 313–322. (C. Dierieck) **89i:41024** 41A28 (41A65, 46B20)
- Simultaneous approximation in normed spaces. (Spanish) *Colloquium 1985–86* (Badajoz, 1985–86), 44–50, *Publ. Dep. Mat. Univ. Extremadura*, 15, Univ. Extremadura, Badajoz, 1987. (Summary) **89c:41029** 41A65 (46B99)
- Fernández López, Antonio (with García Rus, Eulalia) Banach algebras which are a direct sum of division algebras. *J. Austral. Math. Soc. Ser. A* 44 (1988), no. 2, 143–145. (B. Yood) **89a:46104** 46H05 (16A39)
- (with García Rus, Eulalia) Banach triples with generalized inverses. *Manuscripta Math.* 62 (1988), no. 4, 503–508. (Thomas J. Barton) **89i:46055** 46H99 (46H70)
- Noncommutative Jordan Riesz algebras. *Quart. J. Math. Oxford Ser. (2)* 39 (1988), no. 153, 67–80. (Angel Rodríguez-Palacios) **89b:17026** 17C65 (17A15, 46H70)
- Fernández Novoa, J. Espaces non vérifiant le second axiome de dénombrabilité. (English summary) [Spaces not satisfying the second axiom of countability] *Collect. Math.* 37



- (1986), no. 3, 239–248. (J. C. Oxtoby) **89h:54029** 54D20 (28C05)
- Fernández-Pujol, Catherine** Séries convergentes d'opérateurs dans un espace de Banach. (English summary) [Convergent series of operators in a Banach space] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 7, 331–334. (Charn Huen Kan) **89h:47008** 47A35
- Fernández Rodríguez, Rosa M.** Associate triples of higher degree. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **15** (1985), no. 2, 123–129. (H. Kleiński [Zbl 631:18003]) **89f:18004** 18C15 (18C20)
- (with Aguado Martín, F.) On the class of varieties that are topoi. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish) (Badajoz, 1986)*, 1–6, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89g:18005** 18B25
- Fernández Rubio, J.** (with Closas, L.) Rapid computation of the modified Bessel functions  $K_0(x)$  and  $I_0(x)$  and their derivatives. (Spanish) *Stochastica* **11** (1987), no. 1, 53–61. (Siegfried Filippi) **89k:65017** 65D20 (33A40, 65D25)
- Fernández y Fernández-Arroyo, Fidel José** A necessary condition for the existence of the product of measures valued in locally convex spaces. (Spanish) *Publ. Mat.* **32** (1988), no. 1, 129–134. (Pedro Jiménez Guerra) **89f:28024** 28B05 (46G10)
- Fernique, X.** Oscillations de fonctions aléatoires gaussiennes à valeurs vectorielles. [Oscillations of Gaussian vector-valued functions] *Math. Scand.* **60** (1987), no. 1, 96–108. (O. O. Kurchenko) **89e:60085** 60G15
- Un modèle presque sûr pour la convergence en loi. (English summary) [An almost sure model for weak convergence] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 7, 333–338. (Summary) **89a:60010** 60B10
- Feroldi, Mathieu** (with Sterdyniak, Henri) La dynamique du taux de change: du long au court terme. [Exchange rate dynamics: from the long to the short term] With comments by Jean-Pierre Laffargue. *Macrodynamique et déséquilibres*, 83–125, *Économica, Paris*, 1987. (see **89d:90065** 90A17 (90A16))
- Féron, Marc L.** (with Féron, Robert L.) Fuzzy specifications and random fuzzy events considered as basic tools for statistical prediction. Mathematical modelling. *Fuzzy Sets and Systems* **28** (1988), no. 3, 285–293. (Constantin Drossos) **89m:60010** 60A99 (03E72)
- Féron, Robert L.** (with Féron, Marc L.) Fuzzy specifications and random fuzzy events considered as basic tools for statistical prediction. Mathematical modelling. *Fuzzy Sets and Systems* **28** (1988), no. 3, 285–293. (Constantin Drossos) **89m:60010** 60A99 (03E72)
- Ferrand, Jacqueline** (with Cartan, Henri) Le cas André Bloch. [The case André Bloch] *Cahiers du séminaire d'histoire des mathématiques*, 9, 210–219, *Univ. Paris VI, Paris*, 1988. (Editors) **89a:01042** 01A60 (01A70)
- A characterization of quasiconformal mappings by the behaviour of a function of three points. *Complex analysis*, *Joensuu 1987*, 110–123, *Lecture Notes in Math.*, 1351, Springer, Berlin-New York, 1988. (M. K. Vamanamurthy) **89m:30040** 30C60
- (with Cartan, Henri) The case of André Bloch. *Math. Intelligencer* **10** (1988), no. 1, 23–26. (Richard L. Francis) **89a:01041** 01A60 (01A70)
- Invariants conformes dans l'espace de Möbius et caractérisations des applications quasiconformes. [Conformal invariants in Möbius space and characterizations of quasiconformal mappings] *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 1–2, 47–55. (Miodrag Perović) **89i:30020** 30C60 (53A30)
- Ferrand, L. A.** see **Computational methods in water resources**, **89m:76002** and **89m:76003**
- Ferrándiz Leal, José Manuel** A general canonical transformation increasing the number of variables with application to the two-body problem. *Celestial Mech.* **41** (1987/88), no. 1–4, 343–357. (V. Szebehely) **89f:70018** 70F15 (70H15)
- Ferrando, J. C.** (with López Pellicer, M.) Quasi-suprabarrelled spaces. *J. Austral. Math. Soc. Ser. A* **46** (1989), no. 1, 137–145. (I. Tiedt) **89m:46004** 46A07 (46A30)
- Ferrando, Joan Josep** (with Coll, Bartolomé) Sur les vitesses des fluides parfaits barotropes. (English summary) [On the velocity of the barotropic perfect fluids] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 13, 573–576. (Gérard A. Maugin) **89h:83026** 83C55 (58A15)
- (with Coll, Bartolomé) On the permanence of the null character of Maxwell fields. *Gen. Relativity Gravitation* **20** (1988), no. 1, 51–64. (K. P. Tod) **89c:83038** 83C50 (78A25)
- Ferrante, L.** (with Koch, Giorgio) Identifiability of DNA distribution from flow cytometric data with cell debris. *Bull. Math. Biol.* **50** (1988), no. 3, 209–225. (Summary) **89f:92008** 92A08 (92A12)
- Ferrar, Joseph C.** (with Çiftçi, Suleyman; Kaya, Rustem) On 4-transitivity in the Moufang plane. *J. Geom.* **31** (1988), no. 1–2, 65–68. (Elena Brožková) **89f:51015** 51A35 (17A35, 17D05, 51A25)
- Ferrara, S.** The point-field limit of four-dimensional superstrings. *International Workshop on Superstrings, Cosmology, Composite Structures (College Park, MD, 1987)*, 196–206, *World Sci. Publishing, Singapore*, 1987. (see **89a:81005** 81E99 (81E30))
- Scalar potentials in extended supergravities. *Quantum field theory and quantum statistics, Vol. 2*, 259–271, *Hilger, Bristol*, 1987. (W. Cox) **89h:83038** 83E50 (81G25)
- Higher curvature supergravity and superstrings. *Unification of fundamental interactions (Marstrand, 1986)*, 132–137, *Royal Swedish Acad. Sci., Stockholm*, 1987. (see **89f:81005** 83E50 (53C80, 81E30, 83E30))
- (with Aragone, C.; Deser, S.) Anti-Higgs effect in two-dimensional gauge theories. *Classical Quantum Gravity* **4** (1987), no. 4, 1003–1010. (Elio Abdalla) **89h:81113** 81E13 (81G20, 83E50)
- (with Cecotti, S.; Villasante, M.) Linear multiplets and super Chern-Simons forms in 4D supergravity. *Internat. J. Modern Phys. A* **2** (1987), no. 6, 1839–1869. (A. D. Popova) **89f:83097** 83E50 (81E30, 81G20, 83E30)
- (with Cecotti, S.; Girardello, L.) Gravitational supervertices in  $n = 1, 4$ D superstrings. *Phys. Lett. B* **198** (1987), no. 3, 336–342. (Elias Kiritsis) **89a:81118** 81E99 (81E30, 83E30, 83E50)
- Supergravities and superstrings. *Conformal field theory, anomalies and superstrings (Singapore, 1987)*, 233–252, *World Sci. Publishing, Singapore*, 1988. (Roger Brooks) **89m:83092** 83E50 (81E30, 83E30)
- Supertheories. *Differential geometrical methods in theoretical physics (Como, 1987)*, 395–404, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 250, *Kluwer Acad. Publ., Dordrecht*, 1988. (Frans R. Klinkhamer) **89m:81137** 81E99 (81E30, 83E30, 83E50)
- (with Cecotti, S.; Girardello, L.; Pasquinucci, A.; Porrati, Massimo) Matter-coupled supergravity with Gauss-Bonnet invariants: component Lagrangian and supersymmetry breaking. *Internat. J. Modern Phys. A* **3** (1988), no. 7, 1675–1733. (Markku Lehto) **89j:83072** 83E15 (81E30, 81G25, 83E30)
- (with Kounnas, Costas; Porrati, Massimo) Superstring solutions with spontaneously broken four-dimensional symmetries. *Nuclear Phys. B* **304** (1988), no. 3, 500–512. (Aleksandar R. Bogojevic) **89h:81183** 81E99 (81D20, 81E30, 81E40)
- (with Cecotti, S.; Porrati, Massimo; Sabharwal, S.) New minimal higher derivative supergravity coupled to matter. *Nuclear Phys. B* **306** (1988), no. 1, 160–180. (S. Deser) **89e:83081** 83E50
- (with Cecotti, S.; Girardello, L.) Hidden noncompact symmetries in string theory. *Nuclear Phys. B* **308** (1988), no. 2–3, 436–450. (Frans R. Klinkhamer) **89k:81134** 81E99 (81E30, 83E30, 83E50)
- (with Sabharwal, S.; Villasante, M.) Curvatures and Gauss-Bonnet theorem in new minimal supergravity. *Phys. Lett. B* **205** (1988), no. 2–3, 302–305. (Agostino Prastaro) **89f:83099** 83E50 (53C80)
- (with Kounnas, Costas; Porrati, Massimo)  $N = 1$  superstrings with spontaneously broken symmetries. *Phys. Lett. B* **206** (1988), no. 1, 25–31. (Paul Howe) **89h:81184** 81E99 (53C80, 81D20, 81E30)
- (with Cecotti, S.; Girardello, L.) A topological formula for the Kähler potential of 4D  $N = 1$  strings, and its implications for the moduli problem. *Phys. Lett. B* **213** (1988), no. 4, 443–449. (Tristan Hübsch) **89m:53131** 53C80 (32G07, 32J05, 53C55, 81E30, 81E40)
- (with Porrati, Massimo) The manifolds of scalar background fields in  $Z_2$  orbifolds. *Phys. Lett. B* **216** (1989), no. 3–4, 289–296. (Tristan Hübsch) **89m:53132** 53C80 (22E40, 32G07, 53C55, 81E30, 83E30)
- Ferrarese, Giorgio** On the thermodynamical formulation of relativistic continua. (Italian. English summary) *Rend. Sem. Mat. Fis. Milano* **56** (1986), 113–124 (1988). (N. D. Sengupta) **89m:73005** 73B30
- Formulation intrinsèque du problème de Cauchy en relativité générale. (English summary) [Intrinsic formulation for the Cauchy problem in general relativity] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 2, 107–110. (Norbert Noutchegueme) **89g:83007** 83C05
- Ferrari, J. A.** (with Griego, J.; Falco, E. E.) The Kaluza-Klein theory and four-dimensional spacetime. *Gen. Relativity Gravitation* **21** (1989), no. 1, 69–78. (L. M. Sokolowski) **89m:83085** 83E15 (53B50)
- Ferrari, L.** (with Cannata, F.) Dimensions of relativistic quantum mechanical paths. *Amer. J. Phys.* **56** (1988), no. 8, 721–725. (G. Albinus) **89j:81022** 81C05 (81C99)
- Fiedler-Ferrari, N.** see **Fiedler-Ferrari, N.**
- Ferrari, Pablo Augusto** ★ Passeios aleatórios e redes elétricas. (Portuguese) [Random walks and electrical networks] 16<sup>o</sup> Colóquio Brasileiro de Matemática. [16th Brazilian Mathematics Colloquium] *Instituto de Matemática Pura e Aplicada, Rio de Janeiro*, 1987. iv+91 pp. (Adrian Adăscăliței) **89k:60121** 60J70 (58G32, 60–01, 94C05)
- (with Presutti, Errico; Vares, M. E.) Nonequilibrium fluctuations for a zero range process. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **24** (1988), no. 2, 237–268. (T. M. Liggett) **89k:60158** 60K35 (82A35)
- Invariance principle for a solid-on-solid interface model. New directions in statistical mechanics (Santa Barbara, CA, 1987). *J. Statist. Phys.* **51** (1988), no. 5–6, 1077–1090. (T. M. Liggett) **89m:82025** 82A31 (60K35)
- Ferrari, R.** (with Capri, A. Z.) Zero-energy modes and Lüders' theorem. (French summary) *Canad. J. Phys.* **66** (1988), no. 12, 1040–1043. (Summary) **89m:81084** 81E05
- Ferrari, V.** (with Ibañez, J.) A new exact solution for colliding gravitational plane waves. *Gen. Relativity Gravitation* **19** (1987), no. 4, 383–404. (Summary) **89a:83013** 83C15 (83C35)
- (with Ibañez, J.) On the collision of gravitational plane waves: a class of soliton solutions. *Gen. Relativity Gravitation* **19** (1987), no. 4, 405–425. (Summary) **89a:83014** 83C15 (83C35)
- (with Pendenza, P.; Veneziano, G.) Beam-like gravitational waves and their geodesics. *Gen. Relativity Gravitation* **20** (1988), no. 11, 1185–1191. (Tevian Dray) **89i:83014** 83C15
- Focusing process in the collision of gravitational plane waves. *Phys. Rev. D* **37** (1988), no. 10, 3061–3064. (Mario C. Diaz) **89j:83031** 83C35 (83C75)
- (with Ibañez, J.) Type-D solutions describing the collision of plane-fronted gravitational waves. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1853, 417–431. (Nora Bretón Báez) **89f:83048** 83C35 (83C15, 83C20, 83C75)
- Ferraris, Marco** (with Francaviglia, Mauro) Intrinsic ADM formalism for Lagrangian field theories in fibered manifolds. 7th Italian conference on general relativity and gravitational physics (Rapallo, 1986), 55–66, *World Sci. Publishing, Singapore*, 1987. (Summary) **89d:70014** 70G50 (49F05, 58E30, 58F05)
- (with Francaviglia, Mauro) Applications of the Poincaré-Cartan form in higher order field theories. *Differential geometry and its applications (Brno, 1986)*, 31–52, *Math. Appl. (East European Ser.)*, 27, *Reidel, Dordrecht-Boston, MA*, 1987. (David E. Betounes) **89d:58033** 58E30 (49F05, 49H05, 70G50, 83D05)
- (with Francaviglia, Mauro) Formal connections in fibered manifolds. *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 447–482, *Colloq. Math. Soc. János Bolyai*, 46, *North-Holland, Amsterdam-New York*, 1988. (Hans P. Künzle) **89d:53060** 53C05 (58A20, 58E30, 58F05)
- (with Francaviglia, Mauro; Magnano, Guido) Do nonlinear metric theories of gravitation really exist? *Classical Quantum Gravity* **5** (1988), no. 6, L95–L99. (Carl Brans) **89d:83053** 83D05
- Ferraro, Mario** (with Caelli, T. M.) Relationship between integral transform invariances and Lie group theory. *J. Opt. Soc. Amer. A* **5** (1988), no. 5, 738–742. (Antoni Wawrzynczyk) **89j:45001** 45A05 (22E30, 42B10, 57S20, 78A55)
- Ferrarotti, Massimo** Some results about integration on regular stratified sets. *Ann. Mat. Pura Appl. (4)* **150** (1988), 263–279. (J. E. Brothers) **89i:58008** 58A35 (26B20, 28A75, 32B20, 58C35)
- Ferraz, Karin** (with Stédile, Edson) The Hermitian metric in gravitation. (Portuguese) *Bol. Soc. Paran. Mat.* **(2)** **8** (1987), no. 2, 217–231. (Summary) **89d:83058** 83D05 (83E10)
- Ferraz-Mello, S.** see **Long term evolution of planetary systems**, **89j:76002**
- Ferré, J. A.** (with Giral, Francesc) Pattern-recognition analysis of the velocity field in plane turbulent wakes. *J. Fluid Mech.* **198** (1989), 27–64. (Not in MR) 76–05 (68T10, 76F10)
- (with Giral, Francesc) Some topological features of the entrainment process in a heated turbulent wake. *J. Fluid Mech.* **198** (1989), 65–78. (Not in MR) 76–05 (68T10, 76F10)

- Ferré, L.** (with Besse, Ph.; Caussinus, H.; Fine, Jeanne) Principal components analysis and optimization of graphical displays. *Statistics* 19 (1988), no. 2, 301-312. (S. John) 89g:62087 62H25
- Ferre, Michel** Quelques exemples d'application de relateurs partiellement autoréférents. [Some examples of the application of partially self-referential relators] 10<sup>e</sup> Congrès International de Cybernétique (Namur, 1983), 377-391, Assoc. Internat. Cybernét., Namur, 1984. (Summary) 89b:92029 92A17 (92A05)
- Ferreira, A. V.** see **Lojasiewicz, Stanisław**, 89c:26001
- Ferreira, J. A.** see **Ferreira, José Arminio**
- Ferreira, J. Campos** Sur une définition de la valeur d'une distribution en un point et son application au problème de Cauchy. [On a definition of the value of a distribution at a point and its application to the Cauchy problem] *Portugal. Math.* 44 (1987), no. 3, 283-303. (J. Horváth) 89a:46085 46F10 (35D05)
- Ferreira, José António Sofeiro** (with Vidal, René Victor Valqui) A new algorithm for the economic lot size problem. (Russian and Polish summaries) *Control Cybernet.* 16 (1987), no. 3-4, 91-101 (1988). (Not in MR) 90A11 (90B30)
- Ferreira, José Arminio** (with Perla Menzala, G.) Time dependent approach to the inverse scattering problem for wave equations with time dependent coefficients. *Appl. Anal.* 26 (1988), no. 3, 223-254. (Volker Vogelsang) 89d:35182 35R30 (35L05, 35P25)
- Ferreira, José M.** On operators which leave invariant a half-space. *Dynamics of infinite-dimensional systems* (Lisbon, 1986), 75-80, NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 37, Springer, Berlin-New York, 1987. (From the text) 89m:47037 47B99 (47A70, 93B28, 93B60)
- Oscillations and nonoscillations caused by delays. *Appl. Anal.* 24 (1987), no. 3, 181-187. (Vincent Soltés) 89f:34099 34K15 (34C10, 34C15, 34K25)
- Ferreira, L. A.** (with Gomes, J. F.; Zimmerman, A. H.) Vertex operators and Jordan fields. *Phys. Lett. B* 214 (1988), no. 3, 367-370. (Summary) 89j:17017 17B60 (17B67, 81D15)
- leal Ferreira, P.** see **Leal Ferreira, P.**
- Ferreira, Pedro M. G.** Optimal robust multi-purpose general feedback systems. *Analysis and optimization of systems* (Antibes, 1988), 65-71, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see 89c:00031) 93B50 (93C40)
- Comments on: "Internal stabilization and decoupling in linear multivariable systems by unity output feedback compensation" [IEEE Trans. Automat. Control 32 (1987), no. 8, 735-739] by A. I. G. Vardulakis. *IEEE Trans. Automat. Control* 33 (1988), no. 12, 1195. (Not in MR) 93C05 (49D27, 93C35, 93D15)
- Admissible additive perturbations. *IEEE Trans. Automat. Control* 34 (1989), no. 4, 476-478. (Not in MR) 93D99 (15A23)
- DDP and model following problem revisited. *Systems Control Lett.* 12 (1989), no. 2, 129-132. (Summary) 89k:93088 93B50 (93B35, 93C05, 93D15)
- Ferreira, Raimundo R.** (with Carvalho, L. A. V.) On a new extension of Liapunov's direct method to discrete equations. *Quart. Appl. Math.* 46 (1988), no. 4, 779-788. (Author's review [L.A.V.C.]) 89m:39009 39A11
- garcía-Ferreira, Salvador** see **García-Ferreira, Salvador**
- Ferreira, Sílvia M. M.** (with Micali, Artibano; Campos, Tânia M. M.; Costa e Silva, Maria C.) Dérivations dans les algèbres gémétiques. III. (English summary) [Dérivations in gemetic algebras. III] *Linear Algebra Appl.* 113 (1989), 79-99. (H. Gonsior) 89k:17059 17D92
- Ferreiro, A.** (with Gancedo, E.; Pastor, Gerardo; Torres, M.) Isotropic spatial axial radiations and notable polyhedra. *Internat. J. Math. Ed. Sci. Tech.* 19 (1988), no. 4, 489-499. (I. Ya. Gusak) 89i:52007 52A25
- Ferrer, E.** (with de la Incera, V.; Shabad, A. E.) The Bose-condensation problem in gauge theory. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (*Järmala*, 1985), 280-285, "Nauka", Moscow, 1986. (see 89d:81001) 81E13 (81E99)
- Ferrer, Sebastián** (with Deprit, André) Note on Cid's radial intermediary and the method of averaging. *Celestial Mech.* 40 (1987), no. 3-4, 335-343. (Constantin Simirad) 89d:70011 70F15
- Ferreri, Carlo** On some methods of assessing Dirichlet prior parameters. (Italian summary) *Metron* 45 (1987), no. 1-2, 31-49. (Not in MR) 62F15
- Ferrero, Miguel** Radicals of skew polynomial rings and skew Laurent polynomial rings. *Math. J. Okayama Univ.* 29 (1987), 119-126 (1988). (Jean-Pierre van Deuren) 89a:16001 16A05 (16A21)
- The strongly prime radical of an Ore extension. *Comm. Algebra* 17 (1989), no. 2, 351-376. (M. M. Parmenter) 89j:16008 16A21 (16A56)
- (with Parmenter, M. M.) A note on Jacobson rings and polynomial rings. *Proc. Amer. Math. Soc.* 105 (1989), no. 2, 281-286. (J. F. Watters) 89f:16010 16A21
- Ferrero Melgar, Miguel** The philosophy of Erwin Schrödinger: a diachronic view of Schrödinger's thoughts. *Found. Phys.* 18 (1988), no. 3, 357-371. (Summary) 89b:01041 01A70 (01A60)
- Ferretti, Nélida E.** Efficiency of tests based on weighted rankings for randomized blocks when the alternatives have an a priori ordering. *Comm. Statist. Theory Methods* 16 (1987), no. 6, 1629-1653. (Summary) 89g:62130 62K10
- Ferretti, Vincent** (with Sankoff, David) A continuous analog for RNA folding. *Bull. Math. Biol.* 51 (1989), no. 1, 167-171. (Summary) 89m:92017 92A09 (92A12)
- Ferreya, Guillermo S.** On the weak Cauchy problem in the large for semilinear degenerate parabolic equations. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 1 (1987), no. 2, 571-589. (From the introduction) 89m:35123 35K65
- Ferri, A. A.** (with Dowell, Earl H.) Frequency domain solutions to multi-degree-of-freedom, dry friction damped systems. *J. Sound Vibration* 124 (1988), no. 2, 207-224. (Summary) 89d:70001 70-08 (70K40)
- Ferri, Massimo** (with Gagliardi, Carlo) Multiple residues in dimension three. *J. Combin. Theory Ser. B* 44 (1988), no. 3, 263-275. (Mario Pezzana) 89h:57003 57M15 (05C15, 57N10)
- Ferri, Osvaldo** A characterization of  $q^2$ -caps in  $AG(3, q)$ . (Italian. English summary) *Rend. Mat.* (7) 5 (1985), no. 3-4, 285-289 (1988). (J. W. P. Hirschfeld) 89k:51012 51E20
- A characterization of the hyperbolic paraboids of  $AG(3, q)$ . (Italian. English summary) *Rend. Mat.* (7) 6 (1986), no. 1-2, 239-243 (1988). (J. W. P. Hirschfeld) 89m:51015 51E20
- Combinatorial properties characterizing the hyperbolic hyperboloids of  $AG(3, q)$ . (Italian. English summary) *Rend. Mat. Appl.* (7) 7 (1987), no. 1, 131-137 (1988). (J. W. P. Hirschfeld) 89m:51016 51E20
- Ferriz-Mas, A.** Nonlinear flows along magnetic flux tubes: mathematical structure and exact simple wave solutions. *Phys. Fluids* 31 (1988), no. 9, 2583-2593. (Summary) 89i:76096 76W05 (85A30)
- Ferro, Alfredo** (with Cantone, D.; Omodeo, E. G.) Decision procedures for elementary sublanguages of set theory. VIII. A semidecision procedure for finite satisfiability of unquantified set-theoretic formulae. *Comm. Pure Appl. Math.* 41 (1988), no. 1, 105-120. (G. Asser) 89c:03085 03E30 (03B25)
- blanco Ferro, Antonio A.** see **Blanco Ferro, Antonio A.**
- carri Ferro, Giuseppa** see **Carri Ferro, Giuseppa**
- Ferro Fontán, Constantino** (with Ponce Dawson, Silvina) Extension of the Ablowitz-Ladik method to the derivative nonlinear Schrödinger equation. *J. Comput. Phys.* 76 (1988), no. 1, 192-200. (Summary) 89c:81007 81-08 (65P05, 81C05)
- potier-Ferry, Michel** see **Potier-Ferry, Michel**
- Ferry, Steve**  $UV^4$ -equivalent compacta. *Geometric topology and shape theory* (Dubrovnik, 1986), 88-114, *Lecture Notes in Math.*, 1283, Springer, Berlin-New York, 1987. (John J. Walsh) 89c:54030 54C56 (55P10, 55P55)
- (with Rosenberg, Jonathan; Weinberger, Shmuel) Phénomènes de rigidité topologique équivariante. [Equivariant topological rigidity phenomena] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 19, 777-782. (Thierry Fack) 89f:57051 57R91 (58G12)
- Ferzali, A. S.** A space of linear elements of associated connection. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 10, 55-64; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 10, 84-97. (Josef Janyška) 89m:53032 53B05
- Feschich, I.** (with Khameamin, M.) Upper bounds on the best approximations by trigonometric polynomials on the classes  $W^r H^m$  in the space  $L$ . (Russian. English and Bulgarian summaries) *Plovdiv. Univ. Nauchn. Trud.* 22 (1984), no. 2, 105-123 (1986). (Summary) 89i:42004 42A10
- Fesenko, I. B.** (with Vostokov, S. V.) A property of the Hilbert pairing. (Russian) *Mat. Zametki* 43 (1988), no. 3, 393-400, 430; translated in *Math. Notes* 43 (1988), no. 3-4, 226-230. (Helmut Koch) 89f:11160 11S31
- Fesenko, S. V.** (with Aleksandrov, G. A.; Armand, A. D.; Belotelov, N. V.; Vedyushkin, M. A.; Vilkova, L. P.; Voinov, A. A.; Denisenko, E. A.; Kravtsov, V. F.; Logofet, D. O.; Ovsyannikov, L. L.; Pak, S. B.; Pasekov, V. P.; Pisarenko, N. F.; Razzhevskii, V. N.; Sarancha, D. A.; Svirezhev, Yu. M.; Semenov, M. A.; Tarko, A. M.; Shmidt, D. A.) ★ Математические модели экосистем. (Russian) [Mathematical models of ecosystems] Экологические и демографические последствия ядерной войны. [Ecological and demographic consequences of a nuclear war] Edited and with a foreword by A. A. Dorodnitsyn. "Nauka", Moscow, 1986. 176 pp. (Summary) 89a:92054 92A17
- Fesenko, V. I.** Calculation of a resultant. (Russian) *Methods for solving nonlinear problems, and data processing* (Russian), 84-86, 111, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1986. (see 89f:00011) 12D99
- Fet, Ya. I.** The investigations of L. V. Kantorovich in the area of computer architecture. (Russian) *Optimizatsiya No. 40* (57) (1987), 17-25, 159. (Summary) 89b:01041 01A60 (01A70, 68-03)
- Fethi, N.** (with Abdel-Salam, M.; El-Sayed, E. M.) The use of integral cycle switching for control of three-phase induction motors. (Russian summary) *Systems Sci.* 12 (1986), no. 1-2, 123-143 (1987). (Not in MR) 93C75 (93B50)
- Fetisov, V. G.** On a problem of estimation for the regularization parameter for the approximate solution of Uryson equations of the first kind. (Russian) *Problems in functional analysis* (Russian), 106-113, 120, *Petrozavodsk. Gos. Univ., Petrozavodsk*, 1985. (S. Burýšek) 89c:45010 45G05 (45L10, 47H15, 65R20)
- Fettweis, A.** (with Basu, Sankar) Test for two-dimensional scattering Hurwitz polynomials. *Circuits Systems Signal Process.* 3 (1984), no. 2, 225-242. (John Maroulas) 89j:93097 93D25 (30C10, 94A99)
- A new approach to Hurwitz polynomials in several variables. *Circuits Systems Signal Process.* 5 (1986), no. 4, 405-417. (Yun Qing Shi) 89d:93030 93B25 (32A15, 93C35, 94C05)
- Feuer, Arie** (with Tarrab, Moshe) Convergence and performance analysis of the normalized LMS algorithm with uncorrelated Gaussian data. *IEEE Trans. Inform. Theory* 34 (1988), no. 4, 680-691. (Summary) 89j:93148 93E25 (65C99)
- Feuerverger, Andrey** Empirical saddlepoint convergence. *C. R. Math. Rep. Acad. Sci. Canada* 10 (1988), no. 3, 149-153. (Summary) 89b:62080 62G05 (60F99, 62E20)
- (with Ghosh, Sucharita) An asymptotic Neyman-Pearson type result under symmetry constraints. *Comm. Statist. Theory Methods* 17 (1988), no. 5, 1557-1564. (František Rublík) 89k:62029 62F03
- A bound for estimation in nonlinear time series models by independence testing methods. *Statist. Probab. Lett.* 6 (1988), no. 4, 237-241. (S. M. Pandit) 89c:62117 62M10
- Feurer, Reinhard** (with Janko, Wolfgang H.) Eine Studie zur Beurteilung der sprachlichen Eignung der Programmiersprachen BASIC, PASCAL, APL, APL2, LISP und PROLOG zur Programmierung regelbasierter Systeme. [A study to assess the linguistic suitability of the programming languages BASIC, PASCAL, APL, APL2, LISP and PROLOG for the programming of rule-based systems] *Ökonomie und Mathematik*, 355-364, Springer, Berlin-New York, 1987. (see 89j:90002) 68T25
- Feustel, J.** Representation of Picard modular forms by theta constants. *Rev. Roumaine Math. Pures Appl.* 33 (1988), no. 4, 275-281. (Rolf Berndt) 89i:11059 11F55 (11F46, 32N10)
- Feyel, Denis** Sur la méthode de Picard (EDO et EDS). [On the Picard method (ODE and SDE)] *Séminaire de Probabilités, XXI*, 515-519, *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (Federico Marchetti) 89i:60125 60H10 (34A10, 34F05)
- (with de La Pradelle, A.) Perturbations complexes de diffusions. (English summary) [Complex perturbations of diffusions] *Stochastics* 22 (1987), no. 3-4, 325-335. (Ross Pinsky) 89a:35062 35J15 (47D07, 60J60)
- (with de La Pradelle, A.) Sur certaines perturbations non linéaires du laplacien. (English summary) [On some linear perturbations of the Laplacian] *J. Math. Pures Appl.* (9) 67 (1988), no. 4, 397-404. (Maurice Gauthier) 89k:35091 35J65 (35J05)
- Feyerabend, Paul** see **Primas, Hans**, 89k:81004
- Feynman, Richard P.** Negative probability. *Quantum implications*, 235-248, *Routledge & Kegan Paul*, London, 1987. (see 89m:81006) 81B05
- see also **Ginzburg, V. L.**, (Not in MR)
- Fouzou, Loula** (with Arminjon, Paul; Dervieux, Alain; Steve, Herve; Stoufflet, Bruno) Nonoscillatory schemes for multidimensional Euler calculations with unstructured grids.



- Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 1–10, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see 89j:35007) 76–08
- Fiacca, A.** (with Averna, D.) Some results on theorems of G. Scorza Dragoni and L. Tibaldo in abstract spaces. (Italian. English summary) *Riv. Mat. Univ. Parma* (4) **12** (1986), 217–225 (1987). (Cristina Maria Di Bari) **89a:26017** 26B05 (49A50)
- Fiacco, Anthony V.** (with Kyparisis, Jerzy) Generalized convexity and concavity of the optimal value function in nonlinear programming. *Math. Programming* **39** (1987), no. 3, 285–304. (Thomas W. Reiland) **89f:90168** 90C31
- (with Kyparisis, Jerzy) Computable bounds on parametric solutions of convex problems. *Math. Programming* **40** (1988), no. 2 (Ser. A), 213–221. (Jacques A. Ferland) **89c:90084** 90C25 (90C30)
- Fiala, Petr** (with Kurtevořová, Sylva) Multicriterial outranking method with ordinal information on criteria and variants. (Czech. English summary) *Ekonom.-Mat. Obzor* **24** (1988), no. 2, 176–182. (Not in MR) 90C31
- (with Kurtevořová, Sylva; Vopálková, Eliška) Solution approaches to multicriterial one-machine scheduling problems. (Czech. English summary) *Ekonom.-Mat. Obzor* **24** (1988), no. 3, 320–333. (Not in MR) 90B35
- Fialko, S. Yu.** (with Amiro, I. Ya.; Zarutskii, V. A.; Revutskii, V. N.; Skosarenko, Yu. V.; Telalov, A. I.) ★ Колебания ребристых оболочек вращения. (Russian) [Vibrations of ribbed shells of revolution] “*Naukova Dumka*”, Kiev, 1988. 172 pp. ISBN 5-12-009319-1 (Summary) **89h:73034** 73L20 (73–08, 73K25)
- Fialkow, Lawrence A.** The range inclusion problem for elementary operators. *Michigan Math. J.* **34** (1987), no. 3, 451–459. (A. R. Sourour) **89a:47052** 47B47 (47D25)
- Closures of similarity orbits of Hilbert space operators. *Surveys of some recent results in operator theory*, Vol. I, 169–219, *Pitman Res. Notes Math. Ser.*, 171, Longman Sci. Tech., Harlow, 1988. (D. A. Herrero) **89f:47001** 47–02 (47A55, 47A65)
- (with Curcio, Raul E.) Similarity, quasimilarity, and operator factorizations. *Trans. Amer. Math. Soc.* **314** (1989), no. 1, 225–254. (D. A. Herrero) **89k:47001** 47A05 (47A10, 47A30, 47A53, 47A62, 47B37)
- Fialowski, A.** (with Feigin, B. L.) Cohomology of the infinite-dimensional Lie algebra  $L_1$  with nontrivial coefficients. *Bull. Amer. Math. Soc. (N.S.)* **17** (1987), no. 2, 333–337. (Janusz Grabowski) **89b:17016** 17B56 (17B10, 17B65, 58H10)
- Fich, Faith E.** (with Meyer auf der Heide, Friedhelm; Wigderson, Avi) Lower bounds for parallel random-access machines with unbounded shared memory. *Advances in computing research*, Vol. 4, 1–15, *JAI, Greenwich, CT*, 1987. (Daniel Leivant) **89e:68031** 68Q10 (68Q15)
- (with Ragde, Prabhakar; Wigderson, Avi) Simulations among concurrent-write PRAMs. *Algorithmica* **3** (1988), no. 1, 43–51. (Norbert Blum) **89f:68070** 68U20 (68Q25)
- (with Ragde, Prabhakar; Wigderson, Avi) Relations between concurrent-write models of parallel computation. *SIAM J. Comput.* **17** (1988), no. 3, 606–627. (Helmut Alt) **89f:68036** 68Q10 (68Q05, 68Q25)
- Fichera, Gaetano** A characteristic property of the sphere in  $R^n$ . (Italian) *Atti Accad. Sci. Ist. Bologna Cl. Sci. Fis. Mat.* (14) **2** (1984/85), 235–244 (1986). (From the introduction) **89h:31004** 31B05
- Unification of global and local existence theorems for holomorphic functions of several complex variables. (Italian summary) *Atti Accad. Naz. Lincei Mem. Cl. Sci. Fis. Mat. Natur. Sez. Ia* (8) **18** (1986), no. 3, 59–83. (M. Hervé) **89c:32040** 32F10
- Some remarks on potential theory. (Italian. English summary) *Boll. Un. Mat. Ital. A* (7) **2** (1988), no. 3, 401–404. (Summary) **89m:31006** 31B20 (35C10)
- Fichet, Bernard** The role played by  $L_1$  in data analysis. *Statistical data analysis based on the  $L_1$ -norm and related methods* (Neuchâtel, 1987), 185–193, North-Holland, Amsterdam-New York, 1987. (P. A. K. Covey-Crump) **89f:62071** 62G99 (46N05)
- Fichtner, K.-H.** (with Freudenberg, W.) Point processes and the position distribution of infinite boson systems. Proceedings of the symposium on statistical mechanics of phase transitions—mathematical and physical aspects (Trebson, 1986). *J. Statist. Phys.* **47** (1987), no. 5–6, 959–978. (B. S. Nakshatryan) **89f:82009** 82A15 (60G55, 81D05)
- (with Schmidt, M.) Approximation of a continuous system by point systems. *Serdica* **13** (1987), no. 4, 396–402. (Walter Wurmuth) **89f:60062**; **EA 89m** 60H15 (60G60)
- Fickert, Wilton** A mathematical problem from detonation theory. *Quart. Appl. Math.* **46** (1988), no. 3, 459–471. (A. R. Manwell) **89h:76070** 76L05 (73D05, 80A25)
- Fiddy, Michael A.** (with Wombell, Richard J.; Byrne, Charles L.) An optimisation technique for the inversion of scattered field data. *Wave phenomena* (San Jose, CA, 1988), 92–99, Springer, New York-Berlin, 1989. (see 89g:00020) 78A45
- Fidler, J. K.** see **Kremer, H.** **89f:65033**
- Fiedeldey, Harry** (with Fabre de la Ripelle, Michel) An exact integro-differential equation for the ground state of a many-body system with central two-body interactions. (French summary) *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers Sci. Terre* **302** (1986), no. 13, 809–812. (Summary) **89i:81131** 81F05 (81H10)
- (with Fabre de la Ripelle, Michel) An integro-differential equation describing the bound state of a many bosons system. (French summary) *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers Sci. Terre* **302** (1986), no. 14, 851–853. (Summary) **89m:81179** 81F10
- Fiedler, Bernd** Global Hopf bifurcation in reaction diffusion systems with symmetry. *Dynamics of infinite-dimensional systems* (Lisbon, 1986), 81–104, NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 37, Springer, Berlin-New York, 1987. (Piero de Montoni) **89b:35072** 35K57 (35B32, 58F14, 58F35, 92A40)
- (with Brunovský, Pavol) Connecting orbits in scalar reaction diffusion equations. *Dynamics reported*, Vol. 1, 57–89, Teubner, Stuttgart, 1988. (Yuzo Hosono) **89j:58071** 58F12 (35K57, 58F15)
- (with Angenent, S. B.) The dynamics of rotating waves in scalar reaction diffusion equations. *Trans. Amer. Math. Soc.* **307** (1988), no. 2, 545–568. (Peter A. Clarkson) **89b:35158** 35K57 (58F12)
- Fiedler, Brian H.** Conditions for laminar flow in geophysical vortices. *J. Atmospheric Sci.* **46** (1989), no. 2, 252–259. (Summary) **89m:76040** 76E20 (76C99, 86A05, 86A10)
- Fiedler, Frank** Oscillation criteria for a special class of  $2n$ -order ordinary differential equations. *Math. Nachr.* **131** (1987), 205–218. (D. Hinton) **89b:34073** 34C10
- Fiedler, Heinz** On the asymptotic behavior of the best  $L_\infty$ -approximation by polynomials. *Constr. Approx.* **3** (1987), no. 4, 377–388. (Summary) **89e:41040** 41A60
- Fiedler, M.** Doubly stochastic matrices and optimization. *Advances in mathematical optimization*, 44–51, Math. Res., 45, Akademie-Verlag, Berlin, 1988. (Ray C. Shiflett) **89i:15027** 15A51 (90C08)
- Some numerical aspects of Loewner matrices. *Numerical methods* (Miskolc, 1986), 165–189, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (M. Tismenetsky) **89g:15028** 15A57 (47B35, 65F99)
- (with Markham, Thomas L.) An inequality for the Hadamard product of an  $M$ -matrix and an inverse  $M$ -matrix. *Linear Algebra Appl.* **101** (1988), 1–8. (Gong Ning Chen) **89e:15029** 15A48 (15A18)
- (with Plák, Vlastimil) Loewner and Bezout matrices. *Linear Algebra Appl.* **101** (1988), 187–220. (A. Böttcher) **89e:15023** 15A24 (15A09, 47B99)
- Characterizations of Bezout and Hankel-Bezout matrices. *Linear Algebra Appl.* **105** (1988), 77–89. (A. Böttcher) **89f:15017** 15A57 (15A09, 15A30)
- (with Markham, Thomas L.) A characterization of the closure of inverse  $M$ -matrices. *Linear Algebra Appl.* **105** (1988), 209–223. (Ronald L. Smith) **89h:15006** 15A09 (15A48)
- Characterizations of  $MM$ -matrices. *Linear Algebra Appl.* **106** (1988), 233–244. (Thomas L. Markham) **89g:15021** 15A48
- (with Markham, Thomas L.) On the range of the Hadamard product of a positive definite matrix and its inverse. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 3, 343–347. (Gong Ning Chen) **89j:15022** 15A23 (15A45)
- Fiedler, Stuart L.** (with Curry, James H.) On the dynamics of Laguerre's iteration:  $Z^n - 1$ . *Phys. D* **30** (1988), no. 1–2, 124–134. (James D. Meiss) **89h:65076** 65H05 (58F08, 65D15, 70K99)
- Fiedler, Thomas** A characteristic class for totally real surfaces in the Grassmannian of two-planes in four-space. *Ann. Global Anal. Geom.* **4** (1986), no. 1, 121–132. (I. Vaisman) **89c:57029** 57R20 (32M10)
- Totally real embeddings of the torus into  $C^2$ . *Ann. Global Anal. Geom.* **5** (1987), no. 2, 117–121. (Lee Rudolph) **89f:57043** 57R52 (14H99, 32F99, 32H99)
- Fiedler-Ferrari, N.** (with Prado, C. P. C.) Dimensions of a strange attractor associated with the Ising model with competing interactions. *Phys. Lett. A* **135** (1989), no. 3, 175–178. (Summary) **89k:82101** 82A68 (58F13)
- Fiel, D.** Scaling for period doubling sequences with correlated noise. *J. Phys. A* **20** (1987), no. 11, 3209–3217. (Andrew C. Fowler) **89c:58088a** 58F14 (82A05)
- Corrigendum: “Scaling for period doubling sequences with correlated noise”. *J. Phys. A* **21** (1988), no. 4, 1123. (Andrew C. Fowler) **89c:58088b** 58F14 (82A05)
- Field, David A.** Mathematical problems in solid modeling: a brief survey. *Geometric modeling*, 91–107, *SIAM, Philadelphia, PA*, 1987. (see 89b:65010) 65D10
- Field, J. B. F.** (with Speed, F. E.; Speed, T. P.; Williams, J. M.) Biometrics in the CSIR: 1930–1940. Bicentennial history issue. *Austral. J. Statist.* **30** (1988), Special Vol. B, 54–76. (Editors) **89m:01088** 01A70
- Field, J. V.** Giovanni Battista Benedetti on the mathematics of linear perspective. *J. Warburg Courtauld Inst.* **48** (1985), 71–99. (J. F. Rigby) **89e:01014** 01A40 (51–03)
- Linear perspective and the projective geometry of Girard Desargues. (Italian summary) *Nuncius Ann. Storia Sci.* **2** (1987), no. 2, 3–40. (P. Bockstaele) **89g:01022** 01A45 (51–03)
- ★ Kepler's geometrical cosmology. *University of Chicago Press, Chicago, IL*, 1988. xx+243 pp. ISBN 0-226-24823-2 (William R. Shea) **89d:01021** 01A45
- Perspective and the mathematicians: Alberti to Desargues. *Mathematics from manuscript to print, 1300–1600* (Oxford, 1984), 236–263, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1988. (Craig G. Fraser) **89k:01010** 01A40
- Field, M. J.** (with Richardson, R. W.) Symmetry breaking and the maximal isotropy subgroup conjecture for reflection groups. *Arch. Rational Mech. Anal.* **105** (1989), no. 1, 61–94. (Reiner Lauterbach) **89m:58153** 58F14 (58C27, 58E07)
- Field, Richard J.** Experimental and mechanistic characterization of bromate-ion-driven chemical oscillations and traveling waves in closed systems. (Russian) *Oscillations and traveling waves in chemical systems* (Russian), 75–116, “Mir”, Moscow, 1988. (see 89f:92003) 92A09
- see also *Oscillations and traveling waves in chemical systems*, 89f:92003
- Fienberg, M.** see **Benzaouia, Abdellah**, 89c:93162
- Fienberg, Stephen E.** (with DeGroot, Morris H.) Comparing probability forecasters: basic binary concepts and multivariate extensions. *Bayesian inference and decision techniques*, 247–264, *Stud. Bayesian Econometrics Statist.*, 6, North-Holland, Amsterdam-New York, 1986. (D. V. Lindley) **89a:62018** 62B15 (62P99)
- (with Tanur, Judith M.) From the inside out and the outside in: combining experimental and sampling structures. (French summary) *Canad. J. Statist.* **16** (1988), no. 2, 135–151. (Not in MR) 62D05
- (with Tanur, Judith M.) Combining cognitive and statistical approaches to survey design. *Science* **243** (1989), no. 4894, part I, 1017–1022. (Not in MR) 92A25 (62D05)
- Fier, J. M.** (with Keller, H. B.) Equilibrium chaos and related parameter sequences. *Analyse mathématique et applications*, 235–244, Gauthier-Villars, Paris, 1988. (Introduction) **89i:58088** 58F13 (34C35, 73H05)
- Fieseler, Karl-Heinz** (with Kaup, Ludger) Intersection cohomology of  $q$ -complete complex spaces. *Proceedings of the conference on algebraic geometry* (Berlin, 1985), 83–104, Teubner-Texte Math., 92, Teubner, Leipzig, 1986. (Thomas Peternell) **89d:32027** 32C42 (32C35, 32F10)
- (with Kaup, Ludger) On the hard Lefschetz theorem in intersection homology for complex varieties with isolated singularities. *Aequationes Math.* **34** (1987), no. 2–3, 240–263. (K. Lamotte) **89c:14026** 14F45 (32C42, 32J99, 55N35)
- (with Kaup, Ludger) Vanishing theorems for the intersection homology of Stein spaces. *Math. Z.* **197** (1988), no. 2, 153–176. (Thomas Peternell) **89c:32030** 32C42 (32C35, 32F10)
- (with Kaup, Ludger) Theorems of Lefschetz type in intersection homology. I. The hyperplane section theorem. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 3, 175–195. (K. Lamotte) **89k:32024** 32C42 (14F99, 55N35)
- Fife, P. C.** (with Xiao, Ling) The generation and propagation of internal layers. *Nonlinear Anal.* **12** (1988), no. 1, 19–41. (Yoram Schiffmann) **89c:35078** 35K55 (35B25, 92A15, 92A40)
- (with Caginalp, G.) Dynamics of layered interfaces arising from phase boundaries. *SIAM J. Appl. Math.* **48** (1988), no. 3, 506–518. (Summary) **89d:80009** 80A20 (82A25)
- Figari, R.** (with Papanicolaou, George C.; Rubinstein, Jacob) Remarks on the point interaction approximation. *Hydrodynamic behavior and interacting particle systems* (Minneapolis, Minn., 1986), 45–55, *IMA Vol. Math. Appl.*, 9, Springer, New York-Berlin, 1987. (From the introduction) **89m:80002** 80A20 (35B99)

- Figu-Talamanca, Alessandro** (with Steger, Tim) Harmonic analysis on trees. *Symposia Mathematica*, Vol. XXIX (Cortona, 1984), 163–182, *Sympos. Math.*, 29, Academic Press, New York-London, 1987. (A. Korányi) **89k:22019** 22E35 (43A99)
- (with Cohen, Joel M.) Idempotents in the reduced  $C^*$ -algebra of a free group. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 779–782. (Bola O. Balogun) **89g:46095** 46L05 (22D25)
- Figiel, T.** (with Johnson, W. B.; Schechtman, G.) Random sign embeddings from  $l_p^r$ ,  $2 < r < \infty$ . *Proc. Amer. Math. Soc.* **102** (1988), no. 1, 102–106. (Summary) **89f:46041** 46B25 (47B10, 47B37, 47D30)
- (with Johnson, W. B.; Schechtman, G.) Factorizations of natural embeddings of  $l_p^r$  into  $L_p$ . *I. Studia Math.* **89** (1988), no. 1, 79–103. (R. C. James) **89g:46029** 46B20
- Figliola, M. A.** (with Romanelli, L.; Hirsch, F. A.) Deterministic chaos and natural phenomena. *J. Statist. Phys.* **53** (1988), no. 3–4, 991–994. (Not in MR) **58F13**
- Figotin, A. L.** Ergodic properties and essential selfadjointness of random matrix operators. (Russian) *Operators in function spaces and problems in function theory* (Russian), 13–27, 143, "Naukova Dumka", Kiev, 1987. (Anzelm Iwanik) **89g:47030** 47B37 (47B25, 82A05, 82A42)
- Figueira, Mário** (with Dias, João-Paulo) Time decay for the solutions of a nonlinear Dirac equation in one space dimension. *Ricerche Mat.* **35** (1986), no. 2, 309–316. (Thierry Cazenave) **89d:35152** 35Q20 (35B40, 81C05)
- (with Dias, João-Paulo) Global existence of solutions with small initial data in  $H^s$  for the massive nonlinear Dirac equations in three space dimensions. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 3, 861–874. (M. S. Agranovich) **89f:35181** 35Q20
- (with Dias, João-Paulo) Sur l'existence d'une solution globale pour une équation de Dirac non linéaire avec masse nulle. (English summary) [On the existence of a global solution for a nonlinear Dirac equation with zero mass] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 11, 469–472. (M. S. Agranovich) **89f:35182** 35Q20
- Figueiras-Vidal, A. R.** (with Páez-Borrillo, J. M.; Alcázar-Fernández, J.; Ruiz-Mezcua, B.) Using a priori information and  $L_1$ -norm minimization in Cadzow's and Prony's line spectral analysis methods. *Mathematics in signal processing* (Bath, 1985), 121–131, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see **89b:94004**) 94A14
- de Figueiredo, D. G.** On superlinear elliptic problems with nonlinearities interacting only with higher eigenvalues. Nonlinear Partial Differential Equations Conference (Salt Lake City, UT, 1986). *Rocky Mountain J. Math.* **18** (1988), no. 2, 287–303. (Ricardo S. Kubrusly) **89f:35080** 35J65
- see also Partial differential equations, **89c:35002**
- Figueiredo, Leila** Calculus of principally twisted vertex operators. *Mem. Amer. Math. Soc.* **69** (1987), no. 371, iv+58 pp. (Georgia M. Benkart) **89c:17029** 17B67
- Figurski, Jan** Cybernetics of preventive replacements in NNUD devices. (Polish. English and Russian summaries) *Postępy Cybern.* **11** (1988), no. 1, 15–30. (Not in MR) **90B25**
- Fikhtengolts, G. M.** see Vinogradov, S. A. et al., **89m:01112**
- Finkel, Thomas** Estimation of interaction potentials of Gibbsian point processes. *Statistics* **19** (1988), no. 1, 77–86. (Summary) **89g:62147** 62M09 (60G55)
- el-Fiky, Ahmed** see El-Fiky, Ahmed
- Fil, B. N.** (with Samoilenko, V. Gr.) Investigation of the complete integrability and of the symmetry algebra of a dynamical system. (Russian) *Problems of the stability of integral manifolds in equations of mathematical physics* (Russian), 74–77, iv, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) **89i:58165** 58G37 (35Q20, 58F05, 58F07)
- (with Prikratpat-skii, A. K.; Pritula, N. N.) The quantum Lie algebra of currents—the universal algebraic structure of symmetries of completely integrable dynamical systems. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 8, 16–19, 88. (Summary) **89b:58090** 58F07 (17B65, 58F35, 81D15)
- (with Samoilenko, V. Gr.) Algebras of symmetries of completely integrable dynamical systems. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 2, 192–198, 271; translated in *Ukrainian Math. J.* **40** (1988), no. 2, 164–168. (B. G. Konopel'chenko) **89m:58101** 58F07 (35Q20, 58F35)
- Fila, Marek** (with Filo, Ján) Stabilization of solutions of certain one-dimensional degenerate diffusion equations. (Russian summary) *Math. Slovaca* **37** (1987), no. 2, 217–229. (From the introduction) **89m:35105** 35K55 (35B35, 35K65, 92A15)
- (with Filo, Ján) Blow up above stationary solutions of certain nonlinear parabolic equations. *Comment. Math. Univ. Carolin.* **29** (1988), no. 1, 179–193. (Song Mu Zheng) **89d:35015** 35B35 (35B30, 35K55)
- Filali, A. B.** (with Walker, W. R.) System analysis of an irrigation main canal. *Computer methods and water resources*, Vol. 2 (Rabat, 1988), 53–64, *Comput. Mech., Southampton*, 1988. (see **89g:76003b**) 90B10 (92A90)
- Filanovsky, I. M.** (with Qiu, Shui Sheng; Stromsmoe, K. A.) On one combination of the harmonic balance method and perturbation techniques. *Control Theory Adv. Tech.* **3** (1987), no. 3, 189–195. (Not in MR) **93C10**
- (with Qiu, Shui Sheng) On verification of stability of periodic oscillations in nonlinear systems. *IEEE Trans. Circuits and Systems* **34** (1987), no. 12, 1605–1607. (A. de Castro Brzezicki) **89c:70049** 70K20 (65L10)
- Remarks on design of emitter-coupled multivibrators. *IEEE Trans. Circuits and Systems* **35** (1988), no. 6, 751–755. (Not in MR) **94C05**
- (with Qiu, Shui Sheng) On verification of limit cycle stability in autonomous nonlinear systems. *IEEE Trans. Circuits and Systems* **35** (1988), no. 8, 1062–1064. (Summary) **89i:34032** 34C05 (34A34, 34C15)
- Filaretov, V. F.** (with Korzun, A. I.) Identification of the changing load mass of a manipulated object. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 4, 112–117; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 6, 182–187, 208 (Russian). (Not in MR) **93B30** (93C40)
- Filaretov, V. V.** Recursive methods for expressing the determinants of a nondirected graph. (Russian. English summary) *Teoret. Élektronika*. No. 40 (1986), 6–12, 148. (Not in MR) **94C15** (05C50, 94C05)
- Filaset, Michael** The irreducibility of almost all Bessel polynomials. *J. Number Theory* **27** (1987), no. 1, 22–32. (E. Grosswald) **89a:11105** 11R09 (12E05, 33A40)
- Prime values of irreducible polynomials. *Acta Arith.* **50** (1988), no. 2, 133–145. (G. Greaves) **89g:11079** 11N32
- Irreducibility criteria for polynomials with nonnegative coefficients. *Canad. J. Math.* **40** (1988), no. 2, 339–351. (K. Kiyek) **89h:12002** 12D05 (11R09)
- An elementary approach to short interval results for  $k$ -free numbers. *J. Number Theory* **30** (1988), no. 2, 208–225. (Grigori Kolesnik) **89k:11083** 11N25 (11N37)
- Filator, A. N.** (with Il'in, A. A.) Unique solvability of the Navier-Stokes equations on a two-dimensional sphere. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 1, 18–22; translated in *Soviet Math. Dokl.* **38** (1989), no. 1, 9–13. (Athanasios Cotsiolis) **89k:35183** 35Q10 (76D05, 76U05)
- Filator, O. P.** An estimate for the solutions of systems of differential equations on an asymptotically large segment by the averaging method. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 3, 542–544, 552. (V. G. Kolomiets) **89g:34058** 34C29
- (with Khapaev, Mikhail Mikhailovich) Stability of differential inclusions with multivalued perturbations. (Russian) *Mat. Zametki* **43** (1988), no. 3, 346–355, 429; translated in *Math. Notes* **43** (1988), no. 3–4, 199–204. (Pavel Krbec) **89d:34082** 34D10 (34A60)
- Filator, O. A.** Analysis of the high-frequency vibrations of a viscoelastic rod. (Russian) *Mathematical physics* (Russian), 122–128, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (see **89c:00019**) 73F15
- Fil'chakova, V. P.** Solution of a boundary value problem for a linear system of second-order ordinary differential equations with variable coefficients. (Russian) *Mathematical physics* (Russian), 35–38, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (see **89c:00019**) 34B05
- Fild, R.** see Field, Richard J.
- Filé, Gilberto** Classical and incremental attribute evaluation by means of recursive procedures. Eleventh colloquium on trees in algebra and programming (Nice, 1986). *Theoret. Comput. Sci.* **53** (1987), no. 1, 25–65. (Gheorghe Paun) **89i:68074** 68Q50 (68Q45, 68Q55)
- The relation of two patterns with comparable languages. *STACS 88* (Bordeaux, 1988), 184–192, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (Summary) **89c:68057** 68Q45
- The relation of two patterns with comparable languages. (French summary) *STACS 88* (Bordeaux, 1988). *RAIRO Inform. Theor. Appl.* **23** (1989), no. 1, 45–57. (Summary) **89m:68076** 68Q45
- Filip, László** (with Maurer, I. Gy.) Some remarks concerning fuzzy similarities and partitions. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics* (Poznań, 1986), 33–38, *Wy dawn. Politech. Poznań, Poznań*, 1987. (Summary) **89d:03055** 03E72
- (with Maurer, Gyula I.) Fuzzy congruences and compatible fuzzy partitions. *Fuzzy Sets and Systems* **29** (1989), no. 3, 357–361. (Summary) **89k:03066** 03E72
- drigo Filho, E.** see Drigo Filho, E.
- venâncio Filho, F.** see Venâncio Filho, F.
- da Rocha Filho, G.** see da Rocha Filho, G.
- eufrásio Filho, Heronides** see Eufrásio Filho, Heronides
- coutinho-Filho, Mauricio D.** see Coutinho-Filho, Mauricio D.
- silva Filho, O. S.** see Silva Filho, O. S.
- rocha Filho, T. M.** see Rocha Filho, T. M.
- barroso Filho, Wilton** see Barroso Filho, Wilton
- Filimonov, A. B.** The structure of control and measurement channels in infinite-dimensional dynamical systems. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 5 (1986), 58–62, 97. (Summary) **89k:93117** 93C25
- Filimonov, A. P.** (with Tsekanovskii, E. R.) Automorphic-invariant operator colligations and the factorization of their characteristic operator functions. (Russian) *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 4, 94–95. (Yu. M. Arlins'kii) **89h:47012** 47A45 (47A56, 47A68)
- Filimonov, M. Yu.** see Analytic and numerical methods for studying problems in continuum mechanics, **89h:76002**
- Filin, A. G.** Transposition of matrices on a vector pipeline computer. (Russian) *Voprosy Kibernet. (Moscow)* No. 135 (1988), 73–86. (G. Maess) **89c:65166** 65V05 (65F30)
- Filin, A. V.** (with Volkovskii, M. I.) Terminating birth-and-death processes. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 9, 62–67. (Summary) **89a:60200** 60J80 (60K10)
- Filinkov, A. I.** (with Mel'nikova, I. V.) A connection between the well-posedness of the Cauchy problem for an equation and for a system in a Banach space. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 2, 280–284; translated in *Soviet Math. Dokl.* **37** (1988), no. 3, 647–651. (A. G. Baskakov) **89g:34092** 34G10 (34A10, 47A50)
- Filipczak, Małgorzata** On generators for Borel sets. *Real Anal. Exchange* **13** (1987/88), no. 1, 194–203. (J. G. Ceder) **89b:26004** 26A21 (28A05, 54H05)
- Filipec, Pavel** (with Demuth, Oswald) Differentiation of constructive functions of a real variable and relative computability. *Mathematical logic and its applications* (Druzhba, 1986), 81–106, *Plenum, New York-London*, 1987. (A. Kučera) **89c:03107** 03F65 (03D30, 26A24)
- Filipescu, A.** On a system of functional equations. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* **1986**, November, 85–88. (F. W. Carroll) **89d:39009** 39B40 (39B50)
- Filipović, Vojislav Ž.** (with Kovačević, Branko D.) Robust real-time identification of linear systems with correlated noise. *Internat. J. Control* **48** (1988), no. 3, 993–1010. (Not in MR) **93E12** (93C05, 93C30)
- Filipowicz, I.** (with Kwiatkowski, J.; Lemańczyk, M.) Approximation of  $Z_2$ -cocycles and shift dynamical systems. *Publ. Mat.* **32** (1988), no. 1, 91–110. (Adam Fieldsteel) **89f:28038** 28D05
- Filipenko, V. I.** Multiplicity of the spectrum of a selfadjoint differential operator with slowly varying coefficients. (Russian) *Functional analysis*, No. 26 (Russian), 141–146, *Ulyanovsk. Gos. Ped. Inst., Ulyanovsk*, 1986. (Pavel Knyazev) **89f:47072** 47E05 (34B25)
- Filippini, Piero** (with Brugina, Odoardo) Functions of the Kronecker square of the matrix  $Q$ . *Applications of Fibonacci numbers* (San Jose, CA, 1986), 69–76, *Kluwer Acad. Publ., Dordrecht*, 1988. (J. S. Frame) **89f:15011** 15A24
- (with Freitag, Herta T.) On the representation of integral sequences  $\{F_n/d\}$  and  $\{L_n/d\}$  as sums of Fibonacci numbers and as sums of Lucas numbers. *Applications of Fibonacci numbers* (San Jose, CA, 1986), 97–112, *Kluwer Acad. Publ., Dordrecht*, 1988. (M. A. Owens) **89j:11013** 11B34 (11B37, 11B39)
- (with Horadam, A. F.) A matrix approach to certain identities. *Fibonacci Quart.* **26** (1988), no. 2, 115–126. (A. N. Philippou) **89c:15040** 15A99
- Filippov, A. F.** Determination of characteristic exponents of linear systems with quasiperiodic coefficients. (Russian) *Mat. Zametki* **44** (1988), no. 2, 231–243, 287; translated in



- Math. Notes* **44** (1988), no. 1-2, 609-616. (Liang Zhongchao) **89j:34065** 34D05
- Filippov, A. T.** ★ Gauge theories of particles, string and corresponding fields. With a Russian summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E2-87-806. *Joint Inst. Nuclear Res., Dubna*, 1987. 21 pp. (Summary) **89b:81125** 81E13 (81E30)
- Gauge formulation of theories of relativistic particles and strings. *JETP Lett.* **46** (1987), no. 9, 425-428 (1988); translated from *Pisma Zh. Eksp. Teoret. Fiz.* **46** (1987), no. 9, 337-340 (Russian). (Summary) **89b:81104** 81E13 (81E30)
- ★ Введение в теорию суперструн. (Russian) [Introduction to superstring theory] Лекции для Молодых Ученых [Lectures for Young Scientists], R2-88-188. *Ob'ed. Inst. Yadernykh Issled., Dubna*, 1988. 79 pp. (Raiko Zaikov) **89j:81175** 81E99 (81-02, 81E30)
- Filippov, B. V.** An integral variational principle of the linear thermodynamics of irreversible processes in evolution problems of a viscous fluid. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 3, 82-85, 129. (Summary) **89c:80008** 80A20
- Filippov, G. F.** (with Vasilevskii, V. S.) Effective Hamiltonians of the  $Sp(6, R)$  model for magic nuclei. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (Jarmala, 1985), 572-582, "Nauka", Moscow, 1986. (see **89d:81002**) 81G30
- Filippov, I. G.** (with Cheban, V. G.) ★ Математическая теория колебаний упругих и вязкоупругих пластин и стержней. [Mathematical theory of the oscillations of elastic and viscoelastic plates and rods] "Shtiintsa", Kishinev, 1988. 190 pp. ISBN 5-376-00330-2 (J. L. Nowinski) **89i:73049** 73K12 (73-02, 73F99)
- Filippov, O. G.**  $C^*$ -algebras  $A$  over which the Hilbert module  ${}_2(A)$  is self-dual. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 4, 74-76. (P. Saworotnow) **89c:46124** 46L05 (46H25, 46K15)
- Filippov, S. S.** see Dekker, K., **89c:65001**
- Filippov, V. M.** ★ Вариационные принципы для непотенциальных операторов. (Russian) [Variational principles for nonpotential operators] *Univ. Druzhby Narodov*, Moscow, 1985. 207 pp. (R. Schumann) **89c:47078** 47H15 (35A15, 47A50, 47B99, 49G05)
- Classes of operators in a variational method for solving nonlinear equations. (Russian) *Analysis of information-computing systems* (Russian), 98-106, *Univ. Druzhby Narodov*, Moscow, 1986. (C. Ilioi) **89c:65058** 65J15 (47H17)
- On a variational principle for the equation  $-\Delta u + \lambda u = g(x)$ . (Russian) *Current problems in mathematical physics and computer software* (Russian), 117-121, *Univ. Druzhby Narodov*, Moscow, 1986. (J. Kačur) **89a:35063** 35J20 (49G10)
- Semibounded solutions of inverse problems of the calculus of variations. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 9, 1599-1607, 1653. (L. von Wolfersdorf) **89h:35075** 35G15 (35R30, 47A50, 49A99)
- Filippov, V. T.** On the central ideals of a free finitely generated alternative algebra. (Russian) *Algebra i Logika* **25** (1986), no. 4, 470-491, 495. (Bogdan J. Osowski) **89a:17033** 17D05
- (with Golubynatnikov, V. P.; Smirnov, G. I.) Chronogeometric and topological structures of spaces with variable signature of the metric. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 5, 1106-1108; translated in *Soviet Phys. Dokl.* **33** (1988), no. 4, 254-255. (László Szabó) **89f:83071** 83C99 (53C50)
- Filippov, V. V.** On a theorem of Kneser. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 12, 2068-2074, 2204. (Halina Frankowska) **89d:34017** 34A34 (34A60, 49E15)
- Two remarks on the theory of spaces of solutions of ordinary differential equations. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 4, 53-55; translated in *Moscow Univ. Math. Bull.* **43** (1988), no. 4, 39-41. (A. Halanay) **89m:34036** 34C05
- Filippova, T. F.** (with Kurzhanskiĭ, A. B.) Dynamics of the set of viable trajectories to a differential inclusion: the evolution equation. (Russian summary) With the Russian original. *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **17** (1988), no. 3, 137-144, P1-P8. (Leszek Zaremba) **89c:49051** 49E15 (34A60, 49E10)
- Filippovich, A. P.** Analysis of mixed schemes of the finite element method in problems on the deformation of shallow shells. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 5, 741-754, 783. (R. Kodnár) **89f:65121** 65N30 (73L15)
- Filippovich, S. N.** (with Matatov, V. I.) Autonomous Hamiltonian systems with univalent moving singularities. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 3, 534-535, 551. (Summary) **89c:34009** 34A20 (34C05, 58F05)
- Filipov, V. F.** Periodic solutions of the Riccati equation. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **32** (1988), no. 3, 208-211, 284. (D. N. Cheban) **89g:34053** 34C25 (34A10)
- Filk, Thomas** (with Römer, H.) Topological weights and combinatorial unitarity in first and second quantization. *Z. Phys. C* **39** (1988), no. 2, 203-213. (Sorin Marčulescu) **89g:81072** 81E99 (05C99, 58F06, 81D07, 81E30)
- Fili, James Allen** Bounds on the coarseness of random sums. *Ann. Probab.* **16** (1988), no. 4, 1644-1664. (Zheng Yan Lin) **89j:60030** 60E15 (60G50)
- Fillman, Paul** Extremum problems for zonotopes. *Geom. Dedicata* **27** (1988), no. 3, 251-262. (P. McMullen) **89k:52009** 52A25
- Fila, Ján** (with Fila, Marek) Stabilization of solutions of certain one-dimensional degenerate diffusion equations. (Russian summary) *Math. Slovaca* **37** (1987), no. 2, 217-229. (From the introduction) **89m:35105** 35K55 (35B35, 35K65, 92A15)
- (with Fila, Marek) Blow up above stationary solutions of certain nonlinear parabolic equations. *Comment. Math. Univ. Carolin.* **29** (1988), no. 1, 179-193. (Song Mu Zheng) **89d:35015** 35B35 (35B30, 35K55)
- A nonlinear diffusion equation with nonlinear boundary conditions: method of lines. (Russian summary) *Math. Slovaca* **38** (1988), no. 3, 273-296. (Antonino Maugeri) **89m:35118** 35K60
- Filonenko, L. A.** (with Zevin, Aleksandr Aronovich) Periodic oscillations of a pendulum whose point of suspension undergoes horizontal vibrations. (Russian) *Prikl. Mekh.* **24** (1988), no. 8, 103-107, 134; translated in *Soviet Appl. Mech.* **24** (1988), no. 8, 821-825. (I. A. Galutlin) **89m:70043** 70K20
- Filonovich, S. R.** Experiment in I. Newton's *Principia*. (Russian) *Voprosy Istor. Estestvozn.* (Tekhn. i Tekhn. **1987**, no. 4, 57-67. (Peeter Müürsepp) **89d:01022** 01A45 (70-03)
- Fil'shtinskii, V. A.** (with Litvinets, P. D.)  $\lambda$ -transformation of trigonometric polynomials and entire functions. (Russian) *Investigations in the theory of the approximation of functions* (Russian), 59-68, 122, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (Todor G. Genchev) **89g:42001** 42A05 (42A70, 42A82)
- Filter, Wolfgang** On measure representations of Riesz spaces. *Atti Sem. Mat. Fis. Univ. Modena* **35** (1987), no. 1, 77-94. (Dan Vuza) **89m:46008** 46A40 (28A33, 28C15)
- Inductive limits of Riesz spaces. *Generalized functions, convergence structures, and their applications* (Dubrovnik, 1987), 383-392, *Plenum*, New York-London, 1988. (D. H. Fremlin) **89k:46008** 46A40 (06F20, 46A12)
- (with Weber, Karl) Normal measures on Stonian spaces with  $\sigma$ -compact and paracompact support. *Math. Nachr.* **136** (1988), 91-98. (R. B. Kirk) **89h:28019** 28C15 (46E27, 46G99)
- Finanov, A. P.** A proof of the existence and uniqueness of the solution of the problem  $\Delta_2$  for a general equation of hyperbolic type with the Karol operator. (Russian) *Differential equations and mathematical physics* (Russian), 110-114, *Kuibyshev. Gos. Ped. Inst., Kuibyshev*, 1985. (see **89f:35006**) 35L80
- Finashina, G. N.** (with Semenova, S. V.) ★ Введение в теорию суперструн. (Russian) [Introduction to superstring theory] With a contribution by I. V. Volovich and Yu. N. Drozhzhinov. Библиография Ученых СССР. Серия Математика [Bibliography of Scientists of the USSR. Mathematics Series], 17. "Nauka", Moscow, 1987. 81 pp. (Editors) **89b:01042** 01A70
- Finat, J.** A combinatorial presentation of the variety of complete quadrics. *Géométrie algébrique et applications, I* (La Rabida, 1984), 59-77, *Travaux en Cours*, 22, Hermann, Paris, 1987. (Sebastià Xambó Descamps) **89c:14076** 14N05 (14E15)
- Finch, P. D.** Bell's inequality, probability modelling and quantum correlation experiments. A celebration of applied probability. *J. Appl. Probab.* **1988**, Special Vol. 25A, 139-150. (T. W. Barrett) **89k:81008** 81B05 (60K99)
- Finch, Stephen J.** (with Thode, Henry C., Jr.; Mendell, Nancy R.) Simulated percentage points for the null distribution of the likelihood ratio test for a mixture of two normals. (French summary) *Biometrics* **44** (1988), no. 4, 1195-1201. (Not in MR) 62F03
- (with Thode, Henry C., Jr.; Liu, Hung-Kung) Large sample power of absolute moment tests. *Comm. Statist. Simulation Comput.* **17** (1988), no. 4, 1453-1458. (Not in MR) 62F03
- Fincl, Kalmi** On the asymptotic behavior of the  $G_2^*$ -mean and the  $D$ -mean of two functions from number theory. (Serbo-Croatian. English summary) *Akad. Nauka Umjet. Bosne Hercegov. Rad. Odjel. Tehn. Nauka* No. 11 (1987), 43-48. (Aleksandar Ivić) **89a:11092** 11N37 (11P21)
- $G_2^*$ -summability of the derivatives of the spectral function of the Laplace operator. (Serbo-Croatian. French summary) *Akad. Nauka Umjet. Bosne Hercegov. Rad. Odjel. Tehn. Nauka* No. 11 (1987), 49-56. (G. V. Rozenblyum) **89b:35128** 35P20 (35J10, 35P10)
- Finck von Finckenstein, Karl Graf** Über Differenzenverfahren zur numerischen Lösung stark gekoppelter Systeme nichtlinearer Diffusionsgleichungen. (English summary) [On difference methods for the numerical solution of strongly coupled systems of nonlinear diffusion equations] *Z. Naturforsch. A* **42** (1987), no. 10, 1133-1140. (Rolf Jeltsch) **89g:65117** 65M10
- Findley, D.** (with Fymat, A. L.; Greenfield, M. A.; Lo, S. C.) Optimization of the radiotherapy treatment plan. *Appl. Math. Comput.* **27** (1988), no. 2, 117-146. (Summary) **89d:92012** 92A07
- Fine, Benjamin** (with Levin, Frank; Rosenberger, Gerhard) Free subgroups and decompositions of one-relator products of cyclics. II. Normal torsion-free subgroups and FPA decompositions. *J. Indian Math. Soc. (N.S.)* **49** (1985), no. 3-4, 237-247 (1987). (Kathryn J. Horadam) **89c:20044** 20F05 (20E06)
- Fuchsian embeddings in the Bianchi groups. *Canad. J. Math.* **39** (1987), no. 6, 1434-1445. (Jochim Schwermer) **89a:11048** 11F06 (20H10, 57M99)
- (with Rosenberger, Gerhard) Complex representations and one-relator products of cyclics. *Geometry of group representations* (Boulder, CO, 1987), 131-147, *Contemp. Math.*, 74, Amer. Math. Soc., Providence, RI, 1988. (F. Levin) **89c:20054** 20F05 (20E06)
- (with Levin, Frank; Rosenberger, Gerhard) Free subgroups and decompositions of one-relator products of cyclics. I. The Tits alternative. *Arch. Math. (Basel)* **50** (1988), no. 2, 97-109. (Kathryn J. Horadam) **89c:20050** 20F05 (20E07)
- (with Frohman, Charles) Some amalgam structures for Bianchi groups. *Proc. Amer. Math. Soc.* **102** (1988), no. 2, 221-229. (Denis Sjerve) **89a:20027** 20E06 (11F06, 22E40, 57M99)
- (with Howie, James; Rosenberger, Gerhard) One-relator quotients and free products of cyclics. *Proc. Amer. Math. Soc.* **102** (1988), no. 2, 249-254. (David Meier) **89a:20035** 20F05 (20E06)
- Fine, Charles H.** A quality control model with learning effects. *Oper. Res.* **36** (1988), no. 3, 437-444. (Summary) **89c:90119** 90B30 (62N10)
- Fine, J. M.** Low order practical Runge-Kutta-Nyström methods. (German summary) *Computing* **38** (1987), no. 4, 281-297. (M. M. Chawla) **89c:65078** 65L05
- Fine, Jeanne** (with Besse, Ph.; Caussinus, H.; Ferré, L.) Principal components analysis and optimization of graphical displays. *Statistics* **19** (1988), no. 2, 301-312. (S. John) **89g:62087** 62H25
- Fine, Kit** Semantics for quantified relevance logic. *J. Philos. Logic* **17** (1988), no. 1, 27-59. (Daniel H. Cohen) **89k:03015** 03B45
- Fine, Terrence L.** Lower probability models for uncertainty and nondeterministic processes. Assessing uncertainty. *J. Statist. Plann. Inference* **20** (1988), no. 3, 389-411. (see **89g:62008**) 62A99
- Finet, C.** Subspaces of Asplund Banach spaces with the point continuity property. *Israel J. Math.* **60** (1987), no. 2, 191-198. (Abderrazak Sersouri) **89f:46030** 46B20
- Sur un théorème de J. Bourgain. [On a theorem of J. Bourgain] *Acta Sci. Math. (Szeged)* **52** (1988), no. 1-2, 171-178. (Jaroslav Zemánek) **89i:46056** 46J10 (47B38)
- Basic sequences and smooth norms in Banach spaces. *Studia Math.* **89** (1988), no. 1, 1-9. (M. I. Kadets) **89f:46015** 46B15
- de Finis, Massimo** On semiovals in projective planes. Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. 1 (Catania, 1986). *Ars Combin.* **24** (1987), A, 65-70. (David G. Glynn) **89i:51013** 51E20 (05B25, 51E10)
- A characterization of the complement of a cap in  $PG(3, n)$ . Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), C, 275-285. (Brian J. Wilson) **89d:51011** 51E20 (05B25)
- Fink, A. M.** How to polish off median polish. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 5, 932-940. (Summary) **89h:65231** 65U05 (65K99)
- Finke, G.** (with Ahmed, Shams Uddin) Network flow methods for the asymmetric traveling salesman problem. Sixteenth Manitoba conference on numerical mathematics and

- computing (Winnipeg, Man., 1986). *Congr. Numer.* 57 (1987), 223-234. (Colin J. H. McDiarmid) **89b:90075** 90B10 (90B35, 90C35)
- (with Blazewicz, J.; Haupt, Reinhard; Schmidt, Günter Joachim) New trends in machine scheduling. *European J. Oper. Res.* 37 (1988), no. 3, 303-317. (Summary) **89b:90122** 90B35
- Finkel, Alain** (with Choquet, Annie) FIFO nets without order deadlock. *Acta Inform.* 25 (1988), no. 1, 15-36. (Summary) **89a:68167** 68Q90
- Finkel, David** (with Gelenbe, Erol) Stationary deterministic flows. II. The single-server queue. *Theoret. Comput. Sci.* 52 (1987), no. 3, 269-280. (M. Dai Cin) **89a:60217** 60K25 (60K20, 90B22)
- (with Tripathi, Satish K.; Gelenbe, Erol) Load sharing in distributed systems with failures. *Acta Inform.* 25 (1988), no. 6, 677-689. (Summary) **89b:68008** 68M20 (68M10, 90B25)
- Finkel, Rafael A.** (with Chang, M. D.; Engquist, M.; Meyer, R. R.) A parallel algorithm for generalized networks. *Ann. Oper. Res.* 14 (1988), no. 1-4, 125-145. (Summary) **89g:90225** 90C35 (68M10, 90B10)
- martínez Finkelshtein, Andrei** see Martínez Finkelshtein, Andrei
- Finkelshtein, M. Ya.** (with Kozhukhov, I. B.) Perfect and semiprimary subgroup rings. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 12, 45-48, 81. (Edmund R. Puczyłowski) **89c:16031** 16A51 (20M25)
- Finkelshtein, Yu. Yu.** (with Shmelev, A. A.) Estimation of the coefficients of planes of certain integral polyhedra. (Russian) *Ekonom. i Mat. Metody* 22 (1986), no. 4, 744-747. (Jürgen Köhler) **89b:90138** 90C09
- Finkelstein, David** (with Rodriguez, Ernesto) Application of quantum set theory to quantum time-space. *Recent developments in quantum logic* (Cologne, 1984), 315-318. *Grundlagen Exakt. Naturwiss.*, 6, Bibliographisches Inst., Mannheim, 1985. (see **89b:81008**) **81B05** (03E70, 03G12)
- (with Rodriguez, Ernesto) Applications of quantum set theory. *Quantum theory and the structures of time and space*, Vol. 6 (Tutzing, 1984), 70-82. *Hanser, Munich*, 1986. (Summary) **89c:81010** **81B05** (83A05)
- Finkelstein, Shlomit Ritz** Gravity in hyperspin manifolds. *Loyola Conference on Mathematical and Interpretational Problems in Relativistic Quantum Theory* (New Orleans, 1987). *Internat. J. Theoret. Phys.* 27 (1988), no. 2, 251-272. (W. M. Baker) **89i:53052** 53C80 (53A60, 83C60, 83E15)
- Finley, J. D., III** Toward real-valued  $\mathcal{H}$  spaces: twisting type  $N$ . *Gravitation and geometry*, 131-158. *Monographs Textbooks Phys. Sci.*, 4, Bibliopolis, Naples, 1987. (Garry Ludwig) **89f:83038** 83C20 (83C30)
- Fin, John M.** (with Ott, Edward) Chaotic flows and fast magnetic dynamos. *Phys. Fluids* 31 (1988), no. 10, 2992-3011. (Summary) **89k:76100** 76W05 (58F13, 85A30)
- Fin, Lee Samuel** Relativistic stellar pulsations in the Cowling approximation. *Monthly Notices Roy. Astronom. Soc.* 232 (1988), no. 2, 259-275. (Summary) **89c:85003** 85A15
- Fin, Robert** Nonuniqueness and uniqueness of capillary surfaces. *Manuscripta Math.* 61 (1988), no. 3, 347-372. (Summary) **89g:76019** 76B45 (49F10, 53A10)
- (with Shinbrot, Marvin) The capillary contact angle. II. The inclined plane. With an appendix by F. Milinazzo. *Math. Methods Appl. Sci.* 10 (1988), no. 2, 165-196. (G. A. Nariboli) **89k:76022** 76B45 (35B20, 49H05, 58G20)
- Moon surfaces, and boundary behaviour of capillary surfaces for perfect wetting and nonwetting. *Proc. London Math. Soc.* (3) 57 (1988), no. 3, 542-576. (Gary M. Lieberman) **89m:49076** 49F10 (35J60, 53A10, 76B45)
- Fin, V. K.** (with Gusakova, S. M.) Logical inference and databases; similarities and plausible inference. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 2, 110-129; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 5, 42-63, 221 (Russian). (Marc Gyssens) **89m:68012** 68P05 (03B35, 03B60, 68P15, 68T25, 92A25)
- Finochiaro, M. C.** (with Sacchetti, Dario) Sampling of an infinite population: a quasi-uniform distribution on the integers, and quasi-exchangeability. (Italian. English summary) *Metron* 45 (1987), no. 1-2, 151-158. (Summary) **89a:60038** 60E05 (62D05, 62E99)
- Finogenov, S. A.** (with Kuznetsov, Yurii Alekseevich) Two-stage fictitious components method for solving the Dirichlet boundary value problem. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* 3 (1988), no. 4, 301-323. (Włodzimierz Proskurowski) **89k:65119** 65N05 (65N10, 65N50)
- Finston, David R.** (with Röhr, Helmut) Nomial homomorphisms of arbitrary algebras. *Algebras Groups Geom.* 5 (1988), no. 2, 151-186. (Arie H. Boers) **89k:17004** 17A01 (17A60)
- Fintushel, Ronald** (with Stern, Ronald John) Rational homology cobordisms of spherical space forms. *Topology* 26 (1987), no. 3, 385-393. (Charles Livingston) **89d:57051** 57R90
- (with Stern, Ronald John) Definite 4-manifolds. *J. Differential Geom.* 28 (1988), no. 1, 133-141. (Ian Hambleton) **89i:57006** 57N13
- Fiocca, Alessandra** (with Pepe, Luigi) The University and schools for engineers in Ferrara. (Italian. French summary) *Ann. Univ. Ferrara Sez. VII (N.S.)* 32 (1986), 125-166 (1987). (Brunetto Piochi) **89e:01050** 01A74 (01A73)
- Fiol, M. A.** (with Lladó, A. S.; Villar, J. L.) Digraphs on alphabets and the  $(d, N)$  digraph problem. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), C, 105-122. (S. Znam) **89e:05099** 05C20
- (with Mora, Mercè; Serra, O.) General properties of  $c$ -circulant digraphs. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), C, 241-252. (L. W. Beineke) **89f:05141** 05C75 (05C20, 05C50)
- Fiordilino, E.** A method of solution of the two-state Schrödinger equation. (Italian and Russian summaries) *Nuovo Cimento D* (1) 9 (1987), no. 6, 599-608. (Summary) **89m:81035** 81C05 (81K05)
- Fioréntini, Mario** (with Ellia, Philippe) Quelques remarques sur les courbes arithmétiquement Buchsbaum de l'espace projectif. (Italian summary) [Some remarks on arithmetically Buchsbaum curves in projective space] *Ann. Univ. Ferrara Sez. VII (N.S.)* 33 (1987), 89-111 (1988). (Jean D'Almeida) **89j:14024** 14H45 (14H50, 14M05)
- Fioretti, S.** (with Jetto, L.) Accurate derivative estimation from noisy data: a state-space approach. *Internat. J. Systems Sci.* 20 (1989), no. 1, 33-53. (Not in MR) **93E10**
- Fiori, Carla** Partial geometries and sets of permutations. (Italian. English summary) *Matematiche (Catania)* 39 (1984), no. 1-2, 231-237 (1988). (Summary) **89c:51003** 51A45 (51E30)
- (with Bonisoli, Arrigo) Sharply 1-transitive subsets of certain permutation groups. *Geom. Dedicata* 26 (1988), no. 3, 309-314. (H. Kimura) **89g:20003** 20B20
- Fiorot, Jean-Charles** (with Jeannin, Pierre) Surfaces rationnelles sur un carré contrôlé par des points pondérés et des vecteurs. (English summary) [Rational surfaces on a square controlled by weighted points and vectors] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 2, 87-92. (Summary) **89a:65022** 65D10
- (with Tabka, Jalel) Splines d'interpolation polynomiales de degré 3 de classe  $C^2$  conservant la forme. (English summary) [Shape-preserving  $C^2$  cubic polynomial interpolating splines of degree 3] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 3, 133-138. (Summary) **89f:65013** 65D05 (41A15)
- Firmani, Bruno** The stress concentration factor at the edge of an elastic prism subject to nonuniform bending. (Italian) *Rend. Mat.* (7) 5 (1985), no. 3-4, 407-424 (1988). (Summary) **89j:73020** 73C45
- Firsov, Yu. A.** (with Nakhmedov, E. P.; Prigodin, V. N.) The dynamical aspects of the localization process for an electron in disordered systems. *Localization in disordered systems* (Bad Schandau, 1986), 29-42. *Teubner-Texte Phys.*, 16, Teubner, Leipzig, 1988. (see **89f:82003**) **82A57**
- Firth, David** Multiplicative errors: log-normal or gamma? *J. Roy. Statist. Soc. Ser. B* 50 (1988), no. 2, 266-268. (Summary) **89b:62102** 62J05
- Firth, W. J.** Optically bistable arrays and chaotic dynamics. *Phys. Lett. A* 125 (1987), no. 8, 375-379. (Summary) **89a:78002** 78A10 (58F13)
- Optical memory and spatial chaos. *Phys. Rev. Lett.* 61 (1988), no. 3, 329-332. (Summary) **89f:92018** 92A09 (58F13, 78A55)
- Fisch, Jean** (with Henneaux, M.) Representations of the ghost canonical commutation relations and nilpotency of the BRST charge in string theory. *Acad. Roy. Belg. Bull. Cl. Sci.* (5) 73 (1987), no. 5, 201-208. (Summary) **89f:81175** 81E99 (81D05, 81E30)
- (with Dresse, Alain; Henneaux, M.; Schombond, Christiane) Consistent elimination of redundant second-class constraints. *Phys. Lett. B* 210 (1988), no. 1-2, 141-146. (George Siopsis) **89j:81171** 81E99 (81D07, 81E30)
- (with Henneaux, M.; Stasheff, James; Teitelboim, Claudio) Existence, uniqueness and cohomology of the classical BRST charge with ghosts of ghosts. *Comm. Math. Phys.* 120 (1989), no. 3, 379-407. (David McMullan) **89m:81093** 81E13 (55N99, 58F05)
- Fischbein, Efraim** ★ Intuition in science and mathematics. An educational approach. Mathematics Education Library. *D. Reidel Publishing Co., Dordrecht-Boston, MA*, 1987. xiv+225 pp. ISBN 90-277-2506-3 (Michael Otte) **89d:00015** 00A25 (92A25)
- Fischer, A. E.** (with Tromba, A. J.) A new proof that Teichmüller space is a cell. *Trans. Amer. Math. Soc.* 303 (1987), no. 1, 257-262. (C. Earle) **89b:32030** 32G15 (53C20, 58E20)
- Fischer, Gerd** Developable ruled surfaces in complex projective space. *Aequationes Math.* 35 (1988), no. 2-3, 272-276. (Luciana Picco Botta) **89b:14030** 14J26
- Fischer, Herbert** Some aspects of automatic differentiation. *Numerical methods and approximation theory, III* (Niš, 1987), 199-208. *Univ. Niš, Niš*, 1988. (see **89c:65007**) **65D25** (65V05)
- Fischer, Jan** (with Chaichian, Masud) Unitarity of the scattering amplitude in higher dimension. *Proceedings of the Johns Hopkins Workshop on Current Problems in Particle Theory. 11. Frontiers in Particle Theory*, 303-318. *World Sci. Publishing, Singapore*, 1988. (Summary) **89f:81163** 81E99 (81E30)
- (with Chaichian, Masud) Higher-dimensional space-time and unitarity bound on the scattering amplitude. *Nuclear Phys. B* 303 (1988), no. 3, 557-568. (Summary) **89h:81251** 81F20
- Fischer, John Martin** Freedom and miracles. *Noûs* 22 (1988), no. 2, 235-252. (Not in MR) **03B45**
- Fischer, K. A. F.** Newton's ideas at the Jesuit universities of Slovakia. *Isaac Newton's Philosophiae naturalis principia mathematica* (Lublin, 1987), 8-14. *World Sci. Publishing, Singapore*, 1988. (see **89m:01042**) **01A50**
- Brief communication. *Centaureus* 31 (1988), no. 2, 164-167. (Not in MR) **01A50** (01A73)
- Fischer, Klaus** Der quantitative Beitrag der nach 1933 emigrierten Naturwissenschaftler zur deutschsprachigen physikalischen Forschung. (English summary) [The quantitative contribution of scientists who emigrated after 1933 to German-language physics research] *Ber. Wiss.-Gesch.* 11 (1988), no. 2, 83-104. (S. L. Segal) **89e:01057** 01A80 (01A60)
- Fischer, Klaus G.** Symmetric polynomials and Hall's theorem. *Discrete Math.* 69 (1988), no. 3, 225-234. (John R. Stembridge) **89c:05057** 05C70 (05A10, 13B25)
- Fischer, Michael** (with Broder, Andrei; Dolev, Danny) Efficient fault-tolerant routings in networks. *Inform. and Comput.* 75 (1987), no. 1, 52-64. (Joseph Y. Halpern) **89f:68007** 68M10 (68R10, 90B10, 94C15)
- (with Immerman, Neil) Interpreting logics of knowledge in propositional dynamic logic with converse. *Inform. Process. Lett.* 25 (1987), no. 3, 175-181. (Introduction) **89k:68095** 68Q55 (03B70, 68Q10, 68Q15, 68T30)
- Fischer, Pal** (with Christensen, Jens Peter Reus) Small sets and a class of general functional equations. *Aequationes Math.* 33 (1987), no. 1, 18-22. (Zbigniew Gajda) **89f:43002** 43A05 (28C10, 39B70)
- (with Christensen, Jens Peter Reus) Linear independence of iterates and entire solutions of functional equations. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1120-1124. (L. S. O. Liverpool) **89m:30051** 30D05 (30D20, 39B10)
- (with Christensen, Jens Peter Reus) Joint continuity of measurable biadditive mappings. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1125-1128. (M. P. Heble) **89d:43006** 43A46 (22A10, 28C10, 39B70)
- Fischer, T. M.** see Fischer, Thomas R. M.
- Fischer, Thomas** Continuous selections for semi-infinite optimization. *Parametric optimization and related topics* (Plaue, 1985), 95-112. *Math. Res.*, 35, Akademie-Verlag, Berlin, 1987. (W. W. Breckner) **89c:90099** 90C31 (41A50, 54C65)
- A continuity condition for the existence of a continuous selection for a set-valued mapping. *J. Approx. Theory* 49 (1987), no. 4, 340-345. (P. Maritz) **89a:54020** 54C65 (41A65)
- Fischer, Thomas R. M.** On the average complexity of searching for partial match queries in multidimensional search trees. *Algebra, combinatorics and logic in computer science, Vol. I*, II (Győr, 1983), 379-390. *Colloq. Math. Soc. János Bolyai*, 42, North-Holland, Amsterdam-New York, 1986. (From the introduction) **89b:68018** 68P10 (68P20, 68Q25)
- Fischetti, Matteo** (with Martello, Silvano; Toth, Paolo) The fixed job schedule problem with spread-time constraints. *Oper. Res.* 35 (1987), no. 6, 849-858. (Summary)



- 89b:90103 90B35**  
 — (with Martello, Silvano) A hybrid algorithm for finding the  $k$ th smallest of  $n$  elements in  $O(n)$  time. *Ann. Oper. Res.* 13 (1988), no. 1-4, 401-419. (Summary) **89e:90166 90C27** (68Q25)  
 — (with Toth, Paolo) A new dominance procedure for combinatorial optimization problems. *Oper. Res. Lett.* 7 (1988), no. 4, 181-187. (Summary) **89m:90133 90C27**
- Fishburn, Peter C.** (with Lavalley, Irving H.) State-dependent SSB utility. *Econom. Lett.* 25 (1987), no. 1, 21-25. (Summary) **89b:90012 90A06**  
 — (with Pollak, Henry O.) Proportional allocation schemes for tour costs. *European J. Oper. Res.* 31 (1987), no. 1, 24-30. (Colin J. H. McDiarmid) **89a:90074 90B99** (90A99, 90B10)  
 — (with Lavalley, Irving H.) Decision analysis under state-additive SSB preferences. *Oper. Res.* 35 (1987), no. 5, 722-735. (Summary) **89i:90005 90A05**  
 — ★ Nonlinear preference and utility theory. *Johns Hopkins Series in the Mathematical Sciences*, J. Johns Hopkins University Press, Baltimore, MD, 1988. xvi+259 pp. ISBN 0-8018-3598-4 (Peter H. Farquhar) **89b:90022 90A10** (90-02, 90D30)  
 — (with Doyle, Peter G.; Shepp, L. A.) The match set of a random permutation has the FK property. *Ann. Probab.* 16 (1988), no. 3, 1194-1214. (Joseph Negeers) **89i:60035 60E15** (06A10, 60B15)  
 — Minimum graphs that contain all small trees. *Ars Combin.* 25 (1988), 133-165. (R. E. Pippert) **89i:05161 05C35** (05C05)  
 — (with Gehrein, William V.) Pick-and-choose heuristics for partial set covering. *Discrete Appl. Math.* 22 (1988/89), no. 2, 119-132. (Summary) **89m:90134 90C27** (05B40)  
 — (with Lavalley, Irving H.) Context-dependent choice with nonlinear and nontransitive preferences. *Econometrica* 56 (1988), no. 5, 1221-1239. (Marco Scarsini) **89i:90007 90A06** (90A05, 90A10)  
 — (with Lavalley, Irving H.) Transitivity is equivalent to independence for states-additive SSB utilities. *J. Econom. Theory* 44 (1988), no. 1, 202-208. (Marco Scarsini) **89i:90018 90A10** (90A06)  
 — Corrigendum: "Axioms for approval voting: direct proof" [*J. Econom. Theory* 19 (1978), no. 1, 180-185; MR 80f:90017]. *J. Econom. Theory* 45 (1988), no. 1, 212. (Editors) **89f:90010 90A06**  
 — (with Lavalley, Irving H.) The structure of SSB utilities for decision under uncertainty. *Math. Social Sci.* 15 (1988), no. 3, 217-230. (Janusz Kacprzyk) **89f:90005 90A05** (90A10, 90D35)  
 — (with Roberts, Fred S.) Unique finite conjoint measurement. *Math. Social Sci.* 16 (1988), no. 2, 107-143. (Ki Hang Kim) **89b:92074 92A27** (06F99, 90A05)  
 — Combinatorial optimization problems for systems of subsets. *SIAM Rev.* 30 (1988), no. 4, 578-588. (D. J. Kleitman) **89i:05003 05A05** (04A20, 06A10, 90C30)  
 — see also Barthélémy, Jean-Pierre, **89i:90002**
- Fishel, B.** The Fourier-Plancherel transform as a spectral representation of a rigged Hilbert space. *Math. Proc. Cambridge Philos. Soc.* 101 (1987), no. 3, 567-573. (Summary) **89a:47029 47A70** (47B38)
- Fishelson, Dalia** The spectrum and the stability of the Chebyshev collocation operator for transonic flow. *Math. Comp.* 51 (1988), no. 184, 559-579. (David C. Arney) **89d:65083 65M10** (76H05)  
 — Spectral methods for the small disturbance equation of transonic flows. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 2, 232-251. (H. K. Cheng) **89b:76025 76H05** (76-08, 76L05)
- Fisher, A. W.** Consistency condition calculations of supersymmetry anomalies. *Nuclear Phys. B* 297 (1988), no. 2, 315-337. (B. Spence) **89a:81071 81E13** (81E30, 83E50)
- Fisher, Brian** Products of distributions defined by a vector. *Complex analysis and applications '85* (Varna, 1985), 212-219. *Bulg. Acad. Sci., Sofia*, 1986. (Bl. P. Damyanov) **89a:46086 46F10**  
 — (with Sessa, Salvatore) Common fixed points of two pairs of weakly commuting mappings. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 16 (1986), no. 1, 45-59. (Livia D'Apuzzo) **89e:54088 54H25** (47H10)  
 — (with Sessa, Salvatore) A pair of commuting mappings with a common fixed point. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 16 (1986), no. 2, 89-99. (Livia D'Apuzzo) **89e:54089 54H25** (47H10)  
 — (with Li, Zhi Shen) On changing the variable in distributions. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 4, 391-400. (W. Kecs) **89f:46090 46F10**  
 — (with Sessa, Salvatore) Common fixed points of weakly commuting mappings. (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 5-6, 341-349. (S. P. Singh) **89a:54059 54H25**  
 — (with Kuribayashi, Yukio) Neutrices and the beta function. *Rostock. Math. Kolloq.* No. 32 (1987), 56-66. (Endre Pap) **89e:46045 46F10** (44A15)  
 — (with Takači, A.) On  $\alpha$ -products of distributions. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 17 (1987), no. 1, 107-118. (M. Itano) **89d:46042 46F10**  
 — Neutrices and the convolution of distributions. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 17 (1987), no. 1, 119-135. (W. Kecs) **89d:46043 46F10**  
 — (with Sessa, Salvatore) Common fixed points for a pair of mappings. (Arabic summary) *J. Univ. Kuwait Sci.* 15 (1988), no. 1, 9-14. (Summary) **89c:54085 54H25**  
 — (with Takači, A.) Some results on  $\alpha$ -products of distributions. *Serdica* 14 (1988), no. 2, 202-207. (E. L. Koh) **89b:46063 46F10**
- Fisher, D. Grant** (with Sripada, N. Rao) Improved least squares identification. *Internat. J. Control* 46 (1987), no. 6, 1889-1913. (G. Banon) **89a:93048 93E10** (93E12, 93E25)  
 — (with Cluett, W. R.; Martin-Sánchez, J. M.; Shah, S. L.) Stable discrete-time adaptive control in the presence of unmodeled dynamics. *IEEE Trans. Automat. Control* 33 (1988), no. 4, 410-414. (Kazuhiko Terashima) **89d:93074 93D10** (93C40, 93C55)  
 — (with Lu, Weiping) Output estimation with multirate sampling. *Internat. J. Control* 48 (1988), no. 1, 149-160. (Summary) **89e:93185 93E10**  
 — (with Cluett, W. R.; Shah, S. L.) Robustness analysis of discrete-time adaptive control systems using input-output stability theory: a tutorial. *Proc. IEEE-D* 135 (1988), no. 2, 133-141. (B. G. Pachpatte) **89i:93097 93D25** (93B35, 93C40, 93C55)
- Fisher, Daniel S.** (with Chayes, J. T.; Chayes, L.; Spencer, Thomas Crawford) Finite-size scaling and correlation lengths for disordered systems. *Phys. Rev. Lett.* 57 (1986), no. 24, 2999-3002. (Aernout C. D. van Enter) **89a:82026 82A57** (82A05, 82A42)  
 — see also Singh, Rajiv R. P., **89e:82012**
- Fisher, David C.** The number of triangles in a  $K_4$ -free graph. *Discrete Math.* 69 (1988), no. 2, 203-205. (Carsten Thomassen) **89d:05107 05C35**  
 — Next-fit packs a list and its reverse into the same number of bins. *Oper. Res. Lett.* 7 (1988), no. 6, 291-293. (Summary) **89k:90135 90C27** (68Q20, 68R05)
- Fisher, Dawn** Conservative configuration dependent loads on bounded surfaces. *Z. Angew. Math. Phys.* 38 (1987), no. 6, 883-892. (Summary) **89a:73007 73B99**  
 — Configuration dependent pressure potentials. *J. Elasticity* 19 (1988), no. 1, 77-84. (P. Villaggio) **89m:73007 73B99** (73G10)
- Fisher, E. S.** (with Tranquillo, R. T.; Farrell, B. E.; Lauffenburger, D. A.) A stochastic model for chemosensory cell movement: application to neutrophil and macrophage persistence and orientation. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* 90 (1988), no. 1-2, 287-303. (see **89c:92002**) 92A09 (76Z10)
- Fisher, Evan** An upper class law of the iterated logarithm for supermartingales. *Sankhyā Ser. A* 48 (1986), no. 3, 267-272. (R. J. Tomkins) **89a:60079 60F15** (60G42)
- Fisher, Gordon Ray** (with Dastoor, Naorayex K.) On point-optimal Cox tests. *Econometric Theory* 4 (1988), no. 1, 97-107. (V. K. Srivastava) **89b:62100 62J05** (62P20)
- Fisher, J. Chris** Curves of constant width from a linear viewpoint. *Math. Mag.* 60 (1987), no. 3, 131-140. (G. T. Sallee) **89d:52003 52A10** (52-01)  
 — Conics, order, and  $k$ -arcs in  $AG(2, q)$  with  $q$  odd. *J. Geom.* 32 (1988), no. 1-2, 21-39. (J. W. P. Hirschfeld) **89f:51049 51E20** (51E15)
- Fisher, M. E.** see Fisher, Michael Ernest
- Fisher, Marshall L.** Interactive optimization. *Ann. Oper. Res.* 5 (1986), no. 1-4, 541-556. (Summary) **89d:90244 90C99**  
 — (with Rinnooy Kan, A. H. G.) The design, analysis and implementation of heuristics. Focussed issue on heuristics. *Management Sci.* 34 (1988), no. 3, 263-265. (Editors) **89b:90231 90C99** (90B99)
- Fisher, Michael Ellis** Diffusion from an entrance to an exit. Basic concepts in quantum and stochastic transport. *IBM J. Res. Develop.* 32 (1988), no. 1, 76-81. (Summary) **89d:82049 82A31** (39A10, 82-01, 82A41)  
 — (with Singh, Rajiv R. P.) Disordered systems which escape the bound  $v \geq 2/d$ . Comment to: "Finite-size scaling and correlation lengths for disordered systems" [*Phys. Rev. Lett.* 57 (1986), no. 24, 2999-3002; MR 89a:82026] by J. T. Chayes, L. Chayes, D. S. Fisher and T. C. Spencer. *Phys. Rev. Lett.* 60 (1988), no. 6, 548. (Aernout C. D. van Enter) **89e:82012 82A57** (82A05)  
 — (with Randeria, M.) Multisignularity and scaling in partial differential approximants. I. *Proc. Roy. Soc. London Ser. A* 419 (1988), no. 1857, 181-203. (Jiaqi Mo) **89m:35012 35A25** (35C99, 41A30)  
 — (with Singh, Rajiv R. P.; Shankar, Ramamurti) Spin- $\frac{1}{2}$  antiferromagnetic  $XXZ$  chain: new results and insights. *Phys. Rev. B* (3) 39 (1989), no. 4, 2562-2567. (Summary) **89k:82105 82A68** (82A25, 82A69)
- Fisher, Michael Ernest** (with Gayek, Jonathan E.) Estimating reachable sets for two-dimensional linear discrete systems. *J. Optim. Theory Appl.* 56 (1988), no. 1, 67-88. (V. V. Krakhotko) **89b:49058 49E15** (93B05, 93B60, 93C05, 93C55)
- Fisher, N. L.** (with Lewis, Toby; Embleton, B. J. J.) ★ Statistical analysis of spherical data. *Cambridge University Press, Cambridge-New York*, 1987. xiv+329 pp. ISBN 0-521-24273-8 (John Kent) **89b:62002 62-02** (62H12, 62H15, 62H20)
- Fisher, P. H.** (with Penttilä, Tim; Royle, Gordon F.) Symmetric designs, polarities and sub-designs. *Discrete Math.* 71 (1988), no. 1, 19-32. (J. H. van Lint) **89m:05030 05B30** (05C75)
- Fisher, René** ★ Dictionnaire informatique anglais-français. (French) [English-French dictionary of data processing] Fourth edition. *Éditions Eyrolles, Paris*, 1986. vi+714 pp. (Editors) **89c:68001 68-00** (00A20)
- Fisher, S.** (with Arazy, J.; Peetre, Jaak) Möbius invariant spaces of analytic functions. *Complex analysis, I* (College Park, Md., 1985-86), 10-22. *Lecture Notes in Math.*, 1275, Springer, Berlin-New York, 1987. (From the introduction) **89a:46059 46E20** (30H05, 46M35)  
 — The Möbius group and invariant spaces of analytic functions. *Amer. Math. Monthly* 95 (1988), no. 6, 514-527. (Richard M. Timoney) **89k:30051 30H05** (46E15, 46J15, 47B35)  
 — (with Arazy, J.) Rigid and zero reducing linear transformations. *J. Math. Anal. Appl.* 130 (1988), no. 2, 552-555. (Pamela Gorkin) **89c:46068 46J10** (47B38)
- Fisher, Yuval** (with Hubbard, John H.; Wittner, Ben S.) A proof of the uniformization theorem for arbitrary plane domains. *Proc. Amer. Math. Soc.* 104 (1988), no. 2, 413-418. (E. Bujalance) **89k:30044 30F10**
- Fishkina, G. B.** (with Guts, A. K.) Symmetry dynamics of physical space and equivalent bordism theory. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 31 (1988), no. 10, 76-79; translated in *Soviet Phys. J.* 31 (1988), no. 10, 834-837. (V. Oproiu) **89k:57070 57R85** (83F05)
- Fishman, Arthur** Dynamic sales discriminate against uninformed consumers in a competitive market. *Econom. Lett.* 27 (1988), no. 1, 23-25. (Summary) **89m:90026 90A12**
- Fishman, I. P.** Boundary values of biharmonic functions. (Russian) *Application of methods of functional analysis in problems of mathematical physics* (Russian), 132-138, iv, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Nicolae H. Pavel) **89b:34057 34G10** (34C11, 47E05)
- Fishman, L. Z.** A criterion for determining the hazardous and nonhazardous boundaries of the domain of stability of systems with delay. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 10, 185-187. (Qichang Huang) **89b:34068 34K20**
- Fishman, Louis** Phase space factorization and functional integral methods in direct and inverse scattering—symbol analysis. *Wave phenomena* (San Jose, CA, 1988), 76-85. Springer, New York-Berlin, 1989. (see **89g:00020**) 35R99
- Fisk, Mark** (with Srednicki, Mark) Magnetic string fields. *Nuclear Phys. B* 313 (1989), no. 2, 308-320. (Summary) **89m:81138 81E99** (81E30)
- Fisman, Elsa** (with Arad, Zvi) On products of irreducible characters and conjugacy classes of finite groups in complementary sets. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 11-23. *Proc. Sympos. Pure Math.*, 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Olaf Manz) **89a:20006 20C15**  
 — (with Arad, Zvi) About products of irreducible characters and products of conjugacy classes in finite groups. *J. Algebra* 114 (1988), no. 2, 466-476. (Olaf Manz) **89c:20017 20C15** (20D99)
- Fixz, Marek** ★ Wahrscheinlichkeitsrechnung und mathematische Statistik. (German) [Probability theory and mathematical statistics] Translated from the Polish by Han-

- nelore Sulanke, Rolf Sulanke, Josef Wloka and Viktor Ziegler. Eleventh edition. Hochschulbücher für Mathematik [University Books for Mathematics], 40. VEB Deutscher Verlag der Wissenschaften, Berlin, 1989. 777 pp. ISBN 3-326-00079-0 (Editors) **89k:62002** 62-02
- Fiszdon, Władysław** (with Sen, Mihir) Initial behavior of solutions to the Lorenz equations. *Internat. J. Non-Linear Mech.* **23** (1988), no. 1, 53-66. (Summary) **89c:58076** 58F13 (34C35)
- pages-Fita, J.** see **Pages-Fita, J.**
- Fitch, Frederic B.** Formalized self-reference. *Self-reference*, 113-122, Martinus Nijhoff Philos. Lib., 21, Nijhoff, Dordrecht, 1987. (G. E. Mints) **89c:03020** 03B40 (03F40)
- Fitch, Walter M.** A hidden bias in the estimate of total nucleotide substitutions from pairwise differences. *Evolutionary processes and theory* (Israel, 1985), 315-328, Academic Press, Orlando, FL, 1986. (see **89k:92001**) 92A10
- Fitingof, Boris** (with Waksman, Zeev) Fused trees and some new approaches to source coding. *IEEE Trans. Inform. Theory* **34** (1988), no. 3, 417-424. (G. Berman) **89k:94032** 94A29 (94C15)
- Fitzuhl, Ahmed** Inégalité de Babenko et inégalité logarithmique de Sobolev pour l'opérateur de Bessel. (English summary) [Babenko inequality and logarithmic Sobolev inequality for the Bessel operator] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 20, 877-880. (B. Muckenhoupt) **89a:44009** 44A15 (42C10, 46E35, 47D05)
- Fitoussi, Jean-Paul** (with Muet, Pierre-Alain) Macrodynamique et déséquilibres: introduction. [Introduction to macrodynamics and disequilibria] *Macrodynamique et déséquilibres*, 5-9, Économica, Paris, 1987. (see **89d:90065**) 90A17 (90A14)
- (with Velupillai, K.) Growth and cycles in distributive shares output and employment. With comments by Richard Goodwin. *Macrodynamique et déséquilibres*, 31-55, Économica, Paris, 1987. (see **89d:90065**) 90A17 (90A16)
- (with Dehez, Pierre) Equilibres de stagflation et indexation des salaires. [Stagflation equilibria and indexation of salaries] With comments by Jean-Pascal Benassy. *Macrodynamique et déséquilibres*, 163-184, Économica, Paris, 1987. (see **89d:90065**) 90A17 (90A12, 90A14)
- see also **Macrodynamics and disequilibria**, **89d:90065**
- Fitt, A. D.** (with Parker, David F.) Nondiffusive models for pressure-swing adsorption. *IMA J. Appl. Math.* **41** (1988), no. 3, 165-192. (Summary) **89k:76089** 76S05 (76V05)
- Fitt, P.** (with Day, Brian; Kimber, P.; Richardson, D.) A mathematical framework for modular simulation. *Math. Comput. Simulation* **29** (1987), no. 5, 373-383. (Summary) **89f:65011** 65C20
- Fitting, Melvin** Partial models and logic programming. *Theoret. Comput. Sci.* **48** (1986), no. 2-3, 229-255 (1987). (P. Štěpánek) **89d:68051** 68Q55 (03B70, 68N15, 68T25)
- **★** Computability theory, semantics, and logic programming. Oxford Logic Guides, 13. The Clarendon Press, Oxford University Press, New York, 1987. xii+198 pp. ISBN 0-19-503691-3 (Lincoln Wallen) **89c:68027** 68Q05 (03-01, 03B70, 03Dxx, 68-01, 68N05, 68Q55, 68T25)
- Logic programming on a topological bilattice. *Fund. Inform.* **11** (1988), no. 2, 209-218. (R. Parikh) **89j:68098** 68Q55 (03B20, 03B50, 03B70)
- First-order modal tableaux. *J. Automat. Reason.* **4** (1988), no. 2, 191-213. (G. E. Mints) **89b:68132** 68T15 (03B35, 03B45)
- Fittler, Robert** More nonstandard quantum electrodynamics. *Helv. Phys. Acta* **60** (1987), no. 7, 881-902. (Summary) **89h:81280** 81L05 (03H10)
- Fitzgerald, Carl H.** Arcs on which a univalent function has small magnitude. *Complex analysis, I* (College Park, Md., 1985-86), 131-148, *Lecture Notes in Math.*, 1275, Springer, Berlin-New York, 1987. (J. Clunie) **89b:30018** 30C55
- (with Lesley, F. David) Integrability of the derivative of the Riemann mapping function for wedge domains. *J. Analyse Math.* **49** (1987), 271-292. (G. Schober) **89c:30018** 30C35
- Fitzgerald, D. G.** (with Blest, D. C.) Scheduling sports competitions with a given distribution of times. *Discrete Appl. Math.* **22** (1988/89), no. 1, 9-19. (Summary) **89k:90084** 90B35 (05B30, 90D40)
- Fitzgerald, G. F.** see **Hunt, Bruce J.**, **89h:01033**
- Fitzgerald, Peter Leslie** Constrained dynamics and the local symmetries of the massive superparticle. *Classical Quantum Gravity* **5** (1988), no. 1, 59-70. (A. I. Pashnev) **89j:81176** 81E99 (58F05, 81G20)
- Fitzgerald, Robert** (with Yucas, Joseph) Combinatorial techniques and abstract Witt rings. *I. J. Algebra* **114** (1988), no. 1, 40-52. (Bessie H. Kirkwood) **89c:11058** 11E81 (05B05, 19G12)
- Fitzgibbon, W. E.** Longtime solutions for a class of convection diffusion systems. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 119-125, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Rüdiger Landes) **89k:35108** 35K55 (35B60)
- Longtime behavior for a class of abstract integro-differential equations. *Dynamics of infinite-dimensional systems* (Lisbon, 1986), 105-111, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 37, Springer, Berlin-New York, 1987. (J. S. W. Wong) **89a:45005** 45D05 (45J05, 45K05, 47H15)
- A hyperbolic system from a neural transmission model. *Comput. Math. Appl.* **13** (1987), no. 9-11, 767-769. (From the text) **89h:35227** 35L99 (92A09)
- Asymptotic stability for a class of integrodifferential equations. *Czechoslovak Math. J.* **38** (113) (1988), no. 4, 618-622. (H. A. DeKleine) **89m:45020** 45M10 (34K99, 45J05)
- (with Morgan, J. J.) A diffusive epidemic model on a bounded domain of arbitrary dimension. *Differential Integral Equations* **1** (1988), no. 2, 125-132. (Mario Primicerio) **89d:35093** 35K57 (92A15)
- Fitzpatrick, Ben, Jr.** (with Zhou, Hao Xuan) Densely homogeneous spaces. II. *Houston J. Math.* **14** (1988), no. 1, 57-68. (P. Fletcher) **89k:54080** 54F15
- Fitzpatrick, P. M.** (with Pejsachowicz, Jacobo) The fundamental group of the space of linear Fredholm operators and the global analysis of semilinear equations. *Fixed point theory and its applications* (Berkeley, CA, 1986), 47-87, *Contemp. Math.*, 72, Amer. Math. Soc., Providence, RI, 1988. (Jean Mawhin) **89h:47097** 47H15 (47A53, 58B05, 58B15, 58E07)
- The stability of parity and global bifurcation via Galerkin approximation. *J. London Math. Soc.* (2) **38** (1988), no. 1, 153-165. (W. V. Petryshyn) **89k:47085** 47H09 (47H15, 58E07)
- Homotopy, linearization, and bifurcation. *Nonlinear Anal.* **12** (1988), no. 2, 171-184. (Reiner Lauterbach) **89g:58039** 58E07 (58F14)
- Fitzpatrick, Simon** (with Calvert, Bruce D.) Consequences of the duality map taking planes to planes. *Nonlinear analysis and applications* (Arlington, Tex., 1986), 105-114, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (H. E. Lacey) **89a:46031** 46B10 (46E30)
- (with Borwein, J. M.; Giles, J. R.) The differentiability of real functions on normed linear space using generalized subgradients. *J. Math. Anal. Appl.* **128** (1987), no. 2, 512-534. (W. W. Breckner) **89f:58027** 58C20 (26E15, 46G05, 49A52, 90C48)
- (with Calvert, Bruce D.) A Banach lattice characterization of  $c_0$  and  $l_p$ . *Math. Chronicle* **16** (1987), 25-40. (H. E. Lacey) **89c:46022** 46B30
- (with Calvert, Bruce D.) Nonexpansive projections onto two-dimensional subspaces of Banach spaces. *Bull. Austral. Math. Soc.* **37** (1988), no. 1, 149-160. (Ehrhard Behrends) **89c:46017** 46B20 (46B30)
- Fitzsimmons, P. J.** On two results in the potential theory of excessive measures. *Seminar on stochastic processes*, 1986 (Charlottesville, Va., 1986), 21-29, *Progr. Probab. Statist.*, 13, Birkhäuser Boston, Boston, MA, 1987. (Klaus Janssen) **89b:60177** 60J45 (31D05)
- (with Dynkin, E. B.) Stochastic processes on random domains. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **23** (1987), no. 2, suppl., 379-396. (Joseph Glover) **89a:60098** 60G05
- Homogeneous random measures and a weak order for the excessive measures of a Markov process. *Trans. Amer. Math. Soc.* **303** (1987), no. 2, 431-478. (Summary) **89c:60088** 60J45 (60G57, 60J55)
- Penetration times and Skorohod stopping. *Séminaire de Probabilités, XXII*, 166-174, *Lecture Notes in Math.*, 1321, Springer, Berlin-New York, 1988. (Robert Kertz) **89k:60109** 60J45 (31C15, 60G40)
- (with Takas, Michael) Stationary regenerative sets and subordinators. *Ann. Probab.* **16** (1988), no. 3, 1299-1305. (Martin Jacobsen) **89m:60176** 60J30 (60K99)
- (with Gettoer, R. K.) On the potential theory of symmetric Markov processes. *Math. Ann.* **281** (1988), no. 3, 495-512. (Jutta Steffens) **89h:60110** 60J45
- (with Gettoer, R. K.) Revuz measures and time changes. *Math. Z.* **199** (1988), no. 2, 233-256. (Mamoru Kanda) **89h:60124** 60J55 (60J25, 60J45, 60J57)
- Fitzsimmons, Sean** (with McGinn, W. D.) Properties of some self-dual monopoles. *Phys. Rev. D* (3) **36** (1987), no. 8, 2571-2574. (Nick Ganoulis) **89a:81072** 81E13 (53C80, 81G20)
- Fitzsimons, Conor J.** A comparison of some methods for the solution of the nonlinear Poisson equation in semiconductor device modelling. *COMPEL* **6** (1987), no. 4, 197-209. (Summary) **89m:65107** 65N99 (78A60)
- Flume, E.** (with Fournier, Alain) The visible surface problem under abstract graphic models. *Theoretical foundations of computer graphics and CAD* (Il Ciocco, 1987), 575-586, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 40, Springer, Berlin-New York, 1988. (see **89a:68011**) 68U05
- Fix, G. J.** (with Lin, Jian-Tong) Numerical simulations of nonlinear phase transitions. I. The isotropic case. *Nonlinear Anal.* **12** (1988), no. 8, 811-823. (From the introduction) **89h:80009** 80A20 (65P05)
- Fixman, Uri** Sums of multinomial coefficients. *Canad. Math. Bull.* **31** (1988), no. 2, 187-189. (Heinrich Niederhausen) **89c:05010** 05A10
- (with Okoh, Frank; Sankaran, N.) Internal functors for systems of linear transformations. *J. Algebra* **113** (1988), no. 2, 399-415. (William H. Gustafson) **89b:18015** 18G10 (18B20, 18B99)
- Fjeldsø, N.** (with Midtdal, J.; Ravndal, F.) Random walks of a quantum particle on a circle. *J. Phys. A* **21** (1988), no. 7, 1633-1647. (Cheng Xun Wu) **89g:82006** 82-08 (81-08, 81E25, 82-04, 82A41)
- Flachs, Jacob** see **Pang, Ying**, (Not in MR)
- Flack, V. F.** (with Reeves, Jack Halbert) A generalization of the classical secretary problem: dependent arrival sequences. *J. Appl. Probab.* **25** (1988), no. 1, 97-105. (S. M. Samuels) **89d:60084** 60G40 (62L15, 90D05)
- Flagg, Robert C.** (with Myhill, John) An extension of Frege structures. *Mathematical logic and theoretical computer science* (College Park, Md., 1984-1985), 197-217, *Lecture Notes in Pure and Appl. Math.*, 106, Dekker, New York, 1987. (From the introduction) **89h:03027** 03B40 (03F50)
- (with Myhill, John) Implication and analysis in classical Frege structures. *Ann. Pure Appl. Logic* **34** (1987), no. 1, 33-85. (B. van Rootselaar (Zbl 632:03045)) **89f:03046** 03E70 (03B40, 03F60)
- Flaherty, F. J.** Instantons on the quaternionic Siegel space. *Mathematics and general relativity* (Santa Cruz, CA, 1986), 115-118, *Contemp. Math.*, 71, Amer. Math. Soc., Providence, RI, 1988. (Mitsuhiro Itoh) **89f:53047** 53C05 (32G13, 32J15, 58E15, 81E13)
- Flaherty, Joseph E.** (with Baehmann, P. L.; Shephard, M. S.) Adaptive analysis for automated finite element modeling. *The mathematics of finite elements and applications*, VI (Uxbridge, 1987), 521-532, Academic Press, London-New York, 1988. (see **89c:65084**) 65N30 (65N50, 65V05)
- (with Arney, David C.; Biswas, Rupak) A posteriori error estimation of adaptive finite difference schemes for hyperbolic systems. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 437-457, *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Summary) **89d:65088** 65M15
- (with Moore, Peter K.) An adaptive overlapping local grid refinement method for two-dimensional parabolic systems. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 459-474, *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Summary) **89d:65089** 65M60
- (with Adjerid, Slimane) Second-order finite element approximations and a posteriori error estimation for two-dimensional parabolic systems. *Numer. Math.* **53** (1988), no. 1-2, 183-198. (Summary) **89i:65110** 65N30 (65L60)
- (with Adjerid, Slimane) A local refinement finite-element method for two-dimensional parabolic systems. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 5, 792-811. (Summary) **89g:65136** 65N30
- Flahive, Mary G.** Indefinite quadratic forms in many variables. *Indian J. Pure Appl. Math.* **19** (1988), no. 10, 931-959. (Mushfequr Rahman) **89m:11035** 11E10
- (with Borosh, I.; Rubin, David S.; Treybig, L. B.) A sharp bound for solutions of linear Diophantine equations. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 844-846. (Edward L. Cohen) **89i:15022** 15A36 (11D04, 90C10)



- Flajolet, Philippe** Analytic models and ambiguity of context-free languages. Twelfth international colloquium on automata, languages and programming (Nafplion, 1985). *Theoret. Comput. Sci.* **49** (1987), no. 2-3, 283-309. (Loÿs Thimonier) **89c:68067** 68Q45 (03D05, 05A15, 15A18, 68S05)
- Mathematical methods in the analysis of algorithms and data structures. *Trends in theoretical computer science* (Udine, 1984), 225-304, *Principles Comput. Sci.* Ser. 12, Computer Sci. Press, Rockville, MD, 1988. (see **89m:68002**) 68Q25 (05A15, 30E15, 68P05, 68P10)
- Flåm, S. D.** Variational inequalities and the convex feasibility problem. 19. *Jahrestagung "Mathematische Optimierung"* (Sellin, 1987), 41-66, *Seminarberichte*, 90, Humboldt Univ., Berlin, 1987. (Francesco Scarpini) **89g:49011** 49A29 (90C48)
- (with Hastings, Kevin J.) On adjustment costs, profit uncertainty and investment behavior. *Amer. J. Math. Management Sci.* **7** (1987), no. 3-4, 233-252. (Summary) **89h:90024** 90A09
- Stability of convex programs under a distributed constraint qualification. *Optimization* **19** (1988), no. 1, 45-51. (Constantin Zălinescu) **89e:90157** 90C25 (49A52)
- Flamm, Dieter** Boltzmann's influence on Schrödinger. *Schrödinger* (London, 1987), 4-15, Cambridge Univ. Press, Cambridge-New York, 1987. (see **89m:01069**) 81-03 (01A60)
- van Flandern, Thomas** see **Van Flandern, Thomas**
- Flandrin, P.** (with Hlawatsch, F.) Signal representations geometry and catastrophes in the time-frequency plane. *Mathematics in signal processing* (Bath, 1985), 3-14, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (Zdeněk Erntinger) **89c:49007** 94A05 (58C28)
- Flannery, Brian P.** (with Press, William H.; Teukolsky, Saul A.; Vetterling, William T.) ★ Numerical recipes in C. The art of scientific computing. Cambridge University Press, Cambridge-New York, 1988. xxii+735 pp. ISBN 0-521-35465-X (Editors) **89b:65001a** 65-00 (65-04, 65V05)
- (with Vetterling, William T.; Teukolsky, Saul A.; Press, William H.) ★ Numerical recipes example book (C). Cambridge University Press, Cambridge-New York, 1988. xii+239 pp. ISBN 0-521-35746-2 (Editors) **89b:65001b** 65-00 (65-04, 65V05)
- Flapan, Erica** Chirality of nonstandardly embedded Möbius ladders. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 76-81, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (D. W. L. Sumners) **89h:92081** 92A40 (57M15, 57M25)
- (with Boileau, Michel) Uniqueness of free actions on  $S^3$  respecting a knot. *Canad. J. Math.* **39** (1987), no. 4, 969-982. (Cameron McA. Gordon) **89d:57004** 57M25 (57S17)
- Symmetries of knotted hypothetical molecular graphs. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1-3, 157-166. (D. W. L. Sumners) **89g:20080** 92A40 (05C10, 57M15, 57M25)
- Flaschka, Hermann** see **Progress in chaotic dynamics**, (Not in MR)
- Flashner, H.** (with Guttalu, R. S.) A numerical method for computing domains of attraction for dynamical systems. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 4, 875-890. (Andrew C. Fowler) **89h:58101** 58F12 (34D30, 65L05)
- Flasiński, Mariusz** Analysis of scene represented by directed node- and edge-labelled graph. (Polish summary) *Podstawy Sterowania* **17** (1987), no. 1-2, 53-64. (Not in MR) 68T10 (05C20)
- Flato, M.** (with Fronsdal, Christian) Singletons: fundamental gauge theory. *Physique quantique et géométrie* (Paris, 1986), 63-80, *Travaux en Cours*, 32, Hermann, Paris, 1988. (Summary) **89h:81143** 81E20 (22E45, 58F06, 81E13, 81G20)
- see also **Quantum theories and geometry**, **89g:00017**
- Flatto, Leopold** (with Calderbank, A. R.; Coffman, E. G., Jr.) Optimal directory placement on disk storage devices. *J. Assoc. Comput. Mach.* **35** (1988), no. 2, 433-446. (Not in MR) 68M20
- Fleck, George** Form, function, and functioning. *Shaping space* (Northampton, Mass., 1984), 151-171, *Design Sci. Collect.*, Birkhäuser Boston, Boston, MA, 1988. (see **89b:52016**) 92A40 (52A25)
- (with Senechal, Marjorie) Polyhedra in the curriculum? *Shaping space* (Northampton, Mass., 1984), 262-265, *Design Sci. Collect.*, Birkhäuser Boston, Boston, MA, 1988. (see **89b:52016**) 00A25 (52A25)
- see also **Shaping space**, **89b:52016**
- Fleck, N. A.** (with Durban, D.) Asymptotic fields at tip of conical notches and inclusions in a power hardening solid. *J. Mech. Phys. Solids* **37** (1989), no. 2, 233-263. (Not in MR) 73M05 (73C40, 73E99)
- Fleckenstein, Joachim Otto** see **Bernoulli, Johann I.** **89c:01039**
- Fleckinger, Jacqueline Pellé** (with Lapidus, Michel L.) Tambour fractal: vers une résolution de la conjecture de Weyl-Berry pour les valeurs propres du laplacien. (English summary) [Fractal drum: towards a resolution of the Weyl-Berry conjecture for the eigenvalues of the Laplacian] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 4, 171-175. (Xue-Ping Wang) **89d:35133** 35P20 (11P21, 35J25, 58G25)
- Fleckinger, Vincent** Monogénéité de l'anneau des entiers de certains corps de classes de rayon. (English summary) [Monogeneity of the ring of integers of certain ray class fields] *Ann. Inst. Fourier (Grenoble)* **38** (1988), no. 1, 17-57. (Jürgen Ritter) **89i:11120** 11R32
- Fleckinger-Pellé, Jacqueline** see **Fleckinger, Jacqueline Pellé**
- Fleeter, S.** (with Schroeder, L.) Locally analytic numerical method and application to viscous internal and external flows. *Comput. Math. Appl.* **15** (1988), no. 11, 915-932. (Summary) **89e:76012** 76-08 (76D05, 76D15)
- Flegg, Graham** Nicolas Chuquet—an introduction. *Mathematics from manuscript to print, 1300-1600* (Oxford, 1984), 59-72, *Oxford Sci. Publ.*, Oxford Univ. Press, New York, 1988. (J. Dieudonné) **89m:01028** 01A40
- Fleiderovich, M.** Iterative methods with a parametric sequence. (Russian. English summary) *Tartu Riikl. Ül. Toimetised* No. 762 (1987), 107-113. (Mihai Turinici) **89a:65096** 65J15 (47H17, 49D15)
- Fleischer, A.** Submanifolds of reductive homogeneous spaces and Lie triple algebras. *Differential geometry and its applications, communications* (Brno, 1986), 101-107, *Univ. J. E. Purkyně, Brno*, 1987. (O. Kowalski) **89a:53057** 53C30 (17B05)
- Fleischer, Isidore** Equational classes of partial algebras. *Studia Sci. Math. Hungar.* **22** (1987), no. 1-4, 225-228. (Joel Berman) **89c:08004** 08A55 (08B05)
- Abstract Prüfer ideal theory. *J. Algebra* **115** (1988), no. 2, 332-339. (Daniel D. Anderson) **89e:06015** 06F05 (06A12, 13F99)
- Fleischer, V.** The isomorphism and Morita-equivalence of wreath products of monoids. (Russian. English and Estonian summaries) *Tartu Riikl. Ül. Toimetised* No. 764 (1987), 136-145. (K. Todorov) **89b:20141** 20M50 (18B40)
- (with Knauer, Ulrich) Endomorphism monoids of acts are wreath products of monoids with small categories. *Semigroups, theory and applications* (Oberwolfach, 1986), 84-96, *Lecture Notes in Math.*, 1320, Springer, Berlin-New York, 1988. (P. G. Trotter) **89j:20074** 20M30 (20M20, 20M50)
- Fleischacker, Louis Eduard** Quantität, Mathematik und Naturphilosophie. [Quantity, mathematics and natural philosophy] With discussion. *Hegel und die Naturwissenschaften* (Tübingen, 1983), 183-203, *Spekulation Erfahrung Abt. II: Unters.*, 2, Frommann-Holzboog, Stuttgart, 1987. (see **89m:00020**) 00A25
- Fleischmann, Bernhard** Mathematische Modelle und Methoden zur Unterstützung betrieblicher Entscheidungen. [Mathematical models and methods for aiding decision-making in industrial management] *Mitt. Math. Ges. Hamburg* **11** (1987), no. 4, 377-389. (Paul van Beek) **89a:90052** 90Bxx (90C50)
- A new class of cutting planes for the symmetric travelling salesman problem. *Math. Programming* **40** (1988), no. 3 (Ser. A), 225-246. (Maretsugu Yamasaki) **89g:90226** 90C35 (90B10, 90C10)
- Fleischmann, Klaus** Critical behavior of some measure-valued processes. *Math. Nachr.* **135** (1988), 131-147. (Makoto Maejima) **89b:60078** 60G57 (60G60, 60J80)
- Fleischmann, Peter** Periodic simple modules for  $SU_q(2)$  in the describing characteristic  $p \neq 2$ . *Math. Z.* **198** (1988), no. 4, 555-568. (Robert Bédard) **89g:20006** 20C05
- see also **Curtis, Ch.** **89g:20069**
- Fleischner, Herbert** (with Andersen, L. D.; Jackson, Bill) Removable edges in cyclically 4-edge-connected cubic graphs. *Graphs Combin.* **4** (1988), no. 1, 1-21. (H. Joseph Straight) **89c:05060** 05C75
- Fleisher, S.** (with Singh, Hardish; Shwedyk, E.) A generalized two-threshold detection procedure. *IEEE Trans. Inform. Theory* **34** (1988), no. 2, 347-352. (Not in MR) 94A13
- Fleishman, B. S.** (with Belyaev, V. I.; Ivakhnenko, A. G.) Cybernetic methods for optimizing the use of nature. *Soviet J. Automat. Inform. Sci.* **21** (1988), no. 2, 36-40; translated from *Avtomatika* **1988**, no. 2, 36-40, 94 (Russian. English summary). (Not in MR) 00A71 (92A17)
- Fleishman, S. B.** Effective application of the method of nonsequential dynamic programming in combinatorial optimization. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 2, 82-92; translated in *Automat. Remote Control* **49** (1988), no. 2, part 1, 184-193. (Summary) **89d:90172** 90C27
- Fleissner, William** (with Levy, Ronnie) Stone-Čech remainders which make continuous images normal. *Proc. Amer. Math. Soc.* **106** (1989), no. 3, 839-842. (W. Stephen Watson) **89k:54054** 54D40 (54C05, 54D15)
- Fleming, R. J.** (with Irwin, G. W.) Analysis of coloured filter controllers for bank-to-turn CLOS guidance. *Proc. IEE-D* **135** (1988), no. 6, 486-492. (Not in MR) 93E11
- bulman-Fleming, Sydney** see **Bulman-Fleming, Sydney**
- Fleming, W. H.** ★ Controlled Markov processes and viscosity solution of nonlinear evolution equations. *Lezioni Fermiane. [Fermi Lectures] Scuola Normale Superiore, Pisa, Accademia Nazionale dei Lincei, Rome*, 1986. 68 pp. (Emmanuel Nicholas Barron) **89e:93220** 93E20 (35B25, 35R60, 49C20, 90D25, 93-02)
- (with Sethi, Suresh P.; Soner, H. M.) An optimal stochastic production planning problem with randomly fluctuating demand. *SIAM J. Control Optim.* **25** (1987), no. 6, 1494-1502. (L. C. Thomas) **89c:90057** 90B30 (49C20, 60J70, 90C39, 93E20)
- (with Sheu, Shuenn Jyi; Soner, H. M.) A remark on the large deviations of an ergodic Markov process. *Stochastics* **22** (1987), no. 3-4, 187-199. (J. D. Biggins (Zbl 638:60036)) **89k:60099** 60J25 (60F10)
- (with Souganidis, P. E.) Two-player, zero-sum stochastic differential games. *Analyse mathématique et applications*, 151-164, Gauthier-Villars, Paris, 1988. (Veijo Kaitala) **89g:93090** 93E05 (49C20, 90C25)
- (with Ji, D.; Pardoux, E.) Piecewise linear filtering with small observation noise. *Analysis and optimization of systems* (Antibes, 1988), 725-739, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (F. W. Stallmann) **89j:93116** 93E11
- (with Vermes, Domokos) Generalized solutions in the optimal control of diffusions. *Stochastic differential systems, stochastic control theory and applications* (Minneapolis, Minn., 1986), 119-127, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (Věra Lánská) **89k:93223** 93E20 (60J60)
- (with Soner, H. M.) Asymptotic expansions for Markov processes with Lévy generators. *Appl. Math. Optim.* **19** (1989), no. 2, 203-223. (Yasushi Ishikawa) **89k:60108** 60J35
- see also **Stochastic differential systems, stochastic control theory and applications**, **89h:93009**
- Flemming, Diva Marilia** (with Taneja, Inder Jeet) An algorithm for calculating the weighted capacity. *J. Combin. Inform. System Sci.* **9** (1984), no. 4, 260-270. (Ram Autar) **89i:92080** 92A40 (94A17)
- Fleener, Hubert** (with Kosarew, Siegmund) On locally trivial deformations. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 4, 627-665. (Ciprian Borcea) **89c:32055** 32G05
- Extendability of differential forms on nonisolated singularities. *Invent. Math.* **94** (1988), no. 2, 317-326. (Ulrich Karras) **89j:14001** 14B05 (14B15, 14C30, 32B30, 32J25)
- Flerov, Yu. A.** A group-theoretic method for the analysis of the invariance of algorithms for the synthesis of curves. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 260-276, "Nauka", Moscow, 1987. (From the introduction) **89d:65029** 65D99 (22-04)
- Flesher, G. L.** (with Stokov, P. V.) Quantization of a system of particles that have anomalous momenta. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **30** (1987), no. 9, 78-81. (Summary) **89a:81166** 81G10 (81D07)
- Flessas, George P.** An analytic study of the Lorenz equations. *Finite-dimensional integrable nonlinear dynamical systems* (Johannesburg, 1988), 161-173, *World Sci. Publishing, Singapore*, 1988. (W.-H. Steeb) **89m:58138** 58F13
- (with Leach, P. G. L.; Gorringer, V. M.) A Rodrigues formula approach to determining closed-form solutions to the Schrödinger equation for symmetric anharmonic oscillators. *J. Math. Phys.* **30** (1989), no. 2, 406-412. (Ernest R. Davidson) **89k:81025** 81C05 (33A65)
- Fletcher, A. R.** Contributions to Riemann-Roch on projective 3-folds with only canonical singularities and applications. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 221-231, *Proc. Sympos. Pure Math.*, 46, Part 1, Amer. Math. Soc., Providence, RI, 1987. (A. S. Tikhomirov) **89h:14032** 14J30 (14F12)
- Fletcher, C. A. J.** (with Holland, P. G.) Computational investigation of swirling turbulent flow in an annulus. *Computational techniques and applications: CTAC-87* (Sydney, 1987),

- 271–280, *North-Holland, Amsterdam-New York*, 1988. (see **89b:00021**) 76–08  
 — (with Armfield, S. W.) Symbolic analysis of the reduced incompressible Navier-Stokes equations. *Comm. Appl. Numer. Methods* **4** (1988), no. 2, 219–226. (John C. Strikwerda) **89i:76045** 76D10  
 — Computational modelling of severe gradients with mass operator constructions. *Comput. Math. Appl.* **16** (1988), no. 1–2, 31–39. (Jarosław Jeleń) **89j:76012** 76–08 (65N30, 76R99)  
 — see also **Computational techniques and applications: CTAC-87, 89b:00021 and Computational fluid dynamics, 89c:76003**
- Fletcher, David J.** A new class of change-over designs for factorial experiments. *Biometrika* **74** (1987), no. 3, 649–654. (P. D. Puri) **89a:62179** 62K15  
**Fletcher, John E.** (with Havlin, Shlomo; Weiss, G. H.) First passage time problems in time-dependent fields. *J. Statist. Phys.* **51** (1988), no. 1–2, 215–232. (Summary) **89d:82050** 82A31 (60J15, 82A41)  
**Fletcher, L. R.** (with Ho, W. C.) Perturbation theory of output feedback pole assignment. *Internat. J. Control* **48** (1988), no. 3, 1075–1088. (Vicente Hernández) **89k:93112** 93B60 (93B35, 93B55)  
 — Eigenstructure assignment by output feedback in descriptor systems. *Proc. IEEE-D* **135** (1988), no. 4, 302–308. (Not in MR) **93B60** (93B50, 93C30)  
**Fletcher, N. H.** Bird song—a quantitative acoustic model. *J. Theoret. Biol.* **135** (1988), no. 4, 455–481. (Not in MR) **92A18** (76Q05, 92A09)  
**Fletcher, Paul** (with Fairlie, D. B.; Zachos, C. K.) Trigonometric structure constants for new infinite-dimensional algebras. *Phys. Lett. B* **218** (1989), no. 2, 203–206. (From the text) **89k:17038** 17B65 (17B67, 81D15)  
**Fletcher, Roger** ★ Practical methods of optimization. Second edition. A Wiley-Interscience Publication. John Wiley & Sons, Ltd., Chichester, 1987. xiv+436 pp. ISBN 0-471-91547-5 (From the preface) **89j:65050** 65K05 (49A52, 49D15, 90C30)  
 — Recent developments in linear and quadratic programming. *The state of the art in numerical analysis (Birmingham, 1986)*, 213–243, *Inst. Math. Appl. Conf. Ser. New Ser.*, 9, Oxford Univ. Press, New York, 1987. (K. Schittkowski) **89c:90070** 90C05 (90C20)  
**Fleurbaey, Marc** Rational behaviour and adaptation. *Risk, decision and rationality (Aix-en-Provence, 1986)*, 459–481, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston, MA*, 1988. (Introduction) **89b:90005** 90A05  
 — see also **Grandmont, Jean-Michel, 89f:90016**
- Fleishman, B. S.** see **Fleishman, B. S.**
- Flicker, Yuval Z.** Rigidity for automorphic forms. *J. Analyse Math.* **49** (1987), 135–202. (David Manderscheid) **89a:11057** 11F70 (22E50, 22E55)  
 — On the symmetric square: orbital integrals. *Math. Ann.* **279** (1987), no. 2, 173–191. (David Joyner) **89e:22016** 22E35 (11F70, 11R39, 22E50)  
 — Stable base change for spherical functions. *Nagoya Math. J.* **106** (1987), 121–142. (Joe Repta) **89b:11098** 11S37 (11F70, 11R39, 22E35)  
 — Unramified Whittaker functions on the metaplectic group. *Proc. Amer. Math. Soc.* **101** (1987), no. 3, 431–435. (A. B. Venkov) **89c:11084** 11F70 (22E50)  
 — Regular trace formula and base change lifting. *Amer. J. Math.* **110** (1988), no. 4, 739–764. (Ernst-Wilhelm Zink) **89m:11051** 11F72 (11R39, 22E50, 22E55)  
 — Twisted tensors and Euler products. (French summary) *Bull. Soc. Math. France* **116** (1988), no. 3, 295–313. (Daniel Bump) **89m:11049** 11F70 (11F55, 22E55)  
 — On endo-lifting. *Compositio Math.* **67** (1988), no. 3, 271–300. (David Joyner) **89k:22033** 22E50 (11F70, 11S37, 22E55)  
 — (with Kazhdan, D.) On the symmetric square: unstable local transfer. *Invent. Math.* **91** (1988), no. 3, 493–504. (David Soudry) **89c:11031** 11F70 (22E50)
- Fliess, Michel** Some remarks on nonlinear invertibility and dynamic state-feedback. *Theory and applications of nonlinear control systems (Stockholm, 1985)*, 115–121, *North-Holland, Amsterdam-New York*, 1986. (Summary) **89c:93023** 93B17 (93B25)  
 — Esquisses pour une théorie des systèmes non linéaires en temps discret. (English summary) [Sketch of a theory of nonlinear systems in discrete time] Conference on linear and nonlinear mathematical control theory. *Rend. Sem. Mat. Univ. Politec. Torino* **1987**, Special Issue, 55–67. (Summary) **89c:93057** 93B27 (93C10, 93C55)  
 — Sur quelques problèmes concernant les systèmes linéaires généralisés. (English summary) [On some problems concerning generalized linear systems] *Analysis and optimization of systems (Antibes, 1988)*, 161–169, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (J. P. Babary) **89c:93052** 93C05 (93C15, 93C20)  
 — Nonlinear control theory and differential algebra. *Modelling and adaptive control (Sopron, 1986)*, 134–145, *Lecture Notes in Control and Inform. Sci.*, 105, Springer, Berlin-New York, 1988. (Pranod Kumar Sharma) **89j:93058** 93C10 (93B10, 93B15, 93B27)
- Fligner, Michael A.** (with Verducci, Joseph S.) Multistage ranking models. *J. Amer. Statist. Assoc.* **83** (1988), no. 403, 892–901. (M. N. Goria) **89j:62037** 62F07
- Flikkema, Paul G.** (with Davisson, Lee D.) Detection of baseband signals using a delta modulator. *IEEE Trans. Inform. Theory* **34** (1988), no. 3, 537–543. (Not in MR) **94A13** (94A14)
- le Floch, Philippe** see **Le Floch, Philippe**
- Flockerzi, Dietrich** Persistence and bifurcation of invariant tori. *Oscillations, bifurcation and chaos (Toronto, Ont., 1986)*, 419–441, *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (James A. Murdock) **89b:58150** 58F14 (34C45, 58F13)
- Floer, Andreas** Viterbo's index and the Morse index for the symplectic action. *Periodic solutions of Hamiltonian systems and related topics (Il Ciocco, 1986)*, 147–152, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 209, Reidel, Dordrecht-Boston, MA, 1987. (Mircea Puta) **89j:58030** 58F05  
 — An instanton-invariant for 3-manifolds. *Comm. Math. Phys.* **118** (1988), no. 2, 215–240. (Ronald J. Stern) **89k:57028** 57N10 (58G05, 58G10, 58G25)  
 — A relative Morse index for the symplectic action. *Comm. Pure Appl. Math.* **41** (1988), no. 4, 393–407. (Holger Kantz) **89f:58055** 58F05  
 — The unregularized gradient flow of the symplectic action. *Comm. Pure Appl. Math.* **41** (1988), no. 6, 775–813. (Holger Kantz) **89c:58065** 58F05
- Flohr, Friedrich** (with Barner, Martin) ★ Analysis. I. (German) Third edition. de Gruyter Lehrbuch. [de Gruyter Textbook] Walter de Gruyter & Co., Berlin-New York, 1987. 494 pp. ISBN 3-11-011516-6 (R. G. Bartle) **89j:26001** 26–01 (00A05)
- Flondor, Paul** (with Brînzănescu, Vasile) Quadratic intersection form and 2-vector bundles on nonalgebraic surfaces. *Proceedings of the conference on algebraic geometry (Berlin,*
- 1985), 53–64, *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (Robert Frankel) **89d:32061** 32J15 (32L05)
- Flood, Raymond** see **Nature of time, 89m:83002**
- Floratos, E. G. F.** (with Biran, B.; Savvidi, G. K.) The self-dual closed bosonic membranes. *Phys. Lett. B* **198** (1987), no. 3, 329–332. (Summary) **89g:81069** 81E99 (81E30)  
 — (with Antoniadis, I.; Ditsas, P.; Iliopoulos, J.) New realizations of the Virasoro algebra as membrane symmetries. *Nuclear Phys. B* **300** (1988), no. 4, FS22, 549–558. (Summary) **89i:17012** 17B65 (58D30, 81E30)  
 — (with Ditsas, P.) Finite temperature closed bosonic string in a finite volume. *Phys. Lett. B* **201** (1988), no. 1, 49–53. (Summary) **89j:81170** 81E99 (81E30)  
 — (with Iliopoulos, J.) A note on the classical symmetries of the closed bosonic membranes. *Phys. Lett. B* **201** (1988), no. 2, 237–240. (Sergey Merkulov) **89c:81074** 81E13 (81E30)  
 — (with Iliopoulos, J.; Tiktopoulos, G.) A note on  $SU(\infty)$  classical Yang-Mills theories. *Phys. Lett. B* **217** (1989), no. 3, 285–288. (Henrik Pedersen) **89m:81094** 81E13
- Floreanini, Roberto** Representing functionally the two-dimensional conformal group. *Ann. Physics* **178** (1987), no. 2, 227–247. (Raiko Zaikov) **89d:81093** 81E99 (22E70, 81E30, 81E40)  
 — (with Vinet, Luc) Vacuum state of complex scalar fields in  $SO(2, 1)$ -invariant backgrounds. *Phys. Rev. D* (3) **36** (1987), no. 6, 1731–1739. (Marcos D. Maia) **89a:81090** 81E20 (81E13)  
 — (with Vinet, Luc) Complex scalar fields in  $SO(2, 1)$ -invariant backgrounds: representation of the symmetries in the Schrödinger picture. *Group theoretical methods in physics (Varna, 1987)*, 515–522, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (Summary) **89j:81139** 81E20  
 — (with Jackiw, R.) Functional representation for fermionic quantum fields. *Phys. Rev. D* (3) **37** (1988), no. 8, 2206–2224. (Bo-Wei Xu) **89c:81058** 81D05 (81E08)  
 — (with Vinet, Luc) Functional representation of the superconformal group in two dimensions. *Phys. Rev. D* (3) **38** (1988), no. 2, 543–546. (Bo-Wei Xu) **89j:81177** 81E99 (17A70, 58G35)
- Florek, J.** Interpolation by the Fourier-Stieltjes transform of a positive compactly supported measure. *Colloq. Math.* **54** (1987), no. 1, 113–120. (Colin C. Graham) **89d:43007** 43A46  
 — Existence of Sidon sets of first kind in LCA groups. *Colloq. Math.* **54** (1987), no. 1, 121–125. (K. A. Ross) **89b:43005** 43A46  
 — Graphs minimal with respect to contractions in some subfamilies of maximal planar graphs. *Proceedings of the International Conference on Combinatorial Analysis and its Applications (Pokrzywna, 1985)*, *Zastos. Mat.* **19** (1987), no. 3–4, 387–398 (1988). (Aldo G. S. Ventre) **89i:05103** 05C10 (05C38, 05C75)
- Florens, J.-P.** (with Mouchart, M.; Rolin, Jean-Marie) Exact estimability in conditional models. *Asymptotic theory for non i.i.d. processes (Luminy-Marseille, 1984)*, 121–143, *Travaux Rech.*, 8, Publ. Fac. Univ. Saint-Louis, Brussels, 1986. (From the introduction) **89j:62044** 62F15  
 — (with Mouchart, M.) Exhaustivité, ancillarité et identification en statistique bayésienne. (English summary) [Sufficiency, ancillarity and identification in Bayes statistics] *Ann. Econom. Statist.* **1986**, no. 4, 63–93. (Summary) **89a:62010** 62A15 (62B05)  
 — see also *Asymptotic theory for non i.i.d. processes, 89b:62003 and Spatial processes and spatial time series analysis, 89b:62007*
- Florens-Zmirou, Daniele** Statistiques de diffusions et temps local. (English summary) [Statistics of diffusions and local time] *Ann. Inst. H. Poincaré Probab. Statist.* **24** (1988), no. 1, 99–130. (Yu. M. Kabanov) **89f:60089** 60J55 (60H10, 60J60, 62F12)
- Florenzano, Monique** On an extension of the Gale-Nikaido-Debreu lemma. *Econom. Lett.* **25** (1987), no. 1, 51–53. (S. Zlobec) **89d:90046** 90A14 (54C60, 90A12)
- Flores, Jorge Gilberto** A global description of a one-dimensional threshold: the stable manifold of the stationary wave of the Nagumo equation. (Spanish) *Proceedings of the XXth National Congress of the Mexican Mathematical Society (Spanish) (Xalapa, 1987)*, 315–320, *Aportaciones Mat.: Comun.*, 5, Soc. Mat. Mexicana, Mexico City, 1988. (see **89k:00010**) 35K55 (35Q20, 92A09)
- Flores, R. G. Jr.** Classical approaches to cubic tables. *Cahiers Centre Études Rech. Opér.* **30** (1988), no. 1, 39–46. (Not in MR) 62–07 (62H99)
- Florescu, Liviu C.** A  $p$ -complete Menger structure for distribution functions space. *An. Stiint. Univ. "Al. I. Cuza" Iași Sect. I a Mat. (N.S.)* **34** (1988), no. 1, 1–6. (H. Sherwood) **89m:54044** 54E99 (08A02, 54A20, 54C35)
- calvo-Flores Segura, Antonio** see **Calvo-Flores Segura, Antonio**
- Floret, Klaus** Some basic ideas of linear functional analysis. (Portuguese) *Monograf. Soc. Paran. Mat.* **6** (1987), iv+50 pp. (E. R. Lorch) **89b:46001** 46–01
- Florian, A.** (with Schmidt, Wolfgang M.) Zerlegung von Dreiecken in Dreiecke mit Nebenbedingung. (English summary) [Partition of triangles into subtriangles with side condition] *Geom. Dedicata* **24** (1987), no. 3, 363–369. (E. Hertel) **89c:52026** 52A45
- Florinskii, A. A.** Cyclic sets of linear operators, and the multiplicity of the spectrum of a substitution operator. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 2, 112–114, 135. (A. G. Baskakov) **89d:47060** 47B38 (47D05)  
 — Mappings that are contractive in equivalent metrics. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 3, 123–124, 131. (E. G. Pytkeev) **89c:40010** 08A05 (54E35)
- Florya, R. S.** (with Ryabukhin, Yu. M.) An absolutely free strictly regular algebra of rank one. (Russian) *Mat. Issled.* **90** *Algebra i Kol'tsa* (1986), 48–60, 148. (Summary) **89d:08001** 08A05 (16A30)
- Floryan, J. M.** (with Zemach, C.) Quadrature rules for singular integrals with application to Schwarz-Christoffel mappings. *J. Comput. Phys.* **75** (1988), no. 1, 15–30. (B. Boyanov) **89c:65030** 65D32
- Floyd, William J.** Incompressible surfaces in 3-manifolds: the space of boundary curves. *Low-dimensional topology and Kleinian groups (Coventry/Durham, 1984)*, 131–143, *London Math. Soc. Lecture Note Ser.*, 112, Cambridge Univ. Press, Cambridge-New York, 1986. (W. Heil (Zbl 632:57009)) **89f:57019** 57N10 (57M35)  
 — (with Plotnick, Steven P.) Symmetries of planar growth functions. *Invent. Math.* **93** (1988), no. 3, 501–543. (Troels Jørgensen) **89f:22016** 22E40 (11F06, 20F05, 57N05)  
 — (with Hatcher, A.) The space of incompressible surfaces in a 2-bridge link complement. *Trans. Amer. Math. Soc.* **305** (1988), no. 2, 575–599. (G. Burde) **89c:57004** 57M25
- Fluch, Wolfgang** Eine Verallgemeinerung des Kuz'min-Theorems. [A generalization of the Kuz'min theorem] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **195** (1986), no. 4–7, 325–339. (Oto Strauch) **89c:11122** 11K50



- Flügge, Wilhelm** (with Spreiter, John R.) Irmgard Flügge-Lotz (1903–1974). *Women of mathematics*, 33–40. Greenwood, Westport, CT, 1987. (see **89b:01071**) 01A70
- Flügge-Lotz, Irmgard** see **Spreiter, John R.**, (**89b:01071**)
- Flum, Jörg** Formal languages and topological spaces. *Methods and applications of mathematical logic (Campinas, 1985)*, 169–178. *Contemp. Math.*, 69, Amer. Math. Soc., Providence, RI, 1988. (From the summary) **89a:03070** 03C85 (54A99)
- Flume, R.** The  $d = 2$  conformally invariant  $SU(2)$   $\sigma$ -model with Wess-Zumino term and related critical theories. *Renormalization of quantum field theories with nonlinear field transformations (Tegernsee, 1987)*, 170–178. *Lecture Notes in Phys.*, 303, Springer, Berlin-New York, 1988. (see **89g:81058**) 81E13
- Flury, P.** (with Hongler, M.-O.; Cartier, P.) Numerical study of a model of vibro-transporter. *Phys. Lett. A* **135** (1989), no. 2, 106–112. (Summary) **89m:70048** 70K40 (70K50)
- Flusser, Peter** Theory, simulation and reality. *College Math. J.* **19** (1988), no. 3, 210–222. (Not in MR) 60E05 (60-01)
- Flynshter, V. see Fleischer, V.**
- Flynn, James** (with Wijngaard, Jacob) On fractional flow models and equivalent finite state processes. *J. Math. Anal. Appl.* **133** (1988), no. 2, 395–403. (P. Rutkauskas) **89j:90259** 90C39 (90C40)
- (with Chung, Chia-Shin; Chiang, Dalen) Optimal replacement policies for a multicomponent reliability system. *Oper. Res. Lett.* **7** (1988), no. 4, 167–172. (Summary) **89e:90111** 90B25
- Flynn, Thomas J.** (with Gray, Robert M.) Encoding of correlated observations. *IEEE Trans. Inform. Theory* **33** (1987), no. 6, 773–787. (Gur Dial) **89b:94009** 94A15 (94A29, 94A34, 94B35)
- Flytzanis, E.** (with Kanakis, L.) Linear measure preserving transformations in Hilbert spaces. *Proceedings of the conference on ergodic theory and related topics, II (Georgenthal, 1986)*, 53–56. *Teubner-Texte Math.*, 94, Teubner, Leipzig, 1987. (R. Anantharaman) **89c:28039** 28D05 (47A35, 47B38)
- Flyvbjerg, H.** (with Derrida, B.) Statistical properties of randomly broken objects and of multivalley structures in disordered systems. *J. Phys. A* **20** (1987), no. 15, 5273–5288. (A. Comtet) **89c:82052** 82A57
- (with Kjær, N. J.) Exact solution of Kauffman's model with connectivity one. *J. Phys. A* **21** (1988), no. 7, 1695–1718. (F. Ventriglia) **89j:92027** 92A09 (58F40, 82A99)
- Foakes, A. P.** (with Mohammedi, N.; Ross, Douglas A.) Three-loop  $\beta$ -functions for the superstring and heterotic string. *Nuclear Phys. B* **310** (1988), no. 2, 335–354. (Summary) **89j:81178** 81E99 (81E15, 81E30)
- (with Mohammedi, N.; Ross, Douglas A.) Effective action and  $\beta$ -functions for the heterotic string. *Phys. Lett. B* **206** (1988), no. 1, 57–61. (Summary) **89b:81148** 81E15 (81E30)
- Fosta, Dominique** (with Désarménien, Jacques) Fonctions symétriques et séries hypergéométriques basiques multivariées. II. (English summary) [Symmetric functions and multivariate basic hypergeometric series. II] *Combinatoire énumérative (Montreal, Que., 1985/Quebec, Que., 1985)*, 68–90. *Lecture Notes in Math.*, 1234, Springer, Berlin-New York, 1986. (David M. Bressoud) **89e:05020** 05A17 (20C30, 33A30)
- (with Zeilberger, Doron) Laguerre polynomials, weighted derangements, and positivity. *SIAM J. Discrete Math.* **1** (1988), no. 4, 425–433. (R. A. Askey) **89m:05008** 05A15 (33A65)
- Focardi, Stefano** (with Paveri-Fontana, S. L.; Deneubourg, Jean Louis; Chelazzi, Guido) A mathematical framework for the life-cycle of planktonic-benthonic invertebrates. *Biomathematics and related computational problems (Naples, 1987)*, 145–163. *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89j:92051** 92A15
- Fochi, Margherita** (with Skof, Fulvia) On the characterization of certain classes of quadratic functionals. (Italian. English summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **115** (1981), no. 5–6, 303–310 (1984). (B. Crstici) **89c:39013** 39B30
- (with Skof, Fulvia) Remarks on some continuity criteria for additive functions and quadratic functions. (Italian. English summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **119** (1985), no. 5–6, 175–190 (1986). (Solomon Marcus) **89d:39006** 39B10 (39B20)
- Some functional equations conditioned on orthogonal vectors. (Italian. English summary) *Rend. Sem. Mat. Univ. Politec. Torino* **44** (1986), no. 3, 397–406 (1987). (B. Crstici) **89f:39010** 39B70 (39B20)
- Foda, Mostafa A.** (with Mei, Chiang C.) Subharmonic generation of edge waves by nonuniform incident waves. *Wave Motion* **10** (1988), no. 2, 149–160. (Summary) **89c:76028** 76B15 (86A05)
- Foelsche, G. A.** (with Griffin, J. H.; Bielak, J.) Transient response of joint-dominated space structures: a new linearization technique. *AIAA J.* **26** (1988), no. 10, 1278–1285. (Summary) **89f:73059** 73K40 (70K40, 73K30)
- Foerster, D.** On  $d = 2$  Regge calculus without triangulation: the supersymmetric case. *Nuclear Phys. B* **291** (1987), no. 4, 813–828. (Ruth M. Williams) **89a:83042** 83C99 (81E30, 83C27)
- Fofanova, Tatjana S.** (with Rutkowski, Aleksander) The fixed point property in ordered sets of width two. *Order* **4** (1987), no. 2, 101–106. (Margret H. Hof) **89a:06005** 06A10
- Fogel, D. B.** An evolutionary approach to the traveling salesman problem. *Biol. Cybernet.* **60** (1988), no. 2, 139–144. (Summary) **89j:90090** 90B10 (68R10)
- Fogel, Eli** (with Gavish, Motti)  $N$ th-order dynamics target observability from angle measurements. *IEEE Trans. Aerospace Electron. Systems* **24** (1988), no. 3, 305–308. (Not in MR) 93B07
- Fogelman-Soulé, Françoise** Representation of knowledge and learning on automata networks. *Automata networks (Argelès-Village, 1986)*, 95–116. *Lecture Notes in Comput. Sci.*, 316, Springer, Berlin-New York, 1988. (see **89c:68078**) 68T30 (68Q80, 68T05, 92A25)
- Connectionist models in artificial intelligence. (Spanish. French summary) *Rev. Mat. Apl.* **9** (1988), no. 2, 53–76. (J. M. Dion) **89m:68116** 68T05
- Fogelson, Aaron L.** (with Peskin, Charles S.) A fast numerical method for solving the three-dimensional Stokes equations in the presence of suspended particles. *J. Comput. Phys.* **79** (1988), no. 1, 50–69. (Summary) **89k:76004** 76-08 (76-04, 76D07, 76Z05, 92A08)
- Fogelson, J.** On the rate of convergence of a dynamic stochastic approximation method. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **16** (1987), no. 5, 385–394. (K. M. Ramachandran) **89d:62083** 62L20 (93E25)
- Fogwell, T. W.** (with Brakhagen, F.) Multigrid methods for the solution of porous media multiphase flow equations. *Nonlinear hyperbolic equations—theory, computation methods, and applications (Aachen, 1988)*, 139–148. *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 76-08 (76S05, 76T05)
- Folias, Ciprian** (with Frazho, Arthur E.) On the Schur representation in the commutant lifting theorem. I. *I. Schur methods in operator theory and signal processing*, 207–217. *Oper. Theory. Adv. Appl.*, 18, Birkhäuser, Basel-Boston, MA, 1986. (E. Durszt) **89a:47011** 47A20
- (with Ball, Joseph A.; Helton, J. William; Tannenbaum, Allen) On a local nonlinear commutant lifting theorem. *Indiana Univ. Math. J.* **36** (1987), no. 3, 693–709. (E. R. Tsekanovskii) **89a:47010** 47A20 (47B35, 93B28)
- (with Ong, Sing-Cheong; Rosenthal, Peter M.) An interpolation theorem and operator ranges. *Integral Equations Operator Theory* **10** (1987), no. 6, 802–811. (Fernando Cobos) **89a:46147** 46M35 (47A30)
- (with Tannenbaum, Allen) On the Nehari problem for a certain class of  $L^\infty$ -functions appearing in control theory. *J. Funct. Anal.* **74** (1987), no. 1, 146–159. (Summary) **89g:30066** 30D35 (30E05, 46J15, 90B35)
- (with Manley, O.; Temam, Roger) Attractors for the Bénard problem: existence and physical bounds on their fractal dimension. *Nonlinear Anal.* **11** (1987), no. 8, 939–967. (C. Bardos) **89f:35166** 35Q10 (35B99, 58F12)
- (with Tannenbaum, Allen) On the four-block problem. I. *Topics in operator theory*, 93–112. *Oper. Theory. Adv. Appl.*, 32, Birkhäuser, Basel-Boston, MA, 1988. (Avraham Feintuch) **89h:47037a** 47B35 (47A30, 47B38, 93B28)
- (with Bercovici, Hari; Tannenbaum, Allen) On skew Toeplitz operators. I. *Topics in operator theory and interpolation*, 21–43. *Oper. Theory. Adv. Appl.*, 29, Birkhäuser, Basel-Boston, MA, 1988. (Rodrigo Arocena) **89i:47043** 47B35 (47A20, 93B28)
- (with Frazho, Arthur E.) On the Schur representation in the commutant lifting theorem. II. *Topics in operator theory and interpolation*, 171–179. *Oper. Theory. Adv. Appl.*, 29, Birkhäuser, Basel-Boston, MA, 1988. (E. Durszt) **89k:47012** 47A20
- (with Frazho, Arthur E.; Sherman, P. J.) A geometric approach to the maximum likelihood spectral estimator for sinusoids in noise. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part I, 1066–1070. (Summary) **89m:94005** 94A12 (62M15)
- (with Tannenbaum, Allen) On the four-block problem. II. The singular system. *Integral Equations Operator Theory* **11** (1988), no. 5, 726–767. (Avraham Feintuch) **89h:47037b** 47B35 (47A30, 47B38, 93B28)
- (with Tannenbaum, Allen) Optimal sensitivity theory for multivariate distributed plants. *Internat. J. Control* **47** (1988), no. 4, 985–992. (Summary) **89f:93012** 93B35 (93B28, 93C20)
- (with Sell, George R.; Temam, Roger) Inertial manifolds for nonlinear evolutionary equations. *J. Differential Equations* **73** (1988), no. 2, 309–353. (Henk J. A. M. Heijmans) **89e:58020** 58D25 (34C30, 34G20, 35B40, 47H20, 58D07, 58F12)
- (with Bercovici, Hari; Pearcy, C.) Two Banach space methods and dual operator algebras. *J. Funct. Anal.* **78** (1988), no. 2, 306–345. (Vern Paulsen) **89m:47004** 47A15 (47D15)
- (with Constantin, Peter; Temam, Roger) On the dimension of the attractors in two-dimensional turbulence. *Phys. D* **30** (1988), no. 3, 284–296. (Andrew C. Fowler) **89j:76056** 76F99 (58F12, 76D05)
- (with Temam, Roger) The algebraic approximation of attractors: the finite-dimensional case. *Phys. D* **32** (1988), no. 2, 163–182. (Peter E. Kloeden) **89k:58161** 58F12 (34C05, 58F13)
- (with Jolly, M. S.; Kevrekidis, I. G.; Sell, George R.; Titi, E. S.) On the computation of inertial manifolds. *Phys. Lett. A* **131** (1988), no. 7–8, 433–436. (Summary) **89k:65154** 65P05 (35Q20, 58D25, 58F12, 58F14, 92A09)
- (with Manley, O.; Temam, Roger) Modelling of the interaction of small and large eddies in two-dimensional turbulent flows. (French summary) *RAIRO Model. Math. Anal. Numér.* **22** (1988), no. 1, 93–118. (Alberto Valli) **89h:76022** 76F99 (35Q10, 76D05)
- (with Tannenbaum, Allen; Zames, G.) Some explicit formulae for the singular values of certain Hankel operators with factorizable symbol. *SIAM J. Math. Anal.* **19** (1988), no. 5, 1081–1089. (Avraham Feintuch) **89k:47040** 47B35 (93B28, 93B35)
- (with Tannenbaum, Allen) Some remarks on optimal interpolation. *Systems Control Lett.* **11** (1988), no. 4, 259–264. (Shunhua Sun) **89k:93072** 93B35 (15A09, 41A05, 47B35, 93B28)
- Földi, Ch.** (with Kasperkovitz, P.; Eder, O. J.) Inhomogeneous hard rod systems: comparison of theoretical and numerical results. *J. Phys. A* **20** (1987), no. 9, 2497–2510. (Summary) **89b:82049** 82A40 (82-04)
- (with Kasperkovitz, P.) Velocity dependent invariants for hard particles in one dimension. *J. Phys. A* **21** (1988), no. 21, 4039–4052. (From the text) **89k:70029** 70F99 (58F40, 70F35, 82A99)
- Fokas, A. S.** Aspects of integrability in one and several dimensions. *Topics in soliton theory and exactly solvable nonlinear equations (Oberwolfach, 1986)*, 45–77. *World Sci. Publishing, Singapore*, 1987. (F. W. Nijhoff) **89d:58054** 58F07 (35Q20)
- (with Papageorgiou, V. G.) Inverse problems and a unified approach to integrability in 1, 1 + 1 and 2 + 1 dimensions. *Solitons (Tiruchirappalli, 1987)*, 63–85. *Springer Ser. Nonlinear Dynamics*, Springer, Berlin-New York, 1988. (Vladimir Stefanov Gerdjikov) **89h:35336** 35R30 (34A34, 35Q15, 35Q20, 58F07)
- (with Santini, P. M.) Integrable equations in multidimensions (2 + 1) are bi-Hamiltonian systems. *Solitons (Tiruchirappalli, 1987)*, 118–144. *Springer Ser. Nonlinear Dynamics*, Springer, Berlin-New York, 1988. (Vladimir Stefanov Gerdjikov) **89j:58148** 58G37 (35Q20, 58F07, 58F37)
- (with Santini, P. M.) Recursion operators and bi-Hamiltonian structures in multidimensions. I. *Comm. Math. Phys.* **115** (1988), no. 3, 375–419. (Peter A. Clarkson) **89g:58097a** 58F07 (35Q20)
- (with Santini, P. M.) Recursion operators and bi-Hamiltonian structures in multidimensions. II. *Comm. Math. Phys.* **116** (1988), no. 3, 449–474. (Peter A. Clarkson) **89g:58097b** 58F07 (35Q20)
- (with Santini, P. M.) Bi-Hamiltonian formulation of the Kadomtsev-Petviashvili and Benjamin-Ono equations. *J. Math. Phys.* **29** (1988), no. 3, 604–617. (Benno Fuchssteiner) **89g:58088** 58F07 (35Q20)
- (with Barouch, E.; Papageorgiou, V. G.) The bi-Hamiltonian formulation of the Landau-Lifshitz equation. *J. Math. Phys.* **29** (1988), no. 12, 2628–2633. (Yisong Yang) **89i:58047** 58F07 (35Q20, 58F37, 58G37)

- Fokht, A. S.** On the application of Schauder estimates for solutions of equations of elliptic type to estimates for special functions. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 10, 1797–1801, 1838; translated in *Differential Equations* **24** (1988), no. 10, 1200–1203. (Summary) **89j:33007** 33A45 (35B45, 35J15)
- Fokin, I. N.** (with Bregman, L. M.) Methods for determining equilibrium states in polymatrix games with zero sum. (Russian) *Optimizatsiya* No. 40(57) (1987), 70–82, 160. (F. Szidarovszky) **89f:90204** 90D10 (90C05)
- Földes, Antónia** (with Csáki, Endre; Révész, P.) On the maximum of a Wiener process and its location. *Probab. Theory Related Fields* **76** (1987), no. 4, 477–497. (Simeon M. Berman) **89a:60186** 60J65 (60F15)
- (with Csáki, Endre) A note on the stability of the local time of a Wiener process. *Stochastic Process. Appl.* **25** (1987), no. 2, 203–213. (Joseph Glover) **89j:60108** 60J55 (60J65)
- (with Csáki, Endre; Komlós, János) Limit theorems for Erdős-Rényi type problems. *Studia Sci. Math. Hungar.* **22** (1987), no. 1–4, 321–332. (Paul Deheuvels) **89b:60052** 60F05
- (with Csáki, Endre) On the length of the longest flat interval. *Probability theory and mathematical statistics with applications* (Visegrád, 1985), 23–33, Reidel, Dordrecht-Boston, MA, 1988. (N. H. Bingham) **89g:60234** 60J30 (60G17, 60J65)
- (with Csáki, Endre; Kasahara, Yuji) Around Yor's theorem on the Brownian sheet and local time. *J. Math. Kyoto Univ.* **28** (1988), no. 2, 373–381. (Robert J. Adler) **89i:60085** 60G17 (60G60, 60J55)
- Foley, Robert D.** (with Kiessler, Peter C.; Melamed, B.; Yadin, M.) Analysis of a three-node queueing network. *Queueing Systems Theory Appl.* **3** (1988), no. 1, 53–72. (Hans Daduna) **89d:60177** 60K25 (68M20, 90B22)
- (with Kiessler, Peter C.) Positive correlations in a three-node Jackson queueing network. *Adv. in Appl. Probab.* **21** (1989), no. 1, 241–242. (Carl M. Harris) **89m:60227** 60K25 (90B15, 90B22)
- Foley, Thomas A.** A shape-preserving interpolant with tension controls. *Comput. Aided Geom. Design* **5** (1988), no. 2, 105–118. (Summary) **89g:65014** 65D07
- Folger, Tina A.** (with Klir, G. J.) ★ Fuzzy sets, uncertainty, and information. Prentice-Hall, Inc., Englewood Cliffs, NJ, 1988. xii+355 pp. ISBN 0-13-345984-5 (Witold Pedrycz) **89e:94028** 94D05 (00A69, 03E72, 90A05, 92A25, 94A15)
- Folk, Robert T.** (with Goldberg, Irwin S.) Solutions for steady and nonsteady entrance flow in a semi-infinite circular tube at very low Reynolds numbers. *SIAM J. Appl. Math.* **48** (1988), no. 4, 770–771. (Summary) **89f:76037** 76D99 (35Q10, 76Z05)
- Folkerts, Menso** Adelard's versions of Euclid's *Elements*. *Adelard of Bath*, 55–68, *Warburg Inst. Surveys Texts*, XIV, Warburg Inst., London, 1987. (see **89c:01017**) 01A35
- (with Kühne, Andreas; Segre, Michael) Der Aufbau einer Datenbank für die Geschichte der europäischen Mathematik im Mittelalter und der Renaissance. [The setup of a databank for the history of European mathematics in the Middle Ages and Renaissance] *Ber. Wiss.-Gesch.* **11** (1988), no. 4, 256–260. (Editors) **89m:01003** 01A05 (01A35, 01A40)
- Föllmer, Hans** (with Orey, Steven) Large deviations for the empirical field of a Gibbs measure. *Ann. Probab.* **16** (1988), no. 3, 961–977. (Robert J. Adler) **89i:60063** 60F10 (60G60, 82A05)
- Folta, Jaroslav** (with Nový, Luboš) ★ История естествознания в данных. (Russian) [A history of the natural sciences by dates] Хронологический обзор. [A chronological survey] Translated from the Slovak by Z. E. Gefman. Translation edited and with a preface by A. N. Shamin. "Progress", Moscow, 1987. 496 pp. (Editors) **89b:01001** 01–01 (00A20)
- Die Entwicklung der Geometrie im 19. Jahrhundert und die Entstehung geometrischer Schulen. [The development of geometry in the 19th century and the beginnings of schools of geometry] *NTM Schr. Geschichte Natur. Tech. Medizin* **24** (1987), no. 2, 29–41. (Abe Shenitzer) **89b:01020** 01A55 (01A72, 51–03)
- Foltynska, Izabela** The existence of zeros of solutions of a nonlinear integro-differential equations system. *Fasc. Math.* No. 16 (1986), 81–87. (L. A. Sakhnovich [Zbl 614:45017]) **89d:45011** 45J05
- Functional integrability of solutions to the system of nonlinear differential equations. *Fasc. Math.* No. 18 (1988), 111–117 (1989). (Summary) **89m:34045** 34C11
- Fomenko, A. T.** Some new topological problems of Hamiltonian mechanics. (Russian) *Geometry, differential equations and mechanics* (Moscow, 1985), 19–24, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (Editors) **89b:58059** 58F05 (58F07)
- The topology of surfaces of constant energy of integrable Hamiltonian systems and obstructions to integrability. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **50** (1986), no. 6, 1276–1307, 1344. (A. Morimoto) **89f:58056** 58F05 (57R65, 58F07)
- ★ Differential geometry and topology. Translated from the Russian by D. A. Leites. Contemporary Soviet Mathematics. Consultants Bureau, New York, 1987. xiv+323 pp. ISBN 0-306-10995-6 (Elmer G. Rees) **89b:58003** 58–01 (53–01, 57–01)
- (with Novikov, S. P.) ★ Элементы дифференциальной геометрии и топологии. (Russian) [Elements of differential geometry and topology] "Nauka", Moscow, 1987. 432 pp. (Josef Janyška) **89e:58001** 58–01 (53–01)
- (with Trofimov, V. V.) Geometric and algebraic mechanisms for the integrability of Hamiltonian systems on homogeneous spaces and Lie algebras. (Russian) *Current problems in mathematics. Fundamental directions*, Vol. 16 (Russian), 227–299, 307, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform.*, Moscow, 1987. (A. Morimoto) **89c:58056** 58F07
- Qualitative geometric theory of integrable systems, the classification of iso-energy surfaces and bifurcations of Liouville tori for critical energy values. (Russian) *Geometry and the theory of singularities in nonlinear equations* (Russian), 118–139, 184, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1987. (A. Morimoto) **89i:58035a** 58F05 (53C57)
- (with Mishchenko, A. S.) ★ A course of differential geometry and topology. Translated from the Russian by Anatoly Talashev. "Mir", Moscow, 1988. 455 pp. ISBN 5-03-000220-0 (Editors) **89m:53001** 53–01 (57–01, 58–01)
- Qualitative geometrical theory of integrable systems. Classification of isoenergetic surfaces and bifurcation of Liouville tori at the critical energy values. *Global analysis—studies and applications*, III, 221–245, *Lecture Notes in Math.*, 1334, Springer, Berlin-New York, 1988. (A. Morimoto) **89i:58035b** 58F05 (53C57)
- (with Matveev, S. V.) A Morse-type theory for integrable Hamiltonian systems with tame integrals. (Russian) *Mat. Zametki* **43** (1988), no. 5, 663–671, 703; translated in *Math. Notes* **43** (1988), no. 5–6, 382–386. (Ivailo M. Mladenov) **89k:58099** 58F05 (58E05, 58F07)
- (with Le Hong Van) Lagrangian manifolds and the Maslov index in the theory of minimal surfaces. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 1, 42–45; translated in *Soviet Math. Dokl.* **37** (1988), no. 2, 330–333. (John C. Wood) **89e:53086** 53C42 (49F10, 53A10, 58E15)
- (with Le Hong Van) Volumes of minimal surfaces and the curvature tensor of Riemannian manifolds. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 6, 1308–1312; translated in *Soviet Math. Dokl.* **37** (1988), no. 3, 817–820. (Alan West) **89j:53041** 53C20 (53C42, 58E12)
- (with Zieschang, Heiner) Generic topological properties of integrable Hamiltonian systems. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **52** (1988), no. 2, 378–407, 447; translated in *Math. USSR-Izv.* **32** (1989), no. 2, 385–412. (A. Morimoto) **89m:58061** 58F05 (57N10)
- (with Brailov, A. V.) Topology of integral submanifolds of completely integrable Hamiltonian systems. (Russian) *Mat. Sb. (N.S.)* **134(176)** (1987), no. 3, 375–385, 447–448; translated in *Math. USSR-Sb.* **62** (1989), no. 2, 373–383. (Zhaojun Liang) **89d:58036** 58F05
- see also Koblitz, Neal I., **89d:00002** and Federer, Herbert, **89f:49034**
- Fomenko, A. V.** Interpolation of strategies for differential games under conditions of uncertainty. (Russian) *English summary* *Automat. i Telemekh.* **1987**, no. 9, 44–50. (Witold Rzymowski) **89e:90238** 90D26 (90D25)
- Fomenko, T. N.** (with Borisovich, Yu. G.) Homological methods in the theory of periodic and equivariant maps. *Global analysis—studies and applications*, III, 21–41, *Lecture Notes in Math.*, 1334, Springer, Berlin-New York, 1988. (Christian Fenske) **89m:58029** 58C30 (55M35, 57S99)
- Fomicheva, T. G.** (with Kononenko, G. N.) A numerical algorithm for solving problems of geochemical hydrodynamics. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 9(43) (1988), 16–19, 85. (Summary) **89h:76037** 76S05 (76–08, 76T05, 86A05)
- Fomicheva, Yu. G.** A theorem on the existence in  $E^3$  of a surface with given negative Gaussian curvature and with a bijective spherical mapping onto an open half sphere. (Russian) *Investigations in the theory of surfaces in manifolds with curvature of constant sign* (Russian), 92–97, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Valentin Boju) **89h:53005** 53A05
- Fomin, A. A.** Invariants and duality in some classes of torsion-free abelian groups of finite rank. (Russian) *Algebra i Logika* **26** (1987), no. 1, 63–83, 126. (L. Procházka) **89i:20079** 20K15
- Fomin, A. F.** (with Shelukhin, O. I.) Design of nonlinear gauges and demodulators in the presence of non-Gaussian messages and noise. (Russian) *English summary* *Teoret. Elektrotekh.* No. 41 (1986), 3–7. (Not in MR) **94C05** (94A14)
- Fomin, A. N.** (with Shunkov, V. P.) A condition for the nonsimplicity of locally finite groups. (Russian) *Ural. Gos. Univ. Mat. Zap.* **14** (1987), no. 2 Issled. Algebr. Sist. po Svoist. ikh Podsliz., 136–140, vi. (I. Ya. Subbotin) **89i:20054** 20E32 (20E25)
- Classes of finite simple groups. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 3, 389–390, 408; translated in *Ukrainian Math. J.* **40** (1988), no. 3, 335–336. (V. D. Mazurov) **89j:20021** 20D05
- Fomin, G. A.** Some classes of orthogonal series in ultraspherical polynomials. (Russian) *Application of functional analysis, in approximation theory* (Russian), 126–133, 148, *Kalinin. Gos. Univ., Kalinin*, 1984. (see **89c:00006**) 33A65
- Estimates for uniform and in the mean approximation of functions by partial sums of their orthogonal expansions in some orthonormal systems. (Russian) *Theory of functions and approximations, Part 1* (Russian) (Saratov, 1984), 146–152, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00035**) 42A10 (42C05)
- A property of orthogonal polynomials. (Russian) *Application of functional analysis in approximation theory* (Russian), 103–111, *Kalinin. Gos. Univ., Kalinin*, 1987. (Stanislaw Kus) **89c:33017** 33A65 (42C05)
- Fomin, M. B.** (with Kozhevnikov, I. R.; Rybakov, Yu. P.) The structure of topological solitons in the Skyrme model. (Russian) *English summary* *Teoret. Mat. Fiz.* **75** (1988), no. 3, 353–360; translated in *Theoret. and Math. Phys.* **75** (1988), no. 3, 575–580. (Summary) **89f:81100** 81E13
- Fomin, P. V.** On a type of generalized rings. (Ukrainian. Russian summary) *Visnik Kiyv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 114–115, 129. (Summary) **89c:16054** 16A78
- Fomin, S. V.** (with Kornfeld, I. P.; Sinai, Ya. G.) ★ Teoria ergodyczna. (Polish) [Ergodic theory] Translated from the Russian by Jacek Jakubowski. *Państwowe Wydawnictwo Naukowe (PWN)*, Warsaw, 1987. 403 pp. ISBN 83-01-07118-4 (Editors) **89e:28023** 28Dxx (54C70, 54H20, 58F11)
- (with Alekseev, V. M.; Tikhomirov, V. M.) ★ Optimal control. Translated from the Russian by V. M. Volosov. Contemporary Soviet Mathematics. Consultants Bureau, New York, 1987. xiv+309 pp. ISBN 0-306-10996-4 (Leszek Zaremba) **89e:49002** 49–01 (93–01)
- Fomin, V. I.** (with Shatalov, Yu. S.) Optimal integral formulas for the coefficients of the hyperbolic heat equation. (Russian) *Boundary value problems* (Russian), 124–126, 162, *Perm. Politekh. Inst., Perm*, 1984. (see **89b:00008**) 35R30 (35L99)
- Fomin, V. N.** (with Petrov, O. A.) Linear optimal estimation of nonstationary random processes and factorization of correlation operators. (Russian) *English summary* *Automat. i Telemekh.* **1988**, no. 7, 88–98; translated in *Automat. Remote Control* **49** (1988), no. 7, part 1, 887–895. (Han Fu Chen) **89j:93109** 93E10 (47A68, 60H10, 93E11)
- Fominykh, M. A.** Admissible changes of variables in the class of BMO functions. (Russian) *Mat. Zametki* **43** (1988), no. 5, 635–643, 702; translated in *Math. Notes* **43** (1988), no. 5–6, 366–371. (Burglind Jörcke) **89d:42021** 42B30 (46E99)
- Fominykh, M. Yu.** Convergence almost everywhere of Riemann sums. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 6, 67–70. (Maciej Sablik) **89b:26010** 26A42 (42A20)
- Fonacier, Josefina C.** Star polygons. *Matimys Mat.* **11** (1987), no. 2, 1–4. (E. Hertel) **89m:51033** 51M20
- Fonda, Alessandro** (with Cellina, Arrigo; Colombo, Giovanni) A continuous version of Liapunov's convexity theorem. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **5** (1988), no. 1, 23–36. (J. P. R. Christensen) **89c:28005** 28A10 (54C65)
- (with Colombo, Giovanni; Ornelas, António) Lower semicontinuous perturbations of maximal monotone differential inclusions. *Israel J. Math.* **61** (1988), no. 2, 211–218.



- (Dan Butnariu) **89g:34017** 34A60 (49A50)
- Fong, C. K.** (with Murphy, G. J.) Ideals and Lie ideals of operators. *Acta Sci. Math.* (Szeged) **51** (1987), no. 3-4, 441-456. (A. R. Sourour) **89k:47067** 47D25
- (with Fan, Peng) Operators similar to zero diagonal operators. *Proc. Roy. Irish Acad. Sect. A* **87** (1987), no. 2, 147-153. (M. M. Malamud) **89f:47035** 47A99 (47B05)
- (with Herrero, Domingo A.; Rodman, Leiba) Invariant subspace lattices that complement every subspace. *Illinois J. Math.* **32** (1988), no. 1, 151-158. (Kenneth R. Davidson) **89d:47007** 47A15
- Fong, I. K.** see **Feng, I. Kang**
- Fong, I.-Kong** see **Feng, I. Kang**
- Fonio, Harald-Reto** (with Boehm, Paul; Habel, Annegret) Amalgamation of graph transformations: a synchronization mechanism. *J. Comput. System Sci.* **34** (1987), no. 2-3, 377-408. (Dirk Janssens) **89e:68070** 68Q50
- Fonk, Y.** (with Hilhorst, H.) Ground-state and quenched-state properties of a one-dimensional interacting lattice gas in a random potential. *J. Statist. Phys.* **49** (1987), no. 5-6, 1235-1254. (Aernout C. D. van Enter) **89f:82071** 82A67 (82A68)
- Fonseca, Amélia** (with Cordovil, R.; Dias da Silva, J. A.) On the notion of transversal of a sum of matroids. *Portugal. Math.* **45** (1988), no. 3, 317-325. (András Recski) **89j:05027** 05B15
- Fonseca, Irene** Stability of elastic crystals. *Nonclassical continuum mechanics* (Durham, 1986), 187-196, *London Math. Soc. Lecture Note Ser.*, 122, Cambridge Univ. Press, Cambridge-New York, 1987. (Gérard A. Maugin) **89f:73017** 73C50 (49A50, 73C20)
- The lower quasiconvex envelope of the stored energy function for an elastic crystal. *J. Math. Pures Appl.* (9) **67** (1988), no. 2, 175-195. (John M. Ball) **89g:73042** 73S99 (49A50, 73G05)
- Font, A.** (with Ibáñez, L. E.; Nilles, H. P.; Quevedo, F.) Degenerate orbifolds. *Nuclear Phys. B* **307** (1988), no. 1, 109-129. (C. Gauthier) **89j:81179a** 81E99 (81E30, 81G20, 83E30)
- (with Ibáñez, L. E.; Nilles, H. P.; Quevedo, F.) Erratum: "Degenerate orbifolds". *Nuclear Phys. B* **310** (1988), no. 3-4, 764. (C. Gauthier) **89j:81179b** 81E99 (81E30, 81G20, 83E30)
- (with Ibáñez, L. E.; Nilles, H. P.; Quevedo, F.) Yukawa couplings in degenerate orbifolds: towards a realistic  $SU(3) \times SU(2) \times U(1)$  superstring. *Phys. Lett. B* **210** (1988), no. 1-2, 101-112. (Summary) **89m:81139a** 81E99 (81E30, 81G20, 83E30)
- (with Ibáñez, L. E.; Nilles, H. P.; Quevedo, F.) Errata: "Yukawa couplings in degenerate orbifolds: towards a realistic  $SU(3) \times SU(2) \times U(1)$  superstring". *Phys. Lett. B* **213** (1988), no. 4, 564. (Editors) **89m:81139b** 81E99 (81E30, 81G20, 83E30)
- Font, Josep M.** see **Font i Llovet, Josep Ma.**
- Fontaine, Jean-Marc** (with Messing, William)  $p$ -adic periods and  $p$ -adic étale cohomology. *Current trends in arithmetical algebraic geometry* (Arcata, Calif., 1985), 179-207, *Contemp. Math.*, 67, Amer. Math. Soc., Providence, RI, 1987. (T. Ekedahl (Zbl 632:14016)) **89g:14009** 14F30 (14F40, 14G20)
- see also **Biography: Fontaine, Jean-Marc**, **89i:01115**
- ferro Fontán, Constantino** see **Ferro Fontán, Constantino**
- Fontana, Luigi** On Gagliardo's diagrams of  $L^2$  functions. (Italian summary) *Istit. Lombardo Accad. Sci. Lett. Rend. A* **120** (1986), 113-116 (1987). (L. I. Nikolova) **89f:46135** 46M35 (46E30)
- Fontana, Marco** (with Dobbs, David E.; Fedder, Richard) Abstract Riemann surfaces of integral domains and spectral spaces. (Italian summary) *Ann. Mat. Pura Appl.* (4) **148** (1987), 101-115. (Chin-Pi Lu) **89f:14002** 14A20 (13G05)
- (with Dobbs, David E.) Seminormal rings generated by algebraic integers. *Mathematika* **34** (1987), no. 2, 141-154. (W. Narkiewicz) **89e:11064** 11R11 (13B20, 13F05)
- (with Bouvier, Alain; Dobbs, David E.) Universally catenarian integral domains. *Adv. in Math.* **72** (1988), no. 2, 211-238. (David F. Anderson) **89m:13007** 13C15 (13A17, 13B25, 13G05)
- (with Dobbs, David E.) Sur les suites dimensionnelles et une classe d'anneaux distingués qui les déterminent. (English summary) [On dimension sequences and a class of distinguished rings that determines them] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 1, 11-16. (James A. Huckaba) **89f:13008** 13B25
- (with Anderson, David F.; Bouvier, Alain; Dobbs, David E.; Kabbaj, Salah) On Jaffard domains. *Exposition. Math.* **6** (1988), no. 2, 145-175. (J. W. Brewer) **89c:13014** 13C15
- (with Dobbs, David E.; Fedder, Richard)  $G$ -domains and spectral spaces. *J. Pure Appl. Algebra* **51** (1988), no. 1-2, 89-110. (W. Heinzer) **89i:13026** 13G05
- gaveri-Fontana, S. L.** see **Paveri-Fontana, S. L.**
- Fontana, J. F.** (with Köberle, R.) Enhancing the learning of a finite number of patterns in neural networks. *J. Phys. A* **21** (1988), no. 4, L253-L257. (Summary) **89c:92015** 92A09 (82A99)
- (with Köberle, R.) Neural networks with transparent memory. *J. Phys. A* **21** (1988), no. 4, L259-L262. (Summary) **89c:92016** 92A09 (82A99)
- (with Köberle, R.) Information processing in synchronous neural networks. (French summary) *J. Physique* **49** (1988), no. 1, 13-23. (Summary) **89c:92017** 92A09 (68P20, 82A57, 82A99)
- (with Theumann, W. K.) The spherical model as the limiting  $n$ -vector model in a random field. *Phys. A* **149** (1988), no. 1-2, 341-357. (Nicolae Angelescu) **89f:82063** 82A57 (82A97)
- Fontani, A.** (with Bini, D.) On the evaluation of the eigenvalues of the finite differences Laplacian over a hexagon. *Calcolo* **24** (1987), no. 1, 65-84. (Reinhard Scholz) **89h:65169** 65N25
- Fontecilla, R.** (with Steihaug, Trond; Tapia, R. A.) A convergence theory for a class of quasi-Newton methods for constrained optimization. *SIAM J. Numer. Anal.* **24** (1987), no. 5, 1133-1151. (G. Di Pillo) **89h:65155** 65K10 (49D15, 49D29, 49D40, 90C30)
- A heuristic algorithm for nonlinear programming. *J. Optim. Theory Appl.* **58** (1988), no. 3, 431-442. (Summary) **89h:90196** 90C30
- Local convergence of secant methods for nonlinear constrained optimization. *SIAM J. Numer. Anal.* **25** (1988), no. 3, 692-712. (O. V. Vasil'ev) **89j:65051** 65K05 (90C30)
- Font i Llovet, Josep Ma.** On some congruence lattices of a topological Heyting lattice. *Contributions to general algebra*, 5 (Salzburg, 1986), 129-137, *Hölder-Pichler-Tempsky, Vienna*, 1987. (Leo Esakia) **89c:06013** 06D20 (03G10)
- Correction to: "Some remarks on Heyting matrices" [*Z. Math. Logik Grundlag. Math.* **32** (1986), no. 6, 517-520; MR 88e:03031]. *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 3, 287-288. (From the text) **89h:03044** 03B50 (03G25, 06D20)
- Foo, Yung Kuan** (with Postlethwaite, I.) All solutions, all pass form solutions and the "best" solution to an  $H^\infty$  optimization problem in robust control. *Modelling, identification and robust control* (Stockholm, 1985), 163-177, *North-Holland, Amsterdam-New York*, 1986. (see **89h:93008**) 93B25 (41A05)
- Foot, R.** (with Hedayat, A. S.) A graphical proof of the nonexistence of BIB(7, b, r, 3,  $\lambda$ ) designs. *J. Statist. Plann. Inference* **20** (1988), no. 1, 77-90. (Bhagwan-das) **89k:62097** 62K10 (05B05)
- Foot, R.** (with Joshi, G. C.) String theories and the Jordan algebras. *Phys. Lett. B* **199** (1987), no. 2, 203-208. (B. Spence) **89h:81187** 81E99 (17C05, 81E30)
- (with Joshi, G. C.) Remark concerning the twistor formulation of a massless particle, and the division algebras. *Lett. Math. Phys.* **16** (1988), no. 1, 77-82. (Anatol Odziejewicz) **89m:81074** 81D25 (17A35, 81D27)
- (with Joshi, G. C.) A connection between the octonions and the superstring. *Modern Phys. Lett. A* **3** (1988), no. 1, 47-55. (Summary) **89m:81140** 81E99 (81E30)
- (with Joshi, G. C.) On a certain supersymmetric identity and the division algebras. *Modern Phys. Lett. A* **3** (1988), no. 10, 999-1004. (Summary) **89i:17003** 17A35 (81G20)
- Foot, Richard** (with Murty, V. Kumar) Zeros and poles of Artin  $L$ -series. *Math. Proc. Cambridge Philos. Soc.* **105** (1989), no. 1, 5-11. (Jürgen G. Hinze) **89k:11109** 11R42
- see also **Heilbronn, Hans Arnold**, **89i:01140**
- Fora, Ali Ahmad** Fuzzy separation axioms and fuzzy continuity. (Arabic summary) *Arab Gulf J. Sci. Res. A. Math. Phys. Sci.* **5** (1987), no. 3, 307-318. (Zike Deng) **89a:54008** 54A40 (03E72)
- Foran, James** (with Larson, Lee) The symmetric derivation basis, approximate symmetric derivatives and monotonicity. *Real Anal. Exchange* **13** (1987/88), no. 1, 278-284. (S. N. Mukhopadhyay) **89c:26006** 26A24 (26A48)
- Dimension of the graph of Riemann integrable functions. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 219-220. (Hermann Haase) **89h:28011** 28A75 (26A42)
- Forbes, Graeme** Free and classical counterparts: response to Lewis. *Analysis (Oxford)* **47** (1987), no. 3, 147-152. (N. B. Cocchiarella) **89h:03031** 03B45
- Forbes, Lawrence K.** Surface waves of large amplitude beneath an elastic sheet. I. High-order series solution. *J. Fluid Mech.* **169** (1986), 409-428. (Summary) **89c:76019** 76B15 (73J06)
- Surface waves of large amplitude beneath an elastic sheet. II. Galerkin solution. *J. Fluid Mech.* **188** (1988), 491-508. (Summary) **89c:76020** 76B15 (73J06)
- Forcade, Rodney W.** (with Barrett, Wayne W.; Pollington, Andrew D.) On the spectral radius of a (0, 1) matrix related to Mertens' function. *Proceedings of the Victoria Conference on Combinatorial Matrix Analysis* (Victoria, BC, 1987). *Linear Algebra Appl.* **107** (1988), 151-159. (Aleksandar Ivić) **89j:15029** 15A36 (05C99, 11C20, 11M26)
- Forcina, Antonio** (with Giovagnoli, Alessandra) Mathematical properties of cross-classification matrices. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 2, 523-544. (Summary) **89h:62126** 62H30
- de Forcrand, Philippe** (with Pasche, J.; Petritis, D.) Critical behaviour of Edwards random walk in two dimensions: a case where the fractal and Hausdorff dimensions are not equal. *J. Phys. A* **21** (1988), no. 19, 3771-3782. (Aernout C. D. van Enter) **89i:82024** 82A25 (60J15, 82A41)
- (with Gupta, Rajan; Kilcup, Gregory W.; Patel, Apoorva; Sharpe, Stephen R.) Comparison of update algorithms for pure gauge  $SU(3)$ . *Modern Phys. Lett. A* **3** (1988), no. 14, 1367-1378. (Summary) **89h:81007** 81-08 (81E25)
- Ford, David** The construction of maximal orders over a Dedekind domain. *J. Symbolic Comput.* **4** (1987), no. 1, 69-75. (Jürgen Ritter) **89a:11121** 11R54 (16A18)
- (with Buchmann, Johannes) On the computation of totally real quartic fields of small discriminant. *Math. Comp.* **52** (1989), no. 185, 161-174. (Duncan A. Buell) **89f:11147** 11R16 (11Y40)
- Ford, G. W.** (with Lewis, John Trevor; O'Connell, R. F.) Independent oscillator model of a heat bath: exact diagonalization of the Hamiltonian. *J. Statist. Phys.* **53** (1988), no. 1-2, 439-455. (Koichiro Matsuno) **89m:82014** 82A15
- (with Lewis, John Trevor; O'Connell, R. F.) Dissipative quantum tunneling: quantum Langevin equation approach. *Phys. Lett. A* **128** (1988), no. 1-2, 29-34. (Summary) **89c:81053** 81C99 (81J05)
- (with Lewis, John Trevor; O'Connell, R. F.) Quantum Langevin equation. *Phys. Rev. A* (3) **37** (1988), no. 11, 4419-4428. (Summary) **89d:82029** 82A15
- Ford, Ian** (with Critchley, Frank; Rijal, Omar) Interval estimation based on the profile likelihood: strong Lagrangian theory with applications to discrimination. *Biometrika* **75** (1988), no. 1, 21-28. (S. John) **89c:62040** 62F25 (62H30)
- Ford, J. A.** (with Saadallah, A. F.) A rational function model for unconstrained optimization. *Numerical methods* (Miskolc, 1986), 539-563, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (K. Schittkowski) **89c:90175** 90C30 (65K05)
- Ford, J. L.** ★ Economic choice under uncertainty. A perspective theory approach. *St. Martin's Press, New York*, 1987. xii+146 pp. ISBN 0-312-01244-6 (Peter H. Farquhar) **89h:90006** 90A05
- Ford, Joseph** Directions in classical chaos. *Directions in chaos*, Vol. 1, 1-16, *World Sci. Ser. Dir. Condensed Matter Phys.*, 3, World Sci. Publishing, Singapore, 1987. (Peter E. Kloeden) **89d:58082** 58F13 (82A99)
- see also **Progress in chaotic dynamics**, (Not in MR)
- Ford, T. J.** Homomorphisms of progenerator modules under a change of base ring. *Comm. Algebra* **16** (1988), no. 3, 457-482. (F. DeMeyer) **89a:13015** 13C13 (13A99, 13F05)
- (with DeMeyer, F. R.) Homomorphisms of progenerator modules. *J. Algebra* **113** (1988), no. 2, 379-398. (David C. Lantz) **89d:13009** 13C10
- On the Brauer group of a Laurent polynomial ring. *J. Pure Appl. Algebra* **51** (1988), no. 1-2, 111-117. (R. T. Hoobler) **89h:13006** 13A20 (14F20)
- (with DeMeyer, F. R.) Computing the Brauer-Long group of  $Z/2$  dimodule algebras. *J. Pure Appl. Algebra* **54** (1988), no. 2-3, 197-208. (Stefaan Caenepeel) **89i:13005** 13A20 (16A16)
- Ford, William F.** (with Sidi, Avram) An algorithm for a generalization of the Richardson extrapolation process. *SIAM J. Numer. Anal.* **24** (1987), no. 5, 1212-1232. (Gerhard Telschow) **89a:65006** 65B05
- (with Smith, David Alexander; Sidi, Avram) Extrapolation methods for vector sequences. *SIAM Rev.* **29** (1987), no. 2, 199-233. (Karl-Heinz Bachmann) **89j:65013a** 65B05 (65-02, 65F10, 65H10)

- (with Keagy, Thomas A.) Acceleration by subsequence transformations. *Pacific J. Math.* 132 (1988), no. 2, 357–362. (Claude Brezinski) **89f:65004** 65B10 (40D20)
- (with Smith, David Alexander; Sidi, Avram) Correction to: "Extrapolation methods for vector sequences". *SIAM Rev.* 30 (1988), no. 4, 623–624. (Karl-Heinz Bachmann) **89j:65013b** 65B05 (65-02, 65F10, 65H10)
- Foray, Allan** (with Athorne, Chris) Integrable equations in  $(2+1)$  dimensions associated with symmetric and homogeneous spaces. *J. Math. Phys.* 28 (1987), no. 9, 2018–2024. (Summary) **89a:58049** 58F07
- (with Antonowicz, Marek) Coupled KdV equations with multi-Hamiltonian structures. *Phys. D* 28 (1987), no. 3, 345–357. (Malcolm Adams) **89f:58066** 58F07 (35Q20)
- (with Antonowicz, Marek) Coupled Harry Dym equations with multi-Hamiltonian structures. *J. Phys. A* 21 (1988), no. 5, L269–L275. (Randolph J. Schilling) **89b:58074** 58F07 (35Q20, 58F05, 58F19)
- Foregger, Thomas H.** On the relative extrema of a linear combination of elementary symmetric functions. *Linear and Multilinear Algebra* 20 (1987), no. 4, 377–385. (M. Lazkovich) **89a:26029** 26D15
- Permanents of convex combinations of doubly stochastic matrices. *Linear and Multilinear Algebra* 23 (1988), no. 1, 79–90. (Peter M. Gibson) **89i:15008** 15A15
- Forelli, Frank** Two-sheeted coverings of the disc. *Math. Scand.* 61 (1987), no. 1, 17–38. (Horst Tietz) **89g:30080** 30F10
- Foreman, M.** (with Ehrenfeucht, Andrzej; Malitz, J.) Taxonomic partitions. *Methods and applications of mathematical logic* (Campanis, 1985), 27–34, *Contemp. Math.*, 69, Amer. Math. Soc., Providence, RI, 1988. (J. C. Oxtoby) **89b:52018** 52A37 (04A99, 92A12)
- Foreman, Matthew** (with Laver, Richard) Some downwards transfer properties for  $\aleph_2$ . *Adv. in Math.* 67 (1988), no. 2, 230–238. (J. M. Plotkin) **89b:03090** 03E35
- (with Magidor, M.; Shelah, Saharon) Martin's maximum, saturated ideals, and nonregular ultrafilters. *I. Ann. of Math.* (2) 127 (1988), no. 1, 1–47. (F. R. Drake) **89f:03043** 03E30 (03E35, 03E40, 03E55)
- Forest, M. G.** (with Bishop, A. R.; McLaughlin, D. W.; Overman, E. A., II) Quasiperiodic route to chaos in a near-integrable PDE: homoclinic crossings. *Phys. Lett. A* 127 (1988), no. 6–7, 335–340. (Summary) **89b:58074** 58F13 (70K50)
- Forester, A.** (with Ding, Yu; Hu-Duoguo, T.) Space-time variational formulation for the Kirchhoff integral equation. *Boundary elements* (Beijing, 1986), 707–716, Pergamon, Oxford-Elmsford, NY, 1986. (From the introduction) **89k:76080** 76Q05
- Forêt, Annie** Rewrite rule systems for modal propositional logic. *Algebraic and logic programming* (Gaussig, 1988), 147–156, *Math. Res.*, 49, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) **68Q50** (03B35, 03B45)
- Forgács, G.** (with Privman, V.) Directed compact lattice animals: exact results. *J. Statist. Phys.* 49 (1987), no. 5–6, 1165–1180. (B. Derrida) **89d:82123** 82A68
- (with Luck, J. M.; Nieuwenhuizen, Th. M.; Orland, H.) Exact critical behavior of two-dimensional wetting problems with quenched disorder. *J. Statist. Phys.* 51 (1988), no. 1–2, 29–56. (Nicolae Angelescu) **89i:82068** 82A57 (82A25, 82A67, 82A68)
- Forgács, P.** (with Balog, J.; Horváth, Z.; Vecsernyés, P.) Lattice classification of the four-dimensional heterotic strings. *Phys. Lett. B* 197 (1987), no. 3, 395–399. (Richard H. Capps) **89b:81245** 81G20 (06B99, 81E30)
- Forger, M.** (with Abdalla, E.; Abdalla, M. C. B.) Exact S-matrices for anomaly-free nonlinear sigma models on symmetric spaces. *Nuclear Phys. B* 297 (1988), no. 2, 374–400. (Enore Guadagnini) **89c:81098** 81E99 (22E70, 53C35, 58E20, 81E08, 81F15)
- (with Abdalla, E.; Jacques, Michel) Higher conservation laws for ten-dimensional supersymmetric Yang-Mills theories. *Nuclear Phys. B* 307 (1988), no. 1, 198–220. (Summary) **89b:81096** 81E13 (53C80, 58E30)
- Forges, Françoise** Can sunspots replace a mediator? *J. Math. Econom.* 17 (1988), no. 4, 347–367. (Akira Okada) **89m:90003** 90A05 (90A14, 90D10)
- Communication equilibria in repeated games with incomplete information. *Math. Oper. Res.* 13 (1988), no. 2, 191–231. (Sylvain Sorin) **89e:90223** 90D10 (90D15)
- Förgő, Ferenc** \*Nonconvex programming. *Akadémi Kiadó, Budapest*, 1988. 188 pp. ISBN 963-05-4453-9 (L. Grippo) **89m:90138** 90C30 (49D37, 65K05)
- Formalskii, A. M.** (with Osipov, S. N.) A problem on the fastest turn of a manipulator. (Russian) *Prikl. Mat. Mekh.* 52 (1988), no. 6, 929–938. (Not in MR) **70B15**
- Forman, Robin** Functional determinants and geometry. *Invent. Math.* 88 (1987), no. 3, 447–493. (Jürgen Eichhorn) **89b:58212** 58G20 (11F72, 35J55, 81E99)
- Formanek, Edward** Two notes on the Jacobian conjecture. *Arch. Math. (Basel)* 49 (1987), no. 4, 286–291. (Gary H. Meisters) **89b:13007** 13B10 (13F20, 14E05, 14E20, 20G15)
- Formanov, Sh. K.** (with Asimov, A.) A limit theorem for a decomposable statistic in a random allocation scheme. (Russian) *Probability distributions and mathematical statistics* (Russian) (Fergana, 1983), 435–447, 499, "Fan", Tashkent, 1986. (Lyuben R. Mutafchiev) **89d:60013** 60C05 (60F05)
- (with Dam, Z. T.) Estimates for the concentration function of sums of random variables connected in an inhomogeneous Markov chain. (Russian) *Asymptotic methods in mathematical statistics* (Russian), 140–149, 161–162, "Fan", Tashkent, 1987. (Summary) **89b:60104** 60J05 (60E15)
- (with Kaverin, S. V.) Markov branching processes with emigration. II. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1987, no. 3, 36–41, 97. (Kostov V. Mitov) **89a:60195** 60J80
- Formella, S.** On geodesic mappings in Einstein manifolds. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 483–492, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Carlos Córreas-Bosch) **89d:53093** 53C25
- Formess, John Erik** (with Sibony, Nessim) Plurisubharmonic functions on ring domains. *Complex analysis* (University Park, Pa., 1986), 111–120, *Lecture Notes in Math.*, 1268, Springer, Berlin-New York, 1987. (Ahmed Zeriahi) **89d:32029** 32D15 (32D20, 32F05)
- (with Diederich, K.) Applications holomorphes propres entre domaines à bord analytique réel. (English summary) [Proper holomorphic mappings between real-analytic domains] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 7, 321–324. (Hidetaka Hamada) **89i:32052** 32H35 (32D15)
- (with Diederich, K.) Proper holomorphic mappings between real-analytic pseudoconvex domains in  $\mathbb{C}^n$ . *Math. Ann.* 282 (1988), no. 4, 681–700. (John Bland) **89m:32045** 32H35 (32F15)
- (with Wiegnerinck, Jan) A holomorphic reproducing kernel for Kohn-Nirenberg domains in  $\mathbb{C}^2$ . *Math. Scand.* 62 (1988), no. 1, 44–58. (Harold P. Boas) **89i:32004** 32A25 (32F15)
- Fornari, Susana** (with Dajczer, Marcos) Isometric immersions between indefinite Riemannian spheres. *Yokohama Math. J.* 35 (1987), no. 1–2, 61–69. (Martin A. Magid) **89f:53095** 53C50 (53C42)
- Fornasini, Ettore** (with Bisiacco, Mauro; Marchesini, Giovanni) Controller design for 2D systems. *Frequency domain and state space methods for linear systems* (Stockholm, 1985), 99–113, *North-Holland, Amsterdam-New York*, 1986. (V. S. Zajączkowski) **89d:93027** 93B25 (15A23, 93B15, 93B50)
- (with Šebek, M.; Bisiacco, Mauro) Controllability and reconstructibility conditions for 2-D systems. *IEEE Trans. Automat. Control* 33 (1988), no. 5, 496–499. (Jerzy Klamka) **89e:93021** 93B05 (49E15, 93B07, 93B50, 93C05)
- (with Bisiacco, Mauro; Marchesini, Giovanni) 2-D partial fraction expansions and minimal commutative realizations. *IEEE Trans. Circuits and Systems* 35 (1988), no. 12, 1533–1539. (Joseph D. Cole) **89k:93046** 93B20 (93B10, 93B15, 93B25, 93C55)
- Fornberg, Bengt** Generation of finite difference formulas on arbitrarily spaced grids. *Math. Comp.* 51 (1988), no. 184, 699–706. (David C. Arney) **89b:65055** 65D25
- Forniero Rodríguez, Rolando** Existence of conjugate points for sixth-order ordinary differential equations. (Spanish. English summary) *Cienc. Mat. (Havana)* 8 (1987), no. 2, 45–63. (P. Talpalanu) **89g:34043** 34C10
- Forrest, A. Robin** see Bartels, Richard H. et al., **89f:65018**
- Forrest, B. M.** Content-addressability and learning in neural networks. *J. Phys. A* 21 (1988), no. 1, 245–255. (Summary) **89b:92014** 92A09
- Forrest, Brian** Amenability and derivations of the Fourier algebra. *Proc. Amer. Math. Soc.* 104 (1988), no. 2, 437–442. (Pierre Eymard) **89c:43001** 43A07 (46H25, 46J05)
- Forrest, Peter** The logic of naturalness. *Logique et Anal. (N.S.)* 30 (1987), no. 117–118, 91–102. (John P. Burgess) **89b:03032** 03B45
- Forrester, P. J.** (with Andrews, G. E.; Baxter, Rodney James; Bressoud, D. M.; Burge, W. H.; Viennot, Gérard) Partitions with prescribed hook differences. *European J. Combin.* 8 (1987), no. 4, 341–350. (Peter Paule) **89g:05014** 05A30 (82A69)
- (with Andrews, G. E.) Height probabilities in solid-on-solid models. *II. J. Phys. A* 20 (1987), no. 13, 4465–4481. (Paul A. Pearce) **89b:82092** 82A67 (82A68, 82A69)
- Solvable isotherms for a two-component system of charged rods on a line. *J. Statist. Phys.* 51 (1988), no. 3–4, 457–479. (Nicolae Angelescu) **89j:82070** 82A68 (82A25)
- (with Thompson, Colin J.) Modulated phases and the mean-field theory of magnetism with competing interactions. *J. Statist. Phys.* 51 (1988), no. 3–4, 519–536. (Aernout C. D. van Enter) **89i:82008** 82A05 (82A68)
- Forsling, Göran** (with Järmark, Berndt) Optimal fuselage aiming of a modern fighter aircraft. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 43–52, *North-Holland, Amsterdam-New York*, 1986. (see **89b:93010**) **90D26** (49D45, 93B40)
- Forst, Frank G.** Stochastically minimizing total penalty costs in the two-machine flow shop with random processing times. *Amer. J. Math. Management Sci.* 8 (1988), no. 1–2, 121–133. (Summary) **89b:90125** 90B35
- Förste, J.** Zur statistischen Theorie der magnetohydrodynamischen Turbulenz. [The statistical theory of magnetohydrodynamic turbulence] *Z. Angew. Math. Mech.* 67 (1987), no. 7, 337–340. (From the introduction) **89f:76082** 76W05 (76E25, 76F99)
- Stationäre Strömung einer kompressiblen zähen Flüssigkeit mit dehnbaren Mikrostruktur. [Nonstationary flow of a compressible viscous fluid with extendable microstructure] *Z. Angew. Math. Mech.* 67 (1987), no. 11, 574–577. (Michael Renardy) **89b:76011** 76A05 (35Q10)
- Forster, Bruce A.** A discussion of methodological and modelling issues. Comment on: "The control of environmental pollution and optimal investment and employment decisions" [Optimal Control Appl. Methods 8 (1987), no. 1, 21–36; MR 87k:90080] by W. T. Lin. *Optimal Control Appl. Methods* 9 (1988), no. 3, 333–336. (Summary) **89b:90066** 90A30 (00A71, 92A17, 93C75)
- Förster, K.-H.** (with Nagy, Béla) On the local spectral theory of positive operators. *Special classes of linear operators and other topics* (Bucharest, 1986), 71–81, *Oper. Theory: Adv. Appl.*, 28, Birkhäuser, Basel-Boston, MA, 1988. (R. J. Nagel) **89g:47049** 47B55 (47A10)
- Förster, Karl Martin** An explicit third-order algorithm with Courant number three. *Z. Angew. Math. Mech.* 68 (1988), no. 5, T298–T300. (Introduction) **89m:65108** 65P05
- Förster, Klaus-Jürgen** On Chebyshev quadrature for ultraspherical weight functions. *Calcolo* 23 (1986), no. 4, 355–381 (1987). (John Todd) **89g:65021** 65D32
- (with Brass, Helmut) On the estimation of linear functionals. *Analysis* 7 (1987), no. 3–4, 237–258. (B. Boyanov) **89e:65009** 65Dxx (41A55)
- On weight functions admitting Chebyshev quadrature. *Math. Comp.* 49 (1987), no. 179, 251–258. (K. Jetter) **89b:65061** 65D32 (41A55)
- Über Monotonie und Fehlerkontrolle bei den Gregoryschen Quadraturverfahren. (English and Russian summaries) [On monotonicity and error control in Gregory quadrature methods] *Z. Angew. Math. Mech.* 67 (1987), no. 6, 257–266. (J. G. Herriot) **89b:65060** 65D32
- On Chebyshev quadrature and variance of quadrature formulas. *BIT* 28 (1988), no. 2, 360–363. (K. Jetter) **89j:65025** 65D32 (41A55)
- Forster, Matthias** A general network generator. *Mathematical models for decision support* (Val d'Isère, 1987), 207–215, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 48, Springer, Berlin-New York, 1988. (see **89g:90136**) **90B30** (90C10)
- Forster, Otto** (with Ohsawa, Takeo) Complete intersections with growth conditions. *Algebraic geometry, Sendai, 1985*, 91–104, *Adv. Stud. Pure Math.*, 10, North-Holland, Amsterdam-New York, 1987. (Thomas Peternell) **89i:32018** 32C25 (14M10)
- (with Wolfhardt, K.) A theorem on zero schemes of sections in two-bundles over affine schemes with applications to set-theoretic intersections. *Singularities, representation of algebras, and vector bundles* (Lambrecht, 1985), 372–383, *Lecture Notes in Math.*, 1273, Springer, Berlin-New York, 1987. (N. Mohan Kumar) **89b:14066** 14M10 (14F05)
- Förster, Peter** Projektive Klassen endlicher Gruppen. IIb. Gesättigte Formationen: Projektoren. [Projective classes of finite groups. IIb. Saturated formations: projectors] *Arch. Math. (Basel)* 44 (1985), no. 3, 193–209. (R. Covaci (Zbl 564:20012)) **89e:20035** 20D10
- Chief factors, crowns, and the generalised Jordan-Hölder theorem. *Comm. Algebra* 16 (1988), no. 8, 1627–1638. (Patrizia Longobardi) **89i:20039** 20D30 (20D10, 20D25)
- Forster, T. E.** Permutation models in the sense of Rieger-Bernays. *Z. Math. Logik Grundlag. Math.* 33 (1987), no. 3, 201–210. (J. M. Plotkin (Zbl 634:03052)) **89b:03093** 03E70 (03C62)



- Forster, W. Computing "all" solutions of systems of polynomial equations by simplicial fixed point algorithms. *The computation and modelling of economic equilibria* (Tilburg, 1985), 39-57, *Contrib. Econom. Anal.*, 167, North-Holland, Amsterdam-New York, 1987. (Xiaojian Chen) **89b:65122** 65H10 (47H17, 58C30, 65J15, 90C30)
- Forsterer, Franc (with Rosay, Jean-Pierre) Localization of the Kobayashi metric and the boundary continuity of proper holomorphic mappings. *Math. Ann.* **279** (1987), no. 2, 239-252. (Giorgio Patrizio) **89c:32070** 32H35 (32H15)
- Regularity of varieties in strictly pseudoconvex domains. *Publ. Mat.* **32** (1988), no. 1, 145-150. (Harold P. Boas) **89a:32021** 32C25 (32E02, 32F15)
- Extending proper holomorphic mappings of positive codimension. *Invent. Math.* **95** (1989), no. 1, 31-61. (John P. D'Angelo) **89j:32033** 32H35 (32D15, 32F15)
- Forsyth, Barbara (with Busemeyer, Jerome R.; Nozawa, Georgie) Comparisons of elimination by aspects and suppression of aspects choice models based on choice response time. *J. Math. Psych.* **32** (1988), no. 3, 341-349. (Summary) **89j:92079** 92A25 (90A06)
- Forsyth, Peter A. (with Sammon, P. H.) Quadratic convergence for cell-centered grids. *Appl. Numer. Math.* **4** (1988), no. 5, 377-394. (Summary) **89c:65106** 65N10
- Comparison of the single-phase and two-phase numerical model formulation for saturated-unsaturated groundwater flow. *Comput. Methods Appl. Mech. Engrg.* **69** (1988), no. 2, 243-259. (Summary) **89f:76078** 76T05 (76-08, 76S05)
- Fort, J.-C. Solving a combinatorial problem via self-organizing process: an application of the Kohonen algorithm to the traveling salesman problem. *Biol. Cybernet.* **59** (1988), no. 1, 33-40. (Summary) **89c:90084** 90B10 (92A09)
- Fort, Stephen E. (with Ng, C. T.; Lo Schiavo, M.) Additive and subadditive entropies for discrete random vectors. *J. Combin. Inform. System Sci.* **9** (1984), no. 4, 207-216. (N. S. Kambo) **89f:94017** 94A17 (28D20)
- Fort, I. (with Shinar, J.) Can a mixed guidance strategy improve missile performance? *J. Guidance Control Dynamics* **11** (1988), no. 1, 53-59. (Summary) **89j:90304** 90D26 (49D20, 90D25)
- Fort, Sandra (with Bennati, S.) Optimum reinforcement of a circular hole under an arbitrary stress system at infinity. (Italian summary) *Meccanica—J. Ital. Assoc. Theoret. Appl. Mech.* **19** (1984), no. 1, 68-74. (Summary) **89j:73078** 73K40
- Fort, Stefano Spectral asymmetry and vacuum charge in three-dimensional closed and open space. *Nuclear Phys. B* **301** (1988), no. 1, 69-92. (Yi-Gao Liang) **89f:81097** 81E13 (58G10)
- Fortenbacher, Albrecht An algebraic approach to unification under associativity and commutativity. *J. Symbolic Comput.* **3** (1987), no. 3, 217-229. (Summary) **89i:68114** 68T15 (03B35, 68Q55)
- Forti, G. L. The stability of homomorphisms and amenability, with applications to functional equations. *Abh. Math. Sem. Univ. Hamburg* **57** (1987), 215-226. (Z. Moszner) **89b:39013** 39B70 (39C05)
- Forti, Marco (with Honsell, Furio) On the ordering of nonstandard real numbers. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* **(8)** **79** (1985), no. 1-4, 1-8 (1986). (Sauro Tulipani) **89f:03064** 03H05 (26E35)
- (with De Giorgi, Ennio) A framing theory for the foundations of mathematics. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* **(8)** **79** (1985), no. 5, 55-67 (1986). (N. C. A. da Costa) **89g:03069** 03E30
- (with De Giorgi, Ennio; Tortorelli, Vincenzo M.) On the problem of self-reference. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* **(8)** **80** (1986), no. 6, 363-372 (1987). (Summary) **89m:03046** 03E70 (03A05)
- (with Honsell, Furio) Axioms of choice and free construction principles. III. *Bull. Soc. Math. Belg. Ser. B* **39** (1987), no. 3, 259-276. (From the introduction) **89b:03083** 03E25 (03E30, 04A25)
- Fortin, Andre (with Pelletier, Dominique; Camarero, Ricardo) Are FEM solutions of incompressible flows really incompressible? (or how simple flows can cause headaches?). *Internat. J. Numer. Methods Fluids* **9** (1989), no. 1, 99-112. (Summary) **89j:76024** 76-08 (73F99, 76A10, 76D07)
- Fortin, Michel (with Souissi, A.) Optimisation de forme du diffuseur d'une turbine hydraulique. [Optimal shape design of the diffuser of a water turbine] *Computer methods and water resources, Vol. 5* (Rabat, 1988), 39-58, *Comput. Mech., Southampton*, 1988. (Summary) **89k:76045** 76D99 (49F99, 76-08)
- Fortini, Pierluigi (with Boccaletti, D.) On two solutions of the 't Hooft-Polyakov monopole complete equations. (Italian and Russian summaries) *Nuovo Cimento B* **(11)** **100** (1987), no. 1, 91-104. (Yisong Yang) **89a:81062** 81E13
- Fortnow, Lance (with Sipser, Michael) Are there interactive protocols for co-NP languages? *Inform. Process. Lett.* **28** (1988), no. 5, 249-251. (Satoru Miyano) **89i:68040** 68Q15 (03D15, 68Q05, 68Q45)
- Fortuna, L. (with Gallo, Antonio; Nunnari, G.) Parametrization of MIMO systems in closed-loop balanced representation. *Analysis and optimization of systems (Antibes, 1988)*, 1027-1038, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89c:93177** 93D25 (93B15)
- (with Gallo, Antonio; Guglielmino, C.; Nunnari, G.) On the solution of a nonlinear matrix equation for MIMO symmetric realizations. *Systems Control Lett.* **11** (1988), no. 1, 79-82. (Summary) **89c:93036** 93B15 (93C05)
- Fortunato, Donato (with Benci, Vieri) A "Birkhoff-Lewis" type result for nonautonomous Hamiltonian systems. *Periodic solutions of Hamiltonian systems and related topics* (Il Ciocco, 1986), 79-84, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 209, Reidel, Dordrecht-Boston, MA, 1987. (Summary) **89a:58038** 58F05 (34C25, 58E05, 58F22)
- Fortunelli, A. (with Colle, R.; Simonucci, S.) A mixed basis set of plane waves and Hermite Gaussian functions. Analytic expressions of prototype integrals. (Italian summary) *Nuovo Cimento D* **(11)** **9** (1987), no. 8, 969-977. (Summary) **89m:81205** 81G55
- Fosdick, Roger L. (with Virga, Epifanio G.) A variational proof of the stress theorem of Cauchy. *Arch. Rational Mech. Anal.* **105** (1989), no. 2, 95-103. (D. Iesan) **89j:73009** 73A05
- Fossa, G. (with Maier, Giulio; Masarati, P.; Novati, G.) Boundary element analysis in the presence of dihedral symmetry under general boundary conditions. *Boundary elements VII, Vol. 1, II* (Como, 1985), 13.69-13.84, *Comput. Mech., Southampton*, 1985. (see **89f:65003**) 65N99 (73B99)
- Fosséprez, Marc (with Hasler, Martin J.; Schnetzler, Claudia) On the number of solutions of piecewise-linear resistive circuits. *IEEE Trans. Circuits and Systems* **36** (1989), no. 3, 393-402. (W.-K. Chen) **89k:94084** 94C05
- Foster, D. M. E. (with Phillips, G. M.) Double mean processes. *Bull. Inst. Math. Appl.* **22** (1986), no. 11-12, 170-173. (Shri Nivas Bhatt) **89c:40001** 40A05
- Foster, Douglas J. (with Mosher, Charles C.) Multidimensional inversion of seismic data. *Inverse Problems* **4** (1988), no. 1, 71-85. (Summary) **89d:86005** 86A15 (73D50)
- Foster, James E. (with Shorrocks, Anthony F.) Poverty orderings. *Econometrica* **56** (1988), no. 1, 173-177. (From the introduction) **89b:90028** 90A10
- (with Shorrocks, Anthony F.) Poverty orderings and welfare dominance. *Soc. Choice Welf.* **5** (1988), no. 2-3, 179-198. (Yew-Kwang Ng) **89g:90040** 90A10
- Foster, Lorraine L. (with Soule, Malcolm S.) On minimum multinomial degrees of algebraic extension fields. *Exposition. Math.* **6** (1988), no. 1, 71-79. (Chr. U. Jensen) **89b:12003** 12E05 (12E10, 12F05)
- Foster, M. J. (with Greenberg, Ronald I.) Lower bounds on the area of finite-state machines. *Inform. Process. Lett.* **30** (1989), no. 1, 1-7. (Summary) **89m:68069** 68Q35 (68Q25)
- Foster, Ronald M. ★ The Foster census. R. M. Foster's census of connected symmetric trivalent graphs. With a foreword by H. S. M. Coxeter. With a biographical preface by Seymour Schuster. With an introduction by I. Z. Bouwer, W. W. Chernoff, B. Monson and Z. Star. Edited and with a note by Bouwer. *Charles Babbage Research Centre, Winnipeg, MB*, 1988. viii+240 pp. ISBN 0-919611-19-2 (Norman Biggs) **89c:05067** 05C99
- Foster, Sara (with Brown, Harvey Robert) On a recent attempt to define the interpretation basis in the many worlds interpretation of quantum mechanics. *Internat. J. Theoret. Phys.* **27** (1988), no. 12, 1507-1531. (Summary) **89m:81014** 81B05
- Fotheringham, A. Stewart (with Knudsen, Daniel C.) Modeling discontinuous change in the spatial pattern of retail outlets: a methodology. *Transformations through space and time* (Hansholm, 1985), 273-292, *NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci.*, 29, Nijhoff, Dordrecht, 1986. (see **89c:90072**) 90B50 (58C28, 90B10)
- Fotopoulos, S. B. (with Downham, D. Y.) The transient behaviour of the simple random walk in the plane. *J. Appl. Probab.* **25** (1988), no. 1, 58-69. (Peter Arzberger) **89c:60079** 60J15 (60Z27, 92A07, 92A15)
- Fotr, Franz (with Tomantschger, Kurt Walter) An integral operator generating solutions of partial differential equations of higher order. *Publ. Math. Debrecen* **35** (1988), no. 1-2, 141-147. (E. Kreyszig) **89m:35038** 35C15 (47G05)
- Fouché, W. L. The distribution of Bernoulli numbers modulo primes. *Arch. Math. (Basel)* **50** (1988), no. 2, 139-144. (Takashi Agoh) **89d:11011** 11B68 (11N25)
- Foucher, J. M. (with Proust, C.; Drogou, M.; Foucheyrand, E.) Une heuristique pour le problème d'ordonnement statique de type  $n/m$  flowshop, avec prise en compte des temps de montage et démontage d'outils. (English summary) [A heuristic for the  $n/m$  flowshop static scheduling problem, with setup and removal times taken into account] *RAIRO Automat.-Prod. Inform. Ind.* **22** (1988), no. 5, 453-470. (Not in MR) 90B35 (90B22)
- Foucheyrand, E. (with Proust, C.; Drogou, M.; Foucher, J. M.) Une heuristique pour le problème d'ordonnement statique de type  $n/m$  flowshop, avec prise en compte des temps de montage et démontage d'outils. (English summary) [A heuristic for the  $n/m$  flowshop static scheduling problem, with setup and removal times taken into account] *RAIRO Automat.-Prod. Inform. Ind.* **22** (1988), no. 5, 453-470. (Not in MR) 90B35 (90B22)
- Foulds, L. R. (with Dyer, M. E.; Frieze, A. M.) On the strength of connectivity of random subgraphs of the  $n$ -cube. *Random graphs '85* (Poznań, 1985), 17-40, *North-Holland Math. Stud.*, 144, North-Holland, Amsterdam-New York, 1987. (J. Spencer) **89a:05117** 05C80 (05C40, 60C05)
- Foulis, D. J. (with Randall, C. H.) Stochastic entities. *Recent developments in quantum logic* (Cologne, 1984), 265-284, *Grundlehren Exakt. Naturwiss.*, 6, Bibliographisches Inst., Mannheim, 1985. (see **89b:81008**) 81B05 (81C20)
- Foulon, Patrick (with Delyon, François) Adiabatic theory, Liapunov exponents, and rotation number for quadratic Hamiltonians. *J. Statist. Phys.* **49** (1987), no. 3-4, 829-840. (C. Eugene Wayne) **89f:58054** 58F05 (58F11, 70H05, 81C25)
- Foulser, David E. (with Chan, Tony F.) Effectively well-conditioned linear systems. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 6, 963-969. (J. Rokne) **89k:65046** 65F35 (15A12, 65G05)
- Foulser, R. W. S. Modelling of phase behaviour in chemical flood simulation. *Mathematics in oil production* (Cambridge, 1987), 53-75, *Inst. Math. Appl. Conf. Ser. New Ser.*, 18, Oxford Univ. Press, New York, 1988. (see **89j:76003**) 76T05 (76-08)
- Fountain, John B. Free right  $h$ -adequate semigroups. *Semigroups, theory and applications* (Oberwolfach, 1986), 97-120, *Lecture Notes in Math.*, 1320, Springer, Berlin-New York, 1988. (N. R. Reilly) **89b:20082** 20M05 (20M10)
- (with Petrich, Mario) Completely 0-simple semigroups of quotients. III. *Math. Proc. Cambridge Philos. Soc.* **105** (1989), no. 2, 263-275. (Francis Pastijn) **89m:20071** 20M10
- Fouque, Jean-Pierre (with Benassi, Albert) Hydrodynamical limit for the asymmetric zero-range process. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **24** (1988), no. 2, 189-200. (T. M. Liggett) **89k:60153** 60K35 (82A99)
- Fouquet, Jean-Luc (with Benhocine, Abdelhamid) Pancyclic and panconnected line graphs. *J. Graph Theory* **11** (1987), no. 3, 385-398. (Summary) **89b:05139** 05C75
- (with Jolivet, J.-L.; Rivière, M.) Connexion-index in graphs. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), A, 127-158. (Arthur T. White) **89d:05121** 05C40 (05C75)
- Fourati, Sonia (with Lengjart, Erik) Tribus homogènes et commutation de projections. [Homogeneous tribes and commutation of projections] *Séminaire de Probabilités, XXI*, 276-288, *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (Michael Sharpe) **89i:60110** 60G99 (60J25)
- Fourcade, Bertrand (with Tremblay, André-Marie Séguin; Breton, Pierre) Famille d'exposants pour les propriétés électriques des fractals. (English summary) [Family of exponents for the electrical properties of fractals] *Ann. Sci. Math. Québec* **11** (1987), no. 1, 183-204. (Hanna Nencka) **89b:82067** 82A43 (11K55, 26A30, 58F19, 58G25, 60K35)
- (with Breton, Pierre; Tremblay, André-Marie Séguin) Multifractals and critical phenomena in percolating networks: fixed point, gap scaling, and universality. *Phys. Rev. B* **(3)** **36** (1987), no. 16, 8925-8928. (Summary) **89b:82064** 82A43 (26A18, 58F11, 58F14)
- Fourer, Robert (with Bixby, Robert E.) Finding embedded network rows in linear programs. I. Extraction heuristics. Focused issue on heuristics. *Management Sci.* **34** (1988), no. 3, 342-376. (Summary) **89b:90120** 90C05

- A simplex algorithm for piecewise-linear programming. II. Finiteness, feasibility and degeneracy. *Math. Programming* **41** (1988), no. 3 (Ser. A), 281–315. (J. Stoer) **89k:90129** 90C25 (90C08, 90C30)
- Fourier, Jean Baptiste Joseph** see **Bracewell, Ronald N.**, **89c:42013** and **Churchill, Ruel V.**, **89h:35001**
- Fournelle, Thomas A.** (with Sidki, Said; Weston, K.) On algebraic embeddings of rings into groups. *Arch. Math. (Basel)* **51** (1988), no. 5, 425–433. (L. N. Vaserstein) **89j:20051** 20G20 (03C05)
- (with Dixon, Martyn R.) The construction of infinite finitely generated periodic groups using wreath products. *J. Algebra* **115** (1988), no. 1, 150–163. (John D. P. Meldrum) **89e:20075** 20F50 (20E22)
- Fournier, Alain** (with Naiman, Avi) Rectangular convolution for fast filtering of characters. *SIGGRAPH '87* (Anaheim, CA, 1987). *Comput. Graphics* **21** (1987), no. 4, 233–242. (see **89j:68151**) 68U15
- (with Fiume, E.) The visible surface problem under abstract graphic models. *Theoretical foundations of computer graphics and CAD* (II Ciccio, 1987), 575–586, NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 40, Springer, Berlin-New York, 1988. (see **89a:68011**) 68U05
- Fournier, Gilles** (with Violette, Donald) A fixed point theorem for a class of multivalued continuously differentiable maps. *Ann. Polon. Math.* **47** (1987), no. 3, 381–402. (Summary) **89f:47084** 47H10 (46G05, 47H09, 54H25, 58C30)
- Fournier, J.-D.** (with Levine, G.; Tabor, M.) Singularity clustering in the Duffing oscillator. *J. Phys. A* **21** (1988), no. 1, 33–54. (G. V. Khmelevskaya-Plotnikova) **89e:58081** 58F14 (34A20)
- Fournier, John J. F.** Mixed norms and rearrangements: Sobolev's inequality and Littlewood's inequality. *Ann. Mat. Pura Appl.* (4) **148** (1987), 51–76. (Vladimir D. Stepanov) **89e:46037** 46E35 (42B99)
- (with Bloom, Walter R.) Generalized Lipschitz spaces on Vilenkin groups. *Math. Nachr.* **132** (1987), 67–80. (C. W. Onneweer) **89a:43013** 43A75 (22C05, 43A15, 46E99)
- (with Bloom, Walter R.) Smoothness conditions and integrability theorems on bounded Vilenkin groups. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 1, 46–61. (W. R. Wade) **89d:42032** 42C10 (43A75)
- Fournier, Richard** A growth theorem for a class of convex functions. (Russian and Polish summaries) Proceedings of the 9th Conference on Analytic Functions (Lublin, 1986). *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **40** (1986), 31–39 (1987). (Carl P. McCarty) **89g:30019** 30C45
- Foussats, A.** (with Abecasis, C.; Zandron, O.) Diffeomorphically nonequivalent classes of solutions in gauge theories on group manifolds. (Italian and Russian summaries) *Nuovo Cimento A* (11) **98** (1987), no. 1, 85–98. (Agostino Prastaro) **89a:53084** 53C80 (58G37, 58G40, 81E13, 83E50)
- (with Zandron, O.) Canonical covariant formalism for gravity and supergravity in more than four dimensions. *Classical Quantum Gravity* **5** (1988), no. 4, 605–617. (Mark D. Roberts) **89f:83100** 83E50 (53C80, 83C45, 83E15)
- (with Zandron, O.) Covariant Hamiltonian formalism for supersymmetric Yang-Mills theory coupled to supergravity. *Classical Quantum Gravity* **5** (1988), no. 9, 1231–1239. (W. Cox) **89m:83093** 83E50 (81E13)
- (with Abecasis, C.; Zandron, O.) Diffeomorphically nonequivalent classes of solutions in gauge theories on group manifolds. *Internat. J. Modern Phys. A* **3** (1988), no. 10, 2303–2313. (Agostino Prastaro) **89m:53128** 53C80 (58A15, 81E20, 83E50)
- Foutz, Robert V.** (with Zhang, Nian Fan) A higher-order random-parameter process for modeling and forecasting time series. *Comm. Statist. Theory Methods* **17** (1988), no. 2, 485–498. (André Klein) **89j:62131** 62M10
- Foury, Étienne** Autour du théorème de Bombieri-Vinogradov. II. [On the Bombieri-Vinogradov theorem. II] *Ann. Sci. École Norm. Sup.* (4) **20** (1987), no. 4, 617–640. (W. Schwarz) **89j:11075** 11N13 (11N37, 11N69)
- Fowler, A. C.** Generation and creep of magma in the earth. *SIAM J. Appl. Math.* **49** (1989), no. 1, 231–245. (Summary) **89k:86014** 86A60 (76T05)
- A mathematical analysis of glacier surges. *SIAM J. Appl. Math.* **49** (1989), no. 1, 246–263. (L. W. Morland) **89m:86025** 86A99 (76D99, 76E20)
- Fowler, D. H.** ★ The mathematics of Plato's Academy. A new reconstruction. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1987. xxii+401 pp. ISBN 0-19-853912-6 (C. M. Taisbak) **89b:01005** 01A20
- Fowler, P. W.** (with Ceulemans, A.) SO(4) symmetry and the static Jahn-Teller effect in icosahedral molecules. *Phys. Rev. A* (3) **39** (1989), no. 2, 481–493. (Summary) **89j:81281** 81G50
- Fowler, Peter A.** The Königsberg bridges—250 years later. *Amer. Math. Monthly* **95** (1988), no. 1, 42–43. (Not in MR) 05C45
- Fowler, Thomas B.** A time-domain solution approach to model reduction. *IEEE Trans. Circuits and Systems* **35** (1988), no. 8, 1020–1024. (Not in MR) 93C25 (34C20)
- Application of stochastic control techniques to chaotic nonlinear systems. *IEEE Trans. Automat. Control* **34** (1989), no. 2, 201–205. (Summary) **89j:93140** 93E20 (58F13, 93B40)
- Fowlkes, E. B.** (with Gnanadesikan, R.; Kettenring, J. R.) Variable selection in clustering. *J. Classification* **5** (1988), no. 2, 205–228. (Summary) **89h:62093** 62H30
- Fox, Bennett L.** (with Glynn, Peter W.) Computing Poisson probabilities. *Comm. ACM* **31** (1988), no. 4, 440–445. (Not in MR) 60-04
- Fox, Dale R.** Block cutpoint decomposition for Markovian queueing systems. *Appl. Stochastic Models Data Anal.* **4** (1988), no. 2, 101–114. (Summary) **89d:90101** 90B22 (90B15)
- Fox, David W.** (with Beattie, Christopher) Schur complements and the Weinstein-Aronszajn theory for modified matrix eigenvalue problems. *Linear Algebra Appl.* **108** (1988), 37–61. (P. Hagedorn) **89f:49029** 49G15 (15A18, 65F15)
- Fox, Geoffrey C.** A graphical approach to load balancing and sparse matrix vector multiplication on the hypercube. *Numerical algorithms for modern parallel computer architectures* (Minneapolis, MN, 1986–87), 37–61, IMA Vol. Math. Appl., 13, Springer, New York-Berlin, 1988. (see **89j:65093**) 65W05 (65F50)
- A review of automatic load balancing and decomposition methods for the hypercube. *Numerical algorithms for modern parallel computer architectures* (Minneapolis, MN, 1986–87), 63–76, IMA Vol. Math. Appl., 13, Springer, New York-Berlin, 1988. (see **89j:65093**) 65W05
- Fox, Karl A.** Econometrics needs a history: two cases of conspicuous neglect. *Econometrics of planning and efficiency*, 23–47, *Adv. Stud. Theoret. Appl. Econometrics*, 11, Kluwer Acad. Publ., Dordrecht, 1988. (From the text) **89d:01047** 01A60 (62-03, 62P20)
- Fox, Leslie** (with Mayers, D. F.) ★ Numerical solution of ordinary differential equations. *Chapman & Hall, London-New York*, 1987. xii+249 pp. ISBN 0-412-22650-2 (G. K. Gupta) **89g:65003** 65-01 (65Lxx)
- Fox, Phyllis** Mina Rees (1902–). *Women of mathematics*, 175–181, Greenwood, Westport, CT, 1987. (see **89b:01071**) 01A70
- Fox, Ronald F.** Mean first-passage times and colored noise. *Phys. Rev. A* (3) **37** (1988), no. 3, 911–917. (Jerzy Luczka) **89c:82024** 82A31
- Fox, Thomas F.** Operations on triple cohomology. *J. Pure Appl. Algebra* **51** (1988), no. 1–2, 119–128. (D. H. Van Osdol) **89e:18012** 18C15 (18G30, 55S99)
- van Fraassen, Bas C.** Statistical behaviour of indistinguishable particles: problems of interpretation. *Recent developments in quantum logic* (Cologne, 1984), 161–187, *Grundlagen Exakt. Naturwiss.*, 6, Bibliographisches Inst., Mannheim, 1985. (see **89h:81008**) 81B05
- Fradkin, E. S.** (with Pal'chik, M. Ya.) Conformal invariance in two-dimensional field theory. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jarmala, 1985), 191–206, "Nauka", Moscow, 1986. (see **89d:81001**) 81E13 (81E40)
- (with Pal'chik, M. Ya.) Conformal invariance in two-dimensional field theory. *Group theoretical methods in physics*, Vol. 1 (Jarmala, 1985), 123–150, VNU Sci. Press, Utrecht, 1986. (Elias Kiritsis) **89e:81143** 81E99 (81E40)
- (with Pal'chik, M. Ya.) Closed set of equations for Green functions in conformal invariant quantum field theory. *Wandering in the fields*, 128–143, World Sci. Publishing, Singapore, 1987. (see **89m:81002**) 81E15 (81E40)
- (with Vasil'ev, M. A.) Candidate for the role of higher-spin symmetry. *Ann. Physics* **177** (1987), no. 1, 63–112. (Nigel B. Backhouse) **89h:81085** 81D25 (17A70, 81G25)
- (with Batalin, I. A.) Operator quantization of dynamic systems with constraints of the second kind. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 4, 837–842. (Introduction) **89h:81061** 81D07 (58F06)
- (with Bukhbinder, I. L.) On the mean field equations of motion in the theories with unstable vacuum. *Fortschr. Phys.* **36** (1988), no. 2, 97–105. (G. Vitiello) **89i:81104** 81E99 (81C12)
- (with Shvartsman, Sh. M.) The continual approach in the Yang-Mills theory in the external nonabelian field. *Fortschr. Phys.* **36** (1988), no. 11, 831–862. (Henrik Pedersen) **89m:81095** 81E13
- see also *Quantum field theory and quantum statistics*, **89b:81007**; **89b:81008**; **Fainberg, V. Ya.**, **89h:81002** and **Ginzburg, V. L.**, **89b:81008**
- Fradkin, Eduardo** (with Naón, Carlos M.; Schaposnik, Fidel A.) Constrained Fermi systems and Virasoro algebras. *Phys. Lett. B* **200** (1988), no. 1–2, 95–97. (Ömer Öğuz) **89c:81118** 81E99 (17B65, 81E40)
- Fradkin, Edm Samoilovich** see **Fradkin, E. S.**
- Fradkin, L. Ju.** (with Dawe, R. A.) Some a priori bounds for flows through heterogeneous media. *IMA J. Appl. Math.* **38** (1987), no. 3, 181–193. (Summary) **89m:76062** 76S05
- Fradkina, T. E.** Lagrange measure in gauge theories of general form. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jarmala, 1985), 270–275, "Nauka", Moscow, 1986. (see **89d:81001**) 81E13 (81C35)
- Fraenkel, Aviezer S.** (with Berger, Marc A.; Felzenbaum, Alexander) Remark on the multiplicity of a partition of a group into cosets. *Fund. Math.* **128** (1987), no. 3, 139–144. (F. Pérez Monasor) **89e:20047** 20D60 (20D20)
- (with Berger, Marc A.; Felzenbaum, Alexander) Improvements to the Newman-Znám result for disjoint covering systems. *Acta Arith.* **50** (1988), no. 1, 1–13. (Š. Znám) **89f:11013** 11A07 (11B25)
- (with Berger, Marc A.; Felzenbaum, Alexander) Disjoint covering systems with precisely one multiple modulus. *Acta Arith.* **50** (1988), no. 2, 171–182. (Š. Znám) **89i:11019** 11B25 (11A07)
- (with Berger, Marc A.; Erdős, Paul; Felzenbaum, Alexander) Nearly disjoint covering systems. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), B, 231–246. (R. C. Mullin) **89i:11004** 11A07
- (with Berger, Marc A.; Felzenbaum, Alexander) Covers of product sets and the Korec-Znám result. *European J. Combin.* **9** (1988), no. 2, 131–138. (Ivan Korec) **89j:11014** 11B25
- Fraenkel, L. E.** Some results for a linear, partly hyperbolic model of viscoelastic flow past a plate. *Material instabilities in continuum mechanics* (Edinburgh, 1985–1986), 137–146, Oxford Sci. Publ., Oxford Univ. Press, New York, 1988. (see **89f:73005**) 76A10
- (with Amick, Charles J.) The uniqueness of a family of steady vortex rings. *Arch. Rational Mech. Anal.* **100** (1988), no. 3, 207–241. (A. Elcrat) **89c:76042** 76C05
- Fragoso, Marcelo D.** On a partially observable LQG problem for systems with Markovian jumping parameters. *Systems Control Lett.* **10** (1988), no. 5, 349–356. (Summary) **89c:49023** 49D40 (93E11)
- Fragoulis, Maria** On strong spectrally bounded LMC\*-algebras. *Math. Nachr.* **134** (1987), 309–315. (Konrad Schmüdgen) **89d:47106** 47D40 (46K05, 46L05)
- Frailman, Ricardo** (with Boente, Graciela; Yohai, Victor J.) Qualitative robustness for stochastic processes. *Ann. Statist.* **15** (1987), no. 3, 1293–1312. (Zhen Hua Wang) **89c:62049** 62F35 (60G35)
- (with Boente, Graciela) On the asymptotic behaviour of general maximum likelihood estimates for the nonregular case under nonstandard conditions. *Biometrika* **75** (1988), no. 1, 45–56. (M. N. Goria) **89k:62042** 62F12
- (with Boente, Graciela) Consistency of a nonparametric estimate of a density function for dependent variables. *J. Multivariate Anal.* **25** (1988), no. 1, 90–99. (Summary) **89k:62051** 62G05
- Fraisse, Anne-Marie** (with Robert, Christian; Roy, Madeleine) Estimateurs à rétrécisseur matriciel différentiable, pour un coût quadratique général. (English summary) [Shrinkage estimators with differentiable shrinking functions for arbitrary quadratic loss] *Ann. Econom. Statist.* **1987**, no. 8, 161–175. (Lionel Weiss) **89g:62115** 62J07
- (with Robert, Christian; Roy, Madeleine) Une condition nécessaire d'admissibilité pour les familles exponentielles et ses conséquences sur les estimateurs à rétrécisseur matriciel. (English summary) [A necessary condition of admissibility in exponential families and its consequences upon the matricial shrinkage estimator] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 20, 889–891. (Summary) **89b:62019** 62C15



- Fraise, P.** (with Hahn, Géra; Sotteau, D.) Star sub-Ramsey numbers. *Combinatorial design theory*, 153-163, North-Holland Math. Stud., 149, North-Holland, Amsterdam-New York, 1987. (Stefan A. Burr) **89b:05123** 05C55
- A note on distance-dominating cycles. *Discrete Math.* **71** (1988), no. 1, 89-92. (Ortrud R. Oellermann) **89f:05107** 05C38 (05C70)
- (with Ordaz, Oscar) A Chvátal-Erdős condition for  $(t, r)$ -factors in digraphs using given arcs. *Discrete Math.* **71** (1988), no. 2, 143-148. (A. Gregory Starling) **89m:05091** 05C70 (05C20, 05C40)
- Fraissé, Roland** La ramification selon Everett: une interprétation critiquée mais logiquement impeccable de la mécanique quantique. [Ramification according to Everett: a critical but logically impeccable interpretation of quantum mechanics] *Internat. Logic Rev.* **No. 33-34** (1986), 70-93. (Matej Pavlič) **89b:81028** 81B99 (81D99)
- La ramification selon Everett: une interprétation critiquée mais logiquement impeccable de la mécanique quantique. (English summary) [Ramification according to Everett: a critical but logically impeccable interpretation of quantum mechanics] *Hist. Philos. Logic* **8** (1987), no. 2, 215-241. (Dennis Dieks) **89h:81017** 81B10 (81B05)
- Frame, J. S.** (with Anderson, G. D.) Numerical estimates for a Grötsch ring constant. *Constr. Approx.* **4** (1988), no. 3, 223-242. (M. K. Vamanamurthy) **89i:30017** 30C60
- Frampton, Paul H.** (with Okada, Yasuhiro; Ubrico, Marcelo R.) On adelic formulas for the  $p$ -adic string. *Phys. Lett. B* **213** (1988), no. 3, 260-262. (Gerd Faltings) **89j:81180** 81E99 (14G20, 81E30)
- (with Okada, Yasuhiro) Effective scalar field theory of  $p$ -adic string. *Phys. Rev. D* **(3)** **37** (1988), no. 10, 3077-3079. (Sorin Marcescu) **89k:81140** 81E99 (81E30)
- (with Okada, Yasuhiro)  $p$ -adic string  $N$ -point function. *Phys. Rev. Lett.* **60** (1988), no. 6, 484-486. (Summary) **89h:81185** 81E99 (81E30)
- Franseszek, Marek** (with Kowalik, Zbigniew J.; Pierański, Piotr) Self-reanimating chaos in the bouncing-ball system. *Phys. Rev. A* **(3)** **37** (1988), no. 10, 4016-4022. (Summary) **89b:70012** 70K50 (58F13)
- Francia, Leopoldo P.** (with Hughes, Thomas J. R.; Balestra, M.) A new finite element formulation for computational fluid dynamics. V. Circumventing the Babuška-Brezzi condition: a stable Petrov-Galerkin formulation of the Stokes problem accommodating equal-order interpolations. *Comput. Methods Appl. Mech. Engrg.* **59** (1986), no. 1, 85-99. (Summary) **89j:76015d** 76-08 (35Q10, 65N30, 76D07)
- (with Hughes, Thomas J. R.; Errata: "A new finite element formulation for computational fluid dynamics. V. Circumventing the Babuška-Brezzi condition: a stable Petrov-Galerkin formulation of the Stokes problem accommodating equal-order interpolations". *Comput. Methods Appl. Mech. Engrg.* **62** (1987), no. 1, 111. (Editors) **89j:76015e** 76-08 (35Q10, 65N30, 76D07)
- (with Hughes, Thomas J. R.; Mallet, Michel) A new finite element formulation for computational fluid dynamics. VI. Convergence analysis of the generalized SUPG formulation for linear time-dependent multidimensional advective-diffusive systems. *Comput. Methods Appl. Mech. Engrg.* **63** (1987), no. 1, 97-112. (From the introduction) **89j:76015f** 76-08 (35Q10, 65N30, 76N10)
- (with Hughes, Thomas J. R.) A new finite element formulation for computational fluid dynamics. VII. The Stokes problem with various well-posed boundary conditions: symmetric formulations that converge for all velocity/pressure spaces. *Comput. Methods Appl. Mech. Engrg.* **65** (1987), no. 1, 85-96. (From the introduction) **89j:76015g** 76-08 (35Q10, 65N30, 76D07)
- (with Hughes, Thomas J. R.) Some new classes of mixed finite element methods. *Numerical analysis 1987 (Dundee, 1987)*, 135-156, Pitman Res. Notes Math. Ser., 170, Longman Sci. Tech., Harlow, 1988. (Manfred Dobrowolski) **89f:65124** 65N30
- (with Hughes, Thomas J. R.) A mixed finite element formulation for Reissner-Mindlin plate theory: uniform convergence of all higher-order spaces. *Comput. Methods Appl. Mech. Engrg.* **67** (1988), no. 2, 223-240. (Summary) **89g:73033** 73K25 (73K10)
- (with Hughes, Thomas J. R.; Loula, Abimael F. D.; Miranda, Isidoro) A new family of stable elements for nearly incompressible elasticity based on a mixed Petrov-Galerkin finite element formulation. *Numer. Math.* **53** (1988), no. 1-2, 123-141. (P. Ruchus) **89f:65122** 65N30 (73-08)
- Francaviglia, Mauro** (with Ferraris, Marco) Intrinsic ADM formalism for Lagrangian field theories in fibered manifolds. *7th Italian conference on general relativity and gravitational physics (Rapallo, 1986)*, 55-66, World Sci. Publishing, Singapore, 1987. (Summary) **89d:70014** 70G50 (49F05, 58E30, 58F05)
- (with Ferraris, Marco) Applications of the Poincaré-Cartan form in higher order field theories. *Differential geometry and its applications (Brno, 1986)*, 31-52, Math. Appl. (East European Ser.), 27, Reidel, Dordrecht-Boston, MA, 1987. (David E. Betounes) **89d:58033** 58E30 (49F05, 49H05, 70G50, 83D05)
- (with Ferraris, Marco) Formal connections in fibered manifolds. *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 447-482, Colloq. Math. Soc. János Bolyai, 46, North-Holland, Amsterdam-New York, 1988. (Hans P. Künzle) **89d:53060** 53C05 (58A20, 58E30, 58F05)
- (with Ferraris, Marco; Magnano, Guido) Do nonlinear metric theories of gravitation really exist? *Classical Quantum Gravity* **5** (1988), no. 6, L95-L99. (Carl Brans) **89d:83053** 83D05
- mendes France, M.** see Mendes France, M.
- Francés, J. M.** (with Zúñiga, J.; Hidalgo, A.; Requena, A.; López Piñero, A.; Olivares del Valle, F. J.) Analytical expressions for vibrational matrix elements of Morse oscillators. *Phys. Rev. A* **(3)** **38** (1988), no. 8, 4205-4212. (Summary) **89i:81023** 81C05 (81G55)
- Francescato, A.** (with Bagnoli, F.; Ciliberto, S.; Livi, R.; Ruffo, Stefano) Cellular automaton model for a fluid experiment. *Chaos and complexity (Torino, 1987)*, 318-327, World Sci. Publishing, Singapore, 1988. (see **89g:58144**) 76E15 (68U20, 76-05, 76-08)
- Franceschini, Valtor** (with Tebaldi, Claudio) Truncations to 12, 14 and 18 modes of the Navier-Stokes equations on a two-dimensional torus. (Italian summary) *Meccanica—J. Ital. Assoc. Theoret. Appl. Mech.* **20** (1985), no. 3, 207-230. (Summary) **89j:76037** 76D05 (58F13, 58F14, 76E30, 76F99)
- (with Giberti, Claudio; Nicolini, Marco) Common periodic behavior in larger and larger truncations of the Navier-Stokes equations. *J. Statist. Phys.* **50** (1988), no. 5-6, 879-896. (Summary) **89f:76032** 76D05 (58F14, 58F22, 76-08, 76E30)
- di Francesco, P.** see Di Francesco, P.
- Francez, Nissim** (with Katz, Shmuel) Fairness and the axioms of control predicates. *Internat. J. Parallel Programming* **16** (1987), no. 4, 263-278. (Not in MR) **68Q55** (68N15)
- Francfort, G. A.** (with Murat, F.) Optimal bounds for conduction in two-dimensional, two-phase, anisotropic media. *Nonclassical continuum mechanics (Durham, 1986)*, 197-212, London Math. Soc. Lecture Note Ser., 122, Cambridge Univ. Press, Cambridge-New York, 1987. (Philippe Destuynder) **89h:80010** 80A20
- Franchetta, Anna** On the modular representations of a cyclic  $p$ -group. (Italian) *Matematiche (Catania)* **39** (1984), no. 1-2, 181-188 (1988). (G. Michler) **89b:20020** 20C05
- Franchetti, C.** A new geometric property of the unit ball of a normed space. (Italian. English summary) *Rend. Sem. Mat. Fis. Milano* **55** (1985), 113-122 (1988). (Pier Luigi Papini) **89b:46023** 46B20 (41A65)
- Franchi, Bruno** (with Lanconelli, Ermanno; Serrin, J.) Existence and uniqueness of ground states for quasilinear elliptic equations. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* **(8)** **79** (1985), no. 5, 121-126 (1986). (Jana D. Madjarova) **89e:35052** 35J60
- Franchi, Jacques** Produits semi-directs de diffusions réelles et lois asymptotiques. (English summary) [Skew-products of real diffusions and asymptotic laws] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 12, 495-498. (Summary) **89b:60185** 60J60 (60F05)
- de Franchis, M.** see De Franchis, M.
- Franci, R.** (with Toti Rigatelli, L.) Fourteenth-century Italian algebra. *Mathematics from manuscript to print, 1300-1600 (Oxford, 1984)*, 11-29, Oxford Sci. Publ., Oxford Univ. Press, New York, 1988. (Ezra Brown) **89h:01014** 01A35 (01A40)
- Antonio de Mazzinghi: an algebraist of the 14th century. (French and German summaries) *Historia Math.* **15** (1988), no. 3, 240-249. (Richard L. Francis) **89i:01020** 01A35
- toraldo di Francia, G.** see Toraldo di Francia, G.
- rubio de Francia, José Luis** see Rubio de Francia, José Luis
- Franciosi, Michelangelo** (with Moscarillo, Gioconda) A note on the maximum principle for second order nonvariational linear elliptic equations. *Ricerche Mat.* **35** (1986), no. 2, 279-290. (Michael Wiegner) **89e:35026** 35B50 (35J15)
- Franciosi, Silvana** (with de Giovanni, Francesco) On groups in which every finite subgroup is complemented. (Italian. English summary) *Matematiche (Catania)* **38** (1983), no. 1-2, 201-220 (1987). (Giovanni Zacher) **89b:20069** 20E34
- (with de Giovanni, Francesco) Soluble groups with many Černikov quotients. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* **(8)** **79** (1985), no. 1-4, 19-24 (1986). (D. J. S. Robinson) **89f:20043** 20F16
- (with Amberg, Bernhard; de Giovanni, Francesco) On trifactorized soluble minimax groups. *Arch. Math. (Basel)* **51** (1988), no. 1, 13-19. (O. H. Kegel) **89g:20061** 20F19
- (with Amberg, Bernhard; de Giovanni, Francesco) Groups with a nilpotent triple factorisation. *Bull. Austral. Math. Soc.* **37** (1988), no. 1, 69-79. (D. I. Zaitsev) **89g:20062** 20F19
- (with Amberg, Bernhard; de Giovanni, Francesco) Groups with a supersoluble triple factorization. *J. Algebra* **117** (1988), no. 1, 136-148. (J. Wiegold) **89i:20059** 20F19 (20E34)
- Francis, B. A.** (with Feintuch, A.) Minimal sensitivity for linear time varying systems. *Modelling, identification and robust control (Stockholm, 1985)*, 129-136, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:93038** 93B35 (93C45, 93C50)
- ★ A course in  $H_\infty$  control theory. *Lecture Notes in Control and Information Sciences*, 88, Springer-Verlag, Berlin-New York, 1987. x+150 pp. ISBN 3-540-17069-3 (Andrzej Świerniak) **89i:93002** 93-02 (42B30, 93B28, 93B50, 93C05)
- (with Feintuch, A.) Distance formulas for operator algebras arising in optimal control problems. *Topics in operator theory and interpolation, 151-170, Oper. Theory: Adv. Appl.*, 29, Birkhäuser, Basel-Boston, MA, 1988. (Stephen Power) **89h:47007** 47A30 (47B35, 47D99, 93B28)
- (with Georgiou, Tryphon T.) Stability theory of linear time-invariant plants with periodic digital controllers. *IEEE Trans. Automat. Control* **33** (1988), no. 9, 820-832. (B. G. Pachpatte) **89f:93031** 93D05 (49D50, 93B55, 93C55, 93C57)
- (with Tannenbaum, Allen) Generalized interpolation in control theory. *Math. Intelligencer* **10** (1988), no. 4, 48-52. (From the introduction) **89k:93003** 93-02 (30E05, 93B28, 93B35)
- Francis, R. L.** Mathematical haystacks: another look at repunit numbers. *College Math. J.* **19** (1988), no. 3, 240-246. (Ian Anderson) **89i:11005** 11A63
- (with Erkut, E.; Lowe, Timothy J.) Locating two facilities on a tree subject to distance constraints. *Transportation Sci.* **22** (1988), no. 3, 199-208. (Summary) **89f:90046** 90B10
- Francisco, G.** (with Matsas, G. E. A.) Qualitative and numerical study of Bianchi IX models. *Gen. Relativity Gravitation* **20** (1988), no. 10, 1047-1054. (Carl Brans) **89h:83013** 83C20 (83-08, 83F05)
- Franco, J. M.** (with Palacios, M.) Une classe de méthodes numériques pour l'intégration directe d'équations différentielles du type  $y'' = f(t, y, y')$ . [A class of numerical methods for the direct integration of differential equations of type  $y'' = f(t, y, y')$ ] *Rev. Acad. Cienc. Zaragoza* **(2)** **42** (1987), 45-67. (Zahari Zlatev) **89g:65084** 65L05 (65L20)
- Franco, John** (with Ho, Yuan Chuan) Probabilistic performance of a heuristic for the satisfiability problem. *Discrete Appl. Math.* **22** (1988/89), no. 1, 35-51. (F. Szidarovszky) **89j:03032** 03D15 (03B05, 03B35, 68Q20)
- Franco de Oliveira, A. J.** see de Oliveira, A. J. Franco
- Françoise, Jean-Pierre** Estimations uniformes pour les domaines de convergence de la méthode de Newton. [Uniform estimates for the domains of convergence of Newton's method] *Séminaire sur la géométrie algébrique réelle, Tome I, II*, 111-121, Publ. Math. Univ. Paris VII, 24, Univ. Paris VII, Paris, 1986. (Jaroslav Stark) **89d:58062** 58F08 (30C15, 58F18, 65H05)
- Symplectic geometry and soliton theory. *Topics in soliton theory and exactly solvable nonlinear equations (Oberwolfach, 1986)*, 300-306, World Sci. Publishing, Singapore, 1987. (Summary) **89c:58049** 58F07 (58F05)
- Monodromy and the Kowalevskaya top. Singularités d'équations différentielles (Dijon, 1985). *Astérisque No. 150-151* (1987), 87-108, 186. (Tudor S. Ratiu) **89a:58050** 58F07 (70E15)
- Canonical partition functions of Hamiltonian systems and the stationary phase formula. *Comm. Math. Phys.* **117** (1988), no. 1, 37-47. (Tudor S. Ratiu) **89k:58117** 58F07 (58F05)
- Franoň, J.** (with Arques, D.; Guichet, M. T.; Guichet, P.) Comparison of algorithms controlling concurrent access to a database: a combinatorial approach. Thirteenth International Colloquium on Automata, Languages and Programming (Rennes, 1986). *Theoret. Comput. Sci.* **58** (1988), no. 1-3, 3-16. (Summary) **89h:68027** 68P20 (68Q25)

- Francesics, G. The porous medium equation: the superslow diffusion case. *Nonlinear Anal.* 12 (1988), no. 3, 291–301. (Gaston E. Hernandez) **89c:35079** 35K35 (35R35)
- Franké, Ivan A. remark on the strict convexity for seminorms. (Serbo-Croatian summary) *Glas. Mat. Ser. III* 22(42) (1987), no. 1, 99–101. (M. M. Day) **89i:46008** 46A15
- Franjou, Vincent. Quelques éléments dans l'homotopie stable du groupe unitaire. (English summary) [Some elements in the stable homotopy of the unitary group] *Bull. Soc. Math. France* 115 (1987), no. 3, 309–328. (M. Mimura) **89b:55014** 55Q10 (57T99)
- Frank, A. M. (with Pautov, V. N.) An algorithm for constructing a Dirichlet mesh for nonstationary problems on the basis of local relocations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 11, 1730–1734, 1759. (Summary) **89k:65150** 65N99
- Frank, András. On connectivity properties of Eulerian digraphs. *Graph theory in memory of G. A. Dirac (Sandbjerg, 1985)*, 179–194, *Ann. Discrete Math.*, 41, North-Holland, Amsterdam-New York, 1989. (H. Joseph Straight) **89m:05076** 05C40 (05C20, 05C45, 68R10)
- Frank, George. Templates and train tracks. *Trans. Amer. Math. Soc.* 308 (1988), no. 2, 765–784. (William Dunbar) **89i:58112** 58F15 (57M15, 57N10, 58F25)
- Frank, Léonid S. Perturbations singulières coercives: réduction à des perturbations régulières et applications. [Coercive singular perturbations: reduction to regular perturbations, and applications] *Séminaire sur les équations aux dérivées partielles 1986–1987, Exp. No. XVIII*, 27 pp., *École Polytech., Palaiseau*, 1987. (Claude-Michel Brauner) **89d:35010** 35B25 (35B32, 35J99, 35L99)
- Coercive singular perturbations: eigenvalue problems and bifurcation phenomena. *Ann. Mat. Pura Appl.* (4) 148 (1987), 367–395. (Wei Tao Zhang) **89c:35017** 35B25 (35C20, 35P20)
- Frank, Ove. Triad count statistics. Proceedings of the First Japan Conference on Graph Theory and Applications (Hakone, 1986). *Discrete Math.* 72 (1988), no. 1–3, 141–149. (Zbigniew Palka) **89k:05098** 05C80
- Frank, P. M. (with Verde, C.) Sensitivity reduction of the linear quadratic regulator by matrix modification. *Internat. J. Control* 48 (1988), no. 1, 211–223. (Summary) **89c:93077** 93B35 (49D40, 93B50)
- Frank, Rolfdieter. A short proof that ordered linear spaces are locally projective. *Combinatorics '86 (Trento, 1986)*, 177–179, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (Jean-Paul Doignon) **89a:51034** 51G05
- Projective embedding of certain linear spaces. *J. Combin. Theory Ser. A* 48 (1988), no. 2, 266–269. (Luc Teirlinck) **89i:51020** 51A45
- (with Eilers, Erich W.) Products of quasireflections and transvections over local rings. *J. Geom.* 31 (1988), no. 1–2, 69–78. (Frieder Knüppel) **89b:51008** 51C05 (20H25, 51F25)
- Warum ist der euklidische Raum Teil eines projektiven Raumes? [Why is Euclidean space part of a projective space?] *Mitt. Math. Ges. Hamburg* 11 (1988), no. 5, 557–563. (Cyril W. L. Garner) **89c:51003** 51A45
- Frank, Bernd (with Albach, Horst; Werhahn, Michael) Bemerkungen zur Theorie der Investitionsketten. [Remarks on the theory of investment chains] *Ökonomie und Mathematik*, 375–380, *Springer, Berlin-New York*, 1987. (Summary) **89m:90013** 90A09
- Frank, H. W. see Peitgen, Heinz-Otto, **89i:58058**
- Frank, Jens (with Runst, Thomas) Nonlinear perturbations of linear noninvertible boundary value problems in function spaces of type  $B_{p,q}^s$  and  $F_{p,q}^s$ . *Czechoslovak Math. J.* 38(113) (1988), no. 4, 623–641. (Paul G. Schmidt) **89i:35061** 35J65 (46E35, 47H15)
- (with Manin, Yu. I.; Tschinkel, Yuri) Rational points of bounded height on Fano varieties. *Invent. Math.* 95 (1989), no. 2, 421–435. (Joseph H. Silverman) **89m:11060** 11G35 (14G25, 14J20)
- Frank, Jürgen. Correction to: "A Levinson-Durbin recursion for autoregressive-moving average processes" [Biometrika 72 (1985), no. 3, 573–581; MR 87k:62150]. *Biometrika* 75 (1988), no. 2, 395. (Editors) **89d:62089** 62M10
- Frank, Rainer (with Uhlmann, H.) Zur Untersuchung des stationären Verhaltens von stark nichtlinearen, periodisch fremderregten dynamischen Netzwerken. [Investigation of the stationary behavior of strongly nonlinear dynamic networks with periodically forced excitation] *Wiss. Z. Tech. Hochsch. Ilmenau* 34 (1988), no. 4, 135–158. (Zdeněk Ertinger) **89b:58151** 58F14 (94C05)
- Frank, Reiner (with Weghorst, H.) Complex dynamics in a simple input-output model without the full capacity utilization hypothesis. *Metroeconomica* 39 (1988), no. 1, 1–29. (Summary) **89m:90046** 90A17 (58F40, 90A16)
- Frank, Richard. Recent advances in the approximation of surfaces from scattered data. *Topics in multivariate approximation (Santiago, 1986)*, 79–98, *Academic Press, Boston, MA*, 1987. (L. L. Schumaker) **89a:41011** 41A15 (65D10)
- (with Schumaker, L. L.) A bibliography of multivariate approximation. *Topics in multivariate approximation (Santiago, 1986)*, 275–335, *Academic Press, Boston, MA*, 1987. (Editors) **89a:41001** 41–00 (00A15, 41A63)
- (with McMahon, John R.) Knot selection for least squares approximation using thin plate splines. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing (West Point, NY, 1987)*, 311–329, *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Summary) **89d:65012** 65D07
- (with Barker, E.; Goerss, J.) The use of observed data for the initial-value problem in numerical weather prediction. *Comput. Math. Appl.* 16 (1988), no. 1–2, 169–184. (Summary) **89c:86006** 86A10 (86–08)
- Frankel, Michael L. A model of slow equilibrium dynamics for economic expansion. *J. Math. Anal. Appl.* 132 (1988), no. 2, 499–513. (Summary) **89c:90029** 90A14 (90A11)
- (with Sivashinsky, G. I.) On the equation of a curved flame front. *Phys. D* 30 (1988), no. 1–2, 28–42. (Summary) **89f:80008** 80A25
- On the nonlinear evolution of a solid-liquid interface. *Phys. Lett. A* 128 (1988), no. 1–2, 57–60. (Summary) **89b:80004** 80A20 (80A25)
- Frankel, Theodore. Electric currents in multiply connected spaces. *Internat. J. Theoret. Phys.* 27 (1988), no. 8, 995–999. (Kotik K. Lee) **89g:78010** 78A25
- Frankiewicz, Ryszard (with Aniszczak, Bohdan; Plewik, Szymon) Remarks on (s)- and Ramsey-measurable functions. (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 7–8, 479–485. (B. K. Lahiri) **89f:28009** 28A20 (54H05)
- (with Zbierski, Paweł) On closed  $P$ -sets in  $\omega^*$ . (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 9–10, 531–533. (John K. Truss) **89f:03044** 03E50 (04A30)
- (with Kunen, Kenneth) Solution of Kuratowski's problem on function having the Baire property. *I. Fund. Math.* 128 (1987), no. 3, 171–180. (Eva Havirova) **89a:03090** 03E35 (03E55, 26A21, 54H05)
- (with Kunen, Kenneth; Zbierski, Paweł) On inhomogeneity of products of compact  $F$ -spaces. *Fund. Math.* 129 (1988), no. 1, 35–38. (C. W. Patty) **89i:54006** 54B10
- (with Zbierski, Paweł) Strongly discrete subsets in  $\omega^*$ . *Fund. Math.* 129 (1988), no. 3, 173–180. (Dimitrina Stavrova) **89i:54004** 54A35 (54D99)
- (with Zbierski, P.) Partitioner-representable algebras. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 926–928. (Jan Tryba) **89i:03098** 03E50 (03E05, 06E05)
- Frankl, Peter (with Rödl, Vojtěch) Lower bounds for Turán's problem. *Graphs Combin.* 1 (1985), no. 3, 213–216. (Sergei L. Bezrukov) **89i:05038** 05A20 (05A05)
- (with Erdős, Paul; Rödl, Vojtěch) The asymptotic number of graphs not containing a fixed subgraph and a problem for hypergraphs having no exponent. *Graphs Combin.* 2 (1986), no. 2, 113–121. (Edward A. Bender) **89b:05102** 05C30 (05C65, 05C75)
- (with Rödl, Vojtěch) Large triangle-free subgraphs in graphs without  $K_4$ . *Graphs Combin.* 2 (1986), no. 2, 135–144. (J. Spencer) **89b:05124** 05C55
- (with Björner, Anders; Stanley, Richard P.) The number of faces of balanced Cohen-Macaulay complexes and a generalized Macaulay theorem. *Combinatorica* 7 (1987), no. 1, 23–34. (P. McMullen) **89d:52012** 52A25 (05A15, 55U05)
- (with Enomoto, Hikoe; Ito, Noboru; Nomura, Kazumasa) Codes with given distances. *Graphs Combin.* 3 (1987), no. 1, 25–38. (Vera Pless) **89a:94015** 94B05 (05C15)
- (with Chung, F. R. K.) The maximum number of edges in a 3-graph not containing a given star. *Graphs Combin.* 3 (1987), no. 2, 111–126. (Dominique Gouyou-Beauchamps) **89c:05113** 05C35
- (with Cameron, Peter J.; Deza, M.) Sharp sets of permutations. *J. Algebra* 111 (1987), no. 1, 220–247. (Johannes Simons) **89c:20011** 20B30 (05A05, 20B05)
- Erdős-Ko-Rado theorem with conditions on the maximal degree. *J. Combin. Theory Ser. A* 46 (1987), no. 2, 252–263. (E. C. Milner) **89d:05003** 05A05
- (with Füredi, Z.) Solution of the Littlewood-Offord problem in high dimensions. *Ann. of Math.* (2) 128 (1988), no. 2, 259–270. (J. R. Griggs) **89m:05002** 05A05 (06A10)
- (with Graham, R. L.; Rödl, Vojtěch) Quantitative theorems for regular systems of equations. *J. Combin. Theory Ser. A* 47 (1988), no. 2, 246–261. (Charles M. Grinstead) **89d:05020** 05A99 (15A99)
- (with Rödl, Vojtěch; Wilson, R. M.) The number of submatrices of a given type in a Hadamard matrix and related results. *J. Combin. Theory Ser. B* 44 (1988), no. 3, 317–328. (Jennifer Seberry) **89f:05044** 05B20
- (with Machara, Hiroshi) The Johnson-Lindenstrauss lemma and the sphericity of some graphs. *J. Combin. Theory Ser. B* 44 (1988), no. 3, 355–362. (A. Blokhuis) **89c:05078** 05C10
- (with Pach, János) An extremal problem on  $K_r$ -free graphs. *J. Graph Theory* 12 (1988), no. 4, 519–523. (J. Spencer) **89i:05162** 05C35
- Frankl, Phyllis G. (with Weyuker, Elaine J.) An applicable family of data flow testing criteria. *IEEE Trans. Software Engrg.* 14 (1988), no. 10, 1483–1498. (Not in MR) **68N05**
- Franklin, Allan (with Howson, Colin) It probably is a valid experimental result: a Bayesian approach to the epistemology of experiment. *Stud. Hist. Philos. Sci.* 19 (1988), no. 4, 419–427. (Pierre Crépel) **89k:00014** 00A25 (01A50)
- Ladd-Franklin, Christine see Ladd-Franklin, Christine
- Franklin, Gene F. (with Al-Saggaf, Ubaid M.) Model reduction via balanced realizations: an extension and frequency weighting techniques. *IEEE Trans. Automat. Control* 33 (1988), no. 7, 687–692. (Not in MR) **93B15**
- (with Al-Rahmani, Hamed M.) Linear periodic systems: eigenvalue assignment using discrete periodic feedback. *IEEE Trans. Automat. Control* 34 (1989), no. 1, 99–103. (Arno Linemann) **89j:93052** 93B60 (49D50, 93C05)
- Franklin, James. Nondeductive logic in mathematics. *British J. Philos. Sci.* 38 (1987), no. 1, 1–18. (L. D. Kugler) **89i:00031** 00A25 (03A05, 03B48)
- Homomorphisms between modules in characteristic  $p$ . *J. Algebra* 112 (1988), no. 1, 58–85. (A. S. Dzhamal'daev) **89c:17015** 17B10 (17B50)
- Franklin, L. A. A note on approximations and convergence in distribution for Spearman's rank correlation coefficient. *Comm. Statist. Theory Methods* 17 (1988), no. 1, 55–59. (Zuzana Prášková) **89i:62071** 62G10 (62H20)
- The complete exact null distribution of Spearman's Rho for  $n = 12(1)18$ . *J. Statist. Comput. Simulation* 29 (1988), no. 3, 255–269. (Not in MR) **62E15** (62Q05)
- Exact tables of Spearman's footrule for  $N = 11(1)18$  with estimate of convergence and errors for the normal approximation. *Statist. Probab. Lett.* 6 (1988), no. 6, 399–406. (Not in MR) **62Q05**
- Franková, Dana (with Schwabik, Š.) Generalized Sturm-Liouville equations. II. *Czechoslovak Math. J.* 38(113) (1988), no. 3, 531–553. (A. G. Baskakov) **89b:34023** 34B25
- Frankowska, H. Théorèmes d'application ouverte et de fonction inverse. (English summary) [Some open mapping and inverse mapping theorems] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 18, 773–776. (Andreas Kriegl) **89d:58014** 58C15 (26E25, 49E15, 93C25)
- (with Fattorini, H. O.) Necessary conditions for infinite-dimensional control problems. *Analysis and optimization of systems (Antibes, 1988)*, 381–392, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (J. E. Rubio) **89b:90256** 90C48 (49B27, 93C25)
- (with Aubin, Jean-Pierre) Observabilité des systèmes sous incertitude. (English summary) [Observability of systems under uncertainty] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 9, 413–416. (G. Anichini) **89c:93022** 93B07 (34A60, 93C40)
- (with Kaskosz, B.) Linearization and boundary trajectories of nonsmooth control systems. *Canad. J. Math.* 40 (1988), no. 3, 589–609. (Pham Huy Di'en) **89m:49029** 49A52 (34A60, 49E30)
- (with Kaskosz, B.) A maximum principle for differential inclusion problems with state constraints. *Systems Control Lett.* 11 (1988), no. 3, 189–194. (Ivan Ginchev) **89j:49036** 49E10 (34A60, 49B10)
- Contingent cones to reachable sets of control systems. *SIAM J. Control Optim.* 27 (1989), no. 1, 170–198. (Matthias Kowski) **89m:49034** 49B10 (49E10, 49E15, 93C57)
- Franks, John. Generalizations of the Poincaré-Birkhoff theorem. *Ann. of Math.* (2) 128 (1988), no. 1, 139–151. (Roman Szrednicki) **89m:54052** 54H20 (54H25, 58F22, 70K99)
- (with Handel, Michael) Entropy and exponential growth of  $\pi_1$  in dimension two. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 753–760. (Artur Oscar Lopes) **89b:58166** 58F15 (28D20, 58F11)
- Realizing rotation vectors for torus homeomorphisms. *Trans. Amer. Math. Soc.* 311 (1989), no. 1, 107–115. (Douglas S. Shafer) **89k:58239** 58F22



- Franz, Marija** The projection of galaxy models with a Stäckel potential. *Monthly Notices Roy. Astronom. Soc.* **231** (1988), no. 2, 285–308. (Summary) **89h:85001** 85A05
- Franz, Reinhard** (with Dress, Andreas) Zu einer Frage von Herrn S. Bilinski Pflasterungen von Brezflächen betreffend. (English and Serbo-Croatian summaries) [On a problem of S. Bilinski concerning pavings of pretzel surfaces] *Rad Jugoslav. Akad. Znan. Umjet.* **42** (1987), 83–101. (J. M. Wills) **89h:52008** 52A37 (57Q15)
- Franzen, Berthold** (with Göbel, Rüdiger) Nonstandard uniserial modules over valuation domains. *Resuliate Math.* **12** (1987), no. 1–2, 86–94. (Paul C. Eklof) **89e:13029** 13L05 (03E35, 13C05)
- Franzen, Mark** (with Henschen, Lawrence) A new approach to universal unification and its application to AC-unification. *9th International Conference on Automated Deduction (Argonne, IL, 1988)*, 643–657, *Lecture Notes in Comput. Sci.*, **310**, Springer, Berlin-New York, 1988. (see **89c:68004**) **68T15** (03B35)
- coll. Franzese, P.** see **Colli Franzese, P.**
- Franzosa, Robert D.** (with Mischaikow, Konstantin) The connection matrix theory for semiflows on (not necessarily locally compact) metric spaces. *J. Differential Equations* **71** (1988), no. 2, 270–287. (S. Yu. Pilyugin) **89c:54078** 54H20
- Frapplier, Clément** On the derivatives of composite functions. *Fibonacci Quart.* **25** (1987), no. 3, 229–239. (S. N. Mukhopadhyay) **89c:26007** 26A24
- Some representation formulae for entire functions of exponential type. *Bull. Austral. Math. Soc.* **37** (1988), no. 1, 17–26. (C. N. Linden) **89c:30068** 30D15
- Representation formulas for integrable and entire functions of exponential type I. *Canad. J. Math.* **40** (1988), no. 4, 1010–1024. (C. N. Linden) **89m:30057** 30D15
- Inequalities for polynomials with restricted coefficients. *J. Analyse Math.* **50** (1988), 143–157. (A. W. Goodman) **89f:30008** 30C10
- Fraser, Craig G.** The calculus as algebraic analysis: some observations on mathematical analysis in the 18th century. *Arch. Hist. Exact Sci.* **39** (1989), no. 4, 317–335. (I. Grattan-Guinness) **89m:01046** 01A50 (26–03)
- Fraser, Cynthia** (with Ginter, James L.) Competitive dealing strategy and deal value escalation. *Management Sci.* **34** (1988), no. 11, 1315–1323. (Not in MR) **90B50**
- Fraser, D. A. S.** (with Geboyts, R. J.) Nonnested linear models: a conditional confidence approach. (French summary) *Canad. J. Statist.* **15** (1987), no. 4, 375–386. (Summary) **89b:62139** 62J05 (62A30, 62F25)
- Fibre analysis and tangent models. *Statist. Hefte* **28** (1987), no. 3, 163–181. (Summary) **89j:62048** 62F25
- (with McDunnough, P.) On generalization of the analysis of variance. *Ann. Inst. Statist. Math.* **40** (1988), no. 2, 353–366. (Mir Masoom Ali) **89f:62119** 62J10
- (with Massam, H.) Location inference on spheres and cylinders. *J. Statist. Plann. Inference* **18** (1988), no. 2, 195–201. (Summary) **89a:62012** 62A25
- Fraser, Niall M.** (with Wang, Muhong; Hipel, Keith W.) Modeling misperceptions in games. *Behavioral Sci.* **33** (1988), no. 3, 207–223. (A. Rapoport) **89g:90267** 90D45 (92A25)
- (with Kilgour, D. Marc) A taxonomy of all ordinal  $2 \times 2$  games. *Theory and Decision* **24** (1988), no. 2, 99–117. (C. B. Millham) **89f:90199** 90D05
- Fraser, Simon J.** Solvable random-decimation model of cluster scaling. *Phys. Rev. A* (3) **38** (1988), no. 2, 953–960. (Summary) **89d:82084** 82A43 (60K35)
- Fras, M.** (with Di Vecchia, P.; Lerda, A.; Sciuto, S.) A simple expression for the multiloop amplitude in the bosonic string. *Phys. Lett. B* **199** (1987), no. 1, 49–56. (Tsou Sheung Tsun) **89f:81169** 81E99 (81E30)
- (with Di Vecchia, P.; Lerda, A.; Sciuto, S.)  $N$ -string vertex and loop calculation in the bosonic string. *Nuclear Phys. B* **298** (1988), no. 3, 526–556. (Sorin Marculescu) **89f:81170** 81E99 (81E30, 83E30)
- (with Di Vecchia, P.; Hornfeck, K.; Lerda, A.; Sciuto, S.) BRST invariant operator formalism for the superstring. *Phys. Lett. B* **205** (1988), no. 2–3, 250–256. (Summary) **89e:81142** 81E99 (81E30)
- Fraudenfelder, Karl** Solving SLP recourse problems with arbitrary multivariate distributions—the dependent case. *Math. Oper. Res.* **13** (1988), no. 3, 377–394. (Klaus Tammer) **89h:90166** 90C15
- (with Kall, P.) A solution method for SLP recourse problems with arbitrary multivariate distributions—the independent case. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **17** (1988), no. 4, 177–205. (Klaus Tammer) **89h:90165** 90C15
- Frayse, Henri** (with Arnault, Jean-Marie) ★ Cours de mathématiques. 2. (French) [Course in mathematics. 2] [Analysis] Dunod Université: Ouvrages de Base. [Dunod University: Basic Works] Dunod, Paris, 1988. viii+680 pp. ISBN 2-04-016501-0 (Alain Baille) **89g:00001** 00A05 (26–01)
- Fraze, Jerome** A new symbolic representation of the basic truth-functions of the propositional calculus. *Hist. Philos. Logic* **9** (1988), no. 1, 87–91. (Jan Berneri) **89e:03014** 03B05
- Fraser, L. Neil** (with McCoy, John J.) Pseudodifferential operators, operator orderings, marching algorithms and path integrals for one-way equations. *Wave Motion* **9** (1987), no. 5, 413–427. (Sergej M. Zverev) **89h:35367** 35S99 (47G05, 86A15)
- Frazho, Arthur E.** (with Foias, Ciprian) On the Schur representation in the commutant lifting theorem. I. *J. Schur methods in operator theory and signal processing*, 207–217, *Oper. Theory: Adv. Appl.*, **18**, Birkhäuser, Basel-Boston, MA, 1986. (E. Durszt) **89a:47011** 47A20
- Three inverse scattering algorithms for the lifting theorem. I. *Schur methods in operator theory and signal processing*, 219–248, *Oper. Theory: Adv. Appl.*, **18**, Birkhäuser, Basel-Boston, MA, 1986. (Chandler Davis) **89c:47012** 47A45 (47A20)
- (with Foias, Ciprian) On the Schur representation in the commutant lifting theorem. II. *Topics in operator theory and interpolation*, 171–179, *Oper. Theory: Adv. Appl.*, **29**, Birkhäuser, Basel-Boston, MA, 1988. (E. Durszt) **89h:47012** 47A20
- (with Foias, Ciprian; Sherman, P. J.) A geometric approach to the maximum likelihood spectral estimator for sinusoids in noise. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part I, 1066–1070. (Summary) **89m:94005** 94A12 (62M15)
- Frazier, Michael** (with Jawerth, Björn) The  $p$ -transform and applications to distribution spaces. *Function spaces and applications* (Lund, 1986), 223–246, *Lecture Notes in Math.*, **1302**, Springer, Berlin-New York, 1988. (S. J. L. van Eijndhoven) **89g:46064** 46E35 (42B30, 46F05, 46M35)
- Fré, P.** (with D'Auria, R.) Duality in superspace and anomaly free supergravity: some remarks. *Modern Phys. Lett. A* **3** (1988), no. 7, 673–679. (Mark D. Roberts) **89f:83098** 83E50 (81E99)
- (with D'Auria, R.) Minimal 10D anomaly-free supergravity and the effective superstring theory. *Phys. Lett. B* **200** (1988), no. 1–2, 63–68. (W. Cox) **89g:83054** 83E50 (81E30, 83E30)
- (with Gliozzi, F.) Four-dimensional superstrings live on group manifolds. *Phys. Lett. B* **208** (1988), no. 2, 203–208. (Marc Henneaux) **89h:81186** 81E99 (81E30, 83E30)
- Frecker, R. C.** (with MacLean, W. J.) Mathematical approaches to modelling the oculomotor control system. *Math. Sci.* **13** (1988), no. 2, 135–151. (Summary) **89i:92004** 92A06 (92A09)
- Fredenhagen, Klaus** (with Barata, João C. A.) Charged particles in  $Z_2$  gauge theories. *Comm. Math. Phys.* **113** (1987), no. 3, 403–417. (Claus Montonen) **89e:81078** 81E08 (81E13, 81E25)
- (with D'Antoni, C.; Doplicher, S.; Longo, R.) Erratum: "Convergence of local charges and continuity properties of  $W^*$ -inclusions" [Comm. Math. Phys. **110** (1987), no. 2, 325–348; MR 88h:81078]. *Comm. Math. Phys.* **116** (1988), no. 1, 175–176. (From the text) **89c:81066** 81E05 (46L60)
- Frederickson, Greg N.** (with Srinivas, Mandayam A.) On-line updating of solutions to a class of matroid intersection problems. *Inform. and Comput.* **74** (1987), no. 2, 113–139. (András Recski) **89m:05033** 05B35 (68Q20, 68R10, 90C27)
- (with Hambrusch, Susanne E.) Planar linear arrangements of outerplanar graphs. *IEEE Trans. Circuits and Systems* **35** (1988), no. 3, 323–333. (O. D'Antona) **89b:05078** 05C10 (68R10)
- (with Janardan, Ravi) Space-efficient and fault-tolerant message routing in outerplanar networks. *IEEE Trans. Comput.* **37** (1988), no. 12, 1529–1540. (Summary) **89k:68118** 68R10 (68M10, 68Q25)
- Frederickson, Paul O.** (with Benson, Maurice W.) Fast pseudo-inverse algorithms on hypercubes. *Multigrid methods (Copper Mountain, CO, 1987)*, 23–33, *Lecture Notes in Pure and Appl. Math.*, **110**, Dekker, New York, 1988. (W. C. Rheinboldt) **89g:65046** 65F20 (65W05)
- (with McBryan, Oliver A.) Parallel superconvergent multigrid. *Multigrid methods (Copper Mountain, CO, 1987)*, 195–210, *Lecture Notes in Pure and Appl. Math.*, **110**, Dekker, New York, 1988. (see **89c:65005**) **65W05**
- Frederiksen, C. S.** (with Frederiksen, Jørgen S.) The application of spectral techniques in a study of the stability of orographically forced planetary waves. *Computational techniques and applications: CTAC-87 (Sydney, 1987)*, 217–226, North-Holland, Amsterdam-New York, 1988. (Summary) **89d:86012** 86A35 (86–08)
- Frederiksen, Jørgen S.** (with Carnevale, G. F.) Stability properties of exact nonzonal solutions for flow over topography. *Geophys. Astrophys. Fluid Dynamics* **35** (1986), no. 3, 173–207. (D. M. Sloan) **89f:86011** 86A35 (76E20)
- (with Bell, R. C.) Simulations and closure theory for interacting barotropic waves. *Computational techniques and applications: CTAC-87 (Sydney, 1987)*, 207–216, North-Holland, Amsterdam-New York, 1988. (Summary) **89d:86013** 86A35 (86–08)
- (with Frederiksen, C. S.) The application of spectral techniques in a study of the stability of orographically forced planetary waves. *Computational techniques and applications: CTAC-87 (Sydney, 1987)*, 217–226, North-Holland, Amsterdam-New York, 1988. (Summary) **89d:86012** 86A35 (86–08)
- (with Kleeman, R.; Bell, R. C.) Statistical dynamics of quasi-geostrophic flows. *Computational techniques and applications: CTAC-87 (Sydney, 1987)*, 347–356, North-Holland, Amsterdam-New York, 1988. (Summary) **89g:82028** 82A31 (76D05, 82–04)
- Fredkin, Donald R.** (with Rice, John A.) Correlation functions of a function of a finite-state Markov process with application to channel kinetics. *Math. Biosci.* **87** (1987), no. 2, 161–172. (Viktorie Vlachová) **89d:92023** 92A09 (60Z7)
- Fredman, Michael L.** (with Spencer, Thomas H.) Refined complexity analysis for heap operations. *J. Comput. System Sci.* **35** (1987), no. 3, 269–284. (Mukka S. Krishnamoorthy) **89h:68019** 68P05 (68Q25)
- Fredricksen, Harold** (with Krahn, Gary) A randomness property of  $m$ -sequences. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing (West Point, NY, 1987)*, 643–647, *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Zhao Zhi Zhang) **89g:94003** 94A05
- Freed, Daniel S.** On determinant line bundles. *Mathematical aspects of string theory (San Diego, Calif., 1986)*, 189–238, *Adv. Ser. Math. Phys.*, **1**, World Sci. Publishing, Singapore, 1987. (see **89m:81001**) **58G10** (58G25)
- (with Vafa, Cumrun) Global anomalies on orbifolds. *Comm. Math. Phys.* **110** (1987), no. 3, 349–389. (Andreas Nestke) **89c:58130** 58G25 (14K25, 22E40, 53C80, 57R20, 81E30, 83E15)
- (with Uhlenbeck, Karen Keskulla) ★ Инстантоны и четырехмерные многообразия. (Russian) [Instantons and four-manifolds] Translated from the English and with a preface by Yu. P. Solov'ev. "Mir", Moscow, 1988. 272 pp. ISBN 5-03-001158-7 (Editors) **89c:57027** 57R55 (57–02, 58E15)
- (with Vafa, Cumrun) Comment: "Global anomalies on orbifolds" [Comm. Math. Phys. **110** (1987), no. 3, 349–389; MR 89c:58130]. *Comm. Math. Phys.* **117** (1988), no. 2, 349–351. (Andreas Nestke) **89h:58197** 58G25 (14K25, 22E40, 53C80, 57R20, 81E30, 83E15, 83E30)
- $Z/k$ -manifolds and families of Dirac operators. *Invent. Math.* **92** (1988), no. 2, 243–254. (Howard D. Rees) **89f:58127** 58G10 (19L64, 55R50, 81E30)
- The geometry of loop groups. *J. Differential Geom.* **28** (1988), no. 2, 223–276. (Andrew Pressley) **89k:22036** 22E65 (53C55, 57R20, 58B15)
- An index theorem for families of Fredholm operators parametrized by a group. *Topology* **27** (1988), no. 3, 279–300. (John Roe) **89j:58133** 58G12 (46M20, 47A53, 47B10, 47D99, 55R45)
- Freed, Karl F.** (with Bawendi, M. G.) A lattice model for self- and mutually avoiding semiflexible polymer chains. *J. Chem. Phys.* **86** (1987), no. 6, 3720–3730. (Summary) **89b:82075** 82A51
- (with Bawendi, M. G.; Mohanty, Udayan) A lattice field theory for polymer systems with nearest-neighbor interaction energies. *J. Chem. Phys.* **87** (1987), no. 9, 5534–5540. (Summary) **89b:82076** 82A51
- (with Bawendi, M. G.) Systematic corrections to Flory-Huggins theory: polymer-solvent-void systems and binary blend-void systems. *J. Chem. Phys.* **88** (1988), no. 4, 2741–2756. (Summary) **89b:82077** 82A51

- Freeden, Willi** Harmonic splines for solving boundary value problems of potential theory. *Algorithms for approximation* (Shrivenham, 1985), 507–529. *Inst. Math. Appl. Conf. Ser. New Ser.*, 10, Oxford Univ. Press, New York, 1987. (Summary) **89c:65130** 65N99 (65D05)
- Metaharmonic splines for solving the exterior Dirichlet problem for the Helmholtz equation. *Topics in multivariate approximation* (Santiago, 1986), 99–110, Academic Press, Boston, MA, 1987. (Yu. A. Brudnyi) **89h:41025** 41A15 (31B20, 35J05, 65N99)
- Interpolation by multivariate periodic splines. *J. Approx. Theory* **55** (1988), no. 1, 104–117. (Rong Qing Jia) **89i:41007** 41A05 (41A15, 41A63)
- Freedman, A. R.** (with Chun, C. S.) Inclusions for classes of lacunary sets. *Canad. J. Math.* **40** (1988), no. 2, 459–476. (Georges Grekos) **89j:11021** 11B75
- (with Chun, C. S.) Inclusions for classes of lacunary sets. *J. Korean Math. Soc.* **25** (1988), no. 1, 93–107. (C. L. Stewart) **89i:11018** 11B05
- Freedman, D. A.** (with Diaconis, P.) Conditional limit theorems for exponential families and finite versions of de Finetti's theorem. *J. Theoret. Probab.* **1** (1988), no. 4, 381–410. (David J. Aldous) **89g:60127** 60F99 (60G09, 62B05)
- (with Zeisel, H.) From mouse-to-man: the quantitative assessment of cancer risks. With comments and a rejoinder by the authors. *Statist. Sci.* **3** (1988), no. 1, 3–56. (Summary) **89h:92007** 92A07 (62P10)
- Freedman, Daniel Z.** (with Ginsparg, P.; Sommerfeld, C. M.; Warner, N. P.) String-ghost interactions and the trace anomaly. *Phys. Rev. D* **36** (1987), no. 6, 1800–1818. (Roger Brooks) **89a:81128** 81E99 (81E15, 81E30)
- (with Giddings, Steven B.; Shapiro, Joel A.; Thorn, Charles B.) The nonplanar one-loop amplitude in Witten's string field theory. *Nuclear Phys. B* **298** (1988), no. 2, 253–322. (Marc Henneaux) **89c:81119** 81E99 (81E30)
- Freedman, H. I.** (with Rai, Bindhyachal) Persistence in a predator-prey-competitor-mutualist model. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations* (Budapest, 1987), 73–79, János Bolyai Math. Soc., Budapest, 1987. (L. E. Bobisud) **89d:92061** 92A15
- (with So, Joseph Wai-Hung; Waltman, Paul) Predator influence on the growth of a population with three genotypes. III. Persistence and extinction. *J. Math. Anal. Appl.* **128** (1987), no. 1, 287–304. (F. Brauer) **89a:92038** 92A15
- (with Addicott, John F.; Rai, Bindhyachal) Obligate mutualism with a predator: stability and persistence of three-species models. *Theoret. Population Biol.* **32** (1987), no. 2, 157–175. (Prajeshu) **89c:92057** 92A15
- (with Quan, Hong Shun) Interactions leading to persistence in predator-prey systems with group defence. *Bull. Math. Biol.* **50** (1988), no. 5, 517–530. (Wei-Min Liu) **89i:92039** 92A15
- (with Gopalsamy, K.) Nonoccurrence of stability switching in systems with discrete delays. *Canad. Math. Bull.* **31** (1988), no. 1, 52–58. (Harlan W. Stech) **89c:92035** 92A15 (34K20)
- (with Kuang, Yang) Uniqueness of limit cycles in Gause-type models of predator-prey systems. *Math. Biosci.* **88** (1988), no. 1, 67–84. (K. E. Swick) **89g:92045** 92A15 (34C05)
- Freedman, M. A.** A method for reparameterizing mild solutions to nonlinear evolution equations. *J. Differential Equations* **75** (1988), no. 2, 187–205. (Sergiu Aizicovici) **89i:47121** 47H20 (34G20, 47H06)
- Freedman, Michael H.** (with He, Zheng Xu) Factoring the logarithmic spiral. *Invent. Math.* **92** (1988), no. 1, 129–138. (F. W. Gehring) **89j:30026** 30C60 (32A30)
- Whiteheads is a "slice" link. *Invent. Math.* **94** (1988), no. 1, 175–182. (G. Burde) **89h:57004** 57M25 (57N45)
- (with He, Zheng Xu) A remark on inherent differentiability. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1305–1310. (Laurence R. Taylor) **89f:57041** 57R50 (58F99)
- see also Milnor, John, **89d:01064**
- Freeman, E. M.** (with Rikabi, J.; Bryant, C. F.) An error-based approach to complementary formulations of static field solutions. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 9, 1963–1987. (Summary) **89f:78003** 78-08
- Freeman, Geoffrey H.** (with Ipinymi, R. A.) Equineighbour balanced nested row-column designs. *J. Statist. Plann. Inference* **20** (1988), no. 2, 191–199. (Sanpei Kageyama) **89m:05017** 05B05 (05B30, 62K99)
- Nearest neighbour designs for three or four treatments in rows and columns. *Utilitas Math.* **34** (1988), 117–130. (William I. Notz) **89i:05021** 05B30 (05B15)
- Freeman, George H.** (with Mark, Jon W.; Blake, Ian F.) Trellis source codes designed by conjugate gradient optimization. *IEEE Trans. Comm.* **36** (1988), no. 1, 1–12. (Summary) **89d:94042** 94B10 (90C50, 94A29)
- (with Blake, Ian F.; Mark, Jon W.) Trellis source code design as an optimization problem. Coding techniques and coding theory. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part II, 1226–1241. (see **89j:94002**) **94A29** (94B10)
- Freeman, James B.** (with Daniels, Charles B.; Charlwood, Gerald W.) ★ Toward an ontology of number, mind and sign. *Scots Philosophical Monograph Series*, 10, Aberdeen University Press, Aberdeen; Humanities Press, Atlantic Highlands, NJ, 1986. viii+155 pp. ISBN 0-08-032462-2; 0-08-032461-4 (John Bacon) **89g:03003** 03A05 (00A25)
- Freeman, M. D.** (with West, Peter) Ghost vertices for the bosonic string using the group-theoretic approach to string theory. *Phys. Lett. B* **205** (1988), no. 1, 30–37. (Marc Henneaux) **89h:8117a** 81E99 (22E70, 81E30)
- Freeman, Mark O.** (with Saleh, Bahaa E. A.) Moment invariants in the space and frequency domains. *J. Opt. Soc. Amer. A* **5** (1988), no. 7, 1073–1084. (Summary) **89g:65174** 65T05 (78A40, 94A11)
- Freeman, P. R.** (with Wallace, C. S.) Estimation and inference by compact coding. With discussion. *J. Roy. Statist. Soc. Ser. B* **49** (1987), no. 3, 240–265. (Andrea Sgarro) **89d:62031** 62F15 (94A24)
- Freeman, Walter J.** Strange attractors that govern mammalian brain dynamics shown by trajectories of electroencephalographic (EEG) potential. *IEEE Trans. Circuits and Systems* **35** (1988), no. 7, 781–783. (Not in MR) **92A09** (58F13)
- Frees, Edward W.** Correction: "Nonparametric renewal function estimation" [Ann. Statist. **14** (1986), no. 4, 1366–1378; MR 88b:62078]. *Ann. Statist.* **16** (1988), no. 4, 1741. (Editors) **89i:62059** 62G05 (60K05)
- Freese, Ralph** (with McKenzie, Ralph) ★ Commutator theory for congruence modular varieties. *London Mathematical Society Lecture Note Series*, 125, Cambridge University Press, Cambridge-New York, 1987. iv+227 pp. ISBN 0-521-34832-3 (Sheila Oates-Williams) **89c:08006** 08B10
- Freese, Raymond W.** (with Diminnie, Charles R.; Andalaft, Edward Z.) Angle bisectors in normed linear spaces. *Math. Nachr.* **131** (1987), 167–173. (K. Sundaresan) **89c:46032** 46B99 (46C99)
- (with Andalaft, Edward Z.) Characterization of inner product spaces in  $V$ - and  $L$ -spaces. *J. Geom.* **33** (1988), no. 1–2, 3–10. (Grattan P. Murphy) **89m:51027** 51K05 (46C99, 54E40)
- Frege, Gottlob** ★ Scritti postumi. (Italian) [Posthumous works] Edited and with a foreword by Hans Hermes, Friedrich Kambartel and Friedrich Kaulbach. With the collaboration of Gottfried Gabriel and Walburga Röding. Translated from the German by Eva Picardi. Archivio di Logica e Filosofia della Matematica [Archive of Logic and Mathematical Philosophy], 5. Bibliopolis, Naples, 1986. 447 pp. ISBN 88-7088-160-1 (E. Mendelson) **89g:01068** 01A75 (00A25, 03-03, 03A05)
- ★ Funktion, Begriff, Bedeutung. (German) [Function, concept, meaning] Fünf logische Studien. [Five logical studies] Sixth edition. Edited and with a foreword by Günther Patzig. Kleine Vandenhoeck-Reihe [Small Vandenhoeck Series], 1144. Vandenhoeck & Ruprecht, Göttingen, 1986. 107 pp. ISBN 3-525-33377-3 (Editors) **89g:01069** 01A75 (03-03, 03A05)
- see also Sokolowski, Robert, **89c:03009**; McIntyre, Ronald, **89f:03002**; Mendonça, W. P., **89f:03003**; Simons, Peter M., **89g:03008**; Nedobity, Wolfgang, **89i:00034** and Haaparanta, Leila, **89a:03004**
- Frese, Jens** A refinement of Rellick's theorem. *Rend. Mat.* **7** (1985), no. 3–4, 229–242 (1988). (Moshe Marcus) **89j:46033** 46E35 (35J99)
- Freidkin, S. A.** The conjugation problem on an infinite set of intervals. *Rend. Circ. Mat. Palermo* **2** (1986), no. 3, 397–410 (1987). (N. K. Karapetyants) **89d:45006** 45E05
- The nonhomogeneous boundary value problem with a constant coefficient on an infinite set of intervals. *Rend. Mat. Appl.* **7** (1987), no. 1, 29–32 (1988). (Summary) **89m:30085** 30E25
- Freidlin, M. I.** Tunneling soliton in the equations of reaction-diffusion type. *Reports from the Moscow refusenik seminar*, 149–156, *Ann. New York Acad. Sci.*, 491, New York Acad. Sci., New York, 1987. (L. Hsiao) **89d:35094** 35K57 (35Q20)
- Random perturbations of reaction-diffusion equations: the quasideterministic approximation. *Trans. Amer. Math. Soc.* **305** (1988), no. 2, 665–697. (Ross Pinsky) **89f:35110** 35K57 (35R60, 60H15, 60J60)
- Freidman, P. A.** Rings with idealizer condition. (Russian) *Ural. Gos. Univ. Mat. Zap.* **14** (1988), no. 3 *Algebr. Sistemy i ikh Mnogobr.*, 149–170, v. (Iuliu Crivei) **89j:16033** 16A45
- Freiling, C.** (with Payne, T. H.) Some properties of large filters. *J. Symbolic Logic* **53** (1988), no. 4, 1027–1035. (Peter Vojtáš) **89m:03036** 03E05 (03E35, 04A20, 28A99)
- (with Rinne, D.) A symmetric density property: monotonicity and the approximate symmetric derivative. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1098–1102. (Cheng-Ming Lee) **89g:26009** 26A48 (26A24)
- Freiling, Gerhard** Necessary conditions for the uniform convergence and Abel-summability of eigenfunction expansions with irregular ordinary differential bundles. (German and Russian summaries) *Z. Anal. Anwendungen* **5** (1986), no. 6, 543–553. (Hélène Airault) **89b:34058** 34B25 (47E05)
- General boundary eigenvalue problems for systems of differential equations with multiple roots of the characteristic equation. *Proc. Roy. Soc. Edinburgh Sect. A* **108** (1988), no. 1–2, 45–56. (Nicolae H. Pavel) **89c:34027** 34B25 (34B10)
- On the completeness and minimality of the derived chains of eigen- and associated functions of boundary eigenvalue problems nonlinearly dependent on the parameter. *Resuliate Math.* **14** (1988), no. 1–2, 64–83. (Louise A. Raphael) **89h:35029** 35B10 (34B25)
- Freiman, G.** (with Heppes, A.; Uhrin, B.) A lower estimation for the cardinality of finite difference sets in  $\mathbb{R}^n$ . *Problems of computer science* (Budapest, 1987). *Tanulmányok—MTA Számítástechn. Automat. Kutató Int. Budapest* No. 202 (1987), 63–73. (W. H. Mills) **89c:05041** 05B10 (11H25, 11P99)
- (with Schein, Boris M.) Group and semigroup theoretic considerations inspired by inverse problems of the additive number theory. *Semigroups, theory and applications* (Oberwolfach, 1986), 121–140, *Lecture Notes in Math.*, 1320, Springer, Berlin-New York, 1988. (T. E. Hall) **89j:20040** 20F99 (11B13, 20M99)
- (with Halberstam, H.) On a product of sines. *Acta Arith.* **49** (1988), no. 4, 377–385. (K. S. Williams) **89d:11069** 11L99 (42A99)
- (with Lipkin, E.; Levitin, L.) A polynomial algorithm for constructing families of  $k$ -independent sets. *Discrete Math.* **70** (1988), no. 2, 137–147. (Mukkuai S. Krishnamoorthy) **89g:05005** 05A05 (68Q25, 68R05)
- Freimer, Marshall** (with Kollia, Georgia; Mudholkar, Govind S.; Lin, C. Thomas) A study of the generalized Tukey lambda family. *Comm. Statist. Theory Methods* **17** (1988), no. 10, 3547–3567. (Not in MR) **62E15**
- Frein, Yannick** (with Dallery, Yves; Pierrat, Jean-Jacques; David, René Marcel) Optimisation du routage des pièces dans un atelier flexible par des méthodes analytiques. (English summary) [Analytic methods for the optimal routing of parts in a flexible manufacturing system] *RAIRO Automat.-Prod. Inform. Ind.* **22** (1988), no. 5, 489–507. (Not in MR) **90B35**
- Freitag, Eberhard** (with Kiehl, Reinhardt) ★ Étale cohomology and the Weil conjecture. Translated from the German by Betty S. Waterhouse and William C. Waterhouse. With an historical introduction by J. A. Dieudonné. *Ergebnisse der Mathematik und ihrer Grenzgebiete* (3) [Results in Mathematics and Related Areas (3)], 13. Springer-Verlag, Berlin-New York, 1988. xviii+317 pp. ISBN 3-540-12175-7 (James Milne) **89f:14017** 14F20 (11G25, 14G13)
- Freitag, Herta T.** (with Phillips, G. M.) A congruence relation for a linear recursive sequence of arbitrary order. *Applications of Fibonacci numbers* (San Jose, CA, 1986), 39–44, *Kluwer Acad. Publ., Dordrecht*, 1988. (M. A. Owens) **89i:11021** 11B37
- (with Filipponi, Piero) On the representation of integral sequences  $\{F_n/d\}$  and  $\{L_n/d\}$  as sums of Fibonacci numbers and as sums of Lucas numbers. *Applications of Fibonacci numbers* (San Jose, CA, 1986), 97–112, *Kluwer Acad. Publ., Dordrecht*, 1988. (M. A. Owens) **89j:11013** 11B34 (11B37, 11B39)
- Freivalds, Rūsiņš** The operating time of error-free probabilistic Turing machines. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 3, 565–567. (Andreas Brandstädt) **89a:03074** 03D10 (03D15, 68Q05, 68Q15)



- (with Kacnelson, L.) É. I. Arin'. (Russian) *Latv. Mat. Ezhegodnik* No. 32 (1988), 3–8. (Editors) **89m:01093** 01A70
- Freixas, Xavier** L'effet d'irréversibilité généralisé. [The generalized irreversibility effect] *Marchés, capital et incertitude*, 141–153, *Économica*, Paris, 1986. (see **89f:90002**) 90A05 (90A30)
- fréjés i Freixenet, Juan** see **Tarrés i Freixenet, Juan**
- Frejlich, Wojciech** Generalization of the Darwin Lagrangian. *Internat. J. Theoret. Phys.* **27** (1988), no. 6, 711–716. (Summary) **89d:78018** 78A35
- Fremila, David H.** Measure-additive coverings and measurable selectors. *Dissertationes Math. (Rozprawy Mat.)* **260** (1987), 116 pp. (Kazimierz Nikodem) **89e:28012** 28B20 (03E35, 03E50, 49A50, 54C65)
- (with Balogh, Zoltán; Dow, A.; Nyikos, P. J.) Countable tightness and proper forcing. *Bull. Amer. Math. Soc. (N.S.)* **19** (1988), no. 1, 295–298. (Andreas Blass) **89e:03088** 03E35 (03E55, 03E75, 54A35, 54D55)
- (with Miller, Arnold W.) On some properties of Hurewicz, Menger, and Rothberger. *Fund. Math.* **129** (1988), no. 1, 17–33. (J. C. Oxtoby) **89g:54061** 54E18 (54D20)
- Large correlated families of positive random variables. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 1, 147–162. (Donald L. Cohn) **89f:28001** 28A05 (28A20)
- (with Burke, Maxim R.) A note on measurability and almost continuity. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 611–612. (S. M. Srivastava) **89c:28009** 28A20 (03E35)
- (with Sersouri, Abderrazak) On  $\omega$ -independence in separable Banach spaces. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 155, 323–331. (Z. Lipecki) **89k:46033** 46B99
- Perfect pre-images of  $\omega$ , and the PFA. *Topology Appl.* **29** (1988), no. 2, 151–166. (L. Bukovský) **89i:03096** 03E35 (54A25, 54A35, 57P99)
- Frémont, Michel** (with Blanchard, Dominique; Visintin, A.) Phase change with dissipation. *Thermomechanical couplings in solids* (Paris, 1986), 411–418, North-Holland, Amsterdam-New York, 1987. (L. N. Tao) **89g:80003** 80A20
- Adhérence des solides. (English summary) [Adhesion of solids] *J. Méc. Théor. Appl.* **6** (1987), no. 3, 383–407. (P. Villaggio) **89c:73083** 73T05
- French, James D.** The false assumption underlying Berry's paradox. *J. Symbolic Logic* **53** (1988), no. 4, 1220–1223. (John Bacon) **89m:03005** 03A05
- French, Robert E.** ★ The geometry of vision and the mind body problem. American University Studies. Series V: Philosophy, 24. *Peter Lang Publishing, Inc., New York*, 1987. viii+193 pp. ISBN 0-8204-0388-1 (Joachim Krauth) **89c:92073** 92A27 (00A69)
- French, Robert M.** The Banach-Tarski theorem. Translated from the French by the author. *Math. Intelligencer* **10** (1988), no. 4, 21–28. (R. E. Edwards) **89i:04001** 04-01 (54E40)
- French, Steven** (with Redhead, Michael L. G.) Quantum physics and the identity of indiscernibles. *British J. Philos. Sci.* **39** (1988), no. 2, 233–246. (S. D. Chatterji) **89k:81009** 81B05
- Freni, Domenico** Sur les hypergroupes cambistes. (Italian summary) [On exchange hypergroups] *Istit. Lombardo Accad. Sci. Lett. Rend. A* **119** (1985), 175–186 (1987). (Umberto Cerruti) **89b:20148** 20N99
- Freñiche, Francisco J.** Cesàro convergence of martingale difference sequences and the Banach-Saks and Szlenk theorems. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 234–236. (F. Moricz) **89d:60066** 60F25 (46E30, 60G42)
- Some remarks on the average range of a vector measure. *Proc. Amer. Math. Soc.* **107** (1989), no. 1, 119–124. (Lawrence H. Riddle) **89m:46083** 46G10 (28B05)
- Freñk, J. B. G.** (with van Houweninge, M.; Rinnooy Kan, A. H. G.) Order statistics and the linear assignment problem. (German summary) *Computing* **39** (1987), no. 2, 165–174. (Luc P. Devroye) **89d:68069** 68R10 (62G30)
- (with Galambos, G.) Hybrid next-ft algorithm for the two-dimensional rectangle bin-packing problem. (German summary) *Computing* **39** (1987), no. 3, 201–217. (Summary) **89a:68084** 68Q20 (68Q25)
- (with Rinnooy Kan, A. H. G.) The asymptotic optimality of the LPT rule. *Math. Oper. Res.* **12** (1987), no. 2, 241–254. (N. B. Lebedinskaya) **89a:90068** 90B35
- Freñkel, A. A.** Modeling of dynamics on the basis of ridge regression with autocorrelated residuals. (Russian) *Ékonom. i Mat. Metody* **24** (1988), no. 4, 699–708. (Not in MR) 62J07 (62M10)
- Freñkel, É. V.** (with Feigin, B. L.) A family of representations of affine Lie algebras. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 5(263), 227–228. (From the text) **89k:17016** 17B10 (17B67)
- Freñkel, Igor B.** (with Lepowsky, J.; Meurman, A.) Vertex operator calculus. *Mathematical aspects of string theory* (San Diego, Calif., 1986), 150–188, *Adv. Ser. Math. Phys.*, 1, World Sci. Publishing, Singapore, 1987. (see **89m:81001**) 17B65 (17B10, 17B67)
- Beyond affine Lie algebras. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 821–839, *Amer. Math. Soc., Providence, RI*, 1987. (Jouko Mickelsson) **89j:17018** 17B67 (22E65)
- see also **Tits, J.**, **89i:20030**
- Freñkel, V. Ya.** Professor Dirac and Soviet physicists. *Soviet Phys. Uspekhi* **30** (1987), no. 9, 816–822 (1988); translated from *Uspekhi Fiz. Nauk* **153** (1987), no. 1, 173–186 (Russian). (A. S. Wightman) **89h:01050** 01A65 (81-03)
- Freñkin, A. R.** (with Gostev, V. B.) Rayleigh-Schrödinger coefficients for singular perturbations of the discrete spectrum. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astron.* **28** (1987), no. 6, 8–13, 86. (B. Hellwig) **89h:81033** 81C12
- (with Gostev, V. B.; Mineev, V. S.) On the theory of singular perturbations of a discrete spectrum. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **31** (1988), no. 3, 58–64; translated in *Soviet Phys. J.* **31** (1988), no. 3, 223–227. (Summary) **89h:34025** 34B25 (81C12)
- (with Gostev, V. B.) Quantum mechanics of one-dimensional motion in a field with the singularity  $\lambda|x|^{-\alpha}$ . (Russian. English summary) *Teoret. Mat. Fiz.* **74** (1988), no. 2, 247–258; translated in *Theoret. and Math. Phys.* **74** (1988), no. 2, 161–170. (Summary) **89c:81032** 81C05 (81C10)
- Freñsen, C. L.** (with Wong, Roderick) Uniform asymptotic expansions of Laguerre polynomials. *SIAM J. Math. Anal.* **19** (1988), no. 5, 1232–1248. (F. W. J. Olver) **89k:33012** 33A65 (33A40, 41A60)
- Freñking, J.** (with Westphal, U.) On a property of metric projections onto closed subsets of Hilbert spaces. *Proc. Amer. Math. Soc.* **105** (1989), no. 3, 644–651. (Manfred Sommer) **89j:41051** 41A65 (41A52, 46C05, 47H05)
- Freñscura, F. A. M.** (with Hiley, B. J.) Some spinor implications unfolded. *Quantum implications*, 278–288, *Routledge & Kegan Paul, London*, 1987. (see **89m:81006**) 81D99 (81D27)
- Fresewinkel, T.** Recursive estimation of order and parameters of a pilot plant turbo generator. *Stochastic processes in physics and engineering* (Bielefeld, 1986), 91–105, *Math. Appl.*, 42, Reidel, Dordrecht-Boston, MA, 1988. (see **89a:80025**) 93E10
- Fresnel, Christophe** (with Ansel, Denis; Le Roux, Marie-Noëlle) Résolution numérique d'un problème d'interdiffusion. (English summary) [Convergence of a numerical method to the solution of an interdiffusion problem] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 3, 143–146. (Summary) **89b:65302** 65P05
- Freudentberg, W.** (with Fichtner, K.-H.) Point processes and the position distribution of infinite boson systems. Proceedings of the symposium on statistical mechanics of phase transitions—mathematical and physical aspects (Trebon, 1986). *J. Statist. Phys.* **47** (1987), no. 5–6, 959–978. (B. S. Nakhpetyan) **89f:82009** 82A15 (60G55, 81D05)
- Freund, David E.** Selecting estimators for the standard deviation of a normal distribution. *Amer. Math. Monthly* **94** (1987), no. 10, 971–975. (From the introduction) **89d:62026** 62F10
- Freund, Harald** (with Grassberger, P.) Multispin coding for spin glasses. *J. Phys. A* **21** (1988), no. 16, L801–L805. (Summary) **89f:82069** 82A57 (82-04)
- Freund, M.** (with Zayed, A. I.; Görlisch, E.) A theorem of Nehari revisited. *Complex Variables Theory Appl.* **10** (1988), no. 1, 11–22. (F. W. Carroll) **89g:30006** 30B40 (33A45, 41A58)
- The degree of polynomial approximation and interpolation of analytic functions. *Resulante Math.* **13** (1988), no. 1–2, 81–98. (Summary) **89g:30072** 30E10
- The generalized Faber operator and the convergence of generalized Faber expansions. *Numer. Funct. Anal. Optim.* **10** (1989), no. 1–2, 111–126. (Frank D. Lesley) **89m:30006** 30B50 (33A45, 41A10)
- Freund, Peter G. O.** (with Olson, Mark) Non-Archimedean strings. *Phys. Lett. B* **199** (1987), no. 2, 186–190. (Marc Henneaux) **89d:81094** 81E99 (11Q25, 81E30)
- (with Witten, Edward) Adelic string amplitudes. *Phys. Lett. B* **199** (1987), no. 2, 191–194. (Marc Henneaux) **89d:81095** 81E99 (11Q25, 81E30)
- (with Rabin, Jeffrey M.) Supertori are algebraic curves. *Comm. Math. Phys.* **114** (1988), no. 1, 131–145. (Michael G. Eastwood) **89i:32048** 32G15 (14H15, 14K07, 58A50)
- (with Olson, Mark)  $p$ -adic dynamical systems. *Nuclear Phys. B* **297** (1988), no. 1, 86–102. (Markku Lehto) **89g:81026** 81C99 (12E99, 58F05)
- (with Brekke, Lee; Olson, Mark; Witten, Edward) Non-Archimedean string dynamics. *Nuclear Phys. B* **302** (1988), no. 3, 365–402. (Marc Henneaux) **89k:81131** 81E99 (81E30)
- Freund, Robert M.** An analog of Karmarkar's algorithm for inequality constrained linear programs, with a "new" class of projective transformations for centering a polytope. *Oper. Res. Lett.* **7** (1988), no. 1, 9–13. (Summary) **89b:90121** 90C05
- Freund, Roland** On some approximation problems for complex polynomials. *Constr. Approx.* **4** (1988), no. 2, 111–121. (P. Lappan) **89f:30059** 30E10 (41A10)
- (with Huckle, Thomas) An extension problem for  $H$ -unitary matrices with applications to Hermitian Toeplitz matrices. *Linear Algebra Appl.* **108** (1988), 213–230. (L. Rodman) **89i:15029** 15A57
- Freij, Gerhard** On the Selmer group of twists of elliptic curves with  $Q$ -rational torsion points. *Canad. J. Math.* **40** (1988), no. 3, 649–665. (Sheldon Kamienny) **89k:11043** 11G05 (14G25, 14K07, 14K15)
- Freij, Louis** La négation dans la logique d'Aristote. [Negation in the logic of Aristotle] *Pensée naturelle, logique et langage*, 47–60, *Univ. Neuchâtel, Neuchâtel*, 1987. (see **89b:03005**) 03-03 (01A20)
- Freyd, Peter J.** (with Carboni, A.; Scedrov, Andre) A categorical approach to realizability and polymorphic types. *Mathematical foundations of programming language semantics* (New Orleans, LA, 1987), 23–42, *Lecture Notes in Comput. Sci.*, 298, Springer, Berlin-New York, 1988. (Luis M. Laita) **89f:68043** 68Q55 (03B15, 03B40, 18A99, 68N05)
- Frit, Roman** (with Zanolin, Fabio) Sequential convergence in free groups. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* **18** (1986), no. 2, 200–218. (Gert Kneis) **89f:54001** 54A05 (20E05, 54H99)
- (with Dikranjan, Dikran; Zanolin, Fabio) On convergence groups with dense coarse subgroups. *Czechoslovak Math. J.* **37** (112) (1987), no. 3, 471–479. (Bernard L. Madison) **89c:22009** 22A30 (20K45, 54A20)
- (with Koutník, V.) Completions of convergence groups. *General topology and its relations to modern analysis and algebra*, 17 (Prague, 1986), 187–201, *R. E. Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (C. V. Riecke) **89f:54007** 54A20 (22A30, 54D55)
- Products of coarse convergence groups. *Czechoslovak Math. J.* **38** (113) (1988), no. 2, 285–290. (Luchezar Stojanov) **89i:22004** 22A30 (22A05)
- (with Zán, Stanislav) A note on diagonal and matrix properties of convergence spaces. (Russian summary) *Math. Slovaca* **38** (1988), no. 2, 171–176. (Ray Gazik) **89c:54004** 54A20
- Fricke, Arnold** Die Potenzsummenformeln und ihre Struktur. [Formulas for sums of powers and their structure] *Praxis Math.* **29** (1987), no. 8, 462–470. (Introduction) **89k:40008** 40A25 (05A19)
- Anzahlenfragen zur Diagonalenkonfiguration im  $n$ -Eck. [Questions of number on the configuration of diagonals in the  $n$ -gon] *Praxis Math.* **30** (1988), no. 6, 332–363. (L. M. Kelly) **89m:52010** 52A37
- Fricke, Gerd H.** (with Fridy, J. A.) Matrix summability of geometrically dominated series. *Canad. J. Math.* **39** (1987), no. 3, 568–582. (M. S. Rangachari) **89a:40003** 40C05 (40D05, 40G05, 40G10)
- see also **Pursell, Lyle E.**, **89b:46065**
- Fricke, S. H.** (with Balantekin, A. B.; Hatchell, P. J.; Uzer, T.) Uniform semiclassical approximation to supersymmetric quantum mechanics. *Phys. Rev. A* (3) **37** (1988), no. 8, 2797–2804. (Summary) **89e:81051** 81C99
- frjtsch-Fricke, Rita** see **Jeltsch-Fricke, Rita**
- Frid, D.** see **Freed, Daniel S.**
- Fridl, S.** (with Schipp, F.) Tree-martingales. *Probability theory and mathematical statistics with applications* (Visegrád, 1985), 53–63, *Reidel, Dordrecht-Boston, MA*, 1988. (Ditlev Monrad) **89f:60064** 60G48 (60G46)
- Fridman, A. A.** see **Polubarinova-Kochina, P. Ya.**, **89j:01064** and **Chernin, A. D.** (Not in MR)
- Fridman, A. M.** (with Gorkavii, N. N.) Processes of transfer, instabilities and structure of planetary rings. *Plasma theory and nonlinear and turbulent processes in physics*, Vol. 1, 2 (Kiev, 1987), 275–297, *World Sci. Publishing, Singapore*, 1988. (Gh. Procopiuc) **89m:85011** 85A30

- (with Polyachenko, V. L.) Anisotropic gravitational instability. *Soviet Phys. JETP* **67** (1988), no. 5, 867–874; translated from *Zh. Eksp. Teoret. Fiz.* **94** (1988), no. 5, 1–14 (Russian). (Summary) **89j:85002** 85A05
- Fridman, L. M.** (with Sobolev, V. A.) Decomposition of systems having different rates with discontinuous controls. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 3, 29–34; translated in *Automat. Remote Control* **49** (1988), no. 3, part 1, 288–292. (Summary) **89c:49022** 49D27 (93D05, 93D20)
- Fridy, J. A.** (with Fricke, Gerd H.) Matrix summability of geometrically dominated series. *Canad. J. Math.* **39** (1987), no. 3, 568–582. (M. S. Rangachari) **89a:40003** 40C05 (40D05, 40G05, 40G10)
- Fried, David** Finitely presented dynamical systems. *Ergodic Theory Dynamical Systems* **7** (1987), no. 4, 489–507. (S. Yu. Pilyugin) **89h:58157** 58F20 (28D99, 54H20)
- Flat spacetimes. *J. Differential Geom.* **26** (1987), no. 3, 385–396. (J. K. Beem) **89a:53074** 53C50
- Erratum to: "Anosov foliations and cohomology" [*Ergodic Theory Dynamical Systems* **6** (1986), no. 1, 9–16; MR **87h:58172**]. *Ergodic Theory Dynamical Systems* **8** (1988), no. 3, 491–492. (From the text) **89h:58228** 58F15 (57T99)
- Fried, Ervin** On the behaviour of congruence-functors. *Algebra Universalis* **24** (1987), no. 1–2, 188–191. (S. Comer) **89a:18005** 18A22 (08A30)
- Fried, H. M.** On unitary  $SU(N)$  ordered exponentials in a strong coupling limit. *J. Math. Phys.* **28** (1987), no. 6, 1275–1282. (Philip J. Feinsilver) **89a:81027** 81C20
- Fried, Isaac** (with Johnson, Arthur R.) Condition of the finite element stiffness matrix of highly irregular triangular grids. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 139–147, *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (see **89b:00029**) 65N30
- (with Johnson, Arthur R.) A note on elastic energy density functions for largely deformed compressible rubber solids. *Comput. Methods Appl. Mech. Engrg.* **69** (1988), no. 1, 53–64. (C. F. M. Creasy) **89f:73034** 73G05 (73G10)
- Fried, Laurence E.** (with Ezra, Gregory S.) PERTURB: a program for calculating vibrational energies by generalized algebraic quantization. Molecular vibrations. *Comput. Phys. Comm.* **51** (1988), no. 1–2, 103–114. (Summary) **89j:81003** 81-04 (81C12, 81G55)
- Fried, M.** (with Jarden, Moshe) ★ Field arithmetic. *Ergebnisse der Mathematik und ihrer Grenzgebiete* (3) [Results in Mathematics and Related Areas (3)], 11. Springer-Verlag, Berlin-New York, 1986. xviii+458 pp. ISBN 3-540-16640-8 (R. Weissauer [Zbl 625:12001]) **89b:12010** 12Lxx (03B25, 03C10, 03C60, 03H05)
- (with Lidl, R.) On Dickson polynomials and Rédei functions. *Contributions to general algebra*, 5 (Salzburg, 1986), 139–149, *Hölder-Pichler-Tempsky, Vienna*, 1987. (S. D. Cohen) **89c:11076** 11T06 (11T71, 94A60)
- Irreducibility results for separated variables equations. *J. Pure Appl. Algebra* **48** (1987), no. 1–2, 9–22. (Doru Ștefănescu) **89a:14004** 14A10 (12E99, 20C30)
- Friedan, D.** (with Windey, P.) Supersymmetric derivation of the Atiyah-Singer index and the chiral anomaly. *Nuclear Phys. B* **235** (1984), no. 3, 395–416. (Summary) **89b:58198** 58G10 (81E13)
- A new formulation of string theory. *Unification of fundamental interactions* (Marstrand, 1986), 78–88, *Royal Swedish Acad. Sci., Stockholm*, 1987. (see **89f:81005**) 81E99 (14H15, 32G15, 81E30, 81E40)
- (with Cohn, J. D.) Super characters and chiral asymmetry in superconformal field theory. *Nuclear Phys. B* **296** (1988), no. 4, 779–799. (Belal E. Baaquie) **89c:81110** 81E99 (17B65, 81E40)
- (with Banks, Thomas; Dixon, Lance J.; Martinec, Emil) Phenomenology and conformal field theory or can string theory predict the weak mixing angle? *Nuclear Phys. B* **299** (1988), no. 3, 613–626. (B. Spence) **89b:81244** 81G15 (81E30)
- Friedberg, R.** Random walks exterior to a rectangle. *J. Phys. A* **20** (1987), no. 14, 4823–4840. (Cheng Xun Wu) **89d:82007** 82-08 (82A41, 82A70)
- (with Chang, Shau-Jin) Elliptical billiards and Poncelet's theorem. *J. Math. Phys.* **29** (1988), no. 7, 1537–1550. (Horst Knörrer) **89j:58043** 58F07 (14K20)
- (with Hartmann, S. R.) A diagrammatic technique for calculating radiation of coherently or incoherently excited two-level atoms. *J. Phys. B* **21** (1988), no. 4, 683–712. (Suresh V. Lawande) **89i:81159** 81K05 (81C12)
- Friedberg, Solomon** (with Bump, Daniel; Goldfeld, Dorian) Poincaré series and Kloosterman sums for  $SL(3, Z)$ . *Acta Arith.* **50** (1988), no. 1, 31–89. (Shigeaki Tsuyumine) **89j:11047** 11F37 (11L05)
- Friedberg, Stephen H.** A difference equation and operation counts in the computation of determinants. *Math. Mag.* **61** (1988), no. 5, 295–297. (Shao Kuan Li) **89k:65049** 65F40 (15-04, 15A15)
- Friedland, Lazar** (with Kaufman, Allan N.) Phase-space solution of the linear mode-conversion problem. *Phys. Lett. A* **123** (1987), no. 8, 387–389. (Summary) **89f:35190** 35Q99 (58F05)
- Friedland, Peter E.** (with Iwasaki, Yumi) The concept and implementation of skeletal plans. *J. Automat. Reason.* **1** (1985), no. 2, 161–208. (Summary) **89j:68141** 68T20 (68T30)
- Friedland, Shmuel** Canonical forms. *Frequency domain and state space methods for linear systems* (Stockholm, 1985), 115–121, *North-Holland, Amsterdam-New York*, 1986. (V. L. Popov) **89k:14078** 14L30
- (with Nocedal, J.; Overton, Michael L.) The formulation and analysis of numerical methods for inverse eigenvalue problems. *SIAM J. Numer. Anal.* **24** (1987), no. 3, 634–667. (Henry Wolkowicz) **89c:65045** 65F15 (15A18, 65H15)
- Bounds on the spectral radius of graphs with  $e$  edges. *Linear Algebra Appl.* **101** (1988), 81–86. (Norman Biggs) **89i:05196** 05C50
- (with Hershkowitz, Daniel) The rank of powers of matrices in a block triangular form. *Proceedings of the Victoria Conference on Combinatorial Matrix Analysis* (Victoria, BC, 1987). *Linear Algebra Appl.* **107** (1988), 17–22. (Lajos László) **89h:15003** 15A03 (05C38, 05C50, 15A21)
- (with Li, Chi-Kwong; Schneider, Hans) Additive decomposition of nonnegative matrices with applications to permanents and scaling. *Linear and Multilinear Algebra* **23** (1988), no. 1, 63–78. (Jacques Dubois) **89j:15034** 15A48 (15A15, 15A51)
- The maximal value of the spectral radius of graphs with  $e$  edges. *Linear and Multilinear Algebra* **23** (1988), no. 1, 91–93. (Not in MR) 05C50
- Friedlander, B.** (with Stoica, Petre; Söderström, Torsten) Instrumental variable methods for ARMA models. *Control and dynamic systems*, Vol. 25, 79–150, Academic Press, Orlando, FL, 1987. (J. Bokor) **89b:93102** 93E10 (62M10, 93B30, 93E12)
- (with Stoica, Petre; Söderström, Torsten) Asymptotic bias of the high-order autoregressive estimates of sinusoidal frequencies. *Circuits Systems Signal Process.* **6** (1987), no. 3, 287–298. (A. F. Gualtierotti) **89c:62162** 62M10 (62M09, 93E10, 94A05)
- (with Stoica, Petre; Söderström, Torsten) A high-order Yule-Walker method for estimation of the AR parameters of an ARMA model. *Systems Control Lett.* **11** (1988), no. 2, 99–105. (Not in MR) 93E10 (94A05)
- Friedlander, Eric M.** (with Parshall, Brian J.) Limits of infinitesimal group cohomology. *Algebraic topology and algebraic K-theory* (Princeton, N.J., 1983), 523–538, *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (V. P. Snaith) **89d:20037** 20G10 (14L15, 18F25)
- Cohomology of irreducible modules with large weights. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 187–193, *Proc. Sympos. Pure Math.*, 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (H. H. Andersen) **89c:20064** 20G10 (20J06)
- (with Parshall, Brian J.) Geometry of  $p$ -unipotent Lie algebras. *J. Algebra* **109** (1987), no. 1, 25–45. (James E. Humphreys) **89a:17017** 17B56 (17B10, 17B45)
- (with Parshall, Brian J.) Modular representation theory of Lie algebras. *Amer. J. Math.* **110** (1988), no. 6, 1055–1093. (Gordon E. Brown) **89j:17015** 17B50 (17B10, 17B35, 17B56, 20G05, 20G15)
- Multiplicative stability for the cohomology of finite Chevalley groups. *Comment. Math. Helv.* **63** (1988), no. 1, 108–113. (David Benson) **89b:20092** 20G10 (20J06)
- Homology using Chow varieties. *Bull. Amer. Math. Soc. (N.S.)* **20** (1989), no. 1, 49–53. (V. P. Snaith) **89i:14004** 14C35 (19E15, 19F27)
- Friedlander, F. G.** Notes on closed billiard ball trajectories in polygonal domains. *Comm. Partial Differential Equations* **12** (1987), no. 12, 1431–1455. (E. C. Young) **89c:35091** 35L10 (35P10, 58G25)
- Friedlander, J. B.** (with Balog, A.; Pintz, János) Large prime factors of integers in an arithmetic progression. *Studia Sci. Math. Hungar.* **22** (1987), no. 1–4, 175–188. (Gérald Tenenbaum) **89c:11144** 11N25 (11L05, 11N35)
- (with Balog, A.) Simultaneous Diophantine approximation using primes. *Bull. London Math. Soc.* **20** (1988), no. 4, 289–292. (F. Beukers) **89h:11031** 11J13
- On the Bombieri-Vinogradov theorem. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 3, 161–164. (From the summary) **89d:11075** 11N13
- (with Bombieri, Enrico; Iwaniec, H.) Primes in arithmetic progressions to large moduli. III. *J. Amer. Math. Soc.* **2** (1989), no. 2, 215–224. (D. R. Heath-Brown) **89m:11087** 11N13
- Friedlander, Leonid** The asymptotics of the determinant function for a class of operators. *Proc. Amer. Math. Soc.* **107** (1989), no. 1, 169–178. (Steven Rosenberg) **89m:58197** 58G15 (47B25, 47B38, 47G05)
- Friedlander, S.** Stability and waves in the Earth's fluid core. *Energy stability and convection* (Capri, 1986), 325–345, *Pitman Res. Notes Math. Ser.*, 168, Longman Sci. Tech., Harlow, 1988. (see **89c:76004**) 86A99
- Friedler, Louis M.** Preimages of compact  $T_1$  spaces. *Questions Answers Gen. Topology* **6** (1988), no. 1, 57–60. (Ivan L. Reilly) **89f:54054** 54D99
- Friedman, Avner** (with Tzavaras, A. E.) A quasilinear parabolic system arising in modelling of catalytic reactors. *J. Differential Equations* **70** (1987), no. 2, 167–196. (V. N. Razzhevskii) **89g:35052** 35K55 (80A30)
- (with Giga, Yoshikazu) A single point blow-up for solutions of semilinear parabolic systems. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **34** (1987), no. 1, 65–79. (From the introduction) **89b:35066** 35K55 (35B40)
- ★ Mathematics in industrial problems. The IMA Volumes in Mathematics and its Applications, 16. Springer-Verlag, New York-Berlin, 1988. x+174 pp. ISBN 0-387-96860-1 (Andrew C. Fowler) **89k:00017** 00A69 (00A71)
- (with Huang, Shao Yun) Asymptotic behavior of solutions of  $u_t = \Delta \varphi_m(u)$  as  $m \rightarrow \infty$  with inconsistent initial values. *Analyse mathématique et applications*, 165–180, *Gauthier-Villars, Paris*, 1988. (Victor A. Galaktionov) **89m:35027** 35B40 (35K55)
- Blow-up of solutions of nonlinear parabolic equations. *Nonlinear diffusion equations and their equilibrium states, I* (Berkeley, CA, 1986), 301–318, *Math. Sci. Res. Inst. Publ.*, 12, Springer, New York-Berlin, 1988. (Victor A. Galaktionov) **89m:35106** 35K55 (35B05, 35B40, 35K60)
- (with Bellout, Hamid) Identification problems in potential theory. *Arch. Rational Mech. Anal.* **101** (1988), no. 2, 143–160. (D. H. Armitage) **89c:31003** 31B20 (31B15)
- (with Caffarelli, Luis A.) A model of dislocations and the associated free boundary problem. *Indiana Univ. Math. J.* **37** (1988), no. 3, 451–479. (J. R. Ockendon) **89h:35348** 35R35 (35Q99, 73S05)
- (with Oswald, Luc) The blow-up time for higher order semilinear parabolic equations with small leading coefficients. *J. Differential Equations* **75** (1988), no. 2, 239–263. (Victor A. Galaktionov) **89m:35107** 35K55 (35B05, 35B40, 35K60)
- (with Caffarelli, Luis A.) Blowup of solutions of nonlinear heat equations. *J. Math. Anal. Appl.* **129** (1988), no. 2, 409–419. (Victor A. Galaktionov) **89c:35077** 35K55 (35B40)
- (with Friedman, Joel; McLeod, J. Bryce) Concavity of solutions of nonlinear ordinary differential equations. *J. Math. Anal. Appl.* **131** (1988), no. 2, 486–500. (Muthusamy Lakshmanan) **89c:34012** 34A34 (34A10)
- (with Lacey, A.) Blowup of solutions of semilinear parabolic equations. *J. Math. Anal. Appl.* **132** (1988), no. 1, 171–186. (Song Mu Zheng) **89f:35018** 35B05 (35B40, 35K55)
- (with Huang, Shao Yun; Yong, Jiong Min) Optimal periodic control for the two-phase Stefan problem. *SIAM J. Control Optim.* **26** (1988), no. 1, 23–41. (Petr Procházka) **89a:49036** 49D50 (35K85, 49A29, 49A36)
- (with Oswald, Luc) The blow-up surface for nonlinear wave equations with small spatial velocity. *Trans. Amer. Math. Soc.* **308** (1988), no. 1, 349–367. (Pavel Krejčí) **89h:35211** 35L70 (35B40)
- Friedman, Barry Alan** (with Martin, R. F., Jr.) Behavior of the velocity autocorrelation function for the periodic Lorentz gas. *Phys. D* **30** (1988), no. 1–2, 219–227. (Summary) **89b:82050** 82A40 (82-04)
- Friedman, Daniel P.** (with Felleisen, Matthias; Kohlbecker, Eugene; Duba, Bruce) A syntactic theory of sequential control. *Theoret. Comput. Sci.* **52** (1987), no. 3, 205–237. (Dorothy Bollman) **89j:68097** 68Q55 (03B40, 68N05, 68Q65)
- Friedman, Harvey** (with Ko, Ker-I) Computing power series in polynomial time. *Adv. in Appl. Math.* **9** (1988), no. 1, 40–50. (Rodney G. Downey) **89c:03095** 03F60 (03D15,



- 03D45, 68Q15)
- Friedman, Jerome H.** *see* Loh, Wei-Yin, 89j:62078
- Friedman, Joel** A lower bound on strictly nonblocking networks. *Combinatorica* 8 (1988), no. 2, 185–188. (Oleg Tarasow) 89k:05056 05C38 (90B10, 94C15)
- (with Friedman, Avner; McLeod, J. Bryce) Concavity of solutions of nonlinear ordinary differential equations. *J. Math. Anal. Appl.* 131 (1988), no. 2, 486–500. (Muthusamy Lakshmanan) 89c:34012 34A34 (34A10)
- (with Feldman, Paul; Pippenger, Nicholas) Wide-sense nonblocking networks. *SIAM J. Discrete Math.* 1 (1988), no. 2, 158–173. (Ingo Wegener) 89g:94052 94C15 (68M10, 90B10)
- Friedman, John L.** (with Jack, I.) Formal commutators of the gravitational constraints are not well defined: a translation of Ashtekar's ordering to the Schrödinger representation. *Phys. Rev. D* (3) 37 (1988), no. 12, 3495–3504. (Asghar Qadir) 89m:83042 83C45
- Friedman, Joyce** (with Rounds, William C.; Manaster-Ramer, Alexis) Finding natural languages a home in formal language theory. *Mathematics of language*, 349–359, *Benjamins, Amsterdam*, 1987. (Alexander George) 89i:68078 68Q50 (03B65, 68Q45, 68S05)
- Friedman, M.** (with Bar-Noy, T.; Blau, Matthias; Kandel, Abraham) Certain computational aspects of fuzzy decision trees. *Fuzzy Sets and Systems* 28 (1988), no. 2, 163–170. (Summary) 89i:68055 68Q25 (03E72, 68T20)
- Friedman, Michael** Logical truth and analyticity in Carnap's *Logical syntax of language*. *History and philosophy of modern mathematics* (Minneapolis, MN, 1985), 82–94, *Minnesota Stud. Philos. Sci., XI, Univ. Minnesota Press, Minneapolis, MN*, 1988. (Peter M. Simons) 89f:01047 01A60 (00A25, 03-03, 03A05)
- Friedman, Milton** *see* Lives of the laureates, 89d:01074
- Friedman, N.** (with Boyarsky, A.; Scarowsky, M.) Ergodic properties of computer orbits for simple piecewise monotonic transformations. *Comput. Math. Appl.* 15 (1988), no. 12, 997–1006. (Ethan M. Coven) 89h:58168 58F30 (54H20, 58F11, 65D99)
- (with Gabriel, Patrick; King, Jonathan L.) An invariant for rigid rank-1 transformations. *Ergodic Theory Dynamical Systems* 8 (1988), no. 1, 53–72. (Nathaniel F. G. Martin) 89c:28028 28D05
- Friedman, Robert David** (with Morgan, John W.) Algebraic surfaces and 4-manifolds: some conjectures and speculations. *Bull. Amer. Math. Soc. (N.S.)* 18 (1988), no. 1, 1–19. (Ronald J. Stern) 89g:57046 57R55 (14I15, 32G05, 32J15, 57N13)
- (with Morgan, John W.) On the diffeomorphism types of certain algebraic surfaces. I. *J. Differential Geom.* 27 (1988), no. 2, 297–369. (I. Dolgachev) 89d:57046 57R55 (14F05, 14F45, 14J27, 32G13, 32J15)
- (with Morgan, John W.) On the diffeomorphism types of certain algebraic surfaces. II. *J. Differential Geom.* 27 (1988), no. 3, 371–398. (I. Dolgachev) 89d:57047 57R55 (14F05, 14F45, 14J27, 32G13, 32J15)
- Friedman, Steven J.** (with Supowit, Kenneth J.) Finding the optimal variable ordering for binary decision diagrams. *24th ACM/IEEE Design Automation Conference (Miami Beach, FL, 1987)*, 348–356, *ACM, New York*, 1987. (Summary) 89j:90006 90A05 (94C10)
- Friedman, Yankov** (with Barton, Thomas Joseph) Grothendieck's inequality for  $J_B$ -triples and applications. *J. London Math. Soc. (2)* 36 (1987), no. 3, 513–523. (Khristo N. Boyadzhiev) 89a:46139 46L70 (17C65, 46H70)
- (with Dang, Tien Bang) Classification of  $J_B$ -triple factors and applications. *Math. Scand.* 61 (1987), no. 2, 292–330. (Thomas J. Barton) 89g:46109 46L70 (17C65, 46H70)
- (with Gelman, Alexander; Phadia, Eswar) Best invariant estimation of a distribution function under the Kolmogorov-Smirnov loss function. *Ann. Statist.* 16 (1988), no. 3, 1254–1261. (Kumar Joag-Dev) 89i:62060 62G05 (62C15)
- (with Gelman, Alexander; Phadia, Eswar) A modified Kolmogorov-Smirnov type goodness of fit test. *Comm. Statist. Theory Methods* 17 (1988), no. 12, 4147–4162. (Not in MR) 62G10
- Friedrich, Helmut** (with Schmidt, Bernd G.) Conformal geodesics in general relativity. *Proc. Roy. Soc. London Ser. A* 414 (1987), no. 1846, 171–195. (Peter R. Law) 89b:83041 83C30
- On static and radiative space-times. *Comm. Math. Phys.* 119 (1988), no. 1, 51–73. (Philippe-A. Dionne) 89k:83008 83C05 (83C30)
- Friedrich, R.** (with Haken, Hermann) Exact stationary probability distribution for a simple model of a nonequilibrium phase transition. *Z. Phys. B* 71 (1988), no. 4, 515–517. (Koichiro Matsuno) 89g:82027 82A31
- Friedrich, Thomas** (with Kath, Ines) Variétés riemanniennes compactes de dimension 7 admettant des spineurs de Killing. (English summary) [7-dimensional compact Riemannian manifolds admitting Killing spinors] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 19, 967–969. (Oussama Hijazi) 89m:53074 53C25 (58C40, 58G25)
- Friend, Nina** (with Whittemore, Alice S.; Brown, Byron W., Jr.; Holly, Elizabeth A.) Amendment to: "A test to detect clusters of disease" [Biometrika 74 (1987), no. 3, 631–635; MR 88i:62184]. *Biometrika* 75 (1988), no. 2, 396. (Editors) 89d:62108 62P10 (92A07)
- Fries, Jakob Friedrich** *see* Krüger, Lorenz, 89f:01036
- Friesen, Christian** On continued fractions of given period. *Proc. Amer. Math. Soc.* 103 (1988), no. 1, 9–14. (Stanley J. Benkoski) 89d:11004 11A55
- Friesen, Donald K.** (with Fellows, Michael R.; Langston, Michael A.) On finding optimal and near-optimal linear spanning trees. *Algorithmica* 3 (1988), no. 4, 549–560. (Antal Iványi) 89m:68040 68Q15 (68Q25, 68R10, 90B10)
- Friesz, Terry L.** (with Tobin, Roger L.) Sensitivity analysis for equilibrium network flow. *Transportation Sci.* 22 (1988), no. 4, 242–250. (Summary) 89j:90120 90B20
- Frieze, A. M.** (with Dyer, M. E.; Foulds, L. R.) On the strength of connectivity of random subgraphs of the  $n$ -cube. *Random graphs '85 (Poznań, 1985)*, 17–40, *North-Holland Math. Stud.*, 144, *North-Holland, Amsterdam-New York*, 1987. (J. Spencer) 89a:05117 05C80 (05C40, 60C05)
- (with Jackson, Bill) Large holes in sparse random graphs. *Combinatorica* 7 (1987), no. 3, 265–274. (Andrzej Ruciński) 89a:05118 05C80 (60C05)
- (with Bollobás, B.; Fenner, T. I.) An algorithm for finding Hamilton paths and cycles in random graphs. *Combinatorica* 7 (1987), no. 4, 327–341. (A. G. Thomason) 89h:05049 05C80 (05C45, 68R10, 90B15)
- On the exact solution of random travelling salesman problems with medium size integer coefficients. *SIAM J. Comput.* 16 (1987), no. 6, 1052–1072. (Summary) 89g:90104
- 90B15 (68Q25, 68R10, 90B10)
- Partitioning random graphs into large cycles. *Discrete Math.* 70 (1988), no. 2, 149–158. (Andrzej Ruciński) 89f:05146 05C80
- On the random construction of heaps. *Inform. Process. Lett.* 27 (1988), no. 2, 103–109. (Summary) 89c:68020 68P10 (68Q25)
- An algorithm for finding Hamilton cycles in random directed graphs. *J. Algorithms* 9 (1988), no. 2, 181–204. (Colin J. H. McDiarmid) 89j:05064 05C80 (68Q25, 68R10)
- Finding Hamilton cycles in sparse random graphs. *J. Combin. Theory Ser. B* 44 (1988), no. 2, 230–250. (A. G. Thomason) 89h:05050 05C80 (05C45, 68R10, 90B15)
- (with Jackson, Bill; McDiarmid, Colin; Reed, B. A.) Edge-colouring random graphs. *J. Combin. Theory Ser. B* 45 (1988), no. 2, 135–149. (Zbigniew Palka) 89m:05101 05C80 (05C15)
- (with Ahn, Sang; Cooper, Colin; Cornuejols, Gerard) Probabilistic analysis of a relaxation for the  $k$ -median problem. *Math. Oper. Res.* 13 (1988), no. 1, 1–31. (Alexander H. G. Rinnooy Kan) 89c:90048 90B10 (90C05, 90C35)
- (with Håstad, Johan; Kannan, Ravindran; Lagarias, J. C.; Shamir, Adi) Reconstructing truncated integer variables satisfying linear congruences. Special issue on cryptography. *SIAM J. Comput.* 17 (1988), no. 2, 262–280. (Harald Niederreiter) 89d:11115 11Y16 (11T71, 94A60)
- Frigon, Marlene** (with Granas, Andrzej; Guennoun, Zine El Abdine) Sur l'intervalle maximal d'existence de solutions pour des inclusions différentielles. (English summary) [On the maximal interval for the existence of solutions to differential inclusions] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 18, 747–750. (Stefan Mirica) 89g:34019 34A60 (34A15)
- Frink, Orrin** Almost Pythagorean triples. *Math. Mag.* 60 (1987), no. 4, 234–236. (Sun Qi) 89k:11012 11D09
- Fris, I.** (with Miller, Mirka) Minimum diameter of irregular digraphs of degree 2. *Comput. J.* 31 (1988), no. 1, 71–75. (Prabir Das) 89c:05042 05C20 (05C35)
- Frisch, Harry L.** (with Williams, G. O.) Anomalous scaling in systems partially controlled by diffusion. *J. Statist. Phys.* 52 (1988), no. 5–6, 1233–1245. (Summary) 89j:82097 82A99 (80A99, 92A40)
- (with Elskens, Yves) Kinetic theory of hard spheres in infinite dimensions. *Phys. Rev. A* (3) 37 (1988), no. 11, 4351–4353. (Summary) 89d:82088 82A50 (82A40)
- Frisch, Uriel** (with Rivet, Jean-Pierre) Gaz sur réseau pour l'hydrodynamique: formule de Green-Kubo. (English summary) [Lattice gas hydrodynamics: the Green-Kubo formula] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* 303 (1986), no. 12, 1065–1068. (Introduction) 89k:82048 82A40 (68Q80, 76-08, 76D99, 82A68)
- (with d'Humières, D.; Hasslacher, Brosl; Lallemand, P.; Pomeau, Y.; Rivet, Jean-Pierre) Lattice gas hydrodynamics in two and three dimensions. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems I* (1987), no. 4, 649–707. (Tony C. Dorias) 89h:82031 82A50 (76D00, 82A69)
- Frischmuth, K.** (with Szyzka, U.) On static calculation of fishing nets. (Russian and Polish summaries) *Arch. Mech. (Arch. Mech. Stas.)* 39 (1987), no. 6, 633–643 (1988). (Summary) 89f:70009 70C05 (90A30)
- gemma Frisius, Reiner** *see* Gemma Frisius, Reiner
- Fristedt, Bert** (with Berry, Donald A.) Optimality of myopic stopping times for geometric discounting. *J. Appl. Probab.* 25 (1988), no. 2, 437–443. (E.-A. Weiss, Jr.) 89g:60154 60G40 (62L15, 90C39, 90C40)
- Fritsch, Frederick N.** Energy comparisons of Wilson-Fowler splines with other interpolating splines. *Geometric modeling*, 185–201, *SIAM, Philadelphia, PA*, 1987. (see 89b:65010) 65D07
- Representations for parametric cubic splines. *Comput. Aided Geom. Design* 6 (1989), no. 1, 79–82. (Summary) 89k:65011 65D07
- Fritz, J.** Gradient dynamics of infinite point systems. *Ann. Probab.* 15 (1987), no. 2, 478–514. (G. Papanicolaou) 89a:60239 60K35 (60G60, 82A40)
- On the hydrodynamic limit of a one-dimensional Ginzburg-Landau lattice model. The a priori bounds. *J. Statist. Phys.* 47 (1987), no. 3–4, 551–572. (Maria E. Vares) 89a:82017 82A31 (60K35)
- Fritzsche, Bernd** (with Kirstein, Bernd) A Schur type matrix extension problem. *Math. Nachr.* 134 (1987), 257–271. (Dan Timotin) 89a:15019 15A48 (15A12)
- (with Kirstein, Bernd) An extension problem for nonnegative Hermitian block Toeplitz matrices. III. *Math. Nachr.* 135 (1988), 319–341. (M. Tismenetsky) 89f:15018 15A57 (47B35)
- (with Kirstein, Bernd) A matrix extension problem with entropy optimization. *Optimization* 19 (1988), no. 1, 85–99. (T. Ando) 89f:15035 15A48 (47A20)
- (with Kirstein, Bernd) A Schur parametrization of nonnegative Hermitian and contractive block matrices and the corresponding maximum entropy problems. *Optimization* 19 (1988), no. 5, 737–755. (M. Tismenetsky) 89m:15015 15A57 (60G10, 60G25)
- (with Kirstein, Bernd) On the structure of the maximum entropy extension. *Optimization* 20 (1989), no. 2, 177–191. (L. Rodman) 89m:15016 15A57 (15A23)
- Fröberg, Carl-Erik** (with Bohman, Jan) The Stieltjes function—definition and properties. *Math. Comp.* 51 (1988), no. 183, 281–289. (Herman J. J. te Riele) 89f:11095 11M06 (11Y35, 33A10, 65B10)
- Fröberg, Ralf** (with Gottlieb, Christian; Häggkvist, Roland) Gorenstein rings as maximal subrings of  $k[[X]]$  with fixed conductor. *Comm. Algebra* 16 (1988), no. 8, 1621–1625. (Bernd Ulrich) 89h:13027 13H10
- A note on the Stanley-Reisner ring of a join and of a suspension. *Manuscripta Math.* 60 (1988), no. 1, 89–91. (Bernd Graw) 89h:52013 52A25 (13H10)
- Froda, Sorana** A signed rank test for censored paired lifetimes. *Comm. Statist. Theory Methods* 16 (1987), no. 12, 3497–3517. (Subhash C. Kocher) 89a:62108 62G10 (62N05)
- Fröhlich, Jürg** *see* Fröhlich, Jürg
- Frömeke, Jon** (with Grossman, Jerrold W.) An algebraic approach to some number-theoretic problems arising from paper-folding regular polygons. *Amer. Math. Monthly* 95 (1988), no. 4, 289–307. (M. Mendes France) 89d:11063 11K99 (11A99)
- Froeschlé, Claude** (with Gonzi, Robert) On the stochasticity of Halley like comets. Long term evolution of planetary systems (Ramsau, 1988). *Celestial Mech.* 43 (1987/88), no. 1–4, 325–330. (see 89j:76002) 58F13
- *see also* Long term evolution of planetary systems, 89j:76002
- Froese, R.** (with Herbst, I.) Patterns of exponential decay for solutions to second order elliptic equations in a sector of  $\mathbb{R}^2$ . *J. Analyse Math.* 49 (1987), 106–134. (Rainer

- Hempel) **89d:35020** 35B40 (35J15)
- Commutator analysis on noncompact manifolds. *Mathematical quantum field theory and related topics (Montreal, PQ, 1987)*, 37–41, *CMS Conf. Proc.*, 9, Amer. Math. Soc., Providence, RI, 1988. (see **89g:81002**) 58G25 (35P05)
- Frohardt, Daniel Groups which produce generalized quadrangles. *J. Combin. Theory Ser. A* **48** (1988), no. 1, 139–145. (Stanley E. Payne) **89d:51015** 51E25
- Fröhlich, Albrecht Problems in representation theory arising from Galois modules. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 81–85, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Jürgen Ritter) **89b:11090** 11R33
- Module defect and factorisability. *Illinois J. Math.* **32** (1988), no. 3, 407–421. (K. W. Roggenkamp) **89g:11108** 11R33 (11S45, 20C10)
- see also Heilbronn, Hans Arnold, **89i:01140**
- Fröhlich, Jörg (with Pfister, Charles-Ed.) Semi-infinite Ising model. II. The wetting and layering transitions. *Comm. Math. Phys.* **112** (1987), no. 1, 51–74. (C. A. Hurst) **89h:82040** 82A67 (82A05, 82A25, 82A68)
- (with Marchetti, Peralberto) Soliton quantization in lattice field theories. *Comm. Math. Phys.* **112** (1987), no. 2, 343–383. (C. A. Hurst) **89a:81102** 81E25 (81E05, 82A15, 82A68)
- (with Ambjørn, Jan; Durhuus, Bergrinnur; Jónsson, Þórður) Regularized strings with extrinsic curvature. *Nuclear Phys. B* **290** (1987), no. 4, 480–506. (Claus Montonen) **89b:81164** 81E25 (81E30, 81G25, 82A05)
- Statistics and monodromy in two- and three-dimensional quantum-field theory. *Differential geometrical methods in theoretical physics (Como, 1987)*, 173–186, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 250, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89k:81078** 81E13 (81–02, 81E40)
- (with Marchetti, Peralberto) Bosonization, topological solitons and fractional charges in two-dimensional quantum field theory. *Comm. Math. Phys.* **116** (1988), no. 1, 127–173. (C. A. Hurst) **89m:81086** 81E08 (81E25)
- (with Albanese, C.) Periodic solutions of some infinite-dimensional Hamiltonian systems associated with nonlinear partial differential equations. I. *Comm. Math. Phys.* **116** (1988), no. 3, 475–502. (Piero de Mottoni) **89i:35114** 35Q20 (35B10, 35B32, 58F05, 58F14, 81D99, 82A99)
- (with Benettin, Giancarlo; Giorgilli, Antonio) A Nekhoroshev-type theorem for Hamiltonian systems with infinitely many degrees of freedom. *Comm. Math. Phys.* **119** (1988), no. 1, 95–108. (Richard C. Churchill) **89m:58059** 58F05 (34C11, 70H05, 82A60)
- (with Albanese, C.; Spencer, Thomas Crawford) Periodic solutions of some infinite-dimensional Hamiltonian systems associated with nonlinear partial difference equations. II. *Comm. Math. Phys.* **119** (1988), no. 4, 677–699. (Piero de Mottoni) **89k:35192** 35Q20 (34G20, 35R15)
- Frohman, Charles (with Fine, Benjamin) Some amalgam structures for Bianchi groups. *Proc. Amer. Math. Soc.* **102** (1988), no. 2, 221–229. (Denis Serje) **89a:20027** 20E06 (11F06, 22E40, 57M99)
- Fröhner, Michael Ein Galerkin-Verfahren zur numerischen Lösung der Burgers-Gleichung. [A Galerkin method for the numerical solution of the Burgers equation] *Ann. Univ. Sci. Budapest. Sect. Comput.* **6** (1985), 37–48 (1987). (G. W. Hedstrom) **89a:65146** 65M60
- Froidevaux, Christine (with Gaudel, Marie-Claude; Soria, Michèle) ★ Types de données et algorithmes. Vol. I. (French) [Data types and algorithms. Vol. I] Analyse d'algorithmes; définition des types de données. [Analysis of algorithms; definition of data types] With an English summary. Collection Didactique [Didactic Collection], 3. *Institut National de Recherche en Informatique et en Automatique (INRIA), Rocquencourt*, 1986. 206 pp. ISBN 2-7261-0463-0 (Summary) **89a:68001a** 68–01
- (with Gaudel, Marie-Claude; Soria, Michèle) ★ Types de données et algorithmes. Vol. II. (French) [Data types and algorithms. Vol. II] Recherche, tri, algorithmes sur les graphes. [Searching, sorting and graph algorithms] With an English summary. Collection Didactique [Didactic Collection], 4. *Institut National de Recherche en Informatique et en Automatique (INRIA), Rocquencourt*, 1987. viii+240 pp. ISBN 2-7261-0490-8 (Editors) **89a:68001b** 68–01
- Frøkjær, Erik (with Sveinsdóttir, Edda) Datology—the Copenhagen tradition of computer science. *BIT* **28** (1988), no. 3, 450–472. (Not in MR) 68–03 (01)
- Frólik, Z. (with Levi, Sandro) Separability of Baire-measurable images of  $K$ -analytic spaces. (Italian summary) *Boll. Un. Mat. Ital. A (7)* **1** (1987), no. 3, 411–415. (H. Sarbadhikari) **89b:54042** 54H05 (28A05)
- Miroslav Katětov (on the occasion of his seventieth birthday). (Czech) *Časopis Pěst. Mat.* **113** (1988), no. 1, 88–97. (Editors) **89a:01059** 01A70
- Seventy years of Miroslav Katětov. *Czechoslovak Math. J.* **38**(113) (1988), no. 1, 181–190. (Editors) **89c:01058** 01A70
- Academician Miroslav Katětov. (Czech) *Pokroky Mat. Fyz. Astronom.* **33** (1988), no. 1, 1–7. (Editors) **89c:01059** 01A70
- (with Aarts, J. M.) Homeomorphisms of  $Q$  and the orbit classification of flows. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* No. 18 (1988), 15–25. (Karl Petersen) **89g:54089** 54H20
- see also General topology and its relations to modern analysis and algebra, **89c:54002**
- Frolow, E. B. (with Solomentsev, Yu. M.) The mathematical model of flexible machining-cell. (Russian summary) With the Russian original. *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **17** (1988), no. 2, 77–90, P1–P14. (Summary) **89d:93068** 93C75 (90B30)
- Frolow, F. F. Boundary value problems for systems of stochastic partial differential equations. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 2, 409–412; translation in *Theory Probab. Appl.* **33** (1988), no. 2, 385–388. (Ralf Manthey) **89k:60082** 60H15 (35R60, 46F10, 60G25, 60J25)
- (with Bulychyev, V. A.) Boundary value problems for generalized differential equations. (Russian) *Mat. Sb. (N.S.)* **135**(177) (1988), no. 3, 275–296, 414; translation in *Math. USSR-Sb.* **63** (1989), no. 2, 267–287. (Jürgen vom Scheidt) **89b:35360** 35R60 (35D99, 60G60, 60H99)
- Frolow, Fedor Processing and compressing the description of images of handwritten characters. (Russian. English summary) *Comput. Artificial Intelligence* **7** (1988), no. 2, 121–138. (Not in MR) 68U10
- Frolow, N. N. (with Dunaev, I. M.) An algorithm for the numerical solution of a geometrically nonlinear problem on the contact between an incompressible elastic body and a rigid smooth stamp. (Russian) *Boundary value problems (Russian)*, 161–165, 202, *Perm. Politekh. Inst., Perm*, 1983. (see **89c:00008**) 73T05
- Frolow, O. R. (with Petrov, S. I.) Databases with a universal relation. (Russian) *Programirovanie* **1967**, no. 5, 54–61, 111. (János Demetrotics) **89c:68018** 68P15
- Frolow, S. A. (with Slavnov, A. A.) Propagator of the Yang-Mills field in a light cone gauge. (Russian. English summary) *Teoret. Mat. Fiz.* **73** (1987), no. 2, 199–209. (E. Wiczorek) **89h:81122** 81E13
- (with Slavnov, A. A.) Quantization of a nonabelian antisymmetric tensor field. (Russian. English summary) *Teoret. Mat. Fiz.* **75** (1988), no. 2, 201–211; translation in *Theoret. and Math. Phys.* **75** (1988), no. 2, 470–477. (Summary) **89f:81078** 81D07 (81E13)
- (with Slavnov, A. A.) Physical subspace norm in Hamiltonian BRST-quantization. *Phys. Lett. B* **218** (1989), no. 4, 461–464. (Summary) **89m:81141** 81E99 (81D07)
- Frolow, V. A. (with Emel'yanenko, I. S.; Py'eva, T. P.) Detectors of a boundary and a strip in problems of morphological analysis of images of mitochondria. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **29** (1988), no. 4, 33–38, 103. (Summary) **89k:92001** 92A05 (92A08, 92A09)
- Frolow, Vladimir Nikolaevich (with Vatin, A. A.) Analysis of conflicting situations in problems of the short-term scheduling of production. (Russian) *Conflicting models for optimization (Russian)*, 79–92, 96, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1987. (Summary) **89c:90040** 90A11
- Frolow, Yu. N. (with Vitushkin, A. G.; Gonchar, A. A.; Dolzhenko, E. P.; Napalkov, V. V.; Sedletskii, A. M.; Stechkin, S. B.) Aleksei Fedorovich Leon'tev. (Russian) *Mat. Zametki* **42** (1987), no. 4, 483–493. (Editors) **89d:01065** 01A70
- (with Vitushkin, A. G.; Vladimirov, V. S.; Gonchar, A. A.; Napalkov, V. V.; Niko'skii, S. M.; Sedletskii, A. M.; Ulyanov, P. L.) Aleksei Fedorovich Leon'tev. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 5(257), 177–182. (Editors) **89d:01071** 01A70
- Frolova, E. N. (with Moldavanskii, D. I.; Kravchenko, L. V.) Conjugacy separability of some groups with one defining relation. (Russian) *Algorithmic problems in the theory of groups and semigroups (Russian)*, 81–91, 127, *Tul'sk. Gos. Ped. Inst., Tula*, 1986. (Ya. G. Berkovich) **89c:20040** 20F05
- Fröman, Nanny (with Fröman, Per Olof) Comments on the paper: "On the WKBJ approximation" [J. Math. Phys. **28** (1987), no. 3, 556–558; MR **88e:81020**] by M. El Sawi. *J. Math. Phys.* **29** (1988), no. 4, 912. (Summary) **89f:41035** 41A60
- (with Fröman, Per Olof; Lundborg, Bengt) The Stokes constants for a cluster of transition points. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 1, 153–179. (Edward R. Vrscaj) **89m:81047** 81C15 (34A20)
- (with Fröman, Per Olof; Lundborg, Bengt) Symmetry relations for connection matrices in the phase-integral method. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 1, 181–191. (Edward R. Vrscaj) **89m:81048** 81C15 (34A20)
- Fröman, Per Olof (with Fröman, Nanny) Comments on the paper: "On the WKBJ approximation" [J. Math. Phys. **28** (1987), no. 3, 556–558; MR **88e:81020**] by M. El Sawi. *J. Math. Phys.* **29** (1988), no. 4, 912. (Summary) **89f:41035** 41A60
- (with Fröman, Nanny; Lundborg, Bengt) The Stokes constants for a cluster of transition points. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 1, 153–179. (Edward R. Vrscaj) **89m:81047** 81C15 (34A20)
- (with Fröman, Nanny; Lundborg, Bengt) Symmetry relations for connection matrices in the phase-integral method. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 1, 181–191. (Edward R. Vrscaj) **89m:81048** 81C15 (34A20)
- (with Lundborg, Bengt) Improvement of the generalized quantal Bohr-Sommerfeld quantization condition. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 3, 581–601. (Xue-Ping Wang) **89h:81075** 81D07
- Frommer, A. Monotonicity of Brown's method. *Numerical methods (Miskolc, 1986)*, 503–510, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (J. W. Schmidt) **89f:65065** 65J15
- (with Straub, W.) Error-bounds for zeroes of polynomials using complex circular arithmetic. (German summary) *Computing* **40** (1988), no. 3, 273–280. (Miodrag Petković) **89k:65058** 65G10 (65H05)
- Comparison of Brown's and Newton's method in the monotone case. *Numer. Math.* **52** (1988), no. 5, 511–521. (Florica Luban) **89f:65060** 65H10 (90C30)
- Monotonicity of Brown's method. (German and Russian summaries) *Z. Angew. Math. Mech.* **68** (1988), no. 2, 101–109. (Summary) **89a:65086** 65H10
- Enclosing solutions with Brown's method. *Z. Angew. Math. Mech.* **68** (1988), no. 5, T488–T489. (Not in MR) 65H10
- Fronsdal, Christian (with Flato, M.) Singletons: fundamental gauge theory. *Physique quantique et géométrie (Paris, 1986)*, 63–80, *Travaux en Cours*, 32, Hermann, Paris, 1988. (Summary) **89h:81143** 81E20 (22E45, 58F06, 81E13, 81G20)
- The supersingleton. I. Free dipole and interactions at infinity. *Lett. Math. Phys.* **16** (1988), no. 2, 163–172. (W. Cox) **89k:81100a** 81E20 (81G10, 81L05)
- The supersingleton. II. Composite electrodynamics. *Lett. Math. Phys.* **16** (1988), no. 2, 173–177. (W. Cox) **89k:81100b** 81E20 (81G10, 81L05)
- Frosali, G. (with Protopopescu, V.) Can the mixed norm be used in kinetic theory? (Italian summary) *Boll. Un. Mat. Ital. B (7)* **1** (1987), no. 4, 999–1009. (Reinhard Illner) **89d:47084** 47B99 (35Q20, 46E30, 76P05, 82A70)
- (with van der Mee, C. V. M.; Protopopescu, V.) Transport equations with boundary conditions of reverse reflection type. *Math. Methods Appl. Sci.* **10** (1988), no. 1, 15–35. (Gert Due Billing) **89b:81218** 82A70
- Frostig, Esther A stochastic scheduling problem with no late precedence constraints. *Oper. Res.* **36** (1988), no. 6, 937–943. (Summary) **89j:90143** 90B35
- Fruchard, Augustin Canards discrets. (English summary) [Discrete canards] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 1, 41–46. (Summary) **89c:03116** 03H05 (58F08, 58F14)
- Frumkin, M. A. Fast computations with Frobenius matrices. (Russian) *Computational processes and systems*, No. 5 (Russian), 302–311, "Nauka", Moscow, 1987. (F. Szidarovszky) **89c:65056** 65F30
- Systolic calculator for solving linear programming problems. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 4, 149–156; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1988**, no. 1, 51–59, 219 (Russian). (Not in MR) 90C05 (68Q80)
- Frunza, Ștefan Jordan operators on Hilbert spaces. *J. Operator Theory* **18** (1987), no. 2, 201–212. (B. Nagy) **89b:47052** 47B40 (47A65)



- Frutos Escrig, D.** Probabilistic Iano's schemes. Eleventh colloquium on trees in algebra and programming (Nice, 1986). *Theoret. Comput. Sci.* **53** (1987), no. 1, 67-97. (Klaus Indermark) **89i:68080** 68Q55
- Fry, John L.** (with Kowalski, Jack M.) Tunneling in one-dimensional ideal barriers. *J. Math. Phys.* **28** (1987), no. 10, 2407-2415. (G. Papanicolaou) **89b:81037** 81C05 (78A45, 81F99)
- Fryant, Allan J.** Carlson's theorem for generalized axisymmetric potentials. *Pure Appl. Math. Sci.* **28** (1988), no. 1-2, 83-84. (N. V. Rao) **89i:31003** 31A10
- Fryazinov, I. V.** (with Zabelina, M. P.) A difference method for solving the Stefan problem for a binary system. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 7, 1188-1197. (Introduction) **89a:80003** 80A20 (80-08)
- (with Proskolov, A. I.) Techniques and program realization for solving spatial problems in hydrodynamics. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 34, 24 pp. (Summary) **89c:65134** 65P05 (76-08)
- (with Goncharov, A. L.) Difference schemes on a 13-point pattern and schemes with local monotization on irregular grids for two-dimensional Navier-Stokes equations. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 83, 26 pp. (Summary) **89f:76013** 76-08 (35Q10, 65P05, 76D05)
- Frydman, Gabriel I.** (with Fernández, Francisco M.; Castro, Eduardo A.) Tight bounds to the Schrödinger equation eigenvalues. *J. Phys. A* **22** (1989), no. 6, 641-645. (Summary) **89a:81034** 81C05 (81-08)
- Frydrychowicz, Stephan** ★ Anwendung der Gruppentheorie auf Probleme der Mustererkennung. (German) [Application of group theory to problems of pattern recognition] Fortschritt-Berichte der VDI Zeitschriften, Reihe 10: Angewandte Informatik [Progress Reports of the VDI Journals, Series 10: Applied Informatics], 42. Verein Deutscher Ingenieure (VDI), Düsseldorf, 1985. 135 pp. ISBN 3-18-144210-0 (From the introduction) **89f:68058** 68T10 (20F99, 68U05, 94A11)
- Frydryszak, A.** (with Jakóbczyk, L.) Generalized Gelfand-Naimark-Segal construction for supersymmetric quantum mechanics. *Lett. Math. Phys.* **16** (1988), no. 2, 101-107. (Alan L. Carey) **89m:81081** 81D99 (46K10)
- Fryer, M. J.** (with Greenman, J. V.) ★ Optimisation theory. Applications in OR and economics. *Edward Arnold*, London, 1987. viii+293 pp. ISBN 0-7131-3527-1 (G. Di Pillo) **89c:90001** 90-01
- Frykstiig, Jan** (with Wiberg, Nils-Erik) Adaptive and hierarchical time integration of convection-diffusion problems. *The mathematics of finite elements and applications, VI (Uxbridge, 1987)*, 533-540, Academic Press, London-New York, 1988. (see **89c:65004**) **65M60** (76-08, 76R99)
- Fryntov, A. E.** An extremal problem of potential theory. (Russian) *Dokl. Akad. Nauk SSSR* **306** (1988), no. 4, 819-820; translated in *Soviet Math. Dokl.* **37** (1988), no. 3, 754-755. (Not in MR) **31A05**
- Fryszka, Tadeusz L.** Some effective estimates for the roots of the Dirichlet  $L$ -series. II. *Funct. Approx. Comment. Math.* **16** (1988), 21-36. (Jürgen G. Hinz) **89m:11080** 11M26 (11R42)
- An estimate of the order of the Hecke-Landau  $\zeta(s, \chi)$ -functions. *Funct. Approx. Comment. Math.* **16** (1988), 55-62. (Masako Izumi) **89k:11079** 11M41 (11R42)
- Fu, Castor** see Hasselacher, Brosi, (89m:01133a)
- Fu, De Xun** (with Ma, Yan Wen) Jacobian matrix splitting methods and numerical computation of aerodynamics equations. (Chinese. English summary) *Math. Numer. Sinica* **10** (1988), no. 2, 205-214. (Summary) **89i:65134** 65P05 (76-08, 76G15)
- Fu, Heng Lin** On Latin cubes with prescribed intersections. *Ars Combin.* **23** (1987), 171-176. (Diane Johnson) **89g:05031** 05B15
- Steiner quadruple systems with a spanning block design. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **60** (1987), 145-150. (Sharad S. Sane) **89f:05027** 05B05 (51E10)
- A note on the block intersection problem of Steiner quadruple systems of order  $n \cdot v$ . *Tamkang J. Math.* **18** (1987), no. 2, 59-63. (Charles C. Lindner) **89b:05045** 05B07
- Fu, Jun Yi** (with Zhang, Shi Sheng) Convergence of the Ishikawa iterative process for a class of mappings. (Chinese) *J. Math. Res. Exposition* **6** (1986), no. 4, 57-63. (H. R. Shen) **89b:47082** 47H10 (47H17)
- Fu, Jyun-Hong** (with Fan, Michael Ko Hui) On block limiting norm and structured singular value. *Systems Control Lett.* **12** (1989), no. 1, 45-51. (Hsi-han Yeh) **89m:93019** 93B28 (47A10)
- Fu, L.-C.** (with Mason, J. E.; Bai, Er Wei; Bodson, M.; Sastry, S. Shankar) Analysis of adaptive identifiers in the presence of unmodeled dynamics: averaging and tuned parameters. *IEEE Trans. Automat. Control* **33** (1988), no. 10, 969-976. (Jan Bialasiewicz) **89i:93032** 93B30 (49D07, 93C40, 93D25)
- Fu, Li Ya** (with Guo, Hong Jun) A static, spherically symmetric interior solution to the gravitational field equations in Weitzenböck space-time. (Chinese. English summary) *J. Changsha Railway Inst.* **5** (1987), no. 2, 19-24. (Jian-Zeng Li) **89f:83022** 83C15
- Fu, Long Ming** (with Wu, Chang Jiu) A short proof and generalization of an inequality for symmetric functions. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* **1986**, no. 2, 142-146. (Chung Lie Wang) **89c:26038** 26D20
- Fu, Min Fu** (with Dai, Tian Min; Lin, Zhong Xiang; Yang, De Pin) Variational methods for the problems of nonconservative force fields in the micropolar elastodynamics. *Appl. Math. Mech. (English Ed.)* **8** (1987), no. 11, 1003-1012; translated from *Appl. Math. Mech.* **8** (1987), no. 11, 943-952 (Chinese. English summary). (Summary) **89c:73008** 73B25 (49H05, 73C60, 73D99)
- Fu, Minyue** (with Barmish, B. Ross; Saleh, S.) Stability of a polytope of matrices: counterexamples. *IEEE Trans. Automat. Control* **33** (1988), no. 6, 569-572. (Igor N. Litvin) **89c:93084** 93D99 (12D10, 15A18, 34D20, 34D30)
- (with Barmish, B. Ross) Maximal unidirectional perturbation bounds for stability of polynomials and matrices. *Systems Control Lett.* **11** (1988), no. 3, 173-179. (Hong Xing Zhou) **89i:93098** 93D99 (34D10)
- Fu, Shu Sheng** A dominated convergence theorem for the GP-integral. *Bull. Soc. Math. Belg. Sér. B* **39** (1987), no. 3, 287-298. (Inder K. Rana) **89b:28004** 28B05 (26A39)
- Fu, Shun Liang** A necessary and sufficient condition for the validity of the strong law of large numbers. (Chinese) *J. Math. Res. Exposition* **6** (1986), no. 3, 88. (Zheng Yan Lin) **89c:60037** 60F15
- Fu, Y. B.** (with Scott, N. H.) Acceleration wave propagation in an inhomogeneous heat-conducting elastic rod of slowly varying cross section. *J. Thermal Stresses* **11** (1988), no. 2, 127-140. (Summary) **89c:73092** 73U05 (73K05, 73K12)
- Fubini, S.** (with De Alfaro, V.; Furlan, G.) Quantisation, instantons and supersymmetry. *Quantum field theory and quantum statistics, Vol. 1*, 587-599, Hilger, Bristol, 1987. (Gheorghe Zet) **89b:81073** 81D07 (81E13, 81G05)
- (with De Alfaro, V.; Furlan, G.; Roncadelli, M.) Operator ordering and supersymmetry. *Nuclear Phys. B* **296** (1988), no. 2, 402-430. (Roger Picken) **89d:81049** 81D07 (81G20)
- (with De Alfaro, V.; Furlan, G.; Roncadelli, M.) Quantum spinning particle in a curved metric. *Phys. Lett. B* **200** (1988), no. 3, 323-326. (Summary) **89a:81083** 81E20
- Fuchik, S.** see Fučík, Svatopluk
- Fuchs, Aimé** Estimateurs efficaces et densités bayésiennes impropres. [Efficient estimators and improper Bayes densities] With the collaboration of Ph. Artzner. *Adv. in Appl. Math.* **9** (1988), no. 1, 87-103. (Marc Moore) **89b:62069** 62F10 (62F15)
- Fuchs, Andreas** (with Mukundan, Rangaswamy) Design of variable structure system controllers for large-scale multivariable systems using eigenvalue placement. *Internat. J. Systems Sci.* **19** (1988), no. 11, 2283-2289. (Summary) **89i:93059** 93B60 (93A15, 93B50)
- Fuchs, Armin** (with Haken, Hermann) Computer simulations of pattern recognition as a dynamical process of a synergetic system. *Neural and synergetic computers (Schloss Elmau, 1988)*, 16-28, Springer Ser. Synergetics, 42, Springer, Berlin-New York, 1988. (see **89i:92026**) **92A25** (68T10)
- (with Haken, Hermann) Pattern recognition and associative memory as dynamical processes in a synergetic system. I. Translational invariance, selective attention, and decomposition of scenes. *Biol. Cybernet.* **60** (1988), no. 1, 17-22. (Summary) **89b:92013** 92A09
- (with Haken, Hermann) Nonequilibrium phase transitions in pattern recognition and associative memory. Numerical results. *Z. Phys. B* **71** (1988), no. 4, 519-520. (Not in MR) **92A09** (92A25)
- Fuchs, D. B.** see Fuks, D. B.
- Fuchs, Helmut** Test particle motion in geometric object fields—conservation laws. *Differential geometry and its applications, communications (Brno, 1986)*, 109-116, Univ. J. E. Purkyně, Brno, 1987. (R. J. McKellar) **89c:83009** 83C10 (53A55, 70H35, 83C40)
- (with Kasper, U.; Liebscher, D.-E.; Müller, Volker; Schmidt, Hans-Jürgen) The singularity problem of gravitation. *Fortschr. Phys.* **36** (1988), no. 6, 427-452. (Laszlo B. Szabados) **89m:83063** 83C75 (83-02)
- Fuchs, J. C.** (with Richter, E. W.) Similarity solutions for the two-dimensional nonstationary ideal MHD equations. *J. Phys. A* **20** (1987), no. 11, 3135-3157. (G. A. Nariboli) **89a:76057** 76W05 (35Q99)
- Symmetriegruppen idealer MDH-Gleichungen. [Symmetry groups of ideal MDH equations] *Abh. Braunschweig. Wiss. Ges.* **40** (1988), 29-38. (Summary) **89k:35206** 35Q20 (35A30, 76W05)
- Fuchs, Jürgen** Conformal embeddings and hidden symmetries of free fermion theories. *Nuclear Phys. B* **290** (1987), no. 3, 392-416. (Peter Bouwknegt) **89c:81144** 81E99 (17B65, 81E40)
- (with Ellwanger, U.) String field equations and the dual  $S$ -matrix from the exact renormalization group. *Nuclear Phys. B* **312** (1989), no. 1, 95-124. (Summary) **89k:81088** 81E15 (81E30, 81E40)
- (with Ellwanger, U.; Schmidt, Michael G.) The heterotic  $\sigma$ -model with background gauge fields. *Nuclear Phys. B* **314** (1989), no. 1, 175-208. (Summary) **89m:81105** 81E15 (81E13, 81E40)
- Fuchs, László** On the freeness of certain abelian groups. *Caribbean J. Math.* **5** (1986), no. 1, 19-27. (Paul C. Eklof) **89e:20096** 20K35 (20K40)
- (with Eklof, Paul C.) Baer modules over valuation domains. *Ann. Mat. Pura Appl. (4)* **150** (1988), 363-373. (Luigi Salce) **89g:13006** 13C05 (13C10, 13F05)
- (with Monari-Martinez, E.) On modules over valuation domains whose finitely generated submodules are direct sums of cyclics. *Arch. Math. (Basel)* **50** (1988), no. 2, 134-138. (Radoslav Dimitrić) **89a:13014** 13C12
- (with Dauns, John) Infinite Goldie dimensions. *J. Algebra* **115** (1988), no. 2, 297-302. (S. S. Page) **89f:16034** 16A55
- (with Shelah, Saharon) Kaplansky's problem on valuation rings. *Proc. Amer. Math. Soc.* **105** (1989), no. 1, 25-30. (J. M. Plotkin) **89c:13030** 13L05 (03C60, 03E35, 13A18)
- Fuchs, Martin** The Green matrix for strongly elliptic systems of second order with continuous coefficients. (German and Russian summaries) *Z. Anal. Anwendungen* **5** (1986), no. 6, 507-531. (Jiří Rákosník) **89a:35069** 35J45 (35C15)
- A note on removable singularities for minima of certain vector-valued obstacle problems. *Arch. Math. (Basel)* **48** (1987), no. 6, 521-525. (Robert T. Vescan) **89c:49007** 49A36 (49B36, 90C31)
- Liouville theorems for  $p$ -harmonic systems. (Italian summary) *Boll. Un. Mat. Ital. A (7)* **1** (1987), no. 3, 429-435. (Gregorio Diaz) **89d:35052** 35J60 (35B05)
- Everywhere regularity theorems for mappings which minimize  $p$ -energy. *Comment. Math. Univ. Carolin.* **28** (1987), no. 4, 673-677. (Y. L. Xin) **89f:58042** 58E20
- An elementary partial regularity proof for vector-valued obstacle problems. *Math. Ann.* **279** (1987), no. 2, 217-226. (Erich Miersemann) **89b:58062** 58E35 (35D10, 49A29, 58E20)
- (with Fusco, Nicola) Partial regularity proofs for vector-valued functions which minimize certain functionals having nonquadratic growth under smooth side conditions. *J. Reine Angew. Math.* **390** (1988), 67-78. (Jean-Pierre Raymond) **89b:49005** 49A29
- Höhere Integrierbarkeit und Regularität für eine Klasse freier Randwertprobleme. (English and Russian summaries) [Higher integrability and regularity for a class of free boundary value problems] *Z. Anal. Anwendungen* **7** (1988), no. 3, 215-222. (L. von Wolfersdorf) **89j:35132** 35R35 (58E15)
- Fuchs, P. M.** On the stability of spline-collocation methods of multivariate type. *BIT* **27** (1987), no. 3, 374-388. (J. C. Butcher) **89c:65071** 65L05 (65D07, 65L20)
- Fuchs, Peter Rudolf** ★ Ultraproducts of  $\Omega$ -groups (omega groups). Dissertationen der Johannes-Kepler-Universität Linz (Dissertations of the Johannes Kepler University of Linz), 56. *Verband der Wissenschaftlichen Gesellschaften Österreichs (VWGO)*, Vienna, 1986. vi+92 pp. ISBN 3-85369-635-0 (Editors) **89c:03046** 03C20 (03C60, 16A76, 20N99)
- (with Maxson, C. J.; Pettet, M. R.; Smith, Kirby C.) Centraliser near-rings determined by fixed point free automorphism groups. *Proc. Roy. Soc. Edinburgh Sect. A* **107** (1987), no. 3-4, 327-337. (John D. P. Meldrum) **89a:16051** 16A76 (16A19, 16A40, 20F28)

- (with Maxson, C. J.) Kernels of covered groups with operators. *J. Algebra* **114** (1988), no. 1, 68–80. (John D. P. Meldrum) **89c:20046** 20D50 (16A76, 51J99)
- (with Maxson, C. J.) Near-fields associated with invariant linear  $\kappa$ -relations. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 729–736. (John D. P. Meldrum) **89f:16053** 16A76 (12K05, 20E99)
- Fuchs, Werner** Beispiele der Anwendung von Kettenbrüchen durch C. F. Gauss. [Examples of the application of continued fractions by C. F. Gauss] *Gauss-Ges. Göttingen Mitt.* No. 22 (1985), 19–36. (Burnett Meyer) **89a:01031** 01A55 (11–03, 30–03)
- Fuchssteiner, Benno** Solitons in interaction. *Progr. Theoret. Phys.* **78** (1987), no. 5, 1022–1050. (Peter L. Christiansen) **89g:58089** 58F07 (35Q20)
- Fučík, Svatopluk** (with Kufner, A.) ★ Нелинейные дифференциальные уравнения. (Russian) [Nonlinear differential equations] Translated from the English by A. F. Zhukov. Translation edited and with a foreword by S. I. Pokhozhaev. "Nauka", Moscow, 1988. 304 pp. ISBN 5-02-013750-2 (Editors) **89k:35003** 35-02 (34-02, 47-02, 58-02, 90C25)
- Fudali, Stanislaw** Six-point primitive fixing system in a plane. *Demonstratio Math.* **19** (1986), no. 2, 341–348. (C. M. Petty) **89b:52002** 52A10 (52A20)
- Two remarks about homothetic coverings. *Demonstratio Math.* **21** (1988), no. 2, 387–392. (J. M. Wills) **89m:52021** 52A45 (52A40)
- Fudenberg, Drew** (with Levine, David K.) Open-loop and closed-loop equilibria in dynamic games with many players. *J. Econom. Theory* **44** (1988), no. 1, 1–18. (Marwan Simaan) **89c:90115** 90D12 (90A16, 90D40)
- (with Kreps, David M.; Levine, David K.) On the robustness of equilibrium refinements. *J. Econom. Theory* **44** (1988), no. 2, 354–380. (O. A. Malafeev) **89g:90248** 90D10
- (with Tirole, Jean) Erratum: "Preemption and rent equalization in the adoption of new technology" [Rev. Econom. Stud. **52** (1985), no. 3, 383–401; MR 86k:90050]. *Rev. Econom. Stud.* **55** (1988), no. 3, 507. (Editors) **89g:90074** 90A16 (90D40)
- de la Fuente, Pere** see Gallilei, Galileo, **89i:01139**
- Fuentes Villalba, Fernando M.** (with Hernández, Francisco L.) On weighted Orlicz sequence spaces and their subspaces. *Rocky Mountain J. Math.* **18** (1988), no. 3, 585–599. (Barry Turett) **89k:46010** 46A45 (46B25, 46E30)
- Fufae, N. A.** (with Butenin, N. V.; Neimark, Yu. I.) ★ Введение в теорию нелинейных колебаний. (Russian) [Introduction to the theory of nonlinear oscillations] Second edition. "Nauka", Moscow, 1987. 383 pp. (W. S. Loud) **89c:34001** 34-02 (34C15, 54H25, 58Fxx, 70Kxx)
- Fugazza, M.** (with Natale, L.) Simulation of coupled and uncoupled phenomena in floating breakwater models. *Computer methods and water resources*, Vol. 2 (Rabat, 1988), 241–251. *Comput. Mech., Southampton*, 1988. (see **89g:76003b**) 76-04 (76B15)
- Fuglede, Bent** Finely holomorphic functions and finely harmonic morphisms. *Aequationes Math.* **34** (1987), no. 2-3, 167–173. (Bernt Øksendal) **89c:31001** 31A05 (30G99)
- Fine potential theory. *Potential theory—surveys and problems* (Prague, 1987), 81–97. *Lecture Notes in Math.*, 1344, Springer, Berlin-New York, 1988. (see **89m:31001**) 31Bxx (31D05)
- Finely holomorphic functions. A survey. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 4, 283–295. (T. J. Lyons) **89j:30049** 30D60 (30B99, 31A99)
- Stability in the isoperimetric problem for convex or nearly spherical domains in  $\mathbb{R}^n$ . *Trans. Amer. Math. Soc.* **314** (1988), no. 2, 619–638. (Catherine Bandle) **89m:52016** 52A40
- al-Fuhaid, A. S.** see Al-Fuhaid, A. S.
- Fuhrmann, André T.** Fregean sense overlap. *Philos. Quart.* **37** (1987), no. 149, 412–420. (Not in MR) **03A05** (03B65)
- Fuhrmann, Daniel R.** An algorithm for subspace computation, with applications in signal processing. *Linear algebra in signals, systems, and control* (Boston, MA, 1986), 141–149. *SIAM, Philadelphia, PA*, 1988. (Summary) **89m:65039** 65F15 (93B40, 93B60)
- An algorithm for subspace computation, with applications in signal processing. *SIAM Conference on Linear Algebra in Signals, Systems, and Control* (Boston, Mass., 1986). *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 2, 213–220. (Gregory Ammar) **89f:65040** 65F15 (15A18, 49D15, 94A12)
- Fuhrmann, Gy.** "Prototypes" and "fuzziness" in the logic of concepts. *Synthese* **75** (1988), no. 3, 317–347. (Summary) **89c:03095** 03E72 (00A25)
- Fuzziness of concepts and concepts of fuzziness. *Synthese* **75** (1988), no. 3, 349–372. (Summary) **89c:03096** 03E72 (00A25)
- Fuhrmann, Paul A.** Orthogonal matrix polynomials and system theory. Conference on linear and nonlinear mathematical control theory. *Rend. Sem. Mat. Univ. Politec. Torino* **1987, Special Issue**, 68–124. (Giuseppe Conte) **89g:93025** 93B25 (15A09, 15A57, 93B15)
- Fuhrmann, Steve W.** (with Wang, Yung Terng) Analysis of cyclic service systems with limited service: bounds and approximations. *Performance Evaluation* **9** (1988/89), no. 1, 35–54. (Summary) **89j:90123** 90B22 (60K25, 68M20, 90B15)
- Fuja, Tom** (with Heegard, Chris; Goodman, Rod) Linear sum codes for random access memories. *IEEE Trans. Comput.* **37** (1988), no. 9, 1030–1042. (J. C. Hwang) **89k:94079** 94B60 (68P25)
- Fuji-Hara, R.** (with Vanstone, S. A.) Balanced Room squares from finite geometries and their generalizations. *Combinatorial design theory*, 179–188. *North-Holland Math. Stud.*, 149, North-Holland, Amsterdam-New York, 1987. (W. D. Wallis) **89a:05036** 05B15
- (with Vanstone, S. A.) Hyperplane skew resolutions and their applications. *J. Combin. Theory Ser. A* **47** (1988), no. 1, 134–144. (Albrecht Beutelspacher) **89f:51059** 51E30 (05B25)
- Fujihiara, Hideyuki** (with Kaneko, Tetsuo) Normal structure of weakly compact sets of Banach spaces. *Sci. Rep. Niigata Univ. Ser. A No. 24* (1988), 33–36. (S. Swaminathan) **89a:46038** 46B20
- Fujii, Akio** Arithmetic of some zeta function connected with the eigenvalues of the Laplace-Beltrami operator. *Investigations in number theory*, 237–260. *Adv. Stud. Pure Math.*, 13, Academic Press, Boston, MA, 1988. (A. B. Venkov) **89m:11083** 11M41 (11F72, 11R29)
- Fujii, Hiroshi** (with Nishiura, Yasumasa) On the phenomenon of multiple existence of stable equilibria. Coexistence of stable singularly perturbed solutions in systems of reaction-diffusion equations. *Computing methods in applied sciences and engineering, VII (Versailles, 1985)*, 197–212. *North-Holland, Amsterdam-New York*, 1986. (Victor A. Galaktionov) **89b:35073** 35K57 (58E07, 92A09, 92A15)
- (with Nishiura, Yasumasa; Hosono, Yuzo) On the structure of multiple existence of stable stationary solutions in systems of reaction-diffusion equations. *Patterns and waves*, 157–219. *Stud. Math. Appl.*, 18, North-Holland, Amsterdam-New York, 1986. (Summary) **89b:35074** 35K57 (58E07, 58F14, 92A09, 92A15)
- (with Nishiura, Yasumasa) SLEP method to the stability of singularly perturbed solutions with multiple internal transition layers in reaction-diffusion systems. *Dynamics of infinite-dimensional systems* (Lisbon, 1986), 211–230. *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 37, Springer, Berlin-New York, 1987. (Si Ning Zheng) **89b:35009** 35B25 (35B35, 35K57)
- Fujii, Junichi** (with Nakamoto, Ritsuo) The Stein transformation on positive operators. *Math. Japon.* **32** (1987), no. 5, 697–700. (Mehdi Radjabipour) **89a:47021** 47A60 (47B15)
- (with Kubo, Fumio; Kubo, Kyoko) A parametrization between operator means. *Math. Japon.* **33** (1988), no. 2, 201–208. (J. W. Bunce) **89i:47027** 47A60 (15A45, 47B99)
- (with Fujii, Masatoshi) On operator inequalities due to Ando-Kittaneh-Kosaki. *Publ. Res. Inst. Math. Sci.* **24** (1988), no. 2, 295–300. (Fuad Kittaneh) **89g:47011** 47A30 (47A60)
- Fujii, Kazuyuki** A classical solution of the nonlinear pure spinor models with higher derivatives. *Lett. Math. Phys.* **15** (1988), no. 2, 137–142. (A. Crumeyrolle) **89j:81093** 81E08
- (with So, Hiroto; Suwa, Misako) Extended Skyrme models in even dimensions and higher-dimensional solitons. II. Wess-Zumino terms in two and higher dimensions. *Lett. Math. Phys.* **15** (1988), no. 2, 151–158. (Alexander W. Smith) **89m:81142** 81E99 (81E40, 83E15)
- Fujii, Masatoshi** (with Fujii, Junichi) On operator inequalities due to Ando-Kittaneh-Kosaki. *Publ. Res. Inst. Math. Sci.* **24** (1988), no. 2, 295–300. (Fuad Kittaneh) **89g:47011** 47A30 (47A60)
- Fujii, Michikazu** Operations associated with the  $G$ -equivariant unitary cobordism theory. *Math. J. Okayama Univ.* **30** (1988), 161–175. (R. E. Stong) **89k:57069** 57R85 (57R77)
- Fujii, Nobuhiko** Another characterization of the two-weight norm inequalities for the maximal operators. *Tokyo J. Math.* **10** (1987), no. 2, 471–480. (Kenneth F. Andersen) **89f:42015** 42B25
- Fujii, Nobuo** Existence of an optimal domain in a domain optimization problem. *System modelling and optimization* (Tokyo, 1987), 251–258. *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (De Xing Feng) **89j:49012** 49A99 (93C20)
- (with Goto, Yoshito; Muramatsu, Yasuyuki) Second order necessary optimality conditions for domain optimization problem with a Neumann problem. *System modelling and optimization* (Tokyo, 1987), 259–268. *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (De Xing Feng) **89j:93064** 93C20 (49B99)
- Fujikawa, Kazuo** (with Kubo, Jisuke) On the quantization of membrane theories. *Phys. Lett. B* **199** (1987), no. 1, 75–81. (Summary) **89g:81073** 81E99 (81E30)
- Path integral, BRS symmetry, and string and membrane theories. *Conformal field theory, anomalies and superstrings* (Singapore, 1987), 174–202. *World Sci. Publishing, Singapore*, 1988. (Sorin Marčulescu) **89k:81079** 81E13 (81E30, 81E40, 83E30)
- (with Inagaki, Takeshi; Suzuki, Hiroshi) BRS anomaly and the Weyl freedom in string theory. *Phys. Lett. B* **213** (1988), no. 3, 279–284. (Summary) **89b:81188** 81E99 (81E30)
- (with Lindström, U.; Nielsen, N. K.; Roček, M.; van Nieuwenhuizen, P.) Regularized BRST-coordinate-invariant measure. *Phys. Rev. D* **37** (1988), no. 2, 391–405. (Robert Marnelius) **89f:81176** 81E99 (81E30, 83E30)
- Fujiki, Akira** (with Schumacher, Georg) The moduli space of Kähler structures on a real compact symplectic manifold. *Publ. Res. Inst. Math. Sci.* **24** (1988), no. 1, 141–168. (Siegmond Kosarew) **89k:32041** 32G05 (58B12)
- Fujiki, N. M.** (with De Bell, K.; Geldart, D. J. W.) Lattice sums for dipolar systems. *Phys. Rev. B* **36** (1987), no. 16, 8512–8516. (Summary) **89g:82093** 82A67 (82A60)
- Fujikoshi, Y.** (with Krishnaiah, P. R.; Schmidhammer, J.) Effect of additional variables in principal component analysis, discriminant analysis and canonical correlation analysis. *Advances in multivariate statistical analysis*, 45–61. *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (Masashi Okamoto) **89a:62125** 62H10 (62H20, 62H25, 62H30)
- On relationship between the AIC and the overall error rates for selection of variables in a discriminant analysis. *Multivariate statistical modeling and data analysis* (Harrisonburg, Va., 1986), 121–138. *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (Chien-Pai Han) **89c:62103** 62H30
- Error bounds for asymptotic expansions of the distribution of the MLE in a GMANOVA model. *Ann. Inst. Statist. Math.* **39** (1987), no. 1, 153–161. (Summary) **89b:62103** 62H10
- Fujimoto, Hideaki** Realizability conditions of a class of two-variable reactance filter. *J. Fac. Sci. Tech. Kinki Univ. No. 24* (1988), 345–354. (Külmiz Çevik) **89k:94085** 94C05 (93B15)
- Fujimoto, Hirotaka** On the number of exceptional values of the Gauss maps of minimal surfaces. *J. Math. Soc. Japan* **40** (1988), no. 2, 235–247. (Norio Ejiri) **89b:53013** 53A10 (49F10)
- Finiteness of some families of meromorphic maps. *Kodai Math. J.* **11** (1988), no. 1, 47–63. (Junjiro Noguchi) **89c:32036** 32H30
- Modified defect relations for the Gauss map of minimal surfaces. *J. Differential Geom.* **29** (1989), no. 2, 245–262. (Kichoon Yang) **89m:53012** 53A10 (30D35)
- Fujimoto, Richard M.** (with Feng, Hwa-chung) A shared memory algorithm and proof for the generalized alternative construct in CSP. *Internat. J. Parallel Programming* **16** (1987), no. 3, 215–241. (Not in MR) **68Q10**
- Fujimoto, Takao** (with Krause, Ulrich) More theorems on joint production. *Z. Nationalökonom.* **48** (1988), no. 2, 189–196. (conclusion) **89g:90048** 90A11
- Fujimoto, Takayuki** (with Hoshino, Ikuya; Mackawa, Yukihiro; Kimura, Hiroshi; Kimura, Hidenori) Observer-based multivariable control of the aluminum cold tandem mill. *Automatica—J. IFAC* **24** (1988), no. 6, 741–754. (Not in MR) **93C75** (93B07)
- Fujinaka, Toru** (with Katayama, Tohru) Discrete-time optimal regulator with closed-loop poles in a prescribed region. *Internat. J. Control* **47** (1988), no. 5, 1307–1321. (Vicente Hernández) **89g:93048** 93B55 (93B17, 93B50, 93B60)
- Fujio, Mitsuhiro** Differential invariants of superwebs. *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 8, 330–333. (From the introduction) **89a:58008** 58A50 (53A60)
- Fujioka, Atsushi** (with Tsujii, Shigeo; Itoh, Toshiya; Kurosawa, Kaoru; Matsumoto, Tsutomu) A public-key cryptosystem based on the difficulty of solving a system of



- nonlinear equations. *Systems Comput. Japan* 19 (1988), no. 2, 10–18. (Zhen Fu Cao) **89g:94026** 94A60 (11771)
- Fujisaka, Hirokazu** (with Inoue, Masayoshi) Analytic properties of characteristic exponents for chaotic dynamical systems. *Progr. Theoret. Phys.* 77 (1987), no. 5, 1077–1089. (Summary) **89a:58071** 58F13 (82A05)
- (with Inoue, Masayoshi) Statistical-thermodynamics formalism of self-similarity. *Progr. Theoret. Phys.* 77 (1987), no. 6, 1334–1343. (Hanna Nencka) **89g:60244** 60J60 (58F13, 58G40, 62M10, 82A30)
- (with Inoue, Masayoshi) Theory of diffusion and intermittency in chaotic systems. III. New approach to temporal correlations. *Progr. Theoret. Phys.* 78 (1987), no. 2, 268–281. (Summary) **89a:58069** 58F13 (82A35, 82A99)
- (with Inoue, Masayoshi) Continued fraction expansion of fluctuation spectrum and generalized time correlation. *Progr. Theoret. Phys.* 78 (1987), no. 6, 1203–1208. (Editors) **89d:82013** 82A05
- (with Inoue, Masayoshi; Yamaki, O.) Scaling behavior of fluctuation spectrum for pure intermittency chaos. *Phys. Lett. A* 132 (1988), no. 8–9, 403–407. (Summary) **89b:58117** 58F13 (82A99)
- Fujisaki, Masatoshi** Bellman equation with unbounded coefficients and its applications. *Probability theory and mathematical statistics (Kyoto, 1986)*, 69–79, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (B. I. Anan'ev) **89g:49025** 49A60 (49C20, 60G40, 93E11)
- Fujisaki, T.** see *Logic programming '87*, **89h:68137**
- Fujisawa, Toshio** (with Masuda, Sumio; Kashiwabara, Toshinobu) On single layer routing with no wires passing between adjacent pins. *Electron. Comm. Japan. Part I Comm.* 68 (1985), no. 7, 8–16. (Summary) **89h:94016** 94C15 (68Q35)
- Fujishige, Satoru** (with Tamura, Akihisa; Takehara, Hitoshi; Fukuda, Komei; Kojima, Masakazu) A dual interior primal simplex method for linear programming. (Japanese summary) *J. Oper. Res. Soc. Japan* 31 (1988), no. 3, 413–430. (A. G. Azpeitia) **89j:90173** 90C05 (90C33)
- (with Cui, Wen-Tian) A primal algorithm for the submodular flow problem with minimum-mean cycle selection. (Japanese summary) *J. Oper. Res. Soc. Japan* 31 (1988), no. 3, 431–441. (Gheorghe Opris) **89k:90052** 90B10 (90B15)
- (with Katoh, Naoki; Ichimori, Tetsuo) The fair resource allocation problem with submodular constraints. *Math. Oper. Res.* 13 (1988), no. 1, 164–173. (Rainer Burkard) **89f:90094** 90C10 (90B99)
- Fujita, H.** (with Masuda, Kyōya) Mathematical contributions of Professor Seizō Itō. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* 34 (1987), no. 3, 6 pp. (Editors) **89c:01073** 01A70
- (with Watanabe, Yoshiyuki) A family of homogeneous Sasakian structures on  $S^2 \times S^3$ . *C. R. Math. Rep. Acad. Sci. Canada* 10 (1988), no. 1, 57–61. (R. Roşca) **89a:53055** 53C25
- Fujita, Hisaaki** An idealizer with respect to a link between maximal ideals. *Comm. Algebra* 16 (1988), no. 5, 1053–1082. (J. C. Robson) **89f:16008** 16A14 (16A33, 16A66)
- A counterexample to Tarsy's conjecture on global dimension of orders. *Proceedings of the 21st Symposium on Ring Theory (Hiroaki, 1988)*, 7–13, Okayama Univ., Okayama, 1989. (see **89k:16001**) 16A18 (16A55)
- Fujita, Takahiko** A fractional dimension, self-similarity and a generalized diffusion operator. *Probabilistic methods in mathematical physics (Katata/Kyoto, 1985)*, 83–90, Academic Press, Boston, MA, 1987. (From the text) **89m:47042** 47E05
- Fujita, Takao** Classification of noncomplete algebraic varieties. *Algebraic geometry, Bowdoin, 1985 (Brunswick, Maine, 1985)*, 417–423, *Proc. Sympos. Pure Math.*, 46, Part 1, Amer. Math. Soc., Providence, RI, 1987. (M. Miyanishi) **89c:14050** 14J10 (14C20)
- On polarized manifolds whose adjoint bundles are not semipositive. *Algebraic geometry, Sendai, 1985*, 167–178, *Adv. Stud. Pure Math.*, 10, North-Holland, Amsterdam-New York, 1987. (Antonio Lanteri) **89d:14006** 14C20 (14J40)
- Triple covers by smooth manifolds. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* 35 (1988), no. 1, 169–175. (L. Bădescu) **89d:14019** 14E20 (14E22)
- Fujita, Yasuhiro** Linear stochastic partial differential equations with constant coefficients. *J. Math. Kyoto Univ.* 28 (1988), no. 2, 301–310. (Maurizio Pratelli) **89j:60078** 60H15 (35E99, 35R60)
- Fujiwara, Eiji** (with Matsuoka, Kohji) Fault-tolerant  $k$ -out-of- $n$  logic unit networks. *Systems Comput. Japan* 19 (1988), no. 9, 21–31. (Not in MR) **68Q35** (90B25)
- Fujiwara, Hidenori** Représentations monomiales des groupes de Lie nilpotents. [Monomial representations of nilpotent Lie groups] *Pacific J. Math.* 127 (1987), no. 2, 329–352. (Ole A. Nielsen) **89c:22015** 22E27 (46N05)
- Unitary representations of solvable Lie groups. (Japanese) *Sūgaku* 39 (1987), no. 3, 204–215. (Masato Wakayama) **89b:22014** 22E27 (22E25, 22E45)
- Fujiwara, Masako** (with Osikawa, Motosige) Sofic systems and flow equivalence. *Math. Rep. Kyushu Univ.* 16 (1987), no. 1, 17–27. (Fumio Hiai) **89i:54050** 54H20 (05C20, 28D20)
- Fujiwara, Takanori** (with Ohnuki, Yoshio) Anomalies and Weyl modes in chiral gauge theories. *Progr. Theoret. Phys.* 76 (1986), no. 5, 1182–1185. (Henryk Arndt) **89c:81104** 81E15 (81E13)
- Fujiwara, Takao** (with Arai, Masao<sup>2</sup>; Tokihiro, Tetsuji; Kohmoto, Mahito) Localized states and self-similar states of electrons on a two-dimensional Penrose lattice. *Phys. Rev. B* (3) 37 (1988), no. 6, 2797–2804. (Hanna Nencka) **89d:82124** 82A68
- (with Arai, Masao<sup>2</sup>; Tokihiro, Tetsuji; Kohmoto, Mahito) Strictly localized states on a two-dimensional Penrose lattice. *Phys. Rev. B* (3) 38 (1988), no. 3, 1621–1626. (P. Rudra) **89g:82052** 82A60 (52A45)
- (with Tokihiro, Tetsuji; Arai, Masao<sup>2</sup>) Exact eigenstates on a two-dimensional Penrose lattice and their fractal dimensions. *Phys. Rev. B* (3) 38 (1988), no. 9, 5981–5987. (Summary) **89k:82080** 82A60 (81H99)
- (with Krajci, Marian) Strictly localized eigenstates on a three-dimensional Penrose lattice. *Phys. Rev. B* (3) 38 (1988), no. 18, 903–907. (Summary) **89k:82078** 82A60 (82-04, 82A57)
- Fujiwara, Tohru** (with Taniguchi, Kenichi; Kasami, Tadao) Decision problem concerning security for cryptographic protocols. *Systems Comput. Japan* 18 (1987), no. 5, 67–78. (Summary) **89f:94015** 94A60 (68P25)
- (with Kasami, Tadao; Takata, Toyoo; Lin, Shu) A cascaded coding scheme for error control and its performance analysis. *IEEE Trans. Inform. Theory* 34 (1988), no. 3, 448–462. (J. A. Thiong-Ly) **89k:94073** 94B35 (94B05, 94B70)
- Fujiwara, Yasushi** On Galois actions on  $p$ -power torsion points of some one-dimensional formal groups over  $F_p[[t]]$ . *J. Algebra* 113 (1988), no. 2, 491–510. (Alan Candiotti) **89j:11114** 11S31
- Fujitoshi, Seiji** (with Matsuda, Takashi; Yanagiwara, Hiroki) On the transformation of the algebraic equations to those with only simple real roots. *Bull. College Liberal Arts Kyushu Sangyo Univ.* 23 (1987), no. 2, 103–112. (N. Popescu) **89g:12006** 12D99 (26C10)
- (with Matsuda, Takashi; Yanagiwara, Hiroki) On the transformation to get only simple real zeros for an algebraic equation with complex zeros or multiple real zeros. *Bull. College Liberal Arts Kyushu Sangyo Univ.* 25 (1988), no. 1, 221–225. (Summary) **89i:12001** 12D10 (30C10)
- Fukagai, Nobuyoshi** Positive entire solutions of higher order semilinear elliptic equations. *Hiroshima Math. J.* 17 (1987), no. 3, 561–590. (E. S. Noussair) **89c:35008** 35B05 (35J60)
- Fukagawa, Yukinori** (with Yanaru, Torao; Yoshida, Sho) A queueing system with server's walking-time and serial service. *Electron. Comm. Japan. Part I Comm.* 70 (1987), no. 11, 58–67. (Not in MR) **60K25** (90B22)
- Fukai, Ichiro** (with Yoshida, Norinobu; Kashiwa, Tatsuya; Kukutsu, Naoya) Three-dimensional formulation of time-dependent wave propagation in a gyroisotropic medium by Bergeron's method. *Wave Motion* 10 (1988), no. 6, 611–626. (Summary) **89j:78007** 78-08 (78A40)
- Fukao, Takeshi** (with Zhao, Yue) Distributed computing of a stochastic algorithm for combinatorial optimization problems. *System modelling and optimization (Tokyo, 1987)*, 318–327, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (see **89f:90029**) 90C27
- Fukaya, Kenji** Theory of convergence for Riemannian orbifolds. *Japan. J. Math. (N.S.)* 12 (1986), no. 1, 121–160. (Karsten Grove) **89d:53083** 53C20 (22E40)
- A boundary of the set of the Riemannian manifolds with bounded curvatures and diameters. *J. Differential Geom.* 28 (1988), no. 1, 1–21. (Karsten Grove) **89h:53090** 53C20 (58D99)
- Fukazawa, Fumio** (with Tanino, Tetsuzo) Maintenance policies in Markovian deterioration models of parallel unit systems. *Internat. J. Systems Sci.* 19 (1988), no. 8, 1655–1662. (Summary) **89c:90117** 90B25
- Fuks, D. B.** (with Feigin, B. L.; Retakh, V. S.) Massey operations in the cohomology of the infinite-dimensional Lie algebra  $L_1$ . *Topology and geometry—Rohlin Seminar*, 13–31, *Lecture Notes in Math.*, 1346, Springer, Berlin-New York, 1988. (Janusz Grabowski) **89m:17031** 17B65 (17B56)
- Fukuda, Komei** (with Tamura, Akihisa) Local deformation and orientation transformation in oriented matroids. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), A, 243–258. (Jim Lawrence) **89k:05024** 05B35
- (with Tamura, Akihisa; Takehara, Hitoshi; Fujishige, Satoru; Kojima, Masakazu) A dual interior primal simplex method for linear programming. (Japanese summary) *J. Oper. Res. Soc. Japan* 31 (1988), no. 3, 413–430. (A. G. Azpeitia) **89j:90173** 90C05 (90C33)
- Fukuda, Reiji** Stability conditions in quantum system. A general formalism. *Progr. Theoret. Phys.* 78 (1987), no. 6, 1487–1507. (Lawrence P. Horwitz) **89j:81075** 81D10 (81C12, 81E99, 81H99, 82A99)
- (with Higurashi, H.) Equilibrium limit of the stochastic quantization in Minkowski space. *Phys. Lett. B* 202 (1988), no. 4, 541–546. (Philip J. Feinsilver) **89j:81181** 81E99 (81C20, 81D07)
- Fukuda, Takuo** (with Ishikawa, Goo) On the number of cusps of stable perturbations of a plane-to-plane singularity. *Tokyo J. Math.* 10 (1987), no. 2, 375–384. (Jean-Jacques Gervais) **89b:58032** 58C27
- Topology of folds, cusps and Morin singularities. *A fête of topology*, 331–353, *Academic Press, Boston, MA, 1988*. (Claudio Martins Mendes) **89a:58015** 58C27 (57R45)
- Fukuhara, Kenzo** (with Ando, Hideo) Homotopy products and duality. *Mem. College Ed. Arita Univ. Natur. Sci.* No. 38 (1988), 1–31. (John McCleary) **89j:55015** 55Q15 (55Q25)
- Fukuhara, Shinji** Energy of a knot. *A fête of topology*, 443–451, *Academic Press, Boston, MA, 1988*. (Yoshihiko Marumoto) **89f:57005** 57M25
- (with Maruyama, Noriko) A sum formula for Casson's  $\lambda$ -invariant. *Tokyo J. Math.* 11 (1988), no. 2, 281–287. (Cameron McA. Gordon) **89k:57021** 57M99 (57M25)
- Fukui, Kenichi** Orbital presentation of chemical reactions. *Schrödinger (London, 1987)*, 102–111, *Cambridge Univ. Press, Cambridge-New York, 1987*. (see **89m:01069**) 92A40 (80A30, 92A09)
- Fukui, Masaki** The intrinsic Gauss and Codazzi equations for the Cartan connection and their applications. *An. Ştiinţ. Univ. "Al. I. Cuza" Iaşi Sect. I a Mat. (N.S.)* 33 (1987), no. 1, 73–79. (L. Tamásy) **89b:53046** 53B40
- Fukui, Seiichi** (with Owa, Shigeyoshi; Nunokawa, Mamoru) The radius of starlikeness of functions satisfying  $\operatorname{Re}\{f(z)/z^p\} > 0$ . *Bull. Fac. Ed. Wakayama Univ. Natur. Sci.* No. 37 (1988), 11–13. (D. K. Thomas) **89c:30025** 30C45
- (with Owa, Shigeyoshi) An application of Jack's lemma. *Bull. Fac. Ed. Wakayama Univ. Natur. Sci.* No. 37 (1988), 15–17. (D. E. Tepper) **89j:30015** 30C45
- (with Saitoh, Hitoshi; Nunokawa, Mamoru; Owa, Shigeyoshi) A remark on close-to-convex and starlike functions. *Bull. Soc. Roy. Sci. Liège* 57 (1988), no. 3, 137–141. (Carl P. McCarthy) **89m:30033** 30C45
- (with Owa, Shigeyoshi; Altintas, Osman) Notes on certain subclass of close-to-convex functions. *C. R. Math. Rep. Acad. Sci. Canada* 10 (1988), no. 2, 125–130. (R. S. L. Srivastava) **89g:30024** 30C45
- Fukui, Takao** 5D space-time-mass gravity theory with off-diagonal components in the metric tensor. *Astrophys. and Space Sci.* 146 (1988), no. 1, 13–18. (Carl Brans) **89j:83076** 83E15 (83F05)
- Fundamental constants and higher-dimensional universe. *Gen. Relativity Gravitation* 20 (1988), no. 10, 1037–1045. (Enric Verdaguer) **89k:83070** 83E15 (83C05, 83C20, 83E99)
- Fukumoto, Yasuhide** (with Miyazaki, Takeshi)  $N$ -solitons on a curved vortex filament with axial flow. *J. Phys. Soc. Japan* 57 (1988), no. 10, 3365–3370. (Summary) **89k:76027** 76C05 (35Q20)
- Fukunaga, Tetsuya** (with Tazaki, Saburo) Assessment on characteristics of  $b$ -adjacent error-correcting code. *Electron. Comm. Japan. Part I Comm.* 68 (1985), no. 2, 50–58. (Not in MR) **94B70** (94B20, 94B60)
- Fukushima, Masao** (with Itoh, Takehisa) A dual approach to asymmetric traffic equilibrium problems. *Math. Japon.* 32 (1987), no. 5, 701–721. (Alan Shuchat) **89f:90060** 90B20 (90B10, 90C25)

- (with Tanaka, Yoshihiro; Ibaraki, Toshihide) A comparative study of several semi-infinite nonlinear programming algorithms. *European J. Oper. Res.* **36** (1988), no. 1, 92–100. (K. Schittkowski) **89g:90217** 90C30
- Solving inequality constrained optimization problems by differential homotopy continuation methods. *J. Math. Anal. Appl.* **133** (1988), no. 1, 109–121. (Ramesh Saigal) **89g:90190** 90C30
- (with Itoh, Takehisa; Ibaraki, Toshihide) An iterative method for variational inequalities with application to traffic equilibrium problems. (Japanese summary) *J. Oper. Res. Soc. Japan* **31** (1988), no. 1, 82–104. (Summary) **89e:90097** 90B20 (65K05)
- Fukushima, Masatoshi** On holomorphic diffusions and plurisubharmonic functions. *Geometry of random motion (Ithaca, N.Y., 1987)*, 65–78, *Contemp. Math.*, **73**, Amer. Math. Soc., Providence, RI, 1988. (Bernt Øksendal) **89g:60237** 60J45 (31C10, 31C15, 32F05, 60J60)
- A note on capacities in infinite dimensions. *Probability theory and mathematical statistics (Kyoto, 1986)*, 80–85, *Lecture Notes in Math.*, **1299**, Springer, Berlin-New York, 1988. (Ana Bela Cruzeiro) **89d:60147** 60J65 (31C15, 31C25, 60J45)
- Fukutaka, Hiroki** (with Kashiwa, Tarō) Canonical transformations in the path integral and the operator formalism. *Ann. Physics* **185** (1988), no. 2, 301–329. (Takashi Miura) **89i:81033** 81C35
- (with Kashiwa, Tarō) Privileged role of the mid-point prescription in path integrations for constrained systems. *Progr. Theoret. Phys.* **80** (1988), no. 1, 151–161. (Summary) **89h:81049** 81C35 (58F05)
- Fukutake, Takayoshi** Separation axioms in  $r$ -spaces. *Bull. Fukuoka Univ. Ed. III* **37** (1988), 29–32. (I. A. Hasanain) **89m:54029** 54D10 (54A05, 54E55)
- Fukuyama, Katsui** Some limit theorems of almost periodic function systems under the relative measure. *J. Math. Kyoto Univ.* **28** (1988), no. 3, 557–577. (Zdzisław Rychlik) **89m:60050** 60F05
- Fukuyama, Takeshi** (with Kamimura, Kiyoshi) Dynamical time variable in cosmology. *Modern Phys. Lett. A* **3** (1988), no. 4, 333–343. (C. Gauthier) **89f:83115** 83F05
- (with Kamimura, Kiyoshi) Anomalies in two-dimensional gravity. *Phys. Lett. B* **200** (1988), no. 1–2, 75–79. (Gheorghe Zet) **89c:81120** 81E99 (81E13, 83C45)
- Fuliński, A.** Generalized Fokker-Planck-type equation for discrete nonlinear noisy maps. *Acta Phys. Polon. A* **72** (1987), no. 6, 733–745. (Summary) **89a:58070** 58F13 (82A35)
- Fulkerson, L.** (with Dorvlo, A. S. S.) Existence of a solution to the Markov renewal programming problem. *J. Math. Anal. Appl.* **131** (1988), no. 1, 22–24. (L. C. Thomas) **89f:90185** 90C40
- Fuller, A. T.** Redundant inequalities in stability criteria. I. *Internat. J. Control* **46** (1987), no. 6, 2043–2053. (Zdzisław Wyderka) **89g:93173** 93D20 (34D99, 93D99)
- Redundant inequalities in stability criteria. II. *Internat. J. Control* **47** (1988), no. 2, 643–652. (Zdzisław Wyderka) **89e:93174** 93D20 (34D99, 93D99)
- Aperiodicity determinants expressed in terms of roots. *Internat. J. Control* **47** (1988), no. 6, 1571–1593. (S. D. Chatterji) **89m:26026** 26C10 (01A55, 35A30)
- Fuller, J. David** Introduction of a new process with learning about installation and operation. *Optimal Control Appl. Methods* **9** (1988), no. 4, 403–416. (Not in MR) **90B30** (93C15, 93C75)
- Fuller, Kent R.** Algebras from diagrams. *J. Pure Appl. Algebra* **48** (1987), no. 1–2, 23–37. (Dieter Huppel) **89b:16018** 16A46 (16A64)
- (with Hutchinson, George) Exact embedding functors and left coherent rings. *Proc. Amer. Math. Soc.* **104** (1988), no. 2, 385–391. (Wolfgang Grözl) **89b:16075** 16A89 (18E20)
- Fülöp, Róbert** On a special type of fuzzy linear programming. *Numerical methods (Miskolc, 1986)*, 511–519, *Colloq. Math. Soc. János Bolyai*, **50**, North-Holland, Amsterdam-New York, 1988. (E. G. Gofshstein) **89g:90141** 90C05 (03E72)
- Fuller, Wayne A.** ★ Measurement error models. *Wiley Series in Probability and Mathematical Statistics: Probability and Mathematical Statistics*. John Wiley & Sons, Inc., New York, 1987. xxiv+440 pp. ISBN 0-471-86187-1 (C. M. Theobald) **89a:62160** 62J05 (62F10, 62J99)
- Fulling, S. A.** (with Kennedy, Gerard) A closed form for the symbol of the resolvent parametrix of an elliptic operator. *Differential equations and mathematical physics (Birmingham, Ala., 1986)*, 126–133, *Lecture Notes in Math.*, **1285**, Springer, Berlin-New York, 1987. (D. E. Edmunds) **89g:58215** 58G30 (35S05, 47G05, 81C10)
- (with Ruijsenaars, S. N. M.) Temperature, periodicity and horizons. *Phys. Rep.* **152** (1987), no. 3, 135–176. (Markku Lehto) **89a:81091** 81E20 (82A15, 83C47)
- Fülöp, J.** A finite procedure to generate feasible points for the extreme point mathematical programming problem. *European J. Oper. Res.* **35** (1988), no. 2, 228–241. (Wolfgang Scheiderheinze) **89g:90154** 90C10 (90C05)
- The transformation of the linear disjunctive programming problem into a facial problem. *Z. Angew. Math. Mech.* **68** (1988), no. 5, T440–T441. (Not in MR) **90C33**
- Fulton, Robert E.** (with Ou, Ronfu) An investigation of parallel numerical integration methods for nonlinear dynamics. *Comput. & Structures* **30** (1988), no. 1–2, 403–409. (Summary) **89h:65236** 65W05
- Fulton, William** On the topology of algebraic varieties. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 15–46, *Proc. Sympos. Pure Math.*, **46**, Part I, Amer. Math. Soc., Providence, RI, 1987. (K. Lamothe) **89c:14027** 14F45 (14E20, 14F35, 14M07, 32C10)
- Funaki, Tadahisa** Construction of stochastic processes associated with the Boltzmann equation and its applications. *Stochastic processes and their applications (Nagoya, 1985)*, 51–65, *Lecture Notes in Math.*, **1203**, Springer, Berlin-New York, 1986. (G. Papanicolaou) **89a:60182** 60J60 (82A40, 82A70)
- The central limit theorem for the spatially homogeneous Boltzmann equation. *Probabilistic methods in mathematical physics (Katata/Kyoto, 1985)*, 91–111, Academic Press, Boston, MA, 1987. (G. Papanicolaou) **89d:60039** 60F05 (60J60, 82A40)
- The hydrodynamical limit for scalar Ginzburg-Landau model on  $\mathbb{R}$ . *Stochastic analysis (Paris, 1987)*, 28–36, *Lecture Notes in Math.*, **1322**, Springer, Berlin-New York, 1988. (A. Weron) **89j:82025** 82A31
- Funakoshi, Shunsuke** On a decomposition theory of representations and a Plancherel formula for locally compact groups. *Math. Japon.* **32** (1987), no. 4, 533–557. (A. Derighetti) **89h:22007** 22D10 (22D20)
- Funakubo, Koichi** (with Kashiwa, Tarō) Chiral gauge theories on a lattice. *Phys. Rev. Lett.* **60** (1988), no. 21, 2113–2116. (Summary) **89h:81165** 81E25 (81E13)
- Funakubo, Noboru** (with Yokoyama, Naokazu; Yamamoto, Kazuhiko) Fractal-based analysis of 3D natural shapes and its application to terrain modeling. *Systems Comput. Japan* **19** (1988), no. 9, 101–113. (Not in MR) **68U10** (58-04)
- Funar, L. L.** A minimax problem in geometry. (Romanian) *Proceedings of the National Conference on Geometry and Topology (Romanian) (Tirgoviste, 1986)*, 91–96, Univ. București, Bucharest, 1988. (H. W. Guggenheimer) **89m:52022** 52A45 (52A40)
- Funaro, D.** (with Gottlieb, David) A new method of imposing boundary conditions in pseudospectral approximations of hyperbolic equations. *Math. Comp.* **51** (1988), no. 184, 599–613. (A. Quarteroni) **89j:65078** 65N35
- Domain decomposition methods for pseudospectral approximations. I. Second order equations in one dimension. *Numer. Math.* **52** (1988), no. 3, 329–344. (Erich Bohl) **89b:65186** 65L10
- (with Canuto, Claudio) The Schwarz algorithm for spectral methods. *SIAM J. Numer. Anal.* **25** (1988), no. 1, 24–40. (Viorel Arnautu) **89b:65286** 65N35 (65N30)
- Computing the inverse of the Chebyshev collocation derivative. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 6, 1050–1057. (Summary) **89h:65138** 65L99 (65F99)
- Fung, P. C. W.** (with Tao, Fu Zhen) Soliton solutions to the Einstein gravitational field equations in the presence of a spherically-symmetric static background field. *Astrophys. and Space Sci.* **139** (1987), no. 2, 311–320. (Jorge A. Pullin) **89c:83030** 83C35 (83C25)
- (with Wong, W. T.) Prolongation structure for the Thompson equation. (Italian and Russian summaries) *Nuovo Cimento B* (11) **99** (1987), no. 2, 163–170. (Peter L. Christiansen) **89a:35211** 35Q20 (58A17, 58G37)
- (with Wong, W. T.) Solitonlike solutions to the Drinfel'd-Sokolov-Wilson equation. (Italian and Russian summaries) *Nuovo Cimento B* (11) **100** (1987), no. 3, 319–327. (Summary) **89h:35321** 35Q20 (58F07, 58G37)
- (with Wong, W. T.) Painlevé analysis and decomposition of the Bäcklund transformation. (Italian and Russian summaries) *Nuovo Cimento B* (11) **100** (1987), no. 6, 745–750. (Summary) **89d:58136** 58G37 (35Q20)
- (with Cheng, C. M.) The evolution operator technique in solving the Schrödinger equation, and its application to disentangling exponential operators and solving the problem of a mass-varying harmonic oscillator. *J. Phys. A* **21** (1988), no. 22, 4115–4131. (Summary) **89h:81022** 81C05 (22E70)
- Fung, Y. C.** Nonlinear mechanics of the lung. Nonlinearity in biology and medicine (Los Alamitos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1–2, 211–218. (see **89c:92002**) **92A06** (92A09)
- müller-Funk, U.** see **Müller-Funk, U.**
- Funke, R.** The behavior of the trajectories of the solution of a stochastic differential equation. (Russian) *Theory of random processes*, No. 15 (Russian), 103–106, 119, "Naukova Dumka", Kiev, 1987. (R. Sh. Lipster) **89a:60141** 60H10
- A nonlinear diffusion with hyper-gamma distribution. *Stochastic Anal. Appl.* **7** (1989), no. 1, 19–33. (Wolfgang Kliemann) **89m:60186** 60J60 (60H10)
- Funtikov, A. V.** (with Odareev, V. A.) Problems of the nonlinear dynamics of a transportation apparatus in a bounded flow. (Russian) *Asymptotic methods (Russian)*, 215–237, 385, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Summary) **89c:73041** 73J05
- Furedi, Z.** (with Csima, J.) Colouring finite incidence structures. *Graphs Combin.* **2** (1986), no. 4, 339–346. (E. J. F. Primeiro) **89f:51037** 51E15 (05C15, 51E30)
- (with Bárány, I.) Empty simplices in Euclidean space. *Canad. Math. Bull.* **30** (1987), no. 4, 436–445. (Jane R. Sangwine-Yager) **89g:52004** 52A37 (11K38)
- (with Bárány, I.) Computing the volume is difficult. *Discrete Comput. Geom.* **2** (1987), no. 4, 319–326. (Klaus Sutner) **89a:68203** 68U05 (52-04, 68Q25)
- (with Griggs, Jerrold R.; Odlyzko, A. M.; Shearer, James B.) Ramsey-Sperner theory. Special issue: ordered sets (Oberwolfach, 1985). *Discrete Math.* **63** (1987), no. 2–3, 143–152. (Summary) **89b:05003** 05A05
- The number of maximal independent sets in connected graphs. *J. Graph Theory* **11** (1987), no. 4, 463–470. (Charles M. Grinstead) **89e:05115** 05C35
- (with Frankl, Peter) Solution of the Littlewood-Offord problem in high dimensions. *Ann. of Math.* (2) **128** (1988), no. 2, 259–270. (J. R. Griggs) **89m:05002** 05A05 (06A10)
- (with Rosenberg, I. G.) Multicolored lines in a finite geometry. *Discrete Math.* **71** (1988), no. 2, 149–163. (R. C. Mullin) **89g:05035** 05B25
- (with Boros, Endre) Rectangular dissections of a square. *European J. Combin.* **9** (1988), no. 3, 271–280. (Konrad Engel) **89i:05014** 05A15 (05B40, 52A45)
- Matchings and covers in hypergraphs. *Graphs Combin.* **4** (1988), no. 2, 115–206. (Ron Aharoni) **89i:05214** 05C70 (05C65, 90B10)
- (with Chung, F. R. K.; Graham, R. L.; Seymour, Paul D.) On induced subgraphs of the cube. *J. Combin. Theory Ser. A* **49** (1988), no. 1, 180–187. (O. D'Antona) **89i:05101** 05C10 (03G05, 05C35, 06E30, 68Q25)
- (with Bárány, I.) On the shape of the convex hull of random points. *Probab. Theory Related Fields* **77** (1988), no. 2, 231–240. (Pamela J. Davy) **89g:60030** 60D05 (52A22)
- (with Bárány, I.) Approximation of the sphere by polytopes having few vertices. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 651–659. (Peter M. Gruber) **89a:52030** 52A40 (52A22)
- (with Chung, F. R. K.; Garey, M. R.; Graham, R. L.) On the fractional covering number of hypergraphs. *SIAM J. Discrete Math.* **1** (1988), no. 1, 45–49. (W. H. Mills) **89e:05153** 05C70 (05C65)
- Furems, E. M.** (with Larichev, O. I.; Mechtov, A. I.; Moshkovich, E. M.) A method of expert classification for the formation of knowledge bases of diagnostic systems. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 5, 1086–1089; translated in *Soviet Phys. Dokl.* **33** (1988), no. 2, 98–100. (From the text) **89e:68111** 68T30 (90C31)
- Furi, Massimo** (with Pera, Maria Patrizia) A continuation method on locally convex spaces and applications to ordinary differential equations on noncompact intervals. *Ann. Polon. Math.* **47** (1987), no. 3, 331–346. (Jean Mawhin) **89d:47122** 47H10 (34B15, 34G20, 47H15)
- (with Cecchi, M.; Marini, M.) About asymptotic problems for ordinary differential equations. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **2** (1988), no. 2, 333–343. (V. B. Headley) **89d:34032** 34B15 (34B05, 47E05)
- Furino, S.** (with Vanstone, S. A.) Hyperplane skew resolutions in spaces of even dimension. *Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. 2* (Catania, 1986). *Ars Combin.* **24** (1987), B, 63–69. (Albrecht Beutelspacher) **89m:51017** 51E20 (05B25)
- Furian, G.** (with De Alfaro, V.; Fubini, S.) Quantisation, instantons and supersymmetry. *Quantum field theory and quantum statistics*, Vol. 1, 587–599, Hilger, Bristol, 1987. (Gheorghe Zet) **89h:81073** 81D07 (81E13, 81G05)



- (with De Alfaro, V.; Fubini, S.; Roncadelli, M.) Operator ordering and supersymmetry. *Nuclear Phys. B* **296** (1988), no. 2, 402–430. (Roger Picken) **89d:81049** 81D07 (81G20)
- (with De Alfaro, V.; Fubini, S.; Roncadelli, M.) Quantum spinning particle in a curved metric. *Phys. Lett. B* **200** (1988), no. 3, 323–326. (Summary) **89a:81083** 81E20
- see also *Spinors in physics and geometry*. **89j:53002**
- Furlan, P.** (with Budinich, P.; Dąbrowski, L.) Minimal surfaces and strings from spinors: a realization of the Cartan programme. (Italian summary) *Nuovo Cimento A* (11) **96** (1986), no. 2, 194–211. (Summary) **89b:53012** 53A10 (53A50, 81D27, 81E30)
- Furlong, Randall C.** Dynamical cosmic strings from a gauge theory of gravity. *Phys. Rev. D* (3) **38** (1988), no. 6, 1701–1705. (Gheorghe Zet) **89k:83082** 83F05 (81D15, 83E15)
- Furnell, Graham** Wave propagation in longitudinally curved waveguides. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 227–238, North-Holland, Amsterdam-New York, 1988. (Summary) **89d:78004** 78-08
- Furno, Marielena** Bounded-influence instrumental variables estimator: an extension. *Econom. Lett.* **25** (1987), no. 3, 239–242. (Summary) **89b:62219** 62P20
- Furustahl, R. J.** (with Serot, Brian D.) Lattice regularization of quantum partition functions. *Ann. Physics* **185** (1988), no. 1, 138–169. (Kornél Szlachányi) **89f:81143** 81E25 (81E15)
- Furrow, Stanley D.** Chemical oscillators based on iodate ion and hydrogen peroxide. (Russian) *Oscillations and traveling waves in chemical systems* (Russian), 193–216, "Mir", Moscow, 1988. (see **89f:92003**) 92A40
- Furs, S. N.** Computation of Aristotle's and Gergonne's syllogisms. *Studia Logica* **46** (1987), no. 3, 209–225. (Chris Brink) **89k:03112** 03G15 (03B20)
- Fursikov, A. V.** (with Vishik, M. I.) ★ *Mathematische Probleme der statistischen Hydromechanik*. (German) [Mathematical problems of statistical hydromechanics] Translated from the Russian by Bernd Krause. Mathematik und ihre Anwendungen in Physik und Technik [Mathematics and its Applications in Physics and Technology], 41. *Akademische Verlagsgesellschaft Geest & Portig K.-G., Leipzig*, 1986. 428 pp. ISBN 3-321-00000-8 (Editors) **89h:35271** 35Q10 (58D25, 76D05, 76D99)
- On the uniqueness of the solution of a chain of moment equations that correspond to a three-dimensional Navier-Stokes system. (Russian) *Mat. Sb. (N.S.)* **134**(176) (1987), no. 4, 472–495, 575; translated in *Math. USSR-Sb.* **62** (1989), no. 2, 465–490. (V. V. Kovrizhnik) **89f:35167** 35Q10 (76D05)
- Furst, Merrick L.** (with Gross, Jonathan L.; McGeoch, Lyle A.) Finding a maximum-genus graph imbedding. *J. Assoc. Comput. Mach.* **35** (1988), no. 3, 523–534. (Summary) **89i:68049** 68Q20 (05C10, 68Q25, 68R10)
- Furstenberg, H.** (with Weiss, Benjamin) Simultaneous Diophantine approximation and IP-sets. *Acta Arith.* **49** (1988), no. 4, 413–426. (Robert F. Tichy) **89f:11097** 11J71 (11J99)
- Furta, S. D.** On the asymptotic solutions of the equations of motion of mechanical systems. *J. Appl. Math. Mech.* **50** (1986), no. 6, 726–731 (1987); translated from *Prikl. Mat. Mekh.* **50** (1986), no. 6, 938–944 (Russian). (Silvio Nocilla) **89f:70029** 70K20 (70D10)
- Instability of the equilibrium states of nonnatural conservative systems. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 203–206, 326, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Vadim Komkov) **89f:70030** 70K20 (34D20, 70H35, 70K15)
- The instability of equilibrium of a gyroscopic system with two degrees of freedom. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 5, 100–101. (Summary) **89f:70031** 70K20
- Furter, J. E.** (with Eilbeck, J. C.; Grinfeld, Michael) On a stationary state characterization of transition from spinodal decomposition to nucleation behaviour in the Cahn-Hilliard model of phase separation. *Phys. Lett. A* **135** (1989), no. 4–5, 272–275. (Summary) **89k:80015** 80A20 (58E07)
- Furberg, Liv** (with Feder, Jens; Aharony, Amnon; Jessang, T.) Dynamics of invasion percolation. *Phys. Rev. Lett.* **61** (1988), no. 18, 2117–2120. (Summary) **89i:82050** 82A43
- Furugyan, M. G.** Cyclic processing of data in deterministic real-time systems. (Russian) *Some algorithms for the planning of computations in deterministic real-time systems* (Russian), 18–26, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1987. (see **89b:68058**) 68N25 (90B35)
- Furukawa, Koichi** see *Logic programming '87*. **89b:68137**
- Furukawa, Yoshihiro** On the ramified congruence relations of algebraic curves. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **34** (1987), no. 2, 245–269. (Thomas Zink) **89d:14021** 14E22 (11F85, 11G20)
- Furusawa, Masasaki** (with Tezuka, M.; Yagita, Nobuaki) On the cohomology of classifying spaces of torus bundles and automorphic forms. *J. London Math. Soc.* (2) **37** (1988), no. 3, 520–534. (Denis Sjerve) **89f:57060** 57T15 (11F12, 55R20, 55R40, 58D05)
- Furushima, Mikio** Complex analytic compactifications of  $C^1$ . *Proc. Japan Acad. Ser. A Math. Sci.* **64** (1988), no. 1, 25–26. (From the text) **89f:32052** 32J05
- Furuta, Hitoshi** (with Shiraishi, Naruhito; Ozaki, Yoshinobu) Application of fuzzy set theory to fatigue analysis of bridge structures. *Inform. Sci.* **45** (1988), no. 2, 175–184. (Summary) **89d:73047** 73M10 (03E72, 73K99)
- Furuta, K.** (with Yamakita, M.; Sato, Yoshiya) Computation of optimal control for linear systems with delay. *Internat. J. Control* **48** (1988), no. 2, 577–589. (Zbigniew Bartosiewicz) **89m:49052** 49D10 (34K35, 93C05, 93C25)
- Furuta, Mikio** Perturbation of moduli spaces of self-dual connections. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **34** (1987), no. 2, 275–297. (Ronald J. Stern) **89g:57019** 57N13 (32G13, 53C05, 58C15, 58D15, 58E15, 58G10)
- Euler number of moduli spaces of instantons. *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 7, 266–267. (Introduction) **89b:58041** 58D15 (32L05, 53C05, 57R19)
- Furuta, Takayuki**  $A \geq B \geq 0$  assures  $(B^p A^q)^{1/q} \geq B^{p+2r/q}$  for  $r \geq 0$ ,  $p \geq 0$ ,  $q \geq 1$  with  $(1+2r)q \geq p+2r$ . *Proc. Amer. Math. Soc.* **101** (1987), no. 1, 85–88. (Chandler Davis) **89b:47028** 47A60 (15A45, 47B15)
- $A \geq B \geq 0$  iff  $(B^p A^q)^{1/q} \geq B^{p+2r/q}$  for  $r \geq 0$ ,  $p \geq 0$ ,  $q \geq 1$  with  $(1+2r)q \geq p+2r$ . *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 1, 4–6. (Chandler Davis) **89b:47027** 47A60 (15A45, 47B15)
- (with Bach, Edward) Order preserving operator inequalities. *J. Operator Theory* **19** (1988), no. 2, 341–346. (T. Ando) **89c:47025** 47A60 (47B15)
- The operator equation  $T(H^{1/2}T)^2 = K$ . *Linear Algebra Appl.* **109** (1988), 149–152. (T. Ando) **89i:47028** 47A62 (47A60)
- Two mixed Hadamard type generalizations of Heinz inequality. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 91–96. (Lawrence Williams) **89c:47009** 47A05 (47A05)
- An inequality for some nonnormal operators. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1216–1217. (Summary) **89i:47011** 47A30 (47B20, 65J10)
- A proof via operator means of an order preserving inequality. *Linear Algebra Appl.* **113** (1989), 129–130. (From the text) **89c:47023** 47A60
- Furuta, Yoshiomi** Note on ramification of central extensions and Leopoldi's conjecture. *Sci. Rep. Kanazawa Univ.* **33** (1988), no. 1, 1–13. (Kiyoshi Nagata) **89m:11102** 11R27 (11R34, 11R37)
- Furutsu, Hiroto** On representations of Lie superalgebras. II. *Proc. Japan Acad. Ser. A Math. Sci.* **64** (1988), no. 5, 147–150. (From the text) **89m:17044** 17B70
- Furuya, Kyoko** (with Ozorio de Almeida, A. M.) Soliton energies in the standard map beyond the chaotic threshold. *J. Phys. A* **20** (1987), no. 18, 6211–6221. (Summary) **89a:82006** 82A05 (58F13, 82-04)
- Fusaoka, Akira** (with Seki, Hirohisa; Takahashi, Kazuko) A description and reasoning of plant controllers in temporal logic. *CC AI 3* (1986), no. 1–2, 103–120. (Summary) **89c:68105** 68T05 (03B45, 93C40)
- Fusco, Domenico** (with Bampi, Franco) Nonlinear wave analysis of a hyperbolic model for heat conduction. *Atti Sem. Mat. Fis. Univ. Modena* **36** (1988), no. 1, 197–209. (John Albert) **89k:35194** 35Q20 (35L60, 73B30, 80A20)
- (with Currò, C.) Reduction to linear canonical forms and generation of conservation laws for a class of quasilinear hyperbolic systems. *Internat. J. Non-Linear Mech.* **23** (1988), no. 1, 25–35. (Long Wei Lin) **89c:35092** 35L65
- Fusco, Giorgio** (with Zecca, V.) Applications of Newton's method to some numerical problems in matrix theory. *Calcolo* **23** (1986), no. 4, 285–303 (1987). (Külmiz Çevik) **89g:65040** 65F15
- Describing the flow on the attractor of one-dimensional reaction diffusion equations by systems of ODE. *Dynamics of infinite-dimensional systems* (Lisbon, 1986), 113–121, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 37, Springer, Berlin-New York, 1987. (Piotr Biler) **89c:35080** 35K55 (35B25, 58F12)
- (with Oliva, Waldyr Muniz) Jacobi matrices and transversality. *Dynamics of infinite-dimensional systems* (Lisbon, 1986), 249–255, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 37, Springer, Berlin-New York, 1987. (Dietrich Flockerzi) **89f:58077** 58F10 (34C35)
- (with Oliva, Waldyr Muniz) Jacobi matrices and transversality. *Proc. Roy. Soc. Edinburgh Ser. A* **109** (1988), no. 3–4, 231–243. (J. A. Martin) **89k:58229** 58F15 (34D30)
- see also *Advanced topics in the theory of dynamical systems*. **89k:58076**
- Fusco, Nicola** (with Moscarello, Gioconda) Further results on the homogenization of quasilinear operators. *Ricerche Mat.* **35** (1986), no. 2, 231–246. (Piero de Montoni) **89f:35048** 35F20 (35B25)
- (with Moscarello, Gioconda) On the homogenization of quasilinear divergence structure operators. *Ann. Mat. Pura Appl.* (4) **146** (1987), 1–13. (Piero de Montoni) **89a:35025** 35B25 (35J65)
- (with Acerbi, Emilio) An approximation lemma for  $W^{1,p}$  functions. *Material instabilities in continuum mechanics* (Edinburgh, 1985–1986), 1–5, *Oxford Sci. Publ.*, Oxford Univ. Press, New York, 1988. (W. P. Ziemer) **89m:46060** 46E35 (26B35)
- (with Fuchs, Martin) Partial regularity results for vector-valued functions which minimize certain functionals having nonquadratic growth under smooth side conditions. *J. Reine Angew. Math.* **390** (1988), 67–78. (Jean-Pierre Raymond) **89b:49005** 49A29
- Fushchich, V. I.** (with Barannik, L. F.; Barannik, A. F.) Continuous subgroups of the generalized Poincaré group  $P(1, n)$ . (Russian) *Group-theoretic methods in physics, Vol. 2* (Russian) (*Järmala*, 1985), 169–176, "Nauka", Moscow, 1986. (Editors) **89g:22030** 22E70
- (with Barannik, L. F.) Casimir operators for generalized Poincaré groups and the Galilei group. (Russian) *Group-theoretic methods in physics, Vol. 2* (Russian) (*Järmala*, 1985), 176–183, "Nauka", Moscow, 1986. (Editors) **89g:22027** 22E60 (81C40)
- (with Shtelen, V. M.; Zhdanov, R. Z.) Conformally invariant generalization of the Dirac-Heisenberg equation, and its exact solution. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (*Järmala*, 1985), 497–501, "Nauka", Moscow, 1986. (see **89d:81001**) 81D25
- (with Tsifra, I. M.) Conformally invariant nonlinear equations for an electromagnetic field. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (*Järmala*, 1985), 501–505, "Nauka", Moscow, 1986. (see **89d:81001**) 83C50 (78A25)
- (with Barannik, L. F.) Casimir operators of the generalised Poincaré and Galilei groups. *Group-theoretic methods in physics, Vol. II* (*Järmala*, 1985), 275–282, *VNU Sci. Press, Utrecht*, 1986. (M. K. F. Wong) **89e:22031** 22E60 (81C40)
- (with Barannik, L. F.; Barannik, A. F.) On the continuous subgroups of the generalised Poincaré group  $P(1, n)$ . *Group-theoretic methods in physics, Vol. I* (*Järmala*, 1985), 561–570, *VNU Sci. Press, Utrecht*, 1986. (Jules Beckers) **89e:22020** 22E43 (22E15, 81C40)
- (with Barannik, L. F.) Invariants of subgroups of the generalized Poincaré group  $P(1, n)$ . (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1986**, no. 86, 40 pp. (Summary) **89d:17003** 17B10 (15A72, 81C40)
- (with Barannik, A. F.) Continuous subgroups of pseudo-orthogonal and pseudo-unitary groups. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1986**, no. 87, 48 pp. (Summary) **89m:17006** 17B05
- How can one extend the symmetry of differential equations? (Russian) *Symmetry and solutions of nonlinear equations of mathematical physics* (Russian), 4–16, i, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (J. Chrastina) **89f:58141** 58G35 (35A30, 35Q20)
- (with Zhdanov, R. Z.) A generalization of the method of the separation of variables for linear systems of differential equations. (Russian) *Symmetry and solutions of nonlinear equations of mathematical physics* (Russian), 17–22, i, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) **89f:35014** 35A25 (35C99, 58G35)
- (with Barannik, L. F.) Continuous subgroups of generalized Schrödinger groups. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 16, 48 pp. (Summary) **89e:22036** 22E70 (17B10, 58G35)
- (with Krivskii, I. Yu.; Simulik, V. M.) Vector Lagrangians for an electromagnetic and a spinor field. (Russian. English summary) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 54, 39 pp. (Summary) **89f:78008** 78A25
- (with Barannik, L. F.) Continuous subgroups of the conformal group in the Minkowski space  $R_{1,n}$ . (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1988**, no. 34, 48 pp. (Summary) **89j:22010** 22E05 (22E70, 35Q20)

- (with Galitsyn, A. S.; Polubinski, A. S.) A new mathematical model of diffusion processes with finite rate. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 8, 22–27, 86. (Summary) **89h:35141** 35K10 (80A20)
- (with Zhdanov, R. Z.) On the reduction and some new exact solutions of the nonlinear Dirac and Dirac-Klein-Gordon equations. *J. Phys. A* 21 (1988), no. 1, L5–L9. (Woodford W. Zachary) **89j:81026** 81C05 (35Q20, 81E99)
- (with Zhdanov, R. Z.) Nonlocal ansätze for the Dirac equation. *J. Phys. A* 21 (1988), no. 23, L1117–L1121. (Jules Beckers) **89m:81075** 81D25 (35Q20, 58G35)
- (with Egorchenko, I. A.) Symmetric properties of complex-valued nonlinear wave equations. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 2, 347–351; translated in *Soviet Phys. Dokl.* 33 (1988), no. 1, 36–38. (Tie Hu Qin) **89h:35212** 35L70 (58G35)
- (with Barannik, L. F.; Lagno, V. I.) Subalgebras of the Poincaré algebra  $AP(2, 3)$  and the symmetry reduction of the nonlinear ultrahyperbolic d'Alembert equation. I. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 4, 411–416, 542; translated in *Ukrainian Math. J.* 40 (1988), no. 4, 351–356. (A. J. Coleman) **89k:58300** 58G35 (35A30, 35C99, 35L25)
- see also *Symmetry and solutions of nonlinear equations of mathematical physics*, **89b:00018**
- Fushimi, Masanori** Designing a uniform random number generator whose subsequences are  $k$ -distributed. *SIAM J. Comput.* 17 (1988), no. 1, 89–99. (P. Neumann) **89b:65021** 65C10 (90C09)
- Füster, Amparo** (with Guillen, J. M.) Questions of controllability and observability for nonuniformly sampled discrete systems. *Proc. IEEE-D* 135 (1988), no. 4, 248–252. (Not in MR) **93B05** (93B07, 93C55)
- An extended linear model for nonuniformly sampled systems. (Spanish) *Rev. Inform. Automat.* 21 (1988), no. 4, 24–29. (Not in MR) **93B30** (93C05)
- Illorens Fuster, E.** see **Llorens Fuster, E.**
- romero Fuster, M. C.** see **Romero Fuster, M. C.**
- Fuster Capilla, Robert** Duality of infinite-dimensional subspaces in an indefinite inner product space. *Publ. Sec. Mat. Univ. Autònoma Barcelona* 30 (1986), no. 1, 97–102. (T. Ya. Azizov) **89e:46024** 46D05
- Füster Sabater, Amparo** see **Füster, Amparo**
- Futák, Ján** Asymptotic formulas for solutions of functional-differential equations. (Russian and Czech summaries) *Acta Univ. Palack. Olomuc. Fac. Rerum Natur. Math.* 25 (1986), 181–192 (1987). (M. Švec) **89c:34055** 34E10 (34K25)
- On boundedness and stability of solutions of nonlinear second order differential equations in Hilbert spaces. *Arch. Math. (Brno)* 23 (1987), no. 3, 147–154. (Jian Hong Wu) **89d:34102** 34G20 (34C11, 34D20)
- Futami, Ryoko** (with Hoshimiya, Nozomu) A neural network model based on short-term memories for the hierarchical recognition of temporal patterns. *Systems Comput. Japan* 19 (1988), no. 2, 102–109. (Not in MR) **92A09**
- Futorny, V. M.** On two constructions of representations of affine Lie algebras. (Russian) *Application of methods of functional analysis in problems of mathematical physics* (Russian), 86–88, iii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Vladimir K. Dobrev) **89k:17041** 17B67
- On a construction of irreducible representations of semisimple Lie algebras. (Russian) *Funktsional. Anal. i Prilozhen.* 21 (1987), no. 2, 92–93. (S. I. Gel'fand) **89a:17009** 17B10
- Füzessy, Z.** (with Gyimesi, F.) Difference holographic interferometry: theory. *J. Modern Opt.* 35 (1988), no. 10, 1699–1716. (Summary) **89k:78028** 78A55
- Fymat, A. L.** (with Greenfield, M. A.; Lo, S. C.; Findley, D.) Optimization of the radiotherapy treatment plan. *Appl. Math. Comput.* 27 (1988), no. 2, 117–146. (Summary) **89d:92012** 92A07
- Fyodorov, S. I.** A numerical algorithm for solving problems of geometrically nonlinear elasticity for incompressible media. (Russian) *Applied problems in mathematical physics* (Russian), 145–152, *Latv. Gos. Univ., Riga*, 1988. (see **89f:00005**) 73–08 (65N99, 73C50)

## -G-

de abreu G., José see **de Abreu G., José**

trigueros G., María see **Trigueros G., María**

**Gadál, István** Integral elements with given discriminant. *XVI. Steiermärkisches mathematisches Symposium (Stift Rein/Graz, 1986)*, 1–12, *Ber. Math.-Statist. Sect. Forschungsgesellschaft. Joanneum*, 272, *Forschungszentrum Graz, Graz*, 1986. (Richard T. Bumby) **89c:11169** 11R58 (11J87)

— Integral elements with given discriminant over function fields. *Acta Math. Hungar.* 52 (1988), no. 1–2, 133–146. (H.-G. Rück) **89k:11104** 11R29

— On the resolution of inhomogeneous norm form equations in two dominating variables. *Math. Comp.* 51 (1988), no. 183, 359–373. (T. N. Shorey) **89m:11030** 11D57

**Gauze-Rapoport, M. G.** (with Pospelov, D. A.) ★ От amoeba до робота: модели поведения. (Russian) [From amoeba to robot: models of behavior] Проблемы Науки и Технического Прогресса. [Problems of Science and Technological Progress] "Nauka", Moscow, 1987, 285 pp. (A. Rapoport) **89f:92065** 92A25

**Gabal, David** (with Kazee, William H.) The classification of maps of surfaces. *Invent. Math.* 90 (1987), no. 2, 219–242. (Hugh M. Hilden) **89a:57002** 57M12

— Foliations and the topology of 3-manifolds. II. *J. Differential Geom.* 26 (1987), no. 3, 461–478. (Jean-Pierre Otal) **89a:57014a** 57N10 (57R30)

— Foliations and the topology of 3-manifolds. III. *J. Differential Geom.* 26 (1987), no. 3, 479–536. (Jean-Pierre Otal) **89a:57014b** 57N10 (57R30)

— (with Kazee, William H.) The classification of maps of nonorientable surfaces. *Math. Ann.* 281 (1988), no. 4, 687–702. (Allan Edmonds) **89j:57001** 57M12

**Gabarró, J.** (with Balcázar, José L.; Diaz, Josep) On characterizations of the class PSPACE/poly. *Theoret. Comput. Sci.* 52 (1987), no. 3, 251–267. (G. Wechsung) **89c:68034** 68Q15 (03D15)

**Gabov, R.** (with Kirillova, F. M.; Kostyukova, O. I.; Raketskii, V. M.) ★ Конструктивные методы оптимизации. Часть 4. (Russian) [Constructive methods of optimization. Part 4] Выпуклые задачи. [Convex problems] "Universitet-skoe", Minsk, 1987, 224 pp. (W. Breckner) **89i:49023** 49D40 (49D30, 49D45, 90C25)

— (with Kostyukova, O. I.; Kruchenko, Yu. L.) Optimization of a linear dynamical system with nonlinear input. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 31 (1987), no. 12, 1069–1072, 1149. (Nguyen Dong Yen) **89h:49002** 49A10 (49B10, 93B40)

— (with Kirillova, F. M.; Nguen Chan) An approach to the solution of an optimal control problem with trajectory retention for a linear system with delay. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1987, no. 3, 3–9, 123. (Alfredo Gómez) **89b:34171** 34K35 (49A55, 49D35, 93C05)

— (with Medvedev, V. G.) An algorithm for solving a two-stage linear stochastic programming problem with several random parameters. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 32 (1988), no. 1, 13–16, 92. (Summary) **89b:90155** 90C15

**Gabbasov, F. G.** A multidimensional limit theorem for the sums  $\sum f(r^2)$ . (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 9, 26–35, 82. (Eugenius Manstavičius) **89b:60054** 60F05 (60B12)

**Gabbasov, M. B.** The problem of nonequilibrium reverse capillary impregnation. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1988, vyp. 4, 93–94, 115. (Summary) **89m:45015** 45K05 (76S05, 76T05)

**Gabbasov, N. S.** On the approximate solution of a Fredholm integral equation of the first kind in a space of generalized functions. (Russian) *Analytical methods in the theory of differential and integral equations* (Russian), 24–28, *Kuibyshev. Gos. Univ., Kuibyshev*, 1987. (see **89c:00005**) 45B05 (45L05, 46F10)

**Gabdullin, R. R.** (with Shatov, A. K.) Diffraction of acoustic waves by a half-plane that is parallel to the free surface of a compressible stratified fluid. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* 28 (1987), no. 6, 46–52, 87. (Summary) **89e:76071** 76Q05

— (with Shatov, A. K.) Diffraction of internal waves by a half plane that is parallel to the free surface of a fluid. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 9, 1428–1433, 1440. (Summary) **89a:76053** 76V05 (86A05)

— Diffraction of plane waves in a compressible stratified fluid by a strip of finite width. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 11, 1701–1708, 1759. (Summary) **89d:35038** 35J05 (76V05)

**marjanović-Gabela, N.** see **Marjanović-Gabela, N.**

**Gabelaya, A. G.** A frequency criterion for the stabilizability of linear autonomous systems with incomplete information. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 127 (1987), no. 3, 493–496. (From the text) **89k:93160** 93D10 (93C05, 93D99)

**Gabizade, A. Sh.** On an operator equation. (Russian) *Linear operators and their applications* (Russian), 23–25, *Azerbaidzhan. Gos. Univ., Baku*, 1986. (Editors) **89h:47098** 47H15

— see also *Approximation by generalized analytic and spherical functions*, **89b:41001** and *Linear operators and their applications*, **89c:00016**

**Gabizade, S. A.** A linear loaded problem. (Russian) *Approximation by generalized analytic and spherical functions* (Russian), 127–132, *Azerbaidzhan. Gos. Univ., Baku*, 1983. (see **89b:41001**) 31A25

— On a linearly loaded problem. (Russian) *Linear operators and their applications* (Russian), 26–32, *Azerbaidzhan. Gos. Univ., Baku*, 1986. (B. P. Belinskii) **89m:73010** 73C03 (35J40, 45B05)

**Gabidullina, Z. R.** On the convergence of the conditional gradient method for a class of nonconvex functions. (Russian) *Issled. Prikl. Mat.* No. 14 (1987), 15–25. (Rolf Klötzler) **89f:90137** 90C30 (49D07)

**Gabidzashvili, M. A.** Two-weight inequalities for fractional maximal functions. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruz. SSR* 86 (1987), 3–15. (A. A. Martynyuk) **89e:26034** 26D15 (42B25, 46E35)

**Gabisoniya, G. V.** (with Saradzishvili, Ts. I.; Kutkhashvili, K. V.) A schedule planning problem with vector quality indices. (Russian. English summary) *Trudy Inst. Sistem Upravleniya Akad. Nauk Gruz. SSR* 25 (1987), no. 1, 156–162. (Not in MR) **90B35**

**Gabisoniya, V. E.** (with Maisuradze, V. G.) A finite algorithm for the calculation of equilibrium states in a bimatrix game. (Russian. English summary) *Trudy Inst. Sistem Upravleniya Akad. Nauk Gruz. SSR* 25 (1987), no. 1, 110–129. (Quan Zheng) **89d:90247** 90D05 (90D10)

— (with Avalishvili, N. M.) A problem of the control of a complex of operations. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 129 (1988), no. 1, 49–52. (Not in MR) **93A15** (49B10)

**Gabler, S.** (with Wolff, Christian) A quick and easy approximation to the distribution of a sum of weighted chi-square variables. *Statist. Hefte* 28 (1987), no. 4, 317–325. (Summary) **89k:65167** 65U05 (62D05)

— A conditional minimax approach in survey sampling. *Metrika* 35 (1988), no. 3–4, 211–221. (Victor K. T. Tang) **89i:62018** 62D05 (62C20)

**Gabor, Andrzej** Nonlinear orthogonal filters. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 339–350, *North-Holland, Amsterdam-New York*, 1986. (see **89b:93010**) 93E11 (93E10)

**Gabov, S. A.** A problem in the hydrodynamics of an ideal fluid that is connected with flotation. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 1, 16–21, 180; translated in *Differential Equations* 24 (1988), no. 1, 12–15. (Summary) **89h:35287** 35Q20 (76B15, 76B99)

— (with Orazov, B. B.; Sveshnikov, A. G.) Nonstationary oscillations of a vertical column of a stratified fluid and their stabilization. (Russian) *Dokl. Akad. Nauk SSSR* 295 (1987), no. 5, 1041–1045; translated in *Soviet Math. Dokl.* 36 (1988), no. 1, 151–155. (V. G. Samoilenko) **89h:76043** 76V05 (35Q20)

— A method for the reduction and investigation of equations of the dynamics of a stratified fluid. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 3, 525–529; translated in *Soviet Math. Dokl.* 37 (1988), no. 3, 674–677. (V. G. Samoilenko) **89h:76044** 76V05

— (with Pletner, Yu. D.) On a problem of the oscillations of a plane disk in a stratified fluid. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 1, 63–71, 157; translated in *U.S.S.R. Comput. Math. and Math. Phys.* 28 (1988), no. 1, 41–47. (S. S. Titov) **89k:76098** 76V05

— On the theory of internal waves in the presence of a free surface. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 3, 335–345, 477. (Summary) **89e:76029** 76B15 (35R35, 76V05)

— (with Tverskoi, M. B.) On a problem of the flow of a stratified fluid around obstacles. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 4, 608–613, 624. (Summary) **89e:76110** 76V05 (76B99)



- (with Tverskoi, M. B.) A study of linear equations of the dynamics of a compressible stratified fluid. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 12, 1832–1842, 1919. (Summary) **89i:35117** 35Q20 (76N10, 76V05)
- Gabow, Harold N.** (with Tarjan, Robert E.) A linear-time algorithm for finding a minimum spanning pseudoforest. *Inform. Process. Lett.* **27** (1988), no. 5, 259–263. (Norbert Blum) **89e:68047** 68Q25 (05C05, 68R10)
- (with Tarjan, Robert E.) Algorithms for two bottleneck optimization problems. *J. Algorithms* **9** (1988), no. 3, 411–417. (Summary) **89h:90185** 90C27 (05C99, 68R10)
- Scheduling UET systems on two uniform processors and length two pipelines. *SIAM J. Comput.* **17** (1988), no. 4, 810–829. (Mark R. Jerrum) **89j:68059** 68Q20 (68N25, 90B35)
- Gahr, M. M.** (with Subba Rao, T.) The estimation of the bispectral density function and the detection of periodicities in a signal. *J. Multivariate Anal.* **27** (1988), no. 2, 457–477. (Not in MR) **62M10**
- On the third-order moment structure and bispectral analysis of some bilinear time series. *J. Time Ser. Anal.* **9** (1988), no. 1, 11–20. (Theo Gasser) **89e:62118** 62M10 (62M15)
- Gabriel, Gottfried** see Frege, Gottlieb, **89g:01068**
- Gabriel, Marcus D.** (with Haugan, Mark P.; Zhou, Ziyi) Gravitational light deflection and the dragging of inertial frames. *Phys. Rev. D* **37** (1988), no. 10, 2699–2702. (Summary) **89c:83027** 83C25 (83C10)
- Gabriel, Patrick** (with Friedman, N.; King, Jonathan L.) An invariant for rigid rank-1 transformations. *Ergodic Theory Dynamical Systems* **8** (1988), no. 1, 53–72. (Nathaniel F. G. Martin) **89e:28028** 28D05
- Gabriel, Peter** Darstellungen endlichdimensionaler Algebren. (English and Russian summaries) [Representations of finite-dimensional algebras] *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 378–388, *Amer. Math. Soc., Providence, RI*, 1987. (Dieter Happel) **89f:16024** 16A46 (16A64)
- (with Nazarov, L. A.; Roiter, A. V.) Representations indecomposables: an algorithm. (English summary) [Indecomposable representations: an algorithm] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 13, 701–706. (Summary) **89m:16035** 16A46 (06A10, 16A64)
- see also Biography: Gabriel, Peter, **89i:01116**
- Gabriel, Pripose** see Pripose, Gabriel
- Gabriel, W.** (with van den Bosch, F.; de Roos, André Marc) Cannibalism as a life boat mechanism. *J. Math. Biol.* **26** (1988), no. 6, 619–633. (L. E. Bobisud) **89j:92035** 92A15 (92A12)
- Gabrielyan, M. S.** Minimax aiming in a properly linear system with  $m$  objective sets. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1984**, no. 1(155), 36–45. (Not in MR) **90D26** (49A40, 49A45)
- Stable sets in differential games with  $m$  objective sets with variable dynamics. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1985**, no. 2(159), 3–9. (Not in MR) **90D25** (49A45)
- (with Shaginyan, S. G.) The construction of a Lyapunov function. (Russian. English and Armenian summaries) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1987**, no. 1(164), 39–45. (Alexander Kanevskii) **89h:34117** 34D20 (34D99)
- (with Sarkisyan, V. S.; Yusif, Yu. Dz.) Optimal stabilization of an orthotropic rectangular plate. (Russian. English and Armenian summaries) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1987**, no. 3(166), 37–42 (1988). (Summary) **89d:73033** 73K12 (73K40, 93D15)
- Gabrielyan, O. A.** ★ Математическое познание. (Russian) [Mathematical knowledge] Дialeктика объективного и субъективного. [Dialectics of the objective and the subjective] *Akad. Nauk Armyan. SSR, Erevan*, 1987. 143 pp. (Roman Murawski) **89g:00021** 00A25
- Gabuslin, V. N.** Inequalities for derivatives of solutions of ordinary differential equations in the metric of  $L_p$  ( $0 < p \leq \infty$ ). (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 10, 1662–1670, 1835; translated in *Differential Equations* **24** (1988), no. 10, 1088–1094. (L. Hatvani) **89m:34017** 34A40 (47E05)
- Gabutti, B.** (with Lepora, Paolo) An algorithm for the summation of series. *Appl. Numer. Math.* **3** (1987), no. 6, 523–528. (John Todd) **89c:65011** 65B10
- (with Chiochia, G.) A new transformation for computing hypergeometric series and the exact evaluation of the transonic adiabatic flow over a smooth bump. Special issue in honour of Gino Moretti on the occasion of his 70th birthday (Farmingdale, NY, 1987). *Comput. & Fluids* **17** (1989), no. 1, 13–23. (Summary) **89f:76003** 76-08 (33A30, 65D20, 76G05, 76H05)
- Gabyshva, L. N.** (with Kanibolot-skii, M. A.) Optimization of the mass of a layered spherical shell made up of a finite collection of materials. (Russian) *General problems and methods for the investigation of the plasticity and viscoelasticity of materials and structures* (Russian), 29–35, 130, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1986. (Summary) **89h:49020** 49B36 (73K20, 73K40, 73L99, 93C75)
- Gachechiladze, R. I.** (with Maisaia, O. I.) The quasireversibility method for contact problems of elasticity theory. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* **126** (1987), no. 3, 497–500. (Summary) **89g:73043** 73T05 (35J99, 73B25, 73C35)
- (with Maisaia, O. I.) Investigation of ill-posed problems in the classical and the moment theory of elasticity. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruzin. SSR* **87** (1987), 114–125. (A. S. Alekseev) **89f:35194** 35R25 (73C05)
- Gachev, G. D.** The English world-view and Newton's *Mechanics*. (Russian) *Voprosy Istor. Estestvozn. i Tekhn.* **1987**, no. 4, 67–73. (Peeter Müürsepp) **89d:01030** 01A50
- Gachinskii, E. E.** (with Cherkashin, M. Yu.) A system of continuous search optimization with identification. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 2, 47–56; translated in *Automat. Remote Control* **49** (1988), no. 2, part 1, 157–164. (Yu. A. Nikolaev) **89e:93065** 93B30 (93B35, 93C40)
- Gachok, V. P.** (with Yakymiv, Ya. M.) Strange attractors in the dynamical system of glycolysis with regulations. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 5, 1095–1099; translated in *Soviet Phys. Dokl.* **33** (1988), no. 6, 415–417. (From the text) **89j:92016** 92A09 (58F13)
- Gackstatter, Fritz** Über Volumendefekte und Krümmung bei der Robertson-Walker-Metrik und Konstruktion kosmologischer Modelle. (English summary) [On defects of the volume and curvature of the Robertson-Walker metric and construction of cosmological models] *Ann. Physik* **7** **44** (1987), no. 6, 423–439. (A. H. Taub) **89h:83021** 83C15 (83C20)
- Gacs, Péter** (with Reif, John H.) A simple three-dimensional real-time reliable cellular array. 17th Annual ACM Symposium on the Theory of Computing (Providence, RI, 1985). *J. Comput. System Sci.* **36** (1988), no. 2, 125–147. (Karel Culik II) **89m:68102** 68Q80
- Gadbois, Steve** Mixed-norm generalizations of Bergman spaces and duality. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1171–1180. (Barbara D. Mac Cluer) **89m:46041** 46E15
- Gades, P. M.** (with Reyes, E.; Montesinos Amilibia, Angel) Connections partially adapted to a metric ( $J^k = 1$ )-structure. *Colloq. Math.* **54** (1987), no. 2, 215–229. (Ion Mihai) **89m:53049** 53C05 (53C15)
- Gadella, M.** (with Nieto, L. M.; Noriega, J. M.; Santos, Emilio) The generalized Weyl correspondence and time-dependent stochastic processes. *J. Math. Phys.* **28** (1987), no. 12, 2961–2972. (Philip J. Feinsilver) **89d:81050** 81D07 (81C20)
- Gader, Paul D.** Tridiagonal factorizations of Fourier matrices and applications to parallel computations of discrete Fourier transforms. *Linear Algebra Appl.* **102** (1988), 169–209. (Harald E. Krogstad) **89f:65151** 65T05 (65W05)
- Gadh, R.** (with Pope, S. B.) Fitting noisy data using cross-validated cubic smoothing splines. *Comm. Statist. Simulation Comput.* **17** (1988), no. 2, 349–376. (Summary) **89e:62062** 62-04 (62G05)
- Gadla, S. K.** (with Miller, Leslie L.; Kothari, S.; Liu, Ken Chih) Completeness issues for join dependencies derived from the universal relation join dependency. *Inform. Process. Lett.* **28** (1988), no. 5, 269–274. (Summary) **89j:68029** 68P15
- Gadliger, Radu** A uniqueness condition for the Ando dilation. *Stud. Cerc. Mat.* **39** (1987), no. 4, 352–357. (Michal Zając) **89c:47008** 47A20
- Gado, G. A.** (with Hosni, A. K.) Mean integrated square error of a recursive estimators [estimator] of a probability density. *Proc. Pakistan Acad. Sci.* **25** (1988), no. 1, 43–52. (Lesław Gajek) **89m:62037** 62G05
- Gadoev, M.** Convergence of the particle method for a three-dimensional system of Vlasov equations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 1, 112–118, 158; translated in *U.S.S.R. Comput. Math. and Math. Phys.* **28** (1988), no. 1, 74–79. (M. Drăganu) **89d:82050** 82A45 (35Q20, 76W05)
- Gadzhiev, A. A.** (with Dzhabbarzade, R. M.) Spectral decomposition for a two-parameter system of operators. (Russian) *Spectral theory of operators and its applications*, No. 8 (Russian), 72–78, “*Elm*”, Baku, 1987. (S. N. Krachkovskii) **89g:47023** 47A70
- Gadzhiev, A. D.** (with Ibragimov, I. I.) Rate of convergence of singular integrals of I. I. Privalov type in the complex domain [Reviewed in *RZhMat* 1978:3 B87]. (Russian) *Special problems in function theory* (Russian), 46–57, “*Elm*”, Baku, 1977. (see **89f:30003**) **30E20**
- (with Ibragimov, I. I.) A general sequence of positive linear operators in a space of continuous functions [Reviewed in *RZhMat* 1978:5 B62]. (Russian) *Special problems in function theory* (Russian), 58–71, “*Elm*”, Baku, 1977. (see **89f:30003**) **41A36**
- Linear operators in problems connected with the orthogonalization of multidimensional exponentials [Reviewed in *RZhMat* 1982:11 B116]. (Russian) *Special problems in function theory*, No. 2 (Russian), 31–50, “*Elm*”, Baku, 1980. (see **89f:30004**) **42C05**
- Gadzhiev, G. A.** (with Kuliev, N. G.) Approximation of functions of several variables by eigenfunctions of multiparameter spectral problems. (Russian) *Approximation by generalized analytic and spherical functions* (Russian), 93–100, *Azerbaidzhan. Gos. Univ., Baku*, 1983. (see **89b:41001**) **41A30** (34B25)
- Gaede, Karl-Walter** see Contributions to applied mathematics and statistics, **89i:00018**
- Gaertner, Wolf** (with Jungeilges, Jochen) A nonlinear model of interdependent consumer behaviour. *Econom. Lett.* **27** (1988), no. 2, 145–150. (Summary) **89h:90018** 90A07 (58F14)
- (with Pattanaik, Prasanta K.) An interview with Amartya Sen. *Soc. Choice Welf.* **5** (1988), no. 1, 69–79. (J. J. Buckley) **89b:01043** 01A70 (90A08)
- Gaeta, R.** Transitivity and gradient property for real group representations. (Italian and Russian summaries) *Nuovo Cimento B* **11** **99** (1987), no. 1, 61–66. (M. K. F. Wong) **89a:22020** 22E45 (22E70)
- (with Cicogna, G.) A Hopf bifurcation breaking rotation symmetry. *J. Phys. A* **21** (1988), no. 18, L875–L878. (From the text) **89j:58090** 58F14 (34C25, 58F35)
- Gaeta, Sergio** (with Manasevich, Raul F.) Existence of a pair of periodic solutions of an O.D.E. generalizing a problem in nonlinear elasticity, via variational methods. *J. Math. Anal. Appl.* **134** (1988), no. 2, 257–271. (Rouben Rostamian) **89k:34059** 34C25 (58E30, 73C50, 73L15)
- Gaeva, E. A.** (with Kolomiets, V. G.) Asymptotic solutions of nonlinear integro-partial differential equations. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1988**, no. 41, 67 pp. (Summary) **89j:45008** 45K05 (35C20, 73F15, 78A25)
- Gafarian, A. V.** (with Ancker, C. J., Jr.) Erratum: “The validity of assumptions underlying current uses of Lancaster attrition rates” [*Naval Res. Logist.* **34** (1987), no. 4, 505–533; MR **88f:90216**]. *Naval Res. Logist.* **35** (1988), no. 5, 534. (Editors) **89h:90281** 90D35
- Gafarov, I. A.** A conditionally well-posed Cauchy problem. (Russian) *Questions of well-posedness and methods for the investigation of inverse problems* (Russian), 58–63, 159, *Akad. Nauk SSSR Sibsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1986. (S. Raczynski) **89f:34087** 34G10 (34A10)
- Gaffet, B.** (with Carter, Brandon) Standard covariant formulation for perfect-fluid dynamics. *J. Fluid Mech.* **186** (1988), 1–24. (Summary) **89c:76127** 76Y05
- Common structure of several completely integrable nonlinear equations. *J. Phys. A* **21** (1988), no. 11, 2491–2531. (B. G. Konoplechenko) **89j:58116** 58F35 (35A30, 35Q20, 58F07, 58G35)
- Gaffney, P.** When things go wrong. . . . *Numerical analysis 1987* (Dundee, 1987), 67–114, *Pitman Res. Notes Math. Ser.*, 170, *Longman Sci. Tech., Harlow*, 1988. (see **89b:65011**) **65-04**
- Gafni, Eli** (with Marberg, John M.) Distributed sorting algorithms for multichannel broadcast networks. *Theoret. Comput. Sci.* **52** (1987), no. 3, 193–203. (H. N. Djidjev) **89c:68021** 68P10
- (with Marberg, John M.) Sorting in constant number of row and column phases on a mesh. *Algorithmica* **3** (1988), no. 4, 561–572. (Andrzej Pelc) **89i:68015** 68P10 (68Q25, 68Q30)
- Gaforov, A.** The saturation class and saturation order of a linear method for the summation of Fourier series. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **30** (1987), no. 1, 3–7. (T. I. Akhobadze) **89d:42012** 42A24 (41A40)
- Gaft, M. G.** Choice by relation. *Soviet J. Comput. Systems Sci.* **25** (1987), no. 3, 178–185; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 1, 192–199, 224 (Russian). (Summary) **89g:90015** 90A08

- Gafurov, M. U.** (with Kholmuradov, M. K.) Convergence of series of probabilities of large deviations for sums of random variables with multidimensional indices. (Russian) *Probability distributions and mathematical statistics (Russian) (Fergana, 1983)*, 114-131, 490, "Fan", Tashkent, 1986. (Thomas Mikosch) **89g:60094** 60F10
- (with Khamdamov, I. M.) The role of extreme order statistics in the formation of a large deviation of sums of independent random variables. (Russian) *Asymptotic methods in mathematical statistics (Russian)*, 38-46, 159, "Fan", Tashkent, 1987. (S. A. Book) **89b:60069** 60F10 (62G30)
- (with Slastnikov, A. D.) Some problems on the exit of a random walk from a curvilinear boundary, and large deviations. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 2, 327-348. (N. H. Bingham) **89a:60161** 60J15 (60F10)
- (with Sirazhdinov, S. Kh.) Asymptotics of the mean of a functional of a random walk. *Probability theory and mathematical statistics (Kyoto, 1986)*, 474-481, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (Allan Gut) **89d:60126** 60J15 (60G50)
- (with Sarymsakova, Kh. K.; Slastnikov, A. D.) Inequalities for series with probabilities of large deviations and their application. (Russian) *Dokl. Akad. Nauk UzSSR* **1988**, no. 3, 3-5. (S. A. Book) **89g:60095** 60F10 (60F05, 60F15)
- Gafurov, N.** The mean value of an arithmetic function. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **30** (1987), no. 4, 202-206. (Eckehard Krätzel) **89d:11076** 11N25
- Gaganov, A. A.** Parallel calculation of arithmetic expressions with one-place functions. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **174** (1988), *Teor. Slozhn. Vychisl.* **3**, 37-52, 180. (Summary) **89i:68050** 68Q20
- Gage, Michael** (with Epstein, C. L.) The curve shortening flow. *Wave motion: theory, modelling, and computation (Berkeley, Calif., 1986)*, 15-59, *Math. Sci. Res. Inst. Publ.*, 7, Springer, New York-Berlin, 1987. (R. Osserman) **89f:58128** 58G11 (53A04)
- Gagliardi, Carlo** (with Ferri, Massimo) Multiple residues in dimension three. *J. Combin. Theory Ser. B* **44** (1988), no. 3, 263-275. (Mario Pezzana) **89b:57003** 57M15 (05C15, 57N10)
- Gagliardo, Emilio** Musical styles guided by mathematical generalizations of tonality. (Italian. English summary) *Rend. Sem. Mat. Fis. Milano* **56** (1986), 39-49 (1988). (Editors) **89k:00001** 00A05 (11T99)
- Gagneux, Gérard** (with Lefevre, Anne-Marie; Madaune-Tort, Monique) Une approche analytique d'un modèle black oil des écoulements triphasiques compressibles en ingénierie pétrolière. (English summary) [An analytic approach to a black-oil model for three-phase compressible flows in petroleum engineering] *J. Méc. Théor. Appl.* **6** (1987), no. 4, 547-569. (Alberto Valli) **89c:76106** 76T05 (76N10, 76S05)
- Gagnidze, A. G.** Uniqueness of solutions of boundary value problems for parabolic equations and systems. (Russian) *Current problems in mathematical physics, Vol. I (Russian) (Tbilisi, 1987)*, 159-165, 478, *Tbilisi. Gos. Univ., Tbilisi*, 1987. (see **89j:00030**) 35K35
- Gagnon, L.** (with Hussin, V.; Winternitz, P.) Nonlinear equations with superposition formulas and exceptional group  $G_2$ . III. The superposition formulas. *J. Math. Phys.* **29** (1988), no. 10, 2145-2155. (Summary) **89j:58117** 58F35 (17B25, 22E05, 22E60, 34A34)
- (with Winternitz, P.) Lie symmetries of a generalised nonlinear Schrödinger equation. I. The symmetry group and its subgroups. *J. Phys. A* **21** (1988), no. 7, 1493-1511. (W. F. Ames) **89g:58220** 58G35 (34A34, 35A30, 35Q20, 58G37)
- (with Winternitz, P.) Exact solutions of the spherical quintic nonlinear Schrödinger equation. *Phys. Lett. A* **134** (1989), no. 5, 276-281. (Summary) **89k:35207** 35Q20 (58G30)
- (with Winternitz, P.) Exact solutions of the cubic and quintic nonlinear Schrödinger equation for a cylindrical geometry. *Phys. Rev. A* (3) **39** (1989), no. 1, 296-306. (Summary) **89m:35190** 35Q20 (58G35, 81C05)
- Gagnon, René** (with Ali, S. Twareque; Brooke, James; Busch, Paul; Schroeck, Franklin E., Jr.) Current conservation as a geometric property of space-time. (French summary) *Canad. J. Phys.* **66** (1988), no. 3, 238-244. (R. M. Kadobayans'kii) **89j:81043** 81C20
- Gähler, S.** Discrete convergence and applications to integral equations on the half line. *General topology and its relations to modern analysis and algebra, VI (Prague, 1986)*, 203-210, *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (G. F. Miller) **89b:65219** 65R20 (45L05, 54A20, 65J05)
- Gähler, Werner** (with Eklund, Patrik) Basic notions for fuzzy topology. I. *Fuzzy Sets and Systems* **26** (1988), no. 3, 333-356. (Zi Xiao Wang) **89g:54014** 54A40 (03E72)
- (with Eklund, Patrik) Basic notions for fuzzy topology. II. *Fuzzy Sets and Systems* **27** (1988), no. 2, 171-195. (J. Hüster) **89j:54005** 54A40 (03E72)
- Gaida, R. P.** (with Klyuchkovskii, Yu. B.; Tretyak, V. I.) Three-dimensional Lagrangian approach to the classical relativistic dynamics of directly interacting particles. *Constraint's theory and relativistic dynamics (Florence/Arcetri, 1986)*, 210-241, *World Sci. Publishing, Singapore*, 1987. (Mayer Humi) **89c:70037** 70H40
- Gaida, Yu. R.** Monodromy groups of mappings of a Riemann surface and compositions of meromorphic functions. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 10, 6-9, 84. (Summary) **89k:30023** 30D05 (30F99)
- Gaidalovich, V. G.** (with Il'khamov, U.; Sokolov, D. D.) Closed convex surfaces in a pseudo-Euclidean space. (Russian) *Trudy Inst. Mat. (Novosibirsk)* **9** (1987), Issled. Geom. "v iselom" i *Mat. Anal.*, 154-159, 207. (W. J. Firey) **89c:53047** 53C50
- Gaidenko, A. A.** A search algorithm for the maximal cut of a graph. (Russian) *Mathematical methods for optimization and control in systems (Russian)*, 144-150, *Kalinin. Gos. Univ., Kalinin*, 1987. (Oleg Tarasov) **89c:05116** 05C35
- Gaidenko, P. P.** ★ Эволюция понятия науки (XVII-XVIII вв.). (Russian) [Evolution of the concept of science (XVII-XVIII centuries)] *Формирование научных программ нового времени. [Development of scientific programs for a new age] Библиотека Всемирной Истории Естествознания. [Library of the Universal History of the Natural Sciences] "Nauka", Moscow, 1987. 448 pp. (C. J. Scriba) **89d:01023** 01A45 (01A50, 01A99, 03-03)*
- Gaidenko, V. P.** (with Smirnov, G. A.) Medieval knowledge of physics: the principles of its organization. (Russian) *Voprosy Istor. Estestvozn. i Tekhn.* **1987**, no. 3, 113-122. (C. J. Scriba) **89b:01013** 01A35 (03-03, 04-03)
- Gaidor, S. D.** Pareto-optimality in stochastic differential games. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **15** (1986), no. 6, 439-450. (S. Jørgensen (Zbl 631:90105)) **89f:90217** 90D25 (49D40, 90D10, 93E05)
- Berge-equilibrium in stochastic differential games. *Math. Balkanica (N.S.)* **1** (1987), no. 1, 25-32. (David Yeung) **89d:93092** 93E05 (90D15)
- Two cooperative solutions in stochastic differential games. *C. R. Acad. Bulgare Sci.* **41** (1988), no. 1, 19-22. (Arunabha Bagchi) **89g:93091** 93E05 (90D12)
- Gaiduk, S. I.** Some two-dimensional mixed problems with an initial function that does not vanish for the conjugation conditions. III. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 6, 1040, 1101. (Summary) **89k:35127** 35L20
- Galer, D.** On a polynomial lemma of Andrievskii. *Arch. Math. (Basel)* **49** (1987), no. 2, 119-123. (G. Lakshma Reddy) **89d:30005** 30C10 (30C60)
- (with Papamichael, N.) On the comparison of two numerical methods for conformal mapping. *IMA J. Numer. Anal.* **7** (1987), no. 3, 261-282. (G. Opfer) **89m:30017** 30C30
- On the convergence of the Bieberbach polynomials in regions with corners. *Constr. Approx.* **4** (1988), no. 3, 289-305. (Y. Komatu) **89b:30013** 30C35 (30C30)
- Gaifman, Haim** A theory of higher order probabilities. *Theoretical aspects of reasoning about knowledge (Monterey, Calif., 1986)*, 275-292, *Morgan Kaufmann, Palo Alto, CA*, 1986. (Summary) **89a:03050** 03B48 (03B45, 60A99)
- Gaigg, P.** (with Kreuzer, Maximilian) Symmetries of axial gauge pole prescriptions. *Phys. Lett. B* **205** (1988), no. 4, 530-534. (George Leibbrandt) **89c:81121** 81E99 (81C30)
- (with Skarke, H.) Multiloop integrals, counterterms, and renormalization of Yang-Mills theories in the light-cone gauge. *Phys. Rev. D* (3) **38** (1988), no. 10, 3205-3210. (Not in MR) **81E13** (81E15)
- Gaiko, V. A.** (with Cherkas, L. A.) Bifurcations of limit cycles of a quadratic system with two singular points and two parameters that rotate the field. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 9, 1544-1553, 1652. (W. S. Loud) **89g:58147** 58F14 (34C05)
- Gail, H. R.** (with Hantler, S. L.; Taylor, B. Alan) Analysis of a nonpreemptive priority multiserver queue. *Adv. in Appl. Probab.* **20** (1988), no. 4, 852-879. (Martin J. Fischer) **89i:60180** 60K25 (90B22)
- Gail, M. H.** (with Brookmeyer, Ron) Biases in prevalent cohorts. (French summary) *Biometrics* **43** (1987), no. 4, 739-749. (Paul Embrechts) **89a:62217** 62P10 (62N05, 92A07, 92A15)
- (with Tan, W. Y.; Piantadosi, S.) Tests for no treatment effect in randomized clinical trials. *Biometrika* **75** (1988), no. 1, 57-64. (Not in MR) **62P10**
- Gailitis, Modris** Threshold phenomena in three-particle systems with Coulomb interaction. (Russian) *Group-theoretic methods in physics, Vol. 2 (Russian) (Jarmala, 1985)*, 532-536, "Nauka", Moscow, 1986. (see **89d:81002**) 81F05
- Gaillard, Pierre-Y.** Eigenforms of the Laplacian on real and complex hyperbolic spaces. *J. Funct. Anal.* **78** (1988), no. 1, 99-115. (Andreas Juhl) **89h:58198** 58G25
- Gaimon, Cheryl** Simultaneous and dynamic price, production, inventory and capacity decisions. *European J. Oper. Res.* **35** (1988), no. 3, 426-441. (Not in MR) **90A11**
- Gaina, A. B.** (with Ternov, I. M.) Energy spectrum of the Dirac equation in the Schwarzschild and Kerr fields. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **31** (1988), no. 2, 86-92; translated in *Soviet Phys. J.* **31** (1988), no. 2, 157-163. (R. Schimming) **89j:81146** 81E20 (35L99, 83C10, 83C60)
- Gainanov, D. N.** (with Gusak, I. Ya.) Combinatorial properties of positive bases. (Russian) *Mat. Zametki* **42** (1987), no. 3, 463-474, 477. (Béla Uhrin) **89c:52009** 52A25 (15A03)
- Gaines, Steven** (with Roughgarden, Jonathan; Possingham, Hugh P.) Recruitment dynamics in complex life cycles. *Science* **241** (1988), no. 4872, 1460-1466. (Not in MR) **92A17**
- Gainov, A. T.** Orthogonal isotopes of monocomposition algebras. (Russian) *Algebra i Logika* **25** (1986), no. 6, 619-630, 751. (Harry F. Smith) **89f:17002** 17A75
- pascal Gainza, P.** see **Pascal Gainza, P.**
- Gaishun, I. V.** Periodic functions and functional equations on groups. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **31** (1987), no. 11, 965-967, 1052. (P. Javor) **89a:39011** 39B50
- (with Goryachkin, V. V.) Construction of the solutions of a class of distributed discrete systems. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1987**, no. 2, 58-60, 80. (V. Popescu) **89a:39001** 39A10 (39A12, 93C55)
- Periodic solutions of linear total differential equations. (Russian. English summary) *Vestn. Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 5, 7-11, 125. (Russell C. Thompson) **89c:34102** 34G20 (34C25, 35B10, 47E05)
- (with Knyazhishche, L. B.; Raptunovich, N. A.) On the theory of the stability of nonautonomous differential equations. (Russian) *Problems in the qualitative theory of differential equations (Russian) (Irkutsk, 1986)*, 163-168, 284, "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (see **89j:34002**) 34D20
- Gaisin, A. M.** Behavior of the sum of a Dirichlet series in half-strips. (Russian) *Mat. Zametki* **42** (1987), no. 5, 660-669, 762. (Jia Rong Yu) **89c:30005** 30B50 (30D99)
- Gaisinskii, M. D.** (with Goldstein, M. Sh.) Selfadjointness of the Schrödinger operator with a singular potential. (Russian) *Dokl. Akad. Nauk UzSSR* **1987**, no. 10, 4-6. (Josef Voldrich) **89f:35056** 35J10 (47F05)
- Gaitan, Frank** (with Stone, Michael) Topological charge and chiral anomalies in Fermi superfluids. *Ann. Physics* **178** (1987), no. 1, 89-109. (Mario Škrinjar) **89i:81157** 81J05
- Gaitanis, Nikolaos** Totally self-checking checkers with separate internal fault indication. *IEEE Trans. Comput.* **37** (1988), no. 10, 1206-1213. (G. Saucier) **89j:94044** 94C10 (68M99, 90B25)
- Gaitsgori, V. G.** (with Pervozvanskii, Anatoli A.) Local criteria of quality in the optimization of technological complexes. *Soviet J. Comput. Systems Sci.* **25** (1987), no. 6, 1-17 (1988); translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 1, 162-167, 223 (Russian). (Not in MR) **93A15** (90B30, 93C55)
- Gavronskii, A. A.** Numerical techniques for finding estimates which minimize the upper bound of the absolute deviation. *Statistical data analysis based on the  $L_1$ -norm and related methods (Neuchâtel, 1987)*, 247-262, *North-Holland, Amsterdam-New York*, 1987. (I. M. Stancu-Minasian) **89h:90167** 90C15 (65K99)
- (with Ermol'ev, Yu. M.) Methods for searching for optimal submeasures (characterization of the solutions). (Russian. English summary) *Kibernetika (Kiev)* **1987**, no. 5, 94-101, 135. (Quan Zheng) **89c:90109** 90C48
- Gajda, Adam** (with Krynicki, Michał; Szczerba, L. W.) A note on syntactical and semantical functions. *Studia Logica* **46** (1987), no. 2, 177-185. (Bienvenido F. Nebres) **89k:03033** 03C07
- Gajda, Zbigniew** Difference properties of higher orders for continuity and Riemann integrability. *Colloq. Math.* **53** (1987), no. 2, 275-288. (H. Burkil) **89b:22006** 22B05 (22C05, 26A15, 26A42)



- A characterization of exponential polynomials by a class of functional equations. *Publ. Math. Debrecen* 35 (1988), no. 1-2, 51–63. (Helmut Länger) **89j:39012** 39B50
- Gajek, Lesław** Generalized Bayes estimators of a nonlinear function of the natural parameter of an exponential family of distributions. *Demonstratio Math.* 20 (1987), no. 3-4, 355–365 (1988). (Ram Shanmugam) **89i:62047** 62F15 (62C10)
- An improper Cramér-Rao lower bound. *Zastos. Mat.* 19 (1987), no. 2, 241–256. (Zhi-Dong Bai) **89a:62067** 62F10 (62E15)
- On the minimax value in the scale model with truncated data. *Ann. Statist.* 16 (1988), no. 2, 669–677. (A. L. Rukhin) **89g:62014** 62C20 (62C15)
- Gajer, Paweł** Riemannian metrics of positive scalar curvature on compact manifolds with boundary. *Ann. Global Anal. Geom.* 5 (1987), no. 3, 179–191. (Viktor Schroeder) **89m:53061** 53C20
- Gajewski, Antoni** (with Życzkowski, Michał) ★ Optimal structural design under stability constraints. *Mechanics of Elastic Stability*, 13. Kluwer Academic Publishers Group, Dordrecht, 1988. xvi+469 pp. ISBN 90-247-3612-9 (Vadim Komkov) **89i:73060** 73K40 (34D20, 73-02, 73H10, 93B50)
- Gajewski, Krzysztof** (with Radziszewski, Bogusław; Ziemia, Stefan) On the estimation of the stable solution set for the recurrent equations. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations (Budapest, 1987)*, 247–250, *János Bolyai Math. Soc., Budapest*, 1987. (Shigeru Haruki) **89c:39007** 39A11 (39A10)
- (with Radziszewski, Bogusław) On the stability of impact systems. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* 35 (1987), no. 3-4, 183–189. (Silvio Nocilla) **89c:70045** 70K20 (70F30)
- Gajk, I.J.** (with Hadžić, O.) Coincidence points for set-valued mappings in convex metric spaces. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 16 (1986), no. 1, 13–25. (Summary) **89j:54053** 54H25 (54C60)
- A common fixed point theorem in uniformizable spaces. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 16 (1986), no. 2, 63–73. (S. L. Singh) **89c:54090** 54H25 (54E15)
- Topological degree for ultimately compact multivalued vector fields in topological vector spaces. (Serbo-Croatian summary) *Mat. Vesnik* 39 (1987), no. 2, 145–158. (Duong Minh Duc) **89a:47076** 47H09 (47H10, 58C06, 58C30)
- On relative topological degree of set-valued compact vector fields. *Indian J. Pure Appl. Math.* 19 (1988), no. 3, 269–276. (Introduction) **89m:47061** 47H15 (47H10)
- Gajic, Z.** Quasi-decentralized multimodel estimation of linear systems. *Analysis and optimization of systems (Antibes, 1988)*, 557–568, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89c:00031**) 93B40 (68Q10)
- (with Grodt, T.) The recursive reduced-order numerical solution of the singularly perturbed matrix differential Riccati equation. *IEEE Trans. Automat. Control* 33 (1988), no. 8, 751–754. (Summary) **89d:93039** 93B40 (34E15, 49D40, 93B17, 93B25)
- (with Petrović, B.) Recursive solution of linear-quadratic Nash games for weakly interconnected systems. *J. Optim. Theory Appl.* 56 (1988), no. 3, 463–477. (A. T. Rakhmanov) **89f:90222** 90D25
- (with Petkovski, Dj.; Harkara, N.) The recursive algorithm for the optimal static output feedback control problem of linear singularly perturbed systems. *IEEE Trans. Automat. Control* 34 (1989), no. 4, 465–468. (Not in MR) 93B40 (34E15)
- Gajjar, J. S. B.** (with Bassom, A. P.) Nonstationary cross-flow vortices in three-dimensional boundary-layer flows. *Proc. Roy. Soc. London Ser. A* 417 (1988), no. 1852, 179–212. (Summary) **89c:76036** 76D05 (76C05, 76E15)
- Gajski, Daniel** (with Lursinsap, Chidchanok) Improving a PLA area by pull-up transistor folding. *24th ACM/IEEE Design Automation Conference (Miami Beach, FL, 1987)*, 608–614, ACM, New York, 1987. (Mirko Kiviväke) **89k:94111** 94C15 (94C05)
- Gakhov, A. S.** On the problem of integral transforms. (Russian. English summary) *Vestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1987, no. 5, 106–109, 128. (Summary) **89f:44001** 44A05
- Gakkhar, S.** (with Shukla, J. B.; Misra, O. P.; Agarwal, Manju) Effects of ecological and environmental gradients on coexistence of interacting species. *Mathematical modelling in science and technology (St. Louis, MO, 1987)*, *Math. Comput. Modelling* 11 (1988), 907–909. (see **89d:00007**) 92A17
- Gaf, M. M.** (with Kovach, Yu. I.) ★ О двухстороннем аналитическом методе академика С. А. Чаплыгина для дифференциальных уравнений. (Russian) [Academician S. A. Chaplygin's two-sided analytic method for differential equations] *Препринт [Preprint]*, 86-35, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1986. 14 pp. (E. S. Chickin) **89b:34157** 34K10 (65L10)
- (with Kovach, Yu. I.) On the theory of linear difference equations. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1988, no. 7, 60 pp. (Summary) **89k:39003** 39A10
- Gai, S. G.** Dense linear subspaces in  $L^p(E)$ . (Italian summary) *Rend. Mat.* (7) 6 (1986), no. 1-2, 125–130 (1988). (Summary) **89j:41052** 41A65 (46E30)
- Gai, Shmuel** (with Alpern, Steve) A mixed-strategy minimax theorem without compactness. *SIAM J. Control Optim.* 26 (1988), no. 6, 1357–1361. (Milan Mareš) **89k:90185** 90D05 (90D13)
- Gai, Tomas** (with Kruse, Hermann-Josef; Zörnig, Peter) Survey of solved and open problems in the degeneracy phenomenon. *Math. Programming* 42 (1988), no. 1 (Ser. B), 125–133. (H. C. Bakshi) **89j:90169** 90C05
- Galaktionov, E. V.** (with Silbergleit, Alexander Samuel) ★ On the theory of the limiting behaviour and stability of solutions of the hydrodynamic-type systems. With a Russian summary. *Препринт [Preprint]*, 1157, *Akad. Nauk SSSR, Fiz.-Tekh. Inst., Leningrad*, 1987. 51 pp. (Peter E. Kloeden) **89a:34054** 34C35 (35Q10, 58F12, 76E30)
- (with Silbergleit, Alexander Samuel) Absorbing sets of systems of hydrodynamic type. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 4, 555–563, 730; translated in *Differential Equations* 24 (1988), no. 4, 377–383. (Neculae Vornicescu) **89d:34060** 34C05 (34D05, 58F05, 58F12)
- Galaktionov, V. A.** (with Samarskii, A. A.; Kurdyumov, S. P.; Mikhailov, A. P.) ★ Режимы с обострением в задачах для квазилинейных параболических уравнений. (Russian) [Peaking modes in problems for quasilinear parabolic equations] *"Nauka", Moscow*, 1987. 478 pp. (P. Szeptycki) **89a:35002** 35-02 (35A25, 35Axx, 35K55, 92A08, 92A17)
- (with Posashkov, S. A.) Some peculiarities of the evolution of unbounded solutions of semilinear parabolic equations. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 232, 28 pp. (Summary) **89c:35017** 35B40 (35B05, 35K55)
- (with Posashkov, S. A.) Estimates for localized unbounded solutions of quasilinear parabolic equations. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 7, 1133–1143, 1284–1285. (Guang Chang Dong) **89c:35073a** 35K55 (35B40)
- (with Posashkov, S. A.) Unbounded exact solution of the nonlinear heat equation with a source. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 42, 16 pp. (Summary) **89c:35074** 35K55 (35B05, 80A20)
- (with Posashkov, S. A.) Exact solutions of parabolic equations with quadratic nonlinearities. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 115, 23 pp. (Summary) **89i:65095** 65M99 (35K55)
- (with Posashkov, S. A.) Letter to the editor: "Estimates for localized unbounded solutions of quasilinear parabolic equations". (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 3, 545. (Guang Chang Dong) **89c:35073b** 35K55 (35B40)
- (with Bunkin, F. V.; Kirichenko, N. A.; Kurdyumov, S. P.; Samarskii, A. A.) A nonlinear boundary value problem of ignition by radiation. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 4, 549–559, 623. (Summary) **89d:80008** 80A20 (35K20)
- (with Posashkov, S. A.) A method for investigating unbounded solutions of quasilinear parabolic equations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 6, 842–854, 958. (Song Mu Zheng) **89k:35019** 35B05 (35B40, 35K55, 35K65)
- (with Kurdyumov, S. P.; Samarskii, A. A.) The structure of limit distributions of unbounded solutions of quasilinear parabolic equations. (Russian) *Dokl. Akad. Nauk SSSR* 301 (1988), no. 4, 781–785; translated in *Soviet Math. Dokl.* 38 (1989), no. 1, 138–142. (Song Mu Zheng) **89m:35028** 35B40 (35K55)
- Galambos, G.** (with Frenk, J. B. G.) Hybrid next-fit algorithm for the two-dimensional rectangle bin-packing problem. (German summary) *Computing* 39 (1987), no. 3, 201–217. (Summary) **89a:68084** 68Q20 (68Q25)
- Galambos, Janos** ★ The asymptotic theory of extreme order statistics. Second edition. Robert E. Krieger Publishing Co., Inc., Melbourne, FL, 1987. xvi+414 pp. ISBN 0-89874-957-3 (From the preface) **89a:60059** 60F05 (62G30)
- (with Kátai, I.) The gaps in a particular sequence of integers of positive density. *J. London Math. Soc.* (2) 36 (1987), no. 3, 429–435. (Karl-Heinz Indlekofer) **89f:11135** 11N60 (11B05, 11K65)
- (with De Koninck, J.-M.) The intermediate prime divisors of integers. *Proc. Amer. Math. Soc.* 101 (1987), no. 2, 213–216. (Hedi Daboussi) **89c:11127** 11K99
- (with Obretenov, A.) Restricted domains of attraction of  $\exp(-e^{-x})$ . *Stochastic Process. Appl.* 25 (1987), no. 2, 265–271. (C. W. Anderson) **89c:60023** 60F05 (60E07)
- (with Kátai, I.) Some remarks on random walks in multidimensional time. *Probability theory and mathematical statistics with applications (Visegrád, 1985)*, 65–74, *Reidel, Dordrecht-Boston, MA*, 1988. (Gerold Alsmeyer) **89b:60145** 60K05 (60G50, 60J30)
- (with De Koninck, J.-M.) Some randomly selected arithmetical sums. *Acta Math. Hungar.* 52 (1988), no. 1-2, 37–43. (Z. Krizhus) **89k:11068** 11K65 (11N37)
- Variants of the graph dependent model in extreme value theory. *Comm. Statist. Theory Methods* 17 (1988), no. 7, 2211–2221. (A. H. Khan) **89m:62047** 62G30 (62E20)
- sarmiento Galán, Antonio F.** see Sarmiento Galán, Antonio F.
- Galanin, M. P.** Convergence and computational stability of the Richardson method in the presence of an inexact representation of the lower bound on the operator. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 70, 22 pp. (Summary) **89b:65076** 65F10
- Galanis, S.** (with Hadjidimos, A.; Noutsos, D.) On the equivalence of the  $k$ -step iterative Euler methods and successive overrelaxation (SOR) methods for  $k$ -cyclic matrices. *Math. Comput. Simulation* 30 (1988), no. 3, 213–230. (Lucas Jódar) **89j:65034** 65F10
- Galanov, B. A.** On the nonlinear boundary conditions of the mechanics of the contact of rough elastic bodies. *J. Appl. Math. Mech.* 50 (1986), no. 3, 357–361 (1987); translated from *Prikl. Mat. Mekh.* 50 (1986), no. 3, 470–474 (Russian). (C. Dierckx) **89a:73058** 73T05
- (with Krivonos, Yu. M.) The method of nonlinear boundary equations and its numerical realization in three-dimensional contact problems in elasticity theory with a free boundary. (Russian) *Prikl. Problemy Proch. i Plast.* 1987, 10–17, 119. (Summary) **89j:73096** 73T05 (73-08, 73C50)
- The method of nonlinear boundary value equations in problems of the contact of several elastic bodies. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 61 (1987), 62–70, 131. (Summary) **89c:73010** 73C35 (47H15, 73T05)
- Galanová, Yana** Some properties of tensor products of semigroups. *Demonstratio Math.* 20 (1987), no. 1-2, 57–65 (1988). (S. Madhavan) **89f:20067** 20M07
- Galántai, Auréli** (with Abaffy, J.; Spedicato, E.) The local convergence of ABS methods for nonlinear algebraic equations. *Numer. Math.* 51 (1987), no. 4, 429–439. (François Robert) **89c:65065** 65H10
- (with Abaffy, J.) Conjugate direction methods for linear and nonlinear systems of algebraic conditions. *Numerical methods (Miskolc, 1986)*, 481–502, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (François Robert) **89c:65051** 65H10 (65F05, 90C30)
- Galasiewicz, Zygmunt M.** Remark about the dependence of the local conservation of the momentum density on the local behaviour of the curl of the superfluid velocity for  $^3\text{He-A}$  and superfluid  $^4\text{He}$ . *J. Phys. A* 21 (1988), no. 3, 709–714. (Summary) **89a:81182** 81J05
- Galha, E. F.** (with Molchanov, I. N.) Variational formulations and discretization of the problem of the bending of a thin plate with a free boundary. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 3, 24–26, 85. (Vadim Komkov) **89j:73064** 73K10 (73C60)
- Galbati, G.** (with Camerini, P. M.; Maffioli, Francesco) Algorithms for finding optimum trees: description, use and evaluation. *Ann. Oper. Res.* 13 (1988), no. 1-4, 265–397. (Summary) **89c:90206** 90C35 (05C05, 68Q25, 90B10)
- Galbis, Antonio** Köthe sequence spaces with values in Fréchet or (DF)-spaces. *Bull. Soc. Roy. Sci. Liège* 57 (1988), no. 3, 157–172. (Klaus-Dieter Bierstedt) **89k:46011** 46A45 (46E40)
- Galbur, V. A.** (with Ivanov, M. F.; Ryabov, O. A.) A method for calculating nonequilibrium gas dynamic flows taking into account both radiative transfer and ionization. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 7, 1071–1077, 1119. (Summary) **89i:76101** 76X05 (82A45)
- Galdi, G. P.** see Energy stability and convection, **89c:76004**
- Gale, Douglas** Limit theorems for markets with sequential bargaining. *J. Econom. Theory* 43 (1987), no. 1, 20–54. (C. D. Aliprantis) **89c:90030** 90A14

- Price setting and competition in a simple duopoly model. *Quart. J. Econom.* **103** (1988), no. 4, 729–739. (Summary) **89j:90048** 90A14
- Galé, José E.** Regular quasimultipliers of some semisimple Banach algebras. *Studia Math.* **89** (1988), no. 2, 111–131. (E. A. Gorin) **89m:46093** 46J99 (43A99)
- Galeana-Sánchez, Hortensia** A new method to extend kernel-perfect graphs to kernel-perfect critical graphs. *Discrete Math.* **69** (1988), no. 2, 207–209. (Carsten Thomassen) **89d:05086** 05C20
- Galeão, Augusto Cesar** (with Dutra do Carmo, Eduardo Gomes) A consistent approximate upwind Petrov-Galerkin method for convection-dominated problems. *Comput. Methods Appl. Mech. Engrg.* **68** (1988), no. 1, 83–95. (James A. Schmitt) **89e:65099** 65M60 (76-08, 76R99)
- Galeev, E. M.** Kolmogorov widths of classes  $\tilde{W}_p^{\alpha}$  and  $\tilde{H}_p^{\alpha}$  of periodic functions of several variables in the space  $\tilde{L}_q$ . (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 70–72, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) 41A46
- Orders of orthoprojection widths of classes of periodic functions of one and several variables. (Russian) *Mat. Zametki* **43** (1988), no. 2, 197–211, 301; translated in *Math. Notes* **43** (1988), no. 1–2, 110–118. (D. K. Ugulava) **89g:42004** 42A10 (41A35, 41A46, 42B05)
- Projection widths of some finite-dimensional sets. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 1, 64–67; translated in *Moscow Univ. Math. Bull.* **43** (1988), no. 1, 51–54. (A. I. Vasil'ev) **89h:41061** 41A65 (41A46, 46B20)
- Galeeva, A. V.** (with Shirokov, B. M.) Summation of some complex multiplicative functions. (Russian) *Analytic number theory* (Russian), 11–24, 90, *Petrozavodsk. Gos. Univ., Petrozavodsk*, 1986. (Hartmut Menzer) **89j:11091** 11N37
- Galetti, D.** (with de Toledo Piza, A. F. R.) An extended Weyl-Wigner transformation for special finite spaces. *Phys. A* **149** (1988), no. 1–2, 267–282. (V. B. Serebrennikov) **89h:81045** 81C25 (81D07)
- Galgani, Luigi** The problem of energy partition in the light of classical perturbation theory. (Russian summary) *Physics of multiparticle systems*, No. 14 (Russian), 11–18, 97, 100, “*Naukova Dumka*”, Kiev, 1988. (see **89k:82001**) **82A99** (81B99)
- Gali, I. M.** (with Okb El-Bab, A. S.; Saleh, M.) On positive-definite invariant matrix kernels. *Afrika Mat.* **9** (1987), 5–13. (Erik G. F. Thomas) **89c:47025** 47A99 (28B05, 28C10, 43A35, 46A99)
- Galić, H.** Fun and frustration with hydrogen in a 1 + 1 dimension. *Amer. J. Phys.* **56** (1988), no. 4, 312–317. (Summary) **89b:81032** 81C05 (35Q20)
- Galić, Mihailo** Asymptotic behavior of the Riesz mean of the spectral function of the Schrödinger operator in an unbounded domain. (Serbo-Croatian. English summary) *Akad. Nauka Umjet. Bosne Hercegov. Rad. Odjel. Tehn. Nauka* No. 11 (1987), 57–61. (G. V. Rozenblyum) **89a:35153** 35P20 (35J10, 35P10)
- Galić, Radoslav** *T-k-seminets. Proceedings of the Conference “Algebra and Logic”, Cetinje* 1986, 95–105, *Univ. Novi Sad, Novi Sad*, 1987. (V. Havel) **89d:08006** 08A99 (05B30, 20N99)
- Galickas, Aleksandras** Comparative analysis of interpolation models of stationary signals. (Russian. Lithuanian summary) *Trudy Akad. Nauk Litovsk. SSR Ser. B* **1988**, no. 3 (166), 120–123. (Summary) **89k:94009** 94A12 (41A05, 60G35)
- Galicki, K.** (with Lawson, H. Blaine, Jr.) Quaternionic reduction and quaternionic orbifolds. *Math. Ann.* **282** (1988), no. 1, 1–21. (S. M. Salamon) **89m:53075** 53C25 (22E40, 53C15, 58F05)
- Gallier, Sh. I.** Numerical solution of some minimax problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 7, 1000–1011, 1117. (M. Mañás) **89f:90138** 90C30 (65K10)
- Gallier, Sh. U.** ★ Нелинейные волны в органических сплошных средах. (Russian) [Nonlinear waves in bounded continua] “*Naukova Dumka*”, Kiev, 1988. 264 pp. ISBN 5-12-009353-1 (Summary) **89j:73042** 73J06 (73-08, 73D99, 73F30, 73M99, 76-08, 76B10, 76N99)
- Galli, Zvi** (with Alon, Noga; Milman, Vitali D.) Better expanders and superconcentrators. *J. Algorithms* **8** (1987), no. 3, 337–347. (Summary) **89f:68023** 68Q20 (05C75, 68R10)
- (with Hoffmann, Christoph; Luks, E. M.; Schnorr, C.-P.; Weber, Andreas) An  $O(n^3 \log n)$  deterministic and an  $O(n^2)$  Las Vegas isomorphism test for trivalent graphs. *J. Assoc. Comput. Mach.* **34** (1987), no. 3, 513–531. (Narsingh Deo) **89c:68043** 68Q20 (05C25, 68Q25, 68R10)
- (with Landau, Gad M.; Yung, Mordechai M.) Distributed algorithms in synchronous broadcasting networks. Twelfth international colloquium on automata, languages and programming (Nafplion, 1985). *Theoret. Comput. Sci.* **49** (1987), no. 2–3, 171–184. (Summary) **89a:68086** 68Q20 (68M10, 90B10)
- (with Giancarlo, Raffaele) Parallel string matching with  $k$  mismatches. *Theoret. Comput. Sci.* **51** (1987), no. 3, 341–348. (Summary) **89a:68085** 68Q20
- (with Pan, V.) Improved processor bounds for combinatorial problems in RNC. *Combinatorica* **8** (1988), no. 2, 189–200. (Toshimasa Watanabe) **89i:05215** 05C70 (68Q05, 68Q10, 68Q25)
- (with Schieber, Baruch) On finding most uniform spanning trees. *Discrete Appl. Math.* **20** (1988), no. 2, 173–175. (Ding Zhu Du) **89e:05069** 05C05 (90B10)
- (with Tardos, Éva) An  $O(n^2(m + n \log n) \log n)$  min-cost flow algorithm. *J. Assoc. Comput. Mach.* **35** (1988), no. 2, 374–386. (Alan Shuchat) **89f:90048** 90B10 (68Q25, 68R10, 90C35)
- (with Giancarlo, Raffaele) Data structures and algorithms for approximate string matching. *J. Complexity* **4** (1988), no. 1, 33–72. (Summary) **89c:68042** 68Q20 (68P15)
- Gallie, Galileo** ★ Cartas del señor Galileo Galilei, académico lincoo, escritas a Benedetto Castelli y a la señora Cristina de Lorena, Gran Duquesa de Toscana. (Spanish) [Letters from Galileo Galilei, member of the Accademia dei Lincei, to Benedetto Castelli and to Cristina de Lorena, Grand Duchess of Tuscany] Edited and with introductory material by Pere de la Fuente, Xavier Granados and Francisco Reus. Clásicos del Pensamiento [Classics of Thought], 11. Editorial Alhambra, S.A., Madrid, 1986. x+96 pp. ISBN 84-205-1307-5 (From the preface) **89i:01139** 01A75 (01A45)
- ★ Пробирный дел мастер. (Russian) [Master assayer] Translated from the Latin and with a preface by Yu. A. Danilov. Популярные Произведения Классиков Естественных. [Popular Publications of Classics in the Natural Sciences] “*Nauka*”, Moscow, 1987. 272 pp. (Editors) **89a:01103** 01A75
- see also **Bedini, Silvio A.**, **89a:01017**; **Drake, Stillman**, **89c:01021**; **Costabel, Pierre**, **89d:01019**; **Redondí, Pietro**, **89e:01046**; **Hald, A.**, **89g:01023**; **Życiński, Józef M.**, **89g:01027**; **Parkhomovskii, Ya. M.**, **89j:01025** and **Renn, Jürgen**, **89k:01014**
- Galimov, R. É.** (with Aralbaev, T. Z.; Nazimov, A. B.) Peculiarities of the computer decomposition of a group code for calculating the routes of a server. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **30** (1987), no. 5, 282–285. (Not in MR) **90B22** (94B60)
- Galin, G. Ya.** (with Akivis, M. A.; Kirichenko, V. F.; Morozova, E. A.; Novikov, S. P.; Fedenko, A. S.) Anatolii Mikhailovich Vasil'ev. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 4(262), 159–160; translated in *Russian Math. Surveys* **43** (1988), no. 4, 191–193. (Editors) **89m:01073** 01A70
- Galina, Henryk** (with Syslo, Maciej M.) Some applications of graph theory to the study of polymer configuration. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1–3, 167–176. (Summary) **89c:92099** 92A40 (05C99)
- Galina, V.** (with Di Prisco, A.; Herrera, L.; Jiménez, Juan Francisco; Ibañez, J.) The Bondi metric and conformal motions. *J. Math. Phys.* **28** (1987), no. 11, 2692–2696. (Summary) **89h:83007** 83C15 (83C40)
- Galindo, Pablo** On Whitney's extension operator and the representation of the spaces  $B_{\infty}^k(\Omega, E)$ . (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* **81** (1987), no. 1, 159–181. (J. B. Prolia) **89g:46046** 46E10 (58C25)
- (with Maestre, Manuel) Representation of the spaces  $\mathcal{E}_k^p(V, E)$  and  $\mathcal{D}_k^p(V, E)$  ( $1 \leq k \leq \infty$ ). (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* **81** (1987), no. 1, 197–201. (Jorge Mujica) **89g:46073** 46E40 (46E10, 58C25, 58D15)
- Galipò, Maria Pia** (with Giambò, Sebastiano) On the heat conduction in relativistic extended irreversible thermodynamics. *Rend. Mat. Appl.* (7) **6** (1986), no. 3, 245–256 (1988). (Summary) **89m:80003** 80A20 (35K05)
- Galitskas, A. A.** see **Galickas, Aleksandras**
- Galitskaya, I. E.** (with Kuznetsov, Valerii Nikolaevich) Approximate calculation of the stationary reliability indices of a class of semi-Markov systems. (Russian) *Analysis of stochastic systems by methods in operations research and reliability theory* (Russian), 64–68, vi, *Akad. Nauk Ukrain. SSR, Inst. Kibernet.*, Kiev, 1987. (see **89b:90004**) **60K20**
- Galitskii, V. S.** Cosmology in the Einstein-Cartan theory of gravitation. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **31** (1988), no. 3, 25–29; translated in *Soviet Phys. J.* **31** (1988), no. 3, 194–198. (N. V. Miskevich) **89i:83049** 83D05 (83F05)
- Galitskii, V. V.** (with Komarov, A. S.) Numerical modeling of the dynamics of plant populations. (Russian) *Mathematical modeling* (Russian), 103–154, 280, “*Nauka*”, Moscow, 1987. (Summary) **89d:92080** 92A17
- Galitsyn, A. S.** (with Zhukovskii, A. N.; Karagodin, V. P.) Solution of nonlinear convection problems in a closed volume of a viscous fluid by a projection-difference method. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 9, 43 pp. (Summary) **89g:76007** 76-08 (76R10, 80A20)
- (with Shlyusareva, L. V.) A nonlinear problem for an evolution equation that takes into account the heat memory of the medium. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 9, 11–15, 86. (Victor A. Galaktionov) **89c:35081** 35K55 (45K05, 80A20)
- (with Fushchich, V. I.; Polubinskii, A. S.) A new mathematical model of diffusion processes with finite rate. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 8, 22–27, 86. (Summary) **89h:35141** 35K10 (80A20)
- Gallulin, R. V.** Why crystals are symmetric. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (*Jarmala*, 1985), 675–681, “*Nauka*”, Moscow, 1986. (see **89d:81001**) **82A60**
- Galka, Andrzej** (with Woźniak, Czesław; Naniewicz, Zdzisław) On ideal textile-type materials. I. Constitutive modelling. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* **33** (1985), no. 5–6, 255–258. (Summary) **89h:73005** 73B99
- (with Woźniak, Czesław; Naniewicz, Zdzisław) On ideal textile-type materials. II. Governing relations. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* **33** (1985), no. 5–6, 259–264. (Summary) **89h:73006** 73B99
- (with Naniewicz, Zdzisław; Woźniak, Czesław) On ideal textile-type materials. III. Existence problems. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* **33** (1985), no. 5–6, 265–269. (Summary) **89h:73007** 73B99
- (with Naniewicz, Zdzisław; Woźniak, Czesław) On ideal textile-type materials. IV. Examples of solutions. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* **33** (1985), no. 5–6, 271–278. (Summary) **89h:73008** 73B99
- Galkin, S. A.** (with Drozdov, V. V.) A method for the numerical solution of an elliptic problem with a free boundary. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 183, 24 pp. (Summary) **89a:65184** 65N99
- (with Drozdov, V. V.) An iterative method for solving an elliptic problem with a free boundary. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1171–1175, 1284; translated in *Differential Equations* **24** (1988), no. 7, 755–758. (Jaroslav Jeleň) **89k:65125** 65N20
- Galkin, V. A.** (with Tupichev, V. A.) Solvability in the mean of a system of quasilinear conservation laws. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 6, 1300–1304; translated in *Soviet Math. Dokl.* **37** (1988), no. 3, 808–812. (Si Ning Zheng) **89j:35084** 35L65
- On the solutions of equations connected with physical kinetics. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 6, 1362–1367; translated in *Soviet Phys. Dokl.* **33** (1988), no. 2, 107–109. (Song Mu Zheng) **89h:35327** 35R20 (45G10, 47H15, 81G55, 82A40)
- Galkin, V. M.** Quasigroups. (Russian) *Algebra. Topology. Geometry*, Vol. 26 (Russian), 3–44, 162, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform.*, Moscow, 1988. (Péter T. Nagy) **89k:20103** 20N05 (22A30)
- Compact quasigroups. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 6, 24–31; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 6, 29–41. (Gheorghe Ivan) **89j:22002** 22A30 (20N05)
- Galkin, V. Ya.** (with Batomunkueva, G. V.; Belov, A. G.; Ufimtsev, M. V.) Optimal estimates for the parameters of multiple distributions. (Russian) *Mathematical models and numerical methods* (Russian), 59–75, *Moskov. Gos. Univ., Moscow*, 1987. (Jana Jurečková) **89a:62065** 62F10
- Galko, Peter A.** (with Pasupathy, Subbarayan) Optimization of linear receivers for data communication signals. *IEEE Trans. Inform. Theory* **34** (1988), no. 1, 79–92. (Summary) **89c:94008** 94A05
- le Gall, J.-F.** see **Le Gall, J.-F.**



le Gall, Pierre *see* Le Gall, Pierre

Gallager, Robert G. Finding parity in a simple broadcast network. *IEEE Trans. Inform. Theory* 34 (1988), no. 2, 176-180. (Not in MR) 94A40 (94A05)

Gallagher, Neal C., Jr. (with Arce, Gonzalo R.) Stochastic analysis for the recursive median filter process. *IEEE Trans. Inform. Theory* 34 (1988), no. 4, 669-679. (Not in MR) 94A05 (93E10)

Gallant, A. Ronald ★ Nonlinear statistical models. Wiley Series in Probability and Mathematical Statistics: Applied Probability and Statistics. John Wiley & Sons, Inc., New York, 1987. xiv+610 pp. ISBN 0-471-80260-3 (Wilfried Grossmann) 89f:62054 62J02

Gallardo, Diego *see* Gallardo Gómez, Diego

Gallardo, Léonard (with Gebuhrer, Olivier) Marches aléatoires et hypergroupes. (English summary) [Random walks and hypergroups] *Exposition. Math.* 5 (1987), no. 1, 41-73. (Philippe Bougerol) 89g:60024 60B15 (60E10)

Gallardo Gómez, Diego Ergodic theorems for certain linear operators on Orlicz spaces. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 1* (Spanish) (Badajoz, 1986), 213-225. Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (R. J. Nagel) 89f:47014 47A35 (28D05, 46E30, 47B55)

— Orlicz spaces for which the Hardy-Littlewood maximal operator is bounded. *Publ. Mat.* 32 (1988), no. 2, 261-266. (K. Sundaresan) 89m:46054 46E30 (42B25)

Gallas, Jason A. C. Exact analytical eigenfunctions for the  $x^2 + \lambda x^2/(1 + g x^2)$  interaction. *J. Phys. A* 21 (1988), no. 16, 3393-3397. (Summary) 89j:81027 81C05

Gallavotti, Giovanni Some problems on the Hamilton-Jacobi equation. *Periodic solutions of Hamiltonian systems and related topics* (Il Ciocco, 1986), 153-160. NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci., 209, Reidel, Dordrecht-Boston, MA, 1987. (Shi Tao Deng) 89f:58048 58F05 (70H20)

— Renormalization theory and group in mathematical physics. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 1268-1277. Amer. Math. Soc., Providence, RI, 1987. (Henryk Arósz) 89d:81074 81E15 (81-02, 81E08, 82A05, 82A25)

Gallo, Eduardo (with Reventós, Agustí) Curvature and plane fields. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 15, 675-679. (Joseph H. G. Fu) 89g:53051 53C12

balibrea Gallego, Francisco *see* Balibrea Gallego, Francisco

Gallego, Pedro *see* Martínez Gázquez, José. (89m:81026)

Gallego-Díaz, José *see* de Lorenzo, Javier. (89m:01098)

Gallego Lupiáñez, Francisco *see* Lupiáñez, Francisco Gallego

Galletto, Dionigi On the metric of space-time. II. (Italian) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* 115 (1981), no. 5-6, 345-356 (1984). (M. C. Chaki) 89c:83054 83F05

— (with Nocilla, Silvio) Preface to papers presented at the meeting in honor of the ninetieth birthday of Catoaldo Agostinelli. (Italian) Writings in mathematical physics in honor of the ninetieth birthday of Catoaldo Agostinelli (Italian). *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* 120 (1986), suppl., 3 (1987). (Editors) 89i:01075 01A70

— (with Barberis, Bruno) On Friedmann's models of the universe. (Italian. English summary) Writings in mathematical physics in honor of the ninetieth birthday of Catoaldo Agostinelli (Italian). *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* 120 (1986), suppl., 95-109 (1987). (A. H. Klotz) 89i:83068 83F05

— The Academy's contribution to the development of mathematical physics and physics in general. The first two centuries of the Turin Academy of Sciences. (Italian) The first two centuries of the Turin Academy of Sciences (Italian) (Turin, 1983). *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* 121 (1987), suppl., 77-92. (Fabio Sebastiani) 89j:01075 01A74

Galli, Alain (with Wackernagel, Hans) Multivariate geostatistical methods for spatial data analysis. *Data analysis and informatics, V* (Versailles, 1987), 273-280. North-Holland, Amsterdam-New York, 1988. (Summary) 89j:62079 62H99 (62M99)

Gallian, Joseph A. Labeling prisms and prism related graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 59 (1987), 89-100. (C. Hoede) 89d:05162 05C99

— (with Jungreis, Douglas S.) Homomorphisms from  $Z_m[i]$  into  $Z_n[i]$  and  $Z_m[p]$  into  $Z_n[p]$ , where  $i^2 + 1 = 0$  and  $p^2 + p + 1 = 0$ . *Amer. Math. Monthly* 95 (1988), no. 3, 247-249. (Harald Niederreiter) 89c:11154 11R11

mas-Gallie, S. *see* Mas-Gallie, S.

Gallier, Jean H. Fast algorithms for testing unsatisfiability of ground Horn clauses with quantifiers. *J. Symbolic Comput.* 4 (1987), no. 2, 233-254. (John Cowies) 89j:68131 68T15 (03B35, 68Q25)

— (with Courcelle, Bruno) Decidable subcases of the equivalence problem for recursive program schemes. (French summary) *RAIRO Inform. Théor. Appl.* 21 (1987), no. 3, 245-286. (From the summary) 89j:68054 68Q15 (03B70, 68Q55)

— (with Pelin, Alex) Building exact computation sequences. Eleventh colloquium on trees in algebra and programming (Nice, 1986). *Theoret. Comput. Sci.* 53 (1987), no. 1, 125-150. (Summary) 89k:68092 68Q50

— (with Narendran, Paliath; Plaisted, D. A.; Raatz, Stan; Snyder, Wayne) Finding canonical rewriting systems equivalent to a finite set of ground equations in polynomial time. 9th International Conference on Automated Deduction (Argonne, IL, 1988), 182-196. *Lecture Notes in Comput. Sci.*, 310, Springer, Berlin-New York, 1988. (see 89c:68004) 68Q50 (68T15)

Gallina, Giordano Generalizations of strongly monogenic near-rings. (Italian. English summary) *Riv. Mat. Univ. Parma* (4) 12 (1986), 31-34 (1987). (J. R. Clay) 89b:16046 16A76

Gallo, Antonio (with Fortuna, L.; Nunnari, G.) Parametrization of MIMO systems in closed-loop balanced representation. *Analysis and optimization of systems (Antibes, 1988)*, 1027-1038. *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) 89e:93177 93D25 (93B15)

— (with Fortuna, L.; Guglielmino, C.; Nunnari, G.) On the solution of a nonlinear matrix equation for MIMO symmetric realizations. *Systems Control Lett.* 11 (1988), no. 1, 79-82. (Summary) 89e:93036 93B15 (93C05)

Gallo, Giorgio (with Pallottino, Stefano) Shortest path algorithms. *Ann. Oper. Res.* 13 (1988), no. 1-4, 3-79. (Summary) 89f:90049 90B10 (05C35, 68R10)

— (with Scutellà, Maria Grazia) Polynomially solvable satisfiability problems. *Inform. Process. Lett.* 29 (1988), no. 5, 221-227. (Summary) 89m:68041 68Q15 (03B05, 03D15, 68T15)

Galloupos, E. (with Saad, Y.) A parallel block cyclic reduction algorithm for the fast solution of elliptic equations. *Supercomputing* (Athens, 1987), 563-575. *Lecture Notes in Comput. Sci.*, 297, Springer, Berlin-New York, 1988. (Summary) 89b:65329 65W05 (65N20)

Gafmak, A. M. On semi-invariant subgroups of  $n$ -ary groups. (Russian) *The arithmetic and subgroup structure of finite groups* (Russian), 23-30, 211, "Nauka i Tekhnika", Minsk, 1986. (Kazimierz Glazek) 89a:20068 20N15

— On subgroups of a Hamiltonian  $n$ -ary group. (Russian) *The arithmetic and subgroup structure of finite groups* (Russian), 30-33, 211, "Nauka i Tekhnika", Minsk, 1986. (Kazimierz Glazek) 89b:20147 20N15

— Abelian  $n$ -ary groups and their generalizations. (Russian) *Problems in algebra*, No. 3 (Russian), 86-93, 128, "Universitet'skoe", Minsk, 1987. (Smile Markovski) 89j:20076 20N15

Gal-Or, Esther The informational advantages or disadvantages of horizontal mergers. *Internat. Econom. Rev.* 29 (1988), no. 4, 639-661. (Not in MR) 90A30

— The advantages of imprecise information. *Rand J. Econom.* 19 (1988), no. 2, 266-275. (Summary) 89g:90069 90A15 (90A11)

Gal'perin, A. S. (with Ivanov, Evgenii Alekseevich<sup>2</sup>; Ogievetskii, V. I.; Sokatchev, E. S.) Harmonic superspace and extended supersymmetries. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (Järvala, 1985), 42-52, "Nauka", Moscow, 1986. (see 89d:81001) 81E99 (81E13, 83E50)

— (with Ivanov, Evgenii Alekseevich<sup>2</sup>; Ogievetskii, V. I.; Sokatchev, E. S.) Conformal invariance in harmonic superspace. *Quantum field theory and quantum statistics, Vol. 2*, 233-248, Hilger, Bristol, 1987. (Sergey Merkulov) 89m:81096 81E13 (32L25, 81D27, 81E40, 83E50)

— (with Ivanov, Evgenii Alekseevich<sup>2</sup>; Ogievetskii, V. I.) Superspace actions and duality transformations for  $N = 2$  tensor multiplets. *Unification of fundamental interactions* (Marstrand, 1986), 176-183, Royal Swedish Acad. Sci., Stockholm, 1987. (see 89f:81005) 83E50 (58G40, 81G20)

— (with Nguyen Anh Ky; Sokatchev, E. S.)  $N = 2$  supergravity in superspace: solution to the constraints and the invariant action. *Classical Quantum Gravity* 4 (1987), no. 5, 1235-1253. (Agostino Prastaro) 89a:83067 83E50

— (with Ivanov, Evgenii Alekseevich<sup>2</sup>; Ogievetskii, V. I.; Sokatchev, E. S.)  $N = 2$  supergravity in superspace: different versions and matter couplings. *Classical Quantum Gravity* 4 (1987), no. 5, 1255-1265. (Agostino Prastaro) 89a:83068 83E50

— (with Ivanov, Evgenii Alekseevich<sup>2</sup>; Ogievetskii, V. I.) Superspaces for  $N = 3$  supersymmetry. *Soviet J. Nuclear Phys.* 46 (1987), no. 3, 543-549 (1988); translated from *Yadernaya Fiz.* 46 (1987), no. 3, 948-960 (Russian). (Summary) 89m:81097 81E13 (22E70, 81E40)

— (with Ivanov, Evgenii Alekseevich<sup>2</sup>; Ogievetskii, V. I.; Sokatchev, E. S.) Harmonic superspace. Results and perspectives. (Russian) *Proceedings of the VIII International Conference on the Problems of Quantum Field Theory* (Russian) (Alushta, 1987), 267-282, Joint Inst. Nuclear Res., Dubna, 1988. (see 89g:81003) 81E99 (58A50, 81E13)

— (with Ivanov, Evgenii Alekseevich<sup>2</sup>; Ogievetskii, V. I.; Sokatchev, E. S.) Gauge field geometry from complex and harmonic analyticities. I. Kähler and self-dual Yang-Mills cases. *Ann. Physics* 185 (1988), no. 1, 1-21. (R. S. Ward) 89i:53053 53C80 (32C10, 81E13, 81E20, 83E50)

— (with Ivanov, Evgenii Alekseevich<sup>2</sup>; Ogievetskii, V. I.; Sokatchev, E. S.) Gauge field geometry from complex and harmonic analyticities. II. Hyper-Kähler case. *Ann. Physics* 185 (1988), no. 1, 22-45. (R. S. Ward) 89i:53054 53C80 (32C10, 81E13, 81E20, 83C60, 83E50)

— (with Bagger, J. A.; Ivanov, Evgenii Alekseevich<sup>2</sup>; Ogievetskii, V. I.) Gauging  $N = 2$  sigma models in harmonic superspace. *Nuclear Phys. B* 303 (1988), no. 3, 522-542. (Sergey Merkulov) 89h:81097 81E13 (81E20, 81G20, 83E50)

Gal'perin, E. A. (with Zheng, Quan) Nonlinear observation via global optimization methods: measure theory approach. *J. Optim. Theory Appl.* 54 (1987), no. 1, 63-92. (Summary) 89k:93023 93B07 (28A99, 49D37, 93B30, 93C10)

— Precision, complexity, and computational schemes of the cubic algorithm. *J. Optim. Theory Appl.* 57 (1988), no. 2, 223-238. (Krzysztof C. Kiwiel) 89h:90197 90C30 (65K05)

Gal'perin, G. A. A theorem of combinatorial plane geometry on the division of a polygon into triangles. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 127 (1987), no. 1, 25-28. (Marek Lassak) 89a:51047 51M20 (52A45)

— The concept of the center of mass of a system of masses in spaces of constant curvature. (Russian) *Dokl. Akad. Nauk SSSR* 302 (1988), no. 5, 1039-1044; translated in *Soviet Math. Dokl.* 38 (1989), no. 2, 367-371. (Vladislav Goldberg) 89m:53027 53A35 (70B10)

— *see also* Kolmogorov, A. N. 89d:01078

Gal'perin, I. I. (with Chyrenkaev, D. M.) Dynamical systems of automation. (Russian) *Systems for the control of turbines in nuclear power plants* (Russian), 61-70, 112, *Energoatomizdat*, Moscow, 1988. (see 89i:00023) 93A10 (00A69)

Gal'perin, M. E. Confidence intervals of coefficients of a linear model in factor analysis. *Methods for mathematical modeling in systems of automated design and planning* (Russian), 115-117, 234, *Kabardino-Balkarsk. Gos. Univ. Nauchik*, 1985. (see 89j:00017) 62H25

Gal'perin, M. V. On two mathematical approaches to controlling biologically the evolution of bottom communities. *Papers on mathematical ecology, I*, 141-179, DM, 86-2, Karl Marx Univ. Econom., Budapest, 1986. (Summary) 89a:92056 92A17

Galt'sor, D. V. (with Aliev, A. N.) Energetics of magnetized black holes: effective ergospheres and superradiance. *Astrophys. and Space Sci.* 143 (1988), no. 2, 301-316. (Piotr Bizoń) 89i:83011 83C15 (83C47)

— (with Ershov, A. A.) Monopole-fermion systems in the complex isotropic tetrad formalism. *Soviet J. Nuclear Phys.* 47 (1988), no. 2, 355-362 (1988); translated from *Yadernaya Fiz.* 47 (1988), no. 2, 560-574 (Russian). (A. O. Barut) 89i:81091 81E20 (83C99)

Galin, S. A. Effectiveness of the estimation of the time position of a random pulsed signal with an unknown modulating function. *Soviet J. Comm. Tech. Electron.* 33 (1988), no. 2, 75-79; translated from *Radiotekhn. i Elektron.* 32 (1987), no. 10, 2096-2101 (Russian). (Not in MR) 94A05 (94A14)

Galusinski, G. Retractions régulières. [Regular retractions] *Math. Z.* 196 (1987), no. 3, 315-322. (Graziano Gentili) 89f:32050 32H99

- Galuszka, J.** On bisemilattices with generalized absorption laws. *I. Demonstratio Math.* **20** (1987), no. 1-2, 37-43 (1988). (Anna Romanowska) **89g:06013** 06A12
- Bisemilattices with five essentially binary polynomials. *Math. Slovaca* **38** (1988), no. 2, 123-132. (Anna Romanowska) **89g:06014** 06A12
- Galvan, J. B.** (with Sesma, J.) Ambiguities in the Debye expansion of the elastic  $S$  matrix. *J. Math. Phys.* **28** (1987), no. 10, 2420-2426. (R. C. Varma) **89a:81161** 81F15
- Galvão, Carlos A. P.** (with Pimentel, B. M.) The canonical structure of Podolsky generalized electrodynamics. (French summary) *Canad. J. Phys.* **66** (1988), no. 5, 460-466. (N. D. Sengupta) **89k:78007** 78A25
- (with Lemos, Nivaldo A.) On the quantization of constrained generalized dynamics. *J. Math. Phys.* **29** (1988), no. 7, 1588-1592. (Claude Itzykson) **89f:81075** 81D07 (58F06, 70H35)
- Galves, A.** (with Presutti, Enrico) Edge fluctuations for the one-dimensional supercritical contact process. *Ann. Probab.* **15** (1987), no. 3, 1131-1145. (W. David Wick) **89c:60117** 60K35 (60F17)
- (with Olivieri, Enzo; Vares, M. E.) Metastability for a class of dynamical systems subject to small random perturbations. *Ann. Probab.* **15** (1987), no. 4, 1288-1305. (Ya. I. Bilopol'ska) **89a:60142** 60H10 (58F30, 60J60)
- (with Presutti, Enrico) Travelling wave structure of the one-dimensional contact process. *Stochastic Process. Appl.* **25** (1987), no. 1, 153-163. (W. David Wick) **89c:60118** 60K35 (60F17)
- Galvez, F. J.** (with Dehesa, J. S.) On two sets of orthogonal polynomial systems encountered in nonlinear physics. *J. Phys. A* **20** (1987), no. 16, 5489-5495. (W. A. Al-Salam) **89f:33017** 33A65
- Galvin, F.** (with Ciesielski, K.) Cylinder problem. *Fund. Math.* **127** (1987), no. 3, 171-176. (F. R. Drake) **89c:03079** 03E05 (03E10, 03E35)
- (with Bergman, George M.) Transversals of families in complete lattices, and torsion in product modules. *Order* **3** (1987), no. 4, 391-403. (Birge Zimmermann-Huisgen) **89f:06006** 06A23 (13C12, 16A63)
- Gamas, Carlos** Conditions for a symmetrized decomposable tensor to be zero. *Linear Algebra Appl.* **108** (1988), 83-119. (Gin-Hor Chan) **89m:15021** 15A69
- Gambaro, Ivana** see Heilbron, John L., **89i:01080**
- Gambarov, L. A.** ★ Оптимизация планов развития и распределения в экономико-производственных системах. (Russian) [Optimization of plans for development and distribution in economic-production systems] Препринт [Preprint], 87-15. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. 21 pp. (Not in MR) **90A11**
- Decomposition of multi-index problems of the allocation of orders for production. (Russian) *Theory of optimal decisions* (Russian), 4-9, i, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (Summary) **89d:90109** 90B30 (90C08)
- Systems optimization of multidimensional problems of production-transportation type. (Russian) *Methods for the investigation of extremal problems* (Russian), 10-14, i, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. (Summary) **89h:90151** 90C08
- Gambaudo, J.-M.** (with Glendinning, Paul; Tresser, C.) The gluing bifurcation. I. Symbolic dynamics of the closed curves. *Nonlinearity* **1** (1988), no. 1, 203-214. (Stephen Schecter) **89a:58080** 58F14 (34C25, 58F22)
- Gamberelli, Gianfranco** Classes of rational polyhedra. (Russian and Polish summaries) *Control Cybernet.* **16** (1987), no. 2, 123-128. (Introduction) **89h:90122** 90C05 (52A25)
- Gambi Fernández, J. M.** (with San Miguel, A.; Vicente Ruiz, Francisco) Fourth-order orbital equations in stationary weak gravitational fields. *Internat. J. Theoret. Phys.* **27** (1988), no. 1, 107-130. (Larry L. Smalley) **89f:83015** 83C10 (83-08, 83C25)
- Gambill, Thomas N.** (with Skeel, Robert D.) Logarithmic reduction of the wrapping effect with application to ordinary differential equations. *SIAM J. Numer. Anal.* **25** (1988), no. 1, 153-162. (Ekkehard Wagenführer) **89a:65075** 65G10 (34A50, 65F05, 65L05)
- Gambini, Alessandra** Algorithms for soluble subalgebras of finite-dimensional Lie algebras. *Linear Algebra Appl.* **104** (1988), 29-38. (Bernard Kolman) **89k:17003** 17-04 (17B05)
- Gambini, Rodolfo** (with Trias, Antoni) Nonparametric strings. *Phys. Lett. B* **200** (1988), no. 3, 280-284. (Summary) **89h:81189** 81E99 (81E30)
- Gamble, E. B.** (with Poggio, T.; Little, J. J.) Parallel integration of vision modules. *Science* **242** (1988), no. 4877, 436-440. (Summary) **89f:92087** 92A27 (68T10, 68U10)
- Gambao, Fabrice** Minimisation de l'information de Kullback et maximisation de l'entropie sous une contrainte quadratique. (English summary) [Kullback information minimization and entropy maximization under a quadratic constraint] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 9, 425-427. (Răzvan Andonie) **89i:94018** 94A17
- (with Dacunha-Castelle, Didier) Maximisation de l'entropie sous contraintes linéaires et non linéaires. (English summary) [Entropy maximization under linear and nonlinear constraints] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 12, 503-506. (Summary) **89h:62014** 62B10
- Gambos, J. M.** (with Bujalance, E.; Etayo Miqueo, José Javier) Algebraic function fields in one variable over real-closed ground fields. *Géométrie algébrique et applications, III (La Rabida, 1984)*, 125-129. *Travaux en Cours*, 24, Hermann, Paris, 1987. (N. Sankaran) **89a:12009** 12F20 (12D15, 14G30, 14H05)
- Some new results on ordered fields. *J. Algebra* **110** (1987), no. 1, 1-12. (Niel Shell) **89i:12017** 12J15 (12F20)
- Un exemple d'ensemble constructible à adhérence non constructible. (English summary) [An example of a constructible set with nonconstructible closure] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 14, 617-619. (Michel Coste) **89f:32015** 32C05 (14A99, 14G30, 26A12, 32B20)
- Gambos, Jorge** (with Zanelli, Jorge) Ground-state representation and the square root of the bosonic string. *Classical Quantum Gravity* **5** (1988), no. 2, L41-L46. (Summary) **89h:81190** 81E99 (81E30)
- (with Zanelli, Jorge) Supersymmetric quantum mechanics of fermions minimally coupled to gauge fields. *J. Phys. A* **21** (1988), no. 5, L283-L286. (Summary) **89c:81122** 81E99 (81E13)
- (with Ruiz-Altaba, M.) Functional diffusion equation for membranes. *Phys. Lett. B* **205** (1988), no. 2-3, 245-249. (Summary) **89j:81182** 81E99 (58E30, 81E30)
- (with Zanelli, Jorge; Ruiz-Altaba, M.) Supersymmetrization of scalar field theories. *Phys. Lett. B* **206** (1988), no. 2, 252-258. (Gheorghe Zet) **89g:81074** 81E99
- Gambolati, Giuseppe** (with Pini, Giorgio; Sartoretto, Flavio) An improved iterative optimization technique for the leftmost eigenpairs of large symmetric matrices. *J. Comput. Phys.* **74** (1988), no. 1, 41-60. (Vasile I. Ionescu) **89g:65041** 65F15
- Gambosi, Giorgio** (with Nešetřil, Jaroslav; Talamo, Maurizio) Efficient representation of taxonomies. *TAPSOFT '87, Vol. 1* (Pisa, 1987), 232-240. *Lecture Notes in Comput. Sci.*, 249, Springer, Berlin-New York, 1987. (Jarmila Hedlíková) **89a:06006** 06A10 (05C05, 05C20, 68Q25)
- (with Italiano, Giuseppe F.; Talamo, Maurizio) Getting back to the past in the union-find problem. *STACS 88 (Bordeaux, 1988)*, 8-17. *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (Summary) **89c:68046** 68Q25 (68R05)
- Gamella, T. W.** (with Hayashi, Mikihiro) The algebra of bounded analytic functions on a Riemann surface. *J. Reine Angew. Math.* **382** (1987), 49-73. (M. von Renstein (Zbl 635:30039)) **89j:46052** 46J15 (30F99, 30H05)
- (with Davie, A. M.) A theorem on polynomial-star approximation. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 351-356. (Richard M. Aron) **89k:46023** 46B20 (46G20)
- Games, Richard A.** An algebraic construction of sonar sequences using  $M$ -sequences. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 4, 753-761. (Summary) **89c:05067** 05B99 (94A05)
- Gametskil, A. F.** Perfect quadratic forms and problems on arithmetic minima of quadratic forms. (Russian) *Mat. Issled.* No. 103 *Voprosy Diskret. Geom.* (1988), 22-42, 174. (Béla Uhrin) **89k:11051** 11H50 (11H55)
- Gamidov, N. M.** The Cauchy problem with reverse time flow for an evolution equation. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 3, 30-34 (1988). (Tie Hu Qin) **89h:35146** 35K30 (34G10, 35M05)
- Gamkrelidze, N. G.** Application of a smoothness function in the proof of a local limit theorem. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 2, 373-376; translated in *Theory Probab. Appl.* **33** (1988), no. 2, 352-355. (Gerd Christoph) **89i:60047** 60F05 (60E10)
- Gamkrelidze, R. V.** (with Agrach'ev, A. A.) Calculation of the Euler characteristic of the intersections of real quadrics. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 1, 11-14; translated in *Soviet Math. Dokl.* **37** (1988), no. 2, 297-300. (V. M. Kharlamov) **89h:14019** 14F45 (14N99, 57R20, 58F21)
- see also Current problems in mathematics. Fundamental directions, **89a:58088**; Birthday: Gamkrelidze, R. V., **89b:01068**; Current problems in mathematics. Newest results, **89c:58206**; **89c:00010**; Mathematical analysis, **89c:47002**; Current problems in mathematics. Fundamental directions, **89f:22001**; **89f:41001**; Algebra. Topology. Geometry, **89g:00004**; Probability theory. Mathematical statistics. Theoretical cybernetics, **89g:00011**; Kharatishvili, G. L., **89h:01069**; Current problems in mathematics. Fundamental directions, **89h:43001**; **89m:22010** and **89m:54001**
- Gamez, M. S.** A method for the parametrization of one-step problems of operative linear stochastic programming. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 1, 71-74, 79, 135; translated in *Cybernetics* **24** (1988), no. 1, 88-94. (Riho Lepp) **89h:90168** 90C15
- Gan, Dan Yan** Semiclassical approximation in quantum mechanics and Maslov characteristic classes. (Chinese. English summary) *Adv. in Math. (Beijing)* **16** (1987), no. 4, 337-341. (Min You Qi) **89a:58104** 58G15 (35C20, 81C25, 81D07)
- Gan, R. Z.** (with Moodie, T. B.) Broad-spectrum impedance calculations for arterial models. *Internat. J. Engrg. Sci.* **27** (1989), no. 1, 63-76. (Not in MR) **92A09** (73J06, 76Z05)
- Gan, Shi Xin** Local convergence of amarts. (Chinese. English summary) *J. Wuhan Univ. Natur. Sci. Ed.* **1988**, no. 2, 11-16. (Jia Gang Wang) **89f:60065** 60G48
- Gan, Ying Ai** (with Dong, Ze Qing) An elementary method on discounted Markovian decision programming. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 4, part I, 1-6. (Summary) **89h:90250** 90C40
- Gan, You Chen** Analytical methods in the study of the response characteristic function of a system. (Chinese. English summary) *Sci. Exploration* **5** (1985), no. 4, 93-102. (Not in MR) **93B25**
- A fuzzy statistical method for the fuzzy set extension principle. (Chinese. English summary) *J. Changsha Railway Inst.* **5** (1987), no. 3, 131-136. (Summary) **89c:03097** 03E72 (62A99)
- Ganapathy Iyer, V.** A uniqueness theorem for  $L_p(a, b)$ . *J. Ramanujan Math. Soc.* **1** (1986), no. 1-2, 81-84. (Y. Benyamini) **89j:46028** 46E30 (44A60)
- Ganczarewicz, Jacek** ★ Geometria różniczkowa. (Polish) [Differential geometry] Biblioteka Matematyczna [Mathematics Library], 64. Państwowe Wydawnictwo Naukowe (PWN), Warsaw, 1987. 532 pp. ISBN 83-01-06304-1 (O. Kowalski) **89f:53001** 53-01
- (with Mahi, Salima; Rahmani, Noureddine) Horizontal lift of tensor fields of type  $(1, 1)$  from a manifold to its tangent bundle of higher order. Proceedings of the 14th winter school on abstract analysis (Sri, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* No. 14 (1987), 43-59. (I. Kolář) **89a:53036** 53C05
- Gancedo, E.** (with Pastor, Gerardo; Ferreiro, A.; Torres, M.) Isotropic spatial axial radiations and notable polyhedra. *Internat. J. Math. Ed. Sci. Tech.* **19** (1988), no. 4, 489-499. (I. Ya. Gusak) **89i:52007** 52A25
- Ganchev, A. Ch.** (with Dobrev, V. K.) Modular invariance for the  $N = 2$  twisted superconformal algebra. *Modern Phys. Lett. A* **3** (1988), no. 2, 127-137. (Claude Itzykson) **89h:81183** 81E99 (17A70, 81E40)
- Ganchev, Alexander H.** (with Greenberg, William; van der Mee, C. V. M.) Perturbation of bisemigroups and boundary value problems for abstract kinetic equations. *Proceedings of the 15th international symposium on rarefied gas dynamics, Vol. 1* (Grado, 1986), 125-133. Teubner, Stuttgart, 1986. (Summary) **89f:47063** 47D05 (47B50, 82A40, 82A70, 85A25)
- Perturbation of bisemigroups and transport theory. *Group theoretical methods in physics* (Varna, 1987), 322-325. *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (Hassan Emamirad) **89k:47058** 47D05 (47A55, 82A70)
- (with Greenberg, William; van der Mee, C. V. M.) Perturbation analysis of analytic bisemigroups and applications to linear transport theory. *Special classes of linear operators and other topics* (Bucharest, 1986), 83-99. *Oper. Theory: Adv. Appl.*, 28, Birkhäuser, Basel-Boston, MA, 1988. (V. Protopenescu) **89a:47089** 47D05 (47A55, 82A70)
- (with Greenberg, William) Linear half space transport equations with accretive, invertible collision operators. *Transport Theory Statist. Phys.* **17** (1988), no. 1, 93-105. (Luigia Arlotti) **89h:82059** 82A70 (47A50)
- Ganchev, Georgi** (with Ivanov, Stefan) The totally geodesic plane axiom on a differentiable manifold with a linear connection. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 1, 33-35.



- (Sorin Dragomir) **89b:53050** 53C05  
 — (with Stanilov, Gr.; Borisov, Adriyan V.) Academician Boyan L. Petkanchin (1907–1987). (Bulgarian) *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* **29(62)** (1987), no. 3, 208–212. (Editors) **89b:01061** 01A70
- (with Gribachev, Kostadin; Mikhova, Vessela)  $B$ -connections and their conformal invariants on conformally Kaehler manifolds with  $B$ -metric. *Publ. Inst. Math. (Beograd) (N.S.)* **42(56)** (1987), 107–121. (Sorin Dragomir) **89c:53096** 53C50 (53C15)
- Gándac, Florea** Operator equations in uniform spaces. (Romanian. English summary) *Stud. Cerc. Mat.* **39** (1987), no. 6, 507–513. (Summary) **89f:54057** 54E15
- Equations with parameters in locally convex spaces. (Romanian. English summary) *Stud. Cerc. Mat.* **40** (1988), no. 6, 471–476. (George Isaac) **89k:47101** 47H15
- Gander, Walter** (with Arbenz, Peter; Golub, Gene H.) Restricted rank modification of the symmetric eigenvalue problem: theoretical considerations. *Linear Algebra Appl.* **104** (1988), 75–95. (V. S. Zajtakovski) **89b:65052** 65F15 (15A18)
- Gandhi, S. K.** (with Stelle, K. S.) Vanishing of the supermembrane partition function. *Classical Quantum Gravity* **5** (1988), no. 9, L127–L133. (Emili Elizalde) **89m:81098** 81E13 (81D20, 81E20, 81E30)
- Gandini, Pier Mario** (with Lo Faro, Giovanni) Characterization via filters of some topological spaces usually defined via coverings. (Italian. English summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **120** (1986), no. 3–4, 65–70 (1987). (Stoyan Nedev) **89i:54032** 54D20 (54A25)
- Gandolfi, A.** On the uniqueness of the infinite cluster in percolation. *Mark Kac Seminar on Probability and Physics. Syllabus 1985–1987* (Amsterdam, 1985–1987), 49–52. *CWI Syllabi*, 17, Math. Centrum, Centrum Wisk. Inform., Amsterdam, 1988. (see **89c:60005**) 60K35 (82A43)
- (with Bertuzzi, A.; Lucidi, S.) Constrained cross-validation applied to estimation of kinetic parameters of cell populations in perturbed growth. *System modelling and optimization* (Tokyo, 1987), 614–623. *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (Summary) **89m:92042** 92A15 (92A09, 92A10)
- (with Keane, Michael; Russo, L.) On the uniqueness of the infinite occupied cluster in dependent two-dimensional site percolation. *Ann. Probab.* **16** (1988), no. 3, 1147–1157. (William Barnard Krebs) **89m:82044** 82A43 (60K35)
- (with Grimmett, G. R.; Russo, L.) On the uniqueness of the infinite cluster in the percolation model. *Comm. Math. Phys.* **114** (1988), no. 4, 549–552. (R. T. Smythe) **89c:60199** 60K35 (82A43)
- Gandy, E. M.** (with Zubarev, A. L.) The Faddeev-Hahn equations in the quantum-mechanical three-body problem. *Soviet J. Particles and Nuclei* **19** (1988), no. 2, 180–189; translated from *Fiz. Elementar. Chastits i Atom. Yadra* **19** (1988), no. 2, 415–438, 440 (Russian. English summary). (Summary) **89b:81246** 81F10
- Ganesan, M.** (with Joshi, Mohan) Approximate solvability of Hammerstein equation. *Numer. Funct. Anal. Optim.* **9** (1987), no. 9–10, 1039–1058. (J. Kolomý) **89c:47080** 47H17 (47H05, 65J15)
- Ganesan, M. S.** (with Padmanabhan, K. S.) Convolutions of certain classes of univalent functions with negative coefficients. *Indian J. Pure Appl. Math.* **19** (1988), no. 9, 880–889. (Herb Silverman) **89k:30013** 30C45
- Ganesan, N.** (with Suryanarayana, S.) Stable and pseudo stable near rings. *Indian J. Pure Appl. Math.* **19** (1988), no. 12, 1206–1216. (J. R. Clay) **89k:16070** 16A76
- Ganesan, S.** (with Lakshmanan, M.) Singularity-structure analysis and Hirota's bilinearisation of the Davey-Stewartson equation. *J. Phys. A* **20** (1987), no. 17, L1143–L1147. (Summary) **89c:35131** 35Q20 (58Q37)
- Ganesan, Sekar** (with Shieh, L. S.; Dib, H. M.) Linear quadratic regulators with eigenvalue placement in a specified region. *Automatica—J. IFAC* **24** (1988), no. 6, 819–823. (Not in MR) 49D40 (93B60)
- (with Mehio, M. M.; Shieh, L. S.) Eigenstructure assignment in multivariable state-feedback design. *Control Theory Adv. Tech.* **4** (1988), no. 4, 483–488. (Not in MR) 93B60 (93B55, 93C35)
- (with Shieh, L. S.; Dib, H. M.; Yates, R. E.) Optimal pole-placement for state-feedback systems possessing integrality. *Internat. J. Systems Sci.* **19** (1988), no. 8, 1419–1435. (Krzysztof Kuźmiński) **89k:93107** 93B55 (93B50)
- Ganesh, C.** Algorithms for the interpolation with outer functions. *Linear algebra in signals, systems, and control* (Boston, MA, 1986), 375–383, *SIAM, Philadelphia, PA*, 1988. (Summary) **89i:30045** 30E05 (30D55, 41A05, 93B28)
- Gangal, A. D.** (with Amritkar, R. E.; Gupta, Neelima) Dimensional characterization of sets with partial scaling symmetry. *Phys. Rev. A* (3) **36** (1987), no. 6, 2850–2861. (Frederick R. Marotto) **89b:28007** 28A75 (26A30, 58F11, 58F13, 82A99)
- Gangolli, Ramesh** (with Varadarajan, V. S.)  $\ast$  Harmonic analysis of spherical functions on real reductive groups. *Ergebnisse der Mathematik und ihrer Grenzgebiete [Results in Mathematics and Related Areas]*, 101, Springer-Verlag, Berlin-New York, 1988. xiv+365 pp. ISBN 3-540-18302-7 (Roberto J. Miatello) **89m:22015** 22E30 (22E46, 43A90)
- Gangopadhyay, Debashis** (with Home, D.) Exploring the meaning of an individual Feynman path. *Phys. Lett. A* **126** (1988), no. 4, 219–222. (Summary) **89a:81030** 81C35
- (with Singh, Lambodar Prasad) Fujikawa-type formulation of gauged BRST symmetry for the free bosonic string. *Phys. Rev. D* (3) **38** (1988), no. 8, 2652–2655. (Summary) **89j:81183** 81E99 (81E30)
- Ganguly, Ashok** (with Jain, Rajendra Kumar<sup>1</sup>) On the strong Perron summability of Fourier series and its conjugate series. *J. Indian Acad. Math.* **8** (1986), no. 1, 64–67. (Gokulananda Das) **89g:42014** 42A24
- An application of a fixed point theorem to approximation theory. *J. Indian Acad. Math.* **8** (1986), no. 2, 69–70. (O. P. Kapoor) **89c:41045** 41A65 (47H10)
- (with Chandel, Raghendra Singh) Some results on general topology. *J. Indian Acad. Math.* **9** (1987), no. 2, 87–91. (B. T. Sims) **89i:54029** 54D10 (54D15)
- On  $\{C, \alpha, \gamma\}$  summability factors of Fourier series. *Jhānabha* **17** (1987), 1–9. (From the text) **89b:42013** 42A24
- Ganguly, Sumita** (with Saha, Supriti) On separation axioms and separations of connected sets in fuzzy topological spaces. *Bull. Calcutta Math. Soc.* **79** (1987), no. 4, 215–225. (Summary) **89b:54007** 54A40 (03E72)
- (with Mukherjee, M. N.) Generalization of almost continuous multifunctions to bitopological spaces. *Bull. Calcutta Math. Soc.* **79** (1987), no. 5, 274–283. (Janina Ewert) **89c:54032** 54C60 (54C08)
- Gani, J. M.** (with Todorovic, P.) On the persistent release of particles in a fluid flow. *Contributions to the theory and application of statistics*, 43–74, Academic Press, Boston, MA, 1987. (Peter J. Brockwell) **89b:60233** 60K30 (76S05)
- (with Todorovic, P.) Modeling the effect of erosion on crop production. *J. Appl. Probab.* **24** (1987), no. 4, 787–797. (Peter Purdue) **89c:60039** 60F15 (92A17)
- (with Todorovic, P.; Yakowitz, S.) Silting of dams by sedimentary particles. *Math. Sci.* **12** (1987), no. 2, 81–90. (Hideo Osawa) **89b:60165** 60K30
- Adventures in applied probability. A celebration of applied probability. *J. Appl. Probab.* **1988, Special Vol. 25A**, 3–23. (Summary) **89m:01089** 01A70 (60–03)
- see also **Celebration of applied probability**. (Not in MR)
- Ganier, I. G.** Complete variation of measures with values in ordered vector spaces. (Russian) *Investigations in degenerate differential equations and limit theorems of probability theory* (Russian), 78–83, Tashkent. Gos. Ped. Inst., Tashkent, 1985. (see **89g:60002**) 60B05
- Convergence of martingales with values in the space  $L_0(\Omega, \Sigma, \lambda)$ . (Russian) *Dokl. Akad. Nauk UzSSR* **1988**, no. 11, 9–10. (Not in MR) 60G44
- Ganigi, M. D.** (with Uraleghaddi, B. A.) Meromorphic starlike functions with two fixed points. *Bull. Iranian Math. Soc.* **14** (1987), no. 1, 10–21. (O. P. Juneja) **89c:30031** 30C45
- (with Uraleghaddi, B. A.) Meromorphic convex functions with negative coefficients. *J. Math. Res. Exposition* **7** (1987), no. 1, 21–26. (Herb Silverman) **89c:30038** 30C45 (30D30)
- (with Uraleghaddi, B. A.) A certain class of meromorphically starlike functions with positive coefficients. *Pure Appl. Math. Sci.* **26** (1987), no. 1–2, 75–81. (Stephen M. Zemyan) **89k:30027** 30C45 (30C50)
- (with Uraleghaddi, B. A.) Integrals of certain meromorphically starlike functions. *Indian J. Math.* **30** (1988), no. 1, 83–88. (K. S. Padmanabhan) **89d:30016** 30C45
- Ganikhodzaev, A. N.** (with Badalov, I. S.) Some generalizations of limit theorems for branching processes with decreasing immigration. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 6, 3–8, 73. (Summary) **89k:60123** 60B80
- Ganitanand** On the date of Sridhara. *Ganita Bhrati* **9** (1987), no. 1–4, 54–56. (A. I. Volodarskii) **89m:01018** 01A32
- Ganoulis, N.** (with Lazarides, G.) Generalized index theorem for string superconductivity in realistic models. *Phys. Rev. D* (3) **38** (1988), no. 2, 547–551. (Yi-Gao Liang) **89k:81141** 81E99 (58G10, 58G40, 81E30)
- Gans, W.** see **Fractals, quasicrystals, chaos, knots and algebraic quantum mechanics**, **89c:00037**
- Gănscă, I.** (with Coman, G.) On blending interpolation and cubature formulas. (Romanian. English summary) *Bul. Ştiinţ. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Maş.* **28** (1985), 35–40. (Not in MR) 65D32 (41A05, 65D05)
- Ganshin, G. S.**  $\ast$  Методы оптимизации и решение уравнений. (Russian) [Methods for the optimization and solution of equations] “Nauka”, Moscow, 1987. 127 pp. (M. Vlachi) **89i:90047** 90C05 (65K05, 90C08)
- Gansser, Emden R.** (with Vo, Kiem Phong) The chromatic generating function. *Linear and Multilinear Algebra* **22** (1987), no. 1, 87–93. (Larry Basenipiler) **89b:05132** 05C70 (05C15)
- Ganter, Bernhard** see **Contributions to conceptual analysis**, **89a:00018**
- Gantaler, Heinrich** (with Berg, Jan; Morscher, Edgar) Bolzano's Biographie in tabellarischer Übersicht. [Bolzano's biography in a tabular overview] Bolzano-Studien. *Philos. Natur.* **24** (1987), no. 4, 353–372. (Editors) **89i:01059** 01A70 (03–03)
- (with Simons, Peter M.) Bernard Bolzano's kosmologischer Gottesbeweis. [Bernard Bolzano's cosmological proof of God] Bolzano-Studien. *Philos. Natur.* **24** (1987), no. 4, 469–475. (see **89c:01001**) 01A55
- Ganzburg, M. I.** Exact constants of the best polynomial approximation on an  $(m-1)$ -dimensional sphere. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 12, 35–42, 80. (K. G. Ivanov) **89b:41050** 41A44 (41A50, 41A63)
- Exact constants of the best harmonic approximation of a function of several variables. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 4, 788–791; translated in *Soviet Math. Dokl.* **37** (1988), no. 1, 142–145. (J. Albricht) **89d:41040** 41A30 (41A44)
- Gao, Ai Jun** (with Chen, Han Fu; Lei, Guo) Convergence and robustness of the Robbins-Monro algorithm truncated at randomly varying bounds. *Stochastic Process. Appl.* **27** (1988), no. 2, 217–231. (Kurt Marti) **89b:62180** 62L20
- Gao, Che** see **Korte, B.**, **89i:90064a** and **89i:90064b**
- Gao, Cheng Tai** A new method for estimating the population distribution. (Chinese. English summary) *Acta Math. Appl. Sinica* **11** (1988), no. 3, 257–270. (K. F. Yu) **89m:62035** 62G05
- Gao, Chun Yi** Neighborhoods of a class of analytic functions. (Chinese. English summary) *Hunan Ann. Math.* **7** (1987), no. 2, 67–73. (Summary) **89b:30018** 30C45
- Gao, Feng Xin** (with Zhang, Zhen Guo; Hou, Zhan Yuan) The exponents of third-order differential equations with unbounded piecewise-constant matrices and of their perturbation equations. (Chinese. English summary) *Acta Math. Appl. Sinica* **11** (1988), no. 3, 340–357. (Liang Zhongchao) **89k:34072** 34D05
- Gao, Fu Hong** (with Wang, Zi Yu) Approximation of discontinuous functions by Kantorovich operators. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **10** (1988), no. 3, 274–280. (Weixing Zheng) **89k:41029** 41A36 (41A10, 41A17)
- Gao, Guang R.** A pipelined solution method of tridiagonal linear equation systems. *Proceedings of the 1986 International Conference on Parallel Processing*, 84–91, IEEE Comput. Soc. Press, Washington, DC, 1986. (see **89b:68010**) 65W05 (65F05)
- A stability classification method and its application to pipelined solution of linear recurrences. *Parallel Comput.* **4** (1987), no. 3, 305–321. (D. M. Young, Jr.) **89a:65203** 65W05
- Gao, Guo Zhu** Stability of a class of neutral functional-differential equations. (Chinese) An English summary appears in *Chinese Ann. Math. Ser. B* **8** (1987), no. 4, 494. *Chinese Ann. Math. Ser. A* **8** (1987), no. 4, 496–503. (Zuxiu Zheng) **89d:34116** 34K20

- Gao, H. B.** see **Gao, Hong Bo**
- Gao, Hong**  $L^2$ -solutions and regular generalized solutions of a class of integro-partial differential equations with variable parameter. (Chinese. English summary) *Dongbei Shida Xuebao* 1987, no. 1, 27-33. (Summary) **89e:45010** 45K05 (35Q99, 92A15)
- (with Chen, Ren Zhao) Some results on the critical value of the time-varying specific fertility rate  $\beta(t)$ . (Chinese. English summary) *Dongbei Shida Xuebao* 1987, no. 3, 1-8. (Summary) **89a:92031** 92A12 (92A15)
- Gao, Heng Shan** Algebraic semantics in quantified modal logic. I. Concerning the case of  $S5^*$ . (Chinese) *Acta Math. Sinica* 30 (1987), no. 6, 838-846. (Fangming Song) **89h:03024** 03B45
- The algebraic and Kripke's semantics for quantified modal systems. The case concerning  $S5^*$ . *Kexue Tongbao (English Ed.)* 32 (1987), no. 13, 870-872. (Franco Montagna) **89f:03009** 03B45
- (with Lü, Jian An) Algebraic semantics for some systems of quantified normal modal logic with the Barcan formula. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 10, 727-729. (Not in MR) **03B45**
- Gao, Hong Bo** (with Sun, Yi) The local product structure of the internal space and some properties of the heterotic string action. (Chinese. English summary) *High Energy Phys. Nuclear Phys.* 11 (1987), no. 5, 614-619. (Bo-Wei Xu) **89h:81191** 81E99 (81E30)
- Do quantum strings need a quasiconformal instanton? *Classical Quantum Gravity* 5 (1988), no. 10, L135-L138. (Summary) **89j:81184** 81E99 (32G15, 81E30)
- Coadjoint orbit of the Virasoro group and the index theorem on  $\text{Diff}^1 S^1/S^1$ . *Phys. Lett. B* 206 (1988), no. 3, 427-432. (Charles Nash) **89j:22041** 22E65 (17B65, 58G10, 81E40)
- Gao, Hong Sheng** A commutativity theorem for Baer semisimple rings. (Chinese. English summary) *Dongbei Shuxue* 3 (1987), no. 2, 185-190. (Yuan Chun Guo) **89e:16048** 16A70
- Gao, Hong Ye** (with An, Hong Zhi) Two limit theorems on ARIMA models. *Acta Math. Appl. Sinica (English Ser.)* 4 (1988), no. 2, 154-164. (Jiří Anděl) **89g:60064** 60F05 (62M10)
- Gao, Jian Guo** (with Shao, Hui He; Yu, An Ran) Minimum time control of a polymerization reactor for epoxy resin. (Chinese) *Inform. and Control (Shenyang)* 17 (1988), no. 2, 57-61. (Not in MR) **93E12** (93E10)
- Gao, Jian Min** Existence and uniqueness of global smooth solutions for initial-boundary value problems of nonlinear wave equations in exterior domains. (Chinese. English summary) *Dongbei Shuxue* 3 (1987), no. 3, 359-371. (Tie Hu Qin) **89e:35145** 35L70 (35B40)
- (with Xu, Li Cun) A global existence theorem for the Cauchy problem of nonlinear wave equations. *Proc. Roy. Soc. Edinburgh Sect. A* 109 (1988), no. 3-4, 261-269. (Manuel Milla Miranda) **89k:35146** 35L70
- Gao, Jiapeng** (with Rudolph, Luther D.; Hartmann, Carlos R. P.) Iteratively maximum likelihood decodable spherical codes and a method for their construction. *IEEE Trans. Inform. Theory* 34 (1988), no. 3, 480-485. (Alexander M. Barg) **89j:94032** 94B25 (94B35)
- Gao, Jie** (with Ling, Fu Hua) A new integration schema for second order dynamical equations. *Z. Angew. Math. Mech.* 68 (1988), no. 5, T393-T394. (Not in MR) **65L99**
- Gao, Jin Chang** (with Zhang, Yu Lin; Zhou, Chun Hui) Static decoupling of interconnected systems. *Large Scale Systems* 13 (1987), no. 2, 157-165. (Summary) **89e:93012** 93A15 (49D27, 93B50)
- Gao, Jun Bin** Multivariate quasi-Newton interpolation. (Chinese. English summary) *J. Math. Res. Exposition* 8 (1988), no. 3, 447-453. (Weiyi Su) **89k:41004** 41A05 (41A63, 65D05)
- (with Xu, Li Zhi) On a problem of  $S_3^1(\Delta_{11}^1)$  spline interpolation. I. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* 10 (1988), no. 1, 55-67. (Summary) **89j:65014** 65D07 (41A15)
- Gao, Long Sheng** (with Shang, Tie Liang) Transportation theory of multiple scattering and its application to seismic coda waves of impulse source. *Sci. Sinica Ser. B* 31 (1988), no. 12, 1503-1514. (Summary) **89m:86012** 86A15 (73D25)
- Gao, Ming Kun** Methods of statistical test analysis of errors of test facilities. (Chinese) *Math. Practice Theory* 1987, no. 4, 55-62. (Not in MR) **62F03**
- Gao, Qi Ren** The monotone principle of M. R. Tasković for fixed points. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoien.* 26 (1987), no. 1, 11-16. (Editors) **89b:54051** 54H25
- The regular capacity of the balayage of positive hyperharmonic functions on harmonic spaces. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoien.* 27 (1988), no. 1, 13-19. (Summary) **89j:31013** 31D05
- Gao, Shi** Orthogonal projection formulas and quadratic hypersurfaces. (Chinese) *Yangzhou Shiyuan Ziran Kexue Xuebao* 1985, no. 2, 19-29. (Kee Yuen Lam) **89j:51019** 51N10 (15A21, 51N20)
- Gao, Shi An** (with He, Yu Zan) On the growth and value distribution of analytic solutions of a class of algebraic differential equations. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 1, 109-120. (W. Balser) **89b:34011** 34A20 (34C11)
- (with Leslie, D. C.) The stability of spectral schemes for the large eddy simulation of channel flows. *Internat. J. Numer. Methods Fluids* 8 (1988), no. 9, 1107-1116. (P. C. Jain) **89j:76021** 76-08
- Some results in the theory of complex oscillations for periodic second-order linear differential equations. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 2, 89-92. (Not in MR) **34A20** (34C10, 34C25)
- Some results on the complex oscillation theory of periodic second-order linear differential equations. *Kexue Tongbao (English Ed.)* 33 (1988), no. 13, 1064-1068. (Ilpo Laine) **89m:34005** 34A20 (30D35, 34C10)
- Gao, Wei Bing** (with Shi, Zhi Cheng) Dynamic hierarchical control for large-scale systems. (Chinese. English summary) *Acta Automat. Sinica* 13 (1987), no. 2, 111-119. (Summary) **89d:93004** 93A13 (93B50, 93B55, 93D20)
- (with Shi, Zhi Cheng) Stability of interval parameter matrices. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 15, 1121-1123. (Not in MR) **93D05** (93C40)
- (with Shi, Zhi Cheng) On decentralized stabilization of large-scale interconnected systems. *Large Scale Systems* 13 (1987), no. 2, 187-190. (Not in MR) **93D15** (93A15)
- (with Wu, Dong Nan) On the optimization and global linearization of nonlinear mechanical systems. (Chinese. English summary) *Control Theory Appl.* 5 (1988), no. 1, 42-50. (Not in MR) **93C75** (93B17)
- (with Xia, Xiao Hua) Nonlinear observer design by observer canonical forms. *Internat. J. Control* 47 (1988), no. 4, 1081-1100. (K. B. Datta) **89h:93012** 93B07 (93B10, 93B50)
- (with Wu, Dong Nan) Global linearization of nonlinear systems. *Sci. Sinica Ser. A* 31 (1988), no. 3, 369-378. (Edward Jezewski) **89k:93042** 93B17 (93C10, 93C15)
- (with Shi, Zhi Cheng) Decentralized control for linear time-varying systems. *Sci. Sinica Ser. A* 31 (1988), no. 6, 759-768. (Djordjija Petkovski) **89m:93005** 93A15 (93B05, 93C05)
- (with Xia, Xiao Hua) On exponential observers for nonlinear systems. *Systems Control Lett.* 11 (1988), no. 4, 319-325. (Summary) **89j:93014** 93B07 (93C10)
- Gao, Xiao Chun** (with Chen, Cheng Ming; Wang, Yong) An infinite set of nonlocal conserved currents in a two-dimensional nonlinear  $\sigma$ -model. (Chinese. English summary) *Zhejiang Daxue Xuebao* 21 (1987), no. 5, 63-72. (Summary) **89e:81063** 81D15 (81E40)
- Gao, Xiao Shan** Trigonometric identities and mechanical theorem proving in elementary geometry. (Chinese. English summary) *J. Systems Sci. Math. Sci.* 7 (1987), no. 3, 264-272. (Lu Yang) **89g:68061** 68T15 (03B35, 51-04)
- Gao, Ya Guang** Local  $P$ -convexity of product spaces and endowing them with quasi- $P$ -norms. (Chinese. English summary) *Natur. Sci. J. Harbin Normal Univ.* 3 (1987), no. 3, 22-25. (Not in MR) **54A40** (03E72)
- Gao, Yang** On the complementary bounding theorems for limit analysis. *Internat. J. Solids and Structures* 24 (1988), no. 6, 545-556. (Petr Procházka) **89j:73029** 73E20 (58E30, 65N30)
- Inverse variational principle in finite elasticity. *Mech. Res. Comm.* 15 (1988), no. 3, 161-166. (Summary) **89f:73035** 73G05 (73C50, 73C60, 73K40)
- Gao, Yi Hong** (with Li, Miao) Classification of world sheet instantons and the path integral measure in string theories. *Phys. Lett. B* 196 (1987), no. 3, 339-344. (Andrew A. Bytsenko) **89a:81129** 81E99 (57M99, 58G40, 81E30)
- String models and the geometry of the mapping space. (Chinese. English summary) *J. China Univ. Sci. Tech.* 18 (1988), no. 3, 299-305. (Summary) **89j:81140** 81E20 (58D15, 58D30, 58G30, 81E30)
- Gao, Ying Cai** (with Wei, Yu Ting) Existence and uniqueness of generalized solutions to initial-boundary value problems for Boussinesq equations. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 19, 1451-1454. (Not in MR) **35Q20**
- Gao, Zhan Hai** (with Zhang, Di; Zhao, Xiao Qiang) Theory of periodic solutions to ODEs in  $\mathbb{R}^n$  and its applications. (Chinese) Topics in ordinary differential equations (Nanjing, 1986). *Nanjing Daxue Xuebao Shuxue Banian Kan* 1987, 37-49. (Shi Tao Deng) **89i:34002** 34-02 (34C25)
- Gao, Zhen Lin** Conditions for commutativity of generalized  $T$ -rings. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 13 (1987), no. 3, 205-208. (J. Luh) **89e:16045** 16A78 (16A70)
- Gao, Zhi** Simplified Navier-Stokes equations (SNSE). *Sci. Sinica Ser. A* 31 (1988), no. 3, 322-339. (A. S. Gupta) **89j:76039** 76D05 (35Q10, 76D10)
- Gao, Zhi Min** On a question of Siwiec. (Chinese) *Acta Math. Sinica* 30 (1987), no. 5, 671-674. (Shu-Tang Wang) **89e:54055** 54E35
- Remarks on the  $c$ - $s$  spaces. (Chinese summary) *J. Math. (Wuhan)* 7 (1987), no. 3, 317-321. (V. J. Mancuso) **89k:54062** 54E18
- $\mathbb{R}$ -space is invariant under perfect mappings. *Questions Answers Gen. Topology* 5 (1987), no. 2, 271-279. (Gary Gruenhage) **89b:54033a** 54E20 (54C10)
- The closed images of metric spaces and Fréchet  $\mathbb{R}$ -spaces. *Questions Answers Gen. Topology* 5 (1987), no. 2, 281-291. (Gary Gruenhage) **89b:54033b** 54E20 (54C10)
- (with Hattori, Yasunao) A characterization of closed  $s$ -images of metric spaces. *Tsukuba J. Math.* 11 (1987), no. 2, 367-370. (Zbigniew Piotrowski) **89b:54032** 54E18 (54C10)
- Gaponenko, Yu. L.** (with Borovikov, I. P.) A method for the linearization of the inverse problem for the wave equation. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 10, 1516-1526, 1598. (A. S. Alekseev) **89g:35111** 35R30 (35L05)
- (with Nikolaev, I. V.) On the accuracy of the reconstruction of a piecewise-continuous velocity function of a medium from an approximately given vertical hodograph. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 3, 589-593; translated in *Soviet Phys. Dokl.* 33 (1988), no. 1, 40-42. (Introduction) **89a:65194** 65R10 (76G05)
- Gaponov, Yu. V.** (with Vladimirov, D. M.) Recurrent construction of the supermultiplet basis of the group  $SU(4)$ . (Russian) *Group-theoretic methods in physics, Vol. 2 (Russian) (Järvala, 1985)*, 92-99. "Nauka", Moscow, 1986. (see **89d:81002**) **22E70** (81C40)
- (with Vladimirov, D. M.)  $SU(4)$ -symmetry in nuclear physics. (Russian) *Group-theoretic methods in physics, Vol. 2 (Russian) (Järvala, 1985)*, 615-622. "Nauka", Moscow, 1986. (see **89d:81002**) **81G30**
- (with Vladimirov, D. M.) Recurrent constructing  $SU(4)$  supermultiplet basis. *Group theoretical methods in physics, Vol. II (Järvala, 1985)*, 233-242. *VNU Sci. Press, Utrecht*, 1986. (Gordon Feldman) **89c:81202** 81G30 (22E70)
- Gaponov-Grekhor, A. V.** (with Rabinovich, M. I.) Autostructures. The chaotic dynamics of ensembles. (Russian) *Nonlinear waves (Russian)*, 7-44, 394. "Nauka", Moscow, 1987. (Summary) **89f:76054** 76F99 (58F13, 76E15, 82A99, 92A05)
- see also *Nonlinear waves*, **89b:76002** and *Schuster, Heinz Georg*, **89b:58130**
- Gaposhkin, V. F.** Summation of weakly dependent sequences by Cesàro methods. (Russian summary) *Anal. Math.* 13 (1987), no. 4, 269-279. (S. Baron) **89c:40009** 40G05 (42A61, 42C15)
- The law of large numbers for linear autoregression processes. (Russian) *Izv. Vysch. Uchebn. Zaved. Mat.* 1988, no. 4, 12-21; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 4, 14-26. (R. J. Tomkins) **89b:60106** 60F15 (60G42, 62J05)
- On the summation of sequences of independent random variables. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 1, 68-82; translated in *Theory Probab. Appl.* 33 (1988), no. 1, 62-74. (Dominik Szynal) **89g:60105** 60F15 (60G50)
- On the connection between the ergodicity of a continuous-time stationary process and a quantized process. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 2, 401-405; translated in *Theory Probab. Appl.* 33 (1988), no. 2, 377-381. (Andrzej Luczak) **89k:60050** 60G10 (60G12)
- Garabedian, P. R.** ★ Partial differential equations. Second edition. *Chelsea Publishing Co., New York*, 1986. xvii+672 pp. ISBN 0-8284-00325-2 (Editors) **89c:35001** 35-01
- A comment about Schiffer's differential equation. *Complex Variables Theory Appl.* 9 (1987), no. 2-3, 169-174. (Yuk Leung) **89a:30017**; **EA** **89m** 30C70
- Garadzhayev, A.** Spectral theory of a problem on normal oscillations of an ideal compressible fluid in a rotating rigid container. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 12, 2080-2087, 2204. (N. D. Kopachevskii) **89g:35096** 35Q20 (35P05, 76U05)



- Spectral theory of a problem of the small motions of an ideal compressible fluid in an elastic body. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 1, 21–32, 180; translated in *Differential Equations* 24 (1988), no. 1, 15–24. (N. D. Kopachevskii) **89g:35097** 35Q20 (35P05, 73J06, 76N99)
- Garai, V. (with Szabó, Cs.; Szépf, T.) New multiple access algorithms for integrating voice and data on local area networks. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* 17 (1988), no. 6, 381–396. (N. C. Mohanty) **89i:48002** 94A05
- Garalzar, Xabier Existence of positive radial solutions for semilinear elliptic equations in the annulus. *J. Differential Equations* 70 (1987), no. 1, 69–92. (Rüdiger Landes) **89f:35019** 35B03 (35J65)
- Garashchenko, F. G. (with Primak, M. M.) Practical stability criteria for distributed-parameter systems. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 3, 32–34 (1988); translated from *Avtomatika* 1987, no. 3, 43–46, 95 (Russian. English summary). (Andrzej Świerniak) **89i:35018** 35B35 (49D29)
- (with Kutsenko, I. A.) A second-order method in problems of the structural-parametric optimization of the dynamics of beams. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 6 (1987), 23–26, 114. (Summary) **89k:78032** 78A99 (49D15)
- Garashchuk, M. M. (with Emelyanov, N. R.) Algorithms for constructing tests. (Russian) *Metody Diskret. Analiz.* No. 43 (1986), 12–28, 97. (A. N. Melikhov) **89b:94037** 94C15 (94C10)
- Garay, B. (with Farkas, M.; Szabó, G.; Szépf, L.; V. Nagy, I.) Modelling of depth filtration. *Ann. Univ. Sci. Budapest. Sect. Comput.* 7 (1987), 67–73 (1988). (Summary) **89j:76081** 76S05
- Parallelisability in Banach spaces: a parallelisable dynamical system with uniformly bounded trajectories. *Proc. Roy. Soc. Edinburgh Sect. A* 100 (1988), no. 3–4, 371–378. (W. R. Utz) **89g:54091** 54H20 (46B99, 46N05, 58F25)
- Garay, Oscar J. (with Chen, Bang-Yen; Barros, Manuel) Spherical finite type hypersurfaces. *Algebras Groups Geom.* 4 (1987), no. 1, 58–72. (Y. Tashiro) **89b:53092** 53C40 (53A05, 53A10)
- On a certain class of finite type surfaces of revolution. *Kodai Math. J.* 11 (1988), no. 1, 25–31. (Bang-yen Chen) **89a:53061** 53C40
- Finite type cones shaped on spherical submanifolds. *Proc. Amer. Math. Soc.* 104 (1988), no. 3, 868–870. (Bang-yen Chen) **89c:53036** 53C40
- Garbaczewski, Piotr (with Prorok, Dariusz) Stochastic mechanics and the Kepler problem: scattering states. *Fortschr. Phys.* 35 (1987), no. 11, 771–792. (Philip J. Feinsilver) **89e:81032** 81C20 (81C25, 81D30)
- Stochastic quantisation of the Fermi oscillator: non- $Z_2$  route. *J. Phys. A* 20 (1987), no. 14, 4789–4798. (Francesco Guerra) **89e:81033** 81C20
- Garbiero, Sergio (with Abbena, Elsa) On some types of almost Hermitian homogeneous structures. (Italian summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* 120 (1986), no. 5–6, 145–152 (1987). (Y. Tashiro) **89g:53054** 53C15 (53C30)
- Garbow, B. S. (with Giunta, G.; Lyness, J. N.; Murli, A.) Software for an implementation of Weeks' method for the inverse Laplace transform problem. *ACM Trans. Math. Software* 14 (1988), no. 2, 163–170. (Summary) **89d:65107** 65R10 (65V05)
- Garbuzov, B. Yu. Logical formalization of the first-order algebra of finite predicates. (Russian) *Problems of bionics*, No. 41 (Russian), 24–32, 1. "Vishcha Shkola", Kharkov, 1988. (János Demetrovics) **89i:03119** 03G25
- García, A. *see* García, André
- García, Alberto *see* García Díaz, Alberto
- García, André (with Hubbard, M.) Spin reversal of the rattleback: theory and experiment. *Proc. Roy. Soc. London Ser. A* 418 (1988), no. 1854, 165–197. (Mary L. Boas) **89h:70003** 70E15
- bona García, Carlos *see* Bona García, Carlos
- pérez-García, Carlos *see* Pérez-García, Carlos
- blanco García, Covadonga *see* Blanco García, Covadonga
- pérez-García, Cristina *see* Pérez-García, Cristina
- García, D. Alberto *see* García Díaz, Alberto
- García, Domingo Some holomorphic classes of locally convex spaces. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 241–247, Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (Luiza Amália de Moraes) **89k:46060** 46G20 (46A07, 46A09, 46E10)
- Duality of the space  $(H(\Omega, F), \tau_0)$ . (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 81 (1987), no. 1, 137–149. (Luiza Amália de Moraes) **89e:46049** 46G20 (46E10)
- aznar García, Enrique R. *see* Aznar García, Enrique R.
- suárez García, Fermín *see* Suárez García, Fermín
- García, Françoise Étude et implémentation d'un système de déduction pour logique algorithmique. (English summary) [Study and implementation of a deductive system for algorithmic logic] *RAIRO Inform. Théor. Appl.* 22 (1988), no. 1, 57–92. (Summary) **89i:68094** 68Q60 (03B35, 03B70, 68N05)
- García, J. L. *see* García Roig, J.-L.
- de Abreu-García, Jose A. *see* De Abreu-García, Jose A.
- sánchez García, M. *see* Sánchez García, M.
- García, Mauricio A numerical method for computing Bessel functions of integral order. (Spanish) *Bol. Mat.* 19 (1985), no. 3, 221–231. (Introduction) **89m:65023** 65D20
- García, Narciso Operating on the universe. *Arch. Math. Logic* 27 (1988), no. 1, 61–68. (N. H. Williams) **89h:03085** 03E20 (04A99)
- García, Pere (with Valverde, L.) Isomorphisms between De Morgan triplets. Mathematics and fuzziness, Part II (Palma, 1985). *Fuzzy Sets and Systems* 30 (1989), no. 1, 27–36. (Summary) **89m:03048** 03E72 (03B52)
- García Azorero, J. P. (with Peral Alonso, I.) Existence and nonuniqueness for the  $p$ -Laplacian: nonlinear eigenvalues. *Comm. Partial Differential Equations* 12 (1987), no. 12, 1389–1430. (Ricardo S. Kubruyly) **89c:35058** 35J65
- (with Peral Alonso, I.) Comportement asymptotique des valeurs propres du  $p$ -laplacien. (English summary) [Asymptotic behavior of the eigenvalues of the  $p$ -Laplacian] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 2, 75–78. (G. V. Rozenblyum) **89k:35171** 35P20 (35J65)
- García Castellón, F. (with Plans, A.) On linear simplification in Banach spaces. II. (Italian summary) *Boll. Un. Mat. Ital. A* (7) 1 (1987), no. 3, 367–373. (Bor-Luh Lin) **89f:46022** 46B15 (46A22)
- García Cruz, María Antonia (with Falcón Rodríguez, Carlos M.) Association of an  $L$ -analytic function to every multivalued complex function. (Spanish. English summary) *Cienc. Mat. (Havana)* 8 (1987), no. 2, 15–24. (Julia Cufí) **89c:30002** 30B40 (46J99)
- García-Cuerva, José José Luis Rubio de Francia (1949–1988). (Spanish) *Collect. Math.* 38 (1987), no. 1, 3–15. (Editors) **89m:01090** 01A70
- García D., Alberto *see* García Díaz, Alberto
- García de Jalón, Javier (with Bayo, Eduardo; Serna, Miguel Angel) A modified Lagrangian formulation for the dynamic analysis of constrained mechanical systems. *Comput. Methods Appl. Mech. Engrg.* 71 (1988), no. 2, 183–195. (Summary) **89i:70006** 70–08 (70B15)
- García de la Torre, Amalia (with Erice Rodríguez, Javier; Mari Beffa, Gloria) The differential SIR model and its applications to the cases of silent and supercontagious infections. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 248–261, Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89h:92045** 92A15
- García Díaz, Alberto (with Ernst, Frederick J.; Hauser, Isidore) Colliding gravitational plane waves with noncollinear polarization. II. *J. Math. Phys.* 28 (1987), no. 12, 2951–2960. (Basilis C. Xanthopoulos) **89c:83021** 83C20 (83C15, 83C35, 83C40)
- (with Tellez Ulloa, Jorge) Stationary axisymmetric rotating perfect fluid type D solutions. *SILARG, VI (Rio de Janeiro, 1987)*, 143–179, *World Sci. Publishing, Singapore*, 1988. (A. H. Taub) **89f:83039** 83C20 (83C40)
- Comments on a paper by [C. D.] Collinson: "The uniqueness of the Schwarzschild interior metric" [Gen. Relativity Gravitation 7 (1976), no. 5, 419–422; MR 57 #2417]. *Gen. Relativity Gravitation* 20 (1988), no. 6, 589–594. (Alan Barnes) **89m:83014** 83C15 (83C20)
- (with Bretón Baez, Nora; Hauser, Isidore) Stationary axisymmetric solutions in the vacuum Jordan-Brans-Dicke theory. *Internat. J. Theoret. Phys.* 27 (1988), no. 5, 635–640. (Kenneth Dunn) **89f:83075** 83D05
- (with Martínez, H. Guadalupe) Stationary axisymmetric solutions of the Jordan-Brans-Dicke equations with electromagnetic sources. *Internat. J. Theoret. Phys.* 27 (1988), no. 10, 1281–1283. (R. N. Tiwari) **89j:83061** 83D05
- (with Hauser, Isidore) Type-D rigidly rotating perfect fluid solutions. *J. Math. Phys.* 29 (1988), no. 1, 175–178. (P. C. Vaidya) **89a:83028** 83C20 (83C55)
- (with Ernst, Frederick J.; Hauser, Isidore) Colliding gravitational plane waves with noncollinear polarization. III. *J. Math. Phys.* 29 (1988), no. 3, 681–689. (Basilis C. Xanthopoulos) **89k:83026** 83C20 (83C35)
- The  $\tilde{S}(a, b, c/m)$  metrics interpreted as colliding wave solutions. *J. Math. Phys.* 29 (1988), no. 6, 1442. (Summary) **89f:83040** 83C20
- hernández-García, C. *see* Hernández-García, C.
- García-Ferreira, Salvador Nonhomogeneity of certain Baire sets in  $\beta X$ . *Proc. Amer. Math. Soc.* 104 (1988), no. 4, 1325–1326. (R. Grant Woods) **89i:54025** 54C50 (54D35)
- García Hernández, José Luis Prime and QF-3 quotient rings. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 140–145, Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (Miguel Ferrero) **89f:16004** 16A08 (16A36)
- (with Gómez Pardo, J. L.) Self-injective and PF endomorphism rings. *Israel J. Math.* 58 (1987), no. 3, 324–350. (S. S. Page) **89b:16041** 16A65 (16A08, 16A36, 16A52)
- Continuous and PF rings of quotients. *Ring theory (Granada, 1986)*, 94–105, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (S. S. Page) **89m:16052** 16A63
- (with Gómez Pardo, J. L.) Closed submodules of free modules over the endomorphism ring of a quasi-injective module. *Comm. Algebra* 16 (1988), no. 1, 115–137. (Claudia Menini) **89d:16040** 16A65 (16A52)
- fernández García-Hierro, Manuel *see* Fernández García-Hierro, Manuel
- Idez, García-Hierro, Manuel *see* Fernández García-Hierro, Manuel
- García Lafuente, José M. ★ Espacios (LF) y el problema del cociente separable. (Spanish) [(LF) spaces and the separable quotient problem] *Publicaciones del Departamento de Matemáticas, Universidad de Extremadura* [Publications of the Mathematics Department of the University of Extremadura], 12. *Universidad de Extremadura, Facultad de Ciencias, Departamento de Matemáticas, Badajoz*, 1986. 62 pp. ISBN 84-600-4203-0 (José Bonet) **89e:46004** 46A12 (46A07)
- Une note sur les espaces quasi-normables. (English summary) [A note on quasinormable spaces] *Collect. Math.* 37 (1986), no. 3, 249–253. (H. Jarchow) **89a:46005** 46A05 (46A12, 46A20)
- Subspaces of  $c_0$ -barrelled spaces. (Spanish) *Colloquium 1985–86 (Badajoz, 1985–86)*, 1–10, *Publ. Dep. Mat. Univ. Extremadura*, 15, Univ. Extremadura, Badajoz, 1987. (P. Pérez Carreras) **89f:46005** 46A07
- On strong duals of uniformly  $\lambda(P)$ -nuclear spaces. *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 226–230, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (M. S. Ramanujan) **89i:46011** 46A45
- A note on spaces containing  $c_0$ . *Math. Japon.* 32 (1987), no. 6, 877–878. (R. H. Lohman) **89a:46014** 46A15
- *see also* Colloquium: 1986–1988, **89g:46001**
- García López, Alfonso Compact and absolutely summing operators on  $C(K)$ . (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 1 (Spanish) (Badajoz, 1986), 262–270, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Richard Becker) **89k:47045** 47B38 (47B05, 47B10)
- Operators on locally convex spaces of vector-valued continuous functions. *Bull. Austral. Math. Soc.* 36 (1987), no. 2, 267–278. (Paulette Saab) **89b:47045** 47B38 (46E40, 46G10)
- The space  $L^1(\mu, E)$ . (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 81 (1987), no. 4, 681–691. (Giovanni Emmanuele) **89m:46070** 46E40
- García-Máñez, Adalberto (with Wilson, Richard Gordon) Classes of topological spaces preserved under realcompactifications. *Bol. Soc. Mat. Mexicana* (2) 31 (1986), no. 2, 57–60. (I. Blum) **89k:54057** 54D60 (54D50, 54G10)

- García Mazarío, Francisco** Compactness in locally convex spaces of vector measures. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 1 (Spanish) (Badajoz, 1986)*, 231-240. Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (José Bonet) **89m:46049** 46E27 (28B05, 46G10)
- García-Molina, Hector** (with Kogan, Boris) Achieving high availability in distributed databases. *IEEE Trans. Software Engng.* **14** (1988), no. 7, 886-896. (Summary) **89e:68019** 68P15
- García Nogales, Agustín** ★ *K*-analyticidad de espacios de operadores. (Spanish) [The *K*-analyticity of operator spaces] Publicaciones del Departamento de Matemáticas, Universidad de Extremadura [Publications of the Mathematics Department of the University of Extremadura], 21. *Universidad de Extremadura, Facultad de Ciencias, Departamento de Matemáticas, Badajoz*, 1988. vi+102 pp. ISBN 84-7723-015-3 (M. Valdivia) **89g:46009** 46A32 (47D15, 47D30)
- García-Prada, Oscar** (with del Olmo, Mariano A.; Santander, Mariano) Locally operating realizations of nonconnected transformation Lie groups. *J. Math. Phys.* **29** (1988), no. 5, 1083-1090. (Ronald C. King) **89h:22044** 22E70 (81C40)
- García-Reimbert, Catherine** (with Minzoni, A. A.) Some nonlinear effects on Love waves. *J. Elasticity* **20** (1988), no. 2, 143-159. (Introduction) **89k:73020** 73D15 (35Q20, 73D35)
- García-Rodeja Fernández, Eduardo** (with Rodicio, Antonio G.) An exact sequence of *Q*-groups. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish) (Badajoz, 1986)*, 146-148. Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89h:20074** 20J99
- García Rodríguez, Domingo** see García, Domingo
- García Roig, J.-L.** A generalization of Wright's inequality. *Publ. Sec. Mat. Univ. Autònoma Barcelona* **30** (1986), no. 1, 91-96. (Andrew Kustin) **89c:13018** 13D25
- An application of a theorem of E. Davis to Koszul complexes. *Arch. Math. (Basel)* **50** (1988), no. 5, 450-452. (Matthew Miller) **89c:13019** 13D25
- Properties of direct summands of modules. *Comm. Algebra* **17** (1989), no. 1, 73-92. (Jonathan Golan) **89j:16022** 16A30 (16A50, 16A52, 16A53)
- García Rus, Eulalia** (with Fernández López, Antonio) Banach algebras which are a direct sum of division algebras. *J. Austral. Math. Soc. Ser. A* **44** (1988), no. 2, 143-145. (B. Yood) **89a:46104** 46H05 (16A39)
- (with Fernández López, Antonio) Banach triples with generalized inverses. *Manuscripta Math.* **62** (1988), no. 4, 503-508. (Thomas J. Barton) **89i:46055** 46H99 (46H70)
- García-Ugaldé, Francisco J.** (with Morelos-Zaragoza A., R. H.) Design of a Viterbi decoder with microprocessor-based serial implementation. *Applicable algebra, error-correcting codes, combinatorics and computer algebra (Karlsruhe, 1986)*, 58-67. *Lecture Notes in Comput. Sci.*, 307, Springer, Berlin-New York, 1988. (Summary) **89d:94047** 94B35 (94B10)
- Coding and decoding algorithms of Reed-Solomon codes executed on an M68000 microprocessor. (French summary) *Coding theory and applications (Cachan, 1986)*, 183-196. *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (Summary) **89g:94029** 94B05 (94B35)
- Garczyński, Włodzimierz** Measure in the functional integral over the configuration space. *Rep. Math. Phys.* **25** (1988), no. 1, 73-95. (G. Albinus) **89k:81040** 81C35 (58D30, 81E13)
- Gardashov, T. B.** (with Iskenderov, A. D.) Solution of an inverse problem for the quasilinear heat equation with a self-similar regime. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **43** (1987), no. 2, 17-20. (Alexander Doktor) **89e:35144** 35R30 (35K55)
- Gardes, Ernest** (with Mielgo, Honorino) Modal interval analysis: functions. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics (Poznań, 1986)*, 39-58. Wydawn. Politech. Poznań, Poznań, 1987. (Summary) **89d:65051** 65G10
- Gärdenfors, Peter** The dynamics of belief as a basis for logic. *British J. Philos. Sci.* **35** (1984), no. 1, 1-10. (Michael Scanlan) **89a:03008** 03A05
- Variations on the Ramsey test: more triviality results. *Studia Logica* **46** (1987), no. 4, 321-327. (Steve Kuhn) **89g:03024** 03B45
- ★ Knowledge in flux. Modeling the dynamics of epistemic states. A Bradford Book. MIT Press, Cambridge, MA-London, 1988. xiv+262 pp. ISBN 0-262-07109-6 (V. Ya. Kreinovich) **89k:00015** 00A25 (03B45, 68Q99, 90A05, 92A25)
- see also Generalized quantifiers, **89m:03003**
- Gardin, Jean-Claude** La logique, naturelle ou autre, dans les constructions de sciences humaines. [Logic, natural or other, in the constructions of the humanities] *Pensée naturelle, logique et langage*, 179-195. Univ. Neuchâtel, Neuchâtel, 1987. (see **89b:03005**) 00A25
- Gardiner, C. W.** (with Drummond, P. D.) Causality in the Coulomb gauge: a direct proof. *Phys. Rev. A* (3) **38** (1988), no. 9, 4897-4898. (Summary) **89i:78004** 78A25
- Gardiner, Frederick P.** A theorem of Bers and Greenberg for infinite-dimensional Teichmüller spaces. *Holomorphic functions and moduli, Vol. II (Berkeley, CA, 1986)*, 195-205. *Math. Sci. Res. Inst. Publ.*, 11, Springer, New York-Berlin, 1988. (Yoichi Imai) **89m:32038** 32G15 (30C60)
- Gardiner, Joseph C.** (with Susarla, V.; Van Ryzin, John) On bounded length confidence intervals for quantiles of the survival distribution. *J. Statist. Plann. Inference* **18** (1988), no. 2, 245-253. (Richard A. Johnson) **89b:62173** 62L12 (62F25, 62N05)
- Gardiner, Judith D.** (with Laub, Alan J.) Hypercube implementation of some parallel algorithms in control. *Advanced computing concepts and techniques in control engineering (Il Ciocco, 1987)*, 361-390. *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 47, Springer, Berlin-New York, 1988. (see **89g:93002**) 68U20 (68Q25, 93B40)
- Gardiner, S. J.** Subharmonicity of mean values of subharmonic functions. *Proc. Roy. Irish Acad. Sect. A* **87** (1987), no. 2, 169-175. (U. Kuran) **89c:31003** 31B05
- Functions harmonic outside a manifold. *Bull. London Math. Soc.* **20** (1988), no. 2, 136-138. (A. Yu. Rashkovskii) **89c:31009** 31B25
- Growth properties of *p*th means of potentials in the unit ball. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 861-869. (Manfred Stoll) **89e:31004** 31B25
- Gårding, Lars** Lax's construction of parametric families of fundamental solutions of strongly hyperbolic operators. Its prehistory and posthistory. *Wave motion: theory, modelling, and computation (Berkeley, Calif., 1986)*, 60-73. *Math. Sci. Res. Inst. Publ.*, 7, Springer, New York-Berlin, 1987. (Jia Xing Hong) **89d:35100** 35Lxx (01A60, 35-03)
- Lars Hörmander wins the Wolf prize. (Swedish) *Normat* **36** (1988), no. 3, 133-134. (Editors) **89m:01091** 01A70
- Gardner, B. J.** (with Stewart, P. N.) Injective and weakly injective rings. *Canad. Math. Bull.* **31** (1988), no. 4, 487-494. (Jonathan Golan) **89m:16037** 16A48 (08B30, 16A22)
- Gardner, E.** Multiconnected neural network models. *J. Phys. A* **20** (1987), no. 11, 3453-3464. (Summary) **89a:82040** 82A68 (82A57, 92A09)
- The space of interactions in neural network models. *J. Phys. A* **21** (1988), no. 1, 257-270. (F. Ventriglia) **89g:92016** 92A09 (82A68, 82A99)
- (with Derrida, B.) Optimal storage properties of neural network models. *J. Phys. A* **21** (1988), no. 1, 271-284. (F. Ventriglia) **89j:82060** 82A57 (68M99, 92A09)
- Gardner, H. J.** (with Dewar, R. L.) A harmonic expansion for the magnetic field of the helical solenoid. *J. Comput. Phys.* **77** (1988), no. 2, 485-500. (Ll. G. Chambers) **89f:78007** 78A25
- Gardner, Martin** ★ Riddles of the sphinx. And other mathematical puzzle tales. New Mathematical Library, 32. *Mathematical Association of America, Washington, DC*, 1987. xii+164 pp. ISBN 0-88385-632-8 (G. A. Heuer) **89i:00015** 00A08
- ★ Time travel and other mathematical bewilderments. *W. H. Freeman and Company, New York*, 1988. xiv+295 pp. ISBN 0-7167-1924-X; 0-7167-1925-8 (Heiko Harborth) **89b:00005** 00A08
- ★ Penrose tiles to trapdoor ciphers. ... and the return of Dr. Matrix. *Recreational Mathematics. W. H. Freeman and Company, New York*, 1989. x+311 pp. ISBN 0-7167-1986-X; 0-7167-1987-8 (F. J. Papp) **89m:00006** 00A08
- see also Bell, E. T., **89j:00001**
- Gardner, R. B.** (with Shadwick, W. F.) Overdetermined equivalence problems with an application to feedback equivalence. *Differential geometry: the interface between pure and applied mathematics (San Antonio, Tex., 1986)*, 111-119. *Contemp. Math.*, 68, Amer. Math. Soc., Providence, RI, 1987. (From the introduction) **89g:58008** 58A17 (58F40, 93B27)
- The principal components construction applied to affine unimodular repère mobile. Reprinted in *Affine Differential Geometry* [(Oberwolfach, 1986), 235-239. Tech. Univ. Berlin, Berlin, 1988]. *Resulata Math.* **13** (1988), no. 3-4, 235-239. (Irl Bivens) **89d:53023** 53A15 (58A15)
- Gardner, Richard J.** Corson compacts and Radon spaces. *Houston J. Math.* **13** (1987), no. 1, 37-46. (Warren Page) **89h:28020** 28C15 (54H05)
- (with Mauldin, R. Daniel) Bijections of  $\mathbb{R}^n$  onto itself. *Geom. Dedicata* **26** (1988), no. 3, 323-332. (E. H. Kronheimer) **89h:51023** 51F99
- Relative width measures and the plank problem. *Pacific J. Math.* **135** (1988), no. 2, 299-312. (G. D. Chakerian) **89j:52009** 52A40 (52A45)
- Gardner, Robert A.** On an asymptotic model for Mach stem formation in planar detonations. *Mathematics applied to science (New Orleans, La., 1986)*, 65-78. *Academic Press, Boston, MA*, 1988. (Introduction) **89e:80010** 80A25 (35L65, 76L05, 76N15)
- Gardner, William A.** Correlation estimation and time-series modeling for nonstationary processes. (French and German summaries) *Signal Process.* **15** (1988), no. 1, 31-41. (Gy. Terdik) **89f:62075** 62M10 (93E10)
- Garel, Bernard** Séparation asymptotique des chaînes de Markov. (English summary) [Asymptotic separation of Markov chains] *Cahiers Centre Études Rech. Opér.* **29** (1987), no. 3-4, 169-173. (A. Fuchs) **89b:60158** 60J10
- Garen, John E.** Relationships among estimators of triangular econometric models. *Econom. Lett.* **25** (1987), no. 1, 39-41. (Summary) **89a:62225** 62P20
- Garey, L. E.** (with Shaw, R. E.) Numerical methods and roots of the solution for singular integro-differential equations. *Proceedings of the fifteenth Manitoba conference on numerical mathematics and computing (Winnipeg, Man., 1985)*. *Congr. Numer.* **52** (1986), 91-100. (William F. Moss) **89i:65140** 65R20 (45E05, 45L10)
- (with Shaw, R. E.) Multistep methods for second order Volterra integro-differential equations. *Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987)*. *Congr. Numer.* **62** (1988), 117-124. (Summary) **89g:65164** 65R20
- (with Shaw, R. E.) Modified increment methods for solving nonlinear second order Volterra integro-differential equations. *Utilitas Math.* **33** (1988), 23-32. (Johannes Elschner) **89b:65318** 65R20 (45D05, 45J05, 45L10)
- Garey, M. R.** (with Coffman, E. G., Jr.; Johnson, David Stifler) Bin packing with divisible item sizes. *J. Complexity* **3** (1987), no. 4, 406-428. (Richard D. Ringisen) **89b:90172** 90C27 (90B99)
- (with Megiddo, Nimrod; Hakimi, S. Louis; Johnson, David Stifler; Papadimitriou, Christos H.) The complexity of searching a graph. *J. Assoc. Comput. Mach.* **35** (1988), no. 1, 18-44. (T. R. S. Walsh) **89d:68030** 68Q25 (05C75, 68R10, 90D26)
- (with Tarjan, Robert E.; Wilfong, Gordon T.) One-processor scheduling with symmetric earliness and tardiness penalties. *Math. Oper. Res.* **13** (1988), no. 2, 330-348. (D. de Werra) **89f:90072** 90B35
- (with Chung, F. R. K.; Füredi, Z.; Graham, R. L.) On the fractional covering number of hypergraphs. *SIAM J. Discrete Math.* **1** (1988), no. 1, 45-49. (W. H. Mills) **89e:05153** 05C70 (05C65)
- Garg, Anupam** Roughening of two-dimensional quasicrystal interfaces. *Phys. Rev. B* (3) **37** (1988), no. 17, 10003-10019. (Summary) **89f:82065** 82A60 (81C99)
- Garg, G. L.** Extending uniformly continuous functions. *Math. Student* **47** (1979), no. 2-4, 197-203 (1985). (Y. T. Rhineghost) **89j:54029** 54E15 (54B30, 54C20)
- (with Sivaraj, D.) Presemiopen and irresolute functions. *Soochow J. Math.* **14** (1988), no. 1, 51-55. (Janina Ewert) **89m:54016** 54C08
- Garg, K. M.** (with Anantharaman, R.) Errata: "Some topological properties of vector measures and their integral maps" [J. Austral. Math. Soc. Ser. A **23** (1977), no. 4, 453-466; MR **58** #6144]. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 3, 371. (Editors) **89f:28022** 28B05 (46G10)
- Garg, Mrdula** (with Srivastava, Hari M.) Some integrals involving a general class of polynomials and the multivariable *H*-function. *Rev. Roumaine Phys.* **32** (1987), no. 7, 685-692. (R. S. Dahiya) **89c:33010** 33A35
- Garg, R. B.** (with Kapur, P. K.) Ordering policies based on repair cost limit criterion. *Opsearch* **25** (1988), no. 4, 245-258. (Summary) **89i:90027** 90B05
- Garg, Sanjay** (with Schmidt, David K.) Cooperative synthesis of control and display augmentation. *J. Guidance Control Dynamics* **12** (1989), no. 1, 54-61. (Not in MR) 93C75 (93B50)



- Gargano, L. (with Capocelli, R. M.; Vaccaro, U.) A model for communication over noisy channels. *Physics of cognitive processes (Amalfi, 1986)*, 117-162, World Sci. Publishing, Singapore, 1987. (S. Cui) **89a:94003** 94A05 (94B60)
- Gargov, Georgi (with Passy, Solomon; Tinchev, Tinko) Modal environment for Boolean speculations (preliminary report). *Mathematical logic and its applications (Druzhba, 1986)*, 253-263, Plenum, New York-London, 1987. (Summary) **89c:03028** 03B45
- Gargulichevich, Graciela G. Elliptic variational inequalities. (Spanish) *Second Seminar on the Stefan Problem and its Applications, Vol. 2 (Spanish) (Rosario, 1986)*, 129-138, Cuadern. Inst. Mat. Beppo Levi, 14, Univ. Nac. Rosario, Rosario, 1988. (see **89j:00025**) 35J85 (49A29)
- Garibaldi, Ubaldo (with Penco, Maria A.) Probability theory and physics between Bernoulli and Laplace: the contribution of J. H. Lambert (1728-1777). (Italian) *Proceedings of the fifth national congress on the history of physics (Italian) (Rome, 1984)*. *Rend. Accad. Naz. Sci. XL Mem. Sci. Fis. Natur.* (5) 9 (1985), 341-346. (From the text) **89g:01029** 01A50
- gonzález de Garibay, V. see González de Garibay, V.
- Gariepy, R. F. (with Evans, Lawrence C.) Blow-up, compactness and partial regularity in the calculus of variations. *Proceedings of the International Workshop on Integral Functionals in the Calculus of Variations (Trieste, 1985)*. *Rend. Circ. Mat. Palermo (2) Suppl.* No. 15 (1987), 101-108. (Fredri Tröltzsch) **89c:49014** 49B21 (90C48)
- Jiménez Garjito, Pedro see Jiménez Garjito, Pedro
- Garis, Eugenio Between 1500 and 1600: new sciences, new methods, new academies. (Italian. English summary) *Nuncius Ann. Storia Sci.* 1 (1986), no. 1, 3-23. (C. J. Scriba) **89c:01018** 01A40 (01A74)
- Garlo, Paola Histoire de la résolution des singularités des surfaces algébriques (une discussion entre C. Segre et P. del Pezzo). [History of the resolution of singularities of algebraic surfaces (a discussion between C. Segre and P. del Pezzo)] *Cahiers du séminaire d'histoire des mathématiques*, 9, 123-137, Univ. Paris VI, Paris, 1988. (S. L. Kleiman) **89d:01039** 01A55 (14-03, 14J17)
- Garly, Dennis J. (with Henderson, James P.; Wright, David G.) Menger spaces and inverse limits. *Pacific J. Math.* 131 (1988), no. 2, 249-259. (John J. Walsh) **89d:54026** 54F45 (54B25, 57N20)
- (with Rohm, Dale M.) Stable maps into the Hilbert cube. *Proc. Amer. Math. Soc.* 104 (1988), no. 2, 632-634. (Ross Geoghegan) **89k:57038** 57N20 (54F45, 54H25, 55M10)
- Garland, H. (with Murray, M. K.) Kac-Moody monopoles and periodic instantons. *Comm. Math. Phys.* 120 (1988), no. 2, 335-351. (Henrik Pedersen) **89m:53133** 53C80 (22E65, 32L25, 58D05, 58G40, 81D27)
- Garlauskas, Algis (with Kovarskaya, Sofiya; Limanuskas, Valdas) A mathematical model of trophic interaction of biopopulations of biological systems. *System modelling and optimization (Tokyo, 1987)*, 632-642, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (Summary) **89j:92052** 92A17
- (with Koval', Veronika; Vygovskaya, R.) Investigation and optimization of reliability of transport networks. *System modelling and optimization (Tokyo, 1987)*, 672-680, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (see **89f:00029**) 90B10
- Garling, D. J. H. On martingales with values in a complex Banach space. *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 2, 399-406. (Bernard Bru) **89g:60160** 60G46 (46B20)
- Garmash, V. A. see Models and investigation methods in systems in information science, **89m:94001**
- Garms, Klaus (with Bokowski, Jürgen) Althuler's sphere  $M_{10}^{10}$  is not polytopal. *European J. Combin.* 8 (1987), no. 3, 227-229. (Andrew Vince) **89a:52015** 52A25
- Garnsev, A. Yu. (with Sedykh, L. G.) Construction of the asymptotic solution of a nonlinear singularly perturbed system of differential equations. (Russian) *Differential and integral equations (Russian)*, 86-88, 128, *Gor'kov. Gos. Univ., Gorki*, 1985. (Summary) **89a:92062** 92A17 (34E05, 34E15)
- (with Sedykh, L. G.) Construction of an asymptotic solution of singularly perturbed differential equations. (Russian) *Differential equations and applied problems (Russian)*, 3-5, i, *Tul'sk. Politekh. Inst., Tula*, 1985. (see **89g:00008**) 34E05 (34E15)
- (with Sedykh, L. G.) Optimal control of the purification of sewage by active slt. (Russian) *Dokl. Akad. Nauk SSSR* 293 (1987), no. 4, 937-940. (M. Yunusov) **89b:90056** 90A30 (49B10)
- Solution of a problem of search in a domain. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1987, vyp. 2, 8-14, 132. (Andrei V. Panteleyev) **89a:90182** 90D26 (49A45)
- Garnaeva, G. Ya. (with Malafeev, O. A.) Differential search games. (Russian) *Differential equations and applications, I, II (Russian) (Ruse, 1985)*, 251-254, 'Angel Kanchev' Tech. Univ., Ruse, 1987. (Claudia Simionescu) **89d:90258** 90D25 (49A45)
- Garniezek, Zbigniew (with Kuklewski, Julian; Rudnicki, Konrad) Investigation of population distribution. II. (Polish. English summary) *Zeszyty Nauk. Wyz. Szkoły Ped. w Opolu Mat.* 25 (1987), 25-37. (Summary) **89g:85003** 85A35
- Garner, Cyril W. L. Midpoints and midlines in a finite hyperbolic plane. *Combinatorics '86 (Trento, 1986)*, 181-187, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (E. J. F. Primrose) **89c:51016** 51E30
- Garner, J. B. (with Shivaji, Ratnasingham) Existence and uniqueness of solutions to a class of singular diffusion problems. *Appl. Anal.* 30 (1988), no. 1-3, 101-114. (J. V. Baxley) **89k:34021** 34B15 (92A09)
- (with Kellogg, R. B.) Existence and uniqueness of solutions in general multisolute renal flow problems. *J. Math. Biol.* 26 (1988), no. 4, 455-464. (G. Eason) **89k:92017** 92A09 (76Z05, 92A06)
- Analytic bounds for solutions of a class of boundary value problems in physiology. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* 90 (1988), no. 1-2, 333-339. (Floyd B. Hanson) **89m:92018** 92A09 (34B15)
- Analysis of diffusion problems in physiology. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 469-471. (János Tóth) **89j:34018** 34B15 (80A30, 92A09)
- Garnett, J. B. Corona problems, interpolation problems, and inhomogeneous Cauchy-Riemann equations. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 917-923, *Amer. Math. Soc., Providence, RI*, 1987. (Rita Saerens) **89d:32010** 32A35 (30D99, 30E05, 46J15)
- (with Gehring, F. W.; Jones, Peter Wilcox) Quasiconformal groups and the conical limit set. *Holomorphic functions and moduli, Vol. II (Berkeley, CA, 1986)*, 59-67, *Math. Sci. Res. Inst. Publ.*, 11, Springer, New York-Berlin, 1988. (A. Hinkkanen) **89i:30021** 30C60
- Garnett, Lucy A computer algorithm for determining the Hausdorff dimension of certain fractals. *Math. Comp.* 51 (1988), no. 183, 291-300. (Hermann Haase) **89e:58070** 58F11 (30D05)
- Garnir, Henri Georges see Butzer, Paul L., **89c:01048**
- Garofalo, F. (with Leitmann, G.) A composite controller ensuring ultimate boundedness for a class of singularly perturbed uncertain systems. *Dynamics Stability Systems* 3 (1988), no. 3-4, 135-145. (Pradeep Misra) **89k:93073** 93B35 (34E15, 93B50)
- Garofalo, Nicola New estimates of the fundamental solution and Wiener's criterion for parabolic equations with variable coefficients. *Calculus of variations and partial differential equations (Trento, 1986)*, 70-83, *Lecture Notes in Math.*, 1340, Springer, Berlin-New York, 1988. (Neil A. Watson) **89m:35097** 35K10 (31B35)
- (with Lanconelli, Ermanno) Wiener's criterion for parabolic equations with variable coefficients and its consequences. *Trans. Amer. Math. Soc.* 308 (1988), no. 2, 811-836. (Neil A. Watson) **89k:35104** 35K20 (31B10, 31B20)
- Garola, Claudio (with Cattaneo, Gianpiero; Dalla Pozza, Carlo; Nisticò, Giuseppe) On the logical foundations of the Jauch-Piron approach to quantum physics. *Internat. J. Theoret. Phys.* 27 (1988), no. 11, 1313-1349. (Summary) **89j:81013** 81B10
- Garreis, Reiner (with Louis, Jan; Ovrut, Burt A.; Wess, Julius) Schwinger terms, seagulls and the Virasoro anomaly. *Phys. Lett. B* 199 (1987), no. 1, 57-64. (Da-Xi Li) **89c:81144** 81E99 (58G40, 81E30)
- (with Louis, Jan; Ovrut, Burt A.) Topology and heterotic, gravitational, Lorentz and super-Weyl anomalies. *Nuclear Phys. B* 306 (1988), no. 3, 567-602. (B. Spence) **89f:81177** 81E99 (81E30, 83E30)
- Garrido, J. M. A. (with Gil, Maria Angeles; Gil Álvarez, Pedro Ángel) On a principle of choice among Bayes actions and its application for comparing experiments. (French summary) *RAIRO Rech. Opér.* 21 (1987), no. 3, 259-279. (L. J. Good) **89a:62025** 62C10 (62B15, 90A06, 90A10)
- Garrido, José Diffusion premiums for claim severities subject to inflation. *Insurance Math. Econom.* 7 (1988), no. 2, 123-129. (Hans U. Gerber) **89c:62135** 62P05 (90A09)
- Garrido, Luis see Far from equilibrium phase transitions, **89j:82002**
- Garrido, P. L. (with Labarta, Amílcar; Marro Borau, Joaquín) Stationary nonequilibrium states in the Ising model with locally competing temperatures. *J. Statist. Phys.* 49 (1987), no. 3-4, 551-568. (Summary) **89a:82041** 82A68 (82-04, 82A25)
- (with Marro Borau, Joaquín) Ising models with anisotropic interactions: stationary nonequilibrium states with a nonuniform temperature profile. *Phys. A* 144 (1987), no. 2-3, 585-603. (Summary) **89f:82077** 82A68 (82A25, 82A35)
- Garriga, J. (with Verdaguer, E.) Testing the quality factor with some approximate solutions to Einstein's equations. *Gen. Relativity Gravitation* 20 (1988), no. 12, 1249-1262. (Carl Brans) **89m:83028** 83C25 (83C20)
- Rossell i Garriga, Josep M. see Rossell i Garriga, Josep M.
- Garrison, J. C. (with Wright, Ewan Malcolm) Path-integral derivation of the complex ABCD Huygens integral. *J. Opt. Soc. Amer. A* 4 (1987), no. 9, 1751-1755. (L. S. Schulman) **89d:78007** 78A05
- (with Wright, Ewan Malcolm) Complex geometrical phases for dissipative systems. *Phys. Lett. A* 128 (1988), no. 3-4, 177-181. (Edward R. Vrsay) **89j:81065a** 81C99 (58F40)
- (with Wright, Ewan Malcolm) Erratum: "Complex geometrical phases for dissipative systems". *Phys. Lett. A* 132 (1988), no. 8-9, 459. (Edward R. Vrsay) **89j:81065b** 81C99 (58F40)
- (with Chiao, Raymond Y.) Geometrical phases from global gauge invariance of nonlinear classical field theories. *Phys. Rev. Lett.* 60 (1988), no. 3, 165-168. (Summary) **89a:70016** 70G50 (58F05, 81E13)
- Garrison, James W. Hintikka, Laudan and Newton: an interrogative model of scientific inquiry. *Synthese* 74 (1988), no. 2, 145-171. (Not in MR) **01A50** (03B60, 78-03)
- Garro, Ibrahim Nonstandard models for a fragment of the arithmetic and their decision problem. *Z. Math. Logik Grundlag. Math.* 33 (1987), no. 6, 481-483. (Leonard Lipshitz) **89c:03118** 03H15 (03D35)
- Garroni, Maria Giovanna (with Menaldi, José-Luis) On the asymptotic behaviour of solutions of integro-differential inequalities. *Ricerche Mat.* 36 (1987), suppl., 149-171. (N. U. Ahmed) **89m:49048** 49C20 (45K05, 90C40, 93E20)
- Garsia, A. M. (with Remmel, J. B.) Shuffles of permutations and the Kronecker product. *Graphs Combin.* 1 (1985), no. 3, 217-263. (Dennis White) **89b:05006** 05A17 (05A15, 20C30)
- Raising operators and Young's rule. *Combinatoire énumérative (Montreal, Que., 1985/Quebec, Que., 1985)*, 91-105, *Lecture Notes in Math.*, 1234, Springer, Berlin-New York, 1986. (Laurent Habsieger) **89g:05010** 05A15 (05A19, 20C30)
- (with McLarnan, T. J.) Relations between Young's natural and the Kazhdan-Lusztig representations of  $S_n$ . *Adv. in Math.* 69 (1988), no. 1, 32-92. (Michael H. Peel) **89f:20016** 20C30
- Garstecki, A. (with Mróz, Z.) Optimal design of supports of elastic structures subjected to loads and initial distortions. *Mech. Structures Mach.* 15 (1987), no. 1, 47-68. (Summary) **89f:73058** 73K40
- Gart, John J. (with Nam, Jun-Mo) Approximate interval estimation of the ratio of binomial parameters: a review and corrections for skewness. (French summary) *Biometrics* 44 (1988), no. 2, 323-338. (From the summary) **89c:62066** 62F25
- Gärtel, Ute ★ Fehlerabschätzungen für vektorwertige Randwertaufgaben zweiter Ordnung, insbesondere für Probleme aus der chemischen Reaktions-Diffusions-Theorie. (German) [Error estimates for vector-valued boundary value problems of second order, particularly for problems of chemical reaction-diffusion theory] *GMD-Studien [GMD Studies]*, 124, *Gesellschaft für Mathematik und Datenverarbeitung m.b.H. Bonn, St. Augustin*, 1987. vi+112 pp. ISBN 3-88457-124-9 (Peter Knabner) **89k:65122** 65N15 (65G99, 65N35, 80-08)
- Garthenhaus, Solomon (with McCullough, W. Scott) Higher order corrections to the quadratic Ising lattice susceptibility at criticality. *Phys. Lett. A* 127 (1988), no. 6-7, 315-318. (Summary) **89b:82105** 82A68 (82-04)
- Garland, Eugene C., Jr. Uniform high-order difference schemes for a singularly perturbed two-point boundary value problem. *Math. Comp.* 48 (1987), no. 178, 551-564, S5-S9. (Summary) **89a:65116** 65L10 (34B05, 34E15)

- (with Farrell, Paul A.) A uniform convergence result for a turning point problem. *BAIL V* (Shanghai, 1988), 127–132, *Boole Press Conf. Ser.*, 12, Boole, Dun Laoghaire, 1988. (see 89j:65008) 34E20 (65L10)
- An analysis of a uniformly convergent finite difference/finite element scheme for a model singular-perturbation problem. *Math. Comp.* **51** (1988), no. 183, 93–106. (Martin Stynes) 89b:65187 65L10 (65L60)
- Graded-mesh difference schemes for singularly perturbed two-point boundary value problems. *Math. Comp.* **51** (1988), no. 184, 631–657. (F. J. Murray) 89d:65073 65L10 (34B05, 34B27, 65L10)
- Strong stability of compact discrete boundary value problems via exact discretizations. *SIAM J. Numer. Anal.* **25** (1988), no. 1, 111–123. (David C. Arney) 89a:65127 65L20 (34B05, 34B27, 65L10)
- Gärtner, Jürgen** (with Dawson, D. A.) Large deviations from the McKean-Vlasov limit for weakly interacting diffusions. *Stochastics* **20** (1987), no. 4, 247–308. (Maria E. Vares) 89c:60092 60J60 (60F10, 60K35)
- Convergence towards Burgers' equation and propagation of chaos for weakly asymmetric exclusion processes. *Stochastic Process. Appl.* **27** (1988), no. 2, 233–260. (Stefano Olla) 89c:60200 60K35
- Garvan, F. G.** Combinatorial interpretations of Ramanujan's partition congruences. *Ramanujan revisited* (Urbana-Champaign, Ill., 1987), 29–45, *Academic Press, Boston, MA*, 1988. (L. Bruce Richmond) 89e:11063 11P76 (05A17)
- (with Andrews, G. E.) Dyson's crank of a partition. *Bull. Amer. Math. Soc. (N.S.)* **18** (1988), no. 2, 167–171. (M. S. Cheema) 89b:11079 11P65 (05A17)
- A beta integral associated with the root system  $G_2$ . *SIAM J. Math. Anal.* **19** (1988), no. 6, 1462–1474. (R. A. Askey) 89k:33002 33A15 (17B20)
- New combinatorial interpretations of Ramanujan's partition congruences mod 5, 7 and 11. *Trans. Amer. Math. Soc.* **305** (1988), no. 1, 47–77. (L. Bruce Richmond) 89b:11081 11P76 (05A17, 05A19)
- Garzó, V.** On the derivation of the Burnett hydrodynamic equations from the Hilbert expansion. *Phys. A* **149** (1988), no. 3, 551–560. (V. Protopopescu) 89f:82035 82A40 (82A70)
- Garzon, A. R.** (with Cegarra, A. M.; Carrasco, P.) An exact sequence in the first variable for nonabelian cohomology in algebraic categories. A Mayer-Vietoris sequence for nonabelian cohomology of groups. *Categorical algebra and its applications* (Louvain-La-Neuve, 1987), 72–86, *Lecture Notes in Math.*, 1348, Springer, Berlin-New York, 1988. (Timothy Porter) 89m:18019 18G50
- (with Carrasco, P.; Cegarra, A. M.) La suite fondamentale de Hochschild-Serre pour la cohomologie non abélienne des groupes. II. (English summary) [The Hochschild-Serre fundamental exact sequence in nonabelian group cohomology. II] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 2, 71–74. (U. Stammbach) 89g:18021 18G50 (20J05)
- Garzon, Max** Symplectic embeddings of graphs. *J. Combin. Math. Combin. Comput.* **2** (1987), 193–207. (Dieter Kratsch) 89b:05079 05C10 (05C25, 68R10)
- (with Zalstein, Yechezkel) On permutation properties in groups and semigroups. *Semigroup Forum* **35** (1987), no. 3, 337–351. (Summary) 89e:20102 20M10 (20F99)
- (with Zalstein, Yechezkel) Linear semigroups with permutation properties. *Semigroup Forum* **35** (1987), no. 3, 369–371. (Summary) 89e:20103 20M10 (20F99)
- Cyclic automata. *Theoret. Comput. Sci.* **53** (1987), no. 2–3, 307–317. (Klaus W. Wagner) 89c:68025 68Q05 (03D05, 68Q70)
- Gasanenko, V. A.** (with Ostapenko, V. V.) Control reliability in a linear differential game with a fixed termination time. (Russian) *Analytic methods in reliability theory* (Russian), 27–31, ii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1985. (Summary) 89d:90256 90D25
- A Wiener process in a narrow strip. (Russian) *Asymptotic methods in the investigation of stochastic models* (Russian), 11–17, 142, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (Constantin Tudor) 89e:60153 60J65
- A Wiener process in a thin region. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 2, 225–229, 272; translated in *Ukrainian Math. J.* **40** (1988), no. 2, 193–196. (G. A. Sokhadze) 89g:60251 60J65
- Gasanov, A. I.** Mathematical principles of the nondestructive diagnosis of an elastoplastic medium (theory and computational experiment). (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 36, 28 pp. (Summary) 89f:73028 73E99
- An inverse problem of nondestructive diagnostics of an elastoplastic medium. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 6, 1299–1303; translated in *Soviet Math. Dokl.* **37** (1988), no. 1, 242–246. (From the introduction) 89c:73029 73E99 (35R30, 49A36, 93C75)
- Gasanov, E. E.** (with Kazymov, S. S.) Modal control of multidimensional objects. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **7** (1986), no. 6, 68–74 (1987). (Andrzej Świąniak) 89c:93089 93B50 (93B17, 93B55, 93C05)
- Gasanov, G. M.** Approximation of some integral expressions. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 72–75, *Saratov Gos. Univ., Saratov*, 1986. (see 89j:00036) 45L05
- Gasanov, I. I.** (with Chebanyuk, Yu. M.) ★ Многокритериальная стохастическая задача управления водохранилищем сезонного регулирования. (Russian) [A multicriterial stochastic problem of the control of a seasonal control reservoir] Сообщения по Прикладной Математике. [Reports in Applied Mathematics] *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1988, 34 pp. (Summary) 89i:90041 90B30 (60K99, 90B05)
- Gasch, William** Oracles: three new results. *Mathematical logic and theoretical computer science* (College Park, Md., 1984–1985), 219–251, *Lecture Notes in Pure and Appl. Math.*, 106, Dekker, New York, 1987. (From the introduction) 89k:03046 03D15 (68Q15)
- (with Amir, Amihod) Polynomial terse sets. *Inform. and Comput.* **77** (1988), no. 1, 37–56. (Lane Hemachandra) 89c:68032 68Q15 (03D15)
- Gasca, M.** (with Lebrón, E.) On Aitken-Neville formulae for multivariate interpolation. *Numerical approximation of partial differential equations* (Madrid, 1985), 133–140, *North-Holland Math. Stud.*, 133, North-Holland, Amsterdam-New York, 1987. (G. Baszenski) 89b:41005 41A05 (41A63)
- (with Martínez, José Javier) On the computation of multivariate confluent Vandermonde determinants and its applications. *The mathematics of surfaces, II* (Cardiff, 1986), 101–114, *Inst. Math. Appl. Conf. Ser. New Ser.*, 11, Oxford Univ. Press, New York, 1987. (Summary) 89a:65069 65F30 (65D05, 65D25, 65D30)
- (with Mühlbach, G.) Generalized Schur-complements and a test for total positivity. *Appl. Numer. Math.* **3** (1987), no. 3, 215–232. (E. L. Yip) 89d:65031 65F05 (15A15)
- Gascon, André** (with Leachman, Robert C.) A heuristic scheduling policy for multi-item, single-machine production systems with time-varying, stochastic demands. Focused issue on heuristics. *Management Sci.* **34** (1988), no. 3, 377–390. (Summary) 89b:90106 90B35
- (with Leachman, Robert C.) A dynamic programming solution to the dynamic, multi-item, single-machine scheduling problem. *Oper. Res.* **36** (1988), no. 1, 50–56. (Summary) 89b:90104 90B35
- Gascon, F. G.** see González-Gascón, Francisco
- gonzález-Gascón, Francisco** see González-Gascón, Francisco
- Gashimov, I. F.** (with Bairamogly, M.) Discreteness of the spectrum of a one-term operator-differential equation of even order. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 1, 19–25. (G. Yu. Tamanyan) 89b:47068 47E05 (34B25)
- Gashkov, S. B.** The complexity of monotone calculations of polynomials. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 5, 7–13, 104. (Summary) 89d:11116 11Y16 (12-04)
- Complexity of the approximate realization of functions, satisfying the Lipschitz condition, by schemes in continuous bases. (Russian) *Mat. Zametki* **43** (1988), no. 4, 543–557, 575; translated in *Math. Notes* **43** (1988), no. 3–4, 312–320. (Dinh Dung) 89b:65028 65D15 (41A99, 68Q25)
- Computational complexity of some classes of polynomials of several variables. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 2, 89–91; translated in *Moscow Univ. Math. Bull.* **43** (1988), no. 2, 65–67. (Juraj Hromkovič) 89b:68061 68Q25 (03D15, 94C10)
- Gasilov, V. A.** (with Krylov, S. F.; Sorokovikova, O. S.; Tkachenko, S. I.) Application of completely conservative difference schemes to the calculation of two-dimensional magnetohydrodynamic flows. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 5, 717–729, 783. (Summary) 89f:65093 65M05 (76-08, 76W05)
- Gasim, Ali Abul** First-order autoregressive models: a method for obtaining eigenvalues for weighting matrices. *J. Statist. Plann. Inference* **18** (1988), no. 3, 391–398. (B. M. Pötscher) 89d:62090 62M10 (15A18)
- Gaskarov, D. V.** (with Goloskov, K. P.; Shikardnya, A. M.) Application of mathematical programming in discriminant analysis for the solution of a forecasting problem. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 7, 174–181; translated in *Automat. Remote Control* **49** (1988), no. 7, part 2, 956–961. (Summary) 89g:90080 90A20 (62N05)
- Gaskell, P. H.** (with Lau, A. K. C.) Curvature-compensated convective transport: SMART, a new boundedness-preserving transport algorithm. *Internat. J. Numer. Methods Fluids* **8** (1988), no. 6, 617–641. (Summary) 89c:76010 76-08 (76R99)
- Gaspar, Dumitru** (with Suciu, Nicolae) A dual Wold decomposition for subspectral representations of function algebras. *An. Univ. Craiova Mat. Fiz.-Chim.* **14** (1986), 22–32. (Wacław Szymański) 89e:46061 46J25 (46J10, 47A65, 47B20)
- (with Suciu, Nicolae) Intertwining properties of isometric semigroups and Wold type decompositions. *Operators in indefinite metric spaces, scattering theory and other topics* (Bucharest, 1985), 183–193, *Oper. Theory. Adv. Appl.*, 24, Birkhäuser, Basel-Boston, MA, 1987. (E. Durszt) 89a:47066 47D05 (47A67)
- (with Suciu, Nicolae) On the structure of the subspectral representations of function algebras. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 6, 501–508. (Jan Janas) 89m:46088 46J10 (46J25, 47B40, 47D99)
- Gaspar, Zs.** (with Tarnai, Tibor) Multisymmetric close packings of equal spheres on the spherical surface. *Acta Cryst. Sect. A* **43** (1987), no. 5, 612–616. (A. Florian) 89d:52031 52A45 (05B40, 52A40)
- Gaspari, George** (with Rudnick, Joseph; Beldjenna, Arezki) The shapes of open and closed random walks: a  $1/d$  expansion. *J. Phys. A* **20** (1987), no. 11, 3393–3414. (Gregory F. Lawler) 89d:82073 82A41 (82A51)
- Gasparyan, G. S.** (with Markosyan, S. E.) On the Berge conjecture. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* **85** (1987), no. 2, 56–59. (Larry Bassenpiller) 89b:05142 05C75 (05C15)
- (with Markosyan, S. E.)  $\omega$ -perfect graphs. (Russian. English and Armenian summaries) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1987**, no. 3(166), 9–15 (1988). (Felix Lazebnik) 89c:05062 05C75 (68Q25, 68R10)
- Gasparyan, K. V.** A change-of-variables formula for optional semimartingales. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1984**, no. 1(155), 14–25. (Not in MR) 60H05 (60G44)
- Multiplicative decomposition of exponential semimartingales. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* **86** (1988), no. 2, 67–70. (Dominique Lépine) 89g:60157 60G44
- Gaspar, George** Summation, transformation, and expansion formulas for bibasic series. *Trans. Amer. Math. Soc.* **312** (1989), no. 1, 257–277. (W. A. Al-Salam) 89g:33012 33A70 (33A35)
- Gasperini, M.** (with Caianiello, Eduardo R.; Predazzi, E.; Scarpetta, G.) On the confining aspects of a conformally flat geometry. *Phys. Lett. A* **132** (1988), no. 2–3, 82–84. (Summary) 89j:81138 81E20 (81G05, 83C47)
- Short-range interactions in gravitational theories with torsion and quadratic Lagrangian. *Phys. Lett. B* **205** (1988), no. 4, 517–520. (Summary) 89c:83042 83D05
- Gasser, Theo** (with Kneip, Alois) Convergence and consistency results for self-modeling nonlinear regression. *Ann. Statist.* **16** (1988), no. 1, 82–112. (Andrej Pázmán) 89b:62133 62J02 (62F10)
- Gassiev, R. V.** (with Vabishchevich, P. N.) Numerical algorithms for forward calculation for the solution of problems of ideal hydrodynamics. (Russian) *Numerical methods for solving inverse problems of mathematical physics* (Russian), 97–105, 263, *Moskov. Gos. Univ., Moscow*, 1988. (Summary) 89k:76009 76-08 (76B99, 76C05, 76V05)
- Gastmans, R.** (with Sevrin, A.; Troost, W.; Van Proeyen, A.) Infinite-dimensional extended superconformal Lie algebras. *Internat. J. Modern Phys. A* **2** (1987), no. 1, 195–216. (Qi Zhi Han) 89c:17036 17B70 (17B65, 81E30, 81E40)
- Gasyimov, M. G.** (with Kakhramanov, A. Sh.; Petrosyan, S. K.) On the spectral theory of linear differential operators with discontinuous coefficients. (Russian. English and



- Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **43** (1987), no. 3, 13–16. (Summary) **89d:34048** 34B25 (47E05)
- (with Magerramov, A. M.) Uniqueness of the solution of an inverse problem of scattering theory for pencils of ordinary differential operators. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **43** (1987), no. 8, 3–6 (1988). (Not in MR) **34B25** (34A55, 47E05)
- Götarek, D. I. A note on convergence of parabolic Itô equations. *Stochastic Anal. Appl.* **6** (1988), no. 4, 365–378. (Jose Luis Menaldi) **89f:60129** 60H15 (35R60, 93E20)
- Gatermann, Karin The construction of symmetric cubature formulas for the square and the triangle. (German summary) *Computing* **40** (1988), no. 3, 229–240. (J. Kofroň) **89k:65019** 65D30
- Gates, D. J. Growth and decrescence of two-dimensional crystals: a Markov rate process. *J. Statist. Phys.* **52** (1988), no. 1–2, 245–257. (B. H. Lavenda) **89m:82061** 82A60 (82A57)
- (with Westcott, M.) Stability of plant mixtures in the absence of infection or predation. *J. Theoret. Biol.* **131** (1988), no. 1, 15–31. (Hal Leslie Smith) **89f:92040** 92A15 (92A17)
- (with Westcott, M.) Kinetics of polymer crystallization. I. Discrete and continuum models. *Proc. Roy. Soc. London Ser. A* **416** (1988), no. 1851, 443–461. (Summary) **89e:82010a** 82A51 (80A30, 82A31, 82A60)
- (with Westcott, M.) Kinetics of polymer crystallization. II. Growth regimes. *Proc. Roy. Soc. London Ser. A* **416** (1988), no. 1851, 463–476. (Summary) **89e:82010b** 82A51 (80A30, 82A31, 82A60)
- Gates, S. James, Jr. Unidirectional superconformal theories. *International Workshop on Superstrings, Cosmology, Composite Structures* (College Park, MD, 1987), 207–222, *World Sci. Publishing, Singapore*, 1987. (C. Gauthier) **89e:81145** 81E99 (81E30, 81G20, 83E30)
- (with Brooks, Roger; Muhammad, Fuad) Unidirectional superspace: the flux of (super)strings. *Phys. Lett. B* **194** (1987), no. 1, 35–42. (Paul Howe) **89c:81123** 81E99 (81E30, 81G20)
- (with Brooks, Roger) Manifestly supersymmetric gauge fixing in  $D = 2$  supergravity theories. *Classical Quantum Gravity* **5** (1988), no. 2, 367–376. (Mark D. Roberts) **89e:83078** 83E50 (81E20)
- (with Brooks, Roger; Muhammad, Fuad) Extended  $D = 2$  supergravity theories and their lower superspace realisations. *Classical Quantum Gravity* **5** (1988), no. 5, 785–805. (Thomas Schmitt) **89f:83096** 83E50 (83E30)
- (with Brooks, Roger) NSR BRST. *Nuclear Phys. B* **296** (1988), no. 2, 290–312. (B. Spence) **89a:81116** 81E99 (81E30)
- (with Siegel, Warren) Leftons, rightons, nonlinear  $\sigma$ -models, and superstrings. *Phys. Lett. B* **206** (1988), no. 4, 631–638. (Sorin Marcescu) **89k:81142** 81E99 (81E30, 83E30)
- (with Bellucci, Stefano)  $D = 10$ ,  $N = 1$  superspace supergravity and the Lorentz Chern-Simons form. *Phys. Lett. B* **208** (1988), no. 3–4, 456–462. (Summary) **89c:83077** 83E50 (81E30, 83E30)
- (with Lu, Liang; Oerter, Robert N.) Simplified SU(2) spinning string superspace supergravity. *Phys. Lett. B* **218** (1989), no. 1, 33–38. (Mark D. Roberts) **89m:83094** 83E50 (81G25, 83E30)
- see also Workshop: Superstrings, Cosmology, Composite Structures, **89a:81005**
- Gates, S. S. (with Banks, H. T.; Rosen, I. G.; Wang, Y.) The identification of a distributed parameter model for a flexible structure. *SIAM J. Control Optim.* **26** (1988), no. 4, 743–762. (Y. Cherruault) **89f:73049** 73K12 (73F99, 93B30, 93C20)
- von zur Gathen, Joachim Irreducible polynomials over finite fields. *Foundations of software technology and theoretical computer science* (New Delhi, 1986), 252–262, *Lecture Notes in Comput. Sci.*, **241**, Springer, Berlin-New York, 1986. (J. H. van Lint (Zbl 616:12009)) **89c:11176** 11T06 (11Y16, 68Q25)
- Feasible arithmetic computations: Valiant's hypothesis. *J. Symbolic Comput.* **4** (1987), no. 2, 137–172. (Werner Hartmann) **89f:68021** 68Q15 (03D15, 11Y16, 12–04, 15A15, 58–02)
- Permanent and determinant. *Linear Algebra Appl.* **96** (1987), 87–100. (Peter M. Gibson) **89a:15005** 15A15
- Computing powers in parallel. *SIAM J. Comput.* **16** (1987), no. 5, 930–945. (From the introduction) **89j:68060** 68Q20 (11B50, 11T99, 11Y35, 68Q10, 68Q40)
- Factoring polynomials and primitive elements for special primes. *Theoret. Comput. Sci.* **52** (1987), no. 1–2, 77–89. (Samuel S. Wagstaff, Jr.) **89a:11126** 11T06 (11Y16, 68Q15)
- Gather, U. (with Kale, B. K.) Maximum likelihood estimation in the presence of outliers. *Comm. Statist. Theory Methods* **17** (1988), no. 11, 3767–3784. (Not in MR) **62F10**
- Gatjal, Jan (with Hejny, Milan) Do we know how geometry should be taught? (Slovak) *Pokroky Mat. Fyz. Astronom.* **33** (1988), no. 4, 228–233. (B. Crstici) **89j:00040** 00A25
- Gatica, Gabriel (with Basso, Patricia) A generalization of the method of bisection to the case of functions with several roots. (Spanish. English summary) *Rev. Mat.* **9** (1987), no. 1, 8–21. (Summary) **89h:65075** 65H05
- A note on the a posteriori error analysis for the finite element method. *SIAM J. Numer. Anal.* **25** (1988), no. 1, 41–45. (Stephen W. Brady) **89c:65115** 65N15 (65N30)
- Gatica, Juan A. (with So, Joseph Wai-Hung) Predator-prey models with almost periodic coefficients. *Appl. Anal.* **27** (1988), no. 1–3, 143–152. (George Karakostas) **89a:92057** 92A17 (34C27)
- (with Waltman, Paul) A system of functional-differential equations modeling threshold phenomena. *Appl. Anal.* **28** (1988), no. 1, 39–50. (J. M. Cushing) **89h:34062** 34K05 (47H15)
- Gatignol, Ph. (with Rousseau, M.) Analyse asymptotique des faisceaux ultrasonores et problèmes d'interface. (English summary) [Asymptotic analysis of ultrasonic beams and interface problems] *J. Méc. Théor. Appl.* **1986**, suppl., iii, 273–293. (Philippe Boulanger) **89a:76046** 76Q05 (41A60, 73D20)
- Gatignol, René The hydrodynamical description for a discrete velocity model of gas. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems* **1** (1987), no. 4, 709–725. (M. Drăganu) **89j:82039** 82A40 (76P05)
- Gatl, Hilary Minimum and maximum, finite and infinite: Bruno and the Northumberland circle. *J. Warburg Courtauld Inst.* **48** (1985), 144–163. (William R. Shea) **89e:01015** 01A40 (01A45)
- Gatto, A. Eduardo (with Wheeden, Richard L.) Sobolev inequalities for products of powers. *Trans. Amer. Math. Soc.* **314** (1989), no. 2, 727–743. (Gerald B. Folland) **89m:26028** 26D10 (46E35)
- Gatto, Marino (with Muratori, S.; Rinaldi, S.) On the optimality of the logistic growth. *J. Optim. Theory Appl.* **57** (1988), no. 3, 513–517. (Wei-Min Liu) **89d:92062** 92A15 (93C75)
- Gatto, Raoul (with Sartori, G.) Consequences of the complex character of the internal symmetry in supersymmetric theories. *Comm. Math. Phys.* **109** (1987), no. 2, 327–352. (Martin A. Guest) **89a:81042** 81D20 (14L30, 58E99, 81G20)
- Gatto, Romano Giacinto De Cristofaro: a Neapolitan Cartesian mathematician in the late seventeenth and early eighteenth centuries. (Italian) *Boll. Storia Sci. Mat.* **6** (1986), no. 2, 31–88. (Eberhard Knobloch) **89a:01019** 01A45 (01A50, 51–03)
- Gau, Yih-Nan Embedded topological classification of quasi-ordinary singularities. With an appendix by Joseph Lipman. *Mem. Amer. Math. Soc.* **74** (1988), no. 388, 109–129. (Ulrich Karras) **89m:14002** 14B05 (32C40, 57Q45)
- Gaudesfroy, Alain Anti-bruit et cohomologie. (English summary) [Antinoise and cohomology] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers Sci. Terre* **306** (1988), no. 3, 207–209. (Summary) **89k:76082** 76Q05 (58C30, 58G05, 58G40)
- Gaudel, Marie-Claude (with Soria, Michèle; Froidevaux, Christine) ★ Types de données et algorithmes. Vol. I. (French) [Data types and algorithms. Vol. I] Analyse d'algorithmes; définition des types de données. [Analysis of algorithms; definition of data types] With an English summary. Collection Didactique [Didactic Collection], 3. Institut National de Recherche en Informatique et en Automatique (INRIA), Rocquencourt, 1986. 206 pp. ISBN 2-7261-0463-0 (Summary) **89a:68001a** 68–01
- (with Soria, Michèle; Froidevaux, Christine) ★ Types de données et algorithmes. Vol. II. (French) [Data types and algorithms. Vol. II] Recherche, tri, algorithmes sur les graphes. [Searching, sorting and graph algorithms] With an English summary. Collection Didactique [Didactic Collection], 4. Institut National de Recherche en Informatique et en Automatique (INRIA), Rocquencourt, 1987. viii+240 pp. ISBN 2-7261-0490-8 (Editors) **89a:68001b** 68–01
- Gaudet, Gérard (with Moreaux, Michel) A comparison of Bertrand and Cournot equilibrium outcomes in a differentiated nonrenewable resources duopoly. Mathematical modeling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 903–906. (see **89d:00007**) **90A14** (90D10)
- Gaudin, Michel ★ Болюнов функция Гете. (Russian) [The Bethe wave function] Translated from the French by P. P. Kulish and E. K. Sklyanin. Translation edited and with a preface by L. D. Faddeev. "Mir", Moscow, 1987. 352 pp. (Editors) **89c:82001** 82–02 (81Hxx, 82A68)
- Vers le spectre du triangle? (English summary) [Toward the spectrum of the triangle?] *J. Physique* **48** (1987), no. 10, 1633–1650. (Alejandro Uribe) **89c:81113** 58G25 (22E50, 35P05, 58F08, 58F20, 81C05)
- Gaudrat, V. (with Bonnans, J. Frédéric; Saguez, C.) A domain control approach to state-constrained control problems. Boundary control and boundary variations (Nice, 1986), 72–90, *Lecture Notes in Comput. Sci.*, **100**, Springer, Berlin-New York, 1988. (see **89b:93006**) **49B10**
- Gaudry, G. I. Singular integrals and maximal functions on certain Lie groups. *Miniconference on operator theory and partial differential equations* (North Ryde, 1986), 21–25, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, **14**, Austral. Nat. Univ., Canberra, 1986. (Anna Maria Mantero) **89b:43001** 43A22 (43A80, 46N05, 47B99)
- (with Ricker, Werner) Spectral properties of translation operators in certain function spaces. *Illinois J. Math.* **31** (1987), no. 3, 453–468. (Richard M. Crownover) **89f:47047** 47B38 (43A15, 47B40)
- (with Giulini, S.; Hulanicki, Andrzej; Mantero, Anna Maria) Hardy-Littlewood maximal functions on some solvable Lie groups. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 1, 78–82. (Christopher Meaney) **89c:43020** 43A80 (22E25, 22E30, 42B25)
- Gauduchon, P. Les immersions super-minimales d'une surface compacte dans une variété riemannienne orientée de dimension 4. (English summary) [The superminimal immersions of a compact surface in an oriented Riemannian manifold of dimension 4] Théorie des variétés minimales et applications (Palaiseau, 1983–1984). *Astérisque* **No. 154-155** (1987), 9, 151–180, 351 (1988). (see **89g:58052**) **53C42** (32L25)
- La correspondance de Bryant. (English summary) [The Bryant correspondence] Théorie des variétés minimales et applications (Palaiseau, 1983–1984). *Astérisque* **No. 154-155** (1987), 10, 181–208, 351 (1988). (see **89g:58052**) **53C42** (32C25)
- see also Harmonic mappings, twistors, and  $\sigma$ -models, **89h:58047**
- verger-Gangry, J.-L. see Verger-Gangry, J.-L.
- Gaul, Wolfgang Zum Einsatz von Datenanalysemethoden in der Marktforschung. [The application of data analysis methods in market research] *Ökonomie und Mathematik*, 396–408, Springer, Berlin-New York, 1987. (see **89j:90002**) **90A30**
- Gauld, David Variation of fixed-point and coincidence sets. *J. Austral. Math. Soc. Ser. A* **44** (1988), no. 2, 214–224. (V. V. Obukhovskii) **89c:54055** 54H25 (54C35, 54C60)
- alvarez-Gaumé, L. see Alvarez-Gaumé, L.
- Gauß, Carl Friedrich see Fuchs, Werner, **89a:01031**; Wiederkehr, Karl Heinrich, **89b:01027**; Switkint, Zeno G., **89c:01101**; Rowe, David E., **89e:01031**; Bühler, Walter K., **89h:01057**; Ahmktist, Gert, **89j:01028**; Betsch, Gerhard, **89j:01038**; Voigt, H. H., **89j:01045** and Sheinina, O. B., **89k:01021**
- Gauß, Joseph see Michling, Horst, (Not in MR)
- Gautesen, A. K. On the asymptotic solution to a class of linear integral equations. *SIAM J. Appl. Math.* **48** (1988), no. 2, 294–306. (George Karakostas) **89d:45002** 45B05 (45M05)
- The effective conductivity of a composite material with a periodic rectangular geometry. *SIAM J. Appl. Math.* **48** (1988), no. 2, 393–404. (Summary) **89b:80005** 80A20 (35J05)
- A geometrical theory of diffraction for crack-opening displacements. *Wave Motion* **10** (1988), no. 5, 393–404. (I. M. Longman) **89j:73033** 73D25 (35L05, 73M05)
- Gauthier, Véronique (with Isambert, Emmanuel) Trace continue d'un chemin sur son ombre. (English summary) [Continuous trace of a path on its shadow] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 19, 935–938. (W. A. J. Luxemburg) **89j:26022** 26E35 (54D05)
- Gauthier, J.-P. (with Kazakov, D.) Observabilité et observateurs de systèmes non linéaires. (English summary) [Observability and observers of nonlinear systems] *RAIRO Automat.-Prod. Inform. Ind.* **22** (1988), no. 2, 201–212. (Guy Jumarie) **89d:93012** 93B07 (93E10)
- (with Hammouri, H.) Bilinearization up to output injection. *Systems Control Lett.* **11** (1988), no. 2, 139–149. (Mikolaj Buslowicz) **89i:93021** 93B17 (93C10)
- Gauthier, P. (with Boyarsky, A.; Byers, W.) Higher-dimensional analogues of the tent maps. *Nonlinear Anal.* **11** (1987), no. 11, 1317–1324. (From the introduction) **89h:58111** 58F13 (26A18)

- Gauthier, Paul M. Harmonic measure and uniqueness on an infinitely connected domain. *Analysis of one complex variable* (Laramie, Wyo., 1985), 99-103, *World Sci. Publishing, Singapore*, 1987. (From the introduction) **89b:30025** 30C85
- Uniform and better-than-uniform elliptic approximations on unbounded sets. *Complex analysis, I* (College Park, Md., 1985-86), 149-157, *Lecture Notes in Math.*, 1275, Springer, Berlin-New York, 1987. (O. P. Juneja) **89c:30095** 30E10
- (with Grothmann, R.; Hengartner, W.) Asymptotic maximum principles for subharmonic and plurisubharmonic functions. *Canad. J. Math.* **40** (1988), no. 2, 477-486. (W. H. Ovi) **89g:31011** 31C05
- (with Bagby, Thomas) Approximation by harmonic functions on closed subsets of Riemann surfaces. *J. Analyse Math.* **51** (1988), 259-284. (Helmut Köditz) **89j:30064** 30F15 (30E10)
- Gautman, G. P. (with Goyal, A. N.) Unification of generalised functions representable by Mellin-Barnes contour integrals. *Univ. Nac. Tucumán Rev. Ser. A* **29** (1979), no. 1, 103-120 (1987). (Not in MR) **33A35**
- Gautier, Henri-François Toeplitz operators in Bargmann spaces. *Integral Equations Operator Theory* **11** (1988), no. 2, 173-185. (I. M. Spitkovskii) **89d:47043** 47B35 (47B38)
- Gautschi, Walter Gauss-Kronrod quadrature—a survey. *Numerical methods and approximation theory, III* (Niš, 1987), 39-66, *Univ. Niš, Niš*, 1988. (A. J. Rodrigues) **89c:41035** 41A55 (65D32)
- (with Notaris, Sotirios E.) An algebraic study of Gauss-Kronrod quadrature formulae for Jacobi weight functions. *Math. Comp.* **51** (1988), no. 183, 231-248. (B. Boyanov) **89f:65031** 65D32
- (with Rivlin, Theodore J.) A family of Gauss-Kronrod quadrature formulae. *Math. Comp.* **51** (1988), no. 184, 749-754. (Hans Strauss) **89m:65029** 65D32
- (with Inglese, Gabriele) Lower bounds for the condition number of Vandermonde matrices. *Numer. Math.* **52** (1988), no. 3, 241-250. (Ludwig Elsner) **89b:65108** 65F35 (15A12)
- Gaveau, Bernard (with Dostál, Miloš) Développements asymptotiques explicites d'intégrales de Fourier pour certains points critiques dégénérés. (English summary) [Explicit asymptotic expansion of Fourier integrals with certain degenerate critical points] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 20, 857-859. (Introduction) **89a:58103** 58G15 (41A60, 42B10, 58C27)
- (with Schulman, L. S.) Dynamical metastability. *J. Phys. A* **20** (1987), no. 10, 2865-2873. (From the text) **89c:82006** 82A31
- (with Schulman, L. S.) Grassmann-valued processes for the Weyl and the Dirac equations. *Phys. Rev. D* (3) **36** (1987), no. 4, 1135-1140. (Philip J. Feinsilver) **89b:81033** 81C05 (81C20, 81C35)
- (with Okada, Masami; Okada, Tatsuya) Second order differential operators and Dirichlet integrals with singular coefficients. I. Functional calculus of one-dimensional operators. *Tohoku Math. J. (2)* **39** (1987), no. 4, 465-504. (P. Günther) **89b:58218** 58G25 (35P05)
- (with Ancona, Vincenzo) Annulation de la cohomologie pour des fibrés à courbure de signe variable sur une variété kählérienne. (English summary) [Vanishing of cohomology for bundles whose curvature has variable sign on a Kähler manifold] *Ann. Mat. Pura Appl. (4)* **151** (1988), 97-107. (S. Dimiev) **89m:32050** 32L15 (32L20, 53C55)
- (with Méritet, Alain) An anomalous diffusion in a long-range disordered lattice. *Lett. Math. Phys.* **15** (1988), no. 4, 351-355. (Debashish Chowdhury) **89m:82055** 82A57 (60J15, 82A41)
- (with Gaveau, Marc-André) A semi-microscopic model of the heat conduction law. *Lett. Math. Phys.* **16** (1988), no. 2, 179-188. (Brian DeFacio) **89i:82009** 82A05 (80A05)
- Le problème de Cauchy pour une équation d'ondes stochastique. (English summary) [The Cauchy problem for a stochastic wave equation] *C. R. Acad. Sci. Paris Sér. I Math.* **308** (1989), no. 1, 21-24. (Daniel Occone) **89m:60132** 60H07 (35L05, 35R60, 60H15)
- Gaveau, Marc-André (with Gaveau, Bernard) A semi-microscopic model of the heat conduction law. *Lett. Math. Phys.* **16** (1988), no. 2, 179-188. (Brian DeFacio) **89i:82009** 82A05 (80A05)
- Gavre, L. (with Michavila Pitarch, Francisco P.; Diez, F.; Whiteman, J. R.) Generalization of the mapping technique of Aalto to produce finite elements for treating singularities. *The mathematics of finite elements and applications, VI* (Uxbridge, 1987), 541-553, Academic Press, London-New York, 1988. (see **89c:65004**) **65N30**
- Gavioli, Hario (with Rossi, Francesco A.) Aspects of heuristic methods in the "probabilistic traveling salesman problem" (PTSP). *Stochastics in combinatorial optimization* (Udine, 1986), 214-227, *World Sci. Publishing, Singapore*, 1987. (Summary) **89j:90116** 90B15 (90C35)
- Gavish, Bezael (with Altinkemer, Kemal) Heuristics with constant error guarantees for the design of tree networks. Focussed issue on heuristics. *Management Sci.* **34** (1988), no. 3, 331-341. (Summary) **89b:90071** 90B10
- (with Sumita, Ushio) Analysis of channel and disk subsystems in computer systems. *Queueing Systems Theory Appl.* **3** (1988), no. 1, 1-23. (Summary) **89c:68013** 68M20 (60K25, 68P20)
- Gavish, Motti (with Fogel, Eli) Nth-order dynamics target observability from angle measurements. *IEEE Trans. Aerospace Electron. Systems* **24** (1988), no. 3, 305-308. (Not in MR) **93B07**
- Gavril, E. V. (with Yazenin, A. V.) A problem of set-valued fuzzy mathematical programming. (Russian) *Mathematical methods for optimization and control in systems* (Russian), 72-78, *Kalinin. Gos. Univ., Kalinin*, 1987. (From the text) **89c:90216** 90C99 (03E72)
- Gavrilov, M. B. (with Solov'ev, L. S.) Linear waves in two-fluid relativistic gas dynamics. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 41, 32 pp. (Summary) **89c:76128** 76Y05 (76X05)
- Gavril, Fánica Generating the maximum spanning trees of a weighted graph. *J. Algorithms* **8** (1987), no. 4, 592-597. (Fabrizio Lucio) **89a:68099** 68Q25 (05C05, 05C65, 68R10, 90B10)
- Algorithms for maximum  $k$ -colorings and  $k$ -coverings of transitive graphs. *Networks* **17** (1987), no. 4, 465-470. (Ruth Bari) **89a:05088** 05C35 (05C15, 05C70)
- Gavril, S. (with Mor, A.; Weinstein, Marcel Mordechai) The electromagnetic fields of a current loop buried at an arbitrary angle in a stratified ground. *J. Franklin Inst.* **326** (1989), no. 1, 63-71. (From the summary) **89j:78035** 78A99
- Gavril, M. A characterization of strongly exposed points in vector-valued function spaces. *Stud. Cerc. Mat.* **40** (1988), no. 3, 233-244. (Peter Greim) **89k:46053** 46E40 (46E30)
- Gavrilenko, G. M. Secondary quantization of dynamical systems with indeterminacy of part of the phase states. (Russian) *IV International Symposium on Selected Topics in Statistical Mechanics* (Russian) (Dubna, 1987), 83-87, *Joint Inst. Nuclear Res., Dubna*, 1988. (see **89c:82003**) **81D07**
- Gavrilenko, V. V. (with Kubenko, V. D.) An axisymmetric problem of the penetration of thin elastic spherical shells into a compressible fluid. (Russian) *Prikl. Mekh.* **24** (1988), no. 4, 63-74, 134; translated in *Soviet Appl. Mech.* **24** (1988), no. 4, 374-384. (From the text) **89f:73040** 73J06 (73L15)
- Gavrilits, Yu. N. Using utility functions in economic analysis. (Russian) *Ekonom. i Mat. Metody* **24** (1988), no. 5, 781-791. (Andrzej Wiecezorek) **89m:90021** 90A10 (90C30)
- Gavrilov, G. P. see Tutte, W. T., **89i:05093**
- Gavrilov, L. On the geometry of Gorjatchev-Tchaplygin top. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 9, 33-36. (Summary) **89b:58091** 58F07 (14H40, 70E15)
- Note on the generalized Hénon-Heiles system. *C. R. Acad. Bulgare Sci.* **41** (1988), no. 8, 29-32. (R. L. Clerc) **89m:58154** 58F14 (14K25, 58F07, 70H05)
- Gavrilov, S. P. The gauge formalism and generalized Yang-Mills fields. (Russian) *Gravitatsiya i Teor. Otnositeli* **24** (1987), 114-152. (Thomas Schücker) **89d:53123** 53C80 (58E15, 81E13)
- Gavrilov, V. I. (with Zakharyan, V. S.) Sets of Lindelöf points of arbitrary complex functions. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* **86** (1988), no. 1, 12-16. (G. E. Tetvadze) **89i:30040** 30D40
- (with Zakharyan, V. S.) Conditions for the normality of families of holomorphic mappings. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* **86** (1988), no. 2, 62-66. (P. Agranovich) **89b:32006** 32A17 (32H20)
- Gavrilov, V. V. On nonseparable  $n$ -ary groups all of whose subgroups are semiabelian. (Russian) *The arithmetic and subgroup structure of finite groups* (Russian), 20-22, 210, "Nauka i Tekhnika", Minsk, 1986. (Kazimierz Głazek) **89a:20069** 20N15
- Gavrilova, R. M. Characteristics of the growth of functions that are analytic in tube domains. (Russian) *Mathematical analysis and its applications* (Russian), 12-18, 162, *Rostov. Gos. Univ., Rostov-on-Don*, 1985. (Summary) **89g:32001** 32A05
- Gavriluk, I. P. (with Zhuk, P. F.; Bondarenko, L. N.) A property of the finite-difference operator of the second derivative. (Russian) *Vychisl. Prikl. Mat. (Kiev)* **62** (1987), 3-8, 129. (Summary) **89b:65255** 65N25
- An algorithm for solving a class of one-dimensional variational inequalities. (Russian) *Vychisl. Prikl. Mat. (Kiev)* **64** (1988), 24-30, 148. (R. Tichatschke) **89b:65073** 65K05 (49A29)
- Gavriluk, V. N. (with Semushin, S. A.) A monotone scheme of the second order of accuracy for the calculation of three-dimensional flows of an inviscid gas. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 112, 25 pp. (Summary) **89i:65064** 65M99 (35L67, 76-08, 76N15)
- Gavriluk, V. T. On the approximate characterization of functions of the classes  $X_p^q$ . (Russian) *Investigations in the theory of the approximation of functions* (Russian), 14-20, 120, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (L. Gogoladze) **89h:42014** 42A24 (41A40)
- Gavrin, V. P. (with Kabak, G. I.) A criterion for the existence of the Green function of a boundary value problem for a singular integro-differential operator. (Russian) *Boundary value problems* (Russian), 79-83, 197, *Perm. Politekh. Inst., Perm*, 1983. (see **89c:00008**) **47G05**
- (with Kabak, G. I.) A boundary value problem that admits discontinuous solutions. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 12, 2154-2157, 2206. (I. Kiguradze) **89d:34029** 34B10 (34B27)
- (with Kabak, G. I.) On the invertibility of a functional-differential operator. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **31** (1987), no. 11, 968-970, 1052. (I. Kiguradze) **89b:34153** 34K05
- Gavroglu, Kostas (with Goudaroulis, Yorgos) Understanding macroscopic quantum phenomena: the history of superfluidity 1941-1955. *Ann. of Sci.* **45** (1988), no. 4, 367-385. (Mario Skrinjar) **89k:01024** 01A60 (81J05, 82-03)
- Gavruschenko, E. V. Some properties of paracomplexness type. (Russian) *C. R. Acad. Bulgare Sci.* **41** (1988), no. 8, 5-7. (G. D. Dimov) **89m:54032** 54D18 (54G20)
- Gavruța, P. (with Păunescu, D.) A moment problem and Andô's dilation. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* **1986**, May, 33-36. (T. Ando) **89d:47011** 47A20 (44A60)
- Spectral properties of a weighted mean operator. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* **1986**, November, 59-62. (T. Ando) **89d:47061** 47B38 (45D05, 47A10)
- Gavryushin, N. K. On the study of the manuscripts of T. I. Rainov. (Russian) *Monuments of science and technology, 1986* (Russian), 170-182, 262, "Nauka", Moscow, 1987. (Summary) **89b:01044** 01A70 (01A75)
- see also Correspondence: Rainov, T. I.-Sarton, G., **89i:01070**
- Gavurin, M. K. (with Vinogradov, S. A.; Vladimirov, D. A.; Ermakov, S. M.; Makarov, B. M.; Natanson, G. I.; Solomyak, M. Z.; Faddeev, D. K.; Khavin, V. P.) Grigorii Mikhailovich Fikhtengol'ts (on the 100th anniversary of his birth). (Russian) *Vestnik Leningrad. Univ. Mat. Mekh. Astron.* **1988**, vyp. 3, 3-6. (Editors) **89m:01112** 01A70
- Gawande, M. (with Dunn, J. C.) A projected Newton method in a Cartesian product of balls. *J. Optim. Theory Appl.* **59** (1988), no. 1, 45-69. (Alexander Shapiro) **89b:90198** 90C30 (49D07, 49D15, 93B40, 93C55)
- Gawędziński, K. Renormalization: from magic to mathematics. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 1278-1285, *Amer. Math. Soc., Providence, RI*, 1987. (Henryk Aróđ) **89d:81075** 81E15 (81-02, 81E08, 82A25)
- (with Felder, G.; Kupiainen, A.) Spectra of Wess-Zumino-Witten models with arbitrary simple groups. *Comm. Math. Phys.* **117** (1988), no. 1, 127-158. (Andrew Pressley) **89b:81077** 81E13 (22E65, 58B20, 58D15, 81E40)
- (with Felder, G.; Kupiainen, A.) The spectrum of Wess-Zumino-Witten models. *Nuclear Phys. B* **299** (1988), no. 2, 355-366. (Jouko Mickelsson) **89c:22031** 22E65 (58D15, 58G40, 81E08, 81G20)
- Gawinecki, Jerzy Existence, uniqueness and regularity of the first boundary-initial value problem for hyperbolic equations system of the thermal stresses theory for temperature-rate-dependent solids. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.*



- 35 (1987), no. 7-8, 411-419. (W. Kosiński) **89k:35153** 35L99 (35K05, 73C25, 73C35, 73U05)
- The Cauchy problem for the linear hyperbolic equations system of the theory of thermoelasticity of the temperature-rate-dependent solids. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* **35** (1987), no. 7-8, 421-433. (W. Kosiński) **89k:35154** 35L99 (35K05, 73B30, 73C25, 73C30, 73U05)
- The Faedo-Galerkin method in thermal stresses theory. *Comment. Math. Prace Mat.* **27** (1987), no. 1, 83-107. (Yusuke Kato) **89a:35217** 35Q99 (73U05)
- (with Hung Do Duc; Piskorek, Adam) On thermoelastic potential. *Potential theory* (Prague, 1987), 127-129, Plenum, New York-London, 1988. (see **89j:31001**) 35L99 (31B35, 73C30, 73U05)
- Gawron, Piotr Włodzimierz** (with Macedońska, Olga) All automorphisms of the 3-nilpotent free group of countably infinite rank can be lifted. *J. Algebra* **118** (1988), no. 1, 120-128. (S. Andreadakis) **89h:20042** 20E36 (20E05, 20F18)
- Gawronski, Włodzimierz** (with Natke, H. G.) Order estimation of AR and ARMA models. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1143-1148. (Summary) **89c:93132** EA **89m** 93C30 (93B07, 93E10, 93E12)
- Gawronski, Wolfgang** (with Stadtmüller, Ulrich) On the asymptotic distribution of the zeros of  $\sum_{j=0}^n (1 - e^{i\lambda_j})^n z^n$ . *Analysis* **7** (1987), no. 2, 203-219. (Summary) **89c:30013** 30C15
- Asymptotic forms for the derivatives of one-sided stable laws. *Ann. Probab.* **16** (1988), no. 3, 1348-1364. (Makoto Maejima) **89g:60050** 60E07 (33A65, 60E10)
- (with Stadtmüller, Ulrich) On the zeros of Lerch's transcendental function with real parameters. *J. Approx. Theory* **53** (1988), no. 3, 354-364. (H.-J. Runckel) **89g:30009** 30C15 (30E15)
- Gawthrop, P. J.** (with Demircioğlu, H.) Continuous-time relay self-tuning control. *Internat. J. Control* **47** (1988), no. 4, 1061-1080. (Not in MR) **93B50**
- (with Kharbouch, M.) Two-loop self-tuning cascade control. *Proc. IEEE-D* **135** (1988), no. 4, 232-238. (Not in MR) **93A20** (93B35, 93C40)
- Gay, Antonio** (with Modica, Salvatore) Complete inflexive preferences: a definition. *Econom. Lett.* **28** (1988), no. 3, 205-208. (S. V. Ovchinnikov) **89m:90007** 90A06 (90A10)
- Gayek, Jonathan E.** (with Vincent, Thomas L.) An existence theorem for boundary trajectories. *J. Math. Anal. Appl.* **132** (1988), no. 1, 290-299. (P. K. C. Wang) **89g:49049** 49E15 (49A36)
- (with Fisher, Michael Ernest) Estimating reachable sets for two-dimensional linear discrete systems. *J. Optim. Theory Appl.* **56** (1988), no. 1, 67-88. (V. V. Krakhotko) **89h:49058** 49E15 (93B05, 93B60, 93C05, 93C55)
- Gaytgori, V. G.** see **Gaytgori, V. G.**
- Gazeta, J.-P.** (with Hans, M.) Conformally invariant wave equations on 3 + 2 de Sitter space. *Group theoretical methods in physics* (Varna, 1987), 523-529, *Lecture Notes in Phys.*, **313**, Springer, Berlin-New York, 1988. (see **89g:81001**) **81D25** (81E20)
- Gaziev, Sh. S.** Behavior of the solutions of differential equations at infinity. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 1, 16-22, 92. (T. Chanturiya) **89k:34087** 34D99
- Gazit, Hillel** (with Miller, Gary L.) An improved parallel algorithm that computes the BFS numbering of a directed graph. *Inform. Process. Lett.* **28** (1988), no. 2, 61-65. (Norbert Blum) **89j:68045** 68Q10 (68Q25, 68R10)
- Gazizov, R. K.** (with Akhatov, I. Sh.; Ibragimov, N. Kh.) Quasilocality symmetries of equations in mathematical physics. (Russian) *Mathematical modeling* (Russian), 22-56, *280*, "Nauka", Moscow, 1987. (B. G. Konopelchenko) **89h:58211** 58G35 (35A30, 35Q20)
- (with Baikov, V. A.; Ibragimov, N. Kh.) Formal symmetries and Bäcklund transforms. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 226, 28 pp. (Summary) **89e:58120** 58G35 (35A30, 35Q20, 58G37)
- (with Akhatov, I. Sh.; Ibragimov, N. Kh.) Fundamental types of invariant equations in one-dimensional gas dynamics. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 49, 26 pp. (Summary) **89j:58145** 58G35 (35L65, 58G37, 76N15)
- (with Baikov, V. A.; Ibragimov, N. Kh.) Approximate group analysis of the equation  $u_{tt} - (f(u))_{xx} + \varepsilon p(u)u_x = 0$ . (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 68, 27 pp. (Summary) **89h:35015a** 35A30 (22E05, 35L70, 58G35)
- (with Baikov, V. A.; Ibragimov, N. Kh.) Approximate group analysis of the nonlinear equation  $u_{tt} - (f(u))_{xx} + \varepsilon p(u)u_x = 0$ . (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1127-1138, 1283; translated in *Differential Equations* **24** (1988), no. 7, 719-728. (Summary) **89h:35015b** 35A30 (22E05, 35L70, 58G35)
- (with Baikov, V. A.; Ibragimov, N. Kh.) Approximate symmetries. (Russian) *Mat. Sb. (N.S.)* **136** (178) (1988), no. 4, 435-450, 590. (J. Chrastina) **89k:35013** 35A30 (35Q20, 58G35)
- martínez Gázquez, José** see **Martínez Gázquez, José**
- Gburzynski, Paweł** (with Jaromczyk, Jurek W.) Comparison of two algorithms solving a version of the "ham-sandwich" problem. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **61** (1988), 249-258. (Franz Aurenhammer) **89m:68133** 68U05 (52-04, 68Q25)
- Géboyan, M. A.** On the geometry of a partial mapping of a three-dimensional sphere into Euclidean space. (Russian. Armenian summary) *Mathematics*, No. 4 (Russian), 57-66, *Erevan. Univ., Erevan*, 1986. (M. C. Chaki) **89h:51041** 51N20
- Pseudocircular and almost conformal mappings of a three-dimensional sphere into  $E_3$ . (Russian) *Differentsial'naya Geom. Mnogobraz. Figur* No. 18 (1987), 17-20, 136. (Vladislav Goldberg) **89d:53014** 53A07 (53A30)
- Ge, Cheng** (with Ruan, Ji Shou)  $p$ - $q$ -operators. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **4** (1987), no. 4, 18-21. (Shunhua Sun) **89e:47041** 47B37
- Ge, Jing Ai** Some applications of the isometric isomorphism of the spaces  $B(S, \Sigma)$  and  $C(S_1)$ . (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **4** (1987), no. 1, 77-82. (Bor-Luh Lin) **89f:46056** 46E27 (46B25)
- Ge, Mo Lin** (with Lü, Jing Fa) The Yang-Baxter algebra in a nonlinear chiral model. (Chinese) *Kexue Tongbao (Chinese)* **32** (1987), no. 24, 1853-1856. (Not in MR) **58F07** (17B67, 81E13, 82A15)
- (with Lü, Jing Fa) On algebraic structures in the nonlinear principal chiral model. *J. Phys. A* **21** (1988), no. 8, L435-L438. (Summary) **89f:81194** 81E99 (17B65, 58F07, 81D15, 81E40)
- Ge, Wei** (with Fang, Chong Zhi) Existence conditions for a class of robust observers. (Chinese. English summary) *Acta Automat. Sinica* **14** (1988), no. 1, 31-37. (Chung Li Jiang) **89i:93013** 93B07 (93B35)
- Ge, Wei Gao** Theorems on existence of limit cycles for the generalized Liénard equation. (Chinese. English summary) *Acta Math. Appl. Sinica* **11** (1988), no. 2, 163-172. (Xiao Biao Lin) **89g:34038** 34C05
- Ge, Yu An** (with Liu, Kun Lin; Li, Zhong Liang) A discrete linear control model and its application to economic forecasting. (Chinese. English summary) *J. Tsinghua Univ.* **27** (1987), no. 6, 106-114. (Summary) **89h:90063** 90A20 (62P20, 93C75)
- Ge, Yu Bo** Generalized state-dependent Erlangian queues: the  $V$ -sojourn times before the relative arrival times. (Chinese) *Chinese J. Oper. Res.* **5** (1986), no. 1, 66-67, 58. (Xing Jin) **89k:60134** 60K25 (90B22)
- Ge, Zhong** (with Feng, Kang) On the approximation of linear Hamiltonian systems. *J. Comput. Math.* **6** (1988), no. 1, 88-97. (Luis A. Ibort) **89m:70029** 70H05 (58F05, 65L99, 65M05, 70-08)
- Gelais, A. N.** (with Abd El-Monsef, M. E.; Mahmoud, R. A.)  $\beta$ -regular spaces. (Arabic summary) *Proc. Math. Phys. Soc. Egypt* No. 60 (1985), 47-52 (1987). (Mohan L. Tikoo) **89f:54042** 54D15
- (with Abd El-Monsef, M. E.; Lashien, E. F.) Some weaker forms of regularity. (Arabic summary) *Delta J. Sci.* **10** (1986), no. 2, 465-475. (J. E. Vaughan) **89g:54001** 54A05 (54D99)
- Geanakoplos, John D.** (with Polemarchakis, H. M.) Existence, regularity, and constrained suboptimality of competitive allocations when the asset market is incomplete. *Uncertainty, information, and communication*, 65-95, Cambridge Univ. Press, Cambridge-New York, 1986. (Anjan Mukherji) **89f:90026** 90A14 (90A09)
- Gebotys, R. J.** (with Fraser, D. A. S.) Nonnested linear models: a conditional confidence approach. (French summary) *Canad. J. Statist.* **15** (1987), no. 4, 375-386. (Summary) **89h:62139** 62J05 (62A30, 62F25)
- Gebuhrer, Olivier** (with Gallardo, Léonard) Marches aléatoires et hypergroupes. (English summary) [Random walks and hypergroups] *Exposition. Math.* **5** (1987), no. 1, 41-73. (Philippe Bougerol) **89g:60024** 60B15 (60E10)
- Algèbres de Banach commutatives de mesures de Radon bornées et théorèmes ergodiques de type  $L^1$ . (English summary) [Commutative Banach algebras of bounded Radon measures and ergodic theorems of  $L^1$ -type] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 2, 67-70. (Summary) **89a:46108** 46Jxx (43A05, 60J15)
- Gedás, Kastytis** On the structure of the interrelation predicate. (Russian. English and Lithuanian summaries) *Mat. Logika Primenen.* No. 5 (1987), 9-16. (Wiktor Kulesza) **89h:68002** 68M10 (68Q25, 94C99)
- Gečlenė, Vilija** A defended set for a cooperative game. (Russian. English and Lithuanian summaries) *Mat. Metody v Sotsial. Nauk.* No. 19 (1986), 20-26, 99. (Andrzej Wiecezorek) **89c:90116** 90D12 (15A39)
- Gécseg, F.** (with Ésik, Z.) On  $\alpha_0$ -products and  $\alpha_2$ -products. *Theoret. Comput. Sci.* **48** (1986), no. 1, 1-8. (O. A. Letichevskii) **89g:68050** 68Q70
- (with Thierrin, G.) Characterizations of locally transitive semiautomata. *Papers on automata and languages, IX*, 1-8, DM, 87-2, Karl Marx Univ. Econom., Budapest, 1987. (Anna Bagyinszkiné-Orosz) **89h:68108** 68Q70
- (with Imreh, B.) On metric equivalence of  $v_p$ -products. *Acta Cybernet.* **8** (1987), no. 2, 129-134. (V. Topencharov) **89a:68159** 68Q70 (08B25)
- (with Imreh, B.) On  $\alpha_1$ -product of tree automata. *Acta Cybernet.* **8** (1987), no. 2, 135-141. (H.-J. Hoehne) **89a:68160** 68Q70
- (with Ésik, Z.) On a representation of tree automata. *Theoret. Comput. Sci.* **53** (1987), no. 2-3, 243-255. (J. Paredaens) **89m:68096** 68Q70 (68Q05)
- see also **Conference: Automata, languages and programming systems, 89h:68007**
- Gedson, T.** There are no chaotic mappings with residual scrambled sets. *Bull. Austral. Math. Soc.* **36** (1987), no. 3, 411-416. (Jerzy Ombach) **89d:58083** 58F13 (26A18, 54H20)
- Gedrich, T. V.** (with Gruenberg, K. W.) Complete cohomological functors on groups. Singapore topology conference (Singapore, 1985). *Topology Appl.* **25** (1987), no. 2, 203-223. (Ross Staffeldt) **89h:20073** 20J05 (16A60, 18G10, 18G15, 18G20)
- Gedymis, Olgierd** (with Banek, Tadeusz) Stochastic production-inventory control problem with random demand. (Russian and Polish summaries) *Control Cybernet.* **16** (1987), no. 3-4, 85-90 (1988). (Not in MR) **90B05** (49C20, 93B50, 93E20)
- van Geel, Jan** see **Van Geel, Jan**
- van Geemen, Bert** Schottky-Jung relations and vectorbundles on hyperelliptic curves. *Math. Ann.* **281** (1988), no. 3, 431-449. (Olivier Debarre) **89f:14046** 14K05 (14H40, 14K25)
- van der Geer, Gerard** Note on abelian schemes of level three. *Math. Ann.* **278** (1987), no. 1-4, 401-408. (Tsutomu Sekiguchi) **89a:14053** 14K05 (11G10)
- ★ Hilbert modular surfaces. *Ergebnisse der Mathematik und ihrer Grenzgebiete* (3) [Results in Mathematics and Related Areas (3)], **16**, Springer-Verlag, Berlin-New York, 1988. x+291 pp. ISBN 3-540-17601-2 (O. V. Shvartsman) **89c:11073** 11F41 (11G10, 11G15, 14J20)
- van de Geer, Sara** (with Haccou, Patsy; Meelis, Evert) The likelihood ratio test for the change point problem for exponentially distributed random variables. *Stochastic Process. Appl.* **27** (1987), no. 1, 121-139. (J. A. Melamed) **89b:62054** 62F03 (62F05)
- schulte-Geers, E.** see **Schulte-Geers, E.**
- Geerts, A. H. W.** ★ A new method to determine the infinite zero structure of a linear time-invariant system. EUT Report-WSK, 88-01. Eindhoven University of Technology, Department of Mathematics and Computing Science, Eindhoven, 1988. 15 pp. (S. P. Bhattacharyya) **89c:93030** 93B10 (93C05, 93C45)
- Geerts, Ton** A necessary and sufficient condition for solvability of the linear-quadratic control problem without stability. *Systems Control Lett.* **11** (1988), no. 1, 47-51. (From the text) **89d:49035** 49D40 (49A10, 93B25)
- Geetha, S.** (with Vartak, M. N.) Time-cost tradeoff in a three-dimensional assignment problem. *European J. Oper. Res.* **38** (1989), no. 2, 255-258. (Summary) **89m:90108** 90C08 (65K05)
- Gefen, Yuval** (with Kléman, M.; Pavlovitch, A.; Peyrière, Jacques) Inflationary character of Penrose tilings. (French summary) *J. Physique* **49** (1988), no. 7, 1111-1118. (Summary) **89d:82098** 82A57 (52A45)
- Gelfer, S. L.** (with Golodets, V. Ya.) Actions of  $T$ -groups and factors of type II, with property  $T$ . (Russian) *Mathematical physics, functional analysis* (Russian), 52-59, 144, "Naukova Dumka", Kiev, 1986. (Introduction) **89k:46080** 46L55 (22D10, 22D25, 22D40, 46L35)

- Cohomology of the ergodic action of a  $T$ -group on the homogeneous space of a compact Lie group. (Russian) *Operators in function spaces and problems in function theory* (Russian), 77–83, 146. "Naukova Dumka", Kiev, 1987. (D. Petz) **89f:22007** 22D40
- (with Golodets, V. Ya.; Sineľshchikov, S. D.) The fundamental group for ergodic actions of semisimple Lie groups and of their lattices. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 8, 6–9, 87. (G. A. Soifer (Zbl 637:22006)) **89j:22007** 22D40 (22E40, 28D15, 46L55)
- Gegelia, G. T.** Some boundary value problems for linear and quasilinear ordinary differential equations. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **22** (1987), 56–68, 233. (J. B. Butler, Jr.) **89j:34024** 34B15 (34B05)
- Gegelia, T. G.** (with Buchukuri, T. V.) The character of the isolated singularities of the solutions of a system of equations of elasticity theory. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **125** (1987), no. 3, 501–504. (Editors) **89c:73075** 73R05 (73B25)
- see also **Current problems in mathematical physics**, **89j:00031** and **Birthday**: Gegelia, T. G., **89m:01122**
- Gegenberg, J.** (with Kelly, P. F.; Mann, R. B.; McArthur, Randall Douglas; Vincent, D. E.) Reinterpretation of the nonlinear sigma model with torsion. *Modern Phys. Lett. A* **3** (1988), no. 18, 1791–1796. (Summary) **89j:81099** 81E13 (81E20)
- (with Kelly, P. F.; Mann, R. B.; Vincent, D. E.) Theories of gravitation in two dimensions. *Phys. Rev. D* (3) **37** (1988), no. 12, 3463–3471. (Agostino Prastaro) **89k:83061** 83D05
- Géheniau, Jules** (with Gunzig, Edgar; Stengers, Isabelle) The universe: a birth far from equilibrium? *Found. Phys.* **17** (1987), no. 6, 585–601. (M. A. H. MacCallum) **89c:83055** 83F05 (85A40)
- von Gehlen, G.** (with Rittenberg, V.; Schütz, Gunter) Operator content of  $n$ -state quantum chains in the  $c = 1$  region. *J. Phys. A* **21** (1988), no. 12, 2805–2824. (Claude Itzykson) **89j:82012** 82A15 (17B65)
- Gehrig, W.** Functional equation methods applied to economic problems: some examples. *Functional equations: history, applications and theory*, 33–52, *Math. Appl., Reidel, Dordrecht-Boston, MA*, 1984. (M. Ali Khan) **89g:90006** 90Axx (39B40)
- On a characterization of the Shannon concentration measure. *Functional equations: history, applications and theory*, 191–205, *Math. Appl., Reidel, Dordrecht-Boston, MA*, 1984. (J. Aczél) **89h:39009** 39B30 (26A51, 90A07, 90A16, 94A15)
- Gehring, F. W.** (with Martin, Gaven J.) Discrete convergence groups. *Complex analysis, I* (College Park, Md., 1985–86), 158–167, *Lecture Notes in Math.*, **1275**, Springer, Berlin-New York, 1987. (D. Drasin) **89a:30014** 30C60 (30F40)
- Topics in quasiconformal mappings. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 62–80, *Amer. Math. Soc., Providence, RI*, 1987. (Matti Vuorinen) **89c:30051** 30C60 (30–02)
- (with Hag, K.) Remarks on uniform and quasiconformal extension domains. *Complex Variables Theory Appl.* **9** (1987), no. 2–3, 175–188. (Jochen Becker) **89b:30019** 30C60
- (with Garnett, J. B.; Jones, Peter Wilcox) Quasiconformal groups and the conical limit set. *Holomorphic functions and moduli*, Vol. II (Berkeley, CA, 1986), 59–67, *Math. Sci. Res. Inst. Publ.*, **11**, Springer, New York-Berlin, 1988. (A. Hinkkanen) **89i:30021** 30C60
- see also **Holomorphic functions and moduli**, **89c:30001** and **89c:30002**
- Gehrk, Mai** (with Kaiser, Klaus) On the maximality of some conormal extensions of a lattice. *Z. Math. Logik Grundlag. Math.* **33** (1987), no. 1, 13–18. (Autorreferat (Zbl 623:06004)) **89a:06022** 06D05
- Gehrein, William V.** (with Fishburn, Peter C.) Pick-and-choose heuristics for partial set covering. *Discrete Appl. Math.* **22** (1988/89), no. 2, 119–132. (Summary) **89m:90134** 90C27 (05B40)
- Probability calculations for transitivity of the simple majority rule. *Econom. Lett.* **27** (1988), no. 4, 311–315. (Summary) **89j:90017** 90A08
- Geicke, J.** Solitary waves in the  $g^4 + \lambda g^3$  model with and without dissipation. *J. Phys. A* **21** (1988), no. 2, 391–397. (Hideo Yamagata) **89e:81146** 81E99 (35L70)
- Geidarov, A. G.** A remark on the theory of elliptic operators. (Russian) *Spectral theory of operators and its applications*, No. 8 (Russian), 79–82, "Elm", Baku, 1987. (G. Wildenhain) **89c:35042** 35J30 (47F05)
- Conditions for the selfadjointness of higher-order elliptic operators with singular potential. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **43** (1987), no. 3, 10–12. (G. Wildenhain) **89d:35049** 35J30 (47F05)
- Geidarov, B. A.** On an inequality for Volterra operators. (Russian) *Mathematical analysis and differential equations* (Russian), 11–13, *Novosibirsk. Gos. Univ., Novosibirsk*, 1987. (see **89j:00015**) 45M10 (45D05)
- Geldmanis, Dainis** On the capabilities of alternating and parallel nondeterministic finite multipe automata. (Russian) *Latv. Mat. Ezhegodnik* No. 31 (1988), 115–127, 253. (Andreas Brandstädt) **89f:68016** 68Q05 (03D05, 03D15, 68Q25, 68Q75)
- schimansky-Geier, L.** see **Schimansky-Geier, L.**
- Geigenmüller, U.** (with Mazur, Peter) Sedimentation of homogeneous suspensions in finite vessels. *J. Statist. Phys.* **53** (1988), no. 1–2, 137–173. (F. Feuillebois) **89k:76092** 76T05 (76D07, 82A99)
- Geigle, Werner** (with Lenz, Helmut) A class of weighted projective curves arising in representation theory of finite-dimensional algebras. *Singularities, representation of algebras, and vector bundles* (Lambrecht, 1985), 265–297, *Lecture Notes in Math.*, **1273**, Springer, Berlin-New York, 1987. (Alfred G. Wiedemann) **89b:14049** 14H45 (14F05, 16A64)
- Gein, A. G.** Modular subalgebras of Lie algebras. (Russian) *Ural. Gos. Univ. Mat. Zap.* **14** (1987), no. 2 *Issled. Algebr. Sist. po Svoist. ikh Podst.*, 27–33, i–ii. (A. S. Dzhu-madi'daev) **89j:17016** 17B50
- Co-atomic lattices and Lie algebras. (Russian) *Ural. Gos. Univ. Mat. Zap.* **14** (1988), no. 3 *Algebr. Sistemy i ikh Mnogob.*, 66–74, ii. (Joachim Hilgert) **89i:17008** 17B05 (06B99)
- Geiringer, Hilda** see **Richards, Joan L.** (**89b:01071**)
- Geise, G.** Transzendente Splines. [Transcendental splines] *Computergeometrie* (Johann-georgenstadt, 1986), 29–31, *Studientexte*, 92, *Tech. Univ. Dresden, Dresden*, 1986. (see **89b:65043a**) 65D07 (41A15)
- Geisel, T.** (with Zacherl, A.; Radons, G.) Chaotic diffusion and  $1/f$ -noise of particles in two-dimensional solids. *Z. Phys. B* **71** (1988), no. 1, 117–127. (Summary) **89d:82159** 82A99 (58F13, 82A41)
- Geiss, Stefan** Ein Faktorisierungssatz für multilineare Funktionale. [A factorization theorem for multilinear functionals] *Math. Nachr.* **134** (1987), 149–159. (Andreas Defant) **89b:47067** 47D30 (46G20, 46G99, 46M05, 47A56)
- Geissler, Christophe** (with Konolige, Kurt) A resolution method for quantified modal logics of knowledge and belief. *Theoretical aspects of reasoning about knowledge* (Monterey, Calif., 1986), 309–324, *Morgan Kaufmann, Palo Alto, CA*, 1986. (Summary) **89a:03033** 03B45 (03B35)
- Geist, George A.** (with Romine, C. H.) LU factorization algorithms on distributed-memory multiprocessor architectures. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 4, 639–649. (Summary) **89d:65122** 65W05 (65F05)
- Geist, Karlheinz** (with Zbilut, Joseph P.; Mayer-Kress, Gottfried) Dimensional analysis of heart rate variability in heart transplant recipients. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1–2, 49–70. (see **89c:92002**) 92A07
- (with Mayer-Kress, Gottfried; Yates, F. E.; Benton, L.; Keidel, M.; Tirsch, W.; Poppl, S. J.) Dimensional analysis of nonlinear oscillations in brain, heart, and muscle. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1–2, 155–182. (Summary) **89f:92020** 92A09
- (with Lauterborn, W.) The nonlinear dynamics of the damped and driven Toda chain. I. Energy bifurcation diagrams. *Phys. D* **31** (1988), no. 1, 103–116. (Summary) **89d:70023** 70K30 (58F14)
- Gekeler, E. W.** On implicit Runge-Kutta methods with higher derivatives. *BIT* **28** (1988), no. 4, 809–816. (Kevin Burrage) **89k:65082** 65L05
- Gekeler, Ernst-Ulrich** Satake compactification of Drinfel'd modular schemes. *Proceedings of the conference on  $p$ -adic analysis* (Houthalen, 1987), 71–81, *Vrije Univ. Brussel, Brussels*, 1986. (V. Kumar Murty) **89f:11080** 11G18
- On the coefficients of Drinfel'd modular forms. *Invent. Math.* **93** (1988), no. 3, 667–700. (David Goss) **89g:11043** 11F85 (11G20, 11R58)
- On power sums of polynomials over finite fields. *J. Number Theory* **30** (1988), no. 1, 11–26. (S. D. Cohen) **89k:11122** 11T06 (11R58)
- Quasi-periodic functions and Drinfel'd modular forms. *Compositio Math.* **69** (1989), no. 3, 277–293. (David Goss) **89m:11109** 11R58 (11F67, 11G05)
- Gekker, Ravin** Veto theorems with expansion consistency conditions and without the weak Pareto principle. *Math. Social Sci.* **15** (1988), no. 1, 73–80. (Maurice Salles) **89g:90016** 90A08
- Gelashvili, Sh. M.** Construction of the solutions of difference boundary value problems by the method of successive approximations. (Russian) *Boundary value problems* (Russian), 119–125, 199, *Perm. Politekh. Inst., Perm*, 1983. (see **89c:00008**) 39A10
- A periodic boundary value problem for systems of nonlinear difference equations. (Russian) *Boundary value problems* (Russian), 38–42, 155, *Perm. Politekh. Inst., Perm*, 1984. (see **89b:00008**) 39A10
- A boundary value problem for systems of functional-difference equations. (Russian) *Boundary value problems* (Russian), 70–75, vii, *Perm. Politekh. Inst., Perm*, 1986. (see **89c:00009**) 34B25
- Boundary value problems for systems of functional-difference equations. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **22** (1987), 69–99, 234. (B. Crstici) **89f:39004** 39A12 (39B40)
- Gelashvili, T. M.** Projections of representations of Lie algebras. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **130** (1988), no. 3, 473–476. (Summary) **89m:17017** 17B15
- Gelbart, Rachel** (with Abrahamson, Karl; Adler, Andrew; Higham, Lisa; Kirkpatrick, David) The bit complexity of randomized leader election on a ring. *SIAM J. Comput.* **18** (1989), no. 1, 12–29. (Cristian Calude) **89k:68038** 68Q10 (03D05, 68Q25)
- Gelbart, Stephen** (with Pietetski-Shapiro, Ilja Iosifovitch; Rallis, Stephen) ★ Explicit constructions of automorphic  $L$ -functions. *Lecture Notes in Mathematics*, **1254**, Springer-Verlag, Berlin-New York, 1987. vi+152 pp. ISBN 3-540-17848-1 (Joe Repka) **89k:11038** 11F70 (11R39, 11S37, 22E55)
- (with Shahidi, Freydoon) ★ Analytic properties of automorphic  $L$ -functions. *Perspectives in Mathematics*, 6, *Academic Press, Inc., Boston, MA*, 1988. viii+131 pp. ISBN 0-12-729175-4 (David Joyner) **89f:11077** 11F70 (11R39, 11R42, 11S40, 22E55)
- Geldart, D. J. W.** (with Fujiki, N. M.; De'Bell, K.) Lattice sums for dipolar systems. *Phys. Rev. B* (3) **36** (1987), no. 16, 8512–8516. (Summary) **89b:82093** 82A67 (82A60)
- van Gelder, Allen** see **Van Gelder, Allen**
- Gelenbe, Erol** (with Finkel, David) Stationary deterministic flows. II. The single-server queue. *Theoret. Comput. Sci.* **52** (1987), no. 3, 269–280. (M. Dal Cin) **89a:60217** 60K25 (60K20, 90B22)
- (with Cellary, Wojciech; Morzy, Tadeusz) ★ Concurrency control in distributed database systems. *Studies in Computer Science and Artificial Intelligence*, 3, *North-Holland Publishing Co., Amsterdam-New York*, 1988. xvi+349 pp. ISBN 0-444-70409-4 (J. Parcedans) **89k:68030** 68P15
- (with Tripathi, Satish K.; Finkel, David) Load sharing in distributed systems with failures. *Acta Inform.* **25** (1988), no. 6, 677–689. (Summary) **89b:68008** 68M20 (68M10, 90B25)
- Gelerak, R.** see **Gielerak, Roman**
- Gelfand, Alan E.** (with Dey, Dipak K.) On the estimation of a variance ratio. *J. Statist. Plann. Inference* **19** (1988), no. 1, 121–131. (S. R. Patel) **89f:62004** 62C15 (62F11)
- Gel'fand, I. M.** (with Zelevinskii, A. V.) Canonical basis in irreducible representations of  $gl$  and its applications. *Group theoretical methods in physics*, Vol. II (Yurmala, 1985), 127–146, *VNU Sci. Press, Utrecht*, 1986. (F. W. Lemire) **89f:17010** 17B10 (22E45)
- (with Zelevinskii, A. V.) Multiplicities and proper bases for  $gl$ . *Group theoretical methods in physics*, Vol. II (Yurmala, 1985), 147–159, *VNU Sci. Press, Utrecht*, 1986. (F. W. Lemire) **89a:17011** 17B10
- ★ Collected papers. Vol. I. With remarks by V. W. Guillemin and S. Sternberg. *Springer-Verlag, Berlin-New York*, 1987. vi+883 pp. ISBN 3-540-13619-3 (Gerald B. Folland) **89k:01042a** 01A75
- (with Graev, M. I.) General hypergeometric functions on the Grassmannian  $G_{3,6}$ . (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 123, 28 pp. (J. S. Joel) **89c:32083** 32M10 (22E45, 32C42, 33A35)
- (with Graev, M. I.) Strata in  $G_{3,6}$  and the hypergeometric functions connected with them. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 127, 28 pp. (J. S. Joel) **89c:32084** 32M10 (22E45, 32C42, 33A35)



- (with Varchenko, A. N.) Heaviside functions of a configuration of hyperplanes. (Russian) *Funktsional. Anal. i Prilozhen.* 21 (1987), no. 4, 1–18, 96. (A. Verona) **89h:32028** 32C40 (51M20)
- (with Serganova, V. V.) Combinatorial geometries and the strata of a torus on homogeneous compact manifolds. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 2(254), 107–134, 287. (Gerhard Pfister) **89g:32049** 32M10 (22E40, 32C42)
- ★ Collected papers. Vol. II. Edited by S. G. Gindikin, V. W. Guillemin, A. A. Kirillov, B. Kostant and S. Sternberg. With a foreword by Kirillov. With contributions by G. Segal and C. M. Ringel. Springer-Verlag, Berlin-New York, 1988. x+1038 pp. ISBN 3-540-19035-X (Gerald B. Folland) **89k:01042b** 01A75
- (with Afendikov, A. L.; Volevich, L. R.; Voskresenskii, G. P.; Zabrodin, A. V.; Lokutsievskii, O. V.; Oleinik, O. A.; Tikhomirov, V. M.; Chentsov, N. N.) Konstantin Ivanovich Babenko. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 2(260), 115–123; translated in *Russian Math. Surveys* 43 (1988), no. 2, 139–151. (Editors) **89k:01027** 01A70
- (with Buslaev, V. S.; Ladyzhenskaya, O. A.; Pavlov, B. S.; Solomyak, M. Z.; Faddeev, L. D.; Yafaev, D. R.) Mikhail Shlémovich Birman (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 3(261), 201–202; translated in *Russian Math. Surveys* 43 (1988), no. 3, 233–235. (Editors) **89k:01066** 01A70
- (with Alekseevskaya, T. V.; Zelevinskii, A. V.) Distribution of real hyperplanes and the partition function connected with it. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 6, 1289–1293; translated in *Soviet Math. Dokl.* 36 (1988), no. 3, 589–593. (Summary) **89m:05014** 05A99 (32C40, 32C42)
- (with Retakh, V. S.; Serganova, V. V.) Generalized Airy functions, Schubert cells and Jordan groups. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 1, 17–21; translated in *Soviet Math. Dokl.* 37 (1988), no. 1, 8–12. (A. U. Klimyk) **89h:33018** 33A75 (17B65, 22E45, 32C40, 58G07)
- (with Zelevinskii, A. V.; Kapranov, M. M.) Equations of hypergeometric type and Newton polyhedra. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 3, 529–534; translated in *Soviet Math. Dokl.* 37 (1988), no. 3, 678–682. (J. S. Joel) **89j:22015** 22E30 (32C42, 33A30, 58G07)
- Gelfand, Martin P.** (with Lipowsky, Reinhard) Wetting on cylinders and spheres. *Phys. Rev. B* (3) 36 (1987), no. 16, 8725–8735. (Summary) **89h:82026** 82A25 (82A50, 82A68)
- Gelfer, E. S.** The range of values of a functional in a class of functions of exponential type. (Russian) *Theory of functions and approximations, Part 2 (Russian)* (Saratov, 1984), 75–78, Saratov. Gos. Univ., Saratov, 1986. (see **89j:00036**) 30D20
- Gelig, A. Kh.** (with Karetyni, O. Ya.; Yudekevich, M. L.) Stability and ultimate boundedness of processes in systems with pulse-width modulation. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 5, 31–41; translated in *Automat. Remote Control* 49 (1988), no. 5, part 1, 570–579. (Summary) **89e:93157** 93D10 (93C30)
- Gellin, J. C.** (with Picart, P.) Use of quasi-Newton methods for large strain elastic-plastic finite element computations. *Comm. Appl. Numer. Methods* 4 (1988), no. 4, 457–469. (Summary) **89d:73022** 73E10 (65N30, 73–08)
- Geller, S.** (with Reid, Les; Weibel, C.) The cyclic homology and  $K$ -theory of curves. *J. Reine Angew. Math.* 393 (1989), 39–90. (Steven E. Landsburg) **89m:14006** 14C35 (13B20, 18F25, 19D55, 19E20)
- (with Weibel, C.) Hochschild and cyclic homology are far from being homotopy functors. *Proc. Amer. Math. Soc.* 106 (1989), no. 1, 49–57. (Zbigniew Marciniak) **89i:18010** 18G30 (16A62, 18F25, 19D55)
- Gell-Mann, Murray** Superstring theory: closing talk at the second Nobel symposium on particle physics, Marstrand, Sweden, June 7, 1986. *Unification of fundamental interactions (Marstrand, 1986)*, 202–209, Royal Swedish Acad. Sci., Stockholm, 1987. (see **89f:81005**) 81–02 (81E30, 83E30)
- Gelman, Alexander** (with Friedman, Yaakov; Phadia, Eswar) Best invariant estimation of a distribution function under the Kolmogorov-Smirnov loss function. *Ann. Statist.* 16 (1988), no. 3, 1254–1261. (Kumar Joag-Dev) **89i:62060** 62G05 (62C15)
- (with Friedman, Yaakov; Phadia, Eswar) A modified Kolmogorov-Smirnov type goodness of fit test. *Comm. Statist. Theory Methods* 17 (1988), no. 12, 4147–4162. (Not in MR) **62G10**
- (with Rheinboldt, Werner C.) On the computation of finite invariant sets of mappings. *Math. Comp.* 52 (1989), no. 186, 545–551. (T. Y. Li) **89h:58164** 58F25 (39B10, 58F08, 65H10)
- Gelfman, B. D.** (with Borisovich, Yu. G.; Myshkis, A. D.; Obukhovskii, V. V.) ★ Введение в теорию многозначных отображений. (Russian) [Introduction to the theory of multivalued mappings] *Voronzh. Gos. Univ., Voronezh*, 1986. 104 pp. (Andrzej Fryszkowski) **89f:49014** 49A50 (28B20, 34A60, 49–01, 49E10, 54C60, 58C30, 90C30)
- (with Borisovich, Yu. G.; Myshkis, A. D.; Obukhovskii, V. V.) New results in the theory of multivalued mappings. I. Topological characteristics and solvability of operator relations. (Russian) *Mathematical analysis*, Vol. 25 (Russian), 123–197, 200, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (Christian Fenske) **89e:58017** 58C30 (47H10, 54C60)
- On the structure of the set of solutions for inclusions with multivalued operators. *Global analysis—studies and applications, III*, 60–78, *Lecture Notes in Math.*, 1334, Springer, Berlin-New York, 1988. (Jacobo Pejsachowicz) **89j:47035** 47H15 (47H09, 47H10)
- Gelfman, Z. E.** see **Folta, Jaroslav**, **89b:01001**
- Geluk, J. L.** (with de Haan, L.) ★ Regular variation, extensions and Tauberian theorems. CWI Tract, 40. *Stichting Mathematisch Centrum, Centrum voor Wiskunde en Informatica, Amsterdam*, 1987. iv+132 pp. ISBN 90-6196-324-9 (N. H. Bingham) **89a:26002** 26A12 (40E05, 44A15)
- On an application of regular variation in probability theory. *Mathematical analysis and its applications (Kuwait, 1985)*, 403–410, *KFAS Proc. Ser.*, 3, Pergamon, Oxford-Elmsford, NY, 1988. (Theodore Artakis) **89g:60040** 60E05
- Geman, Stuart** (with Graffigne, Christine) Markov random field image models and their applications to computer vision. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1496–1517, *Amer. Math. Soc., Providence, RI*, 1987. (see **89c:00042**) 68U10 (60G60, 92A25)
- Stochastic relaxation methods for image restoration and expert systems. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 2 (Laramie, WY, 1985 and Seattle, WA, 1986/1987), 265–311, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (see **89f:62002**) 68T10 (92A25, 94A12)
- Gemma Frisius, Reiner** see **Goldstein, Bernard R.**, **89i:01019**
- Gencher, Tudor** An inequality for entire functions of exponential type. (Russian summary) *Annuaire Univ. Sofia Fac. Math. Méc.* 77 (1983), no. 1, 147–150 (1988). (S. M. Shah) **89g:30052** 30D15
- Some applications of the Hardy-Littlewood inequality for Fourier integrals. *C. R. Acad. Bulgare Sci.* 41 (1988), no. 5, 23–25. (Daowei Ma) **89h:32010** 32A35
- el-Gendi, S. E.** see **El-Gendi, S. E.**
- Genesio, R.** (with Tesi, A.) The output stabilization of SISO bilinear systems. *IEEE Trans. Automat. Control* 33 (1988), no. 10, 950–952. (Summary) **89e:93178** 93D25
- (with Tesi, A.) On limit cycles in feedback polynomial systems. *IEEE Trans. Circuits and Systems* 35 (1988), no. 12, 1523–1528. (P. W. Elie) **89j:34041** 34C05 (34C25)
- (with Tesi, A.) Results on the stability robustness of systems with state space perturbations. *Systems Control Lett.* 11 (1988), no. 1, 39–46. (Andrzej W. Olbrot) **89j:93083** 93D05 (93B60, 93C05)
- Geng, Chaogang** (with Okubo, Susumu; Marshak, R. E.; Zhao, Zhi Yong) Conditions for absence of global SU(2) anomaly for four-dimensional gauge groups. *Phys. Rev. D* (3) 36 (1987), no. 10, 3268–3272. (M. K. F. Wong) **89d:81067** 81E13 (22E70, 81G20)
- Geng, Xian Guo** Lax pair and Darboux transformation solutions of the modified Boussinesq equation. (Chinese. English summary) *Acta Math. Appl. Sinica* 11 (1988), no. 3, 324–328. (Summary) **89k:35208** 35Q20 (58F07)
- Geng, Zhi** Inference procedures for the symmetry in a contingency table. *Bull. Inform. Cybernet.* 23 (1988), no. 1–2, 55–65. (B. Raja-Rao) **89d:62048** 62H17
- Genin, Yves** On the index theory of pseudo-Carathéodory functions. Applications to the linear system stability problem. Toeplitz lectures 1987 (Tel-Aviv, 1987). *Integral Equations Operator Theory* 10 (1987), no. 5, 640–658. (D. Protas) **89a:30026** 30D30 (30C15, 30D50)
- On a duality relation in the theory of orthogonal polynomials and its application in signal processing. *ICIAM '87: Proceedings of the First International Conference on Industrial and Applied Mathematics* (Paris, 1987), 102–113, *SIAM, Philadelphia, PA*, 1988. (A. Bultheel) **89m:42019** 42C05 (33A65, 42A10, 94A11)
- (with Delsarte, P.) The tridiagonal approach to Szegő's orthogonal polynomials, Toeplitz linear systems, and related interpolation problems. *SIAM J. Math. Anal.* 19 (1988), no. 3, 718–735. (H. Wallin) **89d:30040** 30E05 (30D50, 42A70)
- Genis, Ya. G.** (with Ushakov, I. A.) An estimate for the reliability of redundant repairable systems, taking into account the control and switching characteristics. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 6, 158–167; translated in *Automat. Remote Control* 49 (1988), no. 6, part 2, 813–820. (A. Balogh) **89i:62165** 62N05 (90B25)
- Indices of suitability for repair and the coefficient of readiness of standby systems for various renewal disciplines. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 3, 164–168; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 4, 211–214 (Russian). (Not in MR) **90B25**
- Genkin, A. V.** (with Dubner, P. N.) An aggregation algorithm in a problem of the search for informative features. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 1, 102–109; translated in *Automat. Remote Control* 49 (1988), no. 1, part 2, 81–86. (Not in MR) **68T10**
- Gennaro, M. C.** (with Poli, A.) FAST16: a software program for factorising polynomials over large GF(p). *Applicable algebra, error-correcting codes, combinatorics and computer algebra (Karlsruhe, 1986)*, 139–156, *Lecture Notes in Comput. Sci.*, 307, Springer, Berlin-New York, 1988. (Harald Niederreiter) **89h:11082** 11T06 (11Y05, 68Q40)
- Genov, Yu.** (with Chernenova-Popova, Z.) Optimal control of an active vibration-resistant system. (Russian) *Differential equations and applications, I, II (Russian)* (Ruse, 1985), 465–468, *'Angel Kanchev' Tech. Univ., Ruse*, 1987. (E. G. Albrekt) **89h:49025** 49D07 (93B40, 93C75)
- di Genova, Glauco** see **Di Genova, Glauco**
- Gens, A.** (with Potts, D. M.) The use of critical state models in numerical analysis of geotechnical problems: a review. *Computational plasticity, Part I, II (Barcelona, 1987)*, 1491–1525, *Pineridge, Swansea*, 1987. (see **89c:73030**) 73N99
- Gensch, D. H.** (with Javalgi, Rajshakar G.) The role of sequential processing models in marketing research. *Math. Modelling* 9 (1987), no. 12, 869–882. (Summary) **89h:90016** 90A07 (92A25)
- Gensemer, Susan H.** On relationships between numerical representations of interval orders and semiorders. *J. Econom. Theory* 43 (1987), no. 1, 157–169. (M. Vlach) **89a:90010** 90A06 (90A10)
- Continuous semiorder representations. *J. Math. Econom.* 16 (1987), no. 3, 275–289. (M. Vlach) **89a:90029** 90A10 (90A06)
- Intransitive indifference and incomparability. *Econom. Lett.* 26 (1988), no. 4, 311–314. (Rubin Saposnik) **89h:90013** 90A06
- Gensheimer, H.** (with Kalmbach, Gudrun) Measures and dimension lattices. *Recent developments in quantum logic (Cologne, 1984)*, 285–290, *Grundlagen Exakt. Naturwiss.*, 6, *Bibliographisches Inst., Mannheim*, 1985. (see **89h:81008**) 06C15
- Genichev, Ts. R.** (with Chak'ryan, Keropé B.) Products of finite simple groups. *C. R. Acad. Bulgare Sci.* 40 (1987), no. 2, 5–8. (M. E. Harris) **89b:20054** 20D40
- Gentil, Sylviane** (with Clement, Thierry) Reformulation of parameter identification with unknown-but-bounded errors. *Math. Comput. Simulation* 30 (1988), no. 3, 257–270. (Not in MR) **93C30** (93B30, 93E12)
- Genziani, Graziano** On nonuniqueness of complex geodesics in convex bounded domains. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) 79 (1985), no. 5, 90–97 (1986). (Richard M. Timoney) **89k:32047** 32H15 (30D99)
- Regular complex geodesics for the domain  $D_n = \{(z_1, \dots, z_n) \in \mathbb{C}^n : |z_1| + \dots + |z_n| < 1\}$ . *Complex analysis, III (College Park, Md., 1985–86)*, 35–45, *Lecture Notes in Math.*, 1277, Springer, Berlin-New York, 1987. (Giorgio Patrizio) **89f:32044** 32H15
- (with Struppa, Daniele) Corona problems in spaces of entire functions with growth conditions. *Complex Variables Theory Appl.* 9 (1987), no. 1, 41–48. (Joaquín Ma. Ortega Aramburu) **89c:32007** 32A15 (32E25, 46J15)
- Complex geodesics: nonuniqueness and related questions. *Geometry Seminars, 1986 (Italian)* (Bologna, 1986), 55–73, *Univ. Stud. Bologna, Bologna*, 1988. (Mathias Peternell) **89m:32042** 32H15
- Gentle, James E.** (with Narula, Subhash C.; Sposito, V. A.) Algorithms for unconstrained  $L_1$  linear regression. *Statistical data analysis based on the  $L_1$ -norm and related methods*

- (Neuchâtel, 1987), 83–94, North-Holland, Amsterdam-New York, 1987. (see **89b:62009**) 62J07
- Gentile, Ronald T.T.F.** theories in abelian categories. *Comm. Algebra* **16** (1988), no. 5, 877–908. (Jonathan Golan) **89a:18013** 18E40
- A T.T.F. theory for short exact sequences. *Comm. Algebra* **16** (1988), no. 5, 909–924. (Jonathan Golan) **89a:18014** 18E40
- Gentzen, Gerhard** see **Raggio, Andrés R.** **89j:03001**
- Geoffrion, Arthur M.** The formal aspects of structured modeling. *Oper. Res.* **37** (1989), no. 1, 30–51. (Summary) **89m:90093** 90B99 (00A71)
- Georgdzhaev, V. V.** Solution of the Benney equations by the inverse scattering method. (Russian. English summary) *Teoret. Mat. Fiz.* **73** (1987), no. 2, 255–263. (Summary) **89c:76030** 76B15 (35Q99)
- Geoghegan, Ross** The shape of a group—connections between shape theory and the homology of groups. *Geometric and algebraic topology*, 271–280, *Banach Center Publ.*, **18**, PWN, Warsaw, 1986. (Kenneth S. Brown) **89a:20057** 20J05 (54C56, 55P55)
- (with Dydak, Jerzy) Correction to: "The singular cohomology of the inverse limit of a Postnikov tower is representable" [*Proc. Amer. Math. Soc.* **98** (1986), no. 4, 649–654; MR **87m:55024**]. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 334. (Editors) **89d:55049** 55S45 (54E60, 55P55)
- Georgakis, Constantine** Bounded sequence-to-function Hausdorff transformations. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 531–542. (Amnon Jakimovski) **89i:40003** 40G05 (26D10, 47B38)
- Georgakopoulos, George** (with Kavvadias, Dimitris; Papadimitriou, Christos H.) Probabilistic satisfiability. *J. Complexity* **4** (1988), no. 1, 1–11. (Mark R. Jerrum) **89c:68036** 68Q15 (03B05, 03B48, 03D15, 68T30)
- George, Alan** (with Ng, Esmond) Symbolic factorization for sparse Gaussian elimination with partial pivoting. *SIAM J. Sci. Statist. Comput.* **8** (1987), no. 6, 877–898. (N. N. Abdelmalek) **89a:65046** 65F05
- (with Liu, Joseph W. H.; Ng, Esmond) A data structure for sparse QR and LU factorizations. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 1, 100–121. (David R. Kincaid) **89g:65057** 65F50 (65F25)
- George, Alexander** The imprecision of imprecisativity. *Mind* **96** (1987), no. 384, 514–518. (Not in MR) 03A05
- The conveyability of intuitionism, an essay on mathematical cognition. *J. Philos. Logic* **17** (1988), no. 2, 133–156. (Alejandro R. Garciadiego) **89i:03004** 03A05 (00A25, 01A72)
- Intuitionism, excluded middle and decidability: a response to Weir on Dummett. *Mind* **97** (1988), no. 388, 597–602. (Not in MR) 03A05
- George, E. Olusegun** (with Rousseau, C. C.) On the logistic midrange. *Ann. Inst. Statist. Math.* **39** (1987), no. 3, 627–635. (Barry C. Arnold) **89c:62080** 62G30
- George, John A.** Assessment of errors in approximating the objective function of a quadratic programming problem. *Asia-Pacific J. Oper. Res.* **5** (1988), no. 1, 21–36. (Summary) **89c:90153** 90C20
- George, Raju K.** (with Joshi, Mohan) Controllability of nonlinear systems. *Numer. Funct. Anal. Optim.* **10** (1989), no. 1–2, 139–166. (V. V. Krakhotko) **89k:93015** 93B05 (47H15, 93B28)
- George, Rolf** Bolzano on time. *Bolzano-Studien. Philos. Natur.* **24** (1987), no. 4, 452–468. (Peter M. Simons) **89i:01038** 01A55
- George, Thomas F.** (with Arnoldus, Henk F.; Jelski, Daniel) Confinement and redistribution of charges and currents on a surface by external fields. *J. Math. Phys.* **28** (1987), no. 5, 1069–1074. (Sergej M. Zverev) **89d:78025** 78A45
- George, Varghese T.** (with Elston, Robert C.) Generalized modulus power transformations. *Comm. Statist. Theory Methods* **17** (1988), no. 9, 2933–2952. (Summary) **89h:62032** 62E15
- Georges, Antoine** (with Bouchaud, Jean-Philippe; Lhuillier, C.) Pair wave functions for strongly correlated fermions and their determinantal representation. (French summary) *J. Physique* **49** (1988), no. 4, 553–559. (Summary) **89d:81133** 81J05
- (with Bouchaud, Jean-Philippe) Flory formula as an extended law of large numbers. *Phys. Rev. B* (3) **39** (1989), no. 4, 2846–2849. (Summary) **89k:82065** 82A51 (60J15, 82A41)
- Georgescu, Adelina** (with Oprea, Iuliana) Numerical methods in bifurcation theory. II. Stationary solutions in the infinite-dimensional case. (Romanian. English summary) *Stud. Cerc. Fiz.* **40** (1988), no. 1, 7–18. (Summary) **89j:65048** 65J15 (47H15, 58E07, 76D05, 76E30)
- Georgescu, George** (with Voiculescu, Ioana) Representations of normal algebras. *Proceedings of the Conference on Algebra (Romanian) (Timișoara, 1986)*, 45–46, *Univ. Timișoara, Timișoara*, 1987. (see **89f:00028**) 08A30
- Georgescu, V.** (with Amrein, W. O.; Berthier, Anne-Marie) Weighted estimates for differential operators with operator-valued coefficients. (French summary) *Bull. Soc. Math. France* **115** (1987), no. 3, 291–307. (Summary) **89a:34066** 34G10 (47E05)
- (with Berthier, Anne-Marie) On the point spectrum of Dirac operators. *J. Funct. Anal.* **71** (1987), no. 2, 309–338. (From the introduction) **89b:35131** 35P25 (81C10)
- (with Berthier, Anne-Marie; Purice, Radu) Sur un problème aux limites de la théorie de Ginzburg-Landau. (English summary) [A boundary value problem in the Ginzburg-Landau theory] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 1, 55–58. (Piero de Monttoni) **89k:35195** 35Q20 (35J99, 81J05)
- Georgiades, Costas N.** On PPM sequences with good autocorrelation properties. *IEEE Trans. Inform. Theory* **34** (1988), no. 3, 571–576. (Not in MR) 94A14
- Georgiev, Alexander A.** Consistent nonparametric multiple regression: the fixed design case. *J. Multivariate Anal.* **25** (1988), no. 1, 100–110. (M. Hušková) **89c:62047** 62G05 (60F15, 62J02)
- On the identification of time-varying dynamic systems by nonparametric procedures. *IEEE Trans. Automat. Control* **34** (1989), no. 2, 223–225. (Seihaku Higuchi) **89j:93127** 93E12 (93C05)
- Georgiev, Ch. Kh.** (with Christov, Christo I.) The Fourier method in  $L^2(-\infty, +\infty)$  for an integro-differential equation arising in the theory of surface dilatational viscometry. (Russian. English and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Prirozhna Mat.* **22** (1986), no. 4, 191–198 (1987). (Summary) **89e:76079** 76T05 (45J05)
- Georgiev, Ch. Kh.** (with Grigorov, Kh.) Groups of Cremona transformations of degree  $(2n+1)$  in  $P_n$ . (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prirozhna Mat.* **22** (1986), no. 4, 175–184 (1987). (J. Čížmár) **89k:14015** 14E05 (14N05)
- (with Petrova, Rusanka G.) Some applications of the isometric transformations in a space. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian) (Sunny Beach (Sl'nev Bryag), 1987)*, 625–631, *Bulg. Acad. Sci., Sofia*, 1987. (Summary) **89f:51063** 51F99 (51-01)
- Georgiev, Neko** The phase portrait of a system. (Russian. English summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **77** (1983), no. 1, 139–145 (1988). (Nicolae Lungu) **89j:34042** 34C05
- Georgiev, Pando Grigorov** The strong Ekeland variational principle, the strong drop theorem and applications. *J. Math. Anal. Appl.* **131** (1988), no. 1, 1–21. (S. Rolewicz) **89c:46019** 46B20 (49A29, 90C48)
- Mazur's intersection property and a Krein-Mil'man type theorem for almost all closed, convex and bounded subsets of a Banach space. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 157–164. (I. Namioka) **89j:46015** 46B20
- Georgiev, Stoyan P.** (with D'bnishki, Aleksand'r Al.; Tomov, Toma G.) Remark on a Diophantine system. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian) (Sunny Beach (Sl'nev Bryag), 1987)*, 632–636, *Bulg. Acad. Sci., Sofia*, 1987. (Summary) **89d:11016** 11D04
- Georgieva, A.** (with Ivanov, M. I.; Raichev, P. P.; Roussev, R.) Boson representation of  $Sp(24, \mathbb{R})$  and classification of even-even nuclei. *Group theoretical methods in physics (Varna, 1987)*, 408–413, *Lecture Notes in Phys.*, **313**, Springer, Berlin-New York, 1988. (Summary) **89k:81196** 81G30
- Georgieva, M. Ya.** (with Lyubenov, L. T.) Some sufficient conditions for the oscillation of the solutions of a system of differential equations with autoregulating deviation of the argument. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prirozhna Mat.* **22** (1986), no. 1, 89–94 (1987). (Summary) **89c:34117** 34K15 (34C15)
- Asymptotic behavior of the solutions of a class of functional-differential equations. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prirozhna Mat.* **22** (1986), no. 1, 95–98 (1987). (Summary) **89d:34118** 34K25
- Georgii, Hans-Otto** ★ Gibbs measures and phase transitions. *de Gruyter Studies in Mathematics*, **9**, Walter de Gruyter & Co., Berlin-New York, 1988. xiv+525 pp. ISBN 0-89925-462-4 (Nicolae Angelescu) **89k:82010** 82A05 (60K35, 82-01, 82A25, 82A68)
- Georgijević, Dušan R.** Radial derivatives of some analytic operator functions. *Complex analysis and applications '85 (Varna, 1985)*, 239–248, *Bulg. Acad. Sci., Sofia*, 1986. (T. Ya. Azizov) **89c:47045** 47B38 (30D40, 30G35, 47A68)
- Reproducing kernels and multiple interpolation by holomorphic functions. (Serbo-Croatian summary) Second international symposium on complex analysis and applications (Budva, 1986). *Mat. Vesnik* **38** (1986), no. 4, 451–457. (From the introduction) **89g:30068** 30E05 (46E20)
- Georgiou, Tryphon T.** (with Francis, B. A.) Stability theory of linear time-invariant plants with periodic digital controllers. *IEEE Trans. Automat. Control* **33** (1988), no. 9, 820–832. (B. G. Pachpatte) **89f:93031** 93D05 (49D50, 93B55, 93C55, 93C57)
- Gepner, Doron** New conformal field theories associated with Lie algebras and their partition functions. *Nuclear Phys. B* **290** (1987), no. 1, 10–24. (Elias Kiritsis) **89b:81188** 81E99 (17B10, 22E70, 81D15, 81E30, 81E40)
- Exactly solvable string compactifications on manifolds of  $SU(N)$  holonomy. *Phys. Lett. B* **199** (1987), no. 3, 380–388. (Daniel G. Caldi) **89h:83035** 83E15 (14J28, 53C80, 81E30, 81E40, 83E30)
- Space-time supersymmetry in compactified string theory and superconformal models. *Nuclear Phys. B* **296** (1988), no. 4, 757–778. (Daniel Altschuler) **89b:81189** 81E99 (17B65, 81E30)
- Geppin, M.** (with Romani, F.) Automatic quadrature on Chebyshev points. *Comput. Math. Appl.* **16** (1988), no. 3, 185–193. (Not in MR) 65D32
- Ger, R.** (with Alsina, C.) On associative copulas uniformly close. *Internat. J. Math. Math. Sci.* **11** (1988), no. 3, 439–448. (P. Drăgăla) **89f:39008** 39B30 (62E15)
- Almost approximately convex functions. (Russian summary) *Math. Slovaca* **38** (1988), no. 1, 61–78. (Maciej Sablik) **89m:26020a** 26A51 (39C05)
- Errata for the paper: "Almost approximately convex functions". *Math. Slovaca* **38** (1988), no. 4, 423. (Maciej Sablik) **89m:26020b** 26A51 (39C05)
- Gerardin, M.** (with Cardona, A.) A beam finite element nonlinear theory with finite rotations. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 11, 2403–2438. (Claude Surry) **89k:73042** 73K05 (70B15, 73G05, 73K25)
- Geraltavičius, V.** General equilibrium when there are several types of money and continuous price-setting mechanisms. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 2, 246–254. (V. V. Kondratiev) **89c:90052** 90A14
- Geramita, Anthony V.** (with Maroscia, Paolo; Vogel, Wolfgang) A note on arithmetically Buchsbaum curves in  $P^3$ . *Matematiche (Catania)* **40** (1985), no. 1–2, 21–28 (1988). (Ngô Việt Trung) **89k:14056** 14H45 (13H10, 14H50, 14M05)
- (with Davis, Edward D.) Bese's very ampleness theorem and punctured complete intersections. *The curves seminar at Queen's, Vol. IV (Kingston, Ont., 1985–1986)*, Exp. No. G, 13 pp., *Queen's Papers in Pure and Appl. Math.*, **76**, Queen's Univ., Kingston, ON, 1986. (N. Mohan Kumar) **89c:14008** 14C25 (14E25, 14J26)
- (with Valabrega, Paolo) Subcanonical curves with the same postulation as  $r$  skew lines in  $P^3$ . *The Curves Seminar at Queen's, Vol. V (Kingston, ON, 1987–1988)*, Exp. No. E, 10 pp., *Queen's Papers in Pure and Appl. Math.*, **80**, Queen's Univ., Kingston, ON, 1988. (Luca Chiantini) **89i:14024** 14H45
- (with Davis, Edward D.) Birational morphisms to  $P^2$ : an ideal-theoretic perspective. *Math. Ann.* **279** (1988), no. 3, 435–448. (Wolfgang Vogel) **89a:14014** 14E05
- see also *Seminar: Curves*, **89f:14001**
- Gérard, C.** (with Martinez, André) Asymptotique semi-classique de la fonction spectrale pour des opérateurs de Schrödinger à longue portée. [Semiclassical asymptotics of the spectral function for long-range Schrödinger operators] *Journées "Equations aux dérivées partielles" (Saint Jean de Monts, 1987)*, Exp. No. V, 8 pp., *École Polytech., Palaiseau*, 1987. (B. Hellwig) **89d:35128** 35P05 (35J10)
- (with Martinez, André) Principe d'absorption limite pour des opérateurs de Schrödinger à longue portée. (English summary) [The limiting absorption principle for long-range Schrödinger operators] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 3, 121–123. (Xue-Ping Wang) **89d:35042** 35J10
- (with Sjöstrand, J.) Resonances en limite semiclassique et exposants de Lyapunov. (English summary) [Resonances in the semiclassical limit and Lyapunov exponents]



- Comm. Math. Phys.* **116** (1988), no. 2, 193–213. (Xue-Ping Wang) **89f:35057** 35J10 (58F15, 58G25, 81C05)
- (with Grigis, Alain) Precise estimates of tunneling and eigenvalues near a potential barrier. *J. Differential Equations* **72** (1988), no. 1, 149–177. (D. Hinton) **89h:34024** 34B25 (81C05)
- Gérard, P. (with Rauch, J.) Propagation de la régularité locale de solutions d'équations hyperboliques non linéaires. (English summary) [Propagation of the local regularity of solutions of nonlinear hyperbolic equations] *Ann. Inst. Fourier (Grenoble)* **37** (1987), no. 3, 65–84. (Alan Jeffrey) **89e:35030** 35B65 (35A27, 35L99)
- Gérard, R. On generalizations of the theorem of Briot-Bouquet. *Notas Soc. Mat. Chile* **6** (1987), no. 1, 13–26. (Donald A. Lutz) **89j:58120** 58G07 (32C38, 34A25)
- Gerards, A. M. H. Homomorphisms of graphs into odd cycles. *J. Graph Theory* **12** (1988), no. 1, 73–83. (Summary) **89h:05045** 05C75 (05C38)
- Gérard-Varet, Louis-André (with Jordan, Robert; Kirman, Alain) Dynamique des stocks et équilibre budgétaire dans un modèle où les prix sont contraints à la baisse. [The dynamics of stocks and budgetary equilibrium in a model with falling prices] With comments by Henri Sterdyniak. *Macrodynamique et déséquilibres*, 245–284. *Économica, Paris*, 1987. (see **89d:90065**) 90A17
- (with Zamir, Shmuel) Remarks on the reasonable set of outcomes in a general coalition function form game. *Internat. J. Game Theory* **16** (1987), no. 2, 123–143. (Olga M. Kosheleva) **89d:90253** 90D12
- Gerashimko, N. I. The inverse scattering problem on a noncompact graph. (Russian. English summary) *Teoret. Mat. Fiz.* **75** (1988), no. 2, 187–200; translated in *Theoret. and Math. Phys.* **75** (1988), no. 2, 460–470. (Summary) **89f:81239** 81F99
- Gerashimko, V. I. (with Petrina, D. Ya.; Malyshov, P. V.) Solutions of Bogolyubov equations for infinite three-dimensional systems of particles. *Probability theory and mathematical statistics, Vol. II (Vilnius, 1985)*, 451–460. *VNU Sci. Press, Utrecht*, 1987. (Renuka Datta) **89g:82010** 82A05
- (with Petrina, D. Ya.) The Boltzmann-Grad limit of the states of an infinite system of elastic balls. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 2, 336–340. (Nicolae Angelescu) **89d:82018** 82A05
- (with Stashenko, M. A.) Mathematical problems in the description of a system of electrolyte-membrane solutions. (Russian) *Mathematical problems in the theory of systems of charged particles in inhomogeneous media (Russian)*, 37–49, ii. *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1988. (Summary) **89k:82112** 82A70 (76R50, 76S05, 78A99, 92A09)
- Gerashimov, A. L. Phase convection and nonequilibrium fluctuations in nearly-integrable systems. *Phys. Lett. A* **135** (1989), no. 2, 92–98. (Summary) **89m:82028** 82A35 (58F40, 70H05, 70K99)
- Gerashimov, B. P. (with Kul'chitskaya, I. A.; Mingaleev, G. S.; Pestryakova, G. A.) On construction of linear multistep methods for stiff and nonstiff ODE. *BAIL IV (Novosibirsk, 1986)*, 299–304. *Boole Press Conf. Ser.*, 8, Boole, Dun Laoghaire, 1986. (Peter Alfeld) **89b:65171** 65L05
- (with Aliev, I. V.; Iskander-Zade, F. A.; Popov, Yu. P.) Mathematical modeling of a peristaltic pump. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 55, 22 pp. (Not in MR) 92A09
- Gerashimov, I. A. Newton and celestial mechanics. (Russian) *Istor.-Astronom. Issled.* **20** (1988), 39–55. (Peeter Müürsepp) **89m:01036** 01A45 (85–03)
- Gerashimov, V. A. (with Belokopytov, S. V.; Dmitriev, M. G.; Klishevich, A. M.; Gornov, A. Yu.; Tyatuskina, A. I.; Pasyukov, V. N.) Interior and outer boundary layers in the optimal control problems. Asymptotic and numerical methods. *BAIL IV (Novosibirsk, 1986)*, 216–221. *Boole Press Conf. Ser.*, 8, Boole, Dun Laoghaire, 1986. (Viorel Arnautu) **89d:49017** 49B10 (34E15, 35B25, 49B22)
- Gerashimov, V. N. The group of units of a free product of rings. (Russian) *Mat. Sb. (N.S.)* **134(176)** (1987), no. 1, 42–65, 142; translated in *Math. USSR-Sb.* **62** (1989), no. 1, 41–63. (P. M. Cohn) **89c:16006** 16A06 (20H25)
- Gerashimov, Yu. Ya. Improvement of methods for calculating a three-dimensional boundary layer. (Russian) *Uchen. Zap. TsAGI* **18** (1987), no. 2, 46–53. (Summary) **89b:76027** 76N05 (76–08)
- Gerashin, S. N. (with Sitnikov, D. E.; Shabanov-Kushnarenko, S. Yu.) Difunctionality predicates. (Russian) *Problems of bionics*, No. 39 (Russian), 12–18, i. "Vishcha Shkola", Kharkov, 1987. (Eduard Fuchs) **89b:04002** 04A05 (92A27)
- (with Shlyakhov, V. V.) Conditions for the existence of  $n$ -dimensionally shifted predicates. (Russian) *Problems of bionics*, No. 40 (Russian), 53–58, iii. "Vishcha Shkola", Kharkov, 1988. (M. J. Mączyński) **89j:15041** 15A63 (46N05)
- (with Shlyakhov, V. V.) Simplification of the axiomatics of the predicates of  $n$ -dimensional linearity. (Russian) *Problems of bionics*, No. 41 (Russian), 40–43, ii. "Vishcha Shkola", Kharkov, 1988. (Summary) **89f:00043** 00A69 (46N05)
- Gerber, Hans U. Mathematical fun with ruin theory. *Insurance Math. Econom.* **7** (1988), no. 1, 15–23. (M. J. Goovaerts) **89m:62110** 62P05 (90A09)
- (with Shiu, Elias S. W.) Nonuniqueness of option prices. *Insurance Math. Econom.* **7** (1988), no. 1, 67–69. (Summary) **89j:90010** 90A09 (62P05)
- (with Dufresne, François) The probability and severity of ruin for combinations of exponential claim amount distributions and their translations. *Insurance Math. Econom.* **7** (1988), no. 2, 75–80. (Wolf-Rüdiger Heilmann) **89d:62106** 62P05
- Gerber, I. Interpolation by nonnegative polynomials in the Chebyshev system. (Russian) *Operators and their applications (Russian)*, 20–22. *Leningrad. Gos. Ped. Inst., Leningrad*, 1985. (see **89f:00013**) 41A05
- Approximation by the kernel of an elliptic operator. (Russian) *Operators and their applications (Russian)*, 100–105. *Leningrad. Gos. Ped. Inst., Leningrad*, 1985. (see **89f:00013**) 35J30 (41A30)
- Gerbi, Stéphane (with Herbin, Raphaële; Sonnad, V.) Parallel implementation of a multigrid method on the experimental ICAP supercomputer. *Appl. Math. Comput.* **27** (1988), no. 4, part II, 281–312. (Summary) **89g:65178** 65W05
- Gerbold, Gilbert Exemples d'anneaux  $A$  pour lesquels  $(\binom{n}{k})_{k \in \mathbb{N}}$  est une base du  $A$ -module des polynômes à valeurs entières sur  $A$ . (English summary) [Examples of domains  $A$  for which  $(\binom{n}{k})_{k \in \mathbb{N}}$  is a basis of the  $A$ -module of integer-valued polynomials over  $A$ ] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 1, 1–4. (Jean-Luc Chabert) **89b:13025** 13F20 (11C08, 13B25)
- Polynômes à valeurs entières sur l'anneau des entiers de Gauss. (English summary) [Integral-valued polynomials over the ring of Gaussian integers] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 8, 375–378. (Jean-Luc Chabert) **89m:11097** 11R09 (11C08, 13B25, 13F20)
- Gerchak, Yigal Can a reduction in set up costs indeed increase total costs? Comment on: "From EOQ towards ZI" [Management Sci. **33** (1987), no. 10, 1209–1223; MR 88i:90076] by W. I. Zangwill. With a rejoinder by Zangwill. *Management Sci.* **34** (1988), no. 10, 1271–1273. (Summary) **89h:90075** 90B05
- (with Henig, M. I.) Component commonality in assemble-to-order systems: models and properties. *Naval Res. Logist.* **36** (1989), no. 1, 61–68. (Summary) **89j:90081** 90B05
- Gerchev, A. V. Optimization of linear singularly perturbed systems. (Russian. English summary) *Mathematics and mathematical education (Bulgarian) (Sunny Beach (Sl'nchev Bryag), 1987)*, 187–192. *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89e:49018** 49B50 (34E15, 49B36, 93B50)
- Gerdes, Dieter Wilhelm Olbers' erste Berechnung einer Kometenbahn aus dem Jahre 1779. [Wilhelm Olbers' first calculation of a comet orbit from the year 1779] *Gauss-Ges. Göttingen Mitt.* **25** (1988), 74–79. (Peeter Müürsepp) **89m:01047** 01A50 (85–03)
- Gerecke, W. (with Artmann, Benno; Spalt, Detlef D.) Transzendenzbeweis für  $e$  gestern und heute. [Proof of the transcendence of  $e$  yesterday and today] *Math. Semesterber.* **34** (1987), no. 2, 187–219. (P. Bundschuh) **89a:11073** 11J81 (00A25)
- Gerencsér, László Parameter tracking of time-varying continuous-time linear stochastic systems. *Modelling, identification and robust control (Stockholm, 1985)*, 581–594. *North-Holland, Amsterdam-New York*, 1986. (see **89b:93008**) 93E03 (93C05, 93C50)
- Gergel, V. P. (with Strongin, L. G.; Strongin, P. G.) Neighborhood method in recognition problems. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 2, 46–54; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 4, 14–22, 219 (Russian). (Summary) **89i:68107** 68T10 (92A25)
- Gergely, J. Methods and algorithms for sparse symmetrical matrices. (Hungarian. English summary) *Alkalmaz. Mat. Lapok* **13** (1987/88), no. 3–4, 373–389. (F. Szidarovszky) **89k:65051** 65F50
- Gerhard, Ortwin E. (with Louis, Peter D.) Can galaxies oscillate? A self-consistent model of a nonstationary stellar system. *Monthly Notices Roy. Astronom. Soc.* **233** (1988), no. 2, 337–365. (Summary) **89d:85004** 85A05
- Gerhardt, Martin (with Dress, Andreas; Schuster, Heike) Cellular automata simulating the evolution of structure through the synchronization of oscillators. *From chemical to biological organization*, 134–145. *Springer Ser. Synergetics*, 39, Springer, Berlin-New York, 1988. (Summary) **89m:92063** 92A40 (58F40, 68Q60, 92A12)
- Gericke, Helmut Zeiten verstärkter mathematischer Grundlagenforschung. [Times of intensified research in the foundations of mathematics] *Bull. Soc. Math. Belg. Sér. A* **38** (1986), 209–217 (1987). (E. Mendelson) **89d:01005** 01A20 (01A55)
- Geritz, S. A. H. (with Metz, J. A. J.; Klinkhamer, P. G. L.; de Jong, T. J.) Competition in safe-sites. *Theoret. Population Biol.* **33** (1988), no. 2, 161–180. (Summary) **89h:92061** 92A17
- Gerking, Shelby (with Isserman, Andrew; Taylor, Carol; Schubert, Uwe) Regional labor market analysis. *Handbook of regional and urban economics*, Vol. 1, 543–580. *Handbooks in Economics*, 7, North-Holland, Amsterdam-New York, 1986. (see **89m:90047**) 90A30
- Gerl, Peter Amenable groups and amenable graphs. *Harmonic analysis (Luxembourg, 1987)*, 181–190. *Lecture Notes in Math.*, 1359, Springer, Berlin-New York, 1988. (K. A. Ross) **89k:43001** 43A07 (05C25)
- Random walks on graphs with a strong isoperimetric property. *J. Theoret. Probab.* **1** (1988), no. 2, 171–187. (Donald I. Cartwright) **89g:60216** 60J15
- Gerla, Giangiacomo (with Volpe, Raffaele) The definition of distance and diameter in fuzzy set theory. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* **31** (1986), no. 3, 21–26. (Jozef Sajda) **89a:03106** 03E72 (52A40)
- Transformational semantics for first order logic. *Logique et Anal. (N.S.)* **30** (1987), no. 117–118, 69–79. (Introduction) **89a:03034** 03B45
- Decidability, partial decidability and sharpness relation for  $L$ -subsets. *Studia Logica* **46** (1987), no. 3, 227–238. (Summary) **89i:03088** 03D99 (03E72)
- A preservation theorem for fuzzy number theory. *Inform. Sci.* **45** (1988), no. 1, 51–59. (Prabir Bhattacharya) **89k:03067** 03E72
- Gerlach, Ulrich H. Minkowski Bessel modes. *Phys. Rev. D* (3) **38** (1988), no. 2, 514–521. (Derek Raine) **89m:83047a** 83C47 (81E20)
- Dynamics and symmetries of a field partitioned by an accelerated frame. *Phys. Rev. D* (3) **38** (1988), no. 2, 522–527. (Derek Raine) **89m:83048** 83C47 (81E20)
- Erratum: "Minkowski Bessel modes". *Phys. Rev. D* (3) **38** (1988), no. 10, 3340. (Derek Raine) **89m:83047b** 83C47 (81E20)
- Gerlich, Gerhard The role of probability and statistics in physics. *Probability and Bayesian statistics (Innsbruck, 1986)*, 193–201. *Plenum, New York-London*, 1987. (Pekka Johanness Lahti) **89b:81052** 81C20 (81B05)
- Gerlits, J. (with Nagy, Zs.; Szentmiklóssy, Z.) Some convergence properties in function space. *General topology and its relations to modern analysis and algebra, VI (Prague, 1986)*, 211–222. *R. E. Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (Toshinao Okada) **89j:54019** 54C35 (54A20, 54D55)
- (with Nagy, Zs.) On Fréchet spaces. *Third National Conference on Topology (Italian) (Trieste, 1986)*. *Rend. Circ. Mat. Palermo (2) Suppl.* **18** (1988), 51–71. (Gary Gruenhage) **89m:54039** 54D55 (54A20, 54C35)
- Gerlovin, Emmanuel (with Shragowitz, Eugene) The set of Lagrange and Routh formulations for nonlinear networks. *Internat. J. Circuit Theory Appl.* **16** (1988), no. 2, 129–145. (Summary) **89k:94090** 94C05
- Germain, P. Louis de Broglie ou la passion de la "vraie" physique. [Louis de Broglie or the passion for "true" physics] *C. R. Acad. Sci. Sér. Gén. Vie Sci.* **4** (1987), no. 6, 569–593 (1988). (D. ter Haar) **89h:01060** 01A70 (01A60)
- see also Obala, J., **89i:00013**
- Germain, Sophie see Dahan-Dalmédico, Amy, **89a:01030** and Gray, Mary W., (**89b:01071**)
- Germani, A. (with Jetto, L.; Piccioni, M.) Galerkin approximation for optimal linear filtering of infinite-dimensional linear systems. *Stochastic modelling and filtering (Rome, 1984)*, 42–63. *Lecture Notes in Control and Inform. Sci.*, 91, Springer, Berlin-New York, 1987. (Summary) **89c:93071** 93E11 (34K35, 49D15, 93C25, 93E25)
- (with Jetto, L.; Piccioni, M.) Galerkin approximation for optimal linear filtering of infinite-dimensional linear systems. *SIAM J. Control Optim.* **26** (1988), no. 6, 1287–1305.

- (Akira Ichikawa) **89j:93117** 93E11 (49D15, 93C05, 93C25)  
 — (with Piccioni, M.) Semidiscretization of stochastic partial differential equations on  $\mathbb{R}^d$  by a finite-element technique. *Stochastics* **23** (1988), no. 2, 131–148. (G. N. Mil'shtein) **89f:60063** 60H15 (60H10, 65M60, 93E03)
- Germanovich, O. P.** ★ Линейные периодические уравнения нейтрального типа и их приложения. (Russian) [Linear periodic equations of neutral type and their applications] *Leningrad. Univ., Leningrad*, 1986. 108 pp. (P. Talpalaru) **89c:34076** 34K15 (34A30, 34C25, 34Kxx)
- Germogenova, T. A.** see Knyazikhin, Yu. **89c:85001**
- Geroch, Robert** (with Traschen, Jennie) Strings and other distributional sources in general relativity. *Phys. Rev. D* (3) **36** (1987), no. 4, 1017–1031. (J. D. Finley III) **89d:83048** 83C99 (58G17, 83C05, 83F05)
- Geroldinger, Alfred** Über nicht-eindeutige Zerlegungen in irreduzible Elemente. [On nonunique decompositions into irreducible elements] *Math. Z.* **197** (1988), no. 4, 505–529. (Jan Šliwa) **89d:11096** 11R27 (11R29)
- Geromel, J. C.** (with Bernussou, J.) Parametrical optimization approach for decentralized regulation of discrete systems. *Control and dynamic systems*, Vol. 23, 123–137, Academic Press, Orlando, FL, 1986. (Mihail Voicu) **89c:93007** 93A15 (93B40, 93C55)  
 — (with Silva Filho, O. S.) Partial closed-loop control structure for linear stochastic systems. *IEEE Trans. Automat. Control* **34** (1989), no. 2, 243–246. (Not in MR) **93E20** (93C05)
- Gerónimo, J. S.** (with Barnsley, M. F.; Demko, S. G.; Elton, J. H.) Invariant measures for Markov processes arising from iterated function systems with place-dependent probabilities. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **24** (1988), no. 3, 367–394. (Pierre Moussa) **89k:60088** 60J05 (28D05, 58F11)  
 — (with Bessis, Daniel; Moussa, P.) Function weighted measures and orthogonal polynomials on Julia sets. *Constr. Approx.* **4** (1988), no. 2, 157–173. (I. N. Baker) **89h:58085** 58F08 (30D05, 42C05, 58F11)  
 — (with Harrell, Evans M., II; Van Assche, Walter) On the asymptotic distribution of eigenvalues of banded matrices. *Constr. Approx.* **4** (1988), no. 4, 403–417. (Jesús S. Dehesa) **89j:15017** 15A18 (33A65, 39A70, 42C05, 82A42)  
 — (with Van Assche, Walter) Asymptotics for orthogonal polynomials on and off the essential spectrum. *J. Approx. Theory* **55** (1988), no. 2, 220–231. (W. A. Al-Salam) **89m:33022** 33A65 (30C20)  
 — (with Van Assche, Walter) Orthogonal polynomials on several intervals via a polynomial mapping. *Trans. Amer. Math. Soc.* **308** (1988), no. 2, 559–581. (Mourad E. H. Ismail) **89f:42021** 42C05 (30E05, 33A65)
- Gerov, G.** (with Stanev, Kh. I.) A projection-iteration method for determining the periodic solutions of nonlinear systems of integro-differential equations of Fredholm type with impulse action. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 4, 141–151 (1987). (Summary) **89d:45012** 45J05 (45B05)  
 — see also Mathematics and mathematical education, **89c:00038**
- Geroyannis, V. S.** (with Valvi, F. N.) Analytic inverses and determinants for a class of matrices. *IMA J. Numer. Anal.* **7** (1987), no. 1, 123–128. (Shao Kuan Li) **89i:15006** 15A09 (65F05)
- Gerritzen, L.** Periods and Gauss-Manin connection for the Mumford curve  $y_1^2 y_1' - y_2^2 - y_1^2 + \lambda = 0$ . *Proceedings of the conference on algebraic geometry* (Berlin, 1985), 105–116, Teubner-Texte Math., 92, Teubner, Leipzig, 1986. (F. Baldassarri) **89h:14025** 14F30 (14G20)  
 — (with Herrlich, F.) The extended Schottky space. *J. Reine Angew. Math.* **389** (1988), 190–208. (N. V. Ivanov) **89h:32043** 32G15 (14H15, 30F40)  
 — (with Herrlich, F.; van der Put, Marius) Stable  $n$ -pointed trees of projective lines. *Nederl. Akad. Wetensch. Indag. Math.* **50** (1988), no. 2, 131–163. (P. E. Newstead) **89i:14005** 14D20 (14H10)
- Gerry, Christopher C.** (with Kiefer, Jerry) Radial coherent states for the Coulomb problem. *Phys. Rev. A* (3) **37** (1988), no. 3, 665–671. (Adriaan Tip) **89m:81202** 81G40 (58G40, 81C05, 81D30)  
 — (with Ma, Philip K.; Vrscaj, E. R.) Dynamics of SU(1, 1) coherent states driven by a damped harmonic oscillator. *Phys. Rev. A* (3) **39** (1989), no. 2, 668–674. (Summary) **89j:81062** 81D30 (22E70, 81–04)
- Gershkovich, V. Ya.** (with Vershik, A. M.) Nonholonomic dynamical systems. Geometry of distributions and variational problems. (Russian) *Current problems in mathematics. Fundamental directions*, Vol. 16 (Russian), 5–85, 307, Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow, 1987. (J. Vanžura) **89f:58007** 58A30 (58F17, 70F25)  
 — Estimates for the admissibility sets for fields of cones and polysystems. (Russian) *Kibernet. i Vychisl. Tekhn.* No. 77 (1988), 18–26, 109. (P. Brunovský) **89m:49067** 49E15 (58A30, 58E25, 93B05)  
 — see also Griffiths, Phillip A., **89h:58016**
- Gershon, Mark** (with Szidarovszky, Ferenc; Bárdossy, A.) Application of multiobjective dynamic programming to regional natural resource management. *Appl. Math. Comput.* **24** (1987), no. 4, 281–301. (Veijo Kaitala) **89d:90010** 90A05 (49C20, 90B50, 90C39)
- Gershovitch, V. I.** (with Likhovid, A. P.; Priyatel', A. M.) Quadratic smoothing in a decomposition approach to the solution of linear programming problems of production-transportation type. (Russian) *Methods for the investigation of extremal problems* (Russian), 55–61, v. Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev, 1988. (Summary) **89h:90152** 90C08 (90C05)
- Gershtein, L. M.** The first boundary value problem for a second-order differential equation with almost commuting unbounded operator coefficients. (Russian) *Qualitative and approximate methods for investigating operator equations* (Russian), 7–11, 140, Yaroslav. Gos. Univ., Yaroslavl, 1986. (K. Karták) **89b:34143** 34G10  
 — Perturbation of the generating operator of an analytic semigroup. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 1, 62–63; translated in *Functional Anal. Appl.* **22** (1988), no. 1, 51–52. (A. B. Buche) **89f:47064** 47D05 (47A55)
- Gershun, V. D.** (with Pashnev, A. I.) Supersymmetric description of systems of interacting particles with spin. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jurmala, 1985), 182–184, "Nauka", Moscow, 1986. (see **89d:81001**) **81C99**  
 — (with Pashnev, A. I.) A relativistic system of interacting points as a discrete string. (Russian. English summary) *Teoret. Mat. Fiz.* **73** (1987), no. 2, 294–301. (Sorin Marculescu) **89f:81031** 81C05 (81E30)
- Gershwin, Stanley B.** (with Caromicoli, Adam; Willsky, Alan S.) Multiple time scale analysis of manufacturing systems. *Analysis and optimization of systems* (Antibes, 1988), 677–688, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89a:00031**) **90B30** (60J27, 90B25)  
 — A hierarchical framework for discrete event scheduling in manufacturing systems. *Discrete event systems: models and applications* (Sopron, 1987), 197–216, *Lecture Notes in Control and Inform. Sci.*, 103, Springer, Berlin-New York, 1988. (see **89a:00019**) **90B35**  
 — (with Maimon, Oded) Dynamic scheduling and routing for flexible manufacturing systems that have unreliable machines. *Oper. Res.* **36** (1988), no. 2, 279–292. (Summary) **89d:90120** 90B35
- Gerst, Irving** (with Blecksmith, Richard; Brillhart, John) Some infinite product identities. *Math. Comp.* **51** (1988), no. 183, 301–314. (David M. Bressoud) **89f:05017** 05A17 (05A19, 11P57)
- Gerstein, G. L.** (with Palm, G.; Aertsen, A. M. H. J.) On the significance of correlations among neuronal spike trains. *Biol. Cybernet.* **59** (1988), no. 1, 1–11. (Summary) **89d:92035** 92A09
- Gerstein, Larry J.** A note on splitting quadratic forms. *J. Number Theory* **29** (1988), no. 2, 231–233. (S. Böge) **89e:11054** 11E12
- Gerstel, O.** (with Mansour, Y.; Zaks, S.) Bit complexity of order statistics on a distributed star network. *Inform. Process. Lett.* **30** (1989), no. 3, 127–132. (Summary) **89k:68065** 68Q25 (68M10)
- Gersten, S. M.** Reducible diagrams and equations over groups. *Essays in group theory*, 15–73, *Math. Sci. Res. Inst. Publ.*, 8, Springer, New York-Berlin, 1987. (Ian M. Chiswell) **89d:20030** 20F32 (20F06, 20F10, 57M20)  
 — Solutions of equations over  $\omega$ -nilpotent groups. *Rocky Mountain J. Math.* **17** (1987), no. 4, 845–851. (V. N. Remeslennikov) **89c:20062** 20F05  
 — (with Stallings, John R.) On Gauss's first proof of the fundamental theorem of algebra. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 331–332. (James Howie) **89c:20051** 20E05 (12–01)
- Gerstenhaber, Murray** (with Schack, Samuel D.) Sometimes  $H^1$  is  $H^2$  and discrete groups deform. *Geometry of group representations* (Boulder, CO, 1987), 149–168, *Contemp. Math.*, 74, Amer. Math. Soc., Providence, RI, 1988. (Mary Schaps) **89g:16034** 16A58 (20J05)  
 — (with Schack, Samuel D.) The cohomology of presheaves of algebras. I. Presheaves over a partially ordered set. *Trans. Amer. Math. Soc.* **310** (1988), no. 1, 135–165. (Mary Schaps) **89i:16052** 16A58 (16A61, 18E25, 55N25, 55U10)  
 — see also Deformation theory of algebras and structures and applications, **89h:00003**
- Gerstner, Angelika** see Banse-Gerstner, Angelika
- Gerszonowicz, Jorge A.** (with Bergamasco, Adalberto P.; Petronilho, Gerson) On the regularity up to the boundary in the Dirichlet problem for degenerate elliptic equations. *Trans. Amer. Math. Soc.* **313** (1989), no. 1, 317–329. (Günter Berger) **89i:35066** 35J70 (35B65, 35S15)
- Gersztenkorn, Adam** (with Scales, John A.; Treitel, Sven) Fast  $l_p$  solution of large, sparse, linear systems: application to seismic travel time tomography. *J. Comput. Phys.* **75** (1988), no. 2, 314–333. (Summary) **89d:86006** 86A15 (86–08, 92A07)
- Gerthenbach, J. D.** Hilbert spaces associated with second order elliptic operators and applications to boundary value problems and variational inequalities. *Questiones Math.* **11** (1988), no. 1, 17–50. (Jiří Rákosník) **89h:46046** 46E35 (35J25, 49A29)
- Gerth, Christiane** Näherungslösungen in der Vektoroptimierung. [Approximate solutions in vector optimization] 19. Jahrestagung "Mathematische Optimierung" (Sella, 1987), 67–76, *Seminarberichte*, 90, Humboldt Univ., Berlin, 1987. (Introduction) **89f:90139** 90C30  
 — (with Pöhler, Karin) Dualität und algorithmische Anwendung beim vektoriellen Standortproblem. (English summary) [Duality and algorithmic application for the vector-valued location problem] *Optimization* **19** (1988), no. 4, 491–512. (Heinz Bernau) **89g:90212** 90C31  
 — (with Göpfert, A.; Pöhler, Karin) Vektorielles Standortproblem und Dualität. (English summary) [Vectorial location problem and duality] *Wiss. Z. Karl-Marx-Universität Leipzig Math.-Natur. Reihe* **37** (1988), no. 4, 305–312. (Klaus Tammer) **89h:90151** 90C31
- Gerth, Frank, III** Densities for 3-class ranks in certain cubic extensions. *J. Reine Angew. Math.* **381** (1987), 161–180. (Franz Halter-Koch) **89i:11155** 11R16 (11R29)  
 — Correction to the paper: "Densities for 3-class ranks of pure cubic fields" [Acta Arith. **46** (1986), no. 3, 227–242; MR 88a:11106]. *Acta Arith.* **50** (1988), no. 4, 405. (Constantine Klirorys) **89i:11115** 11R16
- Gerth, R.** (with Huizing, C.; de Roeper, W. P.) Modelling Statecharts behaviour in a fully abstract way. *CAAP'88* (Nancy, 1988), 271–294, *Lecture Notes in Comput. Sci.*, 299, Springer, Berlin-New York, 1988. (Summary) **89c:68078** 68Q55 (68Q60)
- Gertsbak, I.** (with Elperin, T.) Lower confidence limit for the availability of a parallel system with renewable components. *Comm. Statist. Theory Methods* **17** (1988), no. 2, 311–323. (Summary) **89c:62128** 62N05 (62F25)
- Gertsenshtein, M. E.** (with Solov'ev, L. G.) Invariant and reduced action of a physical system in the general theory of relativity. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **30** (1987), no. 9, 74–78. (Summary) **89h:83014** 83C10 (83C47)
- Geras, O. F.** Analytic functions with a given order of modulus of smoothness. (Russian) *Some problems in analysis and differential topology* (Russian), 15–21, i. Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev, 1988. (Summary) **89i:30047** 30E10 (30C99)
- Gervacio, S. V.** Score sequences: lexicographic enumeration and tournament construction. *Proceedings of the First Japan Conference on Graph Theory and Applications* (Hakone, 1986). *Discrete Math.* **72** (1988), no. 1–3, 151–155. (J. W. Moon) **89h:05040** 05C20
- Gervais, Jean-Jacques** Stability of unfoldings in the context of equivariant contact-equivalence. *Pacific J. Math.* **132** (1988), no. 2, 283–291. (Leslie Charles Wilson) **89g:58040** 58E07 (58C27)
- Gervais, Jean-Loup** (with Sakita, B.) Dual-resonance models. *Quantum field theory and quantum statistics*, Vol. 2, 435–465, Hilger, Bristol, 1987. (Giorgio Calucci) **89i:81111** 81E99 (81–02, 81E30)  
 — (with Bilal, Adel) Modular invariance for closed strings at the new critical dimensions. *Phys. Lett. B* **187** (1987), no. 1–2, 39–44. (Daniel G. Caldi) **89a:81113** 81E99 (81E30, 81G25, 83E30)  
 — (with Bilal, Adel) Liouville superstring and Ising model in three dimensions. *Nuclear Phys. B* **295** (1988), no. 2, 277–295. (Claude Itzykson) **89c:81137** 81E99 (81E30,



- 82A25, 82A68)
- $p$ -adic analyticity and Virasoro algebras for conformal theories in more than two dimensions. *Phys. Lett. B* **201** (1988), no. 3, 306–310. (Omar Foda) **89d:81096** 81E99 (17B65, 81E40)
  - (with Bilal, Adel) Systematic approach to conformal systems with extended Virasoro symmetries. *Phys. Lett. B* **206** (1988), no. 3, 412–420. (K. Schoutens) **89j:81162** 81E99 (17B65, 58F35, 81E40)
  - (with Bilal, Adel) Superconformal algebra and super-KdV equation: two infinite families of polynomial functions with vanishing Poisson brackets. *Phys. Lett. B* **211** (1988), no. 1–2, 95–100. (Summary) **89k:58114** 58F07 (17B65, 81E40)
- Gerver, Joseph** (with Propp, James G.; Simpson, R. J.) Greedily partitioning the natural numbers into sets free of arithmetic progressions. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 765–772. (Georges Grekos) **89f:11026** 11B25 (05A99)
- Gerasimov, P. I.** (with Panchishkin, A. A.) A finiteness criterion for the number of rational points for twisted Weil elliptic curves. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **160** (1987), Anal. Teor. Chisel i Teor. Funkts. 8, 41–53, 297. (Reinhard Bölling) **89k:11053** 11G40 (11F11, 14G10, 14K07)
- Gessel, Ira M.** Counting three-line Latin rectangles. *Combinatoire énumérative (Montreal, Que., 1985/Quebec, Que., 1985)*, 106–111, *Lecture Notes in Math.*, 1234, Springer, Berlin-New York, 1986. (C. R. Pranesachar) **89k:05012** 05A15 (05B15)
- Gessing, Ryszard** Optimal control laws for two-level hierarchical resource allocation. *Large Scale Systems* **12** (1987), no. 1, 69–82. (Summary) **89a:90004** 90A05 (90B50, 90D35)
- Optimal control laws for a two-level linear quadratic problem. *Analysis and optimization of systems (Antibes, 1988)*, 700–711, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Joseph D. Cole) **89g:93109** 93E20 (49C20, 90D35, 93A13, 93C55)
- Gesztesy, F.** (with Bollé, D.; Klaus, M.) Scattering theory for one-dimensional systems with  $d \times V(x) = 0$ . *J. Math. Anal. Appl.* **122** (1987), no. 2, 496–518. (Summary) **89k:34028** 34B25 (47E05, 81F05)
- (with Antoine, J.-P.; Shabani, J.) Exactly solvable models of sphere interactions in quantum mechanics. *J. Phys. A* **20** (1987), no. 12, 3687–3712. (Helge Holden) **89d:81027** 81C10 (35J10)
  - (with Holden, Helge) A new class of solvable models in quantum mechanics describing point interactions on the line. *J. Phys. A* **20** (1987), no. 15, 5157–5177. (Edward R. Vrcay) **89a:81016** 81C05 (81H20)
  - (with Albeverio, S.; Høegh-Krohn, R.; Holden, Helge) Point interactions in two dimensions: basic properties, approximations and applications to solid state physics. *J. Reine Angew. Math.* **380** (1987), 87–107. (Arne Jensen) **89d:81026** 81C10 (35P25, 35Q20, 47F05)
  - (with Šeba, P.) New analytically solvable models of relativistic point interactions. *Lett. Math. Phys.* **13** (1987), no. 4, 345–358. (Helge Holden) **89b:81034** 81C05
  - (with Bollé, D.; Danneels, C.) Threshold scattering in two dimensions. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **48** (1988), no. 2, 175–204. (Arne Jensen) **89k:81184** 81F05 (35P25, 47F05)
  - (with Simon, Barry) On a theorem of Deift and Hempel. *Comm. Math. Phys.* **116** (1988), no. 3, 503–505. (Yoshimi Saito) **89g:35080**; **EA 89m** 35P05 (35J10)
  - (with Gurarie, D.; Holden, Helge; Klaus, M.; Sadun, L.; Simon, Barry; Vogl, P.) Trapping and cascading of eigenvalues in the large coupling limit. *Comm. Math. Phys.* **118** (1988), no. 4, 597–634. (Rainer Hempel) **89m:81049** 81C15 (34E20, 47A55, 47E05)
  - (with Bollé, D.; Klaus, M.) Errata: "Scattering theory for one-dimensional systems with  $d \times V(x) = 0$ ". *J. Math. Anal. Appl.* **130** (1988), no. 2, 590. (Editors) **89k:34028b** 34B25 (47E05, 81F05)
  - (with Holden, Helge) Addendum: "A unified approach to eigenvalues and resonances of Schrödinger operators using Fredholm determinants" [*J. Math. Anal. Appl.* **123** (1987), no. 1, 181–198; **MR 88c:35117**; *J. Math. Anal. Appl.* **132** (1988), no. 1, 309. (Editors) **89d:35129** 35P05 (35J10)
- Getmanov, B. S.** (with Barashenkov, I. V.) Multisoliton solutions in the scheme for unified description of integrable relativistic massive fields. Nondegenerate  $sl(2, \mathbb{C})$  case. *Comm. Math. Phys.* **112** (1987), no. 3, 423–446. (Vladimir Stefanov Gerdjikov) **89b:81173** 81E99 (58F07, 81E40)
- (with Kovtun, V. E.) ★ Классификация интегрируемых двумерных моделей релятивистской теории поля с помощью компьютера. (Russian) [Classification of integrable two-dimensional models of relativistic field theory by means of a computer] With an English summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R5-88-138. *Joint Inst. Nuclear Res., Dubna*, 1988. 9 pp. (Not in MR) **81E15** (58F05)
  - (with Barashenkov, I. V.; Kovtun, V. E.) Integrable model with nontrivial interaction between sub- and superluminal solitons. *Phys. Lett. A* **128** (1988), no. 3–4, 182–186. (Mark R. Temple-Raston) **89f:81158** 81E99 (35Q20, 58F07, 81E13)
- Gettoer, R. K.** Capacity theory and weak duality. *Seminar on stochastic processes*, 1983 (Gainesville, Fla., 1983), 97–130, *Progr. Probab. Statist.*, 7, Birkhäuser Boston, Boston, MA, 1984. (Jutta Steffens) **89a:60176** 60J45 (31C15)
- Some remarks on measures associated with homogeneous random measures. *Seminar on stochastic processes*, 1985 (Gainesville, Fla., 1985), 94–107, *Progr. Probab. Statist.*, 12, Birkhäuser Boston, Boston, MA, 1986. (Jutta Steffens) **89f:60087** 60J45 (31C15, 60J55)
  - (with Steffens, J.) The energy functional, balayage, and capacity. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **23** (1987), no. 2, suppl., 321–357. (Joseph Glover) **89b:60178** 60J45 (31C15, 60J40)
  - (with Fitzsimmons, P. J.) On the potential theory of symmetric Markov processes. *Math. Ann.* **281** (1988), no. 3, 495–512. (Jutta Steffens) **89k:60110** 60J45
  - (with Fitzsimmons, P. J.) Revuz measures and time changes. *Math. Z.* **199** (1988), no. 2, 233–256. (Mamoru Kanda) **89b:60124** 60J55 (60J25, 60J45, 60J57)
  - see also *Seminar: Stochastic Processes*, **89j:60005**
- Getsadze, R. D.** On the Saks singularity for general multiple orthogonal Fourier series. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **126** (1987), no. 3, 473–475. (N. B. Pogoyan) **89k:42022** 42C15
- Getis, I. G.** The structure of the solution of a one-dimensional inhomogeneous Stefan problem. (Russian) *Dinamika Sploshn. Sredy* No. 80 (1987), 52–55, 165–166. (Summary) **89f:35220** 35R35 (35K05)
- Getz, W. M.** (with Bergh, M. O.) Stability of discrete age-structured and aggregated delay-difference population models. *J. Math. Biol.* **26** (1988), no. 5, 551–581. (J. M. Cushing) **89k:92045** 92A15
- Harvesting discrete nonlinear age and stage structured populations. *J. Optim. Theory Appl.* **57** (1988), no. 1, 69–83. (Anthony T. Charles) **89e:92036** 92A15 (93C75)
- Getzler, Ezra** (with Brylinski, Jean-Luc) The homology of algebras of pseudodifferential symbols and the noncommutative residue. *K-Theory* **1** (1987), no. 4, 385–403. (P. Schapira) **89j:58135** 58G15
- Cyclic homology and the Beilinson-Manin-Schectman central extension. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 729–734. (Emmanuel Andronikof) **89k:17014** 17B35 (17B65, 19D55, 32C38, 58G07)
- Geus, Lothar** (with Henning, Walter; Vajtersic, Marián; Volkert, Jens) Matrix inversion algorithms for a pyramidal multiprocessor system. (Russian summary) *Comput. Artificial Intelligence* **7** (1988), no. 1, 65–79. (Not in MR) **68Q10** (65F)
- Gevaert, H.** (with De Clerck, F.; Thas, J. A.) Translation partial geometries. *Combinatorics '86 (Trento, 1986)*, 117–135, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (Franco Eugeni) **89c:51015** 51E30
- (with Thas, J. A.; Payne, S. E.) A family of ovals with few collineations. *European J. Combin.* **9** (1988), no. 4, 353–362. (Tamás Szőnyi) **89j:51009** 51E20 (51F25)
  - (with De Clerck, F.; Thas, J. A.) Flocks of a quadratic cone in  $PG(3, q)$ ,  $q \leq 8$ . *Geom. Dedicata* **26** (1988), no. 2, 215–230. (Stanley E. Payne) **89d:51014** 51E25 (05B30)
  - (with Johnson, Norman Lloyd<sup>1</sup>) Flocks of quadratic cones, generalized quadrangles and translation planes. *Geom. Dedicata* **27** (1988), no. 3, 301–317. (Vikram Jha) **89m:51008** 51A40 (05B25, 05B30, 51E20)
  - (with Johnson, Norman Lloyd<sup>1</sup>; Thas, J. A.) Spreads covered by reguli. *Simon Stevin* **62** (1988), no. 1, 51–62. (Gary L. Ebert) **89k:51004** 51A40
- Gevel, Tunc** On the application of mixed finite element methods to the wave equations. (French summary) *RAIRO Model. Math. Anal. Numér.* **22** (1988), no. 2, 243–250. (Ming You Huang) **89f:65116** 65N30
- On the convergence of a time discretization scheme for the Navier-Stokes equations. *Math. Comp.* **53** (1989), no. 187, 43–53. (W. F. Ames) **89m:65085** 65M10 (35Q10, 76–08, 76D05)
- Gevens, Louis** Walrasian social choice: some simple axiomatic approaches. *Social choice and public decision making*, 97–114, Cambridge Univ. Press, Cambridge-New York, 1986. (From the text) **89k:90009** 90A08
- Gevens, M.** (with Bastin, Georges) Stable adaptive observers for nonlinear time-varying systems. *IEEE Trans. Automat. Control* **33** (1988), no. 7, 650–658. (Summary) **89e:93024** 93B07 (93B10, 93C40, 93C75)
- (with Mareels, I. M. Y.) Persistency of excitation criteria for linear, multivariable, time-varying systems. *Math. Control Signals Systems* **1** (1988), no. 3, 203–226. (Vimal Singh) **89j:93098** 93D25 (93C05, 93C35)
  - (with Deistler, Manfred) Properties of the parametrization of monic ARMA systems. *Automatica—J. IFAC* **25** (1989), no. 1, 87–95. (Not in MR) **93E12**
- Gevirtz, Julian** On the difference quotients of an analytic function. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **12** (1987), no. 2, 237–259. (Summary) **89m:30018** 30C35
- Gevorgyan, G. G.** Sets of uniqueness with respect to classes  $l_p$ ,  $p < 2$ , for Ciesielski systems. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1986**, no. 3(163), 20–25. (V. A. Skvortsov) **89d:42033** 42C10
- Gevorgyan, P. S.** On the  $G$ -movability of  $G$ -spaces. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 3(261), 177–178; translated in *Russian Math. Surveys* **43** (1988), no. 3, 203–204. (Jack Weinstein) **89g:55016** 55P55 (54C56, 57N25)
- Gevorgyan, U. Z.** (with Sarafyan, V. V.) Markov processes and boundary value problems for a class of systems of differential equations. (Russian. Armenian summary) *Mathematika*, No. 5 (Russian), 75–87, *Erevan. Univ., Erevan*, 1986. (Di He Hu) **89f:60169** 60J25 (35K20, 60H10, 60J45)
- Geyer, H. B.** (with Scholtz, F. G.) A generalized Schwinger boson mapping with a physical subspace. *Phys. Lett. B* **201** (1988), no. 4, 403–408. (Summary) **89a:81176** 81G30 (22E70)
- Geymonat, G.** Carlo Miranda. (Italian) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **119** (1985), no. 5–6, 292–295 (1986). (Editors) **89a:01060** 01A70
- (with Krasucki, F.; Marigo, J.-J.) Stress distribution in anisotropic elastic composite beams. *Applications of multiple scaling in mechanics (Paris, 1986)*, 118–133, *Rech. Math. Appl.*, 4, Masson, Paris, 1987. (V. Gheorghita) **89f:73056** 73K20
  - (with Cimetièrre, A.; Le Dret, Hervé; Raoult, A.; Tutek, Z.) Asymptotic theory and analysis for displacements and stress distribution in nonlinear elastic straight slender rods. *J. Elasticity* **19** (1988), no. 2, 111–161. (D. Işan) **89f:73042** 73K05 (34E05, 73C10, 73C50)
  - (with Crouzeix, Michel; Raugel, Geneviève) Some remarks about the Morse lemma in infinite dimension. *SIAM J. Math. Anal.* **19** (1988), no. 2, 358–371. (E. Zeidler) **89c:58023** 58E05
- Geymonat, G.** *see* Vallati, Giovanni, **89j:01080**
- Gfrerer, H.** Hölder continuity of solutions of perturbed optimization problems under Mangasarian-Fromovitz constraint qualification. *Parametric optimization and related topics (Plauze, 1985)*, 113–124, *Math. Res.*, 35, Akademie-Verlag, Berlin, 1987. (Krzysztof C. Kiwiel) **89a:90141** 90C31 (49B50, 65K05, 90C30)
- (with Engl, Heinz W.) A posteriori parameter choice for general regularization methods for solving linear ill-posed problems. *Appl. Numer. Math.* **4** (1988), no. 5, 395–417. (M. Z. Nashed) **89f:65060** 65J10 (47A50)
- Ghaboussi, F.** Group theory of spontaneous symmetry breaking. *Internat. J. Theoret. Phys.* **26** (1987), no. 10, 957–966. (E. Kyriakopoulos) **89c:81065** 81D20 (81E13)
- ahdel-Ghaffar, Khaled A. S.** *see* Abdel-Ghaffar, Khaled A. S.
- Ghahramani, F.** (with Lau, A. T.) Isometric isomorphisms between the second conjugate algebras of group algebras. *Bull. London Math. Soc.* **20** (1988), no. 4, 342–344. (Kelly McKennon) **89e:43008** 43A20 (46H99)
- Compact homomorphisms of  $C^*$ -algebras. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 458–462. (Robert S. Doran) **89e:46065** 46L05 (46J05)
  - The group of automorphisms of  $L^1(0, 1)$  is connected. *Trans. Amer. Math. Soc.* **314** (1989), no. 2, 851–859. (Marc Thomas) **89m:43009** 43A20 (43A22, 46J99)
- Ghahlab, Malik** (with Escalada-Imaz, Gonzalo) A practically efficient and almost linear unification algorithm. *Artificial Intelligence* **36** (1988), no. 2, 249–263. (Not in MR)

- 68T30 (68T05)
- Ghanim, M. H.** *L-fuzzy basic proximity spaces. Fuzzy Sets and Systems* 27 (1988), no. 2, 197–203. (Summary) **89f:54010** 54A40 (03E72)
- (with Al-Sirehy, Fatma S.) Topological modification of a fuzzy closure space. *Fuzzy Sets and Systems* 27 (1988), no. 2, 211–215. (O. Costinescu) **89j:54006** 54A40 (03E72)
- (with Sidky, F. I.) Congruence fuzzy relations on semigroups. *Simon Stevin* 62 (1988), no. 2, 143–152. (Summary) **89j:03048** 03E72 (20M99)
- Charley-Tagge, A.** (with Habtemariam, T.; Mamo, E.; Robnett, V.) Epidemiologic modeling of diseases—a case example using *Schistosoma* and *Trypanosoma*. *Mathematical modelling in science and technology* (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 244–249. (see **89d:00007**) 92A15
- Ghatage, Pratibha G.** On the spectrum of the Bergman-Hilbert matrix. *Linear Algebra Appl.* 97 (1987), 57–63. (Karim Seddighi) **89b:47037** 47B35 (47B37)
- Gheiffo, Susanna** (with Cantone, D.; Omodeo, E. G.) The automation of syllogistic. I. Syllogistic normal forms. *J. Symbolic Comput.* 6 (1988), no. 1, 83–98. (Hans-Joachim Goltz) **89i:68111** 68T15 (03B35, 68R10)
- de Ghellinck, G.** (with Vial, Jean-Philippe) An extension of Karmarkar's algorithm for solving a system of linear homogeneous equations on the simplex. *Math. Programming* 39 (1987), no. 1, 79–92. (J. Parida) **89d:90129** 90C05 (65F99)
- Gheondea, Aurelian** On invariant maximal nonnegative subspaces of certain operators acting in a Krein space. *Integral Equations Operator Theory* 12 (1989), no. 1, 129–135. (T. Ya. Azizov) **89m:47031** 47B50 (47A15)
- Gheorghiev, Gheorghe** see **Miron, Radu**, **89c:01076**
- Gheorghiu, C. I.** On the use of Green's formula for the solution of the Navier-Stokes equations. *Seminar on Mechanics*, 63–78, *Preprint*, 88-1, Univ. "Babeş-Bolyai", Cluj-Napoca, 1988. (see **89f:00016**) 76-08 (35Q10, 76D05)
- Gheri, G.** (with Marzulli, P.) Error bounds for initial value problems integrating the principal error equation. *Numerical methods (Miskolc, 1986)*, 249–268, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (Rudolf Scherer) **89c:65072** 65L05
- Ghez, Richard** ★ A primer of diffusion problems. A Wiley-Interscience publication. *John Wiley & Sons, Inc.*, New York, 1988. xvi+243 pp. ISBN 0-471-84692-9 (G. A. Nariboli) **89m:35001** 35-01 (35Kxx, 35Q20, 76R50, 82A70)
- Ghez, Sylvie** (with Verdú, Sergio; Schwartz, S. C.) Stability properties of slotted Aloha with multipacket reception capability. *IEEE Trans. Automat. Control* 33 (1988), no. 7, 640–649. (Not in MR) 94A40
- Ghidaglia, Jean-Michel** (with Temam, Roger) Regularity of the solutions of second order evolution equations and their attractors. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) 14 (1987), no. 3, 485–511 (1988). (Marco Degiovanni) **89g:34095** 34G20 (35B65, 35L70, 58F12)
- (with Temam, Roger) Attractors for damped nonlinear hyperbolic equations. *J. Math. Pures Appl.* (9) 66 (1987), no. 3, 273–319. (From the introduction) **89m:35141** 35L70 (35Q20, 47H20, 58F12, 58F13, 58F30)
- (with Temam, Roger) Dimension of the universal attractor describing the periodically driven sine-Gordon equations. *Proceedings of the second international workshop on mathematical aspects of fluid and plasma dynamics (Orsay, 1985)*. *Transport Theory Statist. Phys.* 16 (1987), no. 2-3, 253–265. (P. A. Kuchment) **89a:35137** 35L70 (35Q20, 58F12)
- (with Saut, Jean-Claude) Équations aux dérivées partielles non linéaires dissipatives et systèmes dynamiques. [Dissipative nonlinear partial differential equations and dynamical systems]. *Équations aux dérivées partielles non linéaires dissipatives et systèmes dynamiques*, 11–46, *Travaux en Cours*, 28, Hermann, Paris, 1988. (Athanasios Cotsiolis) **89h:35288** 35Q20 (58F12)
- Estimation des exposants de Lyapunov: applications à l'estimation de la dimension des attracteurs associés à des équations aux dérivées partielles. [Estimation of Lyapunov exponents: applications to the estimation of the dimension of attractors associated with partial differential equations]. *Équations aux dérivées partielles non linéaires dissipatives et systèmes dynamiques*, 147–169, *Travaux en Cours*, 28, Hermann, Paris, 1988. (Piotr Biler) **89h:58162** 58F12 (35B40, 35Q20, 58G99)
- Generalized Lieb-Thirring inequalities and the dimension of attractors associated to the Ginzburg-Landau p.d.e. *Trends in applications of mathematics to mechanics (Wassenaar, 1987)*, 79–85, *Springer, Berlin-New York*, 1988. (see **89g:58004**) 76E15 (58F12, 82A99)
- Finite-dimensional behavior for weakly damped driven Schrödinger equations. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* 5 (1988), no. 4, 365–405. (Varkey Balliappadath Baby) **89m:35191** 35Q20 (35B30, 35B35, 58F12)
- (with Temam, Roger) Long time behavior for partly dissipative equations: the slightly compressible 2D-Navier-Stokes equations. *Asymptotic Anal.* 1 (1988), no. 1, 23–49. (Athanasios Cotsiolis) **89f:35168** 35Q10 (35B40, 58F12, 76N10)
- (with Demengel, Françoise) Discrétisation en temps et variétés inertielle pour des équations d'évolution aux dérivées partielles non linéaires. (English summary) [Time-discretization and inertial manifolds for nonlinear evolution partial differential equations] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 9, 453–458. (Summary) **89h:35144** 35K22 (34G20, 47H20, 58D25, 58F19)
- (with Marion, Martine; Temam, Roger) Generalization of the Sobolev-Lieb-Thirring inequalities and applications to the dimension of attractors. *Differential Integral Equations* 1 (1988), no. 1, 1–21. (Piotr Biler) **89d:35137** 35Qxx (46E35, 58F12)
- (with Brefort, B.; Temam, Roger) Attractors for the penalized Navier-Stokes equations. *SIAM J. Math. Anal.* 19 (1988), no. 1, 1–21. (Athanasios Cotsiolis) **89b:35135** 35Q10 (58F12, 65P05, 76D05)
- see also *Dissipative nonlinear partial differential equations and dynamical systems*, **89a:35004**
- Ghika, Gr.** (with Corciovei, A.) Static solutions for the sigma-model coupled to gravity in the case of a compact space-like slice. *Rev. Roumaine Phys.* 32 (1987), no. 8, 827–835. (Kotik K. Lee) **89a:83043** 83C99 (53C80, 58E20)
- Ghinea, Ioan** Almost compatible Finsler connections with metrical Finsler structures. *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces (Braşov, 1986)*, 145–154, *Soc. Ştiinţe Mat. R.S. România, Bucharest*, 1986. (L. Tamásy) **89c:53022** 53B40
- Kawaguchi connections and Hashiguchi connections associated to a conformal Finsler structure. *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces (Braşov, 1986)*, 155–163, *Soc. Ştiinţe Mat. R.S. România, Bucharest*, 1986. (D. Opris) **89c:53023** 53B40
- Ghinelli-Smit, Dina** Hall-Ryser type theorems for relative difference sets. *Combinatorics '86 (Trento, 1986)*, 189–193, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (Vasanti N. Bhat-Nayak) **89d:05040** 05B10
- Ghione, Franco** (with Sacchiero, Gianni) Genre d'une courbe lisse tracée sur une variété réglée. [Genus of a smooth curve traced on a ruled variety] *Space curves (Rocca di Papa, 1985)*, 97–107, *Lecture Notes in Math.*, 1266, Springer, Berlin-New York, 1987. (From the text) **89e:14034** 14H45 (14N10)
- (with Vainsencher, Israel) L'inégalité de Castelnuovo-Severi en dimension quelconque. (English summary) [The Castelnuovo-Severi inequality in arbitrary dimension] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 12, 541–543. (R. F. Lax) **89e:14009** 14C20
- Ghione, G.** (with Bava, G. P.; Maio, I.) Fast exact inversion of the generalized Zakharov-Shabat problem for rational scattering data: application to the synthesis of optical couplers. *SIAM J. Appl. Math.* 48 (1988), no. 3, 689–702. (I. Kay) **89e:78011** 78A45 (34A55)
- Ghirardi, G. C.** (with Benatti, F.; Rimini, A.; Weber, Tullio) Quantum mechanics with spontaneous localization and the quantum theory of measurement. (Italian and Russian summaries) *Nuovo Cimento B* (11) 100 (1987), no. 1, 27–41. (L. I. Rozonoër) **89h:81009** 81B05
- Quantum description of microscopic and macroscopic systems: old problems and recent investigations. *Microphysical reality and quantum formalism*, Vol. 1, 2 (Urbino, 1985), 153–163, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89m:81015** 81B05
- (with Rimini, A.; Weber, Tullio) The puzzling entanglement of Schrödinger's wave function. *Found. Phys.* 18 (1988), no. 1, 1–27. (Summary) **89a:81007** 81B05 (01A60)
- Gholes Ch., Eric** (with Cosnard, Michel; Mounida, Driss) Bifurcation structure of a discrete neuronal equation. *Discrete Appl. Math.* 21 (1988), no. 1, 21–34. (F. Ventriglia) **89i:92013** 92A09 (39A10, 58F40)
- Ghorai, J. K.** (with Rejtő, L.) Estimation of mean residual life with censored data under the proportional hazard model. *Comm. Statist. Theory Methods* 16 (1987), no. 7, 2097–2114. (H. K. Hsieh) **89b:62205** 62N05 (62E20, 62G05)
- Ghori, Q. K.** (with Ahmed, Naseer) Applicability of Hamilton-Jacobi method to nonlinear nonholonomic systems. *Appl. Math. Mech. (English Ed.)* 9 (1988), no. 10, 937–952; translated from *Appl. Math. Mech.* 9 (1988), no. 10, 879–892 (Chinese. English summary). (B. Vujanović) **89m:70033** 70H20 (70F25)
- Equations of motion of nonlinear nonholonomic systems with variable masses. *Portugal. Math.* 45 (1988), no. 1, 49–58. (Simos Ichiarioglou) **89f:70011** 70F25 (70P05)
- Ghosal, A.** (with Gujaria, S. C.) Note on the best order for queues in series. *Internat. J. Systems Sci.* 18 (1987), no. 10, 1995–1999. (Introduction) **89b:90088** 90B22 (60K20)
- (with Madan, Sudhir) Identification of waiting time distribution of  $M/G/1$ ,  $M^x/G/1$ ,  $G^x/M/1$  queueing systems. *Internat. J. Math. Math. Sci.* 11 (1988), no. 3, 589–597. (Carl M. Harris) **89d:60176** 60K25 (90B22)
- Ghosal, S. S.** (with Lahiri, Avijit) Spatial patterns in a simple reaction-diffusion system. *Phys. Lett. A* 124 (1987), no. 1-2, 47–52. (Summary) **89a:58081** 58F14 (35K57, 35A10)
- Ghose, Anjan** (with Batta, Rajan; Palekar, Uddatta S.) Locating facilities on the Manhattan metric with arbitrarily shaped barriers and convex forbidden regions. *Transportation Sci.* 23 (1989), no. 1, 26–36. (Summary) **89m:90057** 90B10
- Ghose, D.** (with Prasad, U. R.) Formulation and analysis of combat problems as zero-sum bicriterion differential games. *J. Optim. Theory Appl.* 59 (1988), no. 1, 1–24. (Josef Shinar) **89m:90180** 90D26 (49A45)
- Ghose, S.** (with Chakrabarti, P. P.; Pandey, A.; De Sarkar, S. C.) Increasing search efficiency using multiple heuristics. *Inform. Process. Lett.* 30 (1989), no. 1, 33–36. (Not in MR) 68P10
- Ghosh, Amit** (with Conrey, J. B.; Gonek, S. M.) Simple zeros of zeta functions. *Colloque de Théorie Analytique des Nombres "Jean Coquet"* (Marseille, 1985), 77–83, *Publ. Math. Orsay*, 88-02, Univ. Paris XI, Orsay, 1988. (Masako Izumi) **89h:11056** 11M26
- (with Conrey, J. B.) Simple zeros of the Dirichlet series formed with Ramanujan's tau-function. *C. R. Math. Rep. Acad. Sci. Canada* 10 (1988), no. 2, 95–99. (Don Redmond) **89h:11043** 11F35 (11F66)
- (with Conrey, J. B.) Simple zeros of the Ramanujan  $\tau$ -Dirichlet series. *Invent. Math.* 94 (1988), no. 2, 403–419. (Bruce C. Berndt) **89i:11078** 11M41 (11F35)
- Ghosh, B. K.** see **Ghosh, Bhaskar K.**
- Ghosh, Badal Chandra** (with Sinha, Sunil Kumar<sup>1</sup>) The  $n$ -dimensional Hankel transformation of certain distributions of rapid growth. *J. Indian Math. Soc. (N.S.)* 49 (1985), no. 1-2, 39–53 (1987). (Arpad Takaci) **89g:46077** 46F12 (44A15)
- Ghosh, Bandana** Application of Jacobi's partial differential operators to partial differential equations. *J. Orissa Math. Soc.* 4 (1985), no. 1, 15–21. (Not in MR) 33A75 (35C99)
- Operational derivation of some results for the modified Laguerre polynomials. *J. Orissa Math. Soc.* 5 (1986), no. 2, 105–109. (Introduction) **89j:33018** 33A65
- Group theoretic origins of certain generating functions of Jacobi polynomials. II. *Pure Math. Manuscript* 5 (1986), 21–27. (R. C. S. Chandel) **89i:33023** 33A75 (33A65)
- Application of Gegenbauer's partial differential operators to partial differential equations. *Ranchi Univ. Math. J.* 17 (1986), 35–41 (1987). (R. C. S. Chandel) **89i:33014** 33A45 (35C99)
- Some generating functions of modified Gegenbauer polynomials. *Proc. Indian Acad. Sci. Math. Sci.* 96 (1987), no. 2, 119–124. (B. P. Parasher) **89c:33020** 33A75 (33A50)
- Unification of bilateral generating functions. *Bull. Calcutta Math. Soc.* 80 (1988), no. 3, 209–216. (S. D. Bajpai) **89j:33011** 33A65
- On the extension of bilateral generating relation of modified Laguerre polynomials. *Pure Appl. Math. Sci.* 27 (1988), no. 1-2, 21–26. (Donald Richards) **89e:33018** 33A65 (33A75)
- Ghosh, Bhaskar K.** On the attainment of the Cramér-Rao bound in the sequential case. *Sequential Anal.* 6 (1987), no. 3, 267–288. (Paul Cabilio) **89b:62174** 62L12 (62F10)
- Ghosh, Bijoy Kumar** A geometric approach to simultaneous system design: parameter insensitive disturbance decoupling by state and output feedback. *Modelling, identification and robust control (Stockholm, 1985)*, 471–484, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:93041** 93B50 (49D27, 93B27)
- (with Lirov, Yuval) Simultaneous identification of linear systems: a heuristic approach. *Systems Control Lett.* 9 (1987), no. 4, 317–322. (Witold Pedrycz) **89a:93018** 93B30 (90C27, 93B40, 93C05)



- An approach to simultaneous system design. II. Nonswitching gain and dynamic feedback compensation by algebraic geometric methods. *SIAM J. Control Optim.* **26** (1988), no. 4, 919–963. (A. Barraud) **89c:93058** 93B27 (93B50, 93B55, 93D15)
- (with Dayawansa, Wijesuriya P.) Differential geometric methods in hybrid parametrization of linear dynamical systems. *SIAM J. Control Optim.* **26** (1988), no. 5, 1149–1174. (Summary) **89c:93027** 93B27 (93A10, 93C05)
- Ghosh, Dilip Kumar** (with Karmakar, P. K.) Some series of efficiency balanced designs. *Austral. J. Statist.* **30** (1988), no. 1, 47–51. (Ryoh Fuji-Hara) **89k:62102** 62K15
- Ghosh, Dipankar** (with Knapp, Charles H.) Measurement selection for linear multivariable control systems. *Automatica—J. IFAC* **25** (1989), no. 1, 55–63. (Summary) **89k:93089** 93B50 (93E20)
- Ghosh, Gantam** (with Engineer, M. H.) Berry's phase as the asymptotic limit of an exact evolution: an example. *J. Phys. A* **21** (1988), no. 2, L95–L98. (Summary) **89c:81051** 81C99
- (with Dutta-Roy, Binayak) The Berry phase and the Hannay angle. *Phys. Rev. D* (3) **37** (1988), no. 6, 1709–1711. (Summary) **89a:81025** 81C15
- Ghosh, J. K.** (with Basu, A. P.; Joshi, S. N.) On estimating change point in a failure rate. *Statistical decision theory and related topics, IV, Vol. 2 (West Lafayette, Ind., 1986)*, 239–252. Springer, New York-Berlin, 1988. (A. Balogh) **89h:62158** 62N05 (62F10)
- see also Basu, Debabrata\* **89j:62005**
- Ghosh, Malay** (with Mantelle, Lily Llorens) Generalised likelihood ratio tests for two-parameter exponentials under type I censoring. *Calcutta Statist. Assoc. Bull.* **36** (1987), no. 143–144, 125–139. (Kumar Joag-Dev) **89i:62033** 62F03 (62F05)
- (with Lahiri, Parthasarathi) Robust empirical Bayes estimation of variances from stratified samples. *Sankhyā Ser. B* **49** (1987), no. 1, 78–89. (Summary) **89h:62011** 62D05
- (with Sinha, Bimal Kumar) Inadmissibility of the best equivariant estimators of the variance-covariance matrix, the precision matrix, and the generalized variance under entropy loss. *Statist. Decisions* **5** (1987), no. 3–4, 201–227. (Summary) **89e:62013** 62C15 (62H12)
- (with Lahiri, Parthasarathi) Bayes and empirical Bayes analysis in multistage sampling. *Statistical decision theory and related topics, IV, Vol. 1 (West Lafayette, Ind., 1986)*, 195–212. Springer, New York-Berlin, 1988. (S. Gähler) **89h:62024** 62D05 (62C12, 62F15)
- (with Yang, Ming Chung) Simultaneous estimation of Poisson means under entropy loss. *Ann. Statist.* **16** (1988), no. 1, 278–291. (Glen Meeden) **89b:62020** 62C15 (62C10)
- (with Mantelle, Lily Llorens) Maximum likelihood estimation for two parameter exponentials under type I censoring. *Comm. Statist. Theory Methods* **17** (1988), no. 9, 2859–2879. (B. Raja-Rao) **89h:62046** 62F10 (62F12)
- Ghosh, Mrinal K.** (with Borkar, V. S.) Ergodic control of multidimensional diffusions. I. The existence results. *SIAM J. Control Optim.* **26** (1988), no. 1, 112–126. (Emmanuel Nicholas Barron) **89h:93054** 93E20 (49A60)
- Ghosh, Pradip** (with Bandyopadhyay, Pratul) Stochastic field theory at finite temperature, supersymmetry, and Witten index. *Ann. Physics* **179** (1987), no. 1, 1–19. (Helmut Rumpf) **89e:81034** 81C20 (81E99, 82A15)
- (with Bandyopadhyay, Pratul) Stochastic field theory and finite-temperature supersymmetry. *J. Math. Phys.* **29** (1988), no. 5, 1236–1240. (N. D. Sengupta) **89d:82030** 82A15 (82A31)
- Ghosh, Sankar** Almost sure equi-convergence and equi-convergence in  $L_1$  of certain real-valued and Banach-space-valued functions. *Proceedings of the National Seminar on Stochastic Process, Statistical Inference and Sample Survey (Sambalpur, 1985)*. *J. Orissa Math. Soc.* **4** (1985), no. 2, 85–104. (Summary) **89b:60015** 60B10
- On some applications of the Baire-category for determining range, points of invariability and differentiability of real-valued functions. *Bull. Calcutta Math. Soc.* **79** (1987), no. 5, 284–292. (Jack B. Brown) **89k:26004** 26A24 (26B05, 54C05)
- On a recursion-relation which arises in a statistical context. *Bull. Calcutta Math. Soc.* **79** (1987), no. 6, 336–350. (A. K. Md. Ehsanes Saleh) **89i:62072** 62G10
- On some versions of the de Finetti's theorem and the strong law of large numbers for Banach-space-valued functions. *Bull. Calcutta Math. Soc.* **80** (1988), no. 2, 107–120. (A. Bozorgnia) **89m:60083** 60G09 (60B11, 60F15)
- Ghosh, Subir** (with Gomez, Roberto) Comparison of ratio estimators based on interpenetrating subsamples with or without jackknifing. *J. Indian Soc. Agricultural Statist.* **38** (1986), no. 2, 200–210. (Tommy Wright) **89b:62012** 62D05
- (with Zhang, Xiao Di) Two new series of search designs for  $3^m$  factorial experiments. *Utilitas Math.* **32** (1987), 245–254. (Summary) **89g:62133** 62K15
- Ghosh, Sucharita** (with Feuerverger, Andrey) An asymptotic Neyman-Pearson type result under symmetry constraints. *Comm. Statist. Theory Methods* **17** (1988), no. 5, 1557–1564. (Frantisek Rublik) **89k:62029** 62F03
- Ghosh, Sukumar** (with Datta, Ajoy K.; Chou, Tair-Shian) A new algorithm for deadlock avoidance. *Inform. Sci.* **46** (1988), no. 1–2, 47–72. (Raymond Devillers) **89k:68015** 68N25
- Ghoussoub, N.** (with Godefroy, G.; Maurey, Bernard; Schachermayer, W.) Some topological and geometrical structures in Banach spaces. *Mem. Amer. Math. Soc.* **70** (1987), no. 378, iv+116 pp. (J. Daneš) **89h:46024** 46B20 (46A55)
- Ghys, É.** Sur l'invariance topologique de la classe de Godbillon-Vey. (English summary) [On the topological invariance of the Godbillon-Vey class] *Ann. Inst. Fourier (Grenoble)* **37** (1987), no. 4, 59–76. (Steven E. Hurder) **89e:57023** 57R30 (57R32, 58F18)
- Flots d'Anosov dont les feuilletages stables sont différentiables. [Anosov flows whose stable foliations are differentiable] *Ann. Sci. École Norm. Sup. (4)* **20** (1987), no. 2, 251–270. (Marlies Gerber) **89h:58153** 58F15
- (with Langevin, R.; Walczak, P. G.) Entropie géométrique des feuilletages. [Geometric entropy of foliations] *Acta Math.* **160** (1988), no. 1–2, 105–142. (Shigenori Matsumoto) **89a:57034** 57R30 (58F11, 58F18)
- (with Tsuboi, Takashi) Différentiabilité des conjugaisons entre systèmes dynamiques de dimension 1. (English summary) [Differentiability of conjugations between dynamical systems of dimension 1] *Ann. Inst. Fourier (Grenoble)* **38** (1988), no. 1, 215–244. (Shigenori Matsumoto) **89i:58119** 58F18 (57R30, 58F10)
- (with Barge, Jean) Surfaces et cohomologie bornée. [Surfaces and bounded cohomology] *Invent. Math.* **92** (1988), no. 3, 509–526. (Robert Brooks) **89e:55015** 55N35
- Gauss-Bonnet theorem for 2-dimensional foliations. *J. Funct. Anal.* **77** (1988), no. 1, 51–59. (Steven E. Hurder) **89d:57040** 57R30 (53C12)
- see also Molino, P. **89b:53054**
- Ghysels, Eric** A study toward a dynamic theory of seasonality for economic time series. *J. Amer. Statist. Assoc.* **83** (1988), no. 401, 168–172. (Not in MR) **62M10**
- tran-Gia, P.** see Tran-Gia, P.
- Giacalone, Ermano** (with Ricci, Fulvio) Norms of harmonic projection operators on compact Lie groups. *Math. Ann.* **280** (1988), no. 1, 21–31. (Walter Schempp) **89c:22015** 22E30
- Giacotto, Carmelo** (with Sharma, Subhash C.) Jackknife tests for heteroscedasticity in the general linear model. *Austral. J. Statist.* **30** (1988), no. 2, 200–216. (Not in MR) **62J05**
- Giacchetti, Daniela** (with Donato, Patrizia) Unilateral problems with quadratic growth in unbounded domains. (Italian summary) *Boll. Un. Mat. Ital. A* (6) **5** (1986), no. 3, 361–369. (H. Böttger (Zbl 602:49008)) **89a:35099** 35J85
- Giacchetti, R.** (with Johnson, Russell A.) The Floquet exponent for two-dimensional linear systems with bounded coefficients. *J. Math. Pures Appl. (9)* **65** (1986), no. 2, 93–117. (Angelo B. Mingarelli) **89d:34044** 34B20 (34A30)
- (with Tognetti, V.; Vaia, R.) Variational approach to quantum statistical mechanics. *Path summation: achievements and goals (Trieste, 1987)*, 92–113. World Sci. Publishing, Singapore, 1988. (see **89i:81034**) **82A15** (81C35)
- Giacin, Egidio** (with Benedetto, Sergio; Ajmone Marsan, Marco; Albertengo, Guido) Combined coding and modulation: the theory and applications. *IEEE Trans. Inform. Theory* **34** (1988), no. 2, 223–236. (Shunsuke Ihara) **89f:94012** 94A40 (94A14, 94A29)
- Giacomini, H. J.** (with Riera, J. A.) Exact results for a random frustrated Ising model on the Kagomé lattice. *J. Statist. Phys.* **49** (1987), no. 3–4, 491–509. (Peter J. Forrester) **89d:82125** 82A68
- An exact result for the Kagomé lattice Ising model with magnetic field. *J. Phys. A* **21** (1988), no. 1, L31–L36. (Summary) **89h:82106** 82A68 (82A69)
- An exact functional relation for the partition function of a 2D Ising model with magnetic field. *J. Phys. A* **21** (1988), no. 11, L599–L601. (Summary) **89d:82126** 82A68 (82A69)
- (with Azaria, P.) An exactly soluble two-dimensional Ising model with magnetic field. *J. Phys. A* **21** (1988), no. 19, L935–L940. (Paul A. Pearce) **89m:82070** 82A68 (82A67, 82A69)
- Giakoumakis, Vassili** (with Monjardet, B.) Coefficients d'accord entre deux préordres totaux. (English summary) [Coefficients of agreement between two monotone quasi-orders] *Statist. Anal. Données* **12** (1987), no. 1–2, 46–99. (Summary) **89i:62092** 62H20 (90A06)
- Giamarchi, T.** (with Pierre, Laurent; Schulz, H. J.) A new random-number generator for multispin Monte Carlo algorithms. *J. Statist. Phys.* **48** (1987), no. 1–2, 135–149. (Suresh V. Lawande) **89b:82008** 82–08 (65C10, 81–08)
- Giambravo, V.** (with Pengelley, David J.; Ravenel, Douglas C.) A fractal-like algebraic splitting of the classifying space for vector bundles. *Trans. Amer. Math. Soc.* **307** (1988), no. 2, 433–455. (Donald M. Davis) **89c:55014** 55R40 (55R45, 57R90)
- Giambrugi, J. J.** (with Bollini, C. G.) Analyticity in fourth-order wave equations. (Italian summary) *Nuovo Cimento A* (11) **98** (1987), no. 2, 151–167. (Summary) **89g:81094** 81F05
- Giambo, Sebastiano** (with Galipò, Maria Pia) On the heat conduction in relativistic extended irreversible thermodynamics. *Rend. Mat. Appl. (7)* **6** (1986), no. 3, 245–256 (1988). (Summary) **89m:80003** 80A20 (35K05)
- (with Bariloro, Maria; Pantano, Pietro) Sur la diffraction transversale des ondes non linéaires dans un fluide visqueux relativiste. (English summary) [On the transverse diffraction of nonlinear waves in a relativistic viscous fluid] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 4, 169–172. (A. Pozzi) **89j:76094** 76Y05 (76D33)
- Giambrone, Steve** (with Kron, Aleksandar) Four relevant Gentzen systems. *Studia Logica* **46** (1987), no. 1, 55–71. (Stephen Read) **89d:03014a** 03B45
- (with Urquhart, Alasdair) Proof theories for semilattice logics. *Z. Math. Logik Grundlag. Math.* **33** (1987), no. 5, 433–439. (Stephen Read) **89d:03014b** 03B45
- (with Meyer, Robert K.; Urquhart, Alasdair; Martin, Errol P.) Further results on proof theories for semilattice logics. *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 4, 301–304. (Stephen Read) **89k:03016** 03B45 (06A12)
- Giambruno, A.** Polynomial identities with involution and the hyperoctahedral group. *Group theory (Bressanone, 1986)*, 18–25. *Lecture Notes in Math.*, **1281**, Springer, Berlin-New York, 1987. (A. O. Morris) **89a:16025** 16A38 (20C30)
- (with Di Vincenzo, O. M.) Modular representation theory and PI-algebras. *Comm. Algebra* **16** (1988), no. 10, 2043–2067. (E. Formanek) **89i:16028** 16A38
- (with Sehgal, Sudarshan K.) A Lie property in group rings. *Proc. Amer. Math. Soc.* **105** (1989), no. 2, 287–292. (D. A. Jordan) **89i:16045** 16A68 (16A27, 16A70)
- Giancarlo, Raffaele** (with Galil, Zvi) Parallel string matching with  $k$  mismatches. *Theoret. Comput. Sci.* **51** (1987), no. 3, 341–348. (Summary) **89a:68085** 68Q20
- (with Rytter, Wojciech) Optimal parallel parsing of bracket languages. *Theoret. Comput. Sci.* **53** (1987), no. 2–3, 295–306. (Summary) **89a:68139** 68Q50 (68Q45)
- (with Capocelli, R. M.) Efficient VLSI networks for converting an integer from binary system to residue number system and vice versa. *IEEE Trans. Circuits and Systems* **35** (1988), no. 11, 1425–1430. (Charles J. Colbourn) **89i:68066** 68Q35 (68Q10, 68Q25, 94C99)
- (with Galil, Zvi) Data structures and algorithms for approximate string matching. *J. Complexity* **4** (1988), no. 1, 33–72. (Summary) **89c:68042** 68Q20 (68P15)
- Gianella, Gian Mario** (with Čerin, Z.) Natural equivalence of graph related bifunctors. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **16** (1986), no. 1, 181–195. (Jerzy Dydak) **89c:55023** 55Q99 (05C99)
- Giani, Guido** Errata: "Designing selection experiments with Bernoulli populations." [Comm. Statist. B—Simulation Comput. **16** (1987), no. 2, 535–549]. *Comm. Statist. Simulation Comput.* **17** (1988), no. 1, 313. (Not in MR) **62F07**
- Giani, Umberto** Artificial intelligence in medicine, cognitive science and epidemiological models. *Biomathematics and related computational problems (Naples, 1987)*, 659–667. *Kluwer Acad. Publ., Dordrecht*, 1988. (see **89f:92002**) **92A07** (68T30)
- Giannakopoulos, C.** (with Karcianias, N.; Laios, B.) Decentralized determinantal assignment problem: fixed and almost fixed modes and zeros. *Internat. J. Control* **48** (1988), no. 1, 129–147. (Not in MR) **93B55** (93B27, 93B50)
- Giannakopoulos, F.** (with von Seelen, W.; Mallot, H. A.) Computation in cortical nets. *Neural and synergetic computers (Schloss Elmau, 1988)*, 123–136. *Springer Ser. Synergetics*, **42**, Springer, Berlin-New York, 1988. (see **89i:92026**) **92A25** (68Q99, 92A09)
- Giannakoulas, E. M.** Absolute continuity and decomposability of vector measures taking values in a locally convex space with basis. *Indian J. Pure Appl. Math.* **18** (1987), no. 12,

- 1113–1120. (N. Dinculeanu) **89a:46098** 46G10 (28B05)
- Some properties of vector measures taking values in a topological vector space. *J. Austral. Math. Soc. Ser. A* **43** (1987), no. 2, 224–230. (Kevin T. Andrews) **89e:46047** 46G10 (28B05, 46A05)
- Giannesi, F.** Theorems of the alternative for multifunctions with applications to optimization: general results. *J. Optim. Theory Appl.* **55** (1987), no. 2, 233–256. (Vaithilingam Jeyakumar) **89a:90123** 90C30 (26E25, 49A50, 90C48)
- On a generalization of F. John theorem for constrained extremum problems. *Advances in mathematical optimization*, 52–62, *Math. Res.*, 45, Akademie-Verlag, Berlin, 1988. (Madhusudan Mishra) **89i:90071** 90C30
- Giannini, L. M.** (with Caccetta, L.) An application of discrete mathematics in the design of an open pit mine. *Discrete Appl. Math.* **21** (1988), no. 1, 1–19. (H. T. Lau) **89i:05125** 05C20 (90B10, 90B30)
- Giannoni, Fabio** (with Degiovanni, Marco; Marino, Antonio) Periodic solutions of dynamical systems with Newtonian type potentials. *Periodic solutions of Hamiltonian systems and related topics* (II Ciocco, 1986), 111–115, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 209, Reidel, Dordrecht-Boston, MA, 1987. (Summary) **89a:58094** 58F22 (34C25, 58E05, 58F05)
- Giannozzi, Paolo** (with Grosso, Giuseppe; Moroni, Saverio; Pastori Parravicini, Giuseppe) The ordinary and matrix continued fractions in the theoretical analysis of Hermitian and relaxation operators. *Appl. Numer. Math.* **4** (1988), no. 2–4, 273–295. (M. Znojil) **89g:81111** 81H20 (15A90, 65D15, 81C99)
- Giaquinta, Mariano** The problem of the regularity of minimizers. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1072–1083, *Amer. Math. Soc., Providence, RI*, 1987. (Françoise Berquier) **89d:49020** 49B21 (49A51, 49B36, 58E15)
- (with Modica, Giuseppe) Local existence for quasilinear parabolic systems under nonlinear boundary conditions. *Ann. Mat. Pura Appl.* (4) **149** (1987), 41–59. (Siegfried Carl) **89d:35095** 35K60
- (with Ivert, Per-Anders) Partial regularity for minima of variational integrals. *Ark. Mat.* **25** (1987), no. 2, 221–229. (Dariusz Zagrodny) **89d:49021** 49B21 (26B35, 49A29, 58E20)
- Quasiconvexity, growth conditions and partial regularity. *Partial differential equations and calculus of variations*, 211–237, *Lecture Notes in Math.*, 1357, Springer, Berlin-New York, 1988. (E. Acerbi) **89m:49022** 49A50 (35B65)
- (with Anzellotti, Gabriele) Convex functionals and partial regularity. *Arch. Rational Mech. Anal.* **102** (1988), no. 3, 243–272. (Harold Parks) **89f:49013** 49A50 (35D10, 49A36, 58E15)
- see also **Topics in calculus of variations**, **89k:58051**
- Giardinà, F.** (with Serafini, P.; Ukovich, W.; Kirchner, Hélène; Tiozzo, F.) Job shop scheduling: a case study. *Operations research models in flexible manufacturing systems* (Udine, 1987), 237–246, *CISM Courses and Lectures*, 306, Springer, Vienna, 1989. (see **89k:90082**) 90B35
- Giarrusso, Ester** (with Trombetti, Guido) Estimates for solutions of elliptic equations in a limit case. *Bull. Austral. Math. Soc.* **36** (1987), no. 3, 425–434. (Hideo Soga) **89d:35068** 35J70 (35J25)
- Giarvalis, M.** (with Calzetti, D.; Ruffini, R.) The normalization of the correlation functions for extragalactic structures. *Astronom. and Astrophys.* **198** (1988), no. 1–2, 1–15. (Summary) **89d:85009** 85A35
- Gibbins, P. F.** VDM: axiomatising its propositional logic. *Comput. J.* **31** (1988), no. 6, 510–516. (Stephen L. Bloom) **89k:03020** 03B50 (68Q55)
- Gibbons, J. D.** (with Doering, Charles R.; Holm, Darryl D.; Nicolaenko, Basil) Low-dimensional behaviour in the complex Ginzburg-Landau equation. *Nonlinearity* **1** (1988), no. 2, 279–309. (Piotr Biler) **89g:35095** 35Q20 (58D25, 58F12, 76E99)
- (with Newell, A. C.; Tabor, M.; Zeng, Yun Bo) Lax pairs, Bäcklund transformations and special solutions for ordinary differential equations. *Nonlinearity* **1** (1988), no. 3, 481–490. (C. Rogers) **89k:58118** 58F07 (34C20, 35Q20, 58F37)
- (with Doering, Charles R.; Elgin, J. N.; Holm, Darryl D.) Finite-dimensionality in the laser equations in the good cavity limit. *Phys. Lett. A* **129** (1988), no. 5–6, 310–316. (K. Wodkiewicz) **89k:81210** 81K05
- see also **New developments in the theory and application of solitons**, **89a:00034**
- Gibbons, Alan** (with Rytter, Wojciech) An optimal parallel algorithm for dynamic expression evaluation and its applications. *Foundations of software technology and theoretical computer science* (New Delhi, 1986), 453–469, *Lecture Notes in Comput. Sci.*, 241, Springer, Berlin-New York, 1986. (Summary) **89a:68087** 68Q20 (68Q10, 68Q45)
- (with Israeli, A.; Rytter, Wojciech) Parallel  $O(\log n)$  time edge-colouring of trees and Halin graphs. *Inform. Process. Lett.* **27** (1988), no. 1, 43–51. (Summary) **89a:68100** 68Q25 (05C05, 05C15, 68R10)
- Gibbons, Gary** (with Ruback, Peter) The hidden symmetries of multicentre metrics. *Comm. Math. Phys.* **115** (1988), no. 2, 267–300. (N. J. Hitchin) **89j:53066** 53C80 (53C20, 58F17, 70G05, 81E13)
- (with Breitenlohner, Peter; Maison, Dieter) 4-dimensional black holes from Kaluza-Klein theories. *Comm. Math. Phys.* **120** (1988), no. 2, 295–333. (K. P. Tod) **89j:83018** 83C20 (83E15)
- (with Bouchiat, C.) Nonintegrable quantum phase in the evolution of a spin-1 system: a physical consequence of the nontrivial topology of the quantum state-space. (French summary) *J. Physique* **49** (1988), no. 2, 187–199. (H. Hogreve) **89i:81041** 81C99 (81B05)
- (with Olivier, Dominique; Ruback, Peter; Valent, G.) Multicentre metrics and harmonic superspace. *Nuclear Phys. B* **296** (1988), no. 3, 679–696. (R. S. Ward) **89b:83034** 83C20 (53C25, 53C55, 53C80)
- (with Maeda, Kei-ichi) Black holes and membranes in higher-dimensional theories with dilaton fields. *Nuclear Phys. B* **298** (1988), no. 4, 741–775. (Markku Lehto) **89d:83064** 83E15 (83E50, 83F05)
- (with Comtet, A.) Bogomol'nyi bounds for cosmic strings. *Nuclear Phys. B* **299** (1988), no. 4, 719–733. (Asghar Qadir) **89h:83042** 83F05 (81E30, 83C15)
- Sobolev's inequality, Jensen's theorem and the mass and entropy of the universe. *Nuclear Phys. B* **310** (1988), no. 3–4, 636–642. (S. Deser) **89k:83083** 83F05
- mesterton-Gibbons, M.** see **Mesterton-Gibbons, M.**
- Gibbons, Robert Scott** (with Crampton, P.; Klempner, P.) Erratum: "Dissolving a partnership efficiently" [Econometrica **55** (1987), no. 3, 615–632; MR 88f:90018]. *Econometrica* **56** (1988), no. 6, 1493. (Editors) **89j:90012** 90A07 (90A05)
- Gibbs, Josiah Willard** see **Correspondence: Wald, František**, **89f:01082**; **Knudsen, Ole**, **89h:01070** and **Klein, Martin J.**, **89j:01043**
- Gibert, Jacek** Functional programming with combinators. *J. Symbolic Comput.* **4** (1987), no. 3, 269–293. (Summary) **89a:68019** 68N05 (03B40, 03B70, 68Q40, 68Q55)
- Gibert, Steve** (with Mukherjee, Arunava) Nonnegative idempotent kernels. *J. Math. Anal. Appl.* **135** (1988), no. 1, 326–341. (Di He Hu) **89m:60149** 60J05 (60J35)
- Gilbert, Claudio** (with Franceschini, Valter; Nicolini, Marco) Common periodic behavior in larger and larger truncations of the Navier-Stokes equations. *J. Statist. Phys.* **50** (1988), no. 5–6, 879–896. (Summary) **89f:76032** 76D05 (58F14, 58F22, 76–08, 76E30)
- Gibiat, V.** Phase space representations of acoustical musical signals. *J. Sound Vibration* **123** (1988), no. 3, 529–536. (Summary) **89i:58085** 58F13 (58F40, 92A27)
- Giblin, Peter J.** (with Bruce, James William) ★ Кривые и особенности. (Russian) [Curves and singularities] Геометрическое введение в теорию особенностей. [A geometric introduction to singularity theory] Translated from the English by I. G. Shcherbak. Translation edited and with a preface by V. I. Arnol'd. Современная Математика: Вводные Курса. [Contemporary Mathematics: Introductory Courses] "Mir", Moscow, 1988, 264 pp. ISBN 5-03-001194-3 (Editors) **89b:58023** 58C27
- Gibson, Carol** see **Dictionary: Mathematics, Facts on File**, **89i:00029**
- Gibson, Diana** (with Seneta, E.) Monotone infinite stochastic matrices and their augmented truncations. *Stochastic Process. Appl.* **24** (1987), no. 2, 287–292. (Summary) **89h:60110** 60J10 (15A51)
- Gibson, Gavin J.** Direct limit systems and flat dimension of generalized fractions. *Quart. J. Math. Oxford Ser. (2)* **38** (1987), no. 151, 313–319. (W. V. Vasconcelos) **89a:13008** 13B30 (13D05)
- (with O'Carroll, L.) Direct limit systems, generalized fractions and complexes of Cousin type. *J. Pure Appl. Algebra* **54** (1988), no. 2–3, 249–259. (W. V. Vasconcelos) **89j:13013** 13D25 (13B30, 13H10)
- Gibson, J. K.** A generalisation of Brickell's algorithm for fast modular multiplication. *BIT* **28** (1988), no. 4, 755–763. (Ricardo Baeza-Yates) **89m:68058** 68Q25 (68P25, 68U99)
- Gibson, James S.** (with Rosen, I. G.) Approximation of discrete-time LQG compensators for distributed systems with boundary input and unbounded measurement. *Automatica—J. IFAC* **24** (1988), no. 4, 517–529. (Summary) **89g:93090** 93B50 (49D40, 93B40, 93C05, 93C20, 93C25, 93C35)
- (with Jabbari, Faryar) Vector-channel lattice filters and identification of flexible structures. *IEEE Trans. Automat. Control* **33** (1988), no. 5, 448–456. (Not in MR) **93E12** (93E11)
- (with Rosen, I. G.) Numerical approximation for the infinite-dimensional discrete-time optimal linear-quadratic regulator problem. *SIAM J. Control Optim.* **26** (1988), no. 2, 428–451. (T. Kaczorek) **89a:93020** 93B40 (65J10, 93B50, 93C25, 93C55)
- Gibson, Margaret** Adelard of Bath. *Adelard of Bath*, 7–16, *Warburg Inst. Surveys Texts, XIV*, Warburg Inst., London, 1987. (see **89c:01017**) 01A70 (01A35)
- Gibson, Peter M.** (with Dow, Stephen J.) Permanents of  $d$ -dimensional matrices. *Linear Algebra Appl.* **90** (1987), 133–145. (G. P. Egorychev) **89a:15004** 15A15
- Gibson, Richard G.** (with Roush, F. W.) A characterization of extendable connectivity functions. *Real Anal. Exchange* **13** (1987/88), no. 1, 214–222. (Jack B. Brown) **89b:54016** 54C08 (26A21, 54C30)
- Gichev, T. R.** Some properties of the fundamental matrix of a singularly perturbed linear system in a critical case. (Russian. English and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 1, 19–30 (1987). (Frederick A. Howes) **89b:34086** 34E15 (34A30, 34E20)
- Controllability of a singularly perturbed object in some critical cases. (Russian. English and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 1, 31–42 (1987). (Françoise Berquier) **89g:93004** 93B05 (34E15)
- Singular perturbations in an optimal control problem with fixed ends. (Russian. English and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 2, 9–20 (1987). (Asen L. Dontchev) **89g:93036** 93B35 (34E15, 93C15)
- A singularly perturbed linear system in a critical case. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 11, 1851–1861, 2019. (Summary) **89k:34089** 34E05 (34E15)
- Gichev, V. M.** (with Dobrovol'skii, S. M.) On some characteristic properties of Bloch functions. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 1, 61–64. (Grigore Stefan Salăgean) **89c:32008** 32A17
- Gidas, B.** Consistency of maximum likelihood and pseudolikelihood estimators for Gibbs distributions. *Stochastic differential systems, stochastic control theory and applications* (Minneapolis, Minn., 1986), 129–145, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (M. M. Siddiqui) **89f:62026** 62F12 (60K35, 82A05)
- Giddings, Steven B.** String field theory and the geometry of moduli space. *Mathematical aspects of string theory* (San Diego, Calif., 1986), 95–126, *Adv. Ser. Math. Phys.*, 1, World Sci. Publishing, Singapore, 1987. (see **89m:81001**) 32G15 (14H15, 81E30)
- (with Nelson, Philip C.) Torsion constraints and super Riemann surfaces. *Phys. Rev. Lett.* **59** (1987), no. 23, 2619–2622. (Pankaj Topiwala) **89d:83073** 83E50 (32G15, 58A50, 81E99)
- (with Nelson, Philip C.) The geometry of super Riemann surfaces. *Comm. Math. Phys.* **116** (1988), no. 4, 607–634. (Thomas Schmitt) **89e:58010** 58A50 (14H15, 32G15)
- (with Nelson, Philip C.) Line bundles on super Riemann surfaces. *Comm. Math. Phys.* **118** (1988), no. 2, 289–302. (Mathias Peterzell) **89j:32059** 32L25 (58A50)
- (with Freedman, Daniel Z.; Shapiro, Joel A.; Thorn, Charles B.) The nonplanar one-loop amplitude in Witten's string field theory. *Nuclear Phys. B* **298** (1988), no. 2, 253–322. (Marc Henneaux) **89c:81119** 81E99 (81E30)
- (with Strominger, Andrew) Loss of coherence and determination of coupling constants in quantum gravity. *Nuclear Phys. B* **307** (1988), no. 4, 854–866. (C. Gauthier) **89i:83036** 83C45 (81B05, 83C47, 83F05)
- Conformal techniques in string theory and string field theory. *Phys. Rep.* **170** (1988), no. 3, 167–212. (Olaf Lechtenfeld) **89k:81143** 81E99 (14H15, 32G15, 81E30, 81E40)
- (with Bowick, M. J.; Harvey, Jeffrey A.; Horowitz, Gary T.; Strominger, Andrew) Axionic black holes and an Aharonov-Bohm effect for strings. *Phys. Rev. Lett.* **61** (1988), no. 25, 2823–2826. (C. Gauthier) **89j:83045** 83C47 (81G25, 83C99)
- Giegerich, Robert** Composition and evaluation of attribute coupled grammars. *Acta Inform.* **25** (1988), no. 4, 355–423. (John Shawe-Taylor) **89i:68075** 68Q50 (68N20, 68Q55)
- Gielera, Roman** Vacuum energy density in  $\mathcal{P}(\varphi)_2$  theories. Independence of (nonclassical) boundary conditions (modified version). *Rep. Math. Phys.* **24** (1986), no. 2, 145–154.



- (Michael Röckner) **89k:81067** 81E08 (46N05, 82A05)
- Some Gibbs aspects of the sine-Gordon transformation. (Russian. English summary) *Theor. Mat. Fiz.* **73** (1987), no. 3, 323–334. (Summary) **89f:60129** 60K35 (82A05, 82A15, 82A31)
- Trigonometric perturbation of the Gaussian generalized fields. Small coupling results. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **48** (1988), no. 3, 205–228. (H. Araki) **89i:60106** 60G60 (81E08, 82A05)
- Free energy density for continuous systems with and without superstability assumptions. *J. Math. Phys.* **30** (1989), no. 1, 115–133. (Hans-Otto Georgii) **89k:82011** 82A05
- Glerer, A. Spatial organization and genetic information in brain development. *Biol. Cybernet.* **59** (1988), no. 1, 13–21. (Not in MR) **92A09**
- Glerer, François Geometric approach to the (BRS)-differential algebras of supersymmetric Yang-Mills theories. *Classical Quantum Gravity* **5** (1988), no. 1, L27–L34. (Marc Henneaux) **89k:53069** 53C80 (17B65, 81E13)
- (with McCabe, John Francis) 2d SUGRA: supersymmetric form of the effective action leading to the conformal anomaly. *Phys. Lett. B* **202** (1988), no. 3, 339–342. (Roger Brooks) **89c:83051** 83E50 (81E20)
- Glering, Oswald Über die Sehnenrößen der Raumkurven. (English summary) [On the bisecants of developable ruled surfaces of space curves] *Proceedings of the Congress of Geometry (Thessaloniki, 1987)*, 27–45, Aristotle Univ. Thessaloniki, Thessaloniki, 1988. (H. Brauner) **89f:53002** 53A04 (53A25)
- Eine Variante des Bilinski-Modells der ebenen hyperbolischen Geometrie. (English summary) [A variant of the Bilinski model of plane hyperbolic geometry] *J. Geom.* **31** (1988), no. 1–2, 79–88. (Cyril W. L. Garner) **89f:51079** 51M10 (51N15)
- Gliesch, Christoph Control analysis of biochemical pathways: a novel procedure for calculating control coefficients, and an additional theorem for branched pathways. *J. Theoret. Biol.* **134** (1988), no. 4, 451–462. (Summary) **89j:92028** 92A09
- Glietzel, Heike (with Bohne, Erhart) Trägerflächen isophotischer Flächenelemente aus Scharen gleicher Stellung bei Zentralbeleuchtung ( $Q: v_4(L, g)$ ). [Support surfaces of isophotic area elements from linear systems with equal position under central illumination ( $Q: v_4(L, g)$ )] *Wiss. Z. Pädagog. Hochsch. "Karl Friedrich Wilhelm Wander" Dresden* **21** (1987), 9–16. (H. Brauner) **89k:53002** 53A05 (51N35)
- Glier, Gerhard A compact semilattice on the Hilbert cube with no interval homomorphism. *Proc. Amer. Math. Soc.* **101** (1987), no. 4, 592–594. (Jimmie D. Lawson) **89c:06008** 06B30 (22A26, 54H12)
- Integral representations of linear functionals on function modules. *Rocky Mountain J. Math.* **17** (1987), no. 3, 545–554. (James Bell Cooper) **89f:46052** 46E15 (46B10, 46G99, 46H25, 46M99)
- (with Shekhtman, Boris) On spaces with large Chebyshev subspaces. *J. Approx. Theory* **54** (1988), no. 2, 155–161. (Marco P. Baronti) **89j:41020** 41A20
- Gliesbrecht, F. G. Correction to: "Analysis of data from incomplete block designs" [*Biometrics* **42** (1986), no. 2, 437–448]. *Biometrics* **44** (1988), no. 2, 633. (Not in MR) **82K10**
- Giesy, Daniel P. (with Schy, Albert A.) Multicriteria optimization methods for design of aircraft control systems. *Multicriteria optimization in engineering and in the sciences*, 225–262, *Math. Concepts Methods Sci. Engrg.*, 37, Plenum, New York-London, 1988. (see **89f:90171**) **90C31** (70Q05)
- Giffen, Charles H. Loop spaces for the  $Q$ -construction. *J. Pure Appl. Algebra* **52** (1988), no. 1–2, 1–30. (A. J. Berrick) **89k:18021** 18F25 (19D06)
- Giga, Yoshiyuki (with Aviles, Patricia) A mathematical problem related to the physical theory of liquid crystal configurations. *Miniconference on geometry and partial differential equations*, 2 (Canberra, 1986), 1–16, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 12, Austral. Nat. Univ., Canberra, 1987. (J. E. Brothers) **89c:49005** 49A21 (49B21, 82A57)
- (with Friedman, Avner) A single point blow-up for solutions of semilinear parabolic systems. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **34** (1987), no. 1, 65–79. (From the introduction) **89b:35066** 35K55 (35B40)
- (with Kambe, Tsutomu) Large time behavior of the vorticity of two-dimensional viscous flow and its application to vortex formation. *Comm. Math. Phys.* **117** (1988), no. 4, 549–568. (Summary) **89k:35182** 35Q10 (35K10, 76D05, 76E99)
- (with Miyakawa, Tetsuro; Osada, Hirofumi) Diffusion of vortices in planar Navier-Stokes flow. Mathematical analysis of fluid and plasma dynamics, I (Kyoto, 1986). *Sirakaisaikienkyōshō Kōkyōroku* No. 656 (1988), 81–104. (see **89g:76004**) **76D05** (35Q10)
- Gigante, Giuliana The cohomology of pseudo-Hermitian manifolds with torsion zero. (Italian. English summary) *Riv. Mat. Univ. Parma* (4) **12** (1986), 157–165 (1987). (A. Aeppli) **89a:53076** 53C55 (32F30, 58A14)
- Symmetries on compact pseudo-Hermitian manifolds. (Italian summary) *Rend. Circ. Mat. Palermo* (2) **36** (1987), no. 1, 148–157. (J. R. Vanstone) **89f:53099** 53C55 (32F25)
- Gigliotti, Gary Anthony The conflict between naive and sophisticated choice as a form of the "liberal paradox". *Theory and Decision* **24** (1988), no. 1, 35–42. (Summary) **89a:90005** 90A05
- Gihman, J. I. see Gikhman, I. I.
- Gijbels, I. (with Veraverbeke, N.) Weak asymptotic representations for quantiles of the product-limit estimator. *J. Statist. Plann. Inference* **18** (1988), no. 2, 151–160. (A. P. Basu) **89a:62095** 62G05 (62G20, 62N05)
- (with Janssen, Paul; Veraverbeke, N.) Weak and strong representations for trimmed  $U$ -statistics. *Probab. Theory Related Fields* **77** (1988), no. 2, 179–194. (N. C. Weber) **89b:60074** 60F15 (60F05, 60F17, 62G20)
- Gikhman, I. I. On the representation of functionals of a Wiener sheet by stochastic integrals. *Stochastic optimization (Kiev, 1984)*, 37–49, *Lecture Notes in Control and Inform. Sci.*, 81, Springer, Berlin-New York, 1986. (Marta Sanz Solé) **89b:60133** 60H05 (60J65)
- Gikhman, I. I. (with Mestechkina, T. M.) The Cauchy problem for a parabolic equation with coefficients of "white noise" type. (Russian) *Theory of random processes*, No. 15 (Russian), 19–28, 117, "Naukova Dumka", Kiev, 1987. (G. A. Sokhadze) **89b:60150** 60H20 (35K15, 35R60)
- Gómez Gil, Javier see Gómez Gil, Javier
- Gil, L. (with Couillet, P.; Lega, J.) Transitions in systems far from equilibrium: a Ginzburg-Landau approach. *Chaos and complexity (Torino, 1987)*, 99–112, *World Sci. Publishing, Singapore*, 1988. (Iuliana Oprea) **89m:76036** 76E15 (58F13, 80A50)
- (with Lega, J.) Defects in waves. *Propagation in systems far from equilibrium (Les Houches, 1987)*, 164–175, *Springer Ser. Synergetics*, 41, Springer, Berlin-New York, 1988. (see **89f:76003**) **76E15** (58F14, 80A32, 82A99)
- Gil, M. I. Estimates for the domain of stability and time of a transient process of a nonlinear distributed system. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems (Irkutsk, 1985)* (Russian), 144–149, 325, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (P. Talpalaru) **89b:34044** 34D20 (34G20, 35B35, 45K05)
- (with Shargorodskaya, L. L.) Conditions for the boundedness of solutions and existence of limit cycles for scalar differential equations of a certain type. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 5, 6–10; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 5, 1–7. (Nicolae Lungu) **89k:34051** 34C11 (34C05)
- Gil, María Angeles (with Pérez, Rigoberto; Gil Álvarez, Pedro Ángel) The mutual information. Estimation in the sampling without replacement. *Kybernetika (Prague)* **23** (1987), no. 5, 407–419. (Alexander V. Gnedin) **89a:94012** 94A17 (62B10)
- (with Caso, C.) A note on the estimation of the mutual information in the stratified sampling. (Italian summary) *Metron* **45** (1987), no. 1–2, 295–301. (Summary) **89b:62025** 62D05 (62B10)
- (with Garrido, J. M. A.; Gil Álvarez, Pedro Ángel) On a principle of choice among Bayes actions and its application for comparing experiments. (French summary) *RAIRO Rech. Opér.* **21** (1987), no. 3, 259–279. (I. J. Good) **89a:62025** 62C10 (62B15, 90A06, 90A10)
- (with Brezmes Brezmes, T.; Gil Álvarez, Pedro Ángel) Variance as an unquietness measure, in the two-dimensional case. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* **81** (1987), no. 1, 91–101. (Summary) **89a:62013** 62A99 (62B10)
- (with Fernández, Manuel J.; Martínez, I.) The choice of sample size in estimating mutual information. *Appl. Math. Comput.* **27** (1988), no. 3, part I, 201–216. (S. Gabler) **89j:62014** 62D05
- (with Martínez, I.; Pérez, Rigoberto) A note on the comparison of the quadratic and Shannon's mutual information. *Kybernetika* **17** (1988), no. 2, 49–54. (Not in MR) **94A17**
- Bayesian decision making with previous probabilistic uncertainty and actual fuzzy imprecision. *Kybernetika* **17** (1988), no. 3, 52–66. (Peter Wakker) **89j:62014** 62C10 (03E72, 62F10, 94D05)
- (with Casals, M. R.) An operative extension of the likelihood ratio test from fuzzy data. *Statist. Hefte* **29** (1988), no. 3, 191–203. (Summary) **89m:62034** 62P99 (03E72)
- Gil, Pedro see Gil Álvarez, Pedro Ángel
- Gilbert, A. (with Sorrette, D.; Vanneste, C.) Rupture in random media. *Random fluctuations and pattern growth (Cargèse, 1988)*, 161–169, *NATO Adv. Sci. Inst. Ser. E: Appl. Sci.*, 157, Kluwer Acad. Publ., Dordrecht, 1988. (see **89j:00034**) **82A42** (73M05, 73S99, 82A43)
- Gilain, Christian Condorcet et le calcul intégral. [Condorcet and integral calculus] *Sciences à l'époque de la Révolution Française*, 87–147, *Lib. Bicentenaire Révolution Française*, Lib. Sci. Tech. Albert Blanchard, Paris, 1988. (see **89m:01050**) **01A50**
- Gil Álvarez, M. A. see Gil, María Angeles
- Gil Álvarez, Pedro Ángel (with Gil, María Angeles; Pérez, Rigoberto) The mutual information. Estimation in the sampling without replacement. *Kybernetika (Prague)* **23** (1987), no. 5, 407–419. (Alexander V. Gnedin) **89a:94012** 94A17 (62B10)
- (with Gil, María Angeles; Garrido, J. M. A.) On a principle of choice among Bayes actions and its application for comparing experiments. (French summary) *RAIRO Rech. Opér.* **21** (1987), no. 3, 259–279. (I. J. Good) **89a:62025** 62C10 (62B15, 90A06, 90A10)
- (with Gil, María Angeles; Brezmes Brezmes, T.) Variance as an unquietness measure, in the two-dimensional case. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* **81** (1987), no. 1, 91–101. (Summary) **89a:62013** 62A99 (62B10)
- Gilat, David On the best order of observation in optimal stopping problems. *J. Appl. Probab.* **24** (1987), no. 3, 773–778. (Robert Kertz) **89a:60123** 60G40 (90C40, 90D35)
- (with Meilijson, Isaac) A simple proof of a theorem of Blackwell & Dubins on the maximum of a uniformly integrable martingale. *Séminaire de Probabilités, XXII*, 214–216, *Lecture Notes in Math.*, 1321, Springer, Berlin-New York, 1988. (Dominique Lépine) **89j:60094** 60G44
- On the ratio of the expected maximum of a martingale and the  $L_p$ -norm of its last term. *Israel J. Math.* **63** (1988), no. 3, 270–280. (Jia Gang Wang) **89m:60102** 60G42 (60G46)
- (with Aaronson, Jon; Keane, Michael; de Valk, Vincent) An algebraic construction of a class of one-dependent processes. *Ann. Probab.* **17** (1989), no. 1, 128–143. (P. Laurie Davies) **89m:60084** 60G10 (28D05)
- Gilbert, Andrew D. Spiral structures and spectra in two-dimensional turbulence. *J. Fluid Mech.* **193** (1988), 475–497. (Summary) **89k:76060** 76F05
- Gilbert, D. J. (with Pearson, D. B.) On subordinacy and analysis of the spectrum of one-dimensional Schrödinger operators. *J. Math. Anal. Appl.* **128** (1987), no. 1, 30–56. (Peter A. Clarkson) **89a:34033** 34B25 (34B20, 47E05)
- Gilbert, E. G. (with Keerthi, S. S.) Optimal infinite-horizon feedback laws for a general class of constrained discrete-time systems: stability and moving-horizon approximations. *J. Optim. Theory Appl.* **57** (1988), no. 2, 265–293. (Michael E. Fisher) **89d:93082** 93D15 (93C50, 93C55)
- Gilbert, E. N. An optimal minimax algorithm. *Ann. Oper. Res.* **4** (1985), no. 1–4, 103–121. (Summary) **89b:90257** 90D45 (68Q25)
- Gilbert, Gerald (with Johnston, Desmond) Equivalence of the Kallosh and Carlip quantizations of the Green-Schwarz action for the heterotic string. *Phys. Lett. B* **205** (1988), no. 2–3, 273–280. (Summary) **89d:81097** 81E99 (81E30)
- Gilbert, J. E. (with Davis, K. M.; Kunze, R. A.) Harmonic analysis and exceptional representations of semisimple groups. *Miniconferences on harmonic analysis and operator algebras (Canberra, 1987)*, 58–78, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (Michael Cowling) **89j:22026** 22E45 (22E30)
- (with Davis, K. M.; Kunze, R. A.) Invariant differential operators in harmonic analysis on real hyperbolic space. *Miniconferences on harmonic analysis and operator algebras (Canberra, 1987)*, 79–91, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (A. Korányi) **89j:22027** 22E45 (43A85, 58G05)
- Gilbert, Jean Charles A step-size selection procedure for equality constrained optimization. (French summary) *Analysis and optimization of systems (Antibes, 1988)*, 309–320, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89e:90176** 90C30 (65K05)

- Mise à jour de la métrique dans les méthodes de quasi-Newton réduites en optimisation avec contraintes d'égalité. (English summary) [Update of the metric in reduced quasi-Newton methods in optimization with equality constraints] *RAIRO Model. Math. Anal. Numér.* 22 (1988), no. 2, 251–288. (Pierre Lorian) **89g:90191** 90C30 (65K05)
- Gilbert, John R.** Some nested dissection order is nearly optimal. *Inform. Process. Lett.* 26 (1988), no. 6, 325–328. (Dieter Kratsch) **89b:68054** 68R10 (05C99, 68Q25)
- (with Zmijewski, Earl) A parallel algorithm for sparse symbolic Cholesky factorization on a multiprocessor. *Parallel Comput.* 7 (1988), no. 2, 199–210. (Summary) **89d:65049** 65F50 (65W05)
- (with Peierls, Tim) Sparse partial pivoting in time proportional to arithmetic operations. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 5, 862–874. (Summary) **89f:65034** 65F05 (65F50, 68Q25)
- Gilbert, N. D.** On the fundamental cat<sup>n</sup>-group of an  $n$ -cube of spaces. *Algebraic topology, Barcelona, 1986, 124–139, Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (Richard John Steiner) **89a:55025** 55Q30
- Gilbert, Richard C.** Companion matrices with integer entries and integer eigenvalues and eigenvectors. *Amer. Math. Monthly* 95 (1988), no. 10, 947–950. (Morris Newman) **89j:15030** 15A36 (15A21)
- Gilbert, Robert P.** Transmutations occurring in ocean acoustics. *Oakland conference on partial differential equations and applied mathematics (Rochester, Mich., 1986)*, 74–94, *Pitman Res. Notes Math. Ser.*, 154, Longman Sci. Tech., Harlow, 1987. (V. H. Weston) **89c:76088** 76Q05 (35A25, 86A05)
- (with Duston, Mark D.; Verma, Ghasi R.; Wood, David H.) Direct generation of normal modes by transmutation theory. *Computational acoustics, Vol. 2 (New Haven, Conn., 1986)*, 389–402, *North-Holland, Amsterdam-New York*, 1988. (Summary) **89b:76019** 76Q05 (35C99)
- (with Buchanan, J. L.) Hypermembrane shells. *Trends in applications of mathematics to mechanics (Wassenaar, 1987)*, 261–272, Springer, Berlin-New York, 1988. (see **89g:58004**) 73L99 (30G20, 35J45, 73C03, 73L05)
- (with Begehr, H.) Pseudohyperanalytic functions. *Complex Variables Theory Appl.* 9 (1988), no. 4, 343–357. (Manfred W. Kracht) **89g:30085** 30G20 (35F05)
- (with Magnanini, R.) A moving boundary problem associated with flow through a porous medium. *Nonlinear Anal.* 12 (1988), no. 2, 109–119. (Antonio Fasano) **89d:35186** 35R35 (35K99, 76S05)
- (with Xu, Yong Zhi; Wood, David H.) Construction of approximations to acoustic Green's functions for nonhomogeneous oceans using transmutation. *Wave Motion* 10 (1988), no. 4, 285–297. (Summary) **89i:76081** 76Q05 (35J05, 35R30, 86A05)
- Gilbert, William J.** Complex bases and fractal similarity. (French summary) *Ann. Sci. Math. Québec* 11 (1987), no. 1, 65–77. (M. Mendes France) **89a:11017** 11A63 (11K16)
- (with Vrscaj, E. R.) Extraneous fixed points, basin boundaries and chaotic dynamics for Schröder and König rational iteration functions. *Numer. Math.* 52 (1988), no. 1, 1–16. (L. S. O. Liverpool) **89b:30026** 30D05 (58F08, 58F13, 65E05, 65H05)
- Gilboa, Itzhak** (with Schmiedler, David) Information dependent games. Can common sense be common knowledge? *Econom. Lett.* 27 (1988), no. 3, 215–221. (Hans Peters) **89j:90284** 90D10 (90D40, 94A99)
- A combination of expected utility and maximin decision criteria. *J. Math. Psych.* 32 (1988), no. 4, 405–420. (Rakesh K. Sarin) **89m:90004** 90A05 (90A10)
- Gil'burd, M. M.** Heuristic methods for constructing the median in a problem of group choice. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 7, 131–136; translated in *Automat. Remote Control* 49 (1988), no. 7, part 2, 922–926. (Fouad T. Aleskerov) **89i:90009** 90A08
- Gilding, B. H.** The first boundary value problem for  $-u'' = \lambda u^p$ . *J. Math. Anal. Appl.* 128 (1987), no. 2, 419–442. (I. Kiguradze) **89b:34045** 34B15
- The occurrence of interfaces in nonlinear diffusion-advection processes. *Arch. Rational Mech. Anal.* 100 (1988), no. 3, 243–263. (Peter Knabner) **89f:35104** 35K55 (35R35, 76R50, 76S05)
- (with Herrero, M. A.) Localization and blow-up of thermal waves in nonlinear heat conduction with peaking. *Math. Ann.* 282 (1988), no. 2, 223–242. (Victor A. Galaktionov) **89m:35108** 35K55 (35B05, 35B40, 35K60)
- Gilep, A. I.** Integral equations of the first kind with a logarithmic kernel. (Russian) *Differential equations and mathematical physics (Russian)*, 106–109, *Kulbyshev. Gos. Ped. Inst., Kuybyshev*, 1985. (see **89f:35006**) 45E99
- Giler, S.** (with Kosinski, P.; Rembicki, J.; Masłanka, P.) On  $SO(p, q)$  pure spinors. *Acta Phys. Polon. B* 18 (1987), no. 8, 713–727. (Horia Scutaru) **89c:53013** 53A50 (22E70, 53C30, 81D27)
- Generalised WKB formulae. *J. Phys. A* 21 (1988), no. 4, 909–930. (Xue-Ping Wang) **89e:81029** 81C15
- Giles, David E. A.** (with Srivastava, Virender Kumar) ★ Seemingly unrelated regression equations models. Estimation and inference. *Statistics: Textbooks and Monographs*, 80, Marcel Dekker, Inc., New York, 1987. xiv+374 pp. ISBN 0-8247-7610-0 (R. W. Farebrother) **89e:62141** 62P20 (62J05)
- (with Clarke, Judith A.; Wallace, T. Dudley) Preliminary-test estimation of the error variance in linear regression. *Econometric Theory* 3 (1987), no. 2, 299–304. (Kajal Lahiri) **89d:62111** 62P20 (62J05)
- (with Ullah, A.) The positive-part Stein-rule estimator and tests of linear hypotheses. *Econom. Lett.* 26 (1988), no. 1, 49–51. (Summary) **89e:62087** 62J05 (62F05)
- Giles, J. R.** (with Borwein, J. M.; Fitzpatrick, Simon) The differentiability of real functions on normed linear space using generalized subgradients. *J. Math. Anal. Appl.* 128 (1987), no. 2, 512–534. (W. W. Breckner) **89b:58027** 58C20 (26E15, 46G05, 49A52, 90C48)
- Giles, Robin** The concept of grade of membership. Interpretations of grades of membership. *Fuzzy Sets and Systems* 25 (1988), no. 3, 297–323. (Siegfried Gottwald) **89d:03022** 03B52 (03E05, 03E72)
- A utility-valued logic for decision making. *Internat. J. Approx. Reason.* 2 (1988), no. 2, 113–141. (Summary) **89h:90007** 90A05 (03B60)
- Gillio, A.** (with da Rocha Filho, G.) Compacts associés à des sous-espaces de  $C(K)$ . [Compact spaces associated with subspaces of  $C(K)$ ] *Analyse harmonique: groupe de travail sur les espaces de Banach invariants par translation, Exp. No. III*, 15 pp., *Publ. Math. Orsay*, 87-2, Univ. Paris XI, Orsay, 1987. (W. Govaerts) **89b:46034** 46E15 (54C35)
- Gilkey, Peter B.** Leading terms in the asymptotics of the heat equation. *Geometry of random motion (Ithaca, N.Y., 1987)*, 79–85, *Contemp. Math.*, 73, Amer. Math. Soc., Providence, RI, 1988. (Steven Rosenberg) **89h:58199** 58G25 (58G11)
- The eta invariant and equivariant Spin<sup>c</sup> bordism for spherical space form groups. *Canad. J. Math.* 40 (1988), no. 2, 392–428. (Italo José DeJter) **89k:57052** 57R20 (57R90, 58G10)
- The eta invariant and the equivariant unitary bordism of spherical space form groups. *Compositio Math.* 65 (1988), no. 1, 33–50. (Howard D. Rees) **89g:58193** 58G10 (55N22)
- (with Seitz, Gary M.) Some representations of exceptional Lie algebras. *Geometries and groups (Noordwijkerhout, 1986)*. *Geom. Dedicata* 25 (1988), no. 1-3, 407–416. (G. E. Wall) **89h:20056** 20G05 (17B25)
- Gill, D. S.** (with Siotani, Minoru) On randomization in multivariate analysis of variance. *J. Statist. Plann. Inference* 17 (1987), no. 2, 217–226. (John Kent) **89h:62087** 62H10 (62J10)
- Gill, Jelena B.** (with Petrović, Ljiljana) Causality and stochastic dynamic systems. *SIAM J. Appl. Math.* 47 (1987), no. 6, 1361–1366. (Norman P. Coleman, Jr.) **89d:93090** 93E03 (93B15)
- Gill, John** Limit periodic iteration. *Appl. Numer. Math.* 4 (1988), no. 2-4, 297–308. (W. J. Thron) **89f:54061** 54E50 (30D05, 40A15, 54H25, 58F08)
- Compositions of analytic functions of the form  $F_n(z) = F_{n-1}(f_n(z))$ ,  $f_n(z) \rightarrow f(z)$ . *J. Comput. Appl. Math.* 23 (1988), no. 2, 179–184. (J. Matkowski) **89i:30028** 30D05 (58F08, 65B99)
- Gill, Philip E.** (with Murray, Walter; Saunders, Michael A.; Wright, Margaret H.) Recent developments in constrained optimization. Special issue on emerging paradigms in applied mathematical modelling. *J. Comput. Appl. Math.* 22 (1988), no. 2-3, 257–270. (Kang Hoh Phua) **89j:90218** 90C30
- Gill, R. D.** A note on some methods for regression analysis with incomplete observations. *Sankhyā Ser. B* 48 (1986), no. 1, 19–30. (A. L. Nagar) **89b:62140** 62J05
- (with Schriever, B. F.) Amendment to discussion of paper by L. A. Goodman: "Some useful extensions of the usual correspondence analysis approach and the usual log-linear models approach in the analysis of contingency tables" [*Internat. Statist. Rev.* 54 (1986), no. 3, 243–309]. *Internat. Statist. Rev.* 55 (1987), no. 2, 229. (Not in MR) 62H17
- (with Vardi, Yehuda; Wellner, Jon A.) Large sample theory of empirical distributions in biased sampling models. *Ann. Statist.* 16 (1988), no. 3, 1069–1112. (Kumar Joag-Dev) **89i:62061** 62G05 (60F17)
- Gill, Stanley J.** (with Di Cera, Enrico; Wyman, Jeffries) Canonical formulation of linkage thermodynamics. *Proc. Nat. Acad. Sci. U.S.A.* 85 (1988), no. 14, 5077–5081. (Summary) **89f:92012** 92A08 (92A40)
- Gill, Tepper L.** (with Zachary, Woodford W.) Existence and finite-dimensionality of attractors for the Landau-Lifschitz equations. *Differential equations and mathematical physics (Birmingham, Ala., 1986)*, 134–142, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Muthusamy Lakshmanan) **89f:82005** 82A05 (35Q20, 58F12, 58G99)
- (with Zachary, Woodford W.) Dimension of the universal attractor in spin-wave turbulence. *Phys. Lett. A* 128 (1988), no. 8, 419–423. (Summary) **89d:82160** 82A99
- Gillard, Roland** Relations monomiales entre périodes  $p$ -adiques. [Monomial relations between  $p$ -adic periods] *Invent. Math.* 93 (1988), no. 2, 355–381. (Ehud de Shalit) **89m:11058** 11G15 (11F99, 11G18, 14K22)
- Croissance du nombre de classes dans des  $Z_p$ -extensions liées aux corps quadratiques imaginaires. [Growth of the class number in  $Z_p$ -extensions associated to imaginary quadratic fields] *Math. Ann.* 279 (1988), no. 3, 349–372. (Yūji Kida) **89e:11067** 11R23 (11R29)
- Gille, Jean-Charles** (with Węgrzyn, Stefan; Vidal, Pierre) Le principe de la régénération dans la théorie des systèmes évolutifs. Extrapolations biologiques. (English and Russian summaries) [The principle of regeneration in the theory of evolutive systems. Biological extrapolations] *Bull. Polish Acad. Sci. Tech. Sci.* 34 (1986), no. 1-2, 91–101. (Summary) **89c:92041** 92A12
- (with Węgrzyn, Stefan; Vidal, Pierre) Clonage et principe de la recapitulation dans la théorie des systèmes évolutifs. (English and Russian summaries) [Cloning and the principle of recapitulation in the theory of evolutive systems] *Bull. Polish Acad. Sci. Tech. Sci.* 34 (1986), no. 1-2, 103–109. (Summary) **89c:92047** 92A12
- (with Vidal, Pierre; Węgrzyn, Stefan) Structure hiérarchique et principe de décomposition des systèmes évolutifs. (English and Russian summaries) [Hierarchical structure and the principle of decomposition of evolutive systems] *Bull. Polish Acad. Sci. Tech. Sci.* 34 (1986), no. 1-2, 111–119. (Summary) **89c:92046** 92A12
- (with Węgrzyn, Stefan; Vidal, Pierre) Mutations et théorie des systèmes évolutifs. (English and Russian summaries) [Mutations and the theory of evolutive systems] *Bull. Polish Acad. Sci. Tech. Sci.* 34 (1986), no. 1-2, 121–124. (Summary) **89c:92048** 92A12
- (with Vidal, Pierre; Węgrzyn, Stefan) Mot génétique de système évolutif et programme d'ADN. (English and Russian summaries) [Genetic word of a developmental system and DNA program] *Bull. Polish Acad. Sci. Tech. Sci.* 35 (1987), no. 1-2, 61–70. (Guy Jumarie) **89a:92029** 92A10 (68Q50, 92A12)
- (with Węgrzyn, Stefan; Vidal, Pierre) On some models for developmental systems. IX. Generalized generating word and genetic code. *Internat. J. Systems Sci.* 19 (1988), no. 6, 845–855. (Guy Jumarie) **89c:92028** 92A12 (68Q99, 92A05, 93A13)
- Gillert, H.** (with Amosova, N. N.; Küchler, U.; Maksimov, Yu. D.) ★ Bedieningstheorie. (German) [Queueing theory] Eine Einführung. [An introduction] *Mathematisch-Naturwissenschaftliche Bibliothek [Mathematical-Scientific Library]*, 71. *BSB B. G. Teubner Verlagsgesellschaft, Leipzig*, 1986. 254 pp. ISBN 3-322-00309-4 (Lennart Råde) **89a:60207** 60K25 (90B22)
- Gillespie, John H.** Statistical aspects of the molecular clock. *Evolutionary processes and theory (Israel, 1985)*, 255–272, *Academic Press, Orlando, FL*, 1986. (Summary) **89e:92011** 92A09 (92A12)
- Gillet, H.** (with Bismut, Jean-Michel; Soulé, C.) Torsion analytique et fibrés déterminants holomorphes. (English summary) [Analytic torsion and holomorphic determinant bundles] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 3, 81–84. (N. J. Hitchin) **89b:58201** 58G12 (32G13, 32J25, 32L05)
- (with Messing, William) Cycle classes and Riemann-Roch for crystalline cohomology. *Duke Math. J.* 55 (1987), no. 3, 501–538. (From the introduction) **89c:14025** 14F30 (14C15, 14C40, 14F12)
- (with Grayson, Daniel R.) The loop space of the  $Q$ -construction. *Illinois J. Math.* 31 (1987), no. 4, 574–597. (A. J. Berrick) **89h:18012** 18F25 (19D06)



- (with Soule, C.) Intersection theory using Adams operations. *Invent. Math.* **90** (1987), no. 2, 243–277. (G. Horrocks) **89d:14005** 14C17 (13D05, 14B15, 14C40, 19E08)
- $K$ -theory and intersection theory revisited. *K-Theory* **1** (1987), no. 4, 405–415. (K. R. Coombes) **89c:14014** 14C35 (19E15)
- (with Bismut, Jean-Michel; Soule, C.) Analytic torsion and holomorphic determinant bundles. I. Bott-Chern forms and analytic torsion. *Comm. Math. Phys.* **115** (1988), no. 1, 49–78. (Peter Haskell) **89g:58192a** 58G10 (14F05, 32L10, 58G11)
- (with Bismut, Jean-Michel; Soule, C.) Analytic torsion and holomorphic determinant bundles. II. Direct images and Bott-Chern forms. *Comm. Math. Phys.* **115** (1988), no. 1, 79–126. (Peter Haskell) **89g:58192b** 58G10 (14F05, 32L10, 58G11)
- (with Bismut, Jean-Michel; Soule, C.) Analytic torsion and holomorphic determinant bundles. III. Quillen metrics on holomorphic determinants. *Comm. Math. Phys.* **115** (1988), no. 2, 301–351. (Peter Haskell) **89g:58192c** 58G10 (14F05, 32L10, 58G11)
- Gillett, Raphael Sample size determination in replication attempts: the standard normal  $z$  test. *British J. Math. Statist. Psych.* **39** (1986), no. 2, 190–207. (Title) **89h:62174** 62P15
- Gillman, David (with Schulenberg, J. R.) ★ The propagation of electromagnetic waves through, along, and over a three-dimensional conducting half space. EM waves over a conducting earth. *Methoden und Verfahren der Mathematischen Physik [Methods and Procedures in Mathematical Physics]*, 30. Verlag Peter D. Lang, Frankfurt am Main, 1986. 205 pp. ISBN 3-8204-8905-3 (Rainer Picard) **89g:78001** 78-02 (35P05, 35Q20, 78A40)
- (with Schulenberg, J. R.; Lund, J. R.) Spectral representation of the Laplace transform and related operators in  $L_2(\mathbb{R}_+)$ . *Computational and combinatorial methods in systems theory* (Stockholm, 1985), 69–73. North-Holland, Amsterdam-New York, 1986. (Summary) **89h:47073** 47G05 (44A10)
- (with Li, Zhu; Martin, Clyde Franklin) Discrete observability of the heat equation on bounded domains. *Internat. J. Control* **48** (1988), no. 2, 755–780. (Patrizio Colaneri) **89i:93024** 93B07 (35R30)
- (with Mair, Bernard; Martin, Clyde Franklin) Observability and determination of surface temperature. I. *Internat. J. Control* **48** (1988), no. 6, 2249–2264. (Summary) **89i:93014** 93B07 (35R30, 93C20)
- (with Mair, Bernard; Martin, Clyde Franklin) A convolution method for inverse heat conduction problems. *Math. Systems Theory* **21** (1988), no. 1, 49–60. (K. S. Harinath) **89j:80010** 80A20 (30E25)
- Gillies, Donald A. Was Bayes a Bayesian? (French and Italian summaries) *Historia Math.* **14** (1987), no. 4, 325–346. (H. O. Lancaster) **89a:01061** 01A70 (62-03, 62A15)
- (with Chihara, Charles S.) An interchange on the Popper-Miller argument. *Philos. Stud.* **54** (1988), no. 1, 1–8. (Not in MR) 03B48
- Gilligan, Bruce On the Kobayashi pseudometric reduction of homogeneous spaces. *Canad. Math. Bull.* **31** (1988), no. 1, 45–51. (K. T. Hahn) **89c:32044** 32M10 (32H15)
- Gillman, Richard E. (with Waterland, Robert L.; Yuan, Jian Min; Martens, Craig C.; Reinhardt, William P.) Classical-quantum correspondence in the presence of global chaos. *Phys. Rev. Lett.* **61** (1988), no. 24, 2733–2736. (Summary) **89i:58099** 58F13 (70H05, 81C99)
- Gilliland, Dennis C. (with Karunamuni, Rohana J.) On empirical Bayes with sequential component. *Ann. Inst. Statist. Math.* **40** (1988), no. 1, 187–193. (Albrecht Irie) **89i:62015** 62C10 (62C12)
- Gillis, J. (with Jedwab, J.; Zeilberger, Doron) A combinatorial interpretation of the integral of the product of Legendre polynomials. *SIAM J. Math. Anal.* **19** (1988), no. 6, 1455–1461. (R. K. Raina) **89i:33015** 33A45 (05A10)
- Gilman, A. F. (with Dolan, J. M.; Manickam, S.) A generalization of Everett's result on the Collatz  $3x+1$  problem. *Adv. in Appl. Math.* **8** (1987), no. 4, 405–409. (D. H. Lehmer) **89a:11018** 11A99 (11B83)
- Gilman, E. A. Definability of a distributive lattice by an ordered set of indecomposable elements. (Russian) *Ordered sets and lattices*, No. 9 (Russian), 12–16, 108, Saratov. Gos. Univ., Saratov, 1986. (Anna Romanowska) **89h:06006** 06D10 (06A23)
- Gilman, Jane A characterization of finite subgroups of the mapping-class group. *Combinatorial group theory and topology (Alta, Utah, 1984)*, 433–442, *Ann. of Math. Stud.*, 111, Princeton Univ. Press, Princeton, NJ, 1987. (Summary) **89c:57001** 57M05 (11F06, 20F32, 22E40, 30F35, 57N05)
- On the existence of elliptics in subgroups of  $PSL(2, \mathbb{R})$ : a graphical picture. *Holomorphic functions and moduli*, Vol. II (Berkeley, CA, 1986), 23–27, *Math. Sci. Res. Inst. Publ.*, 11, Springer, New York-Berlin, 1988. (F. Berg) **89j:11037** 11F06 (20H10, 30F35)
- Inequalities in discrete subgroups of  $PSL(2, \mathbb{R})$ . *Canad. J. Math.* **40** (1988), no. 1, 115–130. (Günter Köhler) **89i:11065** 11F06 (20H10)
- Gilman, Robert H. Classes of linear automata. *Ergodic Theory Dynamical Systems* **7** (1987), no. 1, 105–118. (Summary) **89b:68049** 68Q04 (54H20, 58F08)
- Gilmer, Robert (with Nashier, Budh; Nichols, Warren) Generators of ideals containing monics. *Arch. Math. (Basel)* **49** (1987), no. 5, 407–413. (W. Heinzer) **89d:13001** 13A15 (13C10, 13F20)
- (with Heinzer, William) On Jónsson algebras over a commutative ring. *J. Pure Appl. Algebra* **49** (1987), no. 1–2, 133–159. (Marco Fontana) **89a:13004** 13B02 (13E05, 13E15)
- (with Heinzer, William) On the imbedding of a direct product into a zero-dimensional commutative ring. *Proc. Amer. Math. Soc.* **106** (1989), no. 3, 631–636. (James A. Huckaba) **89m:13005** 13B99
- Gilmore, R. Reply to: "Comment on 'Length and curvature in the geometry of thermodynamics'" [Phys. Rev. A (3) **32** (1985), no. 5, 3141; MR 88j:80002] by G. Ruppeiner and "Weinhold's metric geometry and the second law of thermodynamics" [ibid. A (3) **32** (1985), no. 5, 3142–3143; MR 89d:80004a] by K. Horn. *Phys. Rev. A* (3) **32** (1985), no. 5, 3144–3146. (Editors) **89d:80004b** 80A10 (53B50)
- (with Novoselsky, Akiva; Katriel, Jacob) Coefficients of fractional parentage in the  $L$ -S coupling scheme. *J. Math. Phys.* **29** (1988), no. 6, 1368–1388. (G. Vanden Bergh) **89f:81271** 81G35 (81-08, 81G45)
- (with Solari, H. G.) Relative rotation rates for driven dynamical systems. *Phys. Rev. A* (3) **37** (1988), no. 8, 3096–3109. (Summary) **89c:70055** 70K40 (58F13, 58F14, 58F22, 78A60)
- (with Novoselsky, Akiva; Vallières, Michel) Matrix elements of shell model Hamiltonians in multiple angular momentum coupling schemes. *Phys. Rev. C* (3) **38** (1988), no. 3, 1440–1447. (Summary) **89j:81261** 81G30
- see also Horn, K., **89d:80004a**
- Gilmour, A. E. Circulant matrix methods for the numerical solution of partial differential equations by FFT convolutions. *Appl. Math. Modelling* **12** (1988), no. 1, 44–50. (Summary) **89a:65185** 65N99 (65T05, 65W05)
- Gilpin, M. E. (with Taylor, B. L.) Comment on Harpending's and Rogers' model of intergroup selection. *J. Theoret. Biol.* **135** (1988), no. 1, 131–135. (From the text) **89m:92038** 92A12
- van Gils, S. A. (with Drachman, B.; Zhang, Zhi Fen) Abelian integrals for quadratic vector fields. *J. Reine Angew. Math.* **382** (1987), 165–180. (Jinghuang Tian) **89h:34028** 34C05 (14K20, 58F21)
- van Gils, Wil J. (with Tolhuizen, Ludo M. G. M.) A large automorphism group decreases the number of computations in the construction of an optimal encoder/decoder pair for a linear block code. *IEEE Trans. Inform. Theory* **34** (1988), no. 2, 333–338. (John Karlof) **89c:94030** 94B05
- Giltsdorf, Thomas E. The Mackey convergence condition for spaces with webs. *Internat. J. Math. Math. Sci.* **11** (1988), no. 3, 473–483. (H. Jarchow) **89f:46003** 46A05 (46A12)
- Giltsina, David E. Asymptotic approximations of integral manifolds. *SIAM J. Appl. Math.* **47** (1987), no. 5, 929–940. (Urs Kirchgraber) **89g:34063** 34C35 (34C29, 34C30, 34E10)
- Gilson, C. R. (with Barnett, S. M.; Stenholm, S.) Squeezed quantum fluctuations and noise limits in amplifiers and attenuators. Special issue on squeezed light. *J. Modern Opt.* **34** (1987), no. 6–7, 949–963. (see **89m:81213a**) 81K05
- (with Pytkia, M. A.) A procedure for determining exact solutions to certain nonlinear evolution equations. *Wave Motion* **10** (1988), no. 4, 355–363. (Cun-Zheng Wang) **89k:35043** 35C05 (35Q20, 58F07)
- Gilson, James G. Classical fluid aspects of nonlinear Schrödinger equations and solitons. *J. Appl. Math. Simulation* **1** (1987), no. 2, 99–114. (Peter L. Christiansen) **89i:81045** 81C99 (35Q20, 76C99)
- Gilula, Zvi (with Haberman, Shelby J.) The analysis of multivariate contingency tables by restricted canonical and restricted association models. *J. Amer. Statist. Assoc.* **83** (1988), no. 403, 760–771. (Ram Shanmugam) **89i:62090** 62H17
- Gilyazov, S. F. ★ Методы решения линейных некорректных задач. (Russian) [Methods for solving linear ill-posed problems] *Moskov. Gos. Univ., Moscow*, 1987. 120 pp. (I. K. Marek) **89c:65002** 65-02 (47A50, 65J10, 65M30, 65R20)
- (with Morozov, V. A.) Error estimation for the solution of systems of linear algebraic equations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 9, 1416–1418, 1439. (Cs. J. Hegedűs) **89b:65113** 65F99 (65G05)
- Gimadi, E. Kh. Some mathematical models and methods for the planning of large-scale projects. (Russian) *Trudy Inst. Mat. (Novosibirsk)* **10** (1988), *Modeli i Metody Optim.*, 89–115, 264. (Jacek Błazewicz) **89h:90126** 90B35 (05B40)
- Gimarc, Benjamin M. (with Ott, Jane J.) Graphs for chemical reaction networks: applications to the isomerizations among the carboranes. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 285–301, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (see **89b:92038**) 92A40 (05C99)
- Gimbel, John (with Kurtz, David; Lesniak, Linda; Scheinerman, Edward R.; Wierman, John C.) Hamiltonian closure in random graphs. *Random graphs '85 (Poznań, 1985)*, 59–67, *North-Holland Math. Stud.*, 144, North-Holland, Amsterdam-New York, 1987. (Summary) **89h:05051** 05C80
- (with Straight, H. Joseph) Some topics in cochromatic theory. *Graphs Combin.* **3** (1987), no. 3, 255–265. (Summary) **89c:05035** 05C15
- Abelian group labels on graphs. *Ars Combin.* **25** (1988), 87–92. (Stefan A. Burr) **89i:05046** 05C25
- End vertices in interval graphs. *Discrete Appl. Math.* **21** (1988), no. 3, 257–259. (Larry Basenpiller) **89i:05227** 05C75
- Gimelfarb, A. Processes of pair formation leading to assortative mating in biological populations: dynamic interaction model. *Theoret. Population Biol.* **34** (1988), no. 1, 1–23. (Summary) **89f:92060** 92A18 (92A15)
- Giménez, I. (with López Molina, Juan Antonio) On weak and Schauder  $\mathcal{F}$ -bases in topological vector spaces. *Arch. Math. (Basel)* **51** (1988), no. 6, 561–569. (W. H. Ruckle) **89j:46007** 46A35
- Gimigliano, A. Notes on Veronesean surfaces. *The curves seminar at Queen's, Vol. IV* (Kingston, Ont., 1985–1986), Exp. No. I, 20 pp., *Queen's Papers in Pure and Appl. Math.*, 76, Queen's Univ., Kingston, ON, 1986. (R. H. Dye) **89b:14055** 14J26 (14N05)
- Ginalo, P. I. On the equivalence of two optimal control problems. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 28 (1986), 24–27, 131. (Not in MR) 93C15
- Ginchev, Ivan Existence of equilibrium points of a differential game with a retarded dynamical system. *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 663–670, 'Angel Kanchev' Tech. Univ., Ruse, 1987. (Moustafa El-Arabaty) **89c:90123** 90D25 (34K35)
- Geometric-analytic determination of equilibrium states in bimatrix games. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian)* (Sunny Beach (Slivnchev Bryag), 1987), 385–391, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89c:90224** 90D10
- Gindikin, S. G. Manifolds of rational curves and nonlinear equations. *Group theoretical methods in physics*, Vol. 1–3 (Zvenigorod, 1982), 373–383, *Harwood Academic Publ.*, Chur, 1985. (N. J. Hitchin) **89m:32051** 32L25 (32G10, 35Q20, 53C65, 58E15)
- (with Vvedenskaya, N. D.) Image reconstruction based on the Poisson formula for the Radon transform. (Russian) *Linear and nonlinear problems in computer tomography* (Russian), 27–47, *Akad. Nauk SSSR Sibsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1985. (Vitezslav Vesely) **89i:44010** 44A15 (65R10, 92A07)
- A construction of hyper-Kähler metrics. (Russian) *Funktsional. Anal. i Prilozhen.* **20** (1986), no. 3, 82–83. (From the text) **89c:53030** 53C25 (32C10, 32G05, 53C55)
- Differential geometry problems in integral geometry. *Differential geometry and its applications* (Brno, 1986), 53–69, *Math. Appl. (East European Ser.)*, 27, Reidel, Dordrecht-Boston, MA, 1987. (Summary) **89h:22015** 22E30 (22E46, 32L25, 53C65)
- Joseph Louis Lagrange. (Bulgarian) Translated from the Russian by I. Chobanov. *Fiz.-Mat. Spis. B'lgar. Akad. Nauk* **29**(62) (1987), no. 3, 191–198. (Editors) **89d:01031** 01A50 (01A70)
- The enigma named Ramanujan (on the occasion of the 100th anniversary of the birth of Srinivasa Ramanujan). (Bulgarian) Translated from the Russian by G. I. Chobanov. *Fiz.-Mat. Spis. B'lgar. Akad. Nauk* **29**(62) (1987), no. 4, 281–291. (Doru Ștefănescu) **89i:01076** 01A70 (01A60, 11-03, 26-03)

- ★ Tales of physicists and mathematicians. Translated from the Russian and with a note by Alan Shuchat. *Birkhäuser Boston, Inc., Boston, MA*, 1988. xii+157 pp. ISBN 0-8176-3317-0 (Pradip Kumar Majumdar) **89f:01066** 01A70
- see also Gelfand, I. M., **89a:01042b**
- Giné, Evarist** (with Zinn, Joel) A remark on the central limit theorem for random measures and processes. *Probability theory and mathematical statistics, Vol. I* (Vilnius, 1985), 483–487, *VNU Sci. Press, Utrecht*, 1987. (Joseph E. Yukich) **89c:60077** 60F17 (60B12, 60G57)
- (with Andersen, Niels Trolle; Ossander, Mina; Zinn, Joel) The central limit theorem and the law of iterated logarithm for empirical processes under local conditions. *Probab. Theory Related Fields* **77** (1988), no. 2, 271–305. (R. M. Dudley) **89g:60009** 60B12 (60F05, 60F15)
- (with Andersen, Niels Trolle; Zinn, Joel) The central limit theorem for empirical processes under local conditions: the case of Radon infinitely divisible limits without Gaussian component. *Trans. Amer. Math. Soc.* **308** (1988), no. 2, 603–635. (Sándor Csörgő) **89d:60059** 60F17 (60F05)
- Ginepro Tinti, Marina** (with Di Stefano, Maria Elena) The circumference as a special conic, from the viewpoint of Apollonius. (Italian. English summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **116** (1982), no. 1–2, 127–135 (1984). (Eberhard Knobloch) **89a:01006** 01A20
- vernet Ginés, Juan** see Vernet Ginés, Juan
- Ginér, Dimitri** (with Polikarov, Asyara) The scientificity of methodology of science. (German summary) *Z. Allgemeine Wissenschaftstheorie* **19** (1988), no. 1, 18–27. (Pierre Kerszberg) **89j:00041** 00A25 (03A05)
- Gingerich, Owen** The Alfonsine tables in the age of printing. *De astronomia Alphonsi Regis* (Berkeley, CA, 1985), 89–95, *Univ. Barcelona, Barcelona*, 1987. (see **89m:01026**) 01A35
- Gingold, Harry** (with Hsieh, Po-Fang) A global study of singularly perturbed almost diagonal systems. *Ann. Differential Equations* **2** (1986), no. 4, 383–398. (Hussain S. Nur) **89h:34048** 34E05 (34E20)
- Boundedly asymptotic decompositions of an entire interval for second order linear differential equations with multicoalescing transition points. *Ann. Differential Equations* **3** (1987), no. 4, 381–402. (M. I. Rakhimberdiev) **89k:34090** 34E05 (34A30)
- In general, the less degeneracy the less transition. A principle for time-dependent Hamiltonian systems in quantum mechanics. *J. Math. Phys.* **28** (1987), no. 10, 2400–2406. (Mary Beth Ruskai) **89g:81114** 81N05 (58F05, 58F19, 70H05, 81C99)
- On the relation between globality and linearity of solutions of analytic O.D.E.s. *J. Math. Res. Exposition* **7** (1987), no. 4, 611–613. (V. A. Tkachenko) **89g:34006** 34A20
- An invariant asymptotic formula for solutions of second-order linear ODEs. *Asymptotic Anal.* **1** (1988), no. 4, 317–350. (Leonid Yu. Motylev) **89k:34091** 34E05 (34A30, 45D05)
- (with Hsieh, Po-Fang) Asymptotic solutions of a Hamiltonian system in intervals with several turning points. *SIAM J. Math. Anal.* **19** (1988), no. 5, 1142–1150. (B. G. Pachpatte) **89g:34090** 34E20 (34C29, 58F05)
- Gingras, Donald F.** (with Masry, Elias) Autoregressive spectral estimation in additive noise. *IEEE Trans. Acoust. Speech Signal Process.* **36** (1988), no. 4, 490–501. (Raúl Pedro Mentz) **89f:62076** 62M10 (94A05)
- Giniatullin, A. I.** (with Maslennikova, V. N.) Spectral properties of operators for systems of the hydrodynamics of a rotating fluid, and the nonuniqueness of the limit amplitude. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 5, 157–171, 239; translated in *Siberian Math. J.* **29** (1988), no. 5, 812–824. (Summary) **89m:35181** 35Q10 (35J99, 35P05, 76N10, 76U05)
- Ginibre, J.** (with Velo, G.) Conformal invariance and time decay for nonlinear wave equations. I, II. *Ann. Inst. H. Poincaré Phys. Théor.* **47** (1987), no. 3, 221–261, 263–276. (Mitsuhiko Nakao) **89c:35021** 35B40 (35L70, 81F30)
- Ginisti, Jean-Pierre** (with Desclès, Jean-Pierre) Bibliographie commentée. [Annotated bibliography] *Math. Sci. Humaines* No. 103 (1988), 93–109. (Editors) **89k:03014** 03B40 (00A15, 03B65, 68Q55)
- van Ginneken, L. P. P.** (with Otten, R. H. J. M.) An inner loop criterion for simulated annealing. *Phys. Lett. A* **130** (1988), no. 8–9, 429–435. (Summary) **89g:90177** 90C27 (68U20, 90B15)
- Ginocchio, Joseph N.** (with Cooper, Fred; Wipf, Andreas) Derivation of the S-matrix using supersymmetry. *Phys. Lett. A* **129** (1988), no. 3, 145–147. (Summary) **89c:81030** 81C05
- (with Zhang, Wei Min; Wu, Cheng Li; Feng, Da-hsuan; Guidry, Mike W.) Geometrical structure and critical phenomena in the fermion dynamical symmetry model: Sp(6). *Phys. Rev. C* **38** (1988), no. 3, 1475–1487. (Summary) **89j:81267** 81G30
- Ginoyan, M. S.** Asymptotically efficient nonparametric estimation of functionals from a spectral density with zeros. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 3, 315–322; translated in *Theory Probab. Appl.* **33** (1988), no. 2, 296–303. (Friedrich Liese) **89j:62053** 62G05 (62M15)
- Ginsberg, Matthew L.** (with Smith, David Eugene<sup>2</sup>) Reasoning about action. I. A possible worlds approach. *Artificial Intelligence* **35** (1988), no. 2, 165–195. (Petr Jirká) **89m:68128** 68T99 (03B45, 03B60, 92A25)
- (with Smith, David Eugene<sup>2</sup>) Reasoning about action. II. The qualification problem. *Artificial Intelligence* **35** (1988), no. 3, 311–342. (Petr Jirká) **89m:68129** 68T99 (03B45, 03B60, 92A25)
- see also Readings in nonmonotonic reasoning, **89m:68003**
- Ginsburg, John** (with Bell, Murray) On complete partially ordered sets and compatible topologies. *Order* **4** (1987), no. 1, 69–78. (Marcel Erné) **89b:06004** 06A23 (54D30)
- Ginsburg, Seymour** (with Tang, Chang Jie) Projection of object histories. *Theoret. Comput. Sci.* **48** (1986), no. 2–3, 297–328 (1987). (C. Masalagui) **89a:68037** 68P15
- (with Tang, Chang Jie) Canonical forms for interval functions. *Theoret. Comput. Sci.* **54** (1987), no. 2–3, 299–313. (A. V. Anisimov) **89a:68038** 68P15 (68R05)
- Ginsburgh, Victor A.** (with Van der Heyden, Ludo) On extending the Negishi approach to computing equilibria: the case of government price support policies. *J. Econom. Theory* **44** (1988), no. 1, 168–178. (Summary) **89b:90046** 90A14
- Ginsparg, P.** (with Freedman, Daniel Z.; Sommerfeld, C. M.; Warner, N. P.) String-ghost interactions and the trace anomaly. *Phys. Rev. D* **37** (1987), no. 6, 1800–1818. (Roger Brooks) **89a:81128** 81E99 (81E15, 81E30)
- Curiosities at  $c = 1$ . *Nuclear Phys. B* **295** (1988), no. 2 FS21, 153–170. (Peter Bouwknegt) **89c:81147** 81E99 (17B65, 81E40)
- (with Dixon, Lance J.; Harvey, Jeffrey A.)  $\hat{c} = 1$  superconformal field theory. *Nuclear Phys. B* **306** (1988), no. 3, 470–496. (Raiko Zaikov) **89m:81136** 81E99 (17B65, 58A50, 58G40, 81E40)
- Ginter, James L.** (with Fraser, Cynthia) Competitive dealing strategy and deal value escalation. *Management Sci.* **34** (1988), no. 11, 1315–1323. (Not in MR) **90B50**
- Ginzburg, Lev R.** The theory of population dynamics: back to first principles. *Mathematical topics in population biology, morphogenesis and neurosciences* (Kyoto, 1985), 70–79, *Lecture Notes in Biomath.*, **71**, Springer, Berlin-New York, 1987. (J. M. Cushing) **89a:92039** 92A15
- (with Akçakaya, H. Reşit; Slice, D.; Slobodkin, L. B.) Balanced growth rates vs. balanced accelerations as causes of ecological equilibria. *Biomathematics and related computational problems* (Naples, 1987), 165–175, *Kluwer Acad. Publ., Dordrecht*, 1988. (see **89f:92002**) 92A17
- (with Akçakaya, H. Reşit; Kim, Junhyong) Evolution of community structure: competition. *J. Theoret. Biol.* **133** (1988), no. 4, 513–523. (Summary) **89j:92063** 92A17
- Ginzburg, V. A.** A proof of the Deligne–Langlands conjecture. (Russian) *Dokl. Akad. Nauk SSSR* **293** (1987), no. 2, 293–297. (D. Miličević) **89a:22031** 22E50 (11S37)
- Equivariant cohomology and Kähler geometry. (Russian) *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 4, 19–34, 96. (V. Oproiu) **89c:58013** 58A12 (55N91, 58A14, 58F06)
- The Fourier–Langlands transform on reductive groups. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 2, 71–72; translated in *Functional Anal. Appl.* **22** (1988), no. 2, 143–144. (D. Miličević) **89j:22028** 22E45
- Ginzburg, V. L.** ★ Теоретическая физика и астрофизика. (Russian) [Theoretical physics and astrophysics] Дополнительные главы. [Supplementary chapters] Third edition. “Nauka”, Moscow, 1987. 488 pp. (D. ter Haar) **89a:85001** 85–02 (00A89, 58F40, 78–02)
- About Efim Samoilovich Fradkin and the equations for higher-spin particles. *Quantum field theory and quantum statistics, Vol. 2*, 15–33, *Hilger, Bristol*, 1987. (see **89b:81008**) 81–03 (01A70, 81D25)
- On the three-hundredth anniversary of Isaac Newton’s *Principia*. (Bulgarian) Translated from the Russian by I. Chobanov. *Fiz.-Mat. Spis. B’lgar. Akad. Nauk.* **29**(62) (1987), no. 4, 265–281. (Editors) **89k:01033** 01A70
- New generalizations of Poincaré’s geometric theorem. (Russian) *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 2, 16–22, 96. (Summary) **89f:58057** 58F05 (58A10, 78A35)
- (with Pitaevskii, L. P.) Quantum Nyquist formula and the applicability ranges of the Callen–Welton formula. *Soviet Phys. Uspekhi* **30** (1987), no. 2, 168–171; translated from *Uspekhi Fiz. Nauk* **151** (1987), no. 2, 333–339 (Russian). (Koichiro Matsuno) **89c:82002** 82A15 (82A35)
- In memory of Richard Feynman—a remarkable physicist and an astonishing person. (Russian) *Priroda* **1988**, no. 7, 86–89. (Not in MR) **01A70**
- Gioia, A. A.** (with Carroll, Tim) Roots of multiplicative functions. *Compositio Math.* **65** (1988), no. 3, 349–358. (V. C. Harris) **89c:11007** 11A25
- Gionfriddo, Mario** Categories associated with coloured  $n$ -graphs. *J. Combin. Inform. System Sci.* **9** (1984), no. 3, 163–168. (J. Sheehan) **89i:05206** 05C65
- (with Marino, Maria Corinna) Construction of partial  $S_2(3, 4, v)$  with a prescribed number of blocks in common. *J. Combin. Inform. System Sci.* **11** (1986), no. 1, 33–38. (M. J. Grannell) **89i:05069** 05B30 (05B05)
- On the number of pairwise disjoint blocks in a Steiner system. *Combinatorial design theory*, 189–195, *North-Holland Math. Stud.*, **149**, North-Holland, Amsterdam-New York, 1987. (M. J. Grannell) **89b:05031** 05B05
- A short survey of some generalized colourings of graphs. Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. 2 (Catania, 1986). *Ars Combin.* **24** (1987), B, 155–163. (Alan Tucker) **89c:05036** 05C15
- (with Milazzo, Filippo; Vacirca, Vincenzo) On the chromatic number of multipermutation graphs. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), C, 267–274. (Yair Caro) **89f:05078** 05C15
- (with Milici, Salvatore) On the parameter  $v_2(h)$  for  $L_2$ -coloured graphs. *Discrete Math.* **68** (1988), no. 1, 107–110. (Walter Stromquist) **89b:05083** 05C15
- Giordana, A.** (with Bergadano, F.; Saitta, L.) Knowledge representation and use in pattern analysis. *Inform. Sci.* **47** (1989), no. 1, 1–16. (Not in MR) **68T25** (68T10)
- Giordano, Carla** (with Ahmed, Shaque; Laforgia, Andrea) Approximations for the zeros of the derivative of Bessel functions. *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **118** (1984), no. 5–6, 217–225. (M. E. Muldoon) **89c:33012** 33A40
- Giordano, T.** A classification of approximately finite real  $C^*$ -algebras. *J. Reine Angew. Math.* **385** (1988), 161–194. (Cornel Pasnicu) **89b:46078** 46L05 (19K14, 46L80)
- Giorle, Giulio** see Bruschi, Rita, **89d:01058**
- de Giorgi, Ennio** see De Giorgi, Ennio
- Giorgilli, Antonio** Rigorous results on the power expansions for the integrals of a Hamiltonian system near an elliptic equilibrium point. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **48** (1988), no. 4, 423–439. (Helmut Rüssmann) **89k:58087** 58F05 (70F15, 70H05)
- (with Benettin, Giancarlo; Fröhlich, Jürg) A Nekhoroshev-type theorem for Hamiltonian systems with infinitely many degrees of freedom. *Comm. Math. Phys.* **119** (1988), no. 1, 95–108. (Richard C. Churchill) **89m:58059** 58F05 (34C11, 70H05, 82A60)
- (with Celletti, Alessandra) On the numerical optimization of KAM estimates by classical perturbation theory. *Z. Angew. Math. Phys.* **39** (1988), no. 5, 743–747. (Michel Rapaport) **89j:70023** 70G99 (70H99)
- Giorgini, Bruno** Fermionic symmetry-breaking in a ten-dimensional cosmological model. (French summary) *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **306** (1988), no. 5, 335–340. (Thomas Schücker) **89m:83086** 83E15 (83F05)
- Giorkhelidze, D. Sh.** (with Valishvili, N. V.; Tvalchrelidze, A. K.) A numerical study of nonlinear deformation of shells made of composite materials. (Russian) *Current problems in mathematical physics, Vol. II* (Russian) (Tbilisi, 1987), 180–188, 387, *Tbilis. Gos. Univ., Tbilisi*, 1987. (see **89j:00031**) **73K15** (73–08, 73K20, 73L05)
- Giorno, V.** (with Nobile, A. G.; Ricciardi, Luigi M.) On some time-nonhomogeneous diffusion approximations to queueing systems. *Adv. in Appl. Probab.* **19** (1987), no. 4, 974–994. (Charles Tier) **89a:60218** 60K25 (60J60, 90B22)
- (with Lánský, P.; Nobile, A. G.; Ricciardi, Luigi M.) A diffusion neuronal model and its parameters. *Biomathematics and related computational problems* (Naples, 1987), 55–63, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89i:92020** 92A09
- (with Lánský, P.; Nobile, A. G.; Ricciardi, Luigi M.) Diffusion approximation and first-passage-time problem for a model neuron. III. A birth-and-death process approach.



- Biol. Cybernet.* **58** (1988), no. 6, 387-404. (Summary) **89d:92024** 92A09
- Giotopoulos, S.** (with Dalla, Leon; Katseli, Nelli) Skeletons of the unit ball of a  $C^*$ -algebra. *Math. Balkanica (N.S.)* **1** (1987), no. 1, 83-88. (Introduction) **89b:46077** 46L05
- Giovagnoli, Alessandra** (with Forcina, Antonio) Mathematical properties of cross-classification matrices. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 2, 523-544. (Summary) **89b:62126** 62H30
- (with Pukelsheim, Friedrich; Wynn, H. P.) Group invariant orderings and experimental designs. *J. Statist. Plann. Inference* **17** (1987), no. 2, 159-171. (Gregory M. Constantine) **89a:62174** 62K05
- Giovannelli, Raffaele** Detection of empty waves by means of photon correlations in amplified light pulses. *Microphysical reality and quantum formalism, Vol. 1, 2* (Urbino, 1985), 179-196, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht, 1988*. (see **89j:81004**) **81L05**
- Giovannetti, Elis** (with Bosco, Pier Giorgio; Moiso, Corrado) Narrowing vs. SLD-resolution. International Joint Conference on Theory and Practice of Software Development (Pisa, 1987). *Theoret. Comput. Sci.* **59** (1988), no. 1-2, 3-23. (Costică Cazacu) **89k:68130** 68T15
- de Giovanni, Francesco** (with Franciosi, Silvana) On groups in which every finite subgroup is complemented. (Italian. English summary) *Matematiche (Catania)* **38** (1983), no. 1-2, 201-220 (1987). (Giovanni Zacher) **89b:20069** 20E34
- (with Franciosi, Silvana) Soluble groups with many Černikov quotients. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **79** (1985), no. 1-4, 19-24 (1986). (D. J. S. Robinson) **89f:20043** 20F16
- (with Amberg, Bernhard; Franciosi, Silvana) On trifactorized soluble minimax groups. *Arch. Math. (Basel)* **51** (1988), no. 1, 13-19. (O. H. Kegel) **89g:20061** 20F19
- (with Amberg, Bernhard; Franciosi, Silvana) Groups with a nilpotent triple factorization. *Bull. Austral. Math. Soc.* **37** (1988), no. 1, 69-79. (D. I. Zaitsev) **89g:20062** 20F19
- (with Amberg, Bernhard; Franciosi, Silvana) Groups with a supersoluble triple factorization. *J. Algebra* **117** (1988), no. 1, 136-148. (J. Wiegold) **89i:20059** 20F19 (20E34)
- Giovannitti, A. J.** Projective and injective Butler groups. *Houston J. Math.* **14** (1988), no. 1, 75-79. (David M. Arnold) **89e:20080** 20K15
- Giovini, Alessandro** (with Astesiano, Egidio; Reggio, Gianna) Generalized bisimulation in relational specifications. *STACS 88 (Bordeaux, 1988)*, 207-226, *Lecture Notes in Comput. Sci.*, **294**, Springer, Berlin-New York, 1988. (see **89b:68011**) **68Q10** (68Q55)
- Gipson, G. S.** (with Camp, C. V.) Effective use of Monte Carlo quadrature for body force integrals occurring in the integral form of elastostatics. *Boundary elements VII, Vol. 1, II* (Como, 1985), 13.17-13.26, *Comput. Mech., Southampton, 1985*. (see **89f:65003**) **65C05** (73-08)
- Girault, L.** (with Surgailis, D.) Multivariate Appell polynomials and the central limit theorem. *Dependence in probability and statistics (Oberwolfach, 1985)*, 21-71, *Progr. Probab. Statist.*, **11**, Birkhäuser Boston, Boston, MA, 1986. (Summary) **89c:60024** 60F05 (33A65)
- Sánchez-Giralda, Tomás** see **Sánchez-Giralda, Tomás**
- Nedda Giraldo, L.** see **Nedda Giraldo, L.**
- Giral Silió, José M.** The dependence of the Koszul homology with respect to the generators of an ideal. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2* (Spanish) (Badajoz, 1986), 149-152, *Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987*. (José F. Andrade) **89i:13018** 13D25 (13C10)
- Giralt, Francesc** (with Ferré, J. A.) Pattern-recognition analysis of the velocity field in plane turbulent wakes. *J. Fluid Mech.* **198** (1989), 27-64. (Not in MR) **76-05** (68T10, 76F10)
- (with Ferré, J. A.) Some topological features of the entrainment process in a heated turbulent wake. *J. Fluid Mech.* **198** (1989), 65-78. (Not in MR) **76-05** (68T10, 76F10)
- Girard, André** Évolution des idées en optique et évolution des paradigmes. (English summary) [The evolution of ideas in optics and the evolution of paradigms] Colloque science et perspective de l'homme (Rome, 1986). *Rev. Questions Sci.* **159** (1988), no. 1-2, 53-79, 278. (Summary) **89j:01030** 01A50
- Girard, Jean-Yves** ★ Proof theory and logical complexity. Studies in Proof Theory. Monographs, **1**, Bibliopolis, Naples, 1987. 505 pp. ISBN 88-7088-123-7 (G. E. Mints) **89a:03113** 03Fxx (03-02)
- Le lambda-calcul du second ordre. [The second-order lambda-calculus] Séminaire Bourbaki, Vol. 1986/87. *Astérisque* No. 152-153 (1987), 4, 173-185 (1988). (R. P. Nederpelt) **89i:03028** 03B40 (03B15, 03B70, 68Q55)
- Linear logic. *Theoret. Comput. Sci.* **50** (1987), no. 1, 101 pp. (G. E. Mints) **89m:03057** 03F50 (03B70, 68Q99)
- Girardello, L.**  $N = 1$  supergravity from extended supergravity and from superstring theories. *Superstrings, anomalies & unification (Dubrovnik, 1986)*, 317-338, *World Sci. Publishing, Singapore, 1987*. (Helmut Rumpf) **89b:83094** 83E50 (81G25, 83E30)
- (with Cecotti, S.; Ferrara, S.) Gravitational supervertices in  $n = 1, 4D$  superstrings. *Phys. Lett. B* **198** (1987), no. 3, 336-342. (Elias Kiritsis) **89a:81118** 81E99 (81E30, 83E30, 83E50)
- (with Cecotti, S.; Ferrara, S.; Pasquinucci, A.; Porrati, Massimo) Matter-coupled supergravity with Gauss-Bonnet invariants: component Lagrangian and supersymmetry breaking. *Internat. J. Modern Phys. A* **3** (1988), no. 7, 1675-1733. (Markku Lehto) **89j:83072** 83E15 (81E30, 81G25, 83E30)
- (with Cecotti, S.; Ferrara, S.) Hidden noncompact symmetries in string theory. *Nuclear Phys. B* **308** (1988), no. 2-3, 436-450. (Frans R. Klinkhammer) **89k:81134** 81E99 (81E30, 83E30, 83E50)
- (with Cecotti, S.; Ferrara, S.) A topological formula for the Kähler potential of  $4D N = 1$ , 2 strings, and its implications for the moduli problem. *Phys. Lett. B* **213** (1988), no. 4, 443-449. (Tristan Hübsch) **89m:53131** 53C80 (32G07, 32J05, 53C55, 81E30, 81E40)
- Girardi, G.** (with Grimm, Richard) Chern-Simons forms and four-dimensional  $N = 1$  superspace geometry. *Nuclear Phys. B* **292** (1987), no. 1, 181-200. (Marc Henneaux) **89c:81124** 81E99 (81E20, 81E30, 81G25, 83E30, 83E50)
- Girardi, Mario** (with Matzeu, Michele) Solution of minimal period for a class of superquadratic Hamiltonian systems. (Italian summary) *Rend. Mat.* (7) **5** (1985), no. 1-2, 179-187. (Vittorio Coti Zelati) **89c:58104** 58F22 (34C25, 58E05, 58F05)
- (with Matzeu, Michele) Some results on periodic solutions of mountain pass type for Hamiltonian systems. *Periodic solutions of Hamiltonian systems and related topics (II*
- Ciocco, 1986)*, 161-168, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, **209**, Reidel, Dordrecht-Boston, MA, 1987. (Wei Yue Ding) **89a:58095** 58F22 (58E05, 58F05)
- (with Matzeu, Michele) Periodic solutions of convex autonomous Hamiltonian systems with a quadratic growth at the origin and superquadratic at infinity. (Italian summary) *Ann. Mat. Pura Appl.* (4) **147** (1987), 21-72. (Michel Willem) **89b:58074** 58F05 (34C25, 58E05, 58F22)
- (with Matzeu, Michele) Some stability results on periodic Hamiltonian trajectories. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **2** (1988), no. 3, 383-390. (J. Daneš) **89j:70030** 70K20 (34C25, 34D10, 70H05)
- (with Matzeu, Michele) Periodic solutions of prescribed minimal period for Hamiltonian systems: an extension of a theorem by Ekeland and Hofer to the nonconvex case. *Differential Integral Equations* **1** (1988), no. 3, 369-376. (Themistocles M. Rassias) **89b:58178** 58F22 (58E05, 58F05)
- Girault, Vivette** (with Amrouche, Chérif) Une méthode d'approximation mixte des équations des fluides non newtoniens de troisième grade. (English summary) [Mixed approximations of the equations of non-Newtonian fluids of grade three] *Numer. Math.* **53** (1988), no. 3, 315-349. (C. Wayne Mastin) **89b:65210** 65P05 (76-08, 76A05)
- Gire, Camille** (with Le Mouél, Jean-Louis; Jault, Dominique) Sur la forme des mouvements lents animant le fluide du noyau terrestre. (English summary) [On the form of the slow flow in the Earth's fluid core] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **305** (1987), no. 7, 619-624. (Summary) **89k:86015** 86A60 (35Q20, 76W05)
- Girge, S. S.** Tensor symmetry of the macroscopic physical properties of bisubstituted magnetics. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (Jarmala, 1985), 570-574, "Nauka", Moscow, 1986. (see **89d:81001**) **82A60**
- Giri, F.** (with M'Saad, M.; Dugard, L.; Dion, J. M.) Robustness of pole placement direct adaptive control for time-varying plants. *Analysis and optimization of systems (Antibes, 1988)*, 810-821, *Lecture Notes in Control and Inform. Sci.*, **111**, Springer, Berlin-New York, 1988. (Kazuhiko Terashima) **89b:93179** 93D25 (93B35, 93B55, 93C40)
- (with Dugard, L.; Dion, J. M.; M'Saad, M.) Stable pole placement direct adaptive control for systems with arbitrary zeros. *Internat. J. Control* **47** (1988), no. 5, 1443-1454. (Tsu-Tian Lee) **89c:93110** 93B55 (93C40, 93D15)
- (with Dion, J. M.; M'Saad, M.; Dugard, L.) A globally convergent pole placement indirect adaptive controller. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 353-356. (Summary) **89k:93103** 93B55 (93B05, 93C40, 93C55)
- (with Dion, J. M.; Dugard, L.; M'Saad, M.) Robust pole placement direct adaptive control. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 356-359. (Not in MR) **93B55** (93B35, 93C40)
- Giri, N. C.** On a locally best invariant and locally minimax test in symmetrical multivariate distributions. *Advances in multivariate statistical analysis*, 63-83, *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (A. L. Rukhin) **89a:62130** 62H15 (62A05, 62C20)
- (with Kariya, Takeaki; Sinha, Bimal Kumar) Robustness of  $t$ -test. *J. Japan Statist. Soc.* **17** (1987), no. 2, 165-173. (Mir Maswood Ali) **89c:62068** 62F35 (62F03)
- Girko, V. L.** Random determinants. (Russian) Translated in *J. Soviet Math.* **42** (1988), no. 4, 1731-1765. *Probability theory. Mathematical statistics. Theoretical cybernetics, Vol. 24* (Russian), 3-51, *Itoji Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow, 1986*. (Summary) **89a:60029** 60B15 (15A51)
- Elliptic law and elements of  $G$ -analysis. *Probability theory and mathematical statistics, Vol. 1* (Vilnius, 1985), 489-507, *VNU Sci. Press, Utrecht, 1987*. (Zhi-Dong Bai) **89b:60075** 60F15 (60B10, 60F05, 62G99)
- (with Kulov, G. V.) Theorems of the law of large numbers type for functionals of the products of independent random processes. (Russian) *Theory of random processes, No. 15* (Russian), 16-19, 117, "Naukova Dumka", Kiev, 1987. (Summary) **89a:60097** 60F99
- (with Butsan, G. P.; Zhdanok, A. I.) Distributions on functional structures. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 27, 56 pp. (Summary) **89g:60224** 60J25 (47D07, 60J05)
- A  $G_{12}$ -estimate for the Mahalanobis regularized distance. (Russian. English summary) *Kibernetika (Kiev)* **1987**, no. 6, 58-62, 71, 134. (Z. Šidák) **89f:62012** 62E20 (62H12)
- The fundamental equation of  $G$ -analysis. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 62 (1987), 122-126, 133. (Summary) **89b:62075** 62F12
- (with Litvin, I. N.) The stochastic Lyapunov problem for systems of stationary linear differential equations. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 8, 1307-1324, 1468; translated in *Differential Equations* **24** (1988), no. 8, 840-853. (Bohdan Maslowski) **89k:60026** 60F05 (34F05)
- $G_{26}$ -estimates for eigenvalues of covariance matrices. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 10, 9-11, 84. (Summary) **89m:62052** 62H12
- Consistency of estimates obtained by means of the fundamental equation of  $G$ -analysis. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 38 (1988), 25-31, 134. (V. Fabian) **89g:62046** 62F12
- (with Babanin, A. S.) A  $G_8$ -estimate for the solutions of empirical systems of linear algebraic equations. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 39 (1988), 29-33, 126. (Ralf Manthey) **89k:62072** 62H12 (60F17, 60H25)
- An equation for the Stieltjes transforms of the limiting spectral functions of isotropic random matrices. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 36 (1987), 31-33, 139; translated in *Theory Probab. Math. Statist.* No. 36 (1988), 31-33. (Yong Quan Yin) **89m:60079** 60F99 (62H10)
- (with Matveichuk, A. K.) A limit theorem for functionals of random walks. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 36 (1987), 33-36, 139; translated in *Theory Probab. Math. Statist.* No. 36 (1988), 35-39. (M. Iosifescu) **89g:60162** 60J15 (60F05)
- (with Ezhov, S. N.; Plyuko, V. A.) Integral equations for the averaged scattering matrix. (Russian. English summary) *Ukrain. Fiz. Zh.* **33** (1988), no. 10, 1451-1455, 1594. (Summary) **89h:81250** 81F15
- Limiting normalized spectral functions of a pencil of selfadjoint random matrices. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 1, 31-39, 133; translated in *Ukrainian Math. J.* **40** (1988), no. 1, 25-31. (Adolf Rhodius) **89g:15027** 15A52 (47A56, 60F05)
- (with Mysak, R. T.; Onsha, Yu. M.) The stationary Riccati equation for a matrix regularizer in the method of least squares. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 64 (1988), 135-137, 151. (Summary) **89j:93021** 93B25
- Girlich, H.-J.** On the optimal inventory equation in the minimax case. *Inventory in theory and practice (Budapest, 1984)*, 505-512, *Stud. Prod. Engrg. Econom.*, **6**, Elsevier,

- Amsterdam-New York, 1986. (L. C. Thomas) **89d:90080** 90B05
- Girila, S. K. Modeling of arising developing systems. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 10, 65–67, 88. (P. Vondráček) **89b:00046** 00A71 (90A30, 92A12, 93A10)
- Giralam, Florida Power series rings over globalized pseudovaluation domains. *J. Pure Appl. Algebra* **50** (1988), no. 3, 259–269. (David F. Anderson) **89e:13018** 13F25 (13C15, 13F05)
- Giroux, André (with Bélair, Jacques) Growth properties of the solutions of a linear functional-differential equation. *J. Math. Anal. Appl.* **134** (1988), no. 1, 125–128. (Günter Frank) **89g:34005** 34A20 (30D05, 34K15)
- Giroux, Gaston (with Ferland, R.) The  $p$ - $q$  model Boltzmann equation: convergence of the solution. *Utilitas Math.* **33** (1988), 51–58. (Introduction) **89d:82069** 82A40 (60B99, 60E99)
- Giroux, Ghislain (with Saint-Aubin, Yvan) Soliton solutions to various  $\sigma$  models with a Wess-Zumino term. *Phys. Lett. A* **126** (1988), no. 8–9, 515–523. (Enore Guadagnini) **89a:81073** 81E13 (58E20, 58G40, 81E40)
- Giroux, Y. (with Sharp, R. T.) A folk theorem revisited: degenerate representations. *J. Math. Phys.* **28** (1987), no. 8, 1671–1672. (Introduction) **89d:17004** 17B10
- Girše, Robert D. Homomorphism polynomials of certain graphs. *J. Combin. Inform. System Sci.* **10** (1985), no. 1–2, 62–68. (Ruth Bari) **89h:05029** 05C15
- Contraction polynomials of graphs. *J. Combin. Inform. System Sci.* **10** (1985), no. 3–4, 132–138. (E. J. Farrell) **89h:05054** 05C99
- Chromatic polynomials for certain unlabeled graphs. *J. Combin. Inform. System Sci.* **10** (1985), no. 3–4, 151–156. (E. J. Farrell) **89j:05036** 05C15
- Girstmair, Kurt Character coordinates and annihilators of cyclotomic numbers. *Manuscripta Math.* **59** (1987), no. 3, 375–389. (John H. Loxton) **89a:11071** 11J72 (11R18)
- Ein v. Staudt-Clausen Satz für periodische Bernoullizahlen. (English summary) [A theorem of von Staudt-Clausen type for periodic Bernoulli numbers] *Monatsh. Math.* **104** (1987), no. 2, 109–118. (Bruce C. Berndt) **89a:11026** 11B68 (11R18, 11R42)
- Gispiert-Chambaz, Hélène Sur la production mathématique française en 1870 (étude du tome premier du Bulletin des Sciences Mathématiques). [On French mathematical production in 1870 (study of the first volume of the Bulletin des Sciences Mathématiques)] *Arch. Internat. Hist. Sci.* **35** (1985), no. 114–115, 380–399 (1986). (Jesper Lützen) **89d:01040** 01A55 (01A72)
- Glitz, Moti Changing cofinalities and the nonstationary ideal. *Israel J. Math.* **56** (1986), no. 3, 280–314. (F. R. Drake) **89b:03086** 03E40 (03E05, 03E35)
- On the Mitchell and Rudin-Keisler orderings of ultrafilters. *Ann. Pure Appl. Logic* **39** (1988), no. 2, 175–197. (A. Kanamori) **89i:03090** 03E05
- Gitter, S. (with Antoniano, E.; Ucci, J.; Zvengrowski, P.) On the  $K$ -theory and parallelizability of projective Stiefel manifolds. *Bol. Soc. Mat. Mexicana* (2) **31** (1986), no. 1, 29–46. (Norredine Mahammed) **89g:57058** 57T15 (55N15, 55R50, 55S25, 55T99)
- (with Astey, L.; Micha, E.; Pastor, Guillermo) On Chern classes of stably fibre homotopic trivial bundles. *Glasgow Math. J.* **30** (1988), no. 2, 213–214. (J. F. Adams) **89f:55018** 55R40
- Gitman, D. M. (with Lyakhovich, S. L.; Noskov, M. D.; Tyutin, I. V.) Lagrangian formulation of Hamiltonian theory of general form with constraints. (Russian) *Group-theoretic methods in physics, Vol. 2* (Russian) (*Järnala*, 1985), 316–322, “Nauka”, Moscow, 1986. (see **89d:81002**) 70H35
- (with Tyutin, I. V.) The structure of gauge theories in the Lagrangian and Hamiltonian formalisms. *Quantum field theory and quantum statistics, Vol. 1*, 143–164, Hilger, Bristol, 1987. (Ziemowit Popowicz) **89f:81098** 81E13 (58F05, 70H05, 70H35)
- Gittel, H.-P. Studies on transonic flow problems by nonlinear variational inequalities. (German and Russian summaries) *Z. Anal. Anwendungen* **6** (1987), no. 5, 449–458. (Elvira Mascolo) **89a:35232** 35R99 (35Q99, 49A29, 76H05)
- Giudici, Reinaldo E. (with Margaglio, Claudio) Chromatically equivalent graphs. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), B, 221–229. (Stefan A. Burr) **89h:05036** 05C15
- Giudizhev, I. D. see Gyudzhenov, I. D.
- Giuffrida, Salvatore On the intersection of two curves contained in a cubic curve in  $\mathbb{P}^3$ . (Italian. English summary) *Rend. Sem. Mat. Univ. Politec. Torino* **44** (1986), no. 3, 407–426 (1987). (Luca Chiantini) **89a:14039** 14H45 (14C17, 14H50)
- Giuli, E. (with Dikranjan, Dikran) Closure operators. I. Proceedings of the 8th international conference on categorical topology (L'Aquila, 1986). *Topology Appl.* **27** (1987), no. 2, 129–143. (Summary) **89e:18002** 18A32 (18B30, 18E40, 54B30)
- (with Mantovani, Sandra; Tholen, Walter) Objects with closed diagonals. *J. Pure Appl. Algebra* **51** (1988), no. 1–2, 129–140. (S. B. Niefeld) **89c:18001** 18A20 (18A32, 18B30, 54B30)
- (with Dikranjan, Dikran; Tozzi, A.) Topological categories and closure operators. *Quaestiones Math.* **11** (1988), no. 3, 323–337. (H. Herrlich) **89i:18003** 18B30 (54A10, 54B30)
- (with Dikranjan, Dikran)  $S(n)$ - $\theta$ -closed spaces. *Topology Appl.* **28** (1988), no. 1, 59–74. (R. M. Stephenson, Jr.) **89d:54014** 54D25 (54D10)
- Giuliano Antonini, Rita (with Zanzotto, Pio Andrea) A general “geometric” condition for measure derivation. (Italian summary) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **11** (1987), no. 1, 173–191. (U. D’Ambrosio) **89f:28007** 28A15
- Giulini, S. (with Gaudry, G. I.; Hulanicki, Andrzej; Mantero, Anna Maria) Hardy-Littlewood maximal functions on some solvable Lie groups. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 1, 78–82. (Christopher Meaney) **89d:43020** 43A80 (22E25, 22E30, 42B25)
- Giunta, G. (with Garbow, B. S.; Lyness, J. N.; Murli, A.) Software for an implementation of Weeks’ method for the inverse Laplace transform problem. *ACM Trans. Math. Software* **14** (1988), no. 2, 163–170. (Summary) **89d:65107** 65R10 (65V05)
- Giurgiu, Ioachim (with Mioc, Vasile; Pál, Árpád) A method for studying the orbital motion with changing gravitational parameter. *Seminar on Mechanics*, 79–90, Preprint, 88–1, Univ. “Babeş-Bolyai”, Cluj-Napoca, 1988. (see **89f:00016**) 70M99 (70F05)
- Giusti, L. (with Di Vincenzo, R.) Orlicz-Sobolev spaces and existence theorems for an optimal control problem for a hyperbolic differential equation. (Italian) *Matematiche (Catania)* **38** (1983), no. 1–2, 33–63 (1987). (L. von Wolfersdorf) **89c:49008** 49A22 (35L20, 46E35)
- Some optimal control problems for a control process with distributed parameters. (Italian. English summary) *Rend. Circ. Mat. Palermo* (2) **35** (1986), no. 3, 429–443 (1987). (L. von Wolfersdorf) **89c:49007** 49A22 (35L20, 49B22)
- Givant, Steven (with Tarski, Alfred) A formalization of set theory without variables. American Mathematical Society Colloquium Publications, 41. *American Mathematical Society, Providence, RI*, 1987. xxii+318 pp. ISBN 0-8218-1041-3 (D. Monk) **89g:03012** 03B30 (03C05, 03E30, 03G15)
- Given, James A. (with Klein, William) Born-Green hierarchy for continuum percolation. *J. Chem. Phys.* **90** (1989), no. 2, 1116–1127. (Summary) **89m:82045a** 82A43 (82A42)
- (with Klein, William) Erratum: “Born-Green hierarchy for continuum percolation”. *J. Chem. Phys.* **90** (1989), no. 10, 5892. (Editors) **89m:82045b** 82A43 (82A42)
- Givental', A. B. Twisted Picard-Lefschetz formulas. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 1, 12–22, 96; translated in *Functional Anal. Appl.* **22** (1988), no. 1, 10–18. (Alexandru Dimca) **89f:32037** 32G11 (14D05, 32C40)
- Global properties of the Maslov index and Morse theory. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 2, 69–70; translated in *Functional Anal. Appl.* **22** (1988), no. 2, 141–142. (V. Oproiu) **89h:58274** 58G10 (57R45, 58F05)
- Givoev, A. Constraints on asymmetric orbifolds. *Phys. Lett. B* **197** (1987), no. 3, 347–350. (Daniel G. Caldi) **89b:81190** 81E99 (22E40, 53C55, 55R40, 81E30, 83E15)
- Givoli, Dan Nonlocal and semilocal optimal weighting functions for symmetric problems involving a small parameter. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 6, 1281–1298. (Summary) **89c:73003** 73-08 (73L99)
- Gizzatullina, S. M. (with Malinetskii, G. G.; Potapov, A. B.; Ruzmaikin, A. A.; Rukavishnikov, V. D.) The dimension of a geodynamic attractor from data on the variation of the length of days. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 95, 25 pp. (Summary) **89b:86008** 86A99 (58F12)
- Gjergji, Rexhep On the symmetric block design (155, 56, 20) with a collineation group  $G = F_{31,3} \times Z_4$ . (Albanian summary) *Punime Mat.* **2** (1987), 31–33. (Laura Bertani) **89f:05028** 05B05 (20B25)
- On symmetric block design (155, 56, 20) with Frobenius group of order 155. (Albanian summary) *Punime Mat.* **2** (1987), 35–41. (Laura Bertani) **89f:05029** 05B05 (05-04, 20B25)
- Gjunter, N. M. see Günter, N. M.
- Gladiuk, A. V. Solution of the Helmholtz equation in some infinite domains. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 61 (1987), 9–11, 129. (Summary) **89b:65295** 65N99
- Gladiuk, V. S. (with Ovsyannikova, L. B.) Probabilistic numerical methods for linear algebra and mathematical physics. (Russian) *Probabilistic methods and cybernetics, No. 22* (Russian), 61–73, Kazan. Gos. Univ., Kazan', 1987. (Hans-Eberhard Scholz) **89i:65035** 65F10 (65N20)
- Gladiuk, A. L. The Cauchy problem in classes of increasing functions for some nonlinear pseudoparabolic equations. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 2, 277–288, 365; translated in *Differential Equations* **24** (1988), no. 2, 211–219. (Piotr Biler) **89c:35083** 35K70
- Gladiuk, D. I. (with Kazakov, I. E.) ★ Методы оптимизации стохастических систем. (Russian) [Methods for optimization of stochastic systems] Теоретические Основы Технической Кибернетики [Theoretical Foundations of Engineering Cybernetics], 89. “Nauka”, Moscow, 1987. 304 pp. (Claudia Simionescu) **89g:93088** 93Exx (93-02)
- Gladwell, Graham M. L. (with Dods, Steven R. A.; Chaudhuri, Sujet K.) Nonuniform transmission-line synthesis using inverse eigenvalue analysis. *IEEE Trans. Circuits and Systems* **35** (1988), no. 6, 659–666. (Not in MR) **94C05** (34B25)
- Gladiwell, I. (with Shampine, L. F.; Brankin, R. W.) Locating special events when solving ODEs. *Appl. Math. Lett.* **1** (1988), no. 2, 153–156. (Not in MR) **65L99** (65L05)
- (with Thomas, Ruth Margaret) Variable-order variable-step algorithms for second-order systems. I. The methods. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 1, 39–53. (T. Feagin) **89b:65182a** 65L05 (65V05)
- (with Thomas, Ruth Margaret) Variable-order variable-step algorithms for second-order systems. II. The codes. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 1, 55–80. (T. Feagin) **89b:65182b** 65L05 (65V05)
- (with Brankin, R. W.; Shampine, L. F.) Starting BDF and Adams codes at optimal order. *J. Comput. Appl. Math.* **21** (1988), no. 3, 357–368. (Summary) **89b:65166** 65L05
- Glaeske, Hans-Jürgen (with Hess, Albrecht) On the convolution theorem of the Mehler-Fock-transform for a class of generalized functions. *II. Math. Nachr.* **136** (1988), 119–129. (Carlos A. Berenstein) **89j:46042** 46F12 (44A40, 47G05)
- Glaister, P. A shock-reflection problem in compressible gas dynamics with a similarity solution. *IMA J. Numer. Anal.* **8** (1988), no. 3, 343–356. (Shijun Luo) **89j:76064** 76L05 (76N15)
- Flux difference splitting for the Euler equations with axial symmetry. *J. Engrg. Math.* **22** (1988), no. 2, 107–121. (Summary) **89e:76007** 76-08 (76L05, 76N15)
- Glandt, Eduardo D. (with Madden, William G.) Distribution functions for fluids in random media. *J. Statist. Phys.* **51** (1988), no. 3–4, 537–558. (W. Th. F. den Hollander) **89i:82043** 82A42 (82A50)
- Glandsdorff, P. Irreversibility in macroscopic physics: from Carnot cycle to dissipative structures. *Found. Phys.* **17** (1987), no. 7, 653–666. (Koichiro Matsuno) **89b:82043** 82A35 (01A60, 01A72, 58F11, 58F40)
- Glänzel, Wolfgang A characterization theorem based on truncated moments and its application to some distribution families. *Mathematical statistics and probability theory, Vol. B* (Bad Tatzmannsdorf, 1986), 75–84, Reidel, Dordrecht-Boston, MA-London, 1987. (Barry C. Arnold) **89d:62013** 62E10
- A characterization of the normal distribution. *Studia Sci. Math. Hungar.* **23** (1988), no. 1–2, 89–91. (Barry C. Arnold) **89j:62026** 62E10
- de Glas, Michel An axiomatics for fuzzy information. *Uncertainty in knowledge-based systems (Paris, 1986)*, 151–158, *Lecture Notes in Comput. Sci.*, 286, Springer, Berlin-New York, 1987. (Yong-Zai Lu) **89g:94058** 94D05 (03E72, 06D30, 94A17)
- Glasko, V. B. (with Tikhonov, A. N.; Rubashov, I. B.; Arsenin, V. Ya.; Krikisin, Yu. A.; Stepanov, V. V.; Timonov, A. A.) Mathematical design of an NMR-tomograph. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 134, 24 pp. (Summary) **89a:92012** 92A07
- (with Bogomolova, I. A.; Kal'ner, V. D.; Kulik, N. I.; Kondorskaya, E. E.; Tikhonov, A. N.; Yurasov, S. A.) Inverse problems associated with the control of diffusive and thermal



- processes. *J. Engrg. Phys.* 53 (1987), no. 5, 1329-1335 (1988); translated from *Inzh.-Fiz. Zh.* 53 (1987), no. 5, 835-842 (Russian). (Summary) **89d:80007** 80A20 (93C20)
- (with Gubar', A. Yu.; Korshunov, A. B.) Asymptotic methods for constructing a numerical algorithm for a problem of the heating of thin plates by radiation. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* 29 (1988), no. 4, 17-22, 102. (Summary) **89j:80011** 80A20 (80-08)
- (with Nyunin, B. N.; Tikhonov, A. N.; Trubetskoy, M. K.) The problem of reducing acoustic noise in the interior of a car. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 10, 1530-1539, 1598-1599. (Summary) **89j:76074** 76Q05 (73J99, 73K40)
- Glassner, Moses (with Nakai, Mitsuru) Singular points on the Royden harmonic boundary. *Complex Variables Theory Appl.* 6 (1986), no. 2-4, 81-97. (Joel L. Schiff) **89b:30039** 30F25 (30F20)
- Dirichlet principle for the Royden compactification. *Kodai Math. J.* 10 (1987), no. 3, 307-313. (M. Nakai) **89e:30080** 30F25 (30F15)
- Glass, A. M. W. Free products of lattice-ordered groups. *Proc. Amer. Math. Soc.* 101 (1987), no. 1, 11-16. (Summary) **89b:06010** 06F15 (20B22, 20E06)
- Glass, L. (with Beuter, Anne; Laroque, David) Time delays, oscillations, and chaos in physiological control systems. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* 90 (1988), no. 1-2, 111-125. (Summary) **89h:92014** 92A09 (58F13)
- see also Rand, D. A., **89a:58065**
- Glasser, M. L. (with Privman, V.; Svrakić, N. M.) Temperley's triangular lattice compact cluster model: exact solution in terms of the  $q$  series. *J. Phys. A* 20 (1987), no. 18, L1275-L1280. (H. N. V. Temperley [Zbl 633:05005]) **89b:82107** 82A68 (33A30)
- Glasserman, Paul Infinitesimal perturbation analysis of a birth and death process. *Oper. Res. Lett.* 7 (1988), no. 1, 43-49. (Summary) **89b:90083** 90B20
- Glauber, R. J. Quantum amplifiers, attenuators, and their irreversible behavior. *Group theoretical methods in physics*, Vol. 1-3 (Zvenigorod, 1982), 137-148, Harwood Academic Publ., Chur, 1985. (see **89k:81002**) 81K05
- Amplifiers, attenuators, and Schrödinger's cat. *New techniques and ideas in quantum measurement theory* (New York, 1986), 336-372, *Ann. New York Acad. Sci.*, 480, New York Acad. Sci., New York, 1986. (see **89m:81005**) 81B05
- Glauret, J. R. W. (with Barendregt, H. P.; van Eekelen, M. C. J. D.; Plasmeijer, M. J.; Kennaway, J. Richard; Sleep, M. R.) LEAN: an intermediate language based on graph rewriting. *PARLE: Conference on Parallel Architectures and Languages—Europe* (Eindhoven, 1987). *Parallel Comput.* 9 (1988/89), no. 2, 163-177. (see **89j:68053**) 68N05 (68Q50, 68R10)
- Glanan, V. A. Formal reducibility of linear quasiperiodic systems of triangular type. (Russian) *Investigations in differential equations and mathematical analysis* (Russian), 35-41, 171, "Shtiintsa", Kishinev, 1988. (Constantin Simirad) **89i:34045** 34C20 (34C27)
- Glas, J. A survey of statistical methods on remote sensing in Russian literature from 1976 to 1985. *Comm. Statist. Theory Methods* 17 (1988), no. 8, 2419-2454. (Not in MR) **62G99** (01A65)
- (with Johnson, Bruce McK.) Boundary crossing for moving sums. *J. Appl. Probab.* 25 (1988), no. 1, 81-88. (Adam T. Martinsek) **89b:60115** 60G40 (62L10)
- Glas, Sarah Factoriality and finiteness properties of subalgebras over which  $k[x_1, \dots, x_n]$  is faithfully flat. *Comm. Algebra* 16 (1988), no. 9, 1791-1811. (David F. Anderson) **89i:13006** 13C11 (13B20, 13E05, 13F20)
- Regular symmetric algebras. *J. Algebra* 112 (1988), no. 1, 129-138. (Jon L. Johnson) **89b:13014** 13C05 (13B99)
- On the coherence and weak dimension of the rings  $R(x)$  and  $R(x)$ . *Proc. Amer. Math. Soc.* 106 (1989), no. 3, 579-587. (Ira J. Papick) **89k:13018** 13F20
- Glaesbrook, J. F. (with Chargoy-Corona, J.) Nil-instantons associated with the classical torus  $CP^2$ -model. *Lett. Math. Phys.* 15 (1988), no. 3, 213-217. (John C. Wood) **89i:58026** 58E20 (81E13)
- Glaesbrook, K. D. (with Fay, N. A.) On the scheduling of alternative stochastic jobs on a single machine. *Adv. in Appl. Probab.* 19 (1987), no. 4, 955-973. (Kunsi Lin) **89i:90105** 90B35
- (with Fay, N. A.) Evaluating strategies for generalized bandit problems. *Internat. J. Systems Sci.* 19 (1988), no. 8, 1605-1613. (John C. Gittins) **89h:90251** 90C40 (90B35)
- (with Birge, John R.) Assessing the effects of machine breakdowns in stochastic scheduling. *Oper. Res. Lett.* 7 (1988), no. 6, 267-271. (Summary) **89j:90140** 90B35
- Glaeske, K. (with Michalski, Jacek; Sierocki, I.) Feedback transformation for universal algebras. *Contributions to general algebra*, 5 (Salzburg, 1986), 151-162, *Hölder-Pichler-Tempsky, Vienna*, 1987. (Jan Chvalina) **89d:08002** 08A05 (68Q80)
- Glaizer, James A. (with Libchaber, Albert) Quasi-periodicity and dynamical systems: an experimentalist's view. *IEEE Trans. Circuits and Systems* 35 (1988), no. 7, 790-809. (Arkady S. Pikovsky) **89m:58179** 58F27 (34C27, 58F13, 76E15)
- Glazkov, D. Yu. (with Fedorov, F. I.)  $T$ -invariance of first-order relativistic equations. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 31 (1988), no. 12, 5-9; translated in *Soviet Phys. J.* 31 (1988), no. 12, 955-959. (Summary) **89m:81076** 81D25
- Glazkov, V. N. On inner and outer measures. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 1, 197-201, 226; translated in *Siberian Math. J.* 29 (1988), no. 1, 152-155. (J. Král) **89e:28005** 28A12 (28A10)
- Glaszoun, A. S. (with Belotserkovskii, O. M.; Vinogradov, A. V.) Mathematical modeling of the dynamics of the myocardial infarction. (Russian) *Voprosy Kibernet. (Moscow)* No. 132 (1988), 3-22. (Summary) **89f:92006** 92A07 (92A09)
- Gleason, Andrew M. Angle trisection, the heptagon, and the triskaidecagon. *Amer. Math. Monthly* 95 (1988), no. 3, 185-194. (K. Strubecker) **89d:51028** 51M15
- see also *Proceedings: International Congress of Mathematicians*, **89c:00042**
- Gledzer, E. B. (with Glukhovskii, A. B.) Criteria for the stability of stationary solutions of discrete chains of cascade type. (Russian) *Sibirsk. Mat. Zh.* 28 (1987), no. 6, 26-31, 217. (Adelina Georgescu) **89b:76011** 76E20 (34D20, 76F99)
- Gleiser, Marcelo (with Holman, Richard; Neto, Nelson P.) First order formalism for quantum gravity. *Nuclear Phys. B* 294 (1987), no. 4, 1164-1179. (Summary) **89d:83036** 83C45 (81G25)
- Gleiser, Reinhold Solitonic perturbations of perfect fluid cosmological models. *SILARG, VI (Rio de Janeiro, 1987)*, 28-48, *World Sci. Publishing, Singapore*, 1988. (Enric Verdaguer) **89i:83015** 83C15 (83C40, 83E15)
- (with Diaz, Mario; Pullin, Jorge) No-hair theorems and solitonic instabilities of de Sitter spacetimes. *SILARG, VI (Rio de Janeiro, 1987)*, 135-142, *World Sci. Publishing, Singapore*, 1988. (Nora Bretón Báez) **89i:83031** 83C30 (83C15, 83C75)
- (with Diaz, Mario; Pullin, Jorge) Brans-Dicke solitons as finite perturbations on perfect-fluid FRW models in general relativity. *Classical Quantum Gravity* 5 (1988), no. 4, 641-643. (Kenneth Dunn) **89d:83020** 83C15 (83D05)
- (with Cruzate, Juan; Diaz, Mario; Pullin, Jorge) Soliton collision in cosmologies with matter. *Classical Quantum Gravity* 5 (1988), no. 6, 883-889. (Peter Szekeres) **89f:83037** 83C20 (83F05)
- (with Diaz, Mario; Grosso, Roberto D.) Phase transitions in perturbed stiff fluid Friedmann-Robertson-Walker cosmological models. *Classical Quantum Gravity* 5 (1988), no. 7, 989-1001. (A. H. Taub) **89f:83020** 83C15 (83C55, 83F05)
- (with Diaz, Mario) On the geometric structure of nonstationary multisoliton vacuum metrics with real pole trajectories on a general background. *Gen. Relativity Gravitation* 20 (1988), no. 6, 517-526. (Jorge A. Pullin) **89k:83014** 83C15 (83C20)
- (with González, Gabriela I.; Pullin, Jorge) Higher order poles in the Belinskii-Zakharov inverse scattering method. *Phys. Lett. A* 130 (1988), no. 4-5, 206-210. (Mario C. Diaz) **89k:83015** 83C15 (81E13, 83C05)
- Gleissner, Winfried The spread of epidemics. *Appl. Math. Comput.* 27 (1988), no. 2, 167-171. (R. K. Watson) **89d:92063** 92A15
- Gleinninling, Paul Asymmetric perturbations of Lorenz-like equations. *Dynamics Stability Systems* 2 (1987), no. 1, 43-53. (Tong Ren Ding) **89d:58094** 58F14 (34C20, 58F13, 58F30)
- Global bifurcations in flows. *New directions in dynamical systems*, 120-149, *London Math. Soc. Lecture Note Ser.*, 127, Cambridge Univ. Press, Cambridge-New York, 1988. (Michael J. Field) **89k:58212** 58F14 (58F13, 58F22)
- (with Gambaudo, J.-M.; Tresser, C.) The gluing bifurcation. I. Symbolic dynamics of the closed curves. *Nonlinearity* 1 (1988), no. 1, 203-214. (Stephen Schecter) **89a:58080** 58F14 (34C25, 58F22)
- Gleinninling, Richard The rate of convergence in the central limit theorem for nonstationary dependent random vectors. *J. Multivariate Anal.* 26 (1988), no. 1, 89-103. (Ken-ichi Yoshihara) **89g:60073** 60F05
- The growth of the expected number of real zeros of a random polynomial with dependent coefficients. *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 3, 547-559. (Ken-ichi Yoshihara) **89k:60068** 60G99
- The growth of the expected number of real zeros of a random polynomial. *J. Austral. Math. Soc. Ser. A* 46 (1989), no. 1, 100-121. (Ken-ichi Yoshihara) **89k:60069** 60G99
- Gleser, Leon Jay (with Cote, Louis J.; Gupta, Shanti S.; Puri, Prem; Samuels, Stephen) K. C. Sreedharan Pillai 1920-1985. *Advances in multivariate statistical analysis*, vii, xv-xvi, *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (Editors) **89c:01053** 01A70
- New estimators for the mean vector of a normal distribution with unknown covariance matrix. *Statistical decision theory and related topics, IV, Vol. 1* (West Lafayette, Ind., 1986), 347-360, *Springer, New York-Berlin*, 1988. (Dipak K. Dey) **89b:62109** 62H12 (62C20)
- Glezer, N. N. (with Popov, L. D.; Kornilova, G. F.; Korotaeva, L. T.; Kostina, M. A.; Khripun, M. S.) A system of DELTA-PLAN software for the numerical analysis of improper problems in linear programming for the BESM-6 computer. (Russian) *Models and methods in operations research* (Russian), 31-38, 212, "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (see **89j:00018**) 90C05
- Glick, J. H. (with Pardalos, P. M.; Rosen, J. B.) Global minimization of indefinite quadratic problems. (German summary) *Computing* 39 (1987), no. 4, 281-291. (Dorel Duca) **89d:90158** 90C20 (65K05, 90C30)
- Gligor, T. D. (with Ursu, I.; Pop, G.; Demco, D. E.; Dollinger, R.) Methods for obtaining tomographic images using techniques of transmission, emission and magnetic resonance. I. Convolution method. (Romanian. English summary) *Stud. Cerc. Fiz.* 39 (1987), no. 10, 909-929. (Summary) **89f:92009** 92A07
- (with Ursu, I.; Dollinger, R.; Pop, G.; Demco, D. E.) Methods for obtaining tomographic images using techniques of transmission, emission and magnetic resonance. II. Fourier method and iterative methods. (Romanian. English summary) *Stud. Cerc. Fiz.* 39 (1987), no. 10, 931-946. (Summary) **89f:92010** 92A07
- Gliklikh, Yu. E. A curvilinear Itô integral with Riemannian parallel transport, and stochastic equations on manifolds. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 35 (1986), 31-36, 122. (Ya. I. Bilopol'ska) **89a:58118** 58G32 (60H05)
- Geometric aspects of Nelson's stochastic quantization. (Russian) *Geometry and the theory of singularities in nonlinear equations* (Russian), 76-94, 183, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1987. (A. Weron) **89i:81026a** 81C20 (58G32, 60H05)
- Geometrical aspects of Nelson's stochastic quantization. *Global analysis—studies and applications, III*, 246-268, *Lecture Notes in Math.*, 1334, Springer, Berlin-New York, 1988. (A. Weron) **89i:81026b** 81C20 (58G32, 60H05)
- Operators of integral type and differential inclusions on manifolds subject to noninvolutive distributions. (Russian) *Some problems in analysis and differential topology* (Russian), 22-28, ii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1988. (Kazimierz Cegiela) **89m:58012** 58A30 (70F25, 70G25)
- (with Baranov, Yu. S.) A mechanical constraint on the group of volume-preserving diffeomorphisms. (Russian) *Funktsional. Anal. i Prilozhen.* 22 (1988), no. 2, 61-62; translated in *Functional Anal. Appl.* 22 (1988), no. 2, 133-135. (B. Hajduk) **89m:58033** 58D30 (76A02)
- see also *Global analysis—studies and applications*, **89f:58002**
- Glimm, James (with Jaffe, Arthur) ★ Quantum physics. A functional integral point of view. Second edition. *Springer-Verlag, New York-Berlin*, 1987. xxii+535 pp. ISBN 0-387-96476-2 (P. D. F. Ion) **89k:81001** 81-02 (81E05)
- The interaction of nonlinear hyperbolic waves: a conference report. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 763-786, *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Si Ning Zheng) **89h:35198a** 35L65 (73-02, 76-02)
- The interaction of nonlinear hyperbolic waves. *Comm. Pure Appl. Math.* 41 (1988), no. 5, 569-590. (Si Ning Zheng) **89h:35198b** 35L65 (73-02, 76-02)
- (with Grove, John; Lindquist, W. Brent; McBryan, Oliver A.; Tryggvason, Grétar) The bifurcation of tracked scalar waves. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 1, 61-79. (P. C. Jain) **89g:76032** 76L05 (58C27, 65H10, 73D05, 76-08, 76S05)

- Glinskii, Ya. N. (with Pan'kiv, O. Ya.) ★ Экспериментальное исследование эффективности алгоритмов и программ решения систем обыкновенных дифференциальных уравнений. (Russian) [An experimental study of the efficiency of algorithms and programs for solving systems of ordinary differential equations] Препринт [Preprint], 88-42. Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev, 1988. 32 pp. (Summary) **89k:65004** 65-04 (65Lxx)
- Glozzi, F. Multiloop modular invariance and the cosmological constant. *Phys. Lett. B* **194** (1987), no. 1, 30-34. (Summary) **89b:81191** 81E99 (32N99, 81E30)
- (with Fré, P.) Four-dimensional superstrings live on group manifolds. *Phys. Lett. B* **208** (1988), no. 2, 203-208. (Marc Henneaux) **89b:81186** 81E99 (81E30, 83E30)
- Glukh, Z. (with Perunić, P. M.) Estimation of the rarefied function. (Serbo-Croatian summary) *Mat. Vesnik* **39** (1987), no. 4, 447-453. (Summary) **89c:60173** 60K05
- Glizer, V. Ya. An approach to the construction of the asymptotics of the solution of the singularly perturbed Cauchy problem with initial values of the unknown functions that are unbounded with respect to the parameter. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 3, 383-388, 546; translated in *Differential Equations* **24** (1988), no. 3, 265-269. (V. G. Kolomiets) **89c:34087** 34E15 (34A10, 34E05)
- Asymptotic behavior of the solution of a difference problem of optimal control with a small step with a moving right trajectory end. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 8, 1457-1459, 1472. (Not in MR) **89c:34K35** (34E05)
- Globo, S. A. (with Kondrat'ev, Yu. G.) Construction of the Gibbs states of quantum lattice systems. (Russian) *Application of methods of functional analysis in problems of mathematical physics* (Russian), 4-16. i. Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev, 1987. (Kai Long Ren) **89b:60168** 60K35 (82A15)
- Globovnik, Josip (with Stout, Edgar Lee) Boundary regularity for holomorphic maps from the disc to the ball. *Math. Scand.* **60** (1987), no. 1, 31-38. (John Bland) **89c:32033** 32E35 (32H35)
- (with Stout, Edgar Lee) Analytic discs with rectifiable simple closed curves as ends. *Ann. of Math.* (2) **127** (1988), no. 2, 389-401. (Rita Saerens) **89g:32009** 32A40 (30D40, 32A35)
- Discs in the ball containing given discrete sets. *Math. Ann.* **281** (1988), no. 1, 87-96. (Akio Kodama) **89i:32019** 32C25 (32H99)
- (with Aron, Richard M.) Interpolation by analytic functions on  $\mathbb{C}_0$ . *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 2, 295-302. (Klaus-Dieter Bierstedt) **89j:46047** 46G20 (32K99, 46J15)
- Boundary interpolation and proper holomorphic maps from the disc to the ball. *Math. Z.* **198** (1988), no. 1, 143-150. (Adib A. Fadalla) **89i:32032** 32D99
- The modulus of Rudin-Carleson extensions. *Monatsh. Math.* **105** (1988), no. 1, 47-58. (Takahiko Nakazi) **89c:46059** 46J15 (30D55)
- Homogeneous polynomials on the ball of  $\mathbb{C}^2$ . *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 255-259. (Lawrence Gruman) **89c:32037** 32H35 (32E10)
- Testing analyticity on rotation invariant families of curves. *Trans. Amer. Math. Soc.* **306** (1988), no. 1, 401-410. (Carlos A. Berenstein) **89g:30078** 30E25 (30C99, 42C99)
- Glonti, O. A. Nonlinear filtering of stochastic processes and optimal signal transmission through a feedback channel. *Probability theory and mathematical statistics* (Kyoto, 1986), 95-102. *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (N. C. Mohanty) **89c:93194** 93E11 (60G35, 60H10, 94A40)
- Glotzer, Sharon C. (with Henry, Richard W.) A squeezed-state primer. *Amer. J. Phys.* **56** (1988), no. 4, 318-328. (Summary) **89b:81099** 81D30
- Globerman, M. Interpreting Bradley: the critique of fact-pluralism. *Hist. Philos. Logic* **9** (1988), no. 2, 205-223. (Not in MR) **03A05** (01, 03-03)
- Gloukhian, Edouard Un problème de moyenne dans la boule euclidienne. (English summary) [A mean value problem in the Euclidean sphere] *Probab. Math. Statist.* **8** (1987), 27-39. (W. J. Firey) **89c:60024** 60D05 (52A22)
- Glova, N. I. (with Usulbaeva, A. S.) On curvature theory of framing distributions  $\Delta_2$  in  $E_4$ . (Russian) *Ukrain. Geom. Sb.* **30** (1988), 26-36. (V. Oproiu) **89k:53003** 53A07
- Glover, Fred (with Klingman, D.; Phillips, Nancy V.; Ross, G. T.) Integrating modeling, algorithm design, and computational implementation to solve a large-scale nonlinear mixed integer programming problem. *Ann. Oper. Res.* **5** (1986), no. 1-4, 395-411. (Summary) **89d:90151** 90C11
- (with Greenberg, Harvey J.) Logical testing for rule-based management. *Ann. Oper. Res.* **12** (1988), no. 1-4, 199-215. (Not in MR) **68T20** (90B50)
- (with Jones, C. Kenneth) A stochastic generalized network model and large-scale mean-variance algorithm for portfolio selection. *J. Inform. Optim. Sci.* **9** (1988), no. 3, 299-316. (Thomas W. Epps) **89m:90016** 90A09
- Glover, Henry Coloring maps on surfaces. *Algebraic topology, Barcelona, 1986*, 140-147. *Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (Arthur T. White) **89b:05084** 05C15 (05C10)
- (with Sjerve, Denis) The genus of  $PS_2(q)$ . *J. Reine Angew. Math.* **380** (1987), 59-86. (C. MacLachlan) **89c:20087** 20G40 (20H10, 57M12)
- Glover, Joseph Quasistationary distributions, eigenmeasures, and eigenfunctions of Markov processes. *Seminar on stochastic processes*, 1984 (Evanston, Ill., 1984), 71-98. *Progr. Probab. Statist.*, 9, Birkhäuser Boston, Boston, MA, 1986. (Heinz Langer) **89c:60083** 60J25 (47D07)
- Probability and differential equations. *Geometry of random motion* (Ithaca, N.Y., 1987), 87-94. *Contemp. Math.*, 73, Amer. Math. Soc., Providence, RI, 1988. (M. Fukushima) **89j:60106** 60J45 (35J60)
- (with Rao, Murali) Symmetrizations of Markov processes. *J. Theoret. Probab.* **1** (1988), no. 3, 305-325. (Mamoru Kanda) **89c:60144** 60J45 (60J35)
- (with Rao, Murali) Nonsymmetric Markov processes and hypothesis (H). *J. Theoret. Probab.* **1** (1988), no. 4, 371-380. (Yoichi Ōshima) **89b:60121** 60J45 (60J40)
- see also Seminar: Stochastic Processes, **89j:60005**
- Glover, Keith (with Curtin, R. F.) Robust stabilization of infinite-dimensional systems by finite-dimensional controllers: derivations and examples. *Modelling, identification and robust control* (Stockholm, 1985), 113-127. North-Holland, Amsterdam-New York, 1986. (Summary) **89d:93075** 93D10 (93B25, 93C25)
- (with Jonckheere, Edmond) A comparison of two Hankel-norm methods for approximating spectra. *Modelling, identification and robust control* (Stockholm, 1985), 297-306. North-Holland, Amsterdam-New York, 1986. (Summary) **89c:93031** 93B28 (47A99, 47B38, 93B10, 93E03)
- (with Doyle, John C.) Relations between  $H_\infty$  and risk sensitive controllers. *Analysis and optimization of systems* (Antibes, 1988), 3-10, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (P. Sannuti) **89c:93070** 93B35
- (with Curtin, R. F.; Partington, J. R.) Realisation and approximation of linear infinite-dimensional systems with error bounds. *SIAM J. Control Optim.* **26** (1988), no. 4, 863-898. (Vl. Răsvan) **89i:93067** 93C25 (41A65, 47B35, 93B15, 93B28)
- (with Zwart, H. J.; Curtin, R. F.; Partington, J. R.) Partial fraction expansions for delay systems. *Systems Control Lett.* **10** (1988), no. 4, 235-243. (Not in MR) **34K35** (93B50, 93C25)
- (with Doyle, John C.) State-space formulae for all stabilizing controllers that satisfy an  $H_\infty$ -norm bound and relations to risk sensitivity. *Systems Control Lett.* **11** (1988), no. 3, 167-172. (Summary) **89c:93071** 93B35 (49D40, 93E20)
- Glover, N. (with Hsu, I.-S.; Truong, T. K.; Reed, I. S.) A VLSI architecture for performing finite field arithmetic with reduced table lookup. *Linear Algebra Appl.* **98** (1988), 249-262. (John Karlof) **89b:11102** 11T30 (11T71, 68Q25, 94B05, 94B35)
- Głowacki, Paweł An inversion problem for singular integral operators on homogeneous groups. *Studia Math.* **87** (1987), no. 1, 53-69. (Detlef Horst Müller) **89c:43021** 43A80 (22E25, 22E30, 42B30, 47G05)
- Głowinski, R. Viscous flow simulation by finite element methods and related numerical techniques. *Progress and supercomputing in computational fluid dynamics* (Jerusalem, 1984), 173-210. *Progr. Sci. Comput.*, 6, Birkhäuser Boston, Boston, MA, 1985. (James A. Schmitt) **89i:65099** 65M60 (76-08)
- (with Bristeau, M. O.; Périaux, Jacques) Numerical methods for the Navier-Stokes equations. Applications to the simulation of compressible and incompressible viscous flows. *Finite elements in physics* (Lausanne, 1986), 73-187. North-Holland, Amsterdam-New York, 1987. (Introduction) **89m:65081** 65M05 (76-08)
- On a new preconditioner for the Stokes problem. (Portuguese summary) *Mat. Apl. Comput.* **6** (1987), no. 2, 123-140. (N. R. Rajappa) **89a:76026** 76D07 (65M05, 76-08)
- (with Dean, Edward J.; Li, Chin Hsien) Applications of operator splitting methods to the numerical solution of nonlinear problems in continuum mechanics and physics. *Mathematics applied to science* (New Orleans, La., 1986), 13-64. Academic Press, Boston, MA, 1988. (G. W. Hedstrom) **89c:65060** 65J99 (76D25, 81-08, 82A57)
- (with Dean, Edward J.; Li, Chin Hsien) Numerical solution of parabolic problems in high dimensions. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 207-285. *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Summary) **89c:65096** 65M05 (65W05, 76D05, 82A57)
- (with Bégue, Catherine; Périaux, Jacques) Détermination d'un opérateur de préconditionnement pour la résolution itérative du problème de Stokes dans la formulation de Helmholtz. (English summary) [A preconditioning operator for the iterative solution of the Stokes problem via the Helmholtz formulation] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 5, 247-252. (Summary) **89d:35191** 35S05 (65F99, 76D07)
- (with Bourgat, J.-F.; Le Tallec, Patrick) Formulation variationnelle et algorithme de décomposition de domaines pour les problèmes elliptiques. (English summary) [Variational formulation and domain decomposition algorithm for elliptic problems] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 13, 569-572. (Summary) **89b:65290** 65N50
- (with Bristeau, M. O.; Mantel, B.; Périaux, Jacques; Singh, Gian Sundar) On the use of subcycling for solving the compressible Navier-Stokes equations by operator-splitting and finite element methods. *Comm. Appl. Numer. Methods* **4** (1988), no. 3, 309-317. (Summary) **89b:65211** 65P05 (76-08, 76N10)
- see also Symposium: Domain Decomposition Methods for Partial Differential Equations, **89c:65005**; Bibliography: Glowinski, Roland, **89i:01117** and Domain decomposition methods, **89j:65010**
- Gluck, Herman (with Warner, Frank; Ziller, Wolfgang) Fibrations of spheres by parallel great spheres and Berger's rigidity theorem. *Ann. Global Anal. Geom.* **5** (1987), no. 1, 53-82. (Richard H. Escobales, Jr.) **89c:53063** 53C20 (53C21, 57R22)
- Glukhov, A. D. Matroid matchings of graphs and their applications. (Russian) *Issled. Operatsii i ASU* **32** (1988), 70-75, 118. (Daniel Turzik) **89m:05034** 05B35 (05C38)
- Glukhov, V. A. A comparison of  $(C, \alpha)$  means, and a condition for Nikol'skii-type summability of Fourier series in multiplicative systems. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Sarator, 1984), 78-84. *Sarator. Gos. Univ., Sarator, 1986*. (See **89j:00036**) **42C10** (40A05, 42A24)
- Glukhov, Yu. P. (with Babich, S. Yu.; Guz', A. N.) On the solution of a problem on the action of a moving load on a two-layer semispaces with initial stresses. (Russian) *Prikl. Mekh.* **24** (1988), no. 8, 55-60, 132; translated in *Soviet Appl. Mech.* **24** (1988), no. 8, 775-780. (Summary) **89i:73027** 73D99 (73C03, 73K12)
- Glukhova, L. A. A binary-decimal multiplication method for matrix structures. (Russian) *Avtomat. i Ychisl. Tekhn. (Minsk)* **16** (1987), 129-134, iv. (Florica Luban) **89b:65071** 65G99 (68Q10)
- Glukhovskii, A. B. (with Gledzer, E. B.) Criteria for the stability of stationary solutions of discrete chains of cascade type. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 6, 26-31, 217. (Adelina Georgescu) **89b:76011** 76E20 (34D20, 76F99)
- Glushankov, Daniel (with Tilli, Miguel) Maximal deductive systems and injective objects in the category of Hilbert algebras. *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 3, 213-220. (R. Sh. Grigolia) **89i:03060** 03G25 (04A25, 06D99)
- Glushankova, L. Ya. (with Kolesnikova, N. S.) Solution of systems of differential equations by the inversion method. (Russian) *Partial differential equations* (Russian), 69-72. *Leningrad. Gos. Ped. Inst., Leningrad, 1987*. (See **89c:00023**) **35A25**
- Glushchenko, A. A. (with Voloshin, V. S.; Sheshukov, E. G.) Approximate analytic solution of a nonlinear boundary value problem of filtration theory. (Russian) *Mat. Fiz. Nelinein. Mekh.* **8** (42) (1987), 39-45, 93. (Vasilie M. Ionescu) **89j:76042** 76S05 (76-08)
- (with Martynenko, T. V.) Solution of a system of partial differential equations by the differential-difference method. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* **29** (1987), 103-109, 121. (Summary) **89f:35039** 35C05
- Glushchenko, O. A. (with Tretyak, V. P.; Voronyuk, L. V.; Popov, A. V.) On the solution of a problem of the optimal control of laser work on pairs of metals. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* **5** (1986), 19-23, 95. (Not in MR) **93C75**
- Glushchenko, O. B. (with Taraborkin, L. A.) Mixed nonlinear problems for parabolic equations with nonstationary boundary conditions and conjugation conditions. (Russian)



- Ukrain. Mat. Zh. **39** (1987), no. 5, 611–619, 679. (Reinhard Redlinger) **89d:35075** 35K20 (34G20, 47H05)
- Glushchenko, V. E. Application of the search principles of group decisions in multicriterial problems to systems for the recognition of moving objects. (Russian) *Decision-making methods and systems. Applied problems in the analysis of solutions in technical systems* (Russian), 67–72, 148, *Rizhsk. Politekh. Inst.*, Riga, 1986. (see **89h:00001**) 90B40 (90D26, 90D35)
- Glushko, A. V. (with Maslennikova, V. N.) Localization theorems of Tauberian type and the rate of decay of the solution of a system in the hydrodynamics of a viscous compressible fluid. (Russian) *Studies in the theory of differentiable functions of several variables and its applications*, XII (Russian). *Trudy Mat. Inst. Steklov.* **181** (1988), 156–186, 270. (P. Szeptycki) **89i:35120** 35Q20 (35B40, 76N10)
- Glushko, E. G. (with Perov, A. I.; Tyuleneva, I. G.) Eigenvalues and eigenfunctions of an integro-differential operator. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 3, 516–519, 549; translated in *Differential Equations* **24** (1988), no. 3, 373–376. (M. Švec) **89h:45013** 45J05
- Glushkov, V. I. (with Borisov, A. N.) Choice of alternatives on the basis of the analysis of fuzzy evidence. (Russian) *Fuzzy systems: modeling of structure and optimization* (Russian), 63–76, *Kalinin. Gos. Univ., Kalinin*, 1987. (see **89c:00014**) 92A25 (03E72)
- Glushkov, V. M. See *Birthday*: Glushkov, V. M., **89a:01123**
- Głósing-Larsen, H. (with Hinrichsen, D.) A Jordan control canonical form for singular systems. *Internat. J. Control* **48** (1988), no. 5, 1769–1785. (B. G. Mertzios) **89k:93030** 93B10 (93C30)
- Gluskin, E. D. Probability in the geometry of Banach spaces. (Russian) *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 924–938, *Amer. Math. Soc., Providence, RI*, 1987. (Mikhail Ostrovskii) **89h:46025** 46B20 (46–02, 52A05, 60D05)
- Extremal properties of orthogonal parallelepipeds and their applications to the geometry of Banach spaces. (Russian) *Mat. Sb. (N.S.)* **136** (1988), no. 1, 85–96. (G. M. Ustinov) **89j:46016** 46B20 (26D20)
- Gluskin, L. M. Polyadic semigroups. (Russian) *Theory of semigroups and its applications* (Russian), 10–19, 114, *Saratov. Gos. Univ., Saratov*, 1983. (K. Drbohlav) **89a:20070a** 20N15
- Gluzberg, V. E. (with Belova, M. Yu.) A method for the numerical integration of oscillating functions of a certain class. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1987**, no. 5, 12–14. (Gheorghe Coman) **89j:65023** 65D30
- (with Shafarenko, V. A.) A point-source field of direct current in a randomly layered medium. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1988**, no. 3, 63–76. (Summary) **89m:86017** 86A20 (78A99)
- Gluzdovskii, V. V. A class of linear summability methods generated by V. I. Volkov operators. (Russian) *Problems in functional analysis* (Russian), 25–32, 116–117, *Petrozavodsk. Gos. Univ., Petrozavodsk*, 1985. (Summary) **89b:40006** 40G99
- Gluzman, B. Ya. (with Androsov, S. M.; Oslov, V. A.) Methods for the program realization of algorithms for searching for the shortest distances on a graph in a transportation automatic control system. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 9, 158–165. (I. A. Klipper) **89f:05105** 05C38 (05C35, 68R10, 90B20, 90C27)
- Glymou, Clark (with Spirtes, Peter) Latent variables, causal models and overidentifying constraints. *J. Econometrics* **39** (1988), no. 1–2, 175–198. (Summary) **89j:92083** 92A25
- (with Earman, John) A reply to: "Discussion: what revisions does bootstrap testing need?" [*Philos. Sci.* **53** (1986), no. 1, 101–109] by J. M. Zytow. *Philos. Sci.* **55** (1988), no. 2, 260–264. (Not in MR) 03B48
- Glynn, David G. On a set of lines of  $PG(3, q)$  corresponding to a maximal cap contained in the Klein quadric of  $PG(5, q)$ . *Geom. Dedicata* **26** (1988), no. 3, 273–280. (Raymond Hill) **89h:51015** 51E20
- Glynn, Peter W. (with Fox, Bennett L.) Computing Poisson probabilities. *Comm. ACM* **31** (1988), no. 4, 440–445. (Not in MR) 60–04
- (with Iglehart, Donald L.) Simulation methods for queues: an overview. *Queueing Systems Theory Appl.* **3** (1988), no. 3, 221–255. (J. Tegen, Jr.) **89k:60135** 60K25 (90B22)
- (with Iglehart, Donald L.) A new class of strongly consistent variance estimators for steady-state simulations. *Stochastic Process. Appl.* **28** (1988), no. 1, 71–80. (Kumar Joag-Dev) **89f:62029** 62F25 (60F99, 62M99)
- Glyzin, S. D. Stationary regimes of a finite-difference approximation of the Hutchinson equation with diffusion. (Russian) *Qualitative and approximate methods for investigating operator equations* (Russian), 112–127, 144, *Yaroslav. Gos. Univ., Yaroslavl*, 1986. (K. R. Schneider) **89c:92058** 92A15 (34C20, 34K15)
- Bounds for the applicability of an asymptotic method. (Russian. English and Lithuanian summaries) *Mathematical models in biology and medicine*, No. 2 (Russian), 56–58, 188, *Akad. Nauk Litovsk. SSR, Inst. Mat. i Kibernet., Vilnius*, 1987. (Summary) **89a:92040** 92A15
- Gmelig Meyling, R. H. J. On algorithms and applications for bivariate B-splines. *Algorithms for approximation* (Shrivenham, 1985), 83–93, *Inst. Math. Appl. Conf. Ser. New Ser.*, 10, *Oxford Univ. Press, New York*, 1987. (Claude Carasso) **89c:65013** 65D07
- An algorithm for constructing configurations of knots for bivariate B-splines. *SIAM J. Numer. Anal.* **24** (1987), no. 3, 706–724. (Stephen Demko) **89d:65011** 65D07 (41A15)
- Gmir, Abdellah Existence de la trace initiale pour des solutions d'une équation parabolique dégénérée. (English summary) [Existence of an initial trace for solutions of a degenerate parabolic equation] *Ann. Fac. Sci. Toulouse Math. (5)* **8** (1986/87), no. 3, 315–329. (Ioan I. Vrabie) **89c:35053** 35K55 (35B40)
- Gnaedig, Isabelle (with Kirchner, Claude; Kirchner, Hélène) Equational completion in order-sorted algebras (extended abstract). *CAAP'88* (Nancy, 1988), 165–184, *Lecture Notes in Comput. Sci.*, 299, *Springer, Berlin-New York*, 1988. (see **89c:68003**) 68Q50 (68T15)
- Gnanadesikan, R. (with Fowlkes, E. B.; Kettenring, J. R.) Variable selection in clustering. *J. Classification* **5** (1988), no. 2, 205–228. (Summary) **89h:62093** 62H30
- Gnanasekaran, R. Equivalence of block and  $N$ -path implementations of digital filters. *IEEE Trans. Circuits and Systems* **35** (1988), no. 10, 1326–1330. (Not in MR) 94A12
- Gnanvo, Cyprien (with Ille, Pierre) La reconstituabilité des tournois. (English summary) [The reconstructibility of tournaments] *C. R. Acad. Sci. Paris Ser. I Math.* **306** (1988), no. 14, 577–580. (William L. Kocay) **89f:05126** 05C60 (05C20)
- Gnatich, M. (with Adzhemyan, L. Ts.; Vasil'ev, A. N.) A turbulent dynamo as the spontaneous breakdown of symmetry. (Russian. English summary) *Teoret. Mat. Fiz.* **72** (1987), no. 3, 369–383. (Summary) **89d:76017** 76E25 (76W05, 81E99, 82A25)
- (with Adzhemyan, L. Ts.; Vasil'ev, A. N.) The renormalization group approach in turbulence theory: renormalization and critical dimensions of composite operators of the energy-momentum tensor. (Russian. English summary) *Teoret. Mat. Fiz.* **74** (1988), no. 2, 180–191; translated in *Theoret. and Math. Phys.* **74** (1988), no. 2, 115–123. (Summary) **89c:76071** 76F99 (82A25)
- Gnatyuk, V. O. (with Shchirba, V. S.) Some criteria for the global Lipschitz property of functions. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 6, 768–771, 815. (V. M. Gol'dshteyn) **89g:26002** 26A15 (46G05, 58C20)
- Gnedenko, B. V. (with Braginskii, R. P.; Moiseev, Yu. V.; Malunov, V. V.; Molchanov, S. A.) Features of the percolation model of polymer aging. (Russian) *Dokl. Akad. Nauk SSSR* **303** (1988), no. 3, 535–537; translated in *Soviet Math. Dokl.* **38** (1989), no. 3, 546–549. (Not in MR) 73S99 (73M10)
- see also Grodzenskii, S. Ya., **89a:01062** and Kolmogorov, A. N., **89a:01104**
- Gnedin, A. V. (with Yarov, A. A.) Identifiability of systems that are dependent on parameters. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 9, 48–57; translated in *Automat. Remote Control* **49** (1988), no. 9, part 1, 1145–1153. (Zbigniew Nahorski) **89j:93026** 93B30
- Gnedin, N. Yu. (with Dymnikova, I. G.) Rotation of the plane of polarization of a photon in a Petrov type D space-time. *Soviet Phys. JETP* **67** (1988), no. 1, 13–15; translated from *Zh. Eksp. Teoret. Fiz.* **94** (1988), no. 1, 26–31 (Russian). (Garry Ludwig) **89h:83011** 83C10 (83B05)
- Gnot, Stanisław (with Szrednicka, Jolanta) Estimation of variance components in two-way mixed model. *Rostock. Math. Kolloq.* **32** (1987), 87–100. (Júlia Volaufová) **89c:62089** 62J10 (62K10)
- (with Szrednicka, Jolanta) On minimum biased quadratic estimators. *Statistics* **19** (1988), no. 2, 215–222. (Walter Schlee) **89m:62071** 62J10
- (with Michalski, Andrzej) Estimation of parameters under Hardy-Weinberg law in population genetics. *Statistics* **19** (1988), no. 3, 477–487. (Mir Masoom Ali) **89k:62127** 62P10 (92A10)
- Gnuschke-Hauschild, D. (with Pommerenke, Ch.) On dominance in Hadamard gap series. *Complex Variables Theory Appl.* **9** (1987), no. 2–3, 189–197. (T. Kovari) **89c:30004** 30B10
- Go, Jong Bu (with Pak, Tae Je) Several properties about stability of the pseudosolution and the normal solution of a noise equation of corrective value. (Korean. English summary) *Su-hak* **1987**, no. 2, 25–28. (Summary) **89a:65053** 65F10 (47A50, 65J10)
- Goad, Walter B. Sequence analysis—contributions by Ulam to molecular genetics. Stanislaw Ulam 1909–1984. *Los Alamos Sci. No. 15 Special Issue* (1987), 288–291. (see **89m:01133a**) 92A12
- Göbel, Rüdiger New aspects for two classical theorems on torsion splitting. *Comm. Algebra* **15** (1987), no. 12, 2473–2495. (P. Hill) **89h:13019** 13D30 (13C12, 20K21)
- (with Franzen, Berthold) Nonstandard uniserial modules over valuation domains. *Resulato Math.* **12** (1987), no. 1–2, 86–94. (Paul C. Eklof) **89e:13029** 13L05 (03E35, 13C05)
- (with Dugas, Manfred) All infinite groups are Galois groups over any field. *Trans. Amer. Math. Soc.* **304** (1987), no. 1, 355–384. (Summary) **89e:12010** 12F10 (12F20, 20F29)
- (with Goldsmith, B.) Essentially indecomposable modules which are almost free. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 154, 213–222. (Paul C. Eklof) **89f:20059** 20K20 (03E75, 13C13, 20K30)
- Goberna, M. A. (with López, Marco Antonio) Discrete approximation in linear semi-infinite programming. *Proceedings of the first international seminar on operational research of the Basque Provinces* (Zarauz, 1986), 3–20, *Univ. Pais Vasco, Bilbao*, 1986. (Sven-Åke Gustafson) **89a:90080** 90C05 (49D39, 90C08, 90C48)
- (with López, Marco Antonio) Reduction and discrete approximation in linear semi-infinite programming. *Optimization* **18** (1987), no. 5, 643–658. (Adrian S. Lewis) **89f:90081** 90C05 (52A40)
- Some properties of systems whose characteristic cone is closed. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* **81** (1987), no. 1, 183–196. (Juan García Laguna) **89i:90048** 90C05
- (with Jornt, V.) A note about linear inequality systems and duality. (German summary) *Z. Oper. Res. Ser. A-B* **31** (1987), no. 3, A71–A78. (Jürgen Köhler) **89a:90109** 90C25 (90C05)
- (with López, Marco Antonio) Optimal value function in semi-infinite programming. *J. Optim. Theory Appl.* **59** (1988), no. 2, 261–279. (R. Tichatschke) **89m:90097** 90C05 (49A50, 49A55, 49D39, 90C25)
- (with López, Marco Antonio) A theory of linear inequality systems. *Linear Algebra Appl.* **106** (1988), 77–115. (O. Pokorná) **89g:15014** 15A39 (90C05)
- Goberstein, Simon M. Correspondences of semigroups. *Semigroups, theory and applications* (Oberwolfach, 1986), 141–149, *Lecture Notes in Math.*, 1320, *Springer, Berlin-New York*, 1988. (Fred W. Roush) **89e:20114** 20M20 (08A35)
- Göckeler, M. (with Schücker, T.) ★ Differential geometry, gauge theories, and gravity. Cambridge Monographs on Mathematical Physics. *Cambridge University Press, Cambridge-New York*, 1987. xii+230 pp. ISBN 0-521-32960-4 (Robert Coquereaux) **89d:53124** 53C80 (22–01, 53–02, 58–01, 83–02)
- Geometrical methods in the study of topological effects on the lattice. *Fortschr. Phys.* **36** (1988), no. 11, 801–830. (Summary) **89k:81117** 81E25 (81–04)
- (with Bernreuther, W.) Renormalization group and finite size effects in scalar lattice field theories. *Nuclear Phys. B* **295** (1988), no. 2 FS21, 199–210. (Summary) **89c:81090** 81E25 (81–04)
- (with Bernreuther, W.; Kremer, Manfred) A finite size scaling analysis of the  $O(4)$ -invariant lattice  $\phi^4$  theory. *Nuclear Phys. B* **295** (1988), no. 2 FS21, 211–228. (Summary) **89c:81091** 81E25 (81–04)
- Gockert, Dieter (with Metzler, Wolfgang) Simulation and stability analysis for parameter dependent 2-dimensional models of air polluted forests. *Mathematical modelling in science and technology* (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 493–498. (see **89d:00007**) 92A17 (90A30)
- Goda, László (with Dux, Erik) On several degrees of the sensitivity of mean values. (Hungarian) *Mat. Lapok* **33** (1982/86), no. 1–3, 39–45. (L. Leindler) **89g:26019** 26D15

- Godambe, V. P.** (with Thompson, M. E.) Parameters of superpopulation and survey population: their relationships and estimation. (French summary) *Internat. Statist. Rev.* 54 (1986), no. 2, 127–138. (Jon Stene) **89m:62006** 62D05
- Godard, Béatrice** Les énoncés sui-falsificateurs: nouvelle classe d'exceptions à la loi de Leibniz. (English summary) [Self-falsifying statements: a new class of exceptions to Leibniz' law] *Logique et Anal. (N.S.)* 30 (1987), no. 119, 235–256. (B. van Rootselaar) **89a:03009** 03A05
- Goddard, Peter** (with Nahm, Werner; Olive, D. I.; Ruegg, H.; Schwimmer, Adam) Fermions and octonions. *Comm. Math. Phys.* 112 (1987), no. 3, 385–408. (Alex Jay Feingold) **89g:17014** 17B65 (17A35, 17B67, 81D15, 81E40)
- (with Olive, D. I.; Waterson, G.) Superalgebras, symplectic bosons and the Sugawara construction. *Comm. Math. Phys.* 112 (1987), no. 4, 591–611. (Daniel Altschüler) **89c:17030** 17B67 (81D15, 81E30)
- (with Schwimmer, Adam) Unitary construction of extended conformal algebras. *Phys. Lett. B* 206 (1988), no. 1, 62–70. (Peter Bouwknegt) **89g:81075** 81E99 (17B65, 58G40, 81E40)
- (with Schwimmer, Adam) Factoring out free fermions and superconformal algebras. *Phys. Lett. B* 214 (1988), no. 2, 209–214. (Summary) **89j:81185** 81E99 (17B70, 81E40)
- see also Kac-Moody and Virasoro algebras, **89f:17022**
- Godefroy, G.** (with Deville, Robert; Hare, D. E. G.; Zizler, Václav E.) Differentiability of convex functions and the convex point of continuity property in Banach spaces. *Israel J. Math.* 59 (1987), no. 2, 245–255. (J. H. M. Whitfield) **89d:46017** 46B20 (46G05)
- (with Ghoussoub, N.; Maurey, Bernard; Schachermayer, W.) Some topological and geometrical structures in Banach spaces. *Mem. Amer. Math. Soc.* 70 (1987), no. 378, iv+116 pp. (J. Daneš) **89h:46024** 46B20 (46A55)
- (with Deville, Robert; Hare, D. E. G.; Zizler, Václav E.) Phelps spaces and finite-dimensional decompositions. *Bull. Austral. Math. Soc.* 37 (1988), no. 2, 263–271. (P. Saphar) **89b:46015** 46B10
- (with Saphar, Pierre David) Duality in spaces of operators and smooth norms on Banach spaces. *Illinois J. Math.* 32 (1988), no. 4, 672–695. (Peter Harmand) **89j:47026** 47D15 (46B10, 46B20, 46B22)
- On Riesz subsets of abelian discrete groups. *Israel J. Math.* 61 (1988), no. 3, 301–331. (S. V. Khrushchëv) **89m:43011** 43A46 (43A20)
- (with Iochum, Bruno) Arens-regularity of Banach algebras and the geometry of Banach spaces. *J. Funct. Anal.* 80 (1988), no. 1, 47–59. (Horst Behncke) **89j:46051** 46H05 (46B20, 46L05)
- (with Pelant, Jan; Whitfield, J. H. M.; Zizler, Václav E.) Banach space properties of Ciesielski-Pol's  $C(K)$  space. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1087–1093. (Ehrhard Behrends) **89i:46042** 46E99 (46B20)
- (with Saphar, Pierre David) Three-space problems for the approximation properties. *Proc. Amer. Math. Soc.* 105 (1989), no. 1, 70–75. (T. Figiel) **89c:46015** 46B20
- Gödel, Kurt Friedrich** On formally undecidable propositions of *Principia mathematica* and related systems. I [in *From Frege to Gödel. A sourcebook in mathematical logic, 1879–1931*, 592–617, Harvard Univ. Press, Cambridge, Mass., 1967]. *Gödel's theorem in focus*, 17–47, *Croom Helm Philos. Focus Ser.*, Croom Helm, London, 1988. (see **89m:01068**) 01A75 (03A05, 03D35, 03F40)
- see also Sikic, Zvonimir, **89d:01067**; Wang, Hao, **89f:01079**; Gödel remembered, **89f:01083**; Christian, Curt C., **89k:01031**; Gödel, Rudolf, **89f:01083**; Tausky, Olga, **89f:01083**; Kleene, Stephen C., **89f:01083**; Kreisel, Georg, **89f:01083**; Dawson, John W., Jr., **89m:01068**; Kleene, Stephen C., **89m:01068** and Feferman, Solomon, **89m:01068**
- Gödel, Rudolf** History of the Gödel family. Translated from the German by Susan Simons. *Gödel remembered* (Salzburg, 1983), 11–27, *Hist. Logic, IV, Bibliopolis, Naples*, 1987. (see **89f:01083**) 01A70
- Godement, Roger** ★ Cours d'algèbre. (French) [Course in algebra] Third edition. Collection Enseignement des Sciences [Collection: The Teaching of Science], 5. Hermann, Paris, 1987. 671 pp. ISBN 2-7056-5241-8 (Editors) **89b:00002** 00A05 (13-01, 15-01, 16-01, 20-01)
- Godin, M.** see Gaudin, Michel
- Goderis, D.** (with Verbeure, A.; Vets, P.) Theory of fluctuations and small oscillations for quantum lattice systems. *J. Math. Phys.* 29 (1988), no. 12, 2581–2585. (Koichiro Matsuno) **89k:82021** 82A15
- Godfrey, L. G.** (with Tremayne, A. R.) Checks of model adequacy for univariate time series models and their application to econometric relationships. *Econometric Rev.* 7 (1988), no. 1, 1–42. (Not in MR) **62P20**
- Godich, N. T.** (with Godich, V. I.) Point spectrum of additive continuous operators. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1986, no. 9, 23–31, 83. (B. Nagy) **89b:47006** 47A10 (47H12)
- Godich, V. I.** (with Godich, N. T.) Point spectrum of additive continuous operators. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1986, no. 9, 23–31, 83. (B. Nagy) **89b:47006** 47A10 (47H12)
- Godin, O. A.** Reciprocity relations for waves in a compressible fluid. (Russian) *Dokl. Akad. Nauk SSSR* 293 (1987), no. 2, 322–325. (Simona Popp) **89c:76062** 76N10 (76V05)
- Godin, Paul** Analytic regularity of uniformly stable shock fronts with analytic data. *J. Differential Equations* 74 (1988), no. 2, 336–368. (Tommaso Ruggeri) **89j:35085** 35L65 (35L60, 35L67)
- Singular solutions to some nonlinear oblique derivative problems. *J. Funct. Anal.* 76 (1988), no. 2, 233–266. (D. E. Edmunds) **89g:35037** 35J65
- Godinho, Pedro Henrique** Recurrence formulas for the moments of an  $h$ -step hypergeometric distribution. (Portuguese. English summary) *Rev. Mat. Estatist.* 3 (1985), 53–61. (Summary) **89h:62033** 62E15 (33A30)
- Calculation of the moments of the  $h$ -step and negative  $h$ -step hypergeometric distributions using finite difference operators. (Portuguese. English summary) *Rev. Mat. Estatist.* 4/5 (1986/87), 57–62. (Not in MR) **62E15**
- Godini, G.** Operators in normed almost linear spaces. Proceedings of the 14th winter school on abstract analysis (Srni, 1986). *Rend. Circ. Mat. Palermo (2) Suppl. No. 14* (1987), 309–328. (Chandler Davis) **89d:47144** 47H99 (46B99, 47D99)
- On normed almost linear spaces. *Math. Ann.* 279 (1988), no. 3, 449–455. (M. M. Day) **89g:46043** 46B99 (46A15)
- Godlewski, P.** (with Fang, Jaing; Cohen, Gérard Denis; Battail, G.) On the inherent intractability of soft decision decoding of linear codes. *Coding theory and applications* (Cachan, 1986), 141–149, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (see **89c:94004**) 94B05 (94B35)
- see also Coding theory and applications, **89c:94004**
- Godowski, Radosław** Partial Greechie diagrams for modular ortholattices. *Demonstratio Math.* 20 (1987), no. 1–2, 291–297 (1988). (Gudrun Kalmbach) **89d:06012** 06C15
- Gojdy, Luis A.** (with Luccioni, Bibiana M.) Boundary conditions in the finite difference method with irregular meshes. (Spanish. English summary) *Rev. Internac. Métod. Numér. Calc. Diseñ. Ingr.* 4 (1988), no. 1, 31–40. (Summary) **89d:65095** 65N20
- Godreche, C.** (with Luck, J. M.; Vallet, F.) Quasiperiodicity and types of order: a study in one dimension. *J. Phys. A* 20 (1987), no. 13, 4483–4499. (M. Mendes France) **89c:82054** 82A57 (11A55, 11B83, 11K38, 58F08)
- Godsil, C. D.** (with Imrich, Wilfried) Embedding graphs in Cayley graphs. *Graphs Combin.* 3 (1987), no. 1, 39–43. (Martin Škovič) **89d:05097** 05C25
- (with Krasikov, I.; Roditty, Y.) Reconstructing graphs from their  $k$ -edge deleted subgraphs. *J. Combin. Theory Ser. B* 43 (1987), no. 3, 360–363. (B. Manvel) **89a:05106** 05C60
- (with Erdős, Paul; Krantz, Steven G.; Parsons, Torrence) Intersection graphs for families of balls in  $\mathbb{R}^n$ . *European J. Combin.* 9 (1988), no. 5, 501–505. (C. Peyrat) **89i:05225** 05C75 (05C15, 05C99)
- (with Nowakowski, Richard; Nešetřil, Jaroslav) The chromatic connectivity of graphs. *Graphs Combin.* 4 (1988), no. 3, 229–233. (Steve Fisk) **89f:05079** 05C15
- (with Aldred, R. E. L.) Distance-regular antipodal covering graphs. *J. Combin. Theory Ser. B* 45 (1988), no. 2, 127–134. (J. Sheehan) **89i:05221** 05C75 (05B05)
- Polynomial spaces. Proceedings of the Oberwolfach Meeting "Kombinatorik" (1986). *Discrete Math.* 73 (1989), no. 1–2, 71–88. (J. J. Seidel) **89k:05022** 05B30
- Godunov, S. K.** (with Kirilyuk, O. P.) A new variant of equations for the parameters of orthogonal transformations for the deflation of bidiagonal matrices. (Russian) *Computational processes and systems*, No. 5 (Russian), 5–15, "Nauka", Moscow, 1987. (Jiří Hřebíček) **89c:65044** 65F30 (65G99)
- The problem of guaranteed exactness in numerical methods of linear algebra. (Russian) *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1353–1361, *Amer. Math. Soc., Providence, RI*, 1987. (Miodrag Petković) **89c:65059** 65Gxx (65Fxx)
- Sous-espaces invariants des opérateurs linéaires. Point de vue et méthodes numériques nouveaux. (English summary) [Invariant subspaces of linear operators. A new approach with new numerical methods] *Analysis and optimization of systems* (Antibes, 1988), 44–52, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89c:00031**) 93B25 (47A15, 65J05)
- (with Bulgakov, A. Ya.) Circular dichotomy of a matrix spectrum. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 5, 59–70, 237; translated in *Siberian Math. J.* 29 (1988), no. 5, 734–744. (Anna Lee) **89m:15005** 15A18 (15-04, 15A45, 47A10, 65F15)
- see also Partial differential equations, **89k:35005**
- Godzhaev, E. M.** (with Shakhmurov, V. B.) Coercive boundary value problems of degenerate operator-differential equations in a half-space. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* 43 (1987), no. 3, 6–9. (Summary) **89c:34066** 34G10 (34B15, 47A50)
- Godziński, Andrzej** On some interpolation groups with mixed norms. *Funct. Approx. Comment. Math.* 16 (1988), 9–19. (Hans G. Feichtinger) **89i:46075** 46M35 (46A45, 46E30)
- Godzula, V. F.** (with Guž, A. N.; Shnerenko, K. I.) On problems of the statics of nonshallow anisotropic shells with holes. (Russian) *Prikl. Mekh.* 24 (1988), no. 9, 22–30, 132. (Summary) **89i:73064** 73L10 (73K20)
- Goedge, Oskar** A greedy algorithm for hereditary set systems and a generalization of the Rado-Edmonds characterization of matroids. *Discrete Appl. Math.* 20 (1988), no. 1, 39–49. (Ulrich Faigle) **89f:05053** 05B35
- Goedbloed, J. P.** (with Kleiberger, R.) A high-beta tokamak equilibrium. *Plasma Phys. Control. Fusion* 30 (1988), no. 13, 1939–1959. (Summary) **89m:76070** 76W05 (76E25)
- (with Kleiberger, R.) Alfvén wave spectrum of an analytic high-beta tokamak equilibrium. *Plasma Phys. Control. Fusion* 30 (1988), no. 13, 1961–1987. (Summary) **89m:76071** 76W05 (76E25)
- de Goede, E. D.** Stabilization of the Lax-Wendroff method and a generalized one-step Runge-Kutta method for hyperbolic initial-value problems. *Appl. Numer. Math.* 4 (1988), no. 5, 439–453. (Summary) **89d:65084** 65M10
- Goel, L. R.** (with Gupta, Rakesh; Rana, V. S.) Stochastic behaviour of a cell exposed to radiations. *Internat. J. Management Systems* 4 (1988), no. 1, 15–26. (Not in MR) **92A07**
- Goel, Narendra S.** (with Lewis, Harold W., III; Thompson, Richard L.) Simulation of cellular compaction and internalization in mammalian embryo development. II. Models for spherical embryos. *Bull. Math. Biol.* 50 (1988), no. 2, 121–142. (Summary) **89h:92028** 92A09
- (with Thompson, Richard L.) Movable finite automata (MFA) models for biological systems. I. Bacteriophage assembly and operation. *J. Theoret. Biol.* 131 (1988), no. 3, 351–385. (Summary) **89b:92005** 92A05 (92A09)
- (with Thompson, Richard L.) Movable finite automata (MFA) models for biological systems. II. Protein biosynthesis. *J. Theoret. Biol.* 134 (1988), no. 1, 9–49. (Summary) **89f:92004** 92A05 (92A09)
- Goel, Prem K.** Comparison of experiments and information in censored data. *Statistical decision theory and related topics, IV*, Vol. 2 (West Lafayette, Ind., 1986), 335–349, Springer, New York-Berlin, 1988. (Dieter Mussmann) **89c:62013** 62B15 (62B10)
- Goel, R. M.** (with Singh, Vikramaditya; Sohi, N. S.) On radius of convexity of some classes of analytic functions in the unit disc. *Proc. Nat. Acad. Sci. India Sect. A* 56 (1986), no. 3, 242–253. (G. P. Bhargava) **89c:30035** 30C45
- Goel, Rakesh** (with Jain, Rajinder Kumar) Superstable single-step methods for second-order initial value problems. *J. Comput. Appl. Math.* 23 (1988), no. 1, 121–125. (Summary) **89i:65071** 65L05
- Goel, S.** (with Bector, C. R.; Gupta, Y. P.) An economic quantity discount model to increase vendor profits under inflation. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 87–100. (Summary) **89g:90084** 90B05



- Goel, S. N. (with Singh, Ram Pal) Additive information measures with preference of order  $\beta$ . *Inform. Sci.* 43 (1987), no. 3, 161-168. (Prasanna Sahoo) **89g:94018** 94A17 (39B40)
- Goel, Sudhir K. (with Arora, Ashok K.) Characterization of semisimple BCK-algebras. *Math. Japon.* 32 (1987), no. 6, 879-887. (Martin W. Bunder) **89a:06031** 06D99 (03G25)
- (with Arora, Ashok K.; Rodriguez, Dennis M.) Special integration techniques for trigonometric integrals. *Amer. Math. Monthly* 95 (1988), no. 2, 126-130. (G. A. Heuer) **89e:26084** 26A06
- (with Arora, Ashok K.) BCK-algebras with maximal condition. *Math. Japon.* 33 (1988), no. 3, 353-359. (From the introduction) **89f:06022** 06D99 (03G25)
- (with Deeba, Elias Y.) A note on BCI-algebras. *Math. Japon.* 33 (1988), no. 4, 517-522. (Summary) **89f:06020** 06D99 (03G25)
- Characterization of BCI-algebras of order four. *Math. Japon.* 33 (1988), no. 5, 677-686. (Summary) **89f:06021** 06D99 (03G25)
- Goenner, H. F. M. Alternative theories of gravitation in the framework of Riemannian geometry. (German summary) *Astronom. Nachr.* 309 (1988), no. 4, 243-247. (H. Rund) **89j:83062** 83D05 (53B50)
- Goerig, L. (with Doncarli, C.) Lissage-détection de signaux non stationnaires. (English summary) [Smoothing and detection of nonstationary signals] *Analysis and optimization of systems (Antibes, 1988)*, 895-906. *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89c:00031**) 93E14 (93E10, 93E11, 94A05)
- tamarit Goerlich, José Manuel see Tamarit Goerlich, José Manuel
- Goerss, J. (with Franke, Richard; Barker, E.) The use of observed data for the initial-value problem in numerical weather prediction. *Comput. Math. Appl.* 16 (1988), no. 1-2, 169-184. (Summary) **89e:66006** 86A10 (86-08)
- Goerss, Paul G. (with Smith, Larry; Zarati, S.) Sur les  $A$ -algèbres instables. [On unstable  $A$ -algebras] *Algebraic topology, Barcelona, 1986*, 148-161. *Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (J. F. Adams) **89a:55031** 55S10
- (with Mahowald, Mark E.) Immersions not regularly homotopic to embeddings. *Amer. J. Math.* 109 (1987), no. 6, 1171-1195. (Duane Randall) **89h:57023** 57K42 (55Q15, 55S12)
- (with Smith, Larry) Towers and injective cohomology algebras. *Trans. Amer. Math. Soc.* 303 (1987), no. 2, 619-636. (Haynes R. Miller) **89f:55002** 55P15 (55S35)
- (with Cohen, Fred R.; Davis, Donald M.; Mahowald, Mark E.) Integral Brown-Gitler spectra. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1299-1304. (Richard John Steiner) **89h:55018** 55P42 (55P35)
- Goes, Günther (with Buntinas, Martin) Products of sequence spaces and multipliers. (Serbo-Croatian summary) *Rad. Mat.* 3 (1987), no. 2, 287-300. (P. K. Kamthan) **89d:46007** 46A45
- Goeters, H. P. Generating cotorsion theories and injective classes. *Acta Math. Hungar.* 51 (1988), no. 1-2, 99-107. (David M. Arnold) **89e:20097** 20K40 (20K15)
- (with Albrecht, Ulrich) A dual to Baer's lemma. *Proc. Amer. Math. Soc.* 105 (1989), no. 4, 817-826. (P. L. Sperry) **89m:20066** 20K40
- Goetgheluck, Pierre On prime divisors of binomial coefficients. *Math. Comp.* 51 (1988), no. 183, 325-329. (H. J. Godwin) **89f:11033** 11B65 (11A51, 11Y05)
- Goethe, J. see Duck, Michael J. **89h:01028**
- Goetschel, Ray, Jr. (with Voxman, William) Fuzzy matroids. *Fuzzy Sets and Systems* 27 (1988), no. 3, 291-302. (Ulrich Faigle) **89i:05000** 05B35 (03E72)
- Goette, Josef (with Guggenbühl, Walter) Noise performance of SC-integrators assuming different operational transconductance amplifier (OTA) models. *IEEE Trans. Circuits and Systems* 35 (1988), no. 8, 1042-1048. (Summary) **89d:94053** 94C05
- Goetz, Dorothea see Kepler, Johannes, **89e:01052**
- Goetze, B. (with Nehrlich, W.) Scaling of random variables and arrangement problems in layout design. (Hungarian summary) *Közl. MTA Számítástech. Automat. Kutató Int. Budapest* 1987, no. 37, 63-96. (Summary) **89e:90167** 90C27
- (with Kochetkov, D. V.; Nehrlich, W.) Construction of maximal partial intervals. (German and Russian summaries) *J. Inform. Process. Cybernet.* 24 (1988), no. 3, 111-129. (Summary) **89j:94045** 94C10 (03B50, 68R10, 68U05)
- Goff, Stuart (with Saint Mary, Donald F.) The Bohl transformation and oscillation of linear differential systems. *SIAM J. Math. Anal.* 20 (1989), no. 1, 215-221. (Constantin Simirad) **89k:34046** 34C10 (34C20)
- Goff, William E. (with Stone, Michael) Berry's phase, commutators, and the Dirac sea. *Nuclear Phys. B* 295 (1988), no. 2, F521, 243-261. (Charles Nash) **89h:81083** 81D15 (58F05, 58G40, 81E99)
- Gogishvili, A. S. Fractional maximal functions with respect to a basis of convex comparable sets in weighted Lebesgue spaces. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 129 (1988), no. 2, 273-275. (Summary) **89g:42033** 42B25 (46E30)
- Weighted inequalities for potentials in spaces of homogeneous type. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 129 (1988), no. 3, 493-495. (Summary) **89f:42033** 42B30 (46E35)
- Gogherashvili, M. (with Sardanashvili, G. A.) Translation gauge fields and space-time dislocations. (German summary) *Ann. Physik* (7) 45 (1988), no. 4, 297-302. (P. K. Smer) **89m:83078** 83D05 (53C80, 81E13)
- Goggins, M. E. (with Milonni, P. W.) Driven Morse oscillator: classical chaos, quantum theory, and photodissociation. *Phys. Rev. A* (3) 37 (1988), no. 3, 796-806. (Summary) **89h:81035** 81C05 (58F13, 70K50, 81K05)
- Gogishvili, G. P. The structure of genera of positive binary quadratic forms. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruz. SSR* 84 (1987), 28-35. (K. Szymczek) **89c:11057** 11E41
- Gogoladze, L. D. ★ О поведении кратных сопряженных тригонометрических рядов и степенных рядов. (Russian) [The behavior of multiple conjugate trigonometric series and power series] *Tbilis. Gos. Univ., Tbilisi*, 1987. 69 pp. (Włodzimierz Lenski) **89h:42019** 42B05
- On strong summability almost everywhere. (Russian) *Mat. Sb. (N.S.)* 135(177) (1988), no. 2, 158-168, 271; translated in *Math. USSR-Sb.* 63 (1989), no. 1, 153-164. (O. D. Gabisoniya) **89h:42015** 42A24
- Gogonea, Sorin Sur la détermination des fonctions analytiques par des conditions de raccordement et conditions de type Volterra. [On the determination of analytic functions by joining conditions and conditions of Volterra type] *Rev. Roumaine Math. Pures Appl.* 32 (1987), no. 9, 793-799. (Vasile M. Ionescu) **89a:30033** 30E25 (76S05)
- Gogosov, V. V. see Zheleznorovich, V. A., (Not in MR)
- Goguen, Joseph A. (with Moss, Lawrence S.; Meseguer, José) Final algebras, cosemicomputable algebras, and degrees of unsolvability. *Category theory and computer science (Edinburgh, 1987)*, 158-181. *Lecture Notes in Comput. Sci.*, 283, Springer, Berlin-New York, 1987. (J.-J. Ch. Meyer) **89e:68088** 68Q65 (03B70, 03D25, 03D30, 68Q15)
- (with Kirchner, Claude; Meseguer, José) Concurrent term rewriting as a model of computation. *Graph reduction (Santa Fe, N.M., 1986)*, 53-93. *Lecture Notes in Comput. Sci.*, 279, Springer, Berlin-New York, 1987. (Ursula Martin) **89a:68134** 68Q50 (03B70, 68N20, 68Q05)
- Goh, C. J. (with Teo, Kok-Lay) On constrained optimization problems with nonsmooth cost functionals. *Appl. Math. Optim.* 18 (1988), no. 2, 181-190. (J. E. Rubio) **89g:49031** 49B21 (49A52, 90C48, 93B40)
- (with Teo, Kok-Lay) Control parametrization: a unified approach to optimal control problems with general constraints. *Automatica—J. IFAC* 24 (1988), no. 1, 3-18. (C. Illoio) **89a:93021** 93B40
- (with Teo, Kok-Lay) A mathematical model of optimal drug administration in the presence of random noise. *Cybernet. Systems* 19 (1988), no. 3, 235-248. (Summary) **89j:92012** 92A07
- (with Teo, Kok-Lay) On minimax eigenvalue problems via constrained optimization. *J. Optim. Theory Appl.* 57 (1988), no. 1, 59-68. (Summary) **89h:93063** 93B60 (93B17)
- Gohberg, I. (with Kaashoek, M. A.) Various minimalities for systems with boundary conditions and integral operators. *Modelling, identification and robust control (Stockholm, 1985)*, 181-196. *North-Holland, Amsterdam-New York*, 1986. (B. G. Mertzios) **89h:93017** 93B20 (93B10, 93B28)
- (with Rubinstein, Sorin) Cascade decompositions of rational matrix functions and their stability. *Internat. J. Control* 46 (1987), no. 2, 603-629. (K. Seitz) **89h:93041** 93B25 (15A22, 93B15)
- (with Dym, Harry; Kravitsky, Naftali) Biography of M. S. Livšic. *Topics in operator theory and interpolation*, 6-15. *Oper. Theory. Adv. Appl.*, 29, Birkhäuser, Basel-Boston, MA, 1988. (Editors) **89g:01049** 01A70
- (with Dym, Harry) A new class of contractive interpolants and maximum entropy principles. *Topics in operator theory and interpolation*, 117-150. *Oper. Theory. Adv. Appl.*, 29, Birkhäuser, Basel-Boston, MA, 1988. (D. Sarason) **89g:47022** 47A36 (46J99, 47B35)
- (with Kaashoek, M. A.; Lerer, L.) Nodes and realization of rational matrix functions: minimality theory and applications. *Topics in operator theory and interpolation*, 181-232. *Oper. Theory. Adv. Appl.*, 29, Birkhäuser, Basel-Boston, MA, 1988. (L. Rodman) **89e:93045** 93B20 (47A56, 93B15, 93B17)
- (with Ellis, Robert L.; Lay, David C.) On two theorems of M. G. Krein concerning polynomials orthogonal on the unit circle. *Integral Equations Operator Theory* 11 (1988), no. 1, 87-104. (J. V. Baxley) **89d:42030** 42C05 (46N05)
- (with Ben-Artzi, Asher) Lower upper factorizations of operators with middle terms. *J. Funct. Anal.* 77 (1988), no. 2, 309-325. (L. Rodman) **89d:47028** 47A68 (47B10)
- (with Koltracht, I.) Efficient algorithm for Toeplitz plus Hankel matrices. *Integral Equations Operator Theory* 12 (1989), no. 1, 136-142. (H. R. Shen) **89k:65029** 65F05 (15A06, 47A15, 47B35)
- see also *Topics in operator theory and interpolation*, **89a:47002** and *Topics in operator theory*, **89e:47005**
- Goiko, V. I. On a property of  $\mathfrak{F}$ -pre-Frattini subgroups of finite groups. (Russian) *Problems in algebra*, No. 2 (Russian), 120-124, 128, "Universitet'skoe", Minsk, 1986. (Gerhard Pazderski) **89c:20036** 20D10
- $\mathfrak{F}$ -pre-Frattini subgroups of finite groups. (Russian) *The arithmetic and subgroup structure of finite groups (Russian)*, 34-42, 211, "Nauka i Tekhnika", Minsk, 1986. (Yun Fan) **89a:20014** 20D10 (20D25, 20F17)
- Characterization of  $\mathfrak{F}$ -pre-Frattini subgroups of finite groups by the property of covering-avoidance of the chief factors of the group. (Russian) *The arithmetic and subgroup structure of finite groups (Russian)*, 43-47, 211, "Nauka i Tekhnika", Minsk, 1986. (Gerhard Pazderski) **89e:20025** 20D10
- Gokhale, Maya B. (with Myers, Thomas J.) Parallel scheduling of recursively defined arrays. *J. Symbolic Comput.* 6 (1988), no. 1, 65-81. (Not in MR) **68Q40** (68Q25)
- Gokhman, A. O. Symmetric and sign-variable differentiable functions. (Russian) *Function spaces and equations of mathematical physics (Russian)*, 4-11, 84, Voronezh. Gos. Univ., Voronezh, 1988. (Zbigniew Grande) **89f:26011** 26B05 (26B40)
- Gokhman, A. V. Tensor equations of the motion of a mass point of variable mass. (Russian) *Differential geometry*, No. 5 (Russian), 3-9, 102, Saratov. Gos. Univ., Saratov, 1980. (see **89a:53001**) 70P05 (70D99)
- see also *Differential geometry*, **89a:53001**
- sadik Gokturk, S. see Sadik Gokturk, S.
- Gokturk, S. S. see Sadik Gokturk, S.
- Golan, Igal (with Cook, Wade D.; Kress, Moshe) Heuristics for ranking players in a round robin tournament. *Comput. Oper. Res.* 15 (1988), no. 2, 135-144. (Summary) **89d:90270** 90D35 (05C20)
- Golan, Jonathan S. ★ Linear topologies on a ring: an overview. *Pitman Research Notes in Mathematics Series*, 159. *Longman Scientific & Technical, Harlow; John Wiley & Sons, Inc., New York*, 1987. xiv+104 pp. ISBN 0-582-01313-5 (M. L. Teply (Zbl 615:16028)) **89b:16039** 16A80 (06F30)
- (with Simmons, Harold) ★ Derivatives, nuclei and dimensions on the frame of torsion theories. *Pitman Research Notes in Mathematics Series*, 188. *Longman Scientific & Technical, Harlow; copublished in the United States with John Wiley & Sons, Inc., New York*, 1988. x+120 pp. ISBN 0-582-03448-5 (Jacques Raynaud) **89m:16053** 16A63 (06D20, 16A55, 54A05)
- On the Cantor-Bendixson-Simmons filtration of a torsion theory. *Comm. Algebra* 16 (1988), no. 4, 681-688. (M. Teply) **89b:16033** 16A63 (16A55)
- Golany, B. (with Charnes, A.; Keane, Michael; Rousseau, John James) Extremal principle solutions of games in characteristic function form: core, Chebyshev and Shapley value generalizations. *Econometrics of planning and efficiency*, 123-133. *Adv. Stud. Theoret. Appl. Econometrics*, 11, Kluwer Acad. Publ., Dordrecht, 1988. (Akira Okada) **89e:90232** 90D12 (90C20, 90C50)
- (with Charnes, A.; Cooper, W. W.; Masters, J.) Optimal design modifications by geometric programming and constrained stochastic network models. *Internat. J. Systems Sci.* 19 (1988), no. 6, 825-844. (Summary) **89d:90240** 90C50 (90B15, 90C99)

- (with Ben-Tal, A.; Charnes, A.) On  $n$ -person game solutions and convex programs with essentially unconstrained duals. *Optimization* 19 (1988), no. 1, 71–84. (Guang Ya Chen) **89b:90237** 90D10 (90C25)
- Golaszewski, C. H.** (with Ramadge, P. J.) Supervisory control of discrete event processes with arbitrary controls. *Advanced computing concepts and techniques in control engineering* (Il Ciocco, 1987), 459–469, NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 47, Springer, Berlin-New York, 1988. (Summary) **89k:93119** 93C30 (68U20)
- Golberg, A. I.** (with Gurvich, V. A.; Rozenblyum, M. Yu.; Khanin, K. M.) Conditions for dominance solvability of concave  $n$ -person games. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 2(254), 223–224. (Introduction) **89b:90238** 90D10
- Golberg, Michael A.** The perturbed Galerkin method for Cauchy singular integral equations with constant coefficients. *Appl. Math. Comput.* 26 (1988), no. 1, 1–33. (Summary) **89m:65114** 65R20
- A note on a superconvergence result for the generalized airfoil equation. *Appl. Math. Comput.* 26 (1988), no. 2, part I, 105–117. (P. M. Gupta) **89b:65141** 65R20 (45E05, 45L10, 76B05)
- Gold, Harvey J.** ★ Mathematical modeling of biological systems—an introductory guidebook. Reprint of the 1977 original. A Wiley-Interscience Publication. John Wiley & Sons, Inc., New York; Robert E. Krieger Publishing Co., Inc., Melbourne, FL, 1987. xviii+357 pp. ISBN 0-471-02092-3 (Editors) **89b:92003** 92A05
- Gold, Robert** (with Madan, Manohar L.) Kida's theorem for a class of nonnormal extensions. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 55–60. (Thống Nguyễn-Quang-Dô) **89k:11102** 11R23
- Golda, Z. A.** (with Szydłowski, Marek; Heller, Michael) Generic and nongeneric world models. *Gen. Relativity Gravitation* 19 (1987), no. 7, 707–718. (Donal O'Shea) **89b:58035** 58C28 (83F05)
- (with Demiański, M.; Heller, Michael; Szydłowski, Marek) Kantowski-Sachs multidimensional cosmological models and dynamical dimensional reduction. *Classical Quantum Gravity* 5 (1988), no. 5, 733–742. (Dieter Lorenz-Petzel) **89f:83086** 83E15
- Goldberg, A. A.** (with Ostrovskii, I. V.) Indicators of entire absolutely monotone functions of finite order. (Russian) *Sibirsk. Mat. Zh.* 27 (1986), no. 6, 33–49. (Shlomo Strelitz) **89a:30024** 30D15 (30D35, 60E10)
- Integral representation of monotone slowly changing functions. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 4, 21–27; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 4, 27–35. (Yi Qun Yang) **89b:26012** 26A48
- Goldberg, Charles H.** Parity filter automata. *Complex Systems* 2 (1988), no. 1, 91–141. (Klaus Sutner) **89b:68110** 68Q80 (82A99)
- Goldberg, Irwin S.** (with Folk, Robert T.) Solutions for steady and nonsteady entrance flow in a semi-infinite circular tube at very low Reynolds numbers. *SIAM J. Appl. Math.* 48 (1988), no. 4, 770–771. (Summary) **89f:76037** 76D99 (35Q10, 76Z05)
- Goldberg, J. D.** (with Gollub, J. P.; Simonelli, F.) Advances in experimental nonlinear dynamics: space/time patterns. *Chaos and complexity* (Torino, 1987), 142–151, *World Sci. Publishing, Singapore*, 1988. (Summary) **89k:58259** 58F40 (58F13)
- Goldberg, Joel Hart** (with Berry, M. V.) Renormalisation of curlicues. *Nonlinearity* 1 (1988), no. 1, 1–26. (Summary) **89b:58105** 58F08 (11L05, 78A45)
- Goldberg, Joshua N.**  $D$ -invariance on a null surface. *Gravitation and geometry*, 159–164, *Monographs Textbooks Phys. Sci.*, 4, Bibliopolis, Naples, 1987. (Garry Ludwig) **89b:83020** 83C40 (83C45)
- Triad approach to the Hamiltonian of general relativity. *Phys. Rev. D* (3) 37 (1988), no. 8, 2116–2120. (K. P. Tod) **89e:83010** 83C05
- Goldberg, Lisa R.** (with Douady, A.) The nonconjugacy of certain exponential functions. *Holomorphic functions and moduli*, Vol. I (Berkeley, CA, 1986), 1–7, *Math. Sci. Res. Inst. Publ.*, 10, Springer, New York-Berlin, 1988. (Michael Hurley) **89m:58112** 58F10 (58F08)
- $k$ -flat structures and exotic characteristic classes. *Trans. Amer. Math. Soc.* 306 (1988), no. 2, 433–453. (Connor Lazarov) **89g:57041** 57R32 (57R20)
- Goldberg, Ludmila** On singular projective deformations of two second class totally focal pseudocongruences of planes. *Internat. J. Math. Math. Sci.* 11 (1988), no. 1, 71–80. (Hans Sachs) **89a:53018** 53A20
- Goldberg, Mark K.** (with Miller, Z.) A parallel algorithm for bisection width in trees. *Comput. Math. Appl.* 15 (1988), no. 4, 259–266. (Summary) **89k:68119** 68R10 (05C35, 68Q25)
- (with Erdős, Paul; Pach, János; Spencer, Joel) Cutting a graph into two dissimilar halves. *J. Graph Theory* 12 (1988), no. 1, 121–131. (Summary) **89j:05043** 05C35
- Goldberg, Moshe** Mixed-multiplicativity for  $l_p$  norms of matrices. *Linear algebra in signals, systems, and control* (Boston, MA, 1986), 44–47, *SIAM, Philadelphia, PA*, 1988. (Sing Cheong Ong) **89k:15043** 15A60
- (with Tadmor, Eitan) Simple stability criteria for difference approximations of hyperbolic initial-boundary value problems. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 179–185, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 65N10 (35L40)
- Goldberg, Samuel Irving** (with Tóth, Gábor) Remarks on Wente's example of an immersed torus in  $E^3$ . *Differential geometry and its applications* (Brno, 1986), 71–78, *Math. Appl. (East European Ser.)*, 27, Reidel, Dordrecht-Boston, MA, 1987. (Paul Baird) **89b:53014** 53A10
- Nonnegatively curved contact manifolds and the Poincaré conjecture. *Topics in differential geometry*, Vol. I, II (Debrecen, 1984), 493–509, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Viktor Schroeder) **89d:53084** 53C20 (52C15, 57M40, 57N12)
- (with Tóth, Gábor) On closed surfaces immersed in  $E^3$  with constant mean curvature. *J. London Math. Soc.* (2) 38 (1988), no. 2, 333–340. (Michael Grüter) **89m:53013** 53A10 (58E20)
- Goldberg, Wallace** (with Hochstadt, Harry) Hill's matrices with some vanishing instability intervals. *Linear Algebra Appl.* 97 (1987), 121–126. (Bryan E. Cain) **89g:15030** 15A57 (15A18)
- Goldbeter, A.** (with Martiel, J.-L.) Developmental control of a biological rhythm: the onset of cyclic AMP oscillations in *Dictyostelium* cells. *From chemical to biological organization*, 248–254, *Springer Ser. Synergetics*, 39, Springer, Berlin-New York, 1988. (see **89g:92002**) 92A09 (92A08)
- Goldburg, W. I.** (with Tong, Panger) Relative velocity fluctuations in turbulent flows at moderate Reynolds number. II. Model calculation. *Phys. Fluids* 31 (1988), no. 11, 3253–3259. (Summary) **89k:76067** 76F99
- Golden, B.** (with Dror, M.; Ball, Michael O.) A computational comparison of algorithms for the inventory routing problem. *Ann. Oper. Res.* 4 (1985), no. 1–4, 3–23. (Summary) **89b:90074** 90B10 (90B05, 90B35)
- Golden, J. M.** (with Graham, G. A. C.) ★ Boundary value problems in linear viscoelasticity. *Springer-Verlag, Berlin-New York*, 1988. xiv+266 pp. ISBN 3-540-18615-8 (Warren S. Edelstein) **89k:73035** 73F10 (73-02, 73F05, 73F15, 73F20, 73M05, 73T05)
- Golden, Kenneth M.** (with Goldstein, Sheldon; Lebowitz, Joel L.) Nash estimates and the asymptotic behavior of diffusions. *Ann. Probab.* 16 (1988), no. 3, 1127–1146. (Xiang Qun Yang) **89f:60093** 60J60 (35K99, 60J45, 82A05)
- (with Goldstein, Sheldon) Arbitrarily slow decay of correlations in quasiperiodic solutions. *J. Statist. Phys.* 52 (1988), no. 3–4, 1113–1118. (A. Comtet) **89m:82056** 82A57 (82A31)
- Golden, R. M.** A unified framework for connectionist systems. *Biol. Cybernet.* 59 (1988), no. 2, 109–120. (Summary) **89e:92051** 92A25 (92A09)
- Goldengorin, B. I.** Efficiently solvable classes for a one-product allocation problem. (Russian) *Models and methods for the optimization of economic systems* (Russian), 173–152, “Nauka” Sibirsk. Otdel., Novosibirsk, 1987. (From the text) **89c:90058** 90B30 (90B99, 90C08)
- Goldeneizer, A. L.** (with Vasil'ev, D. G.) Distribution of the frequencies of free oscillations of two- and three-dimensional elastic bodies. (Russian) *Mechanics and scientific-technological progress*, Vol. 3 (Russian), 223–236, 272, “Nauka”, Moscow, 1988. (see **89j:73002**) 73D30 (73K12)
- Goldfarb, Donald** (with Grigoriadis, Michael D.) A computational comparison of the Dinic and network simplex methods for maximum flow. *Ann. Oper. Res.* 13 (1988), no. 1–4, 83–123. (Summary) **89d:90090** 90B10
- (with Mehrotra, Sanjay) Relaxed variants of Karmarkar's algorithm for linear programs with unknown optimal objective value. *Math. Programming* 40 (1988), no. 2 (Ser. A), 183–195. (Miguel Delgado Calvo-Flores) **89b:90123** 90C05
- (with Mehrotra, Sanjay) A relaxed version of Karmarkar's method. *Math. Programming* 40 (1988), no. 3 (Ser. A), 289–315. (Andrew Russakoff) **89i:90049** 90C05
- Goldfarb, Warren** Poincaré against the Logicians. *History and philosophy of modern mathematics* (Minneapolis, MN, 1985), 61–81, *Minnesota Stud. Philos. Sci.*, XI, Univ. Minnesota Press, Minneapolis, MN, 1988. (Alejandro R. Garciadiego) **89j:01049** 01A60 (00A25, 01A65, 01A72, 03-03, 03A05)
- Goldfeld, A.** (with Dubi, A.; Burn, K.) Algorithms for the calculation of the second moment of geometrical splitting in Monte Carlo. *Transport Theory Statist. Phys.* 16 (1987), no. 8, 1149–1165. (Summary) **89b:65008** 65C05
- Goldfeld, Dorian** Kloosterman zeta functions for  $GL(n, \mathbb{Z})$ . *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 417–424, *Amer. Math. Soc., Providence, RI*, 1987. (K. Shiratani) **89k:11039** 11F70 (11L05)
- (with Bump, Daniel; Friedberg, Solomon) Poincaré series and Kloosterman sums for  $SL(3, \mathbb{Z})$ . *Acta Arith.* 50 (1988), no. 1, 31–89. (Shigeaki Tsuyumine) **89j:11047** 11F37 (11L05)
- see also Number theory, trace formulas and discrete groups, **89m:11003**
- Goldhaber, Alfred S. T. H. R.** Skyrme (December 5, 1922–June 25, 1987). *Nuclear Phys. A* 487 (1988), no. 1, i–iii. (Not in MR) 01A70 (81-03)
- Goldhirsch, I.** (with Bayli, B. J.; Orszag, Steven A.) Independent degrees of freedom of dynamical systems. *J. Sci. Comput.* 2 (1987), no. 2, 111–121. (Preben Alström) **89d:58078** 58F13 (76F99)
- (with Noskiewicz, S. H.) Distribution functions for random walk processes on networks: an analytic method. *J. Statist. Phys.* 48 (1987), no. 1–2, 255–290. (Cheng Xun Wu) **89b:82129b** 82A70 (60J15, 82A43)
- (with Noskiewicz, S. H.) Anomalous fluctuations in random walk dynamics. *J. Statist. Phys.* 48 (1987), no. 1–2, 291–314. (Cheng Xun Wu) **89b:82129a** 82A70 (60J15, 82A43)
- (with Sulem, P.-L.; Orszag, Steven A.) Stability and Lyapunov stability of dynamical systems: a differential approach and a numerical method. *Phys. D* 27 (1987), no. 3, 311–337. (Summary) **89f:34068** 34D05 (34B25, 58F10, 65L07)
- (with Noskiewicz, S. H.) Average versus typical mean first-passage time in a random random walk. *Phys. Rev. Lett.* 61 (1988), no. 5, 500–502. (Summary) **89j:82044** 82A42 (60J15, 82A41)
- (with Pelz, Richard B.; Orszag, Steven A.) Numerical simulation of thermal convection in a two-dimensional finite box. *J. Fluid Mech.* 199 (1989), 1–28. (Summary) **89k:76049** 76E15 (76-04)
- Goldie, Charles M.** (with Resnick, Sidney) Distributions that are both subexponential and in the domain of attraction of an extreme-value distribution. *Adv. in Appl. Probab.* 20 (1988), no. 4, 706–718. (Paul Embrechts) **89k:60013** 60E05
- (with Resnick, Sidney) Subexponential distribution tails and point processes. *Comm. Statist. Stochastic Models* 4 (1988), no. 2, 361–372. (Richard F. Serfozo) **89m:60043** 60E99 (60F99)
- (with Bingham, N. H.) Riesz means and self-neglecting functions. *Math. Z.* 199 (1988), no. 3, 443–454. (J. Steinebach) **89i:60065** 60F15 (40G99)
- Goldin, V. Ya.** (with Kolpakov, A. V.) Combined methods for solving a multidimensional stationary system of quasidiffusion equations. (Russian) *Computational methods in linear algebra* (Russian) (Moscow, 1982), 60–71, *Akad. Nauk SSSR, Otdel Vychisl. Mat.*, Moscow, 1983. (Stanislav Burys) **89b:65248** 65N20
- Goldman, A. Yu.** Asymptotic design of control systems with an identifiable coordinate. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 9, 180–183. (Not in MR) 93B50 (93C05)
- Goldman, M. A.** see **Goldman, Mikhail Abramovich**
- Goldman, M. L.** Embedding of various metrics for spaces of Calderón type. (Russian) Studies in the theory of differentiable functions of several variables and its applications, XII (Russian). *Trudy Mat. Inst. Steklov.* 181 (1988), 70–94, 270. (Georgi E. Karadzhov) **89f:46070** 46E35 (46E30, 46M35)
- Goldman, Mikhail Abramovich** Splines in a Hilbert space in the case when the kernel of the smoothing operator is contained in the kernel of the interpolation operator. (Russian) *Topological structures and their mappings* (Russian), 47–61, ii–iii, *Lav. Gos. Univ., Riga*, 1987. (R. Smarzewski) **89e:41010** 41A15 (41A65)
- Goldman, Mitchell** Lucas numbers of the form  $pX^2$ , where  $p = 3, 7, 47$ , or 2207. *C. R. Math. Rep. Acad. Sci. Canada* 10 (1988), no. 3, 139–141. (A. G. Shannon) **89e:11012** 11B39



- (11A41)
- Goldman, Noreen** (with Coresh, Josef) The effect of variability in the fertility schedule on numbers of kin. *Math. Population Stud.* **1** (1988), no. 2, 137–156. (Summary) **89g:92038** 92A15
- Goldman, Ronald N.** The role of surfaces in solid modeling. *Geometric modeling*, 69–90, SIAM, Philadelphia, PA, 1987. (see **89b:65010**) 65D10
- (with Barry, Phillip J.) A recursive proof of a B-spline identity for degree elevation. *Comput. Aided Geom. Design* **5** (1988), no. 2, 173–175. (Len Bos) **89h:41020** 41A15 (65D07)
- Urn models and B-splines. *Constr. Approx.* **4** (1988), no. 3, 265–288. (C. C. Rousseau) **89f:41011** 41A15 (60C05)
- Urn models, approximations, and splines. *J. Approx. Theory* **54** (1988), no. 1, 1–66. (Bela Uhrin) **89g:41005** 41A10 (41A15, 60C05)
- Goldman, Sally A.** (with Rivest, Ronald L.) Making maximum entropy computations easier by adding extra constraints (extended abstract). *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 2 (Laramie, WY, 1985 and Seattle, WA, 1986/1987), 323–340, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (see **89f:62002**) 94A17 (65U05, 94C15)
- Goldman, William M.** (with Millson, John J.) The deformation theory of representations of fundamental groups of compact Kähler manifolds. *Bull. Amer. Math. Soc. (N.S.)* **18** (1988), no. 2, 153–158. (H. Wu) **89f:53100** 53C55 (22E40, 22E45, 32G13, 32J25, 32M15, 57R15)
- Topological components of spaces of representations. *Invent. Math.* **93** (1988), no. 3, 557–607. (William Harvey) **89m:57001** 57M05 (22E40, 32G15)
- see also *Geometry of group representations*, **89c:20002**
- Goldmann, Mark** Vectorisation of the multiple shooting method for the nonlinear boundary value problem in ordinary differential equations. *Parallel Comput.* **7** (1988), no. 1, 97–110. (Summary) **89b:65330** 65W05 (65L10)
- Goldner, Gavrilă** (with Balázs, M.) Monotone enclosure for Cauchy problem. *Seminar on mathematical analysis*, 91–100, Preprint, 87-7, Univ. “Babeş-Bolyai”, Cluj-Napoca, 1987. (A. A. Fonarev) **89f:47093** 47H17 (65J15, 65L05)
- Goldoni, Giorgio** The combinatorial significance of the Fibonacci numbers. (Italian) *Archimede* **40** (1988), no. 1, 50–56. (Franco Eugeni) **89k:11008** 11B39
- Goldoni, L.** (with Caliceti, E.; Graffi, S.) Probability of convergence of perturbation theory for hydrogen photoionization. *J. Math. Phys.* **28** (1987), no. 11, 2655–2661. (Edward R. Vrsay) **89b:81047** 81C12 (81C20)
- Goldreich, Oded** (with Alexi, Werner; Chor, Benny; Schnorr, C.-P.) RSA and Rabin functions: certain parts are as hard as the whole. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 194–209. (Melvin M. Sweet) **89j:11120** 11Y11 (11T71, 11Y16, 68P25, 68Q15, 94A60)
- (with Chor, Benny) Unbiased bits from sources of weak randomness and probabilistic communication complexity. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 230–261. (Claus-Peter Schnorr) **89c:68044** 68Q25
- Goldschmidt, Bernd** Representation of generalized analytic vectors in matrix form. *Math. Nachr.* **130** (1987), 177–187. (Manfred W. Kracht) **89d:30051** 30G20 (15A66, 35J45)
- Goldschmidt, Carl Wolfgang Benjamin** see *Küssner, Martha*, **89b:01028**
- Goldschmidt, Yadin Y.** (with Lai, Pik-Yin) Application of statistical mechanics to combinatorial optimization problems: the chromatic number problem and q-partitioning of a graph. *J. Statist. Phys.* **48** (1987), no. 3–4, 513–529. (Yixun Lin) **89a:05120** 05C80 (05C15, 68Q15, 82A57, 90C27)
- Mean-field theory of the Potts spin-glass with finite connectivity. *Nuclear Phys. B* **295** (1988), no. 3 FS21, 409–421. (Aernout C. D. van Enter) **89f:82070** 82A57 (82A25)
- Goldsheld, I. Ya.** (with Margulis, G. A.) The condition of simplicity for the spectrum of Lyapunov exponents. (Russian) *Dokl. Akad. Nauk SSSR* **293** (1987), no. 2, 297–301. (Igor N. Litvin) **89c:60073** 60H25 (15A52, 34D05, 34F05, 39A11, 47B39, 58F11)
- Goldshstein, M. Sh.** (with Galsinskii, M. D.) Selfadjointness of the Schrödinger operator with a singular potential. (Russian) *Dokl. Akad. Nauk UzSSR* **1987**, no. 10, 4–6. (Josef Voldrich) **89f:35056** 35J10 (47F05)
- (with Grabarnik, G. Ya.) Almost sure convergence theorems of von Neumann algebras (some new results). *Special classes of linear operators and other topics* (Bucharest, 1986), 101–120, *Oper. Theory Adv. Appl.*, **28**, Birkhäuser, Basel-Boston, MA, 1988. (Andrzej Luczak) **89g:46103** 46L50 (28D05)
- Goldstein, V. M.** (with Kuz'minov, V. I.; Shvedov, I. A.)  $L_p$ -cohomology of Riemannian manifolds. (Russian) *Trudy Inst. Mat. (Novosibirsk)* **7** (1987), Issled. Geom. Mat. Anal., 101–116, 199. (Andreas Nestke) **89d:58117** 58G05 (58A12, 58A14, 58A25)
- (with Kuz'minov, V. I.; Shvedov, I. A.) The de Rham isomorphism of the  $L_p$ -cohomology of noncompact Riemannian manifolds. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 2, 34–44, 216; translated in *Siberian Math. J.* **29** (1988), no. 2, 190–197. (Jürgen Eichhorn) **89h:58007** 58A12 (58A14, 58G25)
- Goldshnik, M. A.** Paradoxes of viscous flows. (Russian) *Mechanics and scientific-technological progress* (Russian), 34–48, 285, “Nauka”, Moscow, 1987. (Summary) **89g:76024** 76D05 (76D99)
- (with Shtern, V. N.) Conical flows of fluid with variable viscosity. *Proc. Roy. Soc. London Ser. A* **419** (1988), no. 1856, 91–106. (W. O. Crimale, Jr.) **89j:76044** 76D99 (83A30, 86A99)
- Goldsmann, David M.** (with Bechhofer, Robert E.) Sequential selection procedures for multifactor experiments involving Koopman-Darmois populations with additivity. *Statistical decision theory and related topics, IV*, Vol. 2 (West Lafayette, Ind., 1986), 3–21, Springer, New York-Berlin, 1988. (Z. Sidák) **89c:62052** 62F07 (62L10)
- (with Bechhofer, Robert E.) Truncation of the Bechhofer-Kiefer-Sobel sequential procedure for selecting the normal population which has the largest mean. II. 2-factor experiments with no interaction. *Comm. Statist. Simulation Comput.* **17** (1988), no. 1, 103–128. (Not in MR) 62F07
- Goldsmith, B.** (with Göbel, Rüdiger) Essentially indecomposable modules which are almost free. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 154, 213–222. (Paul C. Eklof) **89e:20059** 20K20 (03E75, 13C13, 20K30)
- (with Burns, J. M.) Maximal order abelian subgroups of symmetric groups. *Bull. London Math. Soc.* **21** (1989), no. 1, 70–72. (Cheryl E. Praeger) **89i:20013** 20B35
- Goldstein, A. A.** (with Russak, I. B.) How good are the proximal point algorithms? *Numer. Funct. Anal. Optim.* **9** (1987), no. 7–8, 709–724. (J. E. Spingarn) **89a:90110** 90C25 (49D07, 49D45, 65K10)
- Goldstein, Bernard R.** Remarks on Gemma Frisius's *De radio astronomico et geometrico*. From ancient omens to statistical mechanics, 167–180, *Acta Hist. Sci. Nat. Med.*, **39**, Univ. Lib. Copenhagen, Copenhagen, 1987. (Kristian Peder Moesgaard) **89i:01019** 01A40 (85–03)
- (with Barker, Peter) The role of comets in the Copernican revolution. *Stud. Hist. Philos. Sci.* **19** (1988), no. 3, 299–319. (Kristian Peder Moesgaard) **89i:01016** 01A40 (01A45, 85–03)
- see also *From ancient omens to statistical mechanics*, **89c:01002**
- Goldstein, Byron** (with Torney, David C.) Rates of diffusion-limited reaction in periodic systems. *J. Statist. Phys.* **49** (1987), no. 3–4, 725–750. (Muthusamy Lakshmanan) **89f:35064** 35J25 (35B20, 35P99, 35Q20, 82A70)
- see also *Nonlinearity in biology and medicine*, **89c:92002**
- Goldstein, Catherine** see *Seminar: Number Theory*, **89j:11003**
- Goldstein, Charles I.** Multigrid preconditioners applied to three-dimensional parabolic equation type models. *Computational acoustics, Vol. I* (New Haven, Conn., 1986), 57–74, North-Holland, Amsterdam-New York, 1988. (Summary) **89h:76021** 76Q05 (65F35, 65P05, 76–08)
- (with Parter, Seymour V.) On the norm equivalence of singularly perturbed elliptic difference operators. *Appl. Math. Comput.* **26** (1988), no. 3, part II, 179–200. (Ian Gladwell) **89b:65061** 65F35 (39A70, 47B39, 65N20)
- Goldstein, Jerome A.** (with Rieder, Gisele Ruiz) The Coulomb potential in higher dimensions. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 143–149, *Lecture Notes in Math.*, **1285**, Springer, Berlin-New York, 1987. (Denise Huet) **89d:81028** 81C10
- (with Svirsky, Roman) Singular potentials and scaling. *Houston J. Math.* **13** (1987), no. 4, 557–566. (Xue-Ping Wang) **89c:35038** 35J10 (35P25)
- (with Lin, Chin-Yuan) Singular nonlinear parabolic boundary value problems in one space dimension. *J. Differential Equations* **68** (1987), no. 3, 429–443. (Joachim Naumann) **89c:35079** 35K65 (35K60, 47H20)
- (with Rosencrans, Steven I.) Scientific biographical sketch of Edward D. Conway. *Mathematics applied to science* (New Orleans, La., 1986), xv–xvii, Academic Press, Boston, MA, 1988. (Editors) **89c:01060** 01A70
- (with Oharu, Shinnosuke; Vogt, Andrew) Affine semigroups on Banach spaces. *Hiroshima Math. J.* **18** (1988), no. 2, 433–450. (G. F. Webb) **89g:47089** 47H20 (47D05)
- (with Rieder, Gisele Ruiz) Spin-polarized Thomas-Fermi theory. *J. Math. Phys.* **29** (1988), no. 3, 709–716. (A. O. Barut) **89c:81185** 81G45
- see also *Semigroups and differential operators*, (Not in MR)
- Goldstein, Larry Mark** (with Waterman, Michael S.) Mapping DNA by stochastic relaxation. *Adv. in Appl. Math.* **8** (1987), no. 2, 194–207. (Summary) **89d:92042** 92A10 (92A09)
- Mean square rates of convergence in the continuous time simulated annealing algorithm on  $\mathbb{R}^d$ . *Adv. in Appl. Math.* **9** (1988), no. 1, 35–39. (Th. M. Liebling) **89g:90192** 90C30
- Minimizing noisy functionals in Hilbert space: an extension of the Kiefer-Wolfowitz procedure. *J. Theoret. Probab.* **1** (1988), no. 2, 189–204. (G. Pflug) **89h:62142** 62L20 (93E20)
- On the choice of step size in the Robbins-Monro procedure. *Statist. Probab. Lett.* **6** (1988), no. 5, 299–303. (Katsuji Uosaki) **89d:62084** 62L20
- Goldstein, Laurence** The sorites as a lesson in semantics. *Mind* **97** (1988), no. 387, 447–455. (Not in MR) 03A05 (03B65)
- Goldstein, M. E.** (with Leib, S. J.) Nonlinear roll-up of externally excited free shear layers. *J. Fluid Mech.* **191** (1988), 481–515. (Summary) **89m:76043** 76E30 (76F10)
- (with Hultgren, Lennart S.) Boundary-layer receptivity to long-wave free-stream disturbances. *Annual review of fluid mechanics*, Vol. 21, 137–166, *Annual Reviews, Palo Alto, CA*, 1989. (see **89g:76002**) 76E05 (76D10, 76D33)
- Goldstein, M. S.** see *Goldshstein, M. Sh.*
- Goldstein, Martin I.** (with Sankoff, David) Probabilistic models of genome shuffling. *Bull. Math. Biol.* **51** (1989), no. 1, 117–124. (Summary) **89g:92033** 92A10
- Goldstein, Max** (with Bernstein, Herbert J.) Optimizing Givens' algorithm for multi-processors. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 3, 601–602. (I. Norman Katz) **89b:65090** 65F15 (65W05)
- Goldstein, Michael** Adjusting belief structures. *J. Roy. Statist. Soc. Ser. B* **50** (1988), no. 1, 133–154. (I. J. Good) **89f:62011** 62A15 (90A10)
- Goldstein, Myron** (with Kuran, Ü.) A sharper inequality involving means of subharmonic functions. *J. London Math. Soc. (2)* **36** (1987), no. 3, 469–489. (D. H. Armitage) **89c:31002** 31B05
- (with Kuran, Ü.) On Harnack-type inequalities and the extremality of the Poisson kernel. *Complex Variables Theory Appl.* **9** (1988), no. 4, 327–342. (D. H. Armitage) **89d:31009** 31B05
- (with Brown, Johnny E.; McDonald, John N.) A sequence of extremal problems for trigonometric polynomials. *J. Math. Anal. Appl.* **130** (1988), no. 2, 545–551. (S. Izumi) **89d:42002** 42A05
- (with Haussmann, Werner; Rogge, Lothar) On the mean value property of harmonic functions and best harmonic  $L^1$ -approximation. *Trans. Amer. Math. Soc.* **305** (1988), no. 2, 505–515. (D. H. Armitage) **89d:31010** 31B05 (41A30, 41A50)
- (with Armitage, D. H.) Quadrature and harmonic  $L^1$ -approximation in annuli. *Trans. Amer. Math. Soc.* **312** (1989), no. 1, 141–154. (Ü. Kuran) **89k:31004** 31B05 (41A30)
- Goldstein, Nahum B.** (with Nguyen, Loc Bao; Perkowski, Marek A.) PALMINI—fast Boolean minimizer for personal computers. *24th ACM/IEEE Design Automation Conference* (Miami Beach, FL, 1987), 615–621, ACM, New York, 1987. (see **89f:68003**) 68Q20
- Goldstein, Sheldon** (with Dürr, Detlef; Lebowitz, Joel L.) Asymptotic motion of a classical particle in a random potential in two dimensions: Landau model. *Comm. Math. Phys.* **113** (1987), no. 2, 209–230. (G. F. Dell'Antonio) **89k:82009** 82A05 (60K35, 82A42)
- (with Dürr, Detlef; Lebowitz, Joel L.) Self-diffusion in a nonuniform one-dimensional system of point particles with collisions. *Probab. Theory Related Fields* **75** (1987), no. 2, 279–290. (Summary) **89b:60235** 60K35
- (with Golden, Kenneth M.; Lebowitz, Joel L.) Nash estimates and the asymptotic behavior of diffusions. *Ann. Probab.* **16** (1988), no. 3, 1127–1146. (Xiang Qun Yang) **89f:60093** 60J60 (35K99, 60J45, 82A05)

- (with Golden, Kenneth M.) Arbitrarily slow decay of correlations in quasiperiodic solutions. *J. Statist. Phys.* **52** (1988), no. 3-4, 1113-1118. (A. Comtet) **89m:82056** 82A57 (82A31)
- Goldstein, Stanislaw** Norm convergence of martingales in  $L^p$ -spaces over von Neumann algebras. *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 6, 531-541. (S. Gudder) **89d:46064** 46L50 (60G48)
- (with Luczak, A.) On the Rademacher-Menshov theorem in von Neumann algebras. *Studia Sci. Math. Hungar.* **22** (1987), no. 1-4, 365-377. (V. I. Chilin) **89f:46122** 46L50
- Goldstick, D.** (with O'Neill, Barry) "Truer". *Philos. Sci.* **55** (1988), no. 4, 583-597. (Not in MR) 03B30 (03A05)
- Goldston, D. A.** On the function  $S(T)$  in the theory of the Riemann zeta-function. *J. Number Theory* **27** (1987), no. 2, 149-177. (S. W. Graham) **89a:11006** 11M06
- (with Cheer, A. Y.) Longer than average intervals containing no primes. *Trans. Amer. Math. Soc.* **304** (1987), no. 2, 469-486. (H. G. Diamond) **89d:11073** 11N05
- (with McCurley, Kevin S.) Sieving the positive integers by large primes. *J. Number Theory* **28** (1988), no. 1, 94-115. (G. Greaves) **89d:11077** 11N25
- On the pair correlation conjecture for zeros of the Riemann zeta-function. *J. Reine Angew. Math.* **385** (1988), 24-40. (Yasushi Matsuoka) **89c:11133** 11M26
- (with McCurley, Kevin S.) Sieving the positive integers by small primes. *Trans. Amer. Math. Soc.* **307** (1988), no. 1, 51-62. (H.-E. Richert) **89j:11081** 11N35
- Goldwasser, John L.** (with Brualdi, Richard A.; Michael, T. S.) Maximum permanents of matrices of zeros and ones. *J. Combin. Theory Ser. A* **47** (1988), no. 2, 207-245. (Werner Hartmann) **89c:15010** 15A15 (15A45)
- Goldwasser, Shafi** (with Micali, Silvio; Rivest, Ronald L.) A digital signature scheme secure against adaptive chosen-message attacks. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 281-308. (Harald Niederreiter) **89c:94009** 94A60 (11T71)
- Goldwurm, M.** (with Bertoni, Alberto; Sabadini, Nicoletta) Analysis of a class of algorithms for problems on trace languages. *Applicable algebra, error-correcting codes, combinatorics and computer algebra* (Karlsruhe, 1986), 202-214, *Lecture Notes in Comput. Sci.*, **307**, Springer, Berlin-New York, 1988. (D. M. Campbell) **89h:68080** 68Q45 (68Q25)
- Golechko, Yu. I.** Uniform boundedness of the solutions of a second-order differential equation. (Russian) *Boundary value problems* (Russian), 50-52, 194, *Perm. Politekh. Inst., Perm.* (1983) (see **89c:00008**) 34C11
- Golema, Marian** (with Jaskiewicz, Genadiy) Identification of the balance keeping process in standing position in the presence of short-term disturbances. (Polish. English and Russian summaries) *Postępy Cybernet.* **11** (1988), no. 1, 93-108. (Not in MR) 93D15 (34D10, 92A09)
- Golembiowski, Andreas** Zur Berechnung modular irreduzibler Matrixdarstellungen symmetrischer Gruppen mit Hilfe eines Verfahrens von M. Clausen. [On the computation of modular irreducible matrix representations of symmetric groups by means of a method of M. Clausen] *Bayreuth. Math. Schr.* **25** (1987), 135-222; translated in *Math. USSR-Sb.* **62** (1989), no. 1, 207-221. (A. O. Morris) **89b:20038** 20C30
- Golenishcheva-Kutuzova, M. I.** Functional moduli of moments for groups of diffeomorphisms of two-dimensional manifolds. (Russian) *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 4, 69-70. (V. Lychagin (translated from RZhMat 1988:3 A758)) **89k:58088** 58F05 (58D05)
- Local classification of moments for diffeomorphism groups. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 3(255), 181-182. (V. Lychagin (translated from RZhMat 1987:11 A671)) **89d:58039** 58F05 (58D05)
- Goles Ch., Eric** Threshold networks and generalizations. *Automata networks* (Argeles-Village, 1986), 42-52, *Lecture Notes in Comput. Sci.*, **316**, Springer, Berlin-New York, 1988. (see **89c:68078**) 68Q80
- (with Cosnard, Michel; Moumida, Driss; de St. Pierre, Thierry) Dynamical behavior of a neural automaton with memory. *Complex Systems* **2** (1988), no. 2, 161-176. (Steven Matthyse) **89h:68109** 68Q80 (58F21, 68Q75, 92A09)
- Goles Chacc, Eric** see **Goles Ch., Eric**
- Golek, I.** On mappings with a common fixed point in Menger spaces. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timisoara. Lucr. Sem. Mat. Fiz.* **1986**, November, 45-50. (Xie Ping Ding) **89c:54091** 54H25 (08A02)
- On common fixed points in probabilistic metric spaces. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timisoara. Lucr. Sem. Mat. Fiz.* **1986**, May, 71-76. (Xie Ping Ding) **89d:54035** 54H25 (08A02)
- Golets, V. L.** (with Petrishin, R. I.) Nonlinear oscillations of systems passing through resonance. (Russian) *Prikl. Mekh.* **23** (1987), no. 4, 87-93, 134. (I. A. Galiullin) **89a:70021** 70K30 (34C15, 34C29)
- Golfand, Ya. Yu.** (with Klin, M. Kh.) Amorphous cell rings. I. (Russian) *Investigations in the algebraic theory of combinatorial objects* (Russian), 32-38, *Vsesoyuz. Nauch.-Issled. Inst. Sistem. Issled.*, Moscow, 1985. (Jozef Širáň) **89c:05029a** 05B99
- Gollé, Jovan Dj.** On the relationship between the information measures and the Bayes probability of error. *IEEE Trans. Inform. Theory* **33** (1987), no. 5, 681-693. (From the introduction) **89j:94017** 94A17
- On the relationship between the separability measures and the Bayes probability of error. *IEEE Trans. Inform. Theory* **33** (1987), no. 5, 694-701. (From the introduction) **89j:94018** 94A17
- Golicher, I. I.** Solution of some optimal control problems by the method of iterations. (Russian) *Investigations in the theory of the approximation of functions* (Russian), 139-147, *Akad. Nauk SSSR Bashkir. Filial, Otdel Fiz. Mat., Ufa*, 1986. (Ognyan Kouchnev) **89m:49007** 49A22 (93C20)
- Solution of some optimal control problems by the iterative method. (Russian) *Dokl. Akad. Nauk SSSR* **293** (1987), no. 4, 781-785. (V. I. Garkusha) **89h:49003** 49A22 (93B40, 93C20)
- Golik, S. I.** (with Kamornikov, A. F.) Efficient difference schemes with advancement for three-dimensional quasilinear hyperbolic equations of gradient type. (Russian. English summary) *Vestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 4, 45-51, 124-125. (A. O. Oganessian) **89a:65151** 65N10
- Golin, Simon** (with Blanchard, Ph.) Diffusion processes with singular drift fields. *Comm. Math. Phys.* **109** (1987), no. 3, 421-435. (Summary) **89a:60179** 60H10 (81C20)
- Golinelli, O.** (with Derrida, B.) Effect of thermal noise and initial conditions in the dynamics of a mean-field ferromagnet. (French summary) *J. Physique* **49** (1988), no. 10, 1663-1671. (Summary) **89i:82085** 82A68
- Golla, V. I.** Coastal run-up of a tsunami propagating in a bay. *Izv. Acad. Sci. USSR Atmospher. Ocean. Phys.* **23** (1987), no. 6, 486-491 (1988); translated from *Izv. Akad. Nauk SSSR Ser. Fiz. Atmosf. i Okeana* **23** (1987), no. 6 (Russian). (Summary) **89c:76031** 76B15 (86A05)
- Gollinskii, L. B.** An estimate for stability in the Marcinkiewicz theorem for fourth-degree polynomials. (Russian) *Mathematical physics, functional analysis* (Russian), 118-126, 147, *"Naukova Dumka"*, Kiev, 1986. (S. G. Maloshevskii) **89a:60043** 60E10 (62E10)
- Goltysa, G. S.** (with Boubnov, B. M.) Influence of vertical stratification on motion in a differentially heated rotating annulus. *Geophys. Astrophys. Fluid Dynamics* **42** (1988), no. 1-2, 1-35. (A. S. Gupta) **89f:76046** 76E20 (76C20, 86A35)
- Goltysna, A. G.** (with Molchanov, S. A.) A multidimensional model of rare random scatterers. (Russian) *Dokl. Akad. Nauk SSSR* **294** (1987), no. 6, 1302-1306. (Authors' review (translated from RZhMat 1987:11 V377)) **89f:60067** 60H25 (47B39, 82A42)
- Golitza, George** Representation of the affine superalgebras  $A^{(0)}(0, 2)$ ,  $A^{(2)}(0, 2| -1)$  and their subalgebras  $A^{(2)}_1, A^{(2)}_{-1}$  by vertex operators. *J. Algebra* **117** (1988), no. 1, 198-226. (Chang Kun Liu) **89j:17004** 17A70 (17B67)
- Golley, B. W.** (with Grice, William A.) A finite strip-element for plane stress. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 239-247, North-Holland, Amsterdam-New York, 1988. (Summary) **89c:73003** 73-08
- (with Petrolito, J.) Semi-analytical plane stress analysis. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 589-597, North-Holland, Amsterdam-New York, 1988. (Summary) **89c:73004** 73-08
- Gollub, J. P.** (with Simonelli, F.; Goldberg, J. D.) Advances in experimental nonlinear dynamics: space/time patterns. *Chaos and complexity* (Torino, 1987), 142-151, *World Sci. Publishing, Singapore*, 1988. (Summary) **89i:58259** 58F40 (58F13)
- (with Simonelli, F.) Surface wave mode interactions: effects of symmetry and degeneracy. *J. Fluid Mech.* **199** (1989), 471-494. (Summary) **89h:76017** 76B15 (58F13, 58F14)
- Gollwitzer, Herman E.** (with Mode, Charles J.; Herrmann, Nira) A methodological study of a stochastic model of an AIDS epidemic. *Math. Biosci.* **92** (1988), no. 2, 201-229. (Not in MR) 92A15
- Golod, P. I.** A deformation of the affine algebra  $A^{(1)}$  and Hamiltonian systems on orbits of its subalgebras. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (*Jurnal*, 1985), 368-377, *"Nauka"*, Moscow, 1986. (see **89d:81001**) 17B67 (58F05)
- The hidden symmetry of the Landau-Lifshits equation, the hierarchy of higher equations and a dual equation for an asymmetric chiral field. (Russian. English summary) *Theoret. Mat. Fiz.* **70** (1987), no. 1, 18-29. (L. A. Takhtajan (Takhtadzhyan)) **89c:58059** 58F07 (58G35, 82A05)
- Golodets, Y. Ya.** (with Gefter, S. L.) Actions of  $T$ -groups and factors of type II<sub>1</sub> with property  $T$ . (Russian) *Mathematical physics, functional analysis* (Russian), 52-59, 144, *"Naukova Dumka"*, Kiev, 1986. (Introduction) **89k:46080** 46L55 (22D10, 22D25, 22D40, 46L35)
- (with Gefter, S. L.; Sineishchikov, S. D.) The fundamental group for ergodic actions of semisimple Lie groups and of their lattices. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 8, 6-9, 87. (G. A. Soifer (Zbl 637:22006)) **89j:22007** 22D40 (22E40, 28D15, 46L55)
- (with Sineishchikov, S. D.) Outer conjugacy for actions of continuous amenable groups. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 5, 737-769. (Klaus Thomsen) **89c:46087** 46L55 (28D99, 46L40)
- (with Sineishchikov, S. D.) Automorphisms of ergodic groupoids, and semidirect products. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* **48** (1987), 51-58. (A. L. Fedorov) **89d:22004** 22D40 (20L13, 22D25, 28D15, 46L55)
- Gologan, Rada-Nicolae** Ergodic theorems in  $\sigma$ -lattice cones. Proceedings of the 14th winter school on abstract analysis (Srní, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* **14** (1987), 439-446. (Summary) **89c:28031** 28D99 (46E99, 47B55)
- Golosokov, D. P.** (with Golosokov, P. G.) On the convergence of L. V. Kantorovich's variational method for the biharmonic equation. (Russian) *Partial differential equations* (Russian), 118-123, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (I. Aganović) **89i:35051** 35J35 (65N40)
- Golosokov, K. P.** (with Gaskarov, D. V.; Shkabardnya, A. M.) Application of mathematical programming in discriminant analysis for the solution of a forecasting problem. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 7, 174-181; translated in *Automat. Remote Control* **49** (1988), no. 7, part 2, 956-961. (Summary) **89c:90080** 90A20 (62N05)
- Golosokov, P. G.** (with Golosokov, D. P.) On the convergence of L. V. Kantorovich's variational method for the biharmonic equation. (Russian) *Partial differential equations* (Russian), 118-123, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (I. Aganović) **89i:35051** 35J35 (65N40)
- Golovach, G. P.** A method for the reduction of differential problems to integral equations. (Russian) *Vychisl. Prikl. Mat. (Kiev)* **62** (1987), 8-14, 129. (Summary) **89b:35015** 35C15 (65N99)
- Golovach, Yu. P.** (with Leont'eva, N. V.) Numerical modeling of a supersonic flow around a sphere in a gas with changing density. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **29** (1989), no. 1, 148-151, 160. (Not in MR) 76-08 (76J99, 76L05)
- Golovanov, M. I.** On the degree of nilpotency of 4-Engel Lie rings. (Russian) *Algebra i Logika* **25** (1986), no. 5, 508-532, 613. (A. E. Zaleskii) **89b:17018** 17B65 (17B30)
- (with Egorychev, G. P.; Moiseenko, D. A.) ★ Геометрические неравенства для перманента как смешанного дискриминанта над алгебраическими системами. (Russian) [Geometric inequalities for the permanent as a mixed discriminant over algebraic systems] *Препринт [Preprint]*, 39M. *Akad. Nauk SSSR Sibsk. Otdel., Inst. Fiz., Krasnoyarsk*, 1987. 28 pp. (Anna Lee) **89h:15012** 15A15 (06D99, 15A33)
- Golovanov, P. N.** (with Solodovnikov, V. I.) Rapid parallel calculation of degrees in a quotient ring of polynomials over a finite field. (Russian) *Mat. Zametki* **42** (1987), no. 6, 886-894, 912. (Stefan Dodunekov) **89h:11080** 11T06 (11Y99, 68Q10, 68Q25)
- Golovashchuk, N. S.** Covering maps of a certain class of free matrix problems. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 10, 3-5, 84. (Summary) **89c:16043** 16A64
- Golovaty, Yu. D.** (with Nazarov, S. A.; Oleinik, O. A.) Asymptotic behavior of eigenvalues and eigenfunctions in problems on oscillations of a medium with singular perturbation of the density. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 5(263), 189-190. (Jan Bochenek) **89k:35172** 35P20 (35B25, 73D30)



- Golovchan, V. T.** A variant of a statistical theory of brittle fracture. (Russian) *Prikl. Mekh.* 25 (1989), no. 1, 101–106, 136. (Not in MR) 73M05
- Golovin, A. M.** (with Kozhakhmetova, M. T.) Fundamental solution of a nonstationary problem of MHD flow around a body for small Reynolds numbers. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 1, 43–47, 103. (Summary) 89c:76114 76W05 (35Q10)
- Golovin, V. D.** Cohomology of computable sheaves. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 128 (1987), no. 3, 477–480 (1988). (Marek Golasinski) 89k:55008 55N30 (18F20, 32C35)
- Golovina, Yu. O.** Homological properties of Hilbert modules over nested operator algebras. (Russian) *Mat. Zametki* 41 (1987), no. 6, 769–775, 889. (Josef Wichmann) 89c:46081 46M20 (46H25, 46K99, 47D25)
- Golovina, L. I.** ★ Линейная алгебра и некоторые ее приложения. (Russian) [Linear algebra and some of its applications] Fourth edition. "Nauka", Moscow, 1985. 392 pp. (B. Reichstein) 89c:15001 15–01
- Golovinski, I. A.** P. L. Chebyshev's justification of the method of least squares. (Russian) *Istor.-Mat. Issled.* No. 30 (1986), 224–247. (E. Seneta) 89a:01032 01A55 (62–03)
- Golovizn, V. V.** An asymptotic law for the number of representations of integers by positive quadratic forms. (Russian) *Analytic number theory (Russian)*, 3–11, 90, Petrozavodsk. Gos. Univ., Petrozavodsk, 1986. (De Lang Li) 89k:11019 11E12 (11P55)
- Golovizn, V. M.** (with Samarskaya, E. A.; Chudanov, V. V.) Locally one-dimensional Rothe schemes for the heat equation in arbitrary curvilinear coordinates. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 37, 16 pp. (Summary) 89c:65133 65P05
- Golovko, E. A.** The Dirichlet problem for a nonstrongly elliptic system of second-order equations. (Russian. English and Lithuanian summaries) *Differentsial'nye Uravneniya i Primenen.* No. 40 (1987), 9–15. (Summary) 89a:35071 35J55
- Golse, François** Remarques sur l'homogénéisation des équations de transport. (English summary) [Remarks on the homogenization of transport equations] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 19, 801–804. (Summary) 89b:82130 82A70 (85A25)
- (with Perthame, Benoît; Sulem, C.) On a boundary layer problem for the nonlinear Boltzmann equation. *Arch. Rational Mech. Anal.* 103 (1988), no. 1, 81–96. (Carlo Cercignani) 89b:82018 82A40 (76P05)
- (with Coron, François; Sulem, C.) A classification of well-posed kinetic layer problems. *Comm. Pure Appl. Math.* 41 (1988), no. 4, 409–435. (A. Elcrat) 89g:76038 76P05 (82A40)
- (with Lochak, P.) Andrei Nikolaevich Kolmogorov 1903–1987. (French) *Gaz. Math.* No. 35 (1988), 51–52. (Editors) 89c:01061 01A70
- (with Lions, Pierre-Louis; Perthame, Benoît; Sentis, Rémi) Regularity of the moments of the solution of a transport equation. *J. Funct. Anal.* 76 (1988), no. 1, 110–125. (Summary) 89a:35179 35Q20 (35B99)
- (with Bardos, Claude; Perthame, Benoît; Sentis, Rémi) The nonaccretive radiative transfer equations: existence of solutions and Rosseland approximation. *J. Funct. Anal.* 77 (1988), no. 2, 434–460. (Cor van der Mee) 89f:35174 35Q20 (35B25, 35K55, 85A25)
- Gol'shtein, E. G.** A general approach to decomposition of optimization systems. *Soviet J. Comput. Systems Sci.* 25 (1987), no. 3, 105–114; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 1, 59–69, 221 (Russian). (R. Șerban) 89c:90085 90C25 (49D27)
- A general approach to constructing block methods of convex programming that is based on decomposition analysis of monotone mappings. (Russian) *Wiss. Z. Tech. Hochsch. Ilmenau* 33 (1987), no. 6, 53–58. (V. A. Dykhta) 89c:90158 90C25
- Golsen, William G.** Toward a declarative semantics for infinite objects in logic programming. *J. Logic Programming* 5 (1988), no. 2, 151–164. (Summary) 89c:68089 68T25 (03B70, 68Q55)
- Goltser, Ya. M.** On a measure of the closeness of neutral systems to internal resonance. *J. Appl. Math. Mech.* 50 (1986), no. 6, 731–737 (1987); translated from *Prikl. Mat. Mekh.* 50 (1986), no. 6, 945–953 (Russian). (James A. Murdock) 89c:34035 34C15 (34D10, 70K30)
- (with Pukhbaev, S. K.) On the investigation of linear singular systems with a vector parameter. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1987, no. 5, 15–19. (Summary) 89d:34005 34A08 (34A10, 34E15)
- Goltz, Hans-Joachim** Functional data term models and semantic unification. *Algebraic and logic programming (Gaussig, 1988)*, 158–167, *Math. Res.*, 49, Akademie-Verlag, Berlin, 1988. (see 89j:68002) 68T25 (03B70, 68Q55)
- Golub, A. P.** Integral equations of convolution type and Padé approximants. (Russian) *Investigations in the theory of the approximation of functions (Russian)*, 21–23, 120, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (William L. Perry) 89c:45014 45E10 (41A21)
- Generalized moment representations and rational approximations. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 25, 51 pp. (Summary) 89d:41037 41A21 (44A60)
- Simultaneous Padé approximants for a set of degenerate hypergeometric functions. (Russian) *Ukrain. Mat. Zh.* 39 (1987), no. 6, 701–706, 813. (Guillermo López Lagomasino) 89f:30060 30E10 (41A21)
- Golub, Gene H.** (with Boley, Daniel) A survey of matrix inverse eigenvalue problems. *Inverse Problems* 3 (1987), no. 4, 595–622. (Summary) 89m:65036 65F15
- (with Arbenz, Peter; Gander, Walter) Restricted rank modification of the symmetric eigenvalue problem: theoretical considerations. *Linear Algebra Appl.* 104 (1988), 75–95. (V. S. Zajačkovski) 89b:65052 65F15 (15A18)
- (with Varga, Richard) Obituary to Peter Henrici (13. September 1923–13. March 1987). *Numer. Math.* 52 (1988), no. 5, 481–482. (Editors) 89i:01077 01A70
- (with Arbenz, Peter) On the spectral decomposition of Hermitian matrices modified by low rank perturbations with applications. *SIAM J. Matrix Anal. Appl.* 9 (1988), no. 1, 40–58. (Moody T. Chu) 89c:15028 15A57 (15A18, 65F15)
- see also *Symposium: Domain Decomposition Methods for Partial Differential Equations*, 89f:65005
- Golubechik, I. Z.** Normal subgroups of the linear and unitary groups over associative rings. (Russian) *Spaces over algebras, and some problems in the theory of nets (Russian)*, 122–142, *Bashkir. Gos. Ped. Inst., Ufa*, 1985. (see 89f:00017) 20H25
- Golubev, G. A.** Design of minimax linear filters on the basis of a local and an integral criterion. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 4, 53–62; translated in *Avtomat. Remote Control* 49 (1988), no. 4, part 1, 438–445. (I. Gyöngy) 89j:93118 93E11 (93C05, 93E03)
- Golubev, V. V.** see Belotserkovskii, S. M. et al., 89g:01044
- Golubev, Yu. F.** (with Demidov, V. N.) A method for straightening constraints. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 158, 28 pp. (Summary) 89a:49032 49D07 (90C48)
- (with Grushkevskii, A. V.; Khairullin, R. Z.) Control laws that ensure maximal range for the descent of a satellite in the atmosphere. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 14, 28 pp. (Summary) 89b:65156 65K10 (93C75)
- Golubitsky, M.** (with Chossat, P.; Kefitz, Barbara Lee) Hopf-Hopf mode interactions with  $O(2)$  symmetry. *Dynamics Stability Systems* 1 (1986), no. 4, 255–292. (D. H. Sattinger) 89b:58147 58F14 (80A25)
- (with Roberts, Mark) A classification of degenerate Hopf bifurcations with  $O(2)$  symmetry. *J. Differential Equations* 69 (1987), no. 2, 216–264. (D. R. J. Chillingworth) 89f:58100 58F14 (58C27)
- (with Stewart, Ian; Schaeffer, David G.) ★ Singularities and groups in bifurcation theory. Vol. II. *Applied Mathematical Sciences*, 69. Springer-Verlag, New York-Berlin, 1988. xvi+533 pp. ISBN 0-387-96652-8 (Norman Dancer) 89m:58038 58E07 (34C99, 35B32, 58C27)
- (with Chossat, P.) Symmetry-increasing bifurcation of chaotic attractors. *Phys. D* 32 (1988), no. 3, 423–436. (Summary) 89j:58089 58F14 (58F35, 76F99)
- (with Chossat, P.) Iterates of maps with symmetry. *SIAM J. Math. Anal.* 19 (1988), no. 6, 1259–1270. (F. Visentin) 89k:58207 58F14 (34C35)
- Golubov, B. I.** Criteria for subharmonicity of functions of some classes. (Russian) *Theory of functions and approximations, Part 1 (Russian) (Saratov, 1984)*, 13–15, *Saratov. Gos. Univ., Saratov*, 1986. (see 89j:00035) 31B05
- (with Efimov, Aleksandr Vasilievich; Skvortsov, V. A.) ★ Ряды и преобразования Уолша. (Russian) [Walsh series and transforms] Теория и приложения. [Theory and applications] "Nauka", Moscow, 1987. 344 pp. (F. Schipp) 89b:42031 42C10 (43A75)
- Golubovskaya, G. I.** Solvability of the first boundary value problem for a quasilinear elliptic equation. (Russian) *Qualitative and approximate methods for investigating operator equations (Russian)*, 66–70, 143, *Yaroslav. Gos. Univ., Yaroslavl*, 1986. (Josef Voldrich) 89b:35050 35J65 (76D99)
- Goluybatnikov, V. P.** Geometric problems of the reconstruction of wave sources. (Russian) *Questions of well-posedness and methods for the investigation of inverse problems (Russian)*, 64–70, 159, *Akad. Nauk SSSR Sibsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1986. (Stanislav Janeczko) 89k:58089 58F05 (53C22, 58C27, 78A05)
- (with Smirnov, G. I.; Filippov, V. T.) Chronogeometric and topological structures of spaces with variable signature of the metric. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 5, 1106–1108; translated in *Soviet Phys. Dokl.* 33 (1988), no. 4, 254–255. (László Szabó) 89f:83071 83C99 (53C50)
- Golumbic, Martin Charles** (with Dagan, Ido; Pinter, Ron Yair) Trapezoid graphs and their coloring. *Discrete Appl. Math.* 21 (1988), no. 1, 35–46. (Chinh T. Hoang) 89i:05115 05C15 (68Q35, 68R10, 90B10)
- Algorithmic aspects of intersection graphs and representation hypergraphs. *Graphs Combin.* 4 (1988), no. 4, 307–321. (Fabrizio Luccio) 89i:05207 05C65 (68P15, 68R10)
- (with Hammer, P. L.) Stability in circular arc graphs. *J. Algorithms* 9 (1988), no. 3, 314–320. (Toshimasa Watanabe) 89g:05061 05C35 (05C70, 05C75, 68R10, 90B10)
- Golunkov, Yu. V.** Approximation completeness in algebras of partial recursive functions and predicates. (Russian. English summary) *Kibernetika (Kiev)* 1987, no. 6, 26–30, 133. (Marat M. Arslanov) 89g:03059 03D20
- Goluzina, M. G.** On a uniqueness theorem. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1987, vyp. 1, 109–111, 127. (Summary) 89f:28003 28A12
- Gölzer, B.** (with Holz, A.) Exact solutions to anisotropic  $SU(N \geq 3)$  chains. *J. Phys. A* 20 (1987), no. 16, L1077–L1081. (M. Lawrence Glasser) 89a:82042 82A68 (81E25)
- A novel 15-vertex solution of the Sutherland equation. *J. Phys. A* 22 (1989), no. 1, L25–L31. (H. N. V. Temperley) 89j:82071 82A68 (12H20, 58F07, 81E40, 82A69)
- Goman, M. G.** A differential method for the continuation of solutions of systems of finite nonlinear equations that depend on a parameter. (Russian) *Uchen. Zap. TsAGI* 17 (1986), no. 5, 94–102. (L. Hatvani) 89g:65072 65H99 (34D20)
- A differential method for extending solutions of parameter-dependent systems of finite nonlinear equations. A translation of *Uchen. Zap. TsAGI* 17 (1986), no. 5, 94–102. *Fluid Mech.—Soviet Res.* 16 (1987), no. 4, 128–137. (Michel Cotsaftis) 89b:34108 34C35 (34A15, 34A50, 34C05, 34E20)
- Gomatam, Jagannathan** (with Grindrod, Peter) The geometry and motion of reaction-diffusion waves on closed two-dimensional manifolds. *J. Math. Biol.* 25 (1987), no. 6, 597–610. (Yoram Schiffmann) 89c:92018 92A09 (35K57, 58F40, 92A40)
- (with Grindrod, Peter) Three-dimensional waves in excitable reaction-diffusion systems. *J. Math. Biol.* 25 (1987), no. 6, 611–622. (Yoram Schiffmann) 89c:35086 35K57 (92A09, 92A40)
- Gombani, Andrea** (with Pavon, Michele; Coppo, Barbara) On Hankel-norm approximation of stationary increment processes. *Modelling, identification and robust control (Stockholm, 1985)*, 307–323, *North-Holland, Amsterdam-New York*, 1986. (see 89b:93008) 93B28
- (with Pavon, Michele) Approximate Wiener-Kolmogorov filters. *Analysis and optimization of systems (Antibes, 1988)*, 864–872, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) 89c:93195 93E11 (93B28)
- Gombay, Edit** (with Burke, Murray D.) On goodness-of-fit and the bootstrap. *Statist. Probab. Lett.* 6 (1988), no. 5, 287–293. (Nariaki Sugira) 89f:62043 62G10 (60G15, 62E20)
- Gomboer, L. G.** An ill-posed problem for an equation of ultraparabolic type. (Russian) *Some problems in differential equations and discrete mathematics (Russian)*, 44–51, *Novosibirsk. Gos. Univ., Novosibirsk*, 1986. (S. Eliseev (translated from RZhMat 1987:8 B612)) 89m:35213 35R25 (35K70)
- Gomel, P.** Information gain with preference. *Uncertainty in knowledge-based systems (Paris, 1986)*, 395–402, *Lecture Notes in Comput. Sci.*, 286, Springer, Berlin-New York, 1987. (Inder Jeet Taneja) 89k:94024 94A15 (94A17)
- Gomes, Graciela M. S.** Orthodox congruences on regular semigroups. *Semigroup Forum* 37 (1988), no. 2, 149–166. (Introduction) 89m:20072 20M10 (20M17)
- Gomes, J. F.** (with Arcuri, R.; Olive, D. I.) Conformal subalgebras and symmetric spaces. *Nuclear Phys. B* 285 (1987), no. 2, 327–339. (Raiko Zaikov) 89a:17013 17B20 (32M15,

- 53C35, 81C40, 81E40)  
 — (with Ferreira, L. A.; Zimerman, A. H.) Vertex operators and Jordan fields. *Phys. Lett. B* **214** (1988), no. 3, 367–370. (Summary) **89j:17017** 17B60 (17B67, 81D15)  
 — see also Olive, D. I., **89c:17027**  
**Gomes, Luiz F. A. M.** On stochastic games related to traffic equilibration. *Found. Control Engng.* **12** (1987), no. 3, 121–130. (Summary) **89f:90061** 90B20 (90D15)  
**Gomes, M. Ivette** (with Pestana, Dinis D.) Nonstandard domains of attraction and rates of convergence. *New perspectives in theoretical and applied statistics* (Bilbao, 1986), 467–477, *Wiley Ser. Probab. Math. Statist.: Probab. Math. Statist.*, Wiley, New York, 1987. (C. W. Anderson) **89c:60055** 60F05  
**Gomes, Marcelo O. C.** (with Kurak, V.; Da Silva, A. J.) Weyl fields, quantum integrability and conformal invariant field theories. *Nuclear Phys. B* **295** (1988), no. 2, FS21, 139–152. (Raiko Zaikov) **89h:81060** 81D15 (81E40)  
 — (with Kurak, V.; Da Silva, A. J.) Superconformal invariant nonlinear  $\sigma$ -models from the bosonic ones. *Phys. Lett. B* **202** (1988), no. 4, 538–540. (Enore Guadagnini) **89c:81196** 81G20 (81E13, 81E40)  
 — see also Banerjee, R. S., **89k:81065** and Zhou, Huan Qiang, **89k:81066**  
**Gómez, A.** see **Gómez Fernández, Juan Alfredo**  
**Gomez, C.** see **Gómez, César**  
**piñeiro Gómez, Cándido** see **Piñeiro Gómez, Cándido**  
**Gómez, César** (with Alvarez-Gaumé, L.; Moore, Gregory W.; Vafa, Cumrun) Strings in the operator formalism. *Nuclear Phys. B* **303** (1988), no. 3, 455–521. (Olaf Lechtenfeld) **89h:81171** 81E99 (81E30, 81E40)  
 — (with Alvarez-Gaumé, L.; Nelson, Philip C.; Sierra, Germán; Vafa, Cumrun) Fermionic strings in the operator formalism. *Nuclear Phys. B* **311** (1988/89), no. 2, 333–400. (Olaf Lechtenfeld) **89m:81126** 81E99 (58F05, 58G40, 81E30, 81E40)  
**gallardo Gómez, Diego** see **Gallardo Gómez, Diego**  
**Gómez, E.** see **Gómez Sánchez-Manzano, Eusebio**  
**Gómez, Francisco** (with Muñoz, M. C.) Cut locus contained in a hypersurface. *Proc. Amer. Math. Soc.* **104** (1988), no. 2, 584–586. (Sheila Carter) **89d:53085** 53C20  
**Gómez, G. L.** see **Gómez M., Guillermo L.**  
**Gómez, Guadalupe** (with Berger, Agnes; Wallenstein, Sylvan) A homogeneity test for follow-up studies. *IMA J. Math. Appl. Med. Biol.* **5** (1988), no. 2, 101–112. (Charles J. Mode) **89j:92011** 92A07 (62P99)  
**Gómez, J.** (with Varela, F.) Sur certaines expressions globales d'une forme volume. [On some global expressions of a volume form] *Differential geometric methods in mathematical physics* (Salamanca, 1985), 284–300, *Lecture Notes in Math.*, 1251, Springer, Berlin-New York, 1987. (Gilbert Monna) **89c:53058** 53C65 (58A10)  
 — (with Varela, F.) Global models of some exterior forms of maximal Cartan class. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 153–165, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89g:58005** 58A10  
**Gómez, J. A.** see **Gómez Fernández, Juan Alfredo**  
**Gomez, Javier** see **Gómez Gil, Javier**  
**Gómez, Maria** (with Anděl, Jiří) Two-dimensional long memory models. *Kybernetika* (Prague) **24** (1988), no. 1, 1–16. (Raúl Pedro Mentz) **89c:62115** 62M10  
**Gómez, R.** (with Isaacson, R. A.; Weiling, J. S.; Winicour, J.) Numerical relativity on null cones. *Dynamical spacetimes and numerical relativity* (Philadelphia, PA, 1985), 236–255, *Cambridge Univ. Press, Cambridge-New York*, 1986. (Richard Hansen) **89d:83003** 83–08 (83C30, 83C99)  
**ayala Gómez, Rafael** see **Ayala Gómez, Rafael**  
**Gomez, Roberto** (with Ghosh, Subir) Comparison of ratio estimators based on interpenetrating subsamples with or without jackknifing. *J. Indian Soc. Agricultural Statist.* **38** (1986), no. 2, 200–210. (Tommy Wright) **89h:62012** 62D05  
**Gómez, Susana** (with Quintana, José M.; O'Reilly, Federico J.) Least squares with inequality restrictions: a symmetric positive-definite linear complementarity problem algorithm. *J. Statist. Comput. Simulation* **28** (1987), no. 2, 127–143. (M. C. Cheng) **89k:90163** 90C33 (62J02)  
**Gómez Arias, Jorge** (with Pérez-Abreu, Victor) Constructing confidence intervals for the localization parameter of a symmetric stable distribution. (Spanish) *Proceedings of the XIXth National Congress of the Mexican Mathematical Society*, Vol. 2 (Spanish) (Guadalajara, 1986), 99–117, *Aportaciones Mat.: Comun.*, 4, Soc. Mat. Mexicana, Mexico City, 1987. (see **89k:00009**) 62E25  
**Gomez-Calderon, Javier** (with Madden, Daniel J.) Polynomials with small value set over finite fields. *J. Number Theory* **28** (1988), no. 2, 167–188. (Gary L. Mullen) **89d:11111** 11T06  
**Gómez Fernández, Juan Alfredo** Optimality conditions for a control problem in systems with controlled interruption. (Spanish. English summary) *Investigación Oper.* **7** (1986), no. 3, 3–10. (A. Kósa) **89c:34087** 34K35 (49B10)  
 — see also *Approximation and optimization*, **89k:41001**  
**Gómez Gil, Javier** (with Aron, Richard M.; Llavona, José G.) Homomorphisms between algebras of differentiable functions in infinite dimensions. *Michigan Math. J.* **35** (1988), no. 2, 163–178. (Klaus-Dieter Bierstedt) **89j:46048** 46G20 (46J15)  
**Gómez-Larrañaga, José Carlos** 3-manifolds which are unions of three solid tori. *Manuscripta Math.* **59** (1987), no. 3, 325–330. (John Hempel) **89a:57015** 57N10  
**Gómez M., Guillermo L.** (with Davis, M. H. A.) The semimartingale approach to the optimal resource allocation in the controlled labour-surplus economy. *Stochastic processes—mathematics and physics, II* (Bielefeld, 1985), 36–74, *Lecture Notes in Math.*, 1250, Springer, Berlin-New York, 1987. (Summary) **89d:90062** 90A16 (60G48)  
 — Discounted values and stochastic rates arising in control theory. *XI symposium on operations research* (Darmstadt, 1986), 379–392, *Methods Oper. Res.*, 57, Athenäum/Hain/Hanstein, Königstein/Ts., 1987. (Summary) **89c:90040** 90A16 (93C75, 93E20)  
 — (with Davis, M. H. A.) The martingale maximum principle and the allocation of labour surplus. Eighth conference of the Society of Economic Dynamics and Control (Budapest, 1986). *J. Econom. Dynamics Control* **11** (1987), no. 2, 241–247. (From the introduction) **89d:90063** 90A16  
 — Attainability and reversibility of a golden age for the labour-surplus economy: a stochastic variational approach. *Stochastic processes in physics and engineering* (Bielefeld, 1986), 107–148, *Math. Appl.*, 42, Reidel, Dordrecht-Boston, MA, 1988. (Bojan Popović) **89j:90065** 90A16 (92A20, 93E20)  
**Gómez-Mont, Xavier** Universal families of foliations by curves. Singularités d'équations différentielles (Dijon, 1985). *Asterisque No.* 150–151 (1987), 109–129, 186. (Jean-Pierre Francoise) **89d:32067** 32L99 (32G13, 58F18)  
 — The transverse dynamics of a holomorphic flow. *Ann. of Math.* (2) **127** (1988), no. 1, 49–92. (Jean-Pierre Francoise) **89d:32049** 32G10 (32L99, 58F18)  
 — see also *Holomorphic dynamics*, **89h:58050**  
**Gómez Pardo, J. L.** (with Martínez Hernández, J.) Coherent endomorphism rings and relatively flat modules. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 166–172, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Iuliu Crivei) **89h:16033** 16A65  
 — (with García Hernández, José Luis) Self-injective and PF endomorphism rings. *Israel J. Math.* **58** (1987), no. 3, 324–350. (S. S. Page) **89h:16041** 16A65 (16A08, 16A36, 16A52)  
 — The rational Loewy series and nilpotent ideals of endomorphism rings. *Israel J. Math.* **60** (1987), no. 3, 315–332. (Yonghua Xu) **89c:16043** 16A65  
 — Rings of quotients of endomorphism rings. *Ring theory* (Granada, 1986), 106–121, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (Birge Zimmermann-Huisgen) **89m:16060** 16A65 (16A08, 16A50)  
 — (with García Hernández, José Luis) Closed submodules of free modules over the endomorphism ring of a quasi-injective module. *Comm. Algebra* **16** (1988), no. 1, 115–137. (Claudia Menini) **89d:16040** 16A65 (16A52)  
 — (with Asensio Mayor, J.) Relative splitting properties with applications to endomorphism rings. *Comm. Algebra* **16** (1988), no. 11, 2259–2281. (M. Teply) **89j:16036** 16A63 (16A50, 16A65, 18A40)  
 — (with Rodríguez González, Nieves) QF-3 endomorphism rings of  $\Sigma$ -quasiprojective modules. *Glasgow Math. J.* **30** (1988), no. 2, 215–220. (Yutaka Kawada) **89f:16043** 16A65 (16A36, 16A52, 16A53)  
**Gómez Sánchez-Manzano, Eusebio** Games with convex payoff function in the first variable. *Internat. J. Game Theory* **17** (1988), no. 3, 201–204. (Summary) **89m:90176** 90D10  
**Gomez-Santos, G.** (with Ioannopoulos, J. D.) Application of spin-wave theory to the ground state of  $XY$  quantum Hamiltonians. *Phys. Rev. B* (3) **36** (1987), no. 16, 8707–8711. (Summary) **89h:82108** 82A68  
**Gómez-Tato, A.** (with Alcalde-Cuesta, Fernando; Macías, Enrique) The Godbillon homology. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 7–10, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89k:57057** 57R30 (55U15, 57R32)  
 — (with Macías, Enrique; Alcalde-Cuesta, Fernando) Homotopy for nonnilpotent minimal algebras. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 173–178, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (J. Aguadé) **89i:55008** 55P62  
**Gomi, Kensaku** A pushing up theorem for groups of characteristic 2 type. *Sci. Papers College Arts Sci. Univ. Tokyo* **37** (1988), no. 2, 73–102. (Ulrich Dempwolff) **89f:20020** 20D05  
**Gomilko, A. M.** (with Grichenko, V. T.; Meleshko, V. V.) On the possibilities of a method of homogeneous solutions in a mixed problem in elasticity theory for a semistrip. (Russian) *Teoret. i Prikl. Mekh. (Kiev/Donetsk)* No. 18 (1987), 3–8, i. (Summary) **89j:73015** 73C35 (73–08)  
 — The law of asymptotic expressions in the theory of functional equations in  $K_\sigma$ -spaces. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 5, 551–554, 677. (George Isac) **89d:47077** 47B55  
 — On domains of definition of fractional powers of accretive operators. (Russian) *Mat. Zametki* **43** (1988), no. 2, 229–236, 302; translated in *Math. Notes* **43** (1988), no. 1–2, 129–133. (Hagen Neidhardt) **89g:47043** 47B44 (47A60, 47D05)  
**Gomis, J.** (with Batlle, C.; Pons, J. M.; Román-Roy, Narciso) On the Legendre transformation for singular Lagrangians and related topics. *J. Phys. A* **20** (1987), no. 15, 5113–5123. (Demeter Krupka) **89f:80051** 58F05 (70H99)  
 — (with Batlle, C.; Roca, J.) The propagator of a free relativistic particle in a generic gauge  $d\lambda/d\tau = f(\lambda)$ . *Classical Quantum Gravity* **5** (1988), no. 12, 1663–1667. (Summary) **89m:81063** 81C99 (81E13)  
 — (with Batlle, C.; Pons, J. M.; Román-Roy, Narciso) Lagrangian and Hamiltonian constraints for second-order singular Lagrangians. *J. Phys. A* **21** (1988), no. 12, 2693–2703. (Frans Cantrijn) **89h:58052** 58F05 (70H99)  
 — (with Roca, J.) The propagator of spinless and spinning nonrelativistic particles from the BRST-invariant path integral. *Phys. Lett. B* **207** (1988), no. 3, 309–312. (Summary) **89j:81186** 81E99 (81C35)  
**Gompa, Raghuramaiah** (with Kummer, Martin P.) Nonlinearly coupled oscillators in quantum mechanics: a normal form approach. *J. Math. Phys.* **29** (1988), no. 6, 1405–1416. (Edward R. Vrscay) **89k:81033** 81C12 (58F05, 58F30)  
**Gompf, Robert E.** On sums of algebraic surfaces. *Invent. Math.* **94** (1988), no. 1, 171–174. (Ronald J. Stern) **89j:57028** 57R65 (14J27, 14J28, 14J29, 57N13)  
**Gonçalves, Adilson** (with Ho, Chat Yin) On PSU(3, q) as collineation groups. *J. Algebra* **111** (1987), no. 1, 1–13. (D. W. Erbach) **89a:51018** 51E15 (20B25)  
 — A characterization of  $J_1$  by a piece of its character table. *Notas Soc. Mat. Chile* **6** (1987), no. 1, 27–36. (P. Fong) **89d:20015** 20D08 (20C15)  
**Gonçalves, Daciberg Lima** Braid groups and Wecken pairs. *Fixed point theory and its applications* (Berkeley, CA, 1986), 89–97, *Contemp. Math.*, 72, Amer. Math. Soc., Providence, RI, 1988. (J. S. Birman) **89h:55002** 55M20 (20F36)  
**hasto Gonçalves, J.** see **Basto Gonçalves, J.**  
**Gonçalves, J. V. A.** A note on uniqueness of solution for a class of semilinear nonselfadjoint elliptic problems. *Nonlinear Anal.* **12** (1988), no. 9, 969–973. (Jolanta Przybycin) **89i:35062** 35J65 (47F05)  
**Gonçalves, Jairo** (with Ritter, Jürgen; Sehgal, Sudarshan K.) Subnormal subgroups in  $U(ZG)$ . *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 375–382. (D. A. R. Wallace) **89h:20006** 20C05 (16A26)  
**Gonchar, A. A.** (with Suetin, S. P.) Uniform convergence of Padé approximants. (Russian) *Investigations in the theory of the approximation of functions* (Russian), 70–84, *Akad.*



- Nauk SSSR Bashkir. Filial, Otdel Fiz. Mat., Ufa, 1987. (Kh. I. Kuchmins'ka) 89m:30077 30E10 (30B10)*
- Rational approximations of analytic functions. (Russian) *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986), 739–748, Amer. Math. Soc., Providence, RI, 1987. (Guillermo López Lagomasino) 89e:30066 30E10*
  - (with Vitushkin, A. G.; Dolzhenko, E. P.; Napalkov, V. V.; Sedletskii, A. M.; Stechkin, S. B.; Frolov, Yu. N.) Aleksei Fedorovich Leont'ev. (Russian) *Mat. Zametki* 42 (1987), no. 4, 483–493. (Editors) **89b:01065 01A70**
  - (with Vitushkin, A. G.; Vladimirov, V. S.; Napalkov, V. V.; Nikol'skii, S. M.; Sedletskii, A. M.; Uflyanov, P. L.; Frolov, Yu. N.) Aleksei Fedorovich Leont'ev. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 5(257), 177–182. (Editors) **89d:01071 01A70**
  - (with Vitushkin, A. G.; Kashin, B. S.; Kostrikin, Aleksei Ivanovich; Nikol'skii, S. M.; Novikov, S. P.; Uflyanov, P. L.; Faddeev, L. D.) Evgenii Mikhailovich Nikishin. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 5(257), 183–188. (Editors) **89b:01066 01A70**
  - (with Dzhirbashyan, M. M.; Leont'ev, A. F.; Tumarkin, G. Ts.; Uflyanov, P. L.; Shabat, B. V.) Semen Yakovlevich Khavinson (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 2(260), 173–174; translated in *Russian Math. Surveys* 43 (1988), no. 2, 209–211. (Editors) **89f:01078 01A70**
  - (with Rakhmanov, E. A.) Equilibrium distributions and the rate of rational approximation of analytic functions. (Russian) *Mat. Sb. (N.S.)* 134(176) (1987), no. 3, 306–352, 447; translated in *Math. USSR-Sb.* 62 (1989), no. 2, 305–348. (Guillermo López Lagomasino) **89h:30054 30E10 (31A15)**
  - Gonchar, V. Yu.** (with Bolotin, Yu. L.; Tarasov, V. N.; Chekanov, N. A.) The transition "regularity-chaos-regularity" and statistical properties of energy spectra. *Phys. Lett. A* 135 (1989), no. 1, 29–31. (Summary) **89m:58060 58F05 (70K50)**
  - Goncharenko, A. A.** (with Kravchenko, V. F.; Ponomarev, V. L.) On an inverse problem of the theory of the propagation of electromagnetic waves. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 4, 622–627, 731; translated in *Differential Equations* 24 (1988), no. 4, 432–436. (Gottfried Anger) **89h:35337 35R30 (35J10, 35P25)**
  - Goncharik, L. I.** (with Keshishyan, V. A.) Formulation of parametric transfer functions of discrete switched-capacitor circuits. (Russian) *Avtomat. i Vychisl. Tekhn. (Minsk)* No. 16 (1987), 71–75, iii. (Not in MR) **94C05**
  - Goncharov, A. B.** Generalized conformal structures on manifolds. Selected translations. *Selecta Math. Soviet.* 6 (1987), no. 4, 307–340. (S. M. Salamon) **89e:53050 53C10 (32L25, 53C25, 53C55)**
  - Methods of integral geometry and recovering a function with compact support from its projections in unknown directions. *Acta Appl. Math.* 11 (1988), no. 3, 213–222. (Eric Todd Quinto) **89m:44006 44A15 (44A60, 78A15, 92A07)**
  - Goncharov, A. L.** (with Fryazinov, I. V.) Difference schemes on a 13-point pattern and schemes with local monotization on irregular grids for two-dimensional Navier-Stokes equations. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 83, 26 pp. (Summary) **89j:76013 76-08 (35Q10, 65P05, 76D05)**
  - Goncharov, A. P.** (with Zakharyuta, V. P.) Linear topological invariants and spaces of infinitely differentiable functions. (Russian) *Mathematical analysis and its applications* (Russian), 18–27, 162–163, Rostov. Gos. Univ., Rostov-on-Don, 1985. (Fritz Haslinger) **89m:46038 46E10 (58D15)**
  - Goncharov, S. S.** Axioms for classes with strong homomorphisms. (Russian) *Vychisl. Sistemy No. 116 Prikladn. Logika* (1986), 140–155, 165. (Milan Grulović) **89f:03024 03C52**
  - Axiomatizable classes with strong homomorphisms. *Studia Logica* 46 (1987), no. 2, 113–120. (O. V. Bejgradek) **89h:03058 03C52**
  - A family with a unique univalent but not least numeration. (Russian) *Trudy Inst. Mat. (Novosibirsk)* 8 (1988), *Teor. Model. i ee Primenen.*, 42–58, 184. (Summary) **89f:03037 03D45**
  - Goncharov, Yu. P.** (with Spokoyniy, B. L.) Linear real bundles, spinorial structures and automorphic forms in quantum geometry of strings. *Phys. Lett. B* 192 (1987), no. 1–2, 76–80. (Werner Kleiner) **89e:58022 58D30 (14H15, 32G15, 57R15, 81E30)**
  - (with Bytsenko, A. A.) The inflationary universe in the gauged  $N = 8$  supergravity induced from a superstring. *Phys. Lett. B* 199 (1987), no. 3, 363–365. (Mark D. Roberts) **89e:83083 83E50 (81E30, 83E30, 83F05)**
  - Goncharova, O. N.** Group classification of equations of free convection. (Russian) *Dinamika Sploshn. Sredy No. 79* (1987), 22–35, 156. (Summary) **89f:76076 76R10 (35A30, 58G35)**
  - A mathematical model of the formation of spherical shells under conditions of short-term weightlessness. (Russian) *Dinamika Sploshn. Sredy No. 82* (1987), 66–79, 165–166. (Frederick A. Howes) **89j:76045 76D99**
  - Goncharukil, A. V.** Ill-posed problems and their solution methods. *Ill-posed problems in the natural sciences*, 21–52, *Adv. Sci. Tech. USSR: Math. Mech. Ser., "Mir", Moscow, 1987. (Zuhe Shen) 89d:65061 65J05 (65J10)*
  - (with Tikhonov, A. N.; Stepanov, V. V.) Inverse problems in image processing. *Ill-posed problems in the natural sciences*, 220–232, *Adv. Sci. Tech. USSR: Math. Mech. Ser., "Mir", Moscow, 1987. (Heinz W. Engl) 89b:45001 45B05 (49D15, 65R20, 68U10)*
  - (with Stepanov, A. A.) Computer diagnostics of semiconductor crystals. (Russian) *Dokl. Akad. Nauk SSSR* 292 (1987), no. 1, 60–63. (From the text) **89h:82035 82A60 (78A45, 82-08)**
  - (with Tikhonov, A. N.; Bochkashvili, P. N.; Matvienko, A. N.; Rau, E. I.; Savin, D. O.; Stepanov, V. V.) Microtomography of layered media in conical beams. (Russian) *Dokl. Akad. Nauk SSSR* 296 (1987), no. 5, 1095–1097. (From the text) **89d:92016 92A07 (44A15)**
  - (with Bakushinskii, A. B.; Stepanova, L. D.) Iterative regularizable algorithms for solving three-dimensional inverse problems of gravimetry. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* 1988, no. 5, 105–107. (Not in MR) **86A20 (86-08)**
  - (with Stepanov, V. V.) Problems of the focusing of radiation in the Fresnel approximation. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 1, 115–118; translated in *Soviet Phys. Dokl.* 33 (1988), no. 3, 185–187. (M. Martinis) **89g:78007 78A05**
  - (with Bakushinskii, A. B.; Levitan, S. Yu.) Fast linear iterative algorithms for the restoration of images. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 6, 933–937, 959. (Gabriel Dimitriu) **89j:65087 65R10 (65T05, 92A07)**
  - (with Klivanov, M. V.; Stepanov, V. V.) Inverse problems of coherent optics. The use of the stationary phase method in problems of focusing radiation on a curve. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 10, 1540–1550, 1599. (Summary) **89j:78024 78A40 (58C27)**
  - Gonchigdorzh, R.** A ring of regular quotients of a reduced ring. (Russian) *Algebra i Logika* 26 (1987), no. 2, 150–164, 271. (J. Jirásko) **89m:16008a 16A08**
  - Letter to the editors: "A ring of regular quotients of a reduced ring". (Russian) *Algebra i Logika* 27 (1988), no. 1, 122; translated in *Algebra and Logic* 27 (1988), no. 1, 83. (J. Jirásko) **89m:16008b 16A08**
  - Gonczl, Robert** (with Froeschlé, Claude) On the stochasticity of Halley like comets. Long term evolution of planetary systems (Ramsau, 1988). *Celestial Mech.* 43 (1987/88), no. 1–4, 325–330. (see **89j:76002**) **58F13**
  - dechamps-Gondim, Myriam** see **Dechamps-Gondim, Myriam**
  - Gondran, Michel** (with Minoux, M.) ★ Graphes et algorithmes. (French) [Graphs and algorithms] Second edition. Collection de la Direction des Études et Recherches d'Electricité de France [Collection of the Department of Studies and Research of Electricité de France], 37. *Editions Eyrolles, Paris, 1985. xxviii+545 pp. (Alan Shuchat) 89j:90090 90C35 (05-01, 05Cxx, 68R10, 90B10)*
  - Gondzio, Jacek** Stable variant of the simplex method for solving supersparse linear programs. *Systems analysis and simulation 1988, I (Berlin, 1988), 247–250, Math. Res., 46, Akademie-Verlag, Berlin, 1988. (Summary) 89j:90170 90C05*
  - Gonkel, S. M.** (with Conrey, J. B.; Ghosh, Amit) Simple zeros of zeta functions. *Colloque de Théorie Analytique des Nombres "Jean Coquet" (Marseille, 1985), 77–83, Publ. Math. Orsay, 88-02, Univ. Paris XI, Orsay, 1988. (Masako Izumi) 89h:11056 11M26*
  - Gong, Guang Lu** (with Qian, Min Ping) On the large deviation functions of Markov chains. *Acta Math. Sci. (English Ed.)* 8 (1988), no. 2, 199–209. (J. Steinebach) **89j:60043 60F10 (60J10)**
  - (with Qian, Min Ping; Silverstein, Martin L.) Normal derivative for bounded domains with general boundary. *Trans. Amer. Math. Soc.* 308 (1988), no. 2, 785–809. (M. Fukushima) **89m:60192 60J65 (35A99, 35R60)**
  - Gong, Jia Xiang** On projective semisymmetric connections. (Chinese) An English summary appears in *Chinese Ann. Math. Ser. B* 8 (1987), no. 4, 495. *Chinese Ann. Math. Ser. A* 8 (1987), no. 4, 518–529. (Summary) **89g:53022 53B10**
  - Gong, Sheng** On Reinhardt domains. I. (Chinese) An English summary appears in *Chinese Ann. Math. Ser. B* 8 (1987), no. 3, 383. *Chinese Ann. Math. Ser. A* 8 (1987), no. 2, 205–219. (Zhihua Chen) **89e:32043 32F15 (32A07, 32H10, 53C20)**
  - (with Li, Shi Xiong; Zheng, Xue An) Harmonic analysis on classical groups. *Proceedings of the analysis conference, Singapore 1986, 69–113, North-Holland Math. Stud., 150, North-Holland, Amsterdam-New York, 1988. (Norman J. Weiss) 89e:43013 43A50 (22E30)*
  - Gong, Wei** Random visit array (RVA) storage structures of trees. (Chinese. English summary) *Inform. and Control (Shenyang)* 17 (1988), no. 1, 28–35. (From the summary) **89h:68143 68U05 (68P05)**
  - Gong, Wei Bang** A simple proof of an extension of the Fuglede-Putnam theorem. *Proc. Amer. Math. Soc.* 100 (1987), no. 3, 599–600. (B. L. Wadhwani) **89f:47035 47B20**
  - Gong, Xing Long** (with Zhang, Sheng Kai) ZS values of stochastic alliance strategies. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 11, 805–809. (Not in MR) **90D15**
  - Gong, Zhen He** On temporal aspect of database specifications. *Sci. Sinica Ser. A* 30 (1987), no. 10, 1102–1112. (Not in MR) **68P15**
  - Gongadze, Yu. A.** (with Bolkvadze, Zh. D.; Dzhashishvili, G. N.; Nikolaishvili, Sh. S.) On the approximate solution of plane parallel problems of atmospheric optics. (Russian. English and Georgian summaries) *Approximate methods for solving some problems of the transfer of neutron and gamma radiation (Russian)*, 151–169, 172–173, Tbilis. Gos. Univ., Inst. Prikl. Mat., Tbilisi, 1986. (see **89b:82003**) **78A15 (85A20, 86A35)**
  - Gongora, H.** A presentation of various approaches to the calculation of confidence intervals. (Spanish) *Proceedings of the XXth National Congress of the Mexican Mathematical Society (Spanish) (Xalapa, 1987), 205–217, Aportaciones Mat.: Comun., 5, Soc. Mat. Mexicana, Mexico City, 1988. (see **89k:00010**) 62F25 (62-01)*
  - Gonin, R.** (with Money, A. H.) A review of computational methods for solving the nonlinear  $L_1$ -norm estimation problem. *Statistical data analysis based on the  $L_1$ -norm and related methods (Neuchâtel, 1987), 117–129, North-Holland, Amsterdam-New York, 1987. (Summary) 89d:65116 65U05 (62J07)*
  - Gonnet, Gaston H.** (with Larson, Per-Ake) External hashing with limited internal storage. *J. Assoc. Comput. Mach.* 35 (1988), no. 1, 161–184. (Summary) **89a:68032 68P10**
  - Gonsales-Sabater, A.** (with Belyanin, P. N.; Bobrova, I. V.) The problem of synthesizing engineering CAD for flexible manufacturing systems. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 1, 49–57; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 3, 12–21, 219 (Russian). (Not in MR) **93B50**
  - Gonshor, Harry** Multi-algebra duplication. *J. Math. Biol.* 25 (1987), no. 6, 677–683. (P. Holgate) **89a:17035 17D92 (92A10)**
  - Derivations in genetic algebras. *Comm. Algebra* 16 (1988), no. 8, 1525–1542. (P. Holgate) **89j:17020 17D92**
  - Gonska, Heinz H.** (with Meier-Gonska, Jutta) On approximation by Bernstein-type operators: best constants. *Studia Sci. Math. Hungar.* 22 (1987), no. 1–4, 287–297. (Yuly Makovoz) **89d:41041 41A36 (41A10)**
  - (with Röth, Andreas) Control point insertion for B-spline curves. *Bull. Austral. Math. Soc.* 38 (1988), no. 2, 307–313. (Summary) **89k:65012 65D07**
  - meier-Gonska, Jutta** see **Meier-Gonska, Jutta**
  - Gontareva, I. B.** On the existence of closed trajectories of structurally stable autonomous systems. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 8, 11–13, 87. (P. Brunovsky) **89h:58091 58F09 (34C40, 34D30, 58F22)**
  - Topological structure of the domain of attraction of an attracting set of a three-dimensional Morse-Smale system. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 6, 32–37; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 6, 42–49. (S. Yu. Pilyugin) **89m:58111 58F09 (34D30, 58F12)**
  - Gonzaga, Cloris C.** Conical projection algorithms for linear programming. *Math. Programming* 43 (1989), no. 2 (Ser. A), 151–173. (John J. Dinkel) **89m:90098 90C05**
  - Gonzalez, A.** (with Reverter, A.; Alarcón, E.) Indicators and estimators in p-adaptive boundary elements. *Boundary elements VII, Vol. I, II (Como, 1985), 12.41–12.53, Comput. Elem., Southampton, 1985. (see **89f:65003**) 65N30*

- salvador González, B. see Salvador González, B.
- González, C. see González Dávila, José Carmelo
- morales González, Domingo see Morales González, Domingo
- Gonzalez, Fulton B. Radon transforms on Grassmann manifolds. *J. Funct. Anal.* 71 (1987), no. 2, 339-362. (Eric Grinberg) **89a:53081** 53C65 (43A85)
- González, Gabriela I. (with Gleiser, Reinaldo; Pullin, Jorge) Higher order poles in the Belinskii-Zakharov inverse scattering method. *Phys. Lett. A* 130 (1988), no. 4-5, 206-210. (Mario C. Diaz) **89k:83015** 83C15 (81E13, 83C05)
- González, Gilberto (with Panchapagesan, T. V.) Carathéodory extension for measures with values in positive operators. (Spanish) *Rev. Colombiana Mat.* 21 (1987), no. 1, 31-45. (Pedro Jiménez Guerra) **89m:28018** 28B05 (28B15, 46G10)
- González, J. String effective action in the inverse-dimensional expansion. *Phys. Lett. B* 206 (1988), no. 2, 217-220. (Summary) **89c:81125** 81E99 (81E30)
- (with Bellucci, Stefano) Boundary conditions and renormalization in anti-de Sitter supersymmetry. *Phys. Rev. D* (3) 37 (1988), no. 8, 2357-2360. (Summary) **89e:81113** 81E20 (81E15)
- Illán González, Jesús see Illán González, Jesús
- bustamante González, Jorge see Bustamante González, Jorge
- González, José (with Sánchez P., J. M.) A method for minimizing the cost of synthesis of combinational circuits using the Tapia-Tucker method for solving a BES. (Spanish) *Rev. Inform. Automat.* 21 (1988), no. 2, 48-54. (Not in MR) **94C10** (94C05)
- perán González, José R. see Perán González, José R.
- navarro González, Juan Antonio see Navarro González, Juan Antonio
- Gonzalez, M. O. A generalized complex potential in fluid dynamics. *Univ. Nac. Tucumán Rev. Ser. A* 29 (1979), no. 1, 71-79 (1987). (Not in MR) **76B99**
- González, Manuel (with Álvarez, Teresa; Onieva, Victor M.) Some procedures for generating space ideals. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 1* (Spanish) (Badajoz, 1986), 50-55. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (W. Zelazko) **89j:46020** 46B99 (46B25)
- (with Álvarez, Teresa; Onieva, Victor M.) Totally incomparable Banach spaces and three-space Banach space ideals. *Math. Nachr.* 131 (1987), 83-88. (Andreas Defant) **89a:46034** 46B20 (46M99, 47D30)
- (with Onieva, Victor M.) On functions of relatively regular and normally solvable operators. *J. Math. Anal. Appl.* 133 (1988), no. 1, 209-213. (A. R. Sourour) **89j:47010** 47A60 (47A05)
- Null spaces and ranges of polynomials of operators. *Publ. Mat.* 32 (1988), no. 2, 167-170. (Summary) **89k:47004** 47A05 (47A10, 47A60)
- rodríguez González, Nieves see Rodríguez González, Nieves
- González, Santos (with Martínez, Consuelo) Order relation in quadratic Jordan rings and a structure theorem. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 51-54. (Joseph C. Ferrar) **89j:17025** 17C10
- Gonzalez, Teofilo F. (with Lee, Sing-Ling) A 1.6 approximation algorithm for routing multiterminal nets. *SIAM J. Comput.* 16 (1987), no. 4, 669-704. (Summary) **89a:68088** 68Q20 (68Q35, 68R05, 90B10)
- albis González, Víctor Samuel see Albis González, Víctor Samuel
- González-Aguilera, Víctor Quotients of the complex projective plane by a finite cyclic group. (Spanish) V Latin American colloquium on algebra (Spanish) (Santiago, 1985). *Notas Soc. Mat. Chile* 5 (1986), no. 1, 157-176. (Introduction) **89a:14063** 14L30 (14B05)
- González-Arroyo, A. (with Salas, J.) Computing the couplings of Ising systems from Schwinger-Dyson equations. *Phys. Lett. B* 214 (1988), no. 3, 418-424. (Kornél Szlachányi) **89k:82031** 82A25 (81E25, 82A68)
- González Carmona, Andrés (with Abad Montes, Francisco) Moments of a controlled Markov branching process. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2* (Spanish) (Badajoz, 1986), 339-352. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89g:60255** 60B80
- González Dávila, José Carmelo (with Chinea, Domingo) Almost contact homogeneous structures in hyperbolic spaces. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2* (Spanish) (Badajoz, 1986), 80-87. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Luis A. Cordero) **89m:53080** 53C30 (53C15)
- González de Garibay, V. (with Martín Rodríguez, F.) On the contrasts of chi-squared fit with fuzzy codification. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2* (Spanish) (Badajoz, 1986), 411-422. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (see **89d:00009**) **62F05** (03E72)
- (with Martín Rodríguez, F.) Asymptotic and exact distributions of a fuzzy chi-squared statistic. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2* (Spanish) (Badajoz, 1986), 479-489. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (see **89d:00009**) **62F05** (03E72, 62E20, 65C05)
- González Diéguez, Belarmino (with Bustamante González, Jorge) Some properties of the singular integral of Cauchy type. (Spanish. English summary) *Cienc. Mat. (Havana)* 8 (1987), no. 1, 3-10. (Joaquín Bruna) **89c:30106** 30E20 (42B20)
- (with Betancourt Núñez, Godofredo A.) A generalized Riemann problem on nonsmooth curves. (Spanish. English summary) *Cienc. Mat. (Havana)* 8 (1987), no. 3, 37-44. (Summary) **89j:30055** 30E25
- González-Gascón, Francisco (with González-López, A.) Note on a paper by J. L. Anderson: "Covariance, invariance, and equivalence: a viewpoint" [Gen. Relativity Gravitation 2 (1971), 161-172; MR 58 #25735]. *Gen. Relativity Gravitation* 20 (1988), no. 9, 951-956. (From the text) **89h:58171** 58F35 (83C40)
- (with Costa, Antonio F.; González-López, A.) On codimension one submersions of Euclidean spaces. *Invent. Math.* 93 (1988), no. 3, 545-555. (Yi-Sui Sun) **89h:58093** 58F10 (34C35, 58F05, 70G99)
- (with González-López, A.) The inverse problem concerning symmetries of ordinary differential equations. *J. Math. Phys.* 29 (1988), no. 3, 618-621. (Summary) **89a:58100** 58F35 (22E05, 34A55, 34C20)
- (with González-López, A.) On the possibility of obtaining any first integral of a Hamiltonian system via the Poisson theorem. *J. Phys. A* 21 (1988), no. 12, L621-L623. (Summary) **89e:70019** 70H05
- (with González-López, A.) Newtonian systems of differential equations, integrable via quadratures, with trivial group of point symmetries. *Phys. Lett. A* 129 (1988), no. 3, 153-156. (Summary) **89c:58115** 58F35 (34A05)
- González Juarros, E. (with Pérez Castrillo, J. D.; De Prada Vicente, M. A.) A note on fuzzy proximity spaces. *J. Math. Anal. Appl.* 133 (1988), no. 2, 355-358. (T. Thiruvikraman) **89i:54004** 54A40 (03E72, 54E05)
- González-López, A. (with González-Gascón, Francisco) Note on a paper by J. L. Anderson: "Covariance, invariance, and equivalence: a viewpoint" [Gen. Relativity Gravitation 2 (1971), 161-172; MR 58 #25735]. *Gen. Relativity Gravitation* 20 (1988), no. 9, 951-956. (From the text) **89h:58171** 58F35 (83C40)
- (with Costa, Antonio F.; González-Gascón, Francisco) On codimension one submersions of Euclidean spaces. *Invent. Math.* 93 (1988), no. 3, 545-555. (Yi-Sui Sun) **89h:58093** 58F10 (34C35, 58F05, 70G99)
- (with González-Gascón, Francisco) The inverse problem concerning symmetries of ordinary differential equations. *J. Math. Phys.* 29 (1988), no. 3, 618-621. (Summary) **89a:58100** 58F35 (22E05, 34A55, 34C20)
- Symmetries of linear systems of second-order ordinary differential equations. *J. Math. Phys.* 29 (1988), no. 5, 1097-1105. (Mayer Humi) **89h:58172** 58F35 (34A30)
- (with González-Gascón, Francisco) On the possibility of obtaining any first integral of a Hamiltonian system via the Poisson theorem. *J. Phys. A* 21 (1988), no. 12, L621-L623. (Summary) **89e:70019** 70H05
- (with González-Gascón, Francisco) Newtonian systems of differential equations, integrable via quadratures, with trivial group of point symmetries. *Phys. Lett. A* 129 (1988), no. 3, 153-156. (Summary) **89c:58115** 58F35 (34A05)
- González Manteiga, W. (with Vilar Fernández, J. M.) A class of nonparametrically constructed parameter estimators for a stationary autoregressive model. *Mathematical statistics and probability theory, Vol. B* (Bad Tatzmannsdorf, 1986), 85-95. *Reidel, Dordrecht-Boston, MA-London*, 1987. (Summary) **89k:62054** 62G05 (62M10)
- González Martín, C. ★ Métodos interactivos en programación multiobjetivo. (Spanish) [Interactive methods in multiobjective programming] Dissertation, Universidad de La Laguna, La Laguna, 1985. Colección Monografías [Collection of Monographs], 24. Universidad de La Laguna, Secretariado de Publicaciones, La Laguna, 1986. 179 pp. ISBN 84-600-4309-6 (Juan-Enrique Martínez-Legaz) **89d:90213** 90C31 (90B50)
- (with Ramos Domínguez, Ma. T.; Sánchez García, M.) Information reduction based on joint classifications of objects and variables. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2* (Spanish) (Badajoz, 1986), 522-532. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89h:90259** 90C99 (62B10)
- González Muñoz, Antonio (with de Campos Ibáñez, Luis Miguel) A subjective approach for ranking fuzzy numbers. *Fuzzy Sets and Systems* 29 (1989), no. 2, 145-153. (Summary) **89k:03062** 03E72
- González Rodríguez, José Manuel Existence and uniqueness theorems for systems of partial differential equations with operator  $S_p$ . (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 1* (Spanish) (Badajoz, 1986), 276-287. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Norbert Ortner) **89m:44007** 44A15 (35D05, 35K30, 46F12)
- González Sierra, M. A. (with Sánchez García, M.) The design of experiments: exploration of the control space. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2* (Spanish) (Badajoz, 1986), 467-478. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (see **89d:00009**) **62K99** (62L05)
- González-Sprinberg, Gerardo (with Brasselet, J.-P.) Espaces de Thom et contre-exemples de J.-L. Verdier et M. Goresky. [Thom spaces and counterexamples of J.-L. Verdier and M. Goresky] *Bol. Soc. Brasil. Mat.* 17 (1986), no. 2, 23-50. (Summary) **89h:32031** 32C42 (14F99, 32C35, 57R20)
- (with Brasselet, J.-P.) Sur l'homologie d'intersection et les classes de Chern des variétés singulières (espaces de Thom, exemples de J.-L. Verdier et M. Goresky). [On the homology of intersection and Chern classes of singular varieties (Thom spaces, examples of J.-L. Verdier and M. Goresky)] With an appendix by Verdier. *Géométrie algébrique et applications, II* (La Rabida, 1984), 5-14, *Travaux en Cours*, 23, Hermann, Paris, 1987. (Introduction) **89h:32030** 32C42 (14F99, 32C35, 57R20)
- Désingularisation des surfaces par des modifications de Nash normalisées. [Desingularization of surfaces by normalized Nash modifications] Séminaire Bourbaki, Vol. 1985/86. *Astérisque* No. 145-146 (1987), 4, 187-207. (Summary) **89a:14015** 14E15 (14B05, 32C45)
- González-Vera, Pablo Properties of correspondence and continuity in two-point Padé approximation. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2* (Spanish) (Badajoz, 1986), 423-434. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89h:41022** 41A21
- On certain applications of two-point Padé type approximants with a single pole. *J. Comput. Appl. Math.* 19 (1987), no. 1, 151-160. (Summary) **89f:65023** 65D15
- Goodaire, E. G. (with Parmenter, M. M.) Semisimplicity of alternative loop rings. *Acta Math. Hungar.* 50 (1987), no. 3-4, 241-247. (Karl H. Robinson) **89e:20119** 20N05 (17D05)
- Circle loops of radical alternative rings. *Algebras Groups Geom.* 4 (1987), no. 4, 461-474. (M. Stănescu) **89e:17028** 17D05 (20N05)
- (with Chein, Orin) Moufang loops with limited commutativity and one commutator. *Arch. Math. (Basel)* 51 (1988), no. 1, 92-96. (Karl H. Robinson) **89e:20110** 20N05
- (with Polcino Milies, César) Torsion units in alternative loop rings. *Proc. Amer. Math. Soc.* 107 (1989), no. 1, 7-15. (Orin Chein) **89m:20084** 20N05 (17D05)
- Goodall, D. P. (with Ryan, E. P.) Feedback controlled differential inclusions and stabilization of uncertain dynamical systems. *SIAM J. Control Optim.* 26 (1988), no. 6, 1431-1441. (Andrzej Sosnowski) **89m:93066** 93D15 (34A60, 49E10)
- Goode, S. W. Vorticity and isotropic singularities. *Gen. Relativity Gravitation* 19 (1987), no. 11, 1075-1082. (Gregory J. Galloway) **89f:83069** 83C75 (83F05)
- (with Hewitt, C. G.; Wainwright, J.) Qualitative analysis of a class of inhomogeneous self-similar cosmological models. *Classical Quantum Gravity* 5 (1988), no. 10, 1313-1327. (S. Kichenassamy) **89j:83019** 83C20 (83F05)



- Goodearl, K. R. Linked injectives and Ore localizations. *J. London Math. Soc.* (2) **37** (1988), no. 3, 404-420. (William D. Blair) **89j:16002** 16A08 (16A33)
- (with Menal, P.) Stable range one for rings with many units. *J. Pure Appl. Algebra* **54** (1988), no. 2-3, 261-287. (L. N. Vaserstein) **89h:16011** 16A30 (19B10)
- Goodey, Paul (with Weil, W.) Translative integral formulae for convex bodies. *Aequationes Math.* **34** (1987), no. 1, 64-77. (W. J. Firey) **89a:52010** 52A22
- Goodman, A. W. (with Schoenberg, I. J.) A proof of Grace's theorem by induction. *Honam Math. J.* **9** (1987), no. 1, 1-6. (N. Sankaran) **89a:12002** 12D10 (30C15)
- On the zeros of the derivative of a rational function. *J. Math. Anal. Appl.* **132** (1988), no. 2, 447-452. (George L. Csordas) **89f:30011** 30C15
- Goodman, Jacob E. (with Pollack, Richard) Hadwiger's transversal theorem in higher dimensions. *J. Amer. Math. Soc.* **1** (1988), no. 2, 301-309. (Marilyn Breen) **89d:52008** 52A20 (53B35, 52A35)
- Goodman, Jeremy An instability test for nonrotating galaxies. *Astrophys. J.* **329** (1988), no. 2, part 1, 612-617. (Summary) **89d:85003** 85A05
- Goodman, Jonathan (with Lax, Peter D.) On dispersive difference schemes. I. *Comm. Pure Appl. Math.* **41** (1988), no. 5, 591-613. (Randall J. LeVeque) **89f:65094** 65M10 (35Q20)
- (with LeVeque, Randall J.) A geometric approach to high resolution TVD schemes. *SIAM J. Numer. Anal.* **25** (1988), no. 2, 268-284. (Mark Davidovich Kremetsky) **89c:65097** 65M05 (76-08)
- Stability of viscous scalar shock fronts in several dimensions. *Trans. Amer. Math. Soc.* **311** (1989), no. 2, 683-695. (Terence J. Ruggeri) **89j:35059** 35K30 (35B35, 35L67)
- Goodman, Joseph W. (with Bruck, Jehoshua) A generalized convergence theorem for neural networks. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part 1, 1089-1092. (Summary) **89k:92011** 92A09 (90C27)
- Goodman, L. E. (with Nelson, Carl Anthony) A hypercircle method of frame analysis. I. Theory. *Internat. J. Solids and Structures* **24** (1988), no. 6, 619-636. (Summary) **89c:73066** 73K99
- Goodman, Leo A. Some useful extensions of the usual correspondence analysis approach and the usual log-linear models approach in the analysis of contingency tables. (French summary) With a discussion and reply by the author. *Internat. Statist. Rev.* **54** (1986), no. 3, 243-309. (Not in MR) **62H17**
- see also Anderson, Erling B., (Not in MR) and Gill, R. D., (Not in MR)
- Goodman, M. S. (with Arthurs, E.) Quantum correlations: a generalized Heisenberg uncertainty relation. *Phys. Rev. Lett.* **60** (1988), no. 24, 2447-2449. (A. Barchielli) **89f:81007** 81B05
- Goodman, Mark W. Exponential suppression of string interactions on orbifolds. *Phys. Lett. B* **215** (1988), no. 3, 491-498. (C. Gauthier) **89j:83077** 83E15 (81E30, 83E30)
- Goodman, N. D. (with Vesley, R. E.) Obituary: John R. Myhill (1923-1987). *Hist. Philos. Logic* **8** (1987), no. 2, 243-244. (Editors) **89b:01045** 01A70 (03-03)
- Goodman, Rod (with Fuja, Tom; Heegard, Chris) Linear sum codes for random access memories. *IEEE Trans. Comput.* **37** (1988), no. 9, 1030-1042. (J. C. Hwang) **89k:94079** 94B60 (68P25)
- Goodman, Roe Integration of infinitesimally unitary representations. *Miniconferences on harmonic analysis and operator algebras* (Canberra, 1987), 103-112. *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (Janusz Grabowski) **89h:22040** 22E65 (17B65)
- Goodman, T. N. T. Shape preserving approximation by polyhedral splines. *Multivariate approximation theory, III* (Oberwolfach, 1985), 198-205. *Internat. Schriftenreihe Numer. Math.*, 75, Birkhäuser, Basel-Boston, MA, 1985. (N. A. Nazarenko) **89h:41026** 41A15
- (with Micchelli, Charles A.) Corner cutting algorithms for the Bézier representation of free form curves. *Linear Algebra Appl.* **99** (1988), 225-252. (Wolfgang Boehm) **89c:65018** 65D10
- (with Dahmen, Wolfgang; Micchelli, Charles A.) Compactly supported fundamental functions for spline interpolation. *Numer. Math.* **52** (1988), no. 6, 639-664. (A. Bleyer) **89i:65011** 65D07
- Goodman, Victor Characteristics of normal samples. *Ann. Probab.* **16** (1988), no. 3, 1281-1290. (Hô Dung Phúc) **89h:60011** 60B12 (60D05, 60F10, 60G15)
- (with Kuelbs, J.) Rates of convergence for increments of Brownian motion. *J. Theoret. Probab.* **1** (1988), no. 1, 27-63. (P. Révész) **89a:60080** 60F15 (60B12, 60F17, 60J65)
- Goodrich, John W. (with Soh, W. Y.) Unsteady solution of incompressible Navier-Stokes equations. *J. Comput. Phys.* **79** (1988), no. 1, 113-134. (Summary) **89g:76011** 76-08 (65N35, 76D05)
- Goodrich, Michael T. Finding the convex hull of a sorted point set in parallel. *Inform. Process. Lett.* **26** (1987), no. 4, 173-179. (Mirko Křivánek) **89c:68047** 68Q25 (68U05)
- Goodrich, R. K. (with Gustafson, K. E.) Spectral estimation and factorization in higher dimensions. *A Haar memorial conference, Vol. I, II* (Budapest, 1985), 383-399. *Colloq. Math. Soc. János Bolyai*, 49, North-Holland, Amsterdam-New York, 1987. (J. D. Stegeman) **89c:42021** 42B10 (32A35, 60G10, 62M15, 85A45)
- (with Gustafson, K. E.) Kolmogorov systems and Haar systems. *A Haar memorial conference, Vol. I, II* (Budapest, 1985), 401-416. *Colloq. Math. Soc. János Bolyai*, 49, North-Holland, Amsterdam-New York, 1987. (J. D. Stegeman) **89c:58068** 58F11 (28D05, 58F25, 82A35)
- (with Passi, Ranjit M.) Characterization of the weights of least squares adaptive polynomials. *SIAM J. Appl. Math.* **48** (1988), no. 2, 458-464. (A. Bultheel) **89d:41011** 41A10 (41A25, 62M20)
- Goodsell, G. (with Whiteman, J. R.) Superconvergent recovery for stresses from finite element approximations on subdomains for planar problems of linear elasticity. *The mathematics of finite elements and applications, VI* (Uxbridge, 1987), 29-53. Academic Press, London-New York, 1988. (P. Laasonen) **89h:65195** 65N30 (65N15, 73C35, 73K25)
- (with Whiteman, J. R.) On some finite element error estimates for stress intensity factors in mode I linear elastic fracture problems. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 541-548. *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Summary) **89d:73046** 73M05 (65N30, 73K25)
- Goodstein, R. L. see Rose, H. E., **89a:01083**
- Goodwin, Brian (with Brière, Christian) Geometry and dynamics of tip morphogenesis in *Acetabularia*. *J. Theoret. Biol.* **131** (1988), no. 4, 461-475. (Summary) **89g:92013** 92A09 (92A06)
- Goodwin, Graham C. (with Middleton, R.) Continuous and discrete adaptive control. *Control and dynamic systems, Vol. 25, 151-185, Academic Press, Orlando, FL, 1987.* (Zong Ji Chen) **89a:93032** 93C40 (93B50, 93C55, 93C60, 93E10)
- (with de Souza, Carlos E.; Mayne, D. Q.; Palaniswami, M.) An adaptive control algorithm for linear systems having unknown time delay. *Automatica—J. IFAC* **24** (1988), no. 3, 327-341. (Summary) **89d:34130** 34K35 (93B40, 93C05, 93C40)
- (with Hill, David J.; Wen, Changyun) Stability analysis of decentralised robust adaptive control. *Systems Control Lett.* **11** (1988), no. 4, 277-284. (Djordjija Petkovski) **89m:93048** 93C40 (93A15, 93B35, 93D15)
- Goodwin, Richard M. The use of gradient dynamics in linear general disequilibrium theory. With comments in French by Pierre Malgrange. *Macrodynamique et déséquilibres*, 11-30. *Economica, Paris*, 1987. (see **89d:90065**) 90A17 (90A16)
- see also Fitoussi, Jean-Paul, (**89d:90065**)
- Goody, Katz, Barbara see Katz, Barbara Goody
- de Gooijer, Jan G. (with Abraham, B.; Gould, Ann; Robinson, Lecily) Methods for determining the order of an autoregressive-moving average process: a survey. (French summary) *Internat. Statist. Rev.* **53** (1985), no. 3, 301-329. (Summary) **89h:62150** 62M10
- (with Anderson, Oliver D.) Sampled autocovariance and autocorrelation results for linear time processes. *Comm. Statist. Simulation Comput.* **17** (1988), no. 2, 489-513. (Summary) **89e:62116** 62M10
- (with Saikkonen, Pentti) A specification strategy for order determination in ARMA models. *Comm. Statist. Simulation Comput.* **17** (1988), no. 3, 1037-1054. (Not in MR) **62M10**
- Goormastic, Marlene (with Qu, Yin Sheng; Williams, George W.; Beck, Gerald J.) A generalized model of logistic regression for clustered data. *Comm. Statist. Theory Methods* **16** (1987), no. 12, 3447-3476. (Klaus Hinkelmann) **89b:62135** 62J02 (62P10)
- Goos, Gerhard see Uhl, Jürgen, **89a:68021** and Dencker, Peter, **89c:68072**
- Goovaerts, M. J. (with De Vylder, F.) Recursive calculation of finite-time ruin probabilities. *Insurance Math. Econom.* **7** (1988), no. 1, 1-7. (Summary) **89j:62138** 62P05
- Gopalakrishna, H. S. (with Patil, Shashikala D.) A new criterion for univalence and its applications. *J. Karnatak Univ. Sci.* **31** (1986), 111-118. (G. Lakshma Reddy) **89c:30026** 30C45 (30C55)
- Gopala Krishna, J. (with Usha Sree Devi, M.) General forms of inverse and implicit function theorems treatment closer to intuition through nonstandard techniques. *Bull. Calcutta Math. Soc.* **80** (1988), no. 4, 232-237. (W. A. J. Luxemburg) **89k:26014** 26E35 (03H05, 26B10, 58C15)
- (with Usha Sree Devi, M.) On a nonstandard proof of Watson's lemma concerning asymptotic expansions. *Pure Appl. Math. Sci.* **27** (1988), no. 1-2, 49-51. (M. S. Rangachari) **89f:30064** 30E15 (03H05)
- Gopalsamy, K. Nonoscillation in time delayed Lotka-Volterra competition systems. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 443-446. *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (J. Milota) **89c:92059** 92A15 (34K15)
- (with Zhang, Bing Gen) On a neutral delay logistic equation. *Dynamics Stability Systems* **2** (1987), no. 3-4, 183-195. (K. Smítalová) **89h:92053** 92A15 (34K15, 34K20)
- Oscillation and nonoscillation in neutral differential equations with variable parameters. *J. Math. Phys. Sci.* **21** (1987), no. 6, 593-611. (R. R. Akhmerov) **89d:34111** 34K15 (34C10)
- (with Freedman, H. I.) Nonoccurrence of stability switching in systems with discrete delays. *Canad. Math. Bull.* **31** (1988), no. 1, 52-58. (Harlan W. Stech) **89e:92035** 92A15 (34K20)
- (with Rai, Bindhyachal) Stability analysis of synchronous oscillations in a weakly coupled integrodifferential system. *J. Math. Anal. Appl.* **136** (1988), no. 2, 369-382. (A. Corduneanu) **89m:45021** 45M10 (45J05)
- (with Zhang, Bing Gen) Oscillation and nonoscillation in a nonautonomous delay-logistic equation. *Quart. Appl. Math.* **46** (1988), no. 2, 267-273. (T. Chanturiya) **89k:34128** 34K15 (34C10, 92A15)
- Gopalsamy, S. (with Bhattacharyya, Pijush Kanti) An equilibrium finite element method for fourth order elliptic equations with variable coefficients. *Comput. Math. Appl.* **15** (1988), no. 5, 405-424. (B. Kellogg) **89h:65174** 65N30 (73K25)
- (with Bhattacharyya, Pijush Kanti) On existence and uniqueness of solutions of boundary value problems of fourth order elliptic partial differential equations with variable coefficients. *J. Math. Anal. Appl.* **136** (1988), no. 2, 589-608. (R. Kodnár) **89m:35066** 35J40
- Göpfert, A. Multicriterial duality, examples and advances. *Large-scale modelling and interactive decision analysis* (Eisenach, 1985), 52-58. *Lecture Notes in Econom. and Math. Systems*, 273, Springer, Berlin-New York, 1986. (Autorreferat (Zbl 598:90082)) **89e:90196** 90C31
- (with Gerth, Christiane; Pöhler, Karin) Vektorielles Standortproblem und Dualität. (English summary) [Vectorial location problem and duality] *Wiss. Z. Karl-Marx-Universität Leipzig Math.-Natur. Reihe* **37** (1988), no. 4, 305-312. (Klaus Tammer) **89k:90151** 90C31
- Gopinath, B. see Open problems in communication and computation, **89c:94003**
- Góra, P. (with Boyarsky, A.) Why computers like Lebesgue measure. *Comput. Math. Appl.* **16** (1988), no. 4, 321-329. (Hitoshi Nakada) **89m:58107** 58F08 (28D05, 58-04, 65C20)
- Approximate master equations for an exactly solvable quantum system. *J. Phys. A* **21** (1988), no. 9, 2061-2073. (Demetris P. K. Ghikas) **89g:82014** 82A15 (82A05)
- Goralčík, P. (with Kouček, Václav) On universality of extensions. *Semigroups, theory and applications* (Oberwolfach, 1986), 150-153. *Lecture Notes in Math.*, 1320, Springer, Berlin-New York, 1988. (P. G. Trotter) **89h:20095** 20M50 (18B15, 18B40)
- Goranko, Valentin F. Some syntactic and semantic relations between superintuitionistic and multiple-valued propositional logics. (Bulgarian summary) *Mathematics and mathematical education* (Bulgarian) (Sunny Beach (S'nevch Bryag), 1987), 193-200. *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89c:03036** 03B55 (03B50, 03G25)
- Definability in a modal language with necessity and sufficiency. *C. R. Acad. Bulgare Sci.* **41** (1988), no. 4, 9-11. (V. V. Rybakov) **89h:03025** 03B45
- Gorbach, I. V. The method of a mode basis in the theory of resonators with a sectional surface. (Russian) *Radiotekhn. (Khar'kov)* No. 84 (1988), 47-54, iii. (Summary) **89j:78025** 78A40

- Gorbachev, M. S.** (with Vorotnikov, V. I.; Zaikov, L. N.; et al.) Academician Andrei Nikolaevich Kolmogorov. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1(259), 3-4; translated in *Russian Math. Surveys* 43 (1988), no. 1, 1-2. (Editors) **89b:01046** 01A70
- (with Vorotnikov, V. I.; Zaikov, L. N.; et al.) Academician Andrei Nikolaevich Kolmogorov. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 2, 98-99. (Not in MR) 01A70
- Gorbachev, N. V.** (with Safonov, A. V.) Optimal control and inverse problems of dynamics. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 1, 160-163. (Summary) **89c:70065** 70Q05 (93B50)
- Gorbachev, O. G.** (with Natan, A. A.) Optimal sequential procedures for classification and selection of useful objects. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 3, 138-145; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 6, 38-45, 203 (Russian). (Summary) **89j:90158** 90B50 (92A90)
- Gorbachev, V. A.** The Neumann problem for a plate with a groove. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 8(42) (1987), 50-54, 93. (Summary) **89c:80007** 80A20
- Gorbachuk, V. M.** The Dirichlet problem for a second-order operator-differential equation on a semi-axis. (Russian) *Application of methods of functional analysis in problems of mathematical physics* (Russian), 89-97, iii. *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Mazen Mohamed Shahin) **89j:34088** 34G10 (34B25, 47A50, 47E05)
- Strange attractors in  $n$ -person differential games. (Russian) *Theory of optimal decisions* (Russian), 67-70, v. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (O. N. Bondareva) **89f:90218** 90D25 (58F13, 90A16)
- Stability of solutions of stochastic extremal problems. (Russian) *Mathematical methods for the analysis of complex stochastic systems* (Russian), 71-76, vi. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. (Summary) **89m:90121** 90C15
- Gorbachuk, V. I.** A method for the qualitative reconstruction of the initial condition in the Cauchy problem for the heat equation. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 10(44) (1988), 50-54, 88. (Igor Malyshev) **89k:35249** 35R30 (35K05)
- A general inverse theorem for the approximation of functions by operators of continuation into a canonical domain. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 3, 8-16, 85; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 3, 9-19. (K. G. Ivanov) **89j:41027** 41A27 (41A25)
- Gorbatov, V. A.** ★ Fundamentos de la matemática discreta. (Spanish) [Foundations of discrete mathematics] Translated from the Russian by Maria A. Andrianova. "Mir", Moscow, 1988. 340 pp. ISBN 5-03-000620-6 (Editors) **89i:00002** 00A05 (03-01, 04-01, 05-01, 08-01)
- Gorbatov, Yu. V.** (with Babayan, R. R.; Polonnikov, D. E.) Analysis of the fundamental characteristics of operational amplifiers with differential input and sampled-data stabilization. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 8, 181-188; translated in *Automat. Remote Control* 49 (1988), no. 8, part 2, 1103-1108. (Not in MR) 94C05
- Gorbatshevich, V. V.** (with Onishchik, A. L.) Lie groups of transformations. (Russian) *Current problems in mathematics. Fundamental directions, Vol. 20* (Russian), 103-240, 246. *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (see **89m:22010**) 22-01 (57-01)
- On the curvature of a Riemannian metric on compact homogeneous manifolds. (Russian) *Mat. Zametki* 43 (1988), no. 2, 169-177, 300; translated in *Math. Notes* 43 (1988), no. 1-2, 95-99. (O. Kowalski) **89d:53095** 53C30 (53C20)
- Gorbenko, I. D.** (with Zamula, A. A.; Bessarabenko, K. V.) Accelerated algorithms for forming systems of characteristic discrete signals. (Russian) *Radiotekhn. (Kharkov)* No. 84 (1988), 69-72, iv. (Not in MR) 94A12 (12E20)
- Gorbenko, N. I.** The method of fictitious components as a quadratic programming problem. (Russian) *Computational processes and systems, No. 5* (Russian), 213-217, "Nauka", Moscow, 1987. (C. Ilioi) **89c:65131** 65N99 (65F10)
- Gorbuinov, V. A.** The cardinality of subdirectly irreducible systems in quasivarieties. (Russian) *Algebra i Logika* 25 (1986), no. 1, 3-50, 116. (E. W. Kiss) **89b:08010** 08C15 (03C05, 03C30, 03C55, 08B30)
- Gorbuinov, V. G.** The generalized Grothendieck category. (Russian) *Sibirsk. Mat. Zh.* 28 (1987), no. 5, 54-60. (Jiri Rosicky) **89b:18002** 18A25 (18E10)
- (with Vershinin, V. V.) A quadrangle of spectral sequences. (Russian) *Trudy Inst. Mat. (Novosibirsk)* 9 (1987), Issled. Geom. "v tselom" i *Mat. Anal.*, 41-59, 206. (Marek Golasinski) **89b:55020** 55T15 (18G40, 55T25)
- Gorbuzov, V. N.** (with Nemets, V. S.) Construction in the large of polynomial solutions with a given exponent. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 9, 1633-1636, 1655. (V. A. Tkachenko) **89j:34011** 34A20 (34A25)
- Gorchakov, Yu. M.** Indecomposability of subdirect products of finite groups. (Russian) *Logical-algebraic constructions* (Russian), 23-26. *Kalinin. Gos. Univ., Kalinin*, 1987. (I. Ya. Subbotin) **89g:20051** 20E99
- Gordan, Paul** ★ Vorlesungen über Invariantentheorie. (German) [Lectures on invariant theory] Erster Band: Determinanten. [Vol. I: Determinants] Zweiter Band: Binäre Formen. [Vol. II: Binary forms] Edited by Georg Kerschenteiner. Second edition. *Chelsea Publishing Co., New York*, 1987. Vol. I: xii+201 pp.; Vol. II: xii+360 pp. ISBN 0-8284-0328-7 (J. Dieudonné) **89g:01034** 01A55 (01A75, 15A72)
- Gordeev, E. N.** (with Leon'ev, V. K.) Use of an investigation of stability for the solution of choice problems. (Russian) *Mathematical methods in pattern recognition and discrete optimization* (Russian), 36-51. *Akad. Nauk SSSR, Vychisl. Tsent., Moscow*, 1987. (Andrzej Wiecezorek) **89j:90235** 90C31
- (with Mamutov, K. Kh.) Stability in trajectory bottleneck problems. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 1, 45-52; translated in *Automat. Remote Control* 49 (1988), no. 1, part 1, 34-40. (N. I. Yanev) **89f:90095** 90C10
- Polynomial algorithms for calculating the stability radius for two classes of choice problems. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 5, 1040-1043; translated in *Soviet Math. Dokl.* 36 (1988), no. 3, 557-560. (K. Zimmermann) **89c:90177** 90C30 (90C27)
- Gordeev, L.** On cut elimination in the presence of Peirce rule. *Arch. Math. Logik Grundlag.* 26 (1987), no. 3-4, 147-164. (Henry Africk) **89b:03096** 03F05 (03B10, 03B20, 03F55)
- Proof-theoretical analysis: weak systems of functions and classes. *Ann. Pure Appl. Logic* 38 (1988), no. 1, 121 pp. (Peter Păppinghaus) **89j:03053** 03F50 (03F05, 03F25, 03F35)
- etayo Gordejuela, José Javier** see **Etayo Gordejuela, José Javier**
- Gordesch, J.** An algorithm for the approximation of  $n$ -dimensional distributions. *COMPSTAT 1988* (Copenhagen, 1988), 285-290. *Physica, Heidelberg*, 1988. (see **89i:62084**) 65U05
- Gordeziani, D. G.** (with Korshiya, T. K.; Lobzhanidze, G. B.) Averaged schemes of summary approximation for nonlinear parabolic equations. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* 18 (1986), 68-94, 274. (A. I. Perov) **89f:65068** 65J99 (34G20, 35K55, 65L05)
- A class of nonlocal boundary value problems. (Russian) *Current problems in mathematical physics, Vol. I* (Russian) (Tbilisi, 1987), 183-190, 480. *Tbiliss. Gos. Univ., Tbilisi*, 1987. (see **89j:00030**) 35J25
- Finite-difference schemes for solving nonlocal boundary value problems. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* 19 (1987), 20-25, 205. (E. S. Chichkin) **89d:65074** 65L10
- Gordienko, E. I.** Stability estimates for controlled Markov chains with a minorant. Stability problems of stochastic models. *J. Soviet Math.* 40 (1988), no. 4, 481-486. (Dean Isaacson) **89j:60087** 60J05
- Gordienko, V. I.** (with Zayats, V. M.; Kulynych, Ya. P.) An electromagnetic field of dipole radiator in a slowly moving conducting medium. (Russian) *Mat. Metody i Fiz.-Mekh. Polya* No. 28 (1988), 31-35, 105. (Summary) **89j:78013** 78A25
- Gordinski, L. D.** (with Shuvar, R. A.) Solution of initial-boundary value conjugation problems for degenerate parabolic equations that contain a time derivative in the conjugation conditions. (Russian) *Physical-engineering applications of nonlinear boundary value problems* (Russian), 27-32, 137. *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (Summary) **89c:35080** 35K65
- A study of the electromagnetic field in constructive elements of electric machines by the projection method. (Russian) *Mathematical problems in power generation* (Russian), 39-49, 165. "Naukova Dumka", Kiev, 1988. (see **89k:78001**) 78A30
- Gordon, B. Brent** Topological and algebraic cycles in Kuga-Shimura varieties. *Math. Ann.* 279 (1988), no. 3, 395-402. (Bert van Geemen) **89j:11059** 11G18 (14C30, 14K15)
- Algebraically defined subspaces in the cohomology of a Kuga fiber variety. *Pacific J. Math.* 131 (1988), no. 2, 261-276. (Rolf Berndt) **89b:11048** 11G18 (11F70, 14D10, 14K05, 20G05, 22E40, 32M15, 32N10)
- Gordon, C. McA.** (with Luecke, J.) Only integral Dehn surgeries can yield reducible manifolds. *Math. Proc. Cambridge Philos. Soc.* 102 (1987), no. 1, 97-101. (Introduction) **89a:57003** 57M25
- (with Casson, Andrew J.) Reducing Heegaard splittings. *Topology Appl.* 27 (1987), no. 3, 275-283. (Tsuyoshi Kobayashi) **89c:57020** 57N70 (57M99, 57N10)
- (with Culler, M.; Luecke, J.; Shalen, Peter B.) Correction to: "Dehn surgery on knots" [Ann. of Math. (2) 125 (1987), no. 2, 237-300; MR 88a:57026]. *Ann. of Math. (2)* 127 (1988), no. 3, 663. (From the text) **89c:57015** 57N12 (57M25, 57M40)
- Gordon, Carolyn S.** (with Wilson, Edward N.) Isometry groups of Riemannian solvmanifolds. *Trans. Amer. Math. Soc.* 307 (1988), no. 1, 245-269. (A. L. Onishchik) **89c:53073** 53C30
- Gordon, Daniel M.** On the number of elliptic pseudoprimes. *Math. Comp.* 52 (1989), no. 185, 231-245. (Joseph H. Silverman) **89f:11169** 11Y11 (11G05)
- Gordon, Gary** Algebraic characteristic sets of matroids. *J. Combin. Theory Ser. B* 44 (1988), no. 1, 64-74. (Christian Herrmann) **89c:05024** 05B35
- Gordon, Louis I.** (with Arratia, R.) Tutorial on large deviations for the binomial distribution. *Bull. Math. Biol.* 51 (1989), no. 1, 125-131. (Summary) **89j:62028** 62E15
- Gordon, T. J.** Symmetries of generalized Klein-Gordon (including sine-Gordon) equations in two dimensions. *Math. Proc. Cambridge Philos. Soc.* 102 (1987), no. 3, 573-586. (S. I. Rosencrans) **89a:35180** 35Q20 (35A30, 35L10)
- Gordon, Yehoram** (with Schütt, C.; König, Hermann) Dualité des nombres d'entropie. [Duality of entropy numbers] *Séminaire d'Analyse Fonctionnelle 1984/1985*, 95-97. *Publ. Math. Univ. Paris VII*, 26, *Univ. Paris VII*, Paris, 1986. (K. K. Oberai) **89c:47033** 47B10 (47A99)
- Gaussian processes and almost spherical sections of convex bodies. *Ann. Probab.* 16 (1988), no. 1, 180-188. (J.-P. Kahane) **89a:60107** 60G15 (46B99, 52A22, 60B11)
- (with Meyer, Mathieu; Reisner, Shlomo) Zonoids with minimal volume-product—a new proof. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 273-276. (L. A. Santaló) **89c:52015** 52A40 (52A20)
- Gordov, E. P.** (with Khazanov, A. M.; Koganov, G. A.) Time-dependent projection operator used for separating subsystem variables and its application in laser theory. *Phys. Lett. A* 133 (1988), no. 1-2, 7-10. (Robert Alicki) **89b:82045** 82A35 (81K05)
- Gordzilewski, Wladyslaw** (with Bieszk, Leon) Sur la généralisation de certains théorèmes touchants l'équation de translation sur le produit direct des groupes. [A generalization of some theorems concerning the translation equation of the direct product of groups] *Publ. Math. Debrecen* 34 (1987), no. 3-4, 241-249. (Z. Moszner) **89c:39015** 39B40 (39B50)
- Gore, Sharad D.** Classification of a correlated random walk using its ladder processes. Proceedings of the National Seminar on Stochastic Process, Statistical Inference and Sample Survey (Sambalpur, 1985). *J. Orissa Math. Soc.* 5 (1986), no. 1, 11-27. (Peter Arzberger) **89b:60113** 60J15 (62Mxx)
- Górecki, Z.** (with Rybicki, J.) A new method calculating stresses and displacements in elastic bars. (Russian and Polish summaries) *Rozprawy Inz.* 35 (1987), no. 4, 729-742 (1988). (Summary) **89j:73075** 73K30 (73-04, 73K05)
- Gorelik, E. M.** Metric fiberings of a Lobachevskii space. (Russian) *Dokl. Akad. Nauk SSSR* 301 (1988), no. 6, 1301-1304; translated in *Soviet Math. Dokl.* 38 (1989), no. 1, 202-205. (K. Burian) **89k:51025** 51M10 (54E35, 54E45)
- Gorelik, S. B.** Existence theorems for optimal controls in systems with deviating argument of neutral type. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1987, no. 5, 38-44, 126. (Erwin Kozakiewicz) **89c:31116** 34K35 (49A10)
- Gorelik, V. S.** (with Karasev, V. P.) Structural phase transitions in crystals and the theory of invariants. (Russian) *Group-theoretic methods in fundamental and applied physics* (Russian) (Vladivostok, 1986), 174-185. "Nauka", Moscow, 1988. (Vojtěch Kopský) **89f:82018** 82A25 (82A60)
- Gorelov, V. A.** Effective estimates for the measures of algebraic independence of the values of some hypergeometric  $E$ -functions. (Russian) *Diophantine approximations, Part II* (Russian), 12-23. *Moskov. Gos. Univ., Moscow*, 1986. (Yao Chen Zhu) **89j:11062** 11J91 (11J85)



- Gorelov, Yu. I. (with Vasil'ev, V. I.; Usmanov, Z. D.) Synthesis of optimal simulational control in systems with cyclic technology. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 6, 84–88 (1988); translated from *Avtomatika* **1987**, no. 6, 79–82, 97 (Russian. English summary). (Inven Michiel Yvonne Mareels) **89m:93045** 93C30 (93C25, 93C40)
- Gorev, N. Inversion formulae for first-order approximations in fixed-energy scattering by compactly supported potentials. *Inverse Problems* **4** (1988), no. 4, 1025–1035. (I. Kay) **89j:81234** 81F05 (35R30)
- Goresky, R. Mark (with MacPherson, R.) On the topology of algebraic torus actions. *Algebraic groups Utrecht 1986*, 73–90, *Lecture Notes in Math.*, 1271, Springer, Berlin-New York, 1987. (Dennis Snow) **89a:14064** 14L30 (32M05)
- (with De Concini, C.; MacPherson, R.; Procesi, C.) On the geometry of quadrics and their degenerations. *Comment. Math. Helv.* **63** (1988), no. 3, 337–413. (Michel Brion) **89k:14082** 14L32 (14L35, 14M17, 32G99)
- Goretskii, V. E. (with Kurdachenko, L. A.; Pylaev, V. V.) Groups with a system of minimax quotient groups. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 3, 17–20, 84. (E. I. Khukhro) **89b:20049** 20F19
- Gorev, P. V. (with Anisimova, L. N.; Koldanov, A. P.) The construction of consistent estimates. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 4, 84–89; translated from *Radiotekhn. i Elektron.* **31** (1986), no. 12, 2421–2425 (Russian). (L. L. Campbell) **89a:94009** 94A15 (62F10)
- Gorev, R. (with Lamba, S. S.; Bandyopadhyay, B.) New reduction technique by step error minimization for multivariable systems. *Internat. J. Systems Sci.* **19** (1988), no. 6, 999–1009. (Vimal Singh) **89c:93042** 93B17 (93C05, 93C35, 93C60)
- Gorgadze, Z. G. On Bessel potentials in linear spaces. *Probability theory and mathematical statistics* (Kyoto, 1986), 103–110, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (A. V. Uglanov) **89b:46070** 46G12 (46E99, 60B05)
- Gorgi, Ford Vagris (with Sahyoun, A. H.) Mutual transformability of the formulas of the languages of Markov  $L_{2w}$  and  $\mathcal{R}_w$ . *J. Math. Logik Grundlag. Math.* **33** (1987), no. 2, 123–126. (From the introduction) **89d:03062** 03F50 (03B60)
- On the impossibility of transformation of all true formulas of Markov's language  $L_1$  into true formulas of his language  $\mathcal{R}_1$ . *J. Math. Logik Grundlag. Math.* **34** (1988), no. 4, 305–307. (V. Ya. Kreinovich) **89c:03088** 03F50
- Gorgui-Naguib, R. N. (with King, Robert A.) Comments on: "Matrix processors using p-adic arithmetic for exact linear computations" [IEEE Trans. Comput. **26** (1977), no. 7, 633–639; MR **57** #7963] by E. V. Krishnamurthy. *IEEE Trans. Comput.* **35** (1986), no. 10, 928–930. (Summary) **89f:68024** 68Q20 (11T35, 65F99, 94B60)
- (with King, Robert A.) A class of integer sequences with ideal correlation properties in the Möbius domain. *Mathematics in signal processing* (Bath, 1985), 45–57, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (Summary) **89c:40117** 94A15 (11B83)
- Gorgula, V. I. (with Nagnibida, N. I.) Some remarks on a polynomial basis of a space of analytic functions. (Russian) *Approximation theory and related problems in analysis and topology* (Russian), 21–24, ii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) **89c:30096** 30E10 (30B60, 46E10)
- (with Nagnibida, N. I.) Equivalence of operations of multiple integration in analytic spaces. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 29 (1987), 14–17, 117. (Summary) **89e:47046** 47B38 (30H05, 46E10)
- (with Nagnibida, N. I.) A special polynomial basis of a space of analytic functions. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 1, 39–42, 133; translated in *Ukrainian Math. J.* **40** (1988), no. 1, 32–35. (Jacques Mayer) **89f:30007** 30B60 (32H05)
- Gorgy, F. W. *see Gorgi, Ford Vagris*
- Gori, Alessandro (with Bertossi, Alan A.) Total domination and irredundance in weighted interval graphs. *SIAM J. Discrete Math.* **1** (1988), no. 3, 317–327. (Jürgen Ebert) **89m:68055** 68Q25 (05C70, 68R10)
- Gori, Franco *see Mathematical economics*, **89c:90004**
- Gori, Lauri Nicolò Amati A method of interpolation by means of generalized splines. (Italian. English summary) *Rend. Mat.* (7) **4** (1984), no. 4, 601–616. (Introduction) **89c:41004** 41A05 (41A15)
- Gorin, A. K. (with Yatsuk, N. Ya.) Principles of the realization of an instrumental system of PRODAN-automation in the design of data structures. (Russian) *Methods for solving nonlinear problems, and data processing* (Russian), 23–27, 105, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1986. (see **89f:00011**) 68P05
- Göring, Peter (with Dahn, Bernd L.) Notes on exponential-logarithmic terms. *Fund. Math.* **127** (1987), no. 1, 45–50. (Summary) **89c:03062** 03C65 (12J15, 12L12)
- Gor'kavii, N. N. (with Fridman, A. M.) Processes of transfer, instabilities and structure of planetary rings. *Plasma theory and nonlinear and turbulent processes in physics*, Vol. 1, 2 (Kiev, 1987), 275–297, *World Sci. Publishing, Singapore*, 1988. (Gh. Procopiuc) **89m:85011** 85A30
- Gorkin, Pamela (with Hedenmalm, Håkan; Mortini, Raymond) A Beurling-Rudin theorem for  $H^\infty$ . *Illinois J. Math.* **31** (1987), no. 4, 629–644. (Michael von Renteln) **89a:46114** 46J15 (30H05, 46J20)
- (with Mortini, Raymond)  $F$ -ideals in  $QAB$ . *J. London Math. Soc.* (2) **37** (1988), no. 3, 509–519. (Joaquim Bruna) **89c:46070** 46J15 (46J20)
- Gor'kov, V. F. On Hadwiger's conjecture. (Russian) *Mathematical methods for optimization and control in systems* (Russian), 39–46, *Kalinin. Gos. Univ., Kalinin*, 1987. (Martin Škoviera) **89d:05071** 05C15
- Gorlach, G. N. The possibility of parallel realization of a class of computational schemes. (Russian) *Methods and means for designing discrete systems* (Russian), 37–42, ii, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. (see **89j:68009**) 68Q10
- Gorlenko, E. I. An existence and uniqueness theorem for the solution of a boundary value problem for the equation  $x'' = (f(x, x'))^n$ . (Russian) *Lav. Mat. Ezhegodnik* No. 31 (1988), 34–40, 250. (R. Guenther) **89c:34023** 34B15 (34B10)
- Görlich, E. (with Zayed, A. I.; Freund, M.) A theorem of Nehari revisited. *Complex Variables Theory Appl.* **10** (1988), no. 1, 11–22. (F. W. Carroll) **89g:30006** 30B40 (33A45, 41A58)
- Gorman, Arthur D. (with Anderson, Steven P.) Caustics associated with the asymptotic solution of the diffusion equation. *Quart. Appl. Math.* **45** (1987), no. 4, 783–787. (Michiel Bertsch) **89f:35102** 35K55 (35C20, 58G16)
- Gorman, D. G. (with Kennedy, William) *Applied solid dynamics*. Butterworth, London-Boston, MA, 1988. xii+251 pp. ISBN 0-408-02309-0 (N. Gass) **89h:73001** 73-01 (65N30, 70-01, 70E15, 73K12)
- Górnicki, Jarosław (with Krüppel, Manfred) Ein maßtheoretischer Fixpunktsatz für nichtlineare Operatoren im Hilbert-Raum. (English and Russian summaries) [A measure-theoretic fixed-point theorem for nonlinear operators in Hilbert space] *Wiss. Z. Pädagog. Hochsch. "Liselotte Herrmann" Güstrow Math.-Natur. Fak.* **24** (1986), no. 1, 59–66. (R. G. Bartle) **89b:47079** 47H10
- Uniformly normal structure and fixed points of uniformly Lipschitzian mappings. *Comment. Math. Univ. Carolin.* **28** (1987), no. 3, 481–489. (O. P. Kapoor) **89d:47123** 47H10
- Nonlinear ergodic theorems for nonexpansive mappings in uniformly convex Banach spaces. (German and Russian summaries) *Wiss. Z. Pädagog. Hochsch. "Liselotte Herrmann" Güstrow Math.-Natur. Fak.* **25** (1987), no. 1, 133–152. (E. Lami Dozo) **89c:47066** 47H10 (47A35, 47H09)
- Görnitz, Thomas (with Drieschner, M.; von Weizsäcker, C.-F.) Reconstruction of abstract quantum theory. *Internat. J. Theoret. Phys.* **27** (1988), no. 3, 289–306. (Jeffrey Bub) **89a:81006** 81B05
- Abstract quantum theory and space-time structure. I. Ur theory and Bekenstein-Hawking entropy. *Internat. J. Theoret. Phys.* **27** (1988), no. 5, 527–542. (Carl Brans) **89g:83058** 83F05 (81B99, 83C45)
- Connections between abstract quantum theory and space-time structure. II. A model of cosmological evolution. *Internat. J. Theoret. Phys.* **27** (1988), no. 6, 659–666. (Carl Brans) **89g:83059** 83F05 (81B99)
- Gornostae, O. M. On quasivarieties of models. (Russian) *Theory of semigroups and its applications* (Russian), 82–86, 115, *Saratov. Gos. Univ., Saratov*, 1983. (Summary) **89d:08010** 08C15 (03C05)
- Gornov, A. Yu. (with Belokopytov, S. V.; Dmitriev, M. G.; Gerasimov, V. A.; Klishchik, A. M.; Tyatuskun, A. I.; Pasyukov, V. N.) Interior and outer boundary layers in the optimal control problems. Asymptotic and numerical methods. *BAIL IV* (Novosibirsk, 1986), 216–221, *Boole Press Conf. Ser.*, 8, Boole, Dún Laoghaire, 1986. (Vimier Arnautu) **89d:49017** 49B10 (34E15, 35B25, 49B22)
- Gorodentsev, A. L. Surgeries of exceptional bundles on  $\mathbb{P}^n$ . (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **52** (1988), no. 1, 3–15, 240; translated in *Math. USSR-Izv.* **32** (1989), no. 1, 1–13. (P. E. Newstead) **89c:14018** 14F05
- Gorodetskiĭ, V. V. The periodic Cauchy problem for an equation of parabolic type in classes of generalized functions. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 10, 1745–1751, 1836. (V. S. Rabinovich) **89f:35098** 35K30 (35B10, 46F10)
- A method of summation of Gauss-Weierstrass type of multiple Fourier series in spaces of generalized functions. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 4, 28–34; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 4, 36–45. (Włodzimierz Lenski) **89d:42012** 42B05 (40G10, 42A24, 46F10)
- Gorodniĭ, M. F. Limit behavior of the solutions of a stochastic difference equation in a Banach space. (Russian) *Asymptotic problems in the theory of random processes* (Russian), 41–47, 114, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (J. M. Stoyanov) **89g:60121** 60F17 (39A10, 60H99)
- Limit behavior of the solutions of a stochastic difference equation in Hilbert space. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 1, 15–18; translated in *Soviet Math. Dokl.* **38** (1989), no. 1, 6–8. (Bohdan Masłowski) **89m:60140** 60H15 (47A50)
- Gorokh, V. P. Two-dimensional minimal surfaces in a pseudo-Euclidean space. (Russian) *Ukrain. Geom. Sb.* No. 31 (1988), 36–47. (Vladislav Goldberg) **89k:53013** 53A35
- Gorokhov, A. V. Integrals over trajectories on compact Kähler manifolds. (Russian) *Group-theoretic methods in physics, Vol. 2* (Russian) (*Jurnal*, 1985), 399–410, "Nauka", Moscow, 1986. (see **89d:81002**) 58D30 (81C35)
- Gorokhovik, V. V. Necessary conditions for optimality in matrix impulses for a control problem with terminal constraints. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 1, 70–77; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 4, 66–74, 220 (Russian). (Not in MR) **89B10**
- Goron, S. (with Blaga, L.; Lungu, N.) On integral representation of the overpotential. (Romanian summary) *Bul. Ştiinţ. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Mat.* **28** (1985), 32–34. (Not in MR) **31B15**
- Gorostiza, Luis G. Limit theorems for supercritical branching random fields with immigration. *Adv. in Appl. Math.* **9** (1988), no. 1, 56–86. (Klaus Fleischmann) **89c:60099** 60J80 (60G60, 60H15)
- The demographic variation process of branching random fields. *J. Multivariate Anal.* **25** (1988), no. 2, 174–200. (Klaus Fleischmann) **89f:60054** 60G60 (60G15, 60J80)
- (with Bojdecki, Tomasz) Inhomogeneous infinite-dimensional Langevin equations. *Stochastic Anal. Appl.* **6** (1988), no. 1, 1–9. (Robert L. Wolpert) **89b:60111** 60G20 (60G15, 60H10, 60H15)
- Gorr, G. V. (with Bryum, A. Z.) The sufficient conditions for the existence of asymptotically pendulum-like motions of a heavy rigid body with a fixed point. *J. Appl. Math. Mech.* **50** (1986), no. 4, 522–525 (1987); translated from *Prikl. Mat. Mekh.* **50** (1986), no. 4, 681–684 (Russian). (Summary) **89c:70011** 70E15
- (with Kononykhin, G. A.) On the dynamic impossibility of Grioli regular precession in the motion of a rigid body suspended by a rod. *J. Appl. Math. Mech.* **51** (1987), no. 3, 289–291 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 3, 371–374 (Russian). (Summary) **89j:70008** 70E15 (70E05)
- (with Kovalev, V. M.) Asymptotically uniform motions around an inclined axis in a generalized problem of the motion of a rigid body with a fixed point. (Russian) *Mekh. Tverd. Tela* No. 20 (1988), 13–18, 111. (Summary) **89g:70004** 70E15
- Gorrieri, Roberto (with Marchetti, Sergio; Montanari, Ugo)  $A^2$ CCS: a simple extension of CCS for handling atomic actions. *CAAP '88* (Nancy, 1988), 258–270, *Lecture Notes in Comput. Sci.*, 299, Springer, Berlin-New York, 1988. (Summary) **89b:68041** 68Q10 (03B70)
- Gorringe, V. M. (with Leach, P. G. L.) Hamilton-like vectors for a class of Kepler problems with a force proportional to the velocity. *Celestial Mech.* **41** (1987/88), no. 1–4, 125–130. (Fu Tong) **89g:70006** 70F05 (70D05)
- (with Leach, P. G. L.) Conserved vectors for the autonomous system  $\ddot{r} + g(r, \theta)\dot{r} + h(r, \theta)\dot{\theta} = 0$ . *Phys. D* **27** (1987), no. 1–2, 243–248. (Eduardo Piña) **89d:70003** 70D05 (58F99)
- (with Leach, P. G. L.) A conserved Laplace-Runge-Lenz-like vector for a class of three-dimensional motions. *Phys. Lett. A* **133** (1988), no. 6, 289–294. (Summary)

- 89i:70012** 70D99 (70F05)  
 — (with Leach, P. G. L.; Flessas, George P.) A Rodrigues formula approach to determining closed-form solutions to the Schrödinger equation for symmetric anharmonic oscillators. *J. Math. Phys.* **30** (1989), no. 2, 406–412. (Ernest R. Davidson) **89k:81025** 81C05 (33A65)
- Gorse, D.** (with Taylor, John G.) On the equivalence and properties of noisy neural and probabilistic RAM nets. *Phys. Lett. A* **131** (1988), no. 6, 326–332. (Summary) **89h:92015** 92A09 (68Q75)
- Gorshenkov, V. N.** Wigner distributions and their applications for calculating the constants of two-atom molecules. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (Jurmala, 1985), 410–415, "Nauka", Moscow, 1986. (see **89d:81002**) **81C25** (81G55)
- Gorshkov, P. V.** (with Arkhangel'skii, K. V.) Conditional identities in the algebra of regular languages. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 10, 67–69, 88. (Summary) **89a:68117** 68Q45
- (with Arkhangel'skii, K. V.) On refinement of the concept of a multitape automaton. (Russian. English summary) *Kibernetika (Kiev)* **1987**, no. 6, 20–25, 133. (Summary) **89b:68047** 68Q70
- Gorshkova, O. Ya.** (with Avdonin, S. A.) Controllability of multidimensional parabolic systems with delay. (Russian) *Mathematical physics (Russian)*, 95–99, Leningrad. Gos. Ped. Inst., Leningrad, 1987. (Jerzy Sztajnic) **89e:93014** 93B05 (35R10, 93C20)
- (with Avdonin, S. A.) On the controllability of parabolic systems with delay in the highest derivative. (Russian) *Partial differential equations (Russian)*, 113–118, Leningrad. Gos. Ped. Inst., Leningrad, 1987. (Summary) **89i:93007** 93B05 (34K35, 49E15, 93C20)
- Gorskaya, I. V.** A class of natural logic formulas. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 50, 20 pp. (Summary) **89i:03011** 03B45
- Inter-editing logical deduction. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 162, 28 pp. (Summary) **89k:03011** 03B35 (68T15)
- Górski, A.** Symmetry-breaking in reaction-diffusion systems with fixed traps. *Acta Phys. Polon. A* **73** (1988), no. 1, 25–31. (Yuzo Hosono) **89f:35111** 35K57 (58F14, 92A09)
- Górski, Jerzy** On the Bieberbach inequalities in the class  $S$ . (Russian and Polish summaries) Proceedings of the 9th Conference on Analytic Functions (Lublin, 1986). *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **40** (1986), 41–44 (1987). (K. S. Padmanabhan) **89g:30033** 30C50 (30C45)
- Gorskii, A. S.** Berry's phase and the chiral anomaly. *JETP Lett.* **48** (1988), no. 3, 121–123; translated from *Pisma Zh. Eksp. Teoret. Fiz.* **48** (1988), no. 3, 113–115 (Russian). (B. Spence) **89m:81143** 81E99 (58G10, 81G05)
- Gorskii, D. P.** Definitions, their forms and rules. (Russian) *The logic of scientific knowledge (Russian)*, 140–158, "Nauka", Moscow, 1987. (Wiesław Dziobiak) **89b:03007** 03A05
- Gorskii, N. M.** (with Mikhailenko, B. G.) ★ Решение пространственных задач теории распространения сейсмических волн в скоростях и напряжениях. (Russian) [Solution of spatial problems in the theory of the propagation of seismic waves in velocities and stresses] Препринт [Preprint], 754. *Akad. Nauk SSSR Sibirsk. Otdel. Vychisl. Tsentr, Novosibirsk*, 1987, 43 pp. (M. Mijsicu) **89j:73040** 73D99 (86A15)
- Görtler, Henry** see **Obituary: Görtler, Henry**, **89m:01129**
- Gorunescu, Florin** (with Gorunescu, Marina) Ergodic theorem for a special class of operators. *Stud. Cerc. Mat.* **39** (1987), no. 6, 515–519. (A. G. Baskakov) **89b:47014** 47A35
- Gorunescu, Marina** (with Gorunescu, Florin) Ergodic theorem for a special class of operators. *Stud. Cerc. Mat.* **39** (1987), no. 6, 515–519. (A. G. Baskakov) **89b:47014** 47A35
- Gorunovich, V. V.** (with Malyshev, P. V.) Solution of a problem on the convective diffusion of electrolytes in the potential field of a membrane. (Russian) *Mathematical problems in the theory of systems of charged particles in inhomogeneous media (Russian)*, 50–62, ii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1988. (see **89j:82003**) **76R50** (76S05, 78A99, 82A70, 92A09)
- (with Rebenko, A. L.) Mathematical description of a system of charged particles near the surface of a porous membrane. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 1, 114–117, 135; translated in *Ukrainian Math. J.* **40** (1988), no. 1, 97–100. (Summary) **89b:82036** 82A30 (78A35)
- Goryachev, A. P.** Approximation of monotone functions by piecewise constant functions, and best quadrature formulas for some classes of functions. (Russian) *Function-theoretic methods in problems of mathematical physics (Russian)*, 26–42, *Energoatomizdat, Moscow*, 1986. (Introduction) **89g:41019** 41A55 (65D32)
- Goryachkin, V. V.** (with Gaishun, I. V.) Construction of the solutions of a class of distributed discrete systems. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1987**, no. 2, 58–60, 80. (V. Popescu) **89a:39001** 39A10 (39A12, 93C55)
- Goryainov, V. B.** Theorems of Lévy-Baxter type for elliptic stochastic equations. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 1, 176–179; translated in *Theory Probab. Appl.* **33** (1988), no. 1, 164–167. (O. O. Kurchenko) **89k:60056** 60G20 (35R60, 60G15, 60H10)
- Goryainov, V. V.** On the geometry of a conformal mapping. (Russian) *Theory of functions and approximations, Part 2 (Russian)* (Saratov, 1984), 84–87, Saratov. Gos. Univ., Saratov, 1986. (see **89j:00036**) **30C35**
- Goryunov, V. V.** Projections and vector fields that are tangent to the discriminant of a complete intersection. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 2, 26–37, 96; translated in *Functional Anal. Appl.* **22** (1988), no. 2, 104–113. (I. R. Porteous) **89i:32013** 32B30
- Goryunova, G. I.** (with Mikhailov, V. V.) Possibilities of increasing the stability of a laminar boundary layer on a compliant surface. (Russian) *Uchen. Zap. TSAGI* **17** (1986), no. 6, 30–40. (Summary) **89e:76046** 76E05 (76D10)
- Gorzowski, W.** The coloured double crystallographic point groups. *Acta Phys. Polon. A* **72** (1987), no. 5, 685–689. (G. F. Koster) **89g:20030** 20C35 (82A60)
- Gosper, R. Wm.** Some identities, for your amusement. *Ramanujan revisited (Urbana-Champaign, Ill., 1987)*, 607–609, Academic Press, Boston, MA, 1988. (M. S. Cheema) **89d:05016** 05A19
- Gospodinov, G.** (with Yanachkov, O.) On the solution of a problem of the optimal form of a membrane shell by the boundary element method. (Bulgarian. English and Russian summaries) *Teoret. Prirozna Mekh.* **19** (1988), no. 1, 5, 7, 9, 92–96. (Summary) **89f:73063** 73L15 (73K40)
- Gospodinov, M. G.** A method for forming coalitions in a differential-difference game. (Russian) *Differential equations and applications, I, II (Russian)* (Ruse, 1985), 87–90, "Angel Kanchev" Tech. Univ., Ruse, 1987. (V. I. Garkusha) **89h:90267** 90D12 (90D25)
- Goss, David** The  $\Gamma$ -function in the arithmetic of function fields. *Duke Math. J.* **56** (1988), no. 1, 163–191. (Ernst-Ulrich Gekeler) **89d:11106** 11R58 (11Q25, 11S80, 11T55)
- Gosselin, R. E.** (with Gosselin, R. P.) Errata: "The kinetics of solute clearance by a single tissue capillary of limited permeability: explicit solutions of two models and their bounds" [Bull. Math. Biol. **49** (1987), no. 3, 329–349; MR **88g:92012**]. *Bull. Math. Biol.* **50** (1988), no. 1, 93–94. (Editors) **89d:92025** 92A09 (92A08)
- Gosselin, R. P.** (with Gosselin, R. E.) Errata: "The kinetics of solute clearance by a single tissue capillary of limited permeability: explicit solutions of two models and their bounds" [Bull. Math. Biol. **49** (1987), no. 3, 329–349; MR **88g:92012**]. *Bull. Math. Biol.* **50** (1988), no. 1, 93–94. (Editors) **89d:92025** 92A09 (92A08)
- Gossez, Jean-Pierre** Nonresonance near the first eigenvalue of a second order elliptic problem. *Partial differential equations (Rio de Janeiro, 1986)*, 97–104, *Lecture Notes in Math.*, 1324, Springer, Berlin-New York, 1988. (Günter Berger) **89k:35092** 35P65 (35P30)
- Gostelow, J. P.** (with Blunden, W. R.; Blunden, A. R.) On the application of queuing theory concepts to boundary layer transition. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 109–117, North-Holland, Amsterdam-New York, 1988. (Summary) **89d:76001** 76-05 (60K25, 76F99)
- Gostev, V. B.** (with Frenkin, A. R.) Rayleigh-Schrödinger coefficients for singular perturbations of the discrete spectrum. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **28** (1987), no. 6, 8–13, 86. (B. Hellwig) **89h:81033** 81C12
- (with Mineev, V. S.; Frenkin, A. R.) On the theory of singular perturbations of a discrete spectrum. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **31** (1988), no. 3, 58–64; translated in *Soviet Phys. J.* **31** (1988), no. 3, 223–227. (Summary) **89h:34025** 34B25 (81C12)
- (with Frenkin, A. R.) Quantum mechanics of one-dimensional motion in a field with the singularity  $\lambda|x|^{-\alpha}$ . (Russian. English summary) *Teoret. Mat. Fiz.* **74** (1988), no. 2, 247–258; translated in *Theoret. and Math. Phys.* **74** (1988), no. 2, 161–170. (Summary) **89c:81032** 81C05 (81C10)
- Gostev, V. I.** Determination of optimal controls for linear controlled objects in digital-regulator control systems. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 2, 79–84 (1988); translated from *Avtomatika* **1987**, no. 3, 56–61, 95 (Russian). (Not in MR) **93B50** (93B25)
- A table of transfer functions of optimal digital regulators for linearly varying inputs. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 5, 69–73; translated from *Avtomatika* **1987**, no. 5, 76–81, 96 (Russian). (Not in MR) **93B99** (93C05)
- Gostiaux, Bernard** (with Berger, Marcel) ★ Géométrie différentielle: variétés, courbes et surfaces. (French) [Differential geometry: manifolds, curves and surfaces] Mathématiques. [Mathematics] Presses Universitaires de France, Paris, 1987. vi+513 pp. ISBN 2-13-039268-7 (Alan West) **89b:53001** 53-01 (58-01)
- Goswami, D.** (with Krori, K. D.) Higher-dimensional Einstein-Cartan cosmology. (French summary) *Canad. J. Phys.* **66** (1988), no. 5, 396–398. (Dieter Lorenz-Petzold) **89j:83000** 83E15
- Goswami, P.** (with Lord, Eric A.) Gauge theory of a group of diffeomorphisms. III. The fiber bundle description. *J. Math. Phys.* **29** (1988), no. 1, 258–267. (M. Carmeli) **89b:58039** 58D05 (53C80, 81E13)
- Goto, Munehiro** Examples of single-error-correcting perfect BCD-AN codes. *Electron. Comm. Japan, Part I Comm.* **70** (1987), no. 4, 55–62. (Summary) **89i:94046** 94B40
- Goto, Shiro** Maximal Buchsbaum modules over regular local rings and a structure theorem for generalized Cohen-Macaulay modules. *Commutative algebra and combinatorics (Kyoto, 1985)*, 39–64, *Adv. Stud. Pure Math.*, 11, North-Holland, Amsterdam-New York, 1987. (P. Schenzel) **89h:13028** 13H10 (13H15)
- (with Nishida, Kohji) Rings with only finitely many isomorphism classes of indecomposable maximal Buchsbaum modules. *J. Math. Soc. Japan* **40** (1988), no. 3, 501–518. (Wolfgang Vogel) **89e:13022** 13H10 (14M05)
- Goto, Yoshito** (with Fujii, Nobuo; Muramatsu, Yasuyuki) Second order necessary optimality conditions for domain optimization problem with a Neumann problem. *System modelling and optimization (Tokyo, 1987)*, 259–268, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (De Xing Feng) **89i:93064** 93C20 (49B99)
- Gotoh, Shin'ya** (with Ueno, Shuichi; Kajitani, Yoji) On the nonseparating independent set problem and feedback set problem for graphs with no vertex degree exceeding three. Proceedings of the First Japan Conference on Graph Theory and Applications (Hakone, 1986). *Discrete Math.* **72** (1988), no. 1–3, 355–360. (Toshimasa Watanabe) **89k:05085** 05C70 (05C65, 68R10, 90C10, 90C27)
- Gotoh, Yasuhiro** On some extension property for BMO functions on Riemann surfaces. *J. Math. Kyoto Univ.* **28** (1988), no. 1, 141–152. (David Bekolle) **89k:30032** 30D55 (30F15)
- Gott, V. S.** (with Semenyuk, E. P.; Ursul, A. D.) Methodological problems of information science. (Russian) *Patterns in the development of modern mathematics (Russian)*, 6–28, "Nauka", Moscow, 1987. (A. A. Mullin) **89e:00019** 00A25
- Gottlieb, Christian** (with Fröberg, Ralf; Häggkvist, Roland) Gorenstein rings as maximal subrings of  $k[[X]]$  with fixed conductor. *Comm. Algebra* **16** (1988), no. 8, 1621–1625. (Bernd Ulrich) **89h:13027** 13H10
- Generating ideals in local rings using elements of high degrees. *Manuscripta Math.* **62** (1988), no. 3, 337–340. (Liam O'Carroll) **89k:13024** 13H99 (13E15)
- Gottlieb, Daniel H.** Topology and the robot arm. *Acta Appl. Math.* **11** (1988), no. 2, 117–121. (Michael J. Field) **89e:57026** 57R45 (58C27, 93C30)
- Gottlieb, David** (with Abarbanel, Saul) Information content in spectral calculations. *Progress and supercomputing in computational fluid dynamics (Jerusalem, 1984)*, 345–356, *Progr. Sci. Comput.*, 6, Birkhäuser Boston, Boston, MA, 1985. (Pietro Marzulli) **89i:65229** 65M99
- (with Lustman, Liviu; Tadmor, Eitan) Convergence of spectral methods for hyperbolic initial-boundary value systems. *SIAM J. Numer. Anal.* **24** (1987), no. 3, 532–537. (Vassilios A. Dougalis) **89i:65089** 65M10 (65M15, 65N35)
- (with Funaro, D.) A new method of imposing boundary conditions in pseudospectral approximations of hyperbolic equations. *Math. Comp.* **51** (1988), no. 184, 599–613. (A. Quarteroni) **89j:65078** 65N35
- sterbin Gottlieb, Elsie see **Sterbin Gottlieb, Elsie**



- Gottlieb, H. P. W. Iso-spectral operators: some model examples with discontinuous coefficients. *J. Math. Anal. Appl.* 132 (1988), no. 1, 123-137. (John W. Lee) **89i:34022** 34B25 (47E05, 73K12)
- Wake-free cylindrical and spherical waves in inhomogeneous media. *J. Math. Phys.* 29 (1988), no. 1, 2434-2437. (Summary) **89h:35174** 35L05
- Density distribution for isospectral circular membranes. *SIAM J. Appl. Math.* 48 (1988), no. 4, 948-951. (I. M. Longman) **89j:73068** 73K12 (35J05, 35R30, 73D30, 73D50)
- Gottlieb, Ioan (with Sofonea, L.; Ionescu-Pallas, N.; Toró, T.) The relativistic conception of physics in Romania in the inter war period. Some historical-epistemological remarks. *An. Univ. Timișoara Științ. Fiz.* 25 (1987), 37-57. (Summary) **89h:01047** 01A60 (83-03)
- (with Ionescu-Pallas, N.) Cosmology of the observer. (Romanian. English summary) *Stud. Cerc. Fiz.* 39 (1987), no. 9, 800-809. (Summary) **89e:83090** 83F05
- Gottlieb, James J. Staggered and nonstaggered grids with variable node spacing and local time stepping for the random choice method. *J. Comput. Phys.* 78 (1988), no. 1, 160-177. (Summary) **89g:65125** 65M99
- Gottlieb, Georg (with Ceri, Stefano; Wiederhold, Gio) Efficient database access from PROLOG. *IEEE Trans. Software Engrg.* 15 (1989), no. 2, 153-164. (Not in MR) **68T25** (68P15)
- Gottlöber, S. (with Mathai, A. M.; Haubold, H. J.; Mückel, J. P.; Müller, Volker) Gravitational instability in a multicomponent cosmological medium. *J. Math. Phys.* 29 (1988), no. 9, 2069-2077. (R. C. Roeder) **89j:85009** 85A40 (85A30)
- Schmidt-Götsch, Karsten see Schmidt-Götsch, Karsten
- Gottschalk, J. E. (with Abbott, P. C.; Maslen, E. N.) Coordinate systems and analytic expressions for three-body atomic wavefunctions. II. Closed form wavefunction to second order in  $r$ . *J. Phys. A* 20 (1987), no. 8, 2077-2104. (A. Ventura) **89g:81107b** 81G45
- (with Maslen, E. N.) Coordinate systems and analytic expansions for three-body atomic wavefunctions. III. Derivative continuity via solutions to Laplace's equation. *J. Phys. A* 20 (1987), no. 10, 2781-2803. (A. Ventura) **89g:81107c** 81G45
- (with Maslen, E. N.) Reduction formulae for generalised hypergeometric functions of one variable. *J. Phys. A* 21 (1988), no. 9, 1983-1998. (H. M. Srivastava) **89f:33001** 33A30
- Gottwald, Siegfried see Nonclassical logic, **89e:03005**
- Gotusso, Laura (with Roux, Delfina) Remarks on a smoothing problem. (Italian summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* 118 (1984), no. 3-4, 135-142. (D. Braess (Zbl 587:65009)) **89i:65013** 65D10
- (with Roux, Delfina) A counterexample in a linear algebra problem. (Italian. English summary) *Istit. Lombardo Accad. Sci. Lett. Rend. A* 119 (1985), 133-141 (1987). (Gheorghe Coman) **89f:65032** 65D32 (15A99)
- Götz, Günter (with Buchert, Thomas) A class of solutions for self-gravitating dust in Newtonian gravity. *J. Math. Phys.* 28 (1987), no. 11, 2714-2719. (Dieter Lorenz-Petzel) **89b:83099** 83F05
- Solitons in Newtonian gravity. *Classical Quantum Gravity* 5 (1988), no. 5, 743-765. (George Contopoulos) **89e:85002** 85A05 (35Q20, 76N10)
- A plane-symmetric solution of Einstein's equations with perfect fluid and an equation of state  $p = \gamma \rho$ . *Gen. Relativity Gravitation* 20 (1988), no. 1, 23-35. (Jorge A. Pullin) **89f:83021a** 83C15 (83C20)
- On the cosmological "no-hair" conjecture. *Phys. Lett. A* 128 (1988), no. 3-4, 129-132. (Jorge A. Pullin) **89f:83021b** 83C15 (83C20)
- Götzmann, Gerd Durch Hilbertfunktionen definierte Unterschemata des Hilbertschemas. [Subschemes of the Hilbert scheme that are defined by Hilbert functions] *Comment. Math. Helv.* 63 (1988), no. 1, 114-149. (Werner Kleiner) **89d:14003** 14C05 (14M05)
- A stratification of the Hilbert scheme of points in the projective plane. *Math. Z.* 199 (1988), no. 4, 539-547. (Ioan D. Marinescu) **89k:14003** 14C05
- Guo, Shao Hong see Guo, Shao Hong
- Guo, Yih Shun (with Steeb, W.-H.; Huang, Jeun Chyuan) A comment on the chaotic behaviour of van der Pol equations with an external periodic excitation. *Z. Naturforsch.* A 44 (1989), no. 2, 160-162. (Summary) **89m:58144** 58F13 (34C05, 58F21, 70K40, 70K50)
- Gouda, Mohamed G. (with Anderson, James H.) Atomic semantics of nonatomic programs. *Inform. Process. Lett.* 28 (1988), no. 2, 99-103. (Not in MR) **68Q55** (68Q10)
- Goudaroulis, Yorgos (with Gavrogliu, Kostas) Understanding macroscopic quantum phenomena: the history of superfluidity 1941-1955. *Ann. of Sci.* 45 (1988), no. 4, 367-385. (Mario Škrinjar) **89k:01024** 01A60 (81J05, 82-03)
- Gouin, Henri Équation du mouvement des fluides parfaits de grade  $n$  exprimée sous une forme thermodynamique. (English summary) [Thermodynamical form of the equation of motion for perfect fluids of grade  $n$ ] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* 305 (1987), no. 10, 833-838. (Summary) **89m:76008** 76A02 (76A05)
- Goulart Rosa, S., Jr. (with de Aguiar, F. S.; Bosco, F. A.) Yang-Lee zeros of the Ising model on the closed Cayley tree. *Phys. Lett. A* 127 (1988), no. 4, 194-198. (Summary) **89a:82037** 82A68 (82A25)
- (with Martinez, A. S.) Pair-correlation function of the Potts model on the Cayley tree. *Phys. Rev. A* (3) 38 (1988), no. 2, 4304-4308. (Summary) **89h:82050** 82A68
- Gould, Ann (with de Gooijer, Jan G.; Abraham, B.; Robinson, Lecily) Methods for determining the order of an autoregressive-moving average process: a survey. (French summary) *Internat. Statist. Rev.* 53 (1985), no. 3, 301-329. (Summary) **89h:62150** 62M10
- (with Lawless, J. F.) Consistency and efficiency of regression coefficient estimates in location-scale models. *Biometrika* 75 (1988), no. 3, 535-540. (Summary) **89i:62107** 62J05 (62F12)
- Gould, H. W. Some formulas for Euler's constant. *Bull. Number Theory Related Topics* 10 (1986), no. 2, 2-9. (Christian Radoux) **89j:11011** 11A99
- Number-theoretic identities involving the Möbius function and the logarithm. *Indian J. Math.* 29 (1987), no. 2, 107-115. (V. Sita Ramaiah) **89d:11003** 11A25
- Gould, M. D. (with Paldus, Josef) Parastatistics and the Clifford algebra unitary group approach to the many-electron correlation problem. *J. Math. Phys.* 28 (1987), no. 10, 2304-2309. (Summary) **89c:81206** 81G40
- Gould, N. I. M. On the accurate determination of search directions for simple differentiable penalty functions. *IMA J. Numer. Anal.* 6 (1986), no. 3, 357-372. (Summary) **89i:90072** 90C30
- (with Conn, A. R.) An exact penalty function for semi-infinite programming. *Math. Programming* 37 (1987), no. 1, 19-40. (J. Abraham) **89b:90180** 90C30 (49D39)
- On solving three classes of nonlinear programming problems via simple differentiable penalty function. *J. Optim. Theory Appl.* 56 (1988), no. 1, 89-126. (John J. Dinkel) **89a:90188** 90C30 (49D30, 49D37)
- (with Conn, A. R.; Toint, Ph. L.) Testing a class of methods for solving minimization problems with simple bounds on the variables. *Math. Comp.* 50 (1988), no. 182, 399-430. (Joachim Hirche) **89e:65061** 65K05 (90C30)
- (with Conn, A. R.; Toint, Ph. L.) Global convergence of a class of trust region algorithms for optimization with simple bounds. *SIAM J. Numer. Anal.* 25 (1988), no. 2, 433-460. (Krzysztof C. Kiwiel) **89h:90192** 90C30 (65K05)
- Gould, R. J. (with Faudree, R. J.; Schelp, R. H.) Neighborhood conditions and edge disjoint Hamiltonian cycles. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 59 (1987), 55-68. (Michael Jacobson) **89e:05137** 05C45
- (with Burr, S. A.; Erdős, Paul; Faudree, R. J.; Rousseau, C. C.; Schelp, R. H.; Jacobson, Michael S.) Goodness of trees for generalized books. *Graphs Combin.* 3 (1987), no. 1, 1-6. (Zheng Sheng Wu) **89h:05122** 05C55
- (with Faudree, R. J.; Jacobson, Michael S.; Schelp, R. H.) Extremal problems involving neighborhood unions. *J. Graph Theory* 11 (1987), no. 4, 555-564. (Felix Lazebnik) **89a:05087** 05C35 (05C38, 05C70)
- Gould, Victoria A. R. Orders in semigroups. *Contributions to general algebra*, 5 (Salzburg, 1986), 163-169, *Hölder-Pichler-Tempsky, Vienna*, 1987. (John M. Howie) **89c:20089** 20M10
- Absolutely flat completely 0-simple semigroups of left quotients. *J. Pure Appl. Algebra* 55 (1988), no. 3, 261-288. (Francis Pastijn) **89k:20090** 20M10
- Goulden, I. P. Generating functions and reliabilities for consecutive- $k$ -out-of- $n$  systems. *Utilitas Math.* 32 (1987), 141-147. (Santosh Kumar) **89d:90104** 90B25 (05A15, 62N05)
- (with Andrews, G. E.; Jackson, D. M.) Generalizations of Cauchy's summation theorem for Schur functions. *Trans. Amer. Math. Soc.* 310 (1988), no. 2, 805-820. (Philip Hanlon) **89m:05009** 05A19 (05B15)
- Gouldin, F. C. Interpretation of jet mixing using fractals. *AIAA J.* 26 (1988), no. 11, 1405-1407. (From the text) **89j:76054** 76F10 (58F40)
- Gouleau, Maxime Construction d'une paramétrix pour des opérateurs différentiels hypoelliptiques maximaux sur un espace homogène d'un groupe de Lie nilpotent gradué de rang 2. [Construction of a parametrix for maximal hypoelliptic differential operators on a homogeneous space of a graded nilpotent Lie group of rank 2] *Ann. Global Anal. Geom.* 5 (1987), no. 3, 217-259. (Kenneth G. Miller) **89h:58281** 58G15 (22E30, 35H05)
- Goulian, Mark D. (with Hernández, Oscar F.) Constraints on representations of conformal field theories. *Phys. Lett. B* 215 (1988), no. 3, 511-516. (Olaf Lechtenfeld) **89j:81187** 81E99 (81E40)
- Gouli-Andreas, Florence (with Demetropoulou-Psompoulou, Demetra) On connections on manifolds admitting an  $f(5,1)$ -structure. *Proceedings of the Congress of Geometry (Thessaloniki, 1987)*, 46, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1988. (see **89b:53003**) **53C05** (53C15)
- (with Demetropoulou-Psompoulou, Demetra) On connections on manifolds admitting an  $f(5,1)$ -structure. *Demonstratio Math.* 21 (1988), no. 1, 127-140. (Jarolim Bureš) **89h:53073** 53C05 (53C10)
- Goulter, I. C. (with Bouchart, F.) Fuzzy programming applications in water distribution network design. *Computer methods and water resources*, Vol. 2 (Rabat, 1988), 33-44. *Comput. Mech., Southampton*, 1988. (see **89g:76003b**) **90B10**
- Gourdin, Daniel Theorem of uniqueness for the Cauchy problem related to hyperbolic systems without Levi condition. *Hyperbolic equations (Padua, 1985)*, 252-257, *Pitman Res. Notes Math. Ser.*, 158, *Longman Sci. Tech., Harlow*, 1987. (J. Vaillant) **89h:35188** 35L45 (35A05)
- Classes d'opérateurs faiblement hyperboliques non linéaires. [Classes of nonlinear weakly hyperbolic operators] *Journées "Equations aux Dérivées Partielles" (Saint Jean de Monts, 1988)*, Exp. No. V, 16 pp., *École Polytech., Palaiseau*, 1988. (Hideo Yamagata) **89m:35144** 35L75 (35G25, 47F05)
- Opérateurs faiblement hyperboliques non linéaires. (English summary) [Nonlinear weakly hyperbolic operators] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 15, 659-662. (Summary) **89i:35098** 35L75
- Gourdin, Michel Classification and interpretation of the supertableaux of the orthosymplectic groups  $OSP(m|4)$ . *J. Math. Phys.* 28 (1987), no. 9, 2007-2017. (Nigel B. Backhouse) **89i:22021** 22E45 (17A70, 81C40)
- Gouriéroux, Christian (with Monfort, Alain; Renault, Eric; Trognon, Alain) Résidus généralisés ou interprétations linéaires de l'économétrie non linéaire. [Generalized residuals or linear interpretations of nonlinear econometrics] *Asymptotic theory for non i.i.d. processes (Luminy-Marseille, 1984)*, 173-224, *Travaux Rech.*, 8, *Publ. Fac. Univ. Saint-Louis, Brussels*, 1986. (Tom Wansbeck) **89h:62179** 62P20 (62J02)
- (with Monfort, Alain; Renault, Eric) Kullback causality measures. (French summary) *Ann. Econom. Statist.* 1987, no. 6-7, 369-410. (J. M. Bernardo) **89d:62007** 62B10
- Une approche géométrique des processus ARMA. (English summary) [A geometrical approach to ARMA processes] *Ann. Econom. Statist.* 1987, no. 8, 135-159. (Eric V. Slud) **89i:62120** 62M10 (60G25, 62P20)
- Gourishankar, V. G. (with Rink, R. E.; Zaheer-uddin, M.) Optimal control of heat-pump/heat-storage systems with time-of-day energy price incentive. *J. Optim. Theory Appl.* 58 (1988), no. 1, 93-108. (Not in MR) **93C75**
- (with Zaheer-uddin, M.; Rink, R. E.) Dynamic suboptimal control of a heat pump/heat storage system. *Optimal Control Appl. Methods* 9 (1988), no. 4, 341-355. (Not in MR) **93C75** (49D50, 93B40)
- Goussis, Dimitrios A. (with Pearlstein, Arne J.) Efficient transformation of certain singular polynomial matrix eigenvalue problems. *J. Comput. Phys.* 78 (1988), no. 2, 305-312. (Summary) **89h:65059** 65F30 (15A18)
- Goutal, N. Résolution des équations de Saint-Venant en régime transcritique par une méthode d'éléments finis: application aux bancs découvrants. (English summary) [Finite-element solution of the shallow-water Saint-Venant equations for a transcritical flow: application to the intertidal flat] *EDF Bull. Direction Études Rech. Sér. C Math. Inform.* 1987, no. 4, 120 pp. (A. Jami) **89c:76032** 76B15 (76-08, 86A05)
- Goutier, Claude (with Beauchemin, Pierre; Brassard, Gilles; Crépeau, Claude) Two observations on probabilistic primality testing. *Advances in cryptography—CRYPTO '86*

- (Santa Barbara, Calif., 1986), 443-450, *Lecture Notes in Comput. Sci.*, 263, Springer, Berlin-New York, 1987. (Carl Pomerance) **89c:11180** 11Y11
- (with Beauchemin, Pierre; Brassard, Gilles; Crépeau, Claude; Pomerance, Carl) The generation of random numbers that are probably prime. *J. Cryptology* **1** (1988), no. 1, 53-64. (Sun Qi) **89g:11126** 11Y11 (11A51)
- Goutis, C. E.** (with Leahy, R. M.) Optimal feasible solutions for signal restoration and reconstruction. *Mathematics in signal processing (Bath, 1985)*, 281-298, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see **89b:94004**) 94A12
- (with Ibrahim, M. K.) New recursive algorithm for maximum likelihood Toeplitz covariance matrix estimation. *Mathematics in signal processing (Bath, 1985)*, 543-553, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see **89b:94004**) 94A11
- Goutte, R.** (with Baskurt, A.) Analytic signal reconstruction from instantaneous phase. (French and German summaries) *Signal Process.* **14** (1988), no. 4, 327-333. (Not in MR) 94A12
- (with Peyrin, F.; Amiel, M.) Description d'un algorithme de reconstruction de volume à partir de projections coniques par déconvolution tri-dimensionnelle. (English summary) [Description of a three-dimensional deconvolution reconstruction algorithm from cone beam projections] *Traitement Signal* **5** (1988), no. 4, 223-233. (Not in MR) 68U10 (92A07, 94A12)
- Gouyet, J.-F.** Some general relations between dressed self-avoiding walks and percolation perimeters on lattices. *J. Phys. A* **21** (1988), no. 2, 501-512. (Summary) **89c:82043** 82A43 (82A41)
- Gouyou-Beauchamps, D.** Chemins sous-diagonaux et tableaux de Young. (English summary) [Subdiagonal paths and Young tableaux] *Combinatoire énumérative (Montreal, Que., 1985/Quebec, Que., 1985)*, 112-125, *Lecture Notes in Math.*, 1234, Springer, Berlin-New York, 1986. (J. Désarménien) **89d:05005** 05A15
- (with Delest, M.-P.; Vauquelin, B.) Enumeration of parallelogram polyominoes with given bond and site perimeter. *Graphs Combin.* **3** (1987), no. 4, 325-339. (Heiko Harborth) **89f:05058** 05B50 (05A15)
- Gouzé, Jean-Luc** Structure des modèles mathématiques en biologie. (English summary) [The structure of mathematical models in biology] *Analysis and optimization of systems (Antibes, 1988)*, 1152-1163, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89b:92004** 92A05 (92A17)
- Govaerts, Jan** Isometric compactifications of gravity-Yang-Mills theories. *Ann. Soc. Sci. Bruxelles Sér. I* **99** (1985), no. 4, 153-163 (1987). (David E. Betounes) **89a:83058** 83E15 (81E13, 81E30)
- String and superstring theories: an introduction. *Proceedings of the II Mexican School of Particles and Fields (Cuernavaca, 1986)*, 247-442, *Lecture Notes Particles Fields, World Sci. Publishing, Singapore, 1987*. (Olaf Lechtenfeld) **89k:81144** 81E99 (81E30)
- Govaerts, W.** On small relative distances in a three-dimensional space with infinite norm. *Bull. Soc. Math. Belg. Sér. B* **39** (1987), no. 2, 129-149. (From the text) **89b:65149** 65J99 (46N05, 53C20, 58B20)
- Gover, Eugene** (with Ragusa, Alfio) Koszul complexes with isomorphic homology. *Math. Scand.* **60** (1987), no. 1, 39-51. (T. Józefiak) **89a:13019** 13D25 (13D03)
- Gover, M. J. C.** (with Barnett, Stephen) New algorithms for inversion of Toeplitz-like patterned matrices. *Mathematics in signal processing (Bath, 1985)*, 499-511, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (T. Ando) **89c:15008** 15A09 (47B35, 94A11)
- The efficient solution of a set of linear equations with a near  $r$ -Toeplitz coefficient matrix. *Rostock. Math. Kolloq.* **33** (1988), 57-64. (Summary) **89j:65037** 65F30 (15A06, 65R20)
- Govil, N. K.** (with Dewan, K. K.) On the Eneström-Kakeya theorem. II. *Modern analysis and its applications (New Delhi, 1983)*, 309-317, Prentice-Hall of India, New Delhi, 1986. (P. Lappan) **89c:30012** 30C15
- (with Labelle, Gilbert) On Bernstein's inequality. *J. Math. Anal. Appl.* **126** (1987), no. 2, 494-500. (Summary) **89d:41033** 41A17 (26D10)
- Govindarajan, T. R.** (with Atre, M. V.; Balachandran, A. P.) Massless spinning particles in all dimensions and novel magnetic monopoles. *Internat. J. Modern Phys. A* **2** (1987), no. 2, 453-483. (A. O. Barut) **89a:81049** 81D99 (81G10)
- (with Sudarshan, E. C. G.; Imbo, Tom D.) Configuration space topology and quantum internal symmetries. *Phys. Lett. B* **213** (1988), no. 4, 471-476. (Peter Basarab-Horwath) **89i:81052** 81D07 (81E99)
- Govindarajulu, P.** On upper semicontinuity of the best simultaneous approximation operator. *J. Math. Phys. Sci.* **22** (1988), no. 2, 291-296. (Lee L. Keener) **89k:41024** 41A28
- On  $f$ -best simultaneous approximation in locally convex spaces. *J. Math. Phys. Sci.* **22** (1988), no. 6, 789-796. (S. Venkata Ratnam Naidu) **89m:41014** 41A28 (41A50, 41A52, 46A99)
- Govindarajulu, Z.** Fixed-width confidence interval estimation of scale parameter of exponential distribution with unknown location. *Proceedings of the National Seminar on Stochastic Process, Statistical Inference and Sample Survey (Sambalpur, 1985)*. *J. Orissa Math. Soc.* **4** (1985), no. 2, 77-83. (Walter Schlee) **89k:62108** 62L12 (62F25)
- (with Lindqvist, Bo Henry) Asymptotic efficiency of the Spearman estimator and characterizations of distributions. *Ann. Inst. Statist. Math.* **39** (1987), no. 2, 349-361. (Dana Vorlíčková) **89a:62118** 62G20 (62E10, 62P10)
- (with Shetty, I. D.) A two-sample test for location. *Comm. Statist. Theory Methods* **17** (1988), no. 7, 2389-2401. (Summary) **89b:62054** 62G10
- (with Bock, M. E.) A note on the noncentral chi-square distribution. *Statist. Probab. Lett.* **7** (1988), no. 2, 127-129. (Summary) **89m:62014** 62E15
- Govindjee, S.** (with Simo, J. C.; Kennedy, J. G.) Nonsmooth multisurface plasticity and viscoplasticity. Loading/unloading conditions and numerical algorithms. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 10, 2161-2185. (Summary) **89j:73009** 73-08 (73E05, 73E99, 73F30)
- Govorkov, A. B.** The Fock representation for quaternion fields. (Russian. English summary) *Teoret. Mat. Fiz.* **69** (1986), no. 1, 69-77. (Summary) **89f:81082** 81D25 (22E70, 81D05)
- Gorokhkin, D. N.** (with Volkov, E. A.; Koval'skaya, L. V.; Yakovlenko, V. V.) An algorithm for the analysis of the steady-state mode of an electrical circuit with complex nonlinearities under polyharmonic action. (Russian. English summary) *Teoret. Elektrotekh.* No. 40 (1986), 126-134, 152. (Adrian Adăscăliței) **89i:94053** 94C05 (68U20, 94A12, 94C15)
- Gow, Roderick** Real 2-blocks of  $S_n$ ,  $A_n$  and their double covers. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 421-429, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Karin Erdmann) **89g:20013** 20C15 (20C20, 20C30)
- (with Huppert, Bertram) Degree problems of representation theory over arbitrary fields of characteristic 0. On theorems of N. Itô and J. G. Thompson. *J. Reine Angew. Math.* **381** (1987), 136-147. (Wolfgang Willems) **89b:20029** 20C15
- Commutators in the symmetric group. *Arch. Math. (Basel)* **50** (1988), no. 3, 204-209. (G. E. Wall) **89g:20071** 20G15
- (with Huppert, Bertram) Degree problems of representation theory over arbitrary fields of characteristic 0. II. Groups which have only two reduced degrees. *J. Reine Angew. Math.* **389** (1988), 122-132. (Wolfgang Willems) **89i:20021** 20C15
- Real 2-blocks of characters of finite groups. *Osaka J. Math.* **25** (1988), no. 1, 135-147. (Jörn B. Olsson) **89g:20012** 20C15 (20C20)
- Schur indices and irreducible character degrees in finite solvable groups. *Math. Proc. Cambridge Philos. Soc.* **105** (1989), no. 2, 237-240. (Alexandre Turull) **89k:20012** 20C15
- Gowda, Huche** (with Puttamaiah, C.) On spatial numerical ranges of operators on Banach spaces. *Indian J. Pure Appl. Math.* **19** (1988), no. 2, 177-182. (Takayuki Furuta) **89c:47007** 47A12 (47B15)
- Gower, Barry** Planets and probability: Daniel Bernoulli on the inclinations of the planetary orbits. *Stud. Hist. Philos. Sci.* **18** (1987), no. 4, 441-454. (V. E. Thoren) **89g:01030** 01A50
- Goyal, A. K.** Strictly  $\pi$ -regular near-rings. *Studia Sci. Math. Hungar.* **23** (1988), no. 1-2, 53-60. (J. L. Zemmer) **89m:16073** 16A76 (16A21)
- Goyal, A. N.** (with Gautman, G. P.) On unification of generalised functions representable by Mellin-Barnes contour integrals. *Univ. Nac. Tucumán Rev. Ser. A* **29** (1979), no. 1, 103-120 (1987). (Not in MR) 33A35
- Goyal, Ashok** (with Balakrishnan, Janaki; Biswas, S. N.; Soni, S. K.) Chiral anomaly for parafermions from stochastic quantization. *Phys. Rev. D* (3) **37** (1988), no. 2, 571-573. (M. A. Namazi) **89b:81162** 81E99 (81C20, 81E13)
- Goyal, Pankaj** (with Narayanan, T. S.) Dictionary machine with improved performance. *Comput. J.* **31** (1988), no. 6, 490-495. (Not in MR) 68P05 (68P10)
- Goyal, S. K.** Comment on: "On two deterministic inventory systems with time dependent demand" [Cahiers Centre Études Rech. Opér. **28** (1986), no. 4, 303-309; MR 88d:90047] by U. Dave. With a reply by Dave. *Cahiers Centre Études Rech. Opér.* **29** (1987), no. 3-4, 255-257. (Editors) **89d:90081** 90B05
- (with Sriskandarajah, C.) No-wait shop scheduling: computational complexity and approximate algorithms. *Opersearch* **25** (1988), no. 4, 220-244. (Summary) **89j:90144** 90B35 (68N25, 68Q25)
- Goyal, S. P.** (with Audich, Sunil) Certain inequalities for the Kampé de Fériet function. *Indian J. Pure Appl. Math.* **18** (1987), no. 11, 1006-1010. (S. L. Kalla) **89b:33083** 33A30
- Goyan, I. M.** (with Bunu, I. D.; Tebyrse, E. I.) Tertiary ideals and pretorsions. (Russian) *Mat. Issled.* No. 105 *Moduli, Algebra, Topol.* (1988), 40-44, 195. (L. Bican) **89k:16053** 16A63
- Gózdá, Czesław** (with Polak, Mieczysław) An approximation theorem for the Poisson processes defined on an abstract space. *Studia Sci. Math. Hungar.* **22** (1987), no. 1-4, 169-174. (Olav Kallenberg) **89b:60128** 60G35 (60B15, 60J30)
- Goze, M.** Perturbations de lois d'algèbres de Lie. [Perturbations of Lie algebra laws] *Cahiers Math.* **1987**, no. 1, 53-112. (Jan A. Sanders) **89j:17005** 17B05 (03H05, 58F30)
- (with Ancochea-Bermúdez, José María) Classification des algèbres de Lie filiformes de dimension 8. [Classification of filiform Lie algebras of dimension 8] *Arch. Math. (Basel)* **50** (1988), no. 6, 511-525. (Roger Carles) **89h:17010** 17B30
- Gozi, E.** Hidden BRS invariance in classical mechanics. *Phys. Lett. B* **201** (1988), no. 4, 525-528. (José F. Cariñena) **89k:81041** 81C35 (58D30, 58G35, 70G99)
- de Graaf, J. M.** (with Peletier, L. A.) Stimulated facilitated diffusion. *Nonlinear Anal.* **12** (1988), no. 7, 675-697. (Yoram Schiffmann) **89j:92029** 92A09 (35K55, 92A08)
- de Graaf, Jan** (with van Berkel, C. A. M.) On a property of the Fourier-cosine transform. *Appl. Math. Lett.* **1** (1988), no. 3, 307-310. (Not in MR) 42A38
- van de Graaf, Jeroen** (with Chaum, David; Evertse, J.-H.; Peralta, René) Demonstrating possession of a discrete logarithm without revealing it. *Advances in cryptography—CRYPTO '86 (Santa Barbara, Calif., 1986)*, 200-212, *Lecture Notes in Comput. Sci.*, 263, Springer, Berlin-New York, 1987. (Albrecht Beutelspacher) **89d:94037** 94A60
- (with Peralta, René) A simple and secure way to show the validity of your public key. *Advances in cryptography—CRYPTO '87 (Santa Barbara, CA, 1987)*, 128-134, *Lecture Notes in Comput. Sci.*, 293, Springer, Berlin-New York, 1988. (see **89b:68005**) 94A60 (68F25, 68Q99)
- Grabara, Zbigniew** Choice of alternatives on the grounds of a fuzzy preference relation. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics (Poznań, 1986)*, 59-64, *Wydział Politech. Poznań, Poznań, 1987*. (see **89b:03006**) 90A06 (03E72)
- Grabarnik, G. Ya.** (with Sarymsakov, T. A.) Regularity of monotonically continuous contractions acting on von Neumann algebras. (Russian) *Dokl. Akad. Nauk UzSSR* **1987**, no. 5, 9-11. (A. A. Lodkin) **89a:46126** 46L10 (47B99)
- (with Gold'shtein, M. Sh.) Almost sure convergence theorems in von Neumann algebras (some new results). *Special classes of linear operators and other topics (Bucharest, 1986)*, 101-120, *Oper. Theory Adv. Appl.*, 28, Birkhäuser, Basel-Boston, MA, 1988. (Andrzej Łuczak) **89g:46103** 46L50 (28D05)
- Grabarski, Adam** The collocation method for a quasilinear parabolic equation in the case of two space variables. *Demonstratio Math.* **19** (1986), no. 4, 831-839 (1987). (Lubor Malina) **89a:65177** 65N35
- Grabauskas, V.** Weak convergence of processes generated by stochastic algorithms. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 4, 640-659. (V. Dupac) **89g:60074** 60F05 (62L20)
- Grabian-Różycka, Ewa** Motivations toward self-learning in M. Mazur's theory of character. (Polish. English and Russian summaries) *Postępy Cybernet.* **10** (1987), no. 2, 95-100. (Not in MR) 92A25
- Grabiec, Mariusz** Fixed points in fuzzy metric spaces. *Fuzzy Sets and Systems* **27** (1988), no. 3, 385-389. (Jin Xuan Fang) **89j:54007** 54A40 (03E72, 54H25)



- Grabiner, Judith V.** The centrality of mathematics in the history of western thought. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 1668-1681, Amer. Math. Soc., Providence, RI, 1987. (Peter M. Simons) **89d:01003** 01A05 (00A25)
- Partisans and critics of a new science: the case of artificial intelligence and some historical parallels. *History and philosophy of modern mathematics* (Minneapolis, MN, 1985), 329-345, Minnesota Stud. Philos. Sci., XI, Univ. Minnesota Press, Minneapolis, MN, 1988. (A. D. Booth) **89e:01039** 01A65 (68-03)
- The centrality of mathematics in the history of Western thought. *Math. Mag.* **61** (1988), no. 4, 220-230. (Editors) **89j:01004** 01A05 (00A25)
- Grabinska, Teresa** (with Zabierowski, M.) The correspondence between the Einsteinian and Newtonian theories of gravitation. *Isaac Newton's Philosophiae naturalis principia mathematica* (Lublin, 1987), 61-68, World Sci. Publishing, Singapore, 1988. (see **89m:01042**) 01A45 (01A60, 03B30, 83-03)
- The operationism postulate in the classical kinematics. *Isaac Newton's Philosophiae naturalis principia mathematica* (Lublin, 1987), 193-204, World Sci. Publishing, Singapore, 1988. (see **89m:01042**) 01A60
- Grabmeyer, Johannes** (with Kerber, Adalbert) The evaluation of irreducible polynomial representations of the general linear groups and of the unitary groups over fields of characteristic 0. *Acta Appl. Math.* **8** (1987), no. 3, 271-291. (Michael Clausen) **89e:20029** 20C30 (20C32)
- On the socle of Weyl modules. *Arch. Math. (Basel)* **50** (1988), no. 4, 319-322. (G. D. James) **89c:20061** 20G05
- Grabmiller, Hans** (with Novak, Erich) Nonlinear boundary value problems for the annular membrane: new results on existence of positive solutions. *Math. Methods Appl. Sci.* **10** (1988), no. 1, 37-49. (Stan Chirita) **89c:73028** 73K15
- Grabovoi, I. P.** (with Ostapenko, V. V.) Integration of linear multivalued mappings. (Russian) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 8, 74-76, 89. (Helga Hartwig) **89m:90177** 90D25 (28B20, 58C06)
- Grabovskaya, R. G.** (with Orlovskaya, A. N.) Asymptotic behavior of the solutions of a third-order generalized equation of Emden-Fowler type. (Russian) *Boundary value problems* (Russian), 43-47, 194, Perm. Politekh. Inst., Perm, 1983. (see **89c:00008**) 34E05 (34A34)
- hebda-Grabowska, Halina** see Hebda-Grabowska, Halina
- Grabowski, Jan** see Algebraic and logic programming. **89j:68002**
- Grabowski, Janusz** Derivations of the Lie algebras associated with a symplectic structure. *Differential geometry and its applications, communications* (Brno, 1986), 117-125, Univ. J. E. Purkyně, Brno, 1987. (Cecilio Ruiz) **89g:58066** 58F05 (17B65, 53C57, 58A20)
- Grabowski, Jerzy** (with Szmitko, Wanda) Investigation of a system of nonlinear equations with iterative integral operator. *Demonstratio Math.* **19** (1986), no. 4, 1041-1055 (1987). (T. Walters) **89c:45011** 45G05
- Grabowski, Marian** The entropy of position and the spreading of wave packets. *Rep. Math. Phys.* **24** (1986), no. 3, 327-331. (P. R. Chernoff) **89g:81015** 81C10
- Graboska, Ewa** (with Skrzyszowska, Maria) Construction and equivalency problem for one-terminal-step graph-grammars. (Russian and Polish summaries) *Podstawy Sterowania* **17** (1987), no. 1-2, 35-51. (Ranjana Chaudhuri) **89h:68092** 68Q50 (05C99, 68R10, 68T10)
- Grabski, Zbigniew** (with Mikolajczyk, Leon) Existence theorem for some minimax problem. *Demonstratio Math.* **21** (1988), no. 1, 189-199. (Not in MR) 49A40
- Grace, E. E.** (with Vought, Eldon J.) Weakly monotone images of smooth dendroids are smooth. *Houston J. Math.* **14** (1988), no. 2, 191-200. (Lewis Lum) **89k:54081** 54F20
- Grace, R. Esther** (with Rangan, A.) A non-Markov model for the optimum replacement of self-repairing systems subject to shocks. *J. Appl. Probab.* **25** (1988), no. 2, 375-382. (Peter Koched) **89g:90117** 90B25 (60K10)
- (with Rangan, A.) A note on the selective interaction of two types of events resulting from a renewal point process and its applications. *J. Math. Phys. Sci.* **22** (1988), no. 3, 371-383. (Summary) **89e:92015** 92A09 (90B25)
- (with Rangan, A.) On the replacement of systems subject to shocks and wear-dependent failure. *Adv. in Appl. Probab.* **21** (1989), no. 1, 238-240. (F. Beichelt) **89m:60213** 60K20 (90B25)
- Grace, S. R.** (with Lalli, B. S.) Oscillation of higher order functional differential equations with deviating arguments of mixed type. *Ann. Differential Equations* **2** (1986), no. 4, 399-414. (Mirko Budinčević) **89j:34099** 34K15
- (with Lalli, B. S.) A criterion for the oscillatory and asymptotic behaviour of differential equations with forcing term. *An. Stiint. Univ. "Al. I. Cuza" Iași Sec. I a Mat. (N.S.)* **33** (1987), no. 1, 29-32. (V. B. Headley) **89h:34074** 34C10 (34A34, 34C15, 34K15)
- (with Lalli, B. S.) Oscillatory behaviour of nonlinear differential equations with deviating arguments. *Arch. Math. (Brno)* **23** (1987), no. 1, 15-22. (Ivan Ginchev) **89e:34119** 34K15 (34A34, 34C10)
- (with Lalli, B. S.) On the second order nonlinear oscillations. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 3, 297-309. (Man Kam Kwong) **89g:34046** 34C15
- (with Lalli, B. S.) Integral averaging and the oscillation of second order nonlinear differential equations. *Ann. Mat. Pura Appl. (4)* **151** (1988), 149-159. (T. G. Proctor) **89m:34041** 34C10
- (with Lalli, B. S.) Oscillation and asymptotic behavior of solutions of nonlinear differential inequalities with deviating argument. *Math. Nachr.* **136** (1988), 157-162. (From the introduction) **89f:34100** 34K15 (34A40, 34C10)
- (with Lalli, B. S.) Oscillations in second order differential equations with alternating coefficients. *Period. Math. Hungar.* **19** (1988), no. 1, 69-78. (Preben Alström) **89h:34068** 34C15 (34C10)
- (with Lalli, B. S.; Yeh, Chieh Chih) Addendum: "Oscillation theorems for nonlinear second-order differential equations with a nonlinear damping term" [SIAM J. Math. Anal. **15** (1984), no. 6, 1082-1093; MR 85j:34071]. *SIAM J. Math. Anal.* **19** (1988), no. 5, 1252-1253. (Curtis C. Travis) **89i:34034** 34C10 (34A34)
- (with Lalli, B. S.) Oscillations of functional-differential equations generated by advanced arguments. *Differential Integral Equations* **2** (1989), no. 1, 21-36. (Jian Hong Wu) **89j:34105** 34K15 (34C10)
- Gracey, J. A.** (with Davis, A. C.; Macfarlane, A. J.) Nonperturbative effects in supersymmetric sigma models. *Phys. Lett. B* **201** (1988), no. 2, 251-255. (Summary) **89a:81067** 81E13 (81E20, 81E40)
- Nonperturbative effects in the exact S-matrices of the  $O(N)$  Gross-Neveu and supersymmetric  $\sigma$  models. *Phys. Lett. B* **215** (1988), no. 3, 505-510. (Summary) **89j:81124** 81E15 (81E99)
- Grachev, N. I.** (with Abdullaev, F. Sh.; Evtushenko, Yu. G.) Optimization of stiff systems. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 230-235, "Nauka", Moscow, 1987. (From the text) **89k:49022** 49D25 (49B10)
- muñoz-Gracia, M. P.** see Muñoz-Gracia, M. P.
- Gracia-Bondía, José M.** (with Várilly, Joseph C.; de Faria, Edison) Some useful formulas for twisted products. (Spanish. English summary) *Cienc. Tecn.* **10** (1986), no. 2, 81-90 (1987). (Summary) **89h:81057** 81C25 (46E10, 46M20)
- (with Várilly, Joseph C.) Phase-space representation for Galilean quantum particles of arbitrary spin. *J. Phys. A* **21** (1988), no. 18, L879-L883. (Summary) **89j:81072** 81D05 (81C25)
- (with Várilly, Joseph C.) Nonnegative mixed states in Weyl-Wigner-Moyal theory. *Phys. Lett. A* **128** (1988), no. 1-2, 20-24. (V. B. Serebrennikov) **89e:81038** 81C25 (81D07)
- Graczyńska, Ewa** (with Höft, Margret) Sums of systems of ordered sets. *Contributions to general algebra*, 5 (Salzburg, 1986), 171-184, Hölder-Pichler-Tempsky, Vienna, 1987. (Summary) **89j:06002** 06A10
- Connections between identities and hyperidentities. *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* **17** (1988), no. 1, 34-41. (Libor Polák) **89j:08005** 08B05 (08B15)
- Grädel, Erich** Domino games with an application to the complexity of Boolean algebras with bounded quantifier alternations. *STACS 88 (Bordeaux, 1988)*, 98-107, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (Andreas Brandstädt) **89c:68037** 68Q15 (03D10, 03D15, 03G05, 68Q05)
- Subclasses of Presburger arithmetic and the polynomial-time hierarchy. *Theoret. Comput. Sci.* **56** (1988), no. 3, 289-301. (Peter Slessenger) **89m:03030** 03D15 (03F30, 68Q15)
- Gradedetskiĭ, A. V.** (with Apostolyuk, A. S.; Bobrov, B. F.; Borydyuk, B. A.; Larin, V. B.; Safronov, Yu. G.; Solov'ev, V. S.) Optimization of the de Prony method for the identification of linear dynamical systems. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 66, 64 pp. (Not in MR) 93B30 (93B40)
- Gradioloto, Monique A.** (with Mezzetti, Emilia) Families of curves with ordinary singular points on regular surfaces. *Ann. Mat. Pura Appl. (4)* **150** (1988), 281-298. (Ciro Ciliberto) **89j:14015** 14H10 (14H20)
- Gradius, Raymond H. J. M.** The reaction of the firm on governmental policy: a game-theoretical approach. *Optimal control theory and economic analysis*, 3 (Vienna, 1987), 265-290, North-Holland, Amsterdam-New York, 1988. (see **89d:90002**) 90D25 (90A16, 90D30)
- Graef, John R.** (with Grammatikopoulos, M. K.; Spikes, Paul W.) Asymptotic properties of solutions of nonlinear neutral delay differential equations of the second order. (Serbo-Croatian summary) *Rad. Mat.* **4** (1988), no. 1, 133-149. (Ján Ohrsika) **89f:34110** 34K25 (34C10, 34K15)
- Graev, M. I.** (with Gelfand, I. M.) General hypergeometric functions on the Grassmannian  $G_{k,n}$ . (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 123, 28 pp. (J. S. Joel) **89c:32083** 32M10 (22E45, 32C42, 33A35)
- (with Gelfand, I. M.) Strata in  $G_{k,n}$  and the hypergeometric functions connected with them. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 127, 28 pp. (J. S. Joel) **89c:32084** 32M10 (22E45, 32C42, 33A35)
- Gräff, Martin L.** (with Weinmüller, Ewa B.) Testing of error estimation procedures for boundary value problems with a singularity of the first kind. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 135-152, CMS Conf. Proc., 8, Amer. Math. Soc., Providence, RI, 1987. (Summary) **89g:65101** 65L10
- Gräff, Pitter** Some asymptotic results in turbulent diffusion. *Z. Naturforsch. A* **42** (1987), no. 10, 1079-1084. (William C. Meecham) **89j:76058** 76F99 (60F05, 60J70, 76R50)
- Graffi, S.** (with Caliceti, E.; Gondoni, L.) Probability of convergence of perturbation theory for hydrogen photoionization. *J. Math. Phys.* **28** (1987), no. 11, 2655-2661. (Edward R. Vrsay) **89h:81047** 81C12 (81C20)
- (with Nardini, Franco) A remark on the relation between the propagation of singularities for the Schrödinger equation and the KAM tori of the corresponding Hamiltonian system. (Italian. English summary) *Atti Sem. Mat. Fis. Univ. Modena* **36** (1988), no. 1, 75-83. (Jean-Paul Marchand) **89j:58115** 58F30 (35Q20, 58G25, 81C99)
- (with Paul, T.; Silverstone, H. J.) Resonance overlapping in classical mechanics and avoided crossings in quantum mechanics. *Phys. Rev. A* (3) **37** (1988), no. 6, 2214-2219. (Edward R. Vrsay) **89h:81034** 81C12 (70K30, 81C20)
- Graffigne, Christine** (with Geman, Stuart) Markov random field image models and their applications to computer vision. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 1496-1517, Amer. Math. Soc., Providence, RI, 1987. (see **89c:00042**) 68U10 (60G60, 92A25)
- Grafton, Robert B.** (with Sternberg, Robert L.) On a numerical minimization problem for a new class of nonlinear partial differential equations arising in nonspherical geometrical optics and beamforming lenticular antennas. *II. J. Comput. Appl. Math.* **21** (1988), no. 2, 213-222. (Charles I. Goldstein) **89h:78004** 78-08 (78A55)
- Grager, P. K. H.** (with Kersten, P. H. M.) Symmetries for the super-KdV equation. *J. Phys. A* **21** (1988), no. 11, L579-L584. (Ramajayam Sahadevan) **89j:58147** 58G35 (35Q20, 58-04, 58F07)
- Gragg, Robert F.** The total reflection of a compact wave group: long-range transmission in a waveguide. *Amer. J. Phys.* **56** (1988), no. 12, 1092-1094. (Summary) **89i:76082** EA **89m** 76Q05 (78A45, 78A50, 86A05)
- Gragg, William B.** (with Ammar, Gregory S.) The implementation and use of the generalized Schur algorithm. *Computational and combinatorial methods in systems theory* (Stockholm, 1985), 265-279, North-Holland, Amsterdam-New York, 1986. (Mihail Voicu) **89h:65112** 65F99 (15A48, 15A57, 93B25, 93B40)
- (with Ammar, Gregory S.) Superfast solution of real positive definite Toeplitz systems. *SIAM Conference on Linear Algebra in Signals, Systems, and Control* (Boston, Mass., 1986). *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 1, 61-76. (Summary) **89h:65065** 65F05 (65T05)
- Graham, Carl** Scalar boundary invariants and the Bergman kernel. *Complex analysis, II* (College Park, Md., 1985-86), 108-135, *Lecture Notes in Math.*, 1276, Springer, Berlin-New York, 1987. (John P. D'Angelo) **89d:32045** 32F25 (32H10, 53A30)
- Higher asymptotics of the complex Monge-Ampère equation. *Compositio Math.* **64** (1987), no. 2, 133-155. (I. P. Ramadanov) **89e:32022** 32F15 (35J60, 58G20)

- The martingale problem with sticky reflection conditions, and a system of particles interacting at the boundary. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **24** (1988), no. 1, 45–72. (Summary) **89k:60075** 60H10 (60G44, 60J50, 60J55, 60K35)
- Graham, Colin C.** (with Ramsey, Thomas) Three results on  $I$ -sets. *Colloq. Math.* **51** (1987), 141–147. (H. Günzler (Zbl 621:43009)) **89g:43007** 43A40 (43A60)
- A uniform boundedness principle for compact sets and the decay of Fourier transforms. *Math. Z.* **196** (1987), no. 3, 331–342. (Benjamin B. Wells) **89d:43003a** 43A25 (43A30, 46N05)
- (with Schreiber, Bertram M.) Projections in spaces of bimeasures. *Canad. Math. Bull.* **31** (1988), no. 1, 19–25. (Benjamin B. Wells) **89b:43004** 43A25 (46E27, 46M05)
- (with Lau, A. T.; Leinert, Michael) Separable translation-invariant subspaces of  $M(G)$  and other dual spaces on locally compact groups. *Colloq. Math.* **55** (1988), no. 1, 131–145. (Paul Milnes) **89j:43004** 43A40
- Erratum to the paper: "A uniform boundedness principle for compact sets and the decay of Fourier transforms". *Math. Z.* **198** (1988), no. 3, 449. (Benjamin B. Wells) **89d:43003b** 43A25 (43A30, 46N05)
- Graham, G. A. C.** (with Golden, J. M.) ★ Boundary value problems in linear viscoelasticity. *Springer-Verlag, Berlin-New York*, 1988. xiv+266 pp. ISBN 3-540-18615-8 (Warren S. Edelstein) **89f:73035** 73F10 (73-02, 73F05, 73F15, 73F20, 73M05, 73T05)
- Graham, I. G.** (with Atkinson, Kendall E.) An iterative variant of the Nyström method for boundary integral equations on nonsmooth boundaries. *The mathematics of finite elements and applications, VI (Uxbridge, 1987)*, 297–303, *Academic Press, London-New York*, 1988. (see **89c:65004**) **89b:65004** 65R20
- (with Chandler, G. A.) The convergence of Nyström methods for Wiener-Hopf equations. *Numer. Math.* **52** (1988), no. 3, 345–364. (Jose Cuminato) **89j:65089** 65R20
- Graham, Ian** Intrinsic measures on complex manifolds. (Serbo-Croatian summary) Second international symposium on complex analysis and applications (Budva, 1986). *Mat. Vesnik* **38** (1986), no. 4, 475–488. (T. J. Barth (Zbl 615:32015)) **89h:32047** 32H15
- Intrinsic measures and holomorphic retracts. *Pacific J. Math.* **130** (1987), no. 2, 299–311. (Valentin Zdravkov Hristov) **89a:32026** 32H15
- (with Jones, Peter Llewellyn) ★ Expert systems. Knowledge, uncertainty and decision. Chapman and Hall Computing. *Chapman & Hall, London-New York*, 1988. xviii+363 pp. ISBN 0-412-28510-X (P. Rajagopal) **89m:68130** 68T99 (03B52, 03E72, 68-01, 68U99)
- Holomorphic mappings into strictly convex domains which are Kobayashi isometries at one point. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 917–921. (Yoichi Imai) **89k:32048** 32H15
- Graham, John W.** (with Sarwal, S. N.) A computational model for a class of distributed parameter system. *Tensor (N.S.)* **44** (1987), no. 1, 82–89. (Introduction) **89a:35049** 35C99 (35A25, 93B40, 93C20)
- Graham, Niall** (with Harary, Frank) The number of perfect matchings in a hypercube. *Appl. Math. Lett.* **1** (1988), no. 1, 45–48. (Not in MR) **05C70** (68R10)
- (with Harary, Frank) Covering and packing in graphs. V. Mispicking subcubes in hypercubes. *Comput. Math. Appl.* **15** (1988), no. 4, 267–270. (R. C. Mullin) **89f:05135** 05C70 (05C35)
- Graham, R. L.** (with Chung, F. R. K.; Saks, M. E.) Dynamic search in graphs. *Discrete algorithms and complexity (Kyoto, 1986)*, 351–387, *Perspect. Comput.*, **15**, *Academic Press, Boston, MA*, 1987. (Henry Martyn Mulder) **89c:05183** 05C99 (68P10, 68R05, 68R10)
- (with Rödl, Vojtěch) Numbers in Ramsey theory. *Surveys in combinatorics 1987 (New Cross, 1987)*, 111–153, *London Math. Soc. Lecture Note Ser.*, **123**, *Cambridge Univ. Press, Cambridge-New York*, 1987. (Walter A. Deuber) **89b:05125** 05C55
- A similarity measure for graphs—reflections on a theme of Ulam. *Stanislaw Ulam 1909–1984. Los Alamos Sci. No. 15 Special Issue* (1987), 114–121. (see **89m:01133a**) **05C35** (05C99)
- (with Frankl, Peter; Rödl, Vojtěch) Quantitative theorems for regular systems of equations. *J. Combin. Theory Ser. A* **47** (1988), no. 2, 246–261. (Charles M. Grinstead) **89d:05020** 05A99 (15A99)
- (with Chung, F. R. K.; Füredi, Z.; Seymour, Paul D.) On induced subgraphs of the cube. *J. Combin. Theory Ser. A* **49** (1988), no. 1, 180–187. (O. D'Antona) **89f:05101** 05C10 (03G05, 05C35, 06E30, 68Q25)
- (with Chung, F. R. K.; Cohen, Joel E.) Pursuit-evasion games on graphs. *J. Graph Theory* **12** (1988), no. 2, 159–167. (Stefan A. Burr) **89k:05069** 05C50 (05C99, 90D26, 90D42)
- (with Chung, F. R. K.; Wilson, R. M.) Quasirandom graphs. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 4, 969–970. (Zbigniew Palka) **89a:05116** 05C80
- (with Chung, F. R. K.; Füredi, Z.; Garey, M. R.) On the fractional covering number of hypergraphs. *SIAM J. Discrete Math.* **1** (1988), no. 1, 45–49. (W. H. Mills) **89c:05153** 05C70 (05C65)
- Graham, Robert** (with Roekaerts, D.) A Nicolai map for supersymmetric quantum mechanics on Riemannian manifolds. *Stochastic processes—mathematics and physics, II (Bielefeld, 1985)*, 98–105, *Lecture Notes in Math.*, **1250**, *Springer, Berlin-New York*, 1987. (Summary) **89c:81043** 81C20 (58G32, 60H10, 81C99)
- Squeezing and frequency changes in harmonic oscillations. Special issue on squeezed light. *J. Modern Opt.* **34** (1987), no. 6–7, 873–879. (see **89m:81213a**) **81K05** (81D30)
- (with Isermann, S.; Tél, T.) Quantization of Hénon's map with dissipation. II. Numerical results. *S. Phys. B* **71** (1988), no. 2, 237–246. (Summary) **89k:81049** 81C99 (58F08, 58F13)
- Graham-Eagle, James** Branching from degenerate solutions of a nonlinear eigenvalue problem. *J. Math. Anal. Appl.* **127** (1987), no. 2, 334–345. (Zuchi Chen) **89b:35012** 35B32 (35J65, 58E07)
- Gramain, André** ★ Intégration. (French) [Integration] Collection Méthodes. [Methods Collection] Hermann, Paris, 1988. x+229 pp. ISBN 2-7056-6082-8 (R. G. Bartle) **89m:28001** 28-01 (26-01)
- Gramain, François** Fonctions entières arithmétiques. [Integer-valued arithmetical functions] *Séminaire d'analyse 1985–1986 (Clermont-Ferrand, 1985–1986)*, Exp. No. 9, 9 pp., *Univ. Clermont-Ferrand II, Aubière*, 1986. (L. Kuipers) **89a:11011** 11A25 (30D20)
- Gramchev, T. V.** Gevrey singularities and the Tricomi equation. *Mixed type equations*, 112–119, *Teubner-Texte Math.*, **90**, *Teubner, Leipzig*, 1986. (Megumi Saigo) **89b:35111** 35M05 (35A27)
- Grami, I. G.** Nonclassical estimates for the rate of convergence in the central limit theorem for semimartingales. (Russian) *Mat. Issled. No. 97 Stokhasticheskii Analiz* (1987), 16–33, 87. (A. I. Ekushov) **89a:60088** 60F17
- Sharpening of an estimate for the rate of convergence in the central limit theorem for semimartingales. (Russian) *Mat. Issled. No. 97 Stokhasticheskii Analiz* (1987), 34–40, 88. (A. I. Ekushov) **89a:60089** 60F17
- Normal approximation for semimartingales. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 6(258), 189–190. (Zdzisław Rychlik) **89d:60040** 60F05 (60G44)
- (with Mamatov, Kh. M.) Rate of convergence in a central limit theorem for stochastic integrals with respect to martingales. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 2(260), 143–144; translated in *Russian Math. Surveys* **43** (1988), no. 2, 175–176. (Not in MR) **60F05** (60G44, 60H05)
- Grammaticos, Basile** (with Ramani, Alfred) Linéarisation et (non)-intégrabilité des équations de Yang-Mills. (English summary) [Linearization and (non)integrability of the Yang-Mills equations] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **303** (1986), no. 16, 1417–1420. (Summary) **89j:58046** 58F07 (35Q20, 58F19, 81E15)
- (with Yoshida, Haruo; Ramani, Alfred; Hietarinta, Jarmo) On the nonintegrability of some generalized Toda lattices. *Phys. A* **144** (1987), no. 2–3, 310–321. (Luis A. Ibort) **89d:58060** 58F07 (70H05)
- (with Ramani, Alfred; Yoshida, Haruo) Comment on: "Singular point analysis, resonances and Yoshida's theorem" [J. Phys. A **20** (1987), no. 12, 4027–4030; MR 88j:34060] by W.-H. Steeb, J. A. Louw and M. F. Maritz. *J. Phys. A* **21** (1988), no. 6, 1471–1473. (From the text) **89c:34081** 34D05 (34C05, 58F35)
- (with Yoshida, Haruo; Ramani, Alfred) Nonintegrability of the fourth-order truncated Toda Hamiltonian. *Phys. D* **30** (1988), no. 1–2, 151–163. (Gerard Thompson) **89d:70016** 70H05 (58F05, 58F07)
- (with Pomeau, Y.; Ramani, Alfred) Structural stability of the Korteweg-de Vries solitons under a singular perturbation. *Phys. D* **31** (1988), no. 1, 127–134. (Summary) **89h:35314** 35Q20 (76B15)
- (with Papageorgiou, V. G.) Integrable bouncing-ball models. *Phys. Rev. A* (3) **37** (1988), no. 12, 5000–5001. (Ramajayam Sahadevan) **89f:70022** 70H05 (58F07)
- Grammatikopoulos, M. K.** (with Ladas, G.; Meimaridou, A.) Oscillation and asymptotic behavior of second order neutral differential equations. *Ann. Mat. Pura Appl.* (4) **148** (1987), 29–40. (V. M. Popov) **89c:34077** 34K15 (34C10, 34K25)
- (with Ladas, G.; Meimaridou, A.) Oscillation and asymptotic behavior of higher order neutral equations with variable coefficients. A Chinese summary appears in Chinese Ann. Math. Ser. A **9** (1988), no. 4, 507. *Chinese Ann. Math. Ser. B* **9** (1988), no. 3, 322–338. (József Terjéki) **89k:34121** 34K15 (34K25)
- (with Sficas, Y. G.; Stavroulakis, I. P.) Necessary and sufficient conditions for oscillations of neutral equations with several coefficients. *J. Differential Equations* **76** (1988), no. 2, 294–311. (József Terjéki) **89j:34100** 34K15
- (with Kulenović, M. R.) Some comparison and oscillation results for first-order differential equations and inequalities with a deviating argument. *J. Math. Anal. Appl.* **131** (1988), no. 1, 67–84. (József Kalinowski) **89c:34118** 34K15 (34A40, 34K25)
- (with Graef, John R.; Spikes, Paul W.) Asymptotic properties of solutions of nonlinear neutral delay differential equations of the second order. (Serbo-Croatian summary) *Rad. Mat.* **4** (1988), no. 1, 133–149. (Ján Ohriska) **89c:34110** 34K25 (34C10, 34K15)
- Grams, Gerhard** Erzeugende und Relationen gewisser orthogonaler und symplektischer Gruppen über GF(2). [Generators and relations of certain orthogonal and symplectic groups over GF(2)] *Mitt. Math. Sem. Giessen No. 183* (1987), 55–75. (R. W. Carter) **89c:20068** 20G40 (20F05)
- Granados, Xavier** see Galilei, Galileo, **89i:01139**
- Granas, Andrzej** (with Guennoun, Zine El Abidine) Quelques résultats dans la théorie de Bernstein-Carathéodory de l'équation  $y'' = f(t, y, y')$ . (English summary) [Some results in the Bernstein-Carathéodory theory for the equation  $y'' = f(t, y, y')$ ] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 16, 703–706. (John W. Lee) **89d:34034** 34B15
- (with Frigon, Marlène; Guennoun, Zine El Abidine) Sur l'intervalle maximal d'existence de solutions pour des inclusions différentielles. (English summary) [On the maximal interval for the existence of solutions to differential inclusions] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 18, 747–750. (Stefan Mirica) **89g:34019** 34A60 (34A15)
- (with Guenther, Ronald B.; Lee, John W.) Some existence results for the differential inclusions  $y^{(k)} \in F(x, y, \dots, y^{(k-1)})$ ,  $y \in \mathcal{D}$ . (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 8, 391–396. (Stefan Mirica) **89k:34012** 34A60 (34B10)
- Granata, Antonio** Canonical factorization of disconjugate differential operators. II. *SIAM J. Math. Anal.* **19** (1988), no. 5, 1162–1173. (Ch. G. Philos) **89j:34035** 34C10 (47E05)
- Granberg, A. G.** (with Suspitsyn, S. A.) ★ Введение в системное моделирование народного хозяйства. (Russian) [Introduction to systems modeling of a national economy] "Nauka" Sibirsk. Otdel, Novosibirsk, 1988. 304 pp. ISBN 5-02-029084-X (From the publisher's description) **89g:90081** 90A30
- Grande, Zbigniew** (with Natkaniec, Tomasz) Lattices generated by  $\mathcal{F}$ -quasicontinuous functions. (Russian summary) *Bull. Polish Acad. Sci. Math.* **34** (1986), no. 9–10, 525–530 (1987). (Editors) **89d:26005** 26A15 (46A99)
- (with Natkaniec, Tomasz; Strońska, Ewa) Algebraic structures generated by  $d$ -quasi-continuous functions. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 11–12, 717–723. (D. Preiss) **89m:26021** 26B05 (28A20)
- Sur la quasi-continuité et la quasi-continuité approximative. (English summary) [Quasi-continuity and approximate quasicontinuity] *Fund. Math.* **129** (1988), no. 3, 167–172. (J. C. Oxtoby) **89m:26007** 26A21 (54C50)
- de Grande-De Kimpe, N.** see De Grande-De Kimpe, N.
- Grandek, K.** Accelerated iterative methods for elliptic partial differential equations. *Systems Anal. Modelling Simulation* **4** (1987), no. 6, 541–547. (Rolf Rannacher) **89b:65077** 65F10 (65N20)
- Grandell, Jan** (with Björk, Tomas) Exponential inequalities for ruin probabilities in the Cox case. Special issue for ICA 1988 Helsinki. *Scand. Actuar. J.* **1988**, no. 1–2, 77–111. (Erhard Kremer) **89i:62168** 62P05
- Grandet, M.** (with Amice, Y.; Bertin, M.-J.; Bertrandias, F.; Decomps-Guilloix, Annette; Dress, F.; Mendes France, M.; Rauzy, Gérard) Charles Pisot. (French) *Acta Arith.* **51** (1988), no. 1, 1–4. (Editors) **89i:01054** 01A70
- Grandet-Hugot, Marthe** (with Decomps-Guilloix, Annette) Nouvelles caractérisations des nombres de Pisot et de Salem. [New characterizations of the Pisot and Salem numbers] *Acta Arith.* **50** (1988), no. 2, 155–170. (Christopher Smyth) **89j:11097** 11R06 (11K26)



- Grandhi, R. V.** (with Khot, N. S.; Öz, H.; Eastep, F. E.; Venkayya, V. B.) Optimal structural design with control gain norm constraint. *AIAA J.* **26** (1988), no. 5, 604-611. (Not in MR) 93B60 (49D40, 73K)
- Grandin, Thomas A.** An iterative method for computing multivariate  $C^1$  piecewise polynomial interpolants. *Comput. Aided Geom. Design* **4** (1987), no. 4, 307-319. (David R. Hill) **89c:65010** 65D05 (65D07)
- The stable evaluation of multivariate simplex splines. *Math. Comp.* **50** (1988), no. 181, 197-205. (D. C. Handscomb) **89a:65018** 65D07 (41A15, 41A63)
- Grandinetti, L.** (with Conforti, D.) Numerical comparisons of nonlinear programming algorithms on serial and vector processors using automatic differentiation. *Math. Programming* **42** (1988), no. 2 (Ser. B), 375-389. (Summary) **89k:90166** 90C35 (65K05, 65W05)
- Grandis, Marco** Convergence in homological algebra. (Italian summary) *Rend. Accad. Naz. Sci. XL Mem. Mat.* (5) **11** (1987), no. 1, 205-236. (Timothy Porter) **89f:18012** 18G50 (55T99)
- (with Betti, Renato) Complete theories in 2-categories. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **29** (1988), no. 1, 9-57. (R. H. Street) **89g:18014** 18D05 (18C10, 18G40)
- r-Grandjean L-Valcarcel, A.** **★** **r-Grandjean L-Valcarcel, A.**
- Grandmont, Jean-Michel** **★** Monnaie et valeur. (French) [Money and value] Translated from the English by Marc Fleury. Collection "Économie et Statistiques Avancées". [Collection "Economics and Advanced Statistics"] *Éditions Économica, Paris*, 1986. vi+233 pp. ISBN 2-7178-1150-8 (Hans Peters) **89f:90016** 90A09 (90-02, 90A12, 90A14)
- Grandy, Walter T., Jr.** **★** Foundations of statistical mechanics. Vol. I. Equilibrium theory. *Fundamental Theories of Physics. D. Reidel Publishing Co., Dordrecht-Boston, MA*, 1987. xvi+380 pp. ISBN 90-277-2489-X (Brian DeFacio) **89j:82089** 82A97 (62C10, 81-02, 82-02, 82A30)
- **★** Foundations of statistical mechanics. Vol. II. Nonequilibrium phenomena. *Fundamental Theories of Physics. D. Reidel Publishing Co., Dordrecht-Boston, MA*, 1988. xii+307 pp. ISBN 90-277-2649-3 (Brian DeFacio) **89j:82090** 82A97 (62C10, 82-02, 82A35)
- Grandé, J.** **★** **Grandé, Maullieu José**
- Granero-Portat, M. I.** (with Portat, A.) Energy availability as the main factor of molecular differentiation: a mathematical model. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations (Budapest, 1987)*, 820-823, *János Bolyai Math. Soc., Budapest*, 1987. (F. T. Lindstrom) **89h:92016** 92A09
- Granger, C. W. J.** Implications of aggregation with common factors. *Econometric Theory* **3** (1987), no. 2, 208-222. (Not in MR) 62P20
- Some recent developments in a concept of causality. *J. Econometrics* **39** (1988), no. 1-2, 199-211. (D. E. A. Giles) **89j:62146** 62P20 (90A20)
- Granger, M.** (with Briangon, J.; Maisonne, Philippe) Le nombre de modules du germe de courbe plane  $x^a + y^b = 0$ . [The number of moduli of the plane curve germ  $x^a + y^b = 0$ ] *Math. Ann.* **279** (1988), no. 3, 535-551. (Gerhard Pfister) **89c:14001** 14B05 (32B30)
- Granichin, O. N.** A stochastic approximation algorithm with perturbation in the input for the identification of a static nonstationary discrete object. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1988**, vyp. 3, 92-93, 126; translated in *Vestnik Leningrad Univ. Math.* **21** (1988), no. 3, 56-58. (Benjamin Goldys) **89k:93210** 93E12
- Granja Barón, Angel** Plane analytic curves with contact in the Apéry basis. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish) (Badajoz, 1986)*, 188-191, *Publ. Dep. Mat. Univ. Extremadura*, 18, *Univ. Extremadura, Badajoz*, 1987. (Philippe Carbone) **89k:14050** 14H20 (14B05, 32B30)
- Grannell, J. J.** Mathematical foundations of the edge-function method. *Boundary elements VII, Vol. I, II (Como, 1985)*, 12.15-12.29, *Comput. Mech., Southampton*, 1985. (see **89f:65003**) 65N99 (35C99)
- On simplified hybrid methods for coupling of finite elements and boundary elements. *Boundary elements IX, Vol. 1 (Stuttgart, 1987)*, 447-460, *Comput. Mech., Southampton*, 1987. (Weimin Han) **89j:65071** 65N30
- Grannell, M. J.** (with Griggs, T. S.; Phelan, J. S.) Countably infinite Steiner triple systems. *Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. 2 (Catania, 1986)*, *Ars Combin.* **24** (1987), B, 189-216. (Barbu C. Kestenband) **89c:05018** 05B07 (51E10)
- (with Griggs, T. S.) Some applications of computers in design theory. *Computers in mathematical research (Cardiff, 1986)*, 135-148, *Inst. Math. Appl. Conf. Ser. New Ser.*, 14, *Oxford Univ. Press, New York*, 1988. (Rudolf Mathon) **89m:05016** 05B05
- (with Griggs, T. S.; Phelan, J. S.) A new look at an old construction for Steiner triple systems. *Eleventh British Combinatorial Conference (London, 1987)*, *Ars Combin.* **25** (1988), A, 55-60. (Elizabeth J. Billington) **89d:05036** 05B07
- Granot, Frieda** (with Skorin-Kapov, Jadranka) Nonlinear integer programming: sensitivity analysis for branch and bound. *Oper. Res. Lett.* **6** (1987), no. 6, 269-274. (Summary) **89a:90097** 90C10 (90C30)
- Grant, Andrew** Fourier transforms and the P.N.T. error term. (Russian and Czech summaries) *Časopis Pěst. Mat.* **112** (1987), no. 4, 337-347. (Shigeru Kanemitsu) **89c:11139** 11N05 (42A38)
- A further note on the P.N.T. error term. (Russian and Czech summaries) *Časopis Pěst. Mat.* **112** (1987), no. 4, 348-350. (Shigeru Kanemitsu) **89c:11140** 11N05 (42A38)
- Grant, David** A generalization of Jacobi's derivative formula to dimension two. *J. Reine Angew. Math.* **392** (1988), 125-136. (José M. Muñoz Porras) **89m:14024** 14K25 (11F27, 14H15)
- Grant, Edward** (with Murdoch, John E.) Introduction. *Mathematics and its applications to science and natural philosophy in the Middle Ages, ix-xii*, *Cambridge Univ. Press, Cambridge-New York*, 1987. (Editors) **89c:01062** 01A70
- Eccentrics and epicycles in medieval cosmology. *Mathematics and its applications to science and natural philosophy in the Middle Ages, 189-214*, *Cambridge Univ. Press, Cambridge-New York*, 1987. (Anne Tihon) **89h:01015** 01A35
- (with Zwaninger, Josef W.) Topological phase in molecular bound states: application to the  $E \otimes e$  system. *J. Chem. Phys.* **87** (1987), no. 5, 2954-2964. (Summary) **89b:81255** 81G55 (58F40, 81C99)
- Grant, Hardy** **★** **Yaglom, I. M.**, **89c:01033**
- Granville, Andrew** (with Powell, Barry) On Sophie Germain type criteria for Fermat's last theorem. *Acta Arith.* **50** (1988), no. 3, 265-277. (R. J. Cook) **89g:11024** 11D41
- (with Moisiadis, Alexandros; Rees, Rolf) Bipartite planes. *Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987)*, *Congr. Numer.* **61** (1988), 241-248. (G. W. Peck) **89i:05228** 05C75 (05C99)
- (with Moisiadis, Alexandros; Rees, Rolf) Nested Steiner  $n$ -cycle systems and perpendicular arrays. *J. Combin. Math. Combin. Comput.* **3** (1988), 163-167. (Charles C. Lindner) **89h:05016** 05B05
- (with Monagan, M. B.) The first case of Fermat's last theorem is true for all prime exponents up to 714,591,416,091,389. *Trans. Amer. Math. Soc.* **306** (1988), no. 1, 329-359. (Takashi Agoh) **89g:11025** 11D41
- Granville, Evelyn Boyd** **★** **Kenschaft, Patricia Clark**, **(89b:01071)**
- Granville, Vincent** (with Rasson, Jean-Paul) A strange recursive relation. *J. Number Theory* **30** (1988), no. 2, 238-241. (Vichian Laohakosol) **89j:11014** 11B37
- Graovac, Ante** (with Babić, D.; Kovačević, K.) Simple estimates of the total and the reference pi-electron energy of conjugated hydrocarbons. *Graph theory and topology in chemistry (Athens, Ga., 1987)*, 448-457, *Stud. Phys. Theoret. Chem.*, 51, *Elsevier, Amsterdam-New York*, 1987. (Summary) **89c:81212** 81G55
- (with Gutman, I.; Polansky, Oskar E.) Spectral properties of some structurally related graphs. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1-3, 195-203. (Maria Ferro) **89f:92078** 92A40 (05C50)
- Gras, Georges** Pseudo-mesures  $p$ -adiques associées aux fonctions  $L$  de  $\mathbb{Q}$ . (English summary)  $p$ -adic pseudomeasures associated with the  $L$ -functions of  $\mathbb{Q}$  *Manuscripta Math.* **57** (1987), no. 4, 373-415. (Lawrence Washington) **89d:11109** 11S40 (11R23, 11R42)
- Gras, Marie-Nicole** Condition nécessaire de monogénéité de l'anneau des entiers d'une extension abélienne de  $\mathbb{Q}$ . [A necessary condition for monogeneity of the ring of integers of an abelian extension of  $\mathbb{Q}$ ] *Séminaire de théorie des nombres, Paris 1984-85*, 97-107, *Progr. Math.*, 63, *Birkhäuser Boston, Boston, MA*, 1986. (Jean-François Jauret) **89c:11159** 11R20 (11R33)
- Grasman, J.** (with Doelman, A.) Low order spectral models in hydrodynamics. *Trends in applications of mathematics to mechanics (Wassenaar, 1987)*, 86-97, *Springer, Berlin-New York*, 1988. (see **89g:58004**) 76C15 (76D33, 76E30)
- Grassberger, P.** (with Fahnner, Gerald) Entropy estimates for dynamical systems. *Complex Systems* **1** (1987), no. 6, 1093-1098. (Summary) **89c:58060** 58F08 (54H20)
- (with Zambella, Domenico) Complexity of forecasting in a class of simple models. *Complex Systems* **2** (1988), no. 3, 269-303. (Summary) **89g:58142** 58F13
- (with Politi, A.; Badii, R.) On the geometric structure of nonhyperbolic attractors. *J. Phys. A* **21** (1988), no. 15, L763-L769. (Summary) **89k:58194** 58F13 (58F12)
- (with Freund, Harald) Multispin coding for spin glasses. *J. Phys. A* **21** (1988), no. 16, L801-L805. (Summary) **89i:82069** 82A57 (82-04)
- (with Badii, R.; Politi, A.) Scaling laws for invariant measures on hyperbolic and nonhyperbolic attractors. *J. Statist. Phys.* **51** (1988), no. 1-2, 135-178. (Holger Kantz) **89i:58070** 58F12 (58F13)
- Finite sample corrections to entropy and dimension estimates. *Phys. Lett. A* **128** (1988), no. 6-7, 369-373. (P. N. Rathie) **89d:94027** 94A17
- Grasse, Kevin A.** (with White, L. W.) Estimation of Cauchy data for a first-order nonlinear hyperbolic equation. *J. Math. Anal. Appl.* **135** (1988), no. 2, 545-567. (Alain Bachelot) **89m:35132** 35L60 (76B15)
- Sufficient conditions for the functional reproducibility of time-varying, input-output systems. *SIAM J. Control Optim.* **26** (1988), no. 1, 230-249. (Jerzy Klamka) **89c:93014** 93B15 (93B05, 93C05, 93C50)
- Grasseau, G.** (with Arneodo, A.; Holschneider, Matthias) Wavelet transform of multifractals. *Phys. Rev. Lett.* **61** (1988), no. 20, 2281-2284. (Summary) **89i:58075** 58F13 (28A75, 58F08)
- (with Argoul, F.; Arneodo, A.) Fractal dimensions and  $f(\alpha)$  spectrum for strange attractors. *Z. Angew. Math. Mech.* **68** (1988), no. 10, 519-522. (Introduction) **89k:58170** 58F13
- (with Argoul, F.; Arneodo, A.; Elezgaray, J.; Murenzi, R.) Wavelet transform of fractal aggregates. *Phys. Lett. A* **135** (1989), no. 6-7, 327-336. (Summary) **89k:82069** 82A57 (42C05)
- Grasselli, Luigi** Simple contracted complexes are nonshellable. *European J. Combin.* **8** (1987), no. 3, 287-288. (Andrew Vince) **89a:57008** 57M40 (52A25)
- (with Casali, Maria Rita) Characterizing crystallizations among Lins-Mandel 4-coloured graphs. *Third National Conference on Topology (Italian) (Trieste, 1986)*, *Rend. Circ. Mat. Palermo (2) Suppl. No. 18* (1988), 221-228. (K. S. Sarkaria) **89i:57009** 57Q15 (05C99, 57M05, 57N10)
- Grasselli, Maurizio** An identification problem for a semilinear hyperbolic equation. (Italian summary) *Boll. Un. Mat. Ital. B (7)* **2** (1988), no. 2, 293-311. (Fouad A. Mohamed) **89f:35200** 35R30 (35L70)
- Grasselli, Osvaldo Maria** (with Longhi, Sauro) Disturbance localization by measurement feedback for linear periodic discrete-time systems. *Automatica—J. IFAC* **24** (1988), no. 3, 375-385. (Ülle Kotta) **89g:93041** 93B50 (49D50, 93B27, 93C05, 93C35, 93C55)
- (with Longhi, Sauro) Zeros and poles of linear periodic multivariable discrete-time systems. *Circuits Systems Signal Process.* **7** (1988), no. 3, 361-380. (John Maroulas) **89k:93104** 93B55 (93C05, 93C55)
- Grassi, P.** On the decomposition of a lattice-regular measure with respect to a mapping. *Studia Sci. Math. Hungar.* **22** (1987), no. 1-4, 351-356. (Z. Lipecki) **89f:28033** 28C15
- Grassmann, Hermann** **★** **Schlotte, Karl-Heinz**, **89d:01044**
- Grasso, Massimo** (with Teofilatto, Paolo) Gauge theories, flat superforms and reduction of super fiber bundles. *Rep. Math. Phys.* **25** (1988), no. 1, 53-71. (Agostino Prastaro) **89k:53070** 53C80 (58A50, 81E13, 83E50)
- Gräter, J.** Ringe mit distributivem Rechtsidealverband. [Rings with distributive lattice of right ideals] *Resultate Math.* **12** (1987), no. 1-2, 95-98. (H. H. Brungs) **89a:16004** 16A14 (16A08, 16A10)
- Valuations on finite-dimensional division algebras and their value groups. *Arch. Math. (Basel)* **51** (1988), no. 2, 128-140. (B. Fein) **89i:12007** 12E15 (16A39)
- Gratias, Denis** (with Cornier, Marianne; Portier, Richard) Symmetries and beam reduction in the matrix formulation of the dynamical theory of fast electrons. *Acta Cryst. Sect. A* **44** (1988), no. 6, 789-798. (Summary) **89j:81244** 81F99 (82A55, 82A60)

- Grattan-Guinness, I.** How it means: mathematical theories in physical theories. With examples from French mathematical physics of the early 19th century. Proceedings of the fifth national congress on the history of physics (Italian) (Rome, 1984). *Rend. Accad. Naz. Sci. XL Mem. Sci. Fis. Natur.* (5) **9** (1985), 89–119. (Louis Charbonneau) **89b:01021** 01A55 (00A05, 00A25, 00A69)
- Before Bowditch: Henry Hart's translation of Books 1 and 2 of Laplace's *Mécanique céleste*. *NTM Schr. Geschichte Natur. Tech. Medizin* **24** (1987), no. 2, 53–55. (J. J. Cross) **89c:01029** 01A55
- Grätzer, George** (with Kelly, David) The lattice variety  $\mathbf{D} \circ \mathbf{D}$ . *Acta Sci. Math. (Szeged)* **51** (1987), no. 1–2, 73–80. (From the introduction) **89f:06008** 06B20
- (with Kelly, David) Addendum to: "The lattice variety  $\mathbf{D} \circ \mathbf{D}$ " [*Acta Sci. Math. (Szeged)* **51** (1987), no. 1–2, 73–80; MR 89f:06008]. *Acta Sci. Math. (Szeged)* **52** (1988), no. 3–4, 465. (From the text) **89k:06007** 06B20
- (with Kelly, David) Subdirectly irreducible members of products of lattice varieties. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 483–489. (M. E. Adams) **89c:06007** 06B20
- Grauel, A.** Fundamentals of surface thermodynamics. *Internat. J. Theoret. Phys.* **27** (1988), no. 7, 861–899. (Summary) **89g:76043** 76T05 (76S05, 80A20)
- Grauert, Hans** ★ Was erforschen die Mathematiker? (German) [What do mathematicians investigate?] Abhandlungen der Mathematisch-Naturwissenschaftlichen Klasse. Akademie der Wissenschaften und der Literatur in Mainz [Transactions of the Mathematical-Scientific Section. Academy of Sciences and Literature in Mainz], 86–3. Franz Steiner Verlag GmbH, Wiesbaden, 1986. 17 pp. ISBN 3-515-04868-5 (Michael Otte) **89c:00020** 00A25 (00A05, 01A80)
- Meromorphe Äquivalenzrelationen: Anwendungen, Beispiele, Ergänzungen. [Meromorphic equivalence relations: applications, examples, complements]. *Math. Ann.* **278** (1987), no. 1–4, 175–183. (S. Dimiev) **89h:32009** 32A30 (32C25, 32C40, 32H99)
- (with Remmert, R.) ★ Аналитические локальные алгебры. (Russian) [Analytic local algebras] With the collaboration of O. Rimenshneider [Oswald Rimenshneider]. Translated from the German by D. N. Akhiezer. Translation edited by A. L. Onishchik. "Nauka", Moscow, 1988. 304 pp. ISBN 5-02-013724-3 (Editors) **89j:32009** 32B05 (32–01)
- Graupe, D.** (with Moser, A. T.) Applicability of Kalman filtering theory to identification of time series with nonstationary covariance structures. *Internat. J. Systems Sci.* **20** (1989), no. 1, 91–96. (Not in MR) **93E12** (93E11)
- radelet-de Grave, P.** see **Radelet-de Grave, P.**
- Gravereaux, J.-B.** Calcul de Malliavin et probabilité invariante d'une chaîne de Markov. (English summary) [Malliavin calculus and invariant probability of a Markov chain] *Ann. Inst. H. Poincaré Probab. Statist.* **24** (1988), no. 2, 159–188. (David Nualart Rodón) **89i:60117** 60H07 (60J10)
- Graverson, S. E.** (with Rao, Murali) On a theorem of Cartan. *Czechoslovak Math. J.* **37**(112) (1987), no. 2, 248–261. (Mamoru Kanda) **89b:60179** 60J45 (31B15, 60J40)
- Graves, Stephen C.** Safety stocks in manufacturing systems. *J. Manuf. Oper. Management* **1** (1988), no. 1, 67–101. (Summary) **89d:90082** 90B05 (90B30)
- Determining the spares and staffing levels for a repair depot. With a comment by Candace A. Yano. *J. Manuf. Oper. Management* **1** (1988), no. 2, 227–243. (Not in MR) **90B25**
- Graves, William H.** (with Ruess, W.) Representing compact sets of compact operators and of compact range vector measures. *Arch. Math. (Basel)* **49** (1987), no. 4, 316–325. (P. Saphar) **89a:46145** 46M05 (46G10, 47D30)
- Graves Gregory, Nicola** ★ Who carved up the integers? (They never died). *Mathematica, London*, 1987. x+83 pp. ISBN 0-9512094-0-X (Alexander George) **89f:01004** 01A05 (00A25, 03A05)
- Graves-Morris, P. R.** (with Saff, E. B.) Row convergence theorems for generalised inverse vector-valued Padé approximants. *J. Comput. Appl. Math.* **23** (1988), no. 1, 63–85. (John H. McCabe) **89k:65016** 65D15
- The critical index of the magnetic susceptibility of 3D Ising models. *J. Phys. A* **21** (1988), no. 8, 1867–1881. (Summary) **89d:82039** 82A25 (82–04, 82A68)
- Gray, Alfred** (with Cordero, Luis A.; Fernández, Marisa) The Frölicher spectral sequence and complex compact nilmanifolds. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 17, 753–756. (Yusuke Sakane) **89c:32081** 32M10 (22E25, 53C30)
- Weyl's tube formula as the integral of a Bessel function. *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 511–517, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (H. D. Fegan) **89f:53077** 53C40
- Gray, B. F.** (with Roberts, M. J.) A method for the complete qualitative analysis of two coupled ordinary differential equations dependent on three parameters. *Proc. Roy. Soc. London Ser. A* **416** (1988), no. 1851, 361–389. (János Tóth) **89h:58142** 58F14 (34C99)
- (with Roberts, M. J.) Analysis of chemical kinetic systems over the entire parameter space. I. The Sařnikov thermokinetic oscillator. *Proc. Roy. Soc. London Ser. A* **416** (1988), no. 1851, 391–402. (János Tóth) **89h:58143** 58F14 (34C99, 80A30, 92A40)
- (with Roberts, M. J.) Analysis of chemical kinetic systems over the entire parameter space. II. Isothermal oscillators. *Proc. Roy. Soc. London Ser. A* **416** (1988), no. 1851, 403–424. (János Tóth) **89h:58144** 58F14 (34C99, 80A30, 92A40)
- (with Roberts, M. J.) An asymptotic analysis of the Sařnikov thermokinetic oscillator. *Proc. Roy. Soc. London Ser. A* **416** (1988), no. 1851, 425–441. (Summary) **89d:92017** 92A08 (80A30)
- Gray, Brayton** On the iterated suspension. *Topology* **27** (1988), no. 3, 301–310. (Paul Selick) **89h:55016** 55P40
- Gray, E. P.** (with Farrell, R. A.; Hart, R. W.) An infinite sum of products of Jacobi polynomials. *J. Math. Phys.* **29** (1988), no. 10, 2175–2177. (J. V. Baxley) **89k:33011** 33A65
- Gray, Fernando** (with Ruscheweyh, Stephan) Functions whose derivatives take values in a half-plane. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 215–218. (D. K. Thomas) **89j:30016** 30C45
- Gray, Henry L.** (with Zhang, Nian Fan) On a new definition of the fractional difference. *Math. Comp.* **50** (1988), no. 182, 513–529. (R. C. S. Chandel) **89i:39008** 39A12 (26A33, 39A10)
- Gray, J. O.** (with Valsamis, D.; Owens, D. H.) Stability and performance bounds for the linearisation-based analysis and design of multivariable nonlinear systems. *Proc. IEEE-D* **135** (1988), no. 2, 79–89. (Guy Jumarie) **89d:93089** 93D25 (93B50, 93C10, 93C35)
- Gray, Jack Conrad** see **Loeb, Arthur L.** (**89b:52016**)
- Gray, Jeremy** ★ Linear differential equations and group theory from Riemann to Poincaré. *Birkhäuser Boston, Inc., Boston, MA*, 1986. xxvi+460 pp. ISBN 0-8176-3318-9 (Umberto Bottazzini) **89d:01041** 01A55 (14–03, 20–03, 30–03, 34–03)
- The discovery of non-Euclidean geometry. *Studies in the history of mathematics*, 37–60, *MAA Stud. Math.*, 26, Math. Assoc. America, Washington, DC, 1987. (see **89b:01002**) 01A55 (51–03)
- see also **History of mathematics: a reader**, **89m:01006**
- Gray, John W.** Categorical aspects of data type constructors. *Theoret. Comput. Sci.* **50** (1987), no. 2, 103–135. (Jiří Adámek) **89a:68154** 68Q65 (18A99)
- A categorical treatment of polymorphic operations. *Mathematical foundations of programming language semantics (New Orleans, LA, 1987)*, 2–22, *Lecture Notes in Comput. Sci.*, 298, Springer, Berlin-New York, 1988. (Luis M. Laita) **89h:68100** 68Q55 (03B15, 68N05)
- see also **Categories in computer science and logic**, **89m:18001**
- Gray, Ken** On the resolvability of  $B[3, 3; 9]$  block designs containing no repeated blocks. *J. Combin. Math. Combin. Comput.* **3** (1988), 105–119. (Giuseppe Pellegrino) **89f:05030** 05B05
- Gray, Mary W.** Sophie Germain (1776–1831). *Women of mathematics*, 47–56, *Greenwood, Westport, CT*, 1987. (see **89b:01071**) 01A70
- Gray, Peter** (with Scott, Stephen K.) Isothermal oscillations and relaxation ignitions in gas-phase reactions: the oxidations of carbon monoxide and hydrogen. (Russian) *Oscillations and traveling waves in chemical systems (Russian)*, 532–568, "Mir", Moscow, 1988. (see **89f:92003**) 92A40
- Gray, Robert J.** A class of  $K$ -sample tests for comparing the cumulative incidence of a competing risk. *Ann. Statist.* **16** (1988), no. 3, 1141–1154. (Margaret P. Gessaman) **89h:62079** 62G10
- Gray, Robert M.** (with Flynn, Thomas J.) Encoding of correlated observations. *IEEE Trans. Inform. Theory* **33** (1987), no. 6, 773–787. (Gur Dial) **89a:94009** 94A15 (94A29, 94A34, 94B35)
- (with Ayanoglu, Ender) The design of joint source and channel trellis waveform coders. *IEEE Trans. Inform. Theory* **33** (1987), no. 6, 855–865. (Andrea Sparro) **89b:94021** 94A40 (94A29, 94A34)
- (with Chou, Philip A.; Lookabaugh, Tom) Entropy-constrained vector quantization. *IEEE Trans. Acoust. Speech Signal Process.* **37** (1989), no. 1, 31–42. (Ved Priya) **89k:94031** 94A29 (94A12)
- Gray, William G.** (with Kinnmark, Ingemar P. E.) Fourth-order accurate one-step integration methods with large imaginary stability limits. *Numer. Methods Partial Differential Equations* **2** (1986), no. 1, 63–70. (H. Brunner) **89b:65175** 65L05 (65L07)
- see also **Computational methods in water resources**, **89m:76002** and **89m:76003**
- Gray, William J.** (with Scott, Meckinley) An  $M/G/1$  type vacation queueing model with exceptional service for certain customers. *Appl. Math. Modelling* **13** (1989), no. 2, 103–109. (U. Narayan Bhat) **89m:60228** 60K25 (90B22)
- Graybill, Franklin A.** (with Burdick, Richard K.) The present status of confidence interval estimation on variance components in balanced and unbalanced random models. *Comm. Statist. Theory Methods* **17** (1988), no. 4, 1165–1195. (Not in MR) **62J10**
- (with Lu, Tai-Fang C.; Burdick, Richard K.) Confidence intervals on a difference of expected mean squares. *J. Statist. Plann. Inference* **18** (1988), no. 1, 35–43. (I. Guttman) **89a:62173** 62J10 (62F25)
- Grayson, Daniel R.** (with Gillet, H.) The loop space of the  $Q$ -construction. *Illinois J. Math.* **31** (1987), no. 4, 574–597. (A. J. Berrick) **89h:18012** 18F25 (19D06)
- Exact sequences in algebraic  $K$ -theory. *Illinois J. Math.* **31** (1987), no. 4, 598–617. (Jan Stienstra) **89f:18011** 18F25 (19D10, 19D55)
- The  $K$ -theory of semilinear endomorphisms. *J. Algebra* **113** (1988), no. 2, 358–372. (Introduction) **89i:16021** 16A54 (18F25, 19D99, 19G38)
- Grayson, Matthew A.** The heat equation shrinks embedded plane curves to round points. *J. Differential Geom.* **26** (1987), no. 2, 285–314. (R. Osserman) **89b:53005** 53A04 (35K99, 58G11)
- The shape of a figure-eight under the curve shortening flow. *Invent. Math.* **96** (1989), no. 1, 177–180. (Joel L. Weiner) **89m:53004** 53A04 (58F25)
- Graziani, F. R.** Quantum probability distributions in the early Universe. I. Equilibrium properties of the Wigner equation. *Phys. Rev. D* (3) **38** (1988), no. 4, 1122–1130. (Summary) **89h:83044a** 83F05 (83C45)
- Quantum probability distributions in the early Universe. II. The quantum Langevin equation. *Phys. Rev. D* (3) **38** (1988), no. 4, 1131–1140. (Summary) **89h:83044b** 83F05 (83C45)
- Graziani, G.** (with Piva, R.; Morino, L.) Boundary integral equation method for unsteady viscous and inviscid flows. *Advanced boundary element methods (San Antonio, Tex., 1987)*, 297–304, *Springer, Berlin-New York*, 1988. (Summary) **89b:65299** 65N99
- Grebennikov, E. A.** ★ Введение в теорию резонансных систем. (Russian) [Introduction to the theory of resonance systems] *Moskov. Gos. Univ., Moscow*, 1987. 176 pp. (G. B. Gustafson) **89d:34001** 34–02 (34C29, 34E05, 58F05, 58F27, 70K30)
- Grebennikov, A. I.** A spline-approximation method for solving some ill-posed problems. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 3, 533–537; translated in *Soviet Math. Dokl.* **37** (1988), no. 1, 102–105. (Anton Suhadolc) **89c:65068** 65J10 (47A50, 65R20)
- Grebennikov, M. F.** The field of geometric objects of a three-component distribution of an affine space. (Russian) *Differentsial'naya Geom. Mnogobraz. Figur* No. 18 (1987), 21–24, 136. (Summary) **89j:53010** 53A15 (53A55)
- Grebogi, Celso** (with Brown, Reggie; Ott, Edward) The goodness of ergodic adiabatic invariants. *J. Statist. Phys.* **49** (1987), no. 3–4, 511–550. (G. Benettin) **89c:58076** 58F13 (70H05, 70K50, 82A05)
- (with Ott, Edward; Yorke, James A.) Unstable periodic orbits and the dimension of chaotic attractors. *Phys. Rev. A* (3) **36** (1987), no. 7, 3522–3524. (From the text) **89m:58139** 58F13
- (with Ott, Edward; Yorke, James A.) Chaos, strange attractors, and fractal basin boundaries in nonlinear dynamics. *Science* **238** (1987), no. 4827, 632–638. (Summary) **89b:58113** 58F13 (58–02, 70K50)
- (with Hammel, Stephen M.; Yorke, James A.) Numerical orbits of chaotic processes represent true orbits. *Bull. Amer. Math. Soc. (N.S.)* **19** (1988), no. 2, 465–469. (Arkady S. Pikovsky) **89m:58180** 58F30 (58F08, 58F13)



- (with Battellino, Peter M.; Ott, Edward; Yorke, James A.; Yorke, E. D.) Multiple coexisting attractors, basin boundaries and basic sets. *Phys. D* 32 (1988), no. 2, 296–305. (Summary) **89h:58172** 58F13 (34C15)
- (with Bleher, Siegfried; Ott, Edward; Brown, Reggie) Fractal boundaries for exit in Hamiltonian dynamics. *Phys. Rev. A* (3) 38 (1988), no. 2, 930–938. (Summary) **89g:58127** 58F13 (58F05, 70H05, 70K50)
- (with Ott, Edward; Yorke, James A.) Roundoff-induced periodicity and the correlation dimension of chaotic attractors. *Phys. Rev. A* (3) 38 (1988), no. 7, 3688–3692. (From the text) **89i:58006** 58F13 (63D99)
- Grecchi, V.** (with Bentosela, F.; Caliceti, E.; Maioli, M.; Sacchetti, A.) Analyticity and asymptotics for the Stark-Wannier states. *J. Phys. A* 21 (1988), no. 16, 3321–3331. (M. Demuth) **89j:81289** 81H20
- Grechbanovskii, Evgenii** (with Pinsker, I. Sh.; Kipnis, Victor) The use of conditional cutoffs in a forward selection procedure. *Comm. Statist. Theory Methods* 16 (1987), no. 8, 2227–2241. (Summary) **89g:62106** 62J05
- Grechushnikov, B. N.** (with Konstantinova, A. F.) Crystal optics of absorbing and gyrotropic media. Crystal symmetries. *Comput. Math. Appl.* 16 (1988), no. 5–8, 637–655. (see **89j:60029**) **82A60** (78A99)
- Grechsch, W.** ★ Stochastische Evolutionsgleichungen und deren Steuerung. (German) [Stochastic evolution equations and their control] With English, French and Russian summaries. Teubner-Texte zur Mathematik [Teubner Texts in Mathematics], 98. *BSB B. G. Teubner Verlagsgesellschaft, Leipzig*, 1987. 212 pp. ISBN 3-322-00406-6 (Ludwig Arnold) **89c:60071** 60H15 (93E20)
- e-optimal Steuerung einer linearen parabolischen Ito-Gleichung. [e-optimal control of a linear parabolic Ito equation] *Math. Nachr.* 134 (1987), 7–20. (Claudia Simionescu) **89h:93115** 93E20 (93C20)
- Green, Carlo** On forced oscillations of Lagrangian systems. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* 18 (1986), no. 2, 192–199. (Mario Girardi) **89k:70036** 70H35 (58E10, 58F22, 70K40)
- Remarks on periodic solutions for some dynamical systems with singularities. *Periodic solutions of Hamiltonian systems and related topics* (Il Ciocco, 1986), 169–173, NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci., 209, Reidel, Dordrecht-Boston, MA, 1987. (Tomasz Kapitaniak) **89a:34047** 34C25 (58E05, 58F22)
- Remarks on periodic solutions, with prescribed energy, for singular Hamiltonian systems. *Comment. Math. Univ. Carolin.* 28 (1987), no. 4, 661–672. (Vittorio Coti Zelati) **89e:58049** 58F05 (34C25, 58E05, 58F22)
- Periodic solutions of a class of singular Hamiltonian systems. *Nonlinear Anal.* 12 (1988), no. 3, 259–269. (Michele Matzeu) **89d:58040** 58F05 (34C25, 58E05, 58F22)
- Green, Gabriele H.** On L-fuzzy integrals of measurable functions. *J. Math. Anal. Appl.* 128 (1987), no. 2, 581–585. (T. Thiruvikraman) **89a:28020** 28E10 (03E72)
- (with Bassanezi, Rodney C.) On functionals representable by fuzzy measures. *J. Math. Anal. Appl.* 133 (1988), no. 1, 44–56. (T. Thiruvikraman) **89m:28037** 28E10 (03E72)
- Green, Silvio** (with Boratyński, Maksymilian) When does an ideal arise from the Ferrand construction? (Italian summary) *Boll. Un. Mat. Ital. B* (7) 1 (1987), no. 1, 247–258. (Monica Ida) **89a:14012** 14C99 (13H15, 14M05)
- (with Cumino, Caterina; Manaresi, Mirella) Hyperplane sections of weakly normal varieties in positive characteristic. *Proc. Amer. Math. Soc.* 106 (1989), no. 1, 37–42. (N. Mohan Kumar) **89k:14014** 14E05 (14E22)
- Green, Émile** Sur les groupes symplectiques. [On symplectic groups] *Demonstratio Math.* 19 (1986), no. 4, 841–850 (1987). (J. D. Zund) **89c:51026** 51N30 (20G45)
- Greedy, S. W.** (with Hyland, D. C.) Reduced-order compensation: linear-quadratic reduction versus optimal projection. *J. Guidance Control Dynamics* 11 (1988), no. 4, 328–335. (Not in MR) **49D40**
- Green, A. E.** (with Naghdi, P. M.) Further developments in a nonlinear theory of water waves for finite and infinite depths. *Philos. Trans. Roy. Soc. London Ser. A* 324 (1987), no. 1577, 47–72. (Summary) **89c:76033** 76B15 (76A02)
- Green, Barry** On the Riemann-Roch theorem for orders in the ring of valuation vectors of a function field. *Manuscripta Math.* 60 (1988), no. 3, 259–276. (Jan van Geel) **89d:1107** 11R58 (14C40)
- (with van Wyk, L.) On the small and essential ideals in certain classes of rings. *J. Austral. Math. Soc. Ser. A* 46 (1989), no. 2, 262–271. (E. Jespers) **89k:13016** 13F05 (16A42, 16A66)
- Green, E. L.** Disjoint ideals. *Comm. Algebra* 16 (1988), no. 8, 1543–1562. (Sverre O. Smalø) **89i:16026** 16A64 (16A46, 16A89)
- (with Auslander, Maurice) Trace quotient modules. *Illinois J. Math.* 32 (1988), no. 3, 534–556. (Héctor A. Merklen) **89g:16038** 16A64
- Leedham-Green, E. S.** see **Leedham-Green, E. S.**
- Green, H. S.** (with Triffitt, T.) Information processing by the cortex. *Comput. Math. Appl.* 15 (1988), no. 9, 743–756. (Summary) **89d:92026** 92A09
- (with Bracken, A. J.; Bass, Ludvik) Groups defined on images in fluid diffusion. *J. Austral. Math. Soc. Ser. B* 30 (1988), no. 1, 101–119. (Summary) **89c:76098** 76R50 (80A32)
- (with Triffitt, T.) A zonal model of cortical functions. *J. Theoret. Biol.* 136 (1989), no. 1, 87–116. (Summary) **89i:92017** 92A09
- Green, J. A.** A theorem on modular endomorphism rings. *Illinois J. Math.* 32 (1988), no. 3, 510–519. (David Benson) **89b:20016** 20C20
- (with Nogueira, Marie Theresa A. D.) Almost split sequences over p-adic rings. *Math. Z.* 199 (1988), no. 1, 43–54. (Jean-Pierre van Deuren) **89g:16010** 16A16 (16A26)
- Green, Jack** (with Ragab, Aisha) Estimation of the parameters of the loglogistic distribution based on order statistics. *Amer. J. Math. Management Sci.* 7 (1987), no. 3–4, 307–323. (Summary) **89a:62069** 62F10 (62G30, 62N05)
- (with Ragab, Aisha) Optimal predictive method for estimating the inverse Gaussian density. (Italian summary) *Metron* 45 (1987), no. 1–2, 51–61. (Not in MR) **62F15**
- Green, Jerry R.** (with Laffont, Jean-Jacques) Incentive theory with data compression. *Uncertainty, information, and communication*, 239–253, Cambridge Univ. Press, Cambridge-New York, 1986. (Ki Hang Kim) **89b:90050** 90A15
- (with Laffont, Jean-Jacques) Alternative limited communication systems: centralization versus interchange of information. *Uncertainty, information, and communication*, 255–270, Cambridge Univ. Press, Cambridge-New York, 1986. (Ki Hang Kim) **89b:90051** 90A15
- Green, Judy** Carol Karp (1926–1972). *Women of mathematics*, 86–91, Greenwood, Westport, CT, 1987. (see **89b:01071**) **01A70**
- Christine Ladd-Franklin (1847–1930). *Women of mathematics*, 121–128, Greenwood, Westport, CT, 1987. (see **89b:01071**) **01A70**
- (with LaDuke, Jeanne) Women in the American mathematical community: the pre-1940 Ph.D.s. *Math. Intelligencer* 9 (1987), no. 1, 11–23. (Michael Otte) **89f:01096** **01A80** (01A60)
- Green, Linda** (with Federgruen, Awi) Queueing systems with service interruptions. *Oper. Res.* 34 (1986), no. 5, 752–768 (1987). (Summary) **89a:60216** 60K25 (90B22)
- (with Svoronos, Antony) A convexity result for single-server exponential loss systems with nonstationary arrivals. *J. Appl. Probab.* 25 (1988), no. 1, 224–227. (Takehisa Fujisawa) **89h:60162** 60K25 (90B22)
- (with Federgruen, Awi) Queueing systems with service interruptions. II. *Naval Res. Logist.* 35 (1988), no. 3, 345–358. (Jacqueline Loris-Teghem) **89b:60156** 60K25 (90B22)
- Green, Mark** (with Lazarsfeld, Robert) A deformation theory for cohomology of analytic vector bundles on Kähler manifolds, with applications. *Mathematical aspects of string theory* (San Diego, Calif., 1986), 416–440, Adv. Ser. Math. Phys., 1, World Sci. Publishing, Singapore, 1987. (see **89m:81001**) **32L10** (32G10, 58G05)
- (with Lazarsfeld, Robert) Deformation theory, generic vanishing theorems, and some conjectures of Enriques, Catanese and Beauville. *Invent. Math.* 90 (1987), no. 2, 389–407. (Sheldon H. Katz) **89h:32025** 32G10 (14C22, 14H15)
- A new proof of the explicit Noether-Lefschetz theorem. *J. Differential Geom.* 27 (1988), no. 1, 155–159. (Piotr Pragacz) **89c:14028** 14F99 (14G20, 14J10)
- Green, Michael** All-pass matrices, the positive real lemma, and unit canonical correlations between future and past. *J. Multivariate Anal.* 24 (1988), no. 1, 143–154. (Zhen Hua Wang) **89c:62153** 62M10 (60G10, 60G55, 62H20, 93E03)
- Balanced stochastic realizations. *Linear Algebra Appl.* 98 (1988), 211–247. (Summary) **89g:93019** 93B17 (93B15, 93B25, 93E03)
- On inner-outer factorization. *Systems Control Lett.* 11 (1988), no. 2, 93–97. (Summary) **89e:93048** 93B25 (15A23, 93B10, 93B15)
- Green, Michael B.** Introduction to string and superstring theory. I. *From the Planck scale to the weak scale: toward a theory of the universe*, Vol. 1, 2 (Santa Cruz, Calif., 1986), 139–275, World Sci. Publishing, Singapore, 1987. (Arthur Greenspoon) **89e:81001a** 81–02 (81E30, 83E30)
- Superstring theory. *General relativity and gravitation* (Stockholm, 1986), 72–85, Cambridge Univ. Press, Cambridge-New York, 1987. (Helmut Rumpf) **89c:81002** 81–02 (81E30, 81E99)
- Developments in superstring field theory. *Quantum field theory and quantum statistics*, Vol. 2, 557–577, Hilger, Bristol, 1987. (Elias Kiritsis) **89e:81148** 81E99 (81–02, 81E30)
- Strings and superstrings. *Unification of fundamental interactions* (Marstrand, 1986), 7–18, Royal Swedish Acad. Sci., Stockholm, 1987. (see **89f:81005**) 81–02 (81E30)
- Superstrings. (Bulgarian) Translated from the English by S. N. Kalitsin. *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* 29(62) (1987), no. 3, 159–180. (Editors) **89e:81149** 81E99 (81E30, 83E30)
- (with Schwarz, John H.; Witten, Edward) ★ Superstring theory. Vol. 1. Introduction. Second edition. Cambridge Monographs on Mathematical Physics. Cambridge University Press, Cambridge-New York, 1988. x+470 pp. ISBN 0-521-35752-7 (Editors) **89f:81001a** 81–02 (81E30, 81Exx, 83–02, 83E30, 83Exx)
- (with Schwarz, John H.; Witten, Edward) ★ Superstring theory. Vol. 2. Loop amplitudes, anomalies and phenomenology. Second edition. Cambridge Monographs on Mathematical Physics. Cambridge University Press, Cambridge-New York, 1988. xii+596 pp. ISBN 0-521-35753-5 (Editors) **89f:81001b** 81–02 (81E30, 81Exx, 83–02, 83E30, 83Exx)
- A relative error bound for balanced stochastic truncation. *IEEE Trans. Automat. Control* 33 (1988), no. 10, 961–965. (Not in MR) **93B15** (93E03)
- (with Anderson, B. D. O.) Hilbert transform and gain/phase error bounds for rational functions. *IEEE Trans. Circuits and Systems* 35 (1988), no. 5, 528–535. (Summary) **89k:94005** 94A11 (44A15)
- (with Seiberg, Nathan) Contact interactions in superstring theory. *Nuclear Phys. B* 299 (1988), no. 3, 559–586. (Olaf Lechtenfeld) **89g:81076** 81E99 (81E30)
- Green, Mick** A modelling approach to multiple correspondence analysis. *COMPSTAT 1988* (Copenhagen, 1988), 317–322, Physica, Heidelberg, 1988. (see **89f:62004**) **62H05**
- Green, Paul** (with Canary, R. D.; Epstein, D. B. A.) Notes on notes of Thurston. *Analytical and geometric aspects of hyperbolic space* (Coventry/Durham, 1984), 3–92, London Math. Soc. Lecture Note Ser., 111, Cambridge Univ. Press, Cambridge-New York, 1987. (William Dunbar) **89e:57008** 57N10 (32G15, 32G99, 34A20, 57M99, 58F17)
- Green, Paul S.** (with Hübsch, Tristan) Calabi-Yau hypersurfaces in products of semi-ample surfaces. *Comm. Math. Phys.* 115 (1988), no. 2, 231–246. (L. Bădescu) **89c:14065** 14J40 (14J10, 14J25, 14J30, 32C10, 32J15, 53C55)
- Green, Peter J.** Penalized likelihood for general semi-parametric regression models. (French summary) *Internat. Statist. Rev.* 55 (1987), no. 3, 245–259. (Summary) **89h:62103** 62J05
- (with Lenth, Russell V.) Consistency of deviance-based M estimators. *J. Roy. Statist. Soc. Ser. B* 49 (1987), no. 3, 326–330. (H. L. Harter) **89b:62072** 62F10 (62F35)
- Regression, curvature and weighted least squares. *Math. Programming* 42 (1988), no. 1 (Ser. B), 41–51. (Title) **89h:62104** 62J05 (90C50)
- Cunningham-Green, R. A.** see **Cunningham-Green, R. A.**
- Green, Robert E.** (with Chui, C. K.) Adaptive Kalman filtering for instrumentation radar. *Transactions of the fourth Army conference on applied mathematics and computing* (Ithaca, N.Y., 1986), 953–978, ARO Rep., 87-1, U.S. Army Res. Office, Research Triangle Park, NC, 1987. (H. Vincent Poor) **89b:93105** 93E11
- Green, Timothy A.** A generalized matching problem. *Math. Sci.* 13 (1988), no. 2, 115–120. (Lars Holst) **89j:60018** 60C05
- Green, W. L.** (with Morley, T. D.) Four variational formulations of the contraharmonic mean of operators. *SIAM J. Algebraic Discrete Methods* 8 (1987), no. 4, 670–673. (T. Ando) **89f:47029** 47A60 (15A48, 93C05)
- Greenacre, Michael J.** Clustering the rows and columns of a contingency table. *J. Classification* 5 (1988), no. 1, 39–51. (Not in MR) **62H17** (62H30)
- Greenberg, Betsy S.** (with Wolff, Ronald W.) Optimal order of servers for tandem queues in light traffic. *Management Sci.* 34 (1988), no. 4, 500–508. (Summary) **89b:90089** 90B22
- Greenberg, Brian V.** (with Fagan, James T.) Making tables additive in the presence of zeros. *Amer. J. Math. Management Sci.* 7 (1987), no. 3–4, 359–383. (Summary) **89a:62135**

- 62H17  
**Greenberg, H. J.** see **Greenberg, Harvey J.**  
**Greenberg, Harold** A new reduction method in integer programming. *Discrete Appl. Math.* **21** (1988), no. 2, 169–172. (Summary) **89b:90113** 90C10  
 — Solution to a linear Diophantine equation for nonnegative integers. *J. Algorithms* **9** (1988), no. 3, 343–353. (Béla Vizvári) **89j:11122** 11Y50 (11D04, 90C10)  
**Greenberg, Harvey J.** Advancing basis construction in linear programming. *Ann. Oper. Res.* **5** (1986), no. 1–4, 413–424. (Summary) **89d:90130** 90C05  
 — Diagnosing infeasibility in min-cost network flow problems. I. Dual infeasibility. *IMA J. Math. Management* **1** (1986/87), no. 2, 99–109. (Summary) **89b:90076** 90B10  
 — (with Glover, Fred) Logical testing for rule-based management. *Ann. Oper. Res.* **12** (1988), no. 1–4, 199–215. (Not in MR) **89T20** (90B50)  
 — see also **Mathematical models for decision support**, **89g:90136**  
**Greenberg, J. M.** Hyperbolic heat transfer problems with phase transitions. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 186–192, *Notes Numer. Fluid Mech.*, **24**, Vieweg, Braunschweig, 1989. (see **89j:35007**) **80A20**  
 — Continuum limits of discrete gases. *Arch. Rational Mech. Anal.* **105** (1989), no. 4, 367–376. (Carlo Cercignani) **89m:82033** 82A40 (76N99, 76P05)  
**Greenberg, John L.** Breaking a “vicious circle”: unscrambling A.-C. Clairaut’s iterative method of 1743. (French and German summaries) *Historia Math.* **15** (1988), no. 3, 228–239. (C. H. Edwards, Jr.) **89j:01031** 01A50  
**Greenberg, Joseph** A strategic aspect of the strong positive association condition. *Econom. Lett.* **26** (1988), no. 3, 225–226. (Summary) **89e:90020** 90A08  
 — Payoffs in generalized sequential bargaining games. *Econom. Lett.* **28** (1988), no. 1, 33–35. (Summary) **89j:90309** 90D30 (90A14, 90D20)  
**Greenberg, Marvin Jay** Aristotle’s axiom in the foundations of geometry. *J. Geom.* **33** (1988), no. 1–2, 53–57. (H. W. Guggenheimer) **89m:51019** 51F05 (51M05, 51M10)  
**Greenberg, Peter** Pseudogroups of  $C^1$  piecewise projective homeomorphisms. *Pacific J. Math.* **129** (1987), no. 1, 67–75. (J. M. Boardman) **89c:57039** 57R32 (58H05, 58H10)  
 — Classifying spaces for foliations with isolated singularities. *Trans. Amer. Math. Soc.* **304** (1987), no. 1, 417–429. (Takashi Tsuboi) **89a:57037** 57R32 (58H10)  
 — (with Astey, L.; Micha, E.; Pastor, Guillermo) Some fibred cobordism groups are not finitely generated. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 327–328. (R. E. Stong) **89f:57050** 57R90  
**Greenberg, Ronald I.** (with Leiserson, Charles E.) A compact layout for the three-dimensional tree of meshes. *Appl. Math. Lett.* **1** (1988), no. 2, 171–176. (Summary) **89g:68032a** 68Q35  
 — (with Leiserson, Charles E.) Erratum to: “A compact layout for the three-dimensional tree of meshes”. *Appl. Math. Lett.* **1** (1988), no. 3, 315. (Editors) **89g:68032b** 68Q35  
 — (with Foster, M. J.) Lower bounds on the area of finite-state machines. *Inform. Process. Lett.* **30** (1989), no. 1, 1–7. (Summary) **89m:68069** 68Q35 (68Q25)  
**Greenberg, Steven** (with McQueen, David M.; Peskin, Charles S.) Three-dimensional fluid dynamics in a two-dimensional amount of central memory. *Wave motion: theory, modelling, and computation* (Berkeley, Calif., 1986), 85–146, *Math. Sci. Res. Inst. Publ.*, **7**, Springer, New York-Berlin, 1987. (Summary) **89a:76002** 76-08 (65V05, 76D05)  
**Greenberg, William** (with Ganchev, Alexander H.; van der Mee, C. V. M.) Perturbation of bisemigroups and boundary value problems for abstract kinetic equations. *Proceedings of the 15th international symposium on rarefied gas dynamics, Vol. I* (Grado, 1986), 125–133, Teubner, Stuttgart, 1986. (Summary) **89f:47063** 47D05 (47B50, 82A40, 82A70, 85A25)  
 — (with Ganchev, Alexander H.; van der Mee, C. V. M.) Perturbation analysis of analytic bisemigroups and applications to linear transport theory. *Special classes of linear operators and other topics* (Bucharest, 1986), 83–99, *Oper. Theory: Adv. Appl.*, **28**, Birkhäuser, Basel-Boston, MA, 1988. (V. Protopopescu) **89d:47089** 47D05 (47A55, 82A70)  
 — (with van der Mee, C. V. M.; Waluś, Włodzimierz) Strong solutions of stationary equations in abstract kinetic theory. *Integral Equations Operator Theory* **11** (1988), no. 2, 186–204. (Reinhard Illner) **89e:42010** 42A50 (34K10, 76P05, 82A70)  
 — (with Ganchev, Alexander H.) Linear half space transport equations with accretive, invertible collision operators. *Transport Theory Statist. Phys.* **17** (1988), no. 1, 93–105. (Luigia Arlotti) **89b:82059** 82A70 (47A50)  
**Greenberger, Daniel M.** see **New techniques and ideas in quantum measurement theory**, **89m:81005**  
**Greene, Brian R.** (with Kirklin, Kelley H.; Miron, Paul) Topology and geometry in superstring-inspired phenomenology. *Mathematical aspects of string theory* (San Diego, Calif., 1986), 441–487, *Adv. Ser. Math. Phys.*, **1**, World Sci. Publishing, Singapore, 1987. (see **89m:81001**) **53C80** (81E30, 83E30)  
 — (with Kirklin, Kelley H.) On the equivalence of the two most favoured Calabi-Yau compactifications. *Comm. Math. Phys.* **113** (1987), no. 1, 105–114. (Sergey Merkulov) **89b:32017** 32C10 (32G10, 53C55, 81G20, 83E15)  
 — (with Aspinwall, P. S.; Kirklin, Kelley H.; Miron, Paul) Searching for three-generation Calabi-Yau manifolds. *Nuclear Phys. B* **294** (1987), no. 1, 193–222. (Pankaj Topiwala) **89c:53071** 53C25 (14J30, 32G13, 32J99, 81E99, 83E30)  
 — (with Distler, Jacques; Kirklin, Kelley H.; Miron, Paul) Evaluation of  $\tilde{T}^3$  Yukawa couplings in a three-generation superstring model. *Phys. Lett. B* **195** (1987), no. 1, 41–49. (Andrew A. Bytsenko) **89c:81114** 81E99 (53C80, 81E30, 81G20)  
 — (with Distler, Jacques) Aspects of (2, 0) string compactifications. *Nuclear Phys. B* **304** (1988), no. 1, 1–62. (Marc Henneaux) **89m:81135** 81E99 (32J05, 53C80, 81E30, 83E30)  
**Greene, Curtis** A class of lattices with Möbius function  $\pm 1$ . *0. European J. Combin.* **9** (1988), no. 3, 225–240. (R. P. Dilworth) **89i:06012** 06C05 (05A99)  
 — Posets of shuffles. *J. Combin. Theory Ser. A* **47** (1988), no. 2, 191–206. (Bernd Graw) **89d:06003** 06A10 (05A15)  
**Greene, Daniel H.** (with Knuth, Donald E.) ★ Математические методы анализа алгоритмов. (Russian) [Mathematical methods for the analysis of algorithms] Translated from the second English edition and with an appendix by B. B. Pokhodze. Translation edited by Yu. V. Matiyasevich. With a preface and comments by Pokhodze and Matiyasevich. “Mir”, Moscow, 1987. 120 pp. (Editors) **89a:68101** 68Q25 (68-02)  
**Greene, John** Lagrange inversion over finite fields. *Pacific J. Math.* **130** (1987), no. 2, 313–325. (Gary L. Mullen) **89a:11129** 11T21 (11B65)  
 — Bijections related to statistics on words. *Discrete Math.* **68** (1988), no. 1, 15–29. (S. Milne) **89g:05015** 05A30 (05A15, 05A19)  
**Greene, Ned** Animating Escher with computer graphics. *M. C. Escher: art and science* (Rome, 1985), 263–268, North-Holland, Amsterdam-New York, 1986. (see **89m:80011**) **00A05**  
**Greene, Robert E.** (with Krantz, Steven G.) Biholomorphic self-maps of domains. *Complex analysis, II* (College Park, Md., 1985–86), 136–207, *Lecture Notes in Math.*, **1276**, Springer, Berlin-New York, 1987. (Y. Zelinskij (Zbl 625:32024)) **89c:32063** 32M05 (32F15, 32H99, 32M10)  
 — (with Krantz, Steven G.) Characterizations of certain weakly pseudoconvex domains with noncompact automorphism groups. *Complex analysis (University Park, Pa., 1986)*, 121–157, *Lecture Notes in Math.*, **1268**, Springer, Berlin-New York, 1987. (Giorgio Patrizio) **89c:32044** 32F15  
 — (with Wu, Hung Hsi) Lipschitz convergence of Riemannian manifolds. *Pacific J. Math.* **131** (1988), no. 1, 119–141. (Karsten Grove) **89g:53063** 53C20  
**Greenfield, M. A.** (with Fymat, A. L.; Lo, S. C.; Findley, D.) Optimization of the radiotherapy treatment plan. *Appl. Math. Comput.* **27** (1988), no. 2, 117–146. (Summary) **89d:92012** 92A07  
**Greengard, Claude** (with Thomann, Enrique) On DiPerna-Majda concentration sets for two-dimensional incompressible flow. *Comm. Pure Appl. Math.* **41** (1988), no. 3, 295–303. (Jean Leray) **89d:35141** 35Q10 (76C99)  
 — (with Thomann, Enrique) Singular vortex systems and weak solutions of the Euler equations. *Phys. Fluids* **31** (1988), no. 10, 2810–2813. (Summary) **89b:76013** 76C05 (76-08)  
**Greengard, Leslie** ★ The rapid evaluation of potential fields in particle systems. *ACM Distinguished Dissertations. MIT Press, Cambridge, MA-London*, 1988. xiv+91 pp. ISBN 0-262-07110-X (G. R. Allcock) **89k:31008** 31C20 (31-04, 70-08, 78-04, 78A30)  
 — (with Carrier, J.; Rokhlin, Vladimir V.) A fast adaptive multipole algorithm for particle simulations. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 4, 669–686. (Summary) **89e:65008** 65C20 (70-08, 78-08, 78A35, 82-08)  
**Greenhalgh, David** Threshold and stability results for an epidemic model with an age-structured meeting rate. *IMA J. Math. Appl. Med. Biol.* **5** (1988), no. 2, 81–100. (Andris Abakus) **89g:92040** 92A15  
 — Some results on optimal control applied to epidemics. *Math. Biosci.* **88** (1988), no. 2, 125–158. (R. K. Watson) **89d:92064** 92A15 (92A07, 93C75, 93E20)  
 — Analytical threshold and stability results on age-structured epidemic models with vaccination. *Theoret. Population Biol.* **33** (1988), no. 3, 266–290. (Pauline van den Driessche) **89e:92040** 92A15 (35K55)  
**Greenhut, Melvin L.** (with Norman, George; Hung, Chao-shun) ★ The economics of imperfect competition. A spatial approach. *Cambridge University Press, Cambridge-New York*, 1987. xx+408 pp. ISBN 0-521-30552-7; 0-521-31564-6 (Beth Allen) **89g:90001** 90-02 (90A12, 90A14, 90A30)  
**Greenland, Sander** (with Mickey, Ruth M.) Closed form and dually consistent methods for inference on strict collapsibility in  $2 \times 2 \times K$  and  $2 \times J \times K$  tables. *J. Roy. Statist. Soc. Ser. C* **37** (1988), no. 3, 335–343. (Not in MR) **62H17**  
**Greenleaf, F. P.** (with Corwin, Lawrence; Grelaud, G.) Direct integral decompositions and multiplicities for induced representations of nilpotent Lie groups. *Trans. Amer. Math. Soc.* **304** (1987), no. 2, 549–583. (Hidenori Fujiwara) **89c:22013** 22E25 (22E27)  
 — (with Corwin, Lawrence) Complex algebraic geometry and calculation of multiplicities for induced representations of nilpotent Lie groups. *Trans. Amer. Math. Soc.* **305** (1988), no. 2, 601–622. (Gail Ratcliff) **89f:22012** 22E27 (22E45)  
**Greenlees, J. P. C.** How blind is your favourite cohomology theory? *Exposition. Math.* **6** (1988), no. 3, 193–208. (John McCleary) **89j:55001** 55-02 (55N20, 55T15)  
 — Stable maps into free G-spaces. *Trans. Amer. Math. Soc.* **310** (1988), no. 1, 199–215. (Donald W. Kahn) **89j:55010** 55P42 (55T15)  
**Greenman, J. V.** (with Fryer, M. J.) ★ Optimisation theory. Applications in OR and economics. *Edward Arnold, London*, 1987. viii+293 pp. ISBN 0-7131-3527-1 (G. Di Pillo) **89c:90001** 90-01  
**Greensite, J.** Contact interactions of closed superstrings. *International Workshop on Superstrings, Cosmology, Composite Structures* (College Park, MD, 1987), 3–12, *World Sci. Publishing, Singapore*, 1987. (Summary) **89c:81126** 81E99 (81E30)  
 — (with Klinkhamer, F. R.) Superstring amplitudes and contact interactions. *Nuclear Phys. B* **304** (1988), no. 1, 108–128. (Summary) **89c:81106** 81E15 (81E30)  
**Greenspan, Donald** (with Casulli, Vincenzo) ★ Numerical analysis for applied mathematics, science, and engineering. *Addison-Wesley Publishing Company, Advanced Book Program, Redwood City, CA*, 1988. x+341 pp. ISBN 0-201-09286-7 (Charles Saltzer) **89g:65004** 65-01  
 — Particle modeling in science and technology. *Numerical methods* (Miskolc, 1986), 51–66, *Colloq. Math. Soc. János Bolyai*, **50**, North-Holland, Amsterdam-New York, 1988. (I. Norman Katz) **89c:65012** 65C20  
 — Mechanisms of capillarity via supercomputer simulation. *Comput. Math. Appl.* **16** (1988), no. 4, 331–340. (W. Langlois) **89f:76030** 76B45 (70F99, 76-04)  
 — see also **Numerical methods**, **89b:65012**  
**Greenspan, H. P.** On the vorticity of a rotating mixture. *J. Fluid Mech.* **191** (1988), 517–528. (Summary) **89m:76068** 76T05 (76U05)  
**Greenwell, Raymond N.** (with Landman, Bruce M.) Values and bounds for Ramsey numbers associated with polynomial iteration. *Discrete Math.* **68** (1988), no. 1, 77–83. (D. J. Kleitman) **89d:05021** 05A99 (11B83)  
**Greenwood, Allen G.** (with Kwan, Stephen K.; Davis, Mark M.) A simulation model for determining variable worker requirements in a service operation with time-dependent customer demand. *Queueing Systems Theory Appl.* **3** (1988), no. 3, 265–275. (Summary) **89b:90101** 90B22  
**Greenwood, Priscilla E.** (with Hooghiemstra, Gerard) An extreme-type limit law for a storage process. *Math. Oper. Res.* **13** (1988), no. 2, 232–242. (J. Gani) **89d:60191** 60K30 (60F99, 60J10, 90B05)  
**Gregor, Jiri** The multidimensional z-transform and its use in solution of partial difference equations. *Kybernetika (Prague) Suppl.* **24** (1988), no. 1–2, 40 pp. (L. Berg) **89g:44008** 44A55 (39A10, 65E05, 94A11)  
**Gregorac, R. J.** (with Peters, Justin) Symmetric norms on  $R^n$ . *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 7, 583–593. (B. Klotzek) **89k:51018** 51F99 (46B20)



- Gregori, R. *see* Gregory, R. T.
- Gregorio, E. Generalized Morita equivalence for linearly topologized rings. *Rend. Sem. Mat. Univ. Padova* 79 (1988), 221-246. (Wolfgang Gröbzl) **89k:16076** 16A89 (16A80)
- de Gregorio, S. *see* De Gregorio, S.
- Gregory, D. A. (with de Caen, D.) Factorizations of symmetric designs. *J. Combin. Theory Ser. A* 49 (1988), no. 2, 323-337. (Giordano Gallina) **89i:05068** 05B30
- Gregory, John Numerical methods for extremal problems in the calculus of variations and optimal control theory. *Bull. Amer. Math. Soc. (N.S.)* 18 (1988), no. 1, 31-34. (Marco Gaviato) **89a:49003** 49A21 (65K10, 93B40)
- (with Zeman, Marvin) Spline matrices and their applications to some higher order methods for boundary value problems. *SIAM J. Numer. Anal.* 25 (1988), no. 2, 399-410. (Auréli Galántai) **89c:65016** 65D07 (65L10)
- Gregory, John A. (with Dyn, Nira; Levin, David) A 4-point interpolatory subdivision scheme for curve design. *Comput. Aided Geom. Design* 4 (1987), no. 4, 257-268. (Antonio López-Carmona) **89c:65022** 65D10
- graves Gregory, Nicola *see* Graves Gregory, Nicola
- Gregory, R. *see* Gregory, Ruth
- Gregory, R. D. (with Wan, F. Y. M.) The interior solution for linear problems of elastic plates. *Trans. ASME Ser. E J. Appl. Mech.* 55 (1988), no. 3, 551-559. (Summary) **89f:73046** 73K10
- Gregory, R. T. (with Krishnamurthy, E. V.) ★ Безошибочные вычисления. (Russian) [Error-free calculations] Методы и приложения. [Methods and applications] Translated from the English by Kh. D. Ikramov and A. V. Knyazev. Translation edited and with a foreword by Ikramov. "Mir", Moscow, 1988. 208 pp. ISBN 5-03-001145-5 (Editors) **89j:65030** 65Fxx (65-04, 65G05, 68U99)
- Gregory, Richard L. Puzzles of pictures as untouchable objects. *M. C. Escher: art and science* (Rome, 1985), 135-142. North-Holland, Amsterdam-New York, 1986. (see **89m:00011**) **92A25** (00A05)
- Gregory, Ruth Effective action for a cosmic string. *Phys. Lett. B* 206 (1988), no. 2, 199-204. (Miao Li) **89j:83093** 83F05 (83E30)
- (with Laflamme, R.) Hypercylindrical black holes. *Phys. Rev. D* (3) 37 (1988), no. 2, 305-308. (L. M. Sokolowski) **89e:83069** 83E15 (83C25)
- Gregson, Robert A. M. (with Price, Ian R.) Nonlinear dynamics in a complex cubic one-dimensional model for sensory psychophysics. *Acta Appl. Math.* 11 (1988), no. 1, 1-17. (L. E. H. Trainor) **89c:92086** 92A25 (58F08, 70K99)
- Greguš, O. E. (with Kirichenko, V. V.) Finitely generated modules over semimaximal rings. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 37-42, 124. (Summary) **89d:16034** 16A53
- Gret, P. *see* Gray, Peter
- Greibach, Sheila A. (with Rolim, José D. P.) On the IO-complexity and approximation languages. *Inform. Process. Lett.* 28 (1988), no. 1, 27-31. (Klaus W. Wagner) **89f:68022** 68Q15 (03D05, 03D15)
- Grim, P. (with Cambern, Michael) Mappings of continuous functions on hyper-Stonean spaces. 15th winter school in abstract analysis (Srní, 1987). *Acta Univ. Carolina—Math. Phys.* 28 (1987), no. 2, 31-40. (Pilar Cembranos) **89f:46081** 46E40 (46B20, 46E15)
- (with Jamison, J. E.) Hilbert spaces have the strong Banach-Stone property for Bochner spaces. *Math. Z.* 196 (1987), no. 4, 511-515. (Autorreferat (Zbl 618:46040)) **89m:46071** 46E40 (46C99)
- (with Cambern, Michael) Spaces of continuous vector functions as duals. *Canad. Math. Bull.* 31 (1988), no. 1, 70-78. (Pilar Cembranos) **89e:46041** 46E40 (46B10, 46G10)
- Greiner, A. (with Strittmatter, W.; Honerkamp, J.) Numerical integration of stochastic differential equations. *J. Statist. Phys.* 51 (1988), no. 1-2, 95-108. (W. Hackenbroch) **89b:60076** 60H10 (65U05, 82-08, 82A97)
- Greiner, Günther (with Nagel, Rainer) Growth of cell populations via one-parameter semigroups of positive operators. *Mathematics applied to science* (New Orleans, La., 1986), 79-105, Academic Press, Boston, MA, 1988. (Eugenio Sinestrari) **89f:92041** 92A15 (47B55, 47D05)
- Greiner, H. Computing complex chemical equilibria by generalized linear programming. *Math. Comput. Modelling* 10 (1988), no. 7, 529-550. (Summary) **89d:92095** 92A40 (90C50)
- Greiner, Martin (with Scheid, Werner; Herrmann, Richard) Collective spin from the linearisation of  $(2l+1)$ -dimensional Schrödinger equations as used for nuclear surface vibrations. *J. Phys. A* 21 (1988), no. 15, 3227-3237. (A. J. Coleman) **89m:81196** 81G30 (81D27)
- Greiner, Peter (with Beals, Richard) ★ Calculus on Heisenberg manifolds. *Annals of Mathematics Studies*, 119. Princeton University Press, Princeton, NJ, 1988. x+194 pp. ISBN 0-691-08500-5; 0-691-08501-3 (Kenneth G. Miller) **89m:35223** 35S05 (32F20, 35-02, 47G05, 58G15)
- Greiner, Russell Learning by understanding analogies. *Artificial Intelligence* 35 (1988), no. 1, 81-125. (Not in MR) **68T05**
- Greiner, W. (with Pop, A.; Săndulescu, A.; Scutaru, H.) Charge equilibration mode as an open quantum system. *Z. Phys. A* 329 (1988), no. 3, 357-364. (Summary) **89c:81186** 81F20 (81C20, 82A99)
- Greinke, Werner Mathematische Kartographie. [Mathematical cartography] *Praxis Math.* 30 (1988), no. 1, 15-41. (H. W. Guggenheimer) **89f:51001** 51-01
- yassa-Greiss, Fathy F. *see* Yassa-Greiss, Fathy F.
- Grekas, S. On the strong lifting property for products. *Bull. Soc. Math. Grèce (N.S.)* 28 (1987), part A, 63-70. (Vladimir L. Levin) **89c:28010** 28A51 (46G15)
- gaponov-Grekhor, A. V. *see* Gaponov-Grekhor, A. V.
- Grekos, Georges Convexité, moyennes, densité, lacunes. [Convexity, means, density, lacunas] *Groupe de travail en théorie analytique et élémentaire des nombres*, 1986-1987, 39-43, Publ. Math. Orsay, 88-01, Univ. Paris XI, Orsay, 1988. (Introduction) **89e:11019** 11B05
- Grelaud, G. (with Corwin, Lawrence; Greenleaf, F. P.) Direct integral decompositions and multiplicities for induced representations of nilpotent Lie groups. *Trans. Amer. Math. Soc.* 304 (1987), no. 2, 549-583. (Hidenori Fujiwara) **89b:22013** 22E25 (22E27)
- Grell, J. C. (with Farrell, E. J.) Cycle decompositions of linear benzene chains. *Match* No. 21 (1986), 325-337. (N. Trinajstić) **89a:92082** 92A40 (05C99)
- *see also* Gutman, I. **89a:92083**
- Greller, Larry D. (with Samardžija, Nikola; Wasserman, E.) Nonlinear chemical kinetic schemes derived from mechanical and electrical dynamical systems. *J. Chem. Phys.* 90 (1989), no. 4, 2296-2304. (Summary) **89k:80026** 80A30 (58F13, 92A40)
- Greiner, Douglas Fundamental domains for the general linear group. *Pacific J. Math.* 132 (1988), no. 2, 293-317. (Leonid Vulakh) **89d:11055** 11H55 (11F72)
- Grenkova, L. N. (with Molchanov, S. A.) Lifshits asymptotics for one-dimensional random operators. (Russian) *Mat. Zametki* 44 (1988), no. 1, 38-50, 154; translated in *Math. Notes* 44 (1988), no. 1-2, 508-515. (Shi Sheng Zhang) **89m:60145** 60H25 (47E05, 82A42)
- Gresing, D. (with van Hemmen, J. L.; Huber, A.; Kühn, Reimer) Nonlinear neural networks. I. General theory. *J. Statist. Phys.* 50 (1988), no. 1-2, 231-257. (E. Pessa) **89i:92018** 92A09 (68Q75, 82A57)
- (with van Hemmen, J. L.; Huber, A.; Kühn, Reimer) Nonlinear neural networks. II. Information processing. *J. Statist. Phys.* 50 (1988), no. 1-2, 259-293. (E. Pessa) **89m:92020** 92A09 (68Q80, 82A57, 82A99, 92A25)
- Gres, P. G. On the conjecture on the number of characters in a  $p$ -block. (Russian) *Mat. Zametki* 42 (1987), no. 5, 642-649, 761. (Leonid Krop) **89f:20012** 20C20
- Gresho, Philip M. *see* Numerical methods in laminar and turbulent flow, **89f:78001**
- Gresky, Wolfgang Die Gauß-Webersche Telegraphenleitung, erneutes Verlegen zum Universitätsjubiläum 1887. [The Gauss-Weber telegraph line. Renewed placement on the occasion of the university anniversary 1887] *Gauss-Ges. Göttingen Mitt.* No. 23-24 (1986/87), 31-38. (Not in MR) **01A55**
- Grey, D. R. Harvesting under density-dependent mortality and fecundity. *J. Math. Biol.* 26 (1988), no. 2, 193-197. (H. A. DeKleene) **89g:92041** 92A15 (90A30)
- Supercritical branching processes with density independent catastrophes. *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 2, 413-416. (Dean H. Fearn) **89g:60257** 60J80
- A note on explosiveness of Markov branching processes. *Adv. in Appl. Probab.* 21 (1989), no. 1, 226-228. (William Barnard Krebs) **89m:60203** 60J80
- Greywall, Mahesh S. Streamwise computation of three-dimensional incompressible potential flows. *J. Comput. Phys.* 78 (1988), no. 1, 178-193. (Summary) **89e:76008** 76-08 (76D99)
- Grib, A. A. Quantum logic: possible applications. (Russian) *Patterns in the development of modern mathematics* (Russian), 313-317, "Nauka", Moscow, 1987. (M. J. Mączyński) **89e:81011** 81B10 (00A69, 03G12, 06C15)
- (with Nesteruk, A. V.; Pritomanov, S. A.) Quantum effects of massless fields in anisotropic spacetime. *Classical Quantum Gravity* 5 (1988), no. 8, 1053-1063. (Summary) **89c:83037** 83C47 (81E20)
- (with Nesteruk, A. V.) Quantum effects and elimination of the conformal anomaly in anisotropic space-time. *Soviet J. Nuclear Phys.* 47 (1988), no. 3, 538-542; translated from *Yadernaya Fiz.* 47 (1988), no. 3, 844-852 (Russian). (Summary) **89j:81141** 81E20 (81E15)
- Gribachev, Kostadin (with Ganchev, Georgi; Mikhova, Vessela)  $B$ -connections and their conformal invariants on conformally Kaehler manifolds with  $B$ -metric. *Publ. Inst. Math. (Beograd) (N.S.)* 42(56) (1987), 107-121. (Sorin Dragomir) **89c:53096** 53C50 (53C15)
- Gribov, D. A. (with Afanas'ev, S. A.; Kuznetsov, Yu. I.) Investigation of processes in a nonautonomous autostochastic system. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* 29 (1988), no. 6, 16-20, 113. (Summary) **89c:58166** 58F13 (94C05)
- Gribov, I. V. (with Solov'ev, L. S.) On the problem of the collapse of a gravitating ball. (Russian) *Dokl. Akad. Nauk SSSR* 296 (1987), no. 3, 566-571. (A. K. Guts) **89b:83022** 83C15
- Gribova, N. V. An estimate for the rate of convergence to the normal law of truncated linear combinations of order statistics. (Russian) *Mat. Zametki* 42 (1987), no. 5, 739-746, 764. (Slobodanka Janković) **89c:60056** 60F05 (62G30)
- Gribomont, E. Pascal Proving systolic arrays. CAAP'88 (Nancy, 1988), 185-199, *Lecture Notes in Comput. Sci.*, 299, Springer, Berlin-New York, 1988. (Summary) **89c:68097** 68Q80 (68Q55)
- Gribov, V. N. A new hypothesis on the nature of quark and gluon confinement. *Unification of fundamental interactions* (Marstrand, 1986), 164-168, Royal Swedish Acad. Sci., Stockholm, 1987. (see **89f:81005**) **81G05**
- Grice, William A. (with Golley, B. W.) A finite strip-element for plane stress. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 239-247, North-Holland, Amsterdam-New York, 1988. (Summary) **89c:73003** 73-08
- Grieco, M. (with Zucchetti, B.) Construction of some classes of self-converse duality-graphs. Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. 1 (Catania, 1986). *Ars Combin.* 24 (1987), A, 9-19. (Alan Tucker) **89e:05100** 05C20
- Griego, J. (with Ferrari, J. A.; Falco, E. E.) The Kaluza-Klein theory and four-dimensional spacetime. *Gen. Relativity Gravitation* 21 (1989), no. 1, 69-78. (L. M. Sokolowski) **89m:83085** 83E15 (53B50)
- Griener-Guillod, Sylvie Sous-groupes maximaux de groupes classiques associés à certaines  $C^*$ -algèbres. [Maximal subgroups of classical groups associated with certain  $C^*$ -algebras] *Comment. Math. Helv.* 63 (1988), no. 1, 48-74. (Thierry Fack) **89d:46067** 46L55 (22D25, 46L05)
- Griera, Mercè (with Huguet, L.) Association schemes and difference sets defined on two weight codes. *Applied algebra, algorithmics and error-correcting codes* (Toulouse, 1984), 107-111, *Lecture Notes in Comput. Sci.*, 228, Springer, Berlin-New York, 1986. (Summary) **89b:94030** 94B05 (05B10, 05B30)
- On  $s$ -sum-sets ( $s$  odd) and three-weight projective codes. *Applicable algebra, error-correcting codes, combinatorics and computer algebra* (Karlsruhe, 1986), 68-76, *Lecture Notes in Comput. Sci.*, 307, Springer, Berlin-New York, 1988. (Summary) **89c:94018** 94B60 (05B10, 11B25)
- Gries, David (with Xue, Jin Yun) Generating a random cyclic permutation. *BIT* 28 (1988), no. 3, 569-572. (William Gasarch) **89j:68117** 68R05 (68C60)
- (with Xue, Jin Yun) Developing a linear algorithm for cubing a cyclic permutation. *Sci. Comput. Programming* 11 (1988), no. 2, 161-165. (Not in MR) **68Q20** (68Q25)
- Grieser, D. (with Aigner, M.) Hook-free colorings and a problem of Hanson. *Combinatorica* 8 (1988), no. 2, 143-148. (J. R. Griggs) **89m:05001** 05A05
- Grieve, A. P. A further note on some Wishart expectations. *Metrika* 35 (1988), no. 3-4, 197-202. (Not in MR) **62H05**
- Griewank, Andreas On the iterative solution of differential and integral equations using second updating techniques. *The state of the art in numerical analysis* (Birmingham,

- 1986), 299-324, *Inst. Math. Appl. Conf. Ser. New Ser.*, 9, Oxford Univ. Press, New York, 1987. (Summary) **89h:65129** 65L10 (65R20)
- The local convergence of Broyden-like methods on Lipschitzian problems in Hilbert spaces. *SIAM J. Numer. Anal.* **24** (1987), no. 3, 684-705. (Erich Bohl) **89h:65143** 65J15 (65H10, 90C30)
- Griffiths, David** (with Bramson, Maury) Survival of cyclical particle systems. *Percolation theory and ergodic theory of infinite particle systems* (Minneapolis, Minn., 1984-1985), 21-29, *IMA Vol. Math. Appl.*, 8, Springer, New York-Berlin, 1987. (Peter Donnelly) **89h:60234** 60K35
- (with Cox, J. Theodore) Recent results for the stepping stone model. *Percolation theory and ergodic theory of infinite particle systems* (Minneapolis, Minn., 1984-1985), 73-83, *IMA Vol. Math. Appl.*, 8, Springer, New York-Berlin, 1987. (K. Fleischmann (Zbl 625:60115)) **89f:60118** 60K35 (92A15)
- (with Bramson, Maury; Cox, J. Theodore) Occupation time large deviations of the voter model. *Probab. Theory Related Fields* **77** (1988), no. 3, 401-413. (T. M. Liggett) **89c:60116** 60K35 (60F10)
- (with Bramson, Maury) Flux and fixation in cyclic particle systems. *Ann. Probab.* **17** (1989), no. 1, 26-45. (J. Theodore Cox) **89k:60154** 60K35 (82A99)
- Griffin, J. H.** (with Foelsche, G. A.; Bielak, J.) Transient response of joint-dominated space structures: a new linearization technique. *AIAA J.* **26** (1988), no. 10, 1278-1285. (Summary) **89f:73059** 73K40 (70K40, 73K30)
- Griffin, Philip S.** The influence of extremes on the law of the iterated logarithm. *Probab. Theory Related Fields* **77** (1988), no. 2, 241-270. (W. E. Pruitt) **89i:60067** 60F15
- Nonclassical law of the iterated logarithm behaviour for trimmed sums. *Probab. Theory Related Fields* **78** (1988), no. 2, 293-319. (R. J. Tomkins) **89c:60066** 60F15 (60G50)
- Griffin, T. B.** (with Reddy, B. D.; Martin, John B.) A numerical study of holonomic approximations to problems in plasticity. *Internat. J. Numer. Methods Engng.* **26** (1988), no. 6, 1449-1466. (Summary) **89h:73018** 73G99 (73-08)
- Griffing, Gary** The coffee nonassociative coalgebra. *Comm. Algebra* **16** (1988), no. 11, 2387-2414. (E. J. Taft) **89k:17012** 17A50 (16A24)
- A nonisomorphism theorem for coffee Lie coalgebras. *J. Algebra* **115** (1988), no. 2, 431-441. (E. J. Taft) **89f:17030** 17B99
- Griffith, Daniel A.** (with Huff, James; Sonis, Michael; Leifer, Lloyd A.; Straussfogel, Debra) Dynamic central place theory: an appraisal and future prospects. *Transformations through space and time* (Hansholm, 1985), 121-151, *NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci.*, 29, Nijhoff, Dordrecht, 1986. (Introduction) **89j:92074** 92A20 (90A17, 90A30)
- Model identification for estimating missing values in space-time data series: monthly inflation in the U.S. urban system, 1977-1985. *Transformations through space and time* (Hansholm, 1985), 309-319, *NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci.*, 29, Nijhoff, Dordrecht, 1986. (see **89c:90072**) 62M10 (90A20)
- see also *Transformations through space and time*, **89c:90072**
- Griffith, Phillip** (with Evans, E. Graham, Jr.) Syzygies: the codimension of zeros of a nonzero section. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 485-489, *Proc. Sympos. Pure Math.*, 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (G. Horrocks) **89e:13014** 13D05 (14F05)
- (with Evans, E. Graham, Jr.) Binomial behavior of Betti numbers for modules of finite length. *Pacific J. Math.* **133** (1988), no. 2, 267-276. (Jürgen Herzog) **89d:13014** 13C99 (13D99, 13H05)
- Griffiths, D. F.** see *Numerical analysis* **1987**, **89h:65011**
- Griffiths, D. V.** (with Smith, I. M.) ★ Programming the finite element method. Second edition. *John Wiley & Sons, Ltd., Chichester*, 1988. xii+469 pp. ISBN 0-471-91552-1 (Ian Gladwell) **89d:65101** 65N30 (65-00, 65V05, 73K25, 76-08)
- Griffiths, John F.** Thermokinetic oscillations in homogeneous gas-phase oxidations. (Russian) *Oscillations and traveling waves in chemical systems* (Russian), 569-607, "Mir", Moscow, 1988. (see **89f:92003**) 92A40
- Griffiths, Phillip A.** ★ Внешние дифференциальные системы и вариационное исчисление. (Russian) [Exterior differential systems and the calculus of variations] Translated from the English by S. K. Lando. Translation edited and with a preface by V. I. Arnol'd. With an appendix by A. M. Vershik and V. Ya. Gershkovich. "Mir", Moscow, 1986. 360 pp. (Editors) **89h:58016** 58A15 (49F05, 58E15)
- Griffiths, R. C.** (with Ethier, S. N.) The infinitely-many-sites model as a measure-valued diffusion. *Ann. Probab.* **15** (1987), no. 2, 515-545. (Thomas G. Kurtz) **89a:60130** 60G57 (60J70, 92A10)
- On the distribution of points in a Poisson Dirichlet process. *J. Appl. Probab.* **25** (1988), no. 2, 336-345. (Susan Wilson) **89g:92026** 92A10 (60E05)
- Griffiths, Robert B.** (with Tang, Lei-Han) Localized defects in classical one-dimensional models. *J. Statist. Phys.* **53** (1988), no. 3-4, 853-892. (M. Lawrence Glasser) **89k:82075** 82A57 (58F25)
- Griffith, Dzh.** see *Griffiths, John F.*
- Griffith, F.** see *Griffiths, Phillip A.*
- Grigelionis, B.** (with Mikulevičius, R.) Weak solutions of the stochastic evolution equations and invariance principles. *Probability theory and mathematical statistics*, Vol. I (Vilnius, 1985), 513-522, *VNU Sci. Press, Utrecht*, 1987. (I. Gyöngy) **89a:60148** 60H15
- (with Mikulevičius, R.) Functional limit theorems for queueing systems under heavy traffic. I. (Russian) *Litovsk. Mat. Sb.* **27** (1987), no. 3, 441-454. (W. Szczęotka) **89e:60187** 60K25 (60F17, 90B22)
- (with Mikulevičius, R.) Functional limit theorems for queueing systems under heavy traffic. II. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 4, 660-673. (W. Szczęotka) **89c:60188** 60K25 (60F17, 90B22)
- Griggs, Jerrold R.** (with Kustin, Andrew R.; Ross, Jeffrey A.; Stahl, Jürgen) The lexicographic sum of Cohen-Macaulay and shellable ordered sets. *Graphs Combin.* **1** (1985), no. 2, 145-163. (Andrew Vince) **89g:06004** 06A10 (13H10, 52A25, 57Q05)
- (with Füredi, Z.; Odlyzko, A. M.; Shearer, James B.) Ramsey-Sperner theory. Special issue: ordered sets (Oberwolfach, 1985). *Discrete Math.* **63** (1987), no. 2-3, 143-152. (Summary) **89b:05003** 05A05
- (with Yeh, Roger K.-C.; Grinstead, Charles M.) Partitioning Boolean lattices into chains of subsets. *Order* **4** (1987), no. 1, 65-67. (E. C. Milner) **89c:06006** 06A23
- Problems on chain partitions. Proceedings of the First Japan Conference on Graph Theory and Applications (Hakone, 1986). *Discrete Math.* **72** (1988), no. 1-3, 157-162. (Introduction) **89m:06001** 06A10 (05A05)
- Saturated chains of subsets and a random walk. *J. Combin. Theory Ser. A* **47** (1988), no. 2, 262-283. (D. J. Kleitman) **89h:05004** 05A05 (60C05, 60J15)
- Griggs, T. S.** (with Grannell, M. J.; Phelan, J. S.) Countably infinite Steiner triple systems. Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. 2 (Catania, 1986). *Ars Combin.* **24** (1987), B, 189-216. (Barbu C. Kestenband) **89c:05018** 05B07 (51E10)
- (with Grannell, M. J.) Some applications of computers in design theory. *Computers in mathematical research* (Cardiff, 1986), 135-148, *Inst. Math. Appl. Conf. Ser. New Ser.*, 14, Oxford Univ. Press, New York, 1988. (Rudolf Mathon) **89m:05016** 05B05
- (with Grannell, M. J.; Phelan, J. S.) A new look at an old construction for Steiner triple systems. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), A, 55-60. (Elizabeth J. Billington) **89d:05036** 05B07
- Grigis, Alain** Coefficients de réflexion pour les potentiels de Hardy. [Reflection coefficients for Hardy potentials] *Séminaire sur les équations aux dérivées partielles 1986-1987*, Exp. No. XXII, 10 pp., *Ecole Polytech., Palaiseau*, 1987. (J. S. Joel) **89a:58110** 58G25 (34B30, 58F19)
- Estimations asymptotiques des intervalles d'instabilité pour l'équation de Hill. [Asymptotic estimates of instability intervals for the Hill equation] *Ann. Sci. École Norm. Sup.* (4) **20** (1987), no. 4, 641-672. (F. M. Arscott) **89c:34056** 34B30
- (with Gérard, C.) Precise estimates of tunneling and eigenvalues near a potential barrier. *J. Differential Equations* **72** (1988), no. 1, 149-177. (D. Hinton) **89h:34024** 34B25 (81C05)
- Grignani, G.** (with Mintchev, M.) The effect of gauge and Lorentz anomalies on the beta functions of heterotic sigma models. *Nuclear Phys. B* **302** (1988), no. 2, 330-348. (Summary) **89e:81107** 81E15 (81E40)
- (with Mintchev, M.) Renormalization and conformal properties of  $\sigma$  models on Riemannian space with torsion. *Phys. Rev. D* (3) **38** (1988), no. 10, 3163-3173. (Summary) **89k:81089** 81E15 (81E13, 81E40)
- Grigoliya, M. P.** A modification of a characteristic problem for quasilinear hyperbolic systems with singularities. (Russian) *Boundary value problems* (Russian), 148-154, 201, *Perm. Politekh. Inst., Perm*, 1983. (see **89c:00008**) 35L70
- Grigoliya, R. Sh.** ★ Свободные алгебры неклассических логики. (Russian) [Free algebras of nonclassical logics] "Metsniereba", Tbilisi, 1987. 112 pp. (Wiesław A. Dudek) **89g:03094** 03G25
- Grigolyuk, E. I.** (with Shalashilin, V. I.) ★ Проблемы нелинейного деформирования. (Russian) [Problems of nonlinear deformation] Метод продолжения решения по параметру в нелинейных задачах механики твердого деформируемого тела. [The method of continuation of the solution with respect to the parameter in nonlinear problems of the mechanics of solid deformable bodies]. "Nauka", Moscow, 1988. 232 pp. ISBN 5-02-013800-2 (L. P. Lebedev) **89m:73001** 73-02 (34B15, 73C50, 73K10, 73K15)
- see also *Hahn, Hans Georg*, **89f:73001** and *Brebbia, Carlos Alberto et al.*, **89i:65002**
- Grigor, R. S.** see *Florya, R. S.*
- Grigor'chuk, R. I.** Semigroups with cancellations of degree growth. (Russian) *Mat. Zametki* **43** (1988), no. 3, 305-319, 428; translated in *Math. Notes* **43** (1988), no. 3-4, 175-183. (B. Pondělíček) **89f:20065** 20M05 (20M35, 68Q70)
- Grigorenko, N. L.** Linear differential games with incomplete information. (Russian) *Multistage, hierarchical, differential and noncooperative games* (Russian), 4-11, *Kalinin. Gos. Univ., Kalinin*, 1987. (Bolesław Tolwiński) **89i:90183** 90D26 (34K35, 49A45)
- A problem of pursuit in  $n$ -person differential games. (Russian) *Mat. Sb. (N.S.)* **135** (177) (1988), no. 1, 36-45, 142; translated in *Math. USSR-Sb.* **63** (1989), no. 1, 35-45. (Quan Zheng) **89d:90263** 90D26 (49A45, 90D10, 90D25)
- Grigorenko, N. V.** Logarithmic singularities of some classical linear differential equations. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 8, 1455-1457, 1472. (Summary) **89f:34003** 34A20 (34A30)
- Grigorenko, V. V.** (with Zlobin, G. G.) Numerical investigation of the statistical dynamics of a nonautonomous system of phase self-tuning of frequency. (Russian. English summary) *Teoret. Élektronika*, No. 41 (1986), 61-64. (Not in MR) **34F05**
- Grigorenko, Ya. M.** Numerical solution of differential equations in the theory of shells with different formulations. (Russian) *Current problems in mathematical physics*, Vol. II (Russian) (Tbilisi, 1987), 216-223, 389, *Tbilis. Gos. Univ., Tbilisi*, 1987. (see **89j:00031**) 73K15 (73-08)
- (with Kryukov, N. N.) ★ Численное решение задач статистики гибких слоистых оболочек с переменными параметрами. (Russian) [Numerical solution of problems of the statics of flexible layered shells with variable parameters] "Naukova Dumka", Kiev, 1988. 262 pp. ISBN 5-12-009298-5 (L. P. Lebedev) **89j:73086** 73L99 (65P05, 73-04, 73-08, 73K30)
- Grigor'ev, D. Yu.** Computational complexity in polynomial algebra. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1452-1460, *Amer. Math. Soc., Providence, RI*, 1987. (A. K. Lenstra) **89c:68063** 68Q40 (03C10, 03C60, 12-04, 68-02, 68Q25)
- (with Vorob'ev, N. N., Jr.) Solving systems of polynomial inequalities in subexponential time. *J. Symbolic Comput.* **5** (1988), no. 1-2, 37-64. (Maurice Mignotte) **89h:13001** 13-04 (13B25, 68Q40, 90C10)
- (with Vorob'ev, N. N., Jr.) Solution of systems of polynomial inequalities over real-closed fields in subexponential time. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **174** (1988), *Teor. Slozhn. Vychisl.* **3**, 3-36, 180. (Summary) **89m:68073** 68Q40 (03C60, 03D15, 12D99, 68Q25)
- Grigor'ev, V. V.** (with Korov'yakov, A. N.) A study of the quality of multiply connected discrete systems based on the comparison method. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 9, 58-66; translated in *Automat. Remote Control* **49** (1988), no. 9, part 1, 1154-1160. (From the text) **89m:93004** 93A15 (93B99, 93C55, 93D05)
- Grigor'ev, Yu. N.** (with Meleshko, S. V.) Group analysis of the Boltzmann integro-differential equation. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 2, 323-327. (Nina B. Maslova) **89c:82007** 82A40 (45J05, 58G35)
- Grigor'eva, A. N.** An algorithm of linear complexity for recognition of isomorphism of plane images. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **174** (1988), *Teor. Slozhn. Vychisl.* **3**, 101-121, 181. (Summary) **89i:68056** 68Q25 (68T10)
- Grigor'eva, O. V.** (with Skimel', V. N.) Investigation of the limit behavior of the solutions of a system of differential equations by the comparison method. (Russian) *The method of*



- Lyapunov functions in the analysis of the dynamics of systems (Irkutsk, 1985) (Russian), 29-36, 322, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (From the text) 89c:93123 93C15 (70E99, 70K99)*
- Grigoriadis, Michael D.** (with Goldfarb, Donald) A computational comparison of the Dinic and network simplex methods for maximum flow. *Ann. Oper. Res.* **13** (1988), no. 1-4, 83-123. (Summary) **89d:90090 90B10**
- Grigorian, L. Sh.** (with Avakyan, R. M.) The gravitation theory in bimetric formulation. *Astrophys. and Space Sci.* **146** (1988), no. 1, 183-193. (Summary) **89e:83052 83D05**
- Grigorieff, Rolf Dieter** Some stability inequalities for compact finite difference schemes. *Math. Nachr.* **135** (1988), 93-101. (G. A. Evans) **89g:65165 65R20**
- Grigoria, M.** (with Ariaratnam, S. T.) Response of linear systems to polynomials of Gaussian processes. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 4, 905-910. (Kazimierz Sobczyk) **89m:70058 70L05**
- Grigorov, Kh.** (with Stoev, G. S.) A class of Cremona transformations in  $P_4$  of type  $T_{4,4,4}$ . (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 2, 205-210 (1987). (Doru Ștefănescu) **89f:51094 51N35 (14E07, 14N05)**
- (with Georgiev, G. Kh.) Groups of Cremona transformations of degree  $(2n+1)$  in  $P_4$ . (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* **22** (1986), no. 4, 175-184 (1987). (J. Čizmar) **89k:14015 14E05 (14N05)**
- Grigoryan, A. T.** Development of some trends in mechanics in the USSR. (Russian) *Studies in the history of physics and mechanics, 1987 (Russian), 5-32, 244, "Nauka", Moscow, 1987. (Summary) 89c:01033 01A60 (01A72)*
- Max Planck and his role in the development of science (on the 130th anniversary of his birth). (Russian) *Studies in the history of physics and mechanics, 1987 (Russian), 152-159, 245, "Nauka", Moscow, 1987. (Summary) 89c:01063 01A70 (81-03)*
- Isaac Newton's work of genius. (Russian) *Studies in the history of physics and mechanics, 1987 (Russian), 177-191, 245-246, "Nauka", Moscow, 1987. (Summary) 89c:01022 01A45*
- 30th anniversary of the Soviet National Union of Historians of the Natural Sciences and Technology. (Russian. English summary) *Voprosy Ist. Estestvozn. i Tekhn.* **1987**, no. 4, 10-17. (Not in MR) **01A74**
- Lev Davidovich Landau. (Russian) On the 80th anniversary of his birth. *Studies in the history of physics and mechanics, 1988 (Russian), 139-143, "Nauka", Moscow, 1988. (see 89g:01002) 01A70*
- (with Aleksandrov, A. D.; Demidov, S. S.; Matvievskaia, G. P.; Sirazhdinov, S. S.; Yushkevich, A. P.) Boris A. Rozenfeld: on the 70th anniversary of his birth. *Historia Math.* **15** (1988), no. 1, 1-8. (Editors) **89c:01041 01A70**
- Lev Davidovich Landau (on the 80th anniversary of his birth). (Russian) *Voprosy Ist. Estestvozn. i Tekhn.* **1988**, no. 1, 116-119. (Editors) **89g:01052 01A70**
- see also Hoffmann, Dieter. **89b:01049** and *Studies in the history of physics and mechanics, 89j:01062*
- Grigoryan, G. S.** (with Danielyan, E. A.) Multidimensional limit theorems in a model with time-categorized absolute priorities. (Russian) *Probability distributions and mathematical statistics (Russian) (Fergana, 1983), 131-155, 491, "Fan", Tashkent, 1986. (Kh. T. Tashmanov) 89b:60153 60K25*
- Grigoryan, M. D.** Expansion in a system of Takenaka-Malmquist rational fractions in Orlicz spaces. (Russian. Armenian summary) *Erevan Gos. Univ. Uchen. Zap. Estestv. Nauki* **1985**, no. 1(158), 21-27. (Not in MR) **30B99 (42C15, 46E30)**
- Grigoryan, Suren Arshakovich** The distribution of values of generalized analytic functions. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 6, 1293-1296; translated in *Soviet Math. Dokl.* **36** (1988), no. 2, 379-381. (Toma V. Tonev) **89d:30052 30G35**
- Grigoryeva, E. V.** (with Kotomtseva, L. A.; Samson, A. M.) Regular and chaotic dynamics in a laser with a saturable absorber. *Phys. Lett. A* **130** (1988), no. 6-7, 344-349. (Summary) **89d:78042 78A60**
- Grin, Maik** see Green, Michael B.
- Grikenis, Arunas** see Grikenis, Rimantas
- Grikenis, Rimantas** see Grikenis, Rimantas
- Grikkh, Z. A.** Statistical modeling of isotropic random fields on a sphere. (Russian) *Asymptotic methods in the investigation of stochastic models (Russian), 18-20, 142, Acad. Sci. Ukrain. SSR Inst. Math., Kiev, 1987. (Lutz Peter Klotz) 89c:60104 60G60 (65C20)*
- Grikenis, Arunas** Some properties of a "non-litonnement" exchange process. (Russian. English and Lithuanian summaries) *Met. Metody v Sotsial. Nauk. No. 19* (1986), 9-19, 99. (Introduction) **89i:90023 90A16 (90A14)**
- Grikenis, Rimantas** (with Švitra, Donatas) The possibility of constructing mathematical models for the dynamics of insect populations. (Russian. English and Lithuanian summaries) *Mathematical models in biology and medicine, No. 2 (Russian), 24-48, 187, Akad. Nauk Litovsk. SSR, Inst. Mat. i Kibernet., Vilnius, 1987. (Summary) 89a:92058 92A17*
- Grill, K.** (with Deheuvels, Paul; Erdős, Paul; Révész, P.) Many heads in a short block. *Mathematical statistics and probability theory, Vol. A (Bad Tatzmannsdorf, 1986), 53-67, Reidel, Dordrecht-Boston, MA-London, 1987. (J. Steinbach (Zbl 632:60027)) 89b:60073 60F15 (60F10)*
- On the last zero of a Wiener process. *Mathematical statistics and probability theory, Vol. A (Bad Tatzmannsdorf, 1986), 99-104, Reidel, Dordrecht-Boston, MA-London, 1987. (N. M. Zinchenko) 89f:60096 60J65 (60G17)*
- (with Csáki, Endre) On the large values of the Wiener process. *Stochastic Process. Appl.* **27** (1987), no. 1, 43-56. (S. J. Taylor) **89d:60055 60F15 (60J65)**
- (with Elek, G.) On a full protocol problem. *Probability theory and mathematical statistics with applications (Visegrad, 1985), 35-41, Reidel, Dordrecht-Boston, MA, 1988. (Lyuben R. Mutafchiev) 89g:60027 60C05*
- On the average of a random walk. *Statist. Probab. Lett.* **6** (1988), no. 5, 357-361. (Allan Gut) **89d:60125 60J15**
- Grillakis, Manoussos** Linearized instability for nonlinear Schrödinger and Klein-Gordon equations. *Comm. Pure Appl. Math.* **41** (1988), no. 6, 747-774. (John Albert) **89m:35192 35Q20 (35B35, 35L70, 81C05)**
- Grillenberger, Christian** (with Ziezold, Herbert) On the critical infection rate of the one-dimensional basic contact process: numerical results. *J. Appl. Probab.* **25** (1988), no. 1, 1-8. (T. M. Liggett) **89d:60198 60K35 (92A15)**
- Grim, Patrick** Truth, omniscience, and the knower. *Philos. Stud.* **54** (1988), no. 1, 9-41. (Stephen Read) **89j:03003 03A05 (03B45)**
- Grimaldi, Ralph P.** A generalization of the Fibonacci sequence. Proceedings of the seventeenth Southeastern international conference on combinatorics, graph theory, and computing (Boca Raton, Fla., 1986). *Congr. Numer.* **54** (1986), 123-128. (Introduction) **89f:11030 11B39**
- Grimble, M. J.** (with Šebek, M.; Hunt, K. J.) LQG regulation with disturbance measurement feedforward. *Internat. J. Control* **47** (1988), no. 5, 1497-1505. (A. P. Roberts) **89c:93228 93E20 (49D40, 93B25, 93B50, 93C55)**
- Optimal  $H_\infty$  multivariable robust controllers and the relationship to LQG design problems. *Internat. J. Control* **48** (1988), no. 1, 33-58. (Hsi-han Yeh) **89i:93028 93B28 (49D40, 93B50, 93C35, 93E20)**
- Single versus double Diophantine equation debate. Comments on: "Polynomial approach to Wiener filtering" [Internat. J. Control **47** (1988), no. 3, 681-696; MR 89a:93050] by A. P. Roberts and M. M. Newmann. *Internat. J. Control* **48** (1988), no. 5, 2161-2165. (Summary) **89j:93119 93E11 (93B25)**
- State-space approach to  $H_\infty$  optimal control. *Internat. J. Systems Sci.* **19** (1988), no. 8, 1451-1468. (Not in MR) **93B35 (93C55)**
- Convergence of explicit LQG self-tuning controllers. *Proc. IEEE-D* **135** (1988), no. 4, 309-322. (Lei Guo) **89c:93138 93C40 (49D40, 93E25)**
- Minimax design of optimal stochastic multivariable systems. *Proc. IEEE-D* **135** (1988), no. 6, 436-440. (Summary) **89m:49045 49B60 (49B40, 49D40, 93E20)**
- (with De La Salle, S.; Ho, D.) Relationship between internal model control and LQG controller structures. *Automatica—J. IFAC* **25** (1989), no. 1, 41-53. (Summary) **89k:93090 93B50 (93B35, 93E11)**
- (with Elsayed, A.; Shaked, U.) Application of spectral factorization to the linear discrete-time fixed-point smoothing problem. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 333-335. (Not in MR) **93E10 (93E14)**
- see also Johnson, M. A., (Not in MR)
- Grimes, Dale M.** Quantum theory: the classical theory of nonlinear electromagnetics. *Phys. D* **32** (1988), no. 1, 1-17. (Thomas O. Phillips) **89m:81016 81B05 (81G10)**
- Griminger, Olga** see Einstein, Albert. **89a:01102**
- Grimm, Richard** (with Girardi, G.) Chern-Simons forms and four-dimensional  $N = 1$  superspace geometry. *Nuclear Phys. B* **292** (1987), no. 1, 181-200. (Marc Henneaux) **89c:81124 81E99 (81E20, 81E30, 81G25, 83E30, 83E50)**
- (with Baulieu, Laurent; Bellon, M.) Beltrami parametrization for superstrings. *Phys. Lett. B* **198** (1987), no. 3, 343-348. (M. A. Namazi) **89c:81135 81E99 (53C80, 81E30)**
- Grimm, U.** (with Alcaraz, Francisco C.; Baake, Michael; Rittenberg, V.) Operator content of the  $XXZ$  chain. *J. Phys. A* **21** (1988), no. 3, L117-L120. (Muthiah Daniel) **89b:82101 82A68**
- Grimmer, R.** (with Desch, W.; Schappacher, W.) Well-posedness and wave propagation for a class of integrodifferential equations in Banach space. *J. Differential Equations* **74** (1988), no. 2, 391-411. (Kenneth B. Hannsgen) **89c:45012 45N05 (45K05, 47D05, 73F99)**
- (with Desch, W.) Smoothing properties of linear Volterra integro-differential equations. *SIAM J. Math. Anal.* **20** (1989), no. 1, 116-132. (Guenter Leugering) **89m:45014 45K05 (73F15)**
- (with Desch, W.) Singular relaxation moduli and smoothing in three-dimensional viscoelasticity. *Trans. Amer. Math. Soc.* **314** (1989), no. 1, 381-404. (Kenneth B. Hannsgen) **89k:73031 73F15 (45K05, 45N05, 47D05, 47G05)**
- Grimmett, G. R.** Long paths and cycles in a random lattice. *Random graphs '85 (Poznań, 1985), 69-76, North-Holland Math. Stud., 144, North-Holland, Amsterdam-New York, 1987. (R. T. Smythe) 89d:60194 60K35 (05C80, 60C05)*
- Interacting particle systems and random media: an overview. (French summary) *Internat. Statist. Rev.* **55** (1987), no. 1, 49-62. (Richard Holley) **89j:60132 60K35 (82A43)**
- (with Gandolfi, A.; Russo, L.) On the uniqueness of the infinite cluster in the percolation model. *Comm. Math. Phys.* **114** (1988), no. 4, 549-552. (R. T. Smythe) **89c:60199 60K35 (82A43)**
- (with Dekking, F. M.) Superbranching processes and projections of random Cantor sets. *Probab. Theory Related Fields* **78** (1988), no. 3, 335-355. (J. D. Biggins) **89f:60099 60J80 (60G99)**
- Grimshaw, R.** The modulation of short gravity waves by long waves or currents. *J. Austral. Math. Soc. Ser. B* **29** (1988), no. 4, 410-429. (Summary) **89f:76022 76B15 (86A05)**
- (with Pullin, D. L.) Finite-amplitude solitary waves at the interface between two homogeneous fluids. *Phys. Fluids* **31** (1988), no. 12, 3550-3559. (Summary) **89j:76032 76B15 (76B25, 76V05)**
- (with Hooper, A.) Travelling wave solutions of the Kuramoto-Sivashinsky equation. *Wave Motion* **10** (1988), no. 5, 405-420. (Yu. Z. Aleshkov) **89k:76039 76D33**
- Grimus, Walter** (with Ecker, Gerhard) Basis transformations in generation space and a criterion for the existence of standard forms for unitarily congruent matrices. *J. Phys. A* **21** (1988), no. 12, 2825-2833. (Jean Nuyts) **89k:81202 81G99 (15A21)**
- Grin, D.** see Greene, Daniel H.
- Grinberg, E. Ya.** see Grinbergs, Emanuels J.
- Grinberg, Eric L.** A boundary analogue of Morera's theorem in the unit ball of  $C^n$ . *Proc. Amer. Math. Soc.* **102** (1988), no. 1, 114-116. (Daniele Struppa) **89b:32005 32A10 (30E99, 43A85)**
- Grinbergs, Emanuels J.** Examples of non-Adam multigraphs. (Russian) *Litv. Mat. Eshvednik* **No. 31** (1988), 128-138, 253. (B. Zelinka) **89d:05087 05C20**
- Grincavičius, R.** On the solution of a second-order parabolic equation in a domain with an irregular boundary. (Russian) *Litovsk. Mat. Sb.* **27** (1987), no. 1, 203-205. (From the introduction) **89d:35074 35K20**
- Grinchenko, S. T.** (with Tarankova, N. D.) Analysis of the characteristics of the element-by-element reception of binary signals. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 10, 53-59; translated from *Radiotekhn. i Elektron.* **32** (1987), no. 6, 1191-1198 (Russian). (D. Stanomir) **89g:94007 94A12 (94A29, 94B70)**
- Grinchenko, V. T.** (with Gomilko, A. M.; Meleshko, V. V.) On the possibilities of a method of homogeneous solutions in a mixed problem in elasticity theory for a semigroup. (Russian) *Teoret. i Prikl. Mekh. (Kiev/Donetsk)* **No. 18** (1987), 3-8, i. (Summary) **89j:73015 73C35 (73-08)**
- Grinchuk, M. I.** Complexity of the realization of a sequence of triangular Boolean matrices by gate schemes of varying depth. (Russian) *Metody Diskret. Analiz.* **No. 44** (1986), 3-23,

69. (Korolov Gilezan) **89d:94058** 94C10 (68Q30, 94C15)
- Complexity of the realization of cyclic Boolean matrices by gate circuits. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 7, 39–44; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 7, 65–72. (Karl Weber) **89k:94102** 94C10 (68Q25)
- Grindrod, Peter** (with Gomatam, Jagannathan) The geometry and motion of reaction-diffusion waves on closed two-dimensional manifolds. *J. Math. Biol.* **25** (1987), no. 6, 597–610. (Yoram Schiffmann) **89c:92018** 92A09 (35K57, 58F40, 92A40)
- (with Gomatam, Jagannathan) Three-dimensional waves in excitable reaction-diffusion systems. *J. Math. Biol.* **25** (1987), no. 6, 611–622. (Yoram Schiffmann) **89c:35086** 35K57 (92A09, 92A40)
- Grines, V. Z.** (with Anosov, D. V.; Bronshtein, I. U.; Aranson, S. Kh.) Smooth dynamical systems [Current problems in mathematics. Fundamental directions, Vol. 1, 151–242, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow, 1985; MR 87c:58060]. Translated from the Russian by E. R. Dawson and D. O'Shea. *Dynamical systems, I*, 149–233, *Encyclopaedia Math. Sci.*, 1, Springer, Berlin-New York, 1988. (see **89c:58060**) 58Fxx (34C35)
- Grinfeld, M.** see **Grinfeld, Michael**
- Grinfeld, M. A.** Gravitating bodies with internal surfaces of phase transitions. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1988**, no. 7, 43–59. (Summary) **89j:86010** 86A99 (76T05)
- (with Lazarev, M. P.) Sufficient conditions for the instability of coherent interfaces. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 4, 836–840; translated in *Soviet Phys. Dokl.* **33** (1988), no. 6, 423–425. (From the introduction) **89k:73004** 73B30
- Grinfeld, Michael** (with Eilbeck, J. C.; Furter, J. E.) On a stationary state characterization of transition from spinodal decomposition to nucleation behaviour in the Cahn-Hilliard model of phase separation. *Phys. Lett. A* **135** (1989), no. 4–5, 272–275. (Summary) **89k:80015** 80A20 (58E07)
- Grinkerich, G. V.** A two-dimensional integral equation with the Saran function  $F_M$  in the kernel. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1988**, no. 1, 65–66, 79. (Summary) **89b:45002** 45D05 (33A30)
- Grinstead, Charles M.** (with Griggs, Jerrold R.; Yeh, Roger K.-C.) Partitioning Boolean lattices into chains of subsets. *Order* **4** (1987), no. 1, 65–67. (E. C. Milner) **89c:06006** 06A23
- Cycle lengths in  $A^k_b$ . *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 4, 537–542. (Gong Ning Chen) **89j:15036** 15A48 (11N37)
- Grinstein, Benjamin** (with Rohm, Ryan) Dirac and Majorana spinors on nonorientable Riemann surfaces. *Comm. Math. Phys.* **111** (1987), no. 4, 667–675. (N. J. Hitchin) **89d:53033** 53A50 (53C80, 57R15, 81E20)
- Grinstein, Geoffrey** Stability of nonstationary states of classical, many-body dynamical systems. New directions in statistical mechanics (Santa Barbara, CA, 1987). *J. Statist. Phys.* **51** (1988), no. 5–6, 803–815. (Summary) **89k:58179** 58F13 (76E15, 82A99)
- Grinstein, Louise S.** (with Campbell, Paul J.) Anna Johnson Pell Wheeler (1883–1966). *Women of mathematics*, 241–246, Greenwood, Westport, CT, 1987. (see **89b:01071**) 01A70
- see also *Women of mathematics*, **89b:01071**
- Grintsevichyus, R. K.** see **Grincivichyus, R.**
- Grioli, Giuseppe** A uniqueness theorem in linear elastodynamics. (Italian) Writings in mathematical physics in honor of the ninetieth birthday of Cataldo Agostinelli (Italian). *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **120** (1986), suppl., 125–131 (1987). (Tommaso Ruggeri) **89j:73013** 73C15 (73U05)
- On the motion of a rigid solid body in a gravitational field. (Italian) *Atti Sem. Mat. Fis. Univ. Modena* **36** (1988), no. 2, 369–373. (N. D. Sengupta) **89m:70004** 70E05
- Grippe, L.** (with Lampariello, F.; Lucidi, S.) Newton-type algorithms with nonmonotone line search for large-scale unconstrained optimization. *System modelling and optimization* (Tokyo, 1987), 187–196, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (Summary) **89j:90219** 90C30
- (with Di Pillo, G.) Recent results on nondifferentiable exact penalty functions. *System modelling and optimization* (Tokyo, 1987), 212–220, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (C. A. Botsaris) **89k:90140** 90C30 (65K05)
- (with Lampariello, F.; Lucidi, S.) Global convergence and stabilization of unconstrained minimization methods without derivatives. *J. Optim. Theory Appl.* **56** (1988), no. 3, 385–406. (Jürgen Guddat) **89f:90165** 90C31
- (with Di Pillo, G.) On the exactness of a class of nondifferentiable penalty functions. *J. Optim. Theory Appl.* **57** (1988), no. 3, 399–410. (Bernard Lemaire) **89h:90193** 90C30 (65K05)
- Grissar, Marcus T.** Sigma-model beta-functions. *International Workshop on Superstrings, Cosmology, Composite Structures* (College Park, MD, 1987), 223–237, *World Sci. Publishing, Singapore*, 1987. (Summary) **89f:81178** 81E99 (81E15)
- (with de Wit, B.) Compensating fields and anomalies. *Quantum field theory and quantum statistics*, Vol. 2, 411–432, *Hilger, Bristol*, 1987. (Olivier Piguet) **89k:81083** 81E13 (81–02, 83C47, 83E50)
- (with de Alwis, S. P.; Mezinescu, Luca) Quantization and unitarity in antisymmetric tensor gauge theories. *Nuclear Phys. B* **303** (1988), no. 1, 57–76. (Summary) **89g:81042** 81E13 (81E30)
- (with Xu, Rui-Ming) Quantum supergravities in two dimensions. *Phys. Lett. B* **205** (1988), no. 4, 486–492. (Paul Howe) **89f:81179** 81E99 (81E30, 83E30)
- (with Nishino, Hitoshi; Zanon, D.)  $\beta$ -function approach to the Green-Schwarz superstring. *Phys. Lett. B* **206** (1988), no. 4, 625–630. (Joan Soto) **89k:81090** 81E15 (81E30, 83E30, 83E50)
- (with Nishino, Hitoshi; Zanon, D.)  $\beta$ -functions for the Green-Schwarz superstring. *Nuclear Phys. B* **314** (1989), no. 2, 363–389. (Summary) **89k:81145** 81E99 (81E15, 81E30, 83E50)
- Grishchenko, A. E.** (with Grishchenko, G. I.; Tretyak, V. P.) A problem of minimizing the cost of the underground part of a hydraulic engineering installation. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No. 4* (1985), 87–91, 104. (Not in MR) 90C10 (76S05)
- Grishchenko, G. I.** (with Grishchenko, A. E.; Tretyak, V. P.) A problem of minimizing the cost of the underground part of a hydraulic engineering installation. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No. 4* (1985), 87–91, 104. (Not in MR) 90C10 (76S05)
- Grishchuk, L. P.** (with Zel'dovich, Ya. B.; Rozhanskii, L. V.) Equivalence principle and zero-point field fluctuations. *Soviet Phys. JETP* **65** (1987), no. 1, 11–14; translated from *Zh. Éksper. Teoret. Fiz.* **92** (1987), no. 1, 20–27 (Russian). (Summary) **89b:83052** 83C47 (81E20)
- (with Rozhanskii, L. V.) On the beginning and the end of classical evolution in quantum cosmology. *Phys. Lett. B* **208** (1988), no. 3–4, 369–372. (Miao Li) **89c:83069** 83F05 (83C45, 83C75)
- Grishchuk, S. A.** Investigation of queueing systems with random choice discipline by branching process methods. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 1, 23–26; translated in *Soviet Math. Dokl.* **37** (1988), no. 3, 610–613. (Z. Khalil) **89j:60127** 60K25 (60J85, 90B22)
- Grishin, S. A.** The second method of Lyapunov in problems of the control of motion. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 12, 2157–2159, 2206. (B. M. Garay) **89d:93079** 93D15
- (with Aleksandrov, Viktor Mikhailovich) State of stress and strain of a small neighbourhood of the apex of a wedge for a physical nonlinearity and different boundary conditions. *J. Appl. Math. Mech.* **51** (1987), no. 4, 509–515 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 4, 653–661 (Russian). (Summary) **89j:73019** 73C45 (73E99, 73M05)
- Synthesis of nonlinear control laws. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 4, 58–64; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 6, 127–132, 206 (Russian). (Gianna Stefani) **89m:93067** 93D15 (93B50, 93D05)
- Griso, Georges** (with Collet, Michel) ★ Le cercle d'Euler. (French) [The Euler circle] *Maths en Plus. Librairie Vuibert, Paris*, 1987. 176 pp. ISBN 2-7117-1363-6 (H. W. Guggenheimer) **89a:51043** 51M05
- Grispolakis, Joachim** The fundamental group and weakly confluent mapping on ANRs. I. Proceedings of the 1986 Topology Conference (Lafayette, LA, 1986). *Topology Proc.* **11** (1986), no. 2, 267–279. (John J. Walsh) **89h:54008** 54C10 (55Q05)
- (with Tymchatyn, E. D.) The fundamental group and weakly confluent mappings on ANRs. II. Proceedings of the 1986 Topology Conference (Lafayette, LA, 1986). *Topology Proc.* **11** (1986), no. 2, 281–290. (John J. Walsh) **89h:54027** 54C10 (55Q05)
- Grisvard, Pierre** Le problème de Dirichlet dans l'espace  $W^{1,p}$ . (English summary) [The Dirichlet problem in the space  $W^{1,p}$ ] *Portugal. Math.* **43** (1985/86), no. 4, 393–398 (1987). (Raïner Picard) **89c:35031** 35J05 (35B65)
- Contrôlabilité exacte avec conditions mêlées. (English summary) [Exact controllability with mixed boundary conditions] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 9, 363–366. (P. K. C. Wang) **89a:49005** 49A22 (49E15)
- Edge behavior of the solution of an elliptic problem. *Math. Nachr.* **132** (1987), 281–299. (Ali Azzam) **89c:35030** 35J05 (35B65)
- Gritsa, T. M.** Oscillations of quasilinear systems with random deviation of the argument and random impulse loads. (Russian) *Some problems in the theory of asymptotic methods in nonlinear mechanics* (Russian), 67–78, iv, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1986. (Editors) **89m:70059** 70L05 (34C15, 34F05)
- Gritsak, V. V.** Optimization over combinatorial manifolds. (Russian) *Analysis of stochastic systems by methods in operations research and reliability theory* (Russian), 25–29, ii–iii, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (Summary) **89d:90173** 90C27 (05B35, 90C31)
- Group method algorithms for solving a problem of linear integer optimization. (Russian) *Issled. Operatsii i ASU No. 32* (1988), 52–64, 117. (Summary) **89k:90114** 90C10
- Gritsana, A. S.**  $p$ -surfaces in  $E_n$  with a general family of mean normals. (Russian) *Differentsial'naya Geom. Mnogooobraz. Figur No. 18* (1987), 25–27, 136. (Valentin Boju) **89h:53011** 53A07
- Gritsenko, O. V.** (with Zhidomirov, G. M.) On the determination of a first-order density matrix from data of diffraction experiments. (Russian) *Dokl. Akad. Nauk SSSR* **293** (1987), no. 5, 1162–1166. (From the text) **89d:82110** 82A60 (82–08)
- Gritsenko, S. A.** see **Ribenboim, Paulo**, **89c:11181**
- Grits'ko, E. G.** A scheme for the design of hybrid methods for solving boundary value problems. (Russian) *Mat. Metody i Fiz.-Mekh. Polya No. 25* (1987), 19–22, 101. (Summary) **89c:00023** 00A69 (65N99)
- Gritzmam, Peter** (with Wills, J. M.) An upper estimate for the lattice point enumerator. *Mathematika* **33** (1986), no. 2, 197–203 (1987). (Autorreferat (Zbl 591:52017)) **89f:11088** 11H31 (52A40, 52A43)
- Problems concerning polyhedral 2-manifolds. *Shaping space* (Northampton, Mass., 1984), 258, 260, *Design Sci. Collect., Birkhäuser Boston, Boston, MA*, 1988. (see **89b:52016**) 52A25
- A characterization of all loglinear inequalities for three quermassintegrals of convex bodies. *Proc. Amer. Math. Soc.* **104** (1988), no. 2, 563–570. (Jane R. Sangwine-Yager) **89i:52016** 52A40
- (with Fejes Tóth, G.; Wills, J. M.) Finite sphere packing and sphere covering. *Discrete Comput. Geom.* **4** (1989), no. 1, 19–40. (R. Blind) **89k:52016** 52A45
- Grivel, Pierre-Paul** (with Borel, Armand; Kaup, B.; Hacıfıgı, André; Malgrange, B.; Ehlers, F.) ★ Algebraic  $D$ -modules. Perspectives in Mathematics, 2. *Academic Press, Inc., Boston, MA*, 1987. xii+355 pp. ISBN 0-12-117740-8 (Emmanuel Andronikof) **89g:32014** 32C38 (58G07)
- Extensions of modules et cohomologie des groupes. [Module extensions and group cohomology] *Enseign. Math.* (2) **34** (1988), no. 1–2, 83–105. (U. Stambach) **89h:18016** 18G15 (20J05)
- Grizan, G. P.** The domain of existence of the solution of a boundary value problem for the Emden-Fowler equation. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 4, 563–566, 730; translated in *Differential Equations* **24** (1988), no. 4, 384–386. (P. B. Bailey) **89c:34034** 34B15
- Grižans, G.** A boundary value problem for systems of second-order ordinary differential equations. (Russian) *Current topics in boundary value problems. Theory and applications* (Russian), 115–121, v, *Lav. Gos. Univ., Riga*, 1988. (see **89j:00009**) 34B15
- Uniqueness of the solution of some boundary value problems for ordinary differential equations with a nonsummable singularity. (Russian) *Lav. Mat. Ezhegodnik No. 31* (1988), 41–47, 251. (Stanislaw Sedziwy) **89g:34023** 34B15
- Grize, Jean-Blaise** see *Natural thought, logic and language*, **89b:03005** and *Bibliography*, **89b:03005**
- Grize, Jean-Blaise**, (89b:03005)
- Grizzle, Jessy W.** (with Nijmeijer, Henk) On the infinite zeros of nonlinear discrete-time systems. *Theory and applications of nonlinear control systems* (Stockholm, 1985),



- 183–192, *North-Holland, Amsterdam-New York*, 1986. (see **89g:93010**) 93C10 (93C55)
- (with Shor, M. H.) Sampling, infinite zeros and decoupling of linear systems. *Automatica—J. IFAC* **24** (1988), no. 3, 387–396. (Ülle Kotta) **89f:93028** 93C57 (93B50, 93C05)
- (with Moog, Claude H.) Découplage non linéaire vu de l'algèbre linéaire. (English summary) [Nonlinear decoupling from a linear algebraic viewpoint] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 9, 497–500. (Anna Maria Perdon) **89a:93058** 93B27 (49D27, 93C10, 93C35)
- (with Kokotović, P. V.) Feedback linearization of sampled-data systems. *IEEE Trans. Automat. Control* **33** (1988), no. 9, 857–859. (Summary) **89e:93040** 93B17 (93C57)
- (with Isidori, A.) Fixed modes and nonlinear noninteracting control with stability. *IEEE Trans. Automat. Control* **33** (1988), no. 10, 907–914. (Zdzisław Wyderka) **89i:93088** 93D15 (57R27, 93B05, 93B27)
- Grimela, Miroslav** Methods of nonequilibrium statistical mechanics in molecular simulations. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 979–984. (see **89d:80007**) 82A30
- Hamiltonian dynamics of incompressible elastic fluids. *Phys. Lett. A* **130** (1988), no. 2, 81–86. (Olivier Sero Guillaume) **89e:76015** 76A99 (58F05, 76E30)
- Grobelaar-van Dalsen, Marië** Semilinear evolution equations and fractional powers of a closed pair of operators. *Proc. Roy. Soc. Edinburgh Sect. A* **105** (1987), 101–115. (Simeon Reich) **89h:47099** 47H15 (34G20, 35K22)
- Grobe, Rainer** (with Haake, Fritz; Sommers, H.-J.) Quantum distinction of regular and chaotic dissipative motion. *Phys. Rev. Lett.* **61** (1988), no. 17, 1899–1902. (Summary) **89i:81005** 81–08 (81C99)
- Grobler, J. J.** (with Labuschagne, C. C. A.) The tensor product of Archimedean ordered vector spaces. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 2, 331–345. (W. A. J. Luxemburg) **89f:46014** 46A40 (46M05)
- Gröchenig, Karlheinz** (with Feichtinger, Hans G.) A unified approach to atomic decompositions via integrable group representations. *Function spaces and applications* (Lund, 1986), 52–73. *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (Mario Milman) **89h:46035** 46Exx (22D10, 43A95, 46F05, 46M35)
- Grochowska, Malgorzata** An axiom system for the class of groups of dilations in Fano-Pappian affine planes. *Colloq. Math.* **53** (1987), no. 2, 169–175. (Introduction) **89a:51006** 51A30 (03B30)
- G.-Rodeja F., Eduardo** see **García-Rodeja Fernández, Eduardo**
- Grodz, T.** (with Gajic, Z.) The recursive reduced-order numerical solution of the singularly perturbed matrix differential Riccati equation. *IEEE Trans. Automat. Control* **33** (1988), no. 8, 751–754. (Summary) **89d:93039** 93B40 (34E15, 49D40, 93B17, 93B25)
- Grodzenskii, S. Ya.** ★ *Андрей Андреевич Марков. 1856–1922.* (Russian) [Andrei Andreevich Markov. 1856–1922] Edited and with a preface by B. V. Gnedenko. With appendices by A. V. Malyshev, P. K. Sutin and Gnedenko. *Научно-Биографическая Литература* [Scientific-Biographic Literature] “Nauka”, Moscow, 1987. 257 pp. (E. Seneta (Zbl 616:01032)) **89a:01062** 01A70 (11-03, 39-03, 41-03, 60-03)
- Grodzki, Z.** Synthesis problem for deterministic controlled  $(k, m)$ -shift-registers. *Demonstratio Math.* **20** (1987), no. 3–4, 547–559 (1988). (Bernard J. M. Smets) **89i:94031** 94A60 (93B50)
- (with Latko, M.) The nets of conjugated shift registers. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **17** (1988), no. 3, 159–170. (Bernard J. M. Smets) **89f:94016** 94A60
- Groemer, H.** Stability theorems for projections of convex sets. *Israel J. Math.* **60** (1987), no. 2, 177–190. (A. G. Netrebin) **89k:52003** 52A20
- Stability theorems for convex domains of constant width. *Canad. Math. Bull.* **31** (1988), no. 3, 328–337. (G. D. Chakerian) **89f:52027** 52A40 (52A10)
- On the Brunn-Minkowski theorem. *Geom. Dedicata* **27** (1988), no. 3, 357–371. (Jane R. Sangwine-Yager) **89k:52012** 52A40 (11H06, 52A43)
- On the volume of equichordal sets. *Monatsh. Math.* **106** (1988), no. 1, 1–8. (G. D. Chakerian) **89f:52028** 52A40 (52A20)
- de Groen, Pieter P. N.** The fit of a sum of exponentials to data. *Numerische Behandlung von Differentialgleichungen, IV* (Georgenthal, 1985), 25–39. *Wissensch. Beitr., Friedrich-Schiller-Univ., Jena*, 1987. (R. A. Lorentz) **89a:65023** 65D10 (41A30)
- A singular perturbation problem with boundary and turning point resonance. *Appl. Math. Lett.* **1** (1988), no. 1, 49–51. (Not in MR) **34E20** (34B25)
- Groeneboom, Piet** Limit theorems for convex hulls. *Probab. Theory Related Fields* **79** (1988), no. 3, 327–368. (J. Hüser) **89j:60024** 60D05 (60F05)
- Groenendijk, Wim P.** (with Boxma, O. J.) Two queues with alternating service and switching times. *Queueing theory and its applications*, 261–282. *CWI Monographs*, 7, North-Holland, Amsterdam-New York, 1988. (Hans Daduna) **89j:60123** 60K25 (90B22)
- (with Boxma, O. J.) Waiting times in discrete-time cyclic-service systems. *IEEE Trans. Comm.* **36** (1988), no. 2, 164–170. (Martin A. Wortman) **89g:90107** 90B22 (60K25)
- Groeneveld, H.** (with Federgruen, Avi)  $M/G/c$  queueing systems with multiple customer classes: characterization and control of achievable performance under nonpreemptive priority rules. *Management Sci.* **34** (1988), no. 9, 1121–1138. (Summary) **89f:90064** 90B22
- (with Federgruen, Avi) Polymatroidal flow network models with multiple sinks. *Networks* **18** (1988), no. 4, 285–302. (Edward Minieka) **89k:90054** 90B10
- Groenewald, L.** (with Raubenheimer, H.) A note on the singular and exponential spectrum in Banach algebras. *Quaestiones Math.* **11** (1988), no. 4, 399–408. (Abdullah H. Al-Mojail) **89k:46064** 46H05 (46H10)
- Groenewald, N. J.** The completely prime radical in near-rings. *Acta Math. Hungar.* **51** (1988), no. 3–4, 301–305. (Celestina Cotti-Ferrero) **89j:16044** 16A76 (16A21)
- Strongly prime near-rings. *Proc. Edinburgh Math. Soc.* (2) **31** (1988), no. 3, 337–343. (Günter Pilz) **89i:16033** 16A76
- Strongly prime near-rings. II. *Comm. Algebra* **17** (1989), no. 3, 735–749. (Günter Pilz) **89m:16074** 16A76
- Groenewald, H. J.** What price locality? *Phys. Rep.* **155** (1987), no. 4, 231–249. (Dennis Dieks) **89d:81005** 81B05
- Bilocality. *Phys. Rep.* **155** (1987), no. 4, 251–262. (S. Gudder) **89c:81025** 81B10
- Groenman, J. T.** Bottema—sixty years a doctor. (Dutch) With an appendix by W. A. van der Spek. *Nieuw Tijdschr. Wisk.* **75** (1987), no. 2, 48–53. (Editors) **89h:01061** 01A70
- Groenewald, N. J.** (with Booth, G. L.) On uniformly strongly prime gamma rings. *Bull. Austral. Math. Soc.* **37** (1988), no. 3, 437–445. (R. Gorton) **89c:16053** 16A78
- van Groesen, E. W. C.** Analytical mini-max methods for Hamiltonian braket orbits of prescribed energy. *J. Math. Anal. Appl.* **132** (1988), no. 1, 1–12. (Michele Matzeu) **89m:58062** 58F05 (34C25, 58E05, 70H05)
- see also **Proceedings: Symposium on Mathematics in Industry**, **89e:90001**
- Groetsch, C. W.** (with Engl, Heinz W.) A higher order approximation technique for restricted linear least-squares problems. *Bull. Austral. Math. Soc.* **37** (1988), no. 1, 121–130. (J. Daneš) **89g:65074** 65J10 (45L10, 65R20)
- Griffin, H.** On switching paths polyhedra. *Combinatorica* **7** (1987), no. 2, 193–204. (Paolo Serafini) **89a:90089** 90C10 (52A25, 90B10)
- Gröger, K.** Initial-boundary value problems from semiconductor device theory. (German and Russian summaries) *Z. Angew. Math. Mech.* **67** (1987), no. 8, 345–355. (T. I. Seidman) **89f:78024** 78A55 (35Q20, 82A99)
- (with Strecker, N.) A free boundary value problem modeling thermal oxidation of silicon. (German and Russian summaries) *Z. Anal. Anwendungen* **7** (1988), no. 1, 57–66. (Rolando Magnanini) **89g:35120** 35R35 (35Q20)
- Grob, Jürgen** Stochastic analysis for one-dimensional martingale diffusions. *Proceedings of the conference on ergodic theory and related topics, II* (Georgenthal, 1986), 57–61. *Teubner-Texte Math.*, 94, Teubner, Leipzig, 1987. (A. N. Al-Hussaini) **89e:60148** 60J60 (60G44)
- Grosser, David** (with Parker, Thomas H.) The Riemannian geometry of the Yang-Mills moduli space. *Comm. Math. Phys.* **112** (1987), no. 4, 663–689. (Mitsuhito Itoh) **89h:58024** 58B20 (53C05, 58D15, 58E11, 81E13)
- Grollmann, Joachim** (with Selman, Alan L.) Complexity measures for public-key cryptosystems. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 309–335. (J. C. Lagarias) **89h:68050** 68Q15 (11T71, 68P25, 94A60)
- Gromadzki, Grzegorz** A remark on the approximability of non-Euclidean crystallographic groups by nilpotent groups. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 4, 90–91, 111. (Vojtěch Kopský) **89d:20043** 20H15 (20F18, 20F32)
- Gromak, V. I.** Autotransformations of the Painlevé equations. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **32** (1988), no. 5, 395–398, 475. (Summary) **89c:34011** 34A20 (30D30, 34C20)
- (with Tsegel'nik, V. V.) Solutions of the fifth Painlevé equations. (Russian. English summary) *Vestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 1, 41–49, 124. (Summary) **89c:34007** 34A20 (30D30)
- Gromoll, Detlef** (with Grove, Karsten) The low-dimensional metric foliations of Euclidean spheres. *J. Differential Geom.* **28** (1988), no. 1, 143–156. (Richard H. Escobales, Jr.) **89g:53052** 53C12 (57R30)
- Gromov, Mikhael L.** Hyperbolic groups. *Essays in group theory*, 75–263, *Math. Sci. Res. Inst. Publ.*, 8, Springer, New York-Berlin, 1987. (Christopher W. Stark) **89e:20070** 20F32 (20F06, 20F10, 22E40, 53C20, 57R75, 58F17)
- Cauchy-Riemann equation in Lagrange intersection theory. *Periodic solutions of Hamiltonian systems and related topics* (Il Ciocco, 1986), 175–176, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 209, Reidel, Dordrecht-Boston, MA, 1987. (V. Oproiu) **89h:58075** 58F05
- Soft and hard symplectic geometry. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 81–98, *Amer. Math. Soc., Providence, RI*, 1987. (H. Wu) **89f:53059** 53C15 (53C57, 58D10, 58F05)
- Entropy, homology and semialgebraic geometry. *Séminaire Bourbaki*, Vol. 1985/86. *Astérisque* **145**–146 (1987), 5, 225–240. (H. Knörrer (Zbl 611:58041)) **89f:58082** 58F11 (28D20, 58C25)
- (with Milman, Vitali D.) Generalization of the spherical isoperimetric inequality to uniformly convex Banach spaces. *Compositio Math.* **62** (1987), no. 3, 263–282. (Autorreferat (Zbl 623:46007)) **89f:46031** 46B20 (46G99, 52A40)
- (with Piatetski-Shapiro, Ilya Iosifovitch) Nonarithmetic groups in Lobachevsky spaces. *Inst. Hautes Études Sci. Publ. Math.* **66** (1988), 93–103. (Gopal Prasad) **89j:22019** 22E40
- Gromov, N. A.** Classical groups in Cayley-Klein spaces. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (Jämsala, 1985), 183–190, “Nauka”, Moscow, 1986. (see **89d:81002**) 32M10 (53C30)
- (with Yakushevich, L. V.) Kinematics as a space of constant curvature. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (Jämsala, 1985), 191–198, “Nauka”, Moscow, 1986. (see **89d:81002**) 70B99
- Gromov, V. A.** A sufficient condition for convergence in the mean of a Lagrange-Lozinskii interpolation process. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 87–93, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) 41A05
- Gromov, V. P.** Some problems that are connected with the expansion in a series in eigenfunctions of a linear operator. (Russian) *Theory of functions and approximations, Part 1* (Russian) (Saratov, 1984), 15–24, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00035**) 47A70
- Gromyak, M. I.** (with Khoma, G. P.; Chornyi, V. Z.) Periodic solutions of second-order nonlinear wave ordinary integro-differential equations. (Russian) *Some problems in the theory of asymptotic methods in nonlinear mechanics* (Russian), 79–83, iv, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1986. (Summary) **89a:45017** 45J05 (34C25)
- (with Khoma, G. P.) Construction of periodic solutions of second-order wave differential equations of hyperbolic type. (Russian) *Application of asymptotic methods in the theory of nonlinear differential equations* (Russian), 96–103, vi, *Akad. Nauk Ukrain. SSR, Kiev*, 1987. (Pavel Krejčí) **89c:35012** 35B10 (35L70)
- (with Khoma, G. P.; Smakula, B. I.) Periodic solutions of second-order equations with delay. (Russian) *Problems of the stability of integral manifolds in equations of mathematical physics* (Russian), 97–99, v, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (see **89c:00026**) 34K15 (34C25)
- Construction of periodic solutions of second-order wave differential and integro-differential equations. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 1, 48–53, 133; translated in *Ukrainian Math. J.* **40** (1988), no. 1, 40–44. (Pavel Krejčí) **89c:35014** 35B10 (35L70, 35K10)
- Gromyko, G. F.** A class of difference schemes for problems of heat conduction. (Russian) *Differentsial'nye Uravneniya i Primeneniya* **24** (1988), 45–48. (Summary) **89h:65156**

- 65N05 (80A20)
- Gron, Ø.** Inflationary cosmology according to Wesson's gravitational theory. *Astronom. and Astrophys.* **193** (1988), no. 1-2, 1-4. (Summary) **89a:83045** 83D05 (83F05)
- An inflationary cosmological model in Dunn's scalar-tensor theory of gravitation. *Astrophys. and Space Sci.* **140** (1988), no. 2, 429-430. (Summary) **89a:83046** 83D05 (83F05)
- (with Soleng, Harald H.) Cosmic inertial dragging. *Classical Quantum Gravity* **5** (1988), no. 6, L101-L104. (Summary) **89c:83010** 83C10 (83F05)
- Poincaré stress and the Reissner-Nordström repulsion. *Gen. Relativity Gravitation* **20** (1988), no. 2, 123-129. (W. M. Baker) **89d:83021** 83C15
- (with Soleng, Harald H.) On the physical interpretation of Wesson's gravitational theory. *Gen. Relativity Gravitation* **20** (1988), no. 11, 1115-1125. (Carl Brans) **89m:83075** 83D05 (83E15)
- (with Eriksen, E.) Translational inertial dragging. *Gen. Relativity Gravitation* **21** (1989), no. 2, 105-124. (Summary) **89m:83057** 83C50
- Gronau, H.-D. O. F.** (with Engel, Konrad) ★ Sperner theory in partially ordered sets. With German, French and Russian summaries. Teubner-Texte zur Mathematik [Teubner Texts in Mathematics], 78. *BSB B. G. Teubner Verlagsgesellschaft, Leipzig*, 1985. 232 pp. (J. R. Griggs) **89b:06001** 06A10 (05A05, 06-02)
- (with Just, Winfried; Schade, W.; Scheffler, Petra; Wojciechowski, J.) Path systems in acyclic directed graphs. Proceedings of the International Conference on Combinatorial Analysis and its Applications (Pokrzywna, 1985). *Zastos. Mat.* **19** (1987), no. 3-4, 399-411 (1988). (Miroslav Krivánek) **89i:05128** 05C20 (05C38, 68R10, 90B99)
- Grombik, Niels** Amenability of weighted discrete convolution algebras on cancellative semigroups. *Proc. Roy. Soc. Edinburgh Sect. A* **110** (1988), no. 3-4, 351-360. (W. Żelazko) **89k:43004** 43A20 (43A07, 46H25)
- Gron, Robert** (with Merris, Russell) Algebraic connectivity of trees. *Czechoslovak Math. J.* **37**(112) (1987), no. 4, 660-670. (R. E. Pippert) **89a:05053** 05C05 (05C50)
- (with Merris, Russell) A Hadamard inequality for the third and fourth immanants. *Linear and Multilinear Algebra* **21** (1987), no. 3, 201-209. (G. P. Egorychev and Ja. N. Nushin) **89k:15038** 15A57
- (with Merris, Russell) Conjectures on permanents. *Linear and Multilinear Algebra* **21** (1987), no. 4, 419-427. (Peter M. Gibson) **89b:15006** 15A15
- (with Merris, Russell) A bound for the complexity of a simple graph. *Discrete Math.* **69** (1988), no. 1, 97-99. (G. R. Grimmett) **89i:05066** 05C99 (05A15, 05C05)
- (with Merris, Russell) Cutpoints, lobes and the spectra of graphs. *Portugal. Math.* **45** (1988), no. 2, 182-188. (Derek Smith) **89f:05118** 05C50
- (with Merris, Russell; Watkins, William Earl) Cones in the group algebra related to Schur's determinantal inequality. *Rocky Mountain J. Math.* **18** (1988), no. 1, 137-146. (John Chollet) **89e:15011** 15A15 (15A57, 15A69, 20C30)
- (with Pierce, Stephen) Permanent inequalities for correlation matrices. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 2, 194-201. (G. P. Egorychev) **89i:15009** 15A15
- Gronke, Tomasz** On the random dislocation of three circular caps on a surface of the sphere. *Fasc. Math.* **17** (1987), 109-117. (J. Hübler) **89d:60017a** 60D05 (52A22)
- The random dislocation of circular caps with different radii on a surface of the sphere. *Fasc. Math.* **17** (1987), 119-136. (J. Hübler) **89d:60017b** 60D05 (52A22)
- de Groot, Joost** (with Baars, Jan; van Mill, Jan) A theorem on function spaces. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 1020-1024. (Mohan L. Tikoo) **89b:54009** 54C35 (54A25)
- de Groot, M.** (with Mansfield, P.) The relationship between the canonical super-Virasoro and functional super-Weyl anomalies. *Phys. Lett. B* **202** (1988), no. 4, 519-524. (Danny Birmingham) **89c:81127** 81E99 (17B65, 81E30)
- Grootendorst, A. W.** Johan Hudde's *Epistola secunda de maximis et minimis*. Text, translation, commentary. (Dutch) *Nieuw Arch. Wisk.* (4) **5** (1987), no. 3, 303-334. (F. Smithies) **89e:01021** 01A45 (26-03)
- Gropp, Harald** "Il metodo di Martinetti" (1887) or configurations and Steiner systems  $S(2, 4, 25)$ . Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. 2 (Catania, 1986). *Ars Combin.* **24** (1987), B, 179-188. (Barbu C. Kestenband) **89c:05022** 05B30 (05B07)
- On weak Room squares and weak Room cubes. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), A, 199-210. (Katherine Heinrich) **89g:05032** 05B15 (05B25)
- Gropp, William** Adaptive methods for hyperbolic problems on local memory parallel processors. *Numerical algorithms for modern parallel computer architectures* (Minneapolis, MN, 1986-87), 77-84. *IMA Vol. Math. Appl.*, 13. Springer, New York-Berlin, 1988. (see **89j:65093**) 65W05
- Local uniform mesh refinement on loosely-coupled parallel processors. *Comput. Math. Appl.* **15** (1988), no. 5, 375-387. (Summary) **89d:65123** 65W05 (65M50, 65N50)
- Grosod, Axel** (with Pardoux, É.) Calcul stochastique anticipatif dans les espaces de Hilbert. (English summary) [Anticipating stochastic calculus in Hilbert spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 20, 1001-1004. (David Nualart Rodón) **89m:60127** 60H05 (60H07)
- Gros, Michel** (with Suwa, Noriyuki) Application d'Abel-Jacobi  $p$ -adique et cycles algébriques. [The  $p$ -adic Abel-Jacobi mapping and algebraic cycles] *Duke Math. J.* **57** (1988), no. 2, 579-613. (Wayne Raskind) **89b:14006a** 14C35 (14C15, 14F30, 19E15)
- (with Suwa, Noriyuki) La conjecture de Gersten pour les faisceaux de Hodge-Witt logarithmique. [Gersten's conjecture for logarithmic Hodge-Witt sheaves] *Duke Math. J.* **57** (1988), no. 2, 615-628. (Wayne Raskind) **89b:14006b** 14C35 (14C15, 14F30, 19E15)
- Grosberg, A. Yu.** (with Shakhnovich, E. I.) The dynamic renormalization group method in the statistical theory of biopolymers. (Russian. English summary) *Conference "Renormalization Group-86"* (Russian) (Dubna, 1986), 363-374, 401-402, 411-412. *Joint Inst. Nuclear Res., Dubna*, 1987. (see **89a:81002**) 82A25 (82A51)
- Grosbras, Jean-Marie** ★ Méthodes statistiques des sondages. (French) [Statistical sampling methods] With a preface by J. C. Deville. Collection "Economie et Statistiques Avancées". [Collection "Economics and Advanced Statistics"] *Éditions Economica, Paris*, 1987. ii+343 pp. *ISBN* 2-7178-1205-9 (Gad Nathan) **89c:62024** 62D05
- (with Deville, J.-C.; Roth, N.) Efficient sampling algorithms and balanced samples. *COMPSTAT 1988* (Copenhagen, 1988), 255-266. *Physica, Heidelberg*, 1988. (see **89i:62004**) 65U05
- Grosche, C.** (with Steiner, F.) The path integral on the Poincaré upper half plane and for Liouville quantum mechanics. *Phys. Lett. A* **123** (1987), no. 7, 319-328. (Martin C. Gutzwiller) **89g:81023** 81C35 (81E20)
- (with Steiner, F.) Path integrals on curved manifolds. *Z. Phys. C* **36** (1987), no. 4, 699-714. (Summary) **89b:58034** 58D30 (81C35)
- (with Steiner, F.) The path integral on the pseudosphere. *Ann. Physics* **182** (1988), no. 1, 120-156. (Dennis B. Creamer) **89j:81056** 81C35 (58D30)
- The product form for path integrals on curved manifolds. *Phys. Lett. A* **128** (1988), no. 3-4, 113-122. (Takashi Miura) **89e:81041** 81C35 (58D30, 81E20)
- Grose, Ted** (with Milton, Kimball A.) Schwinger model on a finite-element lattice. *Phys. Rev. D* (3) **37** (1988), no. 6, 1603-1607. (Summary) **89c:81094** 81E25 (81-04)
- Grosheans, Thomas M.** (with Palsson, Bernhard O.) Mathematical modelling of dynamics and control in metabolic networks. VI. Dynamic bifurcations in single biochemical control loops. *J. Theoret. Biol.* **131** (1988), no. 1, 43-53. (Summary) **89c:92026** 92A09 (58F14)
- Groscholz, Emily** Some uses of proportion in Newton's *Principia*, Book I: a case study in applied mathematics. *Stud. Hist. Philos. Sci.* **18** (1987), no. 2, 209-220. (A. G. Molland) **89f:01028** 01A50
- Grosjean, Carl C.** The measure induced by orthogonal polynomials satisfying a recursion formula with either constant or periodic coefficients. II. Pure or mixed periodic coefficients (general theory). *Med. Konink. Acad. Wetensch. België* **48** (1986), no. 5, 55-94. (L. Leindler) **89e:42015** 42C05 (33A65)
- Solution of the evolution equation corresponding to a polynomial discrete-time map of arbitrary degree. (Dutch summary) *Med. Konink. Acad. Wetensch. België* **48** (1986), no. 5, 95-109. (Ryszard Rudnicki) **89j:58055** 58F08 (28D05, 39B10, 58F11)
- A general formula for the calculation of Gaussian path-integrals in two and three Euclidean dimensions. *J. Comput. Appl. Math.* **23** (1988), no. 2, 199-234. (Takashi Miura) **89b:81050** 81C35 (65D30, 81-08)
- see also **de Doelder, P. J.**, **89g:40002**
- Gross, Benedict H.** Local heights on curves. *Arithmetic geometry* (Storrs, Conn., 1984), 327-339. Springer, New York-Berlin, 1986. (see **89b:14029**) 11G30
- Heights and the special values of  $L$ -series. *Number theory* (Montreal, Que., 1985), 115-187. *CMS Conf. Proc.*, 7. Amer. Math. Soc., Providence, RI, 1987. (Lawrence Washington) **89c:11082** 11F67 (11G40, 11R52)
- Heights and  $L$ -series. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 425-433. Amer. Math. Soc., Providence, RI, 1987. (Joseph H. Silverman) **89d:11052** 11G40 (11G05)
- Representation theory and the cuspidal group of  $X(p)$ . *Duke Math. J.* **54** (1987), no. 1, 67-75. (David Grant) **89b:11052** 11G30 (14G25)
- (with Kohnen, Winfried; Zagier, Don) Heegner points and derivatives of  $L$ -series. II. *Math. Ann.* **278** (1987), no. 1-4, 497-562. (Lawrence Washington) **89i:11069** 11G40 (11F30, 11G05, 11R29, 14G10)
- On the values of abelian  $L$ -functions at  $s = 0$ . *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **35** (1988), no. 1, 177-197. (Krystyna Bartz) **89b:11071** 11R42 (11G40)
- Gross, Daniel** On the fundamental group of the fixed points of a unipotent action. *Manuscripta Math.* **60** (1988), no. 4, 487-496. (Dennis Snow) **89c:32041** 32M05 (14L30)
- Gross, David J.** The heterotic string theory. *Unification of fundamental interactions* (Marstrand, 1986), 34-40. *Royal Swedish Acad. Sci., Stockholm*, 1987. (see **89f:81005**) 83E15 (81E30, 83E30)
- (with Perival, Vipul) Heterotic string light-cone field theory. *Nuclear Phys. B* **287** (1987), no. 1, 1-60. (Andrew A. Bytsenko) **89b:81192** 81E99 (81E30, 83E30)
- (with Mende, Paul F.) The high-energy behavior of string scattering amplitudes. *Phys. Lett. B* **197** (1987), no. 1-2, 129-134. (A. I. Pashnev) **89c:81187** 81F99 (81E30, 81G25)
- (with Mende, Paul F.) String theory beyond the Planck scale. *Nuclear Phys. B* **303** (1988), no. 3, 407-454. (Olaf Lechtenfeld) **89e:81180** 81E99 (81E30)
- High-energy symmetries of string theory. *Phys. Rev. Lett.* **60** (1988), no. 13, 1229-1232. (Summary) **89a:81130** 81E99 (81E30)
- (with Perival, Vipul) String perturbation theory diverges. *Phys. Rev. Lett.* **60** (1988), no. 21, 2105-2108. (Aleksandar R. Bogojevic) **89f:81118** 81E15 (81E30)
- Physics and mathematics at the frontier. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 22, 8371-8375. (Summary) **89i:00040** 00A69
- Gross, E. K. U.** (with Oliveira, L. N.; Kohn, W.) Rayleigh-Ritz variational principle for ensembles of fractionally occupied states. *Phys. Rev. A* (3) **37** (1988), no. 8, 2805-2808. (Summary) **89b:81072** 81C99
- Gross, Fletcher** Conjugacy of Hall subgroups. (Italian summary) *Rend. Sem. Mat. Fis. Milano* **56** (1986), 81-84 (1988). (M. E. Harris) **89c:20039** 20D20
- Conjugacy of odd order Hall subgroups. *Bull. London Math. Soc.* **19** (1987), no. 4, 311-319. (From the introduction) **89c:20038** 20D20 (20E32)
- Gross, Fred** (with Yang, Chung Chun) On zeros of  $f(g(z)) - \alpha(z)$ . *Analysis of one complex variable* (Laramie, Wyo., 1985), 104-112. *World Sci. Publishing, Singapore*, 1987. (Gary G. Gundersen) **89b:30047** 30D35
- (with Osgood, C. F.) Addendum to: "Further results on Fermat type equations and a characterization of the Chebyshev polynomials" [J. Math. Anal. Appl. **121** (1987), no. 2, 317-324; MR **88c:30072**]. *J. Math. Anal. Appl.* **134** (1988), no. 1, 254-255. (Editors) **89k:30024** 30D05 (39B10)
- Gross, Gunther** (with Kowalski, Jacek M.; Ansari, Ali; Prueitt, Paul S.; Dawes, Robert L.) On synchronization and phase locking in strongly coupled systems of planar rotators. *Complex Systems* **2** (1988), no. 4, 441-462. (Summary) **89j:70038** 70K99 (58F40, 70K20, 82A99, 92A05)
- Gross, Herbert** Different orthomodular orthocomplementations on a lattice. *Order* **4** (1987), no. 1, 79-92. (S. S. Holland, Jr.) **89a:06020** 06C15 (15A63, 46C99, 81B10)
- Lattices and infinite-dimensional forms. "The lattice method". *Order* **4** (1987), no. 3, 233-256. (Sheila Brenner) **89c:06009** 06C99 (11E04, 15A63)
- Gross, Jonathan L.** (with Furst, Merrick L.; McGeoch, Lyle A.) Finding a maximum-genus graph imbedding. *J. Assoc. Comput. Mach.* **35** (1988), no. 3, 523-534. (Summary) **89i:68049** 68Q20 (05C10, 68Q25, 68R10)
- Gross, Louis J.** A stochastic model of grass growth under grazing. *Biomathematics and related computational problems* (Naples, 1987), 177-185. *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89i:92053** 92A17
- Gross, Robert** (with Yarmush, Martin L.; Kennedy, John W.; Quintas, Louis V.) Antigenesis: a cascade-theoretical analysis of the size distributions of antigen-antibody complexes.



- Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1-3, 177-194. (Summary) **89c:92019** 92A09 (82A99)
- Grossberg, Rami A downward Löwenheim-Skolem theory for infinitary theories which have the unsuperstability property. *J. Symbolic Logic* **53** (1988), no. 1, 231-242. (Summary) **89g:03053** 03C75 (03C45)
- Grossberg, S. (with Carpenter, G. A.) Self-organizing neural network architectures for real-time adaptive pattern recognition. *Neural and synergetic computers* (Schloss Elmau, 1988), 42-74, *Springer Ser. Synergetics*, 42, Springer, Berlin-New York, 1988. (see **89i:92026**) 92A25 (68T10, 92A09)
- (with Bullock, D.) Self-organizing neural architectures for eye movements, arm movements, and eye-arm coordination. *Neural and synergetic computers* (Schloss Elmau, 1988), 197-228, *Springer Ser. Synergetics*, 42, Springer, Berlin-New York, 1988. (see **89i:92026**) 92A09 (68T05, 92A25)
- see also *Neural networks and natural intelligence*, **89m:92062**
- Grosse, Eric (with Baker, Brenda S.; Rafferty, Conor S.) Nonobtuse triangulation of polygons. *Discrete Comput. Geom.* **3** (1988), no. 2, 147-168. (Bernd Graw) **89c:52001** 52-04 (68U05)
- (with Cleveland, William S.; Devlin, Susan J.) Regression by local fitting. Methods, properties, and computational algorithms. *J. Econometrics* **37** (1988), no. 1, 87-114. (Summary) **89a:62157** 62J05
- Grosso, H. On the level order for Dnag operators. *Phys. Lett. B* **197** (1987), no. 3, 413-417. (Yusuke Kato) **89c:81026** 81C12 (81C05, 81G05)
- ★ Models in statistical physics and quantum field theory. *Trieste Notes in Physics. Springer-Verlag, Berlin-New York*, 1988. x+151 pp. ISBN 3-540-19383-9 (Alan D. Sokal) **89i:82001** 82-02 (81-02, 81E25, 81E30, 82A25, 82A68)
- (with Pittner, L.) A supersymmetric generalization of von Neumann's theorem. *J. Math. Phys.* **29** (1988), no. 1, 110-118. (Asao Arai) **89d:81048** 81D05 (46N05, 81E05)
- (with Falkenstein, P.) Fermions in interaction with time-dependent fields. *Nuclear Phys. B* **305** (1988), no. 1 FS23, 126-142. (C. A. Hurst) **89j:81087** 81E05 (46N05, 81C05)
- Grosser, H. Magnetic decay modes for a slender torus. *Astronom. and Astrophys.* **199** (1988), no. 1-2, 235-241. (Summary) **89d:76032** 76W05 (85A30)
- Grosshans, Frank D. Constructing invariant polynomials via Tschirnhaus transformations. *Invariant theory*, 95-102, *Lecture Notes in Math.*, 1278, Springer, Berlin-New York, 1987. (P. E. Newstead) **89a:14066** 14L35 (14D25, 15A72, 20G05)
- Separated orbits for certain nonreductive subgroups. *Manuscripta Math.* **62** (1988), no. 2, 205-217. (Naohisa Shimomura) **89k:14012** 14D25 (20G15)
- Grossi Calleja, Rafael (with Vidal Castedo, Elviro; Perán González, José R.) Recursive estimation and delay processes subject to important stochastic perturbations. (Spanish) *Rev. Inform. Automat.* **21** (1988), no. 3, 22-30. (Onésimo Hernández Lerma) **89i:93212** 93E12
- Gröning, Gerhard (with Zeilinger, Anton) Quantum cellular automata. *Complex Systems* **2** (1988), no. 2, 197-208. (Not in MR) **81C99**
- (with Zeilinger, Anton) A corrigendum: "Quantum cellular automata" [*Complex Systems* **2** (1988), no. 2, 197-208]. *Complex Systems* **2** (1988), no. 5, 611-623. (Not in MR) **81C99**
- (with Zeilinger, Anton) Structures in quantum cellular automata. Matter wave interferometry (Vienna, 1987). *Phys. B + C* **151** (1988), no. 1-2, 366-369. (see **89c:81003**) **81B99** (58F08)
- (with Zeilinger, Anton) A conservation law in quantum cellular automata. *Phys. D* **31** (1988), no. 1, 70-77. (Summary) **89c:81052** 81C99 (58F08, 68Q75)
- Comparison of classical and quantum lattice properties with the aid of cellular automata. *Phys. Lett. A* **131** (1988), no. 1, 1-7. (Summary) **89g:81027** 81C99 (58F40, 68Q40)
- Grossinho, M. R. Some existence results for nonselfadjoint problems at resonance. *Fixed point theory and its applications* (Berkeley, CA, 1986), 107-119, *Contemp. Math.*, 72, Amer. Math. Soc., Providence, RI, 1988. (Jean Mawhin) **89b:47100** 47H15 (34B15)
- Grossman, Gene M. see Caspary, Wilfrid W., Jr., (Not in MR)
- Grossman, Jerrold W. (with Froemke, Jon) An algebraic approach to some number-theoretic problems arising from paper-folding regular polygons. *Amer. Math. Monthly* **95** (1988), no. 4, 289-307. (M. Mendes France) **89d:11063** 11K99 (11A99)
- (with Zeitman, R. Suzanne) An inherently iterative computation of Ackermann's function. *Theoret. Comput. Sci.* **57** (1988), no. 2-3, 327-330. (G. Asser) **89i:03078** 03D15 (03D20, 68Q25, 68Q30)
- Grossman, Robert (with Larson, Richard G.) The symbolic computation of higher-order derivations: symmetries of expressions and actions of group algebras. *Differential geometry: the interface between pure and applied mathematics* (San Antonio, Tex., 1986), 121-131, *Contemp. Math.*, 68, Amer. Math. Soc., Providence, RI, 1987. (From the introduction) **89e:13031** 13N05 (12-04, 58F99)
- (with Krishnaprasad, P. S.; Marsden, Jerrold E.) The dynamics of two coupled rigid bodies. *Dynamical systems approaches to nonlinear problems in systems and circuits* (Henniker, NH, 1986), 373-378, *SIAM, Philadelphia, PA*, 1988. (Manfred Andrie) **89k:70009** 70E15 (58F05, 58F14)
- Grossmann, A. (with Daubechies, Ingrid) Frames in the Bargmann space of entire functions. *Comm. Pure Appl. Math.* **41** (1988), no. 2, 151-164. (Daniel H. Luecking) **89c:46028** 46E20 (30D10, 44A15)
- Grossmann, Ch. (with Roos, H.-G.) Feedback grid generation via monotone discretization for two-point boundary-value problems. *JMA J. Numer. Anal.* **6** (1986), no. 4, 421-432. (Summary) **89b:65130** 65L10
- Monotone discretization of two-point boundary value problems and related numerical methods. *Discretization in differential equations and enclosures* (Weissig, 1986), 99-122, *Math. Res.*, 36, Akademie-Verlag, Berlin, 1987. (David C. Arney) **89g:65102** 65L10 (65G10)
- (with Roos, H.-G.) Zur Herleitung der Konvergenzordnung bei  $C^1$ -Spline-Kollokationsmethoden für eine monotone Randwertaufgabe. [On deriving the rate of convergence in  $C^1$ -spline collocation methods for a monotone boundary value problem] *Z. Angew. Math. Mech.* **68** (1988), no. 1, 59-60. (From the introduction) **89b:65188** 65L10
- see also *Discretization in differential equations and enclosures*, **89a:65005**
- Grossmann, S. (with Effinger, H.) Selfsimilarity of developed turbulence. *The physics of structure formation* (Tübingen, 1986), 346-351, *Springer Ser. Synergetics*, 37, Springer, Berlin-New York, 1987. (see **89b:58064**) 76F99
- (with Erzan, Ayge; Hernández-Machado, Aurora) Diffusion on random hierarchical structures. *J. Phys. A* **20** (1987), no. 12, 3913-3934. (B. Derrida) **89b:82087** 82A57
- (with Engel, Andreas; Mikhailov, A. S.) Decay and diffusion in hierarchically organized systems. *Z. Phys. B* **70** (1988), no. 1, 101-114. (B. Derrida) **89d:82158** 82A99
- Grossmann, Wilfried see *Probability theory and mathematical statistics with applications*, **89c:60002**
- del Grosso, G. see Del Grosso, G.
- Grosso, Giuseppe (with Giannozzi, Paolo; Moroni, Saverio; Pastori Parravicini, Giuseppe) The ordinary and matrix continued fractions in the theoretical analysis of Hermitian and relaxation operators. *Appl. Numer. Math.* **4** (1988), no. 2-4, 273-295. (M. Znojil) **89g:81111** 81H20 (15A90, 65D15, 81C99)
- Grosso, Roberto D. (with Gleiser, Reinaldo; Díaz, Mario) Phase transitions in perturbed stiff fluid Friedmann-Robertson-Walker cosmological models. *Classical Quantum Gravity* **5** (1988), no. 7, 989-1001. (A. H. Taub) **89f:83020** 83C15 (83C55, 83F05)
- Grosu, M. Generalized Lagrange metrics. (Romanian) *Proceedings of the National Conference on Geometry and Topology (Romanian) (Tirgoviste, 1986)*, 111-116, Univ. Bucuresti, Bucharest, 1988. (Aurel Bejancu) **89m:53043** 53B40
- Groszek, Marcia J. Combinatorics on ideals and forcing with trees. *J. Symbolic Logic* **52** (1987), no. 3, 582-593. (James Baumgartner) **89c:03089** 03E35 (03E05, 03E40)
- Grötemeyer, Karl Peter see Deuber, W., **89i:01063**
- Gröthe, Holger (with Eichenauer, Jürgen; Lehn, Jürgen; Topuzoglu, Alev) A multiple recursive nonlinear congruential pseudo random number generator. *Manuscripta Math.* **59** (1987), no. 3, 331-346. (P. Neumann) **89f:65008** 65C10 (11B39)
- (with Eichenauer, Jürgen; Lehn, Jürgen) On the period length of pseudorandom vector sequences generated by matrix generators. *Math. Comp.* **52** (1989), no. 185, 145-148. (H. J. Godwin) **89g:65010** 65C10 (11K45)
- Gröthmann, R. (with Gauthier, Paul M.; Hengartner, W.) Asymptotic maximum principles for subharmonic and plurisubharmonic functions. *Canad. J. Math.* **40** (1988), no. 2, 477-486. (W. H. Ow) **89g:31011** 31C05
- On the real CF-method for polynomial approximation and strong unique constants. *J. Approx. Theory* **55** (1988), no. 1, 86-103. (Summary) **89i:41012** 41A10
- (with Borwein, P. B.; Kroó, András; Saff, E. B.) The density of alternation points in rational approximation. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 881-888. (G. Meinardus) **89b:41035** 41A20 (41A50)
- Grötschel, M. (with Holland, O.) A cutting plane algorithm for minimum perfect 2-matchings. (German summary) *Computing* **39** (1987), no. 4, 327-344. (H. T. Lau) **89a:05108** 05C70 (90C27)
- (with Lovász, L.; Schrijver, Alexander) ★ Geometric algorithms and combinatorial optimization. Algorithms and Combinatorics: Study and Research Texts, 2. *Springer-Verlag, Berlin-New York*, 1988. xii+362 pp. ISBN 3-540-13624-X (Jürgen Köhler) **89m:90135** 90C27 (05-02, 52-02, 68Q25)
- Grötsch, Herbert Camillo see Sachs, Horst, **89h:01079** and Michel, Horst, **89i:01093**
- Groumpos, P. P. (with Leros, A. P.) A structural approach to the modelling and control problem of large scale systems. *Control Theory Adv. Tech.* **3** (1987), no. 3, 217-237. (Asen L. Dontchev) **89d:93006** 93A15 (49D40, 93B50)
- Grove, Adam Two modellings for theory change. *J. Philos. Logic* **17** (1988), no. 2, 157-170. (George F. Schumm) **89c:03027** 03B45 (03B30)
- Grove, E. A. (with Ladas, G.; Schultz, S. W.) Oscillations and asymptotic behavior of first-order neutral delay differential equations. *Appl. Anal.* **27** (1988), no. 1-3, 67-78. (József Kalinowski) **89a:34077** 34K15 (34K25)
- (with Farrell, K.; Ladas, G.) Neutral delay differential equations with positive and negative coefficients. *Appl. Anal.* **27** (1988), no. 1-3, 181-197. (T. Chanturiya) **89a:34076** 34K15 (34C05)
- (with Ladas, G.; Schinas, J.) Sufficient conditions for the oscillation of delay and neutral delay equations. *Canad. Math. Bull.* **31** (1988), no. 4, 459-466. (B. S. Lalli) **89m:34092** 34K15 (34K25)
- Grove, John (with Glimm, James; Lindquist, W. Brent; McBryan, Oliver A.; Tryggvason, Gréar) The bifurcation of tracked scalar waves. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 1, 61-79. (P. C. Jain) **89g:76032** 76L05 (58C27, 65H10, 73D05, 76-08, 76S05)
- Grove, Karsten (with Halperin, Stephen) Dupin hypersurfaces, group actions and the double mapping cylinder. *J. Differential Geom.* **26** (1987), no. 3, 429-459. (Thomas E. Cecil) **89b:53113** 53C40 (53C42, 57T15, 57T20)
- (with Petersen, Peter, V.) Homotopy types of positively curved manifolds with large volume. *Amer. J. Math.* **110** (1988), no. 6, 1183-1188. (Gudlaugur Thorbergsson) **89m:53063** 53C20 (55P15)
- (with Gromoll, Detlef) The low-dimensional metric foliations of Euclidean spheres. *J. Differential Geom.* **28** (1988), no. 1, 143-156. (Richard H. Escobales, Jr.) **89g:53052** 53C12 (57R30)
- (with Petersen, Peter, V.; Wu, Jyh Yang) Controlled topology in geometry. *Bull. Amer. Math. Soc. (N.S.)* **20** (1989), no. 2, 181-183. (Gudlaugur Thorbergsson) **89m:53062** 53C20 (57R55, 58D99)
- Grove, L. C. (with Tracy, Craig A.; Newman, M. F.) Modular properties of the hard hexagon model. *J. Statist. Phys.* **48** (1987), no. 3-4, 477-502. (Peter J. Forrester) **89b:82125** 82A68 (82A69)
- (with Wang, K. S.) Realizability of representations of finite groups. *J. Pure Appl. Algebra* **54** (1988), no. 2-3, 299-310. (Roderick Gow) **89g:20018** 20C15
- Grover, V. K. Splittings of abelian groups by integers. *Indian J. Pure Appl. Math.* **19** (1988), no. 4, 330-332. (Summary) **89b:20114** 20K01
- Grow, David Sidon sets and  $I_0$ -sets. *Colloq. Math.* **53** (1987), no. 2, 269-270. (D. L. Salinger) **89a:42019** 42A38 (43A46)
- Grozdanov, Vasil S. (with Proinov, Petko D.) Symmetrization of the van der Corput-Halton sequence. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 8, 5-8. (Harald Niederreiter) **89i:11121** 11K38
- (with Proinov, Petko D.) On the diaphony of the van der Corput-Halton sequence. *J. Number Theory* **30** (1988), no. 1, 94-104. (Henri Faure) **89i:11065** 11K38
- Groze, Sever (with Chiorean, Ioana) On the Steffensen's method in Fréchet spaces. *Seminar on Numerical and Statistical Calculus (Cluj-Napoca, 1987)*, 134-142, Preprint, 87-9, Univ. "Babeş-Bolyai", Cluj-Napoca, 1987. (J. W. Schmidt) **89h:65097** 65J15 (47H17)

- A method analogous to the Chebyshev method for the solving of the operator equations defined in Fréchet spaces. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* 32 (1987), no. 4, 33–35. (J. Daneş) **89m:65058** 65J15 (47H17)
- (with Chiorean, Ioana) On the solving of operator equations defined in Fréchet spaces by a modified chord method. (Romanian summary) *Studia Univ. Babeş-Bolyai Math.* 32 (1987), no. 4, 36–40. (J. Daneş) **89m:65071** 65J15 (47H17)
- Groze, Victoria (with Chiorean, Ioana) A generalization of projective space. *Seminar on geometry (Cluj-Napoca, 1986)*, 37–50, Preprint, 86-10, Univ. "Babeş-Bolyai", Cluj-Napoca, 1986. (Pavel Burda) **89b:51004** 51A05 (51A25)
- Grozer, Georgi R. Uniqueness of optimal quadrature formulas for some classes of differentiable functions. (Russian) *Serdica* 12 (1986), no. 4, 365–375 (1987). (B. Boyanov) **89j:41042** 41A55 (65D32)
- (with Boyanov, Borislav D.) A note on the optimal recovery of functions in  $H^\infty$ . *J. Approx. Theory* 53 (1988), no. 1, 67–77. (Avraham A. Melkman) **89g:41012** 41A25 (30E10, 41A50)
- Grozina, A. A. (with Popov, A. F.) Sufficient conditions for the complete distribution of the solutions of an infinite system of differential equations. (Russian) *Mathematical analysis and its applications (Russian)*, 117–122, 166, Rostov. Gos. Univ., Rostov-on-Don, 1985. (Summary) **89g:34010** 34A25 (34A35)
- Grubb, A. (with Sharma, C. S.) Minimax theory simplified. (Italian and Russian summaries) *Nuovo Cimento B* (11) 100 (1987), no. 1, 17–26. (L. G. Chambers) **89b:49066** 49G05 (47A70, 47B25, 81C10)
- Grubb, D. J. Summation methods and uniqueness in Vilenkin groups. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 556–558. (W. R. Wade) **89b:42019** 42C10 (43A55)
- Grubb, David (with Magee, Lonnie) A variance comparison of OLS and feasible GLS estimators. *Econometric Theory* 4 (1988), no. 2, 329–335. (V. K. Srivastava) **89i:62108** 62J05 (62P20)
- Grubb, Gerd (with Solonnikov, V. A.) Reduction of basic initial-boundary value problems for the Stokes equation to initial-boundary value problems for parabolic systems of pseudodifferential equations. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 163 (1987), Kraev, Zadachi Mat. Fiz. i Smezhn. Vopr. Teor. Funktsii 19, 37–48, 187. (Monique Dauge) **89c:35131** 35Q10 (35S15, 76D05)
- (with Solonnikov, V. A.) A pseudo-differential treatment of general inhomogeneous initial-boundary value problems for the Navier-Stokes equation. *Journées "Équations aux Dérivées Partielles" (Saint Jean de Monts, 1988)*, Exp. No. III, 8 pp., Ecole Polytech., Palaiseau, 1988. (Monique Dauge) **89m:35179** 35Q10 (76D05)
- Grübel, R. The length of the shorth. *Ann. Statist.* 16 (1988), no. 2, 619–628. (L. Rejto) **89j:62069** 62G30 (60F17)
- Harmonic renewal sequences and the first positive sum. *J. London Math. Soc.* (2) 38 (1988), no. 1, 179–192. (Paul Embrechts) **89f:60077** 60J15 (60K05)
- A minimal characterization of the covariance matrix. *Metrika* 35 (1988), no. 1, 49–52. (Florence Gordon) **89c:62059** 62H05 (62H12)
- Gruber, Bruno Remarks on para-Bose algebra and its indecomposable representations. *Quantum theory and the structures of time and space*, Vol. 5 (Tutzing, 1982), 157–171, Hanser, Munich, 1983. (A. U. Klimyk) **89m:81059** 81C40 (17D99, 81D05)
- Gruber, Christian (with Sütő, András) Phase diagrams of lattice systems with residual entropy. *J. Statist. Phys.* 52 (1988), no. 1–2, 113–142. (Tony C. Dorlas) **89m:82017** 82A25 (82A05, 82A68)
- Gruber, Peter M. Volume approximation of convex bodies by inscribed polytopes. *Math. Ann.* 281 (1988), no. 2, 229–245. (W. J. Firey) **89b:52003** 52A20 (52A40)
- (with Ryschkov, S. S.) Facet-to-face implies face-to-face. *European J. Combin.* 10 (1989), no. 1, 83–84. (J. M. Wills) **89m:52023** 52A45
- see also Radon, Johann, 89i:01142a and 89i:01142b
- Gruber, Ralf Finite elements in magnetohydrodynamics: ideal linear stability problem. *Finite elements in physics (Lausanne, 1986)*, 299–333, North-Holland, Amsterdam-New York, 1987. (R. N. Pandey) **89b:65264** 65N30 (76-08, 76E99, 76W05)
- Gruber, Ronald P. (with Price, Richard H.; Matthews, Stephen M.; Cordwell, William R.; Wagner, Lawrence F.) The impossibility of a simple derivation of the Schwarzschild metric. *Amer. J. Phys.* 56 (1988), no. 3, 265–269. (Summary) **89b:83023** 83C15 (83A05)
- Grubić, Nebojša Some considerations in the new free Dirac field theory. (Serbo-Croatian. English summary) *Akad. Nauka Umjet. Bosne Hercegov. Rad. Odelj. Prirod. Mat. Nauka* No. 25 (1988), 149–175. (Summary) **89c:81067** 81D25
- Grudo, E. I. (with Lasyi, P. G.) Determination of the characteristic vectors of functions of several variables and of stability in the first approximation. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 3, 389–393, 546; translated in *Differential Equations* 24 (1988), no. 3, 269–273. (A. Precupanu) **89c:26031** 26B35
- Grudskii, I. M. Construction of intrinsic coordinates on composite Riemann surfaces. (Russian) *Differential and integral equations and complex analysis (Russian)*, 30–45, ii, Kalmytsk. Gos. Univ., Elista, 1986. (Summary) **89c:30114** 30F99
- Grudisya, V. V. (with Barantsev, R. G.) Localization of singularities in a problem of scattering by contours with noncanonical boundaries. (Russian) *Asymptotic methods (Russian)*, 95–136, 384, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Summary) **89b:78011** 78A45
- Grunberg, K. W. (with Roggenkamp, K. W.) The geometry of homogeneous extension categories. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 413–417, Proc. Sympos. Pure Math., 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Wolfgang Grözl) **89c:16044** 16A64 (16A90, 20E22)
- (with Gedrich, T. V.) Complete cohomological functors on groups. Singapore topology conference (Singapore, 1985). *Topology Appl.* 25 (1987), no. 2, 203–223. (Ross Staffeldt) **89b:20073** 20J05 (16A60, 18G10, 18G15, 18G20)
- Obituary: Kurt August Hirsch. *Bull. London Math. Soc.* 20 (1988), no. 4, 350–358. (Editors) **89j:01061** 01A70
- (with Linnell, P. A.) Minimal free resolutions of lattices over finite groups. *Illinois J. Math.* 32 (1988), no. 3, 361–374. (J. E. Adney) **89j:20006** 20C05
- Grunewald, G. On the existence of metrizable or Sorgenfrey subspaces. *General topology and its relations to modern analysis and algebra, VI (Prague, 1986)*, 223–230, R & E Res. Exp. Math., 16, Heldermann, Berlin, 1988. (W. Stephen Watson) **89g:54013** 54A35 (03E35, 54E99)
- (with Pelant, Jan) Analytic spaces and paracompactness of  $X^2 \setminus \Delta$ . *Topology Appl.* 28 (1988), no. 1, 11–15. (Gabriel Debs) **89c:54053** 54E18 (54H05)
- Gruić, Ljubomir T. Algebraic conditions for absolute tracking control of continuous-time Lurie systems. *Linear algebra in signals, systems, and control (Boston, MA, 1986)*, 535–555, SIAM, Philadelphia, PA, 1988. (see **89f:00025**) 93C15 (93C60)
- Algebraic conditions for absolute tracking control of Lurie systems. *Internat. J. Control* 48 (1988), no. 2, 729–754. (Anna Maria Perdon) **89j:93022** 93B25 (93D05)
- Grum, William J. (with Debnath, Lokenath) The fractional calculus and its role in the synthesis of special functions. I. *Internat. J. Math. Ed. Sci. Tech.* 19 (1988), no. 2, 215–230. (R. Bittner) **89m:26015** 26A33 (33A99, 44A15)
- (with Debnath, Lokenath) The fractional calculus and its role in the synthesis of special functions. II. *Internat. J. Math. Ed. Sci. Tech.* 19 (1988), no. 3, 347–362. (R. Bittner) **89m:33013** 33A40 (26A33)
- Grünberg, O. (with Clarke, E. M.) Research on automatic verification of finite-state concurrent systems. *Annual review of computer science*, Vol. 2, 269–290, Annual Reviews, Palo Alto, CA, 1987. (Neculai Curteanu) **89f:68042** 68Q10 (03B70, 68Q60)
- (with Browne, M. C.; Clarke, E. M.) Characterizing finite Kripke structures in propositional temporal logic. International Joint Conference on Theory and Practice of Software Development (Pisa, 1987). *Theoret. Comput. Sci.* 59 (1988), no. 1–2, 115–131. (Neculai Curteanu) **89c:03030** 03B70 (03B45, 68Q10, 68Q55, 68Q60)
- Grün, Norbert (with Becker, Ulrich; Scheid, Werner) Evaluation of Appell functions in relativistic Coulomb-Dirac form factors. *J. Phys. A* 20 (1987), no. 16, 5447–5458. (Summary) **89c:81178** 81G45 (33A30)
- Grünbaum, B. Mathematical challenges in Escher's geometry. *M. C. Escher: art and science (Rome, 1985)*, 53–67, North-Holland, Amsterdam-New York, 1986. (see **89m:00011**) 00A08 (01A70, 51M20, 52A45)
- (with Shephard, G. C.) A dual for Descartes' theorem on polyhedra. *Math. Gaz.* 71 (1987), no. 457, 214–216. (Andrew Vince) **89f:52014** 52A25
- (with Shephard, G. C.) Duality of polyhedra. *Shaping space (Northampton, Mass., 1984)*, 205–211, Design Sci. Collect., Birkhäuser Boston, Boston, MA, 1988. (see **89f:52016**) 52A25
- (with Shephard, G. C.) Isoneal fabrics. *Amer. Math. Monthly* 95 (1988), no. 1, 5–30. (C. R. J. Clapham) **89g:05039** 05B30 (52A37)
- The edge-density of 4-critical planar graphs. *Combinatorica* 8 (1988), no. 1, 137–139. (O. D'Antona) **89c:05049** 05C15 (05C35)
- (with Shephard, G. C.) Les charpentiers de plaques rigides. [Rigid plate frameworks] Dual French-English text. *Structural Topology* No. 14 (1988), 1–8. (Robert Connelly) **89f:51084** 51M99 (51F99, 52A37)
- Grünbaum, F. Alberto Differential equations in the spectral parameter and multiphase similarity solutions. *Partial differential equations (Rio de Janeiro, 1986)*, 105–117, Lecture Notes in Math., 1324, Springer, Berlin-New York, 1988. (Guo Cheng Zhu) **89m:35193** 35Q20 (58F19, 58G25)
- Commuting pairs of linear ordinary differential operators of orders four and six. *Phys. D* 31 (1988), no. 3, 424–433. (P. A. Kuchment) **89m:58094** 58F07 (34A30)
- Grundhöfer, Theo Ternary fields of compact projective planes. *Abh. Math. Sem. Univ. Hamburg* 57 (1987), 87–101. (Hermann Hähl) **89d:51021** 51H15 (12K99, 51A25)
- Compact disconnected Moufang planes are Desarguesian. *Arch. Math. (Basel)* 49 (1987), no. 2, 124–126. (Hermann Hähl) **89a:51036** 51H10 (17D05)
- The groups of projectivities of finite projective and affine planes. Eleventh British Combinatorial Conference (London, 1987). *Discrete Math.* 25 (1988), 269–275. (P. B. Kirkpatrick) **89f:51038** 51E15 (05B25, 20D05)
- Compact disconnected planes, inverse limits and homeomorphisms. *Monatsh. Math.* 105 (1988), no. 4, 261–277. (Rainer Löwen) **89j:51014** 51H10 (51C05, 51E15)
- Grundland, A. M. (with Winternitz, P.; Tuszynski, J. A.) Exact solutions of the multidimensional classical  $\phi^4$ -field equations obtained by symmetry reduction. *J. Math. Phys.* 28 (1987), no. 9, 2194–2212. (Henrik Bohr) **89c:35145** 35Q20 (58G35, 81G20, 81G25, 82A25)
- (with Tuszynski, J. A.) Symmetry breaking and bifurcating solutions in the classical complex  $\phi^4$  field theory. *J. Phys. A* 20 (1987), no. 18, 6243–6258. (Joan Soto) **89c:81150** 81E99 (81C05, 82A99)
- (with Skierski, M.; Tuszynski, J. A.) Symmetry reduction for the three-dimensional Landau-Ginzburg equation. *Phys. Lett. A* 133 (1988), no. 4–5, 213–218. (Summary) **89f:58161** 58G35 (35Q20, 82A25)
- (with Tuszynski, J. A.) Multivalued solutions of the  $\phi^4$ -field equations, transition to ergodicity and bifurcations. *Phys. Lett. A* 133 (1988), no. 6, 298–304. (Masakazu Ichijyanagi) **89m:81036** 81C05 (35Q20, 58E20, 58F11, 58F14, 81J05)
- Grundling, Hendrik Systems with outer constraints. Gupta-Bleuler electromagnetism as an algebraic field theory. *Comm. Math. Phys.* 114 (1988), no. 1, 69–91. (Gioseppina Epifanio) **89c:81067** 81E05 (46L60)
- (with Hurst, C. A.) The quantum theory of second class constraints: kinematics. *Comm. Math. Phys.* 119 (1988), no. 1, 75–93. (Camillo Trapani) **89c:81052** 81D07 (46L60, 58F05, 81E05)
- (with Hurst, C. A.) A note on regular states and supplementary conditions. *Lett. Math. Phys.* 15 (1988), no. 3, 205–212. (Camillo Trapani) **89f:46131** 46L60 (81D05, 81E05)
- Grundszenik, Janis (with Blumens, A. A.) Principles of automatization of the design of experiments for dynamic systems. (Russian) *Decision-making methods and systems. Applied problems in the analysis of solutions in technical systems (Russian)*, 92–99, 150, Rishsk. Politekh. Inst., Riga, 1986. (see **89b:00001**) 62K99 (90B30)
- Grundy, R. E. (with Peletier, L. A.) Short time behaviour of a singular solution to the heat equation with absorption. *Proc. Roy. Soc. Edinburgh Sect. A* 107 (1987), no. 3–4, 271–288. (J. López Gómez) **89b:35067** 35K55 (35B40)
- Grün, Maïlleu José (with Tiñena, F.) Isometries on  $W$ -algebras. *C. R. Math. Rep. Acad. Sci. Canada* 10 (1988), no. 4, 167–170. (S. Rudeanu) **89b:03113** 03G25 (03B50, 54A05)
- Grünfelder, Luzius (Co-)homology of commutative coalgebras. *Comm. Algebra* 16 (1988), no. 3, 541–576. (From the introduction) **89m:13008** 13D03 (16A24, 16A62)
- Gruner-Bauer, P. (with Mertens, F. G.) Excitation spectrum of the Toda lattice for finite temperatures. *Z. Phys. B* 70 (1988), no. 4, 435–447. (Summary) **89d:82127** 82A68 (82A30)
- Grunewald, Fritz J. (with Elstrodt, Jürgen; Mennicke, Jens L.) Séries de Poincaré, sommes de Kloosterman et valeurs propres du laplacien pour les groupes de congruence agissant sur un espace hyperbolique. (French summary) [Poincaré series, Kloosterman sums and eigenvalues of the Laplacian for congruence groups acting on hyperbolic spaces] *C. R.*



- Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 13, 577–581. (Peter Sarnak) **89c:11086** 11F72 (11E57, 11L05, 11P21)
- (with Elstrodt, Jürgen; Mennicke, Jens L.) Vahlen's group of Clifford matrices and spin-groups. *Math. Z.* **196** (1987), no. 3, 369–390. (E. A. Connors) **89b:11031** 11E57 (11E88, 15A66, 20G15, 20H15)
- (with Elstrodt, Jürgen; Mennicke, Jens L.) Some remarks on discrete subgroups of  $SL_2(\mathbb{C})$ . (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **162** (1987), *Avtomorf. Funkts. i Teor. Chisel.* **III**, 77–106, 189. (O. V. Shvartsman) **89c:22018** 22E40 (11E32, 11E45, 11F72, 58G25)
- (with Segal, Daniel; Smith, Geoff C.) Subgroups of finite index in nilpotent groups. *Invent. Math.* **93** (1988), no. 1, 185–223. (Daniel Barsky) **89m:11084** 11M41 (03C10, 03C60, 20F18)
- (with O'Halloran, Joyce) Varieties of nilpotent Lie algebras of dimension less than six. *J. Algebra* **112** (1988), no. 2, 315–325. (A. S. Dzhamadil'daev) **89c:17018** 17B30
- (with O'Halloran, Joyce) A characterization of orbit closure and applications. *J. Algebra* **116** (1988), no. 1, 163–175. (H. H. Andersen) **89j:17006** 17B05 (17B30, 20G05)
- (with Elstrodt, Jürgen; Mennicke, Jens L.) Arithmetic applications of the hyperbolic lattice point theorem. *Proc. London Math. Soc.* (3) **57** (1988), no. 2, 239–283. (Dorothy Andreoli) **89g:11033** 11E45 (11F72)
- Grunin, V. K.** (with Kiselev, N. V.; Kurtser, G. M.; Yakubovskii, E. G.) An algorithm for estimating the parameters of the regular and irregular components of an echo signal in a classification problem. (Russian) *Algorithms, software and hardware for flexible production systems* (Russian), 13–25, 209, *Avtomat. Proizvod.*, 7, Leningrad. Univ., Leningrad, 1988. (D. Stanomir) **89g:94008** 94A12
- Grunsky, Helmut** see Blaschke, Wilhelm, **89a:01101**
- Grupp, Frieder** (with Richert, Hans-Egon) Notes on functions connected with the sieve. *Analysis* **8** (1988), no. 1–2, 1–23. (Gérard Tenenbaum) **89i:11101** 11N35
- Gruševskii, A. V.** Tidal evolution of the axial rotations of celestial bodies taking into account their compression. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 223, 23 pp. (Summary) **89d:85012** 85A99
- (with Golubev, Yu. F.; Khairullin, R. Z.) Control laws that ensure maximal range for the descent of a satellite in the atmosphere. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 14, 28 pp. (Summary) **89b:65156** 65K10 (93C75)
- Grushko, A. N.** A game-theoretic method for constructing an optimal hierarchical structure. (Russian) *Multistage, hierarchical, differential and noncooperative games* (Russian), 74–82, Kalinin. Gos. Univ., Kalinin, 1987. (B. L. Ovsievich) **89i:93004** 93A13 (90D15)
- Grushko, I. I.** (with Afanas'ev, V. B.) Rapid Fourier transform algorithms for the fields  $GF(2^m)$ . (Russian) *Noise-resistant coding and computer reliability* (Russian), 33–55, 190, "Nauka", Moscow, 1987. (Manfred Tasche) **89f:94003** 94A11 (94B35)
- Decoding of Berman modular MDS-codes. (Russian) *Problemy Peredachi Informatsii* **24** (1988), no. 2, 15–21; translated in *Problems Inform. Transmission* **24** (1988), no. 2, 96–101. (Summary) **89g:94036** 94B35 (94B15)
- Grushko, P. Ya.** (with Arutyunyan, S. Kh.; Evtushik, L. E.; Lumiste, Ülo) Differential-algebraic methods for geometric investigations in the work of A. M. Vasil'ev and his scientific school. (Russian) *Problems in geometry*, Vol. 20 (Russian), 3–34, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform.*, Moscow, 1988. (I. Vaisman) **89k:01029** 01A70 (53-03, 53C10, 58H05)
- Gruška, J.** see Special issue: International Symposium on Mathematical Foundations of Computer Science, **89c:68006**
- Gruson, Laurent** (with Peskine, Christian) Space curves: complete series and speciality. *Space curves* (Rocca di Papa, 1985), 108–123, *Lecture Notes in Math.*, 1266, Springer, Berlin-New York, 1987. (Monica Idà) **89c:14045** 14H45 (14H50)
- Grüter, Michael** (with Jost, Jürgen) Allard type regularity results for varifolds with free boundaries. *Ann. Scuola Norm. Sup. Pisa Cl. Sci.* (4) **13** (1986), no. 1, 129–169. (Harold Parks (Zbl 615:49018)) **89d:49048** 49F20
- The monotonicity formula in geometric measure theory, and an application to a partially free boundary problem. *Partial differential equations and calculus of variations*, 238–255, *Lecture Notes in Math.*, 1357, Springer, Berlin-New York, 1988. (Constantin Udriste) **89m:49079** 49F20 (53A10)
- de Grutula, V.** see De Grutula, V.
- Gryaznov, V. G.** (with Solov'ev, V. A.) A criterion for the dislocation generation of cracks near the interface. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 3, 614–617; translated in *Soviet Phys. Dokl.* **33** (1988), no. 7, 544–546. (L. A. Turaki) **89m:82059** 82A57 (73S05)
- Grycak, Wiesław** (with Deszcz, Ryszard) On some class of warped product manifolds. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 3, 311–322. (Johan Deprez) **89g:53061** 53C20 (53C25)
- Grygarová, Libuše** (with Nožička, František; Lommatzsch, Klaus) ★ Geometrie konvexer Mengen und konvexe Analysis. (German) [Geometry of convex sets and convex analysis] *Mathematische Lehrbücher und Monographien, II. Abteilung: Mathematische Monographien* [Mathematical Textbooks and Monographs, Part II: Mathematical Monographs], 71, Akademie-Verlag, Berlin, 1988, 423 pp. ISBN 3-05-500335-7 (Guenter Leugering) **89k:52001** 52-01 (49A50, 49A55, 52A20)
- The implicit function theorem for a convex function. *Arbeiten zur mathematischen Optimierung und zu verwandten Gebieten*, 45–58, *Seminarberichte*, 94, Humboldt Univ., Berlin, 1988. (J. E. Spingarn) **89g:90169** 90C25 (26B25)
- Gryllakis, Constantinos** Products of completion regular measures. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 563–568. (J. C. Oxtoby) **89d:28010** 28C15 (28A35)
- etchine-Grynberg, G.** see Netchine-Grynberg, G.
- Grytczak, Aleksandr** The Halpern-Richert type theorems for submultiplicative functions on arithmetical semigroups. *Demonstratio Math.* **19** (1986), no. 3, 629–636 (1987). (Anthony A. Gioia) **89c:11009** 11A25 (11N35)
- Grynvald, F.** see Grunewald, Fritz J.
- Grzeglewicz, Ryszard** (with John, Kamil) Extreme elements of the unit ball of bilinear operators on  $l_2^2$ . *Arch. Math. (Basel)* **50** (1988), no. 3, 264–269. (Jerry A. Johnson) **89d:47095** 47D15 (46B99)
- Grzegórski, S. M.** Multilevel least-change Newton-like methods for equality constrained optimization problems. *Math. Programming* **37** (1987), no. 1, 91–116. (L. V. Vasil'ev) **89a:90124** 90C30 (65K05)
- Grzeszczuk, Piotr** Goldie dimension of differential operator rings. *Comm. Algebra* **16** (1988), no. 4, 689–701. (K. R. Goodearl) **89c:16005** 16A05
- Dual Gabriel dimension of modules with derivations. *Comm. Algebra* **16** (1988), no. 8, 1689–1699. (T. Albu) **89f:16036** 16A55 (16A72)
- (with Puczyłowski, Edmund R.) Gabriel and Krull dimensions of modules over rings graded by finite groups. *Proc. Amer. Math. Soc.* **105** (1989), no. 1, 17–24. (T. Albu) **89m:16047** 16A55 (06C05)
- Grzybowski, H. Tomasz** Quadratic kinetic equations are linear in the tensor product space. *Internat. J. Theoret. Phys.* **27** (1988), no. 10, 1277–1279. (Summary) **89i:82036** 82A40
- Nonequilibrium diffusion as a Markov process. *Phys. Lett. A* **134** (1988), no. 1, 4–7. (Carlo Cercignani) **89k:82049** 82A40 (60J60)
- Gu, An Hai** The transformation function  $\Phi$  and the condition needed for KUR space having the fixed point. *Appl. Math. Mech. (English Ed.)* **7** (1986), no. 3, 293–297; translated from *Appl. Math. Mech.* **7** (1986), no. 3, 273–277 (Chinese. English summary). (R. G. Bartle) **89f:46032** 46B20 (47H10)
- The transformation  $\Phi$  and general Pythagoras' theorem on the linear manifold. *Appl. Math. Mech. (English Ed.)* **8** (1987), no. 12, 1201–1204; translated from *Appl. Math. Mech.* **8** (1987), no. 12, 1131–1134 (Chinese. English summary). (K. Burian) **89k:51039** 51N20 (15A03)
- Gu, An Na** On the proof of a theorem. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **13** (1987), no. 3, 54–56. (Shao Kuan Li) **89a:15002** 15A09
- Gu, Cai Xing** Spectra of tensor products and elementary operators. (Chinese) An English summary appears in *Chinese Ann. Math. Ser. B* **8** (1987), no. 4, 492. *Chinese Ann. Math. Ser. A* **8** (1987), no. 5, 544–556. (Shao Kuan Li) **89a:47004** 47A10 (47A99, 47B99)
- (with Li, Shao Kuan) On the spectral representation of the elementary operator and spectral mapping theorems. *Acta Math. Sinica (N.S.)* **4** (1988), no. 1, 39–44. (Robin Harter) **89b:47003** 47A10
- Gu, Chao Hao** (with Hong, Jia Xing) Some developments of the theory of partial differential equations of mixed type. *Mixed type equations*, 120–135, *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) **89b:35112** 35M05
- A global study of extremal surfaces in 3-dimensional Minkowski space. *Differential geometry and differential equations* (Shanghai, 1985), 26–33, *Lecture Notes in Math.*, 1255, Springer, Berlin-New York, 1987. (Introduction) **89d:53018** 53A10 (53A35)
- A class of boundary problems for extremal surfaces of mixed type in Minkowski 3-space. *J. Reine Angew. Math.* **385** (1988), 195–202. (Introduction) **89h:53018** 53A10
- The mixed PDE for amplifying spiral waves. *Lett. Math. Phys.* **16** (1988), no. 1, 69–76. (Summary) **89h:35232** 35M05 (35A30, 58G37)
- Gu, Cheng** What happens when bootstrapping the smoothing spline? *Comm. Statist. Theory Methods* **16** (1987), no. 11, 3275–3284. (Hilmar Drygas) **89b:62081** 62G05 (62J02)
- Gu, D.-W.** (with Postlethwaite, I.; O'Young, S. D.) Note on McMillan degree bounds for  $H^\infty$  optimal controllers. *Internat. J. Control* **48** (1988), no. 4, 1743–1747. (Not in MR) **93B35**
- Gu, Dao Xiu** Complete regular solutions of nonhomogeneous quasilinear first-order partial differential equations. (Chinese. English summary) *Hunan Jiaoyu Xueyuan Ziran Kexue Xuebao* **6** (1988), no. 1, 31–34. (Song Mu Zheng) **89m:35046** 35F25
- Gu, Feng** On a generalization of Bernstein polynomials to an infinite interval. (Chinese) *Math. Practice Theory* **1987**, no. 4, 89–90. (Ying Guang Shi) **89c:41008** 41A10 (41A25)
- Gu, Fa Wen** (with Chen, Shao Zhong) Some measurable selection theorems for topological spaces. (Chinese. English summary) *J. Math. Res. Exposition* **7** (1987), no. 2, 179–184. (Summary) **89g:54041** 54C65 (28A99)
- Gu, Guo Qing** A cylindrically symmetric steady state rigorous general solution in electromagnetic fluid mechanics under a radial magnetic field. (Chinese) *Acta Math. Sci. (Chinese)* **7** (1987), no. 3, 313–321. (S. I. Pai) **89c:76115** 76W05
- Gu, Ji Fa** (with Wang, Xu Zhu) A class of ranking methods of alternatives. (Chinese. English summary) *J. Systems Engrg.* **3** (1988), no. 1, 14–23. (Summary) **89h:90014** 90A06 (03E72, 94D05)
- Gu, K.** (with Tongue, B. H.) A higher order method of interpolated cell mapping. *J. Sound Vibration* **125** (1988), no. 1, 169–179. (Arkady S. Pikovsky) **89k:58147** 58F08 (58F13, 70K99)
- (with Tongue, B. H.) Interpolated cell mapping of dynamical systems. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 2, 461–466. (Robert Faure) **89j:58074** 58F12 (70K05)
- Gu, Lian Kun** The asymptotic behavior of solutions of degenerate nonlinear parabolic equations. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoien.* **26** (1987), no. 6, 631–640. (Zuchi Chen) **89h:35043** 35B40 (35K65)
- Gu, Sheng Shi** (with Yue, Jing Liang) Chaotic behavior of a generalized Hénon mapping. (Chinese. English summary) *J. Shanghai Jiaotong Univ.* **1987**, no. 5, 83–86, 127. (Jingzhong Zhang) **89c:58077** 58F13 (26A18)
- Gu, X. M.** (with Sethna, P. R.) Resonant surface waves and chaotic phenomena. *J. Fluid Mech.* **183** (1987), 543–565. (Summary) **89a:76014** 76B15
- Gu, Xin Li** (with Wang, Xie Hua) Application of tree grammar and projection to hierarchical description of Chinese characters. (Chinese. English summary) *J. East China Norm. Univ. Natur. Sci. Ed.* **1988**, no. 2, 23–33. (Not in MR) **68U10** (68R10)
- Gu, Xin Shen** (with Li, Yi Shen; Zou, Mao Rong) Three kinds of Darboux transformation for the evolution equations which connect with AKNS eigenvalue problem. *Acta Math. Sinica (N.S.)* **3** (1987), no. 2, 143–151. (Malcolm Adams) **89d:35164** 35Q20 (58F07, 58G37)
- $L$ -degree Darboux transformation for the evolution equations which are associated with AKNS eigenvalue problem and its reductions. *Ann. Differential Equations* **3** (1987), no. 1, 13–37. (I. S. Krasil'shchik) **89h:35290** 35Q20 (58F07, 58G37)
- Gu, Xing Yuan** (with Wang, Wei) On the stability of a self-tuning controller in the presence of bounded disturbances. *IEEE Trans. Automat. Control* **34** (1989), no. 2, 211–214. (Chung Li Jiang) **89m:93072** 93D25 (93C40, 93C55)
- Gu, Xun** (with Liu, Zu Dong) A gene diffusion model for a colony with asynchronous growth, and its degree of heterogeneity. (Chinese) *Xuebao Tongbao (Chinese)* **32** (1987), no. 16, 1255–1258. (Not in MR) **92A15**
- Gu, Yi Ming** Analyses of some termination criteria for the simplex evolutionary technique. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **14** (1988), no. 3, 126–131. (Summary) **89m:90099** 90C05
- Gu, Zhi Ming** The homotopy types of the deleted products of some vector bundles. A Chinese summary appears in *Chinese Ann. Math. Ser. A* **9** (1988), no. 4, 507. *Chinese*

- Ann. Math. Ser. B* 9 (1988), no. 3, 311–314. (Donald M. Davis) **89k:57055** 57R22 (55R25)
- Gu, Zhi Yu** (with Qian, Shang Wu) Aharonov-Bohm scattering on parallel flux lines of the same magnitude. *J. Phys. A* 21 (1988), no. 11, 2573–2585. (Summary) **89e:81013** 81B99
- Gu, Zhong Wen** (with Yu, Li) A new method for parameter estimation of bilinear systems—the Fourier series method. (Chinese) *Inform. and Control (Shenyang)* 17 (1988), no. 2, 54–56, 61. (Yen Ping Shih) **89j:93032** 93B30 (34A45)
- Gua, Tuoying** see **Guo, Tuo Ying**
- Guncaneme, Julio E.** An optimal parameter choice for regularized ill-posed problems. *Integral Equations Operator Theory* 11 (1988), no. 4, 610–613. (Charles W. Groetsch) **89e:65054** 65J10 (47A50)
- On optimal convergence for regularized Tikhonov approximations. *J. Optim. Theory Appl.* 58 (1988), no. 1, 127–131. (P. M. Anselone) **89h:65220** 65R20 (45B05, 45L05, 45L10, 49D15)
- On simplified Tikhonov regularization. *J. Optim. Theory Appl.* 58 (1988), no. 1, 133–138. (M. Z. Nashed) **89h:65092** 65J10
- Guadagnini, E.** (with Martellini, M.; Mintchev, M.) Scale invariant sigma models on homogeneous spaces. *Phys. Lett. B* 194 (1987), no. 1, 69–74. (Elcio Abdalla) **89a:81092** 81E20 (53C30, 53C80, 81E15)
- The loop effective measure for sigma models coupled with gravity. *J. Math. Phys.* 29 (1988), no. 8, 1901–1908. (Author's review) **89i:81092** 81E20
- (with Martellini, M.; Mintchev, M.) Vanishing of the cosmological constant for heterotic-type lower-dimensional superstrings. *Phys. Lett. B* 200 (1988), no. 4, 478–482. (M. A. Namazi) **89h:81192** 81E99 (32G15, 81E30, 83E30)
- Beta-function computation without the use of normal coordinates. *Phys. Rev. D* (3) 37 (1988), no. 8, 2253–2256. (Summary) **89h:81132** 81E15 (81E30)
- Guadalupe, I.** (with Gutiérrez, Carlos; Sotomayor, J.; Tribuzi, R.) Principal lines on surfaces minimally immersed in constantly curved 4-spaces. *Dynamical systems and bifurcation theory (Rio de Janeiro, 1985)*, 91–120, *Pitman Res. Notes Math. Ser.*, 160, *Longman Sci. Tech., Harlow*, 1987. (R. Osserman) **89a:53011** 53A10 (53A07, 53C42, 58F18, 58F21)
- Guadalupe Hernández, José Javier** (with Rezola, Ma. Luisa) The conjugate function in plane curves. *Canad. Math. Bull.* 31 (1988), no. 2, 147–152. (Michel Zinsmeister) **89g:42037** 42B30
- Gualtierotti, A. F.** (with Baker, C. R.) Likelihood ratios and signal detection for non-Gaussian processes. *Stochastic processes in underwater acoustics (Brighton, 1985)*, 154–180, *Lecture Notes in Control and Inform. Sci.*, 85, *Springer, Berlin-New York*, 1986. (From the introduction) **89d:94017** 94A13 (60G35)
- Guan, Bo** Primitive topological algebras and modules. *J. Math. Res. Exposition* 8 (1988), no. 1, 23–28. (R. J. Loy) **89g:46084** 46H25 (46H15)
- Guan, Jia Yu** The stability of proper efficient solutions in generalized multicriteria mathematical programming. (Chinese. English summary) *J. Systems Engrg.* 3 (1988), no. 1, 81–85. (Qi-Yue Bu) **89h:90222** 90C31 (49A50)
- Guan, Ke Ying** Bifurcation of the periodic differential equations with regularisable infinity. *Proc. Roy. Soc. Edinburgh Sect. A* 107 (1987), no. 3–4, 233–247. (W. S. Loud) **89h:34094** 34C25
- (with Gunson, J.; Hassan, H. S.) On periodic solutions of the periodic Riccati equation. *Resultate Math.* 14 (1988), no. 3–4, 309–317. (Ch. G. Philos) **89k:34060** 34C25 (34C27, 34C40)
- Guan, Li Tai** A method for constructing numerical integration formulas in higher dimensions with thin plate splines. (Chinese. English summary) *Acta Sci. Natur. Univ. Sunyatseni* 1988, no. 1, 39–44. (De Hui Chen) **89i:65020** 65D30
- Guan, Mei Gu** The windy postman problem for a class of graphs. (Chinese) *Chinese J. Oper. Res.* 2 (1983), no. 2, 51–52. (Not in MR) 90B10 (05C45)
- (with Lenstra, J. K.; Rinnooy Kan, A. H. G.) On the travelling salesman problem. (Chinese) *Chinese J. Oper. Res.* 4 (1985), no. 1, 22–31, 21. (Yixun Lin) **89j:90098** 90B10 (05C45, 90C10, 90C35)
- Guan, Wei De** Markov decision drift processes. (Chinese) *Chinese J. Oper. Res.* 6 (1987), no. 1, 15–20. (Editors) **89k:90174** 90C40
- Guan, Xiao Zhi** (with Wang, Neng Chao) A bisection technique for parallel solution of a class of recurrence problems. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 6, suppl., 99–102. (Summary) **89h:35260** 35Q05 (65W05)
- Guan, Yan Shen** (with Yang, Jiahn Bo) Optimal control of supersonic inlet/engine combination. *J. Guidance Control Dynamics* 11 (1988), no. 2, 137–145. (Not in MR) 93C75 (49D40, 93E20)
- Guan, Zhi Cheng** Change of phase with variable melting temperature. (Italian summary) *Riv. Mat. Univ. Parma* (4) 12 (1986), 131–138 (1987). (Renuka Datta) **89g:80004** 80A20 (80A10)
- Guangxiang, Zhang** see **Zhang, Guang Xiang**
- Guaraldo, Francesco** An approximation problem for manifolds. (Italian. English summary) *Rend. Mat.* (7) 6 (1986), no. 1–2, 99–103 (1988). (A. Tognoli) **89m:32012** 32B15 (32C05, 57R99, 58A07, 58A35)
- Guardabassi, G.** (with Righettini, A.; Ruffoni, L.) Output linearizable models and nonlinear control of a distillation column. (Russian and Polish summaries) *Systems Sci.* 12 (1986), no. 4, 43–66 (1987). (Summary) **89h:93076** 93C75 (93B50)
- Guardiola, R.** see **Ixaru, L. Gr.** **89b:81011**
- Guarini, Marcello W.** (with Palusinski, Olgierd A.; Wright, Stephen Joseph) Spectral technique in electronic circuit analysis. *Internat. J. Numer. Modelling* 1 (1988), no. 3, 137–151. (Not in MR) 41A50 (94C05)
- Guarneri, I.** (with Casati, G.; Perotti, L.) Chaos and quantum dynamics of simple models. (Russian summary) *Physics of multiparticle systems*, No. 14 (Russian), 6–11, 97, 100, *"Naukova Dumka"*, Kiev, 1988. (see **89k:82001**) 58F13 (81D99)
- (with Brivio, G. P.; Casati, G.; Perotti, L.) Quantum suppression of chaotic diffusion: theory and experiment. *Progress in chaotic dynamics. Phys. D* 33 (1988), no. 1–3, 51–57, 81C99
- Gubanov, I. I.** (with Panovko, Ya. G.) ★ Устойчивость и колебания упругих систем. (Russian) [Stability and vibrations of elastic systems] Современные концепции, парадоксы и ошибки. [New concepts, paradoxes and fallacies] Fourth edition. *Проблемы Науки и Технического Прогресса. [Problems of Science and Technological Progress] "Nauka"*, Moscow, 1987. 352 pp. (Editors) **89f:73002** 73–01
- Gubar, A. Yu.** (with Glasko, V. B.; Korshunov, A. B.) Asymptotic methods for constructing a numerical algorithm for a problem of the heating of thin plates by radiation. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* 29 (1988), no. 4, 17–22, 102. (Summary) **89j:80011** 80A20 (80–08)
- Gubar, I. G.** (with Gubar, S. I.) Error dynamics in debugging a program. (Russian) *Methods for solving nonlinear problems, and data processing (Russian)*, 27–30, 105, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1986. (see **89f:00011**) 68N05
- Gubar, S. I.** (with Gubar, I. G.) Error dynamics in debugging a program. (Russian) *Methods for solving nonlinear problems, and data processing (Russian)*, 27–30, 105, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1986. (see **89f:00011**) 68N05
- Gubbi, A. V.** (with Dow, A.; Symański, Andrzej) Rigid Stone spaces within ZFC. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 745–748. (Hao Xuan Zhou) **89d:54028** 54G05 (06E15)
- Gubeladze, A. K.** On a class of perfect sets. (Russian) *Probabilistic methods for the investigation of systems with an infinite number of degrees of freedom (Russian)*, 40–45, iii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1986. (S. A. Peregudov) **89a:28002** 28A05
- Finite-valued stationary Markov chains. (Russian) *Asymptotic problems in the theory of random processes (Russian)*, 48–51, 115, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (Serban Grigorescu) **89j:60091** 60J10
- Gubeladze, I. Dz.** On the division class groups of divisible monoids. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzin. SSR* 122 (1986), no. 2, 241–244. (P. M. Cohn) **89i:13008** 13B25
- On the  $K$ -theory of complete projective algebras. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzin. SSR* 128 (1987), no. 1, 17–20. (Charles Weibel) **89g:18020** 18F25 (13B25, 13D15, 19D23)
- "Classical" algebraic  $K$ -theory of monoid algebras. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzin. SSR* 130 (1988), no. 3, 469–471. (L. N. Vaserstein and E. Wheland) **89k:18022** 18F25 (19A31, 19B28)
- The Anderson conjecture and a maximal class of monoids over which projective modules are free. (Russian) *Mat. Sb. (N.S.)* 135(177) (1988), no. 2, 169–185, 271; translated in *Math. USSR-Sb.* 63 (1989), no. 1, 165–180. (Iuliu Crivei) **89d:13010** 13C10
- Gubin, S. V.** (with Kovalev, A. M.) Gauge function of the domain of attainability of a linear control system and its application in estimation problems. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1987, no. 10, 21–25, 85. (Igor N. Litvin) **89a:49037** 49E15 (93B05, 93C05)
- Extremal properties of corner points of the boundary of a domain of attainability. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 8(42) (1987), 10–12, 92. (Venteslav G. Rumchev) **89g:49050** 49E15 (93B05)
- (with Kovalev, A. M.) On constructing the attainability sets of linear nonautonomous systems with resource constraints. *Soviet J. Comput. Systems Sci.* 25 (1987), no. 2, 175–181; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1986, no. 6, 155–160, 223 (Russian). (Jerzy Szatjain) **89b:49059** 49E15 (93C05)
- Gubin, Yu. P.** (with Lomov, S. A.; Safonov, V. F.) The connection between the regularization method and the averaging method for systems in standard form. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 133–145, 339–340, "Ilim", Frunze, 1987. (D. Balnov) **89g:34059** 34C29
- (with Lomov, S. A.; Safonov, V. F.) Asymptotic theory of differential systems and the connection between the regularization method and the averaging method. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 146–160, 340, "Ilim", Frunze, 1987. (Zhu Jun Jing) **89g:34060** 34C29 (34E05)
- Gubonin, N. S.** An estimate of the probability of failure in a system with preventive maintenance at random moments in time. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 9, 166–168; translated in *Automat. Remote Control* 49 (1988), no. 9, part 2, 1242–1244. (F. Beichelt) **89m:90074** 90B25
- Gubreev, G. M.** The property of being a basis of families of functions of Mittag-Leffler type. Dzhirbashyan transforms and the Muckenhoupt condition. (Russian) *Funktsional. Anal. i Prilozhen.* 21 (1987), no. 4, 71–72. (A. B. Aleksandrov) **89c:46043** 46E30 (30B60, 42B99, 46E25)
- Guccia, Giovan Battista** see *Anniversary: Foundation of the Circolo Matematico di Palermo*, (89k:01038) and *De Franchis, M.*, (89k:01038)
- Guckenheimer, John** (with Armbruster, D.; Holmes, Philip) Heteroclinic cycles and modulated travelling waves in systems with  $O(2)$  symmetry. *Phys. D* 29 (1988), no. 3, 257–282. (A. Vanderbauwhede) **89h:58136** 58F14 (58C27, 76E30)
- Guddat, Jürgen** Parametric optimization: pivoting and predictor-corrector continuation, a survey. *Parametric optimization and related topics (Plaue, 1985)*, 125–162, *Math. Res.*, 35, *Akademie-Verlag, Berlin*, 1987. (Johannes Jahn) **89a:90142** 90C31
- (with Jongen, H. Th.) Structural stability in nonlinear optimization. *Optimization* 18 (1987), no. 5, 617–631. (Summary) **89h:90223** 90C31
- see also *Advances in mathematical optimization*, **89b:90117**
- Gudder, Stanley P.** Measures and states on graphs. *Recent developments in quantum logic (Cologne, 1984)*, 253–264, *Grundlagen Exakt. Naturwiss.*, 6, *Bibliographisches Inst., Mannheim*, 1985. (see **89b:81008**) 05C99 (81B05)
- State dimension of a graph. *Demonstratio Math.* 19 (1986), no. 4, 947–975 (1987). (D. J. Foulis) **89a:05126** 05C99 (05C65, 81B05)
- (with Pulmannová, Sylvia) Geometric properties of transition amplitude spaces. *J. Math. Phys.* 28 (1987), no. 10, 2393–2399. (A. Barchielli) **89b:81026** 81B10 (06C15)
- (with Rüttimann, Gottfried T.) Finite function spaces and measures on hypergraphs. *Discrete Math.* 68 (1988), no. 2–3, 221–244. (R. Piziak) **89a:28011** 28C99 (05C65, 81B10)
- (with Rüttimann, Gottfried T.) Positive sets in finite linear function spaces. *Discrete Math.* 68 (1988), no. 2–3, 245–255. (R. Piziak) **89a:28012** 28C99 (05C65, 81B10)
- (with Stulpe, Werner; Hagler, J.) An uncertainty relation for joint position-momentum measurements. *Found. Phys. Lett.* 1 (1988), no. 3, 287–292. (Summary) **89j:81012** 81B05
- Finite model for particles. *Hadronic J.* 11 (1988), no. 1, 21–34. (Summary) **89j:81257** 81G25
- Realistic quantum probability. *Loyola Conference on Mathematical and Interpretational Problems in Relativistic Quantum Theory (New Orleans, 1987)*. *Internat. J. Theoret. Phys.* 27 (1988), no. 2, 193–209. (M. J. Maczyński) **89h:81018** 81B10 (46L60, 46N05, 81C37)



- A theory of amplitudes. *J. Math. Phys.* **29** (1988), no. 9, 2020–2035. (H. Primas) **89b:81011** 81B05
- Godinas, P. P. *see* Gudynas, Pranas P.
- Godin, A. N. (with Uzdov, A. E.) Determination of the coefficients of diffusion and capture from experimental data. (Russian) *Function-theoretic methods in problems of mathematical physics (Russian)*, 42–46, *Energoatomizdat, Moscow*, 1986. (see **89b:00012**) 35R30
- Godin, D. A. Plane real projective quartic curves. *Topology and geometry—Rohlin Seminar*, 341–347, *Lecture Notes in Math.*, 1346, Springer, Berlin-New York, 1988. (Peter Gihlin) **89i:58012** 58C27 (14H45)
- Godin, V. V. On methods for the numerical solution of a transcendental equation with complex coefficients. (Russian) *Lav. Mat. Ezhegodnik* No. 31 (1988), 141–146, 254. (I. P. Mysovskikh) **89b:65078** 65H05 (76Q05)
- Godmundsdottir, Gudrun A regularity theorem for differential equations of constant strength. *Differential equations and mathematical physics (Birmingham, Ala., 1986)*, 150–154, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (David S. Tartakoff) **89d:35003** 35A20 (35B99, 35H05)
- Godmundson, Peter (with Zang, Weilin) A boundary integral method for internal piecewise smooth crack problems. (French summary) *Internat. J. Fracture* **38** (1988), no. 4, 275–294. (Summary) **89i:73010** 73-08 (73M05)
- Godovich, N. N. (with Terteryan, A. A.) Stability of block difference schemes for parabolic equations. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 3, 531–534; translated in *Soviet Math. Dokl.* **36** (1988), no. 3, 489–492. (Ivan Kopčec) **89f:65074** 65L05
- Godunovich, V. S. (with Mossakovskii, V. I.; Makeev, E. M.) \* Контактные взаимодействия элементов оболочечных конструкций. (Russian) [Contact interactions of elements of shell constructions] "Naukova Dumka", Kiev, 1988. 288 pp. ISBN 5-12-009305-1 (Summary) **89j:73100** 73T05 (73-05, 73-08, 73K15)
- Gudynas, Pranas P. An estimate for the rate of convergence in the central limit theorem for dependent two-dimensional random vectors. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **28** (1988), no. 1, 66–76; translated in *Lithuanian Math. J.* **28** (1988), no. 1, 47–54. (Włodzimierz Bryc) **89c:60075** 60F05
- Gul'z, L. A. (with Zmorovich, V. A.) On a generalization of an asymptotic formula for  $n!$ . (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 6, 782–783, 816. (J. Albricht) **89c:33001** 33A15 (05A19)
- Gudzenko, A. B. A method for the synthesis of sliding modes in one-dimensional systems using observers. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 10, 35–41; translated in *Automat. Remote Control* **49** (1988), no. 10, part 1, 1278–1282. (Summary) **89i:93047** 93B50 (93B07)
- Guechi, L. (with Chetouani, L.; Hammann, T. F.) Exact path integral for the ring potential. *Phys. Lett. A* **125** (1987), no. 6–7, 277–281. (Takashi Miura) **89d:81037** 81C35
- Guedda, Mohammed (with Véron, Laurent) Local and global properties of solutions of quasilinear elliptic equations. *J. Differential Equations* **76** (1988), no. 1, 159–189. (John M. Ball) **89k:35078** 35J60 (35B65)
- (with Véron, Laurent) Bifurcation phenomena associated to the  $p$ -Laplace operator. *Trans. Amer. Math. Soc.* **310** (1988), no. 1, 419–431. (Maria J. Esteban) **89j:35024** 35B32 (35J60)
- Gugan, Dominique Different representations for bilinear models. *J. Time Ser. Anal.* **8** (1987), no. 4, 389–408. (Hironao Kawashima) **89g:62155** 62M99
- Guefat, Jacques (with Marcotte, Patrice) Adaptation of a modified Newton method for solving the asymmetric traffic equilibrium problem. *Transportation Sci.* **22** (1988), no. 2, 112–124. (Summary) **89g:90085** 90B20
- Guelman, M. Gyrostat trajectories and core energy. *J. Guidance Control Dynamics* **11** (1988), no. 6, 577–583. (David A. Levinson) **89m:70012** 70E99
- Guenoun, Zine El Abidine (with Granas, Andrzej) Quelques résultats dans la théorie de Bernstein-Carathéodory de l'équation  $y'' = f(t, y, y')$ . (English summary) [Some results in the Bernstein-Carathéodory theory for the equation  $y'' = f(t, y, y')$ ] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 16, 703–706. (John W. Lee) **89d:34034** 34B15
- (with Frigon, Marlène; Granas, Andrzej) Sur l'intervalle maximal d'existence de solutions pour des inclusions différentielles. (English summary) [On the maximal interval for the existence of solutions to differential inclusions] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 18, 747–750. (Stefan Mirica) **89g:34019** 34A60 (34A15)
- Guenoun, Tajeddine (with Aubry, Denis) Réponse homogénéisée en temps de structures sous chargements cycliques. (English summary) [Time-homogenized response of structures under cyclic loadings] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **303** (1986), no. 20, 1765–1768. (Summary) **89j:73092** 73M10 (35C20, 73F30)
- Guenoche, A. (with Monjardet, B.) Méthodes ordinales et combinatoires en analyse des données. (English summary) [Ordinal and combinatorial methods in data analysis] *Math. Sci. Humaines* No. 100 (1987), 5–47, 129 (1988). (Not in MR) 62-07 (05A15, 05C05, 68R05, 92A05)
- Guenet, Jacques *see* Seminar: Complex Analysis and Geometry, 1987, **89c:32002**
- Guenter, Ronald B. (with Lee, John W.) Topological transversality and differential equations. *Fixed point theory and its applications (Berkeley, CA, 1986)*, 121–130, *Contemp. Math.*, 72, Amer. Math. Soc., Providence, RI, 1988. (Olusola Akinyele) **89k:34014** 34A34 (34A50, 47H15, 58C27, 58E99)
- (with Granas, Andrzej; Lee, John W.) Some existence results for the differential inclusions  $y^{(k)} \in F(x, y, \dots, y^{(k-1)})$ ,  $y \in \mathcal{B}$ . (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 8, 391–396. (Stefan Mirica) **89i:34012** 34A60 (34B10)
- Gueret, Philippe (with Cufaro Petroni, Nicola; Vigier, J.-P.) Second-order wave equation for spin- $\frac{1}{2}$  fields: 8-spinors and canonical formulation. *Found. Phys.* **18** (1988), no. 11, 1057–1075. (Summary) **89k:81057** 81D25 (81D27)
- Guéret, Pierre Properties of a set of symmetric Maxwellian equations. *Z. Naturforsch.* **A 43** (1988), no. 7, 684–686. (L. G. Chambers) **89g:78011** 78A25 (81G10)
- Guérmond, Jean-Luc A systematic formula for the asymptotic expansion of singular integrals. (French summary) *Z. Angew. Math. Phys.* **38** (1987), no. 5, 717–729. (Summary) **89h:41060** 41A60 (76B99, 76C99)
- Guerra, Francisco *see* Approximation and optimization, **89k:41001**
- Guerra, P. Jiménez *see* Jiménez Guerra, Pedro
- Jiménez Guerra, Pedro *see* Jiménez Guerra, Pedro
- Guerraggio, Angelo Economics and mathematics in Italy in the late nineteenth and early twentieth centuries. (Italian) With an English translation by I. McGilvray. *Scientia (Milano)* **121** (1986), no. 1–4, 13–63. (E. Marchi) **89g:01035** 01A55 (01A60, 90-03)
- *see also* Italian mathematics between the two world wars, **89i:01133** and Vailati, Giovanni, **89j:01080**
- Guerre, S. (with Raynaud, Y.) Sur les isométries de  $L^p(X)$  et le théorème ergodique vectoriel. [The isometries of  $L^p(X)$  and the vector-valued ergodic theorem] *Canad. J. Math.* **40** (1988), no. 2, 360–391. (U. Krengel) **89d:47054** 47B38 (28D99, 47A35, 47B55)
- *see also* Seminar: Functional Analysis, **89c:46002**
- Guerreiro, Santos *see* Brief testaments on the life and works of Prof. Santos Guerreiro, **89j:01072**
- Guerrero, Antonio L. (with Martín, Pablo) Higher order two-point quasi-fractional approximations to the Bessel functions  $J_0(x)$  and  $J_1(x)$ . *J. Comput. Phys.* **77** (1988), no. 1, 276–281. (A. Haimovici) **89j:65016** 65D15 (33A40, 65L99)
- Guerrero, Victor M. A note on the estimation of Atkinson's index of inequality. *Econom. Lett.* **25** (1987), no. 4, 379–384. (Summary) **89b:62220** 62P20
- (with Johnson, Richard A.) Transforming grouped bivariate data to near normality. *Statist. Probab. Lett.* **6** (1988), no. 4, 213–224. (Khurshed Alam) **89a:62068** 62F10 (62H17, 62J05)
- Guerrero Casas, Flor Ma. (with López-Carmona, Antonio) Error bounds in a convergence acceleration process. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish) (Badajoz, 1986)*, 435–441, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89b:65009** 65B05
- Guerrero Durán, José Antonio (with Puerto Albando, Justo) Expected distances along travel directions. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish) (Badajoz, 1986)*, 442–457, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89f:90050** 90B10
- Guerru, L. (with Colli Franzone, P.; Rovida, S.) Macroscopic cardiac source model and propagation waves in excitable media. *Biomathematics and related computational problems (Naples, 1987)*, 615–627, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89i:92013** 92A09 (92A07)
- Guerrero, Gabriele (with Rionero, S.) On the stability of the solutions to an integral evolution equation of the nonlinear particle transport theory. (Italian summary) *Meccanica—J. Ital. Assoc. Theoret. Appl. Mech.* **22** (1987), no. 2, 59–64. (A. Bellini-Morante) **89c:76086** 76P05
- On the stability problem for the exterior linear viscoelasticity. *Ricerche Mat.* **36** (1987), no. 1, 63–72. (Michael Renardy) **89j:73047** 73F05 (45K05, 73F15, 73H99)
- Guerron, J. A. D. (with de Araujo, A. L.; Alves, E. H.) Some relations between modal and paraconsistent logic. *J. Non-Classical Logic* **4** (1987), no. 2, 33–44. (Wojciech Dziuk) **89c:03049** 03B60 (03B45)
- Guess, Frank (with Berger, Roger L.; Boos, Dennis D.) Tests and confidence sets for comparing two mean residual life functions. (French summary) *Biometrics* **44** (1988), no. 1, 103–115. (George W. Williams) **89g:62160** 62P10 (62N05)
- (with Witten, Matthew) On the incompatibility of Gompertz or Weibull survival dynamics with exponentially distributed individual lifespans. *Bull. Math. Biol.* **50** (1988), no. 2, 187–192. (Summary) **89f:92042** 92A15
- Guessab, Allal Sur les formules de quadrature numérique dans  $\mathbb{R}^n$  avec certains noeuds ayant une composante connue. (English summary) [Numerical quadrature formulas in  $\mathbb{R}^n$  with certain knots having a given component] *Appl. Anal.* **26** (1987), no. 2, 129–144. (Mariano Gasca) **89a:65038** 65D32 (41A55, 41A63)
- On the approximate calculation of integrals on a polygon in  $\mathbb{R}^2$ . *Numerical methods and approximation theory, III (Niš, 1987)*, 225–239, *Univ. Niš, Niš*, 1988. (J. Kofroň) **89k:65026** 65D30
- Numerical cubature formulae with preassigned knots. *Numer. Math.* **52** (1988), no. 4, 467–478. (M. M. Chawla) **89c:65030** 65D32
- Guessarian, Irène Some fixpoint techniques in algebraic structures and applications to computer science. *Fund. Inform.* **10** (1987), no. 4, 387–413. (Manfred Broy) **89d:68052** 68Q55 (03B70, 68P15, 68Q60)
- (with Benson, David B.) Algebraic solutions to recursion schemes. *J. Comput. System Sci.* **35** (1987), no. 3, 365–400. (Stephen L. Bloom) **89d:68050** 68Q55 (03B70, 03D75, 18C10)
- (with Meseguer, José) On the axiomatization of "if-then-else". *SIAM J. Comput.* **16** (1987), no. 2, 332–357. (Summary) **89f:68043** 68Q55 (03B70, 03C05, 08A99)
- (with Niar-Dinedane, Wafaa) An automaton characterization of fairness in SCCS. *STACS 88 (Bordeaux, 1988)*, 356–372, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (Summary) **89c:68029** 68Q10 (68Q45, 68Q55)
- A note on fixpoint techniques in data base recursive logic programs. (French summary) *RAIRO Inform. Théor. Appl.* **22** (1988), no. 1, 49–56. (Summary) **89i:68018** 68P15 (68T25)
- Guest, M. A. (with Pressley, A. N.) Holomorphic curves in loop groups. *Comm. Math. Phys.* **118** (1988), no. 3, 511–527. (Jean Marion) **89i:58016** 58D15 (32C10, 58C10, 81E99)
- Guggenbühl, Walter (with Goette, Josef) Noise performance of SC-integrators assuming different operational transconductance amplifier (OTA) models. *IEEE Trans. Circuits and Systems* **35** (1988), no. 8, 1042–1048. (Summary) **89d:94053** 94C05
- Guggenheimer, H. \* Probabilistic propositional logic. *Polytechnic Notes on Artificial Intelligence, 4. Polytechnic University, Division of Computer Science, Brooklyn, NY*, 1987. 43 pp. (From the preface) **89m:68114** 68T01 (03B48, 03B70, 68T20, 68T30)
- Computing frames along a trajectory. *Comput. Aided Geom. Design* **6** (1989), no. 1, 77–78. (Summary) **89k:68144** 68U05
- Guglielmino, C. (with Fortuna, L.; Gallo, Antonio; Nunnari, G.) On the solution of a nonlinear matrix equation for MIMO symmetric realizations. *Systems Control Lett.* **11** (1988), no. 1, 79–82. (Summary) **89c:93036** 93B15 (93C05)
- Guglielmino, Francesco (with Nicolosi, Francesco)  $W$ -solutions of boundary value problems for degenerate elliptic operators. (Italian. English summary) *Ricerche Mat.* **36** (1987), suppl., 59–72. (Bruno Franchi) **89k:35098** 35J70 (35J20)
- Gugushvili, E. I. (with Lolashvili, S. R.; Nikolaishvili, Sh. S.) On the determination of a radiation field at great depths. (Russian. English and Georgian summaries) *Approximate methods for solving some problems of the transfer of neutron and gamma radiation (Rus-*

- sian), 143-150, 172, *Tbilis. Gos. Univ., Inst. Prikl. Mat., Tbilisi*, 1986. (see **89b:82003**) 78A40
- Guha, A.** (with Lim, H. A.; Shapir, Y.) Nonperturbative tricritical exponents of trails. I. Exact enumeration on a triangular lattice. *J. Phys. A* **21** (1988), no. 3, 773-783. (Summary) **89a:82047** 82A68 (82A25, 82A41)
- (with Lim, H. A.; Shapir, Y.) Nonperturbative tricritical exponents of trails. II. Exact enumerations on square and simple cubic lattices. *J. Phys. A* **21** (1988), no. 4, 1043-1053. (Summary) **89d:82115** 82A67 (05A15, 82-04)
- Guha-Roy, C.** Exact solutions to a coupled nonlinear equation. *Internat. J. Theoret. Phys.* **27** (1988), no. 4, 447-450. (From the text) **89g:35098** 35Q20 (35C05)
- Gui, Wen Zhuang** Hierarchical elements, local mappings and the  $h$ - $p$  version of the finite element method. I. *J. Comput. Math.* **6** (1988), no. 1, 54-67. (I. Norman Katz) **89h:65177** 65N30
- Hierarchical elements, local mappings and the  $h$ - $p$  version of the finite element method. II. *J. Comput. Math.* **6** (1988), no. 2, 142-155. (I. Norman Katz) **89h:65134** 65N30 (65D99)
- Gui, Xiang Yun** (with Liu, Shu Cheng) An exchange type null space method for general quadratic programming problems. (Chinese. English summary) *Acta Math. Appl. Sinica* **11** (1988), no. 2, 209-221. (Jian Zhong Zhang) **89i:90057** 90C20
- Gui, Yuan Xing** Thermo-quantum field and superthermo state. *Sci. Sinica Ser. A* **31** (1988), no. 9, 1104-1115. (Summary) **89k:81101** 81E20
- Guia, Josep** (with Lledó, Rafael; Segura, Isabel) New characterizations of  $T_0$ -spaces. *Collect. Math.* **37** (1986), no. 3, 255-259. (C. E. Aull) **89c:54041** 54D10
- On the definition of the derived sets of transfinite order. *Bull. Calcutta Math. Soc.* **79** (1987), no. 4, 261-264. (J. M. Aarts) **89c:54003** 54A05
- Guibas, Leonidas J.** (with Stolfi, Jorge) Ruler, compass and computer: the design and analysis of geometric algorithms. *Theoretical foundations of computer graphics and CAD (Il Ciocco, 1987)*, 111-165, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 40, Springer, Berlin-New York, 1988. (see **89a:68011**) 68U05
- (with Aggarwal, Alok; Chazelle, Bernard; O'Dünlaing, Colm; Yap, Chee-Keng) Parallel computational geometry. *Algorithmica* **3** (1988), no. 3, 293-327. (Franz Aurenhammer) **89h:68141** 68U05 (68Q10, 68Q25)
- (with Hershberger, John) An  $O(n^2)$  shortest path algorithm for a nonrotating convex body. *J. Algorithms* **9** (1988), no. 1, 18-46. (Herbert Edelsbrunner) **89c:68114** 68U05 (52-04, 68Q25)
- Guichardet, A.** Représentations de longueur finie et géométrie différentielle sur  $\hat{G}$ . [Representations of finite length and differential geometry on  $\hat{G}$ ] *Actes du colloque Jean Braconnier (Lyon, 1986)*, 31-40, *Publ. Dép. Math. Nouvelle Sér. B*, 87-1, Univ. Claude-Bernard, Lyon, 1987. (Jonathan M. Rosenberg) **89b:22023** 22E45 (22E46, 58B05)
- Méthode des orbites pour les représentations de longueur finie. II. (English summary) [The orbit method for representations of finite length. II] *Bull. Soc. Math. France* **115** (1987), no. 2, 197-210. (Jonathan M. Rosenberg) **89b:22024** 22E46 (22E47, 58B05)
- Guichet, M. T.** (with Arquès, D.; Françon, J.; Guichet, P.) Comparison of algorithms controlling concurrent access to a database: a combinatorial approach. Thirteenth International Colloquium on Automata, Languages and Programming (Rennes, 1986). *Theoret. Comput. Sci.* **58** (1988), no. 1-3, 3-16. (Summary) **89h:68027** 68P20 (68Q25)
- Guichet, P.** (with Arquès, D.; Françon, J.; Guichet, M. T.) Comparison of algorithms controlling concurrent access to a database: a combinatorial approach. Thirteenth International Colloquium on Automata, Languages and Programming (Rennes, 1986). *Theoret. Comput. Sci.* **58** (1988), no. 1-3, 3-16. (Summary) **89h:68027** 68P20 (68Q25)
- Guida, M.** (with Arimitsu, T.; Umezawa, H.) Dissipative quantum field theory. Thermo field dynamics. *Phys. A* **148** (1988), no. 1-2, 1-26. (Robert Alicki) **89f:81155** 81E99 (81E15)
- Guidetti, Davide** On the asymptotic behavior of solutions of linear nonautonomous parabolic equations. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 4, 1055-1076. (Manfred W. Kracht) **89d:35077** 35K22 (34G10, 35R20, 58D25)
- Guidetti, Renato** (with De Stefano, S.) On perfect ideals. (Italian. English summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **117** (1983), no. 4-6, 299-306 (1986). (Gianfranco Niesi) **89c:13030** 13H10
- (with Zavaglia, Andrea) An extended notion of grade of a module. (Italian summary) *Boll. Un. Mat. Ital. D* (6) **5** (1986), no. 1, 193-199 (1987). (M. H. Bijan-Zadeh) **89b:13021** 13C15
- Guidry, Mike W.** (with Zhang, Wei Min; Wu, Cheng Li; Feng, Da-hsuan; Ginocchio, Joseph N.) Geometrical structure and critical phenomena in the fermion dynamical symmetry model:  $Sp(6)$ . *Phys. Rev. C* (3) **38** (1988), no. 3, 1475-1487. (Summary) **89j:81267** 81G30
- podio-Guidugli, P.** see **Podio-Guidugli, P.**
- Guiggiani, M.** (with Casalini, P.) New developments in the boundary element method for plane and axisymmetric elasticity. *Advanced boundary element methods (San Antonio, Tex., 1987)*, 81-91, Springer, Berlin-New York, 1988. (Summary) **89c:73002** 73-08 (73C02)
- Guignard, Monique** (with Kim, Siwhan) Lagrangean decomposition: a model yielding stronger Lagrangean bounds. *Math. Programming* **39** (1987), no. 2, 215-228. (Summary) **89b:90151** 90C11
- (with Kim, Siwhan) Lagrangean decomposition for integer programming: theory and applications. (French summary) *RAIRO Rech. Opér.* **21** (1987), no. 4, 307-323. (Horst W. Hamacher) **89f:90096** 90C10
- Décomposition lagrangienne et facettes de polyèdres entiers. (English summary) [Lagrangean decomposition and facets of integer polytopes] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 6, 225-230. (Horst W. Hamacher) **89j:90192** 90C11
- A Lagrangean dual ascent algorithm for simple plant location problems. *European J. Oper. Res.* **35** (1988), no. 2, 193-200. (Summary) **89b:90152** 90C11 (90B10)
- (with Lee, Jae Sik) An approximate algorithm for multidimensional zero-one knapsack problems—a parametric approach. Focused issue on heuristics. *Management Sci.* **34** (1988), no. 3, 402-410. (Summary) **89b:90139** 90C09
- Guizarro Carranza, P.** Relation between the bounds of asymptotic expansions. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 1 (Spanish) (Badajoz, 1986)*, 288-294, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89i:41029** 41A60
- Guilbaud, Olivier** Exact Kolmogorov-type tests for left-truncated and/or right-censored data. *J. Amer. Statist. Assoc.* **83** (1988), no. 401, 213-221. (M. Knott) **89h:62080** 62G10
- Guilford, W.** (with Winfree, Arthur T.) The dynamics of organizing centers: numerical experiments in differential geometry. *Biomathematics and related computational problems (Naples, 1987)*, 697-716, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89j:92041** 92A09
- Guillaume, Marcel** Constantes d'une algèbre monadique libre sur une algèbre de Boole et automorphismes préservant une partie génératrice de celle-ci. [Constants of a free monadic algebra over a Boolean algebra and automorphisms preserving a set of generators of the Boolean algebra] *Methods and applications of mathematical logic (Campinas, 1985)*, 45-53, *Contemp. Math.*, 69, Amer. Math. Soc., Providence, RI, 1988. (Csaba Hatvany) **89f:03059** 03G15 (08A40)
- Guillemin, V.** (with Sternberg, S.) A generalization of the notion of polarization. *Ann. Global Anal. Geom.* **4** (1986), no. 3, 327-347. (J. H. Rawnsley) **89m:58079** 58F06 (22E46)
- Quasiclassical aspects of reduction. *VIIIth international congress on mathematical physics (Marseille, 1986)*, 106-119, *World Sci. Publishing, Singapore*, 1987. (Manfred Andrie) **89b:58185** 58F35 (58G35, 81C99)
- (with Uribe, Alejandro) Reduction, the trace formula, and semiclassical asymptotics. *Proc. Nat. Acad. Sci. U.S.A.* **84** (1987), no. 22, 7799-7801. (Anne-Marie Charbonnel) **89f:58135** 58G25 (81C40)
- see also Gelfand, I. M., **89k:01042a** and **89k:01042b**
- Guillen, J. M.** (with Fuster, Amparo) Questions of controllability and observability for nonuniformly sampled discrete systems. *Proc. IEEE-D* **135** (1988), no. 4, 248-252. (Not in MR) **93B05** (93B07, 93C55)
- Guilleme, Jean** (with Dolecki, Szymon; Lignola, Maria Beatrice; Malivert, Christian) Méthode des  $T$ -inégalités. (English summary) [The method of  $T$ -inequalities] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 12, 659-662. (U. D'Ambrosio) **89m:49014** 49A29 (49A50)
- Guilleux, A.** (with Cherruault, Y.) Identification des systèmes compartimentaux ordinaires. Les programmes FELICITY et SOPHIE-ALICE. [Identification of ordinary compartmental systems. The programs FELICITY and SOPHIE-ALICE] *10<sup>e</sup> Congrès International de Cybernétique (Namur, 1983)*, 1394-1402, *Assoc. Internat. Cybernét., Namur*, 1984. (M. E. Wise) **89b:92002** 92-08 (92A07, 92A09, 93B30)
- Systèmes compartimentaux à retard interne. *Analys. [Compartmental systems with internal delay. Analys.] 10<sup>e</sup> Congrès International de Cybernétique (Namur, 1983)*, 1403-1420, *Assoc. Internat. Cybernét., Namur*, 1984. (M. E. Wise) **89c:92003** 92-08 (92A09, 93B30)
- Une théorie des algorithmes archimédiens; l'algorithme Gabriel pour la résolution des problèmes multivariés. [A theory of Archimedean algorithms. The Gabriel algorithm for the solution of multivariate problems] *11<sup>e</sup> congrès international de cybernétique (Namur, 1986)*, 1233-1250, *Assoc. Internat. Cybernét., Namur*, 1986. (see **89a:94001**) 92A07
- Méthode statistique de comparaison des fonctions mathématiques expérimentales à travers des transformations mal connues. Définition d'un indice de ressemblance. [Statistical method for the comparison of experimental mathematical functions through badly known transformations. Definition of a similarity index] *11<sup>e</sup> congrès international de cybernétique (Namur, 1986)*, 1251-1254, *Assoc. Internat. Cybernét., Namur*, 1986. (see **89a:94001**) 92A07
- griener-Guilod, Sylvie** see **Griener-Guilod, Sylvie**
- Guillope, C.** (with Joseph, Daniel D.; Nguyen, K.; Rosso, F.) Nonlinear stability of rotating flow of two fluids. (French summary) *J. Méc. Théor. Appl.* **6** (1987), no. 5, 619-645. (L. Debnath) **89a:76037** 76E30 (76U05)
- Guillot, Jean-Claude** (with Raistorn, James) Inverse spectral theory for a singular Sturm-Liouville operator on  $[0, 1]$ . *J. Differential Equations* **76** (1988), no. 2, 353-373. (H. Hochstadt) **89d:34030** 34B25 (34A55, 47E05)
- (with Dermenjian, Yves) Scattering of elastic waves in a perturbed isotropic half space with a free boundary. The limiting absorption principle. *Math. Methods Appl. Sci.* **10** (1988), no. 2, 87-124. (Volker Vogelsang) **89i:35109** 35P25 (73D25)
- decomps-Guilloux, Annette** see **Decomps-Guilloux, Annette**
- dolveck-Guilpard, B.** see **Dolveck-Guilpard, B.**
- saint-Guily, Bernard** see **Saint-Guily, Bernard**
- Guin, Daniel** Cohomologie et homologie non abéliennes des groupes. [Nonabelian group cohomology and homology] *J. Pure Appl. Algebra* **50** (1988), no. 2, 109-137. (K. Vogtmann) **89b:18017** 18G50 (18F25, 19C20, 20J99)
- Guíñez, Victor** Positive quadratic differential forms and foliations with singularities on surfaces. *Trans. Amer. Math. Soc.* **309** (1988), no. 2, 477-502. (Robert Roussarie) **89h:57021** 57R30 (49F05, 58A10, 58F99)
- grattan-Guinness, I.** see **Grattan-Guinness, I.**
- Guirguis, Georges H.** A third-order boundary condition for the exterior Stokes problem in three dimensions. *Math. Comp.* **49** (1987), no. 180, 379-389. (H. D. Mittelmann) **89b:65265** 65N30 (76-08, 76D07)
- On the competition between artificial methods and boundary integral methods for the Stokes equations in exterior domains. *Comm. Appl. Numer. Methods* **4** (1988), no. 4, 491-497. (Editors) **89c:65107** 65N10 (76-08, 76D07)
- Guizard, Thierry** On an episode in the history of the integral calculus. *Historia Math.* **14** (1987), no. 2, 215-219. (S. D. Chatterji) **89c:01030** 01A55
- Guizard, René** On the geometry of computations. (French summary) Text in English and French. *Computer aided geometric reasoning, Vol. I, II (Sophia-Antipolis, 1987)*, 275-306, *INRIA, Rocquencourt*, 1987. (Editors) **89a:18003** 18A10
- Guivarc'h, Y.** (with Hardy, J.) Théorèmes limites pour une classe de chaînes de Markov et applications aux difféomorphismes d'Anosov. (English summary) [Limit theorems for a class of Markov chains and applications to Anosov diffeomorphisms] *Ann. Inst. H. Poincaré Probab. Statist.* **24** (1988), no. 1, 73-98. (Manfred Denker) **89m:60080** 60F99 (28D20, 54H20, 58F11, 58F15)
- Gujarathi, C. C.** (with Kageyama, Sanpei; Shah, Shantil M.) Some improved bounds on the number of blocks in BIB designs. *J. Indian Soc. Agricultural Statist.* **38** (1986), no. 2, 187-192. (Girdhar G. Agarwal) **89h:62135** 62K10
- Gujaria, S. C.** (with Ghosal, A.) Note on the best order for queues in series. *Internat. J. Systems Sci.* **18** (1987), no. 10, 1995-1999. (Introduction) **89b:90088** 90B22 (60K20)



- Gajrati, P. D.** Critical behavior of  $n \rightarrow 0$  gauge-invariant theory: self-avoiding random surfaces. *Phys. Rev. B* (3) **39** (1989), no. 4, 2494–2500. (Summary) **89k:82032** 82A25 (82A41)
- Gakov, V. V.** (with Kostrov, A. V.) A method for the nonlinear identification of the motion of an aircraft. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 7, 38–50; translated in *Avtomat. Remote Control* **49** (1988), no. 7, part 1, 848–857. (Not in MR) **93B30** (93C73)
- Galamov, R.** Dynamics of a system with nonlinear growth of the reproduction of "prey". (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1263–1266, 1287. (Tibor Krisztin) **89i:92041** 92A15
- Galati, H. L.** (with Heydari, Ahmad Pour Darvish) On multi-input bi-tandem queue modelling. *Pure Appl. Math. Sci.* **25** (1987), no. 1–2, 87–93. (K. M. Ramachandran) **89b:60216** 60K25 (90B22)
- Galati, K. K.** On the measurable solution of a functional equation. *Bull. Calcutta Math. Soc.* **79** (1987), no. 2, 112–118. (Witold Jarczyk) **89b:39010** 39B40 (94A17)
- (with Rakheja, T. D.) On symmetry and reversible symmetry concerning generalized directed divergence. *Kybernetika (Prague)* **24** (1988), no. 1, 47–53. (Summary) **89b:94017** 94A17
- Galati, T. R.** (with Islam, M. A.) A note on the weak Arrow-Hurwicz-Uzawa constraint qualification. *Opsearch* **24** (1987), no. 4, 249–252. (Panos M. Pardalos) **89b:90183** 90C30
- (with Islam, M. A.) Proper efficiency in a linear fractional vector maximum problem with generalized convex constraints. *European J. Oper. Res.* **36** (1988), no. 3, 339–345. (S. R. Mohan) **89k:90152** 90C31 (90C32)
- Gulbekian, Edward** The origin and value of the stadion unit used by Eratosthenes in the third century B.C. *Arch. Hist. Exact Sci.* **37** (1987), no. 4, 359–363. (Richard L. Francis) **89a:01008** 01A20
- Guldan, Filip** On a problem of linear arboricity. (Russian and Slovak summaries) *Časopis Pěst. Mat.* **112** (1987), no. 4, 395–400. (G. Chartrand) **89g:05044** 05C05 (05C70)
- Gulenko, V. P.** (with Shevchenko, L. A.) A numerical method for solving problems of optimal integer control. (Russian) *Methods and techniques for the design of multiprocessor systems* (Russian), 83–86, 96, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (Summary) **89d:49029** 49D07 (49D25, 90C10)
- Güller, Y.** Hamilton-Jacobi theory of continuous systems. (Italian summary) *Nuovo Cimento B* (11) **100** (1987), no. 2, 251–266. (M. C. Singh) **89b:70007** 70G50 (70H25)
- Gulerich, N. M.** (with Konyagin, S. V.; Rakhmankulov, R. V.) Fixed points and the differentiability of the norm. (Russian) *Mat. Sb. (N.S.)* **136** (178) (1988), no. 4, 468–477, 590. (George Isaac) **89k:47090** 47H10 (46B20, 47H09)
- Guliev, R. D.** (with Musae, B. I.) Convergence of a cubature formula for a multidimensional singular integral in some classes of functions. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **43** (1987), no. 11, 3–7 (1988). (Gheorghe Coman) **89b:65031** 65D32
- Gulin, A. V.** (with Yakovleva, S. A.) A modified method of parabolas for determining the eigenvalues of a tridiagonal matrix with nonlinear occurrence of the spectral parameter. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 191, 21 pp. (Summary) **89b:65093** 65F15
- (with Drozdova, O. M.; Kartyshov, S. V.; Koshlev, I. M.) Numerical investigation of the stability of higher-order differential-algebraic systems with delay. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 141, 23 pp. (Summary) **89b:65121** 65L07
- Gulka, S. S.** Averaging in systems of integro-differential equations with impulse action. (Russian) *Some problems in the theory of asymptotic methods in nonlinear mechanics* (Russian), 84–88, v, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1986. (Summary) **89a:45018** 45J05 (34C29, 93C57)
- Gulko, F. B.** (with Balabushkin, A. N.) Prediction of the extreme values of the phase coordinates of stochastic systems. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 6, 70–77; translated in *Avtomat. Remote Control* **49** (1988), no. 6, part 1, 743–748. (Summary) **89c:93216** 93E20 (93E03)
- Gulko, S. P.** (with Okunev, O. G.) Local compactness and  $M$ -equivalence. (Russian) *Problems in geometry and topology* (Russian), 14–23, 91, *Petrozavodsk. Gos. Univ., Petrozavodsk*, 1986. (Michael Tkachenko) **89j:54024** 54D45 (22A05, 54C35)
- Gulliver, Robert** (with Jost, Jürgen) Harmonic maps which solve a free-boundary problem. *J. Reine Angew. Math.* **381** (1987), 61–89. (A. J. Tromba) **89k:58067** 58E20 (35R35)
- Isoperimetric problems having continua of solutions. *Partial differential equations and calculus of variations*, 256–263, *Lecture Notes in Math.*, 1357, Springer, Berlin-New York, 1988. (M. Elisa G. de Oliveira) **89m:53103** 53C42 (53C20)
- (with Tomi, Friedrich) On false branch points of incompressible branched immersions. *Manuscripta Math.* **63** (1989), no. 3, 293–302. (Yi Bing Shen) **89m:58039** 58E12 (53A10, 53C42)
- Gulyaev, N. I.** (with Shelepen', S. A.) An approximate method for the solution of a linear operator equation and its application to the solution of a boundary value problem. (Russian) *Boundary value problems* (Russian), 141–145, 200–201, *Perm. Politekh. Inst., Perm*, 1983. (See **89c:00008**) **47A50** (65J10)
- Gulyaev, Yu. V.** (with Dmitriev, A. S.; Kislov, V. Ya.; Panas, A. I.) Mode pulling and competition in a system with chaotic dynamics. *Phys. Lett. A* **128** (1988), no. 3–4, 172–176. (Summary) **89b:70007** 70K50 (34C15, 58F13)
- (with Dmitriev, A. S.; Kislov, V. Ya.; Panas, A. I.) Bifurcations of strange attractors. The connection of Lyapunov characteristic exponents with the spectrum. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 3, 593–597; translated in *Soviet Phys. Dokl.* **33** (1988), no. 1, 42–44. (From the text) **89b:58132** 58F13 (58F14)
- Gulyanitskii, L. F.** (with Malysko, S. A.) An efficient algorithm for solving occupancy problems on a semi-infinite tape. (Russian) *Design and development of program packages* (Russian), 30–34, iii, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (Summary) **89b:90186** 90C27
- An approach to the metrization of a permutation space and its use in problems of discrete optimization. (Russian) *Issled. Operatsii i ASU No. 32* (1988), 81–84, 118. (Summary) **89j:90255** 90C35 (90B10)
- Gumbs, Godfrey** (with Ali, M. K.) Dynamical maps, Cantor spectra, and localization for Fibonacci and related quasiperiodic lattices. *Phys. Rev. Lett.* **60** (1988), no. 11, 1081–1084. (Summary) **89c:58104** 58F27
- Gumaratne, Gemunu H.** (with Procaccia, Itamar) Organization of chaos. *Phys. Rev. Lett.* **59** (1987), no. 13, 1377–1380. (Summary) **89b:58133** 58F13 (82A25)
- (with Jensen, Mogens H.; Procaccia, Itamar) Universal strange attractors on wrinkled tori. *Nonlinearity* **1** (1988), no. 1, 157–180. (Summary) **89b:58114** 58F13
- (with Cvitanović, Predrag; Procaccia, Itamar) Topological and metric properties of Hénon-type strange attractors. *Phys. Rev. A* (3) **38** (1988), no. 3, 1503–1520. (Summary) **89i:58080** 58F13
- Gunawardena, Jeremy** Stiefel-Whitney classes for representations of groups. *J. London Math. Soc.* (2) **35** (1987), no. 3, 539–550. (Howard D. Rees) **89g:57036** 57K20 (22E99, 55R40, 57T25)
- Günaydin, M.** (with Hyun, S. J.) Unitary lowest weight representations of the noncompact supergroup  $OSp(2n/2m, R)$ . *J. Math. Phys.* **29** (1988), no. 11, 2367–2376. (Hideki Omori) **89k:22037** 22E65 (22E47, 22E60, 22E70)
- Gundermann, Thomas** (with Wechsung, Gerd) Counting classes with finite acceptance types. (Russian summary) *Comput. Artificial Intelligence* **6** (1987), no. 5, 395–409. (Summary) **89k:68048** 68Q15
- Gundersen, Gary G.** Correction to: "Meromorphic functions that share four values" [Trans. Amer. Math. Soc. **277** (1983), no. 2, 545–567; MR **84g:30028**]. *Trans. Amer. Math. Soc.* **304** (1987), no. 2, 847–850. (W. K. Hayman) **89a:30028** 30D35
- Gundersen, H. J. G.** (with Jensen, E. B.; Baddeley, A. J.; Sundberg, R.) Recent trends in stereology. (French summary) *Internat. Statist. Rev.* **53** (1985), no. 1, 99–108. (Summary) **89f:62053** 62H99
- Gündes, A. N.** (with Desoer, C. A.) Bicomprime factorizations of the plant and their relation to right- and left-coprime factorizations. *IEEE Trans. Automat. Control* **33** (1988), no. 7, 672–676. (Not in MR) **93B50** (93B25)
- (with Desoer, C. A.) Algebraic theory of linear time-invariant feedback systems with two-input two-output plant and compensator. *Internat. J. Control* **47** (1988), no. 1, 33–51. (Giuseppe Conte) **89c:93027** 93B25 (93C45, 93D25)
- Gun'ko, O. L.** (with Andon, F. I.; Polyachenko, B. E.) Optimization of computations in multiprocessor computer complexes. (Russian) *Design and development of program packages* (Russian), 4–9, i, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (Summary) **89f:65155** 65W05
- Gunning, R. C.** On theta functions for Jacobi varieties. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 89–98, *Proc. Sympos. Pure Math.*, **46**, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Olivier Debarre) **89b:14061** 14K25 (14H40, 32G20)
- Gunson, J.** Perturbation theory for a Sturm-Liouville problem with an interior singularity. *Proc. Roy. Soc. London Ser. A* **414** (1987), no. 1846, 255–269. (Basudeb Ray Paladhi) **89d:34049** 34B25 (47E05)
- (with Everitt, W. N.; Zettl, A.) Some comments on Sturm-Liouville eigenvalue problems with interior singularities. *Z. Angew. Math. Phys.* **38** (1987), no. 6, 813–838. (Summary) **89b:34022** 34B25 (34–04)
- (with Guan, Ke Ying; Hassan, H. S.) On periodic solutions of the periodic Riccati equation. *Resulante Math.* **14** (1988), no. 3–4, 309–317. (Ch. G. Philos) **89k:34060** 34C25 (34C27, 34C40)
- de Gunst, M. C. M.** On the distribution of general quadratic functions in normal vectors. *Statist. Neerlandica* **41** (1987), no. 4, 245–251. (D. N. Shanbhag) **89f:62046** 62H05 (60E05, 62E10)
- van Gunsteren, Wilfred F.** Classical molecular dynamics simulations: algorithms and applications, stochastic dynamics, and free energies. *Mathematical frontiers in computational chemical physics* (Minneapolis, MN, 1987), 136–156, *IMA Vol. Math. Appl.*, **15**, Springer, New York-Berlin, 1988. (See **89f:81004**) **82–08** (81G55)
- Gunter, Elsa L.**  $M$ -groups with Sylow towers. *Proc. Amer. Math. Soc.* **105** (1989), no. 3, 555–563. (Roderick Gow) **89g:20014** 20C15
- Günter, N. M.** see **Renschuch, Bodo et al.**, **89a:01044** and **89c:13003**
- Günther, Cl.** A consistent upwind method of second order for the convection-diffusion equation. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 249–258, North-Holland, Amsterdam-New York, 1988. (Summary) **89c:65102** 65N05
- Günther, L.** (with Chudnovskii, E. M.) Quantum tunneling of magnetization in small ferromagnetic particles. *Phys. Rev. Lett.* **60** (1988), no. 8, 661–664. (Summary) **89a:81036** 81C99
- Günther, Matthias** Über zwei spezielle inverse Probleme der Potentialtheorie. (English and Russian summaries) [On two special inverse problems of potential theory.] *Z. Anal. Anwendungen* **6** (1987), no. 5, 459–470. (V. M. Isakov) **89b:31005** 31B15 (35R30, 86A20)
- Über eine Klasse von nichtlinearen, lokal stetig invertierbaren Operatoren in Skalen von Hilbert-Räumen. [On a class of nonlinear, locally continuously invertible operators in scales of Hilbert spaces] *Math. Nachr.* **136** (1988), 253–270. (Jürgen Weyer) **89b:47083** 47H15 (35F20)
- Günther, Nina** (with Kotz, S.; Johnson, Norman Lloyd<sup>2</sup>) Inspection errors in Graff-Rocloffs' modification of hierarchical Dorfman screening procedures. *Comm. Statist. Theory Methods* **17** (1988), no. 1, 139–168. (Not in MR) **62N10**
- Günther, Paul** Huygens' principle and hyperbolic equations. With appendices by V. Wunsch. *Perspectives in Mathematics*, **5**, Academic Press, Inc., Boston, MA, 1988. Iviii+847 pp. ISBN 0-12-307330-8 (R. Schimming) **89j:35077** 35Lxx (35–02, 58G16)
- Güntherodt, H. J.** (with Riedinger, R.; Habar, M.; Oelhafen, P.) About the Delaunay-Voronoi tessellation. *J. Comput. Phys.* **74** (1988), no. 1, 61–72. (A. G. Schlijper) **89b:50223** 50B45 (52A45, 82A57)
- Günttner, R.** On asymptotics for the uniform norms of the Lagrange interpolation polynomials corresponding to extended Chebyshev nodes. *SIAM J. Numer. Anal.* **25** (1988), no. 2, 461–469. (G. Meinardus) **89a:41005** 41A05 (41A60, 65D05)
- Gunzburger, Max D.** (with Chang, Qing Long) A finite element method for first order elliptic systems in three dimensions. *Appl. Math. Comput.* **23** (1987), no. 2, 171–184. (Summary) **89m:65100** 65N30
- (with Du, Qiang; Layton, W.) A low dispersion, high accuracy finite element method for first order hyperbolic systems in several space variables. Hyperbolic partial differential equations. *V. Comput. Math. Appl.* **15** (1988), no. 6–8, 447–457. (Summary) **89j:65070** 65N30
- (with Peterson, Janet S.) On finite element approximations of the streamfunction-vorticity and velocity-vorticity equations. Numerical methods in laminar and turbulent flow (Montreal, PQ, 1987). *Internat. J. Numer. Methods Fluids* **8** (1988), no. 10, 1229–1240. (William H. H. Banks) **89i:76010** 76–08 (76D05)

- (with Peterson, Janet S.) Finite-element methods for the streamfunction-vorticity equations: boundary-condition treatments and multiply connected domains. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 4, 650–668. (R. N. Pandey) **89g:65142** 65N30 (76–08)
- Gunzig, Edgar (with Géhéniau, Jules; Stengers, Isabelle) The universe: a birth far from equilibrium? *Found. Phys.* 17 (1987), no. 6, 585–601. (M. A. H. MacCallum) **89c:83055** 83F05 (85A40)
- Guo, Ai Ping (with Yu, Shi Rong) A stopping criterion for clustering in grouping genotypes. (Chinese. English summary) *J. Biomath.* 3 (1988), no. 1, 48–56. (Summary) **89b:92022** 92A10
- Guo, B. Q. see Guo, Ben Qi
- Guo, Bao Lin (with Pang, Daochu) Common fixed point theorems for pairs of set-valued mappings. (Chinese. English summary) *Dongbei Shida Xuebao* 1988, no. 1, 19–22. (Not in MR) 54H25
- New common fixed point theorem for commuting map pair with the sequence of mappings on a metric space. *Math. Japon.* 33 (1988), no. 3, 361–374. (S. P. Singh) **89k:54104** 54H25
- Guo, Bao Ping Macroeconomic dynamic input-output control model with time-delay investment. *Econom. Comput. Econom. Cybernet. Stud. Res.* 23 (1988), no. 2, 75–84. (Summary) **89g:90079** 90A17 (90A16)
- Guo, Bao Qi (with Chen, Xiao Hong) A class of free boundary problems for a system of hyperbolic equations. (Chinese. English summary) *J. Harbin Inst. Tech.* 1988, no. 2, 1–9. (Summary) **89k:35255** 35R35 (35L60)
- Guo, Bao Wen On Artin's conjecture. (Chinese) *Math. Practice Theory* 1988, no. 2, 95. (Zun Shan) **89m:11085** 11N05 (11–04)
- Guo, Bao Zhu (with Yu, Jing Yuan; Zhu, Guang Tian) Control of a semidiscrete population evolution system. (Chinese. English summary) *J. Systems Sci. Math. Sci.* 7 (1987), no. 3, 214–219. (Si Ning Zheng) **89a:92053** 92A15 (34H05, 49A10, 93C75)
- Guo, Ben Qi The  $h$ - $p$  version of the finite element method for elliptic equations of order  $2m$ . *Numer. Math.* 53 (1988), no. 1–2, 199–224. (Summary) **89j:65072** 65N30 (73K25)
- (with Babuška, I.) Regularity of the solution of elliptic problems with piecewise analytic data. I. Boundary value problems for linear elliptic equation of second order. *SIAM J. Math. Anal.* 19 (1988), no. 1, 172–203. (Neil M. Wigley) **89a:35039** 35B65 (35J25, 65N99)
- (with Babuška, I.) The  $h$ - $p$  version of the finite element method for domains with curved boundaries. *SIAM J. Numer. Anal.* 25 (1988), no. 4, 837–861. (I. Norman Katz) **89i:65111** 65N30
- Guo, Ben Yu (with Ma, He Ping) Fourier pseudospectral method for Burgers equation. *Dongbei Shuxue* 2 (1986), no. 4, 383–394. (James A. Schmitt) **89b:65231** 65M99
- The convergence of numerical method for nonlinear Schrödinger equation. *J. Comput. Math.* 4 (1986), no. 2, 121–130. (A. O. Garder) **89a:65136** 65M10
- (with Ma, He Ping) The Fourier pseudospectral method with a restrain operator for the M.K.d.V. equation. *Numerical methods for partial differential equations (Shanghai, 1987)*, 113–120, *Lecture Notes in Math.*, 1297, Springer, Berlin-New York, 1987. (D. Schultz) **89c:65110** 65M99
- (with Mitchell, Andrew Ronald; Chen, Sui Yang) On a one-dimensional difference scheme in reaction diffusion. *J. Comput. Math.* 5 (1987), no. 3, 191–202. (Brian D. Sleeman) **89a:65188** 65P05 (92A09)
- (with Ma, He Ping) The Fourier pseudospectral method for solving two-dimensional vorticity equations. (Chinese. English summary) *Shanghai Keji Daxue Xuebao* 1987, no. 4, 14–24. (Summary) **89b:65096** 65M99 (35Q20)
- (with Ma, He Ping) The Fourier pseudospectral method for three-dimensional vorticity equations. *Acta Math. Appl. Sinica (English Ser.)* 4 (1988), no. 1, 55–68. (Hong Yuan Fu) **89m:65089** 65M99 (35Q20)
- (with Cai, Zhi Qiang) Error estimates for a Schwarz alternating procedure on  $L$ -shaped regions. *Appl. Math. Comput.* 28 (1988), no. 1, 39–46. (Summary) **89j:65079** 65N99
- (with Ma, He Ping) The Chebyshev spectral method for Burgers-like equations. *J. Comput. Math.* 6 (1988), no. 1, 48–53. (G. W. Hedstrom) **89k:65145** 65N35 (65N10)
- (with Cao, Wei Ming) The Fourier pseudospectral method with a restrain operator for the RLW equation. *J. Comput. Phys.* 74 (1988), no. 1, 110–126. (P. C. Jain) **89c:76039** 76B25 (65M05, 76–08)
- see also BAIL V, **89j:65008**
- Guo, Bo Ling The “blow-up” problem for the system of nonlinear Schrödinger equations with wave operator and the soliton solution for the system. (Chinese summary) *Sci. Exploration* 5 (1985), no. 3, 93–98. (Summary) **89m:35194** 35Q20 (35B40)
- Global solutions of initial-boundary value problems for a class of systems of multidimensional strongly nonlinear Schrödinger equations of fourth order. (Chinese. English summary) *Dongbei Shuxue* 3 (1987), no. 4, 399–409. (Summary) **89k:35209** 35Q20 (35J10)
- The global solution for one class of the system of LS nonlinear wave interaction. *J. Math. Res. Exposition* 7 (1987), no. 1, 69–76. (Nakao Hayashi) **89a:35181** 35Q20 (35L65)
- Initial-boundary value problems for some further extended systems of multidimensional Zakharov equations. (Chinese) *J. Math. (Wuhan)* 7 (1987), no. 3, 267–275. (Xun Cheng Huang) **89j:35116** 35Q20
- (with Zhou, Yu Lin) Weak solution of system of ferromagnetic chain with several variables. *Sci. Sinica Ser. A* 30 (1987), no. 12, 1251–1266. (Muthusamy Lakshmanan) **89b:35323** 35Q20 (35B45, 35D99, 82A68)
- Guo, D. S. (with Aberg, T.) Quantum electrodynamical approach to multiphoton ionisation in the high-intensity  $H$  field. *J. Phys. A* 21 (1988), no. 24, 4577–4591. (Summary) **89j:81304** 81L05 (81G10)
- Guo, Da Jun Some fixed point theorems of expansion and compression type with applications. *Nonlinear analysis and applications (Arlington, Tex., 1986)*, 213–221, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (Richard P. Jerrard) **89c:47067** 47H10 (34B15, 45Gxx)
- (with Lakshmikantham, V.) ★ Nonlinear problems in abstract cones. Notes and Reports in Mathematics in Science and Engineering, 5. Academic Press, Inc., Boston, MA, 1988. viii+275 pp. ISBN 0-12-293475-X (D. Pascali) **89k:47084** 47H07 (34A34, 45G10, 47–02, 47H10, 47H15)
- (with Sun, Jing Xian; Qi, Gui Jie) Some extensions of the mountain pass lemma. *Differential Integral Equations* 1 (1988), no. 3, 351–358. (Michel Willem) **89e:58024** 58E05 (46G99, 47H99)
- (with Sun, Jing Xian) Some global generalizations of the Birkhoff-Kellogg theorem and applications. *J. Math. Anal. Appl.* 129 (1988), no. 1, 231–242. (L. Górniewicz) **89b:47083** 47H12 (54H25, 58E07)
- (with Sun, Jing Xian) The calculation of topological degree and its applications. (Chinese) *J. Math. Res. Exposition* 8 (1988), no. 3, 469–480. (Editors) **89i:47101** 47H09 (58C30)
- Guo, Da Wei (with Wu, Ren Zhi; Wang, Ji Sheng) Classification and analysis of the family system of Haller's organs of dermacentors in larvae by using mixed model. (Chinese. English summary) *J. Biomath.* 3 (1988), no. 2, 108–116. (Summary) **89j:92007** 92A05 (62H30)
- Guo, Duo Zuo Necessary and sufficient conditions for spectral equality of quasisimilar operators. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* 1987, no. 2, 29–32. (Shan Li Sun) **89a:47005** 47A10
- Note on the symbols of compact Hankel operators. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* 1987, no. 3, 33–36. (Summary) **89c:47037** 47B35
- Quasimilarity of analytic Toeplitz operators whose symbols are univalent functions. (Chinese) *J. Math. Res. Exposition* 7 (1987), no. 3, 415–418. (Shan Li Sun) **89b:47038** 47B35
- Guo, Fu Kui An equivalent definition of  $E$ -integration. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 13 (1987), no. 1, 39–42. (Introduction) **89f:26008** 26A42
- Guo, Han Ying (with Chen, Wei; Hu, Hong Liang; Yu, Yue) Remarks on superstring field theories. II. *Modern Phys. Lett. A* 2 (1987), no. 11, 835–845. (Danny Birmingham) **89h:81172** 81E99 (81E30, 83E30)
- (with Chen, Wei; Hu, Hong Liang; Yu, Yue) Symmetry, cohomology and string field theories—a Fock space formalism. *Conformal field theory, anomalies and superstrings (Singapore, 1987)*, 391–418, *World Sci. Publishing, Singapore*, 1988. (Tsou Sheung Tsun) **89k:81072** 81E13 (81–02, 81E20, 81E30)
- Guo, Hong Jun (with Fu, Li Ya) A static, spherically symmetric interior solution to the gravitational field equations in Weitzenböck space-time. (Chinese. English summary) *J. Changsha Railway Inst.* 5 (1987), no. 2, 19–24. (Jian-Zeng Li) **89f:83022** 83C15
- Guo, Ji Yang (with Chen, Gui Jing; Stephens, Michael A.) Further study of asymptotic distribution of estimated empirical processes in truncated distribution families. (Chinese. English summary) *J. Systems Sci. Math. Sci.* 8 (1988), no. 1, 32–41. (Lin-Cheng Zhao) **89i:62160** 62M99
- Guo, Jian<sup>1</sup> Invariance and convergence of a modified conjugate gradient method. (Chinese) *Chinese J. Oper. Res.* 6 (1987), no. 1, 61–62. (Not in MR) 90C30 (65K05)
- Guo, Jin Bao (with Tang, Guo Ping) On orders in regular rings. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 12, 893–895. (Not in MR) 16A86
- Guo, Jin Yun (with Liu, Shao Xue; Luo, Yun Lun; Tang, Ai Ping; Xiao, Jie) Some results on modules and rings. *Bull. Soc. Math. Belg. Sér. B* 39 (1987), no. 2, 181–193. (Iuliu Crivei) **89c:16008** 16A12 (16A21, 16A35, 16A89)
- On the termination of the construction of the lower radical class for a class of associative rings. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B 8 (1987), no. 4, 488. *Chinese Ann. Math. Ser. A* 8 (1987), no. 4, 433–444. (Yonghua Xu) **89a:16006** 16A21
- On biregular radicals. (Chinese. English summary) *Adv. in Math. (Beijing)* 17 (1988), no. 3, 299–302. (Yonghua Xu) **89k:16010** 16A21
- On the indecomposable modules of algebras stably equivalent to hereditary algebras. *Comm. Algebra* 16 (1988), no. 9, 1749–1757. (William Crawley-Boevey) **89k:16054** 16A64 (16A46)
- Guo, Jing Mei Immersions of  $k$ -connected closed manifolds into some Euclidean spaces. *Kexue Tongbao (English Ed.)* 32 (1987), no. 9, 577–580. (Laurence R. Taylor) **89k:57062** 57R42
- Guo, Lei (with Chen, Han Fu) Adaptive control via consistent estimation for deterministic systems. *Internat. J. Control* 45 (1987), no. 6, 2183–2202. (Edward Jezewski) **89b:93068** 93C40 (93B30, 93C55)
- (with Chen, Han Fu) Robust identification of discrete-time stochastic systems. *Discrete event systems: models and applications (Sopron, 1987)*, 239–251, *Lecture Notes in Control and Inform. Sci.*, 103, Springer, Berlin-New York, 1988. (R. Haber) **89j:93125** 93E12 (93C55, 93E10)
- (with Chen, Han Fu) A robust stochastic adaptive controller. *IEEE Trans. Automat. Control* 33 (1988), no. 11, 1035–1043. (Bożenna Pasik-Duncan) **89i:93071** 93C40 (93B35, 93C55)
- (with Xia, Lige; Liu, Yi) Recursive algorithm for the computation of the  $H^\infty$ -norm of polynomials. *IEEE Trans. Automat. Control* 33 (1988), no. 12, 1154–1157. (Summary) **89j:93043** 93B40 (93B25)
- Guo, Mao Zheng (with Papanicolaou, George C.) Self-diffusion of interacting Brownian particles. *Probabilistic methods in mathematical physics (Katata/Kyoto, 1985)*, 113–151, Academic Press, Boston, MA, 1987. (Maria E. Vares) **89g:60245** 60J60 (60K35)
- (with Papanicolaou, George C.; Varadhan, Srinivasa R. S.) Nonlinear diffusion limit for a system with nearest neighbor interactions. *Comm. Math. Phys.* 118 (1988), no. 1, 31–59. (F. L. Spitzer) **89m:60255** 60K35 (60J60)
- Guo, Qing Yu (with Chang, Wei) Fuzzy recognition and its application in long-range weather forecasting. (Chinese. English summary) *Fuzzy Math.* 7 (1987), no. 2, 59–64. (Summary) **89g:03079** 03E72 (86A10)
- Guo, Rui Feng Some new matrix operations and their applications in nonnumerical computation. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* 23 (1987), no. 2, 254–260. (Summary) **89c:68039** 68Q20
- Guo, Rui Hai (with Yuan, Xiao Feng) ★ Chaos and bifurcation of phase-locking loops under periodic perturbation. *Shuli Kexue [Mathematical Sciences. Research Reports IM5], 26. Academia Sinica, Institute of Mathematical Sciences, Chengdu*, 1988. 12 pp. (Iuliana Oprca) **89j:58093** 58F14 (58F13, 70K50)
- Guo, Shao Mu Approximate solutions to a class of boundary value problems for nonlinear elliptic equations. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 6, suppl., 39–44. (Summary) **89k:65135** 65N30 (35J60)
- Guo, Shao Zhong (with Ma, Feng Ning) A study of central projection contours and contour lines of surfaces widely known in engineering. (Chinese. English summary) *J. Tianjin Univ.* 1988, no. 1, 75–84. (Summary) **89h:68147** 68U05



- Guo, Shun Sheng On the rate of convergence of the Durrmeyer operator for functions of bounded variation. *J. Approx. Theory* 51 (1987), no. 2, 183-192. (M. W. Müller) **89h:41041** 41A25 (41A36)
- Generalized convexity and pointwise saturation. (Chinese) *J. Math. (Wuhan)* 7 (1987), no. 3, 245-248. (Tian Ping Chen) **89j:41037** 41A36 (41A40)
- (with Chen, Wen Zhong) The degree of pointwise convergence of some positive linear operators on functions of bounded variation. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* 9 (1987), no. 3, 243-252. (Yu Yu Feng) **89h:41047** 41A36 (41A25)
- Guo, Shao Hong (with Chen, Qi Zhou; Liu, Jin Ming) The improved Hamiltonian and  $\rho$ - $\omega$  mass difference in lattice gauge theory. *Comm. Theoret. Phys.* 7 (1987), no. 3, 263-273. (Not in MR) **81E25** (81G25)
- (with Chen, Hao) Exact solutions for the topological charge in  $1+1$ -dimensional lattice gauge theory. (Chinese. English summary) *High Energy Phys. Nuclear Phys.* 11 (1987), no. 6, 844-848. (Summary) **89e:81124** 81E25 (81E13)
- Guo, Si Cong A mathematical model of fuzzy discriminant analysis. (Chinese. English summary) *Fuzzy Math.* 7 (1987), no. 2, 1-8. (Summary) **89h:03096** 03E72
- (with Wang, Pei Zhuang; Di Nola, A.; Sessa, Salvatore) Further contributions to the study of finite fuzzy relation equations. *Fuzzy Sets and Systems* 26 (1988), no. 1, 93-104. (Summary) **89a:03107** 03E72 (15A99)
- Guo, Tao Ying (with Sun, Ke Kuan) Conditions for the existence of a weakest topology in a class of semihomomorphic spaces. (Chinese. English summary) *J. Math. (Wuhan)* 8 (1988), no. 1, 101-103. (Summary) **89k:54002** 54A10
- Guo, Wen Bin The  $\pi$ -normality and  $\pi$ -length of  $\pi$ -solvable groups. (Chinese) *Yangzhou Shiyan Ziran Kexue Xuebao* 1985, no. 1, 19-22. (Yun Fan) **89g:20035** 20D10 (20D20)
- (with Jing, Feng Jie) Finite abelian groups with automorphism groups of order 6 or 8. (Chinese. English summary) *Yangzhou Shiyan Ziran Kexue Xuebao* 1987, no. 4, 38-41. (Hugo S. Sun) **89j:20030** 20D45 (20F28, 20K01)
- (with Yuan, Xiang Huan) Some properties of exterior powers of modules. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* 5 (1988), no. 3, 29-32. (Summary) **89m:13009** 13D03 (18G10)
- Guo, Xiao Feng (with Zhang, Fu Ji; Chen, Rong Si) Perfect matchings in hexagonal systems. *Graphs Combin.* 1 (1985), no. 4, 383-386. (Summary) **89g:05091** 92A40 (05C70)
- (with Zhang, Fu Ji) The classification of hexagonal systems by their Z-transformation graphs. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* 4 (1987), no. 2, 7-12. (Hugo S. Sun) **89h:05145** 05C75 (05C70, 92A40)
- (with Zhang, Fu Ji) Characterization of an invariant for benzenoid systems. *Match* No. 22 (1987), 181-194. (R. C. Read) **89a:05086** 92A40 (05C99)
- (with Zhang, Fu Ji; Chen, Rong Si) The connectivity of Z-transformation graphs of perfect matchings of hexagonal systems. *Acta Math. Appl. Sinica (English Ser.)* 4 (1988), no. 2, 131-135. (N. Trinajstić) **89i:05082** 92A40 (05C40, 05C70)
- (with Chen, Rong Si; Zhang, Fu Ji) The edge connectivity of interchange graphs of classes of matrices of zeros and ones. *J. Xinjiang Univ. Natur. Sci.* 5 (1988), no. 1, 17-25. (Ji Cheng Chen) **89k:05068** 05C30 (05C40, 15A36, 15A48)
- A note on the inverse of a formal power series. (Chinese) *J. Xinjiang Univ. Natur. Sci.* 5 (1988), no. 2, 11-13. (Chin-Pi Lu) **89k:05007** 05A15 (13F25)
- (with Zhang, Fu Ji) The necessary and sufficient conditions for benzenoid systems with small number of hexagons to have Kekulé patterns. *Match* No. 23 (1988), 229-238. (Summary) **89m:05068** 92A40 (05C99)
- Guo, Xin Kang (with Shen, Yao Tian) On the existence of infinitely many critical points of the even functional  $\int_{\Omega} F(x, u, Du) dx$  in  $W^{1,p}$ . *Acta Math. Sci. (English Ed.)* 7 (1987), no. 2, 187-195. (Filomena Pacella) **89c:35048** 35J60 (49A21, 58E05)
- Guo, Xiu Yun Normal  $p$ -complements and a characteristic of nilpotent groups. (Chinese. English summary) *J. Math. (Wuhan)* 7 (1987), no. 4, 403-406. (Ming-Yao Xu) **89j:20034** 20D15 (20D20)
- Guo, Y. H. (with Padovan, Joe; Chung, Sangwoon) Asymptotic steady state behavior of fractionally damped systems. *J. Franklin Inst.* 324 (1987), no. 3, 491-511. (Summary) **89h:34003** 34A05 (34E05, 47G05, 70J05, 73K99)
- Guo, Y. Q. see Guo, Yu Qi
- Guo, Yi Xin (with Yu, Yun Ling) Investigating the mutation of cancer with the aid of the theory of dissipative structures. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* 1988, no. 1, 23-27, 22. (Not in MR) **92A07**
- Guo, Yin Kun (with Zhang, Zhong Fu; Li, Xiao Dong) Two theorems on the edge chromatic number of a graph. (Chinese. English summary) *J. Lanzhou Railway College* 6 (1987), no. 4, 67-71. (Chong-Keang Lim) **89k:05037** 05C15
- Guo, You Zhong (with Ma, Chen; Zhang, Wei Tao) A problem arising from the effect of thermal gradients in marine piled structures. *Acta Math. Sci. (English Ed.)* 8 (1988), no. 1, 11-20. (Charles J. Amick) **89i:35036** 35J05 (35C20, 80A15)
- Guo, Yu Qi (with Zhang, Liang; Wang, Li Min) On conjecture about a code commutatively equivalent to a prefix code. *Sci. Sinica Ser. A* 30 (1987), no. 10, 1009-1015. (L. L. Campbell) **89c:94043** 94B45
- (with Zhang, Shu Hua) Two notes on the classes of S-regular languages. (Chinese) *Acta Math. Sinica* 31 (1988), no. 1, 125-130. (Summary) **89i:68072** 68Q45 (20M35, 68S05)
- (with Ren, Xue Ming; Zhu, Ping) E-rectangular quasiregular semigroups. (Chinese) *Acta Math. Sinica* 31 (1988), no. 3, 396-403. (J. B. Kim) **89h:20091** 20M10
- (with Thierin, G.; Zhang, Shu Hua) Semaphore codes and ideals. *J. Inform. Optim. Sci.* 9 (1988), no. 1, 73-83. (Ludwig Staiger) **89e:94017** 94B45 (20M35)
- (with Reis, C. M.; Thierin, G.) On fd scopes and rf disjunctive languages. (Chinese) *Xuebao Tongbao (Chinese)* 33 (1988), no. 5, 321-324. (Not in MR) **68Q45**
- (with Reis, C. M.; Thierin, G.) Relatively f-disjunctive languages. *Semigroup Forum* 37 (1988), no. 3, 289-299. (Jettie Kleijn) **89i:68071** 68Q45 (20M35)
- Guo, Yu Qing (with Yu, Kai) Generalized multistate monotone coherent systems. (Chinese. English summary) *Acta Automat. Sinica* 14 (1988), no. 4, 248-255. (Summary) **89j:90138** 90B25 (93A10)
- Guo, Yuan Chun Rings almost satisfying the descending chain condition for principal left ideals. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin* 1988, no. 1, 1-4. (Yonghua Xu) **89k:16058** 16A66 (16A34)
- Guo, Yuan Ming Some results on the strong uniqueness of best simultaneous approximation. (Chinese. English summary) *Hunan Jiaoyu Xueyuan Ziran Kexue Xuebao* 6 (1988), no. 1, 9-13. (Summary) **89j:41030** 41A28 (41A50)
- Guo, Zhi Yi Circuits and paths in tournaments. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Kexue Ban* 23 (1987), no. 4, 637-640. (Tian Xing Yao) **89i:05177** 05C38 (05C20, 05C45)
- Guo, Zhong The primitive index set of a primitive matrix with positive diagonal elements. (Chinese) *Acta Math. Sinica* 31 (1988), no. 2, 283-288. (Ji-guang Sun) **89h:15027** 15A48
- A criterion for a class of partially nonpositive matrices. (Chinese. English summary) *Hunan Daxue Xuebao* 15 (1988), no. 1 Special Issue of Math., 155-160. (Ji-guang Sun) **89k:15032** 15A48 (15A18)
- Guo, Zhong Wei (with McInnis, B. C.) Modeling of the blood circulatory system and adaptive control of artificial hearts. (Chinese. English summary) *Acta Automat. Sinica* 13 (1987), no. 6, 416-423. (Summary) **89d:92013** 92A07 (92A09, 93C75)
- Guo, Zhu Rui (with Sha, Zhen; Wu, Zheng Chang) On interpolation splines  $S_3^1(\Delta_{mn}^0)$ . (Chinese) An English summary appears in Chinese Ann. Math. Ser. B 8 (1987), no. 3, 388. *Chinese Ann. Math. Ser. A* 8 (1987), no. 3, 368-376. (Han Lin Chen) **89h:41019** 41A15 (65D07)
- (with Ye, Mao Dong) Lacunary interpolation by splines. II. *J. Math. Res. Exposition* 7 (1987), no. 1, 87-96. (H. P. Dikshit) **89h:41005** 41A05 (41A15)
- Gupal, A. M. (with Mikhalevich, V. S.; Norkin, V. I.) ★ Методы невыпуклой оптимизации. (Russian) [Nonconvex optimization methods] Экономико-Математическая Библиотека. [Library of Mathematical Economics] "Nauka", Moscow, 1987. 280 pp. (Bruce D. Craven) **89f:90148** 90C30 (65K05)
- (with Mikhalevich, V. S.; Dubrovskii, V. B.) Global character of exact nonsmooth penalties. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 2, 111-112, 136. (Summary) **89h:90204** 90C30
- Guppalo, A. S. (with Voloshina, M. S.; Lopushanskaya, G. P.) Solution of generalized mixed boundary value problems for inhomogeneous strongly elliptic systems of second-order differential equations in the case of a multiply connected domain. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 8(42) (1987), 45-50, 93. (Summary) **89e:35050** 35J55
- Gupta, A. K. see Gupta, Arjun K.
- sen Gupta, Abhijit see Sen Gupta, Abhijit
- Gupta, Anil (with Savion, Leah) Semantics of propositional attitudes: a critical study of Cresswell's Structured meanings. *J. Philos. Logic* 16 (1987), no. 4, 395-410. (Marcus Kracht) **89a:03059** 03B65
- (with Singh Chandel, R. C.) Use of the multivariable H-function of Srivastava and Panda in cooling of a heated cylinder. *Pure Appl. Math. Sci.* 25 (1987), no. 1-2, 43-48. (K. M. Sakane) **89c:33006** 33A30 (80A20)
- Gupta, Arjun K. (with Tang, Jen) Some properties of LR-tests for generalized variances of two multivariate normal populations. *Publ. Inst. Statist. Univ. Paris* 31 (1986), no. 1, 59-69. (Dennis L. Young) **89h:62090** 62H15
- (with Nagar, D. K.) Nonnull distribution of LRC for testing  $H: \mu = 0; \Sigma = \sigma^2 I_p$  in multivariate normal distribution. (French and Italian summaries) *Statistica (Bologna)* 46 (1986), no. 3, 291-296. (Introduction) **89h:62104** 62H10 (62H15)
- (with Tang, Jen) Distribution of likelihood criteria and Box approximation. *Multivariate statistical modeling and data analysis (Harrisonburg, Va., 1986)*, 139-145, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston, MA*, 1987. (S. B. Nandi) **89g:62077** 62H10 (62H15)
- (with Nagar, D. K.) Nonnull distribution of the likelihood ratio criterion for testing equality of covariance matrices under intraclass correlation model. *Comm. Statist. Theory Methods* 16 (1987), no. 11, 3323-3341. (Yasunori Fujikoshi) **89a:62126** 62H10 (62H15)
- (with Nagar, D. K.) Correction to: "Nonnull distribution of the determinant of B-statistic in the complex case" [J. Korean Statist. Soc. 15 (1986), no. 1, 62-70; MR 88c:62089]. *J. Korean Statist. Soc.* 16 (1987), no. 2, 128-129. (Editors) **89e:62062** 62H10
- (with Nagar, D. K.) Distribution of the product of determinants of random matrices connected with the noncentral matrix variate Dirichlet distribution. *South African Statist. J.* 21 (1987), no. 2, 141-153. (Yasunori Fujikoshi) **89h:62114** 62H15
- (with Nagar, D. K.) Asymptotic expansion of the nonnull distribution of likelihood ratio statistic for testing multisample sphericity. *Comm. Statist. Theory Methods* 17 (1988), no. 9, 3145-3155. (Summary) **89g:62082** 62H15 (62H10)
- (with Javier, W. R.) On testing the dimensionality of regression coefficients. *Metrika* 36 (1989), no. 1, 15-27. (Not in MR) **62H15**
- sen Gupta, Ashis see Sen Gupta, Ashis
- Gupta, B. C. see Gupta, Bhisham Chand
- Gupta, Bal Chand (with Patel, S. M.) On extensions of Fuglede-Putnam theorem. *Indian J. Pure Appl. Math.* 19 (1988), no. 1, 55-58. (Pavel Knyazev) **89d:47037** 47B20 (47B10)
- Gupta, Bhisham Chand A bound connected with  $2^k$  factorial search designs of resolution 3.1. *Comm. Statist. Theory Methods* 17 (1988), no. 9, 3137-3144. (Kishore Sinha) **89m:62086** 62K15
- Gupta, C. K. see Gupta, Chander Kanta
- Gupta, Chaitan P. Boundary value problems for differential equations in Hilbert spaces involving reflection of the argument. *J. Math. Anal. Appl.* 128 (1987), no. 2, 375-388. (M. Švec) **89h:34046** 34B15 (34K10, 34K30)
- Existence and uniqueness theorems for the bending of an elastic beam equation. *Appl. Anal.* 26 (1988), no. 4, 289-304. (Zheng You Zhu) **89m:34027** 34B15 (73K05)
- Solvability of a fourth order boundary value problem with periodic boundary conditions. *Internat. J. Math. Math. Sci.* 11 (1988), no. 2, 275-284. (T. J. Mahar) **89c:34035** 34B15 (34C25, 47H15, 73K05)
- Solvability of a boundary value problem with the nonlinearity satisfying a sign condition. *J. Math. Anal. Appl.* 129 (1988), no. 2, 482-492. (Jan Andres) **89a:34024** 34B15
- Existence and uniqueness results for the bending of an elastic beam equation at resonance. *J. Math. Anal. Appl.* 135 (1988), no. 1, 208-225. (P. B. Bailey) **89i:34019** 34B15 (73K05)
- Gupta, Chander Kanta (with Gupta, Narain; Levin, Frank) On dimension subgroups relative to certain product ideals. *Group theory (Bressanone, 1986)*, 31-35, *Lecture Notes in Math.*, 1281, Springer, Berlin-New York, 1987. (I. B. S. Passi (Zbl 629:20004)) **89a:20005** 20C07 (20F12, 20F14)
- Gupta, D. P. (with Aggarwal, Satish K.) Positive values of inhomogeneous quaternary quadratic forms of type (3, 1). *Acta Cienc. Indica Math.* 13 (1987), no. 3, 162-169. (Madhu Raka) **89i:11072** 11H55
- (with Mazhar, S. M.) Approximation of continuous functions by ultraspherical series. *Mathematical analysis and its applications (Kuwait, 1985)*, 23-28, *KFAS Proc. Ser.*,

- 3, Pergamon, Oxford-Elmsford, NY, 1988. (B. D. Agrawal) **89k:33010** 33A45 (33A65, 41A10)
- (with Aggarwal, Satish K.) Positive values of inhomogeneous quadratic forms of signature  $-2$ . *J. Number Theory* **29** (1988), no. 2, 138–165. (Mary E. Flahive) **89f:11089** 11H55 (11E25, 11H50)
- Gupta, Indrani** (with Vartak, M. N.) Duality theory for fractional programming problems under  $\eta$ -convexity. *Opsearch* **24** (1987), no. 3, 163–174. (Summary) **89b:90237** 90C32
- Gupta, Indu** (with Sengar, R. S.; Singh, D. B.) Thermal instability of a rotating heterogeneous fluid layer with free boundaries in the presence of a magnetic field. *Proc. Nat. Acad. Sci. India Sect. A* **57** (1987), no. 2, 203–216. (Summary) **89f:76048** 76E25 (76U05)
- Gupta, J. R.** (with Banerjee, Mihir B.; Subbiah, M.) On reducing Howard's semicircle for homogeneous shear flows. *J. Math. Anal. Appl.* **130** (1988), no. 2, 398–402. (C. F. Chan Man Fong) **89a:76030** 76E05
- (with Kaushal, M. B.) Generalized hydromagnetic Rayleigh-Taylor instability. *J. Math. Anal. Appl.* **134** (1988), no. 1, 51–63. (Jean Pierre Brancher) **89j:76047** 76E25
- (with Kaushal, M. B.) Rotatory hydromagnetic double-diffusive convection with viscosity variations. *J. Math. Phys. Sci.* **22** (1988), no. 3, 301–320. (Jean Pierre Brancher) **89j:76048** 76E25 (76E15, 76U05, 76W05)
- Gupta, K. C.** see **Gupta, Kailash Chandra**
- Gupta, K. K.** see **Gupta, Kamleshwar Kumar**
- Gupta, Kailash Chandra** (with Agrawal, S. M.) Unified theorems involving  $H$ -function transform and Meijer-Bessel function transform. *Proc. Indian Acad. Sci. Math. Sci.* **96** (1987), no. 2, 125–130. (P. Anandani) **89c:44066** 44A20 (33A30, 44A55)
- (with Agrawal, S. M.) Some unified theorems involving  $H$ -function transforms. *Ganita Sandesh* **2** (1988), no. 1, 11–16. (H. M. Srivastava) **89m:33009** 33A35 (44A20)
- Gupta, Kamleshwar Kumar** (with Pandey, H. D.) An  $R$ - $\otimes$  recurrent Finsler space with nonsymmetric connection. (Turkish summary) *Istanbul Üniv. Fen Fak. Mecm. Ser. A* **43** (1978), 107–112 (1987). (L. Tamásy) **89g:53037** 53B40
- Gupta, Km. Vandana** (with Pathak, Ashutosh) Approximation of a function by the Nörlund means of derived Fourier series. *Vikram Math. J.* **6** (1985/86), 49–58. (J. Németh) **89f:42003** 42A10
- Gupta, L. R.** (with Puri, P. D.) Incomplete block designs for parallel line assays. *J. Statist. Plann. Inference* **20** (1988), no. 1, 121–128. (N. Gaffke) **89k:62100** 62K10
- Gupta, Lorene E.** (with Hehner, Eric C. R.; Malton, Andrew J.) Erratum: "Predictive methodology" [Acta Inform. **23** (1986), no. 5, 487–505; MR 87k:68090]. *Acta Inform.* **26** (1988), no. 3, 285. (Editors) **89k:68096** 68Q55 (68N05)
- Gupta, M. N.** (with Arora, Radha Krishnan) More comments on: "Distributed termination detection algorithm for distributed computations" [Arora, Gupta and S. P. Rana, Inform. Process. Lett. **22** (1986), no. 6, 311–314; R. B. Tan, G. Tel and J. van Leeuwen, ibid. **23** (1986), no. 3, 163; MR 87j:68034ab]. *Inform. Process. Lett.* **29** (1988), no. 1, 53–55. (Editors) **89j:68043** 68Q10
- Gupta, Manjul**  $\gamma$ -convergence and Schauder decompositions. *Modern analysis and its applications* (New Delhi, 1983), 65–77, Prentice-Hall of India, New Delhi, 1986. (W. H. Ruckle) **89f:46011** 46A35
- see **Gupta, N. D.** see **Sen Gupta, N. D.**
- Gupta, Narain** (with Gupta, Chander Kanta; Levin, Frank) On dimension subgroups relative to certain product ideals. *Group theory* (Bressanone, 1986), 31–35, *Lecture Notes in Math.*, 1281, Springer, Berlin-New York, 1987. (I. B. S. Passi (Zbl 629:20004)) **89a:20005** 20C07 (20F12, 20F14)
- Dimension subgroups of metabelian  $p$ -groups. *J. Pure Appl. Algebra* **51** (1988), no. 3, 241–249. (Gerald H. Cliff) **89m:20042** 20F26 (20F12, 20F14, 20F18, 20F40)
- see also **Neumann, B. H.** **89b:01107**
- Gupta, Omprakash K.** A branch and bound heuristic for computing upper bounds for nonlinear integer programs. *Indian J. Management Systems* **3** (1987), no. 3, 97–103. (Summary) **89k:90122** 90C11
- Gupta, P. C.** see **Gupta, Pratap Chandra**
- Gupta, P. K.** (with Sharma, B. B.) Markovian queueing model—a case study. *Acta Cienc. Indica Math.* **13** (1987), no. 1, 57–61. (Not in MR) **60K25** (90B22)
- (with Mittal, S. P.) Effect of twin births on the Markovian queue system  $M/M/\infty$ . *Acta Cienc. Indica Math.* **13** (1987), no. 4, 234–238. (Jacqueline Loris-Teghem) **89g:60291** 60K25 (90B22)
- Gupta, Pratap Chandra** (with Yogi, A. K.) On higher degree ratio-cum-product estimators. *J. Statist. Res.* **19** (1985), no. 1–2, 31–40. (Summary) **89m:62011** 62D05
- (with Kothwala, N. H.) A study of second order approximation of some ratio type statistics. *Biometrical J.* **30** (1988), no. 3, 369–377. (Not in MR) **62D05**
- Gupta, R. C.** see **Gupta, Radha Charan**
- Gupta, R. D.** see **Gupta, Rameshwar D.**
- Gupta, Radha Charan** Highlights of mathematical developments in India before Newton. *Math. Ed. (Siwan)* **20** (1986), no. 4, 131–138. (Brij Mohan) **89f:01014** 01A32
- Chords and areas of Jambūdvipa regions in Jaina cosmography. *Ganita Bhārati* **9** (1987), no. 1–4, 51–53. (George Abraham) **89b:01011** 01A32
- New Indian values of  $\pi$  from the *Manava sulba sutra*. *Centauros* **31** (1988), no. 2, 114–125. (A. I. Volodarskii) **89k:01008** 01A32
- Kurt Vogel (1888–1985), the veteran German historian of mathematics. *Ganita Bhārati* **10** (1988), no. 1–4, 16–20. (Editors) **89m:01092** 01A70
- Gupta, Rajan** (with Kilcup, Gregory W.; Patel, Apoorva; Sharpe, Stephen R.; de Forcrand, Philippe) Comparison of update algorithms for pure gauge SU(3). *Modern Phys. Lett. A* **3** (1988), no. 14, 1367–1378. (Summary) **89b:81007** 81–08 (81E25)
- Gupta, Rajni** On the multidimensional Laplace transform and its applications. *Jhanabha* **17** (1987), 67–77. (K. M. Saksena) **89a:44004** 44A10 (44A30)
- Gupta, Rakesh** (with Goel, L. R.; Rana, V. S.) Stochastic behaviour of a cell exposed to radiations. *Internat. J. Management Systems* **4** (1988), no. 1, 15–26. (Not in MR) **92A07**
- Gupta, Ramesh C.** (with Kirmani, S. N. U. A.) On order relations between reliability measures. *Comm. Statist. Stochastic Models* **3** (1987), no. 1, 149–156. (Summary) **89c:60101** 60K10 (60E05, 62N05, 90B25)
- (with Gupta, Rameshwar D.) Estimation of  $P(Y_p > \max(Y_1, Y_2, \dots, Y_{p-1}))$  in the exponential case. *Comm. Statist. Theory Methods* **17** (1988), no. 3, 911–924. (Not in MR) **62F10**
- Gupta, Rameshwar D.** (with Richards, Donald St. P.) Multivariate Liouville distributions. *J. Multivariate Anal.* **23** (1987), no. 2, 233–256. (Summary) **89g:62024** 62E15
- (with Gupta, Ramesh C.) Estimation of  $P(Y_p > \max(Y_1, Y_2, \dots, Y_{p-1}))$  in the exponential case. *Comm. Statist. Theory Methods* **17** (1988), no. 3, 911–924. (Not in MR) **62F10**
- Gupta, Sant Kumar** (with Rana, V. D.) Thermo elastic-plastic and creep transition in rotating cylinders. *J. Math. Phys. Sci.* **23** (1989), no. 1, 71–90. (Not in MR) **49A21** (49B21)
- Gupta, Shanti S.** (with Cote, Louis J.; Gleser, Leon Jay; Puri, Prem; Samuels, Stephen) K. C. Sreedharan Pillai 1920–1985. *Advances in multivariate statistical analysis*, vii, xv–xvi, *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (Editors) **89c:01053** 01A70
- (with Liang, TaChen) Selecting the best unknown mean from normal populations having a common unknown coefficient of variation. *Mathematical statistics and probability theory*, Vol. B (Bad Tatzmannsdorf, 1986), 97–112, Reidel, Dordrecht-Boston, MA-London, 1987. (Yung L. Tong) **89d:62023** 62F07
- (with Liang, TaChen) On some Bayes and empirical Bayes selection procedures. *Probability and Bayesian statistics* (Innsbruck, 1986), 233–246, Plenum, New York-London, 1987. (D. Y. Huang) **89g:62036** 62F07 (62C10, 62C12)
- (with Leu, Lii-Yuh) An asymptotic distribution-free selection procedure for a two-way layout problem. *Comm. Statist. Theory Methods* **16** (1987), no. 8, 2313–2325. (Wen Tao Huang) **89c:62053** 62F07 (62J10)
- (with Miescke, Klaus J.) On the problem of finding the largest normal mean under heteroscedasticity. *Statistical decision theory and related topics, IV*, Vol. 2 (West Lafayette, Ind., 1986), 37–49, Springer, New York-Berlin, 1988. (Tenko Raykov) **89c:62054** 62F07
- (with Liang, TaChen) Empirical Bayes rules for selecting the best binomial population. *Statistical decision theory and related topics, IV*, Vol. 1 (West Lafayette, Ind., 1986), 213–224, Springer, New York-Berlin, 1988. (J. V. Deshpande) **89c:62010** 62C12 (62F07)
- Gupta, Suchitra** (with Pardalos, P. M.) A note on a quadratic formulation for linear complementarity problems. *J. Optim. Theory Appl.* **57** (1988), no. 1, 197–202. (Summary) **89d:90224** 90C33
- Gupta, Sudhir C.** A note on component-wise Kronecker designs. *Metrika* **34** (1987), no. 5, 283–286. (Summary) **89b:62134** 62K10
- On designs for factorial experiments derivable from generalized cyclic designs. *Sankhya Ser. B* **49** (1987), no. 1, 90–96. (R. A. Bailey) **89g:62134** 62K15
- Precision of estimation of the treatment contrasts and the intra-block matrix of block designs. *Biometrical J.* **30** (1988), no. 4, 451–460. (Kishore Sinha) **89m:62081** 62K10
- Type A incomplete multi-response designs. *Comm. Statist. Theory Methods* **17** (1988), no. 9, 3089–3105. (Girdhar G. Agarwal) **89j:62103** 62K10
- On the property of balance and the pattern of  $C$ -matrix in block designs. *Comm. Statist. Theory Methods* **17** (1988), no. 9, 3125–3135. (Girdhar G. Agarwal) **89j:62125** 62K10
- (with Singh, Murari) Analysis of PBIB designs using association matrices. *Metrika* **36** (1989), no. 1, 1–6. (Summary) **89m:62080** 62K10
- Gupta, Sunil** (with Livne, Zvi A.) Resolving a conflict situation with a reference outcome: an axiomatic model. *Management Sci.* **34** (1988), no. 11, 1303–1314. (Summary) **89j:90294** 90D12
- Gupta, Sunita** (with Pandey, G. S.) On the degree of approximation to a function by the Nörlund means of its Fourier series. *Vikram Math. J.* **6** (1985/86), 42–48. (J. Németh) **89g:42005** 42A10 (42A24)
- Gupta, Surinder Kumar** (with Punnen, A. P.) Minimum deviation problems. *Oper. Res. Lett.* **7** (1988), no. 4, 201–204. (Summary) **89e:90168** 90C27
- Gupta, U. C.** Steady state results for the transportation system with  $k$  classes of vehicles. *Optimization* **19** (1988), no. 3, 421–426. (Summary) **89b:90058** 90B22 (60K25)
- Gupta, V. C.** (with Awasthi, C. P.) Integrability conditions of an  $F(K, K-2)$ -structure satisfying  $F^K + F^{K-2} = 0$  ( $K$  odd). *Publ. Math. Debrecen* **34** (1987), no. 3–4, 251–257. (Pedro Martínez Gadea) **89c:53053** 53C15
- Gupta, Vinod Kumar** (with Nigam, A. K.; Puri, P. D.) Characterization and construction of incomplete block designs for symmetrical parallel line assays. (Hindi summary) *J. Indian Soc. Agricultural Statist.* **39** (1987), no. 2, 161–166, iv. (Girdhar G. Agarwal) **89m:62082** 62K10
- Gupta, Y. K.** (with Mahanta, M. N.) Coupled Maxwell-pseudoscalar field from the Einstein-Mayer theory. (German summary) *Ann. Physik* (7) **44** (1987), no. 8, 553–557. (A. H. Klotz) **89g:83055** 83E99
- Gupta, Y. P.** (with Dharmadhikari, A. D.) Performance measure estimation for repairable systems. *Opsearch* **24** (1987), no. 4, 207–217. (Philip J. Boland) **89b:62204** 62N05 (90B25)
- (with Bector, C. R.; Goel, S.) An economic quantity discount model to increase vendor profits under inflation. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **62** (1988), 87–100. (Summary) **89g:90084** 90B05
- Gupte, Neelima** (with Amritkar, R. E.; Gangal, A. D.) Dimensional characterization of sets with partial scaling symmetry. *Phys. Rev. A* (3) **36** (1987), no. 6, 2850–2861. (Frederick R. Marotto) **89b:28007** 28A75 (26A30, 58F11, 58F13, 82A99)
- (with Amritkar, R. E.) Inverse problem for multifractals: extension to logarithmic and additive corrections. *Phys. Rev. Lett.* **60** (1988), no. 4, 245–248. (Summary) **89b:82137** 82A99 (26A18, 58F13)
- Guralnick, R.** (with Bass, Hyman) Torsion in the Picard group and extension of scalars. *J. Pure Appl. Algebra* **52** (1988), no. 3, 213–217. (F. DeMeyer) **89c:13006** 13C10 (19A13)
- Similarity of holomorphic matrices. *Linear Algebra Appl.* **99** (1988), 85–96. (William H. Gustafson) **89a:16005** 16A18 (16A64)
- Guralnick, S. A.** (with Erber, T.) Hysteresis and incremental collapse: the iterative evolution of a complex system. *Ann. Physics* **181** (1988), no. 1, 25–53. (Summary) **89a:73027** 73E50
- Gurarie, D.** Asymptotic inverse spectral problem for anharmonic oscillators. *Comm. Math. Phys.* **112** (1987), no. 3, 491–502. (Alejandro Uribe) **89c:81018** 81C05 (34A55, 34B25, 35P99)
- (with Gesztesy, F.; Holden, Helge; Klaus, M.; Sadun, L.; Simon, Barry; Vogl, P.) Trapping and cascading of eigenvalues in the large coupling limit. *Comm. Math. Phys.* **118** (1988),



- no. 4, 597-634. (Rainer Hempel) **89m:81049** 81C15 (34E20, 47A55, 47E05)
- Gurarii, V. P.** (with Ruzmatova, N. T.) On a scattering problem with a turning point of infinite multiplicity. (Russian) *Analytical methods in the theory of differential and integral equations* (Russian), 28-31, *Kuibyshev. Gos. Univ., Kuibyshev*, 1987. (See **89c:00005**) 34E20
- Gurev, T. E.** (with Safarov, Yu. G.) Exact spectral asymptotics for the Laplace operator on a manifold with periodic geodesics. (Russian) Boundary value problems of mathematical physics, 13 (Russian). *Trudy Mat. Inst. Steklov.* **179** (1988), 36-53, 241. (S. Z. Leventsovskii) **89i:35106** 35P20 (58G25)
- Asymptotics of the spectrum of a biharmonic operator on a hemisphere. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1988**, vyp. 3, 94-95, 126; translated in *Vestnik Leningrad Univ. Math.* **21** (1988), no. 3, 59-61. (Andreas Juhl) **89m:35167** 35P20 (35J40, 58F11, 58F22)
- Gurev, R.** Category of simplicial complexes. *Studia Sci. Math. Hungar.* **22** (1987), no. 1-4, 379-381. (G. Cherlin) **89b:03054** 03C35 (03C20, 52A25)
- On ultraproducts of compact Hausdorff spaces. *J. Symbolic Logic* **53** (1988), no. 1, 294-300. (Paul Bankston) **89b:03051** 03C20 (03C85, 54B10)
- Gurevich, A. P.** Generating functions of Volterra operators with a weight having a turning point. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Sarator, 1984), 93-97, *Sarator. Gos. Univ., Sarator*, 1986. (See **89j:00036**) 47G05
- Gurevich, Aleksandr Viktor** (with Pitaevskii, L. P.) Averaged description of waves in the Korteweg-de Vries-Burgers equation. *Soviet Phys. JETP* **66** (1987), no. 3, 490-495 (1988); translated from *Zh. Éksper. Teoret. Fiz.* **93** (1987), no. 3, 871-880 (Russian). (Summary) **89h:35291** 35Q20 (76B15)
- Gurevich, D. I.** Trace and determinant in algebras associated with the Yang-Baxter equation. (Russian) *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 3, 79-80. (J. S. Joel) **89c:58050** 58F07 (17B65, 18B99)
- Gurevich, E. S.** (with Naumov, G. E.) An interval representation of utility. (Russian. English summary) *Axiomat. i Telemekh.* **1987**, no. 10, 122-131. (Andrzej Wiecezorek) **89c:90031** 90A10
- Gurevich, V. A.** Weighted  $M$ -estimates in nonlinear regression. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 2, 421-424; translated in *Theory Probab. Appl.* **33** (1988), no. 2, 395-399. (Andrzej Pázmán) **89i:62103** 62J02 (62F35)
- Gurevich, Yuri** (with Ajtai, Miklós) Monotone versus positive. *J. Assoc. Comput. Mach.* **34** (1987), no. 4, 1004-1015. (Ingo Wegener) **89a:68068** 68Q15 (03C13, 03C40, 03D15, 03G05)
- Logic and the challenge of computer science. *Trends in theoretical computer science* (Udine, 1984), 1-57, *Principles Comput. Sci. Ser.*, 12, *Computer Sci. Press, Rockville, MD*, 1988. (See **89m:68002**) 03B70 (03C13, 03D15, 68Q05, 68Q15)
- Gurjelashvili, R. I.** Integrability of a conjugate function in  $L^p$  with power weight. (Russian) *Mat. Sb. (N.S.)* **136** (178) (1988), no. 3, 341-360, 430. (R. P. Boas, Jr.) **89m:42008** 42A50
- On a theorem of Hardy. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **131** (1988), no. 2, 257-260. (Summary) **89m:26032** 26D15
- Gurin, A. M.** Realization of nets of convex polyhedra with equiangular vertices. V. (Russian) *Ukrain. Geom. Sb.* **30** (1987), 22-36, i. (E. Hertel) **89e:52010** 52A25
- Gurin, L. G.** The maximum principle in a minimax problem of optimal control. (Russian) *Approximate methods for analysis and their applications* (Russian), 37-48, *Akad. Nauk SSSR Sibsk. Otdel., Énerget. Inst., Irkutsk*, 1985. (L. Mikolajczyk) **89m:49040** 49B40
- see also Aubin, Jean-Pierre, **89c:90001**
- Gurjar, R. V.** (with Shastri, A. R.) On the rationality of complex homology 2-cells. I. *J. Math. Soc. Japan* **41** (1989), no. 1, 37-56. (Takao Fujita) **89k:14035** 14F45 (14J29, 32C10, 32J99)
- Gurka, Petr** (with Opic, Bohumír) Continuous and compact imbeddings of weighted Sobolev spaces. I. *Czechoslovak Math. J.* **38** (113) (1988), no. 4, 730-744. (Dinh Dung) **89j:46034** 46E35
- Gürkan, A. Turan** Complements on weighted spaces. (Turkish. English summary) *Atatürk Üniv. J. Sci.* **1985**, no. 2 *Special Issue*, 147-154. (Summary) **89b:46033** 46E15 (46J99)
- Gürlebeck, Klaus** (with Sprössig, W.) An application of quaternionic analysis to the solution of time-independent Maxwell equations and of Stokes' equation. *Proceedings of the 14th winter school on abstract analysis* (Sri, 1986). *Rend. Circ. Mat. Palermo* (2) **Suppl. No. 14** (1987), 61-76. (L. Jentsch) **89h:78002** 78-08 (30G35, 35C15, 35J99)
- (with Sprössig, W.) A generalized Leibniz rule and foundation of a discrete quaternionic analysis. *Proceedings of the Winter School on Geometry and Physics* (Sri, 1987). *Rend. Circ. Mat. Palermo* (2) **Suppl. No. 16** (1987), 43-64. (André Hautot) **89c:30086** 30G35 (35A99)
- Interpolation and best approximation in spaces of monogenic functions. (German summary) *Wiss. Z. Tech. Univ. Karl-Marx-Stadt* **30** (1988), no. 1, 38-40. (Bernd Goldschmidt) **89h:41006** 41A05 (30E10, 30G35, 41A50)
- Gurman, V. I.** ★ Принцип расширения в задачах управления. (Russian) [The extension principle in control problems] *Теоретические Основы Технической Кибернетики*. [Theoretical Foundations of Engineering Cybernetics] "Nauka", Moscow, 1985. 288 pp. (Summary) **89m:49056** 49D29 (49-02, 93-02, 93C73)
- Extensions of differential systems and their applications to the investigation of natural-economic models. (Russian) *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 91-98, "Angel Kanchev" Tech. Univ., Ruse, 1987. (P. Vondráček) **89c:90041** 90A16 (34A60, 49E10, 90A30)
- (with Ivanova, L. I.) Models and analysis of ecological-economic systems. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 2, 54-57 (1988); translated from *Avtomatika* **1987**, no. 2, 55-58, 96 (Russian). (Not in MR) **92A17** (90A30)
- (with Brusilovskii, P. M.; Drozdovskii, É. E.) ★ Приложение математических моделей к анализу эколого-экономических систем. (Russian) [Application of mathematical models to the analysis of ecological-economic systems] Edited by I. A. Bashalkhanov and V. A. Baturin. "Nauka" Sibsk. Otdel., Novosibirsk, 1988. 216 pp. (Editors) **89d:90069** 90A30
- (with Baturin, V. A.; Moskalenko, A. I.; Baginov, I. P.; Bobryshev, A. G.; Butin, A. A.; Danilina, E. V.; Derenko, N. V.; Dushin, K. B.; Dykhta, V. A.; Kolokolnikov, G. A.; Konstantinov, G. N.; Mel'nik, V. V.; Nikiforova, L. N.; Ovsyannikova, N. A.; Rasina, I. V.; Rozenraukh, D. M.; Urbanovich, D. E.; Fedorova, E. Yu.) ★ Методы улучшения в вычислительном эксперименте. (Russian) [Methods of improving [control] in numerical experiments] "Nauka" Sibsk. Otdel., Novosibirsk, 1988. 184 pp. ISBN 5-02-028573-0 (Asen L. Dontchev) **89h:65099** 65Kxx (49Dxx, 93B40)
- Sufficient conditions for optimality with a resolving system. (Russian. English summary) *Axiomat. i Telemekh.* **1988**, no. 6, 168-171. (Not in MR) **49B10**
- Models and optimality conditions for discrete-continuous processes. (Russian and Polish summaries) *Control Cybernet.* **17** (1988), no. 2-3, 247-254. (Not in MR) **49B34** (93C55)
- Gürses, Metin** (with McCrea, J. Dermott; Baekler, Peter) A Kerr-like solution of the Poincaré gauge field equations. (Italian summary) *Nuovo Cimento B* (11) **99** (1987), no. 2, 171-177. (Dieter Lorenz-Petzold) **89b:83072** 83D05
- (with Baekler, Peter; Hehl, Friedrich W.) A new method to solve the field equations of Poincaré gauge theories. *Classical Quantum Gravity* **5** (1988), no. 7, L105-L112. (P. K. Smerz) **89f:83073** 83D05 (81E13)
- (with Baekler, Peter; Hehl, Friedrich W.; McCrea, J. Dermott) The exterior gravitational field of a charged spinning source in the Poincaré gauge theory: a Kerr-Newman metric with dynamic torsion. *Phys. Lett. A* **128** (1988), no. 5, 245-250. (M. Carmeli) **89f:83074** 83D05
- Gürsey, Feza** Super Poincaré groups and division algebras. *Modern Phys. Lett. A* **2** (1987), no. 12, 967-976. (Hyo C. Myung) **89b:17003** 17A35 (81E30, 81G20)
- Lattices generated by discrete Jordan algebras. *Modern Phys. Lett. A* **3** (1988), no. 12, 1155-1168. (R. Iordănescu) **89m:17049** 17C40
- Gurshtein, A. A.** Ptolemy and Copernicus. (Russian) *Priroda* **1988**, no. 3, 85-92. (Editors) **89j:01009** 01A20 (01A40)
- Gurtin, Morton E.** Toward a nonequilibrium thermodynamics of two phase materials with sharp interface. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 79-85, *ARO Rep.* **88-01**, *U.S. Army Res. Office, Research Triangle Park, NC*, 1988. (Summary) **89c:80009** 80A20 (73B30)
- (with Matano, Hiroshi) On the structure of equilibrium phase transitions within the gradient theory of fluids. *Quart. Appl. Math.* **46** (1988), no. 2, 301-317. (Marshall Slemrod) **89j:49015** 49B21 (73G10, 76A02, 80A20)
- (with Hrusa, William J.) On energies for nonlinear viscoelastic materials of single-integral type. *Quart. Appl. Math.* **46** (1988), no. 2, 381-392. (Michael Renardy) **89e:73020** 73F99 (73B30, 73G10)
- Gurvich, T. L.** (with Azarov, T. A.) Sharpening of a theorem of Yu. V. Prokhorov on the asymptotic behavior of the binomial distribution. (Russian) *Probability distributions and mathematical statistics* (Russian) (Fergana, 1983), 4-19, 487, "Fan", Tashkent, 1986. (Zheng Yan Lin) **89b:60047** 60F05 (60E99)
- Gurvich, V. A.** (with Gol'berg, A. I.; Rozenblyum, M. Yu.; Khanin, K. M.) Conditions for dominance solvability of concave  $n$ -person games. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 2(254), 223-224. (Introduction) **89b:90238** 90D10
- (with Gvishiani, A. D.) Metric and ultrametric resistance spaces. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 6(258), 187-188. (Juraj Hromkovič) **89f:90051** 90B10 (94C10)
- Equivalence of problems of calculating schemes, optimal flows and static equilibrium. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 6(258), 191-192. (Stefan Tiġan) **89g:90170** 90C25 (65K05, 90B10)
- A stochastic game with complete information that does not have equilibrium states in pure stationary strategies. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 2(260), 135-136; translated in *Russian Math. Surveys* **43** (1988), no. 2, 171-172. (O. A. Malafeev) **89g:90256** 90D15 (90D10)
- Extremal homogeneous hypergraphs and a hypercombinatorial function. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 4, 792-797; translated in *Soviet Math. Dokl.* **37** (1988), no. 1, 146-151. (Ioan Tomescu) **89d:05058** 05B40 (05C35, 05C65)
- Gurvits, L. N.** (with Zakharin, A. M.) Randomization of random variables and their distributions. (Russian. English summary) *Kibernetika (Kiev)* **1987**, no. 1, 108-115, 136. (Summary) **89d:60033** 60E99 (60G99, 90B99)
- Gur'yanov, A. E.** Exact numerical solution of systems of linear stationary ordinary differential equations. (Russian) *Mathematical physics* (Russian), 81-83, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Zahari Zlatev) **89f:65075** 65L05
- Gurzadyan, V. G.** (with Kocharyan, A. A.; Matinyan, S. G.) Catastrophes in stellar systems. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 1, 54-58. (From the introduction) **89a:85004** 85A15 (58C28, 58F11)
- (with Kocharyan, A. A.) Instability in Wheeler-DeWitt superspace. *Modern Phys. Lett. A* **2** (1987), no. 12, 921-927. (Gheorghe Zet) **89b:83075** 83E05 (58F17, 83C45, 83F05)
- (with Kocharyan, A. A.) The Arnowitt-Deser-Misner principle and geodesic flows in Wheeler-DeWitt superspace. *Soviet Phys. JETP* **66** (1987), no. 4, 651-653 (1988); translated from *Zh. Éksper. Teoret. Fiz.* **93** (1987), no. 4, 1153-1158 (Russian). (C. Gauthier) **89f:83072** 83C99 (58F05, 83F05)
- (with Kocharyan, A. A.) Dynamic chaos and a regular field. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 2, 323-325; translated in *Soviet Phys. Dokl.* **33** (1988), no. 7, 494-495. (Introduction) **89m:85006** 85A05 (58F13)
- Gurzhi, A. A.** (with Konstantinov, M. Yu.; Meleshko, V. V.) Interaction of coaxial vortex rings in an ideal fluid. *Fluid Dynamics* **23** (1988), no. 2, 224-229; translated from *Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* **1988**, no. 2, 78-84 (Russian). (Touvia Miloh) **89h:76026** 76C05
- Gurzo, G. G.** Systems of generators for the centralizers of the rigid elements of a braid group. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **51** (1987), no. 5, 915-935, 1117; translated in *Math. USSR-Izv.* **31** (1988), no. 2, 223-244. (James Howie) **89c:20073** 20F36
- Gurzova, G. V.** A mixed boundary value problem for an elliptic equation with a plane of singularity. (Russian) *Differential equations and mathematical physics* (Russian), 104-106, *Kuibyshev. Gos. Ped. Inst., Kuibyshev*, 1985. (See **89f:35006**) 35J70
- Gusak, A. A.** (with Gusak, E. A.) Petr Fedorovich Papkovich (on the 100th anniversary of his birth). (Russian) *Vestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 5, 122-124. (Not in MR) **01A70**
- see also Martynenko, M. D., **89f:01072**
- Gusak, D. V.** (with Turenizayova, A. I.) On lattice semicontinuous Poisson processes on a Markov chain. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 6, 707-711, 813. (N. H. Bingham) **89a:60172** 60J30
- Oscillating schemes for a random walk. I. (Russian) *Teor. Veroyatnost. i Mat. Statist.* **39** (1988), 33-39, 126. (N. H. Bingham) **89g:60217** 60J15
- Gusak, E. A.** (with Martynenko, M. D.; Zhuravkov, M. A.) Solution of a problem of thermoelasticity by the method of Green quasifunctions. (Russian) *Mathematical physics* (Russian), 84-87, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (D. G. Natroshvili) **89m:73034** 73U05 (35C99, 73C25)

- (with Gusak, A. A.) Petr Fedorovich Papkovich (on the 100th anniversary of his birth). (Russian) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1987, no. 5, 122–124. (Not in MR) 01A70
- Gusak, I. Ya. (with Gainanov, D. N.) Combinatorial properties of positive bases. (Russian) *Mat. Zametki* 42 (1987), no. 3, 463–474, 477. (Béla Uhrin) 89c:52009 52A25 (15A03)
- Gusak, P. P. (with Sorkin, L. R.) Minimax function approximation by noisy observations under nonparametric uncertainty. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* 17 (1988), no. 1, 37–47. (Benjamin Goldys) 89c:93207 93E12 (62C20, 62G05, 93C40, 93E11)
- Gusakova, S. M. (with Finn, V. K.) Logical inference and databases; similarities and plausible inference. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 2, 110–129; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 5, 42–63, 221 (Russian). (Marc Gyssens) 89m:68012 68P05 (03B35, 03B60, 68P15, 68T25, 92A25)
- Gusar, V. V. A problem of spline control of nonlinear systems. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 9, 1475–1481, 1651; translated in *Differential Equations* 24 (1988), no. 9, 959–964. (A. M. Galperin) 89k:65074 65K10 (41A15, 49A36)
- Spline-controllability and approximate determination of optimal spline-control. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 6, 724–731, 813. (T. R. Gichev) 89k:93014 93B05 (41A15, 49A10)
- Gusarenko, S. A. Functional-differential equations with a nonlinear superposition operator. (Russian) *Boundary value problems* (Russian), 68–72, 158, *Perm. Politekh. Inst., Perm.* 1984. (see 89b:00008) 34K05 (47H99)
- Solvability of equations of neutral type with a locally Volterra operator. (Russian) *Functional-differential equations* (Russian), 26–29, ii–iii, *Perm. Politekh. Inst., Perm.* 1985. (D. Izumova) 89g:34100 34K05
- On the continuity of solutions of equations of the second kind. (Russian) *Boundary value problems* (Russian), 20–23, ii, *Perm. Politekh. Inst., Perm.* 1986. (see 89c:00009) 47H15 (34A10)
- Gusev, E. V. The Bethe method: thermodynamics and limit states. (Russian. English summary) *Teoret. Mat. Fiz.* 67 (1986), no. 3, 440–450. (S. V. Temko) 89g:82015 82A15 (82A68)
- Guseinov, B. A. (with Ushakov, I. A.) Use of generating functions for the construction of a Pareto set. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 236–240, "Nauka", Moscow, 1987. (Introduction) 89c:90102 90B22
- Guseinov, E. A. Applications of the method of spline functions to the solution of an integral equation of the first kind with a logarithmic singularity in the kernel. (Russian) *Applied problems in functional analysis* (Russian), 39–42, 115–116, *Azerbaijdzhan. Gos. Univ., Baku*, 1986. (Summary) 89b:65312 65R20
- Guseinov, F. M. (with Novruzov, A. A.) Boundary properties of the solutions of second-order elliptic equations. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* 43 (1987), no. 9, 3–6. (Günter Berger) 89b:35126 35J67 (31B20, 35J25)
- Guseinov, F. V. Characterization of finite-dimensional subspaces of spaces of continuous and measurable bounded vector-valued functions. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 7 (1986), no. 6, 19–22 (1987). (M. Abel) 89d:46039 46E40
- Guseinov, G. A. On the order of approximation by generalized Gelfond operators [Reviewed in *RZhMat* 1978:3 B166]. (Russian) *Special problems in function theory* (Russian), 24–30, "Elm", Baku, 1977. (see 89f:30003) 41A35
- Convergence of A. O. Gelfond operators of an analytic function in an ellipse. (Russian) *Approximation by generalized analytic and spherical functions* (Russian), 113–120, *Azerbaijdzhan. Gos. Univ., Baku*, 1983. (see 89b:41001) 30E10
- On a theorem of A. O. Gelfond. (Russian) *Special problems in function theory*, No. III (Russian), 84–90, "Elm", Baku, 1986. (From the text) 89c:41027 41A35
- Guseinov, G. G. (with Sabel'feld, K. K.) Solution of the first three-dimensional problem of elasticity theory by the method of random walks on spheres. (Russian) *Dinamika Sploshn. Sredy* No. 80 (1987), 113–122, 168. (Summary) 89f:73013 73C02
- Guseinov, G. Sh. On the spectral theory of the Laplace-Beltrami operator in an  $n$ -dimensional Lobachevskii space. (Russian) *Spectral theory of operators and its applications*, No. 8 (Russian), 83–134, "Elm", Baku, 1987. (Friedbert Prüfer) 89d:58127 58G25 (11F72, 35P05)
- Asymptotic behavior of the spectral function and discrete spectrum of the Laplace-Beltrami operator on the fundamental domain of an  $n$ -dimensional Lobachevskii space. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 1, 26–32. (Andreas Juhl) 89c:35118 35P20 (58G25)
- On the spectral theory of second-order multiparameter difference equations. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 51 (1987), no. 4, 785–811, 910–911; translated in *Math. USSR-Izv.* 31 (1988), no. 1, 95–120. (R. C. Gilbert) 89c:39008 39A12 (34B25, 39A70, 47B39)
- Guseinov, I. M. (with Pashaev, R. T.) The transformation operator for a class of integro-differential equations. (Russian) *Applied problems in functional analysis* (Russian), 82–86, 118, *Azerbaijdzhan. Gos. Univ., Baku*, 1986. (Summary) 89a:45019 45J05
- (with Nabiev, I. M.) An inverse problem for the Sturm-Liouville operator with nonseparable boundary conditions. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 2, 22–29. (From the text) 89c:34042 34B25 (34A55, 47E05)
- (with Azimova, G. M.) Direct and inverse problems of scattering theory for a system of first-order difference equations. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 3, 3–8 (1988). (From the introduction) 89g:39008 39A12 (47A40, 47B39)
- Gusein-Zade, S. M. Equivariant analogue of the index of a gradient vector field. (Russian) *Analysis on manifolds and differential equations* (Russian), 46–60, 174–175, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1986. (G. Tóth) 89c:58065 58F09
- (with Arnol'd, V. I.; Varchenko, A. N.) ★ Singularities of differentiable maps. Vol. II. Monodromy and asymptotics of integrals. Translated from the Russian by Hugh Porteous. Translation revised by the authors and James Montaldi. Monographs in Mathematics, 83. Birkhäuser Boston, Inc., Boston, MA, 1988. viii+492 pp. ISBN 0-8176-3185-2 (Editors) 89g:58024 58C27 (32B30, 32C40, 32G11)
- On the frequency distribution of Russian letters. (Russian) *Problemy Peredachi Informatsii* 24 (1988), no. 4, 102–107; translated in *Problems Inform. Transmission* 24 (1988), no. 4, 338–342. (Summary) 89k:92096 92A90
- Gusev, A. A. (with Varlamova, O. S.) Dynamic aspects of an economic optimum for the quality of the environment. (Russian) *Ekonom. i Mat. Metody* 24 (1988), no. 3, 447–457. (Not in MR) 90A30 (92A17)
- Gusev, A. I. Structure of the attractors of mappings of compact sets. (Russian) *Application of functional analysis, in approximation theory* (Russian), 11–18, 142, *Kalinin. Gos. Univ., Kalinin*, 1984. (see 89c:00006) 54H20 (58F12)
- Gusev, A. L. Group-testing procedures that use a priori information. Statistical methods of estimation and verification of hypotheses. *J. Soviet Math.* 41 (1988), no. 1, 792–794, 62N10
- Gusev, L. A. (with Aizerman, M. A.; Petrov, Sergei Vsevolodovich; Smirnova, I. M.; Tenenbaum, L. A.) Dynamic approach to analysis of structures described by graphs (foundations of graph-dynamics). *Topics in the general theory of structures*, 69–136, *Theory Decis. Lib. Ser. D. Syst. Theory Knowledge Engrg. Probl. Solving, Reidel, Dordrecht-Boston, MA*, 1987. (Milan Mareš) 89i:90007 90A08 (05C99, 90C39)
- Gusev, M. I. (with Kurzhanskii, A. B.) Inverse problems in the dynamics of control systems. (Russian) *Mechanics and scientific technological progress*, Vol. 1 (Russian), 187–195, 295, "Nauka", Moscow, 1987. (Zbigniew Emirsajlow) 89m:93009 93B07 (49D15, 93C10)
- Optimization of measurements in a problem on the estimation of the state of a dynamical system with geometric constraints on noise. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 11, 1862–1870, 2020; translated in *Differential Equations* 24 (1988), no. 11, 1237–1243. (Summary) 89k:93063 93B30 (93B07)
- On the stability of solution of the inverse problems in control system dynamics. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* 17 (1988), no. 5, 297–310. (A. Barraud) 89i:93031 93B30 (34H05, 93E10)
- Gusev, S. V. Linear stabilization of nonlinear systems program motion. *Systems Control Lett.* 11 (1988), no. 5, 409–412. (Adam Łozowicki) 89k:93164 93D15 (93C10, 93D99)
- Guseva, I. L. (with Vasil'kov, D. A.; Lyapidevskii, V. K.) An estimate for the response of a detector of approximations of spectral characteristics. (Russian) *Function-theoretic methods in problems of mathematical physics* (Russian), 15–21, *Energoatomizdat, Moscow*, 1986. (A. Kochubei [translated from *RZhMat* 1986:9 B1155]) 89k:46090 46N05 (90C05)
- Gusfield, Dan (with Martel, Charles U.) A fast parallel quicksort algorithm. *Inform. Process. Lett.* 30 (1989), no. 2, 97–102. (Summary) 89k:68026 68P10 (68Q25)
- Gügen, Hans-Werner (with Hertzberg, Joachim) Some fundamental properties of local constraint propagation. *Artificial Intelligence* 36 (1988), no. 2, 237–247. (Summary) 89i:68126 68T05
- Gushchin, A. K. The Dirichlet problem for a second-order elliptic equation. (Russian) *Mat. Sb. (N.S.)* 137(179) (1988), no. 1, 19–64, 143. (H. Triebel) 89m:35060 35J25
- (with Mikhailov, V. P.) Comparison theorems for solving hyperbolic equations. (Russian) *Mat. Sb. (N.S.)* 134(176) (1987), no. 3, 353–374, 447; translated in *Math. USSR-Sb.* 62 (1989), no. 2, 349–371. (Peter R. Popivanov) 89c:35007 35B05 (35B40, 35L20)
- Gusić, Ivica Diophantine geometry. (Serbo-Croatian) *Matematika (Zagreb)* 14 (1985), no. 1, 5–12. (Not in MR) 11D41
- Gustafson, John L. (with Montry, Gary R.; Benner, Robert E.) Development of parallel methods for a 1024-processor hypercube. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 4, 609–638. (Not in MR) 65W05
- Gustafson, K. E. (with Goodrich, R. K.) Spectral estimation and factorization in higher dimensions. *A Haar memorial conference*, Vol. I, II (Budapest, 1985), 383–399, *Colloq. Math. Soc. János Bolyai*, 49, North-Holland, Amsterdam-New York, 1987. (J. D. Stegeman) 89c:42021 42B10 (32A35, 60G10, 62M15, 85A45)
- (with Goodrich, R. K.) Kolmogorov systems and Haar systems. *A Haar memorial conference*, Vol. I, II (Budapest, 1985), 401–416, *Colloq. Math. Soc. János Bolyai*, 49, North-Holland, Amsterdam-New York, 1987. (J. D. Stegeman) 89c:58068 58F11 (28D05, 58F25, 82A35)
- Gustafson, William H. Group rings over hereditary orders. *J. Algebra* 108 (1987), no. 2, 317–324. (From the introduction) 89d:16035 16A54 (19A31)
- (with Habibi, Javad Faghih) Reflexive serial algebras. *Linear Algebra Appl.* 99 (1988), 217–223. (Kenneth R. Davidson) 89d:16028 16A46 (15A30, 47A15)
- Gustafsson, Bertil (with Ferm, Lars) Far field boundary conditions for steady state solutions to hyperbolic systems. *Nonlinear hyperbolic problems* (St. Étienne, 1986), 238–252, *Lecture Notes in Math.*, 1270, Springer, Berlin-New York, 1987. (Darrell L. Hicks) 89c:35095 35L60 (35B99, 76B99)
- Unsymmetric hyperbolic systems and the Euler equations at low Mach numbers. *J. Sci. Comput.* 2 (1987), no. 2, 123–136. (David F. Griffiths) 89b:65222 65M30 (35L99)
- Inhomogeneous conditions at open boundaries for wave propagation problems. *Appl. Numer. Math.* 4 (1988), no. 1, 3–19. (W. F. Ames) 89b:65212 65M10 (73D99)
- Gustafsson, Björn An ill-posed moving boundary problem for doubly-connected domains. *Ark. Mat.* 25 (1987), no. 2, 231–253. (Fouad A. Mohamed) 89h:35352 35R35 (35R25)
- (with Mossino, Jacqueline) Quelques inégalités isopérimétriques pour le problème de Stefan. (English summary) [Some isoperimetric inequalities for the Stefan problem] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 15, 669–672. (A. Visintin) 89b:35170 35R35 (35K05, 80A20)
- Application of half-order differentials on Riemann surfaces to quadrature identities for arc-length. *J. Analyse Math.* 49 (1987), 54–89. (Helmut Kötitz) 89k:30032 30E20 (30F30)
- Gustafson, Kjell (with Lundh, Michael; Söderlind, Gustaf) A PI stepsize control for the numerical solution of ordinary differential equations. *BIT* 28 (1988), no. 2, 270–287. (Zahari Zlatev) 89c:65073 65L05
- Gustafsson, Tommy Global  $L^p$ -properties for the spatially homogeneous Boltzmann equation. *Arch. Rational Mech. Anal.* 103 (1988), no. 1, 1–38. (Carlo Cercignani) 89h:82019 82A40 (76P05)
- Guestonov, V. A. Sliding states in difference systems with variable structure. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 12, 2115–2122, 2205. (J. Gregor) 89c:39006 39A11 (39A10)
- Gusyakov, V. K. Mathematical modeling of tsunami generation. (Russian) *Mathematical modeling in geophysics* (Russian), 65–82, 131, "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (see 89h:86005) 73N10 (86A15)



- Gusynin, V. P. (with Roman'kov, V. V.) Conformally covariant operators and the effective action in an external gravitational field. *Soviet J. Nuclear Phys.* **46** (1987), no. 6, 1097-1099 (1988); translated from *Yadernaya Fiz.* **46** (1987), no. 6, 1832-1837 (Russian). (Summary) **89d:83040** 83C47 (81E20)
- Gut, R. E. (with Egorov, V. V.) Generation of correlated Gaussian pseudorandom numbers. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 12, 1888-1889, 1920. (Summary) **89a:65010** 65C10
- Gujan, Marin Simplifiable cyclic semihypergroups. *Proceedings of the Conference on Algebra (Romanian) (Timisoara, 1986)*, 47-50, Univ. Timisoara, Timisoara, 1987. (From the text) **89g:20118** 20N99
- Gutik, Andrzej A connected space with a dispersion point without fixed-point property. *Topology Appl.* **30** (1988), no. 1, 101-105. (Donald E. Bennett) **89k:54087** 54F50 (54B15)
- Gutenbaum, Jakob Two-level heuristic algorithm for parallel machines scheduling. *Systems analysis and simulation 1988, II (Berlin, 1988)*, 84-89, Math. Res., 47, Akademie-Verlag, Berlin, 1988. (Introduction) **89j:90145** 90B35
- Guter, V. (with Valov, V.) Selection theorems for AE(n)-spaces. *C. R. Acad. Bulgare Sci.* **41** (1988), no. 5, 11-12. (A. Shostak) **89m:54026** 54A05 (54C65)
- Gutfreund, H. (with Reger, J. D.; Young, A. P.) The nature of attractors in an asymmetric spin glass with deterministic dynamics. *J. Phys. A* **21** (1988), no. 12, 2775-2797. (Not in MR) **58F40** (58F12, 82A57)
- (with Mézard, Marc) Processing of temporal sequences in neural networks. *Phys. Rev. Lett.* **61** (1988), no. 2, 235-238. (Summary) **89d:92027** 92A09
- Guth, Alan H. (with Blau, Steven K.) Inflationary cosmology. *Three hundred years of gravitation*, 524-603, Cambridge Univ. Press, Cambridge-New York, 1987. (see **89b:83007**) **83F05** (01A60, 85A40)
- Gutiérrez, Carlos (with Sotomayor, J.) Closed principal lines and bifurcation. *Bol. Soc. Brasil. Mat.* **17** (1986), no. 1, 1-19. (Francesco Mercuri) **89g:58044** 58E12 (53A05, 58F14)
- (with Guadalupe, I.; Sotomayor, J.; Tribuzy, R.) Principal lines on surfaces minimally immersed in constantly curved 4-spaces. *Dynamical systems and bifurcation theory (Rio de Janeiro, 1985)*, 91-120, Pitman Res. Notes Math. Ser., 160, Longman Sci. Tech., Harlow, 1987. (R. Osserman) **89a:53011** 53A10 (53A07, 53C42, 58F18, 58F21)
- A counter-example to a  $C^2$  closing lemma. *Ergodic Theory Dynamical Systems* **7** (1987), no. 4, 509-530. (J. W. Robbins) **89k:58240** 58F22
- Foliations on surfaces having exceptional leaves. *Dynamical systems, Valparaíso 1986*, 73-85, *Lecture Notes in Math.*, 1331, Springer, Berlin-New York, 1988. (Gilbert Levitt) **89j:57021** 57R30
- Gutiérrez, Jaime (with Ruiz de Velasco, J. Bellas, Carlos) Distributive elements in the near-rings of polynomials. *Proc. Edinburgh Math. Soc.* (2) **32** (1989), no. 1, 73-80. (Günter Pilz) **89n:16075** 16A76
- valdivia Gutiérrez, Oscar see Valdivia Gutiérrez, Oscar
- monterrey Gutiérrez, P. A. see Monterrey Gutiérrez, P. A.
- Gutiérrez Cabria, Segundo Development of statistical inference from its beginnings to the beginning of this century. (Spanish. English summary) *Estadist. Española* **98** (1983), 9-29. (Summary) **89b:01016** 01A50 (01A55)
- Gutiérrez Jáimez, Ramón (with Fajardo Caldera, Miguel A.) Characterization of some discrete distributions by linear regression. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish) (Badajoz, 1986)*, 404-410, Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89f:62008** 62E10 (62J05)
- Gutia, G. M. Characterization of complete  $n$ -partite digraphs that have a Hamiltonian path. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 1, 107-108, 136. (Ioan Tomescu) **89d:05127** 05C45 (05C20, 05C75)
- Gutjahr, Walter Enumeration of program structures as trees with commutative or associative nodes. *J. Combin. Inform. System Sci.* **12** (1987), no. 1-2, 13-24. (G. Berman) **89j:68121** 68R10 (05C05, 68N05)
- Gutkin, D. A-cohomologie et opérateurs de récursion. (English summary) [A-cohomology and recursion operators] *Ann. Inst. H. Poincaré Phys. Théor.* **47** (1987), no. 4, 355-366. (I. Vaisman) **89d:58041** 58F05
- Gutkin, Eugene Quantum nonlinear Schrödinger equation. I. Intertwining operators. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **3** (1986), no. 4, 285-314. (J. Weidmann) (Zbl 614:35086) **89a:35182** 35Q20 (81C05)
- Heisenberg-Ising spin chain and the nonlinear Schrödinger equation. *Rep. Math. Phys.* **24** (1986), no. 1, 121-127. (Chris Athorne) **89g:82068** 82A68 (82A15)
- Harmonic analysis of the quantum nonlinear Schrödinger equation. *Miniconferences on harmonic analysis and operator algebras (Canberra, 1987)*, 113-132, Proc. Centre Math. Anal. Austral. Nat. Univ., 16, Austral. Nat. Univ., Canberra, 1988. (Tuncay Aktosun) **89j:81245** 81F99 (35Q20, 81E99)
- Quantum nonlinear Schrödinger equation. II. Explicit solution. *J. Funct. Anal.* **77** (1988), no. 2, 326-345. (Summary) **89g:35099** 35Q20 (81C05)
- Gutknecht, Martin (with Trefethen, Lloyd N.) Padé, stable Padé, and Chebyshev-Padé approximation. *Algorithms for approximation (Shrivenham, 1985)*, 227-264, Inst. Math. Appl. Conf. Ser. New Ser., 10, Oxford Univ. Press, New York, 1987. (Summary) **89g:41011** 41A21 (65D15)
- (with Kaiser, André) Iterative  $k$ -step methods for computing possibly repulsive fixed points in Banach spaces. *J. Math. Anal. Appl.* **125** (1987), no. 1, 104-123. (Erich Bohi) **89b:65144** 65J15 (47H10, 65H10)
- Attenuation factors in multivariate Fourier analysis. *Numer. Math.* **51** (1987), no. 6, 615-629. (Rong Qing Jia) **89d:42022** 42B05 (41A15, 41A63, 65D07, 65T05)
- (with Marti, Jörg) Peter Henrici zum Gedenken. (Peter Henrici in memoriam) *Resuliate Math.* **13** (1988), no. 1-2, i-iii. (Editors) **89c:01064** 01A70
- Gutlyanskii, V. Ya. (with Kravchuk, E. V.) Boundary functions of a system of functionals that depend on the value of a univalent function and its derivative. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 13, 30 pp. (Summary) **89d:30018** 30C55
- (with Ryzanov, V. I.) Quasiconformal mappings with constraints of integral type on the M. A. Lavrent'ev characteristic. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 2, 283-286; translated in *Soviet Math. Dokl.* **36** (1988), no. 3, 456-459. (M. Yu. Vasil'chik) **89a:30015** 30C60 (30C70)
- Gutman, I. (with Cyvin, B. N.; Brunvoll, J.; Cyvin, S. J.) Distribution of  $K$ , the number of Kekulé structures in benzenoid hydrocarbons. III. Kekulé structure statistics. *Match* **21** (1986), 301-315. (Summary) **89g:92079** 92A40 (05A15)
- Comment on the paper: "Cycle decompositions of linear benzene chains" [Match No. 21 (1986), 325-337; MR 89a:92082] by E. J. Farrell and J. C. Grell. *Match* **22** (1987), 317-318. (From the text) **89a:92083** 92A40
- (with Cioslowski, Jerzy) Bounds for the number of perfect matchings in hexagonal systems. *Publ. Inst. Math. (Beograd) (N.S.)* **42**(56) (1987), 21-27. (N. Trinajstić) **89c:05157** 05C70
- (with Balaban, Alexandru T.; Brunvoll, J.; Cioslowski, Jerzy; Cyvin, B. N.; Cyvin, S. J.; He, Wen Chen; He, Wen Jie; Knop, J. V.; Kovačević, M.; Müller, W. R.; Szymanski, K.; Tošić, Ratko; Trinajstić, N.) Enumeration of benzenoid and coronoid hydrocarbons. *Z. Naturforsch.* **42** (1987), no. 8, 863-870. (Summary) **89d:92090** 92A40 (05A15)
- (with Cvetković, Dragolj; Doob, Michael; Torgašev, Aleksandar) ★ Recent results in the theory of graph spectra. *Annals of Discrete Mathematics*, 36, North-Holland Publishing Co., Amsterdam-New York, 1988. xii+306 pp. ISBN 0-444-70361-6 (Robert C. Brigham) **89d:05130** 05C50 (05C75, 92A40)
- (with Graovac, Ante; Polansky, Oskar E.) Spectral properties of some structurally related graphs. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1-3, 195-203. (Maria Ferro) **89f:92078** 92A40 (05C50)
- (with Cyvin, S. J.) Hosoya index of fused molecules. *Match* **23** (1988), 89-94. (Summary) **89j:92096** 92A40 (05C99)
- On distances in some bipartite graphs. *Publ. Inst. Math. (Beograd) (N.S.)* **43**(57) (1988), 3-8. (R. A. Meller) **89g:05099** 05C99 (92A40)
- Gutman, Semion Existence theorems for nonlinear evolution equations. *Nonlinear Anal.* **11** (1987), no. 10, 1193-1206. (S. B. Agase) **89d:47142** 47H20 (34G20)
- (with Martin, Robert H., Jr.) Porous medium systems with slow and fast reactions. *J. Differential Equations* **74** (1988), no. 1, 86-119. (Jan Prüss) **89j:35068** 35K57 (47H20, 76D05, 92A40)
- Gutman, Shaul The structure of root clustering criteria. *Linear algebra in signals, systems, and control (Boston, MA, 1986)*, 48-54, SIAM, Philadelphia, PA, 1988. (Mohamed Mansour) **89i:93186** 93D99 (15A18, 30C15)
- Gutmann, Sam Tests uniformly more powerful than uniformly most powerful monotone tests. *J. Statist. Plann. Inference* **17** (1987), no. 3, 279-292. (Wen Tao Huang) **89c:62049** 62F04 (62F25)
- Gutowitz, Howard A. (with Knight, B. W.; Victor, Jonathan D.) Erratum: "Local structure theory for cellular automata" [Phys. D **28** (1987), no. 1-2, 18-48; MR 88i:68078]. *Phys. D* **29** (1988), no. 3, 428. (Editors) **89d:68063** 68Q80 (92A05)
- (with Victor, Jonathan D.) Local structure theory: calculation on hexagonal arrays, and interaction of rule and lattice. *J. Statist. Phys.* **54** (1989), no. 1-2, 495-514. (Summary) **89k:82084** 82A67 (68Q80, 92A12)
- Guts, A. K. Automorphisms of local order structures in hyperbolic manifolds. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 5, 61-63. (N. V. Ivanov) **89b:53099** 53C50
- Dense order in the Lobachevskii space. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 4, 205-207, 226; translated in *Siberian Math. J.* **29** (1988), no. 4, 684-686. (K. Burian) **89m:51031** 51M10
- (with Fishkina, G. B.) Symmetry dynamics of physical space and equivariant bordism theory. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **31** (1988), no. 10, 76-79; translated in *Soviet Phys. J.* **31** (1988), no. 10, 834-837. (V. Oproiu) **89k:57070** 57R85 (83F05)
- Gutsmann, Ts. I. (with Man'ko, V. S.) On the gravitational field of a mass possessing a magnetic dipole moment. *Phys. Lett. A* **123** (1987), no. 5, 215-216. (W. B. Bonnor) **89c:83014** 83C15 (83C50)
- (with Man'ko, V. S.) On a family of solutions of the Einstein-Maxwell equations. *Gen. Relativity Gravitation* **20** (1988), no. 4, 327-335. (S. Kichenassamy) **89c:83023** 83C20
- (with Man'ko, V. S.) New static solutions of the Einstein-Maxwell equations. *Phys. Lett. A* **132** (1988), no. 2-3, 85-87. (Nora Bretón Báez) **89m:83015** 83C15 (83C50)
- (with Man'ko, V. S.; Elsgolts, S. L.) New exact solutions of the static Einstein-Maxwell equations. *Classical Quantum Gravity* **6** (1989), no. 3, L41-L44. (Jorge A. Pullin) **89m:83016** 83C15
- Gutt, S. (with Cahen, Michel; Lemaire, L.; Spindel, Ph.) Killing spinors. *Bull. Soc. Math. Belg. Sér. A* **38** (1986), 75-102 (1987). (Introduction) **89d:53122** 53C80 (53A50, 81D27, 83C60, 83E50)
- (with Cahen, Michel) An algebraic construction of a product on the regular orbits of semisimple Lie groups. *Gravitation and geometry*, 71-82, *Monographs Textbooks Phys. Sci.*, 4, Bibliopolis, Naples, 1987. (Zi-Xin Hou) **89c:22023** 22E46 (58F06)
- (with Cahen, Michel; Kozameh, C.; Newman, E. T.) Yang-Mills equations and solvable groups. *II. J. Math. Phys.* **29** (1988), no. 4, 1022-1025. (David McMullan) **89f:81094** 81E13 (53C80, 58E30)
- Guttala, R. S. (with Flashner, H.) A numerical method for computing domains of attraction for dynamical systems. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 4, 875-890. (Andrew C. Fowler) **89h:58101** 58F12 (34D30, 65L05)
- Göttinger, W. (with Haug, P.; Lang, D.) Geometrical principles of pattern formation and pattern recognition. *Computational systems—natural and artificial (Schloss Elmau, 1987)*, 97-116, Springer Ser. Synergetics, 38, Springer, Berlin-New York, 1987. (Conclusion) **89c:92006** 92A05 (58F14, 58F40)
- (with Neveling, M.; Lang, D.; Haug, P.; Dangelmayr, G.) Interactions of stationary modes in systems with two and three spatial degrees of freedom. *The physics of structure formation (Tübingen, 1986)*, 153-165, Springer Ser. Synergetics, 37, Springer, Berlin-New York, 1987. (see **89b:58064**) **80A20** (58F14, 76R99)
- see also Physics of structure formation, **89b:58064**
- Gutman, I. (with Draper, N. R.) A common model selection criterion. *Probability and Bayesian statistics (Innsbruck, 1986)*, 139-150, Plenum, New York-London, 1987. (Title) **89a:62158** 62J05
- (with Sinha, Snehesh Kumar) Bayesian analysis of life-testing problems involving the Weibull distribution. *Comm. Statist. Theory Methods* **17** (1988), no. 2, 343-356. (Summary) **89b:62207** 62N05 (62F15)
- (with Johnson, Richard A.; Bhattacharyya, G. K.; Reiser, B.) Confidence limits for stress-strength models with explanatory variables. *Technometrics* **30** (1988), no. 2, 161-168. (A. C. Cohen) **89c:62129** 62N05 (62F25)
- (with Draper, N. R.; Evans, Michael John) A Bayesian approach to system reliability when two components are dependent. *Comput. Statist. Data Anal.* **7** (1989), no. 1, 39-49. (Not in MR) **62N05** (90B25)

- Guttman, Louis *see* Shye, Samuel. (Not in MR)
- Guttmann, A. J. (with Osborn, T. R.) A Monte Carlo study of lattice trails. *J. Phys. A* 21 (1988), no. 2, 513–517. (Summary) **89d:82074** 82A41 (82-04)
- (with Enting, I. G.) The size and number of rings on the square lattice. *J. Phys. A* 21 (1988), no. 3, L165–L172. (Summary) **89a:82034** 82A67 (82-04, 82A41)
- (with Enting, I. G.) The number of convex polygons on the square and honeycomb lattices. *J. Phys. A* 21 (1988), no. 8, L467–L474. (M. Lawrence Glasser) **89g:82059** 82A67 (05A15, 82A41)
- (with Baxter, Rodney James) Series expansion of the percolation probability for the directed square lattice. *J. Phys. A* 21 (1988), no. 15, 3193–3204. (Summary) **89i:82047** 82A43 (82A67)
- (with Essam, J. W.; De'Bel, K.) On two-dimensional directed percolation. *J. Phys. A* 21 (1988), no. 19, 3815–3832. (Summary) **89i:82049** 82A43 (82A25)
- Guttorp, Peter (with Aase, Knut K.) Estimation in models for security prices. *Scand. Actuar. J.* 1987, no. 3–4, 211–224. (Not in MR) 90A09 (90A19)
- (with Lockhart, Richard A.) On the asymptotic distribution of quadratic forms in uniform order statistics. *Ann. Statist.* 16 (1988), no. 1, 433–449. (Noel Cressie) **89a:62048** 62E20 (62G30)
- (with Ko, Daijin) Robustness of estimators for directional data. *Ann. Statist.* 16 (1988), no. 2, 609–618. (Helmut Rieder) **89g:62050** 62F35
- (with Lockhart, Richard A.) Finding the location of a signal: a Bayesian analysis. *J. Amer. Statist. Assoc.* 83 (1988), no. 402, 322–330. (Not in MR) 62F15
- Gutzwiller, Martin C. (with Mandelbrot, B. B.) Invariant multifractal measures in chaotic Hamiltonian systems, and related structures. *Phys. Rev. Lett.* 60 (1988), no. 8, 673–676. (From the text) **89b:58134** 58F13 (11K55, 81C99, 82A99)
- Guy, Reed A. (with Deltete, Robert J.) Note on: "Bell's theorem and the foundations of quantum physics" [Amer. J. Phys. 53 (1985), no. 4, 306–317; MR 86f:81013] by H. P. Stapp. With a reply by Stapp. *Amer. J. Phys.* 56 (1988), no. 6, 565–567. (S. Gudder) **89g:81008** 81B10
- Guyer, R. A. (with Chen, Yang) A polymer in a fractal pore space. *J. Phys. A* 21 (1988), no. 22, 4173–4181. (Not in MR) 82A51
- Guyon, Etienne The physics of random matter. *Le hasard et la matière (Les Houches, 1986)*, 71–156, North-Holland, Amsterdam-New York, 1987. (see **89j:82001**) 82A42 (76S05, 82A57)
- (with Roux, S.; Hansen, Alex) Nonlocal and nonlinear problems in the physics of disordered media. *Far from equilibrium phase transitions (Sitges, 1988)*, 177–193, *Lecture Notes in Phys.*, 319, Springer, Berlin-New York, 1988. (see **89j:82002**) 82A57 (76S05, 82A43)
- Guyon, I. (with Personnaz, L.; Nadal, J.-P.; Dreyfus, G.) Storage and retrieval of complex sequences in neural networks. *Phys. Rev. A* (3) 38 (1988), no. 12, 6365–6372. (Summary) **89m:92019** 92A09 (58F08, 58F40, 68T99)
- Guyon, Xavier Estimation d'un champ par pseudo-vraisemblance conditionnelle: étude asymptotique et application au cas markovien. (English summary) [Estimation of a field by pseudoconditional likelihood: asymptotic study and application to the Markov case] *Spatial processes and spatial time series analysis (Brussels, 1985)*, 15–62, *Travaux Rech.*, 11, Publ. Fac. Univ. Saint-Louis, Brussels, 1987. (H. Bandemer and Lothar Heinrich) **89g:62029** 62E20 (62M05)
- (with Yao, Jian Feng) Analyse discriminante contextuelle. (English summary) [Contextual discrimination analysis] *Data analysis and informatics, V (Versailles, 1987)*, 47–56, North-Holland, Amsterdam-New York, 1988. (see **89g:62009**) 68U10 (62H30)
- Guz, A. N. (with Godzula, V. F.; Shnerenko, K. I.) On problems of the statics of nonshallow anisotropic shells with holes. (Russian) *Prikl. Mekh.* 24 (1988), no. 9, 22–30, 132. (Summary) **89i:73064** 73L10 (73K20)
- Theory of long-duration fracture of composite materials under compression. (Russian) *Prikl. Mekh.* 24 (1988), no. 5, 3–11, 132; translated in *Soviet Appl. Mech.* 24 (1988), no. 5, 431–439. (Summary) **89j:73089** 73M05 (73E25, 73K20, 73M15, 73M20)
- (with Babich, S. Yu.; Glukhov, Yu. P.) On the solution of a problem on the action of a moving load on a two-layer semispace with initial stresses. (Russian) *Prikl. Mekh.* 24 (1988), no. 8, 55–60, 132; translated in *Soviet Appl. Mech.* 24 (1988), no. 8, 775–780. (Summary) **89i:73027** 73D99 (73C03, 73K12)
- Guz, W. A geometric form of the canonical commutation relations. (Italian and Russian summaries) *Nuovo Cimento A* (11) 98 (1987), no. 6, 745–760. (A. O. Barut) **89i:81050** 81D05 (58F06)
- (with Caianiello, Eduardo R.) The Dirac-like equation in phase space and baryon mass spectrum. (Italian and Russian summaries) *Nuovo Cimento A* (11) 99 (1988), no. 5, 677–683. (Summary) **89f:81258** 81G25 (81F15, 81G05)
- (with Caianiello, Eduardo R.) Quantum Fisher metric and uncertainty relations. *Phys. Lett. A* 126 (1988), no. 4, 223–225. (T. W. Barrett) **89a:81014** 81B99 (81C20)
- Göbel, Erhan Les représentations irréductibles complexes des groupes  $SL(3, p)$ ,  $PSL(3, p)$ . [Complex irreducible representations of the groups  $SL(3, p)$  and  $PSL(3, p)$ ] *Publ. Inst. Math. (Beograd) (N.S.)* 43(57) (1988), 27–34. (Bhama Srinivasan) **89j:20042** 20G05 (20C15)
- de Guzman, G. C. (with Kelso, J. A. S.) Order in time: how the cooperation between the hands informs the design of the brain. *Neural and synergetic computers (Schloss Elmau, 1988)*, 180–196, *Springer Ser. Synergetics*, 42, Springer, Berlin-New York, 1988. (Introduction) **89m:92023** 92A09
- Gvaradze, M. I. Holomorphic functions whose maximum of the modulus grows arbitrarily slowly. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruzin. SSR* 86 (1987), 16–23. (A. G. Dzharvarshvili) **89c:30056** 30D40
- Gvaradze, M. G. (with Kankiya, M. K.; Nikolaishvili, S. S.; Peradze, R. K.) The moment method and its generalized form in connection with the calculation of neutron distributions in homogeneous media. (Russian. English and Georgian summaries) *Approximate methods for solving some problems of the transfer of neutron and gamma radiation (Russian)*, 98–116, 171–172, *Tbilis. Gos. Univ., Inst. Prikl. Mat., Tbilisi*, 1986. (see **89b:82003**) 82A75
- Gvaraniya, A. A. Stable formulas on quasigroups. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 29 (1987), 13–14, 117. (Not in MR) 20N05 (03C60)
- Gvazava, D. K. Influence zones of initial data for solutions of nonlinear degenerate hyperbolic equations. (Russian) *Current problems in mathematical physics, Vol. I* (Russian) (Tbilisi, 1987), 166–173, 478–479, *Tbilis. Gos. Univ., Tbilisi*, 1987. (see **89j:00030**) 35B30 (35L80)
- Second-order nonlinear equations with complete characteristic systems and characteristic problems for them. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruzin. SSR* 87 (1987), 45–53. (Bogdan Nowak) **89b:35019** 35G20 (35L70)
- Gvilava, S. G. The maximum principle for a type of systems of parabolic partial differential equations. (Russian. English summary) *Trudy Inst. Sistem Upravleniya Akad. Nauk Gruzin. SSR* 25 (1987), no. 1, 167–172. (Not in MR) 49B22
- The maximum principle for a third-order partial differential equation of hyperbolic type. (Russian. English summary) *Trudy Inst. Sistem Upravleniya Akad. Nauk Gruzin. SSR* 25 (1987), no. 1, 173–180. (Summary) **89c:49015** 49B22 (35L75, 45D05, 93C20)
- Gvishiani, A. D. (with Gurvich, V. A.) Metric and ultrametric resistance spaces. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 6(258), 187–188. (Juraj Hromkovič) **89i:90051** 90B10 (94C10)
- (with Kirillov, A. A.) Теоремы и задачи функционального анализа. (Russian) [Theorems and problems of functional analysis] Second edition. "Nauka", Moscow, 1988. 398 pp. ISBN 5-02-013797-9 (From the preface) **89j:46001** 46-01 (00A05, 28-01, 43-01, 47-01)
- Gwinner, J. On the Galerkin approximation of nonsmooth boundary integral equations arising in radiative heat transfer. *Boundary elements IX, Vol. 3 (Stuttgart, 1987)*, 257–264, *Comput. Mech., Southampton*, 1987. (S. L. Kalla) **89m:80004** 80A20 (45B05, 45L10, 80-08)
- Gyachas, Kastitis *see* Gečias, Kastytis
- Gyachene, Viliya *see* Gečienė, Vilija
- Gyárfás, A. (with Bierbrauer, J.) On  $(n, k)$ -colorings of complete graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 123–139. (Aiden A. Bruen) **89i:05114** 05C15
- (with Faudree, R. J.; Schelp, R. H.) Graphs which have an ascending subgraph decomposition. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 59 (1987), 49–54. (Ortrud R. Oellermann) **89d:05142** 05C70
- Problems from the world surrounding perfect graphs. Proceedings of the International Conference on Combinatorial Analysis and its Applications (Pokrzywna, 1985). *Zastos. Mat.* 19 (1987), no. 3–4, 413–441 (1988). (Alan Tucker) **89c:05089** 05C15
- (with Erdős, Paul; Faudree, R. J.; Schelp, R. H.) Cycles in graphs without proper subgraphs of minimum degree 3. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), B, 195–201. (George R. T. Hendry) **89c:05126** 05C38
- (with Jacobson, Michael S.; Kinch, Lael F.) On a generalization of transitivity for digraphs. *Discrete Math.* 69 (1988), no. 1, 35–41. (J. W. Moon) **89a:05071** 05C20
- The irregularity strength of  $K_{m,m}$  is 4 for odd  $m$ . *Discrete Math.* 71 (1988), no. 3, 273–274. (Ortrud R. Oellermann) **89f:05100** 05C35 (05C99)
- (with Lehel, J.) On-line and first fit colorings of graphs. *J. Graph Theory* 12 (1988), no. 2, 217–227. (Felix Lazebnik) **89c:05037** 05C15 (68Q25)
- Gyimesi, F. (with Füzesi, Z.) Difference holographic interferometry: theory. *J. Modern Opt.* 35 (1988), no. 10, 1699–1716. (Summary) **89k:78028** 78A55
- Gyires, B. Contributions to the positive definite solutions of certain differential equations. *A. Haar memorial conference, Vol. I, II (Budapest, 1985)*, 417–422, *Colloq. Math. Soc. János Bolyai*, 49, North-Holland, Amsterdam-New York, 1987. (Evangelos Ifantisi) **89b:34026** 34A34 (62J99)
- The extreme linear predictions of the matrix-valued stationary stochastic processes. *Mathematical statistics and probability theory, Vol. B (Bad Tatzmannsdorf, 1986)*, 113–124, *Reidel, Dordrecht-Boston, MA-London*, 1987. (Franz Schmidt) **89g:60147** 60G25 (15A42, 62M20)
- Gylden, Hugo *see* Poincaré, Henri. **89c:01054b**
- Gyllenberg, M. (with Webb, G. F.) Age-size structure in populations with quiescence. *Math. Biosci.* 86 (1987), no. 1, 67–95. (P. Waltman) **89c:92060** 92A15
- (with Clément, Ph.; Diekmann, O.; Heijmans, H. J. A. M.; Thieme, Horst R.) Perturbation theory for dual semigroups. II. Time-dependent perturbations in the sun-reflexive case. *Proc. Roy. Soc. Edinburgh Sect. A* 109 (1988), no. 1–2, 145–172. (S. Kantorovitz) **89f:47072** 47D05 (34G10, 47A55, 92A15)
- Gyöker, S. On a supercritical Hopf bifurcation in a chemical model. *Differential equations: qualitative theory, Vol. I, II (Szeged, 1984)*, 361–366, *Colloq. Math. Soc. János Bolyai*, 47, North-Holland, Amsterdam-New York, 1987. (P. Waltman) **89d:92096** 92A40 (34C25, 58F14)
- Behaviour of solutions near a line segment of equilibria. *Z. Angew. Math. Mech.* 68 (1988), no. 5, T456–T457. (T. J. Mahar) **89k:58213** 58F14 (34C30, 92A17)
- Gyöngy, I. Mimicking complicated stochastic differential equations by simpler ones. *Probability theory and mathematical statistics with applications (Visegrád, 1985)*, 87–96, *Reidel, Dordrecht-Boston, MA*, 1988. (P. Sundar) **89g:60185** 60H10 (34F05, 93E03)
- Györfi, László Density estimation from dependent sample. *Statistical data analysis based on the  $L_1$ -norm and related methods (Neuchâtel, 1987)*, 393–402, North-Holland, Amsterdam-New York, 1987. (Vladimir Katkovnik) **89g:62056** 62G05
- (with Devroye, Luc) ★ Непараметрическое оценивание плотности. (Russian) [Nonparametric density estimation]  $L_1$ -подход. [The  $L_1$ -approach] Translated from the English by A. B. Tsybakov. Translation edited and with a preface by M. B. Mal'utov. With appendices by N. N. Chentsov and V. N. Vapnik. "Mir", Moscow, 1988. 408 pp. ISBN 5-03-000475-0 (Editors) **89c:62071** 62G05
- (with Ericson, Thomas) Superimposed codes in  $\mathbb{R}^n$ . *IEEE Trans. Inform. Theory* 34 (1988), no. 4, 877–880. (Alexander M. Barg) **89k:94078** 94B60
- Györfi, Géza (with Tishby, Naftali) Path integrals in Hamiltonian systems: breakup of the last Kolmogorov-Arnol'd-Moser torus due to random forces. *Phys. Rev. Lett.* 62 (1989), no. 4, 353–356. (Summary) **89f:58031** 58F05 (70H05, 70L05)
- (with Satija, Indubala I.) Dimensional reduction and universal  $f(\alpha)$  in magnetic chains. *Phys. Rev. Lett.* 62 (1989), no. 4, 446–449. (Summary) **89k:82092** 82A68
- Györi, E. (with Tuza, Zolt) Decompositions of graphs into complete subgraphs of given order. *Studia Sci. Math. Hungar.* 22 (1987), no. 1–4, 315–320. (J. Sedláček) **89b:05042** 05C70
- Györi, I. Connections between compartmental systems with pipes and integro-differential equations. *Mathematical models in medicine: diseases and epidemics, Part 2. Math.*



- Modelling* 7 (1986), no. 9-12, 1215-1238. (P. Bertrand) **89c:92020** 92A09 (34K05, 45J05, 92A15, 93A10)
- ★ Two approximation techniques for functional differential equations. Ipenpuur [Preprint], 165. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1987. 42 pp. (Narahari Parhi) **89m:34020** 34A45 (34K05, 65L99)
  - (with Eller, J.; Zöllei, M.; Krizsa, F.) Modelling thrombopoiesis regulation. I. Model description and simulation results. *Comput. Math. Appl.* 14 (1987), no. 9-12, 841-848. (Summary) **89a:92019** 92A09
  - (with Eller, J.) Modelling thrombopoiesis regulation. II. Mathematical investigation of the model. *Comput. Math. Appl.* 14 (1987), no. 9-12, 849-859. (Summary) **89a:92020** 92A09
  - (with Ladas, G.) Oscillations of systems of neutral differential equations. *Differential Integral Equations* 1 (1988), no. 3, 281-286. (T. L. Herdman) **89d:34112** 34K15 (34C15)
  - (with Karakostas, G.) Global stability in job systems. *J. Math. Anal. Appl.* 131 (1988), no. 1, 85-96. (K. R. Schneider) **89c:34083** 34D20 (34C11, 92A15)
- Györy, K.** (with Evertse, J.-H.; Shorey, T. N.; Tijdeman, R.) Equal values of binary forms at integral points. *Acta Arith.* 48 (1987), no. 4, 379-396. (F. Beukers) **89k:11014** 11D41 (11E16)
- (with Evertse, J.-H.; Stewart, C. L.; Tijdeman, R.) S-unit equations and their applications. *New advances in transcendence theory* (Durham, 1986), 110-174. Cambridge Univ. Press, Cambridge-New York, 1988. (Lian Xiang Wang) **89j:11028** 11D41 (11J85)
  - (with Evertse, J.-H.) Decomposable form equations. *New advances in transcendence theory* (Durham, 1986), 175-202. Cambridge Univ. Press, Cambridge-New York, 1988. (Lian Xiang Wang) **89j:11042** 11D41 (11D57)
  - (with Stewart, C. L.; Tijdeman, R.) On prime factors of sums of integers. III. *Acta Arith.* 49 (1988), no. 3, 307-312. (Antal Balog) **89j:11094** 11P45 (11A41, 11N05)
  - (with Evertse, J.-H.) On the number of polynomials and integral elements of given discriminant. *Acta Math. Hungar.* 51 (1988), no. 3-4, 341-362. (W. Narkiewicz) **89k:12006** 12E05 (11R09, 11R29)
  - (with Evertse, J.-H.) On the numbers of solutions of weighted unit equations. *Compositio Math.* 66 (1988), no. 3, 329-354. (Michel Laurent) **89j:11082** 11J87 (11D85)
  - (with Evertse, J.-H.; Stewart, C. L.; Tijdeman, R.) On S-unit equations in two unknowns. *Invent. Math.* 92 (1988), no. 3, 461-477. (F. Beukers) **89j:11028** 11D61
  - (with Shorey, T. N.) On the denominators of equivalent algebraic numbers. *Nederl. Akad. Wetensch. Indag. Math.* 50 (1988), no. 1, 29-41. (Noriko Hirata-Kohno) **89c:11113** 11J99 (11E76, 11J70, 11J87)
- Gyrevska, L. V.** Rate of approximation of functions by Cesàro sums of their orthogonal expansions in convergence systems. (Russian. English and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 3, 149-160 (1987). (From the summary) **89g:42040** 42C05
- Gysin, Liliana M.** Inequalities for the product of the volumes of a partition determined in a convex body by a surface. *Rend. Circ. Mat. Palermo* (2) 35 (1986), no. 3, 420-428 (1987). (L. A. Santaló) **89f:52029** 52A40
- Gyulchev, I. D.** (with Chimev, K. N.) Functions with three strongly essential variables. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 21 (1985), no. 3, 153-163 (1986). (Editors) **89c:04001** 04A05 (03B50, 03G05, 06E30)
- The number of functions in  $P_k$  with an incomplete graph. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 1, 167-172 (1987). (G. E. Mints) **89i:03046** 03B50 (94C10)
  - (with Chimev, K. N.) Subfunctions of functions with three strongly essential variables. (Russian. English summary) Proceedings of the joint Bulgarian-Hungarian workshop on mathematical cybernetics and data processing ("Gyulechitsa", Bulgaria, 1985). *Tanulmányok—MTA Széchenyi Int. Budapest No. 182* (1986), 21-30. (Summary) **89b:26016** 26B35
  - c-strongly essential variables of functions in  $P_k$ . (Russian. English summary) Proceedings of the joint Bulgarian-Hungarian workshop on mathematical cybernetics and data processing ("Gyulechitsa", Bulgaria, 1985). *Tanulmányok—MTA Széchenyi Int. Budapest No. 182* (1986), 31-35. (Summary) **89b:26018** 26B35
  - (with Chimev, K. N.; Shtrakov, Slavcho VI.; Aslanski, M. S.) Separable and dominating sets of variables for the functions. *Mathematics and mathematical education (Bulgarian)* (Sunny Beach (S'p'nech Bryag), 1987), 61-71. *Bulg. Acad. Sci., Sofia*, 1987. (see **89c:00038**) 03B50
- Gyunter, N. M.** see Günter, N. M.
- Gyál, H.** Hamiltonian systems and semigroups. (Spanish) *First conference on analysis* (Spanish) (Mérida, 1986), 83-93. *Univ. de los Andes, Mérida*, 1986. (José F. Carriena) **89j:70024** 70H05 (35Q20, 58F05, 93E03)
- (with Kabbabe, L.) Kinetic equation for Ising model in a convolutionless formalism. *Acta Phys. Polon.* A 72 (1987), no. 6, 721-727. (Robert Alicki) **89d:82128** 82A68 (82A97)
  - Umbra calculus via integral transforms. *J. Math. Anal. Appl.* 129 (1988), no. 2, 315-325. (Heinrich Niederhausen) **89a:05022** 05A40 (44A99)
- Haack, W.** Rückschau über 85 Jahre. [Retrospective on 85 years] *Sitzungsberichte der Berliner Mathematischen Gesellschaft*, 171-179. *Freie Univ. Berlin, Berlin*, 1987. (Editors) **89h:01062** 01A70
- Haag, Gunter** (with Weidlich, Wolfgang) Stochastic migration theory and migratory phase transitions. *Transformations through space and time* (Hanstholm, 1985), 104-117. *NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci.*, 29, Nijhoff, Dordrecht, 1986. (Introduction) **89k:92078** 92A20
- Haagerup, Uffe** A new upper bound for the complex Grothendieck constant. *Israel J. Math.* 60 (1987), no. 2, 199-224. (G. J. O. Jameson) **89f:47029** 47B10 (46Bxx, 46M05)
- (with Cowling, Michael; Howe, Roger E.) Almost  $L^2$  matrix coefficients. *J. Reine Angew. Math.* 387 (1988), 97-110. (Rebecca Herb) **89i:22008** 22D10 (22E46)
- Haake, Fritz** (with Grobe, Rainer; Sommers, H.-J.) Quantum distinction of regular and chaotic dissipative motion. *Phys. Rev. Lett.* 61 (1988), no. 17, 1899-1902. (Summary) **89i:81005** 81-08 (81C99)
- de Haan, L.** (with Geluk, J. L.) ★ Regular variation, extensions and Tauberian theorems. *CWI Tract*, 40. *Stichting Mathematisch Centrum, Centrum voor Wiskunde en Informatica, Amsterdam*, 1987. iv+132 pp. ISBN 90-6196-324-9 (N. H. Bingham) **89a:26002** 26A12 (40E05, 44A15)
- (with Brozius, Henk) On limiting laws for the convex hull of a sample. *J. Appl. Probab.* 24 (1987), no. 4, 852-862. (Sidney I. Resnick) **89b:60036** 60F05 (60D05, 60G55)
  - (with Balkema, A. A.) Almost sure continuity of stable moving average processes with index less than one. *Ann. Probab.* 16 (1988), no. 1, 333-343. (Summary) **89h:60117** 60J30 (60G17)
  - (with Weissman, Ishay) The index of the outstanding observation among  $n$  independent ones. *Stochastic Process. Appl.* 27 (1988), no. 2, 317-329. (Aart J. Stam) **89d:60041** 60F05
- Haarapanta, Leila** Frege's context principle. *Comm. Cognition* 18 (1985), no. 1-2, 81-94. (Siegfried Gottwald) **89f:03006** 03A05 (01A55, 03-03)
- On Frege's concept of being. *The logic of being*, 269-289. *Synthese Hist. Lib.*, 28, Reidel, Dordrecht-Boston, MA, 1986. (see **89a:03004**) 03A05 (01A55, 03-03)
- Haara, P.** (with Arjas, E.) A logistic regression model for hazard: asymptotic results. *Scand. J. Statist.* 14 (1987), no. 1, 1-18. (Eric V. Slud) **89a:62207** 62N05 (62E20, 62M09, 62P10)
- (with Arjas, E.) A note on the asymptotic normality in the Cox regression model. *Ann. Statist.* 16 (1988), no. 3, 1133-1140. (Wilfried Grossmann) **89i:62159** 62M99 (62J02)
  - (with Arjas, E.) A note on the exponentiality of total hazards before failure. *J. Multivariate Anal.* 26 (1988), no. 2, 207-218. (M. M. Siddiqui) **89m:60115** 60G55 (62N05, 90B25)
- Haaren, E.** (with Hettich, R.; Ries, M.; Still, G.) Accurate numerical approximations of eigenfrequencies and eigenfunctions of elliptic membranes. (German and Russian summaries) *Z. Angew. Math. Mech.* 67 (1987), no. 12, 589-597. (Summary) **89a:49045** 49G05 (49D39, 73K15)
- Haario, H.** (with Somersalo, E.) The Backus-Gilbert method revisited: background, implementation and examples. *Numer. Funct. Anal. Optim.* 9 (1987), no. 9-10, 917-943. (Summary) **89b:65221** 65R20 (45L10, 86-08)
- (with Seidman, Thomas I.) Reaction and diffusion at a gas/liquid interface. *Proceedings of the Minisymposium on Numerical Methods for Semiconductors and Magnets* (Jyväskylä, 1988), 21-30. *Bericht*, 42, *Univ. Jyväskylä, Jyväskylä*, 1988. (Darko Kapor) **89m:80014** 80A32 (35Q20, 76V05)
  - (with Somersalo, E.) A regularization method for integral equations of the first kind. *Theory and applications of inverse problems* (Helsinki, 1985), 16-26. *Pitman Res. Notes Math. Ser.*, 167, *Longman Sci. Tech., Harlow*, 1988. (From the introduction) **89g:45002** 45A05 (49D15, 86A15)
  - see also *Theory and applications of inverse problems*, **89c:00029**
- Haas, Alexander** The multiple prime random number generator. *ACM Trans. Math. Software* 13 (1987), no. 4, 368-381. (Brian Conolly) **89h:65018** 65C10
- Haas, Andrew Howard** (with Susskind, Perry) The geometry of the hyperelliptic involution in genus two. *Proc. Amer. Math. Soc.* 105 (1989), no. 1, 159-165. (H. M. Farkas) **89c:30078** 30F10 (32J99)
- Haas, Peter J.** (with Shedler, Gerald S.) Regenerative generalized semi-Markov processes. *Comm. Statist. Stochastic Models* 3 (1987), no. 3, 409-438. (Richard F. Serfozo) **89a:60204** 60K15
- Haas, R.** (with Brauchli, H.) A combination of boundary elements with conformal mapping methods. *Boundary elements VII, Vol. I, II* (Como, 1985), 12.3-12.13. *Comput. Mech., Southampton*, 1985. (see **89f:65003**) 65E05
- Haas, Tobias M.** A numerical study of the phase structure of the  $q$ -state generalization of the hard-square model. *J. Statist. Phys.* 54 (1989), no. 1-2, 201-219. (Not in MR) **82-04** (82A25, 82A69)
- Haase, H.** Packing measures on Euclidean spaces. 15th winter school in abstract analysis (Srní, 1987). *Acta Univ. Carolin.—Math. Phys.* 28 (1987), no. 2, 59-66. (K. J. Falconer) **89c:28009** 28A75 (60G17)
- Open-invariant measures and the covering number of sets. *Math. Nachr.* 134 (1987), 295-307. (B. Rodríguez-Salinas) **89c:28016** 28C15
  - Die metrische Dimension analytischer Mengen. [The metric dimension of analytic sets] *Arch. Math. (Basel)* 50 (1988), no. 6, 553-563. (J. E. Brothers) **89b:28012** 28A75 (54F45, 55M10)
  - Metric outer measures of type I in the general setting. *Math. Nachr.* 135 (1988), 35-40. (S. J. Taylor) **89f:28002** 28A05 (28A75)
- Haase, R. W.** (with Kramer, L.; Kramer, Peter; Lalvani, H.) Polyhedra of three quasilatitudes associated with the icosahedral group. *Acta Cryst. Sect. A* 43 (1987), no. 4, 574-587. (Summary) **89b:52024** 52A43 (20H15, 82A60)
- Haastert, Burkhard** On direct and inverse images of  $\mathcal{P}$ -modules in prime characteristic. *Manuscripta Math.* 62 (1988), no. 3, 341-354. (Arno van den Essen) **89j:14011** 14F05 (16A03, 18E99, 32C38)
- Haba, Z.** Stochastic equations for some Euclidean fields. *Stochastic processes in classical and quantum systems* (Ascona, 1985), 315-328. *Lecture Notes in Phys.*, 262, *Springer, Berlin-New York*, 1986. (Introduction) **89a:81053** 81E08 (81C35)
- Linearizable quantum supersymmetric  $\sigma$  models. *Phys. Rev. D* (3) 38 (1988), no. 2, 647-655. (Olivier Piguet) **89i:81068** 81E13 (81C20)
- Haber, M.** (with Riedinger, R.; Oelhafen, P.; Güntherodt, H. J.) About the Delaunay-Voronoi tessellation. *J. Comput. Phys.* 74 (1988), no. 1, 61-72. (A. G. Schlijper) **89h:05023** 05B45 (52A45, 82A57)

-H-

truong xuan duc Ha see Truong Xuan Duc Ha

**Ha, In Joong** The standard decomposed system and noninteracting feedback control of nonlinear systems. *SIAM J. Control Optim.* 26 (1988), no. 5, 1235-1249. (J. M. Dion) **89k:93091** 93B50 (49D27, 93C10)

**Ha, Ki Sik** (with Cho, Yeol Je; White, Albert George, Jr.) Strictly convex and strictly 2-convex 2-normed spaces. *Math. Japon.* 33 (1988), no. 3, 375-384. (A. Alexiewicz) **89m:46006** 46A15

(with Kim, Jai Heui) Monotone iterative technique for 1-dimensional stochastic differential equations. *Stochastic Anal. Appl.* 6 (1988), no. 2, 191-203. (Toshio Yamada) **89d:60101** 60H10

**Haack, W.** Rückschau über 85 Jahre. [Retrospective on 85 years] *Sitzungsberichte der*

- Habasiński, Z.** Regular automata and model checking. *CAAP'88* (Nancy, 1988), 231–243, *Lecture Notes in Comput. Sci.*, 299, Springer, Berlin-New York, 1988. (Summary) **89e:68086** 68Q60 (03B45, 03B70, 68Q70)
- Habeeb, M. A. Z.** Fluid-dynamical interpretation of quantum damped oscillators. *J. Phys. A* **20** (1987), no. 17, 5929–5934. (Summary) **89b:81073** 81C99 (81D30)
- Habegger, Nathan** Hypercohomology varieties for complexes of modules, the realizability criterion, and equivalent formulations of a conjecture of Carlsson. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 431–437, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (J. L. Alperin) **89b:20111** 20J06 (20C20, 20J05, 20J10)
- Habel, Annegret** (with Kreowski, Hans-Jörg) May we introduce to you: hyperedge replacement. *Graph-grammars and their application to computer science* (Warrenton, VA, 1986), 15–26, *Lecture Notes in Comput. Sci.*, 291, Springer, Berlin-New York, 1987. (see **89b:68009**) 68Q50
- (with Boehm, Paul; Fonio, Harald-Reto) Amalgamation of graph transformations: a synchronization mechanism. *J. Comput. System Sci.* **34** (1987), no. 2–3, 377–408. (Dirk Janssens) **89e:68070** 68Q50
- (with Kreowski, Hans-Jörg) Characteristics of graph languages generated by edge replacement. *Theoret. Comput. Sci.* **51** (1987), no. 1–2, 81–115. (Curtis R. Cook) **89a:68135** 68Q50 (05C99, 68Q45)
- Haber, Michael** Do the marginal totals of a  $2 \times 2$  contingency table contain information regarding the table proportions? *Comm. Statist. Theory Methods* **18** (1989), no. 1, 147–156. (Summary) **89m:62057** 62H17
- Haber, R.** Parametric identification of nonlinear dynamic systems based on nonlinear crosscorrelation functions. *Proc. IEEE-D* **135** (1988), no. 6, 405–420. (Not in MR) **93E12** (93E10)
- Haberland, Christoph** (with Lahrmann, Andreas) A comparative investigation on recurrence formulae in finite difference methods. Numerical methods in thermal problems (Montreal, PQ, 1987). *Internat. J. Numer. Methods Engrg.* **25** (1988), no. 2, 593–609. (Summary) **89d:80001** 80–08 (80A20)
- Haberman, Richard** (with Bourlond, F. Jay) Variation of wave action: modulations of the phase shift for strongly nonlinear dispersive waves with weak dissipation. *Phys. D* **32** (1988), no. 1, 72–82. (Summary) **89h:35292** 35Q20 (34C10)
- (with Bourlond, F. Jay) The modulated phase shift for strongly nonlinear, slowly varying, and weakly damped oscillators. *SIAM J. Appl. Math.* **48** (1988), no. 4, 737–748. (Ji Bin Li) **89j:34049** 34C15 (34E15, 58F30)
- Haberman, Shelby J.** (with Gilula, Zvi) The analysis of multivariate contingency tables by restricted canonical and restricted association models. *J. Amer. Statist. Assoc.* **83** (1988), no. 403, 760–771. (Ram Shanmugam) **89i:62090** 62H17
- Habets, P.** (with Fabry, C.) Existence of solutions to second order boundary value problems with nonlinear boundary conditions. *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 639–645, *'Angel Kanchev' Tech. Univ., Ruse, 1987.* (G. Anichini) **89b:34044** 34B15 (34A10, 34B10)
- Habib, M. K.** (with Thavaneswaran, A.) Recursive parameter estimation for semimartingales. *Internat. J. Systems Sci.* **19** (1988), no. 9, 1901–1909. (Summary) **89e:93189** 93E10 (60G48)
- Habibi, Javad Faghili** (with Gustafson, William H.) Reflexive serial algebras. *Linear Algebra Appl.* **99** (1988), 217–223. (Kenneth R. Davidson) **89d:16028** 16A46 (15A30, 47A15)
- Habibullah, G. M.** A note on maximal function. *Punjab Univ. J. Math. (Lahore)* **20** (1987), 51–62. (From the introduction) **89h:42027** 42B30
- Habibullah, Mohamed** (with Basu, A. P.) A test for bivariate exponentiality against BIFRA alternative. *Calcutta Statist. Assoc. Bull.* **36** (1987), no. 141–142, 79–84. (M. M. Siddiqui) **89b:62051** 62F03 (62N05)
- Habsieger, Laurent** Une  $q$ -intégrale de Selberg et Askey. (English summary) [A  $q$ -integral of Selberg and Askey] *SIAM J. Math. Anal.* **19** (1988), no. 6, 1475–1489. (R. A. Askey) **89m:33002** 33A15 (05A30)
- Habtemariam, T.** (with Gharthey-Tagoe, A.; Mamo, E.; Robnett, V.) Epidemiologic modelling of diseases—a case example using Schistosoma and Trypanosoma. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 244–249. (see **89d:00007**) 92A15
- Haccou, Patsy** (with Meelis, Evert; van de Geer, Sara) The likelihood ratio test for the change point problem for exponentially distributed random variables. *Stochastic Process. Appl.* **27** (1987), no. 1, 121–139. (J. A. Melamed) **89b:62054** 62F03 (62F05)
- Hachem, Bachar** (with Derriennic, Y.) Sur la convergence en moyenne des suites presque sous-additives. [On the convergence in the mean of almost subadditive sequences] *Math. Z.* **198** (1988), no. 2, 221–224. (Isaac Meilijson) **89h:28024** 28D05 (60F15, 60G10)
- el Hachimi, Abderrahmane** see El Hachimi, Abderrahmane
- Hackbusch, Wolfgang** The panel clustering technique for the boundary element method (invited contribution). *Boundary elements IX, Vol. 1* (Stuttgart, 1987), 463–474, *Comput. Mech., Southampton*, 1987. (Summary) **89i:76011** 76–08 (65N30, 73–08, 76B99)
- (with Hagemann, Sigrid) Frequency decomposition multi-grid methods for hyperbolic problems. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 209–217, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 65N50
- The frequency decomposition multi-grid algorithm. *Robust multi-grid methods* (Kiel, 1988), 96–104, *Notes Numer. Fluid Mech.*, 23, Vieweg, Braunschweig, 1989. (see **89m:65007**) 65P05
- (with Reusken, A.) On global multigrid convergence for nonlinear problems. *Robust multi-grid methods* (Kiel, 1988), 105–113, *Notes Numer. Fluid Mech.*, 23, Vieweg, Braunschweig, 1989. (see **89m:65007**) 65P05
- (with Nowak, Z. P.) On the fast matrix multiplication in the boundary element method by panel clustering. *Numer. Math.* **54** (1989), no. 4, 463–491. (G. A. Evans) **89h:65162** 65R20
- see also **Robust multi-grid methods**, **89m:65007**
- Hackenbrach, D.** (with Höck, K.-H.; Jordan, P.; Thomas, Harry) Degenerate Hopf bifurcation in the presence of symmetry. *Phys. D* **27** (1987), no. 3, 338–356. (Bernold Fiedler) **89h:58145** 58F14
- Hackenbroch, Wolfgang** Measure extensions by conditional atoms. *Math. Z.* **200** (1989), no. 3, 347–352. (Detlef Plachky) **89m:28005** 28A12
- Hacking, Ian** Was there a probabilistic revolution 1800–1930? *The probabilistic revolution, Vol. 1*, 45–55, *Bradford Book, MIT Press, Cambridge, MA-London*, 1987. (Jiunn T. Hwang) **89g:01036** 01A55
- Prussian numbers 1860–1882. *The probabilistic revolution, Vol. 1*, 377–394, *Bradford Book, MIT Press, Cambridge, MA-London*, 1987. (Summary) **89a:01033** 01A55 (92A20)
- Hackl, Klaus** (with Zastrow, Udo) On the existence, uniqueness and completeness of displacements and stress functions in linear elasticity. *J. Elasticity* **19** (1988), no. 1, 3–23. (M. Jurak) **89h:73010** 73C05 (58F40, 73C02)
- Hackl, Peter** (with Bauer, Peter) Multiple testing in a set of nested hypotheses. *Statistics* **18** (1987), no. 3, 345–349. (Jan Ámos Víšek) **89b:62052** 62F03
- Hackman, Steven T.** (with Passy, Ury) Projectively-convex sets and functions. *J. Math. Econom.* **17** (1988), no. 1, 55–68. (Petra Weidner) **89i:90019** 90A10 (26B25, 52A30)
- Hacon, Derek** (with Buoncristiano, Sandro) A geometrical approach to characteristic numbers. *Geometry today* (Rome, 1984), 21–38, *Progr. Math.*, 60, Birkhäuser Boston, Boston, MA, 1985. (P. J. Kahn) **89a:57047** 57R77 (55N22, 57R20)
- Hacque, Michel** Réhabilitation des degrés en théorie de Galois. [Rehabilitation of degrees in Galois theory] *Actes du 112<sup>e</sup> Congrès National des Sociétés Savantes* (Lyon, 1987), 35–50, *Com. Trav. Hist. Sci., Paris*, 1987. (James K. Deveney) **89m:12003** 12F10 (12–03, 16A74)
- Prolongement d'isomorphismes et théorie de Galois. [Extension of isomorphisms and Galois theory] *J. Algebra* **113** (1988), no. 1, 136–200. (S. Eliger) **89e:16050** 16A74
- Hada, T.** (with Kennel, C. F.; Buti, B.; Pellat, R.) Nonlinear, dispersive, elliptically polarized Alfvén waves. *Phys. Fluids* **31** (1988), no. 7, 1949–1961. (Summary) **89d:76035** 76W05
- Hadaegh, F. Y.** (with Bayard, David S.; Meldrum, D. R.) Optimal experiment design for identification of large space structures. *Automatica—J. IFAC* **24** (1988), no. 3, 357–364. (Summary) **89d:93035** 93B30 (49D27, 73K40, 93A15, 93B30, 93C75)
- Hadarnard, Jacques** How I did not discover relativity. Translated from the French by I. H. Rose. Edited and with an introduction by Benoit B. Mandelbrot. *Math. Intelligencer* **10** (1988), no. 2, 65–67. (C. B. Collins) **89e:01036** 01A60 (01A80)
- Hadar, Josef** (with Seo, Tae Kun) Asset proportions in optimal portfolios. *Rev. Econom. Stud.* **55** (1988), no. 3, 459–468. (Rolf van Dawen) **89g:90027** 90A09
- Haddad, A. H.** (with Heck, B. S.) Singular perturbation analysis of linear systems with scalar quantized control. *Automatica—J. IFAC* **24** (1988), no. 6, 755–764. (Summary) **89h:93115** 93C15 (34E15)
- (with Heck, B. S.) Singular perturbation in piecewise-linear systems. *IEEE Trans. Automat. Control* **34** (1989), no. 1, 87–90. (Qinde Zhou) **89m:34080** 34E15 (34C20)
- Haddad, Foad I.** (with Pingree, David; Kennedy, E. S.) al-Birūnī's treatise on astrological lots. *Z. Gesch. Arab.-Islam. Wiss.* **1** (1984), 9–54. (Author's review (E.S.K.)) **89g:01010** 01A30
- Haddad, Lucien** (with Rosenberg, I. G.) Famille large de clones sur un univers fini. (English summary) [A large family of clones on a finite universe] *Ann. Sci. Math. Québec* **12** (1988), no. 1, 55–72. (Alden Pixley) **89i:08004** 08A40
- Haddad, Ramsey W.** (with Schäfer, Alejandro A.) Recognizing Bellman-Ford-orderable graphs. *SIAM J. Discrete Math.* **1** (1988), no. 4, 447–471. (Itisuo Takanami) **89m:68111** 68R10 (05C20, 68Q25)
- Haddad, Richard A.** (with Akansu, Ali N.) A new orthogonal transform for signal coding. *IEEE Trans. Acoust. Speech Signal Process.* **36** (1988), no. 9, 1404–1411. (B. D. Donevski) **89i:94005** 94A11
- Haddad, Wassim M.** (with Bernstein, Dennis S.) The optimal projection equations with Petersen-Hollot bounds: robust stability and performance via fixed-order dynamic compensation for systems with structured real-valued parameter uncertainty. *IEEE Trans. Automat. Control* **33** (1988), no. 6, 578–582. (Not in MR) **93D15** (93C40)
- (with Bernstein, Dennis S.) Robust reduced-order modeling via the optimal projection equations with Petersen-Hollot bounds. *IEEE Trans. Automat. Control* **33** (1988), no. 7, 692–695. (Not in MR) **93B17** (93C40)
- (with Bernstein, Dennis S.) Unified optimal projection equations for simultaneous reduced-order, robust modelling, estimation and control. *Internat. J. Control* **47** (1988), no. 4, 1117–1132. (Not in MR) **93B50**
- Haddi, Aziz** Détermination des extensions centrales des algèbres de Kac-Moody. (English summary) [The determination of central extensions of Kac-Moody Lie algebras] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 16, 691–694. (Summary) **89i:17018** 17B67 (17B56)
- Haddow, J. B.** (with Ogden, R. W.) Application of extremum principles to mixed boundary value problems in nonlinear elasticity. *Trends in applications of mathematics to mechanics* (Wassenaar, 1987), 280–289, *Springer, Berlin-New York*, 1988. (see **89g:58004**) **73C35** (73C50, 73C60)
- (with Ogden, R. W.) Compression of bonded elastic bodies. *J. Mech. Phys. Solids* **36** (1988), no. 5, 551–579. (Summary) **89g:73023** 73G99 (73C20, 73C50, 73C60)
- Haderer, K. P.** Vector-transmitted diseases in structured populations. *Dynamical systems and environmental models* (Eisenach, 1986), 154–161, *Math. Ecol., Akademie-Verlag, Berlin*, 1987. (H. W. Hethcote) **89c:92061** 92A15
- (with Dietz, Klaus) Epidemiological models for sexually transmitted diseases. *J. Math. Biol.* **26** (1988), no. 1, 1–25. (Pauline van den Driessche) **89f:92038** 92A15
- Hadri, T.** Prise en compte d'une force linéique de frontière dans un modèle de plaques de Hencky comportant une non-linéarité géométrique. (English summary) [Accounting for a boundary line force in a Hencky plate model containing a geometric nonlinearity] *RAIRO Model. Math. Anal. Numér.* **22** (1988), no. 3, 457–468. (Joachim Naumann) **89i:73052** 73K40 (73K10)
- Hadri, Ali S.** (with Chatterjee, Samprit) ★ Sensitivity analysis in linear regression. *Wiley Series in Probability and Mathematical Statistics: Applied Probability and Statistics*. John Wiley & Sons, Inc., New York, 1988. xvi+315 pp. ISBN 0-471-82216-7 (Kenneth N. Berk) **89i:62002** 62–02 (62J05)
- (with Chatterjee, Samprit) Impact of simultaneous omission of a variable and an observation on a linear regression equation. *Comput. Statist. Data Anal.* **6** (1988), no. 2, 129–144. (Not in MR) **62J05**
- abdul Hadi, Z.** see Abdul Hadi, Z.
- Hadid, S. B.** (with Alshamani, J. G.) Liapunov stability of differential equations of noninteger order. (Arabic summary) *Arab J. Math.* **7** (1986), no. 1–2, 5–17. (B. M. Garay) **89g:34069** 34D20 (26A33, 34C11)



- (with Abdul Kader, N. A.) On the conditions for the nonoscillatory solutions of nonlinear higher order differential equations. *Progr. Math. (Varanasi)* **21** (1987), no. 1, 23–28. (Vincent Sotés) **89c:34067** 34C15 (34A34, 34C11)
- Hadjilidmetriou, John D.** Periodic orbits of the planetary type and their stability. Long term evolution of planetary systems (Ramsau, 1988). *Celestial Mech.* **43** (1987/88), no. 1–4, 371–390. (Summary) **89m:70014** 70F07 (58F14, 58F22, 70F10, 70K20, 70K30)
- Hadjilidimos, A.** A survey of the iterative methods for the solution of linear systems by extrapolation, relaxation and other techniques. Proceedings of the 2nd international conference on computational and applied mathematics (Leuven, 1986). *J. Comput. Appl. Math.* **20** (1987), Special Issue, 37–51. (David R. Kincaid) **89b:65078** 65F10
- (with Galanis, S.; Noutsos, D.) On the equivalence of the  $k$ -step iterative Euler methods and successive overrelaxation (SOR) methods for  $k$ -cyclic matrices. *Math. Comput. Simulation* **30** (1988), no. 3, 213–230. (Lucas Jódar) **89j:65034** 65F10
- (with Avdelas, G.; de Pillis, J.; Neumann, Michael) A guide to the acceleration of iterative methods whose iteration matrix is nonnegative and convergent. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 3, 329–342. (L. W. Ehrlich) **89c:65028** 65F10
- see also **Iterative methods for the solution of linear systems**, (Not in MR)
- Hadjisavvas, N.** (with Nassopoulos, B.; Pantelidis, G.) On the renorming of a vector space endowed with two norms and the simultaneous best approximation problem. *Math. Ann.* **280** (1988), no. 4, 549–557. (S. Cobzas) **89g:46030** 46B20 (41A65)
- Hadjlock, Frank** Minimum detour methods for string or sequence comparison. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **61** (1988), 263–274. (Satoru Miyano) **89k:68054** 68Q20 (92A25)
- Ha-Duong, T.** Space-time variational formulas and calculations of retarded potential. *Boundary elements VII, Vol. I, II* (Como, 1985), 5.51–5.60. *Comput. Mech., Southampton, 1985*. (see **89f:65003**) 76Q05 (46N05, 65P05)
- (with Ding, Yu; Forestier, A.) Space-time variational formulation for the Kirchhoff integral equation. *Boundary elements (Beijing, 1986)*, 707–716. *Pergamon, Oxford-Elmsford, NY, 1986*. (From the introduction) **89k:76080** 76Q05
- A mathematical analysis of boundary integral equations in the scattering problems of transient waves (invited contribution). *Boundary elements IX, Vol. 3* (Stuttgart, 1987), 101–114. *Comput. Mech., Southampton, 1987*. (F. Ursell) **89j:76075** 76Q05 (76–08)
- Ha Duy Bang** The applicability of infinite-order differential operators. (Russian) *Acta Math. Vietnam.* **12** (1987), no. 1, 67–72. (S. Raczynski) **89d:34019** 34A35
- Embedding theorems for Sobolev spaces of infinite order. (Russian) *Mat. Sb. (N.S.)* **136** (178) (1988), no. 1, 115–127. (J. Musielak) **89f:46071** 46E35
- Some embedding theorems for spaces of periodic functions of infinite order. (Russian) *Mat. Zametki* **43** (1988), no. 4, 509–517, 574; translation in *Math. Notes* **43** (1988), no. 3–4, 293–298. (J. Musielak) **89f:46072** 46E35
- Hadwin, Donald W.** Strongly quasidiagonal  $C^*$ -algebras. With an appendix by Jonathan Rosenberg. *J. Operator Theory* **18** (1987), no. 1, 3–18. (Judith A. Packer) **89d:46060** 46L05 (46L55, 46M05, 47A66, 47D25)
- (with Hoover, Thomas B.) Operator algebras and the conjugacy of transformations. *J. Funct. Anal.* **77** (1988), no. 1, 112–122. (David R. Larson) **89c:47069** 47D30 (46L05, 46L55)
- (with Nordgren, E. A.) Extensions of the Berger-Shaw theorem. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 517–525. (Roni Levy) **89c:47026** 47B10 (47B20)
- (with Kerr, Jeanne Wald) Scalar-reflexive rings. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 1–8. (David C. Lantz) **89d:13013** 13C13 (13E10)
- Hadžić, O.** (with Gajić, Lj.) Coincidence points for set-valued mappings in convex metric spaces. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **16** (1986), no. 1, 13–25. (Summary) **89j:54053** 54H25 (54C60)
- (with Janiak, Teresa) Some fixed point theorems for multivalued mappings in Banach spaces and their applications. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **16** (1986), no. 1, 27–43. (P. P. Zabrejko) **89m:47049** 47H10
- On random best approximations. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **16** (1986), no. 2, 1–8. (Summary) **89a:60154** 60H25 (41A65)
- Some results from nonlinear analysis in limit vector spaces. *Generalized functions, convergence structures, and their applications* (Dubrovnik, 1987), 399–407. *Plenum, New York-London, 1988*. (George Isac) **89k:47091** 47H10 (46A15, 47H99)
- Some properties of measures of noncompactness in paranormed spaces. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 843–849. (Michele Mininni) **89g:47078** 47H10 (47H09)
- elezović-Hadžić, S.** see **Elezović-Hadžić, S.**
- Hadzichristos, I.** (with Papastavridis, S.) Formulas for the reliability of a consecutive- $k$ -out-of- $n$ :  $F$  system. *J. Appl. Probab.* **25** (1988), no. 4, 772–779. (Kyle Siegrist) **89m:60208** 60K10
- Hadzilacos, Vassos** A theory of reliability in database systems. *J. Assoc. Comput. Mach.* **35** (1988), no. 1, 121–145. (C. Masalagiu) **89g:68006** 68P15 (68M15)
- Haefliger, J.-P.** Some remarks on the Segal and Sullivan conjectures. *Amer. J. Math.* **110** (1988), no. 5, 833–847. (V. P. Snaith) **89k:55022** 55P99 (57S17)
- Haefliger, André** (with Borel, Armand; Grivel, Pierre-Paul; Kaup, B.; Malgrange, B.; Ehlers, F.)  $\star$  Algebraic  $D$ -modules. Perspectives in Mathematics, 2. Academic Press, Inc., Boston, MA, 1987. xii+355 pp. ISBN 0-12-117740-8 (Emmanuel Andronikof) **89g:32014** 32C38 (58G07)
- Des espaces homogènes à la résolution de Koszul. (English summary) [From homogeneous spaces to Koszul's resolution] *Ann. Inst. Fourier (Grenoble)* **37** (1987), no. 4, 5–13. (S. Murakami) **89f:57061** 57T15 (01A70, 17B56, 58A10)
- Leaf closures in Riemannian foliations. *A fte of topology*, 3–32. Academic Press, Boston, MA, 1988. (Claude Roger) **89c:57033** 57R30 (53C12, 58F18, 58H05)
- (with Salem, Eliane) Pseudogroupes d'holonomie des feuilletages riemanniens sur des variétés compactes 1-connexes. [Pseudogroups of holonomy of Riemannian foliations on simply connected compact manifolds] *Géométrie différentielle* (Paris, 1986), 141–160. *Travaux en Cours*, 33. Hermann, Paris, 1988. (P. Molino) **89m:57027** 57R30 (53C12, 58H10)
- Haefner, Jeremy** (with Levy, Lawrence S.) Commutative orders whose lattices are direct sums of ideals. *J. Pure Appl. Algebra* **50** (1988), no. 1, 1–20. (Cornelius Greither) **89e:13005** 13C05 (13F05)
- Direct sum behavior of lattices over sigma- $I$  rings. *J. Pure Appl. Algebra* **51** (1988), no. 1–2, 141–159. (R. A. Wiegand) **89d:13007** 13C05 (06B99, 13F05, 20C10)
- Haegemans, Ann** (with Cools, Ronald) Construction of three-dimensional cubature formulae with points on regular and semiregular polytopes. *Numerical integration (Halifax, N.S., 1986)*, 153–163. *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 203. Reidel, Dordrecht-Boston, MA, 1987. (K. Jetter) **89a:65039** 65D32
- (with Cools, Ronald) Construction of sequences of embedded cubature formulae for circular symmetric planar regions. *Numerical integration (Halifax, N.S., 1986)*, 165–172. *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 203. Reidel, Dordrecht-Boston, MA, 1987. (K. Jetter) **89a:65037** 65D32
- (with Van Huffel, Sabine; Vandewalle, Joos) An efficient and reliable algorithm for computing the singular subspace of a matrix, associated with its smallest singular values. *J. Comput. Appl. Math.* **19** (1987), no. 3, 313–330. (Ludwig Elsner) **89c:65051** 65F15 (65F20)
- (with Cools, Ronald) Automatic computation of knots and weights of cubature formulae for circular symmetric planar regions. Proceedings of the 2nd international conference on computational and applied mathematics (Leuven, 1986). *J. Comput. Appl. Math.* **20** (1987), Special Issue, 153–158. (Avram Sidi) **89c:65028** 65D32 (65V05)
- (with Cools, Ronald) An embedded pair of cubature formulae of degree 5 and 7 for the triangle. *BIT* **28** (1988), no. 2, 357–359. (David K. Kahaner) **89d:65024** 65D32
- (with Cools, Ronald) Another step forward in searching for cubature formulae with a minimal number of knots for the square. (German summary) *Computing* **40** (1988), no. 2, 139–146. (Christian Coatmelec) **89b:65038** EA **89m** 65D32 (41A55)
- Haesler, Edward Hermann** Automatic theorem proving: an attempt to improve readability of proofs generated by resolution. *Methods and applications of mathematical logic (Campinas, 1985)*, 179–188. *Contemp. Math.*, 69. Amer. Math. Soc., Providence, RI, 1988. (J. A. Kalman) **89j:68134** 68T15 (03B35, 03F55)
- Haesler, Erich** On the rate of convergence in the central limit theorem for martingales with discrete and continuous time. *Ann. Probab.* **16** (1988), no. 1, 275–299. (N. C. Weber) **89a:60060** 60F05 (60G42, 60G44)
- (with Csörgő, Sándor; Mason, David M.) The asymptotic distribution of trimmed sums. *Ann. Probab.* **16** (1988), no. 2, 672–699. (R. A. Maller) **89f:60021** 60F05 (62G30)
- (with Joos, Konrad) A nonuniform bound on the rate of convergence in the martingale central limit theorem. *Ann. Probab.* **16** (1988), no. 4, 1699–1720. (Adhir K. Basu) **89b:60038** 60F05 (60G42)
- (with Deheuvels, Paul; Mason, David M.) Almost sure convergence of the Hill estimator. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 2, 371–381. (M. D. Burke) **89i:62043** 62F12
- (with Einmahl, John H. J.; Mason, David M.) On the relationship between the almost sure stability of weighted empirical distributions and sums of order statistics. *Probab. Theory Related Fields* **79** (1988), no. 1, 59–74. (Mir Maswood Ali) **89i:62080** 62G30 (62E10)
- Haезендонк, J.** (with Boogaert, P.; Delbaen, F.) Limit theorems for the present value of the surplus of an insurance portfolio. *Insurance Math. Econom.* **7** (1988), no. 2, 131–138. (Fl. De Vylder) **89b:62165** 62P05 (60F99, 60G44, 62E20, 90A09)
- Hafner, James Lee** Some remarks on odd Maass wave forms (and a correction to: "Zeros of  $L$ -functions attached to Maass forms" [Math. Z. **190** (1985), no. 1, 113–128; MR **86m:11034**] by Hafner, C. Epstein and P. Sarnak). *Math. Z.* **196** (1987), no. 1, 129–132. (O. M. Fomenko) **89a:11056** 11F66 (11F37)
- New omega results in a weighted divisor problem. *J. Number Theory* **28** (1988), no. 3, 240–257. (Leo Murata) **89j:11078** 11N25 (11N37)
- Hafner, M. L.** (with Mandelzweig, V. B.) Fast convergent hyperspherical harmonic expansion for three-body systems. *Ann. Physics* **189** (1989), no. 1, 29–52. (Summary) **89k:81003** 81–08 (81G45)
- Hafika, Raphael T.** (with Shin, Yung S.; Plaut, Raymond H.) Simultaneous analysis and design for eigenvalue maximization. *AIAA J.* **26** (1988), no. 6, 738–744. (Summary) **89j:73035** 73K40 (73H05, 73K12)
- (with Murthy, Durbha V.) Approximations to eigenvalues of modified general matrices. *Comput. & Structures* **29** (1988), no. 5, 903–917. (Summary) **89c:65044** 65F15
- (with Shin, Yung S.; Watson, Layne T.; Plaut, Raymond H.) Tracing structural optima as a function of available resources by a homotopy method. *Comput. Methods Appl. Mech. Engrg.* **70** (1988), no. 2, 151–164. (Summary) **89g:73036** 73K40 (73H05, 90C50)
- Hafmann, Rolf** Numerical methods for two-dimensional exterior elliptic boundary value problems. *Wiss. Z. Tech. Univ. Karl-Marx-Stadt* **30** (1988), no. 1, 7–10. (Not in MR) **89Nxx**
- Hag, K.** (with Gehring, F. W.) Remarks on uniform and quasiconformal extension domains. *Complex Variables Theory Appl.* **9** (1987), no. 2–3, 175–188. (Jochen Becker) **89b:30019** 30C60
- Hagan, P. S.** (with Brenner, D.) Sorption limits with increasing diffusion coefficients. *SIAM J. Appl. Math.* **48** (1988), no. 4, 917–920. (Summary) **89d:80012** 80A20
- (with Herskowitz, M.; Pirkle, C.) A simple approach to highly sensitive tubular reactors. *SIAM J. Appl. Math.* **48** (1988), no. 5, 1083–1101. (Summary) **89g:80005** 80A20
- (with Herskowitz, M.; Pirkle, C.) Runaway in highly sensitive tubular reactors. *SIAM J. Appl. Math.* **48** (1988), no. 6, 1437–1450. (Summary) **89j:80017** 80A32 (35B32)
- Hagedorn, George A.** High order corrections to the time-independent Born-Oppenheimer approximation. II. Diatomic Coulomb systems. *Comm. Math. Phys.* **116** (1988), no. 1, 23–44. (M. Demuth) **89h:81035** 81C12 (81G55)
- High order corrections to the time-dependent Born-Oppenheimer approximation. II. Coulomb systems. *Comm. Math. Phys.* **117** (1988), no. 3, 387–403. (Lawrence E. Thomas) **89h:81272** 81G55 (81C12)
- Hagedorn, Peter** (with Kelkel, K.; Wallaschek, J.)  $\star$  Vibrations and impedances of rectangular plates with free boundaries. Lecture Notes in Engineering, 23. Springer-Verlag, Berlin-New York, 1986. vi+152 pp. ISBN 3-540-17043-X (B. A. Boley) **89k:73047** 73K12 (73D30)
- $\star$  Nonlinear oscillations. Second edition. Translated from the German, edited and with a preface by Wolfram Stadler. Oxford Engineering Science Series, 10. Oxford Science Publications. The Clarendon Press, Oxford University Press, New York, 1988. xii+311 pp. ISBN 0-19-856194-6 (Editors) **89h:70008** 70Kxx (34C10, 70-01, 70H05)
- Hagelin, J. S.** (with Antoniadis, I.; Ellis, Jonathan Richard; Nanopoulos, D. V.) Cut model-building with fermionic four-dimensional strings. *Phys. Lett. B* **205** (1988), no. 4, 459–465. (Summary) **89k:81190** 81G20 (81E30)

- Hageman, T.** (with van Leeuwen, W. A.) Viscous Bianchi type II universes with intergalactic magnetic field. *Phys. A* 146 (1987), no. 3, 506–524. (Summary) **89b:83035** 83C20 (83F05)
- Hagemann, Sigrid** (with Hackbusch, Wolfgang) Frequency decomposition multi-grid methods for hyperbolic problems. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 209–217, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 65N50
- Hagen, C. R.** see **Deser, S.** **89f:81129**
- Hagen, Hans** (with Schulze, Guido) Automatic smoothing with geometric surface patches. *Comput. Aided Geom. Design* 4 (1987), no. 3, 231–235. (S. Dubuc) **89f:65019** 65D10 (53A05)
- Hagen, Ole** Some paradoxes in economics. *Paradoxical effects of social behavior*, 13–25, *Physica, Heidelberg*, 1986. (see **89d:90019**) 90A10 (90A09)
- Hager, A. W.** (with Ball, R. N.) Archimedean kernel distinguishing extensions of Archimedean  $I$ -groups with weak unit. *Indian J. Math.* 29 (1987), no. 3, 351–368 (1988). (Michael Darnel) **89m:06022** 06F20
- (with Brümmer, G. C. L.) Functorial uniformization of topological spaces. *Proceedings of the 8th international conference on categorical topology* (L'Aquila, 1986). *Topology Appl.* 27 (1987), no. 2, 113–127. (M. Husek) **89c:54025** 54B30 (18A40, 54E15)
- Hager, W. W.** Bidiagonalization and diagonalization. *Comput. Math. Appl.* 14 (1987), no. 7, 561–572. (Ludwig Elsner) **89c:65057** 65F30
- Dual techniques for constrained optimization. *J. Optim. Theory Appl.* 55 (1987), no. 1, 37–71. (Summary) **89j:90220** 90C30 (49D07, 49D29)
- (with Presler, Dwayne L.) Dual techniques for minimax. *SIAM J. Control Optim.* 25 (1987), no. 3, 660–685. (Ferenc Forgó) **89b:90184** 90C30 (65K05)
- (with Rostamian, R.) Reflection and refraction of elastic waves for stratified materials. *Wave Motion* 10 (1988), no. 4, 333–348. (Fadil Santosa) **89g:73016** 73D15 (73D25)
- (with Rostamian, R.) Invariant imbedding and the reflection of elastic waves. *Control of partial differential equations* (Santiago de Compostela, 1987), 144–155, *Lecture Notes in Control and Inform. Sci.*, 114, Springer, Berlin-New York, 1989. (see **89j:00028**) 73D25 (73D15)
- Hagerup, Torben** Towards optimal parallel bucket sorting. *Inform. and Comput.* 75 (1987), no. 1, 39–51. (Summary) **89a:68033** 68P10
- On saving space in parallel computation. *Inform. Process. Lett.* 29 (1988), no. 6, 327–329. (Summary) **89k:68043** 68Q10
- Haggag, M. H.** (with Machali, H. M.; El-Labany, S.; Attia, M. T.) Chandrasekhar's  $X$ - and  $Y$ -functions. *Astrophys. and Space Sci.* 149 (1988), no. 1, 13–18. (Summary) **89i:85002** 85A25 (33A70)
- Haggard, Paul W.** Some applications of Legendre numbers. *Internat. J. Math. Math. Sci.* 11 (1988), no. 2, 405–412. (Shiro Ando) **89j:11022** 11B83 (33A45)
- Some further results on Legendre numbers. *Internat. J. Math. Math. Sci.* 11 (1988), no. 3, 619–623. (F. T. Howard) **89i:11031** 11B83 (33A45)
- On Legendre numbers of the second kind. *Internat. J. Math. Math. Sci.* 11 (1988), no. 4, 815–822. (F. T. Howard) **89i:05019** 05A15 (11B83)
- Häggkvist, Roland** (with Fröberg, Ralf; Gottlieb, Christian) Gorenstein rings as maximal subrings of  $k[[X]]$  with fixed conductor. *Comm. Algebra* 16 (1988), no. 8, 1621–1625. (Bernd Ulrich) **89h:13027** 13H10
- Haghighi, Ahmad** On  $F_4$ -topology of Krull-type rings. *Proceedings of the 20th symposium on ring theory* (Okayama, 1987), 99–107, Okayama Univ., Okayama, 1987. (C. R. Hajarnavis) **89e:16010** 16A14 (16A18)
- Haghighi, M.** Computation of prime numbers by using a probabilistic algorithm. *Comput. Math. Appl.* 15 (1988), no. 11, 939–942. (Summary) **89d:11113** 11Y11 (11Y16)
- Computation of relative integral bases for algebraic number fields. *Internat. J. Math. Math. Sci.* 11 (1988), no. 3, 523–526. (K. Lakshmi) **89f:11151** 11R21 (11R33)
- Haghighi, M.** (with Proskurovski, Włodzimierz) Parallel efficiency of a domain decomposition method. *Domain decomposition methods* (Los Angeles, CA, 1988), 269–281, *SIAM, Philadelphia, PA*, 1989. (see **89j:65010**) 68U20 (68Q10)
- Hagihara, Ken'ichi** (with Manabe, Yoshifumi; Tokura, Nobuki) The minimum track number of the narrower channel in the single-row single-layer routing. *Electron. Comm. Japan, Part I Comm.* 68 (1985), no. 2, 1–9. (Summary) **89i:68067** 68Q35 (90B10)
- (with Masuzawa, Toshimitsu; Tokura, Nobuki) Distributed algorithms for fault diagnosis of processors. *Systems Comput. Japan* 19 (1988), no. 8, 54–68. (Not in MR) **89Q35**
- Hagino, Tatsuya** A typed lambda calculus with categorical type constructors. *Category theory and computer science* (Edinburgh, 1987), 140–157, *Lecture Notes in Comput. Sci.*, 283, Springer, Berlin-New York, 1987. (R. P. Nederpelt) **89e:03021** 03B40 (18C10, 18D15, 68Q55)
- Hagis, Peter, Jr.** The third largest prime factor of an odd multiperfect number exceeds 100. *Bull. Malaysian Math. Soc.* 2 (1986), no. 2, 43–49. (Anthony A. Gioia) **89b:11008** 11A25
- Hagiwara, Tomomichi** (with Araki, Mituhiko) Design of a stable state feedback controller based on the multirate sampling of the plant output. *IEEE Trans. Automat. Control* 33 (1988), no. 9, 812–819. (Summary) **89c:93091** 93B50 (93B55)
- (with Araki, Mituhiko) On preservation of strong stabilizability under sampling. *IEEE Trans. Automat. Control* 33 (1988), no. 11, 1080–1082. (B. G. Pachpatte) **89j:93079** 93C57 (93D15)
- (with Araki, Mituhiko) Controllability indices of sampled-data systems. *Internat. J. Systems Sci.* 19 (1988), no. 12, 2449–2457. (Patrio Colaneri) **89m:93007** 93B05 (93C57)
- Hagiwara, Yoshiki** The elimination of redundant Alg. EE derivations that are uniformly nonminimal. *J. Inform. Process.* 10 (1987), no. 3, 161–172. (Not in MR) **88T15**
- Hagler, J.** (with Stulpe, Werner; Gudder, Stanley P.) An uncertainty relation for joint position-momentum measurements. *Found. Phys. Lett.* 1 (1988), no. 3, 287–292. (Summary) **89j:81012** 81B05
- Hagood, John W.** (with Bell, Wayne C.) Separation properties and exact Radon-Nikodým derivatives for bounded finitely additive measures. *Pacific J. Math.* 131 (1988), no. 2, 237–248. (Z. Lipiecki) **89e:28004** 28A12
- Hagopian, Charles L.** Fixed points of arc-component-preserving maps. *Trans. Amer. Math. Soc.* 306 (1988), no. 1, 411–420. (Lee Mohler) **89d:54022** 54F20 (54H25)
- Hagstrom, Jane N.** Computational complexity of PERT problems. *Networks* 18 (1988), no. 2, 139–147. (Not in MR) **90B30**
- Hagstrom, T. M.** (with Tewarson, R. P.; Jazcilevich, Aron) Numerical experiments on a domain decomposition algorithm for nonlinear elliptic boundary value problems. *Appl. Math. Lett.* 1 (1988), no. 3, 299–302. (Not in MR) **65N99**
- (with Hariharan, S. L.) Accurate boundary conditions for exterior problems in gas dynamics. *Math. Comp.* 51 (1988), no. 184, 581–597. (David C. Arney) **89b:65232** 65M99 (76N99)
- (with Tewarson, R. P.) Partitioning and parallel algorithms for kidney models. *Mathematical modelling in science and technology* (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 847–849. (see **89d:00007**) 92A09 (92A06)
- Hähl, Hermann** Differentiable fibrations of the  $(2n-1)$ -sphere by great  $(n-1)$ -spheres and their coordinatization over quasifields. *Resulata Math.* 12 (1987), no. 1–2, 99–118. (H. Salzmann) **89a:57032** 57R22 (51H25)
- Die Oktavenebene als Translationsebene mit großer Kollineationsgruppe. (English summary) [The Cayley plane as a translation plane with a large collineation group] *Monatsh. Math.* 106 (1988), no. 4, 265–299. (H. Salzmann) **89m:51025** 51H10
- Hahn, Alexander J.** see **Classical groups and related topics**, **89h:20002**
- Hahn, Frank H.** ★ Money, growth and stability. *MIT Press, Cambridge, MA-London*, 1985. viii+392 pp. ISBN 0-262-08156-3 (Mohamed El-Hodiri) **89k:90030** 90A14 (01A75, 90A16)
- An exercise in non-Walrasian analysis. *Equilibrium analysis*, 289–299, *Cambridge Univ. Press, Cambridge-New York*, 1986. (Christian Gilles) **89d:90057** 90A15 (90A14)
- Hahn, G. J.** (with Oppenlander, J. E.; Schme, J.) Some simple robust estimators of normal distribution tail percentiles and their properties. *Comm. Statist. Theory Methods* 17 (1988), no. 7, 2279–2301. (Not in MR) **62F35**
- Hahn, Geza** (with Fraisse, P.; Sotteau, D.) Star sub-Ramsey numbers. *Combinatorial design theory*, 153–163, *North-Holland Math. Stud.*, 149, North-Holland, Amsterdam-New York, 1987. (Stefan A. Burr) **89b:05123** 05C55
- Hahn, Hans Georg** ★ Теория упругости. (Russian) [Elasticity theory] Основы линейной теории и ее применения. [Foundations of linear theory and its applications] Translated from the German by E. A. Kogan. Translation edited with a preface and commentaries by E. I. Grigolyuk. "Mir", Moscow, 1988. 344 pp. ISBN 5-03-000368-1 (Editors) **89f:73001** 73-01 (73C02)
- Hahn, Jörg** Isotropy representations of semisimple symmetric spaces and homogeneous hypersurfaces. *J. Math. Soc. Japan* 40 (1988), no. 2, 271–288. (Introduction) **89h:53108** 53C35 (17B20)
- Hahn, K. T.** (with Stoll, M.) Boundary limits of Green potentials on the ball in  $C^n$ . *Complex Variables Theory Appl.* 9 (1988), no. 4, 359–371. (J. Siciak) **89i:31005** 31B25 (31B15, 31C05)
- (with Pflug, Peter) On a minimal complex norm that extends the real Euclidean norm. *Monatsh. Math.* 105 (1988), no. 2, 107–112. (Jan Wiegner) **89a:32031** 32H35 (32A07, 32M05)
- Nontangential limit theorems for normal mappings. *Pacific J. Math.* 135 (1988), no. 1, 57–64. (Burglind Jörkic) **89i:32010** 32A40 (32A17)
- (with Pflug, Peter) The Kobayashi and Bergman metrics on generalized Thullen domains. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 207–214. (Marcus Wright) **89m:32043** 32H15 (32H20)
- (with Singman, David) Boundary behavior of invariant Green's potentials on the unit ball in  $C^n$ . *Trans. Amer. Math. Soc.* 309 (1988), no. 1, 339–354. (M. Hervé) **89j:32008** 32A40 (31B25)
- Hahn, Philipp Matthäus** ★ Werkstattbuch. II. (German) [Workshop book. II] 1771–1773. Fotomechanischer Nachdruck und Transkription. [Photographic reproduction and transcription] Transcribed by Helgard Bisterfeld. Edited and with an introduction by Ludwig Oechslin. Quellen und Schriften zu Philipp Matthäus Hahn [Sources and Publications on Philipp Matthäus Hahn], 3. Württembergisches Landesmuseum, Stuttgart, 1987. 366 pp. (P. Bockstaete) **89m:01140** 01A75 (01A50)
- Hahn, Siegfried** Über zufällige Fixpunkte bei stetigen zufälligen Operatoren in metrischen Vektorräumen. (Serbo-Croatian summary) [On random fixed points for continuous random operators in metric vector spaces] *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 16 (1986), no. 2, 25–39. (Duong Minh Duc) **89d:47124** 47H10 (60H25)
- Random fixed point theorems for random upper semicontinuous multivalued operators. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 17 (1987), no. 1, 1–15. (Duong Minh Duc) **89d:47125** 47H10 (60H25)
- A general random fixed point theorem for upper semicontinuous multivalued 1-set-contractions. (German and Russian summaries) *Z. Anal. Anwendungen* 6 (1987), no. 3, 281–286. (Ramendra Krishna Bose) **89c:47081** 47H10
- Hahne, F. J. W.** (with Scholtz, F. G.) Vibrations and rotations for the proton-neutron interacting boson model. *Nuclear Phys. A* 483 (1988), no. 1, 23–49. (Summary) **89d:81124** 81G30
- Häher, Peter** An exterior boundary-value problem for the Maxwell equations with boundary data in a Sobolev space. *Proc. Roy. Soc. Edinburgh Sect. A* 109 (1988), no. 3–4, 213–224. (Rainer Picard) **89k:35210** 35Q20 (45H05, 45L05, 78A25)
- le thanh Hai** see **Le Thanh Hai**
- Hai, Wen Hua** The Liouville equation on an  $n$ -dimensional complex manifold. (Chinese. English summary) *Hunan Jiaoyu Xueyuan Ziran Kexue Xuebao* 5 (1987), no. 2, 19–24. (Summary) **89b:58227** 58G30 (32A10)
- Haigh, John** The distribution of evolutionarily stable strategies. *J. Appl. Probab.* 25 (1988), no. 2, 233–246. (Peter D. Taylor) **89c:92042** 92A12 (60C05, 60E05, 90D40)
- Haight, J. A.** An  $F_\sigma$  semigroup of zero measure which contains a translate of every countable set. *Study group on analytic number theory, 1st–2nd years, 1984–1985, Exp. No. 29, 9 pp.*, *Secrétariat Math., Paris*, 1985. (From the text) **89h:11014** 11B05 (11K55, 43A10)
- On multiples of certain real sequences. *Acta Arith.* 49 (1988), no. 3, 303–306. (Ming-Chit Liu) **89f:11038** 11B99
- Hailat, Mohammad Q.** On the structure of Jacobi sets. *J. Pure Appl. Algebra* 52 (1988), no. 3, 283–295. (Sen Qiu) **89h:17003** 17B05 (17B20, 17B50)
- Classification of rank 2 GW-root systems. *Linear and Multilinear Algebra* 23 (1988), no. 1, 15–26. (Gordon E. Brown) **89h:17019** 17B50
- Haile, Darrell** (with Tesser, Steven) On Azumaya algebras arising from Clifford algebras. *J. Algebra* 116 (1988), no. 2, 372–384. (Lindsay N. Childs) **89j:15044** 15A66 (16A16)



- A useful proposition for division algebras of small degree. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 317–319. (B. Fein) **89k:16037** 16A39 (12E15)
- Hailperin, Theodore** Infinite truth-functional logic. *Notre Dame J. Formal Logic* **29** (1988), no. 1, 28–33. (P. Štěpánek) **89d:03035** 03C75 (03B10)
- Haiman, George** Almost sure asymptotic behavior of the record and record time sequences of a stationary Gaussian process. *Mathematical statistics and probability theory, Vol. A (Bad Tatzmannsdorf, 1986)*, 105–120, *Reidel, Dordrecht-Boston, MA-London, 1987*. (Simeon M. Berman) **89c:60053** 60G10 (60G15)
- Étude des extrêmes d'une suite stationnaire  $m$ -dépendante avec une application relative aux accroissements du processus de Wiener. (English summary) [Study of the extrema of an  $m$ -dependent stationary sequence with an application involving the increments of the Wiener process] *Ann. Inst. H. Poincaré Probab. Statist.* **23** (1987), no. 3, 425–457. (Simeon M. Berman) **89a:60104** 60G10 (60F05, 60F10, 60J65)
- Haimes, Yacov Y.** (with Li, Duan) The envelope approach for multiobjective optimization problems. *IEEE Trans. Systems Man Cybernet.* **17** (1987), no. 6, 1026–1038. (Summary) **89c:90101** 90C31 (49D27)
- (with Li, Duan) Correction to: "The envelope approach for multiobjective optimization problems" [*IEEE Trans. Systems Man Cybernet.* **17** (1987), no. 6, 1026–1038; MR **89c:90101**]. *IEEE Trans. Systems Man Cybernet.* **18** (1988), no. 2, 332. (Summary) **89g:90216** 90C31
- Haimo, Deborah Tepper** (with Zayed, A. L.) Inversion of an integral transform related to a general form of heat equation. *J. Math. Anal. Appl.* **131** (1988), no. 1, 246–264. (S. L. Kalla) **89f:44012** 44A15 (35K05)
- Haimovich, M.** (with Magnanti, T. L.) Extremum properties of hexagonal partitioning and the uniform distribution in Euclidean location. *SIAM J. Discrete Math.* **1** (1988), no. 1, 50–64. (Béla Uhrin) **89e:52021** 52A40
- Haimovich, A.** An ecological system depending on ages and diffusion. *Math. Comput. Modelling* **10** (1988), no. 10, 775–789. (R. C. MacCamy) **89m:92044** 92A15
- see also Luca, Nicolaie, **89c:01072**
- Hain, Richard M.** On a generalization of Hilbert's 21st problem. *Ann. Sci. École Norm. Sup. (4)* **19** (1986), no. 4, 609–627. (M. Scheunert (Zbl 616:14004)) **89a:14013** 14D05 (14C30)
- The geometry of the mixed Hodge structure on the fundamental group. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 247–282, *Proc. Sympos. Pure Math.*, **46, Part 2**, Amer. Math. Soc., Providence, RI, 1987. (Toshitake Kohno) **89g:14010** 14F40 (14C30, 32C40, 32G20, 55P62, 58A14)
- Iterated integrals and mixed Hodge structures on homotopy groups. *Hodge theory (Sant Cugat, 1985)*, 75–83, *Lecture Notes in Math.*, **1246**, Springer, Berlin-New York, 1987. (V. S. Retakh) **89f:14018** 14F35 (32G20, 55P62)
- Higher Albanese manifolds. *Hodge theory (Sant Cugat, 1985)*, 84–91, *Lecture Notes in Math.*, **1246**, Springer, Berlin-New York, 1987. (Yukihiko Namikawa) **89a:14060** 14K30 (14C30, 14F35, 22E25, 32J25)
- The de Rham homotopy theory of complex algebraic varieties. II. *K-Theory* **1** (1987), no. 5, 481–497. (Toshitake Kohno) **89d:14028** 14F40 (14C30, 14F35, 32C40, 55P62)
- ★ Итерированные интегралы и проблема гомотопических периодов. (Russian) [Iterated integrals and the problem of homotopy periods] Translated from the English by A. V. Pazhitnov and A. V. Khokhlov. Translation edited and with a preface by A. S. Mishchenko. "Nauka", Moscow, 1988. 95 pp. ISBN 5-02-013727-8 (Editors) **89j:55013** 55P62 (57T30, 58A12)
- (with Dufree, Alan H.) Mixed Hodge structures on the homotopy of links. *Math. Ann.* **280** (1988), no. 1, 69–83. (Toshitake Kohno) **89c:14012** 14C30 (32B30, 32J25, 55P62, 57M25)
- Haining, Robert** Income diffusion and regional economics. *Transformations through space and time (Hansholm, 1985)*, 59–80, *NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci.*, **29**, *Nijhoff, Dordrecht*, 1986. (see **89c:90072**) 90A17 (90A19)
- Spatial modelling and the statistical analysis of spatial data in human geography. (French summary) *Math. Sci. Humaines No. 99* (1987), 5–25, 57. (Summary) **89c:92082** 92A20
- see also *Transformations through space and time*, **89c:90072**
- Hainz, J.** Stability and Hopf bifurcation in a predator-prey system with several parameters. *SIAM J. Appl. Math.* **48** (1988), no. 1, 170–190. (K. R. Schneider) **89d:92065** 92A15 (34C15)
- Hairer, E.** (with Deufhard, P.; Zguck, J.) One-step and extrapolation methods for differential-algebraic systems. *Numer. Math.* **51** (1987), no. 5, 501–516. (David Swales) **89c:65069** 65L05
- (with Lubich, C.; Schlichte, M.) Fast numerical solution of weakly singular Volterra integral equations. *J. Comput. Appl. Math.* **23** (1988), no. 1, 87–98. (Summary) **89g:65166** 65R20
- (with Lubich, C.) Extrapolation at stiff differential equations. *Numer. Math.* **52** (1988), no. 4, 377–400. (Summary) **89m:65066** 65L05
- Haitovsky, Yoel** On multivariate ridge regression. *Biometrika* **74** (1987), no. 3, 563–570. (S. John) **89c:62170** 62J07 (62F15, 62H12)
- Hajarnavis, C. R.** Homological and Cohen-Macaulay properties in noncommutative Noetherian rings. *Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliavin (Paris, 1986)*, 235–246, *Lecture Notes in Math.*, **1296**, Springer, Berlin-New York, 1987. (D. A. Jordan) **89d:16037** 16A60 (16A62)
- (with Armendariz, Efraim P.) On prime ideals in hereditary PI-rings. *J. Algebra* **116** (1988), no. 2, 502–505. (Søren Jøndrup) **89e:16026** 16A38 (16A14, 16A34, 16A55)
- (with Brown, K. A.) Injectively homogeneous rings. *J. Pure Appl. Algebra* **51** (1988), no. 1–2, 65–77. (S. A. Paramhans) **89g:16007** 16A15 (16A33, 16A36, 16A60)
- Hajduk, Bogusław** Metrics of positive scalar curvature on spheres and the Gromov-Lawson conjecture. *Math. Ann.* **280** (1988), no. 3, 409–415. (Italo José Deijter) **89h:53091** 53C20
- Hajduk, Zygmunt** Isaac Newton's philosophy of nature. *Isaac Newton's Philosophiae naturalis principia mathematica (Lublin, 1987)*, 96–112, *World Sci. Publishing, Singapore*, 1988. (see **89m:01042**) 01A45
- Hajek, Bruce** (with Sasaki, Galen) Optimal dynamic routing in single commodity networks by iterative methods. *IEEE Trans. Comm.* **35** (1987), no. 11, 1199–1206. (Summary) **89k:90060** 90B10
- (with Sasaki, Galen) Link scheduling in polynomial time. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part 1, 910–917. (Summary) **89m:90085** 90B35 (94A05)
- (with Sasaki, Galen) The time complexity of maximum matching by simulated annealing. *J. Assoc. Comput. Mach.* **35** (1988), no. 2, 387–403. (Summary) **89c:90170** 90C27 (05C70, 68Q25, 90B10)
- Cooling schedules for optimal annealing. *Math. Oper. Res.* **13** (1988), no. 2, 311–329. (Th. M. Liebling) **89f:90140** 90C30
- Hajek, D. W.** (with Barreto, S.) Spaces which are Wallman remainders. *Caribbean J. Math.* **5** (1986), no. 1, 13–18. (Ronnie Levy) **89c:54054** 54D40
- Some categories which have no minimal generating classes. *Quaestiones Math.* **11** (1988), no. 1, 1–6. (Y. T. Rhineghost) **89b:54013** 54B30 (18A40, 18B30, 54B10)
- Hajek, O.** (with Elaydi, Saber) Exponential trichotomy of differential systems. *J. Math. Anal. Appl.* **129** (1988), no. 2, 362–374. (A. Corduneanu) **89b:34019** 34A30 (34D20)
- Hajek, P.** Partial conservativity revisited. *Comment. Math. Univ. Carolin.* **28** (1987), no. 4, 679–690. (C. Smoryński) **89c:03093** 03F25 (03F30)
- Towards a probabilistic analysis of MYCIN-like expert systems (working paper). *COMPSTAT 1988 (Copenhagen, 1988)*, 117–121, *Physica, Heidelberg*, 1988. (see **89i:62004**) 65U05
- Hajela, D.** (with Pollington, Andrew D.; Smith, Brent Pendleton) On Kloosterman sums with oscillating coefficients. *Canad. Math. Bull.* **31** (1988), no. 1, 32–36. (Zun Shan) **89d:11065** 11L05
- On a conjecture of Kőmlos about signed sums of vectors inside the sphere. *European J. Combin.* **9** (1988), no. 1, 33–37. (M. I. Kadets) **89i:52017** 52A40
- (with Chung, F. R. K.; Seymour, Paul D.) Self-organizing sequential search and Hilbert's inequalities. 17th Annual ACM Symposium on the Theory of Computing (Providence, RI, 1985). *J. Comput. System Sci.* **36** (1988), no. 2, 148–157. (Allen Klinger) **89i:68012** 68P05 (68P10, 68Q25)
- Haj-Hariri, Hossein** Transformations reducing the order of the parameter in differential eigenvalue problems. *J. Comput. Phys.* **77** (1988), no. 2, 472–484. (Summary) **89c:76009** 76-08 (34B25, 34C20, 76D10)
- Hajian, Arshag** (with Eigen, Stanley) A characterization of exhaustive weakly wandering sequences for nonsingular transformations. *Comment. Math. Univ. St. Paul.* **36** (1987), no. 2, 227–233. (Nathaniel Friedman) **89a:28015** 28D05
- (with Eigen, Stanley) Poincaré sequences in infinite measure spaces and complementing subsets of the integers. *Dynamical systems (College Park, MD, 1986–87)*, 154–157, *Lecture Notes in Math.*, **1342**, Springer, Berlin-New York, 1988. (F. Schweiger) **89i:28009** 28D05 (11K38, 11K55, 11P99)
- el-Hajji, Adnan Atef** see **El-Hajji, Adnan Atef**
- el-Hajji, Ali** see **El-Hajji, Ali**
- Haji-Boutros, J.** see **Lorenz-Petzold, Dieter**, **89c:83018**
- Hajnal, A.** (with Juhász, I.; Soukup, L.) On saturated almost disjoint families. *Comment. Math. Univ. Carolin.* **28** (1987), no. 4, 629–633. (Eva Hartová) **89b:03079** 03E05 (03E55)
- (with Komjáth, Péter) Embedding graphs into colored graphs. *Trans. Amer. Math. Soc.* **307** (1988), no. 1, 395–409. (N. Hindman) **89c:05145** 05C55 (03E35, 04A20, 05A17)
- Hajnal, J. V.** Singularities in the transverse fields of electromagnetic waves. I. Theory. *Proc. Roy. Soc. London Ser. A* **414** (1987), no. 1847, 433–446. (R. F. Millar) **89d:78021** 78A40
- Singularities in the transverse fields of electromagnetic waves. II. Observations on the electric field. *Proc. Roy. Soc. London Ser. A* **414** (1987), no. 1847, 447–468. (R. F. Millar) **89d:78022** 78A40
- (with Nye, J. F.; Hannay, J. H.) Phase saddles and dislocations in two-dimensional waves such as the tides. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1852, 7–20. (Summary) **89c:86004** 86A05 (58C27, 58F14, 76B15, 78A99)
- Hajto, Zbigniew** Whitney (b)-regularity for analytically constructible sets. *Proceedings of the conference on algebraic geometry (Berlin, 1985)*, 117–122, *Teubner-Texte Math.*, **92**, Teubner, Leipzig, 1986. (Alexandru Dimca) **89f:32024** 32C42
- abd el-Hakeim, K. M.** see **Abd El-Hakeim, K. M.**
- Haken, Hermann** Synergetic computers for pattern recognition and associative memory. *Computational systems—natural and artificial (Schloss Elmau, 1987)*, 2–22, *Springer Ser. Synergetics*, **38**, Springer, Berlin-New York, 1987. (Editors) **89c:92021** 92A09 (00A69, 92A05)
- (with Mayer-Kress, Gottfried) An explicit construction of a class of suspensions and autonomous differential equations for diffeomorphisms in the plane. *Comm. Math. Phys.* **111** (1987), no. 1, 63–74. (Russell B. Walker) **89b:58179** 58F25 (58F13)
- Pattern formation: thermodynamics or kinetics? *From chemical to biological organization*, 6–13, *Springer Ser. Synergetics*, **39**, Springer, Berlin-New York, 1988. (see **89g:92002**) 82A35 (92A40)
- Synergetics in pattern recognition and associative action. *Neural and synergetic computers (Schloss Elmau, 1988)*, 2–15, *Springer Ser. Synergetics*, **42**, Springer, Berlin-New York, 1988. (see **89i:92026**) 92A25 (68T10)
- (with Fuchs, Armin) Computer simulations of pattern recognition as a dynamical process of a synergetic system. *Neural and synergetic computers (Schloss Elmau, 1988)*, 16–28, *Springer Ser. Synergetics*, **42**, Springer, Berlin-New York, 1988. (see **89i:92026**) 92A25 (68T10)
- (with Fuchs, Armin) Pattern recognition and associative memory as dynamical processes in a synergetic system. I. Translational invariance, selective attention, and decomposition of scenes. *Biol. Cybernet.* **60** (1988), no. 1, 17–22. (Summary) **89h:92013** 92A09
- Synergetics and computers. Special issue on emerging paradigms in applied mathematical modelling. *J. Comput. Appl. Math.* **22** (1988), no. 2–3, 197–202. (Summary) **89h:92002** 92-02 (00A71, 92A05)
- (with Peplowski, P.) Bifurcation with two parameters in two-dimensional complex space. Applications to laser systems. *Phys. D* **30** (1988), no. 1–2, 135–150. (Jolanta Przybycin) **89f:34006** 34A20 (34C20, 58F14, 78A60)
- Nonequilibrium phase transitions in pattern recognition and associative memory. *Z. Phys. B* **70** (1988), no. 1, 121–123. (Introduction) **89c:92012** 92A09 (82A25, 82A57)
- (with Wang, Zhi Cheng) Quantum theory of the two-photon laser. *Z. Phys. B* **71** (1988), no. 2, 253–259. (Summary) **89f:81285** 81K05
- (with Friedrich, R.) Exact stationary probability distribution for a simple model of a nonequilibrium phase transition. *Z. Phys. B* **71** (1988), no. 4, 515–517. (Koichiro Matsuno) **89g:82027** 82A31
- (with Fuchs, Armin) Nonequilibrium phase transitions in pattern recognition and associative memory. Numerical results. *Z. Phys. B* **71** (1988), no. 4, 519–520. (Not in MR) **89a:92A09** (92A25)

- Learning in synergetic systems for pattern recognition and associative action. *Z. Phys. B* 71 (1988), no. 4, 521–526. (Summary) **89f:92014** 92A08 (92A12, 92A25)
- see also *Neural and synergetic computers*, **89i:92026**
- Hakimi, V.** (with Combescot, R.; Dombre, T.; Pomeau, Y.; Pumi, A.) Analytic theory of the Saffman-Taylor fingers. *Phys. Rev. A* (3) 37 (1988), no. 4, 1270–1283. (Summary) **89c:76103** 76T05 (76B45)
- Hakim-Dowek, M.** (with Lépinge, D.) L'exponentielle stochastique des groupes de Lie. [The stochastic exponential of Lie groups] *Séminaire de Probabilités, XX*, 1984/85, 352–374, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (R. W. R. Darling) **89h:58210** 58G32 (60G48, 60H99)
- Hakimi, S. Louis** (with Kariv, Oded) A generalization of edge-coloring in graphs. *J. Graph Theory* 10 (1986), no. 2, 139–154. (Summary) **89a:05064** 05C15
- (with Choi, Hyeon-Ah) Data transfers in networks. *Algorithmica* 3 (1988), no. 2, 223–245. (J. Bond) **89j:68016** 68M10 (68Q25, 90B35)
- (with Lutz, William J.) Design of multi-input multi-output systems with minimum sensitivity. *IEEE Trans. Circuits and Systems* 35 (1988), no. 9, 1114–1122. (Patrizio Colaneri) **89i:93020** 93B15 (93B20, 93B35)
- (with Esfahanian, Abdol Hossein) On computing a conditional edge-connectivity of a graph. *Inform. Process. Lett.* 27 (1988), no. 4, 195–199. (Ortrud R. Oellermann) **89c:05051** 05C40 (68R10)
- (with Megiddo, Nimrod; Garey, M. R.; Johnson, David Stifler; Papadimitriou, Christos H.) The complexity of searching a graph. *J. Assoc. Comput. Mach.* 35 (1988), no. 1, 18–44. (T. R. S. Walsh) **89d:68030** 68Q25 (05C75, 68R10, 90D26)
- (with Schmeichel, E. F.) A cycle structure theorem for Hamiltonian graphs. *J. Combin. Theory Ser. B* 45 (1988), no. 1, 99–107. (Chris Rodger) **89j:05051** 05C45
- (with Schmeichel, E. F.) Chromatic factorizations of a graph. *J. Graph Theory* 12 (1988), no. 2, 177–182. (Ruth Bari) **89c:05038** 05C15
- (with Schmeichel, E. F.) A note on the vertex arboricity of a graph. *SIAM J. Discrete Math.* 2 (1989), no. 1, 64–67. (Derek Smith) **89c:05050** 05C35 (05C38, 68R10)
- Hakimjanov, You. B.** see *Khakimdzhanov, Yu. B.*
- Hakizimana, G.** (with Jourdain, G.; Loubet, G.) Adapted codes for communication through multipath channel. (French summary) *Coding theory and applications (Cachan, 1986)*, 173–182, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (Summary) **89g:94023** 94A40
- Halabi, Yahia S.** Finite-difference scheme for simulating the two-dimensional dispersion problem in natural channels. (Arabic summary) *Arab J. Math.* 5 (1984), no. 1–2, 5–24. (Summary) **89b:65032** 65D05 (76–08)
- Halany, A.** Periodic and almost periodic solutions to affine stochastic systems. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations (Budapest, 1987)*, 94–101, *János Bolyai Math. Soc., Budapest*, 1987. (G. N. Mil'shtein) **89f:34085** 34F05 (34C25, 34C27, 60H10, 93E03, 93E15)
- (with Tudor, Constantin; Morozan, T.) Tracking almost periodic signals under white noise perturbations. *Stochastics* 21 (1987), no. 4, 287–301. (Zvi Arstein) **89d:49016** 49A60 (60H99, 93B25, 93E20)
- Halany, Aristide** (with Popescu, Mihail) Une propriété arithmétique dans l'analyse du comportement d'un système hydraulique comprenant une chambre d'équilibre avec étranglement. (English summary) [An arithmetical property in the analysis of the behavior of a hydraulic system including a throttled surge tank] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* 305 (1987), no. 15, 1227–1230. (Summary) **89j:76036** 76B99 (76E99)
- Halany, Elena** Normal forms of degree 5 in  $\mathbb{P}^n$ . *Rev. Roumaine Math. Pures Appl.* 33 (1988), no. 4, 297–303. (Ciro Ciliberto) **89k:14062** 14J25
- Håland, Inger Johanne** Number theory and dynamical systems—a baffling interplay. (Norwegian. English summary) *Normal* 36 (1988), no. 1, 13–24, 39. (Nathaniel F. G. Martin) **89j:11012** 11B25 (11Q15, 58F11)
- Halberstam, H.** (with Freiman, G.) On a product of sines. *Acta Arith.* 49 (1988), no. 4, 377–385. (K. S. Williams) **89d:11069** 11L99 (42A99)
- (with Diamond, Harold G.; Richert, Hans-Egon) Combinatorial sieves of dimension exceeding one. *J. Number Theory* 28 (1988), no. 3, 306–346. (Grigori Kolesnik) **89g:11080** 11N35
- Halbritter, Norbert** Groups with a nilpotent-by-finite triple factorization. *Arch. Math. (Basel)* 51 (1988), no. 5, 393–400. (H. Heineken) **89k:20044** 20E22 (20F19)
- Halbritter, Ulrich** Berechnung der Werte von Zetafunktionen totalreeller kubischer Zahlkörper an ganzzahligen Stellen mittels verallgemeinerter Dedekindscher Summen. II. [Computation of the values of zeta functions of totally real cubic number fields at integer points using generalized Dedekind sums. II] *Resulata Math.* 13 (1988), no. 1–2, 99–134. (O. H. Körner) **89c:11164** 11R42 (11R80)
- Hald, A.** Galileo's statistical analysis of astronomical observations. (French summary) *Internat. Statist. Rev.* 54 (1986), no. 2, 211–220. (Summary) **89g:01023** 01A45
- On de Moivre's solutions of the problem of duration of play, 1708–1718. *Arch. Hist. Exact Sci.* 38 (1988), no. 2, 109–134. (William J. Adams) **89d:01032** 01A50 (60–03, 90–03)
- Haldane, F. D. M.** (with Affleck, Ian) Critical theory of quantum spin chains. *Phys. Rev. B* (3) 36 (1987), no. 10, 5291–5300. (Claus Montonen) **89a:82011** 82A25 (81E08, 81E40, 82A15)
- (with Arovas, Daniel P.; Auerbach, Assa) Extended Heisenberg models of antiferromagnetism: analogies to the fractional quantum Hall effect. *Phys. Rev. Lett.* 60 (1988), no. 6, 531–534. (Summary) **89c:82066** 82A68
- O(3) nonlinear  $\sigma$  model and the topological distinction between integer- and half-integer-spin antiferromagnets in two dimensions. *Phys. Rev. Lett.* 61 (1988), no. 8, 1029–1032. (Summary) **89i:81099** 81E25 (82A68)
- (with Vannimenus, J.; Kirkpatrick, S.; Jayaprakash, C.) Ground-state morphology of random frustrated XY systems. *Phys. Rev. B* (3) 39 (1989), no. 7, 4634–4643. (Summary) **89m:82087** 82A68
- Haldane, John Burdon Sanderson** see *Dronamraju, Krishna R.*, **89d:01059**
- Haldorsen, H. H.** (with Brand, P. J.; Macdonald, C. J.) Review of the stochastic nature of reservoirs. *Mathematics in oil production (Cambridge, 1987)*, 109–209, *Inst. Math. Appl. Conf. Ser. New Ser.*, 18, Oxford Univ. Press, New York, 1988. (see **89j:76003**) 76–08 (76S05, 76T05)
- Hale, Jack K.** Asymptotic behaviour and dynamics in infinite dimensions. *Nonlinear differential equations (Granada, 1984)*, 1–42, *Res. Notes in Math.*, 132, Pitman, Boston, MA-London, 1985. (G. F. Webb) **89b:58115** 58F10 (34K30, 35–02, 47H20, 58F12)
- (with Lin, Xiao-Biao) Symbolic dynamics and nonlinear semiflows. *Ann. Mat. Pura Appl. (4)* 144 (1986), 229–259. (A. Vanderbauwhede) **89g:58130** 58F13
- Asymptotic behavior of gradient dissipative systems. *Dynamics of infinite-dimensional systems (Lisbon, 1986)*, 123–128, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 37, Springer, Berlin-New York, 1987. (Editors) **89c:47081** 47H20 (35L75)
- Homoclinic orbits and chaos in delay equations. *Ordinary and partial differential equations (Dundee, 1986)*, 75–94, *Pitman Res. Notes Math. Ser.*, 157, Longman Sci. Tech., Harlow, 1987. (Waldyr M. Oliva) **89d:58067** 58F10 (34K15, 58F13, 58F14, 58F15)
- $\star$  Asymptotic behavior of dissipative systems. *Mathematical Surveys and Monographs*, 25, American Mathematical Society, Providence, RI, 1988. x+198 pp. ISBN 0-8218-1527-X (Jean-Michel Ghidaglia) **89g:58059** 58Fxx (34C35, 35B40, 58F09, 58F12)
- (with Stavrakakis, N.) Compact attractors for weak dynamical systems. *Appl. Anal.* 26 (1988), no. 4, 271–287. (Feliks Przytycki) **89c:34088** 34D30 (34C35, 35B35, 58F12, 93D15)
- (with Sternberg, Natalia) Onset of chaos in differential delay equations. *J. Comput. Phys.* 77 (1988), no. 1, 221–239. (Waldyr M. Oliva) **89h:58115** 58F13 (34K15)
- (with Raugel, Geneviève) Upper semicontinuity of the attractor for a singularly perturbed hyperbolic equation. *J. Differential Equations* 73 (1988), no. 2, 197–214. (Matthew Witten) **89i:35022** 35B40 (35L70, 58F12, 58G16)
- (with Lin, Xiao-Biao; Raugel, Geneviève) Upper semicontinuity of attractors for approximations of semigroups and partial differential equations. *Math. Comp.* 50 (1988), no. 181, 89–123. (Tie Hu Qin) **89a:47093** 47H20 (35K55, 35K70, 65N30)
- Hale, Susan C.** Spacetime and the abstract/concrete distinction. *Philos. Stud.* 53 (1988), no. 1, 85–102. (Lawrence Sklar) **89b:03008** 03A05 (83A05)
- Hà Lê Anh** On two problems of Katona concerning sums of vectors. *Studia Sci. Math. Hungar.* 23 (1988), no. 1–2, 37–39. (L. M. Kelly) **89m:52011** 52A37
- Halfin, Shlomo** (with Avi-Itzhak, Benjamin) Response times in M/M/1 time-sharing schemes with limited number of service positions. *J. Appl. Probab.* 25 (1988), no. 3, 579–595. (Summary) **89e:90121** 90B35 (60K25, 90B22)
- Halikias, G. D.** (with Limebeer, D. J. N.) A controller degree bound for  $\mathcal{H}^\infty$ -optimal control problems of the second kind. *SIAM J. Control Optim.* 26 (1988), no. 3, 646–677. (Avraham Feintuch) **89e:93073** 93B35 (93C05)
- Halilsoy, Mustafa** Interacting electromagnetic shock waves in general relativity. *Nuovo Cimento B* (11) 99 (1987), no. 1, 95–101. (J. D. Finley III) **89c:83015** 83C15 (83C35)
- Studies in space-times admitting two spacelike Killing vectors. *J. Math. Phys.* 29 (1988), no. 2, 320–326. (Niky Kamran) **89b:83036** 83C20 (58E20)
- Colliding electromagnetic shock waves in general relativity. *Phys. Rev. D* (3) 37 (1988), no. 8, 2121–2126. (Colin B. G. McIntosh) **89h:83008** 83C15 (83C50)
- Halkowska, Katarzyna** (with Bryll, Grzegorz) L-decidability of fragmentary Słupski systems. (Polish. English summary) *Zeszyty Nauk. Wyz. Szkoły Ped. w Opolu Mat.* 24 (1986), 5–10 (1987). (Summary) **89c:03043** 03B50
- Externally compatible identities in pseudocomplemented distributive lattices. *Demonstratio Math.* 20 (1987), no. 1–2, 89–93 (1988). (T. S. Blyth) **89f:06018** 06D15
- On separation operator on classes of algebras. *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* 17 (1988), no. 2, 67–69. (Not in MR) 03C05
- Hall, A. D.** Worldwide rankings of research activity in econometrics: 1980–1985. *Econometric Theory* 3 (1987), no. 2, 171–194. (Not in MR) 62P20 (01A73)
- (with McAleer, Michael; McKenzie, C. R.) Testing separate time series models. *J. Time Ser. Anal.* 9 (1988), no. 2, 169–189. (P. Newbold) **89c:62080** 62M10
- Hall, A. R.** Newtonianism after 300 years. Newton's *Principia* and its legacy. *Notes and Records Roy. Soc. London* 42 (1988), no. 1, 5–9. (Editors) **89a:01047** 01A65
- Hall, Ernest L.** (with Park, Kyoungh T.) Form recognition using moment invariants for three-dimensional perspective transformations. *Science on form (Sakura, 1985)*, 255–264, *Reidel, Dordrecht-Boston, MA*, 1987. (see **89g:82013**) 51N20 (68T10, 92A27)
- Hall, Frank J.** (with Bevis, Jean H.; Hartwig, Robert E.) Consiliarity and the matrix equation  $A\bar{X} - X\bar{B} = C$ . *Current trends in matrix theory (Auburn, Ala., 1986)*, 51–64, *North-Holland, New York-Amsterdam*, 1987. (Summary) **89a:15015** 15A24 (15A21)
- (with Bevis, Jean H.; Hartwig, Robert E.) The matrix equation  $A\bar{X} - X\bar{B} = C$  and its special cases. *SIAM J. Matrix Anal. Appl.* 9 (1988), no. 3, 348–359. (Ji-guang Sun) **89h:15021** 15A24
- Hall, G. S.** Lorentz manifolds and general relativity theory. *Differential geometry (Warsaw, 1979)*, 47–52, *Banach Center Publ.*, 12, PWN, Warsaw, 1984. (László Szabó) **89j:53053** 53C50 (53C80, 83–01)
- The classification of second order symmetric tensors in general relativity theory. *Differential geometry (Warsaw, 1979)*, 53–73, *Banach Center Publ.*, 12, PWN, Warsaw, 1984. (J. D. Zund) **89g:53046** 53B50 (53B30, 83C20)
- Curvature, metric and holonomy in general relativity. *Differential geometry and its applications, communications (Brno, 1986)*, 127–136, *Univ. J. E. Purkyně, Brno*, 1987. (Paul E. Ehrlich) **89b:53100** 53C50 (83C99)
- Singularities and homothety groups in spacetime. *Classical Quantum Gravity* 5 (1988), no. 5, L77–L80. (Laszlo B. Szabados) **89d:83047** 83C75 (53C50)
- Connections and symmetries in spacetime. *Gen. Relativity Gravitation* 20 (1988), no. 4, 399–406. (Agostino Prastaro) **89c:53097** 53C50 (53C05, 83C99)
- Homothetic transformations with fixed points in spacetime. *Gen. Relativity Gravitation* 20 (1988), no. 7, 671–681. (Niky Kamran) **89i:83034** 83C40 (53C80)
- (with Kay, W.) Curvature structure in general relativity. *J. Math. Phys.* 29 (1988), no. 2, 420–427. (J. K. Beem) **89c:83022** 83C20 (53C50, 53C80)
- (with Kay, W.) Holonomy groups in general relativity. *J. Math. Phys.* 29 (1988), no. 2, 428–432. (J. K. Beem) **89c:83023** 83C20 (53C50, 53C80)
- (with da Costa, José Manuel N.) Affine collineations in space-time. *J. Math. Phys.* 29 (1988), no. 11, 2465–2472. (A. H. Bokhari) **89m:83038** 83C40 (53C80, 83C20)
- Hall, George** (with Higham, Desmond) Analysis of stepsize selection schemes for Runge-Kutta codes. *IMA J. Numer. Anal.* 8 (1988), no. 3, 305–310. (J. R. Cash) **89m:65067** 65L05
- Hall, George L.** Comment on the paper: "Theta series and magic numbers for diamond and certain ionic crystal structures" [J. Math. Phys. 28 (1987), no. 7, 1653–1657; MR



- 88g:82058] by N. J. A. Sloane. *J. Math. Phys.* **29** (1988), no. 9, 2090–2091. (Summary) **89f:82066** 82A60 (14K25, 82A68)
- Hall, Glen R. Some examples of permutations modelling area preserving monotone twist maps. *Phys. D* **28** (1987), no. 3, 393–400. (Hans G. Bothe) **89a:58057** 58F08 (58-04)
- A remark on the multiplicity of monotone periodic orbits. *Ergodic Theory Dynamical Systems* **8** (1988), Charles Conley Memorial Issue, 109–118. (Leo Jonker) **89k:58090** 58F05 (58F22)
- Hall, J. I. Finitary linear transformation groups and elements of finite local degree. *Arch. Math. (Basel)* **50** (1988), no. 4, 315–318. (O. H. Kegel) **89b:20067** 20E25 (20E32)
- The hyperbolic lines of finite symplectic spaces. *J. Combin. Theory Ser. A* **47** (1988), no. 2, 284–298. (F. De Clerck) **89f:51021** 51A45 (05B25, 51E20)
- The number of trace-valued forms and extraspecial groups. *J. London Math. Soc.* (2) **37** (1988), no. 1, 1–13. (Editors) **89f:03025** 03C60 (20F99)
- Hall, Marshall, Jr. (with Bate, John A.; Van Rees, G. H. J.) Structures within (22, 33, 12, 8, 4)-designs. *J. Combin. Math. Combin. Comput.* **4** (1988), 115–122. (D. P. Roselle) **89f:05017** 05B05
- (with Roth, Robert Lyle; Van Rees, G. H. J.; Vanstone, S. A.) On designs (22, 33, 12, 8, 4). *J. Combin. Theory Ser. A* **47** (1988), no. 2, 157–175. (M. J. Grannell) **89b:05032** 05B05
- Hall, Michael J. W. Quantum mechanics and the concept of joint probability. *Found. Phys.* **19** (1989), no. 2, 189–207. (Summary) **89k:81010** 81B05
- Hall, Nicholas G. Separate vs. joint replenishment policies with maximum storage requirement costs. *European J. Oper. Res.* **36** (1988), no. 2, 180–183. (Not in MR) **90B05**
- A multi-item EOQ model with inventory cycle balancing. *Naval Res. Logist.* **35** (1988), no. 3, 319–325. (Summary) **89b:90063** 90B05
- (with Rhee, K. Anthony; Rhee, WanSoo T.) A nonidentical parallel processor scheduling problem. *Naval Res. Logist.* **35** (1988), no. 3, 419–424. (Summary) **89a:90069** 90B35
- Hall, Peter On the bootstrap and likelihood-based confidence regions. *Biometrika* **74** (1987), no. 3, 481–493. (Summary) **89b:62084** 62G15 (62G05)
- (with Watson, Geoffrey S.; Cabrera, Javier) Kernel density estimation with spherical data. *Biometrika* **74** (1987), no. 4, 751–762. (Michael Falk) **89g:62057** 62G05
- On the effect of random norming on the rate of convergence in the central limit theorem. *Ann. Probab.* **16** (1988), no. 3, 1265–1280. (Roy V. Erickson) **89e:60043** 60F05
- Rate of convergence in bootstrap approximations. *Ann. Probab.* **16** (1988), no. 4, 1665–1684. (Gutti J. Babu) **89k:60027** 60F05 (60G30, 62G05)
- (with Marron, J. S.) Choice of kernel order in density estimation. *Ann. Statist.* **16** (1988), no. 1, 161–173. (Lesław Gajek) **89j:62054** 62G05
- Theoretical comparison of bootstrap confidence intervals. With a discussion and a reply by the author. *Ann. Statist.* **16** (1988), no. 3, 927–985. (Lionel Weiss) **89b:62085** 62G15 (62F25)
- On confidence intervals for spatial parameters estimated from nonreplicated data. (French summary) *Biometrics* **44** (1988), no. 1, 271–277. (Chuan Yi Wu) **89e:62041** 62F25
- (with Barndorff-Nielsen, O. E.) On the level-error after Bartlett adjustment of the likelihood ratio statistic. *Biometrika* **75** (1988), no. 2, 374–378. (Sadana Konishi) **89f:62027** 62E20
- (with Härdle, W.; Marron, J. S.) How far are automatically chosen regression smoothing parameters from their optimum? With comments by David W. Scott and Iain Johnstone and a reply by the authors. *J. Amer. Statist. Assoc.* **83** (1988), no. 401, 86–101. (Winston T. Lin) **89g:62060** 62G05 (62J05)
- (with Smith, Richard L.) The kernel method for unfolding sphere size distributions. *J. Comput. Phys.* **74** (1988), no. 2, 409–421. (Pamela J. Davy) **89b:60024** 60D05
- (with Wand, Matthew P.) Minimizing  $L_1$  distance in nonparametric density estimation. *J. Multivariate Anal.* **26** (1988), no. 1, 59–88. (Paul Deheuvels) **89m:62036** 62G05
- (with Seneta, E.) Products of independent, normally attracted random variables. *Probab. Theory Related Fields* **78** (1988), no. 1, 135–142. (Paul Embrechts) **89e:60044** 60F05 (62E20)
- (with Martin, Michael A.) Exact convergence rate of bootstrap quantile variance estimator. *Probab. Theory Related Fields* **80** (1988), no. 2, 261–268. (G. K. Bhattacharyya) **89b:62055** 62G05 (62E20)
- Errata: "On the processing of a motion-blurred image" [SIAM J. Appl. Math. **47** (1987), no. 2, 441–453; MR 88d:68103]. *SIAM J. Appl. Math.* **48** (1988), no. 5, 1215. (Editors) **89b:68152** 68U10 (60K99)
- (with Wand, Matthew P.) On the minimization of absolute distance in kernel density estimation. *Statist. Probab. Lett.* **6** (1988), no. 5, 311–314. (Vishnu Dayal Jha) **89g:62058** 62G05
- A Picard theorem with an application to minimal surfaces. *Trans. Amer. Math. Soc.* **314** (1989), no. 2, 597–603. (Kichoon Yang) **89m:53014** 53A10 (32H25)
- Hall, Philip<sup>3</sup> (with Lakin, W. D.) Instability driven boundary layers on curved walls. *Applied mathematics, fluid mechanics, astrophysics* (Cambridge, MA, 1987), 134–143. *World Sci. Publishing, Singapore*, 1988. (see **89f:76002**) **76E30**
- (with Smith, F. T.) The nonlinear interaction of Tollmien-Schlichting waves and Taylor-Görtler vortices in curved channel flows. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1853, 255–282. (Isom H. Herron) **89f:76038** 76E05 (76D99, 76E30)
- Hall, R. R. The propinquity of divisors. *Acta Arith.* **49** (1987), no. 2, 155–163. (Jean-Marie De Koninck) **89d:11078** 11N25 (11N37)
- Hall, Richard L. The ground-state energy of a system of identical bosons. *J. Math. Phys.* **29** (1988), no. 4, 990–994. (From the summary) **89c:81188** 81F99
- Bounds on the energy of the  $N$ -body problem with linear combinations of power-law potentials and the logarithmic potential. *Phys. Rev. D* (3) **37** (1988), no. 2, 540–545. (Summary) **89a:81017** 81C05
- The equivalent two-body and delta energy lower bounds for  $N$ -boson systems. *J. Phys. A* **22** (1989), no. 2, 179–183. (Summary) **89m:81037** 81C05
- Hall, Shawn A. Real-time control of a nonlinear electromagnetic actuator. *Automatica—J. IFAC* **25** (1989), no. 1, 17–31. (Not in MR) **93C75** (78A60)
- Hall, T. E. Amalgamation for inverse and generalized inverse semigroups. *Trans. Amer. Math. Soc.* **310** (1988), no. 1, 313–323. (P. R. Jones) **89j:20065** 20M10 (08B25, 20M17, 20M18)
- Hall, W. J. (with Huang, Wei-Min) Large deviations and estimation in infinite-dimensional models. *Statist. Probab. Lett.* **6** (1988), no. 6, 433–439. (Vishnu Dayal Jha) **89g:62059** 62C05 (62F10)
- Hall, W. S. (with Aliabadi, M. H.; Phemister, T. G.) Taylor expansions in the boundary element method for Neumann problems. *Boundary elements VII, Vol. I, II* (Como, 1985), 12.31–12.39. *Comput. Mech., Southampton*, 1985. (see **89f:65003**) **65R20**
- Hallam, Thomas G. (with Ma, Zhi En) Effects of parameter fluctuations on community survival. *Math. Biosci.* **86** (1987), no. 1, 35–49. (Summary) **89f:92058** 92A17
- (with Lassiter, Ray R.; Li, Jia<sup>2</sup>; McKinney, William) Physiologically structured population models in risk assessment. *Biomathematics and related computational problems* (Naples, 1987), 197–211. *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89j:92042** 92A15
- (with Li, Jia<sup>2</sup>) Survival in continuous structured populations models. *J. Math. Biol.* **26** (1988), no. 4, 421–433. (V. Sree Hari Rao) **89k:92057** 92A15
- Hallap, T. (with Kiirinen, K.) Lie point transformations admitted by E. Witten equations. (Russian summary) *Eesti NSV Tead. Akad. Toimetised Füüs.-Mat.* **36** (1987), no. 4, 431–433, 440. (Summary) **89b:58230** 58G35 (35A30, 81E13)
- Hallefjord, Åsa (with Bogetoft, Peter; Kok, Matthijs) On the convergence of reference point methods in multiobjective programming. *European J. Oper. Res.* **34** (1988), no. 1, 56–68. (Summary) **89i:90078** 90C31 (90B50)
- (with Jörnsten, K.) Constraint generation and surrogate relaxation. *J. Inform. Optim. Sci.* **9** (1988), no. 2, 215–218. (Summary) **89g:90155** 90C10
- Hallenbeck, David J. (with Ktaczynska, Katarzyna) The absolute and uniform convergence of infinite improper integrals. *Amer. Math. Monthly* **95** (1988), no. 2, 124–126. (Not in MR) **26A42**
- Support points of subordination families. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 414–416. (T. H. MacGregor) **89j:30031** 30C80
- A note on extreme points of subordination classes. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1167–1170. (D. R. Wilken) **89j:30017** 30C45 (30C80)
- Haller, Hans Competition in a stock market with small firms. *Z. Nationalökonom.* **48** (1988), no. 3, 243–261. (conclusion) **89b:90033** 90A11 (90A05, 90A09, 90A14)
- Haller, Kurt Quantum electrodynamics in the temporal gauge. *Phys. Rev. D* (3) **36** (1987), no. 6, 1830–1838. (Summary) **89a:81186** 81L05 (81E13, 81G05)
- Hughes-Hallett, A. J. see Hughes-Hallett, A. J.
- Hallett, Michael see Bunn, Robert. (Not in MR)
- Halliday, I. G. (with Dunne, Gerald V.) Negative-dimensional oscillators. *Nuclear Phys. B* **308** (1988), no. 2–3, 589–618. (Summary) **89j:81064** 81C99
- (with Dunne, Gerald V.; Suranyi, Peter) Generalised bosonic construction of Virasoro algebras. *Phys. Lett. B* **213** (1988), no. 2, 139–143. (Summary) **89f:17015** 17B65 (81E40)
- Hallin, Marc Performances asymptotiques des modèles MA dans la prévision des processus  $q$ -dépendants non stationnaires. [Asymptotic behavior of MA models in the forecasting of nonstationary  $q$ -dependent processes] *Asymptotic theory for non i.i.d. processes* (Luminy-Marseille, 1984), 77–91. *Travaux Rech., 8, Publ. Fac. Univ. Saint-Louis, Brussels*, 1986. (Pham Dinh Tuan) **89b:62151** 62M10 (60G25)
- (with Dufour, Jean-Marie) Tests non paramétriques optimaux pour le modèle autogressif d'ordre un. (English summary) [Optimal nonparametric tests for a first-order autoregressive model] *Ann. Econom. Statist.* **1987**, no. 6–7, 411–434. (Francesco Battaglia) **89b:62187** 62M10 (62G10, 62G20)
- (with Puri, Madan L.) Optimal rank-based procedures for time series analysis: testing an ARMA model against other ARMA models. *Ann. Statist.* **16** (1988), no. 1, 402–432. (Francesco Battaglia) **89b:62188** 62M10
- (with Lefèvre, C.; Puri, Madan L.) On time-reversibility and the uniqueness of moving average representations for non-Gaussian stationary time series. *Biometrika* **75** (1988), no. 1, 170–171. (Robert V. Foutz) **89f:62077** 62M10 (60G10, 62E10)
- (with Puri, Madan L.) Locally asymptotically rank-based procedures for testing autoregressive moving average dependence. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 7, 2031–2035. (Zuzana Prásková) **89e:62119** 62M10 (62G10)
- see also Spatial processes and spatial time series analysis, **89b:62087**
- Hallinwell, J. J. Correlations in the wave function of the Universe. *Phys. Rev. D* (3) **36** (1987), no. 12, 3626–3640. (Asghar Qadir) **89a:83036** 83C45 (81B05, 83F05)
- Hallin, Lars An intensional characterization of the largest bisimulation. *Theoret. Comput. Sci.* **53** (1987), no. 2–3, 335–343. (Ryszard Janicki) **89b:68026** 68Q10 (68Q05)
- On normalization of proofs in set theory. *Dissertationes Math. (Rozprawy Mat.)* **261** (1988), 95 pp. (G. E. Mints) **89j:03050** 03F05 (03E30)
- Hallin, Fernand ★ La structure poétique du monde. (French) [The poetic structure of the world] Copernic, Kepler [Copernicus, Kepler]. *Des Travaux. [Works] Éditions du Seuil, Paris*, 1987. 317 pp. ISBN 2-02-009802-4 (Umberto Barcaro) **89g:01019** 01A40 (01A45)
- Halmos, Paul R. ★ I want to be a mathematician. An autobiography in three parts. MAA Spectrum. *Mathematical Association of America, Washington, DC*, 1985. xvi+421 pp. ISBN 0-88385-445-7 (Editors) **89e:01044** 01A70 (01A80)
- ★ I have a photographic memory. *American Mathematical Society, Providence, RI*, 1987. x+326 pp. ISBN 0-8218-0115-5 (Arthur M. Hobbs) **89f:01067** 01A70 (00A20, 01A60)
- Halperin, Stephen Le complexe de Koszul en algèbre et topologie. (English summary) [The Koszul complex in algebra and topology] *Ann. Inst. Fourier (Grenoble)* **37** (1987), no. 4, 77–97. (Daniel Tanré) **89d:55040** 55R20 (01A65, 13H10)
- The nonvanishing of the deviations of a local ring. *Comment. Math. Helv.* **62** (1987), no. 4, 646–653. (Lučeazar L. Avramov) **89d:13015** EA 89m 13D03 (13H10)
- (with Grove, Karsten) Dupin hypersurfaces, group actions and the double mapping cylinder. *J. Differential Geom.* **26** (1987), no. 3, 429–459. (Thomas E. Cecil) **89b:53113** 53C40 (53C42, 57T15, 57T20)
- (with Lemaire, Jean-Michel) Suites inertes dans les algèbres de Lie graduées ("Autopsie d'un meurtre. II"). [Inertial sequences in graded Lie algebras ("Anatomy of a murder. II")] *Math. Scand.* **61** (1987), no. 1, 39–67. (Yves Félix) **89e:55022** 55P62 (16A62, 17B55)
- (with Lemaire, Jean-Michel) Notions of category in differential algebra. *Algebraic topology—rational homotopy* (Louvain-la-Neuve, 1986), 138–154. *Lecture Notes in Math.*, **1318**, Springer, Berlin-New York, 1988. (Yves Félix) **89b:55023** 55P62 (55P35, 55P40)
- (with Félix, Yves; Thomas, Jean-Claude) Gorenstein spaces. *Adv. in Math.* **71** (1988), no. 1, 92–112. (Marc Aubry) **89k:55019** 55P62 (18G15, 55M30, 55T20)
- (with Félix, Yves; Jacobsson, Carl; Löfwall, Clas; Thomas, Jean-Claude) The radical of the homotopy Lie algebra. *Amer. J. Math.* **110** (1988), no. 2, 301–322. (Lex Renner) **89d:55029** 55P62 (13H99, 17B56, 55P50)

- Torsion gaps in the homotopy of finite complexes. *Topology* 27 (1988), no. 3, 367–375. (Yves Félix) **89h:55024** 55P62 (55Q05)
- (with Félix, Yves; Lemaire, Jean-Michel; Thomas, Jean-Claude) Mod  $p$  loop space homology. *Invent. Math.* 95 (1989), no. 2, 247–262. (John F. Oprea) **89k:55010** 55P35 (55P62)
- Halpern, Herbert** (with Berman, Kenneth A.; Kaftal, Victor; Weiss, Gary) Matrix norm inequalities and the relative Dixmier property. *Integral Equations Operator Theory* 11 (1988), no. 1, 28–48. (J. P. Sproston) **89e:46063** 46L05
- Halpern, Joseph Y.** Reasoning about knowledge: an overview. *Theoretical aspects of reasoning about knowledge* (Monterey, Calif., 1986), 1–17, Morgan Kaufmann, Palo Alto, CA, 1986. (Summary) **89a:03035** 03B45 (03B65, 03B70)
- (with Fagin, Ronald) I'm OK if you're OK: on the notion of trusting communication. *J. Philos. Logic* 17 (1988), no. 4, 329–354. (Summary) **89m:68034** 68Q10 (68M10, 68Q55, 68T25)
- Halpern, Laurence** (with Engquist, Björn) Far field boundary conditions for computation over long time. *Appl. Numer. Math.* 4 (1988), no. 1, 21–45. (David C. Arney) **89c:65109** 65M99 (65N99)
- Conditions aux limites artificielles pour un système incomplettement parabolique. (English summary) [Artificial boundary conditions for incompletely parabolic systems]. *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 8, 413–416. (Alberto Valli) **89m:35180** 35Q10 (35K65, 35L50, 76N10)
- (with Trefethen, Lloyd N.) Wide-angle one-way wave equations. *J. Acoust. Soc. Amer.* 84 (1988), no. 4, 1397–1404. (Summary) **89j:76076** 76Q05 (35L05, 76-08)
- (with Bamberger, A.; Engquist, Björn; Joly, Patrick) Parabolic wave equation approximations in heterogeneous media. *SIAM J. Appl. Math.* 48 (1988), no. 1, 99–128. (Rishi Ram Sharma) **89h:35225** 35L99 (65P05, 73D99, 76Q05, 86A05, 86A15)
- (with Bamberger, A.; Engquist, Björn; Joly, Patrick) Higher order paraxial wave equation approximations in heterogeneous media. *SIAM J. Appl. Math.* 48 (1988), no. 1, 129–154. (Rishi Ram Sharma) **89h:35226** 35L99 (65P05, 73D99, 76Q05, 86A05, 86A15)
- Halpern, Leopold** Erwin Schrödinger's views on gravitational physics during his last years at the University of Vienna and some research ensuing from it. *Found. Phys.* 17 (1987), no. 11, 1113–1130. (H. Treder) **89a:01043** 01A60 (01A70, 83-05)
- Observations of two of our brightest stars. *Differential geometrical methods in theoretical physics* (Como, 1987), 463–471, NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci., 250, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89m:01061** 01A60 (01A70, 81-03)
- Halpern, M. B.** Coordinate-invariant regularization. *Ann. Physics* 178 (1987), no. 2, 272–312. (From the text) **89j:81055** 81E15 (81E13)
- (with Bern, Z.) Diagrammatic methods in phase-space regularization. *Z. Phys. C* 39 (1988), no. 3, 381–391. (Summary) **89j:81121** 81E15 (81E13)
- Halpern, Paul** (with Ilachinski, Andrew) Structurally dynamic cellular automata. *Complex Systems* 1 (1987), no. 3, 503–527. (Summary) **89k:68111** 68Q80 (58F08)
- Halpin, John F.** Indeterminism, indeterminateness, and tense logic. *J. Philos. Logic* 17 (1988), no. 3, 207–219. (Wiesław Dziobiak) **89j:03012** 03B45
- Halse, P.** (with Schmitt, H. A.; Barrett, B. R.; Balantekin, A. B.) Orthosymplectic supersymmetry complementary to combined Bose-Fermi seniority algebras. *Phys. Lett. B* 210 (1988), no. 1–2, 1–4. (Summary) **89j:81263** 81G30
- Hamacher, Horst W.** (with Queyranne, M.)  $K$  best solutions to combinatorial optimization problems. *Ann. Oper. Res.* 4 (1985), no. 1–4, 123–143. (Summary) **89b:90174** 90C27
- (with Chegireddy, Chandra R.) Algorithms for finding  $K$ -best perfect matchings. Rio conference on combinatorial optimization (Rio de Janeiro, 1985). *Discrete Appl. Math.* 18 (1987), no. 2, 155–165. (Summary) **89j:90209** 90C27 (68Q25, 68R10)
- Hamachi, Toshihiro** (with Nasu, Masakazu) Topological conjugacy for 1-block factor maps of subshifts and sofic covers. *Dynamical systems* (College Park, MD, 1986–87), 251–260, *Lecture Notes in Math.*, 1342, Springer, Berlin-New York, 1988. (Ki Hang Kim) **89j:54043** 54H20 (28D99, 58F11)
- Hamad, G.** (with Sobeh, M.) Some global properties for the solution of a special boundary value problem. (Arabic summary) *Delta J. Sci.* 10 (1986), no. 1, 20–40. (L. P. Lebedev) **89c:34038** 34B15 (34A10, 45J05)
- (with Megahed, F.; Salem, Sh.) On some integral inequalities in  $n$  independent variables. *Pure Math. Manuscript* 5 (1986), 29–38. (A. Lupas) **89c:26030** 26D10
- (with Megahed, F.; Salem, Sh.) On some integro-differential inequalities on one variable defined on an infinite interval. *Arch. Math. (Brno)* 23 (1987), no. 1, 23–27. (D. Y. Kasture) **89g:26014** 26D10 (45J05)
- Hamada, Hiroshi** (with Morikawa, Yoshitaka; Yamane, Nobumoto) A fast algorithm for the cosine transform based on successive order reduction of the Chebyshev polynomial. *Electron. Comm. Japan. Part I Comm.* 69 (1986), no. 3, 45–54. (Not in MR) 65T05 (68Q25, 94A11)
- Hamada, K.-J.** Automorphic functions on super Riemann surfaces and fermionic string. *Phys. Lett. B* 201 (1988), no. 4, 440–446. (A. K. Raina) **89f:81181** 81E99 (14H15, 32G15, 81E30)
- (with Takao, Masaru) Spin-4 current algebra. *Phys. Lett. B* 209 (1988), no. 2–3, 247–251. (Philippe Christe) **89j:81077a** 81D15 (17B65, 81E40)
- (with Takao, Masaru) Supersymmetric Yang-Mills theory in two-dimensional superspace and super Kac-Moody algebra. *Phys. Lett. B* 210 (1988), no. 1–2, 120–124. (Roger Brooks) **89h:81105** 81E13 (17B70, 81E40)
- (with Takao, Masaru) Errata: "Spin-4 current algebra". *Phys. Lett. B* 213 (1988), no. 4, 564. (Philippe Christe) **89j:81077b** 81D15 (17B65, 81E40)
- Hamada, Kazuyasu** (with Suzuki, Masayuki) Robust adaptive algorithm with nonlinear decay term. *Internat. J. Control* 47 (1988), no. 3, 665–680. (Andrzej Świerniak) **89h:93033** 93C40 (93C10, 93D25)
- Hamada, Michael S.** (with Tse, S.-K.) A note on the existence of maximum likelihood estimates in linear regression models using interval-censored data. *J. Roy. Statist. Soc. Ser. B* 50 (1988), no. 2, 293–296. (H. Toutenburg) **89j:62086** 62J05
- Hamada, Noboru** Characterization of min-hypers in a finite projective geometry and its applications to error-correcting codes. Designs and finite geometries (Kyoto, 1986). *Sirikaiseikenkyūsho Kōkyōroku* No. 607 (1987), 52–69. (Vikram Jha) **89f:94029** 94B05 (51E20, 94B25)
- (with Deza, M.) Characterization of  $\{2(q+1)+2, 2, t, q\}$ -min-hypers in  $PG(t, q)$  ( $t \geq 3$ ,  $q \geq 5$ ) and its applications to error-correcting codes. *Discrete Math.* 71 (1988), no. 3, 219–231. (Ian Blake) **89j:51007** 51E20 (05B25, 94B05)
- Hamada, Takashi** (with Sato, Iwao<sup>2</sup>; Yoshimura, Izumi) Cycle multiplicities of the line graphs of complete bipartite graphs. *TRU Math.* 23 (1987), no. 1, 117–136. (J. M. S. Simões-Pereira) **89b:05112** 05C38
- Hamada, Toshio** Some results for a multi-armed bandit problem. *J. Japan Statist. Soc.* 18 (1988), no. 1, 87–96. (Toru Nakai) **89m:62097** 62L15 (90C39, 90C40, 90D20)
- Hamada, Yōsaku** (with Takeuchi, Akira) Le domaine d'existence et le prolongement analytique des solutions des problèmes de Goursat et de Cauchy à données singulières. (English summary) [Domain of existence and analytic continuation of solutions of Goursat and Cauchy problems with singular data] *Hyperbolic equations and related topics* (Katata/Kyoto, 1984), 51–62, Academic Press, Boston, MA, 1986. (Summary) **89m:35003** 35A05
- Hamakiotes, Costas C.** (with Berger, Stanley A.) Period tripling in periodic flows through curved pipes. *Phys. Rev. Lett.* 62 (1989), no. 11, 1270–1273. (Summary) **89h:76057** 76E30 (76-04, 76D05)
- Hämäläinen, Heikki O.** (with Honkala, Iiro S.) A new construction for covering codes. Coding techniques and coding theory. *IEEE Trans. Inform. Theory* 34 (1988), no. 5, part II, 1343–1344. (see **89j:94002**) 94B60
- Hämäläinen, M. S.** (with Ilmoniemi, R. J.; Sarvas, J.) Interdependence of information conveyed by the magnetoencephalogram and the electroencephalogram. *Theory and applications of inverse problems* (Helsinki, 1985), 27–37, Pitman Res. Notes Math. Ser., 167, Longman Sci. Tech., Harlow, 1988. (Introduction) **89h:92008** 92A07 (78A60)
- Hämäläinen, R. P.** (with Ehtamo, H.; Ruusunen, J.; Kaitala, V.) Solution for a dynamic bargaining problem with an application to resource management. *J. Optim. Theory Appl.* 59 (1988), no. 3, 391–405. (Theo Driessen) **89j:90292** 90D12 (90A30, 90D25)
- Hamami, M.** (with Jacobsen, S. E.) Exhaustive nondegenerate conical processes for concave minimization on convex polytopes. *Math. Oper. Res.* 13 (1988), no. 3, 479–487. (Vladimir I. Venets) **89m:90139** 90C30
- Hamana, Masamichi** Monotone closures of commutative  $C^*$ -algebras. *Proc. Amer. Math. Soc.* 105 (1989), no. 3, 683–685. (Jean-Luc Sauvageot) **89m:46097** 46L05
- Hamana, Takashi** (with Hinamoto, Takao; Maekawa, Sadao) A generalized study on the synthesis of 2-D state-space digital filters with minimum roundoff noise. *IEEE Trans. Circuits and Systems* 35 (1988), no. 8, 1037–1042. (Not in MR) 94A12 (93B50)
- (with Hinamoto, Takao; Maekawa, Sadao; Venetsanopoulos, Anastasios N.) Approximation and minimum roundoff noise synthesis of 3-D separable-denominator recursive digital filters. *J. Franklin Inst.* 325 (1988), no. 1, 27–47. (Wiktor Kulesza) **89d:93043** 93B50 (68U10, 93E11)
- Hamann, Eloise** (with Houston, Evan; Johnson, Jon L.) Properties of uppers to zero in  $R[x]$ . *Pacific J. Math.* 135 (1988), no. 1, 65–79. (Liam O'Carroll) **89j:13019** 13F20 (13A15, 13B25, 13F10)
- Hamann, Uwe** (with Wildenhain, Günther) Approximation by solutions of elliptic boundary value problems in various function spaces. *Function spaces and applications* (Lund, 1986), 247–252, *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (Gottfried Anger) **89c:35050** 35J30 (35R30, 41A63, 46E15)
- Approximation durch Lösungen elliptischer Randwertprobleme auf geschlossenen Hyperflächen. [Approximation by solutions of elliptic boundary value problems on closed hypersurfaces] *Math. Nachr.* 136 (1988), 285–301. (H. Triebel) **89h:35095a** 35J40 (35A35, 41A30)
- Zum Zusammenhang zwischen der Eindeigkeitseigenschaft des Cauchy-Problems im Kleinen und der Approximation durch Lösungen elliptischer Differentialgleichungen. [On the connection between the property of uniqueness for the Cauchy problem in the small and the approximation by solutions of elliptic differential equations] *Math. Nachr.* 136 (1988), 303–306. (H. Triebel) **89h:35095b** 35J40 (35A35, 41A30)
- Hamano, Fumio** Necessary and sufficient conditions for subspace reachability and controllability of discrete-time, time-invariant linear dynamical systems. *Linear algebra in signals, systems, and control* (Boston, MA, 1986), 556–563, SIAM, Philadelphia, PA, 1988. (W. M. Wonham) **89j:49037** 49E15 (93B05, 93C05, 93C55)
- Hamblen, J. O.** (with Braham, R.) On the behavior of some associative neural networks. *Biol. Cybernet.* 60 (1988), no. 2, 145–151. (Summary) **89j:92011** 92A09
- Hambleton, I.** (with tom Dieck, Tammo) Surgery theory and geometry of representations. DMV Seminar, 11. Birkhäuser Verlag, Basel-Boston, MA, 1988. viii+115 pp. ISBN 3-7643-2204-7 (A. A. Ranicki) **89g:57047** 57R65 (57R67, 57S17)
- (with Kreck, Matthias) Smooth structures on algebraic surfaces with cyclic fundamental group. *Invent. Math.* 91 (1988), no. 1, 53–59. (Ronald J. Stern) **89a:57043** 57R55 (14J27, 57N13, 57R19)
- (with Lee, Ronnie) Finite group actions on  $P^2(\mathbb{C})$ . *J. Algebra* 116 (1988), no. 1, 227–242. (Dennis Snow) **89e:14044** 14L30 (57S17)
- (with Taylor, Laurence R.; Williams, E. B.) On  $G_n(RG)$  for  $G$  a finite nilpotent group. *J. Algebra* 116 (1988), no. 2, 466–470. (L. N. Vaserstein) **89h:20008** 20C05 (16A26, 19A31)
- (with Kreck, Matthias) On the classification of topological 4-manifolds with finite fundamental group. *Math. Ann.* 280 (1988), no. 1, 85–104. (Laurence R. Taylor) **89g:57020** 57N13
- (with Milgram, R. J.; Taylor, Laurence R.; Williams, Bruce) Surgery with finite fundamental group. *Proc. London Math. Soc.* (3) 56 (1988), no. 2, 349–379. (A. A. Ranicki) **89c:57043** 57R67 (19L64, 57R65)
- Hambrusch, Susanne E.** (with Apostolico, Alberto) Finding maximum cliques on circular-arc graphs. *Inform. Process. Lett.* 26 (1987), no. 4, 209–215. (Narsingh Deo) **89a:68094** 68Q25 (05C35, 68Q20, 68R10)
- (with Frederickson, Greg N.) Planar linear arrangements of outerplanar graphs. *IEEE Trans. Circuits and Systems* 35 (1988), no. 3, 323–333. (O. D'Antona) **89h:05078** 05C10 (68R10)
- Hamburg, Peter** Fuzzy sets and De Morgan algebras. Mathematics and fuzziness, Part I (Palma, 1985). *Fuzzy Sets and Systems* 27 (1988), no. 1, 21–29. (Summary) **89d:03056** 03E72 (03G25, 06D30, 54A40)
- Hamdache, Kamel** La méthode de viscosité artificielle pour des modèles de la théorie cinétique discrète. (English summary) [The artificial viscosity method for discrete kinetic models] *J. Méth. Théor. Appl.* 6 (1987), no. 5, 663–689. (Editors) **89f:76064** 76P05 (35Q20, 82A40)
- Problèmes aux limites pour l'équation de Boltzmann: existence globale de solutions. (English summary) [Boundary value problems for the Boltzmann equation: global



- existence of solutions] *Comm. Partial Differential Equations* 13 (1988), no. 7, 813-845. (V. Prottopescu) **89f:45016** 45K05 (76P05, 82A40)
- Hamdy, H. I.** (with Son, M.-S.; Al-Mahmed, M.) On the distribution of bivariate  $F$ -variable. *Comput. Statist. Data Anal.* 6 (1988), no. 2, 157-164. (Not in MR) **62E15**
- (with Mukhopadhyay, Nitit; Darmanto, S.) Simultaneous estimation after selection and ranking and other procedures: the negative exponential case. *Metrika* 35 (1988), no. 5, 275-286. (Lionel Weiss) **89i:62036** 62F07 (62F25)
- habe-Hamed, Ch.** see **Baba-Hamed, Ch.**
- Hamedani, G. G.** On commuting mappings and fixed points. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 30 (1987), 35-41. (Roman Maňka) **89c:54086** 54H25
- (with Walter, Gilbert G.) Bayes estimation of the binomial parameter  $n$ . *Comm. Statist. Theory Methods* 17 (1988), no. 6, 1829-1843. (Summary) **89c:62062** 62F15 (62F10)
- Oscillation theorems for second order functional-differential equations. *J. Math. Anal. Appl.* 135 (1988), no. 1, 237-243. (J. Jarmík) **89j:34101** 34K15 (34C10)
- On two recent characterizations of multivariate normal distribution. *Metrika* 35 (1988), no. 1, 41-47. (Ramesh C. Gupta) **89c:62084** 62H05 (62E10)
- abdel-Hameed, M.** see **Abdel-Hameed, M.**
- shahul Hameed, M. A.** see **Shahul Hameed, M. A.**
- Hamel, Jürgen** see **Central catalogue of old astronomical printed works in the libraries of the GDR (up to 1700)**, **89h:01113**
- Hamer, C. J.** (with Quispel, G. R. W.; Batchelor, M. T.) Conformal anomaly and surface energy for Potts and Ashkin-Teller quantum chains. *J. Phys. A* 20 (1987), no. 16, 5677-5693. (Jacques H. H. Perk) **89g:82069** 82A68 (82A15, 82A25, 82A69)
- (with Batchelor, M. T.) Some finite-size amplitudes and critical exponents for Potts and Ashkin-Teller quantum chains. *J. Phys. A* 21 (1988), no. 3, L173-L178. (Summary) **89a:82043** 82A68 (82A25)
- (with Allton, C. R.) The (1+1)D O(2) model: a finite lattice analysis. *J. Phys. A* 21 (1988), no. 10, 2417-2429. (Summary) **89g:82020** 82A25 (82-04, 82A68)
- (with Batchelor, M. T.; Barber, Michael N.) Logarithmic corrections to finite-size scaling in the four-state Potts model. *J. Statist. Phys.* 52 (1988), no. 3-4, 679-710. (Summary) **89i:82086** 82A68 (82-04)
- Hamid, M.** (with LoVetri, J.) Coulomb wave functions in the theory of the circular paraboloidal waveguide. (French summary) *Canad. J. Phys.* 66 (1988), no. 3, 212-227. (Summary) **89c:78017** 78A50
- Hamid, H.** (with Vrscaj, E. R.) Rayleigh-Schrödinger perturbation theory at large order for radial relativistic Hamiltonians using hypervirial and Hellmann-Feynman theorems. *Phys. Lett. A* 130 (1988), no. 3, 141-146. (Summary) **89f:81049** 81C15
- Hamidoune, Yahya Ould** (with Las Vergnas, Michel) A solution to the Box Game. *Discrete Math.* 65 (1987), no. 2, 157-171. (A. C. Liu) **89b:90236** 90D05
- On a pursuit game on Cayley digraphs. *European J. Combin.* 8 (1987), no. 3, 289-295. (Victor J. Baston) **89d:90264** 90D26 (05C20, 05C25, 90D42)
- (with Las Vergnas, Michel) A solution to the misère Shannon switching game. Proceedings of the First Japan Conference on Graph Theory and Applications (Hakone, 1986). *Discrete Math.* 72 (1988), no. 1-3, 163-166. (Harold Reiter) **89k:90206** 90D42 (05B35, 05C38)
- (with Las Vergnas, Michel) Local edge-connectivity in regular bipartite graphs. *J. Combin. Theory Ser. B* 44 (1988), no. 3, 370-371. (Summary) **89k:05059** 05C40
- Hamill, David C.** (with Jeffries, David J.) Subharmonics and chaos in a controlled switched-mode power converter. *IEEE Trans. Circuits and Systems* 35 (1988), no. 8, 1059-1061. (Not in MR) **94C05** (39A10, 58F13, 93D15)
- Hamilton, A. G.** ★ Logic for mathematicians. Second edition. *Cambridge University Press, Cambridge-New York*, 1988. viii+228 pp. ISBN 0-521-36865-0 (Editors) **89c:03002** 03-01
- Hamilton, D. H.** Extremal boundary problems. *Proc. London Math. Soc.* (3) 56 (1988), no. 1, 101-113. (Johnny E. Brown) **89f:30042** 30C70
- Hamilton, James D.** Rational-expectations econometric analysis of changes in regime: an investigation of the term structure of interest rates. Economic time series with random walk and other nonstationary components. *J. Econom. Dynamics Control* 12 (1988), no. 2-3, 385-423. (see **89j:62004**) **90A20** (62P20)
- Hamilton, N. T.** (with Swerdlow, N. M.; Toomer, G. J.) The Canobic inscription: Ptolemy's earliest work. *From ancient omens to statistical mechanics*, 55-73, *Acta Hist. Sci. Nat. Med.*, 39, Univ. Lib. Copenhagen, Copenhagen, 1987. (Anne Tihon) **89m:01008** 01A20
- Hamilton, Richard S.** The Ricci flow on surfaces. *Mathematics and general relativity* (Santa Cruz, CA, 1986), 237-262, *Contemp. Math.*, 71, Amer. Math. Soc., Providence, RI, 1988. (Dennis M. DeTurck) **89i:53029** 53C20 (35K55, 58G11)
- Hamilton, W. D.** Instability and cycling of two competing hosts with two parasites. *Evolutionary processes and theory* (Israel, 1985), 645-668, *Academic Press, Orlando, FL*, 1986. (Andris Abakus) **89g:92057** 92A17
- Hamm, Helmut A.** Invariants of weighted homogeneous singularities. *Journées Complexes* 85 (Nancy, 1985), 6-13, *Inst. Élie Cartan*, 10, Univ. Nancy, Nancy, 1986. (Ulrich Karras) **89j:32015** 32B30 (14C30, 32J25)
- Hammann, T. F.** (with Chetouani, L.; Guechi, L.) Exact path integral for the ring potential. *Phys. Lett. A* 125 (1987), no. 6-7, 277-281. (Takashi Miura) **89d:81037** 81C35
- Hammarling, S.** The numerical solution of the general Gauss-Markov linear model. *Mathematics in signal processing* (Bath, 1985), 441-456, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see **89d:94004**) **62J05** (93E11, 93E25)
- van Hamme, L.** see **Van Hamme, L.**
- Hammel, Stephen M.** (with Yorke, James A.; Grebogi, Celso) Numerical orbits of chaotic processes represent true orbits. *Bull. Amer. Math. Soc. (N.S.)* 19 (1988), no. 2, 465-469. (Arkady S. Pikovsky) **89m:58180** 58F30 (58F08, 58F13)
- al-Hammer, A. H. A.** see **Al-Hammer, A. H. A.**
- Hammer, Jacob** The concept of rationality and stabilization of nonlinear systems. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 193-204, *North-Holland, Amsterdam-New York*, 1986. (Ewa Bednarczuk) **89c:93155** 93D05 (93B15, 93C10, 93C55)
- Assignment of dynamics for nonlinear recursive feedback systems. *Internat. J. Control* 48 (1988), no. 3, 1183-1212. (Andrzej Świński) **89m:93028** 93B50 (93C10, 93C55, 93D15)
- Hammer, P. L.** (with Crama, Y.; Jaumard, Brigitte; Simeone, B.) Product form parametric representation of the solutions to a quadratic Boolean equation. (French summary) *RAIRO Rech. Opér.* 21 (1987), no. 4, 287-305. (S. Rudeanu) **89e:90141** 90C09 (03G05, 05C99, 06E30)
- (with Golumbic, Martin Charles) Stability in circular arc graphs. *J. Algorithms* 9 (1988), no. 3, 314-320. (Toshimasa Watanabe) **89g:05061** 05C35 (05C70, 05C75, 68R10, 90B10)
- (with Liu, Yan Pei) Ordering relations and 0-1 programming problems. I. (Chinese) *J. Math. Res. Exposition* 8 (1988), no. 2, 315-325. (Yixun Lin) **89k:90110a** 90C09 (06E30, 68Q15, 90C10)
- (with Liu, Yan Pei) Ordering relations and 0-1 programming problems. II. (Chinese. English summary) *J. Math. Res. Exposition* 8 (1988), no. 3, 481-490. (Yixun Lin) **89k:90110b** 90C09 (06E30, 68Q15, 90C10)
- (with Simeone, B.; Lieblich, Th. M.; de Werra, D.) From linear separability to unimodality: a hierarchy of pseudo-Boolean functions. *SIAM J. Discrete Math.* 1 (1988), no. 2, 174-184. (Kaicheng Lu) **89m:68059** 68Q25 (06E30, 90C09, 94C10)
- (with Mahadev, N. V. R.; Peled, U. N.) Some properties of 2-threshold graphs. *Networks* 19 (1989), no. 1, 17-23. (H. T. Lau) **89m:05096** 05C75
- Hamming, R. W.** ★ Numerical methods for scientists and engineers. Reprint of the second edition. *Dover Publications, Inc., New York*, 1986. xii+721 pp. ISBN 0-486-65241-6 (Editors) **89b:65002** 65-01
- Hammond, Peter J.** Consequentialist social norms for public decisions. *Social choice and public decision making*, 3-27, *Cambridge Univ. Press, Cambridge-New York*, 1986. (From the text) **89b:90019** 90A08 (90A10)
- Consequentialist demographic norms and parenting rights. *Soc. Choice Welf.* 5 (1988), no. 2, 127-145. (Not in MR) **92A15** (90A10)
- Hammond, Richard T.** Gravitation, torsion, and electromagnetism. *Gen. Relativity Gravitation* 20 (1988), no. 8, 813-827. (Alan Barnes) **89i:83050** 83D05 (83E10)
- Hammodi, Ahmed** Équation de la chaleur sur une base polygonale. (English summary) [Heat equation on a polygonal basis] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 4, 165-170. (Neil A. Watson) **89h:35139** 35K05
- Hammouri, H.** (with Gauthier, J.-P.) Bilinearization up to output injection. *Systems Control Lett.* 11 (1988), no. 2, 139-149. (Mikolaj Boslawicz) **89i:93021** 93B17 (93C10)
- Ibrahim Hamouda, Kamal el din** see **Ibrahim Hamouda, Kamal el din**
- Hamoui, A.** see **Mathematical analysis and its applications**, **89b:14002**
- Hamstrom, Mary-Elizabeth** Homeotopy groups of 3-manifolds—an isomorphism theorem. *Colloq. Math.* 53 (1987), no. 2, 199-204. (Sergey V. Matveev) **89c:57008** 57N10
- Haray, Sami M.** Some compactifications of a semitopological semigroup. *Semigroup Forum* 34 (1987), no. 3, 341-357. (Summary) **89c:22007** 22A20
- Hamzaoui, C.** (with Boudjema, F.; Rahal, V.; Ren, H. C.) Electromagnetic properties of generalized Majorana particles. *Phys. Rev. Lett.* 62 (1989), no. 8, 852-854. (Summary) **89k:81189** 81G10
- Han, Chang Woo** (with Chung, Ki Soo; Kim, Jae Kwan; Koh, I. G.) Becchi-Rouet-Stora structure and gauge-invariant actions for higher-spin fields. *Phys. Rev. D* (3) 37 (1988), no. 4, 1079-1082. (Richard H. Capps) **89j:81096** 81E13 (81E30, 83E15)
- Han, Chien-Pai** (with Rao, Chaluradi Venkateswara; Ravichandran, J.) Inference based on conditional specification: a second bibliography. *Comm. Statist. Theory Methods* 17 (1988), no. 6, 1945-1964. (Summary) **89c:62001** 62-00 (62J99)
- Han, Chong Kyu** Regularity of mappings of G-structures of Frobenius type. *Proc. Amer. Math. Soc.* 106 (1989), no. 1, 127-137. (M. Kalka) **89i:58006** 58A15 (53C10)
- Han, Chong Zhao** (with Wang, Li Qi; Wan, Bai Wu) A decomposition-coordination algorithm for multivariable self-tuning control. (Chinese. English summary) *Acta Automat. Sinica* 14 (1988), no. 1, 70-75. (Summary) **89j:93078** 93C75 (49D27, 93C35, 93C40)
- Han, Daesoo** (with Kim, Y. S.; Noz, Marilyn E.) Linear canonical transformations of coherent and squeezed states in the Wigner phase space. *Phys. Rev. A* (3) 37 (1988), no. 3, 807-814. (K. Wódkiewicz) **89b:81264** 81K05 (81C25)
- (with Kim, Y. S.) Special relativity and interferometers. *Phys. Rev. A* (3) 37 (1988), no. 11, 4494-4496. (Summary) **89c:83005** 83A05
- Han, De Guang** An elementary property of index functions in Banach algebras. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 13 (1987), no. 3, 199-200. (Josef Wichmann) **89d:46049** 46H05 (47A53)
- A best approximation theorem and spaces of quasitriangular operators. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 13 (1987), no. 4, 144-147. (Shan Li Sun) **89d:47064** 47D15 (47A66)
- Han, De Hong** (with Jiang, Nai Chang) Memory condensation of the Jacobi matrix of pipe network equations and optimization of node symbols in pipe network graphs. (Chinese. English summary) *Hunan Daxue Xuebao* 14 (1987), no. 4, 37-42. (Not in MR) **90B10** (65F99)
- Han, Fuson** (with Lings, David A.) Direct methods: the identification of conditions which simplify the generation of inconsistent quadruples. *Acta Cryst. Sect. A* 44 (1988), no. 5, 657-661. (Summary) **89h:82037** 82A60
- Han, Chang Ryong** (with Li, Gab Dok) Stochastic approximation methods based on observations with biases. (Korean. English summary) *Su-hak* 1988, no. 1, 3-6. (Summary) **89k:62110** 62L20
- Han, Guo Qiang** Asymptotic expressions and superconvergence for odd degree periodic spline interpolation. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* 9 (1987), no. 3, 193-197. (Jian Ke Lu) **89f:65014** 65D07 (41A15)
- Asymptotic expressions and extrapolations of tension spline collocation for second-order ordinary differential equations. (Chinese. English summary) *Math. Numer. Sinica* 10 (1988), no. 1, 18-26. (Summary) **89i:65075** 65L10
- Han, Hou De** (with Wu, Xiao Nan) Approximation of boundary condition at infinity and its application to boundary element methods. *Boundary elements* (Beijing, 1986), 127-134, *Pergamon, Oxford-Elmsford, NY*, 1986. (G. T. Symm) **89i:65073** 65N30
- The boundary finite element methods for Signorini problems. *Numerical methods for partial differential equations* (Shanghai, 1987), 38-49, *Lecture Notes in Math.*, 1297, Springer, Berlin-New York, 1987. (Gérard Lebourg) **89b:65266** 65N30 (35J25)
- Remarks on quasiconforming elements. (Chinese. English summary) *Math. Numer. Sinica* 10 (1988), no. 2, 173-180. (Chuan Miao Chen) **89i:65117** 65N30
- Han, Ji Chang** Radiation solutions and dust solutions of the field equations. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* 4 (1987), no. 2, 123-127. (Yu Fen Liu) **89i:83016** 83C15
- Exact solutions of the Einstein-Maxwell field equations. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* 4 (1987), no. 2, 211-218. (Yu Fen Liu) **89i:83017** 83C15

- Static solutions of the Einstein-Maxwell field equations. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* 5 (1988), no. 1, 20–28. (Yu Fen Liu) **89j:83012** 83C15 (83C50)
- Interior solutions of field equations for a charged sphere. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* 5 (1988), no. 1, 86–95. (Kotik K. Lee) **89j:83018** 83C15 (83C50)
- Han, Ji Ye** (with Yue, Min Yi) A unified approach to feasible direction algorithms for optimization problems with linear constraints. (Chinese) *Chinese J. Oper. Res.* 2 (1983), no. 2, 59–60, 35. (Not in MR) 90C30 (65K05)
- Han, Jia-Yuan** (with Wyman, Bostwick F.) Reachability of linear systems with subspace open constraints. *Linear algebra in signals, systems, and control* (Boston, MA, 1986), 564–575, SIAM, Philadelphia, PA, 1988. (see **89f:00025**) 49E15 (93C05)
- Han, Jian Xun** (with Qin, Xia) The identification of linear continuous-time systems from small samples of input-output data. (Chinese. English summary) *Acta Automat. Sinica* 14 (1988), no. 1, 17–23. (Not in MR) 93B30 (93C05, 93C60)
- Han, Jin Xuan** Using Newton's formula to find directly the general term and summation formula of a linear recurrent sequence of numbers. (Chinese) *Math. Practice Theory* 1988, no. 1, 65–75. (Hugo S. Sun) **89k:11006** 11B37 (05A19, 40A25)
- Han, Jing Luan** (with Zhu, Shuhao; Liu, Liang Shen) Nice operators between ordered unit Banach spaces. (Chinese) *Acta Math. Sinica* 31 (1988), no. 3, 320–325. (Shunhua Sun) **89k:47056** 47B55
- Han, Jing Qing** (with Liu, Yong Qing; Jin, Wei Yan; Qin, Yuan Xun) A criterion for all the roots of an algebraic equation to have negative real parts. (Chinese. English summary) *Control Theory Appl.* 4 (1987), no. 4, 41–47. (Not in MR) 26C10 (93B25)
- Han, Kuang Wei** (with Tsay, Tain Sou) Diagonal dominance design of multivariable feedback control systems using the stability-equality method. *J. Franklin Inst.* 325 (1988), no. 4, 485–503. (Not in MR) 93B50 (93C35)
- (with Tsay, Tain Sou) Limit cycle analysis of nonlinear multivariable feedback control systems. *J. Franklin Inst.* 325 (1988), no. 6, 721–730. (Summary) **89j:93060** 93C10 (34C05)
- Han, Kyung Soo** (with Kim, Woo Chul) A two-stage selection procedure for exponential populations. *J. Korean Statist. Soc.* 16 (1987), no. 1, 37–44. (I. D. Dhariyal) **89g:62037** 62F07
- Han, Mao An** The property of limit sets of continuous flows on surfaces. (Chinese summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* 4 (1987), no. 1, 83–86. (Douglas S. Shafer) **89b:58219** 58G25 (34C35, 34C40)
- The problem of limit cycles of nonlinear equations. (Chinese. English summary) *Nanjing Daxue Xuebao Ziran Xue Ban* 23 (1987), no. 4, 625–636. (Shi Bai) **89m:70040** 70K10 (34C05)
- Conditions for a diffeomorphism to be embedded in a  $C^r$  flow. *Acta Math. Sinica (N.S.)* 4 (1988), no. 2, 111–123. (J. W. Robbins) **89k:58264** 58F99
- Periodic orbits and  $P$  stable orbit closures of continuous flows on surfaces. A Chinese summary appears in Chinese Ann. Math. Ser. A 9 (1988), no. 4, 506. *Chinese Ann. Math. Ser. B* 9 (1988), no. 3, 274–282. (L. Janos) **89m:58172** 58F22 (54H20)
- Embeddings of homeomorphisms in flows and their application. (Chinese. English summary) *J. Math. Res. Exposition* 8 (1988), no. 3, 380–382. (Zhen Xi Dong) **89i:58127** 58F25 (54H20)
- Han, Shi An** The classes of some positive definite unimodular lattices over  $\mathbb{Z}[\sqrt{3}]$  and  $\mathbb{Z}[\sqrt{6}]$ . A Chinese summary appears in Chinese Ann. Math. Ser. A 9 (1988), no. 1, 103. *Chinese Ann. Math. Ser. B* 9 (1988), no. 1, 50–67. (D. G. James) **89k:11024** 11E41 (11R11)
- Han, Shi Fang** Eigenvalue theory of stretching fluid sheets. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 3, 273–285. (Summary) **89c:76021** 76A10 (76A05)
- Han, Shih-Ping** (with Chen, Mei-Qin) A parallel quasi-Newton method for partially separable large scale minimization. *Ann. Oper. Res.* 14 (1988), no. 1–4, 195–211. (Summary) **89j:90215** 90C30
- A successive projection method. *Math. Programming* 40 (1988), no. 1 (Ser. A), 1–14. (S.-C. Fang) **89b:90185** 90C30 (49D07, 90C48)
- (with Lou, Gang) A parallel projection method for solving generalized linear least-squares problems. *Numer. Math.* 53 (1988), no. 3, 255–264. (Tudor Dumitrescu) **89g:65034** 65F10 (90C25)
- (with Lou, Gang) A parallel algorithm for a class of convex programs. *SIAM J. Control Optim.* 26 (1988), no. 2, 345–355. (Giorgio Giorgi) **89c:90159** 90C25 (65K05, 65W05)
- Han, Song Ho** Constructions of feedback control based on stochastic maximum principle. (Korean. English summary) *Su-hak* 1988, no. 2, 17–23. (Not in MR) 49B60 (93C20)
- Han, Te Sun** (with Costa, Max H. M.) Broadcast channels with arbitrarily correlated sources. *IEEE Trans. Inform. Theory* 33 (1987), no. 5, 641–650. (Kaicheng Lu) **89f:94013** 94A40 (94A29)
- Hypothesis testing with multiterminal data compression. *IEEE Trans. Inform. Theory* 33 (1987), no. 6, 759–772. (J. A. Melamed) **89c:62044** 62F03 (94A15)
- Han, Wei Min** (with E, Wei Nan; Huang, Hong Ci) Error analysis of local refinements of polygonal domains. *J. Comput. Math.* 5 (1987), no. 1, 89–94. (H. D. Mittelman) **89e:65119** 65N30
- Han, Wen Bao** On counting absolute trace of powers in  $GF(p^m)$ . *Acta Math. Sinica (N.S.)* 4 (1988), no. 3, 266–269. (Harold N. Ward) **89m:11121** 11T21 (94B15)
- Han, Xiao Feng** On the embedding of distributive lattices into recursive polynomial degrees. *Acta Math. Sinica (N.S.)* 3 (1987), no. 2, 97–102. (Marat M. Arslanov) **89c:03070** 03D30
- Han, Yong-Hyeon** (with Choe, Tae Ho; Hong, Sung Sa) Separated locales. II. *Kyungpook Math. J.* 27 (1987), no. 2, 109–114. (Jiří Rosický) **89j:54002** 54A05 (06D99)
- Han, Yong Sheng** On some properties of the  $s$ -function and the Marcinkiewicz integral. (Chinese. English summary) *Beijing Daxue Xuebao* 1987, no. 5, 21–34. (Weixing Zheng) **89g:42029** 42B20 (42B25)
- A problem in the space  $H^p(\mathbb{R}_+^2 \times \mathbb{R}_+^2)$ . (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 20, 1521–1525. (Not in MR) 42B30
- Han, Yun Rui** The bifurcation problem for a class of nonlinear equations. (Chinese) *J. Math. Res. Exposition* 8 (1988), no. 1, 73–78. (Jing Xian Sun) **89f:47093** 47H15 (58E07)
- Han, Zhen** (with Li, De Yuan) A difference method for degenerate hyperbolic equations of second order. *Numerical methods for partial differential equations* (Shanghai, 1987), 76–97, *Lecture Notes in Math.*, 1297, Springer, Berlin-New York, 1987. (V. D. Glushenkov) **89m:65082** 65M05
- Han, Zheng Zhi** (with Zheng, Yu Fan) Description of properties of decentralized systems by  $(A, B)$ -characteristic subspace. *Frequency domain and state space methods for linear systems* (Stockholm, 1985), 485–499, North-Holland, Amsterdam-New York, 1986. (P. Bertrand) **89b:93018** 93A15 (93B05, 93B07)
- (with Zheng, Yu Fan) An economical control strategy for decentralized systems. (Chinese. English summary) *Acta Automat. Sinica* 14 (1988), no. 4, 281–284. (Not in MR) 93A15
- The consistent condition of disturbance decoupling of decentralized control. (Chinese summary) *Control Theory Appl.* 5 (1988), no. 1, 90–94. (Giuseppe Conte) **89j:93024** 93B27 (93A15, 93C05)
- Han, Zhi Gang** A stable control system with parameter adaptation and its application. (Chinese. English summary) *Control Theory Appl.* 4 (1987), no. 4, 76–81. (Daoyi Xu) **89j:93069** 93C40
- Identification of the family of models  $y(k) = \phi(k)^T A f(k)$  and its application. (Chinese. English summary) *Heilongjiang Daxue Ziran Xue Xuebao* 1987, no. 4, 1–6. (Not in MR) 93B30
- Hanafi, A. R.** Some generalizations of magic squares. *Razi J. Karachi Math. Assoc.* 9 (1987), 9–22. (Heiko Harborth) **89g:05033** 05B15
- Hanafi, Ibrahim M.** (with Mahmoud, Fatma A. M.) Application of the inverse Radon integral equation for the reconstruction of two-dimensional radiographs. (Arabic summary) *Bull. Fac. Sci. Assiut Univ.* 15 (1986), no. 1, 147–158. (Summary) **89c:92009** 92A07
- (with Mahmoud, Fatma A. M.) Application of the inverse Radon integral equation for the reconstruction of two-dimensional radiographs. *J. Natur. Sci. Math.* 27 (1987), no. 2, 57–70. (Viktor Kotov) **89c:92010** 92A07 (44A15, 92-08)
- Hanák, Gábor** Stopping rules for stochastic approximation methods. *Studia Sci. Math. Hungar.* 22 (1987), no. 1–4, 149–167. (V. Dupac) **89f:62068** 62L20 (60G40)
- Hanamura, Masaki** Structure of birational automorphism groups. I. Nonuniruled varieties. *Invent. Math.* 93 (1988), no. 2, 383–403. (L. Bădescu) **89f:14051** 14L15 (14E05, 14L30)
- Hanawa, Kimio** (with Mitsudera, Humio) Frictional coastal trapped waves in a two-layered ocean. *J. Fluid Mech.* 198 (1989), 453–469. (Summary) **89k:86001** 86A05
- Hancock, Don L.** On some generalized Lebesgue functions and transformations. *Colloq. Math.* 54 (1987), no. 2, 295–305. (A. M. Bruckner) **89c:26003** 26A24 (26A16)
- Handa, B. R.** (with Kambo, N. S.) Power of a test for equality of  $K$  exponential location parameters. *Comm. Statist. Theory Methods* 16 (1987), no. 9, 2755–2769. (Summary) **89b:62037** 62F03
- Handa, Sita** (with Srivastava, Hari M.) Some general theorems on generating functions and their applications. *Appl. Math. Lett.* 1 (1988), no. 4, 391–394. (Summary) **89m:33020** 33A65 (33A40)
- Handel, David** Bordism of algebras over Hopf algebras. *J. Pure Appl. Algebra* 47 (1987), no. 3, 243–252. (S. Cormack) **89a:55006** 55N22 (57T05)
- Handel, Michael** (with Franks, John) Entropy and exponential growth of  $\pi_1$  in dimension two. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 753–760. (Artur Oscar Lopes) **89b:58166** 58F15 (28D20, 58F11)
- Handelman, David E.** ★ Positive polynomials, convex integral polytopes, and a random walk problem. *Lecture Notes in Mathematics*, 1282, Springer-Verlag, Berlin-New York, 1987. xii+136 pp. ISBN 3-540-18400-7 (P. McMullen) **89b:06014** 06F25 (13H10, 19K14, 46L99, 52A43, 60G50, 60J15)
- Handelman, Richard A.** (with Bleistein, Norman) ★ Asymptotic expansions of integrals. Second edition. *Dover Publications*, New York, 1986. xvi+425 pp. ISBN 0-486-65082-0 (From the preface) **89d:41049** 41A60
- Handrock-Meyer, S.** (with Dümmel, Siegfried) Uniqueness of the solution of an inverse problem for a quasilinear parabolic equation in divergence form. (German and Russian summaries) *Z. Anal. Anwendungen* 7 (1988), no. 3, 241–246. (Dang Dinh Ang) **89b:35335** 35R30 (35K55)
- Handschel, Günter** Eine Erweiterung der Booleschen Algebra. [An extension of Boolean algebra] *Math. Semesterber.* 35 (1988), no. 1, 81–94. (S. Rudeanu) **89j:03056** 03G15 (03-01)
- Handschug, M.** On equivalent quasidifferentials in the two-dimensional case. *Optimization* 20 (1989), no. 1, 37–43. (Juan-Enrique Martínez-Legaz) **89j:90221** 90C30 (52A10)
- Handscum, D. C.** Recovery of fluid flow fields. *Algorithms for approximation* (Shirvenham, 1985), 531–540, *Inst. Math. Appl. Conf. Ser. New Ser.*, 10, Oxford Univ. Press, New York, 1987. (Summary) **89f:65024** 65D15 (65N30)
- Handy, Carlos R.** Nonnegativity and moment quantization for  $|\Psi|^2$ . *Phys. Lett. A* 124 (1987), no. 6–7, 308–312. (K. V. Bhagwat) **89b:81048** 81C12 (58F07, 58F19, 81-08)
- A solution to the one-dimensional missing moment problem. *J. Math. Phys.* 29 (1988), no. 1, 32–35. (Christian Coatmelec) **89c:44006** 44A60 (41A21, 41A60)
- (with Bessis, Daniel; Williams, Robert M.) Moment problem formulation of the simplified ideal magnetohydrodynamics ballooning equation. *J. Math. Phys.* 29 (1988), no. 3, 717–720. (Summary) **89d:76018** 76E25
- (with Bessis, Daniel; Morley, T. D.) Generating quantum energy bounds by the moment method: a linear-programming approach. *Phys. Rev. A* (3) 37 (1988), no. 12, 4557–4569. (Summary) **89i:81046** 81C99 (44A60, 90C50)
- (with Luo, Lishi; Mantica, Giorgio; Msezane, Alfred Z.) Exact bounds to one-dimensional potential scattering amplitudes through the classical theory of moments. *Phys. Rev. A* (3) 38 (1988), no. 1, 490–493. (Summary) **89i:81227** 81F05 (44A60)
- Hanebaly, Elaidi** (with Arino, Ovide) Solutions presque périodiques de:  $(dx/dt) + \|x\|^{\alpha}x = h(t)$  ( $\alpha \geq 0$ ) sur les espaces de Banach. (English summary) [Almost-periodic solutions of  $(dx/dt) + \|x\|^{\alpha}x = h(t)$  ( $\alpha \geq 0$ ) in Banach spaces] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 16, 707–710. (Summary) **89c:34037** 34C20 (34C27)
- Hänel, D.** (with Schröder, Wolfgang) A multigrid-relaxation scheme for the Navier-Stokes equations. *Multigrid methods* (Copper Mountain, CO, 1987), 555–577, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (Summary) **89f:76012** 76-08 (76D05)
- Hang, C. C.** (with Lim, Cheng-Chew; Leong, K. Y.) Critical control weighting for non-minimum-phase stochastic control systems. *Optimal Control Appl. Methods* 8 (1987), no. 3, 243–252. (Summary) **89k:93228** 93E20
- (with Lim, Cheng-Chew; Teo, Kok-Lay) General pole restriction controller design. *Internat. J. Systems Sci.* 19 (1988), no. 7, 1335–1344. (Not in MR) 93B55 (93B50)
- (with Lim, K. W.; Chong, B. W.) A dual-rate adaptive digital Smith predictor. *Automatica—J. IFAC* 25 (1989), no. 1, 1–16. (Not in MR) 93C40 (93E10)



- Hangan, Théodor** Deux propriétés géométriques des variétés  $(M^3, g)$   $SO(2)$ -isotropes. [Two geometric properties of  $SO(2)$ -isotropic manifolds  $(M^3, g)$ ] *Confer. Sem. Mat. Univ. Bari* No. 221 (1987), 9 pp. (1988). (Chuan Yu Ma) **89j:53039** 53C20 (53C22)
- (with Caddeo, Renzo) Une caractérisation des métriques riemanniennes tridimensionnelles  $SO(2)$ -isotropes. (English summary) [A characterization of  $SO(2)$ -isotropic three-dimensional Riemannian metrics] *Rend. Sem. Fac. Sci. Univ. Cagliari* **57** (1987), no. 1, 61–84. (O. Kowalski) **89m:53064** 53C20 (53C25)
- On totally geodesic distributions of planes. *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 519–530, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Irl Bivens) **89d:58009** 58A30 (53C05, 58A15)
- Hanges, Nicholas** The missing first integral. *J. Differential Equations* **72** (1988), no. 1, 178–188. (H. Jacobowitz) **89j:32016** 32C05 (32F25)
- Hanggi, P.** (with Balakrishnan, Venkataraman; Van den Broeck, C.) First-passage times of non-Markovian processes: the case of a reflecting boundary. *Phys. Rev. A* (3) **38** (1988), no. 8, 4213–4222. (Cheng Xun Wu) **89m:82024** 82A31 (34F05, 60H10, 60J60)
- Hangos, Katalin M.** (with Kármay, Miroslav) One-sided approximation of Bayes rule and its application to regression model with Cauchy noise. *Kybernetika (Prague)* **24** (1988), no. 5, 321–339. (Kurt Marti) **89j:93106** 93E10 (62F15)
- Hanif, Muhammad** (with Brewer, K. R. W.; Tam, S. M.) How nearly can model-based prediction and design-based estimation be reconciled? *J. Amer. Statist. Assoc.* **83** (1988), no. 401, 128–132. (K. R. Shah) **89j:62084** 62J05
- Hanjó, Zeljko** The Newton method for solving nonlinear equations. (Serbo-Croatian) *Matematika (Zagreb)* **15** (1986), no. 3, 37–42. (Gradimir V. Milovanović) **89g:65063** 65H05
- An initial value problem for linear difference equations. (Serbo-Croatian) *Matematika (Zagreb)* **16** (1987), no. 1, 34–50. (Wazir Hasan Abdi) **89k:39002** 39A10 (34A10, 34A30)
- Hanke, Michael** (with März, R.; Neubauer, Andreas) On the regularization of a class of nontransferable differential-algebraic equations. *J. Differential Equations* **73** (1988), no. 1, 119–132. (Summary) **89b:34016** 34A25 (34A45, 34B05)
- On the nonlinear Boltzmann equation of the carrier transport in semiconductors. I. Existence and uniqueness of solutions. (German and Russian summaries) *Z. Anal. Anwendungen* **7** (1988), no. 4, 321–336. (Carlo Cercignani) **89m:82088** 82A70 (45K05, 82A55)
- Hankel, Hermann** Recherches sur les fonctions ayant une infinité d'oscillations et sur les fonctions discontinues. [Research on functions with an infinite number of oscillations and discontinuous functions] Translated from the German by Jeanne Peiffer. *Cahiers du séminaire d'histoire des mathématiques*, 9, 139–209, *Univ. Paris VI, Paris*, 1988. (Desmond Fearnley-Sander) **89f:01090** 01A75 (28-03)
- Hankerson, Darrel** (with Peterson, Allan) On a theorem of Elias for difference equations. *Nonlinear analysis and applications (Arlington, Tex., 1986)*, 229–234, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (Bernd Aulbach) **89a:39002** 39A10 (39A12)
- (with Peterson, Allan) Comparison theorems for eigenvalue problems for  $n$ th order differential equations. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1204–1211. (Curtis C. Travis) **89d:34050** 34B25 (34C10, 47B55)
- Hankin, Chris** (with Burn, Geoffrey; Peyton Jones, Simon) A safe approach to parallel combinator reduction. *Theoret. Comput. Sci.* **56** (1988), no. 1, 17–36. (Dorothy Bollman) **89f:68081** 68Q55
- Hanks, Steve** (with McDermott, Drew) Nonmonotonic logic and temporal projection. *Artificial Intelligence* **33** (1987), no. 3, 379–412. (Summary) **89a:03057** 03B60 (03B45, 68T01)
- Häkel, Michael** (with Wildenhain, Günther) Eine Bemerkung über Stabilität und Approximation in Zusammenhang mit dem Dirichlet-Problem. [A remark on stability and approximation in connection with the Dirichlet problem] *Rostock. Math. Kolloq.* No. 32 (1987), 39–48. (H. Triebel) **89c:35044** 35J40 (31B35)
- Hannabuss, K. C.** (with Carey, A. L.) Temperature states on loop groups, theta functions and the Luttinger model. *J. Funct. Anal.* **75** (1987), no. 1, 128–160. (H. Araki) **89c:22030** 22E65 (47D45, 81E05, 82A15)
- An obstruction to generalising superalgebras. *J. Phys. A* **20** (1987), no. 17, L1135–L1138. (Bani Mitra) **89e:17021** 17B70
- Selfadjoint operators in indefinite inner product spaces. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 155, 333–348. (J. Bogár) **89i:47063** 47B50 (46K10, 47A60)
- Hannák, L.** (with Demetrowics, János; Rónyai, Lajos) On monotone clones. Problems of computer science (Budapest, 1987). *Tanulmányok—MTA Számítástech. Automat. Kutató Int. Budapest No. 202* (1987), 39–62. (I. G. Rosenberg) **89f:08008** 08A40 (06A10)
- Hannan, E. J.** (with Deistler, Manfred) ★ The statistical theory of linear systems. Wiley Series in Probability and Mathematical Statistics: Probability and Mathematical Statistics. John Wiley & Sons, Inc., New York, 1988. xvi+380 pp. ISBN 0-471-80777-X (J. Bokor) **89m:60085** 60G10 (62Mxx, 93-02, 93B15, 93C05, 93C35, 93E12)
- (with Thomson, P. J.) Time delay estimation. *J. Time Ser. Anal.* **9** (1988), no. 1, 21–33. (Jifi Anděl) **89b:62189** 62M10
- Hannan, James** (with Nogami, Yoshiko) Bounds for difference of two integrals of a bounded function in terms of extensions of Lévy metric. *Probability theory and mathematical statistics (Kyoto, 1986)*, 357–365, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (S. T. Rachev) **89c:60031** 60E05 (62E10)
- Hannay, J. H.** (with Ozerio de Almeida, A. M.) Resonant periodic orbits and the semiclassical energy spectrum. *J. Phys. A* **20** (1987), no. 17, 5873–5883. (V. F. Lazutkin) **89m:81051** 81C25 (35P20, 58F14)
- (with Berry, M. V.) Classical nonadiabatic angles. *J. Phys. A* **21** (1988), no. 6, L325–L331. (Summary) **89c:70028** 70H05 (58F05)
- (with Nye, J. F.; Hajnal, J. V.) Phase saddles and dislocations in two-dimensional waves such as the tides. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1852, 7–20. (Summary) **89c:60004** 86A05 (58C27, 58F14, 76B15, 78A99)
- Hannsgen, Kenneth B.** (with Renardy, Yuriko; Wheeler, Robert L.) Effectiveness and robustness with respect to time delays of boundary feedback stabilization in one-dimensional viscoelasticity. *SIAM J. Control Optim.* **26** (1988), no. 5, 1200–1234. (R. F. Datko) **89k:93165** 93D15 (34K35, 45M10, 73F15)
- Hano, Kazuhiro** (with Hirohata, Teisuya) Controllability by two vector fields. *Mem. Osaka Inst. Tech. Ser. A* **32** (1988), no. 2, 37–44. (Peng Nian Chen) **89f:93007** 93B05 (58F40, 93C10)
- Hanousek, Jan** Asymptotic relation of  $M$ - and  $P$ -estimators of location. *Comput. Statist. Data Anal.* **6** (1988), no. 3, 277–284. (J. A. Melamed) **89b:62054** 62F35 (62F10)
- Hanousek, B.** (with Joly, J.-L.) Applications bilinéaires compatibles avec un opérateur hyperbolique. (English summary) [Bilinear mappings compatible with a hyperbolic operator] *Ann. Inst. H. Poincaré Anal. Non Linéaire* **4** (1987), no. 4, 357–376. (Michael Oberguggenberger) **89c:35022** 35B40 (35L40)
- (with Driollet, Denise) Systèmes hyperboliques semi-linéaires conservatifs 1-D. (English summary) [One-dimensional conservative semilinear hyperbolic systems] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 6, 231–234. (Summary) **89j:35082** 35L60
- (with Charrier, P.; Dacorogna, Bernard; Laborde, P.) An existence theorem for slightly compressible materials in nonlinear elasticity. *SIAM J. Math. Anal.* **19** (1988), no. 1, 70–85. (From the introduction) **89m:73013** 73C50 (73C60)
- Hans, M.** (with Gazeau, J.-P.) Conformally invariant wave equations on  $3+2$  de Sitter space. *Group theoretical methods in physics (Varna, 1987)*, 523–529, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (see **89g:81001**) 81D25 (81E20)
- Hanschke, Thomas** Explicit formulas for the characteristics of the  $M/M/2/2$  queue with repeated attempts. *J. Appl. Probab.* **24** (1987), no. 2, 486–494. (Jos H. A. de Smit) **89a:60219** 60K25 (90B22)
- Hansel, D.** (with Jolicoeur, T.; Maillard, J.-M.) Staggered lattice models. *J. Phys. A* **20** (1987), no. 14, 4923–4937. (Paul A. Pearce) **89f:82078** 82A68 (81E25, 82A67)
- (with Luciani, J.-F.) A characteristic of the Lyapunov spectrum for the multichannel Anderson localisation in the thermodynamical limit. *J. Phys. A* **20** (1987), no. 15, L1031–L1038. (Summary) **89c:82055** 82A57
- (with Maillard, J.-M.) Series analysis of the  $q$ -state checkerboard Potts model. *J. Phys. A* **21** (1988), no. 1, 213–225. (Summary) **89b:82109** 82A68
- (with Maillard, J.-M.) Symmetries of models with genus  $> 1$ . *Phys. Lett. A* **133** (1988), no. 1–2, 11–14. (H. N. V. Temperley) **89k:82093** 82A68 (82A69)
- Hansen, Alex** (with Roux, S.) A new algorithm to extract the backbone in a random resistor network. *J. Phys. A* **20** (1987), no. 18, L1281–L1285. (Summary) **89c:82004** 82-08
- (with Guyon, Etienne; Roux, S.) Nonlocal and nonlinear problems in the physics of disordered media. *Far from equilibrium phase transitions (Stigès, 1988)*, 177–193, *Lecture Notes in Phys.*, 319, Springer, Berlin-New York, 1988. (see **89j:82002**) 82A57 (76S05, 82A43)
- A connection between the percolation transition and the onset of chaos in the Kauffman model. *J. Phys. A* **21** (1988), no. 10, 2481–2486. (Summary) **89c:92013** 92A09 (58F40, 82A43)
- (with Batrouni, G.) Fourier acceleration of iterative processes in disordered systems. *J. Statist. Phys.* **52** (1988), no. 3–4, 747–773. (Summary) **89i:82004** 82-08 (82A42, 82A57)
- Hansen, Bjørn G.** On log-concave and log-convex infinitely divisible sequences and densities. *Ann. Probab.* **16** (1988), no. 4, 1832–1839. (Lin-Cheng Zhao) **89i:60030** 60E07
- Hansen, E. R.** An overview of global optimization using interval analysis. *Reliability in computing*, 289–307, *Perspect. Comput.*, 19, Academic Press, Boston, MA, 1988. (see **89j:65011**) 90-02 (65G10, 90Cxx)
- (with Oommen, B. J.) Correction to: “The asymptotic optimality of discretized linear reward-inaction learning automata” [IEEE Trans. Systems Man Cybernet. **14** (1984), no. 3, 542–545; MR 85h:92042]. *IEEE Trans. Systems Man Cybernet.* **18** (1988), no. 2, 332. (Editors) **89c:92068** 92A15 (68T05)
- Hansen, Gerd** see Sienknecht, Hans-Peter, **89j:90078**
- ramlau-Hansen, Henrik** see Ramlau-Hansen, Henrik
- Hansen, Horst** (with Löwe, Michael) Modular algebraic specifications. *Algebraic and logic programming (Gaussig, 1988)*, 168–179, *Math. Res.*, 49, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) 68Q65 (68N05, 68Q50)
- Hansen, J. S.** (with Buhariwala, K. J.) Dynamics of viscoelastic structures. *AIAA J.* **26** (1988), no. 2, 220–227. (Summary) **89c:73031** 73F15
- Hansen, Jean-Pierre** (with Alastuey, Angel; Cléroutin, Jean) Mean field kinetic theory of a classical electron gas in a periodic potential. III. The high-temperature limit in two dimensions. *J. Statist. Phys.* **52** (1988), no. 1–2, 395–421. (Summary) **89h:82028** 82A45 (82A40)
- Hansen, Jennie C.** A functional central limit theorem for random mappings. *Ann. Probab.* **17** (1989), no. 1, 317–332. (David J. Aldous) **89m:60028** 60C05 (60F17)
- Hansen, Johan P.** Codes on the Klein quartic, ideals, and decoding. *IEEE Trans. Inform. Theory* **33** (1987), no. 6, 923–925. (A. T. Vasquez) **89f:11164** 11T71 (94B35)
- Hansen, Kristina** (with Althoen, S. C.; Kugler, L. D.)  $C$ -associative algebras of dimension 4 over  $R$ . *Algebras Groups Geom.* **3** (1986), no. 3, 329–360. (Irvin Roy Hentzel) **89c:17011** 17A99 (17D99)
- (with Althoen, S. C.; Kugler, L. D.) Four-dimensional real algebras satisfying two  $C$ -associative conditions. *Algebras Groups Geom.* **4** (1987), no. 4, 395–419. (Arie H. Boers) **89f:17001** 17A30 (17A35)
- Restriction to  $GL_2(\mathcal{O})$  of supercuspidal representations of  $GL_2(F)$ . *Pacific J. Math.* **130** (1987), no. 2, 327–349. (Allan J. Silberger) **89d:22013** 22E50
- Hansen, Lars Peter** (with Heaton, John C.; Ogaki, Masao) Efficiency bounds implied by multiperiod conditional moment restrictions. *J. Amer. Statist. Assoc.* **83** (1988), no. 403, 863–871. (Bert M. Steece) **89m:62102** 62M10 (62P20)
- Hansen, Morris H.** Some history and reminiscences on survey sampling. *Statist. Sci.* **2** (1987), no. 2, 180–190. (Jon Stene) **89b:62029b** 62D05 (01A70, 01A74, 62-03)
- see also Olkin, Ingram, **89b:62029a**
- Hansen, P. E.** Leslie matrix models: a mathematical survey. *Papers on mathematical ecology*, I, 1–139, *DM, 86-2*, Karl Marx Univ. Econom., Budapest, 1986. (Prajneshu) **89f:92043** 92A15
- Hansen, Per Christian** The truncated SVD as a method for regularization. *BIT* **27** (1987), no. 4, 534–553. (N. N. Abdelmalek) **89a:65068** 65F20 (65F35)
- The 2-norm of random matrices. *J. Comput. Appl. Math.* **23** (1988), no. 1, 117–120. (Paul Deheuvels) **89k:15037** 15A52 (60F99)
- Hansen, Pierre** Minimum sum of diameters clustering. *J. Classification* **4** (1987), no. 2, 215–226. (Summary) **89a:68183** 68T10 (05C70, 68Q25, 92A05)
- (with Roucairol, Catherine) Problème de la bipartition minimale d'un graphe. (English summary) [The minimal bipartition problem for a graph] *RAIRO Rech. Oper.* **21** (1987), no. 4, 325–348. (Mirko Krivánek) **89c:05047** 05C35 (68Q25, 90B10)
- (with Jaumard, Brigitte; Lu, Shi Hui) Approche analytique de l'optimisation globale. (English summary) [Analytical approach to global optimization] *C. R. Acad. Sci. Paris*

- Sér. I Math.* **306** (1988), no. 1, 29–32. (Summary) **89b:90186** 90C30
- (with Labbé, Martine) Algorithms for voting and competitive location on a network. *Transportation Sci.* **22** (1988), no. 4, 278–288. (Summary) **89m:90061** 90B10 (90A08)
- Hansen, Robert G. Auctions with endogenous quantity. *Rand. J. Econom.* **19** (1988), no. 1, 44–58. (Summary) **89c:90053** 90A14
- Hansen, Rodney T. (with Swanson, Leonard G.) The equivalence of the multiplication, pigeonhole, induction, and well ordering principles. *Internat. J. Math. Ed. Sci. Tech.* **19** (1988), no. 1, 129–131. (Perry Smith) **89c:03084** 03E20
- Hansen, Sönke The leading singularity of the scattering kernel for a transparent obstacle. *Math. Ann.* **279** (1987), no. 1, 125–139. (Vesselin M. Petkov) **89a:35157** 35P25 (35L05)
- Stoltenberg-Hansen, V. see Stoltenberg-Hansen, V.
- Hansen, Vagn Lundsgaard Algebra and topology of Weierstrass polynomials. *Exposition. Math.* **5** (1987), no. 3, 267–274. (K. Lamotke) **89b:30004** 30C10 (32B05, 57M12)
- On Steenrod bundles and the van Kampen theorem. *Canad. Math. Bull.* **31** (1988), no. 2, 241–249. (Wolfgang H. Heil) **89c:55031** 55R10
- From geometry to topology. (Danish. English summary) *Normat* **36** (1988), no. 2, 48–60, 90. (Summary) **89b:01042** 01A60 (52–03, 57–03)
- A model for embedding finite coverings defined by principal bundles into bundles of manifolds. *Topology Appl.* **28** (1988), no. 1, 1–9. (Summary) **89g:55026** 55R15 (57M12, 57N35)
- Hansen, Wolfhard Baryage spaces—a natural setting for potential theory. *Potential theory—surveys and problems* (Prague, 1987), 98–117, *Lecture Notes in Math.*, **1344**, Springer, Berlin-New York, 1988. (see **89m:31001**) 31D05
- (with Hueber, H.) Singularity of harmonic measure for sub-Laplacians. (French summary) *Bull. Sci. Math.* (2) **112** (1988), no. 1, 53–64. (Lung Ock Chung) **89m:31007** 31C15 (22E30, 31C25, 58G99)
- (with Hueber, H.) Eigenvalues in potential theory. *J. Differential Equations* **73** (1988), no. 1, 133–152. (R. M. Hervé) **89c:31014** 31D05 (35P05, 47B38)
- Hansen, Bruce (with Herron, David A.) The interior distance ratio in quadrilaterals and inequalities for rings. *Complex Variables Theory Appl.* **9** (1988), no. 4, 321–325. (Lowell Hansen) **89c:30038** 30C60 (30A10, 30C75)
- Hanson, Floyd (with Wazwaz, A.-M.) Singular and turning point resonance: small perturbations—big effects. *Appl. Math. Lett.* **1** (1988), no. 2, 137–140. (Summary) **89g:34091** 34E20
- (with Ryan, Dennis) Optimal harvesting with density dependent random effects. *Natur. Resource Modeling* **2** (1988), no. 3, 439–455. (Summary) **89d:90072** 90A30 (92A15)
- Hanson, M. P. (with Rouvray, D. H.) The use of topological indices to estimate the melting points of organic molecules. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 201–208, *Stud. Phys. Theoret. Chem.*, **51**, Elsevier, Amsterdam-New York, 1987. (see **89h:92038**) 92A40 (82A60)
- Hanson, Morgan A. (with Mond, B.) Convex transformable programming problems and invexity. *J. Inform. Optim. Sci.* **8** (1987), no. 2, 201–207. (R. N. Kaul) **89b:90187** 90C30
- (with Egudo, Richard R.) Multiobjective duality with invexity. *J. Math. Anal. Appl.* **126** (1987), no. 2, 469–477. (R. R. Egudo (Zbl 635:90086)) **89c:90194** 90C31
- (with Rueda, Norma G.) Optimality criteria in mathematical programming involving generalized invexity. *J. Math. Anal. Appl.* **130** (1988), no. 2, 375–385. (Panos M. Pardalos) **89d:90199** 90C30 (90C48)
- Hanssens, G. A characterization of point-line geometries for buildings of spherical type. *Med. Konink. Acad. Wetensch. België* **48** (1986), no. 5, 111–150. (S. V. Tsaranov) **89h:51010** 51D20 (51B25)
- (with Van Maldeghem, H.) A new look at the classical generalized quadrangles. *Ars Combin.* **24** (1987), 199–210. (Stanley E. Payne) **89a:51028** 51E25 (05B30)
- A technique in the classification theory of point-line geometries. *Geom. Dedicata* **24** (1987), no. 1, 85–101. (S. V. Tsaranov) **89h:51009** 51B25 (51D20)
- (with Van Maldeghem, H.) Coordinatization of generalized quadrangles. *Combinatorics '86* (Trento, 1986), 195–207, *Ann. Discrete Math.*, **37**, North-Holland, Amsterdam-New York, 1988. (Stanley E. Payne) **89c:51014** 51E25 (05B30)
- A characterization of point-line geometries for finite buildings. Geometries and groups (Noordwijkerhout, 1986). *Geom. Dedicata* **25** (1988), no. 1–3, 297–315. (S. V. Tsaranov) **89f:51029** 51B25 (20G15, 51D20)
- cruzeiro-Hansson, L. see Cruzeiro-Hansson, L.
- Hantler, S. L. (with Gail, H. R.; Taylor, B. Alan) Analysis of a nonpreemptive priority multiserver queue. *Adv. in Appl. Probab.* **20** (1988), no. 4, 852–879. (Martin J. Fischer) **89i:60180** 60K25 (90B22)
- Hantzschmann, K. (with Thinh, N. X.) Fehleranalyse und rechnergestützte Fehlerabschätzung für eine Klasse von Randwertaufgaben bei gewöhnlichen Differentialgleichungen. [Error analysis and computer-aided error estimates for a class of boundary value problems of ordinary differential equations] *Mathematische Verfahrenstechnik* (Weißig, 1985), 20–32, *Studientexte*, **89**, Tech. Univ. Dresden, Dresden, 1986. (Rolf Rannacher) **89a:65117** 65L10
- Hanuscheck, Randolph (with Rommelfanger, Heinrich; Wolf, Jochen) Linear programming with fuzzy objectives. *Fuzzy Sets and Systems* **29** (1989), no. 1, 31–48. (Summary) **89j:90171** 90C05 (03E72)
- Hanyga, A. (with Fabrizio, M.) Solutions in the variational sense to hyperbolic systems with unbounded coefficients. (Russian and Polish summaries) *Arch. Mech.* **39** (1987), no. 1–2, 27–39. (Hidetoshi Tahara) **89f:35120** 35L15 (35L55)
- Hanzon, B. On a coordinate free prediction error algorithm for system identification. *Modelling, identification and robust control* (Stockholm, 1985), 595–604, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:93077** 93E12 (93C05, 93C55, 93D20)
- A differential-geometric approach to approximate nonlinear filtering. *Geometricalization of statistical theory* (Lancaster, 1987), 219–223, *ULDM Publ.*, Lancaster, 1987. (C. R. Rao) **89j:60079** 60H15 (53B21, 60G35)
- dinh hao Hao see Dinh Hao
- Hao, Bai Lin Bifurcations and chaos in a periodically forced limit cycle oscillator. *Advances in science of China. Physics*, Vol. 1, 113–139, Science Press, Beijing, 1985. (J. A. Louw) **89g:58151** 58F14 (34C15, 58F13, 92A08)
- (with Zhang, Hong Jun; Dai, Jian Hua; Wang, Peng Ye; Jin, Chao Ding) Analytical study of a bimodal map related to optical bistability. *Comm. Theoret. Phys.* **8** (1987), no. 3, 281–294. (Summary) **89a:58203** 58F13 (78A60)
- (with Ananthakrishna, G.; Balakrishnan, Radha) Errata: "Spatially chaotic spin patterns in a field-perturbed Heisenberg chain" [Phys. Lett. A **121** (1987), no. 8–9, 407–410; MR **88c:82029**]. *Phys. Lett. A* **124** (1987), no. 9, 526. (Editors) **89f:82074** 82A68
- Hao, Shou Application of the regularization method to the numerical solution of Abel's integral equation. II. *J. Comput. Math.* **4** (1986), no. 4, 322–328. (V. V. Vasin) **89b:65313** 65R20
- Haouat, Youssef Spectre d'anneaux de polynômes à plusieurs variables sur une suite croissante d'anneaux. [The spectrum of multivariate polynomial rings over an increasing sequence of rings] *Arch. Math. (Basel)* **50** (1988), no. 3, 236–240. (Jean-Luc Chabert) **89c:13009** 13B25
- Spectre d'anneaux de polynômes sur une suite de modules. [The spectrum of polynomial rings over a sequence of modules] *Arch. Math. (Basel)* **51** (1988), no. 4, 303–307. (Liam O'Carroll) **89j:13002** 13A17 (13B25)
- (with Cahen, Paul-Jean) Polynômes, dérivées et différences finies divisées à valeurs entières sur un anneau de pseudo-valuation. (English summary) [Integer-valued polynomials, derivatives and finite divided differences on a pseudovaluation domain] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 14, 581–584. (Jean-Luc Chabert) **89b:13010** 13B25 (13F20)
- (with Cahen, Paul-Jean) Polynômes à valeurs entières sur un anneau de pseudo-valuation. (English summary) [Integer-valued polynomials on a pseudovaluation domain] *Manuscripta Math.* **61** (1988), no. 1, 23–31. (Jean-Luc Chabert) **89f:13007** 13B25 (13F20)
- Happel, Dieter Dynkin algebras. *Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliarin, 37ème année* (Paris, 1985), 1–14, *Lecture Notes in Math.*, **1220**, Springer, Berlin-New York, 1986. (Hagen Meltzer) **89c:16038** 16A64
- Repetitive categories. Singularities, representation of algebras, and vector bundles (Lambrech, 1985), 298–317, *Lecture Notes in Math.*, **1273**, Springer, Berlin-New York, 1987. (Michael M. Kapranov) **89a:16041** 16A64 (18E30)
- On the derived category of a finite-dimensional algebra. *Comment. Math. Helv.* **62** (1987), no. 3, 339–389. (Ibrahim Assem) **89c:16029** 16A46 (16A64, 18E30)
- ★ Triangulated categories in the representation theory of finite-dimensional algebras. London Mathematical Society Lecture Note Series, **119**, Cambridge University Press, Cambridge-New York, 1988. x+208 pp. ISBN 0-521-33922-7 (Alfred G. Wiedemann) **89c:16035** 16A46 (16A48, 16A62, 16A64, 18E30)
- (with Rickard, Jeremy; Schofield, A. H.) Piecewise hereditary algebras. *Bull. London Math. Soc.* **20** (1988), no. 1, 23–28. (Hagen Meltzer) **89c:16039** 16A64
- Hapuarachchi, K. P. Sampling errors of analytic statistics: an empirical investigation. *Comm. Statist. Simulation Comput.* **17** (1988), no. 2, 549–567. (Summary) **89g:62017** 62D05
- Haq, Shamsul Selection of relaxation factors for generalised over relaxation method. *Riazi J. Karachi Math. Assoc.* **9** (1987), 23–27. (H. R. Schwarz) **89b:65079** 65F10
- Hara, Hiroaki (with Obata, Tsunehiro; Lee, Seung Joo) Fluctuation and bifurcation of the path described by generalized random walks. *Phys. Rev. B* (3) **37** (1988), no. 1, 476–486. (Summary) **89a:82059** 82A70 (60J15, 82A41)
- (with Okayama, Seiji) Fractal dimension and scaling behavior of cracks in a random medium: "frequency-rank" distribution described by generalized random walks. *Phys. Rev. B* (3) **37** (1988), no. 16, 9504–9511. (Summary) **89f:82041** 82A42 (73M05, 73S99)
- Hara, Kei (with Yamamoto, Tetsuhiko; Ougita, Kazuyuki) Parameter identification of distributed parameter systems using spline functions. *Internat. J. Systems Sci.* **19** (1988), no. 1, 49–64. (J. P. Babary) **89a:93054** 93E12 (93C20, 93E14, 93E25)
- fuji-Hara, R. see Fuji-Hara, R.
- Hara, Shinji (with Yamamoto, Yutaka; Omata, Tohru; Nakano, Michio) Repetitive control system: a new type servo system for periodic exogenous signals. *IEEE Trans. Automat. Control* **33** (1988), no. 7, 659–668. (Summary) **89d:93056** 93C30 (34K35, 93B40, 93B50, 93D15, 93E11)
- (with Yamamoto, Yutaka) Relationships between internal and external stability for infinite-dimensional systems with applications to a servo problem. *IEEE Trans. Automat. Control* **33** (1988), no. 11, 1044–1052. (Hartmut Logemann) **89m:93043** 93C25 (93D15, 93D20, 93D25)
- (with Sung, Hak-Kyung) Properties of sensitivity and complementary sensitivity functions in single-input single-output digital control systems. *Internat. J. Control* **48** (1988), no. 6, 2429–2439. (Summary) **89j:93076** 93B35
- (with Kondo, R.; Katori, H.) Properties of zeros in digital control systems with computational time delay. *Internat. J. Control* **49** (1989), no. 2, 493–511. (Summary) **89k:93105** 93B55 (93C60, 93D15)
- (with Sung, Hak-Kyung) Sensitivity improvement by a stable controller in SISO digital control systems. *Systems Control Lett.* **12** (1989), no. 2, 123–128. (Not in MR) **93B35**
- Hara, Tadayuki (with Yoneyama, Toshiaki) On the global center of generalized Liénard equation and its application to stability problems. II. *Funkcial. Ekvac.* **31** (1988), no. 2, 221–225. (T. A. Burton) **89j:34068** 34D20
- Hara, Takahiko Detection of multivariate outliers with location slippage or scale inflation in left orthogonally invariant or elliptically contoured distributions. *Ann. Inst. Statist. Math.* **40** (1988), no. 2, 395–406. (Khursheed Alam) **89g:62079** 62H12 (62C15)
- Hara, Takashi (with Hattori, Tetsuya; Kondo, Kei-ichi; Tasaki, Hal) Scalar field theory from statistical mechanics. *Progr. Theoret. Phys. Suppl.* **92** (1987), 1–13. (Claus Montonen) **89c:81082** 81E08 (81–02, 82–02)
- (with Tasaki, Hal) Critical behavior in a system of branched polymers. *Progr. Theoret. Phys. Suppl.* **92** (1987), 14–25. (Anton Bovier) **89f:82054** 82A51 (82A25)
- (with Tasaki, Hal) Rigorous renormalization group analysis of  $\phi^4$  field theory. *Progr. Theoret. Phys. Suppl.* **92** (1987), 26–45. (Henryk Arodz) **89d:81055** 81E08 (81E25, 82A25)
- Hara, Veikko ★ On the delay time for distributed networks. Dissertation, University of Jyväskylä, Jyväskylä, 1988. Bericht [Report], **41**, Universitätt Jyväskylä, Mathematisches Institut, Jyväskylä, 1988. 100 pp. ISBN 951-679-993-0 (François Arbaud) **89m:94022** 94C05 (49D25)
- Harabetian, Edward Rarefactions and large time behavior for parabolic equations and monotone schemes. *Comm. Math. Phys.* **114** (1988), no. 4, 527–536. (Reinhard Redinger) **89d:35084** 35K55 (35B40, 35L65, 47H20)
- A numerical method for computing viscous shock layers. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 220–229,



- Notes Numer. Fluid Mech., 24, Vieweg, Braunschweig, 1989. (see 89j:35007) 76-08 (76L05)
- Harada, Hitoshi** New subhierarchies of the KP hierarchy in the Sato theory. II. Truncation of the KP hierarchy. *J. Phys. Soc. Japan* **56** (1987), no. 11, 3847-3852. (David J. Kaup) **89h:58214** 58G37 (35Q20, 58F07)
- Harada, Keichiro** Another look at the frame shapes of finite groups. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **34** (1987), no. 3, 491-512. (J. Lehner) **89e:11025** 11F20
- Harada, Koji** (with Tsutsui, Izumi) A consistent Gauss law in anomalous gauge theories. *Progr. Theoret. Phys.* **78** (1987), no. 3, 675-679. (Yisong Yang) **89b:81126** 81E13
- (with Tsutsui, Izumi) Revealing the gauge freedom in the path-integral formalism. *Progr. Theoret. Phys.* **78** (1987), no. 4, 878-885. (Introduction) **89e:81089** 81E13 (81C35)
- (with Shizuya, Ken-ichi) Supersymmetric axial anomalies and the Wess-Zumino action. *Nuclear Phys. B* **301** (1988), no. 1, 115-131. (Enore Guadagnini) **89e:81090** 81E13 (81G20)
- (with Tsutsui, Izumi) Operator solutions of the bosonized chiral Schwinger model. *Z. Phys. C* **39** (1988), no. 1, 137-141. (Hans D. Dahmen) **89j:81125** 81E15 (81E40)
- Harada, Manabu** Generalizations of Nakayama ring. VI. Right US-n rings;  $n = 3, 4$ . *Osaka J. Math.* **24** (1987), no. 4, 785-815. (Frans Loonstra) **89f:16026** 16A45
- Generalizations of Nakayama ring. VII. Hereditary rings. *Osaka J. Math.* **25** (1988), no. 2, 419-439. (Frans Loonstra) **89f:16025** 16A35
- Harada, Masanao** (with Kono, Akira) Cohomology mod  $p$  of the 4-connected cover of the classifying space of simple Lie groups. *Homotopy theory and related topics* (Kyoto, 1984), 109-122, *Adv. Stud. Pure Math.*, 9, North-Holland, Amsterdam-New York, 1987. (A. Dold) **89c:55013** 55R35 (55R40)
- Harada, Norio** (with Doi, Shun) Tridiagonal factorization algorithm: a preconditioner for nonsymmetric system solving on vector computers. *J. Inform. Process.* **11** (1987), no. 1, 38-46 (1988). (Summary) **89d:65048** 65F50 (65W05)
- Hărăgus, Dumitru** An abstract nonlinear equation. *An. Univ. Timișoara Ser. Științ. Mat.* **25** (1987), no. 2, 43-49. (Paul G. Schmidt) **89j:35111** 35Q10 (35R20, 47H15)
- Haran, Dan** Quantifier elimination in separably closed fields of finite imperfection degree. *J. Symbolic Logic* **53** (1988), no. 2, 463-469. (Max A. Dickmann) **89i:03057** 03C10 (03C60, 12F10, 12L12)
- Harao, Masateru** (with Iwanuma, Koji) Knowledge representation and inference based on first-order modal logic. *Logic programming '87* (Tokyo, 1987), 236-251, *Lecture Notes in Comput. Sci.*, 315, Springer, Berlin-New York, 1988. (see 89h:68137) 68T30 (03B45, 03B70)
- Harari, Diego** (with Hong, Deog Ki; Ramond, P.; Rodgers, V. G. J.) The superstring, Diff<sup>2</sup>/S<sup>1</sup>, and holomorphic geometry. *Nuclear Phys. B* **294** (1987), no. 2, 556-572. (Kotik K. Lee) **89d:58021** 58D05 (53C80, 58B25, 58F06, 81E30)
- Harari, Sami** Application des codes correcteurs au partage du secret. [Applying correcting codes to secret sharing]. *Traitement Signal* **4** (1987), no. 4, 353-356. (Yvo Desmedt) **89g:94025** 94A60 (11T71, 94B05)
- Harary, Frank** (with Plantholt, Michael) Extremal values for chromatic invariants. *Matematiche (Catania)* **38** (1983), no. 1-2, 65-72 (1987). (Introduction) **89b:05031** 05C35 (05C15)
- (with DeTemple, Duane; Robertson, Jack) Existential partition graphs. *J. Combin. Inform. System Sci.* **9** (1984), no. 4, 193-196. (Edward R. Scheinerman) **89b:05044** 05C75
- The knots and links of Albrecht Dürer. *Atti Accad. Pontaniana (N.S.)* **34** (1985), 97-106 (1986). (Editors) **89a:01016** 01A40 (57M25)
- (with Chartrand, G.; Oellermann, O. R.) On the regulation number of a multigraph. *Graphs Combin.* **1** (1985), no. 2, 137-144. (L. W. Beineke) **89g:05060** 05C35 (05C20)
- (with Morris, F. R.) Graphs and bigraphs with interval and co-interval properties. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 101-106. (J. Sedláček) **89g:05090** 05C75
- (with Schuster, Seymour; Vestergaard, Preben Dahl) Interpolation theorems for the invariants of spanning trees of a given graph: edge-covering. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 107-114. (H. Joseph Straight) **89d:05143** 05C70 (05C05)
- (with Lewinter, Martin) Hypercubes and other recursively defined Hamilton laceable graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **60** (1987), 81-84. (Barry Piazza) **89d:05128** 05C45 (05C75)
- (with Lauri, Josef) The class reconstruction number of maximal planar graphs. *Graphs Combin.* **3** (1987), no. 1, 45-53. (William L. Kocay) **89f:05127** 05C60 (05C75)
- (with Anderson, Marlow) Achievement and avoidance games for generating abelian groups. *Internat. J. Game Theory* **16** (1987), no. 4, 321-325. (Harold Reiter) **89a:90189** 90D42 (20K01)
- (with Plochinski, Ken) On degree achievement and avoidance games for graphs. *Math. Mag.* **60** (1987), no. 5, 316-321. (Edward R. Scheinerman) **89i:05254** 05C99 (90D26, 90D42)
- (with Exoo, G.) Animal-trees and caterpillars are equivalent. *Nat. Acad. Sci. Lett.* **10** (1987), no. 2, 67-69. (Robert C. Brigham) **89a:05111** 05C75 (05C05, 05C50)
- (with DeTemple, Duane; Robertson, Jack) Partition graphs. *Soochow J. Math.* **13** (1987), no. 2, 121-129. (Hubert de Frayssin) **89k:05089** 05C75
- (with Graham, Niall) The number of perfect matchings in a hypercube. *Appl. Math. Lett.* **1** (1988), no. 1, 45-48. (Not in MR) **05C70** (68R10)
- (with Graham, Niall) Covering and packing in graphs. V. Mispacking subcubes in hypercubes. *Comput. Math. Appl.* **15** (1988), no. 4, 267-270. (R. C. Mullin) **89f:05135** 05C70 (05C35)
- Cubical graphs and cubical dimensions. *Comput. Math. Appl.* **15** (1988), no. 4, 271-275. (L. W. Beineke) **89f:05229** 05C35
- (with Hayes, John P.; Wu, Horng-Jyh) A survey of the theory of hypercube graphs. *Comput. Math. Appl.* **15** (1988), no. 4, 277-289. (L. W. Beineke) **89f:05230** 05C75 (05C10, 05C70)
- (with Hsu, D. Frank) Node-graceful graphs. *Comput. Math. Appl.* **15** (1988), no. 4, 291-298. (Yousef Alavi) **89f:05231** 05C75 (05C99)
- (with Lewinter, Martin) The starlike trees which span a hypercube. *Comput. Math. Appl.* **15** (1988), no. 4, 299-302. (H. Joseph Straight) **89e:05070** 05C05
- (with Mezey, Paul G.) Embedding and characterization of quantum chemical reaction graphs on two-dimensional orientable surfaces. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1-3, 205-214. (Gary Haggard) **89e:92065** 92A40 (05C10)
- In memory of Torrence Parsons, 1941-1987. *J. Graph Theory* **12** (1988), no. 2, iii. (Editors) **89i:01079** 01A70
- (with Buckley, Fred; Doty, Lynne L.) On graphs with signed inverses. *Networks* **18** (1988), no. 3, 151-157. (J. Sedláček) **89i:05222** 05C75 (05C50)
- (with Lauri, Josef) On the class-reconstruction number of trees. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 153, 47-60. (R. L. Hemminger) **89b:05074** 05C05 (05C60)
- (with Schuster, Seymour) Interpolation theorems for the independence and domination numbers of spanning trees. *Graph theory in memory of G. A. Dirac* (Sandbjerg, 1985), 221-227, *Ann. Discrete Math.*, 41, North-Holland, Amsterdam-New York, 1989. (B. Zelinka) **89i:05163** 05C35 (05C05, 90B10)
- Harashima, Katsumi** (with Yamada, Shochiro; Kasai, Tamotsu) Analysis of a heuristic algorithm for planar assignment problem. *Electron. Comm. Japan. Part I Comm.* **70** (1987), no. 6, 1-10. (Summary) **89k:90120** 90C10
- Harauz, A.** Asymptotics for some nonlinear hyperbolic equations with a one-dimensional set of rest points. *Bol. Soc. Brasil. Mat.* **17** (1986), no. 2, 51-65. (From the introduction) **89m:35142** 35L70 (35B40)
- (with Komornik, V.) Oscillations in the wave equation. *Nonlinear partial differential equations and their applications. Collège de France seminar, Vol. VIII* (Paris, 1984-1985), 110-119, *Pitman Res. Notes Math. Ser.*, 166, Longman Sci. Tech., Harlow, 1988. (E. C. Young) **89h:35175** 35L05 (35B05)
- Contrôlabilité exacte d'une membrane rectangulaire au moyen d'une fonctionnelle analytique localisée. (English summary) [Exact controllability of a rectangular membrane by means of a localized analytic functional] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 3, 125-128. (Ovidiu Cârja) **89e:49030** 49E15 (46F15, 93B05, 93C20)
- Attractors of asymptotically compact processes and applications to nonlinear partial differential equations. *Comm. Partial Differential Equations* **13** (1988), no. 11, 1383-1414. (Piotr Biler) **89j:58072** 58F12 (35B40, 58D25)
- (with Zuazua, Enrique) Super-solutions of eigenvalue problems and the oscillation properties of second order evolution equations. *J. Differential Equations* **74** (1988), no. 1, 11-28. (Wei Tao Zhang) **89f:35136** 35L70 (35L20, 35P15)
- (with Cazenave, Thierry) Some oscillatory properties of the wave equation in several space dimensions. *J. Funct. Anal.* **76** (1988), no. 1, 87-109. (Paul L. Davis) **89h:35175** 35L05 (35B05)
- (with Youkana, Amar) On a result of K. Masuda concerning reaction-diffusion equations. *Tohoku Math. J. (2)* **40** (1988), no. 1, 159-163. (Otared Kavian) **89f:35112** 35K57
- Harborth, Heiko** Regular point sets with unit distances. *Intuitive geometry* (Siofok, 1985), 239-253, *Colloq. Math. Soc. János Bolyai*, 48, North-Holland, Amsterdam-New York, 1987. (L. M. Kelly) **89d:52023** 52A37
- Fermat-like binomial equations. *Applications of Fibonacci numbers* (San Jose, CA, 1986), 1-5, *Kluwer Acad. Publ., Dordrecht*, 1988. (Md. Fazlee Hossain) **89f:11049** 11D57 (11B39)
- (with Dehnhardt, Knut) Universal tilings of the plane by 0-1-matrices. Proceedings of the Oberwolfach Meeting "Kombinatorik" (1986). *Discrete Math.* **73** (1989), no. 1-2, 65-70. (C. R. J. Clapham) **89m:05040** 05B45 (52A45)
- (with Mengersen, L.) All Ramsey numbers for five vertices and seven or eight edges. Proceedings of the Oberwolfach Meeting "Kombinatorik" (1986). *Discrete Math.* **73** (1989), no. 1-2, 91-98. (C. C. Rousseau) **89k:05075** 05C55
- (with Clapham, C.; Exoo, G.; Mengersen, L.; Sheehan, John) The Ramsey number of  $K_5 - e$ . *J. Graph Theory* **13** (1989), no. 1, 7-15. (Linda Lesniak) **89m:05085** 05C55
- Harbour, M. Glez** (with Drake, J. M.) Calculation of signal delay in integrated interconnections. *IEEE Trans. Circuits and Systems* **36** (1989), no. 2, 272-276. (Christoph Meinel) **89k:94086** 94C05
- Harboure, Eleonor** (with Macias, Roberto A.; Segovia, Carlos) Extrapolation results for classes of weights. *Amer. J. Math.* **110** (1988), no. 3, 383-397. (Wo-Sang Young) **89f:47055** 47B38 (42B25)
- Harboure, Brian** Automorphisms of  $K3$ -like rational surfaces. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 17-28, *Proc. Sympos. Pure Math.*, 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Shigeyuki Kondō) **89f:14044** 14J50 (14J26)
- (with Lang, William E.) Multiple fibers on rational elliptic surfaces. *Trans. Amer. Math. Soc.* **307** (1988), no. 1, 205-223. (Allen B. Altman) **89f:14024** 14J27 (14J26)
- Harder, Albert M.** (with Hicks, Troy L.) Fixed point theory and iteration procedures. *Indian J. Pure Appl. Math.* **19** (1988), no. 1, 17-26. (Ljubomir Čirić) **89a:54056** 54H25
- Harder, G.** Eisenstein cohomology of arithmetic groups. The case  $GL_2$ . *Invent. Math.* **89** (1987), no. 1, 37-118. (Joachim Schwermer) **89b:22018** 22E40 (11F67)
- Eisensteinkohomologie für Gruppen vom Typ  $GU(2, 1)$ . [Eisenstein cohomology for groups of type  $GU(2, 1)$ ] *Math. Ann.* **278** (1987), no. 1-4, 563-592. (O. V. Shvartsman) **89c:11090** 11F75 (22E40, 22E41)
- Hardie, K. A.** (with Kamps, K. H.) The homotopy category of homotopy factorizations. *Algebraic topology, Barcelona, 1986*, 162-170, *Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (Ronald Brown) **89e:55028** 55Q05 (18G55)
- (with Kamps, K. H.) Homotopy over  $B$  and under  $A$ . (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **28** (1987), no. 3, 183-196. (J. W. Rutter) **89d:55032** 55P99
- Hardin, Clyde D., Jr.** (with Cambanis, Stamatis; Weron, Aleksander) Innovations and Wold decompositions of stable sequences. *Probab. Theory Related Fields* **79** (1988), no. 1, 1-27. (Peter J. Brockwell) **89g:60146** 60G25 (62M20)
- Hardin, Douglas P.** (with Takács, Peter; Webb, G. F.) Asymptotic properties of a continuous-space discrete-time population model in a random environment. *J. Math. Biol.* **26** (1988), no. 4, 361-374. (Henk J. A. M. Heijmans) **89j:92052** 92A15 (60K30)
- (with Takács, Peter; Webb, G. F.) A comparison of dispersal strategies for survival of spatially heterogeneous populations. *SIAM J. Appl. Math.* **48** (1988), no. 6, 1396-1423. (R. Shonkwiler) **89k:92054** 92A15 (47H10, 47H15)
- Hardin, Russell** Pragmatic intuitions and rational choice. *Paradoxical effects of social behavior*, 27-36, *Physica, Heidelberg*, 1986. (see 89d:90019) 90A06
- Harding, J.** Boolean factors of orthogonal modular lattices. *Algebra Universalis* **25** (1988), no. 3, 281-282. (From the text) **89k:06014** 06C15

- Harding, Rosalind M.** (with Sokal, Robert R.) Classification of the European language families by genetic distance. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 23, 9370-9372. (Not in MR) 92A90 (92A10)
- Härdle, W.** An effective selection of regression variables when the error distribution is incorrectly specified. *Ann. Inst. Statist. Math.* **39** (1987), no. 3, 533-548. (S. John) **89c:62111** 62J05
- Efficient nonparametric smoothing in high dimensions using interactive graphical techniques. *COMPSTAT 1988* (Copenhagen, 1988), 17-30, *Physica, Heidelberg*, 1988. (see **89i:62004**) 62G05
- (with Tsybakov, A. B.) Robust nonparametric regression with simultaneous scale curve estimation. *Ann. Statist.* **16** (1988), no. 1, 120-135. (Theo Gasser) **89c:62072** 62G05 (62J02)
- (with Janssen, Paul; Serfling, R.) Strong uniform consistency rates for estimators of conditional functionals. *Ann. Statist.* **16** (1988), no. 4, 1428-1449. (Lionel Weiss) **89i:62062** 62G05 (60F15)
- (with Hall, Peter; Marron, J. S.) How far are automatically chosen regression smoothing parameters from their optimum? With comments by David W. Scott and Iain Johnstone and a reply by the authors. *J. Amer. Statist. Assoc.* **83** (1988), no. 401, 86-101. (Winston T. Lin) **89g:62060** 62G05 (62J05)
- (with Bowman, Adrian W.) Bootstrapping in nonparametric regression: local adaptive smoothing and confidence bands. *J. Amer. Statist. Assoc.* **83** (1988), no. 401, 102-110. (Margaret P. Gessaman) **89f:62040** 62G05
- (with Carroll, Raymond J.) Symmetrized nearest neighbor regression estimates. *Statist. Probab. Lett.* **7** (1989), no. 4, 315-318. (Summary) **89k:62052** 62G05
- Hardt, Robert M.** (with Simon, Leon M.) ★ Seminar on geometric measure theory. DMV Seminar, 7. Birkhäuser Verlag, Basel-Boston, MA, 1986. 117 pp. ISBN 3-7643-1815-5 (J. E. Brothers) **89c:49031** 49F20 (28A75)
- Regularity and singularity for energy minimizing maps. *Miniconference on geometry and partial differential equations*, 2 (Canberra, 1986), 50-59, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 12, Austral. Nat. Univ., Canberra, 1987. (Fang Hua Lin) **89a:58028** 58E15 (49F22)
- Singularities in some geometric variational problems. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 540-550, *Amer. Math. Soc., Providence, RI*, 1987. (J. Eells) **89g:58048** 58E15 (49F20)
- Hardy, Godfrey Harold** (with Littlewood, J. E.; Polya, George) ★ Inequalities. Reprint of the 1952 edition. Cambridge Mathematical Library. Cambridge University Press, Cambridge-New York, 1988. xii+324 pp. ISBN 0-521-35880-9 (Editors) **89d:26016** 26Dxx (01A75)
- see also Ramanujan, Srinivasa, **89j:01078**
- Hardy, Graeme** Demicontinuity of Nemitsky operators on Orlicz-Sobolev spaces. *Bull. Austral. Math. Soc.* **37** (1988), no. 1, 29-42. (P. P. Zabrejko) **89c:47083** 47H99 (46E35)
- Hardy, J.** (with Guivarc'h, Y.) Théorèmes limites pour une classe de chaînes de Markov et applications aux difféomorphismes d'Anosov. (English summary) [Limit theorems for a class of Markov chains and applications to Anosov diffeomorphisms] *Ann. Inst. H. Poincaré Probab. Statist.* **24** (1988), no. 1, 73-98. (Manfred Denker) **89m:60080** 60F99 (28D20, 54H20, 58F11, 58F15)
- Hardy, Kenneth** (with Williams, Kenneth S.) Congruences modulo 16 for the class numbers of complex quadratic fields. *J. Number Theory* **27** (1987), no. 2, 178-195. (Kenzo Komatsu) **89a:11114** 11R29 (11A07, 11R11)
- (with Kaplan, Pierre; Williams, Kenneth S.) The representation of a pair of integers by a pair of positive-definite binary quadratic forms. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 847-855. (Yoshio Mimura) **89i:11049** 11E16 (11D85)
- (with Hudson, Richard H.; Richman, David; Williams, Kenneth S.) Determination of all imaginary cyclic quartic fields with class number 2. *Trans. Amer. Math. Soc.* **311** (1989), no. 1, 1-55. (Duncan A. Buell) **89f:11148** 11R16 (11R29)
- Hare, D. E. G.** (with Deville, Robert; Godefroy, G.; Zizler, Václav E.) Differentiability of convex functions and the convex point of continuity property in Banach spaces. *Israel J. Math.* **59** (1987), no. 2, 245-255. (J. H. M. Whitfield) **89d:46017** 46B20 (46G05)
- (with Deville, Robert; Godefroy, G.; Zizler, Václav E.) Phelps spaces and finite-dimensional decompositions. *Bull. Austral. Math. Soc.* **37** (1988), no. 2, 263-271. (P. Saphar) **89b:46015** 46B10
- Hare, E. O.** (with Hedetniemi, S. T.) A linear algorithm for computing the Knight's domination number of a  $k \times n$  chessboard. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 115-130. 68Q20 (05B99, 68R05)
- Hare, Kathryn E.** Arithmetic properties of thin sets. *Pacific J. Math.* **131** (1988), no. 1, 143-155. (D. L. Salinger) **89a:43010** 43A46
- An elementary proof of a result on  $A(p)$  sets. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 829-834. (K. A. Ross) **89m:43012** 43A46
- Properties and examples of  $(L^p, L^q)$  multipliers. *Indiana Univ. Math. J.* **38** (1989), no. 1, 211-227. (Satoru Igari) **89m:43010** 43A22 (42A45, 46E30)
- Hare, William R.** (with Thompson, G. Gerald) Generalized Radon theorems in convex structures. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 131-134. (John R. Reay) **89c:52001** 52A01 (52A20)
- Harel, Alon** (with Nitzan, Shmuel) The libertarian resolution of the Paretian liberal paradox. *Z. Nationalökonom.* **47** (1987), no. 4, 337-352. (From the introduction) **89h:90020** 90A08 (90A07)
- Harel, Arie** (with Zipkin, Paul H.) Strong convexity results for queueing systems. *Oper. Res.* **35** (1987), no. 3, 405-418. (Winfried K. Grassmann) **89a:60220** 60K25 (90B22)
- Sharp bounds and simple approximations for the Erlang delay and loss formulas. *Management Sci.* **34** (1988), no. 8, 959-972. (Summary) **89i:90035a** 90B22
- Erratum to: "Sharp bounds and simple approximations for the Erlang delay and loss formulas". *Management Sci.* **34** (1988), no. 10, 1277. (Editors) **89i:90035b** 90B22
- Harel, David** ★ Algorithms. The spirit of computing. Addison-Wesley Publishing Company, Wokingham, 1987. xiv+425 pp. ISBN 0-201-19240-3 (Claus-Peter Schnorr) **89b:68001** 68-01 (68Qxx)
- On visual formalisms. *Comm. ACM* **31** (1988), no. 5, 514-530. (Summary) **89d:68070** 68R10 (68P15, 68Q10, 68T30)
- Harel, Michel** (with Puri, Madan L.) Weak convergence of weighted multivariate empirical processes under mixing conditions. *Mathematical statistics and probability theory*, Vol. A (Bad Tatzmannsdorf, 1986), 121-141, *Reidel, Dordrecht-Boston, MA-London*, 1987. (Georg Neuhaus) **89a:60090** 60F17 (62G30)
- (with Puri, Madan L.) L'espace  $D_k$  et la convergence faible du processus empirique indexé par rectangles en condition de mélange. (English summary) [The space  $D_k$  and weak convergence for rectangle-indexed empirical processes under mixing conditions] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 4, 207-210. (Summary) **89b:60020** 60B12 (60F17, 62G99)
- Convergence faible de la statistique de rang multidimensionnelle en condition de  $\phi$  mélange. (English summary) [Weak convergence of multidimensional rank statistics under the  $\phi$  mixing condition] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 10, 433-436. (Summary) **89c:62041** 62E20 (62G99)
- (with Puri, Madan L.) Comportement limite de la  $U$ -statistique, de la  $V$ -statistique et d'une statistique de rang à un échantillon pour des processus absolument réguliers non stationnaires. (English summary) [Limiting behavior of  $U$ -statistics,  $V$ -statistics and one sample rank order statistics for nonstationary absolutely regular processes] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 14, 625-628. (Summary) **89d:60042** 60F05 (60F17, 62E20, 62G30)
- Weak convergence of multidimensional rank statistics under  $\phi$ -mixing conditions. *J. Statist. Plann. Inference* **20** (1988), no. 1, 41-63. (Zheng Yan Lin) **89m:60014** 60B10 (60F05, 62G10)
- Hargittai, I.** (with Hargittai, Magdolna) Polyhedral molecular geometries. *Shaping space* (Northampton, Mass., 1984), 172-188, *Design Sci. Collect., Birkhäuser Boston, Boston, MA*, 1988. (see **89b:52016**) 92A40 (52A25)
- see also Crystal symmetries, **89j:00029**
- Hargittai, Magdolna** (with Hargittai, I.) Polyhedral molecular geometries. *Shaping space* (Northampton, Mass., 1984), 172-188, *Design Sci. Collect., Birkhäuser Boston, Boston, MA*, 1988. (see **89b:52016**) 92A40 (52A25)
- Hargreaves, Colin P.** Distributions of runs of consecutive ascending integers with unequal probabilities. *British J. Math. Statist. Psych.* **40** (1987), no. 1, 20-25. (Lyuben R. Mutafchiev) **89j:60019** 60C05 (92A25)
- Hariche, K.** (with Denman, E. D.) On solvents and Lagrange interpolating  $\lambda$ -matrices. *Appl. Math. Comput.* **25** (1988), no. 4, 321-332. (M. Tismenetsky) **89b:15016** 15A22 (65F30)
- Hari Dass, N. D.** The statistical mechanics-particle physics correspondence. *Recent developments in theoretical physics* (Kottayam, 1986), 118-128, *World Sci. Publishing, Singapore*, 1987. (Koichiro Matsuno) **89g:82016** 82A15 (81G05, 81G20)
- Haridi, Self** see IEEE Symposium: Logic Programming, **89j:68008**
- Hariharan, S. I.** Nonlinear acoustic wave propagation in atmosphere. *Quart. Appl. Math.* **45** (1987), no. 4, 735-748. (V. H. Weston) **89b:86005** 86A35 (76Q05)
- A model problem for acoustic wave propagation in the atmosphere. *Computational acoustics*, Vol. 2 (New Haven, Conn., 1986), 65-82, *North-Holland, Amsterdam-New York*, 1988. (V. H. Weston) **89d:76026** 76Q05
- (with Hagstrom, T. M.) Accurate boundary conditions for exterior problems in gas dynamics. *Math. Comp.* **51** (1988), no. 184, 581-597. (David C. Arney) **89b:65232** 65M99 (76N99)
- Harikrishnan, K. P.** (with Nandakumar, V. M.) Evidence for the existence of Sarkovskii ordering in a two-dimensional map. *Phys. Lett. A* **133** (1988), no. 6, 305-308. (Summary) **89k:58214** 58F14 (26A18, 58F13)
- Harinck, Pascale** Fonctions généralisées sur une algèbre de Lie semi-simple réelle. (English summary) [Invariant generalized functions on a semisimple Lie algebra] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 20, 853-856. (Brad Shelton) **89b:22015** 22E30 (46F99)
- haj-Hariri, Hossein** see Haj-Hariri, Hossein
- Harkara, N.** (with Gajic, Z.; Petkovski, Dj.) The recursive algorithm for the optimal static output feedback control problem of linear singularly perturbed systems. *IEEE Trans. Automat. Control* **34** (1989), no. 4, 465-468. (Not in MR) 93B40 (34E15)
- Harker, Patrick T.** (with Vargas, Luis G.) The theory of ratio scale estimation: Saaty's analytic hierarchy process. *Management Sci.* **33** (1987), no. 11, 1383-1403. (Summary) **89i:92066a** 92A25 (90B50)
- (with Vargas, Luis G.) Erratum: "The theory of ratio scale estimation: Saaty's analytic hierarchy process". *Management Sci.* **34** (1988), no. 12, 1511. (Editors) **89i:92066b** 92A25 (90B50)
- Accelerating the convergence of the diagonalization and projection algorithms for finite-dimensional variational inequalities. *Math. Programming* **41** (1988), no. 1 (Ser. A), 29-59. (M. Birioli) **89d:69004** 49A29 (90A14, 90C33)
- Harkleroad, Leon** Fuzzy regressivity and retracability. *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 6, 523-529. (From the introduction) **89j:03043** 03E72 (03D50)
- Harlamov, B. P.** see Kharlamov, B. P.
- Harlamov, V. M.** see Kharlamov, V. M.
- Harley, P. J.** (with Pickering, W. M.) Poisson's equation, hexagonal grids and FFT methods: periodic boundary conditions. *J. Comput. Phys.* **75** (1988), no. 1, 236-243. (David F. Griffiths) **89b:65167** 65N20 (65T05)
- Harlow, Francis H.** Early work in numerical hydrodynamics. Stanislaw Ulam 1909-1984. *Los Alamos Sci. No. 15 Special Issue* (1987), 144. (see **89m:01133a**) 01A60
- (with Besnard, Didier; Johnson, Norman Lee; Rauenzahn, Rick; Wolfe, Jonathan) Instabilities and turbulence. Stanislaw Ulam 1909-1984. *Los Alamos Sci. No. 15 Special Issue* (1987), 145-174. (see **89m:01133a**) 76E15
- Harman, Blahoslav** Strengthening of maximal ergodic theorem. *Proceedings of the conference on ergodic theory and related topics, II* (Georgenthal, 1986), 62-64, *Teubner-Texte Math.*, 94, Teubner, Leipzig, 1987. (R. Anantharaman) **89d:28011** 28D05
- Harman, Glyn** Metric Diophantine approximation with two restricted variables. III. Two prime numbers. *J. Number Theory* **29** (1988), no. 3, 364-375. (Carlo Viola) **89b:11039** 11J83
- Metric Diophantine approximation with two restricted variables. I. Two square-free integers, or integers in arithmetic progressions. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 2, 197-206. (Carlo Viola) **89b:11038** 11J83
- Metric Diophantine approximation with two restricted variables. II. A prime and a square-free integer. *Mathematika* **35** (1988), no. 1, 59-68. (Carlo Viola) **89m:11069** 11J83



- Harman, P. M.** Newton to Maxwell: the *Principia* and British physics. Newton's *Principia* and its legacy. *Notes and Records Roy. Soc. London* **42** (1988), no. 1, 75–96. (H. Treder) **89c:01004** 01A05
- Harmand, P.** (with Rao, T. S. S. R. K.) An intersection property of balls and relations with  $M$ -ideals. *Math. Z.* **197** (1988), no. 2, 277–290. (J. Diestel) **89b:46026** 46B20
- Harminc, Matěj** Cardinality of the system of all sequential convergences on an abelian lattice ordered group. *Czechoslovak Math. J.* **37**(112) (1987), no. 4, 533–546. (Introduction) **89h:06007** 06F20
- Harms, B.** (with Clavelli, L.; Cox, P. H.) Operatorial Chan-Paton factors. *Phys. Rev. D* (3) **36** (1987), no. 12, 3747–3754. (Tsou Sheung Tsun) **89e:81140** 81E99 (81E30)
- (with Clavelli, L.) Excited-state vertices for type-I superstrings. *Phys. Rev. D* (3) **37** (1988), no. 12, 3622–3627. (Summary) **89h:81249** 81F15 (81D15, 81E30, 81E99)
- (with Clavelli, L.; Cox, P. H.) Finiteness of lower-dimensional open-string theories. *Phys. Rev. Lett.* **61** (1988), no. 7, 787–790. (Summary) **89f:81164** 81E99 (81E30)
- Harms, Janelle J.** (with Colbourn, Charles J.) Partitions into indecomposable triple systems. *Combinatorial design theory*, 107–118, *North-Holland Math. Stud.*, 149, North-Holland, Amsterdam-New York, 1987. (Summary) **89g:05020** 05B05
- Harms, S.** (with Beyer, G.) Ableitung und Realisierung eines Algorithmus zum Schnitt zweier Quadriken. [Derivation and realization of an algorithm for the intersection of two quadrics] *Computergeometrie (Johanngeorgenstadt, 1986)*, 5–10, *Studientexte*, 92, Tech. Univ. Dresden, Dresden, 1986. (see **89b:65043a**) 65D10
- Harnad, J.** (with Adams, M. R.; Previato, E.) Isospectral Hamiltonian flows in finite and infinite dimensions. I. Generalized Moser systems and moment maps into loop algebras. *Comm. Math. Phys.* **117** (1988), no. 3, 451–500. (Jair Koiller) **89k:58112** 58F07 (14H40, 58F05, 70H05)
- Harnick, V.** see Spalt, Detlef D., **89d:01053**
- Harnos, Z.** Agricultural models. *Economic-ecological modeling*, 100–116, *Stud. Regional Sci. Urban Econom.*, 16, North-Holland, Amsterdam-New York, 1987. (see **89d:90076**) 90A30
- Harpar, Giera** The nonoptimality of the over-the-counter options dividend protection. *Econom. Lett.* **27** (1988), no. 1, 55–59. (Not in MR) **90A09**
- de la Harpe, Pierre** (with Wenzl, Hans) Opérations sur les rayons spectraux de matrices symétriques entières positives. [English summary] [Operations on the spectral radii of positive integral symmetric matrices] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 17, 733–736. (Frederick Goodman) **89h:15026** 15A36 (58F11)
- Introduction to knot and link polynomials. *Fractals, quasicrystals, chaos, knots and algebraic quantum mechanics (Maratea, 1987)*, 233–263, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 235, Kluwer Acad. Publ., Dordrecht, 1988. (Józef H. Przytycki) **89m:57004** 57M25 (32B30, 58C27, 92A09)
- On groups of smooth maps into a simple compact Lie group. *Comment. Math. Helv.* **63** (1988), no. 3, 450–463. (Hideki Omori) **89j:58013** 58D15 (22E65, 58D05)
- Harper, David G.** (with Blake, Robert W.) Energetics of piscivorous predator-prey interactions. *J. Theoret. Biol.* **134** (1988), no. 1, 59–76. (Summary) **89h:92064** 92A18 (92A15)
- Harper, J. F.** The rear stagnation region of a bubble rising steadily in a dilute surfactant solution. *Quart. J. Mech. Appl. Math.* **41** (1988), no. 2, 203–213. (Summary) **89f:76079** 76T05
- Harper, James D.** Estimating the sum of alternating series. *College Math. J.* **19** (1988), no. 2, 149–153. (Not in MR) **40A25**
- Harper, John R.** (with Zabrodsky, A.) Evaluating a  $p$ th order cohomology operation. *Publ. Mat.* **32** (1988), no. 1, 61–78. (J. F. Adams) **89h:55030** 55S20 (55P45)
- Harrell, Evans M., II** On the extension of Ambarzumian's inverse spectral theorem to compact symmetric spaces. *Amer. J. Math.* **109** (1987), no. 5, 787–795. (Stephan Rempel) **89c:35129** 35P25 (35R30, 58G25)
- (with Geronimo, J. S.; Van Assche, Walter) On the asymptotic distribution of eigenvalues of banded matrices. *Constr. Approx.* **4** (1988), no. 4, 403–417. (Jesús S. Dehesa) **89j:15017** 15A18 (33A65, 39A70, 42C05, 82A42)
- Harriman, John E.** Some properties of the Husimi function. *J. Chem. Phys.* **88** (1988), no. 10, 6399–6408. (Summary) **89g:81022** 81C25
- Harrington, Joseph E., Jr.** Finite rationalizability and cooperation in the finitely repeated prisoners' dilemma. *Econom. Lett.* **23** (1987), no. 3, 233–237. (O. Opitz) **89g:90246** 90D20 (90D05)
- Oligopolistic entry deterrence under incomplete information. *Rand. J. Econom.* **18** (1987), no. 2, 211–231. (Summary) **89d:90047** 90A14
- Harrington, Lee** (with Baldwin, John T.) Trivial pursuit: remarks on the main gap. Stability in model theory (Trento, 1984). *Ann. Pure Appl. Logic* **34** (1987), no. 3, 209–230. (Steven Buechler) **89h:03055** 03C45
- Harriott, Tina A.** (with Williams, Jeffrey George) Exact solutions of the Einstein field equations for a topologically nontrivial metric. *J. Math. Phys.* **29** (1988), no. 1, 179–181. (Shin-ichi Kitamura) **89h:83024** 83C15
- Harris, A. Brooks** Averages over percolation clusters on a Cayley tree. *J. Phys. A* **20** (1987), no. 15, 5405–5408. (Summary) **89g:82047** 82A43
- (with Meir, Yigal; Aharony, Amnon) Diffusion on percolating clusters. *Phys. Rev. B* (3) **36** (1987), no. 16, 8752–8764. (Summary) **89c:82044** 82A43
- (with Aharony, Amnon) Flory approximation for self-avoiding walks on fractals. *J. Statist. Phys.* **54** (1989), no. 3–4, 1091–1097. (Summary) **89m:82050** 82A51 (82A41)
- (with Meir, Yigal; Aharony, Amnon) Percolation in negative field and lattice animals. *Phys. Rev. B* (3) **39** (1989), no. 1, 649–656. (Summary) **89k:82058** 82A43 (82A25, 82A67)
- Harris, A. J.** (with Bollobás, B.) List-colourings of graphs. *Graphs Combin.* **1** (1985), no. 2, 115–127. (Alan Tucker) **89e:05086** 05C15
- Harris, B. J.** On the asymptotic properties of linear differential equations. *Mathematika* **34** (1987), no. 2, 187–198. (L. Janos) **89f:34077** 34E05 (34A30)
- An exact method for the calculation of certain Titchmarsh-Weyl  $m$ -functions. *Proc. Roy. Soc. Edinburgh Sect. A* **106** (1987), no. 1–2, 137–142. (A. C. Garibaldi) **89b:34052** 34B20
- A note on a paper of Atkinson concerning the asymptotics of an eigenvalue problem with interior singularity. *Proc. Roy. Soc. Edinburgh Sect. A* **110** (1988), no. 1–2, 63–71. (Zhaojun Liang) **89j:34031** 34B25 (34C20)
- An inverse problem involving the Titchmarsh-Weyl  $m$ -function. *Proc. Roy. Soc. Edinburgh Sect. A* **110** (1988), no. 3–4, 305–309. (John Adam) **89k:34027** 34B20 (34A55, 35P05)
- Harris, Bernard** (with Marden, Morris; Park, Chong Jin) The distribution of the number of empty cells in a generalized random allocation scheme. *Random graphs '85 (Poznań, 1985)*, 77–90, *North-Holland Math. Stud.*, 144, North-Holland, Amsterdam-New York, 1987. (Lars Holst) **89b:60027** 60C05 (60F05)
- Harris, Bruno** An analytic function and iterated integrals. *Compositio Math.* **65** (1988), no. 2, 209–221. (Mark Scheingorn) **89c:11080** 11F66 (30F30, 30F35)
- Harris, Carl M.** (with Prabhu, N. U.) Stochastic comparisons for single-server queues. *Naval Res. Logist.* **34** (1987), no. 4, 555–567. (T. Rolski) **89b:60214** 60K25 (90B22)
- (with Marchal, William G.) State dependence in  $M/G/1$  server-vacation models. *Oper. Res.* **36** (1988), no. 4, 560–565. (Summary) **89g:60280** 60K25 (90B22)
- Harris, D. J.** (with Edmunds, D. E.; Evans, W. D.) Approximation numbers of certain Volterra integral operators. *J. London Math. Soc.* (2) **37** (1988), no. 3, 471–489. (Bernd Carl) **89k:47078** 47G05 (41A46, 45D05, 47B10)
- Harris, John Alvin** Local algebraic and holomorphic invariants for a real-analytic surface in complex space. *Géométrie algébrique et applications, III (La Rabida, 1984)*, 131–139, *Travaux en Cours*, 24, Hermann, Paris, 1987. (Herwig Hauser) **89a:32007** 32B05
- (with Martin, Clyde Franklin) Large roots yield large coefficients. An addendum to: "The roots of a polynomial vary continuously as a function of the coefficients" [Proc. Amer. Math. Soc. **100** (1987), no. 2, 390–392; MR 88h:30006]. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 993–994. (Summary) **89c:26026** 26C10 (30C15)
- Harris, J. M.** (with Ramm, A. G.) Inversion of the acoustic well to well data. *Appl. Math. Lett.* **1** (1988), no. 2, 127–131. (Not in MR) **86A99**
- Harris, Joe** see Harris, Joseph Daniel
- Harris, John C.** (with Kuhn, Nicholas J.) Stable decompositions of classifying spaces of finite abelian  $p$ -groups. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 3, 427–449. (J. F. Adams) **89d:55021** 55P42
- Harris, Joseph Daniel** (with Eisenbud, David) On varieties of minimal degree (a centennial account). *Algebraic geometry, Bowdoin, 1985 (Brunswick, Maine, 1985)*, 3–13, *Proc. Sympos. Pure Math.*, 46, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Allen B. Altman) **89f:14042** 14J40 (14J26)
- Curves and their moduli. *Algebraic geometry, Bowdoin, 1985 (Brunswick, Maine, 1985)*, 99–143, *Proc. Sympos. Pure Math.*, 46, Part 1, Amer. Math. Soc., Providence, RI, 1987. (H. Lange) **89h:14023** 14H10 (14H15, 30F20)
- An introduction to the moduli space of curves. *Mathematical aspects of string theory (San Diego, Calif., 1986)*, 285–312, *Adv. Ser. Math. Phys.*, 1, World Sci. Publishing, Singapore, 1987. (see **89m:81001**) 14H15 (14H10, 32G15)
- (with Diaz, Steven) Geometry of Severi varieties. II. Independence of divisor classes and examples. *Algebraic geometry (Sundance, UT, 1986)*, 23–50, *Lecture Notes in Math.*, 1311, Springer, Berlin-New York, 1988. (R. F. Lax) **89g:14014** 14H10 (14C22, 14N10)
- (with Eisenbud, David) Vector spaces of matrices of low rank. *Adv. in Math.* **70** (1988), no. 2, 135–155. (Jean-Marc Drezet) **89j:14010** 14F05 (15A03)
- (with Cornalba, Maurizio) Divisor classes associated to families of stable varieties, with applications to the moduli space of curves. *Ann. Sci. École Norm. Sup.* (4) **21** (1988), no. 3, 455–475. (Eckart Viehweg) **89j:14019** 14H10 (14D20)
- (with Ciliberto, Ciro; Miranda, Rick) On the surjectivity of the Wahl map. *Duke Math. J.* **57** (1988), no. 3, 829–858. (I. Dolgachev) **89m:14010** 14H10 (14J28)
- (with Ciliberto, Ciro; Miranda, Rick) General components of the Noether-Lefschetz locus and their density in the space of all surfaces. *Math. Ann.* **282** (1988), no. 4, 667–680. (Marco Andreatta) **89k:14061** 14J25 (14C22)
- (with Moore, Gregory W.; Nelson, Philip C.; Singer, Isadore M.) Errata: "Modular forms and the cosmological constant" [Phys. Lett. B **178** (1986), no. 2–3, 167–173; MR 87m:81170]. *Phys. Lett. B* **201** (1988), no. 4, 579. (Editors) **89c:81087** 81E20 (11F55, 32G15, 81E30)
- (with Diaz, Steven) Geometry of the Severi variety. *Trans. Amer. Math. Soc.* **309** (1988), no. 1, 1–34. (H. Lange) **89i:14018** 14H10
- (with Diaz, Steven) Ideals associated to deformations of singular plane curves. *Trans. Amer. Math. Soc.* **309** (1988), no. 2, 433–468. (Philippe Carbonne) **89m:14003** 14B07 (14H20)
- see also Loeser, François, **89d:14038**
- Harris, Lawrence** see Bayard, David S., **89k:93235**
- Harris, Morton E.** On classical Clifford theory. *Trans. Amer. Math. Soc.* **309** (1988), no. 2, 831–842. (Richard Andrew Davis) **89i:20023** 20C20 (16A26, 20C05)
- Harris, Steven G.** Closed and complete spacelike hypersurfaces in Minkowski space. *Classical Quantum Gravity* **5** (1988), no. 1, 111–119. (Martin A. Magid) **89c:53097** 53C50
- Complete spacelike immersions with topology. *Classical Quantum Gravity* **5** (1988), no. 6, 833–838. (Paul E. Ehrlich) **89d:53112** 53C50
- Harrison, B. Kent** (with Papachristou, C. J.) Isogroups of differential ideals of vector-valued differential forms: application to partial differential equations. *Acta Appl. Math.* **11** (1988), no. 2, 155–175. (C. Rogers) **89c:58005** 58A15 (35A30, 35Q20, 53C80, 58G35)
- (with Papachristou, C. J.) Nonlocal symmetries and Bäcklund transformations for the self-dual Yang-Mills system. *J. Math. Phys.* **29** (1988), no. 1, 238–243. (Jouko Mickelsson) **89h:58186** 58F37 (58F07, 81E13)
- (with Papachristou, C. J.) Bäcklund transformations and local conservation laws for self-dual Yang-Mills fields with arbitrary gauge group. *Phys. Lett. A* **127** (1988), no. 3, 167–170. (R. S. Ward) **89d:58113** 58F37 (35Q20, 81E13)
- Harrison, David Kent** (with Pareigis, Bodo) Witt rings of higher degree forms. *Comm. Algebra* **16** (1988), no. 6, 1275–1313. (A. Pröszynski) **89j:11036** 11E76 (11E81, 19G12)
- (with DeMeyer, F. R.; Miranda, Rick) Quadratic forms over  $\mathbb{Q}$  and Galois extensions of commutative rings. *Mem. Amer. Math. Soc.* **77** (1989), no. 394, viii+63 pp. (Lindsay N. Childs) **89m:11036** 11E81 (11R18, 13B05, 19G12)
- Harrison, J. Michael** (with Williams, Ruth J.) Brownian models of open queuing networks with homogeneous customer populations. *Stochastics* **22** (1987), no. 2, 77–115. (Martin I. Reiman) **89b:60215** 60K25 (60F17, 60J65, 90B22)
- Brownian models of queueing networks with heterogeneous customer populations. *Stochastic differential systems, stochastic control theory and applications (Minneapolis, Minn., 1986)*, 147–186, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (Summary) **89c:60105** 60K25 (90B22)

- Harrison, Jenny C.  $C^2$  counterexamples to the Seifert conjecture. *Topology* 27 (1988), no. 3, 249–278. (John Cantwell) 89m:58167 58F18 (57R30)
- Harrison, P. G. (with Khoshnevisan, H.) Algebraic transformation techniques for functional languages. *Comput. J.* 31 (1988), no. 3, 229–242. (Not in MR) 68N05 (68N15)
- Linearisation: an optimisation for nonlinear functional programs. *Sci. Comput. Programming* 10 (1988), no. 3, 281–318. (Summary) 89h:68014 68N15 (68T25)
- Harrison, Terry P. (with Chatterjee, Kalyan) The value of information in competitive bidding. *European J. Oper. Res.* 36 (1988), no. 3, 322–333. (Summary) 89e:90240 90D35 (90A30, 92A17)
- (with Rosenthal, Richard E.) Optimizability of utility and value functions. *Naval Res. Logist.* 35 (1988), no. 3, 411–418. (Summary) 89a:90030 90A10 (90C31)
- Harrison, Tom A problem concerning the lattice varietal product. *Algebra Universalis* 25 (1988), no. 1, 40–84. (Joel Berman) 89e:06007 06B20 (08A05)
- Hárs, L. The Tamme problem for  $n = 10$ . *Studia Sci. Math. Hungar.* 21 (1986), no. 3–4, 439–451. (Egon Schulte) 89b:52022 52A40 (52A37)
- Harsanyi, John C. Individual utilities and utilitarian ethics. *Paradoxical effects of social behavior*, 1–12, *Physica, Heidelberg*, 1986. (see 89d:90019) 90A06 (90A10)
- Utilitarian morality in a world of very half-hearted altruists. *Social choice and public decision making*, 57–73, Cambridge Univ. Press, Cambridge-New York, 1986. (Conclusion) 89a:90031 90A10
- ★ Rational behavior and bargaining equilibrium in games and social situations. Reprint of the 1986 edition. Cambridge University Press, Cambridge-New York, 1988. xii+314 pp. ISBN 0-521-31183-7 (O. N. Bondareva) 89e:90032 90A10 (90A14, 90D12)
- (with Selten, Reinhard) ★ A general theory of equilibrium selection in games. With a foreword by Robert Aumann. MIT Press, Cambridge, MA-London, 1988. xviii+378 pp. ISBN 0-262-08173-3 (Theo Driessen) 89e:90285 90D10 (90-02, 90D40)
- Assessing other people's utilities. With a comment by Philippe Mongin. *Risk, decision and rationality (Aix-en-Provence, 1986)*, 127–144, *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1988. (Conclusion) 89a:90032 90A10 (90A06)
- Hart, David (with Block, Louis) Orbit types for maps of the interval. *Ergodic Theory Dynamical Systems* 7 (1987), no. 2, 161–164. (M. Eisenberg) 89g:58172 58F20 (26A18, 54H20, 58F08)
- Hart, K. P. (with Davis, S. W.) A property related to the strict  $p$ -space problem. Proceedings of the 1987 Topology Conference (Birmingham, AL, 1987). *Topology Proc.* 12 (1987), no. 1, 59–74. (C. R. Borges) 89e:54038 54D15
- Hart, Oliver D. (with Moore, John Halstead) Incomplete contracts and renegotiation. *Econometrica* 56 (1988), no. 4, 755–785. (Summary) 89e:90024 90A09
- (with Tirole, Jean) Contract renegotiation and Coasian dynamics. *Rev. Econom. Stud.* 55 (1988), no. 4, 509–540. (Summary) 89h:90037 90A12
- Hart, R. W. (with Farrell, R. A.; Gray, E. P.) An infinite sum of products of Jacobi polynomials. *J. Math. Phys.* 29 (1988), no. 10, 2175–2177. (J. V. Baxley) 89k:33011 33A65
- Hart, Sergiu (with Neyman, Abraham) Values of nonatomic vector measure games: are they linear combinations of the measures? *J. Math. Econom.* 17 (1988), no. 1, 31–40. (J. A. Rickard) 89d:90272 90D45 (90A99)
- Harte, Henry see Grattan-Guinness, I., 89e:01029
- Harte, Robin ★ Invertibility and singularity for bounded linear operators. Monographs and Textbooks in Pure and Applied Mathematics, 109. Marcel Dekker, Inc., New York, 1988. xii+590 pp. ISBN 0-8247-7754-9 (R. W. Cross) 89d:47001 47Axx (47-01, 47-02)
- A note on generalized inverse functions. *Proc. Amer. Math. Soc.* 104 (1988), no. 2, 551–552. (Jaroslav Zemánek) 89e:46063 46H05 (39B70, 47A05)
- Harter, H. Leon History and role of order statistics. *Comm. Statist. Theory Methods* 17 (1988), no. 7, 2091–2107. (Summary) 89i:62081 62G30 (01A60, 62-03)
- Harter, Richard (with Chrobak, Marek) A note on random sampling. *Inform. Process. Lett.* 29 (1988), no. 5, 255–256. (A. D. Booth) 89m:68047 68Q20 (62-04, 68Q25)
- Hartiel, D. J. Fully indecomposable and nearly decomposable matrices in  $\Omega(R, S)$ . *Linear and Multilinear Algebra* 21 (1987), no. 3, 231–237. (M. Pearl) 89g:15029 15A57
- Hartl, Johann Ein einfacher Induktionsbeweis für die Existenz der Jordan-Normalform. [A simple proof of induction for the existence of the Jordan normal form] *Arch. Math. (Basel)* 50 (1988), no. 4, 323–327. (Morris Newman) 89h:15017 15A21
- Büschel linearer Abbildungen. (English summary) [Pencils of linear mappings] *J. Geom.* 31 (1988), no. 1–2, 89–95. (H. Brauner) 89f:51008 51A05 (51A10)
- Hartl, Richard F. A wheat trading model with demand and spoilage. *Optimal control theory and economic analysis*, 3 (Vienna, 1987), 235–244, North-Holland, Amsterdam-New York, 1988. (Summary) 89h:90008 90A05 (90A16, 90B05)
- Comment on: “The control of environmental pollution and optimal investment and employment decisions” [Optimal Control Appl. Methods 8 (1987), no. 1, 21–36; MR 87k:90080] by W. T. Lin. *Optimal Control Appl. Methods* 9 (1988), no. 3, 337–339. (From the text) 89h:90067 90A30 (92A17, 93C75)
- Hartle, James B. (with Thorne, Kip S.; Price, Richard H.) Gravitational interaction of a black hole with distant bodies. *Black holes: the membrane paradigm*, 146–180, Yale Univ. Press, New Haven, CT, 1986. (see 89b:83002) 83C15 (83C10)
- (with Schleich, Kristin) The conformal rotation in linearised gravity. *Quantum field theory and quantum statistics*, Vol. 2, 67–87, Hilger, Bristol, 1987. (Sorin Marculescu) 89j:83038 83C45
- Quantum kinematics of spacetime. I. Nonrelativistic theory. *Phys. Rev. D* (3) 37 (1988), no. 10, 2818–2832. (Enric Verdaguer) 89h:81144 81E20 (83C47)
- (with Witt, D. M.) Gravitational  $\theta$  states and the wave function of the universe. *Phys. Rev. D* (3) 37 (1988), no. 10, 2833–2837. (Markku Lehto) 89E:83055 83C45 (81E20, 83F05)
- Hartley, Brian Centralizers in locally finite groups. *Group theory (Bressanone, 1986)*, 36–51, *Lecture Notes in Math.*, 1281, Springer, Berlin-New York, 1987. (Yu. I. Merzlyakov) 89c:20058 20F50 (20E32, 20F26)
- (with Bier, Thomas; Cheng, Kai Nah) A remark on association schemes on finite groups. *Arch. Math. (Basel)* 51 (1988), no. 6, 481–484. (Roderick Gow) 89j:20010 20C15 (05B30)
- Fixed points of automorphisms of certain locally finite groups and Chevalley groups. *J. London Math. Soc.* (2) 37 (1988), no. 3, 421–436. (O. H. Kegel) 89d:20022 20E25 (20E36, 20F16, 20G15)
- (with Tomkinson, M. J.) Carter subgroups and injectors in a class of locally finite groups. *Rend. Sem. Mat. Univ. Padova* 79 (1988), 203–212. (John S. Wilson) 89m:20040 20F19 (20F17, 20F26)
- Hartley, Gilbert A. (with Abdel-Akher, Ahmed) Evaluation of boundary integrals for plate bending. *Internat. J. Numer. Methods Engrg.* 28 (1989), no. 1, 75–93. (Summary) 89j:73003 73-08 (73K30)
- Hartley, Michael J. Neoclassical econometrics [econometrics]: the kernel. *J. Math. Anal. Appl.* 131 (1988), no. 2, 313–328. (Manfred Kraft) 89f:62090 62P20 (90A11, 90A15)
- Hartley, Richard (with Kilgour, D. Marc) The geometry of the uncovered set in the three-voter spatial model. *Math. Social Sci.* 14 (1987), no. 2, 175–183. (S. G. Novikov) 89g:90017 90A08
- Hartman, Alan Halving the complete design. *Combinatorial design theory*, 207–224, North-Holland Math. Stud., 149, North-Holland, Amsterdam-New York, 1987. (Luc Teirlinck) 89b:05033 05B05
- (with Hoffman, Dean G.) Steiner triple systems with an involution. *European J. Combin.* 8 (1987), no. 4, 371–378. (Chung H. Cho) 89e:05019 05B07
- Hartman, Hyman (with Tamayo, Pablo; Klein, William) Inhomogeneous cellular automata and statistical mechanics. *Complex Systems* 1 (1987), no. 2, 245–256. (Summary) 89b:82140 82A99 (58F08, 58F11, 68Q80, 82A57)
- Hartman, S. Some problems and remarks on relative multipliers. *Colloq. Math.* 54 (1987), no. 1, 103–111. (U. B. Tewari) 89e:43011 43A22 (43A46)
- Hartmann, Juris (with Hemachandra, Lane) On sparse oracles separating feasible complexity classes. *Inform. Process. Lett.* 28 (1988), no. 6, 291–295. (Summary) 89i:68041 68Q15 (68Q30)
- see also ACM Symposium: Theory of Computing, 89j:68001
- Hartmann, Carlos R. P. (with Tao, D. L.; Lala, P. K.) An efficient class of unidirectional error detecting/correcting codes. *IEEE Trans. Comput.* 37 (1988), no. 7, 879–882. (Summary) 89d:94051 94B60
- (with Gao, Jiapeng; Rudolph, Luther D.) Iteratively maximum likelihood decodable spherical codes and a method for their construction. *IEEE Trans. Inform. Theory* 34 (1988), no. 3, 480–485. (Alexander M. Barg) 89j:94032 94B25 (94B35)
- Hartmann, Christian (with Clerc, René-Louis) Invariant curves as solutions of functional equations. *Functional equations: history, applications and theory*, 217–226, *Math. Appl., Reidel, Dordrecht-Boston, MA*, 1984. (György Targonski) 89g:58104 58F08 (34C35, 39B40)
- (with Belhaq, Mohamed; Clerc, René-Louis) Étude numérique d'une 4-résonance d'une équation de Liénard forcée. (English summary) [Numerical study of a 4-resonance of a forced Liénard equation] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Terre* 303 (1986), no. 10, 873–876. (Summary) 89k:58206 58F14 (70K40)
- (with Belhaq, Mohamed; Clerc, René-Louis) Bifurcations homocliniques pour des équations de Liénard forcées périodiquement. (English summary) [Homoclinic bifurcations for periodically forced Liénard equations] *J. Méc. Théor. Appl.* 6 (1987), no. 6, 865–877. (W. S. Loud) 89f:58096 58F14 (34C35, 58F15, 70K40)
- (with Belhaq, Mohamed; Clerc, René-Louis) Méthodes d'échelles multiples pour la recherche de solutions invariantes par une transformation de  $\mathbb{R}^2$  et applications. [Multiple-scale methods for determining solutions invariant under a transformation of  $\mathbb{R}^2$ , and applications] *Mech. Res. Comm.* 15 (1988), no. 6, 361–370. (Introduction) 89f:58053 58F08 (34C20)
- Hartmann, I. (with Böcker, J.; Zwanig, Ch.) ★ Nichtlineare und adaptive Regelungssysteme. (German) [Nonlinear and adaptive control systems] Hochschultext. [University Textbooks] Springer-Verlag, Berlin-New York, 1986. xiv+579 pp. ISBN 3-540-16930-X (Jerzy Jaron) 89h:93001 93-01 (93C10, 93C40, 93D05)
- (with Endrikat, C.) Optimal design of discrete-time MIMO systems in the frequency domain. *Internat. J. Control* 48 (1988), no. 4, 1569–1582. (Not in MR) 93B50 (93C55)
- Hartmann, P. (with Priess-Crampe, Sibylla) Zur Fortsetzung von  $\sigma$ -Stellen angeordneter Divisionsalgebren. [On the continuation of  $\sigma$ -places of ordered division algebras] *Arch. Math. (Basel)* 51 (1988), no. 2, 178–180. (Jan van Geel) 89i:16015 16A39 (16A66)
- Stellen und Topologien von Schiefkörpern und Alternativkörpern. [Places and topologies of skew fields and alternative fields] *Arch. Math. (Basel)* 51 (1988), no. 3, 274–282. (Theo Grundhöfer) 89k:12013 12J10 (12E15, 16A80, 17A30)
- Die Stellentopologie projektiver Ebenen und Lenz-topologische Ebenen. [The place topology of projective planes and Lenz topological planes] *Geom. Dedicata* 26 (1988), no. 3, 259–272. (H. Salzmann) 89j:51012 51G05 (51H10)
- (with Brandstetter, J.) Über Homomorphismen projektiver Räume. [On homomorphisms of projective spaces] *Geom. Dedicata* 28 (1988), no. 1, 87–92. (F. Radó) 89m:51006 51A10 (51C05)
- Hartmann, S. R. (with Friedberg, R.) A diagrammatic technique for calculating radiation of coherently or incoherently excited two-level atoms. *J. Phys. B* 21 (1988), no. 4, 683–712. (Suresh V. Lawande) 89i:81159 81K05 (81C12)
- Hartog, Joop (with Bierens, Herman J.) Nonlinear regression with discrete explanatory variables, with an application to the earnings function. *J. Econometrics* 38 (1988), no. 3, 269–299. (Manfred Kraft) 89i:62177 62P20 (62J02, 90A19)
- Hartsfield, Nora (with Jackson, Brad; Ringel, Gerhard) The splitting number of the complete graph. *Graphs Combin.* 1 (1985), no. 4, 311–329. (Jean-Claude Fournier) 89h:05027 05C10
- (with Ringel, Gerhard) Hamilton surfaces for the complete symmetric tripartite graph. *Arch. Math. (Basel)* 50 (1988), no. 5, 470–473. (A. Gregory Starling) 89k:05032 05C10 (05C38, 05C45)
- (with Ringel, Gerhard) Minimal quadrangulations of orientable surfaces. *J. Combin. Theory Ser. B* 46 (1989), no. 1, 84–95. (Arthur T. White) 89m:05048 05C10 (57M15)
- Hartshorne, Robin On the classification of algebraic space curves. II. *Algebraic geometry, Bowdoin, 1985 (Brunswick, Maine, 1985)*, 145–164, *Proc. Sympos. Pure Math.*, 46, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Ciro Ciliberto) 89g:14025 14H45 (14H10, 14H50)
- Stable reflexive sheaves. III. *Math. Ann.* 279 (1988), no. 3, 517–534. (Jean-Marc Drezet) 89h:14011 14F05 (14H50)
- (with Hirschowitz, André) Nouvelles courbes de bon genre dans l'espace projectif. [New curves with good genus in projective space] *Math. Ann.* 280 (1988), no. 3, 353–367. (Rosa M. Miró-Roig) 89d:14043 14H45 (14F05, 14H50)



- Hartvigsen, David B.** (with Wagner, Donald K.) Recognizing max-flow min-cut path matrices. *Oper. Res. Lett.* 7 (1988), no. 1, 37–42. (From the introduction) **89d:90091** 90B10 (05B35, 05C35)
- Hartwell, Walter T.** (with Picone, Joseph; Prezas, Dimitrios P.; LoCicero, Joseph L.) Spectrum estimation using an analytic signal representation. (French and German summaries) *Signal Process.* 15 (1988), no. 2, 169–182. (H. Vincent Poor) **89i:93106** 93E10 (94A12)
- Hartwich, Peter-M.** (with Hsu, Chung-Hao) High-resolution upwind schemes for the three-dimensional incompressible Navier-Stokes equations. *ALAA J.* 26 (1988), no. 11, 1321–1328. (Summary) **89j:76014** 76-08 (76D05)
- Hartwig, Robert E.** (with Bevis, Jean H.; Hall, Frank J.) Consimilarity and the matrix equation  $A\bar{X} - X\bar{B} = C$ . *Current trends in matrix theory* (Auburn, Ala., 1986), 51–64, North-Holland, New York-Amsterdam, 1987. (Summary) **89a:15015** 15A24 (15A21)
- A remark on the characterization of the parallel sum of two matrices. *Linear and Multilinear Algebra* 22 (1987), no. 2, 193–197. (George E. Trapp) **89f:15006** 15A09 (15A30, 15A33)
- (with Bevis, Jean H.; Hall, Frank J.) The matrix equation  $A\bar{X} - X\bar{B} = C$  and its special cases. *SIAM J. Matrix Anal. Appl.* 9 (1988), no. 3, 348–359. (Ji-guang Sun) **89h:15021** 15A24
- Hartz, Glenn A.** (with Cover, J. A.) Space and time in the Leibnizian metaphysics. *Noûs* 22 (1988), no. 4, 493–519. (Not in MR) 01A45 (00A25)
- Haruki, Hiroshi** On a functional equation of Pexider type. *Aequationes Math.* 36 (1988), no. 1, 1–19. (F. W. Carroll) **89k:39017** 39B30 (30D05)
- Haruki, Shigeru** (with Tsutsumi, A.) The regularity of solutions of functional equations and hypoellipticity. *Functional equations: history, applications and theory*, 99–112, Math. Appl., Reidel, Dordrecht-Boston, MA, 1984. (From the introduction) **89c:39012** 39B20 (35H05)
- The existence of solvable operators in the ideal. *Proc. Japan Acad. Ser. A Math. Sci.* 63 (1987), no. 9, 346–349. (Hiroshi Haruki) **89m:39015** 39B40
- On the general solution of a nonsymmetric partial difference functional equation analogous to the wave equation. *Aequationes Math.* 36 (1988), no. 1, 20–31. (B. G. Pachpatte) **89h:39011** 39B40 (39A12)
- Harvey, A. C.** (with Stock, James H.) Continuous time autoregressive models with common stochastic trends. Economic time series with random walk and other nonstationary components. *J. Econom. Dynamics Control* 12 (1988), no. 2–3, 365–384. (Summary) **89m:62115** 62P20
- Harvey, Alex** Geodesics in Kasner universes. *Phys. Rev. D* (3) 39 (1989), no. 2, 673–676. (W. B. Bonnor) **89m:83010** 83C10 (83C15)
- Harvey, Jeffrey A.** Minimal conformal models and string compactification. *International Workshop on Superstrings, Cosmology, Composite Structures* (College Park, MD, 1987), 91–101, World Sci. Publishing, Singapore, 1987. (Raiko Zaikov) **89i:81112** 81E99 (81E30, 81E40, 81G20, 83E30)
- Orbifolds and twisted strings. *Unification of fundamental interactions* (Marstrand, 1986), 126–131, Royal Swedish Acad. Sci., Stockholm, 1987. (see **89f:81005**) **83E15** (22E40, 81E30, 83E30)
- (with Moore, Gregory W.; Vafa, Cumrun) Quasicrystalline compactification. *Nuclear Phys. B* 304 (1988), no. 2, 269–290. (Andrew A. Bytsenko) **89m:81144** 81E99 (22E40, 81E30, 81E40, 82A57)
- (with Dixon, Lance J.; Ginsparg, P.)  $\hat{c} = 1$  superconformal field theory. *Nuclear Phys. B* 306 (1988), no. 3, 470–496. (Raiko Zaikov) **89m:81136** 81E99 (17B65, 58A50, 58G40, 81E40)
- (with Bowick, M. J.; Giddings, Steven B.; Horowitz, Gary T.; Strominger, Andrew) Axionic black holes and an Aharonov-Bohm effect for strings. *Phys. Rev. Lett.* 61 (1988), no. 25, 2823–2826. (C. Gauthier) **89j:83045** 83C47 (81G25, 83C99)
- Harvey, Reese** (with Dadok, J.; Morgan, Frank) Calibrations on  $\mathbb{R}^4$ . *Trans. Amer. Math. Soc.* 307 (1988), no. 1, 1–40. (Norio Ejiri) **89f:53089** 53C42 (15A75, 49F10, 58A10, 58E15)
- (with Bryant, Robert L.) Submanifolds in hyper-Kähler geometry. *J. Amer. Math. Soc.* 2 (1989), no. 1, 1–31. (S. M. Salamon) **89m:53090** 53C40 (32C10, 33C25, 53C55)
- Harville, David A.** (with Jeske, Daniel R.) Prediction-interval procedures and (fixed-effects) confidence-interval procedures for mixed linear models. *Comm. Statist. Theory Methods* 17 (1988), no. 4, 1053–1087. (A. I. Khuri) **89h:62119** 62J10 (62F25)
- Harwit, Martin** An attempt to model the growth of understanding in astronomy. *Theory and observational limits in cosmology* (Castel Gandolfo, 1985), 89–119, Specola Vaticana, Vatican City, 1987. (Editors) **89c:01005** 01A05
- Hary, David** (with Moore, George P.) On the performance and stability of human metronome-synchronization strategies. *British J. Math. Statist. Psych.* 40 (1987), no. 2, 109–124. (Summary) **89h:92067** 92A25
- Harzheim, Egbert** Combinatorial generalizations of the Jordan-Brouwer separation theorem. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), A, 259–268. (Helga Schirmer) **89f:55003** 55M99 (55M20, 57N15)
- Hasan, A.** (with Kalra, M. S.) Comparison of some numerical schemes for the KdV equation. *Solitons* (Tiruchirappalli, 1987), 184–187, Springer Ser. Nonlinear Dynamics, Springer, Berlin-New York, 1988. (see **89h:00027**) **65M60**
- Hasanain, I. A.** (with Mashhour, A. S.; Allam, A. A.; Abd El-Hakeim, K. M.) On strongly compactness. *Bull. Calcutta Math. Soc.* 79 (1987), no. 4, 243–248. (M. K. Vamanamurthy) **89g:54049** 54D10 (54D30)
- (with Allam, A. A.; Zahran, A. M.) On almost continuous, S-continuous and set connected mappings. *Indian J. Pure Appl. Math.* 18 (1987), no. 11, 991–996. (Shantha Bose) **89d:54005** 54C10 (54C08)
- Hasanis, Thomas** Complete hypersurfaces in cylinders. *J. Austral. Math. Soc. Ser. A* 46 (1989), no. 2, 313–318. (Domenico Perrone) **89k:53048** 53C40 (53A07)
- Haták, Alexander** A strong convergence in  $L^p$  and upper  $q$ -continuous operators. *Czechoslovak Math. J.* 38(113) (1988), no. 3, 420–424. (G. M. Ustinov) **89k:46041** 46E30 (47H99)
- Disconjugacy and multipoint boundary value problems for linear differential equations with delay. *Czechoslovak Math. J.* 39(114) (1989), no. 1, 70–77. (Jian Hong Wu) **89m:34086** 34K10 (34B10, 34K15)
- Hase, Kenji** (with Ito, Tadayasu; Suetatsu, Yoshikazu; Hayase, Toshiyuki) Distribution patterns of eigenvalues of laminar pipe flow (classification of modes based on dynamics of the system). *JSME Internat. J. Ser. II* 31 (1988), no. 4, 632–638. (Summary) **89k:76032** 76D05 (76-04, 76E05)
- Hase, Yoko** (with Satsuma, Junkichi) An  $N$ -soliton solution for the nonlinear Schrödinger equation coupled to the Boussinesq equation. *J. Phys. Soc. Japan* 57 (1988), no. 3, 679–682. (Summary) **89f:35184** 35Q20
- Hasebe, Takayuki** (with Kurosawa, Kaoru) Consideration on a nonlinear multimodality flow problem in a packet switching network. *Electron. Comm. Japan. Part I Comm.* 69 (1986), no. 12, 29–35. (Summary) **89j:90097** 90B10 (49D10, 94C99)
- Hasegawa, Hiroshi** (with Adachi, Satoshi) Quadratic Zeeman spectra for the hydrogen atom by means of semiclassical quantization. *J. Phys. Soc. Japan* 57 (1988), no. 1, 80–87. (Summary) **89h:81252** 81G45 (58F27, 81D07)
- (with Ojima, I.; Ichinaga, M.) Entropy production and its positivity in nonlinear response theory of quantum dynamical systems. *J. Statist. Phys.* 50 (1988), no. 3–4, 633–655. (H. Araki) **89m:82015** 82A15 (46L55, 46N05)
- Hasegawa, Izumi** (with Abe, Tomoji; Okuyama, Yukihiko; Sato, Kimitake) Totally umbilical submanifolds in Sasakian manifolds. *J. Hokkaido Univ. Ed. Sect. II A* 38 (1988), no. 2, 1–8. (Yoshiko Kubo) **89g:53078** 53C40 (53C25)
- (with Abe, Tomoji) Totally contact umbilical submanifolds in Sasakian manifolds. *J. Hokkaido Univ. Ed. Sect. II A* 39 (1988), no. 1, 1–8. (Urbano) **89m:53096** 53C40 (53C25)
- Hasegawa, Keizo** Minimal models of nilmanifolds. *Proc. Amer. Math. Soc.* 106 (1989), no. 1, 65–71. (Marisa Fernández) **89j:32015** 32C10 (32M10, 53C15, 53C30, 53C55, 55P62)
- Hasegawa, Kohji** Dual pairs on spinors. Cases of  $(C_n, C_n)$  and  $(C_n^{(1)}, C_n^{(1)})$ . *Proc. Japan Acad. Ser. A Math. Sci.* 63 (1987), no. 10, 400–403 (1988). (Introduction) **89k:22024** 22E45
- Hasegawa, Yukiko** Some remarks on the  $C^\infty$ -Goursat problem. *J. Math. Kyoto Univ.* 28 (1988), no. 1, 37–51. (Xavier Saint Raymond) **89d:35028** 35E15 (35A05)
- Hasenfratz, Anna** (with Hasenfratz, Peter) Singular renormalization group transformations and first order phase transitions. I. *Nuclear Phys. B* 295 (1988), no. 1, 1–20. (Tony C. Dorlas) **89g:82022a** 82A25 (82A68, 82A97)
- (with Decker, Karsten; Hasenfratz, Peter) Singular renormalization group transformations and first order phase transitions. II. Monte Carlo renormalization group results. *Nuclear Phys. B* 295 (1988), no. 1, 21–35. (Tony C. Dorlas) **89g:82022b** 82A25 (81E25, 82-04, 82A68)
- Hasenfratz, Peter** (with Hasenfratz, Anna) Singular renormalization group transformations and first order phase transitions. I. *Nuclear Phys. B* 295 (1988), no. 1, 1–20. (Tony C. Dorlas) **89g:82022a** 82A25 (82A68, 82A97)
- (with Decker, Karsten; Hasenfratz, Anna) Singular renormalization group transformations and first order phase transitions. II. Monte Carlo renormalization group results. *Nuclear Phys. B* 295 (1988), no. 1, 21–35. (Tony C. Dorlas) **89g:82022b** 82A25 (81E25, 82-04, 82A68)
- Hosseini-Hashemi, S.** see Hosseini-Hashemi, S.
- Hashiguchi, Kosaburo** Notes on congruence relations and factor pumping conditions for rational languages. *Theoret. Comput. Sci.* 57 (1988), no. 2–3, 303–316. (Jetty Kleijn) **89j:68079** 68Q45 (20M35)
- Hashiguchi, Masao** How to get examples of Finsler spaces. *Confer. Sem. Mat. Univ. Bari* No. 225 (1987), 13 pp. (1988). (Aurel Bejancu) **89h:53063** 53B40 (58E15)
- (with Amici, O.; Casciaro, Biagio) On Finsler metrics associated with a Lagrangian. *Rep. Fac. Sci. Kagoshima Univ. Math. Phys. Chem.* No. 20 (1987), 33–41. (H. Rund) **89g:53030** 53B40 (58F05)
- (with Atanasiu, Gheorghe) Semi-symmetric Miron connections in dual Finsler spaces. *Rep. Fac. Sci. Kagoshima Univ. Math. Phys. Chem.* No. 20 (1987), 43–49. (S. Watanabe) **89f:53021** 53B40
- Hashimoto, Hiroshi** Transitivity of fuzzy matrices under generalized connectedness. *Fuzzy Sets and Systems* 29 (1989), no. 2, 229–234. (Summary) **89m:03049** 03E72 (05C20, 15A99)
- Hashimoto, Isao** (with Sakurada, Kuninori; Abe, Yutaka; Ishida, Toshiyuki; Miyamoto, Yutaka) On quasi-ranked vector spaces. I. *J. Hokkaido Univ. Ed. Sect. II A* 38 (1987), no. 1, 33–40. (R. Anantharaman) **89c:46006** 46A15
- Hashimoto, Keizo** The telescope and observation in late Ming China. *Proceedings of the Fourth Asian-Pacific Regional Meeting of the International Astronomical Union* (Beijing, 1987). *Vistas Astronom.* 31 (1988), 849–851. (see **89f:01001**) 01A25
- Hashimoto, Naoki** Deformations of some algebraic surfaces with  $q = 0$  and  $p_g = 1$ . *Kodai Math. J.* 11 (1988), no. 1, 64–69. (Allen B. Altman) **89f:14035** 14J15 (14J25, 14L32, 32C45, 32J05)
- Hashimoto, Takayuki** (with Ojika, Takeo; Izumoto, Yoshiro; Nakazumi, Akira) Bang-bang control of rotating rigid body suspended by wire. (Japanese summary) *Mem. Osaka Kyoiku Univ. III Natur. Sci. Appl. Sci.* 36 (1987), no. 2, 181–191 (1988). (Summary) **89f:70042** 70Q05 (49B36, 93C15, 93C75)
- Hashimoto, Takeshi** A list-type reduced-constraint generalization of the Viterbi algorithm. *IEEE Trans. Inform. Theory* 33 (1987), no. 6, 866–876. (Summary) **89i:94043** 94B35 (94B10)
- Hashizume, Hidekuni** (with Kawabata, Hiroaki; Inagaki, Yoshio; Shirao, Yoshiaki; Nagahara, Toshiyuki; Kido, Masao) A method of optimal control in nonlinear systems. *Bull. Univ. Osaka Prefect. Ser. A* 35 (1986), no. 1, 33–45. (Vimal Singh) **89k:93167** 93D15 (93C10, 93D20)
- Hashizume, Michihiko** (with Eguchi, Masaaki; Koizumi, Shin) The Gangolli estimates for the coefficients of the Harish-Chandra expansions of the Eisenstein integrals on real reductive Lie groups. *Hiroshima Math. J.* 17 (1987), no. 3, 457–469. (V. S. Varadarajan) **89c:22022** 22E45 (46N05)
- el Hasi, C. D.** (with Castagnino, Mario; Mazzitelli, F. D.; Paz, J. P.) On the Dirac equation in anisotropic backgrounds. *Phys. Lett. A* 128 (1988), no. 1–2, 25–28. (Charles A. Nelson) **89h:81084** 81D25 (81E20, 83C15)
- Hasibeder, Günther** (with Länger, Helmut) Simple criteria for asymptotic stability, neutral stability, and instability. *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* 195 (1986), no. 4–7, 267–279. (Summary) **89a:26023** 26C10 (34C35, 34D05, 34D20, 92A17)
- (with Dye, Christopher) Population dynamics of mosquito-borne disease: persistence in a completely heterogeneous environment. *Theoret. Population Biol.* 33 (1988), no. 1, 31–53. (Andris Abukuks) **89c:92062** 92A15

- Hasiewicz, Zbigniew** Supersymmetry algebras: extensions of orthogonal Lie algebras. *Proceedings of the 14th winter school on abstract analysis* (Srní, 1986). *Rend. Circ. Mat. Palermo* (2) Suppl. No. 14 (1987), 77–92. (Horia Scutaru) **89b:17040** 17B70 (83E50)
- Hasiewicz, Zygmunt Jerzy** Two-stage procedure for parameter estimation in large-scale interconnected linear zero-memory systems. *Internat. J. Systems Sci.* **19** (1988), no. 3, 497–516. (Summary) **89b:93048** 93B30 (93A15)
- Haskell, Peter** Index theory of geometric Fredholm operators on varieties with isolated singularities. *K-Theory* **1** (1987), no. 5, 457–466. (Claude Schochet) **89g:58194** 58G10 (19K56)
- Häsel, Karin** On topological transitivity of set configuration spaces. *Proceedings of the conference on ergodic theory and related topics, II* (Georgenthal, 1986), 65–69, *Teubner-Texte Math.*, 94, Teubner, Leipzig, 1987. (Peter Walters) **89g:82060** 82A67 (54H20, 82A05)
- Hasler, Martin J.** (with Azzouz, Abdennasser) Uniqueness of the asymptotic behaviour of autonomous and nonautonomous, switched and nonswitched, linear and nonlinear systems of dimension 2. *Internat. J. Circuit Theory Appl.* **16** (1988), no. 2, 191–226. (E. J. Barbeau) **89d:34083** 34D20 (34C05, 34E99, 93D05, 94C05)
- Comments on: "Efficient solution of the variational equation for piecewise-linear differential equations" [Internat. J. Circuit Theory Appl. **14** (1986), no. 4, 305–314; MR 87j:34005] by T. S. Parker and L. O. Chua. *Internat. J. Circuit Theory Appl.* **16** (1988), no. 3, 325–329. (From the text) **89g:58152** 58F14 (34C05)
- (with Fosséprez, Marc; Schnetzler, Claudia) On the number of solutions of piecewise-linear resistive circuits. *IEEE Trans. Circuits and Systems* **36** (1989), no. 3, 393–402. (W.-K. Chen) **89k:94084** 94C05
- Haslinger, J.** (with Hlaváček, I.; Nečas, Jindřich; Lovíšek, J.) ★ Solution of variational inequalities in mechanics. Translated from the Slovak by J. Jarník. *Applied Mathematical Sciences*, 66, Springer-Verlag, New York-Berlin, 1988, x+275 pp. ISBN 0-387-96597-1 (Petr Procházka) **89f:73003** 73-02 (35-02, 49A29, 73C60, 73Exx, 73T05)
- (with Neittaanmäki, Pekka; Salmenkari, K.) On optimal mesh design for FEM in unilateral boundary value problems. *The mathematics of finite elements and applications, VI* (Uxbridge, 1987), 103–113, *Academic Press, London-New York*, 1988. (see **89c:65004**) 65N30 (65N50)
- (with Neittaanmäki, Pekka; Tiihonen, Timo; Kaarna, A.) Optimal shape design and unilateral boundary value problems. I, II. *Optimal Control Appl. Methods* **9** (1988), no. 2, 127–144, 145–163. (Klaus Steffen) **89j:49001** 49A29 (49D15, 49D30, 65K10, 73K40)
- Hasminkii, R. Z.** see **Khas'minskii, R. Z.**
- Hass, E.-C.** (with Plath, P. J.) The principle of valency conservation. I. The skeleton influence on pericyclic reactions. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1–3, 215–237. (Summary) **89c:92100** 92A40
- Hassan, H. S.** On existence of two real periodic solutions of differential equations of Riccati type. (Arabic summary) *Qatar Univ. Sci. Bull.* **6** (1986), 33–38. (Rouben Rostamian) **89d:34074** 34C25 (34A20)
- (with Guan, Ke Ying; Gunson, J.) On periodic solutions of the periodic Riccati equation. *Resulata Math.* **14** (1988), no. 3–4, 309–317. (Ch. G. Philos) **89k:34060** 34C25 (34C27, 34C40)
- Hassan, K.** (with Sarigöl, N.) A study of the influence of the angle condition on plate bending of triangular finite elements. *Comm. Appl. Numer. Methods* **4** (1988), no. 1, 79–83. (Summary) **89d:73037** 73K25 (65N30, 73K10)
- Hassan, M. F.** (with Sultan, M. A.; Calvet, J. L.) Parameter estimation in large-scale systems using sequential decomposition. *Internat. J. Systems Sci.* **19** (1988), no. 3, 487–496. (Summary) **89b:49050** 49D27 (93A13, 93B30, 93C35)
- New multi-level algorithm for linear dynamical systems. *Internat. J. Systems Sci.* **19** (1988), no. 12, 2631–2642. (Zoran Gajic) **89k:93010** 93A13 (93A15, 93C05)
- (with Badr, R. I.; Bernussou, J.; Bilal, A. Y.) Time-domain robustness and performance optimisation of linear quadratic control problems. *Proc. IEE-D* **135** (1988), no. 4, 223–231. (Andrzej Świerniak) **89j:93043** 93B50 (49B50, 93B35, 93D15)
- Hassan, M. I.** Integrability of derivatives of classical solutions of Dirichlet's problem for an elliptic equation. *Acta Math. Sci. (English Ed.)* **6** (1986), no. 4, 361–365. (Rudolf Švarc) **89f:35062** 35J25 (35B45)
- Hassan, M. M.** (with Amin, M. H.) Time-optimal output regulators for linear multivariable discrete-time systems. I. Right invertible decouplable systems. *Internat. J. Control* **46** (1987), no. 3, 865–879. (Summary) **89k:93049** 93B25 (93C55)
- (with Amin, M. H.) Time-optimal output regulators for linear multivariable discrete-time systems. II. All classes of right-invertible systems. *Internat. J. Control* **46** (1987), no. 4, 1411–1428. (Summary) **89k:93050** 93B25 (93C05, 93C55)
- (with Amin, M. H.) Determination of invariant zeros and zero directions of the system  $S(A, B, C, E)$ . *Internat. J. Control* **47** (1988), no. 4, 1011–1041. (Summary) **89k:93099** 93B55 (93B40, 93C05, 93C35)
- al-Hassan, Q.** see **Al-Hassan, Q.**
- Hassan, Sk. Md.** On some types of recurrent spaces of first order. *Mathematica (Cluj)* **28**(51) (1986), no. 2, 125–131. (Kamla Devi Singh) **89a:53026** 53B20
- Hassanein, Khatib M.** (with Saleh, A. K. Md. Ehsanes) On various  $F$ -estimation in a parallelism problem. *Soochow J. Math.* **12** (1986), 83–94. (S. Jeyaratnam) **89g:62108** 62J05
- Hassani, Nacer** (with Arino, Ovide; Bourad, Fawzia) Un résultat sur le comportement asymptotique des solutions de systèmes dynamiques monotones. (English summary) [On the asymptotic behaviour of the solutions of certain order-preserving dynamical systems] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 7, 311–315. (E. Lami Dozo) **89k:47109** 47H20 (34K15)
- Hassanien, S. F.** (with Soliman, M. A.) The Klein correspondence of line congruences immersed in an elliptic space  $S_3$  onto the hyperquadric  $P^4$ . (Arabic summary) *Bull. Fac. Sci. Assiut Univ.* **A 13** (1984), no. 2, 93–101. (P. Stavre) **89g:53017** 53A25
- (with Soliman, M. A.) The Klein-images of line complexes immersed in  $S_3$ , on the absolutum of the elliptic space  $S_3$ . (Arabic summary) *Bull. Fac. Sci. Assiut Univ.* **A 15** (1986), no. 1, 71–80. (Günter Aumann) **89a:53019** 53A25 (53A35)
- Hassan Salem, Zeinab** (with Jain, Mahendra Kumar) Numerical solution of singular boundary value problems. *J. Math. Phys. Sci.* **20** (1986), no. 4, 309–315. (L. F. Shampine) **89a:65118** 65L10
- al-Hassār** see **Aballagh, M.**, **89b:01010**
- Hassard, Brian D.** A code for Hopf bifurcation analysis of autonomous delay-differential systems. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 447–463, *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (Summary) **89g:58153** 58F14 (34K15, 58-04, 92A15)
- Hasse, R. W.** (with Myers, W. D.) ★ Geometrical relationships of macroscopic nuclear physics. Springer Series in Nuclear and Particle Physics. Springer-Verlag, Berlin-New York, 1988, x+141 pp. ISBN 3-540-17510-5 (A. Ventura) **89b:81265** 81G35 (81-01)
- Hasse, Wolfgang** ★ Optische Beobachtungen in gekrümmten Räumen. (German) [Optical observations in curved spaces] *Technische Universität Berlin, Berlin*, 1987, 131 pp. ISBN 3-7983-1190-0 (Hellmuth Stachel) **89f:53041** 53B50 (53B30)
- Hässelbarth, Werner** The inverse problem of isomer enumeration. *J. Comput. Chem.* **8** (1987), no. 5, 700–717. (Summary) **89a:92084** 92A40 (20B99, 82A67)
- Hassenforder, Claudie** An extension of Knight's theorem on Cauchy distribution. *J. Theoret. Probab.* **1** (1988), no. 2, 205–209. (F. B. Knight) **89d:60034** 60E99
- Hassin, Rafael** A computing scheme for network problems with random edge lengths. *Stochastics in combinatorial optimization* (Udine, 1986), 228–232, *World Sci. Publishing, Singapore*, 1987. (From the introduction) **89j:90091** 90B10 (90C35)
- (with Zemel, Eitan) Probabilistic analysis of the capacitated transportation problem. *Math. Oper. Res.* **13** (1988), no. 1, 80–89. (Alexander H. G. Rinnooy Kan) **89d:90142** 90C08
- Hasslacher, Brosl** (with Frisch, Uriel; d'Humières, D.; Lallemand, P.; Pomeau, Y.; Rivet, Jean-Pierre) Lattice gas hydrodynamics in two and three dimensions. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems* **1** (1987), no. 4, 649–707. (Tony C. Dorlas) **89h:82031** 82A50 (76D05, 82A69)
- Discrete fluids. Stanislaw Ulam 1909–1984. With a contribution by Tsutomu Shimomura, Gary D. Doolen, Hasslacher and Castor Fu. *Los Alamos Sci. No. 15 Special Issue* (1987), 175–217. (see **89m:01133a**) 76P05 (82A68)
- Hassold, Gregory N.** (with Kantor, Yacov) Topological entanglements in the percolation problem. *Phys. Rev. Lett.* **60** (1988), no. 15, 1457–1460. (Summary) **89b:82001** 82-04 (82A43, 82A51)
- el Hassouni, A.** see **El Hassouni, A.**
- Hastad, Johan** One-way permutations in NC<sup>0</sup>. *Inform. Process. Lett.* **26** (1987), no. 3, 153–155. (J. C. Lagarias) **89b:68051** 68Q15 (68Q05)
- Dual vectors and lower bounds for the nearest lattice point problem. *Combinatorica* **8** (1988), no. 1, 75–81. (Béla Uhrin) **89i:11074** 11H99 (11H41, 68R05)
- Lower bounds in computational complexity theory. *Notices Amer. Math. Soc.* **35** (1988), no. 5, 677–683. (Norbert Blum) **89c:68048** 68Q25 (03D15, 68-02)
- (with Frieze, A. M.; Kannan, Ravindran; Lagarias, J. C.; Shamir, Adi) Reconstructing truncated integer variables satisfying linear congruences. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 262–280. (Harald Niederreiter) **89d:11115** 11Y16 (11T71, 94A60)
- Solving simultaneous modular equations of low degree. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 336–341. (Eric Bach) **89c:68049** 68Q25 (11T71, 11Y16, 68P25, 94A60)
- Hastie, T.** (with Pregibon, D.) A new algorithm for matched case-control studies with applications to additive models. *COMPSTAT 1988* (Copenhagen, 1988), 279–284, *Physica, Heidelberg*, 1988. (see **89i:62004**) 62P10
- Hastings, Harold M.** (with Jani, Mahendra) Covering maps in Top<sup>n</sup>. *Geometric topology and shape theory* (Dubrovnik, 1986), 115–124, *Lecture Notes in Math.*, 1283, Springer, Berlin-New York, 1987. (Andrzej Kozłowski) **89a:55019** 55P55
- Hastings, Kevin J.** (with Fläm, S. D.) On adjustment costs, profit uncertainty and investment behavior. *Amer. J. Math. Management Sci.* **7** (1987), no. 3–4, 233–252. (Summary) **89b:90024** 90A09
- (with Eastham, Jerome F.) Optimal impulse control of portfolios. *Math. Oper. Res.* **13** (1988), no. 4, 588–605. (Boženna Pašik-Duncan) **89m:90015** 90A09
- Hastings, S. P.** (with Lu, Chun Qing; Wan, Yieh Hei) Existence of a traveling flame front in a model with no cold boundary difficulty. *SIAM J. Appl. Math.* **47** (1987), no. 6, 1229–1240. (J. Adler) **89c:80020** 80A25 (34B15, 80A30)
- (with Troy, William C.) Oscillating solutions of the Falkner-Skan equation for positive  $\beta$ . *J. Differential Equations* **71** (1988), no. 1, 123–144. (H. Tasso) **89a:35164** 35Q10 (76D10)
- Hasumi, Morisuke** (with Kataoka, Saburō) Remarks on Hardy-Orlicz classes. *Arch. Math. (Basel)* **51** (1988), no. 5, 455–463. (Waleed M. Deeb) **89k:46034** 46E10 (30D55, 30H05)
- Hata, Hiroaki** (with Morita, Terumitsu; Tomita, Koji; Mori, Hazime) Spectra of singularities for the Lozi and Hénon maps. *Progr. Theoret. Phys.* **78** (1987), no. 4, 721–726. (Summary) **89h:70008** 70K50 (58F13)
- (with Morita, Terumitsu; Mori, Hazime; Horita, Takehiko; Tomita, Koji) Spatial and temporal scaling properties of strange attractors and their representations by unstable periodic orbits. *Progr. Theoret. Phys.* **79** (1988), no. 2, 296–312. (Andrew C. Fowler) **89h:58128** 58F13 (26A18)
- Hata, Hiroyuki** (with Itoh, Katsumi; Kugo, Taichiro; Kunitomo, Hiroshi; Ogawa, Kaku) BRS invariant vertex of Neveu-Schwarz-Ramond superstring. *Progr. Theoret. Phys.* **78** (1987), no. 2, 453–486. (Robert Marnelius) **89c:81128** 81E99 (81E30)
- Hata, Masayoshi** On continuous functions with no unilateral derivatives. (French summary) *Ann. Inst. Fourier (Grenoble)* **38** (1988), no. 2, 43–62. (F. Mirosław Filipczak) **89i:26006** 26A27
- On Weierstrass's nondifferentiable function. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 3, 119–123. (Summary) **89c:26013** 26A27
- Singularities of the Weierstrass type functions. *J. Analyse Math.* **51** (1988), 62–90. (F. Brooks) **89m:26012** 26A27
- Hatada, Kazuyuki** Chi-square tests for mod 1 distribution of Fermat and Fibonacci quotients. *Sci. Rep. Fac. Ed. Gifu Univ. Natur. Sci.* **12** (1988), 1–2. (Introduction) **89d:11105** 11R42 (11B39, 11K36, 62G10)
- Hatch, Dorian M.** (with Stokes, Harold T.; Putnam, Rand M.) Space group representations induced by local site symmetries. *Group theoretical methods in physics* (Varna, 1987), 326–333, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (R. L. E. Schwarzenberger) **89j:20020** 20C35 (82A60)
- Hatchell, P. J.** (with Fricke, S. H.; Balantekin, A. B.; Uzer, T.) Uniform semiclassical approximation to supersymmetric quantum mechanics. *Phys. Rev. A* (3) **37** (1988), no. 8,



- 2797-2804. (Summary) **89e:81051** 81C99
- Hatcher, A.** Measured lamination spaces for surfaces, from the topological viewpoint. *Topology Appl.* **30** (1988), no. 1, 63-88. (N. V. Ivanov) **89k:57022** 57M99 (57R30)
- (with Floyd, William J.) The space of incompressible surfaces in a 2-bridge link complement. *Trans. Amer. Math. Soc.* **305** (1988), no. 2, 575-599. (G. Burde) **89c:57004** 57M25
- Hatcher, John R.** New types of nonlinear integral equations. *Houston J. Math.* **14** (1988), no. 1, 97-103. (Donald Kershaw) **89b:45010** 45G05
- Hatcher, William S.** A certain measure of importance. *Pensée naturelle, logique et langage*, 61-73, *Univ. Neuchâtel, Neuchâtel*, 1987. (David Makinson) **89g:03011** 03B30 (00A25)
- Hatfield, B. F.** Introduction to quantum field theory, path integrals, and strings. *Mathematical aspects of string theory* (San Diego, Calif., 1986), 1-12, *Adv. Ser. Math. Phys.*, 1, World Sci. Publishing, Singapore, 1987. (see **89m:81001**) 81-02 (81C35, 81E30)
- (with Yau, S.-T.) An exchange symmetry expansion for the 2-point correlation function of the nonlinear Schrödinger model. *Nuclear Phys. B* **305** (1988), no. 1 F523, 16-32. (Tuncay Aktosun) **89d:82022** 82A15 (81E13)
- Hatfield, Gary** Representation and content in some (actual) theories of perception. *Stud. Hist. Philos. Sci.* **19** (1988), no. 2, 175-214. (Not in MR) 92A25
- Hathaway, R. J.** (with Bezdek, J. C.; Howard, R. E.; Wilson, Celia A.; Windham, M. P.) Local convergence analysis of a grouped variable version of coordinate descent. *J. Optim. Theory Appl.* **54** (1987), no. 3, 471-477. (Summary) **89f:90163** 90C31
- (with Davenport, J. W.; Bezdek, J. C.) Parameter estimation for finite mixture distributions. *Comput. Math. Appl.* **15** (1988), no. 10, 819-828. (Title) **89h:62045** 62F10 (65U05)
- (with Bezdek, J. C.) Recent convergence results for the fuzzy c-means clustering algorithms. *J. Classification* **5** (1988), no. 2, 237-247. (Summary) **89h:62094** 62H30
- (with Kim, Taehwan; Bezdek, J. C.) Optimality tests for fixed points of the fuzzy c-means algorithm. *Pattern Recognition* **21** (1988), no. 6, 651-663. (Summary) **89m:65063** 65K05 (03E72, 68T10, 90C99)
- Hatori, Mitsuho** (with Suehiro, Naoki) Modulatable orthogonal sequences and their application to SSMA systems. *IEEE Trans. Inform. Theory* **34** (1988), no. 1, 93-100. (Not in MR) 94A14
- (with Suehiro, Naoki) *N*-shift cross-orthogonal sequences. *IEEE Trans. Inform. Theory* **34** (1988), no. 1, 143-146. (Summary) **89h:94019** 94A24
- Hatori, Tadatsugu** (with Montgomery, David) Transport coefficients for magnetohydrodynamic cellular automata. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems* **1** (1987), no. 4, 735-752. (From the summary) **89d:76033** 76W05 (76-04, 82A31, 82A40)
- el Hatri, Mohamed** see **El Hatri, Mohamed**
- Hatsuda, Machiko Tawaki** (with Kato, Mitsuhiro; Koikawa, Takao) Can SST-II contain the standard model? *Modern Phys. Lett. A* **3** (1988), no. 16, 1603-1617. (Summary) **89j:81255** 81G20 (17B67, 81E30)
- Hatsue, Kabei** Remarks on minimal immersions. *Bull. Fac. Sci. Ibaraki Univ. Ser. A No. 19* (1987), 47-48. (Renato Tribuzy) **89a:53069** 53C42
- Hattersley, Bob** (with Wilson, Julia) A dual approach to primal degeneracy. *Math. Programming* **42** (1988), no. 1 (Ser. B), 135-145. (S. R. Arora) **89m:90100** 90C05
- Hattori, Aki** Topology of the moduli space of SU(2)-instantons with instanton number 2. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **34** (1987), no. 3, 741-761. (N. J. Hitchin) **89m:53134** 53C80 (32G13, 32L10, 57R22, 81E13)
- Hattori, Kumiko** (with Hattori, Tetsuya; Watanabe, Hiroshi<sup>2</sup>) Gaussian field theories on general networks and the spectral dimensions. *Progr. Theoret. Phys. Suppl. No. 92* (1987), 108-143. (Summary) **89k:81118** 81E25 (82A68)
- (with Hattori, Tetsuya; Watanabe, Hiroshi<sup>2</sup>) Block spin approach to the singularity properties of the continued fractions. *Comm. Math. Phys.* **115** (1988), no. 1, 31-48. (Tony C. Dorlas) **89d:82116** 82A67 (60K35, 82A41)
- (with Hattori, Tetsuya) POP approximation to the spectral dimension of dual three-dimensional Sierpiński carpets. *J. Phys. A* **21** (1988), no. 14, 3117-3129. (Summary) **89i:82087** 82A68 (82A25)
- Hattori, Takashi** Time-extraction for temporal logic. Logic programming and local process time. Mathematical methods in software science and engineering (Japanese). *Sarikaikikenkyūsho Kōkyōroku No. 655* (1988), 167-185. (see **89i:68001**) 68T25
- Hattori, Tetsuya** (with Hara, Takashi; Kondo, Kei-ichi; Tasaki, Hal) Scalar field theory from statistical mechanics. *Progr. Theoret. Phys. Suppl. No. 92* (1987), 1-13. (Claus Montonen) **89e:81082** 81E08 (81-02, 82-02)
- (with Hattori, Kumiko; Watanabe, Hiroshi<sup>2</sup>) Gaussian field theories on general networks and the spectral dimensions. *Progr. Theoret. Phys. Suppl. No. 92* (1987), 108-143. (Summary) **89k:81118** 81E25 (82A68)
- (with Hattori, Kumiko; Watanabe, Hiroshi<sup>2</sup>) Block spin approach to the singularity properties of the continued fractions. *Comm. Math. Phys.* **115** (1988), no. 1, 31-48. (Tony C. Dorlas) **89d:82116** 82A67 (60K35, 82A41)
- (with Hattori, Kumiko) POP approximation to the spectral dimension of dual three-dimensional Sierpiński carpets. *J. Phys. A* **21** (1988), no. 14, 3117-3129. (Summary) **89i:82087** 82A68 (82A25)
- Hattori, Yasunao** (with Gao, Zhi Min) A characterization of closed  $s$ -images of metric spaces. *Tsukuba J. Math.* **11** (1987), no. 2, 367-370. (Zbigniew Piotrowski) **89b:54032** 54E18 (54C10)
- Hatvani, L.** Yuri Alekseevich Mitropol'skii, founder of ICNO. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations* (Budapest, 1987), 14-17, János Bolyai Math. Soc., Budapest, 1987. (Editors) **89f:01047** 01A70
- Hatrany, Cs.** Post rings and Post algebras. I. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* **1986**, May, 11-18. (Vlad Boicescu) **89e:06012** 06D25 (03G20)
- Hatzenbuehler, James** (with Mattson, Don A.) The Cantor set as a remainder of  $X \times Y$ . *Houston J. Math.* **13** (1987), no. 3, 367-371. (J. van Mill) **89b:54030** 54D40 (54D35)
- (with Mattson, Don A.) Spaces for which the first uncountable ordinal space is a remainder. *Period. Math. Hungar.* **19** (1988), no. 2, 107-112. (Jack R. Porter) **89b:54020** 54D35 (54D40)
- (with Mattson, Don A.) Nonscattered zero-dimension remainders. *Rocky Mountain J. Math.* **18** (1988), no. 3, 635-644. (K. D. Magill, Jr.) **89i:54036** 54D40 (54D35)
- Hatziafratis, Telemachos E.** An integral representation formula for holomorphic functions on analytic varieties. *Bull. Soc. Math. Grèce (N.S.)* **27** (1986), 21-29. (M. Hervé)
- 89g:32006** 32A25
- On certain integrals associated to CR-functions. *Trans. Amer. Math. Soc.* **314** (1989), no. 2, 781-802. (Jürgen Leiterer) **89m:32004** 32A25
- Haasbold, H. J.** (with Mathai, A. M.; Mückel, J. P.; Gottlöber, S.; Müller, Volker) Gravitational instability in a multicomponent cosmological medium. *J. Math. Phys.* **29** (1988), no. 9, 2069-2077. (R. C. Roeder) **89j:85009** 85A40 (85A30)
- Haasbold, K.** (with Posthoff, C.; Bochmann, D.) ★ Diskrete Mathematik. (German) [Discrete mathematics] Mathematisch-Naturwissenschaftliche Bibliothek [Mathematical-Scientific Library], 70. *BSB B. G. Teubner Verlagsgesellschaft, Leipzig*, 1986. 248 pp. ISBN 3-322-00300-0 (B. Zelinka) **89b:00003** 00A05 (05-01, 06-01, 68-01)
- Hauck, J.** (with Henkel, D.; Mika, K.) Ordering of metal atoms in binary ccp, hcp, and bcc alloys. *Z. Phys. B* **71** (1988), no. 2, 187-192. (Summary) **89f:82067** 82A60 (82-04)
- Hauck, Jürgen** Eine berechenbare Funktion mit rationalen Werten, die nicht rekursiv ist. [A computable function with rational values which is not recursive] *Z. Math. Logik Grundl. Math.* **33** (1987), no. 3, 255-256. (Editors) **89d:03037** 03D20 (03F60)
- Hauck, Ken** (with Drysdale, Robert L., III; Jerard, Robert B.; Schaudt, Barry) Discrete simulation of NC machining. Computational geometry (Waterloo, ON, 1987). *Algorithmica* **4** (1989), no. 1, 33-60. (Summary) **89m:68143** 68U30 (68U05)
- Hauck, Peter** (with Kienzle, Reinhold) Modular Fitting functors in finite groups. *Bull. Austral. Math. Soc.* **36** (1987), no. 3, 475-483. (Harimut Laue) **89a:20015** 20D10
- Haug, Edward J.** (with Choi, Kyung K.; Komkov, V.) ★ Design sensitivity analysis of structural systems. Mathematics in Science and Engineering, 177. Academic Press, Inc., Orlando, FL, 1986. xvi+381 pp. ISBN 0-12-332920-5; 0-12-332921-3 (Z. Mróz) **89i:73061** 73K40 (73-02, 73-08, 90C50)
- (with Choi, Kyung K.; Komkov, V.) ★ Анализ чувствительности при проектировании конструкции. (Russian) [Sensitivity analysis in the design of structures] Translated from the English by S. Yu. Ivanova and A. D. Larichev. Translation edited and with a preface by N. V. Banichuk. "Mir", Moscow, 1988. 430 pp. (Editors) **89j:73062** 73K40 (73-02, 73-08, 90C50)
- Haug, Kenneth** (with Kouri, Donald J.; Sun, Yan; Mowrey, Richard C.; Zhang, John Z. H.; Truhlar, Donald G.; Schwenke, David W.) New time-dependent and time-independent computational methods for molecular collisions. *Mathematical frontiers in computational chemical physics* (Minneapolis, MN, 1987), 207-243, *IMA Vol. Math. Appl.*, 15, Springer, New York-Berlin, 1988. (see **89f:81004**) 81F99 (81G55)
- (with Zhang, John Z. H.; Kouri, Donald J.; Schwenke, David W.; Shima, Yaakov; Truhlar, Donald G.)  $\mathcal{L}^2$  amplitude density method for multichannel inelastic and rearrangement collisions. *J. Chem. Phys.* **88** (1988), no. 4, 2492-2512. (Summary) **89a:81180** 81G55 (81-08)
- Haug, P.** (with Güttinger, W.; Lang, D.) Geometrical principles of pattern formation and pattern recognition. *Computational systems—natural and artificial* (Schloss Elmau, 1987), 97-116, *Springer Ser. Synergetics*, 38, Springer, Berlin-New York, 1987. (conclusion) **89c:92006** 92A05 (58F14, 58F40)
- (with Neveling, M.; Lang, D.; Güttinger, W.; Dangelmayr, G.) Interactions of stationary modes in systems with two and three spatial degrees of freedom. *The physics of structure formation* (Tübingen, 1986), 153-165, *Springer Ser. Synergetics*, 37, Springer, Berlin-New York, 1987. (see **89b:58064**) 80A20 (58F14, 76R99)
- Haugan, Mark P.** (with Gabriel, Marcus D.; Zhou, Di) Gravitational light deflection and the dragging of inertial frames. *Phys. Rev. D* **37** (1988), no. 10, 2699-2702. (Summary) **89c:83027** 83C25 (83C10)
- Hauge, E. H.** (with Ding, E. Jiang) Some analytic results for a binary fluid mixture. *Phys. A* **155** (1989), no. 2, 189-205. (Summary) **89m:82016** 82A25 (70F99)
- Haughton, Dominique M. A.** On the choice of a model to fit data from an exponential family. *Ann. Statist.* **16** (1988), no. 1, 342-355. (M. M. Siddiqui) **89e:62036** 62F12
- Haugland, Dag** (with Wallace, Stein W.) Solving many linear programs that differ only in the righthand side. *European J. Oper. Res.* **37** (1988), no. 3, 318-324. (Summary) **89k:90097** 90C05 (90C15)
- Hauke, Jan** (with Baksalary, Jerzy K.) Partial orderings of matrices referring to singular values or eigenvalues. *Linear Algebra Appl.* **96** (1987), 17-26. (R. Kala) **89a:15007** 15A18 (11E99)
- Haukkanen, Pentti** A generalization of the Subbarao identity. *Aequationes Math.* **35** (1988), no. 1, 76-81. (D. Reaick) **89f:11015** 11A25
- A note on specially multiplicative arithmetic functions. *Fibonacci Quart.* **26** (1988), no. 4, 325-327. (Joseph Sándor) **89m:11009** 11A25 (11B39)
- Haupt, Otto** see **Blaschke, Wilhelm**, **89a:01100** and **Birthday: Haupt, Otto**, **89i:01126**
- Haupt, P.** (with Tsakmakis, Ch.) Über duale Variablen in der Kontinuumsmechanik. [On dual variables in continuum mechanics] *Z. Angew. Math. Mech.* **68** (1988), no. 4, T189-T191. (V. T. Golovchan) **89k:73003** 73A05 (73B05)
- Haupt, Reinhard** (with Blazewicz, J.; Finke, G.; Schmidt, Günter Joachim) New trends in machine scheduling. *European J. Oper. Res.* **37** (1988), no. 3, 303-317. (Summary) **89h:90122** 90B35
- Production scheduling under time-varying resource consumption. *Found. Control Engrg.* **13** (1988), no. 1, 15-26. (Summary) **89j:90146** 90B35 (90B30)
- Haurie, A.** (with Boukas, K.) Optimality conditions for continuous time systems with controlled jump Markov disturbances: application to an FMS planning problem. *Analysis and optimization of systems* (Antibes, 1988), 663-676, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89f:49029** 49B60 (90C39, 93C75, 93E20)
- (with Hollander, A.) A note on incremental incentives in continuous time. *Optimal control theory and economic analysis*, 3 (Vienna, 1987), 143-150, *North-Holland, Amsterdam-New York*, 1988. (Summary) **89j:90024** 90A09 (90A16)
- (with Breton, M.; Alj, A.) Sequential Stackelberg equilibria in two-person games. *J. Optim. Theory Appl.* **59** (1988), no. 1, 71-97. (G. P. Pavasilopoulos) **89j:90278** 90D05 (90D15, 93A13)
- (with L'Ecuyer, Pierre) Discrete event dynamic programming with simultaneous events. *Math. Oper. Res.* **13** (1988), no. 1, 152-163. (Santosh Kumar) **89c:90106** 90C39
- Hausch, Donald B.** A model of sequential auctions. *Econom. Lett.* **26** (1988), no. 3, 227-233. (Summary) **89e:90054** 90A14 (90A12)
- hauschke-Hauschild, D.** see **Gunschke-Hauschild, D.**
- Hauschild, Dirk** (with Valk, Rüdiger) Safe states in banker-like resource allocation problems. *Inform. and Comput.* **75** (1987), no. 3, 232-263. (Siegmar Gerber) **89e:68028**

- 68Q05 (68N25, 68Q10, 68Q90)
- Hausen, Jutta** Modules with the summand intersection property. *Comm. Algebra* 17 (1989), no. 1, 135–148. (L. Fuchs) **89j:16039** 16A53 (20K15)
- Hauser, Herwig** (with Müller, Gerd) Harmonic and dissonant singularities. *Proceedings of the conference on algebraic geometry* (Berlin, 1985), 123–134, *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (Ulrich Karras) **89c:32016** 32C40 (14B10, 32B30)
- Hauser, Isidore** (with Ernst, Frederick J.) A new proof of an old conjecture. *Gravitation and geometry*, 165–214, *Monographs Textbooks Phys. Sci.*, 4, Bibliopolis, Naples, 1987. (Enric Verdaguer) **89c:83024** 83C20 (83C15, 83C35, 83C40)
- (with Ernst, Frederick J.; García Díaz, Alberto) Colliding gravitational plane waves with noncollinear polarization. II. *J. Math. Phys.* 28 (1987), no. 12, 2951–2960. (Basilis C. Xanthopoulos) **89c:83021** 83C20 (83C15, 83C35, 83C40)
- (with García Díaz, Alberto; Bretón Baez, Nora) Stationary axisymmetric solutions in the vacuum Jordan-Brans-Dicke theory. *Internat. J. Theoret. Phys.* 27 (1988), no. 5, 635–640. (Kenneth Dunn) **89f:83075** 83D05
- (with García Díaz, Alberto) Type-D rigidly rotating perfect fluid solutions. *J. Math. Phys.* 29 (1988), no. 1, 175–178. (P. C. Vaidya) **89a:83028** 83C20 (83C55)
- (with Ernst, Frederick J.; García Díaz, Alberto) Colliding gravitational plane waves with noncollinear polarization. III. *J. Math. Phys.* 29 (1988), no. 3, 681–689. (Basilis C. Xanthopoulos) **89k:83026** 83C20 (83C55)
- Hauser, Paulo R.** (with Curado, Evaldo M. F.) Potts ferromagnet: transformations and critical exponents in planar hierarchical lattices. *J. Statist. Phys.* 52 (1988), no. 1–2, 503–507. (James L. Monroe) **89i:82088** 82A68 (82A05, 82A25)
- Hausman, Jerry A.** Taxes and labor supply. *Handbook of public economics*, Vol. I, 213–263, *Handbooks in Econ.*, 4, North-Holland, Amsterdam-New York, 1985. (see **89m:90002a**) 90A10 (90A30)
- Hausmann, Jean-Claude** (with Vogel, Pierre) Manifold categories of Poincaré duality spaces. *Differential topology* (Siegen, 1987), 241–258, *Lecture Notes in Math.*, 1350, Springer, Berlin-New York, 1988. (J. P. E. Hodgson) **89k:57044** 57P10 (55M30)
- Hausrath, Alan R.** (with Manasevich, Raul F.) Periodic solutions of periodically forced weakly coupled nondegenerate systems. *Appl. Anal.* 26 (1987), no. 1, 1–21. (Maria Patrizia Pera) **89a:34048** 34C25
- (with Manasevich, Raul F.) Periodic solutions of periodically forced nondegenerate systems. *Rocky Mountain J. Math.* 18 (1988), no. 1, 49–65. (A. Somolinov) **89c:34072** 34C25 (85E05, 85F22)
- Haussler, D.** (with Blumer, A.; Blumer, J.; McConnell, R.; Ehrenfeucht, Andrzej) Complete inverted files for efficient text retrieval and analysis. *J. Assoc. Comput. Mach.* 34 (1987), no. 3, 578–595. (Armin Cremers) **89b:68028** 68P20 (68Q25, 68R10, 68T10)
- Quantifying inductive bias: AI learning algorithms and Valiant's learning framework. *Artificial Intelligence* 36 (1988), no. 2, 177–221. (Summary) **89b:68127** 68T05
- Hausmann, U. G.** Examples of optimal controls for linear stochastic control systems with partial observation. *Stochastics* 22 (1987), no. 3–4, 289–323. (Emmanuel Nicholas Barron) **89a:93057** 93E20 (93C40)
- Nonlinear filtering—the degenerate case. *Stochastic differential systems, stochastic control theory and applications* (Minneapolis, Minn., 1986), 187–203, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (O. A. Glonti) **89c:93196** 93E11 (60G35, 60H15)
- (with Pardoux, É.) A conditionally almost linear filtering problem with non-Gaussian initial condition. *Stochastics* 23 (1988), no. 2, 241–275. (Mireille Chaleyat-Maurel) **89d:60080** 60G35 (93E11)
- Hausmann, Werner** Approximation by harmonic functions. *Topics in multivariate approximation* (Santiago, 1986), 111–124, *Academic Press*, Boston, MA, 1987. (W. K. Hayman) **89b:31007** 31B20 (31B99, 41A30)
- (with Zeller, K.)  $H$ -sets and best uniform approximation by solutions of elliptic differential equations. *Resulante Math.* 14 (1988), no. 1–2, 84–92. (R. M. Hervé) **89k:41032** 41A50 (35B99, 35J15)
- (with Goldstein, Myron; Rogge, Lothar) On the mean value property of harmonic functions and best harmonic  $L^1$ -approximation. *Trans. Amer. Math. Soc.* 305 (1988), no. 2, 505–515. (D. H. Armitage) **89d:31010** 31B05 (41A30, 41A50)
- Hautamäki, Antti** ★ Points of view and their logical analysis. *Acta Philosophica Fennica*, 41, *Societas Philosophica Fennica, Helsinki*, 1986. 156 pp. ISBN 951-95055-6-3 (Charles F. Kielkopf) **89c:03050** 03B60 (03A05, 06B99)
- Hautus, M. L. J.** (with Zhu, Si Quan; Praagman, C.) Sufficient conditions for robust BIBO stabilization: given by the gap metric. *Systems Control Lett.* 11 (1988), no. 1, 53–59. (Andrzej W. Olbrot) **89k:93181** 93D25 (93D99)
- Haux, R.** (with Mattauch, V.; Weckesser, G.) Correction to: "Rank tests for the  $2 \times 2$  design with  $I$  blocks" [Biometrical J. 29 (1987), no. 5, 507–524; MR 88i:62075]. *Biometrical J.* 30 (1988), no. 2, 255. (Editors) **89j:62064** 62G10 (62K10)
- Haüy, René-Just** see Burckhardt, Johann Jakob, **89m:51020**
- Havas, Peter** see Einstein, Albert, **89a:01102**
- Havel, Ivan** Jaroslav Morávek. (Czech) *Časopis Pěst. Mat.* 112 (1987), no. 4, 420–423. (Editors) **89b:01048** 01A70
- Havel, Timothy F.** (with Dress, Andreas) The fundamental theory of distance geometry. *Computer aided geometric reasoning*, Vol. I, II (Sophia-Antipolis, 1987), 127–169, *INRIA, Rocquencourt*, 1987. (V. N. Berestovskii) **89c:51020** 51K05
- (with Dress, Andreas) Shortest-path problems and molecular conformation. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* 19 (1988), no. 1–3, 129–144. (G. W. Peck) **89c:92063** 92A40 (90B10)
- (with Easthope, Peter L.) Computational experience with an algorithm for tetrahedral inequality bound smoothing. *Bull. Math. Biol.* 51 (1989), no. 1, 173–194. (Summary) **89m:92064** 92A40 (92A09)
- Havener, Arthur** (with Aoki, Masanao) An instrumental variables interpretation of linear systems theory estimation. *J. Econom. Dynamics Control* 12 (1988), no. 1, 49–54. (Not in MR) **62P20** (62M10)
- (with Cerchi, Marlene) Cointegration and stock prices: the random walk on Wall Street revisited. Economic time series with random walk and other nonstationary components. *J. Econom. Dynamics Control* 12 (1988), no. 2–3, 333–346. (see **89j:62004**) 90A09 (90A20)
- Haviv, Moshe** Aggregation/disaggregation methods for computing the stationary distribution of a Markov chain. *SIAM J. Numer. Anal.* 24 (1987), no. 4, 952–966. (James E. Gentle) **89f:65039** 65F10 (60J10, 65U05)
- (with Ritov, Yakov) The variance of the waiting time in a queueing system with jockeying. *Comm. Statist. Stochastic Models* 4 (1988), no. 1, 161–182. (U. Narayan Bhat) **89c:60189** 60K25 (90B22)
- (with Ritov, Yakov) Erratum: "The variance of the waiting time in a queueing system with jockeying" [Comm. Statist. Stochastic Models 4 (1988), no. 1, 161–182; MR 89c:60189]. *Comm. Statist. Stochastic Models* 5 (1989), no. 1, 161. (Editors) **89m:60229** 60K25 (90B22)
- Havlicek, Hans** Liniengeometrische Modelle affiner 4-Räume. [Line-geometric models of affine 4-spaces] *Proceedings of the Congress of Geometry* (Thessaloniki, 1987), 47–53, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1988. (R. Fritsch) **89f:51013** 51A30
- Lineare Geradenkomplexe über Schiefkörpern. [Linear line complexes over skew fields] *Arch. Math. (Basel)* 51 (1988), no. 2, 181–187. (O. Giering) **89b:51038** 51M30
- Havlicek, M.** (with Smirnov, Yu. F.; Tolstol, V. N.; Burdík, Ć.; Sakharuk, A. A.) The Dyson-type boson realizations for representations of the semisimple Lie algebras and superalgebras. *Group theoretical methods in physics*, Vol. 1–3 (Zvenigorod, 1982), 67–76, *Harwood Academic Publ., Chur*, 1985. (Summary) **89m:17020** 17B15 (17B70, 81C40)
- (with Blank, J.) Irreducible  $\ast$ -representations of the Lie superalgebras  $B(0, n)$  with finite-degenerated vacuum. II. *J. Math. Phys.* 29 (1988), no. 3, 546–559. (Gerald A. Goldin) **89m:17009** 17B10 (17B70)
- Havlin, Shlomo** Anomalous diffusion and fractons in disordered structures. *Random fluctuations and pattern growth* (Cargèse, 1988), 15–19, *NATO Adv. Sci. Inst. Ser. E: Appl. Sci.*, 157, *Kluwer Acad. Publ., Dordrecht*, 1988. (see **89j:00034**) 82A57 (82A43)
- (with Bunde, Armin; Stanley, H. E.) Anomalous transport in random linear structures. *Random fluctuations and pattern growth* (Cargèse, 1988), 37–41, *NATO Adv. Sci. Inst. Ser. E: Appl. Sci.*, 157, *Kluwer Acad. Publ., Dordrecht*, 1988. (see **89j:00034**) 82A42 (82A70)
- (with Schwartz, Moshe) Diffusion in the presence of random fields in  $d \geq 2$  dimensions. *J. Phys. A* 21 (1988), no. 8, L483–L486. (Summary) **89f:82042** 82A42 (82A41)
- (with Fletcher, John E.; Weiss, G. H.) First passage time problems in time-dependent fields. *J. Statist. Phys.* 51 (1988), no. 1–2, 215–232. (Summary) **89d:82050** 82A31 (60J15, 82A41)
- (with Weissman, Haim) Dynamics in multiplicative processes. *Phys. Rev. B* (3) 37 (1988), no. 10, part B, 5994–5996. (Summary) **89b:82034** 82A25 (58F40)
- Havstad, James W.** (with Ehlers, Cindy L.) Attractor dimension of nonstationary dynamical systems from small data sets. *Phys. Rev. A* (3) 39 (1989), no. 2, 845–853. (Summary) **89k:58180** 58F13 (62M10)
- Havsteen, B.** (with Busse, H.-G.) Analysis of life processes and economic systems by methods of thermodynamics. *From chemical to biological organization*, 348–357, *Springer Ser. Synergetics*, 39, Springer, Berlin-New York, 1988. (see **89g:92002**) 92A05 (82A35, 90A16)
- al-Hawaj, A. Y.** see Al-Hawaj, A. Y.
- Hawkes, Trevor** Subgroup embedding properties. *Group theory* (Bressanone, 1986), 52–64, *Lecture Notes in Math.*, 1281, Springer, Berlin-New York, 1987. (John S. Wilson) **89c:20039** 20D30 (20F26)
- (with Isaacs, I. M.) On the poset of  $p$ -subgroups of a  $p$ -solvable group. *J. London Math. Soc.* (2) 38 (1988), no. 1, 77–86. (Kenneth A. Brown) **89c:20083** 20J05
- Hawking, S. W.** Who's afraid of (higher derivative) ghosts? *Quantum field theory and quantum statistics*, Vol. 2, 129–139, *Hilger, Bristol*, 1987. (see **89b:81008**) 83C45 (81G25)
- The Schrödinger equation of the Universe. *Schrödinger* (London, 1987), 176–179, *Cambridge Univ. Press, Cambridge-New York*, 1987. (see **89m:01069**) 83C45 (83F05)
- Newton's Principia. *Three hundred years of gravitation*, 1–4, *Cambridge Univ. Press, Cambridge-New York*, 1987. (see **89b:83007**) 01A45 (01A60)
- Quantum cosmology. *Three hundred years of gravitation*, 631–651, *Cambridge Univ. Press, Cambridge-New York*, 1987. (see **89b:83007**) 83C45 (01A60, 83F05)
- The density matrix of the universe. *Unification of fundamental interactions* (Marstrand, 1986), 151–153, *Royal Swedish Acad. Sci., Stockholm*, 1987. (see **89f:81005**) 83F05 (83C45)
- (with Page, Don N.) How probable is inflation? *Nuclear Phys. B* 298 (1988), no. 4, 789–809. (Markku Lehto) **89c:83056** 83F05
- (with Laflamme, R.) Baby universes and the nonrenormalizability of gravity. *Phys. Lett. B* 209 (1988), no. 1, 39–41. (Yu. N. Obukhov) **89b:83021** 83C45 (81E20, 81E30, 83F05)
- Wormholes in spacetime. *Phys. Rev. D* (3) 37 (1988), no. 4, 904–910. (Markku Lehto) **89f:83056** 83C45 (83F05)
- see also *Three hundred years of gravitation*, **89b:83007**
- Hawkins, David** The spirit of play—a memoir for Stan Ulam. Stanislaw Ulam 1909–1984. *Los Alamos Sci. No. 15 Special Issue* (1987), 39–51. (see **89m:01133a**) 01A70
- Hawkins, J. M.** (with Choksi, J. R.; Prasad, V. S.) Abelian cocycles for nonsingular ergodic transformations and the genericity of type III $_{\lambda}$  transformations. *Monatsh. Math.* 103 (1987), no. 3, 187–205. (Motosige Osikawa) **89a:28019** 28D99 (46L55)
- Hawkins, Thomas** Cayley's counting problem and the representation of Lie algebras. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1642–1656, *Amer. Math. Soc., Providence, RI*, 1987. (J. Dieudonné) **89f:01033** 01A55 (01A60, 22-03)
- Non-Euclidean geometry and Weierstrassian mathematics: the background to Killing's work on Lie algebras. *Studies in the history of mathematics*, 21–36, *MAA Stud. Math.*, 26, *Math. Assoc. America, Washington, DC*, 1987. (see **89b:01002**) 01A55
- Hawley, John F.** General relativistic hydrodynamics near black holes. *Dynamical spacetimes and numerical relativity* (Philadelphia, PA, 1985), 101–122, *Cambridge Univ. Press, Cambridge-New York*, 1986. (see **89b:83004**) 83C55
- (with Centrella, Joan M.; Shapiro, Stuart L.; Evans, Charles R.; Teukolsky, Saul A.) Test-bed calculations in numerical relativity. *Dynamical spacetimes and numerical relativity* (Philadelphia, PA, 1985), 328–344, *Cambridge Univ. Press, Cambridge-New York*, 1986. (see **89b:83004**) 83-08
- Hawranek, Jacek** (with Zygmunt, Jan) Some elementary properties of conditionally distributive lattices. *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* 12 (1983), no. 3, 117–121. (R. Beazer) **89j:06008** 06D05
- A characterization of prime theories in Johansson's minimal logic. *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* 12 (1983), no. 3, 122–125. (Janis Ctrulius) **89b:03043** 03B60 (03B20)
- (with Zygmunt, Jan) Notes on the semantics for the logic with semi-negation. Foundations of statements in mathematics and in philosophy. Types of logical systems and prob-



- lems of truth (Jablonna, 1983). *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* 12 (1983), no. 4, 152-156. (see **89g:03001**) 03B60
- On the degree of complexity of sentential logics. III. An example of Johansson's minimal logic. *Studia Logica* 46 (1987), no. 4, 283-289. (W. Rautenberg) **89i:03054** 03B99
- Haws, D. (with Copeland, E.; Kibble, T. W. B.; Mitchell, David; Turok, Neil) Monopoles connected by strings and the monopole problem. *Nuclear Phys. B* 298 (1988), no. 3, 445-457. (Summary) **89b:81000** 83F05 (81G25)
- Haxell, P. E. (with McDonald, J. J.; Thomason, S. K.) Counting interval orders. *Order* 4 (1987), no. 3, 269-272. (K. P. Bogart) **89j:06003** 06A10 (05A15)
- Haxthausen, Anne Elisabeth Mutually recursive algebraic domain equations. *VDM '88*. *VDM—the way ahead* (Dublin, 1988), 299-317. *Lecture Notes in Comput. Sci.*, 328, Springer, Berlin-New York, 1988. (see **89m:68093**) 68Q60 (03B70, 68Q55)
- Hay, Cynthia Introduction. *Mathematics from manuscript to print*, 1300-1600 (Oxford, 1984), 1-8. *Oxford Sci. Publ., Oxford Univ. Press, New York, 1988*. (Editors) **89b:01063** 01A70
- Is translation betrayal in the history of mathematics? *Mathematics from manuscript to print*, 1300-1600 (Oxford, 1984), 183-189. *Oxford Sci. Publ., Oxford Univ. Press, New York, 1988*. (H. W. Guggenheimer) **89m:01004** 01A05 (00A25)
- see also *Mathematics from manuscript to print*, **89c:01003**
- Hayakawa, Eijirou Regularization of vector fields by Easton type surgery. *Dynamical systems and singular phenomena* (Kyoto, 1986), 147-161. *World Sci. Adv. Ser. Dyn. Syst.*, 2, World Sci. Publishing, Singapore, 1987. (Summary) **89c:58117** 58F40 (70F05, 70F35)
- Hayakawa, Takeshi Correction to: "The likelihood ratio criterion and the asymptotic expansion of its distribution" [Ann. Inst. Statist. Math. 29 (1977), no. 3, 359-378; MR 57#14225]. *Ann. Inst. Statist. Math.* 39 (1987), no. 3, 681. (Editors) **89a:62049** 62E20 (62F05, 62H10)
- Hayakawa, Yoshiyuki (with Šiljak, Dragoslav D.) On almost invariant subspaces of structured systems and decentralized control. *IEEE Trans. Automat. Control* 33 (1988), no. 10, 931-939. (V. V. Krakhotko) **89k:93166** 93D15 (93A15, 93B05, 93B07)
- Hayami, K. (with Brebbia, Carlos Alberto) A new coordinate transformation method for singular and nearly singular integrals over general curved boundary elements. *Boundary elements IX, Vol. 1* (Stuttgart, 1987), 375-399. *Comput. Mech., Southampton, 1987*. (Summary) **89i:73005** 73-08 (73K25)
- Hayase, Toshiyuki (with Ito, Tadayasu; Suematsu, Yoshiyuki; Hase, Kenji) Distribution patterns of eigenvalues of laminar pipe flow (classification of modes based on dynamics of the system). *JSMI Internat. J. Ser. II* 31 (1988), no. 4, 632-638. (Summary) **89k:76032** 76D05 (76-04, 76E05)
- Hayashi, Chihito Summary report of our studies on nonlinear oscillations. (Russian summary) *Asymptotic methods in mathematical physics* (Russian), 256-263, 304, "Naukova Dumka", Kiev, 1988. (see **89g:00006**) 34C10 (58F08, 70Kxx)
- Hayashi, Heima Note on an index formula of elliptic units in a ring class field. II. *Acta Arith.* 50 (1988), no. 4, 351-353. (Jing Yu) **89j:11058** 11G16 (11F20, 11G15, 11R27)
- Hayashi, Katsuya (with Okamoto, Masahiro; Sakai, Toshio) Biochemical switching device realizing McCulloch-Pitts type equation. *Biol. Cybernet.* 58 (1988), no. 5, 295-299. (Not in MR) 92A09
- Hayashi, Masahito (with Kawamoto, Noboru; Kuramoto, Tetsuji; Shigemoto, Kazuyasu) Modular invariance and the gravitational anomaly in type II superstring theory. *Nuclear Phys. B* 294 (1987), no. 2, 459-497. (Roger Brooks) **89a:81131** 81E99 (81E30, 83E30)
- (with Kawamoto, Noboru; Kuramoto, Tetsuji; Shigemoto, Kazuyasu) Gravitational anomaly cancellation in type I superstring theory. *Nuclear Phys. B* 296 (1988), no. 2, 373-401. (Roger Brooks) **89b:81193** 81E99 (81E20, 81E30, 83E30)
- Hayashi, Mikihiro (with Gamelin, T. W.) The algebra of bounded analytic functions on a Riemann surface. *J. Reine Angew. Math.* 382 (1987), 49-73. (M. von Renteln [Zbl 635:30039]) **89j:46052** 46J15 (30F99, 30H05)
- Hayashi, Nakao Global strong solutions of coupled Klein-Gordon-Schrödinger equations. *Funkcial. Ekvac.* 29 (1986), no. 3, 299-307. (M. S. Agranovich) **89c:35132** 35Q20
- (with Tsutsumi, Yoshio) Remarks on the scattering problem for nonlinear Schrödinger equations. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 162-168. *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Woodford W. Zachary) **89a:35155** 35Q20
- (with Tsutsumi, Yoshio) Scattering theory for Hartree type equations. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* 46 (1987), no. 2, 187-213. (Gustavo Perla Menzala) **89a:81158** 81F05 (35P25, 35Q20, 81G45)
- (with Ozawa, Tohru) Scattering theory in the weighted  $L^2(\mathbb{R}^*)$  spaces for some Schrödinger equations. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* 48 (1988), no. 1, 17-37. (Arne Jensen) **89k:35175** 35P25 (35J10, 47F05, 81F05)
- Asymptotic behavior of solutions to time-dependent Hartree equations. *Nonlinear Anal.* 12 (1988), no. 3, 313-319. (Woodford W. Zachary) **89d:35021** 35B40 (35Q20)
- Hayashi, Takahiro Sugawara operators and their applications to Kac-Kazhdan conjecture. *Proc. Japan Acad. Ser. A Math. Sci.* 63 (1987), no. 9, 356-359. (From the text) **89m:17040** 17B67 (17B10)
- Hayasida, Kazuya (with Kawai, Yasuhiko) On a degenerate quasilinear elliptic equation with mixed boundary conditions. *Tokyo J. Math.* 10 (1987), no. 2, 437-470. (D. E. Edmunds) **89g:35035** 35J60
- On the regularity properties for solutions of the Cauchy problem for the porous media equation. *Proc. Amer. Math. Soc.* 107 (1989), no. 1, 107-112. (Peter Knabner) **89m:35109** 35K55 (35K65, 76S05)
- Hayat Khalid, M. (with Ahmad, B.) Some theorems of BCK-algebras. *J. Natur. Sci. Math.* 28 (1988), no. 1, 161-163. (Summary) **89d:06018** 06D99 (03G25)
- Hayden, T. L. (with Wells, Jim) Approximation by matrices positive semidefinite on a subspace. *Linear Algebra Appl.* 109 (1988), 115-130. (F. Sziardovsky) **89k:65047** 65F35 (15A60)
- Haydon, Richard On the structure of the space  $L_{p, \infty}(\mu; Y^*)$  of weak\*  $p$ -integrable functions. *Séminaire d'Analyse Fonctionnelle 1984/1985*, 1-8. *Publ. Math. Univ. Paris VII*, 26, Univ. Paris VII, Paris, 1986. (Introduction) **89m:46072** 46E40 (46E30)
- (with Levy, Mireille; Odell, Edward) On sequences without weak\* convergent convex block subsequences. *Proc. Amer. Math. Soc.* 100 (1987), no. 1, 94-98. (C. Ward Henson) **89d:46014** 46B15 (03E30)
- (with Bellenot, Steven F.; Odell, Edward) Quasi-reflexive and tree spaces constructed in the spirit of R. C. James. *Banach space theory* (Iowa City, IA, 1987), 19-43. *Contemp. Math.*, 85, Amer. Math. Soc., Providence, RI, 1989. (Abderrazzak Sersouri) **89m:46014** 46B10 (46B15)
- Hayes, David R. The refined  $p$ -adic abelian Stark conjecture in function fields. *Invent. Math.* 94 (1988), no. 3, 505-527. (David Goss) **89k:11116** 11R58 (11R18, 11R27, 11R42)
- Hayes, Ellen Amanda see Moskol, Ann. (**89b:01071**)
- Hayes, John P. (with Maziasz, Robert L.) Layout optimization of CMOS functional cells. *24th ACM/IEEE Design Automation Conference* (Miami Beach, FL, 1987), 544-551. *ACM, New York, 1987*. (D. Stanomir) **89k:94112** 94C15 (05C35, 94C30)
- (with Harary, Frank; Wu, Horng-Jyh) A survey of the theory of hypercube graphs. *Comput. Math. Appl.* 15 (1988), no. 4, 277-289. (L. W. Beineke) **89i:05230** 05C75 (05C10, 05C70)
- Hayes, M. H. (with Wilkes, D. M.; Clements, M. A.) Iterative harmonic decomposition of nonstationary random processes: theory and application to spectral line tracking. *Mathematics in signal processing* (Bath, 1985), 105-119. *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see **89b:94004**) 93E25
- Hayes, Michael On strain and straining. *Arch. Rational Mech. Anal.* 100 (1988), no. 3, 265-273. (Marcelo Epstein) **89d:73004** 73B99
- Hayes, Sandra The spectrum and its relation to complex analysis. *Geometry Seminars*, 1986 (Italian) (Bologna, 1986), 75-80. *Univ. Stud. Bologna, Bologna, 1988*. (Introduction) **89m:32020** 32C15 (32G05)
- Haykin, Simon Modern signal processing. *Signal processing and pattern recognition in nondestructive evaluation of materials* (Lac Beauport, PQ, 1987), 39-47. *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 44, Springer, Berlin-New York, 1988. (see **89a:94002**) 94A12 (93E03, 94A13)
- Hayli, Avram (with Dumont, Thierry; Moulin Ollagnier, Jean; Strelcyn, Jean-Marie) Quelques résultats nouveaux sur les billards de Robnik. (English summary) [Some new results on Robnik billiards] *J. Phys. A* 20 (1987), no. 11, 3237-3249. (Jaroslav Smítal) **89c:80082** 58F14 (30D05, 58F17)
- Hayman, K. J. (with Noye, John) The fourth-order explicit FDM for solving the one-dimensional diffusion equation with a derivative boundary condition. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 259-269. *North-Holland, Amsterdam-New York, 1988*. (Summary) **89c:65087** 65M05
- Hayman, Walter Functions mapping rationals on rationals. *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* 195 (1986), no. 1-3, 53-70. (R. Walliser) **89a:30027** 30D30 (11Q05, 30D20, 30E99)
- (with Brannan, David A.) Research problems in complex analysis. *Bull. London Math. Soc.* 21 (1989), no. 1, 1-35. (From the introduction) **89m:30001** 30-02 (00A07, 31-02)
- see also Heilbronn, Hans Arnold, **89i:01140**
- Haymond, Robert E. (with Thornton, John R.; Warner, Daniel D.) A shortest path algorithm in robotics and its implementation on the FPS T-20 hypercube. *Ann. Oper. Res.* 14 (1988), no. 1-4, 305-320. (Not in MR) 90C39 (70-02, 70Q05)
- Ibn al-Haytham, Hasan see Sezgin, Fuat, **89c:01013**
- Hayton, G. E. (with Pugh, A. C.; Kafai, A.) Some local results for linear systems and implications for state variable feedback. *Internat. J. Control* 48 (1988), no. 5, 1755-1767. (T. Kaczorek) **89k:93114** 93C05 (93B55)
- Hayward, Ryan B. A lower bound for the optimal crossing-free Hamiltonian cycle problem. *Discrete Comput. Geom.* 2 (1987), no. 4, 327-343. (Hansjoachim Walther) **89a:05057** 05C10 (05C45)
- Hazama, Fumio Branching rules and Hodge cycles on certain abelian varieties. *Amer. J. Math.* 110 (1988), no. 2, 235-252. (Ryuji Sasaki) **89e:14042** 14K05 (17B10, 22E45)
- Geometric analogue of the Mumford-Tate conjecture for stably nondegenerate abelian varieties (a note on Mustafin's paper). *Tôhoku Math. J. (2)* 40 (1988), no. 1, 87-94. (Introduction) **89i:14037** 14K05 (11G10, 32G20)
- Hazareesingh, L. (with Kannan, D.) Stochastic product integration and stochastic equations. *Stochastic partial differential equations and applications* (Trento, 1985), 72-120. *Lecture Notes in Math.*, 1236, Springer, Berlin-New York, 1987. (Summary) **89a:60136** 60H05 (28A50, 60H10)
- Hazen, Allen Natural deduction and Hilbert's  $\varepsilon$ -operator. *J. Philos. Logic* 16 (1987), no. 4, 411-421. (J. Corcoran) **89c:03013** 03B10 (03A05, 03C80)
- Hazen, Gordon B. Differential characterizations of nonconical dominance in multiple objective decision making. *Math. Oper. Res.* 13 (1988), no. 1, 174-189. (K. Zimmermann) **89c:90127** 90D35 (90C31)
- Hazewinkel, M. Lie algebraic methods in filtering and identification. *VIIIth international congress on mathematical physics* (Marseille, 1986), 120-137. *World Sci. Publishing, Singapore, 1987*. (G. Banon) **89g:93098a** 93E11 (17B99, 60G35, 60H15, 93B27, 93E12)
- Lectures on linear and nonlinear filtering. *Analysis and estimation of stochastic mechanical systems* (Udine, 1987), 103-135. *CISM Courses and Lectures*, 303, Springer, Vienna, 1988. (Daniel Occone) **89f:93039** 93E11 (17B65, 60G35, 93E12)
- A tutorial introduction to differentiable manifolds and calculus on manifolds. *Analysis and estimation of stochastic mechanical systems* (Udine, 1987), 316-340. *CISM Courses and Lectures*, 303, Springer, Vienna, 1988. (D. I. Papuc) **89i:58001** 58-01 (53-01)
- A short tutorial on Lie algebras. *Analysis and estimation of stochastic mechanical systems* (Udine, 1987), 341-350. *CISM Courses and Lectures*, 303, Springer, Vienna, 1988. (Summary) **89k:17014** 17Bxx (17-01, 93B27, 93E11)
- Lie algebraic method in filtering and identification. *Stochastic processes in physics and engineering* (Bielefeld, 1986), 159-176. *Math. Appl.*, 42, Reidel, Dordrecht-Boston, MA, 1988. (G. Banon) **89g:93098b** 93E11 (17B99, 60G35, 60H15, 93B27, 93E12)
- see also *Stochastic processes in physics and engineering*, **89a:00025**; *Proceedings: Symposium on Mathematics in Industry*, **89e:90001** and *Deformation theory of algebras and structures and applications*, **89h:00003**
- Hazed, W. (with Siebert, E.) Automorphisms on a Lie group contracting modulo a compact subgroup and applications to semistable convolution semigroups. *J. Theoret. Probab.* 1 (1988), no. 2, 211-225. (Summary) **89m:60023** 60B15
- Hazou, Irene A. (with Solmon, Donald C.) Inversion of the exponential X-ray transform. I. *Analysis. Math. Methods Appl. Sci.* 10 (1988), no. 5, 561-574. (Frank Natterer) **89k:44007** 44A15 (45H05, 45L05, 92A07)
- Hazra, Satya N. (with Reddy, M. Sudhakara) Design of two-dimensional circularly symmetric low-pass IIR filters using transformation. *IEEE Trans. Circuits and Systems* 35 (1988), no. 9, 1186-1188. (Not in MR) 94A05

- Hdeib, Hasan Z.** On the product of paracompact spaces. *Questions Answers Gen. Topology* 5 (1987), no. 2, 229–236. (Ivan L. Reilly) **89c:54048** 54D18
- (with Pareek, C. M.) Para-Lindelöf spaces. *Questions Answers Gen. Topology* 6 (1988), no. 1, 1–9. (C. E. Aull) **89g:54054** 54D20
- On spaces which have countable tightness. *Questions Answers Gen. Topology* 6 (1988), no. 1, 11–20. (C. E. Aull) **89h:54014** 54D15 (54D18, 54D55)
- A note on  $L$ -closed spaces. *Questions Answers Gen. Topology* 6 (1988), no. 1, 67–72. (Ivan L. Reilly) **89f:54055** 54D99
- He, Anming** (with Cai, Yunhai) Scattering amplitude for Witten's open superstring field theory. *Phys. Lett. B* 196 (1987), no. 1, 60–64. (B. Spence) **89a:81117** 81E99 (81E30, 81E40)
- He, Chang Zheng** Compact continuous mappings and fixed point theorems in partially ordered locally convex topological vector spaces. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* 1988, no. 1, 97–105. (Jing Xian Sun) **89i:47100** 47H07 (47H10)
- He, Chong** Generalized derivatives of a region function and its applications. *Appl. Math. Mech. (English Ed.)* 8 (1987), no. 4, 389–396. (Gérard Lebourg) **89e:26011** 26A24 (26B05, 58C20, 90C30)
- He, Chong You** Almost periodic solutions of the Abel differential equation. *Ann. Differential Equations* 1 (1985), no. 1, 27–41. (Summary) **89g:34057** 34C27 (34D20)
- On almost periodic solutions for nonlinear systems with almost periodic forcing. *Ann. Differential Equations* 3 (1987), no. 4, 403–420. (Summary) **89k:34068** 34C29 (34A34, 34C27)
- Research aspects of almost periodic ODEs. (Chinese) Topics in ordinary differential equations (Nanjing, 1986). *Nanjing Daxue Xuebao Shuxue Bannian Kan* 1987, 50–63. (Wei Yue Ding) **89m:34050** 34C27 (34–02)
- (with Sun, Jian Hua) Almost periodic solution of a class of nonautonomous systems. *Ann. Differential Equations* 4 (1988), no. 4, 461–472. (Nicolae Lungu) **89m:34052** 34C27 (34C25)
- He, Chun Yang** (with Xiong, Xi Wen) The depression method for the second kind inverse eigenvalue problem of symmetric tridiagonal matrices. (Chinese. English summary) *J. Dalian Inst. Tech.* 25 (1986), Special Issue on Mathematics, suppl., 46–51. (E. L. Yip) **89d:50338** 65F15
- Reduction of ill-conditioned eigenvectors of an unsymmetric matrix. (Chinese. English summary) *Math. Numer. Sinica* 9 (1987), no. 4, 396–402. (Ji-guang Sun) **89i:65040** 65F15 (65F35)
- He, Fa He** (with Wei, Mu Lin) The mathematician Prof. Jian Ke Lu. (Chinese) *J. Wuhan Univ. Natur. Sci. Ed.* 1987, no. 4, 123–124. (Editors) **89h:01064** 01A70
- He, Guang Zong** Discussion of an improvement in the gradient projection method. (Chinese) *J. Chengdu Univ. Sci. Tech.* 1986, no. 2, 79–84. (Not in MR) 90C30 (65K05)
- A note on dynamic programming. (Chinese) *J. Chengdu Univ. Sci. Tech.* 1988, no. 4, 151–155. (Su Sheng Wang) **89j:90260** 90C39 (49C20)
- He, J. C.** (with Bao, Cheng Guang) A procedure to calculate the Talmi-Moshinsky coefficients for  $N$ -body systems with arbitrary masses. *J. Phys. A* 21 (1988), no. 15, 3253–3258. (Summary) **89j:81287** 81H10
- He, Ji Chao** (with Zhang, Yan'li) Data dependencies in databases with incomplete information. *J. Comput. Sci. Tech. (English Ed.)* 3 (1988), no. 2, 131–138. (Not in MR) 68P15
- He, Jia Ru** Equivale fuzzy numbers and equikernel fuzzy numbers. (Chinese) *Math. Practice Theory* 1988, no. 1, 14–17. (Summary) **89h:03097** 03E72
- He, Jia Xing** On (0,1) Hermite interpolation. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 5, 155–159. (Not in MR) 41A05 (65D05)
- He, Jian Xun** Practical stability of discontinuous large-scale systems. *Comput. Math. Appl.* 14 (1987), no. 2, 119–125. (Ye-Hwa Chen) **89k:93011** 93A15 (93D99)
- He, Jing Min** (with Lu, Kai Cheng) The security and design of knapsack public key cryptosystems. (Chinese. English summary) *J. Tsinghua Univ.* 28 (1988), no. 1, 89–97. (Zhao Zhi Zhang) **89m:94011** 94A60 (68P25)
- He, Kun** (with Zheng, Zhong Guo) A robust estimation method in a family of distributions with fuzzy tails. (Chinese. English summary) *Adv. in Math. (Beijing)* 17 (1988), no. 2, 179–185. (Summary) **89f:62032** 62F35 (62F10)
- He, Li** Some theorems about positive linear operators on the space  $C(Q)$ . (Chinese. English summary) *Hunan Jiaoyu Xueyuan Ziran Xue Xuebao* 5 (1987), no. 2, 42–44. (Guang Ya Chen) **89a:47044** 47B38 (26D15)
- He, Li Min** A modification of Powell-Zangwill's method and its rate of convergence. (Chinese) *Chinese J. Oper. Res.* 5 (1986), no. 1, 65, 29. (Not in MR) 90C30
- A modification of Powell-Zangwill's method and its rate of convergence. A Chinese summary appears in Chinese Ann. Math. Ser. A 8 (1987), no. 5, 645. *Chinese Ann. Math. Ser. B* 8 (1987), no. 4, 479–487. (Wolfgang Wetterling) **89a:90125** 90C30 (65K10)
- He, Lian Fa** (with Chen, Zao Ping) Necessary and sufficient conditions for embedding a mapping on a circle into a semiflow. (Chinese) *Acta Math. Sinica* 30 (1987), no. 6, 729–732. (Lian-Fa He) **89f:54075** 54H20
- A necessary and sufficient condition for embedding a continuous self-mapping of the interval in a quasiflow. (Chinese) *Acta Math. Sinica* 31 (1988), no. 2, 258–261. (Run Sheng Yang) **89g:54092** 54H20 (34C35, 58F25)
- Existence of periodic orbits for dynamical systems on nonorientable 2-manifolds. (Chinese) *J. Math. Res. Exposition* 8 (1988), no. 3, 407–410. (Zhen Xi Dong) **89k:58241** 58F22
- He, Lun Zhi** An improvement in the principle of optimal resource allocation. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* 5 (1988), no. 1, 108–112. (Summary) **89j:90236** 90C31
- On the problem of stability of equilibrium prices. (Chinese) *J. Xinjiang Univ. Natur. Sci.* 5 (1988), no. 2, 74–77. (Not in MR) 90A14 (90A12)
- He, Meng Xing** Abstract functional-differential equations—Lyapunov functionals and existence of periodic solutions. (Chinese) *Acta Math. Sinica* 31 (1988), no. 3, 425–430. (Jian Hong Wu) **89i:34108** 34K30 (34C25, 34K15)
- He, Min** Uniform boundedness and uniform ultimate boundedness of functional-differential equations with unbounded delay. A Chinese summary appears in Chinese Ann. Math. Ser. A 8 (1987), no. 3, 533. *Chinese Ann. Math. Ser. B* 8 (1987), no. 3, 320–328. (Binggen Zhang) **89b:34159** 34K15 (34C11)
- He, Ming** Lattice structure under multiple choice principle. *Sichuan Daxue Xuebao* 24 (1987), no. 2, 119–125. (Guo Jun Wang) **89a:06015** 06A23 (06D05, 06D10)
- He, Qing** On the problem of constructing  $k$ -connected graphs. (Chinese. English summary) *Heilongjiang Daxue Ziran Xue Xuebao* 1988, no. 1, 79–80, 68. (Gui Zhen Liu) **89i:05186** 05C40
- He, Rong Lu** A class of difference schemes for solving diffusion-convection equations. (Chinese. English summary) *Xinan Jiaotong Daxue Xuebao* 1987, no. 4, 50–57. (Ben-Yu Guo) **89h:65140** 65M05 (65M10)
- He, Sheng Wu** (with Wang, Jia Gang) On contiguity, entire separation and convergence in variation of sequences of measures induced by stochastic processes. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* 4 (1988), no. 1, 53–63. (Summary) **89j:60061** 60G30
- He, Tian Xiao** (with Chui, C. K.; Wang, Ren Hong) The  $C^2$  quartic spline space on a four-directional mesh. Proceedings of China-US Joint Conference on Approximation Theory (Hangzhou, 1985). *Approx. Theory Appl.* 3 (1987), no. 4, 32–36. (K. Jetter) **89i:41015** 41A15 (41A63, 65D07)
- (with Chui, C. K.) On minimal and quasiminimal supported bivariate splines. *J. Approx. Theory* 52 (1988), no. 2, 217–238. (Gerhard Meitz) **89a:41007** 41A15 (65D07)
- (with Chui, C. K.; Xu, Li Zhi) Asymptotic properties of positive summation-integral operators. *J. Approx. Theory* 55 (1988), no. 1, 49–60. (Harvir Singh Kasana) **89k:41028** 41A36 (41A25)
- He, Wen Chen** (with He, Wen Jie) On Kekulé structure and  $P$ - $V$  path method. *Graph theory and topology in chemistry (Athens, Ga., 1987)*, 476–483. *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (W. T. Tutte) **89g:92082** 92A40 (05C99)
- (with He, Wen Jie) One-to-one correspondence between Kekulé and sextet patterns. *Graph theory and topology in chemistry (Athens, Ga., 1987)*, 484–488. *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (N. Trinajstić) **89g:92081** 92A40 (05C99)
- (with Balaban, Alexandru T.; Brunvoll, J.; Cioslowski, Jerzy; Cyvin, B. N.; Cyvin, S. J.; Gutman, I.; He, Wen Jie; Knop, J. V.; Kovačević, M.; Müller, W. R.; Szymanski, K.; Tošić, Ratko; Trinajstić, N.) Enumeration of benzenoid and coronoid hydrocarbons. *Z. Naturforsch. A* 42 (1987), no. 8, 863–870. (Summary) **89d:92090** 92A40 (05A15)
- He, Wen Guang** Multiple model adaptive control for a class of systems with uncertain parameters. (Chinese. English summary) *Acta Automat. Sinica* 14 (1988), no. 3, 191–198. (Jifeng Zhang) **89i:93072** 93C40 (34K35, 93C60)
- He, Wen Jie** Jackson's conjecture concerning 2-connected "almost regular" graphs. (Chinese) *Chinese J. Oper. Res.* 4 (1985), no. 1, 67–68. (Zheng Sheng Wu) **89j:05050** 05C45 (05C38)
- (with He, Wen Chen) On Kekulé structure and  $P$ - $V$  path method. *Graph theory and topology in chemistry (Athens, Ga., 1987)*, 476–483. *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (W. T. Tutte) **89g:92082** 92A40 (05C99)
- (with He, Wen Chen) One-to-one correspondence between Kekulé and sextet patterns. *Graph theory and topology in chemistry (Athens, Ga., 1987)*, 484–488. *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (N. Trinajstić) **89g:92081** 92A40 (05C99)
- (with Balaban, Alexandru T.; Brunvoll, J.; Cioslowski, Jerzy; Cyvin, B. N.; Cyvin, S. J.; Gutman, I.; He, Wen Chen; Knop, J. V.; Kovačević, M.; Müller, W. R.; Szymanski, K.; Tošić, Ratko; Trinajstić, N.) Enumeration of benzenoid and coronoid hydrocarbons. *Z. Naturforsch. A* 42 (1987), no. 8, 863–870. (Summary) **89d:92090** 92A40 (05A15)
- He, Wen Qing** (with Chen, Yong Yi; You, Chuan Hua) Computation of the period of a homogeneous finite Markov chain. (Chinese. English summary) *Lanzhou Daxue Xuebao* 24 (1988), no. 3, 1–6. (Mu Fa Chen) **89m:60153** 60J10
- He, Xiang Dong** (with Wang, Min Zhong) A weakening of the initial conditions for stability of an Euler column. (Chinese. English summary) *Beijing Daxue Xuebao* 1987, no. 5, 101–106. (Summary) **89d:73029** 73H05
- He, Xiang Wei** (with Ye, Xiao Ye) Feedback control for the attitude control system of an elastic space vehicle. (Chinese. English summary) *Acta Automat. Sinica* 13 (1987), no. 3, 184–190. (Zong Ji Chen) **89b:93078** 93C75 (93B07, 93B50, 93B55, 93B60, 93C20)
- He, Xin** (with Yesha, Yaacov) Binary tree algebraic computation and parallel algorithms for simple graphs. *J. Algorithms* 9 (1988), no. 1, 92–113. (Michael B. Richey) **89e:68050** 68Q25 (05C70, 68Q10)
- (with Yesha, Yaacov) A nearly optimal parallel algorithm for constructing depth first spanning trees in planar graphs. *SIAM J. Comput.* 17 (1988), no. 3, 486–491. (Mirko Krivánek) **89e:05071** 05C05 (68Q25, 68R10, 90B10)
- He, Ying Hui** Some notes on convergence rates for error variance estimates in linear models. (Chinese. English summary) *J. Math. Res. Exposition* 8 (1988), no. 2, 301–306. (Zhi-Dong Bai) **89b:62105** 62J05 (62E20)
- He, Yu Qi** see Ho, Yu-Chi
- He, Yu Zan** (with Yang, Chung Chun) On pseudoprimitivity of the product of some pseudoprime meromorphic functions. *Analysis of one complex variable (Laramie, Wyo., 1985)*, 113–124. *World Sci. Publishing, Singapore*, 1987. (Norbert Steinmetz) **89e:30061** 30D05 (34A20, 34D30)
- (with Gao, Shi An) On the growth and value distribution of analytic solutions of a class of algebraic differential equations. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 1, 109–120. (W. Balser) **89b:34011** 34A20 (34C11)
- He, Yuan Ping** (with Wang, Neng Chao) The parallel Newton-Raphson iterative method for linear multistep formulas. (Chinese. English summary) *Math. Numer. Sinica* 10 (1988), no. 2, 181–193. (Summary) **89i:65070** 65L05
- He, Zheng Xu** Controlling the free boundaries in solidification processes. *An. Stiint. Univ. "Al. I. Cuza" Iași Sec. I a Mat. (N.S.)* 33 (1987), no. 1, 39–46. (Fouad A. Mohamed) **89f:35221** 35R35 (80A20)
- (with Freedman, Michael H.) Factoring the logarithmic spiral. *Invent. Math.* 92 (1988), no. 1, 129–138. (F. W. Gehring) **89j:30026** 30C60 (32A30)
- (with Freedman, Michael H.) A remark on inherent differentiability. *Proc. Amer. Math. Soc.* 104 (1988), no. 4, 1305–1310. (Laurence R. Taylor) **89f:57041** 57R50 (58F99)
- He, Zhi Jun** (with Zhang, Wei; Yu, Rui Zhao) A linear heuristic algorithm for graph search. (Chinese. English summary) *Inform. and Control (Shenyang)* 17 (1988), no. 2, 1–6. (Ding Zhu Du) **89f:68075** 68Q25 (05C05, 68R10)
- He, Zhi Qiang** (with Tao, Fu Zhen) Soliton gravitational wave solutions in the case of a static centrally symmetric background gravitational field. (Chinese) *Xue Xue Tongbao (Chinese)* 33 (1988), no. 8, 575–578. (Not in MR) 83C15 (83C35)



- He, Zhong Luo** The strong law of large numbers for weighted sums of random variables. (Chinese. English summary) *J. Math. (Wuhan)* 7 (1987), no. 3, 233–238. (Zheng Yan Lin) **89i:60068** 60F15 (60G50)
- He, Zi Fan** (with Xu, Meng Lie) Design and implementation of an interface for a symbolic mathematical computation system. (Chinese. English summary) *Hunan Daxue Xuebao* 15 (1988), no. 1 *Special Issue of Math.*, 161–167. (Summary) **89i:68075** 68Q40
- He, Zao** The application of systems theory to studying the change in the structure of employment. (Chinese. English summary) *Beijing Shifan Daxue Xuebao* 1987, no. 4, 88–96. (Not in MR) 92A20
- Head, Tom** (with Lando, Barbara) Regularity of sets of initial strings of periodic DOL-systems. *Theoret. Comput. Sci.* 48 (1986), no. 1, 101–108. (Juhani Karhumäki) **89a:68118** 68Q45
- The topological structure of the space of unending paths of a graph. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 60 (1987), 131–140. (Jacek Nikiel) **89i:05129** 05C20 (05C38, 54H10)
- (with Lando, Barbara) Bounded DOL languages. *Theoret. Comput. Sci.* 51 (1987), no. 3, 255–264. (H. Jürgensen) **89g:68038** 68Q45 (68Q50)
- Healey, Timothy J.** A group-theoretic approach to computational bifurcation problems with symmetry. *Comput. Methods Appl. Mech. Engrg.* 67 (1988), no. 3, 257–295. (R. R. Huilgol) **89i:58057** 58E07 (20H15, 47H15, 65H10, 73H99)
- Global bifurcations and continuation in the presence of symmetry with an application to solid mechanics. *SIAM J. Math. Anal.* 19 (1988), no. 4, 824–840. (A. Vanderbauwhede) **89i:58058** 58E07 (73H05, 73K05)
- Healy, M. J. R.** (with Tillett, H. E.) Short-term extrapolation of the AIDS epidemic. With discussion. *J. Roy. Statist. Soc. Ser. A* 151 (1988), no. 1, 50–65. (Not in MR) 62P10 (92A15)
- Heaps, Terry** (with Helliwell, John F.) The taxation of natural resources. *Handbook of public economics*, Vol. I, 421–472, *Handbooks in Economics*, 4, North-Holland, Amsterdam-New York, 1985. (see **89m:90002a**) 90A30
- Heard, Melvin L.** (with Rankin, Samuel M., III) A semilinear parabolic Volterra integro-differential equation. *J. Differential Equations* 71 (1988), no. 2, 201–233. (Teodor Hăvărneanu) **89i:45003** 45D05 (45J05, 45K05)
- Heera, Donald W.** (with Barton, Russell R.; Lawphongpanich, Siriphong) The equivalence of transfer and generalized benders decomposition methods for traffic assignment. *Transportation Res. Part B* 23 (1989), no. 1, 61–73. (Not in MR) 90C08
- Hearnshaw, J. B.** see *Proceedings: 4th Asian-Pacific Regional Meeting of the International Astronomical Union*, **89i:01001**
- Heath, David C.** (with Kertz, Robert P.) Leaving an interval in limited playing time. *Adv. in Appl. Probab.* 20 (1988), no. 3, 635–645. (Sylvain Sorin) **89i:90102** 90D15 (60G40, 90C40, 93E05)
- Heath, Jo**  $K$ -to-1 functions on arcs for  $K$  even. *Proc. Amer. Math. Soc.* 101 (1987), no. 2, 387–391. (Rotaub Goubau Cahill) **89i:26002** 26A15 (54C10)
- $k$ -to-1 functions between graphs with finitely many discontinuities. *Proc. Amer. Math. Soc.* 103 (1988), no. 2, 661–666. (J. Moduszeewski) **89i:05104** 05C10 (54C10)
- There is no exactly  $k$ -to-1 function from any continuum onto  $[0, 1]$ , or any dendrite, with only finitely many discontinuities. *Trans. Amer. Math. Soc.* 306 (1988), no. 1, 293–305. (L. E. Ward, Jr.) **89b:54017** 54C10 (54F15, 54F50)
- Tree-like continua and exactly  $k$ -to-1 functions. *Proc. Amer. Math. Soc.* 105 (1989), no. 3, 765–772. (P. Krupski) **89i:54028** 54C10 (54F50)
- Heath, Lenwood S.** (with Rosenberg, Arnold L.; Smith, Bruce T.) The physical mapping problem for parallel architectures. *J. Assoc. Comput. Mach.* 35 (1988), no. 3, 603–634. (Karel Culik II) **89i:68076** 68Q35
- Heath, M. T.** (with Romine, C. H.) Parallel solution of triangular systems on distributed-memory multiprocessors. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 3, 558–588. (Zeng Rong Chen) **89i:65168** 65W05 (65F05)
- (with Eisenstat, S. C.; Henkel, C. S.; Romine, C. H.) Modified cyclic algorithms for solving triangular systems on distributed-memory multiprocessors. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 3, 589–600. (Zeng Rong Chen) **89i:65169** 65W05 (65F05)
- Heath, Philip R.** (with Parmenter, M. M.) Lifting colimits in various categories. *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 2, 193–197. (S. B. Niefeld) **89i:18003** 18A30 (18A20, 20J99, 20L13)
- Heath-Brown, D. R.** van der Corput bounds for the Dedekind zeta-function. *Groupe de travail en théorie analytique et élémentaire des nombres*, 1986–1987, 44–46, *Publ. Math. Orsay*, 88-01, Univ. Paris XI, Orsay, 1988. (see **89b:11004**) 11R42 (11M99)
- The growth rate of the Dedekind zeta-function on the critical line. *Acta Arith.* 49 (1988), no. 4, 323–339. (A. Perelli) **89i:11071** 11R42
- The number of primes in a short interval. *J. Reine Angew. Math.* 389 (1988), 22–63. (R. C. Vaughan) **89i:11099** 11N05 (11N35)
- Differences between consecutive primes. *Jahresber. Deutsch. Math.-Verein.* 90 (1988), no. 2, 71–89. (H.-E. Richert) **89i:11100** 11N05
- The fractional part of  $\alpha n^2$ . *Mathematika* 35 (1988), no. 1, 28–37. (R. C. Baker) **89i:11056** 11J71 (11L40)
- Heathcote, Adrian** Zeeman-Göbel topologies. *British J. Philos. Sci.* 39 (1988), no. 2, 247–261. (László B. Szabados) **89i:83030** 83C99
- Heathcote, C. R.** (with Welsh, A. H.) Multivariate functional least squares. *J. Multivariate Anal.* 25 (1988), no. 1, 45–64. (Nariaki Sugiyama) **89d:62044** 62H12 (62E20)
- Heatherly, Henry** Matrices satisfying  $AB - BA = I$ . *Amer. Math. Monthly* 94 (1987), no. 10, 979–980. (William H. Gustafson) **89i:15019** 15A24 (15A33)
- Algebras with a unity commutator. *Indian J. Pure Appl. Math.* 19 (1988), no. 1, 36–41. (Vesselin Drensky) **89i:16025** 16A42 (16A53)
- A characterization of infinite dimension for vector spaces. *Math. Mag.* 61 (1988), no. 4, 239–242. (G. Bandyopadhyay) **89i:47005** 47A05 (15A99)
- Heaton, John C.** (with Hansen, Lars Peter; Ogaki, Masao) Efficiency bounds implied by multiperiod conditional moment restrictions. *J. Amer. Statist. Assoc.* 83 (1988), no. 403, 863–871. (Bert M. Steece) **89m:62102** 62M10 (62P20)
- Heaton, K. C.** Propagator matrices in the solution of EMP problems. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 475–513, *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (see **89b:00029**) 78A99
- Héauime, François** Modules purs-semi-simples. [Pure-semisimple modules] *Comm. Algebra* 17 (1989), no. 1, 33–58. (Robert Wisbauer) **89m:16058** 16A64 (16A53, 16A60, 16A90)
- Heaviside, Oliver** see *Nahin, Paul J.*, **89f:01073**
- Hebda, James J.** (with Blumenthal, Robert A.) The generalized Cartan-Ambrose-Hicks theorem. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 14, 647–651. (R. J. Crittenden) **89i:53043** 53C05 (53C10)
- (with Blumenthal, Robert A.) An analogue of the holonomy bundle for a foliated manifold. *Tôhoku Math. J. (2)* 40 (1988), no. 2, 189–197. (Jean Wouafou Kamga) **89d:53069** 53C12 (57R30)
- Hebda-Grabowska, Halina** Weak convergence of random sums of infima of independent random variables. *Probab. Math. Statist.* 8 (1987), 41–47. (M. Csörgö) **89i:60025** 60F05 (60G50)
- Hebeker, F.-K.** Efficient boundary element methods for three-dimensional exterior viscous flows. *Numer. Methods Partial Differential Equations* 2 (1986), no. 4, 273–297. (Timothy Nigel Phillips) **89i:76011** 76-08 (76D99)
- A boundary element spectral method for nonstationary Navier-Stokes flows. *The mathematics of finite elements and applications*, VI (Uxbridge, 1987), 305–312, *Academic Press, London-New York*, 1988. (see **89i:65004**) 65M60 (76-08, 76D05)
- Hebermehl, Georg** PP NUMATH—a program package for methods of numerical mathematics. With remarks on matrix processor variants. *Numerical methods (Miskolc, 1986)*, 669–688, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (see **89b:65012**) 65V05
- Hébert, Michel** On the reflective hull problem. *Comment. Math. Univ. Carolin.* 28 (1987), no. 4, 603–606. (H. Herrlich) **89i:18002** 18A20 (18A40)
- Multireflections and multifactorization systems. *Demonstratio Math.* 20 (1987), no. 3–4, 501–517 (1988). (Csaba Némethi) **89i:18002** 18A20 (18A40)
- Hebisch, U.** (with Weinert, Hanns Joachim) On Euclidean semirings. *Kyungpook Math. J.* 27 (1987), no. 1, 61–88. (R. Gorton) **89i:16054** 16A78
- (with van Leeuwen, L. C. A.) On additively or multiplicatively idempotent semirings and partial orders. *Semigroups, theory and applications (Oberwolfach, 1986)*, 154–161, *Lecture Notes in Math.*, 1320, Springer, Berlin-New York, 1988. (H. J. Weinert) **89i:16046** 16A78 (06F05, 06F25)
- Heble, M. P.** Approximation of differentiable functions on a Hilbert space. III. *Math. Ann.* 282 (1988), no. 3, 473–484. (J. P. Holmes) **89i:41040** 41A65 (46G99, 58C07, 58C25)
- Hecht, Henryk** (with Milićić, Dragan; Schmid, Wilfried; Wolf, Joseph A.) Localization and standard modules for real semisimple Lie groups. I. The duality theorem. *Invent. Math.* 90 (1987), no. 2, 297–332. (David Collingwood) **89i:22025** 22E46
- Hecht, K. T.** (with Le Blanc, Richard) New perspective on the  $U(n)$  Wigner-Racah calculus. II. Elementary reduced Wigner coefficients for  $U(n)$ . *J. Phys. A* 20 (1987), no. 14, 4613–4635. (R. Mirman) **89i:81025a** 81C40 (20C35, 22E70, 81G30)
- Vector coherent state theory for the  $S, D$  fermion pair algebra. *Nuclear Phys. A* 475 (1987), no. 2, 276–300. (G. Vanden Berghé) **89i:81250** 81G30 (22E70, 81D30)
- (with Rowe, D. J.; Le Blanc, Richard) Vector coherent state theory and its application to the orthogonal groups. *J. Math. Phys.* 29 (1988), no. 2, 287–304. (Summary) **89i:22028** 22E46 (81D30)
- Vector coherent state theory for the  $Sp(6) \supset U(3)$  branch of the  $S, D$  fermion pair algebra. *Nuclear Phys. A* 484 (1988), no. 1, 61–76. (Summary) **89i:81261** 81G30 (22E70, 81D30)
- Hecht, Ralf** (with Backler, Peter; Hehl, Friedrich W.; Shirafuji, Takeshi) Mass and spin of exact solutions of the Poincaré gauge theory. *Progr. Theoret. Phys.* 78 (1987), no. 1, 16–21. (P. K. Smerz) **89i:83068** 83D05 (81E13)
- Heck, André** A criterion for a triple  $(X, I, \mu)$  to be a  $W$ -graph of a Coxeter group. *Comm. Algebra* 16 (1988), no. 10, 2083–2102. (Bhama Srinivasan) **89i:20075** 20H15 (05C99)
- Heck, B. S.** (with Haddad, A. H.) Singular perturbation analysis of linear systems with scalar quantized control. *Automatica—J. IFAC* 24 (1988), no. 6, 755–764. (Summary) **89i:93115** 93C15 (34E15)
- (with Haddad, A. H.) Singular perturbation in piecewise-linear systems. *IEEE Trans. Automat. Control* 34 (1989), no. 1, 87–90. (Qinde Zhou) **89m:34080** 34E15 (34C20)
- Hecke, Erich** ★ Analysis und Zahlentheorie. (German) [Analysis and number theory] Vorlesung Hamburg 1920. [Hamburg lectures 1920] Edited and with a foreword by Peter Roquette. Dokumente zur Geschichte der Mathematik [Documents on the History of Mathematics], 3. *Friedr. Vieweg & Sohn, Braunschweig*, 1987. xxviii+234 pp. ISBN 3-528-08997-0 (Charles J. Parry) **89i:01043** 01A75 (11-03, 11R18, 11R37)
- Hecker, Hans-Dietrich** Beleuchtungsprobleme für Polygone. [Problems of illumination for polygons] *Wiss. Z. Pädagog. Hochsch. "Karl Friedrich Wilhelm Wander" Dresden* 21 (1987), 17–20. (H. Brauner) **89i:51026** 51M20 (52A25)
- Heckmann, G. J.** (with Opdam, E. M.) Root systems and hypergeometric functions. I. *Compositio Math.* 64 (1987), no. 3, 329–352. (S. I. Gelfand) **89i:58192a** 58G07 (22E45, 32C38, 32C40, 33A35)
- Root systems and hypergeometric functions. II. *Compositio Math.* 64 (1987), no. 3, 353–373. (S. I. Gelfand) **89i:58192b** 58G07 (22E45, 32C38, 32C40, 33A35)
- Hector, Gilbert** Cohomologies transversales des feuilletages riemanniens. I. (English summary) [Transversal cohomology of Riemannian foliations. I] *Feuilletages riemanniens, quantification géométrique et mécanique (Lyon, 1986)*, 5–30, *Travaux en Cours*, 26, Hermann, Paris, 1988. (P. Molino) **89i:57022** 57R30 (53C12)
- Hedayat, A. S.** (with Majumdar, Dibyen) Model robust optimal designs for comparing test treatments with a control. *J. Statist. Plann. Inference* 18 (1988), no. 1, 25–33. (Summary) **89i:62126** 62K05
- (with Foody, W. M.) A graphical proof of the nonexistence of BIB(7, b, r, 3, λ[16] designs. *J. Statist. Plann. Inference* 20 (1988), no. 1, 77–90. (Bhagwandas) **89i:62097** 62K10 (05B05)
- Hedberg, Lars Inge** Nonlinear potential theory and Sobolev spaces. *Nonlinear analysis, function spaces and applications*, Vol. 3 (Litomyšl, 1986), 5–30, *Teubner-Texte Math.*, 93, Teubner, Leipzig, 1986. (H. Wallin) **89i:46074** 46E35 (31C15)
- Hedenmalm, Håkan** (with Gorkin, Pamela; Mortini, Raymond) A Beurling-Rudin theorem for  $H^\infty$ . *Illinois J. Math.* 31 (1987), no. 4, 629–644. (Michael von Renteln) **89i:46114** 46J15 (30H05, 46J20)
- Bounded analytic functions and closed ideals. *J. Analyse Math.* 48 (1987), 142–166. (Michael von Renteln) **89i:46115** 46J15 (30H05, 46J20)

- Hedetnietni, S. T. (with Hare, E. O.) A linear algorithm for computing the Knight's domination number of a  $k \times n$  chessboard. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 59 (1987), 115–130. 68Q20 (05B99, 68R05)
- (with Domke, Gayla S.; Laskar, R.; Allan, Robert) Generalized packings and coverings of graphs. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 259–270. (J. W. Moon) 89i:05212 05C70
- (with Hedetniemi, Sandra M.; Liestman, Arthur L.) A survey of gossiping and broadcasting in communication networks. *Networks* 18 (1988), no. 4, 319–349. (Ki Hang Kim) 89h:90087 90B10 (05C35, 92A20, 94C15)
- Hedetnietni, Sandra M. (with Hedetniemi, S. T.; Liestman, Arthur L.) A survey of gossiping and broadcasting in communication networks. *Networks* 18 (1988), no. 4, 319–349. (Ki Hang Kim) 89h:90087 90B10 (05C35, 92A20, 94C15)
- Hedlund, Kye S. Aesop: a tool for automated transistor sizing. 24th ACM/IEEE Design Automation Conference (Miami Beach, FL, 1987), 114–120. *ACM, New York*, 1987. (see 89f:68003) 94C05
- Heegard, Chris (with Fuja, Tom; Goodman, Rod) Linear sum codes for random access memories. *IEEE Trans. Comput.* 37 (1988), no. 9, 1030–1042. (J. C. Hwang) 89h:94079 94B60 (68P25)
- Heep, Maria (with Weselmann, Uwe) Deligne's conjecture. *Beilinson's conjectures on special values of L-functions*, 37–42, *Perspect. Math.*, 4, Academic Press, Boston, MA, 1988. (Introduction) 89k:11049 11G40 (11F67, 14G10)
- Heerema, Nickolas (with Deveney, James K.) Higher derivations and distinguished subfields. *Canad. J. Math.* 40 (1988), no. 1, 131–141. (H. F. Kreimer) 89b:12009 12F15
- Heermann, Dieter W. (with Binder, K.) Monte Carlo simulation in statistical physics. An introduction. Springer Series in Solid-State Sciences, 80. Springer-Verlag, Berlin-New York, 1988. viii+127 pp. ISBN 3-540-19107-0 (Ernesto Omerti) 89i:82002 82-04 (82-01, 82A25, 82A41, 82A43, 82A68)
- (with Desai, Rashmi C.; Binder, K.) Finite-size scaling in a microcanonical ensemble. *J. Statist. Phys.* 53 (1988), no. 3–4, 795–823. (M. Lawrence Glasser) 89k:82004 82-08 (82A25, 82A68)
- Hefner, Kim A. S. (with Lundgren, J. Richard) Biquicubic covers and partitions of acyclic digraphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 59 (1987), 135–146. (O. V. Borodin) 89i:05130 05C20 (05C70)
- el-Hefny, M. R. see El-Hefny, M. R.
- Hefner, Ernst F. Inverse methods and solitons as applied to nuclear physics. *Some topics on inverse problems* (Montpellier, 1987), 134–144, *World Sci. Publishing, Singapore*, 1988. (see 89f:35007) 81G35 (35Q20, 35R30)
- Hegarty, A. F. Uniformly accurate methods for two-dimensional singular perturbation problems. *BAIL IV* (Novosibirsk, 1986), 314–319, *Boole Press Conf. Ser.*, 8, Boole, Dun Laoghaire, 1986. (N. A. Sidorov) 89b:65043 65N10
- Hegazi, Ahmed Sadek (with Czichowski, Günter) Darstellungen von Heisenberg-Lie-Superalgebren. [Representations of Heisenberg-Lie superalgebras] *Math. Nachr.* 135 (1988), 85–92. (J. Löhmus) 89k:17013 17A70 (17B10, 17B70)
- Hegde, Manjunath V. (with Agrawal, Rajeev; Teneketzis, Demosthenis) Asymptotically efficient adaptive allocation rules for the multiarmed bandit problem with switching cost. *IEEE Trans. Automat. Control* 33 (1988), no. 10, 899–906. (John C. Gittins) 89k:62105 62L05 (90C40)
- Hegedüs, Csaba J. Newton's recursive interpolation in  $\mathbb{R}^n$ . *Numerical methods* (Miskolc, 1986), 605–623, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (T. N. L. Patterson) 89c:65007 65D05
- Hegedüs, M. A new proof of a fixed point theorem for generalized Banach contractions. *Mathematical analysis and systems theory*, IV, 49–54, *DM*, 87-3, Karl Marx Univ. Econom., Budapest, 1987. (Schie Park) 89c:54087 54H25
- Hegel, Georg Wilhelm see Hegel and the natural sciences, 89m:00020; Neuser, Wolfgang, (89m:00020) and (Not in MR)
- Hegerfeldt, Gerhard C. (with Schulze, Henrik) Noncommutative cumulants for stochastic differential equations and for generalized Dyson series. *J. Statist. Phys.* 51 (1988), no. 3–4, 691–710. (Ronald F. Fox) 89h:82011 82A31 (60H25)
- (with Schulze, Henrik) Quantum shot noise: expansions in powers of the pulse density. *J. Statist. Phys.* 51 (1988), no. 3–4, 711–728. (Ronald F. Fox) 89h:82012 82A15 (60J20)
- Heging see He, Qing
- Hehl, Friedrich W. (with Baekler, Peter; Hecht, Ralf; Shirafuji, Takeshi) Mass and spin of exact solutions of the Poincaré gauge theory. *Progr. Theoret. Phys.* 78 (1987), no. 1, 16–21. (P. K. Smerz) 89b:83068 83D05 (81E13)
- (with Baekler, Peter; Gürses, Metin) A new method to solve the field equations of Poincaré gauge theories. *Classical Quantum Gravity* 5 (1988), no. 7, L105–L112. (P. K. Smerz) 89f:83073 83D05 (81E13)
- (with McCrea, J. Dermott; Mielke, Eckehard W.) A remark on the axisymmetric Chen et al. solution of the Poincaré gauge theory. *Phys. Lett. A* 127 (1988), no. 2, 65–69. (P. K. Smerz) 89d:83055 83D05 (81E13)
- (with Baekler, Peter; Gürses, Metin; McCrea, J. Dermott) The exterior gravitational field of a charged spinning source in the Poincaré gauge theory: a Kerr-Newman metric with dynamic torsion. *Phys. Lett. A* 128 (1988), no. 5, 245–250. (M. Carmeli) 89f:83074 83D05
- (with Kopyński, Wojciech; McCrea, J. Dermott) The Weyl group and its currents. *Phys. Lett. A* 128 (1988), no. 6–7, 313–317. (H. S. Green) 89f:81081 81D15 (58E30, 81C40)
- Hegner, Eric C. R. Logic based on programming. *Logic of programming and calculi of discrete design* (Marktredorf, 1986), 261–275, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 36, Springer, Berlin-New York, 1987. (Gordon Fisher) 89a:03010 03A05
- (with Gupta, Lorene E.; Malton, Andrew J.) Erratum: "Predicate methodology" [Acta Inform. 23 (1986), no. 5, 487–505; MR 87k:68090]. *Acta Inform.* 26 (1988), no. 3, 285. (Editors) 89k:68096 68Q35 (68N05)
- Real-time programming. *Inform. Process. Lett.* 30 (1989), no. 1, 51–56. (Not in MR) 68N05 (68Q55)
- Heiberger, Richard M. see Computer science and statistics, 89c:62004
- meyer auf der Heide, Friedhelm see Meyer auf der Heide, Friedhelm
- Heidelberger, Michael Fechner's indeterminism: from freedom to laws of chance. *The probabilistic revolution*, Vol. 1, 117–156, *Bradford Book*, MIT Press, Cambridge, MA-London, 1987. (Summary) 89a:01034 01A55 (92A27)
- Heidelberger, Philip (with Towsey, Don) Sensitivity analysis from sample paths using the method of likelihoods. *Analysis and optimization of systems* (Antibes, 1988), 951–953, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see 89c:00031) 93B35
- (with Cao, Xi-Ren; Zazanis, Michael A.; Suri, Rajan) Convergence properties of infinitesimal perturbation analysis estimates. *Management Sci.* 34 (1988), no. 11, 1281–1302. (Summary) 89i:90036 90B22
- Discrete event simulations and parallel processing: statistical properties. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 6, 1114–1132. (Do Le Minh) 89j:68152 68U20 (60K10, 65W05)
- Heidema, Johannes (with Brink, Chris) A verisimilar ordering of theories phrased in a propositional language. *British J. Philos. Sci.* 38 (1987), no. 4, 533–549. (Piotr Wojtylak) 89c:03017 03B30 (03A05)
- Heideman, Michael T. Multiplicative complexity, convolution, and the DFT. *Springer-Verlag, New York-Berlin*, 1988. viii+155 pp. ISBN 0-387-96810-5 (A. D. Booth) 89i:94006 94A11 (11Y16, 12-04, 65T05, 68-02)
- Heidenreich, W. (with Castell, L.; Künemund, T.) All unitary irreducible representations of  $osp(N, 4)$  with positive energy. *Quantum theory and the structures of time and space*, Vol. 6 (Tutzing, 1984), 138–175, *Hanser, Munich*, 1986. (Bani Mitra) 89k:17047 17B70 (22E70, 81G20)
- Massless particles in de Sitter space. *Group theoretical methods in physics* (Varna, 1987), 530–536, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (see 89g:81001) 81E20 (22E70, 58G35, 81D25)
- (with Lorente, M.) Quantization of conformally invariant Bargmann-Wigner equations with gauge freedom. *J. Math. Phys.* 29 (1988), no. 7, 1698–1704. (Anton Z. Capri) 89f:81083 81D25
- Heiderich, K. (with Unruh, W.) Spin-two fields, general covariance, and conformal invariance. *Phys. Rev. D* (3) 38 (1988), no. 2, 490–497. (Summary) 89i:81093 81E20 (81E13, 83C47)
- Heier, K. (with von Wolfersdorf, L.) Exact calculation of some classes of Hilbert integrals with cotangent kernel. *Z. Angew. Math. Mech.* 68 (1988), no. 11, 583–584. (Not in MR) 44A15
- Heij, C. (with Willems, J. C.) Scattering theory and approximation of linear systems. *Modelling, identification and robust control* (Stockholm, 1985), 397–411, *North-Holland, Amsterdam-New York*, 1986. (Summary) 89c:93025 93B20 (34B25, 93B15, 93C05, 93C55)
- van der Heijden, M. C. (with Schornagel, A.) Interval uneffectiveness distribution for a k-out-of-n multistate reliability system with repair. *European J. Oper. Res.* 36 (1988), no. 1, 66–77. (Summary) 89c:90112 90B25
- van der Heijden, Peter G. M. (with de Leeuw, Jan) Correspondence analysis of incomplete contingency tables. *Psychometrika* 53 (1988), no. 2, 223–233. (Graham J. G. Upton) 89m:62058 62H17
- Heijmans, H. J. A. M. (with Clément, Ph.; Angenent, S. B.; van Duijn, C. J.; de Pagter, B.) One-parameter semigroups. *CWI Monographs*, 5, North-Holland Publishing Co., Amsterdam-New York, 1987. x+312 pp. ISBN 0-444-70284-9 (R. J. Nagel) 89b:47058 47D05 (34Gxx, 47B55, 47H20)
- Mathematical morphology: an algebraic approach. *CWI Newlett.* No. 14 (1987), 7–27. (Summary) 89h:92085 92A90 (06A23, 52A43, 68U10, 92A25)
- Semigroup theory for control on sun-reflexive Banach spaces. *IMA J. Math. Control Inform.* 4 (1987), no. 2, 111–129. (Zbigniew Emirsajlow) 89d:93055 93C25 (34K35, 47D05, 93B05, 93B07)
- (with Clément, Ph.; Diekmann, O.; Gyllenberg, M.; Thieme, Horst R.) Perturbation theory for dual semigroups. II. Time-dependent perturbations in the sun-reflexive case. *Proc. Roy. Soc. Edinburgh Sect. A* 109 (1988), no. 1–2, 145–172. (S. Kantorovitz) 89i:47072 47D05 (34G10, 47A55, 92A15)
- Heijmans, R. D. H. (with Magnus, Jan R.) Corrigenda: "Consistent maximum-likelihood estimation with dependent observations. The general (nonnormal) case and the normal case" [*J. Econometrics* 32 (1986), no. 2, 253–285; MR 88d:62175]. *J. Econometrics* 35 (1987), no. 2, 393–395. (Kimio Morimune) 89b:62221 62P20 (62F12, 62J05)
- Heikkilä, Seppo On the method of iteratively generated chain approximations for equations in function spaces. *Appl. Anal.* 28 (1988), no. 3, 181–197. (V. Šeda) 89k:47092 47H10 (47H15, 47H17, 65J15)
- Solvability of differential equations involving discontinuities. (Finnish. English summary) *Arkivimedes* 40 (1988), no. 3, 171–183. (Summary) 89i:34087 34G20 (34A08)
- (with Lakshmikantham, V.; Leela, S.) Applications of monotone techniques to differential equations with discontinuous right-hand side. *Differential Integral Equations* 1 (1988), no. 3, 287–297. (C. P. Gupta) 89g:34002 34A10 (34B15, 47H17)
- Heil, A. (with Kersch, A.; Reifenhäuser, B.; Vogel, H.) Application of topological ideas to the Aharonov-Bohm effect. *European J. Phys.* 9 (1988), no. 3, 200–208. (Not in MR) 81B99 (58A10, 78A99)
- Heil, Erhard Extensions of an inequality of Bonnesen to D-dimensional space and curvature conditions for convex bodies. *Aequationes Math.* 34 (1987), no. 1, 35–60. (Eric Grinberg) 89g:52005 52A40 (52A22)
- Wieviel Affinnormalen gehen durch einen Punkt? (English summary) [How many affine normals pass through one point?] *Proceedings of the Congress of Geometry* (Thessaloniki, 1987), 54–66, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1988. (Peter M. Gruber) 89f:52006 52A20 (53A15)
- Relative and affine normals. Reprinted in *Affine Differential Geometry* [(Oberwolfach, 1986), 240–254, *Tech. Univ. Berlin, Berlin*, 1988]. *Resulata Math.* 13 (1988), no. 3–4, 240–254. (An-Min Li) 89b:53030 53A15
- Heil, M. Stationary solutions of incompressible Stokes equation for a circular pipe. *Z. Naturforsch.* A 42 (1987), no. 6, 543–546. (A. Jami) 89b:76010 76D07
- Heil, Wolfgang (with Tollefson, Jeffrey L.) On Nielsen's theorem for 3-manifolds. *Yokohama Math. J.* 35 (1987), no. 1–2, 1–20. (Bruno Zimmermann) 89c:57009 57N10
- (with Cushman-Roisin, B.; O'Brien, J. J.) Realizing two-dimensional, continuous directed fields by vector fields and an algorithm to remove dichotomous ambiguity in a discrete field. *Math. Comput. Modelling* 10 (1988), no. 11, 853–862. (Summary) 89i:86005 86A10 (58F40)



- Heilbron, John L.** ★ I dilemmi di Max Planck. (Italian) [The dilemmas of Max Planck] Portavoce della scienza tedesca. [Spokesman for German science] Translated from the English by Riccardo Valla. Translation edited by Ivana Gambaro. Saggi Scientifici. [Essays in Science] Editore Boringhieri, Turin, 1988. 222 pp. ISBN 88-339-0427-X. (Editors) **89i:01000** 01A70
- Heilbron, Hans Arnold** ★ The collected papers of Hans Arnold Heilbronn. With biographical commentaries by J. W. S. Cassels, A. Fröhlich, Olga Taussky, John C. Shepherdson, J. H. H. Chalk, M. Deuring, P. Scherk, T. C. Nicholas, P. Du Val, R. A. Rankin and D. J. Lewis. With commentaries by R. C. Vaughan, W. K. Hayman, H. Stark, B. J. Birch, Chalk, Fröhlich, S. Chowla and R. Foote. Edited by Ernst J. Kani and Robert A. Smith. With a preface by Kani. Canadian Mathematical Society Series of Monographs and Advanced Texts. A Wiley-Interscience Publication. John Wiley & Sons, Inc., New York, 1988. xvi+608 pp. ISBN 0-471-81655-8 (D. R. Heath-Brown) **89i:01140** 01A75 (11-03)
- Heiligenberg, W.** (with Baldi, Pierre) How sensory maps could enhance resolution through ordered arrangements of broadly tuned receivers. *Biol. Cybernet.* **59** (1988), no. 4-5, 313-318. (Summary) **89k:92075** 92A18 (92A27)
- Heiliö, Matti** Weakly summable measures in Banach spaces. *Ann. Acad. Sci. Fenn. Ser. A I Math. Dissertationes* No. 66 (1988), 49 pp. (Werner Linde) **89e:46048** 46G12 (28C20)
- Heilmann, Margareta**  $L_p$ -saturation of some modified Bernstein operators. *J. Approx. Theory* **54** (1988), no. 3, 260-273. (S. D. Riemenschneider) **89b:41049** 41A40
- Heilpern, Stanislaw** Fuzzy sets and reliability. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics* (Poznań, 1986), 65-69. Wydawn. Politech. Poznań, Poznań, 1987. (Introduction) **89h:90112** 90B25 (03E72)
- Fuzzy equations. (Chinese summary) *Fuzzy Math.* **7** (1987), no. 2, 77-84. (From the introduction) **89j:03044** 03E72
- Heiman, M. S.** (with Bajaj, A. K.; Sherman, P. J.) Periodic motions and bifurcations in dynamics of an inclined impeller pump. *J. Sound Vibration* **124** (1988), no. 1, 55-78. (Summary) **89g:70016** 70K40 (58F14, 70K20, 70K50)
- Heimann, B.** (with Loose, H.) Computer-oriented method for multirigid body systems based on the recursive Newton-Euler-Lagrange formalism. (German and Russian summaries) *Z. Angew. Math. Mech.* **69** (1989), no. 1, 29-35. (Not in MR) **70B15** (70-04)
- Heimbeck, Günter** Translationsebenen der Ordnung 49 mit Scherungen. (English summary) [Translation planes of order 49 with shears] *Geom. Dedicata* **27** (1988), no. 1, 87-100. (Vikram Jha) **89h:51013** 51E15 (05B25, 51A40, 51E20)
- (with Wagner, Richard) Eine neue Serie von endlichen Translationsebenen. (English summary) [A new series of finite translation planes] *Geom. Dedicata* **28** (1988), no. 1, 107-125. (Norman L. Johnson) **89m:51013** 51E15 (51A40)
- Heinecke, G.** (with Oetli, W.) Characterization of weakly efficient points. (German summary) *Z. Oper. Res.* **32** (1988), no. 6, 375-393. (Pierre Loridan) **89m:90164** 90C48
- Heinekamp, Albert** Zur Einführung. [Introduction] *Leibniz: questions de logique* (Bruxelles/Louvain-la-Neuve, 1985), vii-xiv. *Studia Leibnitiana Sonderheft*, 15. Steiner, Wiesbaden, 1988. (see **89m:01041**) 01A45 (01-06, 03-03, 03A05)
- see also *Three hundred years of Nova methodus* by G. W. Leibniz (1684-1984), **89h:01025** and *Leibniz: questions de logic*, **89m:01041**
- Heineke, J. M.** (with Shefrin, H. M.) On some global properties of Gorman class demand systems. *Econom. Lett.* **25** (1987), no. 2, 155-160. (Summary) **89a:90036** 90A11
- (with Shefrin, H. M.) Exact aggregation and the finite basis property. *Internat. Econom. Rev.* **29** (1988), no. 3, 525-538. (Not in MR) **90A06** (90A14)
- Heinen, Hermann** Soluble irreducible groups of automorphisms of certain groups of class two. *Group theory* (Bressanone, 1986), 65-72. *Lecture Notes in Math.*, 1281. Springer, Berlin-New York, 1987. (Andrea Caranti) **89b:20049** 20D15 (20F28)
- A remark on subgroup lattices of finite soluble groups. *Rend. Sem. Mat. Univ. Padova* **77** (1987), 135-147. (From the introduction) **89g:20041** 20D30 (20D10)
- (with Soules, Panagiotis) Subnormal embedding of relatively complete groups. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 3, 389-400. (Bernd Baumann) **89j:20028** 20D35 (20D10, 20D45)
- Heinen, James A.** (with Siddique, Bari M. A.) A simple algorithm for arbitrary polynomial transformation. *IEEE Trans. Acoust. Speech Signal Process.* **36** (1988), no. 1, 77-80. (Jian-Min Zhu) **89g:94004** 94A11 (94A12)
- Heinhold, Josef** see *Contributions to applied mathematics and statistics*, **89i:00018**
- Heinig, Georg** Structure theory and fast inversion of Hankel striped matrices. I. *Integral Equations Operator Theory* **11** (1988), no. 2, 205-229. (L. Rodman) **89c:15029** 15A57 (15A09, 47B35, 65F05)
- (with Rost, Karla) On the inverses of Toeplitz-plus-Hankel matrices. *Linear Algebra Appl.* **106** (1988), 39-52. (Shao Kuan Li) **89e:15035** 15A57 (15A09, 15A21, 47B35)
- (with Jankowski, P.; Rost, Karla) Fast inversion algorithms of Toeplitz-plus-Hankel matrices. *Numer. Math.* **52** (1988), no. 6, 665-682. (V. S. Zajačkovski) **89j:65054** 65L05 (15A09, 15A57)
- (with Rost, Karla) Matrix representations of Toeplitz-plus-Hankel matrix inverses. *Linear Algebra Appl.* **113** (1989), 65-78. (L. Rodman) **89m:15009** 15A24 (15A09, 47B35)
- Heinig, Hans P.** Weighted estimates for classical operators. *Nonlinear analysis, function spaces and applications*, Vol. 3 (Litomyšl, 1986), 31-53. *Teubner-Texte Math.*, 93. Teubner, Leipzig, 1986. (Summary) **89f:42019** 42B30 (47B38, 47G05)
- Heinonen, Juha** (with Kilpeläinen, Tero)  $A$ -superharmonic functions and supersolutions of degenerate elliptic equations. *Ark. Mat.* **26** (1988), no. 1, 87-105. (P. Lindqvist) **89g:35079** 35J60 (31B99, 49A29)
- Harmonic measure and Makarov's theorem. (Finnish. English summary) *Arkhimedes* **40** (1988), no. 2, 75-88. (Summary) **89h:30038** 30C85 (31A15)
- Asymptotic paths for subsolutions of quasilinear elliptic equations. *Manuscripta Math.* **62** (1988), no. 4, 449-463. (Enrique Zuazua) **89m:35069** 35J60 (31B05, 35B05)
- (with Kilpeläinen, Tero) On the Wiener criterion and quasilinear obstacle problems. *Trans. Amer. Math. Soc.* **310** (1988), no. 1, 239-255. (Igor Bock) **89m:35091** 35J85 (49A29)
- Heinrich, Katherine** (with Hell, Pavol) On the problem of bandsize. *Graphs Combin.* **3** (1987), no. 3, 279-284. (D. J. Kleitman) **89c:05030** 05C05
- (with Nonay, Gillian M.) Exact coverings of 2-paths by 4-cycles. *J. Combin. Theory Ser. A* **45** (1987), no. 1, 50-61. (Arthur M. Hobbs) **89a:05095** 05C38 (05B30, 05B40)
- A subgraph intersection problem. *Utilitas Math.* **32** (1987), 101-110. (G. H. J. Van Rees) **89b:05106** 05C35 (05C70)
- (with Lindner, C. C.; Rodger, C. A.) Almost resolvable decompositions of  $2K_n$  into cycles of odd length. *J. Combin. Theory Ser. A* **49** (1988), no. 2, 218-232. (Ortrud R. Oellermann) **89i:05216** 05C70
- (with Lic, Gui Zhen) A lower bound on the number of spanning trees with  $k$  end-vertices. *J. Graph Theory* **12** (1988), no. 1, 95-100. (Seymour Schuster) **89g:05045** 05C05
- Heinrich, Lothar** On the central limit problem for sequences and fields of  $m$ -dependent random variables. *Limit theorems in probability theory and related fields*, 25-48. *Wiss. Theorie Prax., Tech. Univ. Dresden, Dresden*, 1987. (Zuzana Prásková) **89i:60048** 60F05 (60E07)
- Rates of convergence in stable limit theorems for sums of exponentially  $\psi$ -mixing random variables with an application to metric theory of continued fractions. *Math. Nachr.* **131** (1987), 149-165. (M. Iosifescu) **89a:60061** **EA 89m** 60F05 (11K50)
- Asymptotic expansions in the central limit theorem for a special class of  $m$ -dependent random fields. I. *Math. Nachr.* **134** (1987), 83-106. (Xavier Guyon) **89e:60045** 60F05 (60G60)
- Asymptotic behaviour of an empirical nearest-neighbour distance function for stationary Poisson cluster processes. *Math. Nachr.* **136** (1988), 131-148. (B. S. Nakhapetyan) **89j:60066** 60G55 (60F05)
- Asymptotic Gaussianity of some estimators for reduced factorial moment measures and product densities of stationary Poisson cluster processes. *Statistics* **19** (1988), no. 1, 87-106. (Walter Warmuth) **89f:60023** 60F05 (60G55, 62M05)
- Heinrich, Stefan** (with Carl, Bernd; Kühn, Thomas)  $s$ -numbers of integral operators with Hölder continuous kernels over metric compacta. *J. Funct. Anal.* **81** (1988), no. 1, 54-73. (Hermann König) **89f:47036** 47B10 (47B38, 47G05)
- Heinricher, Arthur C.** (with Mizel, Victor J.) A new example of the Lavrentiev phenomenon. *SIAM J. Control Optim.* **26** (1988), no. 6, 1490-1503. (Martin Fuchs) **89i:49002** 49A05 (49C05)
- Heinrichs, Wilhelm** ★ Kollokationsverfahren und Mehrgittermethoden bei elliptischen Randwertaufgaben. (German) [Collocation methods and multigrid methods for elliptical boundary value problems] *Berichte der Gesellschaft für Mathematik und Datenverarbeitung* [Reports of the Society for Mathematics and Data Processing], 168. *Gesellschaft für Mathematik und Datenverarbeitung m.b.H. Bonn, St. Augustin; R. Oldenbourg Verlag, Munich*, 1987. iv+142 pp. ISBN 3-486-20465-3 (Gerhard Telschow) **89g:65146** **EA 89m** 65N35
- Collocation and full multigrid methods. *Appl. Math. Comput.* **26** (1988), no. 1, 35-43. (Jan Mandel) **89e:65128** 65N35 (65N50)
- Line relaxation for spectral multigrid methods. *J. Comput. Phys.* **77** (1988), no. 1, 166-182. (Summary) **89g:65148** 65N50
- Multigrid methods for combined finite difference and Fourier problems. *J. Comput. Phys.* **78** (1988), no. 2, 424-436. (Summary) **89h:65202** 65N50
- Effective preconditioning for spectral multigrid methods. *Robust multi-grid methods* (Kiel, 1988), 139-144. *Notes Numer. Fluid Mech.*, 23. Vieweg, Braunschweig, 1989. (see **89m:65007**) 65N99 (65N30)
- Heintz, Joos** (with Davenport, James H.) Real quantifier elimination is doubly exponential. *J. Symbolic Comput.* **5** (1988), no. 1-2, 29-35. (A. A. Mullin) **89g:03009** 03B25 (03C10, 03D15, 12L12)
- Heintze, Ernst** Extrinsic upper bounds for  $\lambda_1$ . *Math. Ann.* **280** (1988), no. 3, 389-402. (Domenico Perrone) **89f:53091** 53C42
- Heinz, C.** Analytische Mechanik polarer Systeme. (English and Russian summaries) [Analytical mechanics of polar systems] *Z. Angew. Math. Mech.* **68** (1988), no. 1, 25-31. (Martin Kummer) **89k:70030** 70F99 (70H99)
- Heinze, Steffen** Traveling waves in combustion processes with complex chemical networks. *Trans. Amer. Math. Soc.* **304** (1987), no. 1, 405-416. (Summary) **89g:35048** 35K40 (80A25, 80A32)
- Heinzer, William** (with Gilmer, Robert) On Jónsson algebras over a commutative ring. *J. Pure Appl. Algebra* **49** (1987), no. 1-2, 133-159. (Marco Fontana) **89a:13004** 13B02 (13E05, 13E15)
- (with Lantz, David) Jónsson extensions of one-dimensional semilocal domains. *J. Algebra* **117** (1988), no. 1, 179-197. (W. V. Vasconcelos) **89c:13017** 13F05 (13B20)
- (with Gilmer, Robert) On the imbedding of a direct product into a zero-dimensional commutative ring. *Proc. Amer. Math. Soc.* **106** (1989), no. 3, 631-636. (James A. Huckaba) **89m:13005** 13B99
- Heinzmann, Gerhard** Poincaré et la philosophie des mathématiques. [Poincaré and the philosophy of mathematics] *Cahiers du séminaire d'histoire des mathématiques*, 9, 99-121. *Univ. Paris VI, Paris*, 1988. (G. Hirsch) **89h:01043** 01A60 (00A25, 03A05)
- Heinzner, Peter** Linear äquivariante Einbettungen Steinscher Räume. [Linearly equivariant imbeddings of Stein spaces] *Math. Ann.* **280** (1988), no. 1, 147-160. (Gerd Fischer) **89k:32061** 32M10 (32E10)
- Heise, U.** Condition of a boundary integral equation for the elasticity problem, and round-off errors in its numerical solution. *Advanced boundary element methods* (San Antonio, Tex., 1987), 157-164. *Springer, Berlin-New York*, 1988. (see **89b:65009**) 73-08
- Heise, Werner** (with Quattrocchi, Pasquale) The equivalence theorem for cyclic codes. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* **80** (1985), no. 6, 263-267 (1986). (Vikram Jha) **89d:94044** 94B15 (11T71)
- (with Quattrocchi, Pasquale) The algebraic theory of codes. (Italian) *Boll. Un. Mat. Ital. A* (7) **1** (1987), no. 3, 313-331. (Vikram Jha) **89b:94027** 94Bxx (11T71)
- Heisenberg, Werner** see Mehra, Jagdish, **89g:01039**
- Heiser, Willem J.** Selecting a stimulus set with prescribed structure from empirical confusion frequencies. *British J. Math. Statist. Psych.* **41** (1988), no. 1, 37-51. (Summary) **89f:92069** 92A27
- (with Critchley, Frank) Hierarchical trees can be perfectly scaled in one dimension. *J. Classification* **5** (1988), no. 1, 5-20. (Byron J. T. Morgan) **89h:62092** 62H30
- Heiss, W. D.** A quantum mechanical phase transition and singular behaviour of the classical analogous case. *Finite-dimensional integrable nonlinear dynamical systems* (Johannesburg, 1988), 271-281. *World Sci. Publishing, Singapore*, 1988. (Martine J. Perrin) **89j:81028** 81C05
- Schroeder-Heister, Peter** see *Schroeder-Heister, Peter*
- Heitsch, James L.** Some interesting group actions. *Index theory of elliptic operators, foliations, and operator algebras* (New Orleans, LA/Indianapolis, IN, 1986), 113-123,

- Contemp. Math.*, 70, Amer. Math. Soc., Providence, RI, 1988. (Connor Lazarov) **89j:57022** 57R30 (46L80, 57R32, 57S99)
- Heitzinger, W.** (with Troch, I.; Valentin, G.) ★ Praxis nichtlinearer Gleichungen. (German) [Practice of nonlinear equations] Mit zahlreichen Anwendungsbeispielen für Ingenieure, Mathematiker und Naturwissenschaftler. [With many examples of application for engineers, mathematicians and natural scientists] Carl Hanser Verlag, Munich, 1985. xxiv+364 pp. ISBN 3-446-14079-4 (Gerhard Merz (Zbl 551:65024)) **89a:65081** 65H05 (65-01)
- Hejman, J.** Topological vector group topologies for the real line. *General topology and its relations to modern analysis and algebra*, VI (Prague, 1986), 241–248, *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (Rangachari Venkataraman) **89h:22006** 22A30 (46A99, 54H15)
- Hejduk, Jacek** On  $\sigma$ -ideal generated by two totally imperfect  $\sigma$ -ideals. (Serbo-Croatian summary) *Rad. Mat.* 3 (1987), no. 2, 229–233. (Detlef Plachky) **89a:28003** 28A05 (04A15)
- Hejhal, Dennis A.** Zeros of Epstein zeta functions and supercomputers. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1362–1384, Amer. Math. Soc., Providence, RI, 1987. (Herman J. J. te Riele) **89j:11128** 11Y99 (11M41)
- (with Bombieri, Enrico) On the zeros of Epstein zeta functions. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* 304 (1987), no. 9, 213–217. (Summary) **89i:11136** 11M41 (11E45, 11R42)
- Hejny, Milan** (with Gatia, Ján) Do we know how geometry should be taught? (Slovak) *Pokroky Mat. Fyz. Astronom.* 33 (1988), no. 4, 228–233. (B. Crstici) **89j:00040** 00A25
- Hekimova, M. A.** see Arolska, Mariya A.
- Hekrda, Josef** Index transforms for  $N$ -dimensional DFTs. *Numer. Math.* 51 (1987), no. 4, 469–480. (Harold N. Ward) **89h:65230** 65T05 (11Y16, 20K01)
- Hekster, N. S.** (with van der Waal, Robert W.) Monomiality and 2-isoclinism of groups. *Nederl. Akad. Wetensch. Indag. Math.* 50 (1988), no. 3, 263–276. (I. M. Isaacs) **89j:20012** 20C15 (20E34)
- Helal, Abdelsalam A.** (with Elmargamid, Ahmed K.) Towards a unified model for performance evaluation of concurrency control. *Inform. Sci.* 47 (1989), no. 1, 77–94. (Not in MR) **68P15**
- el-Helaly, Sherif** see El-Helaly, Sherif
- Helary, J.-M.** (with Plouzeau, N.; Raynal, M.) A distributed algorithm for mutual exclusion in an arbitrary network. *Comput. J.* 31 (1988), no. 4, 289–295. (Not in MR) **68M10**
- Helbig, Siegfried** On the continuity of the feasible set in extremally linear problems. *Numer. Funct. Anal. Optim.* 9 (1987/88), no. 11–12, 1201–1220. (K. Zimmermann) **89e:90178** 90C30
- On Carathéodory's and Krein-Milman's theorems in fully ordered groups. *Comment. Math. Univ. Carolin.* 29 (1988), no. 1, 157–167. (G. Rangan) **89g:46118** 46P05 (06F15, 46B99, 52A01)
- Held, Isaac M.** (with Panetta, R. Lee) Baroclinic eddy fluxes in a one-dimensional model of quasi-geostrophic turbulence. *J. Atmospheric Sci.* 45 (1988), no. 22, 3354–3365. (Summary) **89j:86009** 86A35
- king-Hele, D. G.** see King-Hele, D. G.
- Helein, Frédéric** Minima de la fonctionnelle énergie libre des cristaux liquides. (English summary) [Minima of the free energy functional of liquid crystals] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 12, 565–568. (Robert M. Hardt) **89g:58049** 58E15 (49C10, 82A57)
- Homéomorphismes quasi conformes entre surfaces riemanniennes. (English summary) [Quasiconformal homeomorphisms between Riemann surfaces] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 13, 725–730. (J. Eells) **89m:58048** 58E20
- Regularity and uniqueness of harmonic maps into an ellipsoid. *Manuscripta Math.* 60 (1988), no. 2, 235–257. (John C. Wood) **89h:58055** 58E20
- Heifenstein, H. G.** Symplectic algebra and Gaussian optics. *Z. Angew. Math. Phys.* 39 (1988), no. 4, 579–585. (Kotik K. Lee) **89g:78008** 78A05
- Helfer, Adam D.** Stein covers for curved twistor spaces. *J. Geom. Phys.* 4 (1987), no. 3, 261–275. (Peter R. Law) **89k:32059** 32L25 (81D27)
- A formula for the local solution of the self-dual Yang-Mills equations. *Proc. Roy. Soc. London Ser. A* 414 (1987), no. 1846, 135–147. (Peter R. Law) **89h:32039** 32L25 (53C80, 81D27, 81E13)
- Helffer, Bernard** (with Sjöstrand, J.) Analyse semi-classique pour l'équation de Harper. [Semiclassical analysis for the Harper equation] *Séminaire sur les équations aux dérivées partielles* 1986–1987, Exp. No. XVII, 13 pp., *Ecole Polytech., Palaiseau*, 1987. (Rémi Vaillancourt) **89c:58131** 58G25 (35J10, 35P05, 47B37)
- (with Martinez, André) Comparaison entre les diverses notions de résonances. [Comparison among the various notions of resonance] *Helv. Phys. Acta* 60 (1987), no. 8, 992–1003. (Arne Jensen) **89h:35083** 35J10 (35P05, 47F05, 58G25, 81F05)
- On a conjecture of P. Jorgensen and W. Klink. *Publ. Res. Inst. Math. Sci.* 23 (1987), no. 6, 1007–1013. (William H. Klink) **89f:22011** 22E25 (35P05, 43A80, 58G25)
- Helgason, R. V.** (with Kennington, Jeff; Zaki, H. A.) A parallelization of the simplex method. *Ann. Oper. Res.* 14 (1988), no. 1–4, 17–40. (Summary) **89h:90143** 90C05 (65K05)
- Helgason, Sigurdur** ★ Группы и геометрический анализ. (Russian) [Groups and geometric analysis] Интегральная геометрия, инвариантные дифференциальные операторы и сферические функции. [Integral geometry, invariant differential operators and spherical functions] Translated from the English and with a preface by P. A. Kuchment. "Mir", Moscow, 1987. 736 pp. (Editors) **89g:22014** 22E30 (22-01, 22-02, 43-02)
- see also Biography: Helgason, Sigurdur, **89j:01070**
- Heil, Pavol** (with Heinrich, Katherine) On the problem of bandsize. *Graphs Combin.* 3 (1987), no. 3, 279–284. (D. J. Kleitman) **89c:05030** 05C05
- (with Liestman, Arthur L.) Broadcasting in one dimension. *Discrete Appl. Math.* 21 (1988), no. 2, 101–111. (G. W. Peck) **89i:05041** 05A99
- (with Bang-Jensen, Jørgen; MacGillivray, G.) The complexity of colouring by semi-complete digraphs. *SIAM J. Discrete Math.* 1 (1988), no. 3, 281–298. (Mukkuai S. Krishnamoorthy) **89e:05095** 05C20 (05C15, 68Q25)
- (with Kirkpatrick, David; Kratochvil, Jan; Kriz, Igor) On restricted two-factors. *SIAM J. Discrete Math.* 1 (1988), no. 4, 472–484. (H. Joseph Straight) **89m:05092** 05C70
- Hellaby, Charles** Volume matching in Tolman models. *Gen. Relativity Gravitation* 20 (1988), no. 12, 1203–1217. (C. B. Collins) **89i:83019** 83C15 (83F05)
- Helland, K. N.** (with Rohr, J. J.; Itsweire, E. C.; Van Atta, C. W.) Growth and decay of turbulence in a stably stratified shear flow. *J. Fluid Mech.* 195 (1988), 77–111. (Not in MR) **76F10**
- Hellegouarch, Yves** (with McQuillan, D. L.; Paysant-Le Roux, R.) Unités de certains sous-anneaux des corps de fonctions algébriques. [Units of certain subrings of algebraic function fields] *Acta Arith.* 48 (1987), no. 1, 9–47. (Hans-George Rück (translated from Zbl 632:12018)) **89g:11112** 11R58 (11R27, 11R33)
- À la recherche de l'arithmétique qui se cache dans la musique. [In search of the arithmetic hiding in music] *Gaz. Math.* No. 33 (1987), 71–80. (Editors) **89m:11010** 11A25 (00A69, 01A50)
- Propriétés géométrico-arithmétiques des algèbres à involution. [Geometric and arithmetical properties of algebras with involution] *Linear Algebra Appl.* 97 (1987), 29–43. (Hors Pfeuffer) **89k:16020** 16A28 (11E88, 12J15, 15A66)
- (with Damamme, Gilles) Propriétés de transcendance des valeurs de la fonction zeta de Carlitz. (English summary) [Transcendence properties of the values of Carlitz's zeta function] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 12, 635–637. (David Goss) **89k:11115** 11R58 (11J91, 11M41)
- Notions de base pour l'arithmétique de  $\mathbb{F}_q((1/t))$ . [Basic notions for the arithmetic of  $\mathbb{F}_q((1/t))$ ] *Canad. J. Math.* 40 (1988), no. 4, 817–832. (S. D. Cohen) **89m:11110** 11R58 (11G20, 11T99)
- Helleman, Robert H. G.** Quantum levels of area-preserving maps. Progress in chaotic dynamics. *Phys. D* 33 (1988), no. 1–3, 121–131. (Summary) **89k:81053** 81D07 (58F05)
- (with Mao, Jian-Min) Nonsymmetric four-dimensional volume-preserving maps: universality classes of period doubling. *Phys. Rev. A* 37 (1988), no. 9, 3475–3478. (Summary) **89e:58064** 58F08
- Heller, Alex** On permutation representations. *Illinois J. Math.* 32 (1988), no. 3, 501–509. (Wolfgang Knap) **89i:20009** 20B07 (18B99)
- Homotopy theories. *Mem. Amer. Math. Soc.* 71 (1988), no. 383, vi+78 pp. (J. P. May) **89h:55013** 55P65 (55U35)
- Heller, Eric J.** (with O'Connor, Patrick W.) Quantum localization for a strongly classically chaotic system. *Phys. Rev. Lett.* 61 (1988), no. 20, 2288–2291. (Summary) **89j:81069** 81C99 (58F11, 58F13)
- Heller, Michael** ★ Questions to the universe. Ten lectures on the foundations of physics and cosmology. *Astronomy and Astrophysics Series*, 14. *Pachart Publishing House, Tucson, AZ*, 1986. xii+152 pp. ISBN 0-88126-008-8 (Lawrence Sklar) **89e:83001** 83-01 (83A05, 83F05)
- (with Golda, Z. A.; Szydłowski, Marek) Generic and nongeneric world models. *Gen. Relativity Gravitation* 19 (1987), no. 7, 707–718. (Donal O'Shea) **89h:58035** 58C28 (83F05)
- Between Newton and Einstein: Mach's reform of the Newtonian mechanics. *Newton and the new direction in science* (Cracow, 1987), 155–173, *Spocla Vaticana, Vatican City*, 1988. (see **89h:01014**) **01A55**
- (with Demiański, M.; Golda, Z. A.; Szydłowski, Marek) Kantowski-Sachs multidimensional cosmological models and dynamical dimensional reduction. *Classical Quantum Gravity* 5 (1988), no. 5, 733–742. (Dieter Lorenz-Petzel) **89f:83086** 83E15
- see also Newton and the new direction in science, **89h:01014**
- Heller, Walter P.** Coordination failure under complete markets with applications to effective demand. *Equilibrium analysis*, 155–175, *Cambridge Univ. Press, Cambridge-New York*, 1986. (conclusion) **89h:90036** 90A12 (90A14)
- Hellerstein, Simon** Real zeros of derivatives of meromorphic functions and solutions of differential equations—a survey with problems and conjectures. *Complex analysis, I* (College Park, Md., 1985–86), 197–209, *Lecture Notes in Math.* 1275, Springer, Berlin-New York, 1987. (Günter Frank) **89d:30035** 30D35 (30-02, 34A20)
- Helleseth, T.** (with Dodunekov, Stefan M.; Manev, N.; Yurehus, O.) New bounds on binary linear codes of dimension eight. *IEEE Trans. Inform. Theory* 33 (1987), no. 6, 917–919. (Vera Pless) **89f:94021** 94B05 (11T71)
- Helliwell, John F.** (with Heaps, Terry) The taxation of natural resources. *Handbook of public economics*, Vol. 1, 421–472, *Handbooks in Economics*, 4, North-Holland, Amsterdam-New York, 1985. (see **89m:90002a**) **90A30**
- Helliwell, T. M.** (with Konkowski, D. A.) Electromagnetic fields in a Taub-NUT-type cosmology. *Phys. Lett. A* 129 (1988), no. 5–6, 305–309. (Jorge A. Pullin) **89k:83043** 83C50 (83C25, 83C75)
- Hellman, Geoffrey** EPR, Bell, and collapse: a route around "stochastic" hidden variables. *Philos. Sci.* 54 (1987), no. 4, 558–576. (Jeffrey Bub) **89c:81011** 81B05
- Hellmuth, T.** (with Zajonc, Arthur G.; Walther, Herbert) Realizations of "delayed-choice" experiments. *Microphysical reality and quantum formalism*, Vol. 1, 2 (Urbino, 1985), 153–159, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (see **89j:81004**) **81-05**
- Hellner, E.** Einführung in eine anorganische Strukturchemie. (English summary) [Introduction to an inorganic structure chemistry] *Z. Krist.* 175 (1986), no. 3–4, 227–248. (Summary) **89j:92097** 92A40 (82A60)
- meier-Hellstern, Kathleen S.** see Meier-Hellstern, Kathleen S.
- Hellwig, Klaus** Die Erhaltung der volkswirtschaftlichen Leistungsfähigkeit. [The preservation of the productivity of the national economy] *Ökonomie und Mathematik*, 544–548, Springer, Berlin-New York, 1987. (Summary) **89m:90049** 90A30
- Helman, Paul** (with Veroff, Robert) Designing deductive databases. *J. Automat. Reason.* 4 (1988), no. 1, 29–68. (Summary) **89c:68022** 68P15 (03B70, 68T15)
- Helmberg, Gilbert** On subsequences of normal sequences. *Proceedings of the conference on ergodic theory and related topics, II* (Geirgental, 1986), 70–71, *Teubner-Texte Math.*, 94, Teubner, Leipzig, 1987. (O. P. Stackelberg) **89g:11064** 11K31 (11K99, 28D05, 60B10)
- (with Sun, Li Chiang) Maximal words connected with unimodal maps. *Order* 4 (1988), no. 4, 351–380. (Andrew Osbaldestin) **89g:58110** 58F08 (54F05)
- Helmhold, David** (with Mayr, Ernst) Perfect graphs and parallel algorithms. *Proceedings of the 1986 International Conference on Parallel Processing*, 853–860, *IEEE Comput. Soc. Press, Washington, DC*, 1986. (see **89h:68010**) **05C15**
- (with Mayr, Ernst) Fast scheduling algorithms on parallel computers. *Advances in computing research*, Vol. 4, 39–68, *JAI, Greenwich, CT*, 1987. (Pavol Hell) **89h:68042** 68Q10 (68Q25, 90B35)



- Helmers, R. (with Does, R. J. M. M.; Klaassen, C. A. J.) On the Edgeworth expansion for the sum of a function of uniform spacings. *J. Statist. Plann. Inference* **17** (1987), no. 2, 149–157. (J. A. Melamed) **89a:62047** 62E20 (60F05, 62G30)
- (with Janssen, Paul; Serfling, R.) Glivenko-Cantelli properties of some generalized empirical DF's and strong convergence of generalized  $L$ -statistics. *Probab. Theory Related Fields* **79** (1988), no. 1, 75–93. (Sándor Csörgő) **89b:60046** 60F15 (62G99)
- (with van Es, A. J.) Elementary symmetric polynomials of increasing order. *Probab. Theory Related Fields* **80** (1988), no. 1, 21–35. (Lajos Horváth) **89k:60025** 60F05 (60F10, 62G30)
- Helmers, K. On Levy's area process. *Stochastic differential systems (Bad Honnef, 1985)*, 187–194, *Lecture Notes in Control and Inform. Sci.*, **78**, Springer, Berlin-New York, 1986. (Shigeo Takenaka) **89b:60109** 60G17 (60J65, 81C20)
- The asymptotic behaviour of the maximum likelihood estimates for a class of diffusion processes. *Stochastic differential systems, stochastic control theory and applications (Minneapolis, Minn., 1986)*, 205–213, *IMA Vol. Math. Appl.*, **10**, Springer, New York-Berlin, 1988. (G. Roussas) **89c:62140** 62M05 (60H10, 62F12)
- von Helmholtz, Hermann see Baillache, Patrice, **89j:01037** and Hörz, Herbert, **89m:01054**
- Helmnick, Aloysius G. (with Cohen, Arjeh M.) Trilinear alternating forms on a vector space of dimension 7. *Comm. Algebra* **16** (1988), no. 1, 1–25. (James F. Hurley) **89h:20060** 20G10 (15A69, 15A75, 20G15)
- Helmnick, Gerard Deformations of connections, the Riemann Hilbert problem and  $r$ -functions. *Computational and combinatorial methods in systems theory (Stockholm, 1985)*, 75–89, *North-Holland, Amsterdam-New York*, 1986. (Charles Nash) **89f:58068** 58F07 (81E15)
- Helmke, Uwe (with Byrnes, Christopher I.; Morse, A. Stephen) Necessary conditions in adaptive control. Modelling, identification and robust control (Stockholm, 1985), 3–14, *North-Holland, Amsterdam-New York*, 1986. (Kazuhiko Terashima) **89d:93058** 93C40 (49B10)
- (with Prätzel-Wolters, D.) Stability and robustness properties of universal adaptive controllers for first-order linear systems. *Internat. J. Control* **48** (1988), no. 3, 1153–1182. (O. A. Sebakhy) **89h:93034** 93C40 (49E25, 93D15)
- Helms, Billy P. (with Jean, William H.) Necessary conditions for stochastic dominance: a general approach. *Appl. Stochastic Models Data Anal.* **4** (1988), no. 2, 89–99. (Summary) **89d:90024** 90A09 (90A10)
- Helms, Ronald W. (with Fairclough, Diane L.) A mixed linear model with linear covariance structure: a sensitivity analysis of maximum likelihood estimators. *J. Statist. Comput. Simulation* **25** (1986), no. 3–4, 205–236. (Not in MR) 62J05
- Manipulating statistical hypotheses and tests as Boolean functions. *Amer. Statist.* **42** (1988), no. 4, 253–256. (Summary) **89h:62038** 62F03
- Helmstetter, Jacques Monoïdes de Clifford et déformations d'algèbres de Clifford. [Clifford monoïdes and deformations of Clifford algebras] *J. Algebra* **111** (1987), no. 1, 14–48. (Carl Riehm) **89h:11017** 11E88 (15A66)
- Helou, Charles An explicit 2<sup>nd</sup> reciprocity law. *J. Reine Angew. Math.* **389** (1988), 64–89. (R. A. Molina) **89e:11072** 11S31
- Helson, Henry (with Merrill, Kathy D.) Cocycles on the circle. II. *Special classes of linear operators and other topics (Bucharest, 1986)*, 121–124, *Oper. Theory. Adv. Appl.*, **28**, Birkhäuser, Basel-Boston, MA, 1988. (Arlan Ramsay) **89j:22008** 22D40 (22D30)
- see also *Special classes of linear operators and other topics*, **89h:47003**
- Helson, J. William (with Ball, Joseph A.; Johnson, Charles Royal; Palmer, John N.) ★ Operator theory, analytic functions, matrices, and electrical engineering. CBMS Regional Conference Series in Mathematics, **68**. Published for the Conference Board of the Mathematical Sciences, Washington, DC; by the American Mathematical Society, Providence, RI, 1987. xvi+134 pp. ISBN 0-8218-0718-8 (T. Ando) **89f:47001** 47-02 (46J15, 46N05, 47A15, 47A68, 47B50, 93B25, 93B28)
- (with Ball, Joseph A.; Foias, Ciprian; Tannenbaum, Allen) On a local nonlinear commutant lifting theorem. *Indiana Univ. Math. J.* **36** (1987), no. 3, 693–709. (E. R. Tsekanovskii) **89a:47010** 47A20 (47B35, 93B28)
- (with Rodman, Leiba) Vandermonde and resultant matrices: an abstract approach. *Math. Systems Theory* **20** (1987), no. 2–3, 169–192. (M. Tismenetsky) **89d:15002a** 15A33
- (with Ball, Joseph A.; Sung, Chen Han) Nonlinear solutions of Nevanlinna-Pick interpolation problems. *Michigan Math. J.* **34** (1987), no. 3, 375–389. (E. R. Tsekanovskii) **89e:47043** 47B38 (30E05, 32A10, 47A20, 47H99)
- (with Ball, Joseph A.) Shift invariant manifolds and nonlinear analytic function theory. *Integral Equations Operator Theory* **11** (1988), no. 5, 615–725. (Allen Tannenbaum) **89m:58018** 58B99 (30H05)
- (with Rodman, Leiba) Correction: "Vandermonde and resultant matrices: an abstract approach". *Math. Systems Theory* **21** (1988), no. 1, 61. (M. Tismenetsky) **89d:15002b** 15A33
- (with Sideris, Athanasios) Frequency response algorithms for  $H_\infty$  optimization with time domain constraints. *IEEE Trans. Automat. Control* **34** (1989), no. 4, 427–434. (Summary) **89m:93029** 93B50 (93B35, 93C55)
- Heltshe, James F. Jackknife estimate of the matching coefficient of similarity. (French summary) *Biometrics* **44** (1988), no. 2, 447–460. (From the summary) **89c:62184** 62P10 (62F10)
- Hemachandra, Lane (with Hartmanis, Juris) On sparse oracles separating feasible complexity classes. *Inform. Process. Lett.* **28** (1988), no. 6, 291–295. (Summary) **89f:68041** 68Q15 (68Q30)
- Hemdan, H. T. (with Al-Rashed, A. M.) Solution of the generalized cube and octahedron functional equations. *Utilitas Math.* **33** (1988), 123–135. (Hiroshi Haruki) **89f:39009** 39B40
- tazi Hemida, Mohammed see Tazi Hemida, Mohammed
- Hemion, Geoffrey A discrete geometry: speculations on a new framework for classical electrodynamics. *Internat. J. Theoret. Phys.* **27** (1988), no. 10, 1145–1255. (Jules Beckers) **89j:78009** 78A02
- Hemker, P. W. Multigrid and improved accuracy for the Euler equations. *Discretization in differential equations and enclosures (Weissig, 1986)*, 123–136, *Math. Res.*, **36**, Akademie-Verlag, Berlin, 1987. (David C. Arney) **89h:65150** 65M60 (76-08, 76C99)
- (with Johnson, G. M.) Multigrid approaches to the Euler equations. *Multigrid methods*, 57–72, *Frontiers Appl. Math.*, **3**, SIAM, Philadelphia, PA, 1987. (see **89m:65004**) 65-02
- A nonlinear multigrid method for one-dimensional semiconductor device simulation. *BAIL V (Shanghai, 1988)*, 18–29, *Boole Press Conf. Ser.*, **12**, Boole, Dain Laoghaire, 1988. (see **89j:65008**) 78-04 (65P05, 78A60)
- (with Koren, Barry) Multigrid, defect correction and upwind schemes for the steady Navier-Stokes equations. *Numerical methods for fluid dynamics, III (Oxford, 1988)*, 153–170, *Int. Math. Appl. Conf. Ser. New Ser.*, **17**, Oxford Univ. Press, New York, 1988. (see **89j:76004**) 76-08 (65N99, 76D05)
- van Hemmen, J. L. Pattern recognition in nonlinear neural networks. *The physics of structure formation (Tübingen, 1986)*, 22–41, *Springer Ser. Synergetics*, **37**, Springer, Berlin-New York, 1987. (Summary) **89f:92066** 92A25 (68T10, 92A09)
- (with Rzążewski, K.) Nonlinear neural networks with external noise. *J. Phys. A* **20** (1987), no. 18, 6553–6560. (Summary) **89a:92021** 92A09 (82A57)
- (with Wreszinski, W.) Universal upper bound for the tunneling rate of a large quantum spin. *Comm. Math. Phys.* **119** (1988), no. 2, 213–219. (Aernout C. D. van Enter) **89j:81285** 81G55 (82A99)
- (with van Enter, Aernout C. D.; Pospiech, C.) Mean-field theory of random-site  $q$ -state Potts models. *J. Phys. A* **21** (1988), no. 3, 791–801. (M. Lawrence Glasser) **89e:82004** 82A25 (82A68)
- (with Grensing, D.; Huber, A.; Kühn, Reimer) Nonlinear neural networks. I. General theory. *J. Statist. Phys.* **50** (1988), no. 1–2, 231–257. (E. Pessa) **89j:92018** 92A09 (68Q75, 82A57)
- (with Grensing, D.; Huber, A.; Kühn, Reimer) Nonlinear neural networks. II. Information processing. *J. Statist. Phys.* **50** (1988), no. 1–2, 259–293. (E. Pessa) **89m:92020** 92A09 (68Q80, 82A57, 82A99, 92A25)
- (with Riedel, U.; Kühn, Reimer) Temporal sequences and chaos in neural nets. *Phys. Rev. A* **38** (1988), no. 2, 1105–1108. (Summary) **89f:92023** 92A09 (58F13, 82A57)
- (with Böös, S.; Kühn, Reimer) Martingale approach to neural networks with hierarchically structured information. *Z. Phys. B* **71** (1988), no. 2, 261–271. (Summary) **89j:92023** 92A09 (82A57, 82A99)
- Hemmer, P. C. (with Ding, E. Jiang) Exact treatment of mode locking for a piecewise linear map. *J. Statist. Phys.* **46** (1987), no. 1–2, 99–110. (Jincheng Xiong) **89a:58056** 58F08
- (with Ding, E. Jiang) Winding numbers for the supercritical sine circle map. *Phys. D* **32** (1988), no. 1, 153–160. (Summary) **89j:58077** 58F13 (26A18, 54H20, 58F08)
- Hemmerling, Armin Normed two-plane traps for finite systems of cooperating compass automata. (German and Russian summaries) Mathematical aspects of informatics (Mädgesprung, 1986). *J. Inform. Process. Cybernet.* **23** (1987), no. 8–9, 453–470. (H. Jürgensen) **89c:68055** 68Q80
- Hemmeter, Joe On an iteration diagram. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **60** (1987), 59–66. (R. C. Entringer) **89e:05101** 05C20 (11A15)
- The large cliques in the graph of quadratic forms. *European J. Combin.* **9** (1988), no. 4, 395–410. (J. J. Seidel) **89i:05164** 05C35
- Hemmi, Yutaka Homotopy associative finite  $H$ -spaces and the mod 3 reduced power operations. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 6, 1071–1084. (Donald M. Davis) **89d:55022** 55P45 (55S05)
- Mod 3 homotopy associative  $H$ -spaces which are products of spheres. *Hiroshima Math. J.* **18** (1988), no. 2, 227–243. (M. Arkowitz) **89f:55005** 55P45
- Hemminger, Robert L. (with Dean, Nathaniel; Toft, Bjarne) On contractible edges in 3-connected graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 291–293. (A. Ádám) **89e:05125** 05C38
- Hempel, Joachim A. On the uniformization of the  $n$ -punctured sphere. *Bull. London Math. Soc.* **20** (1988), no. 2, 97–115. (E. Bujalance) **89c:30109** 30F10
- (with Smith, Simon J.) Hyperbolic lengths of geodesics surrounding two punctures. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 513–516. (W. H. J. Fuchs) **89c:30045** 30C99 (51M10)
- Hempel, John Residual finiteness for 3-manifolds. *Combinatorial group theory and topology (Alta, Utah, 1984)*, 379–396, *Ann. of Math. Stud.*, **111**, Princeton Univ. Press, Princeton, NJ, 1987. (Summary) **89b:57002** 57M05 (20E26, 20F34, 57N10)
- Coverings of Dehn fillings of surface bundles. II. *Topology Appl.* **26** (1987), no. 2, 163–173. (Klaus Johannson) **89j:57008** 57N10 (57M25)
- Henč, Damir Ergodicity of foliations with singularities. *J. Funct. Anal.* **75** (1987), no. 2, 349–361. (M. Rees) **89d:57041** 57R30 (58A10, 58F18)
- Hendawy, Z. M. (with Lin, Jie; Roberts, P. D.) Extension of integrated system optimization and parameter estimation to hierarchical control of steady state systems with output-dependent constraints. *Internat. J. Control* **47** (1988), no. 2, 413–431. (P. Vondráček) **89d:93003** 93A13 (93B30, 93B40)
- (with Lin, Jie; Roberts, P. D.) New model-based double-loop iterative strategy for integrated system optimization and parameter estimation of large-scale industrial processes. *Internat. J. Control* **47** (1988), no. 3, 753–773. (Not in MR) **93A15** (93B30, 93B40)
- Henderson, Charles R. The use of equivalent linear models in mixed model estimation and prediction. *Comm. Statist. Theory Methods* **17** (1988), no. 4, 969–982. (Summary) **89d:62057** 62J05 (62J10)
- Henderson, James P. (with Garity, Dennis J.; Wright, David G.) Menger spaces and inverse limits. *Pacific J. Math.* **131** (1988), no. 2, 249–259. (John J. Walsh) **89d:54026** 54F45 (54B25, 57N20)
- Henderson, Jenny Aline (with Delbourgo, R.) The Grassmann Euclidean group  $Sp(2) \wedge T(2)$  and its representations. *J. Phys. A* **20** (1987), no. 3, 529–535. (Lawrence P. Horwitz) **89d:22029** 22E70 (81G20)
- (with Jarvis, P. D.) Coset space dimensional reduction and one-loop corrections. *Nuclear Phys. B* **297** (1988), no. 3, 539–556. (Summary) **89e:81109** 81E15 (81E13)
- Henderson, Johnny Optimality and existence for Lipschitz equations. *Internat. J. Math. Math. Sci.* **11** (1988), no. 2, 267–274. (Pavel Drábek) **89d:34035** 34B15 (34B10)
- (with Elie, P. W.) Integral conditions for right dislocality of a linear differential equation. *J. Math. Anal. Appl.* **131** (1988), no. 2, 441–450. (Anthony Uyi Afuwape) **89h:34033** 34C10 (34A30)
- Henderson, R. V. (with Klopman, Gilles; Raychaudhury, Chandan) A new approach to structure-activity using distance information content of graph vertices: a study with

- phenylalkylamines. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 635-640. (see **89d:00007**) 92A40
- Henderson, Tom (with Samal, Ashok) Parallel consistent labeling algorithms. *Internat. J. Parallel Programming* **16** (1987), no. 5, 341-364. (Not in MR) 68U10 (68Q10)
- Henderson, W. (with Breen, P.) Dominated strategies in searching for evolutionary stable strategies. *J. Austral. Math. Soc. Ser. B* **30** (1988), no. 2, 214-219. (Peter D. Taylor) **89h:90283** 90D40 (92A12, 92A15, 92A18)
- Hendricks, John see Eckhardt, Roger. (**89m:01133a**)
- Hendriks, E. On a model of spatially homogeneous polymerization with a phase transition. *Mark Kac Seminar on Probability and Physics. Syllabus 1985-1987* (Amsterdam, 1985-1987), 1-5, *CWI Syllabi*, 17, *Math. Centrum, Centrum Wisk. Inform., Amsterdam*, 1988. (Debashish Chowdhury) **89m:82052** 82A51 (82A25)
- Hendriks, Harrie The Alexander polynomial of a knot: a revival. *Nieuw Arch. Wisk.* (4) **6** (1988), no. 1-2, 23-34. (Yoko Nakagawa) **89k:57011** 57M25
- Hendriksen, E. The strong Hamburger moment problem and selfadjoint operators in Hilbert space. *J. Comput. Appl. Math.* **19** (1987), no. 1, 79-88. (Lawrence Williams) **89c:47035** 47B25 (44A60)
- A characterization of classical orthogonal Laurent polynomials. *Nederl. Akad. Wetensch. Indag. Math.* **50** (1988), no. 2, 165-180. (W. A. Al-Salam) **89h:33014** 33A65 (42C15)
- Hendry, David see Spanos, Aris. (**89g:62170**)
- Hendry, George R. T. Diagonal Ramsey numbers for graphs with seven edges. *Utilitas Math.* **32** (1987), 11-34. (Jerrold W. Grossman) **89b:05126** 05C55
- The multiplicity of 1-factors in total graphs. *Discrete Math.* **70** (1988), no. 1, 21-25. (Heinz Kröger) **89i:05217** 05C70
- Scattering number and extremal non-Hamiltonian graphs. *Discrete Math.* **71** (1988), no. 2, 165-175. (Linda Lesniak) **89j:05060** 05C75 (05C35, 05C45)
- Henry, R. J. Asymptotic convergence in distribution for Spearman's rank correlation coefficient. *Comm. Statist. Simulation Comput.* **17** (1988), no. 4, 1449-1452. (Not in MR) 62H20
- Heng, Z. Boundary element study of an anisotropic plate. *Comm. Appl. Numer. Methods* **4** (1988), no. 4, 557-559. (Summary) **89d:73034** 73K20 (73-08, 73K10)
- Hengartner, N. (with Bshouty, D.; Hengartner, W.) A constructive method for starlike harmonic mappings. *Numer. Math.* **54** (1988), no. 2, 167-178. (D. Gaier) **89m:30016** 30C30 (65E05)
- Hengartner, W. (with Abdul Hadi, Z.) Univalent logharmonic mappings. (Russian and Polish summaries) Proceedings of the 9th Conference on Analytic Functions (Lublin, 1986). *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **40** (1986), 1-11 (1987). (From the introduction) **89c:30009** 30C45
- (with Abdul Hadi, Z.) Spirallike logharmonic mappings. *Complex Variables Theory Appl.* **9** (1987), no. 2-3, 121-130. (Carl P. McCarty) **89a:30012** 30C55
- (with Gauthier, Paul M.; Grothmann, R.) Asymptotic maximum principles for subharmonic and plurisubharmonic functions. *Canad. J. Math.* **40** (1988), no. 2, 477-486. (W. H. Ow) **89g:31011** 31C05
- (with Bshouty, D.; Hengartner, N.) A constructive method for starlike harmonic mappings. *Numer. Math.* **54** (1988), no. 2, 167-178. (D. Gaier) **89m:30016** 30C30 (65E05)
- Henglein, Fritz (with Paige, Robert) Mechanical translation of set theoretic problem specifications into efficient RAM code—a case study. *J. Symbolic Comput.* **4** (1987), no. 2, 207-232. (Summary) **89d:68020** 68N05 (03B70, 68T99)
- Henig, M. I. Characterizing the nondominated set by separable functions. *J. Optim. Theory Appl.* **59** (1988), no. 3, 423-444. (Emil Iwanow) **89m:90149** 90C31
- (with Gerchak, Yigal) Component commonality in assemble-to-order systems: models and properties. *Naval Res. Logist.* **36** (1989), no. 1, 61-68. (Summary) **89j:90081** 90B05
- Henkel, C. S. (with Eisenstat, S. C.; Heath, M. T.; Romine, C. H.) Modified cyclic algorithms for solving triangular systems on distributed-memory multiprocessors. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 3, 589-600. (Zeng Rong Chen) **89c:65169** 65W05 (65F05)
- Henkel, D. (with Hauck, J.; Mika, K.) Ordering of metal atoms in binary ccp, hcp, and bcc alloys. *Z. Phys. B* **71** (1988), no. 2, 187-192. (Summary) **89f:82067** 82A60 (82-04)
- Henkel, Malte (with Patkós, András) Conformal invariance and line defects in the two-dimensional Ising model. *J. Phys. A* **21** (1988), no. 4, L231-L236. (Summary) **89c:82068** 82A68 (81G20)
- (with Schütz, Gunter) Finite-lattice extrapolation algorithms. *J. Phys. A* **21** (1988), no. 11, 2617-2633. (Summary) **89k:82005** 82-08 (82A25, 82A68)
- Henkin, G. M. see Khenkin, G. M.
- Henley, Christopher L. Random tilings with quasicrystal order: transfer-matrix approach. *J. Phys. A* **21** (1988), no. 7, 1649-1677. (A. G. Schlijper) **89j:82061** 82A57 (52A45)
- (with Leung, P. W.; Chester, G. V.) Dodecagonal order in a two-dimensional Lennard-Jones system. *Phys. Rev. B* (3) **39** (1989), no. 1, 446-458. (Summary) **89j:82064** 82A57 (82-04, 82A60)
- Henn, Rudolf see Economics and mathematics. **89j:90002**
- Hennart, Jean Pierre (with Jaffre, Jérôme; Roberts, Jean Elizabeth) A constructive method for deriving finite elements of nodal type. *Numer. Math.* **53** (1988), no. 6, 701-738. (Summary) **89g:65144** 65N30
- (with Mund, E. H.) On the  $h$ - and  $p$ -versions of the extrapolated Gordon's projector with applications to elliptic equations. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 5, 773-791. (Summary) **89g:65143** 65N30
- Henneaux, M. (with Teitelboim, Claudio)  $p$ -form electrodynamics. *Found. Phys.* **16** (1986), no. 7, 593-617. (Alfred Actor) **89b:81101** 81D99 (53C80, 78A25, 81E30)
- (with Fisch, Jean) Representations of the ghost canonical commutation relations and nilpotency of the BRST charge in string theory. *Acad. Roy. Belg. Bull. Cl. Sci.* (5) **73** (1987), no. 5, 201-208. (Summary) **89f:81175** 81E99 (81D05, 81E30)
- (with Teitelboim, Claudio; Zanelli, Jorge) Quantum mechanics for multivalued Hamiltonians. *Phys. Rev. A* (3) **36** (1987), no. 9, 4417-4420. (Martin C. Gutzwiller) **89g:81024** 81C35 (70H05)
- (with Brink, Lars) ★ Principles of string theory. With a preface by Claudio Teitelboim. Series of the Centro de Estudios Científicos de Santiago. [Series of the Center for Scientific Studies of Santiago] Plenum Press, New York-London, 1988. xiv+297 pp. ISBN 0-306-42657-9 (Miao Li) **89i:81001** 81-02 (81E30, 81E40, 83E30)
- (with Charap, J. M.; Nelson, J. E.) Explicit form of the constraint algebra in tetrad gravity. *Classical Quantum Gravity* **5** (1988), no. 11, 1405-1414. (Agostino Prastaro) **89k:83049** 83C99 (58F05, 83E50)
- (with Teitelboim, Claudio) BRST cohomology in classical mechanics. *Comm. Math. Phys.* **115** (1988), no. 2, 213-230. (Bo-Yu Hou) **89h:17022** 17B56 (32L10, 58F05, 70G99, 81E99)
- BRST extensions of a Lie group. *Nuclear Phys. B* **308** (1988), no. 2-3, 619-628. (From the text) **89i:22036** 22E70 (17B65, 81E13)
- (with Dresse, Alain; Fisch, Jean; Schomblond, Christiane) Consistent elimination of redundant second-class constraints. *Phys. Lett. B* **210** (1988), no. 1-2, 141-146. (George Siopsis) **89j:81171** 81E99 (81D07, 81E30)
- (with Demaret, J.; De Rop, Y.) Chaos in nondiagonal spatially homogeneous cosmological models in spacetime dimensions  $\leq 10$ . *Phys. Lett. B* **211** (1988), no. 1-2, 37-41. (Stephen W. Goode) **89j:83011** 83C15 (83F05)
- (with Fisch, Jean; Stasheff, James; Teitelboim, Claudio) Existence, uniqueness and cohomology of the classical BRST charge with ghosts of ghosts. *Comm. Math. Phys.* **120** (1989), no. 3, 379-407. (David McMullan) **89m:81093** 81E13 (55N99, 58F05)
- Hennequin, P. L. see School: Probability Theory. **89i:60005**
- Hennessey, Matthew An algebraic theory of fair asynchronous communicating processes. Twelfth international colloquium on automata, languages and programming (Nafplion, 1985). *Theoret. Comput. Sci.* **49** (1987), no. 2-3, 121-143. (T. Mülender) **89b:68027** 68Q10 (68Q55)
- Hennet, J.-C. (with Vassiliaki, M.; Bitsoris, G.) Feedback control of linear discrete-time systems under state and control constraints. *Internat. J. Control* **47** (1988), no. 6, 1727-1735. (Not in MR) 93B50 (93C05, 93C55)
- Hennig, J. D. see Group theoretical methods in physics. **89g:81001**
- Henning, M. A. (with Swart, Henda C.; Winter, P. A.) On  $(\Gamma, n)$ -regular graphs. *Questions Math.* **11** (1988), no. 1, 51-63. (J. Sheehan) **89c:05127** 05C38
- Henning, Walter (with Geus, Lothar; Vajteric, Marián; Volkert, Jens) Matrix inversion algorithms for a pyramidal multiprocessor system. (Russian summary) *Comput. Artificial Intelligence* **7** (1988), no. 1, 65-79. (Not in MR) 68Q10 (65F)
- Hennings, M. A. A characterisation of  $C^*$ -algebras. *Proc. Edinburgh Math. Soc.* (2) **30** (1987), no. 3, 445-453. (Robert S. Doran) **89a:46119** 46K05 (46L05)
- Power-bounded elements and Tauberian theorems in locally convex algebras. *Math. Proc. Cambridge Philos. Soc.* **105** (1989), no. 1, 147-159. (Krzysztof Jarosz) **89m:46086** 46H05
- Hennion, H. Comportement des exposants de Lyapounov d'une matrice perturbée par des rotations. [Behavior of the Lyapunov exponents of a matrix perturbed by rotations] *Probabilités*, 89-98, *Publ. Inst. Rech. Math. Rennes*, 1986-1, *Univ. Rennes I*, Rennes, 1986. (Albert Raugi) **89j:60015** 60B15 (58F11, 58F30)
- Hénon, Michel Viscosity of a lattice gas. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems* **1** (1987), no. 4, 763-789. (Olivier Sero Guillaume) **89h:76005** 76-08 (76P05, 82-08, 82A40)
- Henrard, J. (with Murigande, Charles) Colombo's top. *Celestial Mech.* **40** (1987), no. 3-4, 345-366. (Summary) **89c:70018** 70F15
- (with Lemaitre, A.) The 3/2 resonance. Long term evolution of planetary systems (Ramsau, 1988). *Celestial Mech.* **43** (1987/88), no. 1-4, 91-98. (see **89j:76002**) 70F10 (58F13, 70K30)
- (with de Vrieschauer, Anne) Sweeping through a second order resonance. Long term evolution of planetary systems (Ramsau, 1988). *Celestial Mech.* **43** (1987/88), no. 1-4, 99-112. (Summary) **89m:58186** 58F40 (70F15, 70K30)
- see also Long term evolution of planetary systems. **89j:76002**
- Henrich, Wolfgang Absolute und starke Summierbarkeit von Orthogonalreihen mit Hausdorff-Verfahren. [Absolute and strong summability of orthogonal series by Hausdorff methods] *Mitt. Math. Sem. Giessen* No. 183 (1987), i-ii, 1-53. (S. Baron) **89g:42044** 42C15 (40F05, 41A25, 42A28)
- Henrici, Peter De Branges' proof of the Bieberbach conjecture: a view from computational analysis. *Sitzungsberichte der Berliner Mathematischen Gesellschaft*, 105-121, *Freie Univ. Berlin*, Berlin, 1987. (Walter Gautschi and G. Gasper) **89m:01071** 01A65 (00A25, 30C50, 65D20, 65E05)
- see also Gutknecht, Martin. **89c:01064** and Golub, Gene H. **89i:01077**
- Henriksen, M. (with Peters, Thomas J.) Locally finite families, completely separated sets and remote points. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 989-995. (J. van Mill) **89c:54047** 54D40 (03E05)
- (with Dow, A.; Kopperman, Ralph; Vermeer, J.) The space of minimal prime ideals of  $C(X)$  need not be basically disconnected. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 317-320. (W. A. Feldman) **89i:54024** 54C40 (06F25)
- Henion, Claudia Helen Abbot Merrill (1864-1949). *Women of mathematics*, 147-151, Greenwood, Westport, CT, 1987. (see **89b:01071**) 01A70
- Henry, D. B. (with Albert, J. P.; Bona, Jerry L.) Sufficient conditions for stability of solitary-wave solutions of model equations for long waves. *Phys. D* **24** (1987), no. 1-3, 343-366. (Summary) **89a:35166** 35Q20
- Henry, Donald P., Jr. (with Banerjee, Prasanta K.) A new boundary element formulation for two- and three-dimensional thermoelasticity using particular integrals. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 9, 2061-2077. (Summaries) **89g:73004a** 73-08 (73C25)
- (with Banerjee, Prasanta K.) A new BEM formulation for two- and three-dimensional elastoplasticity using particular integrals. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 9, 2079-2096. (Summary) **89g:73004b** 73-08 (73E99)
- Henry, J.-P. see Henry, Jean-Pierre Georges
- Henry, Jacques (with Kaufman, François; Landau, Mayer; Pierret, C.) Utilisation de la méthode de continuation-bifurcation en électrophysiologie cardiaque. [Use of the bifurcation-continuation method in cardiac electrophysiology] 11<sup>e</sup> congrès international de cybernétique (Namur, 1986), 1313-1327, *Assoc. Internat. Cybernét.*, Namur, 1986. (see **89a:94001**) 92A09
- (with Sadikou, Y.; Yvon, J. P.) Identification of parameters in diffusion convection models: application to the analysis of blood flow in digital subtraction angiography. *Control of partial differential equations* (Santiago de Compostela, 1987), 156-167, *Lecture Notes in Control and Inform. Sci.*, 114, Springer, Berlin-New York, 1989. (see **89j:00028**) 92A07 (35Q99, 93B30)



- Henry, Jean-Pierre Georges** (with Merle, M.) Conditions de régularité et éclatements. (English summary) [Regularity conditions and blowings up] *Ann. Inst. Fourier (Grenoble)* 37 (1987), no. 3, 159–190. (Alexandru Dimca) **89d:32015** 32B30 (32C42)
- Henry, M. S.** Lipschitz and strong unicity constants. *A. Haar memorial conference, Vol. I, II (Budapest, 1985)*, 423–444, *Colloq. Math. Soc. János Bolyai*, 49, North-Holland, Amsterdam-New York, 1987. (Darrell Schmidt) **89e:41037** 41A52 (41A44, 41A50)
- Henry, Richard W.** (with Giotter, Sharon C.) A squeezed-state primer. *Amer. J. Phys.* 56 (1988), no. 4, 318–328. (Summary) **89b:81099** 81D30
- Henschen, Lawrence** (with Yahya, Adnan) Deduction in non-Horn databases. *J. Automat. Reason.* 1 (1985), no. 2, 141–160. (Summary) **89b:68135** 68T15 (03B35)
- (with McCune, William) Experiments with semantic paramodulation. *J. Automat. Reason.* 1 (1985), no. 3, 231–261. (Summary) **89i:68116** 68T15 (03B35, 68Q55)
- (with Franzen, Mark) A new approach to universal unification and its application to AC-unification. *9th International Conference on Automated Deduction (Argonne, IL, 1988)*, 643–657, *Lecture Notes in Comput. Sci.*, 310, Springer, Berlin-New York, 1988. (see **89c:68004**) 68T15 (03B35)
- Hensgen, Wolfgang** Operators  $H^1 \rightarrow X$ . (English summary) [Operators  $H^1 \rightarrow X$ ] *Manuscripta Math.* 59 (1987), no. 4, 399–422. (J. Diestel) **89a:47045** 47B38 (46B22, 46E40, 47A65)
- On complementation of vector-valued Hardy spaces. *Proc. Amer. Math. Soc.* 104 (1988), no. 4, 1153–1162. (Daniel H. Luecking) **89f:46082** 46E40 (30D55, 42B30, 46I15)
- Hensley, Doug** Errata: "On continued fractions and a certain example of a sequence of continuous functions" [Amer. Math. Monthly 95 (1988), no. 6, 537–539; MR 89i:40001] by J. Fabrykowski. *Amer. Math. Monthly* 95 (1988), no. 10, 911. (André Hautot) **89i:40006** 40A15
- A truncated Gauss-Kuz'min law. *Trans. Amer. Math. Soc.* 306 (1988), no. 1, 307–327. (Roger Paysant-Le Roux) **89j:11066** 11K36 (11A55, 11H41)
- Henson, C. Ward** (with Compton, Kevin J.; Shelah, Saharon) Nonconvergence, undecidability, and intractability in asymptotic problems. *Ann. Pure Appl. Logic* 36 (1987), no. 3, 207–224. (Charles Steinhorn) **89f:03021** 03C13 (03C52)
- Infinitesimals in functional analysis. *Nonstandard analysis and its applications* (Hull, 1986), 140–181, *London Math. Soc. Stud. Texts*, 10, Cambridge Univ. Press, Cambridge-New York, 1988. (see **89n:03060**) 46Q05 (03H05, 46Axx, 46Bxx, 47Axx, 47Bxx)
- Henson, Martin C.** ★ Elements of functional languages. Computer Science Texts. Blackwell Scientific Publications Ltd., Oxford, 1987. xiv+434 pp. ISBN 0-632-01739-2; 0-632-01506-3 (Guang Kun Hou) **89j:68099** 68Q55 (68-01, 68N05, 68Q60)
- Henstock, Ralph** see Symposium: Real Analysis, **89j:26003**
- Henz, Ewa** On a Weyl theorem in von Neumann algebras. (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 3-4, 195–201. (D. Petz) **89c:46081** 46L50 (40A30)
- Hentschel, Klaus** Die Korrespondenz Duhem-Mach: zur "Modellbeladenheit" von Wissenschaftsgeschichte. (English summary) [The correspondence of Duhem and Mach: the history of science is "fraught with models"] *Ann. of Sci.* 45 (1988), no. 1, 73–91. (H. Tredor) **89c:01065** 01A70 (01A60)
- Henty, J. C.** (with Howe, P. S.; Townsend, P. K.) Quantum mechanics of the relativistic spinning particle. *Classical Quantum Gravity* 5 (1988), no. 5, 807–823. (Marc Henneaux) **89b:81051** 81C35 (81D30)
- Hentzel, Irvin R.** (with Peresi, Luiz A.) Counterexamples in nonassociative algebra. *Algebras Groups Geom.* 5 (1988), no. 1, 109–128. (H. Röhrli) **89j:17002** 17A30
- (with Carini, Luisa; Piacentini Cattaneo, Giulia Maria) Degree four identities not implied by commutativity. *Comm. Algebra* 16 (1988), no. 2, 339–356. (V. A. Artamonov) **89c:17005** 17A30
- (with Pokrass, D. J.) A computational and graph-theoretic approach to nonassociative algebras. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 241–258. (H. Röhrli) **89j:17001** 17A30 (05C99, 17-04)
- Henye, F. S.** (with Dythe, Kristian; Longuet-Higgins, M. S.; Schult, R. L.) The orbiting double pendulum: an analogue to interacting gravity waves. *Proc. Roy. Soc. London Ser. A* 418 (1988), no. 1855, 281–299. (P. C. Parks) **89j:70019** 70F20 (70H35, 76B15)
- Henze, N.** A probabilistic representation of the "skew-normal" distribution. *Scand. J. Statist.* 13 (1986), no. 4, 271–275. (Mir Maswood Ali) **89k:62015** 62E10 (60E99)
- On the fraction of random points with specified nearest-neighbour interrelations and degree of attraction. *Adv. in Appl. Probab.* 19 (1987), no. 4, 873–895. (H. W. Lotwick) **89c:60063** 60G55 (60D05)
- A multivariate two-sample test based on the number of nearest neighbor type coincidences. *Ann. Statist.* 16 (1988), no. 2, 772–783. (Truc Nguyen) **89g:62083** 62H15 (62G10)
- (with Baringhaus, L.; Morgenstern, D.) Some elementary proofs of the normality of  $XY/(X^2 + Y^2)^{1/2}$  when  $X$  and  $Y$  are normal. *Comput. Math. Appl.* 15 (1988), no. 11, 943–944. (Włodzimierz Bryc) **89g:60038** 60E05
- Hepkes, A.** On the density of translates of a domain. (Russian and Hungarian summaries) *Közl. MTA Széchenyi Akad. Kutató Int. Budapest* 1987, no. 36, 93–97. (Peter Gritzmann) **89a:52037** 52A45
- (with Freiman, G.; Uhrin, B.) A lower estimation for the cardinality of finite difference sets in  $\mathbb{R}^n$ . Problems of computer science (Budapest, 1987). *Tanulmányok—MTA Széchenyi Akad. Kutató Int. Budapest* No. 202 (1987), 63–73. (W. H. Mills) **89e:05041** 05B10 (11H25, 11P99)
- A lower bound for the incircle of a domain. *Közl. MTA Széchenyi Akad. Kutató Int. Budapest* 1988, no. 38, 81–82. (H. W. Guggenheimer) **89i:53002** 53A04
- Herbert, D. M.** (with Adler, Jack) Addendum: "A criticality criterion for thermal explosions in well-stirred systems with reactant consumption" [IMA J. Appl. Math. 35 (1985), no. 1, 55–70; MR 87c:80019] *IMA J. Appl. Math.* 36 (1986), no. 3, 307. (Editors) **89m:80008** 80A25
- Herbin, Raphaële** (with Gerbi, Stéphane; Sonnad, V.) Parallel implementation of a multigrid method on the experimental ICAP supercomputer. *Appl. Math. Comput.* 27 (1988), no. 4, part II, 281–312. (Summary) **89g:65178** 65W05
- Herbert, Gregor** ★ Wachstumsordnung des Bergmankerns auf pseudokonvexen Gebieten. (German) [Order of growth of the Bergman kernel on pseudoconvex domains] Schriftenreihe des Mathematischen Instituts der Universität Münster, Ser. 2 [Series of the Mathematical Institute of the University of Münster, Ser. 2], 46. Universität Münster, Mathematisches Institut, Münster, 1987. x+146 pp. (Emil Straube) **89c:32067** 32H10 (32F15)
- Herbst, B. M.** The road to chaos in the parametrically driven oscillator. *Finite-dimensional integrable nonlinear dynamical systems* (Johannesburg, 1988), 300–313, *World Sci. Publishing, Singapore*, 1988. (François Aribaud) **89m:58140** 58F13 (34C15, 70K50)
- (with Sloan, D. M.) Review of some results on modulational instabilities in nonlinear difference schemes. *Numerical analysis 1987* (Dundee, 1987), 242–258, *Pitman Res. Notes Math. Ser.*, 170, Longman Sci. Tech., Harlow, 1988. (E. G. Dyakonov) **89i:65091** 65M10
- (with Coot, A.) Grid resonances, focusing and Benjamin-Feir instabilities in leapfrog time discretizations. *J. Comput. Phys.* 75 (1988), no. 1, 31–53. (David C. Arney) **89e:65096** 65M10 (65Q05)
- (with Steeb, W.-H.) Parametrically driven one-dimensional sine-Gordon equation and chaos. *Z. Naturforsch. A* 43 (1988), no. 8-9, 727–733. (Summary) **89i:58087** 58F13 (35Q20)
- Herbst, Ehrhard** Ein Stabilitätsbegriff für Faltungsgleichungen. [A stability concept for convolution equations] *Rostock. Math. Kolloq.* No. 31 (1987), 57–64. (Hans-Jürgen Gieske) **89a:46093** 46F99
- Herbst, Ira** (with Froese, R.) Patterns of exponential decay for solutions to second order elliptic equations in a sector of  $\mathbb{R}^2$ . *J. Analyse Math.* 49 (1987), 106–134. (Rainer Hempel) **89d:35020** 35B40 (35J15)
- Herbert, I.** (with Moszyńska, M.) On intrinsic embeddings. (Serbo-Croatian summary) *Glas. Mat. Ser. III* 22(42) (1987), no. 2, 421–427. (Dušan Repovš) **89m:54043** 54E40 (51F99, 57N99)
- Herbst, Fedor** Separability in distant Jauch-type hybrid macrostates of a quantum and a classical system. *Internat. J. Theoret. Phys.* 25 (1986), no. 12, 1215–1227. (Summary) **89b:81017** 81B05
- (with Vujčić, Milan) Irrelevance of the Pauli principle in distant correlations between identical fermions. *J. Phys. A* 20 (1987), no. 16, 5555–5563. (L. I. Rozonoër) **89b:81018** 81B05
- Herceg, Dragoslav** (with Cvetković, Ljiljana) Some results on  $M$ - and  $H$ -matrices. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 16 (1986), no. 2, 121–129. (Jeffrey Stuart) **89i:15016** 15A48 (15A57)
- (with Petrović, Nenad) On numerical solution of a singularly perturbed boundary value problem. II. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 17 (1987), no. 1, 163–186. (Summary) **89c:65084** 65L10
- (with Cvetković, Ljiljana) A combination of relaxation methods and method of averaging functional corrections. *Numerical methods and approximation theory, III* (Niš, 1987), 241–249, *Univ. Niš, Niš*, 1988. (Summary) **89g:65052** 65F30
- (with Petrović, Nenad) Numerische Modelle höherer Ordnung für gestörte Randwertaufgaben. [Numerical models of higher order for perturbed boundary value problems] *Z. Angew. Math. Mech.* 68 (1988), no. 5, T489–T491. (Not in MR) 65L10
- Herdman, Terry L.** (with Burns, John A.; Cliff, Eugene M.; Turi, Janos) On integral transforms appearing in the derivation of the equations of an aeroelastic system. *Nonlinear analysis and applications* (Arlington, Tex., 1986), 89–98, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (H. K. Cheng) **89g:76013** 76B05 (73J05)
- Heredia, Diego** see Pareja Heredia, Diego
- Hereman, Willy** (with Van den Bulck, Eric) MACSYMA program for the Painlevé test of nonlinear ordinary and partial differential equations. *Finite-dimensional integrable nonlinear dynamical systems* (Johannesburg, 1988), 117–129, *World Sci. Publishing, Singapore*, 1988. (Summary) **89j:34001** 34-04 (35Q20, 58-04, 58F07)
- Herer, Wojciech** Espérance mathématique d'une variable aléatoire à valeurs dans un espace métrique à courbure négative. (English summary) [Mathematical expectation of a random variable with values in a metric space of negative curvature] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 15, 681–684. (Summary) **89c:60008** 60B05 (58G32)
- Herlin, Isabelle** (with Simon, Jean-Claude) Opérateurs non linéaires donnant une signature de texture invariante aux translations. (English summary) [Nonlinear operators giving a texture signature invariant with respect to translations] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers Sci. Terre* 304 (1987), no. 8, 327–332. (Summary) **89j:92091** 92A27
- Herlitz, Eduard** Reduktion der Einsteinschen Feldgleichungen für Typ-N-Vakuum-Lösungen mit Killingvektor und homothetischer Gruppe auf eine gewöhnliche Differentialgleichung 3. Ordnung für eine reelle Funktion. (English and Russian summaries) [Reduction of the Einstein field equations for type-N vacuum solutions with Killing vector and homothety group to a third-order ordinary differential equation for a real function] *Wiss. Z. Friedrich-Schiller-Univ. Jena Natur. Reihe* 35 (1986), no. 6, 735–740. (Introduction) **89d:83027** 83C20 (83C05)
- Stationary axisymmetry perfect fluid solutions in general relativity. *Gen. Relativity Gravitation* 20 (1988), no. 7, 635–646. (Alan Barnes) **89k:83016** 83C15 (83C20)
- Herman, Gabor T.** (with Censor, Yair; Elfving, Tommy) Special-purpose algorithms for linearly constrained entropy maximization. *Maximum-entropy and Bayesian spectral analysis and estimation problems* (Laramie, Wyo., 1983), 241–254, *Fund. Theories Phys., Reidel, Dordrecht-Boston, MA*, 1987. (Frank Natterer) **89d:92011** 92A07 (65K05)
- Herman, Michael-R.** Recent results and some open questions on Siegel's linearization theorem of germs of complex analytic diffeomorphisms of  $\mathbb{C}^n$  near a fixed point. *VIIIth international congress on mathematical physics* (Marseille, 1986), 138–184, *World Sci. Publishing, Singapore*, 1987. (Helmut Rüssmann) **89k:32013** 32B30 (58F08, 58F30)
- Hermann, Martin** (with Wallisch, Walter) ★ Numerische Behandlung von Fortsetzungs- und Bifurkationsproblemen bei Randwertaufgaben. (German) [Numerical treatment of continuation and bifurcation problems in boundary value problems] With English, French and Russian summaries. Teubner-Texte zur Mathematik [Teubner Texts in Mathematics], 102. BSB B. G. Teubner Verlagsgesellschaft, Leipzig, 1987. 188 pp. ISBN 3-322-00431-7 (Tassilo Küpper) **89e:65081** 65L10 (34B15, 58E07, 58F14)
- Efficient shooting algorithms for solving nonlinear TPBVPs with separated endconditions. *Numerical methods* (Miskolc, 1986), 269–285, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (Summary) **89m:65074** 65L10
- Hermann, Peter Z.** On the product of all nonzero elements of a finite ring. *Glasgow Math. J.* 30 (1988), no. 3, 325–330. (J. L. Zimmer) **89m:16027** 16A44
- Hermann, Robert** Invariants for feedback equivalence and Cauchy characteristic multifoliations of nonlinear control systems. *Acta Appl. Math.* 11 (1988), no. 2, 123–153. (Dumitru Motreanu) **89e:93041** 93B17 (58F40, 93B27, 93B50)

- Differential form methods in the theory of variational systems and Lagrangian field theories. *Acta Appl. Math.* 12 (1988), no. 1, 35–78. (Constantin Udriste) **89m:58054** 58E30 (49F05, 58A15, 70G50, 81E30, 81E99)
- Hermann, Thomas** (with Kis, O.; Vértesi, P.) On certain rational interpolatory operators. *Acta Math. Hungar.* 49 (1987), no. 1–2, 29–49. (A. Sharma (Zbl 621:42005)) **89h:41036** 41A20 (41A05, 42A15)
- Hermes, Hans** see **Frege, Gottlob**, **89g:01068**
- Hermes, Henry** Involutive subdistributions and canonical forms for distributions and control systems. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 123–135, North-Holland, Amsterdam-New York, 1986. (Asen L. Dontchev) **89f:93009** 93B10
- (with Kowski, Matthias) Local controllability of a single input, affine system. *Nonlinear analysis and applications* (Arlington, Tex., 1986), 235–248, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (M. Ráduica) **89h:93009** 93B05 (49E15, 93D15)
- Distributions having bases which generate finite-dimensional Lie algebras. *Systems Control Lett.* 8 (1987), no. 4, 375–380. (Summary) **89d:58010** 58A30 (17B65, 58F40, 93C10)
- Distributions and the Lie algebras their bases can generate. *Proc. Amer. Math. Soc.* 106 (1989), no. 2, 555–565. (J. W. Auer) **89k:58016** 58A30 (17B30, 53A55, 93B27)
- Hernáiz Alonso, José Ángel** Fitting ideals and valuation rings. *Géométrie algébrique et applications, I* (La Rabida, 1984), 111–116, *Travaux en Cours*, 22, Hermann, Paris, 1987. (Introduction) **89f:13013** 13C05 (13A18, 14B05)
- (with Sánchez-Giraldo, Tomás) Some criteria for solvability of systems of linear equations over modules. *Ring theory* (Granada, 1986), 122–134, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (William H. Gustafson) **89f:13026** 13F05 (15A06)
- Hermite, Charles** see **Stander, D.**, **89i:01105**
- Hermoso Carazo, A.** (with Molina Fernández, M.) Sequential inference in diffusion branching processes. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 514–521, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89i:62134** 62L12 (60H10, 60J60, 60J80, 62M09)
- Hernández, Diego Bricio** Noise: its characterization, elimination and synthesis. (Spanish) *Proceedings of the XIXth National Congress of the Mexican Mathematical Society*, Vol. 1 (Spanish) (Guadalajara, 1986), 21–53, *Aportaciones Mat.: Comun.*, 3, Soc. Mat. Mexicana, Mexico City, 1987. (see **89k:00008**) 94A05 (93E10)
- The Hamilton-Jacobi-Bellman equation and some applications. (Spanish) *Miscelanea Mat. No. 16* (1987), 50–78. (Jose Luis Menaldi) **89a:49029** 49C20 (93C75, 93E20)
- Hernández, E. S.** (with Jezek, D. M.) Determination of basins of attraction for SU(2) dissipative models. *J. Phys. A* 21 (1988), no. 13, 2899–2909. (Summary) **89g:58121** 58F12 (70K05, 81G40)
- (with Cataldo, H. M.) Non-Markovian quantal Brownian motion model. *J. Statist. Phys.* 50 (1988), no. 1–2, 383–403. (Summary) **89f:81269** 81G35 (82A99)
- (with Cataldo, H. M.) Memory loss process and non-Gibbsian equilibrium solutions of master equations. *J. Statist. Phys.* 53 (1988), no. 3–4, 673–688. (Summary) **89k:82036** 82A30 (81H99)
- (with Cataldo, H. M.) Semiclassical description of harmonic quantal Brownian motion. *Phys. Rev. A* (3) 39 (1989), no. 4, 2034–2041. (Summary) **89m:81050** 81C25 (81K05)
- Hernández, Francisco L.** (with Peirats, Vicente) Weighted sequence subspaces of Orlicz function spaces isomorphic to  $\ell^p$ . *Arch. Math. (Basel)* 50 (1988), no. 3, 270–280. (G. Schechtman) **89c:46044** 46E30 (46A45)
- (with Rodríguez-Salinas, Baltasar) On  $\ell^p$ -complemented copies in Orlicz spaces. *Israel J. Math.* 62 (1988), no. 1, 37–55. (Y. Benyamini) **89f:46059** 46E30 (46A45, 46B25)
- (with Fuentes Villalba, Fernando M.) On weighted Orlicz sequence spaces and their subspaces. *Rocky Mountain J. Math.* 18 (1988), no. 3, 585–599. (Barry Turett) **89k:46010** 46A45 (46B25, 46E30)
- Hernández, Gastón E.** Dynamics of populations with age-difference and diffusion: localization. *Appl. Anal.* 29 (1988), no. 1–2, 143–163. (J. M. Cushing) **89j:92053** 92A15 (35K99, 45K05)
- martínez Hernández, J.** see **Martínez Hernández, J.**
- Hernández, J. M.** (with Mikhailov, I. D.) Position moments of the distribution function in semi-Markov processes. (Spanish. English summary) *Investigación Oper.* 5 (1984), no. 3, 63–76. (Ștefan P. Niculescu) **89k:60127** 60K15
- Hernández, Jesús** Continuation and comparison methods for some nonlinear elliptic systems. *Contributions to nonlinear partial differential equations, Vol. II* (Paris, 1985), 137–147, *Pitman Res. Notes Math. Ser.*, 155, Longman Sci. Tech., Harlow, 1987. (Ester Giarrusso) **89a:35018** 35B05 (35J65, 35K57, 92A09)
- guadalupe Hernández, José Javier** see **Guadalupe Hernández, José Javier**
- torrea Hernández, José Luis** see **Torrea Hernández, José Luis**
- Hernández, Luis J.** Proper cohomologies and the proper classification problem. *Algebraic topology*, Barcelona, 1986, 171–191, *Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (Timothy Porter) **89d:55047** 55S37 (55N99, 55Q05, 55S35)
- (with Porter, Timothy) Proper pointed maps from  $\mathbb{R}^{n+1}$  to a  $\sigma$ -compact space. *Math. Proc. Cambridge Philos. Soc.* 103 (1988), no. 3, 457–462. (Donald W. Kahn) **89d:55038** 55Q70 (55Q05)
- Hernández, Oscar F.** (with Goulian, Mark D.) Constraints on representations of conformal field theories. *Phys. Lett. B* 215 (1988), no. 3, 511–516. (Olaf Lechtenfeld) **89j:81187** 81E99 (81E40)
- Hernández, Salvador** Algebras of Baire functions. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 81 (1987), no. 1, 203–208. (Anthony D'Aristotile) **89h:54011** 54C50 (26A21, 54D60)
- Hernández, Vicente García** (with Urbano, Ana) Pole-assignment problem for discrete-time linear periodic systems. *Internat. J. Control* 46 (1987), no. 2, 687–697. (Allen Tannenbaum) **89e:93111** 93B55 (93C05, 93C55)
- (with Jódar, Lucas) On the matrix equation  $(d/dt)X(t) = A(t)X(t) + X(t)B(t) + C(t)$  with periodic coefficients. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 81 (1987), no. 1, 117–130. (Alan R. Hausrath) **89c:34016** 34A30 (34C25)
- (with Urbano, Ana) Extended inertia theorems for discrete-time periodic Lyapunov and Riccati equations. *Linear algebra in signals, systems, and control* (Boston, MA, 1986), 55–63, *SIAM, Philadelphia, PA*, 1988. (O. A. Sebakh) **89j:93023** 93B25 (49D50, 93C55)
- Hernández Advíncula, F.** (with Subit Gómez, R.; Morgado Morales, Eberto R.) Minimum number of generators of a Sylow subgroup of the automorphism group of an abelian  $p$ -group of type  $[p^{m_1}, p^{m_2}, \dots, p^{m_r}]$  with  $m_i = m_{i+1} + 1$ . (Spanish. English summary) *Cienc. Mat. (Havana)* 8 (1987), no. 1, 37–48. (F. Pérez Monasor) **89e:20045** 20D45 (20D20)
- (with Subit Gómez, R.; Morgado Morales, Eberto R.) The minimum number of generators for the Sylow subgroup of the automorphism group of an abelian  $p$ -group of type  $[p^{m_1}, p^{m_2}, \dots, p^{m_r}]$ , with  $m_i > m_{i+1} + 1$ . (Spanish. English summary) *Cienc. Mat. (Havana)* 8 (1987), no. 3, 5–15. (Marian Deaconescu) **89i:20038** 20D20 (20D25, 20D45)
- Hernández Fdez., Ma. Luisa Teresa** Automatic proof of theorems. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 458–466, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89h:03017** 03B35 (68T15)
- Hernández García, Vicente** see **Hernández, Vicente García**
- Hernández García, C.** (with Bercovici, Hari; Paulsen, V. I.) Universal compressions of representations of  $H^\infty(G)$ . *Math. Ann.* 281 (1988), no. 2, 177–191. (Wacław Szymański) **89m:46092** 46J25 (46J15, 47A20, 47D25)
- Hernández-Lerma, O.** (with Lasserre, J. B.) A forecast horizon and a stopping rule for general Markov decision processes. *J. Math. Anal. Appl.* 132 (1988), no. 2, 388–400. (L. C. Thomas) **89f:90186** 90C40
- Hernández-Machado, Aurora** (with Erzan, Ayte; Grossmann, S.) Diffusion on random hierarchical structures. *J. Phys. A* 20 (1987), no. 12, 3913–3934. (B. Derrida) **89h:82087** 82A57
- Hernández Rulópez, Daniel** (with Muñoz Masqué, Jaime) Variational Berezinian problems and their relationship with graded variational problems. *Differential geometric methods in mathematical physics* (Salamanca, 1985), 137–149, *Lecture Notes in Math.*, 1251, Springer, Berlin-New York, 1987. (Introduction) **89b:58038** 58C50 (58A50, 58E30)
- vicente Hernanz, Ma. Lina** see **Vicente Hernanz, Ma. Lina**
- Herdson, W. C.** (with Bruce, Annadora J.) Perimeter codes for benzenoid aromatic hydrocarbons. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 491–513, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (Summary) **89c:92101** 92A40
- Graph codes and a definition of structural similarity. *Comput. Math. Appl.* 15 (1988), no. 4, 303–309. (P. Ungar) **89f:92079** 92A40 (05C99, 68R10)
- (with Radhakrishnan, T. P.) Molar volumes of alkanes and topological indices. *J. Math. Chem.* 2 (1988), no. 4, 391–399. (Not in MR) 92A40
- Hernquist, Dale Clarke** Smoothly symmetrizable hyperbolic systems of partial differential equations. *Math. Scand.* 61 (1987), no. 2, 262–275. (Michael Oberguggenberger) **89h:35186** 35L40 (35A30, 35S99)
- Herr, Alfred O.** (with Schwartz, S. C.) Poisson models and mean-squared error for correlator estimators of time delay. *IEEE Trans. Inform. Theory* 34 (1988), no. 2, 287–303. (Not in MR) 94B70
- Herrold, Horst** Allgemeiner Strummscher Vergleichssatz. [General Sturm comparison theorem] *Math. Nachr.* 139 (1988), 27–30. (H. Hochstadt) **89k:34047** 34C10
- Konforme Abbildung der Wendelfläche. [Conformal mapping of the helicoid] *Math. Semesterber.* 35 (1988), no. 1, 95–100. (Hiroshi Haruki) **89b:53044** 53A30 (53A05)
- Herroux, M.** (with McCormick, Stephen F.; McKay, Steven M.; Thomas, J. W.) Applications of the fast adaptive composite grid method. *Multigrid methods* (Copper Mountain, CO, 1987), 251–265, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (Summary) **89g:65149** 65N50
- Herr, H.-O.** Ein Verfahren zur Berechnung wandernder Wellen bei deterministischen Epidemiemodellen. [A method for computing travelling waves in deterministic epidemic models] *Z. Angew. Math. Mech.* 68 (1988), no. 5, T492–T494. (Henk J. A. M. Heijmans) **89h:92046** 92A15
- bouza Herrera, Carlos N.** see **Bouza Herrera, Carlos N.**
- Herrera, I.** Generalized boundary methods. *Boundary elements VII, Vol. I, II* (Como, 1985), 12.55–12.71, *Comput. Mech., Southampton*, 1985. (see **89f:65003**) 65N99
- (with Allen, Myron B. III; Pinder, G. F.) ★ Numerical modeling in science and engineering. A Wiley-Interscience Publication. *John Wiley & Sons, Inc., New York*, 1988. xii+418 pp. ISBN 0-471-80635-8 (G. W. Hedstrom) **89g:65002** 65-01 (00A69, 00A71)
- Herrera, L.** (with Di Prisco, A.; Jiménez, Juan Francisco; Galina, V.; Ibañez, J.) The Bondi metric and conformal motions. *J. Math. Phys.* 28 (1987), no. 11, 2692–2696. (Summary) **89h:83007** 83C15 (83C40)
- (with Jiménez, Juan Francisco; Esculpi, M.) Surface phenomena in general relativistic stellar models: critical mass and stability. *Phys. Lett. A* 130 (1988), no. 4–5, 211–216. (Summary) **89d:83049** 83C99 (85A15)
- Herrero, A.** (with Puls, J.) Approximate lambda-operators working at optimum convergence rate. I. Theory and application to hydrostatic atmospheres. *Astronom. and Astrophys.* 204 (1988), no. 1–2, 219–228. (Summary) **89k:85005** 85A20 (85-08)
- Herrero, Carmen** (with Villar, Antonio) A characterization of economies with the nonsubstitution property. *Econom. Lett.* 26 (1988), no. 2, 147–152. (Summary) **89d:90035** 90A11
- Herrero, Domingo A.** The Fredholm structure of an  $n$ -multicyclic operator. *Indiana Univ. Math. J.* 36 (1987), no. 3, 549–566. (Lawrence Williams) **89a:47020** 47A53 (47A10, 47A65)
- Spectral pictures of operators in the Cowen-Douglas class  $\mathcal{B}_n(\Omega)$  and its closure. *J. Operator Theory* 18 (1987), no. 2, 213–222. (Lawrence Fialkow) **89h:47032** 47A65 (47A10, 47B99)
- An essay on quasitriangularity. *Special classes of linear operators and other topics* (Bucharest, 1986), 125–154, *Oper. Theory Adv. Appl.*, 28, Birkhäuser, Basel-Boston, MA, 1988. (Shan Li Sun) **89h:47028** 47A66 (47A55, 47A65, 47B37)
- In memory of Constantin Apostol. *Topics in operator theory*, 1–6, *Oper. Theory Adv. Appl.*, 32, Birkhäuser, Basel-Boston, MA, 1988. (R. G. Bartle) **89g:01053** 01A70
- (with Taylor, Thomas J.; Wang, Zong Y.) Variation of the point spectrum under compact perturbations. *Topics in operator theory*, 113–158, *Oper. Theory Adv. Appl.*, 32, Birkhäuser, Basel-Boston, MA, 1988. (Kenneth R. Davidson) **89h:47018** 47A55 (47A10, 47A66)
- (with Fong, C. K.; Rodman, Leiba) Invariant subspace lattices that complement every subspace. *Illinois J. Math.* 32 (1988), no. 1, 151–158. (Kenneth R. Davidson) **89d:47007**



- 47A15  
— Economical compact perturbations. II. Filling in the holes. *J. Operator Theory* **19** (1988), no. 1, 25–42. (Kenneth R. Davidson) **89i:47021** 47A55 (47A10)
- Herrero, M. A.** (with Elliott, Charles M.; King, John Robert; Ockendon, J. R.) The mesa problem: diffusion patterns for  $u_t = \nabla \cdot (u^m \nabla u)$  as  $m \rightarrow +\infty$ . *IMA J. Appl. Math.* **37** (1986), no. 2, 147–154. (Summary) **89m:76061** 76S05 (35B40, 35K55, 35R35)
- (with Vázquez, Juan Luis) Thermal waves in absorbing media. *J. Differential Equations* **74** (1988), no. 2, 218–233. (Yoram Schiffmann) **89i:35077** 35K55 (80A20)
- (with Gilding, B. H.) Localization and blow-up of thermal waves in nonlinear heat conduction with peaking. *Math. Ann.* **282** (1988), no. 2, 223–242. (Victor A. Galaktionov) **89m:35108** 35K35 (35B05, 35B40, 35K60)
- Herrero, M. J.** (with Binmore, K. G.) Matching and bargaining in dynamic markets. *Rev. Econom. Stud.* **55** (1988), no. 1, 17–31. (Introduction) **89c:90026** 90A14
- (with Binmore, K. G.) Security equilibrium. *Rev. Econom. Stud.* **55** (1988), no. 1, 33–48. (Introduction) **89c:90027** 90A14
- criado Herrero, Regino** see **Criado Herrero, Regino**
- Herrlich, F.** Moduli and Teichmüller space for degenerating curves. *Proceedings of the conference on p-adic analysis (Houthalen, 1987)*, 83–95, *Vrije Univ. Brussel, Brussels*, 1986. (Peter Ullrich) **89b:14041** 14H15 (14G20, 32G15)
- Graphs of groups with isomorphic fundamental group. *Arch. Math. (Basel)* **51** (1988), no. 3, 232–237. (Alain Valette) **89j:20032** 20E06 (05C25, 20F32)
- (with Gerritzen, L.) The extended Schottky space. *J. Reine Angew. Math.* **389** (1988), 190–208. (N. V. Ivanov) **89b:32043** 32G15 (14H15, 30F40)
- (with Gerritzen, L.; van der Put, Marius) Stable n-pointed trees of projective lines. *Nederl. Akad. Wetensch. Indag. Math.* **50** (1988), no. 2, 131–163. (P. E. Newstead) **89i:14005** 14D20 (14H10)
- Herrlich, Horst** (with Bentley, H. L.; Lowen-Colebunders, Eva) The category of Cauchy spaces is Cartesian closed. *Proceedings of the 8th international conference on categorical topology (L'Aquila, 1986)*. *Topology Appl.* **27** (1987), no. 2, 105–112. (Summary) **89c:54062** 54E99 (18B99, 54B15, 54B30, 54C35)
- (with Salicrú López, Graciela; Strecker, G. E.) Factorizations, denseness, separation, and relatively compact objects. *Proceedings of the 8th international conference on categorical topology (L'Aquila, 1986)*. *Topology Appl.* **27** (1987), no. 2, 157–169. (Summary) **89c:18001** 18A20 (18A32, 18A40, 18B30, 54B30)
- On the representability of partial morphisms in Top and in related constructs. *Categorical algebra and its applications (Louvain-La-Neuve, 1987)*, 143–153, *Lecture Notes in Math.*, **1348**, Springer, Berlin-New York, 1988. (Michael M. Zarichnyi) **89m:18006** 18B30 (18B15, 54B30)
- Herrmann, Christian** (with Day, Alan) Gluing of modular lattices. *Order* **5** (1988), no. 1, 85–101. (E. T. Schmidt) **89m:06009** 06B05 (06C05)
- Herrmann, G.** (with Honein, T.) The involution correspondence in plane elastostatics for regions bounded by a circle. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 3, 566–573. (P. P. Teodorescu) **89i:73013** 73C02
- Herrmann, Hans J.** (with da Silva, Luciano R.; Lucena, Liaci S.) Simulations of mixtures of two Boolean cellular automata rules. *Complex Systems* **2** (1988), no. 1, 29–37. (Summary) **89c:82076** 82A68 (68Q80, 82A25)
- (with Stanley, H. E.) The fractal dimension of the minimum path in two- and three-dimensional percolation. *J. Phys. A* **21** (1988), no. 17, L829–L833. (Summary) **89i:82051** 82A43 (82-04)
- eichenauer-Herrmann, Jürgen** see **Eichenauer-Herrmann, Jürgen**
- Herrmann, Manfred** (with Ikeda, Shin; Orbanz, U.) ★ Equimultiplicity and blowing up. An algebraic study. With an appendix by B. Moonen. *Springer-Verlag, Berlin-New York*, 1988. xviii+629 pp. ISBN 3-540-15289-X (L. Bădescu) **89g:13012** 13H15 (13H10, 14B15, 32B30)
- Herrmann, Nira** (with Mode, Charles J.; Gollwitzer, Herman E.) A methodological study of a stochastic model of an AIDS epidemic. *Math. Biosci.* **92** (1988), no. 2, 201–229. (Not in MR) **92A15**
- Herrmann, Richard** (with Greiner, Martin; Scheid, Werner) Collective spin from the linearisation of  $(2\lambda + 1)$ -dimensional Schrödinger equations as used for nuclear surface vibrations. *J. Phys. A* **21** (1988), no. 15, 3227–3237. (A. J. Coleman) **89m:81196** 81G30 (81D27)
- Herrmann, Robert A.** Nonstandard consequence operators. *Kobe J. Math.* **4** (1987), no. 1, 1–14. (Klaus Potthoff) **89d:03068** 03H05 (03B99, 06A12)
- Herro, Mark A.** (with Costello, Daniel J., Jr.; Hu, Lai Zhao) Capacity and cutoff rate calculations for a concatenated coding system. *IEEE Trans. Inform. Theory* **34** (1988), no. 2, 212–222. (Not in MR) **94B35** (94A40, 94B70)
- Herron, David A.** The geometry of uniform, quasicircle, and circle domains. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **12** (1987), no. 2, 217–227. (Olli Martio) **89k:30018** 30C60
- (with Vuorinen, M.) Positive harmonic functions in uniform and admissible domains. *Analysis* **8** (1988), no. 1–2, 187–206. (Ü. Kuran) **89k:31005** 31B05 (30C60)
- (with Hanson, Bruce) The interior distance ratio in quadrilaterals and inequalities for rings. *Complex Variables Theory Appl.* **9** (1988), no. 4, 321–325. (Lowell Hansen) **89c:30038** 30C60 (30A10, 30C75)
- Herron, Gary** Techniques for visual continuity. *Geometric modeling*, 163–174, *SIAM, Philadelphia, PA*, 1987. (see **89b:65010**) **65D10**
- Hersch, Joseph** On the mapping functions of domains extended by sector reflections. *Complex Variables Theory Appl.* **9** (1987), no. 2–3, 199–209. (D. H. Hamilton) **89d:30007** 30C20
- On some elementary applications of the reflection principle to Schwarz-Christoffel integrals. *Complex analysis*, 101–106, *Birkhäuser, Basel-Boston, MA*, 1988. (Hiroshi Haruki) **89m:30015** 30C20
- see also **Complex analysis**, **89j:30001**
- Hersch, Roger D.** Character generation under grid constraints. *SIGGRAPH '87 (Anaheim, CA, 1987)*. *Comput. Graphics* **21** (1987), no. 4, 243–252. (see **89j:68151**) **68U15**
- Hersh, M. A.** Adaptive identification and control of time-varying stochastic systems using “semiperiodic” functions. *Internat. J. Control* **47** (1988), no. 5, 1243–1257. (Summary) **89b:93106** 93E12 (93C40, 93C50)
- Hershberger, John** (with Guibas, Leonidas J.) An  $O(n^2)$  shortest path algorithm for a nonrotating convex body. *J. Algorithms* **9** (1988), no. 1, 18–46. (Herbert Edelsbrunner) **89b:68114** 68U05 (52-04, 68Q25)
- Hershkowitz, Daniel** (with Schneider, Hans) Sequences, wedges and associated sets of complex numbers. *Czechoslovak Math. J.* **38(113)** (1988), no. 1, 138–156. (G. J. Rieger) **89i:11009** 11B99
- (with Shashua, Dafna) Maximal Lyapunov scaling factors and their applications in the study of Lyapunov diagonal semistability of block triangular matrices. *Linear Algebra Appl.* **103** (1988), 21–39. (M. M. Konstantinov) **89c:15015** 15A18 (93B25)
- (with Schneider, Hans) Solutions of Z-matrix equations. *Linear Algebra Appl.* **106** (1988), 25–38. (Anna Lee) **89f:15004** 15A06 (15A48)
- (with Friedland, Shmuel) The rank of powers of matrices in a block triangular form. *Proceedings of the Victoria Conference on Combinatorial Matrix Analysis (Victoria, BC, 1987)*. *Linear Algebra Appl.* **107** (1988), 17–22. (Lajos László) **89b:15003** 15A03 (05C38, 05C50, 15A21)
- (with Rothblum, Uriel G.; Schneider, Hans) Characterizations and classifications of M-matrices using generalized nullspaces. *Linear Algebra Appl.* **109** (1988), 59–69. (Jeffrey Stuart) **89j:15037** 15A48
- Lyapunov diagonal semistability of acyclic matrices. *Linear and Multilinear Algebra* **22** (1988), no. 3, 267–283. (Bryan E. Cain) **89b:15031** 15A57 (15A18, 15A42)
- (with Schneider, Hans) On Lyapunov scaling factors of real symmetric matrices. *Linear and Multilinear Algebra* **22** (1988), no. 4, 373–384. (Bryan E. Cain) **89i:15030** 15A57 (15A18, 15A42)
- (with Shashua, Dafna) Cones of real positive semidefinite matrices associated with matrix stability. *Linear and Multilinear Algebra* **23** (1988), no. 2, 165–181. (George P. Barker) **89b:15015** 15A18 (15A57)
- (with Schneider, Hans) Equality classes of matrices. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 1, 1–18. (Shao Kuan Li) **89f:15015** 15A45
- (with Rothblum, Uriel G.; Schneider, Hans) Classifications of nonnegative matrices using diagonal equivalence. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 4, 455–460. (Marc Artztouni) **89b:15028** 15A48 (15A21)
- Herskowitz, José N.** (with Panier, Eliane R.; Tits, André L.) A QP-free, globally convergent, locally superlinearly convergent algorithm for inequality constrained optimization. *SIAM J. Control Optim.* **26** (1988), no. 4, 788–811. (R. N. Kaul) **89b:90209** 90C30 (65K10)
- Herskowitz, M.** (with Hagan, P. S.; Pirkle, C.) A simple approach to highly sensitive tubular reactors. *SIAM J. Appl. Math.* **48** (1988), no. 5, 1083–1101. (Summary) **89c:80005** 80A20
- (with Hagan, P. S.; Pirkle, C.) Runaway in highly sensitive tubular reactors. *SIAM J. Appl. Math.* **48** (1988), no. 6, 1437–1450. (Summary) **89j:80017** 80A32 (35B32)
- Hertel, E.** (with Böhm, Johannes; Börner, W.; Krötenheerdt, O.; Mögling, Werner; Stammler, L.) ★ Geometrie. I. (German) [Geometrie. II] Axiomatischer Aufbau der euklidischen Geometrie. [Axiomatic construction of Euclidean geometry] With historical comments by H. Wussing. Fifth edition. Studienbücherei. [Textbook Library] Mathematik für Lehrer [Mathematics for Teachers], 6. VEB Deutscher Verlag der Wissenschaften, Berlin, 1988. 146 pp. ISBN 3-326-00370-6 (Editors) **89c:51001** 51-02 (51M05)
- Hertle, Alexander** The identification problem for the constantly attenuated Radon transform. *Math. Z.* **197** (1988), no. 1, 13–19. (Frank Natterer) **89b:44002** 44A15 (47B38, 92A07)
- Hertz, A.** Bipartite graphs. *J. Combin. Theory Ser. B* **45** (1988), no. 1, 1–12. (Chinh T. Hoang) **89i:05116** 05C15
- (with de Werra, D.) Consecutive colorings of graphs. (German summary) *Z. Oper. Res.* **32** (1988), no. 1, 1–8. (Summary) **89j:05037** 05C15 (90B10)
- see also **Graph colouring and variations**, **89j:05038**
- Hertz, J. A.** (with Krogh, A.) Mean-field analysis of hierarchical associative networks with “magnetisation”. *J. Phys. A* **21** (1988), no. 9, 2211–2224. (Summary) **89g:92019** 92A09 (68Q90, 82A57, 92A25)
- A “gauge theory” in computational vision: a model for outline extraction. *Phys. Scripta* **39** (1989), no. 1, 161–167. (Summary) **89m:92061** 92A27 (81E13)
- Hertzberg, Joachim** (with Güsen, Hans-Werner) Some fundamental properties of local constraint propagation. *Artificial Intelligence* **36** (1988), no. 2, 237–247. (Summary) **89b:68126** 68T05
- Hervés, Carlos** (with Besada, Manuel) Existence of competitive equilibrium in an economy with no time horizon. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 1 (Spanish) (Badajoz, 1986)*, 84–90, *Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz*, 1987. (Summary) **89j:90044** 90A14
- (with Besada, Manuel; Estévez, Margarita) Equilibria in economies with countably many commodities. *Econom. Lett.* **26** (1988), no. 3, 203–207. (Erwin Klein) **89k:90028** 90A14
- Hertzberg, Agnes M.** (with Stanton, R. G.) The relation between combinatorics and the statistical design of experiments. *J. Combin. Inform. System Sci.* **9** (1984), no. 4, 217–232. (William I. Notz) **89f:05031** 05B05 (05B15, 62K10)
- (with Wynn, H. P.) Nearest neighbour balance and interblock and intrablock analysis in the design of experiments. *Utilitas Math.* **31** (1987), 243–254. (P. D. Puri) **89b:62161** 62K10
- Herzberger, J.** Computational aspects of some iterative methods for bounding the inverse of a matrix. *Anal. Numer. Théor. Approx.* **16** (1987), no. 1, 41–46. (O. Widlund) **89c:65042** 65F10
- On the monotonicity of the interval versions of Schulz’s method. II. (German summary) *Computing* **39** (1987), no. 4, 371–375. (H. Ratschek) **89c:65062** 65G10
- On the efficiency of iterative methods for bounding the inverse matrix. *Numerical methods and approximation theory, III (Niš, 1987)*, 251–256, *Univ. Niš, Niš*, 1988. (Summary) **89g:65031** 65F10
- Some aspects of iterative methods for bounding the inverse matrix. *Numerical methods (Miskolc, 1986)*, 191–205, *Colloq. Math. Soc. János Bolyai*, **50**, North-Holland, Amsterdam-New York, 1988. (J. A. Grant) **89c:65063** 65G10 (65F10)
- On the monotonicity of higher-order interval iterations for bounding the inverse matrix. (German summary) *Computing* **40** (1988), no. 4, 367–372. (F. Szidarovszky) **89k:65059** 65G10 (65F30)
- Zur Effizienz von intervallmäßigen Schulz-Verfahren höherer Ordnung. [On the efficiency of interval-like Schulz methods of higher order] *Z. Angew. Math. Mech.* **68** (1988), no. 1, 60–61. (Not in MR) **65G10**

- Explizite Schulz-Verfahren höherer Ordnung zur Approximation der inversen Matrix. [Explicit Schulz methods of higher order for the approximation of the inverse matrix] *Z. Angew. Math. Mech.* **68** (1988), no. 5, T494–T496. (Not in MR) 65F10
- Herzel, H.** Deterministisches Chaos in biologischen Systemen. [Deterministic chaos in biological systems] *Wiss. Z. Humboldt-Univ. Berlin Math.-Natur. Reihe* **36** (1987), no. 8, 633–642. (Michael C. Mackey) **89f:92001** 92-02 (58F40, 92A05)
- Complexity of symbol sequences. *Systems Anal. Modelling Simulation* **5** (1988), no. 5, 435–444. (Summary) **89j:92049** 92A12 (92A09, 94A17)
- (with Anishchenko, V. S.) Noise-induced chaos in a system with homoclinic points. *Z. Angew. Math. Mech.* **68** (1988), no. 7, 317–318. (From the text) **89h:58109** 58F13 (58F14)
- Stabilization of chaotic orbits by random noise. *Z. Angew. Math. Mech.* **68** (1988), no. 11, 582–583. (Not in MR) 70L05 (58F13, 70K50)
- Herzer, Armin** Supplement to: "On rational representations of chain geometries as projective varieties" [Arch. Math. (Basel) **47** (1986), no. 6, 573–576; MR **88e:51006**]. *Arch. Math. (Basel)* **48** (1987), no. 6, 550–551. (J. André) **89a:51008** 51B05
- Über Scharen linearer Unterräume der Rang-r-Mannigfaltigkeiten. [On families of linear subspaces of the rank  $r$  manifolds] *Mitt. Math. Ges. Hamburg* **11** (1987), no. 4, 459–468. (J. André) **89a:51003** 51A05 (51A45)
- Die Kategorie der Kettengeometrien. [The category of chain geometries] *Resulante Math.* **12** (1987), no. 3–4, 278–288. (Frieder Knüppel) **89c:51005** 51B99
- Construction of some planar translation spaces. *Combinatorics '86 (Trento, 1986)*, 209–216, *Ann. Discrete Math.*, **37**, North-Holland, Amsterdam-New York, 1988. (J. André) **89b:51003** 51A15
- Herzfeld, Ute Christina** Frattini classes of formations of finite groups. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **2** (1988), no. 3, 601–611. (A. Scarselli) **89k:20028** 20D10
- Frattini classes and maximal subclasses, in particular of saturated formations of finite groups. *J. Algebra* **117** (1988), no. 1, 93–98. (A. Scarselli) **89g:20036** 20D10
- Herzig, Andreas** (with Fariñas del Cerro, Luis) Linear modal deductions. *9th International Conference on Automated Deduction (Argonne, IL, 1988)*, 487–499, *Lecture Notes in Comput. Sci.*, **310**, Springer, Berlin-New York, 1988. (see **89c:68004**) 03B45 (03B35)
- Herzog, Bernd** Shokurov's nonvanishing theorem for normal surfaces. *Proceedings of the conference on algebraic geometry (Berlin, 1985)*, 135–145, *Teubner-Texte Math.*, **92**, Teubner, Leipzig, 1986. (Harry D'Souza) **89a:14041** 14J25 (14C20)
- Herzog, Joachim** (with Maxsien, T.) On the behaviour of a certain error-term. *Arch. Math. (Basel)* **50** (1988), no. 2, 145–155. (V. Sita Ramaiah) **89e:11055** 11N37
- Herzog, Jürgen** (with Kühl, Michael) Maximal Cohen-Macaulay modules over Gorenstein rings and Bourbaki-sequences. *Commutative algebra and combinatorics (Kyoto, 1985)*, 65–92, *Adv. Stud. Pure Math.*, **11**, North-Holland, Amsterdam-New York, 1987. (Bernd Ulrich) **89h:13029** 13H10 (13C05)
- Linear Cohen-Macaulay modules on integral quadrics. *Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliavin (Paris, 1986)*, 214–227, *Lecture Notes in Math.*, **1296**, Springer, Berlin-New York, 1987. (Sergey Yuzvinsky) **89a:13016** 13C13 (11E81, 11E88, 13D25, 13F05)
- (with Buchweitz, Ragnar-Olaf; Eisenbud, David) Cohen-Macaulay modules on quadrics. *Singularities, representation of algebras, and vector bundles (Lambrecht, 1985)*, 58–116, *Lecture Notes in Math.*, **1273**, Springer, Berlin-New York, 1987. (Luchezar L. Avramov) **89g:13005** 13C05 (13D25, 13H10, 15A66)
- (with Sanders, Herbert) The Grothendieck group of invariant rings and of simple hypersurface singularities. *Singularities, representation of algebras, and vector bundles (Lambrecht, 1985)*, 134–149, *Lecture Notes in Math.*, **1273**, Springer, Berlin-New York, 1987. (Alfred G. Wiedemann) **89b:14004** 14B05 (13D15)
- (with Brennan, Joseph P.; Ulrich, Bernd) Maximally generated Cohen-Macaulay modules. *Math. Scand.* **61** (1987), no. 2, 181–203. (Matthew Miller) **89j:13027** 13H15 (13C13, 13H10)
- (with Sanders, Herbert) Indecomposable syzygy-modules of high rank over hypersurface rings. *J. Pure Appl. Algebra* **51** (1988), no. 1–2, 161–168. (Andrew Kustin) **89h:13011** 13C05 (14B05)
- (with Eisenbud, David) The classification of homogeneous Cohen-Macaulay rings of finite representation type. *Math. Ann.* **280** (1988), no. 2, 347–352. (Andrew Kustin) **89c:13012** 13C05 (14J26, 14M20)
- Hess, Albrecht** (with Glaesche, Hans-Jürgen) On the convolution theorem of the Mehler-Fock-transform for a class of generalized functions. II. *Math. Nachr.* **136** (1988), 119–129. (Carlos A. Berenstein) **89j:46042** 46F12 (44A40, 47G05)
- Hess, Benno** see Katchalski-Katzir, E., **89m:01096**
- Hess, Christian** Théorème de la convergence dominée pour l'intégrale et l'espérance conditionnelle des ensembles aléatoires non bornés et des intégrales. (English summary) [The dominated convergence theorem for the integral and the conditional expectation of unbounded random sets and of integrands] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 3, 139–142. (Summary) **89a:60032** 60B99 (28B05, 28B20, 46N05, 60D05)
- Hess, Heinz-Jürgen** see Leibniz, G. W., **89f:01091**
- Hess, Peter** (with Dancer, E. N.) On stable solutions of quasilinear periodic-parabolic problems. *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* **14** (1987), no. 1, 123–141. (V. N. Razzhevskii) **89g:35016** 35B35 (35K55)
- (with Alikakos, Nicholas D.) On stabilization of discrete monotone dynamical systems. *Israel J. Math.* **59** (1987), no. 2, 185–194. (Sadakazu Aizawa) **89h:47083** 47H07 (46B30, 47H09)
- Hess, Walter Paul** (with Burmeister, W.; Dietze, Siegfried; Schmidt, Jochen W.) Solution of a class of weakly coupled programs via dualization, and applications. *Discretization in differential equations and enclosures (Weissig, 1986)*, 57–80, *Math. Res.*, **36**, Akademie-Verlag, Berlin, 1987. (C. P. Ortlieb) **89j:90200** 90C25 (65K05)
- (with Schmidt, Jochen W.) Positive interpolation with rational quadratic splines. (German summary) *Computing* **38** (1987), no. 3, 261–267. (Dennis D. Pence) **89b:65034** 65D07 (41A15, 41A20, 73K05)
- (with Schmidt, Jochen W.) Positivity of cubic polynomials on intervals and positive spline interpolation. *BIT* **28** (1988), no. 2, 340–352. (John B. Kioustelidis) **89e:65014** 65D07 (41A29)
- Hesselager, Ole** On the asymptotic distribution of weighted least squares estimators. Special issue for ICA 1988 Helsinki. *Scand. Actuar. J.* **1988**, no. 1–2, 69–76. (Björn Sundt) **89m:62065** 62J05 (62F12)
- Hesselink, Wim H.** Dimension formulas related to a tame quiver. *Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliavin, 37ème année (Paris, 1985)*, 15–24, *Lecture Notes in Math.*, **1220**, Springer, Berlin-New York, 1986. (William Crawley-Boevey) **89e:15004** 15A03 (15–04, 16A46, 20G99)
- Interpretations of recursion under unbounded nondeterminacy. *Theoret. Comput. Sci.* **59** (1988), no. 3, 211–234. (Ranjan Chaudhuri) **89f:68062** 68Q55 (68N05, 68Q10, 68Q60)
- Deadlock and fairness in morphisms of transition systems. *Theoret. Comput. Sci.* **59** (1988), no. 3, 235–257. (Anna Bagyinszkiné-Orosz) **89j:68046** 68Q10
- Hestenes, David** Inductive inference by neural networks. *Maximum-entropy and Bayesian methods in science and engineering, Vol. 2 (Laramie, WY, 1985 and Seattle, WA, 1986/1987)*, 19–32, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89j:92030** 92A09 (92A27)
- Hester, J. H.** (with Hirschberg, D. S.; Larmore, L. L.) Construction of optimal binary split trees in the presence of bounded access probabilities. *J. Algorithms* **9** (1988), no. 2, 245–253. (Summary) **89c:68018** 68P05 (68P10)
- Hethcote, Herbert W.** Optimal ages of vaccination for measles. *Math. Biosci.* **89** (1988), no. 1, 29–52. (Not in MR) 92A15
- Hetrick, James E.** (with Hosotani, Yutaka) QED on a circle. *Phys. Rev. D* (3) **38** (1988), no. 8, 2621–2624. (P. Achuthan) **89j:81214** 81L05
- Hettich, R.** (with Still, G.) Local aspects of a method for solving membrane-eigenvalue problems by parametric semi-infinite programming. *Parametric optimization and related topics (Plase, 1985)*, 183–195, *Math. Res.*, **35**, Akademie-Verlag, Berlin, 1987. (Hubertus Th. Jongen) **89c:49032** 49G05 (33A40, 49D39, 90C31)
- (with Haaren, E.; Ries, M.; Still, G.) Accurate numerical approximations of eigenfrequencies and eigenfunctions of elliptic membranes. (German and Russian summaries) *Z. Angew. Math. Mech.* **67** (1987), no. 12, 589–597. (Summary) **89a:49045** 49G05 (49D39, 73K15)
- (with Marggraf, G.) Some experiments with Karmarkar's algorithm for linear programming. *Optimization* **19** (1988), no. 5, 653–664. (Summary) **89g:90142** 90C05
- Hettmansperger, T. P.** (with Brown, Bruce Maxwell) Invariant tests in bivariate models and the  $L_1$  criterion. *Statistical data analysis based on the  $L_1$ -norm and related methods (Neuchâtel, 1987)*, 333–344, *North-Holland, Amsterdam-New York*, 1987. (Hannu Oja) **89j:62061** 62G10 (62H15)
- (with Brown, Bruce Maxwell) Affine invariant rank methods in the bivariate location model. *J. Roy. Statist. Soc. Ser. B* **49** (1987), no. 3, 301–310. (J. V. Deshpande) **89d:62032** 62G05 (62G10, 62H12, 62H15)
- Hetzer, Georg** Forced periodic oscillations in the climate system via an energy balance model. *Comment. Math. Univ. Carolin.* **28** (1987), no. 4, 593–601. (Si Ning Zheng) **89c:35112** 35K57 (35B10)
- Heunis, A. J.** Nonlinear filtering of rare events with large signal-to-noise ratio. *J. Appl. Probab.* **24** (1987), no. 4, 929–948. (O. A. Glonti) **89g:60149** 60G35 (93E10, 93E11)
- Asymptotic properties of prediction error estimators in approximate system identification. *Stochastics* **24** (1988), no. 1, 1–43. (Onésimo Hernández Lerma) **89j:93128** 93E12 (60F17)
- Heuser, Harro** Zur Ideengeschichte der Funktionalanalysis. [On the history of ideas of functional analysis] *Math. Semesterber.* **35** (1988), no. 1, 38–63. (Jesper Lützen) **89j:01050** 01A60 (46–03)
- Heuter, Uchi** First-order properties of trees, star-free expressions, and aperiodicity. *STACS 88 (Bordeaux, 1988)*, 136–148, *Lecture Notes in Comput. Sci.*, **294**, Springer, Berlin-New York, 1988. (Summary) **89c:68058** 68Q45 (03D05)
- Heuvers, Konrad J.** (with Waterhouse, William C.) Sums of weight vectors and sums of semilinear functions. *Aequationes Math.* **35** (1988), no. 1, 69–75. (Lex Renner) **89b:15002** 15A04 (39B99)
- (with Cummings, L. J.; Rao, K. P. S. Bhaskara) A characterization of the permanent function by the Binet-Cauchy theorem. *Linear Algebra Appl.* **101** (1988), 49–72. (H. Minic) **89h:15013** 15A15
- Hevia Soto, Hector** (with Ruiz, Sergio) Decompositions of complete graphs into caterpillars. *Rev. Mat. Apl.* **9** (1987), no. 1, 55–62. (Yair Caro) **89b:05133** 05C70 (05C05)
- Hewak, Daniel W.** (with Lit, John W. Y.; Li, Yi-Fan) Guiding properties of multilayer dielectric planar waveguides. (French summary) *Canad. J. Phys.* **66** (1988), no. 10, 914–940. (Summary) **89j:78033** 78A50
- Hewings, Geoffrey J. D.** (with Jensen, Rodney C.) Regional, interregional and multiregional input-output analysis. *Handbook of regional and urban economics, Vol. 1*, 295–355, *Handbooks in Econom.*, **7**, North-Holland, Amsterdam-New York, 1986. (see **89m:90047**) 90A17 (90A14)
- Hewitt, C. G.** (with Wainwright, J.; Goode, S. W.) Qualitative analysis of a class of inhomogeneous self-similar cosmological models. *Classical Quantum Gravity* **5** (1988), no. 10, 1313–1327. (S. Kichenassamy) **89j:83019** 83C20 (83F05)
- Hewitt, Edwin** What Pavel Sergeevich Aleksandrov meant to me. (Russian) Translated from the English by A. A. Mal'tsev. *Uspekhi Mat. Nauk* **41** (1986), no. 6(252), 205–208. (St. D. Latow (Zbl 621:01010)) **89g:01055** 01A70
- (with Asmar, Nakhle) Marcel Riesz's theorem on conjugate Fourier series and its descendants. *Proceedings of the analysis conference, Singapore 1986*, 1–56, *North-Holland Math. Stud.*, **150**, North-Holland, Amsterdam-New York, 1988. (Burglind Jörjcke) **89h:43007** 43A22 (01A60, 42A50, 43A25)
- Hey, Anthony J. G.** (with Amir-Azizi, Siamak; Morris, T. R.) Quantum fractals. *Complex Systems* **1** (1987), no. 5, 923–938. (Summary) **89c:81045** 81C35 (81–04)
- (with Merlin, John H.; Ricketts, Martin William; Vaughn, Michael T.; Williams, David C.) Topological solutions in gauge theory and their computer graphic representation. *Science* **240** (1988), no. 4856, 1163–1168. (Not in MR) **81E13** (81–04)
- Heydari, Ahmad Pour Darvish** On bulk arrivals in biserics channels linked in series with a common channel. *J. Indian Soc. Statist. Oper. Res.* **8** (1987), no. 1–4, 17–36. (J. G. C. Templeton) **89e:60190** 60K25 (90B22)
- (with Gulati, H. L.) On multi-input bi-tandem queue modelling. *Pure Appl. Math. Sci.* **25** (1987), no. 1–2, 87–93. (K. M. Ramachandran) **89b:60216** 60K25 (90B22)
- Heyde, C. C.** On combining quasikelihood estimating functions. *Stochastic Process. Appl.* **25** (1987), no. 2, 281–287. (Niels Keiding) **89c:62141** 62M05 (60G99, 62M09)
- (with Kulkarni, P. M.) Optimal robust estimation for discrete time stochastic processes. *Stochastic Process. Appl.* **26** (1987), no. 2, 267–276. (W. A. O'N. Waugh) **89b:62156** 62M99 (62F35)



- Asymptotic efficiency results for the method of moments with application to estimation for queueing processes. *Queueing theory and its applications*, 405–412, *CWI Monographs*, 7, North-Holland, Amsterdam-New York, 1988. (R. Bergmann) **89f:60181** 60K25 (62M09, 90B22)
- see also **Australia: history of statistics**, **89g:01001**
- Heydemann, M.-C.** (with Meyer, J.-C.; Sotteau, D.) On the forwarding index problem for small graphs. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), C, 253–266. (E. J. F. Primrose) **89f:05108** 05C38 (90B10)
- van der Heyden, Ludo** see **Van der Heyden, Ludo**
- Heyer, Herbert** Generalized translation structures and invariant Feller semigroups. *Mathematical statistics and probability theory*, Vol. A (Bad Tatzmannsdorf, 1986), 143–194, Reidel, Dordrecht-Boston, MA-London, 1987. (Introduction) **89k:60105** 60J30 (47B38, 47D05)
- Bayesian aspects in the theory of comparison of statistical experiments. *Probability and Bayesian statistics* (Innsbruck, 1986), 247–256, Plenum, New York-London, 1987. (K. K. Ferentinos) **89a:62019** 62B15 (62C10)
- Convolution semigroups of measures on Sturm-Liouville structures. *Symposia Mathematica*, Vol. XXIX (Cortona, 1984), 131–162, *Sympos. Math.*, 29, Academic Press, New York-London, 1987. (Léonard Gallardo) **89m:60024** 60B15 (47D05)
- (with Bloom, Walter R.) Continuity of convolution semigroups on hypergroups. *J. Theoret. Probab.* **1** (1988), no. 3, 271–286. (Wilfried Hazod) **89j:60012** 60B15 (43A05, 43A30, 43A35)
- Bemerkungen zum Vergleich linearer normaler Experimente. (English summary) [Remarks on the comparison of linear normal experiments] *Monatsh. Math.* **106** (1988), no. 1, 9–23. (Dieter Musmann) **89b:62003** 62B15
- Heyman, Ehud** (with Felsen, Leopold B.) Weakly dispersive spectral theory of transients. I. Formulation and interpretation. *IEEE Trans. Antennas and Propagation* **35** (1987), no. 1, 80–86. (J. A. Bennett) **89h:78009** 78A40
- (with Felsen, Leopold B.) Weakly dispersive spectral theory of transients. II. Evaluation of the spectral integral. *IEEE Trans. Antennas and Propagation* **35** (1987), no. 5, 574–580. (J. A. Bennett) **89h:78010** 78A40
- Weakly dispersive spectral theory of transients. III. Applications. *IEEE Trans. Antennas and Propagation* **35** (1987), no. 11, 1258–1266. (J. A. Bennett) **89h:78011** 78A40
- (with Steinberg, B. Z.; Felsen, Leopold B.) Spectral analysis of focus wave modes. *J. Opt. Soc. Amer. A* **4** (1987), no. 11, 2081–2091. (R. F. Millar) **89h:78007** 78A40
- Heywood, John G.** (with Rannacher, R.) Finite element approximation of the nonstationary Navier-Stokes problem. III. Smoothing property and higher order error estimates for spatial discretization. *SIAM J. Numer. Anal.* **25** (1988), no. 3, 489–512. (J. W. Thomas) **89k:65114** 65M60 (35Q10)
- Epochs of regularity for weak solutions of the Navier-Stokes equations in unbounded domains. *Tôhoku Math. J. (2)* **40** (1988), no. 2, 293–313. (Jean-Michel Ghidaglia) **89f:35169** 35Q10 (35B65)
- Heywood, P.** (with Rooney, P. G.) On the inversion of the even and odd Hilbert transformations. *Proc. Roy. Soc. Edinburgh Sect. A* **109** (1988), no. 3–4, 201–211. (C. Carton-Lebrun) **89m:44008** 44A15 (47B38, 47G05)
- Hiai, Fumio** (with Nakamura, Yoshihiro) Extensions of nonlinear completely positive maps. *J. Math. Soc. Japan* **39** (1987), no. 3, 367–384. (Vern Paulsen) **89c:46072** 46L05 (47H99)
- (with Tsukada, Makoto) Generalized conditional expectations and martingales in noncommutative  $L^p$ -spaces. *J. Operator Theory* **18** (1987), no. 2, 265–288. (D. Petz) **89c:46082** 46L50 (46M35)
- Spectral relations and unitary mixing in semifinite von Neumann algebras. *Hokkaido Math. J.* **17** (1988), no. 1, 117–137. (A. A. Lodkin) **89k:46070** 46L10 (46L50, 46L55)
- (with Yamamoto, S.) On homomorphisms of an orthogonally decomposable Hilbert space. III. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 3, 287–295. (E. Stormer) **89k:46071** 46L10 (46C99)
- Hibbard, Thomas N.** (with Cremers, Armin B.) Subspaces: factorization and communication. *Computational and combinatorial methods in systems theory* (Stockholm, 1985), 383–396, North-Holland, Amsterdam-New York, 1986. (Summary) **89a:68062** 68Q10 (68M10, 68N25)
- Hibi, Takayuki** Every affine graded ring has a Hodge algebra structure. *Rend. Sem. Mat. Univ. Politec. Torino* **44** (1986), no. 2, 277–286 (1987). (Ngô Việt Trung) **89c:13010** 13B99
- Union and gluing of a family of Cohen-Macaulay partially ordered sets. *Nagoya Math. J.* **107** (1987), 91–119. (P. Schenzel) **89b:13034** 13H10 (06A10, 52A25)
- Study of three-dimensional algebras with straightening laws which are Gorenstein domains. III. *Hiroshima Math. J.* **18** (1988), no. 2, 299–308. (Luchezar L. Avramov) **89k:13020** 13H10
- Level rings and algebras with straightening laws. *J. Algebra* **117** (1988), no. 2, 343–362. (Matthew Miller) **89g:13010** 13H10 (13H15)
- Linear extensions and order polynomials of finite partially ordered sets. *Proc. Japan Acad. Ser. A Math. Sci.* **64** (1988), no. 4, 121–122. (From the introduction) **89m:06002** 06A10
- Hibschweiler, R. A.** (with MacGregor, T. H.) Closure properties of families of Cauchy-Stieltjes transforms. *Proc. Amer. Math. Soc.* **105** (1989), no. 3, 615–621. (Donna Kumagai) **89g:30075** 30E20
- Hickel, Michel** Sur un problème de division dans l'algèbre  $A^\infty(\Omega)$  d'un ouvert faiblement pseudo-convexe de  $\mathbb{C}^2$ . [On a division problem in the algebra  $A^\infty(\Omega)$  of a weakly pseudoconvex open set in  $\mathbb{C}^2$ ] *Math. Z.* **197** (1988), no. 2, 201–218. (Rita Saerens) **89d:32037** 32E25 (32F15, 46J15)
- Hickerson, Dean** (with Andrews, G. E.; Dyson, Freeman J.) Partitions and indefinite quadratic forms. *Invent. Math.* **91** (1988), no. 3, 391–407. (S. W. Graham) **89f:11071** 11F35 (11F27, 11P72)
- Hickey, Timothy** (with Cohen, Jacques) Automating program analysis. *J. Assoc. Comput. Mach.* **35** (1988), no. 1, 185–220. (Michael Bauer) **89h:68101** 68Q55 (68N05, 68Q60)
- Hickin, Kenneth** Some applications of tree-limits to groups. I. *Trans. Amer. Math. Soc.* **305** (1988), no. 2, 797–839. (O. V. Belegarde) **89b:03053** 03C30 (20B22, 20E18)
- Hickling, F.** (with Fellows, Michael R.; Syslo, Maciej M.) A topological parameterization and hard graph problems (extended abstract). Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 69–78. (Narsingh Deo) **89i:05102** 05C10 (57M15, 68Q25, 68R10)
- Hickman, M. S.** (with McIntosh, C. B. G.; Lun, A. W.-C.) Complex relativity and real solutions. V. The flat space background. *Gen. Relativity Gravitation* **20** (1988), no. 7, 647–657. (Garry Ludwig) **89j:83022** 83C20 (83C05)
- (with McIntosh, C. B. G.) Single Kerr-Schild metrics: a double view. *Gen. Relativity Gravitation* **20** (1988), no. 8, 793–811. (A. H. Taub) **89k:83029** 83C20
- Hicks, D.** (with Kuttler, Kenneth) Weak solutions of initial-boundary value problems for a class of nonlinear viscoelastic equations. *Appl. Anal.* **26** (1987), no. 1, 33–43. (Renuka Ravindran) **89f:35170** 35Q10 (35D10)
- (with Kuttler, Kenneth) Some progress on the hydrocode convergence problem. *Appl. Math. Comput.* **23** (1987), no. 3, 211–233. (Robert Stephen Cantrell) **89b:35157** 35Q99 (35K99, 65N10, 76N99)
- (with Kuttler, Kenneth) Continuum and discrete hydrodynamical models and globally well-posed problems. *Appl. Math. Comput.* **25** (1988), no. 4, 299–320. (C. Fetecău) **89g:76012** 76A99
- (with Ransom, V. H.) Hyperbolic two-pressure models for two-phase flow revisited. Correction to: "Hyperbolic two-pressure models for two-phase flow" [*J. Comput. Phys.* **53** (1984), no. 1, 124–151; MR 85c:76059]. *J. Comput. Phys.* **75** (1988), no. 2, 498–504. (P. C. Jain) **89f:76081** 76T05
- (with Kuttler, Kenneth) Initial-boundary value problems for the equation  $u_{tt} = (\sigma(u_x))_x + (\alpha(u_x)u_{xx})_x + f$ . *Quart. Appl. Math.* **46** (1988), no. 3, 393–407. (Michael Renardy) **89k:35147** 35L70 (35Q20, 73F15)
- Hicks, Troy L.** (with Harder, Alberta M.) Fixed point theory and iteration procedures. *Indian J. Pure Appl. Math.* **19** (1988), no. 1, 17–26. (Ljubomir Čirić) **89a:54056** 54H25
- Fixed point theorems for quasimetric spaces. *Math. Japon.* **33** (1988), no. 2, 231–236. (Shie Park) **89f:54082** 54H25
- (with Bollenbacher, Alberta) A fixed point theorem revisited. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 898–900. (Livia D'Apuzzo) **89d:54032** 54H25
- Hida, Haruzo** Congruences of cusp forms and Hecke algebras. *Séminaire de théorie des nombres*, Paris 1983–84, 133–146, *Progr. Math.*, 59, Birkhäuser Boston, Boston, MA, 1985. (Robert S. Rumely) **89a:11052** 11F33 (11R23)
- On  $p$ -adic Hecke algebras for  $GL_2$ . *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 434–443, *Amer. Math. Soc.*, Providence, RI, 1987. (Richard Taylor) **89d:11039** 11F33 (11F67, 11F85, 11R23)
- Galois representations and the theory of  $p$ -adic Hecke algebras. (Japanese) Sugaku Expositions **2** (1989), no. 1, 75–102. *Sūgaku* **39** (1987), no. 2, 124–139. (Noburo Ishii) **89a:11061** 11G16 (11F33, 11F67, 11F70)
- Modules of congruence of Hecke algebras and  $L$ -functions associated with cusp forms. *Amer. J. Math.* **110** (1988), no. 2, 323–382. (Jacques Tilouine) **89i:11058** 11F33 (11F11, 11F85, 11R23)
- A  $p$ -adic measure attached to the zeta functions associated with two elliptic modular forms. II. *Ann. Inst. Fourier (Grenoble)* **38** (1988), no. 3, 1–83. (Neal Koblitz) **89k:11120** 11S40 (11F11, 11F33, 11F67, 11F85)
- On  $p$ -adic Hecke algebras for  $GL_2$  over totally real fields. *Ann. of Math. (2)* **128** (1988), no. 2, 295–384. (Sheldon Kamienny) **89m:11046** 11F41 (11F85)
- Hida, Takayuki** Generalized Gaussian measures. Functional integration with emphasis on the Feynman integral (Sherbrooke, PQ, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* **17** (1987), 229–236 (1988). (Hui-Hsiung Kuo) **89b:60137** 60J65 (60G20, 60H15)
- (with Saito, Kimiaki) White noise analysis and the Levy Laplacian. *Stochastic processes in physics and engineering* (Bielefeld, 1986), 177–184, *Math. Appl.*, 42, Reidel, Dordrecht-Boston, MA, 1988. (Terry R. McConnell) **89m:60092** 60G15 (60H99, 60J65, 81C20)
- (with Potthoff, J.; Streit, L.) Dirichlet forms and white noise analysis. *Comm. Math. Phys.* **116** (1988), no. 2, 235–245. (Michael Röckner) **89c:60105** 60G60 (31C25, 60H99)
- A note on generalized Gaussian random fields. *J. Multivariate Anal.* **27** (1988), no. 1, 255–260. (Michael Röckner) **89m:60097** 60G20 (60G15, 60G60)
- Hidalgo, A.** (with Zúñiga, J.; Francés, J. M.; Requena, A.; López Piñero, A.; Olivares del Valle, F. J.) Analytical expressions for vibrational matrix elements of Morse oscillators. *Phys. Rev. A* **3** (38) (1988), no. 8, 4205–4212. (Summary) **89i:81023** 81C05 (81G55)
- lolo-Hidalgo, Miguel** see **Lobo-Hidalgo, Miguel**
- fernández garcía-Hierro, Manuel** see **Fernández García-Hierro, Manuel**
- fdez. garcía-Hierro, Manuel** see **Fdez. García-Hierro, Manuel**
- Hietarinta, Jarmo** A search for bilinear equations passing Hirota's three-soliton condition. III. Sine-Gordon-type bilinear equations. *J. Math. Phys.* **28** (1987), no. 11, 2586–2592. (Hélène Airlaut) **89d:35156** 35Q20
- (with Yoshida, Haruo; Ramani, Alfred; Grammaticos, Basile) On the nonintegrability of some generalized Toda lattices. *Phys. A* **144** (1987), no. 2–3, 310–321. (Luis A. Ibort) **89d:58060** 58F07 (70H05)
- Applications of nonlinear physics. (Finnish. English summary) *Arkhimedes* **40** (1988), no. 3, 156–163. (Not in MR) **88F13** (35Q20, 58F07, 76E15)
- A search for bilinear equations passing Hirota's three-soliton condition. IV. Complex bilinear equations. *J. Math. Phys.* **29** (1988), no. 3, 628–635. (Hélène Airlaut) **89f:35185** 35Q20 (58F07)
- Higa, Tatsuo** On the equivalence problem and integration of differential systems. *Nagoya Math. J.* **106** (1987), 49–77. (Antonio Kumpera) **89b:58009** 58A17 (58G99, 58H05)
- On the homotopy groups of a compact homogeneous space. *Comment. Math. Univ. St. Paul.* **37** (1988), no. 2, 193–208. (Yves Félix) **89m:57044** 57T15 (55P62)
- Higashiyama, Youichi** (with Ariyoshi, Hiromu) A method for reducing the number of product terms in a symbolic reliability expression. *Electron. Comm. Japan. Part I Comm.* **70** (1987), no. 9, 50–58. (Not in MR) 90B25
- longuet-Higgins, H. C.** see **Longuet-Higgins, H. C.**
- Higgins, J. R.** A fresh approach to the derivative sampling theorem. *Mathematics in signal processing* (Bath, 1985), 25–31, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (Summary) **89c:94013** 94A12
- longuet-Higgins, M. S.** see **Longuet-Higgins, M. S.**
- Higgins, P. M.** Epimorphisms and amalgams. *Colloq. Math.* **56** (1988), no. 1, 1–17. (John M. Howie) **89m:20083** 20M50 (18B40)
- Digraphs and the semigroup of all functions on a finite set. *Glasgow Math. J.* **30** (1988), no. 1, 41–57. (John M. Howie) **89b:20135** 20M20

- (with Brown, Bruce Maxwell) Finite full transformation semigroups as collections of random functions. *Glasgow Math. J.* **30** (1988), no. 2, 203–211. (Fred W. Roush) **89g:60067** 60F05 (05C30, 20M20)
- The range order of a product of  $i$  transformations from a finite full transformation semigroup. *Semigroup Forum* **37** (1988), no. 1, 31–36. (John M. Howie) **89b:20136** 20M20 (60C05)
- Higgs, Denis** (with Brunker, Don) Primary decomposition for  $\Sigma$ -groups. *Canad. Math. Bull.* **31** (1988), no. 4, 399–403. (Luigi Salce) **89k:20079** 20K10 (20K25)
- $\Sigma$ -groups as convergence groups. *Math. Nachr.* **137** (1988), 101–112. (Ray Gazik) **89j:54039** 54H15
- (with Brunker, Don) Constructions of  $\Sigma$ -groups, relatively free  $\Sigma$ -groups. *J. Austral. Math. Soc. Ser. A* **46** (1989), no. 1, 8–21. (L. Fuchs) **89i:20082** 20K99 (22A99)
- Higgs, R. J.** On the degrees of projective representations. *Glasgow Math. J.* **30** (1988), no. 2, 133–135. (G. Karpilovsky) **89e:20026** 20C25
- Groups whose projective character degrees are powers of a prime. *Glasgow Math. J.* **30** (1988), no. 2, 177–180. (G. Karpilovsky) **89e:20027** 20C25
- Trivial action on the tensor product of finite groups. *Glasgow Math. J.* **30** (1988), no. 3, 271–274. (G. Karpilovsky) **89h:20036** 20D99
- Groups which act transitively on the projective characters of a normal subgroup. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 3, 429–434. (G. Karpilovsky) **89h:20021** 20C25
- High, Jack** (with Cowen, Tyler) Time, bounded utility, and the St. Petersburg paradox. *Theory and Decision* **25** (1988), no. 3, 219–223. (Summary) **89m:90172** 90D05 (90A10)
- Higham, Desmond** (with Hall, George) Analysis of stepsize selection schemes for Runge-Kutta codes. *IMA J. Numer. Anal.* **8** (1988), no. 3, 305–310. (J. R. Cash) **89m:65067** 65L05
- Higham, Lisa** (with Abrahamson, Karl; Adler, Andrew; Gelbart, Rachel; Kirkpatrick, David) The bit complexity of randomized leader election on a ring. *SIAM J. Comput.* **18** (1989), no. 1, 12–29. (Cristian Calude) **89k:68038** 68Q10 (03D05, 68Q25)
- Higham, Nicholas J.** (with Stewart, G. W.) Numerical linear algebra in statistical computing. *The state of the art in numerical analysis* (Birmingham, 1986), 41–57. *Inst. Math. Appl. Conf. Ser. New Ser.*, 9, Oxford Univ. Press, New York, 1987. (James E. Gentle) **89d:65117** 65U05 (62J05, 65F99)
- The symmetric Procrustes problem. *BIT* **28** (1988), no. 1, 133–143. (N. Gass) **89g:65047** 65F20 (41A29, 73K05)
- Fast solution of Vandermonde-like systems involving orthogonal polynomials. *IMA J. Numer. Anal.* **8** (1988), no. 4, 473–486. (Summary) **89k:65067** 65H10 (65F30)
- Computing a nearest symmetric positive semidefinite matrix. *Linear Algebra Appl.* **103** (1988), 103–118. (Ching-Tsuan Pan) **89h:65057** 65F30 (15A45, 65F35)
- Higman, D. G.** Coherent algebras. *Linear Algebra Appl.* **93** (1987), 209–239. (Summary) **89d:15001** 15A30
- Strongly regular designs and coherent configurations of type  $\{3^2\}$ . *European J. Combin.* **9** (1988), no. 4, 411–422. (Dieter Jungnickel) **89i:05070** 05B30
- Higson, Nigel** Algebraic  $K$ -theory of stable  $C^*$ -algebras. *Adv. in Math.* **67** (1988), no. 1, 140 pp. (Cornel Păscu) **89g:46110** 46L80 (19K14, 46M20)
- Higuchi, Atsushi** (with Parker, Leonard) Aspects of QED and nonabelian gauge theories in  $S^1 \times \mathbb{R}^2$  and  $S^1 \times \mathbb{R}^4$  spacetimes. *Phys. Rev. D* **37** (1988), no. 10, 2853–2871. (Summary) **89e:81091** 81E13 (81E20, 81L05)
- Higuchi, T.** Approach to an irregular time series on the basis of the fractal theory. *Phys. D* **31** (1988), no. 2, 277–283. (Summary) **89f:58090** 58F13 (28A75)
- Higuchi, Tatsuo** (with Huang, Xi Yue; Kameyama, Michitaka) Design of a time-optimal digital control system for a DC-servomotor with amplitude limitation. *Systems Comput. Japan* **19** (1988), no. 2, 64–73. (Not in MR) **93C75** (93B50)
- Higuchi, Yasunari** On some problems related to the percolation for the two-dimensional Ising model. *Probabilistic methods in mathematical physics* (Katata/Kyoto, 1985), 153–179. *Academic Press, Boston, MA*, 1987. (H. Kesten) **89i:60196** 60K35 (82A43)
- Higuchi, Yoshiaki** (with Nagase, Michihiro) On the  $L^2$ -boundedness of pseudodifferential operators. *J. Math. Kyoto Univ.* **28** (1988), no. 1, 133–139. (Luigi Rodino) **89d:47112** 47G05 (35S05)
- Higurashi, H.** (with Fukuda, Reijiro) Equilibrium limit of the stochastic quantization in Minkowski space. *Phys. Lett. B* **202** (1988), no. 4, 541–546. (Philip J. Feinsilver) **89j:81181** 81E99 (81C20, 81D07)
- Hijikata, Hiroaki** Linear representations of the Galois group over local fields. *Galois representations and arithmetic algebraic geometry* (Kyoto, 1985/Tokyo, 1986), 161–171. *Adv. Stud. Pure Math.*, 12, North-Holland, Amsterdam-New York, 1987. (Ernst-Wilhelm Zink) **89j:11128** 11S20 (11S15, 11S37)
- see also *Algebraic geometry and commutative algebra*, **89g:14001** and **89g:14002**
- Hikita, H.** Servomechanisms based on sliding mode control. *Internat. J. Control* **48** (1988), no. 2, 435–447. (Not in MR) **93B99** (93C05, 93C10)
- Hikita, Shiro** (with Tamura, Hiroyuki) On measurable multiattribute value functions based on finite-order independence of structural difference. *Large-scale modelling and interactive decision analysis* (Eisenach, 1985), 1–11. *Lecture Notes in Econ. and Math. Systems*, 273, Springer, Berlin-New York, 1986. (Manjuri Basu) **89d:90033** 90A10
- Hikita, Teruo** (with Yokouchi, Hirofumi) A rewriting system for categorical combinators with multiple arguments. *Mathematical methods in software science and engineering* (Japanese). *Sūrikaiseikenkyūsho Kōkyūroku No. 655* (1988), 186–208. (see **89i:68001**) **68Q90**
- Hilali, A.** On the algebraic and differential Newton-Puiseux polygons. *J. Symbolic Comput.* **4** (1987), no. 3, 335–349. (Summary) **89b:65198** 65L99 (34A20, 34A30)
- Hilbert, David** An efficient Navier-Stokes solver and its application to fluid flow in elastic tubes. *Numerical methods* (Miskolc, 1986), 439–447. *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (Max D. Gunzburger) **89j:65062** 65M60 (73J06, 76-08, 76Z05)
- see also Smoryński, Craig, **89m:30001**
- Hild, Michael** (with Komura, Masao) A trip in Julia space: morphological change of complex boundaries. *Science on form* (Sakura, 1985), 601–606. *Reidel, Dordrecht-Boston, MA*, 1987. (see **89g:82013**) **58F11** (30D05, 58F08)
- Hildebrand, Adolf** Quantitative mean value theorems for nonnegative multiplicative functions. II. *Acta Arith.* **48** (1987), no. 3, 209–260. (Evelyn Scriba) **89b:11078** 11N60
- (with Erdős, Paul; Odlyzko, A. M.; Pudaite, P.; Reznick, B.) The asymptotic behavior of a family of sequences. *Pacific J. Math.* **126** (1987), no. 2, 227–241. (Autorreferat (A.O.)) **89e:11024** 11B37 (11N37)
- On the number of prime factors of an integer. *Ramanujan revisited* (Urbana-Champaign, Ill., 1987), 167–185. *Academic Press, Boston, MA*, 1988. (M. J. Narlikar) **89f:11125** 11N25 (11N37)
- (with Schwarz, Wolfgang Karl; Spilker, Jürgen) Still another proof of Parseval's equation for almost-even arithmetical functions. *Aequationes Math.* **35** (1988), no. 2-3, 132–139. (E. J. Scourfield) **89h:11049** 11K65 (11A25, 11N37)
- On the constant in the Pólya-Vinogradov inequality. *Canad. Math. Bull.* **31** (1988), no. 3, 347–352. (Matti Jutila) **89k:11072** 11L40
- (with Tenenbaum, Gérard) On the number of prime factors of an integer. *Duke Math. J.* **56** (1988), no. 3, 471–501. (Aleksandar Ivić) **89k:11084** 11N25
- Large values of character sums. *J. Number Theory* **29** (1988), no. 3, 271–296. (Matti Jutila) **89k:11073** 11L40
- Multiplicative functions at consecutive integers. II. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 3, 389–398. (T. M. Apostol) **89d:11082** 11N37
- (with Maier, Helmut) Gaps between prime numbers. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 1–9. (Gérard Tenenbaum) **89k:11080** 11N05
- Hildebrandt, Stefan** see *Calculus of variations and partial differential equations*, **89f:00022** and *Partial differential equations and calculus of variations*, **89g:00010**
- Hildebrandt, J. A.** (with Schäferkott, M. R.) Compact totally disconnected  $k$ -divisible semigroups. *Semigroup Forum* **37** (1988), no. 1, 113–117. (Anne L. Hudson) **89g:22003** 22A15 (20M10)
- Hilden, Hugh M.** (with Lozano, María Teresa; Montesinos, José María) On the universal group of the Borromean rings. *Differential topology* (Siegen, 1987), 1–13. *Lecture Notes in Math.*, 1350, Springer, Berlin-New York, 1988. (Wilbur Whitten) **89m:57002** 57M10 (22E40, 57M12)
- (with Horn, Berthold K. P.; Negahdaripour, Shahriar) Closed-form solution of absolute orientation using orthonormal matrices. *J. Opt. Soc. Amer. A* **5** (1988), no. 7, 1127–1135. (Summary) **89g:78003** 78-08
- Hildenbrand, Werner** Equilibrium analysis of large economies. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1518–1527. *Amer. Math. Soc., Providence, RI*, 1987. (Walter Trockel) **89e:90055** 90A14
- Hildenbrandt, R.** Kostengünstige Belegung von Formen im Hinblick auf Bedarfsschwankungen. [Cost-effective occupancy of forms with respect to fluctuations in demand] *Wiss. Z. Tech. Hochsch. Ilmenau* **34** (1988), no. 4, 69–76. (Not in MR) **90B30**
- Hile, G. N.** (with Pfaffenberger, W. E.) Idempotents in complex Banach algebras. *Canad. J. Math.* **39** (1987), no. 3, 625–630. (H. G. Dales) **89a:46107** 46H30 (46J05)
- (with Yeh, R. Z.) Exceptional boundary sets for solutions of parabolic partial differential inequalities. *Trans. Amer. Math. Soc.* **306** (1988), no. 2, 607–621. (Robert Stephen Cantrell) **89m:35098** 35K10 (35B05)
- Hiley, B. J.** (with Peat, F. David) General introduction: the development of David Bohm's ideas from the plasma to the implicate order. *Quantum implications*, 1–32. *Routledge & Kegan Paul, London*, 1987. (see **89m:81006**) **81B05**
- (with Frescura, F. A. M.) Some spinor implications unfolded. *Quantum implications*, 278–288. *Routledge & Kegan Paul, London*, 1987. (see **89m:81006**) **81D99** (81D27)
- see also *Quantum implications*, **89m:81006**
- Hilfstein, Erna** Was Valentinus Otho a mathematics professor at the University of Heidelberg? *Organon No. 22-23* (1986/87), 221–225. (V. E. Thoren) **89i:01081** 01A70 (01A40, 01A73)
- Hilgert, Joachim** Invariant Lorentzian orders on simply connected Lie groups. *Ark. Mat.* **26** (1988), no. 1, 107–115. (A. Lakshmi) **89j:22014** 22E15 (53C50)
- (with Hofmann, Karl Heinrich) Invariant cones in Lie algebras. *Semigroup Forum* **37** (1988), no. 2, 241–252. (V. V. Astrakhansev) **89e:17006** 17B05
- Hilhorst, H.** (with Fonk, Y.) Ground-state and quenched-state properties of a one-dimensional interacting lattice gas in a random potential. *J. Statist. Phys.* **49** (1987), no. 5-6, 1235–1254. (Aernout C. D. van Enter) **89f:82071** 82A67 (82A68)
- Some recent developments and problems in the theory of spin glasses. *Mark Kac Seminar on Probability and Physics. Syllabus 1985-1987* (Amsterdam, 1985-1987), 17, CWI Syllabi, 17, Math. Centrum, Centrum Wisk. Inform., Amsterdam, 1988. (see **89e:60005**) **82A57**
- Hill, Bruce M.** On the validity of the likelihood principle. *Statistical decision theory and related topics, IV, Vol. 1* (West Lafayette, Ind., 1986), 119–132. *Springer, New York-Berlin*, 1988. (Title) **89a:62011** 62A15 (62A10)
- Hill, Christopher T.** (with Hodges, Hardy M.; Turner, Michael S.) Bosonic superconducting cosmic strings. *Phys. Rev. D* **37** (1988), no. 2, 263–282. (Miao Li) **89f:83116** 83F05 (81G25)
- Hill, David Arneson** Injective modules over non-Artinian serial rings. *J. Austral. Math. Soc. Ser. A* **44** (1988), no. 2, 242–251. (Summary) **89b:16026** 16A52 (16A04, 16A33)
- Hill, David J.** (with Wen, Changyun; Goodwin, Graham C.) Stability analysis of decentralized robust adaptive control. *Systems Control Lett.* **11** (1988), no. 4, 277–284. (Djordjija Petkovski) **89m:93048** 93C40 (93A15, 93B35, 93D15)
- Hill, J. M.** (with Willis, J. R.) Analytical aspects of heat flow in random two-component laminates. *Quart. Appl. Math.* **46** (1988), no. 2, 353–364. (J. D. P. Donnelly) **89f:73007** 73B30 (35K57, 80A20)
- Hill, Joe R.** (with Tsai, Chih-Ling) Calculating the efficiency of maximum quasilielihood estimation. *J. Roy. Statist. Soc. Ser. C* **37** (1988), no. 2, 219–230. (Not in MR) **62F10**
- Hill, M. G.** (with Porter, David) The numerical determination of fundamental solutions of elliptic equations. *IMA J. Numer. Anal.* **6** (1986), no. 4, 405–420. (Summary) **89h:65205** 65N99
- Hill, N. A.** (with Pedley, T. J.; Kessler, J. O.) The growth of bioconvection patterns in a uniform suspension of gyrotactic micro-organisms. *J. Fluid Mech.* **195** (1988), 223–237. (Summary) **89m:92004** 92A05 (76E15, 76Z10)
- Hill, Paul** (with Megibben, Charles) Generalizations of the stacked bases theorem. *Trans. Amer. Math. Soc.* **312** (1989), no. 1, 377–402. (David M. Arnold) **89g:20089** 20K21
- Hill, Raymond** (with Newton, D. E.) Some optimal ternary linear codes. *Eleventh British Combinatorial Conference* (London, 1987). *Ars Combin.* **25** (1988), A, 61–72. (K. Seitz) **89f:94022** 94B05



- Hill, Richard** (with Brenton, Lawrence) On the Diophantine equation  $1 = \sum 1/n_i + 1/\prod n_i$  and a class of homologically trivial complex surface singularities. *Pacific J. Math.* **133** (1988), no. 1, 41–67. (P. Orlik) **89d:32023** 32C40 (14B05, 32B30)
- Hill, Terrell L.** ★ An introduction to statistical thermodynamics. Second edition. *Dover Publications, Inc., New York*, 1986. xvi+508 pp. ISBN 0-486-65242-4 (Editors) **89f:82001** 82-01 (82A35)
- Interrelations between random walks on diagrams (graphs) with and without cycles. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 9, 2879–2883. (Summary) **89m:92021** 92A09 (05C38, 60J15, 80A32)
- Number of visits to a state in a random walk, before absorption, and related topics. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 13, 4577–4581. (Aart J. Stam) **89g:60229** 60J27 (92A08, 92A09)
- Discrete-time random walks on diagrams (graphs) with cycles. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 15, 5345–5349. (Gregory F. Lawler) **89f:60075** 60J10 (60J15, 92A08)
- Hill, Theodore P.** (with van der Wal, Jan) Monotonically improving limit-optimal strategies in finite-state decision processes. *Math. Oper. Res.* **12** (1987), no. 3, 463–473. (Aleksandr A. Yushkevich) **89a:90155** 90C40
- Common hyperplane medians for random vectors. *Amer. Math. Monthly* **95** (1988), no. 5, 437–441. (Hermann Haase) **89d:60018** 60D05
- (with Demko, S. G.) Equitable distribution of indivisible objects. *Math. Social Sci.* **16** (1988), no. 2, 145–158. (Chandra M. Gulati) **89j:90005** 90A05 (90B50)
- A proportionality principle for partitioning problems. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 288–293. (Summary) **89m:60038** 60E15 (05A17, 60A10)
- Hill, W. G.** (with Weir, B. S.) Variances and covariances of squared linkage disequilibria in finite populations. *Theoret. Population Biol.* **33** (1988), no. 1, 54–78. (Summary) **89h:92021** 92A10
- Hillebrandt, Gert** Product geometries. *J. Geom.* **33** (1988), no. 1-2, 58–64. (Christiane Lefèvre-Percsy) **89m:51011** 51D20 (51A05)
- Hillier, Howard** (with Smith, Larry) On the realization and classification of cyclic extensions of polynomial algebras over the Steenrod algebra. *Proc. Amer. Math. Soc.* **100** (1987), no. 4, 731–738. (Summary) **89c:55017** 55S10
- Hillery, Mark** (with Mlodinow, Leonard D.) Bounds from a conservation law in the Dicke model. *Phys. Rev. A* (3) **38** (1988), no. 8, 4064–4072. (Summary) **89i:81160** 81K05 (81D30)
- Hilliard, Lorenzo O.** The case of equality in Hopf's inequality. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 4, 691–709. (Thomas L. Markham) **89c:15024** 15A42
- Hillion, H. P.** (with Proth, J.-M.) A top-down hierarchical classification method. *Appl. Stochastic Models Data Anal.* **3** (1987), no. 4, 247–255. (Not in MR) 62H30
- (with Proth, J.-M.) Analyse de fabrications non linéaires et répétitives à l'aide de graphes d'événements temporisés. (English summary) [Analysis of nonlinear repetitive processing by means of timed event graphs] *RAIRO Rech. Opér.* **22** (1988), no. 2, 137–176. (Summary) **89g:90129** 90B35 (68R10, 90B30)
- (with Proth, J.-M.) Performance evaluation of job-shop systems using timed event-graphs. *IEEE Trans. Automat. Control* **34** (1989), no. 1, 3–9. (Summary) **89j:90147** 90B35 (68M20)
- Hillion, P.** Spinor focus wave modes. *J. Math. Phys.* **28** (1987), no. 8, 1743–1748. (Summary) **89c:35023** 35C05 (35J99, 35L05, 78A25)
- Solutions of the wave equations with boundary conditions on the hyperplane  $z - ct = 0$ . *J. Math. Phys.* **29** (1988), no. 8, 1771–1775. (V. P. Mainra) **89k:35122** 35L05
- Solutions of Maxwell's equations with boundary conditions on the hyperplane  $z - ct = 0$ . *J. Math. Phys.* **29** (1988), no. 10, 2219–2222. (Summary) **89h:35293** 35Q20 (35L05, 78A25)
- Remark on a system of two nonlinear differential equations. *SIAM J. Appl. Math.* **48** (1988), no. 2, 286–293. (F. Milinazzo) **89f:34015** 34A34 (34A25, 34A50, 65L15)
- Some exotic solutions of the wave equation in unbounded isotropic media. *Wave Motion* **10** (1988), no. 2, 143–147. (Gustavo Perla Menzala) **89f:35118** 35L05 (35C99, 76Q05)
- Hillman, J. A.** (with Keaton, C.) Seifert matrices and 6-knots. *Trans. Amer. Math. Soc.* **309** (1988), no. 2, 843–855. (Alexander I. Suciu) **89j:57015** 57Q45
- Hillmer, Steven C.** (with Trabelsi, Abdelwahed) Benchmarking of economic time series. *J. Amer. Statist. Assoc.* **82** (1987), no. 400, 1064–1071. (Baldev Raj) **89a:62192** 62M10 (62D05, 62P20)
- (with Stam, Antonio) Marginals of multivariate first-order autoregressive time series models. *J. Time Ser. Anal.* **9** (1988), no. 1, 89–97. (Raúl Pedro Mentz) **89c:62122** 62M10
- Hills, D. A.** (with Sackfield, A.) Results in elasticity theory using complex FORTRAN. *Computers in mathematical research (Cardiff, 1986)*, 177–185. *Inst. Math. Appl. Conf. Ser. New Ser.*, 14, Oxford Univ. Press, New York, 1988. (see **89c:00032**) 73-08
- Hills, R. N.** (with Roberts, P. H.) On the formulation of diffusive mixture theories for two-phase regions. *J. Engrg. Math.* **22** (1988), no. 2, 93–106. (Summary) **89d:80013** 80A20
- Hilpinen, Risto** The semantics of questions and the theory of inquiry. Conference on philosophical logic (Gent, 1985). *Logique et Anal. (N.S.)* **29** (1986), no. 116, 523–539. (Tomáš Havránek) **89c:03029** 03B45 (03B60, 68T30)
- Hilton, A. J. W.** (with Chetwynd, A. G.) Critical star multigraphs. *Graphs Combin.* **2** (1986), no. 3, 209–221. (J. Sheehan) **89f:05077** 05C15
- (with Andersen, L. D.) The existence of symmetric Latin squares with one prescribed symbol in each row and column. *Combinatorial design theory, 1–26, North-Holland Math. Stud.*, 149, North-Holland, Amsterdam-New York, 1987. (Katherine Heinrich) **89a:05035** 05B15
- Outlines of Latin squares. *Combinatorial design theory*, 225–241, North-Holland Math. Stud., 149, North-Holland, Amsterdam-New York, 1987. (Katherine Heinrich) **89a:05037** 05B15
- (with Chetwynd, A. G.) The existence of multigraphs with a given degree sequence and given chromatic index. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **58** (1987), 247–255. (Prabir Das) **89c:05088** 05C15
- Embedding partial triple systems. *J. Combin. Math. Combin. Comput.* **2** (1987), 77–95. (Lars Døvling Andersen) **89g:05029** 05B07
- (with Jackson, Bill) A note concerning the chromatic index of multigraphs. *J. Graph Theory* **11** (1987), no. 3, 267–272. (Summary) **89b:05085** 05C15
- (with Chetwynd, A. G.) Snarks and  $k$ -snarks. Eleventh British Combinatorial Conference (London, 1987). *Art. Combin.* **25** (1988), C, 39–54. (Robin J. Wilson) **89d:05070** 05C15 (05B15)
- (with Johnson, P. D., Jr.) Reverse class critical multigraphs. *Discrete Math.* **69** (1988), no. 3, 309–311. (Robin J. Wilson) **89d:05072** 05C15 (05C75)
- Recent results on edge-colouring graphs, with applications to the total-chromatic number. *J. Combin. Math. Combin. Comput.* **3** (1988), 121–134. (Carsten Thomassen) **89k:05038** 05C15
- (with Chetwynd, A. G.) The edge-chromatic class of graphs with maximum degree at least  $|V| - 3$ . *Graph theory in memory of G. A. Dirac (Sandbjerg, 1985)*, 91–110, *Ann. Discrete Math.*, 41, North-Holland, Amsterdam-New York, 1989. (H. Joseph Straight) **89m:05050** 05C15
- Hilton, Peter** Localization of derivations and the genus of groups with operators. *J. Indian Math. Soc. (N.S.)* **49** (1985), no. 3-4, 151–166 (1987). (U. Stambach) **89g:20060** 20F18
- (with Pedersen, Jean) Looking into Pascal's triangle: combinatorics, arithmetic, and geometry. *Math. Mag.* **60** (1987), no. 5, 305–316. (Charles Laywine) **89i:05010** 05A10 (05A17, 05A19)
- On groups of pseudo-integers. *Acta Math. Sinica (N.S.)* **4** (1988), no. 2, 189–192. (J. L. Brenner) **89i:11015** 11A99 (20F99, 20K99)
- Hinaga, Tatsuya** (with Tsuda, Yoshihiro; Tamura, Hideyuki; Sueoka, Atsuo) Vibrations of a forced self-excited system with a retarded argument (influence of initial conditions). *JSME Internat. J. Ser. III* **31** (1988), no. 3, 494–501. (Summary) **89j:34106** 34K15 (58F08, 58F12, 70K40)
- Hinamoto, Takao** (with Maekawa, Sadao; Shimonishi, Jiro) Pole assignment for two-dimensional systems using a multifunctional observer. *Electron. Comm. Japan. Part I Comm.* **68** (1985), no. 11, 57–65. (Summary) **89h:93023** 93B55 (93B07)
- (with Maekawa, Sadao; Nakamura, Yoshinari) Approximation of multivariable linear systems by lower-order models. *Electron. Comm. Japan. Part I Comm.* **69** (1986), no. 10, 39–46. (Marek Aleksander Kowalski) **89j:93056** 93C05 (41A20)
- (with Shimonishi, Jiro; Maekawa, Sadao) Inversion for 2-D systems. *Electron. Comm. Japan. Part I Comm.* **70** (1987), no. 7, 20–28. (Moriyoshi Kimura) **89m:93056** 93C55 (54H20, 93B15)
- (with Hamanaka, Takashi; Maekawa, Sadao) A generalized study on the synthesis of 2-D state-space digital filters with minimum roundoff noise. *IEEE Trans. Circuits and Systems* **35** (1988), no. 8, 1037–1042. (Not in MR) 94A12 (93B50)
- (with Hamanaka, Takashi; Maekawa, Sadao; Venetsanopoulos, Anastasios N.) Approximation and minimum roundoff noise synthesis of 3-D separable-denominator recursive digital filters. *J. Franklin Inst.* **325** (1988), no. 1, 27–47. (Wiktor Kulesza) **89d:93043** 93B50 (68U10, 93E11)
- (with Maekawa, Sadao; Shimonishi, Jiro; Venetsanopoulos, Anastasios N.) Balanced realization and model reduction of 3-D separable-denominator transfer functions. *J. Franklin Inst.* **325** (1988), no. 2, 207–219. (Alexander V. Gneden) **89g:93014** 93B15 (93B05, 93B07, 93B10)
- Hinderer, K.** Remarks on directly Riemann integrable functions. *Math. Nachr.* **130** (1987), 225–230. (Introduction) **89c:60100** 60K05
- Hindman, Neil** (with Deuber, W.) Partitions and sums of  $(m, p, c)$ -sets. *J. Combin. Theory Ser. A* **45** (1987), no. 2, 300–302. (G. L. Alexanderson) **89a:05013** 05A17
- (with Davenport, Dennis) Subprincipal closed ideals in  $\beta\mathbb{N}$ . *Semigroup Forum* **36** (1987), no. 2, 223–245. (W. W. Comfort) **89h:54031** 54H99 (54D40)
- (with Milnes, Paul) The LMC-compactification of a topologized semigroup. *Czechoslovak Math. J.* **38(113)** (1988), no. 1, 103–119. (V. V. Mukhin) **89c:22008** 22A20 (54D35)
- Some equivalents of the Erdős sum of reciprocals conjecture. *European J. Combin.* **9** (1988), no. 1, 39–47. (W. A. Webb) **89j:11007** 11B05 (11B25)
- (with Bergelson, Vitaly) A combinatorially large cell of a partition of  $\mathbb{N}$ . *J. Combin. Theory Ser. A* **48** (1988), no. 1, 39–52. (Eduard Fuchs) **89m:04003** 04A20 (05A99, 11B75)
- Is there a point of  $\omega^*$  that sees all others? *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1235–1238. (Judith Roitman) **89d:04008** 04A20 (03E05, 54D35)
- Hindmarsh, M. C.** (with Everett, Allen E.) **89a:81070**
- Hindmarsh, R. C. A.** (with Morland, L. W.; Boulton, G. S.; Hutter, K.) The unsteady plane flow of ice-sheets: a parabolic problem with two moving boundaries. *Geophys. Astrophys. Fluid Dynamics* **39** (1987), no. 3, 183–225. (Andrew C. Fowler) **89a:86013** 86A60
- Hindry, Marc** (with Silverman, Joseph H.) The canonical height and integral points on elliptic curves. *Invent. Math.* **93** (1988), no. 2, 419–450. (Ernst-Ulrich Gekeler) **89k:11044** 11G05 (11D25, 14G25)
- Autour d'une conjecture de Serge Lang. [On a conjecture of Serge Lang] *Invent. Math.* **94** (1988), no. 3, 575–603. (Michel Laurent) **89k:11046** 11G10 (11J89, 14K15)
- Hines, W. G. S.** Erratum: "Evolutionary stable strategies: a review of basic theory" [Theoret. Population Biol. **31** (1987), no. 2, 195–272; MR 88f:92033]. *Theoret. Population Biol.* **33** (1988), no. 1, 114. (Editors) **89d:92066** 92A15 (90D45, 92A18)
- Hineva, S. T.** On infinitesimal deformations of submanifolds of a Riemannian manifold. *Differential geometry (Warsaw, 1979)*, 75–81, *Banach Center Publ.*, 12, PWN, Warsaw, 1984. (Chuan Yu Ma) **89j:53017** 53B25
- Hinga, S.** (with Peleg, K.) Parameter sensitivity of nonlinear vibration systems. *J. Sound Vibration* **128** (1989), no. 1, 1–11. (Summary) **89k:70044** 70K30 (70K20)
- Hing Cortés, Rosina** (with López Chimil, Marcos) Absolute nonoscillation and stability criteria for second-order automatic control systems. (Spanish. English summary) *Cienc. Mat. (Havana)* **6** (1985), no. 3, 67–74. (Abel R. Castro Figueroa) **89g:93079** 93D05 (34C10)
- Hingston, Nancy** Isometry-invariant geodesics on spheres. *Duke Math. J.* **57** (1988), no. 3, 761–768. (Gudlaugur Thorbergsson) **89m:53071** 53C22 (58E10, 58F17)
- Hinich, Melvin J.** (with Wolinsky, Murray A.) A test for aliasing using bispectral analysis. *J. Amer. Statist. Assoc.* **83** (1988), no. 402, 499–502. (Summary) **89j:62121** 62M10
- Hinich, V. A.** see **Khinich, V. A.**
- Hinkkanen, A.** The diagonal representation of the Grunsky operator. *Complex Variables Theory Appl.* **9** (1987), no. 1, 23–30. (D. H. Hamilton) **89f:30016** 30C40 (30C55)
- Harmonic functions in quasicircle domains. *Holomorphic functions and moduli, Vol. I (Berkeley, CA, 1986)*, 79–91, *Math. Sci. Res. Inst. Publ.*, 10, Springer, New York-Berlin, 1988. (Michel Zinsmeister) **89g:30043** 30C85
- (with Anderson, James Milne; Lesley, F. David) On theorems of Jackson and Bernstein type in the complex plane. *Constr. Approx.* **4** (1988), no. 3, 307–319. (Z. Rubinstein)

- 89d:30044** 30E10 (41A10, 41A27)  
— Modulus of continuity of harmonic functions. *J. Analyse Math.* **51** (1988), 1–29. (Albert Baernstein II) **89m:31002** 31A05 (31B05)
- (with Rossi, John) Second order differential equations with rational coefficients. *Proc. Amer. Math. Soc.* **106** (1989), no. 3, 667–678. (W. H. J. Fuchs) **89k:34006** 34A20 (30D05, 30D35)
- Hinkley, D. V.** (with Wang, Suojin) More about transformations and influential cases in regression. *Technometrics* **30** (1988), no. 4, 435–440. (Not in MR) **62J05**
- Hinman, Peter G.** see **Bibliography: Mathematical logic**, **89e:03001d**
- Hinrichs, Klaus** (with Nievergelt, Jürg; Schorn, Peter) Plane-sweep solves the closest pair problem elegantly. *Inform. Process. Lett.* **26** (1988), no. 5, 255–261. (Summary) **89a:68206** 68U05 (68Q25)
- Hinrichsen, D.** (with Glüsing-Luerssen, H.) A Jordan control canonical form for singular systems. *Internat. J. Control* **48** (1988), no. 5, 1769–1785. (B. G. Mertziog) **89k:93030** 93B10 (93C30)
- Hintikka, Jaakko** True and false logics of scientific discovery. *Comm. Cognition* **18** (1985), no. 1–2, 3–14. (C. Ulises Moulines) **89h:03009** 03A05  
— (with Kulas, Jack) Different uses of the definite article. *Comm. Cognition* **18** (1985), no. 1–2, 69–80. (Not in MR) **03B65**  
— The varieties of being in Aristotle. *The logic of being*, 81–114, *Synthese Hist. Lib.*, 28, Reidel, Dordrecht-Boston, MA, 1986. (see **89a:03004**) **01A20** (03–03, 03A05)  
— Kant on existence, predication, and the ontological argument [Dialectica **35** (1981), no. 1–2, 127–146; MR **84c:03012**]. *The logic of being*, 249–267, *Synthese Hist. Lib.*, 28, Reidel, Dordrecht-Boston, MA, 1986. (see **89a:03004**) **03A05** (03–03)  
— Reasoning about knowledge in philosophy: the paradigm of epistemic logic. *Theoretical aspects of reasoning about knowledge* (Monterey, Calif., 1986), 63–80, *Morgan Kaufmann, Palo Alto, CA*, 1986. (Summary) **89a:03036** 03B45  
— Game-theoretical semantics as a synthesis of verificationist and truth-conditional meaning theories. *New directions in semantics*, 235–258, *Cognitive Sci. Ser.*, 2, Academic Press, London-Orlando, FL, 1987. (François Lepage) **89k:03028** 03B65  
— Language understanding and strategic meaning. *Synthese* **73** (1987), no. 3, 497–529. (Michael Scanlan) **89d:03025** 03B65 (03A05)  
— Model minimization—an alternative to circumscription. *J. Automat. Reason.* **4** (1988), no. 1, 1–13. (P. Štěpánek) **89i:03010** 03B10 (03B35, 03B60, 68T15)  
— On the incommensurability of theories. *Philos. Sci.* **55** (1988), no. 1, 25–38. (David Makinson) **89h:03018** 03B30  
— What is the logic of experimental inquiry? *Synthese* **74** (1988), no. 2, 173–190. (S. K. Thomason) **89e:03010** 03A05 (03B60)  
— On the development of the model-theoretic viewpoint in logical theory. *Synthese* **77** (1988), no. 1, 1–36. (E. Mendelson) **89h:03062** 03–03 (01A60, 03A05, 03B65, 03C99)  
— see also **Logic of being**, **89a:03004**
- Hinton, D. B.** (with Shaw, J. K.) Asymptotics of solutions and spectra of perturbed periodic Hamiltonian systems. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 169–174, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (V. G. Samoilenko) **89g:34026** 34B25 (58F05, 58F30)  
— (with Shaw, J. K.) Dirac systems with discrete spectra. *Canad. J. Math.* **39** (1987), no. 1, 100–122. (H. Hochstadt) **89d:34051** 34B25 (34B20, 34C05, 47E05)  
— (with Shaw, J. K.) Absolutely continuous spectra of perturbed periodic Hamiltonian systems. *Rocky Mountain J. Math.* **17** (1987), no. 4, 727–748. (A. G. Baskakov) **89m:34031** 34B25 (47E05, 58F05, 58F30)  
— (with Brown, Richard C.) Weighted interpolation inequalities of sum and product form in  $\mathbb{R}^n$ . *Proc. London Math. Soc.* (3) **56** (1988), no. 2, 261–280. (E. R. Love) **89e:26027** 26D10 (39A12)
- Hinton, E.** see **Computational plasticity**, **89c:73030**
- Hinz, Andreas M.** Behavior of eigenfunctions and the spectrum of Schrödinger operators. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 175–179, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Volker Vogelsang) **89c:35126** 35P20 (35J10)
- Hioe, F. T.** (with Carroll, C. E.) Driven three-state model and its analytic solutions. *J. Math. Phys.* **29** (1988), no. 2, 487–509. (Thomas O. Philips) **89d:81135** 81K05 (81C05)
- Hion, Jaak** Polygons over categories and groupoids. *Algebra-Tagung Halle 1986*, 85–101, *Wissenschaft. Beitr.*, 33, Martin-Luther-Univ. Halle-Wittenberg, Halle (Saale), 1987. (Ronald Brown) **89a:18004** 18A10 (20L05)  
— On nets of free polygons over a category and their categories of homomorphisms. *Beiträge Algebra Geom.* No. 24 (1987), 51–74. (P. Normak (Zbl 612:18003)) **89b:20142** 20M50 (18B40)
- Hipel, Keith W.** (with Wang, Muhong; Fraser, Niall M.) Modeling misperceptions in games. *Behavioral Sci.* **33** (1988), no. 3, 207–223. (A. Rapoport) **89g:90267** 90D45 (92A25)
- Hipp, Sabine K.** (with Holzbaier, Ulrich D.) Decision processes with monotone hysteretic policies. *Oper. Res.* **36** (1988), no. 4, 585–588. (Summary) **89h:90099** 90B22 (90C40)
- Hippocrates** see **Hughes, Barnabas B.**, **89m:01009**
- Hirabayashi, Mikihito** (with Yoshino, Ken-ichi) Remarks on unit indices of imaginary abelian number fields. *Manuscripta Math.* **60** (1988), no. 4, 423–436. (Susumu Shirai) **89i:11068** 11R27
- Hirabayashi, Ryuichi** (with Suzuki, Hisatoshi; Tsuji, Masato) The water salesman problem. (Japanese. English summary) *J. Oper. Res. Soc. Japan* **30** (1987), no. 4, 472–492. (Summary) **89a:90058** 90B10 (05C35)
- Hiraide, Koichi** Expansive homeomorphisms of compact surfaces are pseudo-Anosov. *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 9, 337–338. (Denis Sjerve) **89j:57007** 57M99 (58F15)  
— Expansive homeomorphisms with the pseudo-orbit tracing property on compact surfaces. *J. Math. Soc. Japan* **40** (1988), no. 1, 123–137. (Edward Slaminka) **89b:58167** 58F15
- Hiraishi, Hiromi** (with Kawahara, Kenji; Yajima, Shuzo) Locally exhaustive testing of combinational circuits using linear logic circuits. *J. Inform. Process.* **11** (1988), no. 3, 191–198. (Not in MR) **68R10**
- Hiraishi, Kunihiko** (with Ichikawa, Atsunobu) Analysis and control of discrete event systems represented by Petri nets. *Discrete event systems: models and applications* (Sopron, 1987), 115–134, *Lecture Notes in Control and Inform. Sci.*, 103, Springer, Berlin-New York, 1988. (see **89a:90019**) **68Q90**
- Hirakawa, Fumiko** Second order asymptotically complete class of estimators with respect to general loss functions. *TRU Math.* **23** (1987), no. 2, 241–255. (Wilfried Grossmann) **89i:62045** 62F12
- (with Akahira, Masafumi; Takeuchi, Kei) Second and third order asymptotic completeness of the class of estimators. *Probability theory and mathematical statistics* (Kyoto, 1986), 11–27, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (A. L. Rukhin) **89d:62030** 62F12
- Hiramatsu, Toyokazu** (with Sato, Makoto; Takada, Ichiro) On  $S_2$ -type modular forms of weight 1. *Math. Japon.* **32** (1987), no. 6, 915–925. (R. W. K. Odoni) **89i:11069** 11F30 (11F11, 11F20)
- Theory of automorphic forms of weight 1. *Investigations in number theory*, 503–584, *Adv. Stud. Pure Math.*, 13, Academic Press, Boston, MA, 1988. (Marvin I. Knopp) **89m:11040** 11F11 (11F27, 11R37)
- (with Akiyama, Shigeaki) On some dimension formula for automorphic forms of weight one. III. *Nagoya Math. J.* **111** (1988), 157–163. (K.-B. Gundlach) **89k:11028** 11F11
- Hiramine, Yutaka** Some translation planes admitting  $SL(2, 5) \times SL(2, 5)$ . *J. Combin. Theory Ser. A* **48** (1988), no. 2, 189–196. (T. G. Ostrom) **89j:51002** 51A40 (20B25, 51E15)
- Hirano, Katsuomi** (with Aki, Sigeo) Properties of the extended distributions of order  $k$ . *Statist. Probab. Lett.* **6** (1987), no. 2, 67–69. (A. N. Philippou) **89c:60014** 60E05 (62E15)
- Hirano, Norimichi** On the existence of multiple solutions for a nonlinear wave equation. *J. Differential Equations* **71** (1988), no. 2, 334–347. (Sergiu Aizicovici) **89b:35094** 35L70 (47H15)  
— Unbounded nonlinear perturbations of linear elliptic problems at resonance. *J. Math. Anal. Appl.* **132** (1988), no. 2, 434–446. (Ricardo S. Kubrusly) **89m:35078** 35J65 (35B20)
- Multiple nontrivial solutions of semilinear elliptic equations. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 468–472. (Yao Tian Shen) **89i:35063** 35J65
- Hirano, Yasuyuki** (with Yaqub, Adil) Rings satisfying the identity  $(X - X^*)(Y - Y^*) = 0$ . *Math. J. Okayama Univ.* **29** (1987), 185–189 (1988). (Hal G. Moore) **89d:16042** 16A70 (16A48)  
— On rings with unique minimal subrings. *Acta Math. Hungar.* **51** (1988), no. 1–2, 57–60. (T. S. Ravisankar) **89e:16034** 16A45  
— (with Tominaga, H.) Rings in which every element is the sum of two idempotents. *Bull. Austral. Math. Soc.* **37** (1988), no. 2, 161–164. (Stuart A. Steinberg) **89i:16012** 16A32  
— (with Suenaga, Takashi) Generalizations of von Neumann regular rings and  $n$ -like rings. *Comment. Math. Univ. St. Paul.* **37** (1988), no. 2, 145–149. (Daniel D. Anderson) **89k:16032** 16A38 (13A99, 16A30, 16A70)  
— (with Hongan, M.; Ōhori, Masayuki) Correction to: “On right p.p. rings” [Math. J. Okayama Univ. **24** (1982), no. 2, 99–109; MR **85b:16019**]. *Math. J. Okayama Univ.* **30** (1988), 213–214. (From the text) **89k:16046** 16A50  
— Some results on additive groups of rings. *Proceedings of the 21st Symposium on Ring Theory* (Hiroaki, 1988), 21–28, *Okayama Univ., Okayama*, 1989. (see **89k:16001**) **16A45** (20K99)
- Hirashita, Yukio** The Hodge’s  $\ast$ -operator and orthonormal basis. *Bull. Fac. Liberal Arts Chukyo Univ.* **28** (1987), no. 3, 717–754. (Hans Klaus Rummel) **89c:58004** 58A14 (15A75, 53C55)
- Hirata, Hironori** (with Sugai, Yasuo) Hierarchical simulated annealing optimization in partition problem. *System modelling and optimization* (Tokyo, 1987), 328–337, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (see **89f:90029**) **90C27** (90B10)  
— (with Sugai, Yasuo) Aggregation of ecological networks based on information theory. *System modelling and optimization* (Tokyo, 1987), 604–613, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (Summary) **89j:92064** 92A17 (94A15)  
— see also **Sugihara, George**, **89d:92083**
- Hirata, Kohji** Solvable model of beam-beam effects in  $e^+e^-$  colliding storage rings. *Phys. Rev. D* (3) **37** (1988), no. 5, 1307–1320. (Summary) **89b:81257** 81G99 (78A99)
- Hirata, Tomio** (with Yamasaki, Hiroshi; Imai, Masaharu; Ibaraki, Toshihide) Computational complexity of the file allocation problem in distributed database systems. *Systems Comput. Japan* **19** (1988), no. 3, 53–63. (Summary) **89d:68011** 68P15 (68Q15)
- Hirayama, Minoru** (with Tajima, Toshihiko) Vanishing theorems for Hannay angle and Berry phase. *Progr. Theoret. Phys.* **79** (1988), no. 4, 746–757. (Elisa Udeschini-Brinis) **89b:81063** 81C99 (58F05)
- Hirayama, Tetsuji** Nonpreemptive scheduling of a finite-source queue with two customer classes. (Japanese summary) *J. Oper. Res. Soc. Japan* **30** (1987), no. 2, 200–217. (Shaler Stidham, Jr.) **89d:90102** 90B22 (60K25)  
— Optimal service assignment in a finite-source queue. *IEEE Trans. Automat. Control* **34** (1989), no. 1, 67–75. (Summary) **89j:90148** 90B35 (60K25, 90B22)
- Hiremuth, G. R.** On generalization of  $G_2$  diagonal and metrization. *Proc. Japan Acad. Ser. A Math. Sci.* **64** (1988), no. 8, 288–291. (József Chabér) **89k:54073** 54E99 (54C10)
- Hiremuth, V. A.** Coregular modules. *Tamkang J. Math.* **18** (1987), no. 2, 103–111. (J. Hausen) **89c:16032** 16A53 (13C13)
- Hirji, Karim F.** (with Mehta, C. R.; Patel, Nitin R.) Computing distributions for exact logistic regression. *J. Amer. Statist. Assoc.* **82** (1987), no. 400, 1110–1117. (A. L. Nagar) **89c:62126** 62J99  
— (with Mehta, C. R.; Patel, Nitin R.) Exact inference for matched case-control studies. (French summary) *Biometrics* **44** (1988), no. 3, 803–814. (Summary) **89b:62167** 62P10
- Hirohata, Tetsuya** (with Hano, Kazuhiro) Controllability by two vector fields. *Mem. Osaka Inst. Tech. Ser. A* **32** (1988), no. 2, 37–44. (Peng Nian Chen) **89f:93007** 93B05 (58F40, 93C10)
- Hirokawa, Sachio** Some properties of one-step recurrent terms in lambda calculus. *Math. Japon.* **32** (1987), no. 6, 927–935. (Martin W. Bunder) **89b:03027** 03B40  
— On a problem on the correspondence between lambda calculus and combinatory logic. *Math. Japon.* **32** (1987), no. 6, 937–945. (Martin W. Bunder) **89b:03028** 03B40  
— (with Sekimoto, Shoji) One-step recurrent terms in  $\lambda$ - $\beta$ -calculus. *Theoret. Comput. Sci.* **56** (1988), no. 2, 223–231. (Simona Ronchi Della Rocca) **89b:68035** 68Q05 (03B40, 68Q50)
- Hirokawa, Sumio** (with Wakuta, Kazuyoshi) Optimum weighing rules for detecting counterfeit coins. (Japanese) *Sūgaku* **39** (1987), no. 3, 281–285. (Teruhisa Nakai) **89a:90153** 90C39 (05A99, 90C50)
- Hironaka, Heisuke** (with Babakhanian, Ari) On the complex Grassmann manifold. *Illinois J. Math.* **33** (1989), no. 1, 170–179. (D. N. Akhiezer) **89m:14028** 14M15 (32C10, 32M10, 57R99)



- see also Algebraic geometry and commutative algebra, 89g:14001 and 89g:14002
- Hironaka, Yumiko** On a denominator of Kitaoka's power series attached to local densities. *Comment. Math. Univ. St. Paul.* 37 (1988), no. 2, 159–171. (Siegfried Böcherer) **89m:11038** 11E95 (11E08, 11L05)
- (with Sata, Fumihiko) Representations of Hecke algebras and symmetric spaces in case of alternating matrices. *Proceedings of the 21st Symposium on Ring Theory (Hiroaki, 1988)*, 43–51, Okayama Univ., Okayama, 1989. (see **89k:16001**) 22E50 (16A42, 16A64, 20G05)
- Hironaka, Eiko** Higher-dimensional Dedekind sums. *Kobe J. Math.* 4 (1988), no. 2, 163–174. (Don Redmond) **89j:11040** 11F20
- Hirota, Ryogo** (with Nakamura, Akira<sup>2</sup>) Exact solutions of the cylindrical Toda molecule equation. *J. Phys. Soc. Japan* 56 (1987), no. 9, 3055–3061. (Alain J. Phares) **89b:35144** 35Q20 (81G99)
- Exact solutions of the spherical Toda molecule equation. *J. Phys. Soc. Japan* 57 (1988), no. 1, 66–70. (Summary) **89d:35157** 35Q20 (81G55)
- Exact solution to 2N-wave interaction. *J. Phys. Soc. Japan* 57 (1988), no. 2, 436–441. (Summary) **89d:35026** 35C05 (35Q20)
- (with Ohta, Yasuhiro; Satsuma, Junkichi) Solutions of the Kadomtsev-Petviashvili equation and the two-dimensional Toda equations. *J. Phys. Soc. Japan* 57 (1988), no. 6, 1901–1904. (Summary) **89i:58049** 58F07 (35Q20)
- (with Ito, Masaaki; Kako, Fujio) Two-dimensional Toda lattice equations. Recent developments in soliton theory. *Progr. Theoret. Phys. Suppl.* No. 94 (1988), 42–58. (Summary) **89k:35211** 35Q20 (58F35)
- (with Ohta, Yasuhiro; Satsuma, Junkichi) Wronskian structures of solutions for soliton equations. Recent developments in soliton theory. *Progr. Theoret. Phys. Suppl.* No. 94 (1988), 59–72. (Summary) **89k:58301** 58G35 (35Q20, 58F07)
- Hirotsu, C.** A class of estimable contrasts in an age-period-cohort model. *Ann. Inst. Statist. Math.* 40 (1988), no. 3, 451–465. (Summary) **89e:62163** 62P10
- Hirsch, F. A.** (with Bouleau, N.) Propriétés d'absolue continuité dans les espaces de Dirichlet et application aux équations différentielles stochastiques. (English summary) [Absolute continuity properties in Dirichlet spaces and an application to stochastic differential equations] *Séminaire de Probabilités, XX*, 1984/85, 131–161, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (David Nualart Rodón) **89f:60060** 60H10 (31C25, 60H07)
- (with Bouleau, N.) Sur des propriétés du flot d'une équation différentielle stochastique. (English summary) [Remarks about the flow of a stochastic differential equation] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 9, 421–424. (Summary) **89a:60140** 60H10 (58D25, 58G32, 60J65)
- Propriété d'absolue continuité pour les équations différentielles stochastiques dépendant du passé. (English summary) [The absolute continuity property for stochastic differential equations with coefficients that depend on the past] *J. Funct. Anal.* 76 (1988), no. 1, 193–216. (Ana Bels Cruzeiro) **89a:60143** 60H10 (28C20, 60H07)
- (with Romanelli, L.; Figliola, M. A.) Deterministic chaos and natural phenomena. *J. Statist. Phys.* 53 (1988), no. 3–4, 991–994. (Not in MR) **58F13**
- Hirsch, Guy** Les mathématiques et les "révolutions scientifiques". (English summary) [Mathematics and "scientific revolutions"] *Bull. Soc. Math. Belg. Sér. A* 37 (1985), no. 1, 19–62. (Jens Høyrup) **89h:00011** 00A25 (01A05, 01A55)
- Hirsch, Kurt August** see Grünberg, K. W. **89j:01061**
- Hirsch, Morris W.** (with Wang, Xiaolu) Foliations of planar regions and CCR  $C^*$  algebras with infinite composition length. *Amer. J. Math.* 109 (1987), no. 5, 797–806. (Thierry Fack) **89c:46073** 46L05 (57R30, 58F11)
- (with Chiang, Hsiao-Dong; Wu, Felix F.) Stability regions of nonlinear autonomous dynamical systems. *IEEE Trans. Automat. Control* 33 (1988), no. 1, 16–27. (P. Talpalaru) **89c:58064** 58F10 (93C10, 93D05)
- Stability and convergence in strongly monotone dynamical systems. *J. Reine Angew. Math.* 383 (1988), 1–53. (W. R. Utz) **89c:58108** 58F25 (47H20)
- A note on the differential equations of Gleick-Lorenz. *Proc. Amer. Math. Soc.* 105 (1989), no. 4, 961–962. (Wei-Min Liu) **89k:58181** 58F13 (34C11)
- Hirschberg, D. S.** (with Hester, J. H.; Larmore, L. L.) Construction of optimal binary split trees in the presence of bounded access probabilities. *J. Algorithms* 9 (1988), no. 2, 245–253. (Summary) **89c:68018** 68P05 (68P10)
- Hirschfeld, J. W. P.** (with Bruen, Aiden A.) Intersections in projective space. II. Pencils of quadrics. *European J. Combin.* 9 (1988), no. 3, 255–270. (J. C. Fisher) **89f:51046** 51E20
- (with Voloch, J. F.) The characterization of elliptic curves over finite fields. *J. Austral. Math. Soc. Ser. A* 45 (1988), no. 2, 275–286. (René Schoof) **89j:14011** 14G15 (51E25)
- Hirschfelder, J. O.** (with Moiseyev, N.) Representation of several complex coordinate methods by similarity transformation operators. *J. Chem. Phys.* 88 (1988), no. 2, 1063–1065. (Summary) **89b:81237** 81F99 (81G99)
- Hirschhorn, M. D.** (with Subbarao, M. V.) On the parity of  $p(n)$ . *Acta Arith.* 50 (1988), no. 4, 355–356. (David M. Bressoud) **89j:11100** 11P57
- A generalisation of the quintuple product identity. *J. Austral. Math. Soc. Ser. A* 44 (1988), no. 1, 42–45. (David M. Bressoud) **89a:05019** 05A19 (11P57, 17B65)
- Hirschorn, E. S.** (with Rawitscher, G. H.) Accurate evaluation of an integral involving the product of two Bessel functions and a Gaussian. *J. Comput. Phys.* 68 (1987), no. 1, 104–126. (J. Kofroň) **89f:65030** 65D30
- Hirschorn, Ronald M.** (with Davis, J. H.) Global output tracking for nonlinear systems. *SIAM J. Control Optim.* 26 (1988), no. 6, 1321–1330. (D. K. Arrowsmith) **89k:93092** 93B50 (93C15)
- see also Kumpera, A. **89c:49029**
- Hirschowitz, André** Problèmes de Brill-Noether en rang supérieur. (English summary) [Brill-Noether problems for higher-rank vector bundles] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 4, 153–156. (H. Lange) **89i:14010** 14F05 (14D20, 32L10)
- Existence de faisceaux réflexifs de rang deux sur  $P^3$  à bonne cohomologie. [Existence of reflexive sheaves of rank two in  $P^3$  with good cohomology] *Inst. Hautes Études Sci. Publ. Math.* No. 56 (1988), 105–137. (Rosa M. Miro-Roig) **89c:14019** 14F05
- (with Hartshorne, Robin) Nouvelles courbes de bon genre dans l'espace projectif. [New curves with good genus in projective space] *Math. Ann.* 280 (1988), no. 3, 353–367. (Rosa M. Miro-Roig) **89d:14043** 14H45 (14F05, 14H50)
- Symétries des surfaces rationnelles génériques. [Symmetries of generic rational surfaces] *Math. Ann.* 281 (1988), no. 2, 255–261. (Werner Kleinert) **89k:14064** 14J26 (14E07, 14J28, 14J50)
- Hirsh, Richard S.** (with Ku, Hwar-C.; Taylor, Thomas D.; Rosenberg, Allan P.) A domain decomposition approach for the computation of incompressible flow by the pseudospectral matrix element method and its parallel implementation. *Domain decomposition methods (Los Angeles, CA, 1988)*, 351–360, SIAM, Philadelphia, PA, 1989. (see **89j:65010**) 76-08
- Hirshleifer, Jack** The analytics of continuing conflict. Formal analysis in international relations. *Synthese* 76 (1988), no. 2, 201–233. (see **89c:90218**) 90D40 (90A30, 90D45, 92A90)
- Hirshon, Ron** Some properties of direct products. *J. Algebra* 115 (1988), no. 2, 352–365. (A. H. M. Hoare) **89i:20056** 20E99
- Hirst, Anthony C.** Slow instabilities in tropical ocean basin—global atmosphere models. *J. Atmospheric Sci.* 45 (1988), no. 5, 830–852. (Summary) **89f:86002** 86A05 (86A35)
- Hirt, Walter** (with Massey, James L.) Capacity of the discrete-time Gaussian channel with intersymbol interference. *IEEE Trans. Inform. Theory* 34 (1988), no. 3, 380–388. (Alexander M. Barg) **89i:94026** 94A40
- Hirzebruch, Friedrich** (with Barthel, Gottfried; Höfer, Thomas) ★ Gradenkongfigurationen und Algebraische Flächen. (German) [Line configurations and algebraic surfaces] Aspects of Mathematics, D4. Friedr. Vieweg & Sohn, Braunschweig, 1987. xii+308 pp. ISBN 3-528-08907-5 (Hélène Esnault) **89a:14045** 14J29 (14J25)
- ★ Gesammelte Abhandlungen. Band I, II. (German) [Collected papers. Vol. I, II] 1951–1962, 1963–1987. Springer-Verlag, Berlin-New York, 1987. Vol. I: viii+814 pp; Vol. II: iv+818 pp. ISBN 3-540-18087-7 (W. D. Neumann) **89h:01106** 01A75
- Hirzebruch, U.** Ein Einfachheitskriterium für nicht-assoziative Algebren. (English summary) [A simplicity criterion for nonassociative algebras] *Nederl. Akad. Wetensch. Indag. Math.* 49 (1987), no. 4, 393–396. (Arie H. Boers) **89c:17002** 17A01 (17A60)
- Hiscock, William A.** (with Lindblom, Lee) Stability in dissipative relativistic fluid theories. *Mathematics and general relativity (Santa Cruz, CA, 1986)*, 181–220, *Contemp. Math.*, 71, Amer. Math. Soc., Providence, RI, 1988. (Philippe-A. Dionne) **89i:83044** 83C55 (76E99, 76Y05)
- General relativistic fluid spheres with nonzero vacuum energy density. *J. Math. Phys.* 29 (1988), no. 2, 443–445. (B. K. Datta) **89g:83030** 83C55
- Hisdal, Ellen** Are grades of membership probabilities? Interpretations of grades of membership. *Fuzzy Sets and Systems* 25 (1988), no. 3, 325–348. (László T. Kóczy) **89j:03019** 03B52 (03E72, 62P99, 68T05)
- The philosophical issues raised by fuzzy set theory. Interpretations of grades of membership. *Fuzzy Sets and Systems* 25 (1988), no. 3, 349–356. (Summary) **89a:03011** 03A05 (00A25, 03E72)
- Hislop, Peter D.** (with Sigal, Israel M.) Shape resonances in quantum mechanics. *Differential equations and mathematical physics (Birmingham, Ala., 1986)*, 180–196, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Helge Holden) **89b:81044** 81C10 (35J10, 81C12)
- (with De Bièvre, S.) Spectral resonances for the Laplace-Beltrami operator. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* 48 (1988), no. 2, 105–145. (Anne-Marie Charbonnel) **89m:58206** 58G25 (11F72, 47F05)
- Conformal covariance, modular structure, and duality for local algebras in free massless quantum field theories. *Ann. Physics* 185 (1988), no. 2, 193–230. (Erwin Brüning) **89j:81088** 81E05 (22E45, 46L60)
- (with Crawford, John David) Vlasov equation on a symplectic leaf. *Phys. Lett. A* 134 (1988), no. 1, 19–24. (D. ter Haar) **89k:58086** 58F05 (35Q20, 82A45)
- Hiss, Gerhard** (with Lux, Klaus) The Brauer characters of the Hall-Janko group. *Comm. Algebra* 16 (1988), no. 2, 357–398. (Karin Erdmann) **89d:20011** 20C20
- Hitchcock, Mavis** The origin and growth of the Applied Probability Trust. A celebration of applied probability. *J. Appl. Probab.* 1988, Special Vol. 25A, 47–64. (Summary) **89m:01134** 01A74
- Hitchin, Nigel** ★ Monopoles, minimal surfaces and algebraic curves. Séminaire de Mathématiques Supérieures [Seminar on Higher Mathematics], 105. Presses de l'Université de Montréal, Montréal, PQ, 1987. 94 pp. ISBN 2-7606-0801-8 (Mitsuihito Itoh) **89h:58043** 58E15 (32L10, 53C80, 58D15, 58F05, 81E13)
- The self-duality equations on a Riemann surface. *Proc. London Math. Soc.* (3) 55 (1987), no. 1, 59–126. (Mitsuihito Itoh) **89a:32021** 32G13 (14F05, 14H15, 32L10, 53C05, 58E99, 81E13)
- (with Atiyah, Michael) ★ The geometry and dynamics of magnetic monopoles. M. B. Porter Lectures. Princeton University Press, Princeton, NJ, 1988. viii+134 pp. ISBN 0-691-08480-7 (G. M. Khenkin) **89k:53067** 53C80 (32L10, 53C05, 58E15, 58F07, 58G30, 81E13)
- (with Murray, M. K.) Spectral curves and the ADHM method. *Comm. Math. Phys.* 114 (1988), no. 3, 463–474. (Henrik Pedersen) **89f:53105** 53C80 (32L10, 81F10)
- Hite, G. E.** (with Seitz, W. A.; Schmalz, T. G.; Klein, D. J.) Resonance in poly-polyphenanthenes: a transfer matrix approach. *Graph theory and topology in chemistry (Athens, Ga., 1987)*, 458–465, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (see **89b:92038**) 92A40
- (with Seitz, W. A.; Klein, D. J.) Interacting dimers on a Sierpiński gasket. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* 19 (1988), no. 1–3, 339–348. (H. N. V. Temperley) **89c:82063** 82A67 (05C10)
- Hiotomatsu, Sin** (with Park, Bong-kyu) A study on new Muller's method. *Publ. Res. Inst. Math. Sci.* 23 (1987), no. 4, 667–672. (Michel Cosnard) **89a:65085** 65H05
- (with Park, Bong-kyu) A new method using the circles of curvature for solving equations in  $R^1$ . *Publ. Res. Inst. Math. Sci.* 24 (1988), no. 2, 249–252. (Summary) **89d:65053** 65H05
- Hittmair, O.** Schrödinger's unified field theory seen 40 years later. *Schrödinger (London, 1987)*, 165–175, *Cambridge Univ. Press, Cambridge-New York, 1987*. (see **89m:01069**) 83-03 (01A60, 83E10)
- see also Radon, Johann. **89i:01142a**
- Hjort, N. L.** (with Quinn, B. G.; McLachlan, Geoffrey J.) A note on the Aitkin-Rubin approach to hypothesis testing in mixture models. *J. Roy. Statist. Soc. Ser. B* 49 (1987), no. 3, 311–314. (Summary) **89g:62032** 62F03 (62F05)
- Hjorth, P. G.** (with Teuber, J.) Inertia in Friedmann cosmologies. (Italian and Russian summaries) *Nuovo Cimento B* (11) 97 (1987), no. 2, 131–140. (Colin B. G. McIntosh) **89a:83071** 83F05

- Hladík, Arnošt** (with Brdička, Miroslav) ★ Teoretická mechanika. (Czech) [Theoretical mechanics] Academia [Publishing House of the Czechoslovak Academy of Sciences], Prague, 1987. 583 pp. (Jiri Nedoma) **89c:70002** 70-02
- Hladnik, Milan** When are generalized derivations spectral? *Operators in indefinite metric spaces, scattering theory and other topics* (Bucharest, 1985), 215-226. *Oper. Theory. Adv. Appl.*, 24, Birkhäuser, Basel-Boston, MA, 1987. (T. A. Gillespie) **89a:47050** 47B40 (47B10, 47B47)
- Hlaváček, I.** Weight minimization of an elastic beam with classical and nonclassical boundary conditions. (German and Russian summaries) *Z. Angew. Math. Mech.* **67** (1987), no. 8, 373-383. (Vadim Komkov) **89b:73029** 73K40 (49A22, 93C75)
- (with Haslinger, J.; Nečas, Jindřich; Lovisek, J.) ★ Solution of variational inequalities in mechanics. Translated from the Slovak by J. Jarník. *Applied Mathematical Sciences*, 66. Springer-Verlag, New York-Berlin, 1988. x+275 pp. ISBN 0-387-96597-1 (Petr Procházka) **89f:73003** 73-02 (35-02, 49A29, 73C60, 73Exx, 73T05)
- Shape optimization of elastoplastic bodies by the finite element method. *The mathematics of finite elements and applications*, VI (Uxbridge, 1987), 75-81. Academic Press, London-New York, 1988. (Introduction) **89f:73059** 73K40 (73E99, 73K25)
- Domain optimization in axisymmetric elliptic boundary value problems by finite elements. (Russian and Czech summaries) *Appl. Mat.* **33** (1988), no. 3, 213-244. (C. Ilíoi) **89f:65123** 65N30 (49A22, 49D25)
- Hlavatý, Ladislav** Painlevé analysis of nonautonomous evolution equations. *Phys. Lett. A* **128** (1988), no. 6-7, 335-338. (Summary) **89c:35133** 35Q20 (58G37)
- Hlawatsch, F.** (with Flandrín, P.) Signal representations geometry and catastrophes in the time-frequency plane. *Mathematics in signal processing* (Bath, 1985), 3-14. *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (Zdeněk Ertinger) **89c:94007** 94A05 (58C28)
- Hlawka, Edmund** Über die geometrische Reihe von E. Hecke. [On the geometric series of E. Hecke] *Acta Arith.* **49** (1987), no. 2, 113-125. (Gerold S. Wagner) **89c:11115** 11K06 (11R42)
- Eine Anwendung diophantischer Approximationen auf die Theorie von Differentialgleichungen. [An application of Diophantine approximations to the theory of differential equations] *Aequationes Math.* **35** (1988), no. 2-3, 232-253. (P. Bundschuh) **89h:11034** 11T71 (34A45)
- On a class of multiple Lambert series. *J. Math. Phys. Sci.* **22** (1988), no. 1, 45-66. (L. Kuipers) **89h:11004** 11A25
- see also Radon, Johann, **89i:01142a** and **89i:01142b**
- Hlousek, Zvonimir** (with Shertzer, Janine) On the stability of the Skyrme-model soliton with unit Hopf charge. *Phys. Rev. D* (3) **37** (1988), no. 5, 1279-1284. (Jürgen Burzlaff) **89d:81060** 81E13
- New formulas for the arbitrary four-point amplitudes in open-string theory. *Phys. Rev. D* (3) **38** (1988), no. 6, 1847-1852. (Summary) **89h:81193** 81E99 (81E30)
- Hlynka, M.** (with Sheahan, J. N.) The secretary problem for a random walk. *Stochastic Process. Appl.* **28** (1988), no. 2, 317-325. (Aart J. Stam) **89g:90231** 90C40 (60G40, 60J15, 90C15)
- Hmamed, A.** A matrix inequality. *Internat. J. Control* **49** (1989), no. 1, 363-365. (Not in MR) **15A39** (93B25)
- nguyen cat Ho** see **Nguyen Cat Ho**
- Ho, Chat Yin** On the order of a projective plane and planes with a totally irregular collineation group. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 423-429. *Proc. Sympos. Pure Math.*, 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (D. W. Erbach) **89g:20004** 20B25 (51E15)
- (with Gonçalves, Adilson) On PSU(3, q) as collineation groups. *J. Algebra* **111** (1987), no. 1, 1-13. (D. W. Erbach) **89a:51018** 51E15 (20B25)
- Projective planes of order 15 and other odd composite orders. *Geom. Dedicata* **27** (1988), no. 1, 49-64. (Ferenc Wettl) **89f:51039** 51E15 (05B25, 20B25)
- A new 7-local subgroup of the Monster. *J. Algebra* **115** (1988), no. 2, 513-520. (Geoffrey Mason) **89h:20026** 20D08
- (with Drake, David A.) Projective extensions of Kirkman systems as substructures of projective planes. *J. Combin. Theory Ser. A* **48** (1988), no. 2, 197-208. (Chester J. Salwach) **89i:51010** 51E15 (05B25)
- Ho, Chin Wen** (with Lee, Richard C. T.) Efficient parallel algorithms for finding maximal cliques, clique trees, and minimum coloring on chordal graphs. *Inform. Process. Lett.* **28** (1988), no. 6, 301-309. (G. Berman) **89c:68055** 68Q20 (05C35, 68R10)
- Ho, Ching-Tien** (with Johnsson, S. Lennart) Algorithms for matrix transposition on Boolean N-cube configured ensemble architectures. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 3, 419-454. (Bruno Codenotti) **89h:68045** 68Q10 (65W05, 68Q25)
- Ho, Choon Lin** (with Hosotani, Yutaka) Field theory of geometric membranes. *Phys. Rev. Lett.* **60** (1988), no. 10, 885-888. (Summary) **89c:81129** 81E99 (81E30)
- Ho, D.** (with Grimble, M. J.; De La Salle, S.) Relationship between internal model control and LQG controller structures. *Automatica—J. IFAC* **25** (1989), no. 1, 41-53. (Summary) **89k:93090** 93B50 (93B35, 93E11)
- Ho, Dal Yun** (with Lyu, Chung Ho) On some properties of antisymmetric connection. (Korean. English summary) *Cho-sŏn In-min Kong-hwa-kuk Kwa-hak-wŏn T'ong-bo* **1987**, no. 5, 3-5. (H. S. Park) **89f:53015** 53B05
- Ho, James K.** (with Lee, Tak C.; Sundarraj, R. P.) Decomposition of linear programs using parallel computation. *Math. Programming* **42** (1988), no. 2 (Ser. B), 391-405. (Summary) **89k:90098** 90C05 (68Q10)
- (with McKenney, William A.) Triangularity of the basis in linear programs for material requirements planning. *Oper. Res. Lett.* **7** (1988), no. 6, 273-278. (Not in MR) **90C05**
- Ho, Lop Fat** Spectral assignability of systems with scalar control and application to a degenerate hyperbolic system. *SIAM J. Control Optim.* **24** (1986), no. 6, 1212-1231. (Summary) **89b:93060** 93B55 (93B05, 93B60, 93C25)
- Exact controllability of second order hyperbolic systems with control in the Dirichlet boundary conditions. *J. Math. Pures Appl.* (9) **66** (1987), no. 4, 363-368. (Lin Huang) **89b:93021** 93B05 (35L99, 49E15, 93B07, 93C20)
- Ho, Paul K. M.** (with McLane, Peter J.) Spectrum, distance, and receiver complexity of encoded continuous phase modulation. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part 1, 1021-1032. (Not in MR) **94A14**
- Ho, Tin-Lun** (with Rabson, David A.; Mermin, N. David) Aperiodic tilings with nonsym-morphic space groups  $p2/gm$ . *Acta Cryst. Sect. A* **44** (1988), no. 5, 678-688. (Vojtěch Kopský) **89k:52017** 52A45 (20H15, 82A57, 82A60)
- Ho, W. C.** (with Fletcher, L. R.) Perturbation theory of output feedback pole assignment. *Internat. J. Control* **48** (1988), no. 3, 1075-1088. (Vicente Hernández) **89k:93112** 93B60 (93B35, 93B55)
- Ho, Yin** (with Rizvi, S. M.; White, Albert George, Jr.) Weak 2-norms and 2-inner products. *Math. Japon.* **32** (1987), no. 4, 643-648. (P. K. Subramanian) **89a:46027** 46A99 (46C99)
- Ho, Yu-Chi** Perturbation analysis of discrete event dynamical systems. (Chinese) *Chinese J. Oper. Res.* **4** (1985), no. 2, 24-28. (Not in MR) **90B22** (90B15)
- (with Li, Shu) Extensions of infinitesimal perturbation analysis. *IEEE Trans. Automat. Control* **33** (1988), no. 5, 427-438. (Summary) **89k:93116** 93E20 (49B50, 93B35)
- Perturbation analysis explained. *IEEE Trans. Automat. Control* **33** (1988), no. 8, 761-763. (Not in MR) **49D07**
- (with Li, Shu; Vakili, Pirooz) On the efficient generation of discrete event sample paths under different system parameter values. *Math. Comput. Simulation* **30** (1988), no. 4, 347-370. (Brian Conolly) **89j:68153** 68U20 (65C10, 65U05, 90B35)
- Ho, Yuan Chuan** (with Franco, John) Probabilistic performance of a heuristic for the satisfiability problem. *Discrete Appl. Math.* **22** (1988/89), no. 1, 35-51. (F. Sziardorvsky) **89j:03032** 03D15 (03B05, 03B35, 68Q20)
- nguyen dinh Hoa** see **Nguyen Dinh Hoa**
- Hoag, John** (with Neumann, Dean; O'Brien, Thomas; Kim, Kyoo) Policy functions for capital accumulation paths. *J. Econom. Theory* **46** (1988), no. 1, 205-214. (V. V. Obukhovskii) **89j:90068** 90A16
- Hoang, C. T.** (with Reed, B. A.) A note on short cycles in digraphs. *Discrete Math.* **66** (1987), no. 1-2, 103-107. (L. Caccetta) **89a:05072** 05C20 (05C38, 90B10)
- (with Reed, B. A.)  $P_2$ -comparability graphs. Graph colouring and variations. *Discrete Math.* **74** (1989), no. 1-2, 173-200. (Alan Tucker) **89m:05098** 05C75 (05C15, 68Q20, 68R10)
- (with Maffray, F.) Opposition graphs are strict quasi-parity graphs. *Graphs Combin.* **5** (1989), no. 1, 83-85. (Alan Tucker) **89m:05097** 05C75 (05C15)
- Hoang-Dinh Dung** Formulas for the inversion of integral representations of some  $p$ -analytic functions and for their application. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 2, 324-335, 366; translation in *Differential Equations* **24** (1988), no. 2, 248-257. (Wazir Hasan Abdi) **89i:30055** 30G20
- Hoang Hô'u Dư'ông** (with Nguyen Van Minh) Local models of the greatest characteristic exponent of differential equations depending on parameters. *Acta Math. Vietnam.* **12** (1987), no. 1, 3-15. (Henk Broer) **89d:58068** 58F10 (58C27)
- (with Ton Quoc Binh) Generic properties of characteristic vectors. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 12, 2173-2175, 2208. (Summary) **89c:58101** 58F19
- Hoang Lê Minh** Singularities of the complex-analytic solutions of the self-dual Yang-Mills equations. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 3(261), 197-198; translation in *Russian Math. Surveys* **43** (1988), no. 3, 207-208. (From the text) **89m:32052** 32L25 (14F05)
- Hoang Tuy** Minimizing a convex function over a nonconvex set. *XI symposium on operations research* (Darmstadt, 1986), 61-72. *Methods Oper. Res.*, 57, Athenäum/Hain/Hanstein, Königstein/Ts., 1987. (Michel Théra) **89f:90116** 90C25
- An implicit space covering method with applications to fixed point and global optimization problems. *Acta Math. Vietnam.* **12** (1987), no. 2, 93-102. (C. A. Botaris) **89k:90179** 90C48 (65J15)
- (with Khachaturov, V.; Utikin, S. L.) A class of exhaustive cone splitting procedures in conical algorithms for concave minimization. *Optimization* **18** (1987), no. 6, 791-807. (Kaj Madsen) **89c:65062** 65K05 (90C25)
- (with Horst, Reiner; Nguyen Van Thoai) Outer approximation by polyhedral convex sets. (German summary) *OR Spektrum* **9** (1987), no. 3, 153-159. (Summary) **89m:90141** 90C30
- (with Nguyen Van Thuong) On the global minimization of a convex function under general nonconvex constraints. *Appl. Math. Optim.* **18** (1988), no. 2, 119-142. (Juan-Enrique Martínez-Legaz) **89j:90222** 90C30 (49D37, 65K05)
- (with Horst, Reiner) Convergence and restart in branch-and-bound algorithms for global optimization. Application to concave minimization and D.C. optimization problems. *Math. Programming* **41** (1988), no. 2 (Ser. A), 161-183. (J. Mockus) **89m:90140** 90C30 (90C25)
- (with Phan Thiên Thạch) Parametric approach to a class of nonconvex global optimization problems. *Optimization* **19** (1988), no. 1, 3-11. (Alexander Shapiro) **89k:90192** 90C30
- (with Utikin, S. L.; Khachaturov, V. R.) Conical algorithms for solving the concave programming problem and some of its generalizations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 7, 992-999, 1117. (S. Zlobec) **89k:90148** 90C30
- see also Phan-Dinh Diêu et al., **89j:01062** and **Bibliography: Hoang Tuy, 89j:01069**
- Hoàng Văn Lai** Exact bounds for derivatives of classical solution of Cauchy's problem for a quasilinear equation. *Acta Math. Vietnam.* **12** (1987), no. 2, 61-72. (Zvonimir Tutek) **89m:35033** 35B45 (35L65)
- Hoàng Văn Tao** The method of the small parameter in problems on the collapse of a dam. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 4, 105-107, 112-113. (Summary) **89c:76041** 76B99 (35Q99, 86A05)
- Hoàng Xuân Phú** Zur Lösung des linearisierten Knickstab-Problems mit beschränkter Ausbiegung. (English and Russian summaries) [On the solution of the linearized buckling-rod problem with restricted bending] *Z. Anal. Anwendungen* **6** (1987), no. 4, 371-384. (P. P. Teodorescu) **89c:73037** 73H05 (49B10, 93C05, 93C15)
- Solution of some high-dimensional linear optimal control problems by the method of region-analysis. *Internat. J. Control* **47** (1988), no. 2, 493-518. (Summary) **89k:93113** 93C05 (90B05)
- Linear optimal control problem of a system with circuit-free graph structure. *Internat. J. Control* **48** (1988), no. 5, 1867-1882. (Ton Geerts) **89m:49035** 49B10 (05C20, 93C05, 93C75)
- Hoare, A. H. M.** Pseudogroups and length functions. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 1, 21-30. (Roger C. Alperin) **89c:20048** 20E99 (20F32)
- Hoare, C. A. R.** ★ Communicating sequential processes. With a foreword by Edsger W. Dijkstra. Prentice-Hall International Series in Computer Science. Prentice-Hall



- International, Englewood Cliffs, NJ-London, 1985. 256 pp. ISBN 0-13-153271-5 (Ryszard Janicki) **89b:68003** 68-02 (68Q05, 68Q10)
- Algebraic specifications and proofs for communicating sequential processes. *Logic of programming and calculi of discrete design* (Marktoberdorf, 1986), 277–300. NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 36, Springer, Berlin-New York, 1987. (T. Müldner) **89c:68030** 68Q10 (03B70)
  - (with Roscoe, A. W.) The laws of Occam programming. *Theoret. Comput. Sci.* **60** (1988), no. 2, 177–229. (W. Richard Stark) **89j:68051** 68Q10 (68N05, 68Q55, 68Q60)
  - ★ Взаимодействующие последовательные процессы. (Russian) [Communicating sequential processes] Translated from the English by A. A. Bul'fonkova. Translation edited and with a foreword by A. P. Ershov. "Mir", Moscow, 1989. 264 pp. ISBN 5-03-001043-2 (Editors) **89k:68001** 68-02 (68Q10)
- Hoare, M. R. (with Rahman, Mizan) Cumulative hypergeometric processes: a statistical role for the  $F_{\infty-1}$  functions. *J. Math. Anal. Appl.* **135** (1988), no. 2, 615–626. (Javad Behboodani) **89k:62018** 62E15 (26A30, 33A30)
- Hobbes, Thomas *see* Schaffer, Simon, **89i:01031**
- Hobby, C. (with Allen, P. J.) A characterization of units in  $ZS_n$ . *Comm. Algebra* **16** (1988), no. 7, 1479–1505. (S. K. Sehgal) **89g:20005** 20C05 (16A26)
- Hobby, David (with McKenzie, Ralph) ★ The structure of finite algebras. *Contemporary Mathematics*, 76. American Mathematical Society, Providence, RI, 1988. xii+203 pp. ISBN 0-8218-5073-3 (Joel Berman) **89m:08001** 08A05 (03C05, 08-02, 08B05)
- Finite fixed point algebras are subdiagonalisable. *Algebra Universalis* **25** (1988), no. 2, 210–222. (Wojciech Dziuk) **89k:03114** 03G25 (06E99)
- Hobill, D. W. (with Anderson, James L.) Matched analytic-numerical solutions of wave equations. *Dynamical spacetimes and numerical relativity* (Philadelphia, PA, 1985), 389–410. Cambridge Univ. Press, Cambridge-New York, 1986. (Philippe-A. Dionne) **89g:83005** 83C05 (83-08)
- Hoch, P. K. (with Yoxen, E. J.) Schrödinger at Oxford: a hypothetical national cultural synthesis which failed. *Ann. of Sci.* **44** (1987), no. 6, 593–616. (A. S. Wightman) **89a:01063** 01A70 (01A60, 01A73)
- Hochbaum, Dorit S. The concept of best possibility in the analysis of approximation algorithms. *Proceedings of the Israel Mathematical Union Conference* (Tel Aviv, 1987), 36–44. Tel Aviv Univ., Tel Aviv, 1987. (Aurel Galántai) **89j:65017** 65D15
- (with Maass, Wolfgang) Fast approximation algorithms for a nonconvex covering problem. *J. Algorithms* **8** (1987), no. 3, 305–323. (Uwe Zimmermann) **89f:90097** 90C10 (68Q25)
  - (with Shmoys, David B.) Using dual approximation algorithms for scheduling problems: theoretical and practical results. *J. Assoc. Comput. Mach.* **34** (1987), no. 1, 144–162. (Summary) **89d:90117** 90B35
  - (with Shmoys, David B.) A polynomial approximation scheme for scheduling on uniform processors: using the dual approximation approach. *SIAM J. Comput.* **17** (1988), no. 3, 539–551. (Jan Weglarz) **89f:68053** 68R05 (68N25, 68Q25, 90B35)
- Hochberg, Herbert Quantification, description, and identity. *Analysis* (Oxford) **47** (1987), no. 2, 87–92. (Henry Africk) **89b:03015** 03B10 (03A05)
- Hochberg, Yosef (with Tamhane, Ajit C.) ★ Multiple comparison procedures. Wiley Series in Probability and Mathematical Statistics: Applied Probability and Statistics. John Wiley & Sons, Inc., New York, 1987. xxiv+450 pp. ISBN 0-471-82222-1 (Dennis O. Dixon) **89c:62125** 62J15
- (with Conforti, Michele) Sequentially rejective pairwise testing procedures. *J. Statist. Plann. Inference* **17** (1987), no. 2, 193–208. (René Flagny) **89c:62124** 62J15
- Hochheim, York (with Timmesfeld, Franz) A note on TI-subgroups. *Arch. Math. (Basel)* **51** (1988), no. 2, 97–103. (Koichiro Harada) **89h:20024** 20D05
- Hochstadt, Harry (with Goldberg, Wallace) Hill's matrices with some vanishing instability intervals. *Linear Algebra Appl.* **97** (1987), 121–126. (Bryan E. Cain) **89g:15030** 15A57 (15A18)
- Hochstein-Kind, Maria Existence and uniqueness of global solutions for wave equations with scalar nonlinearities. (German summary) *Z. Angew. Math. Phys.* **39** (1988), no. 5, 753–755. (Sergiu Aizicovici) **89j:34092** 34G20 (35L70, 47H15)
- Hochster, Melvin Intersection problems and Cohen-Macaulay modules. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 491–501. *Proc. Sympos. Pure Math.*, 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Matthew Miller) **89b:13022** 13C15 (13D25, 13H10, 14C17)
- (with Huneke, Craig) Tightly closed ideals. *Bull. Amer. Math. Soc. (N.S.)* **18** (1988), no. 1, 45–48. (Matthew Miller) **89b:13003** 13A15 (13H10, 14B12)
- Hochwald, Scott H. (with Morrel, Bernard B.) Some consequences of left invertibility. *Proc. Amer. Math. Soc.* **100** (1987), no. 1, 109–110. (Summary) **89a:46105** 46H05
- Hock, J. L. (with McQuistan, R. B.) The shift operator matrix method applied to the two-dimensional nearest and next nearest neighbor problem. *J. Math. Chem.* **2** (1988), no. 1, 49–68. (H. N. V. Temperley) **89b:82114** 82A68
- Höck, K.-H. (with Hackenbrach, D.; Jordan, P.; Thomas, Harry) Degenerate Hopf bifurcation in the presence of symmetry. *Phys. D* **27** (1987), no. 3, 338–356. (Bernold Fiedler) **89b:58145** 58F14
- Hockett, Kevin (with Holmes, Philip) Bifurcation to rotating Cantor sets in maps of the circle. *Nonlinearity* **1** (1988), no. 4, 603–616. (Leo Jonker) **89k:58242** 58F22 (58F14)
- (with Holmes, Philip) Bifurcation to badly ordered orbits in one-parameter families of circle maps, or angels fallen from the devil's staircase. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 1031–1051. (J. Angel Rodriguez) **89g:58105** 58F08 (58F14)
- Hocking, G. C. Infinite Frobenius number solutions to the problem of a submerged source or sink. *J. Austral. Math. Soc. Ser. B* **29** (1988), no. 4, 401–409. (Summary) **89c:76026** 76B10
- Hocking, R. R. A cell means analysis of mixed linear models. *Comm. Statist. Theory Methods* **17** (1988), no. 4, 983–1010. (Not in MR) **62J10**
- Hocquemiller, J. (with Weil, Juergen W.; Allouch, D.; Mézard, A.; Vaillant, J.-C.; Delorme, C.; Lavit, Christine; Raoult, J.-C.) ★ Rozpracovaná řešení úloh z vyšší algebry. (Czech) [Worked-out solutions for exercises in higher algebra] Translated from the French and with a preface by Ladislav Beran. Academia [Publishing House of the Czechoslovak Academy of Sciences], Prague, 1987. 653 pp. (Editors) **89i:00014** 00A07 (00A05)
- Hodel, R. E. Ultrafilters, independent collections, and applications to topology. *Topology Appl.* **28** (1988), no. 3, 181–193. (Peter Vojtáš) **89c:54007** 54A25
- Hodgdon, Marion L. (with Coleman, Bernard D.) A theory of shear bands. *Constitutive models of deformation* (Blacksburg, VA, 1986), 27–36. SIAM, Philadelphia, PA, 1987. (see **89f:73004**) **73E99**
- Hodges, Andrew ★ Alan Turing: the enigma. A Touchstone Book. Simon & Schuster, New York, 1983. x+588 pp. ISBN 0-671-52809-2 (Editors) **89i:01082** 01A70 (03-03)
- Hodges, Hardy M. (with Hill, Christopher T.; Turner, Michael S.) Bosonic superconducting cosmic strings. *Phys. Rev. D* (3) **37** (1988), no. 2, 263–282. (Miao Li) **89f:83116** 83F05 (81G25)
- Hodges, Timothy J. A noncommutative Bass-Tate sequence. *Bull. Soc. Math. Belg. Ser. B* **39** (1987), no. 3, 255–257. (L. N. Vaserstein) **89c:18012** 18F25 (16A14, 16A54, 19D25, 19D45)
- Hodges, Wilfrid (with Doner, John) Alfred Tarski and decidable theories. *J. Symbolic Logic* **53** (1988), no. 1, 20–35. (J. M. Plotkin (Zbl 647:03001)) **89j:01048** 01A60 (01A70, 03-03, 03B25)
- Hodgkin, Luke A direct calculation of super-Teichmüller space. *Lett. Math. Phys.* **14** (1987), no. 1, 47–53. (Pankaj Topiwala) **89c:32065** 32G15 (58A50)
- On metrics and super-Riemann surfaces. *Lett. Math. Phys.* **14** (1987), no. 2, 177–184. (Pankaj Topiwala) **89c:58013** 58A50 (32G15)
  - Super Teichmüller spaces: punctures and elliptic points. *Lett. Math. Phys.* **15** (1988), no. 2, 159–163. (Jeffrey M. Rabin) **89m:32039** 32G15 (22E40, 30F35, 58A50, 81E30, 83E30)
- Hodgson, R. J. W. Precise shooting methods for the Schrödinger equation. *J. Phys. A* **21** (1988), no. 3, 679–683. (Ernest R. Davidson) **89d:81003** 81-08 (34A50, 65L99, 81C05)
- High-precision calculation of the eigenvalues for the  $x^2 + \lambda x^2/(1 + g x^2)$  potential. *J. Phys. A* **21** (1988), no. 7, 1563–1570. (Summary) **89c:81030** 81C15 (81-04)
  - Generating phase-equivalent potentials. *J. Phys. A* **21** (1988), no. 24, 4557–4563. (Summary) **89j:81235** 81F05 (81-04)
- el-Hodiri, Mohamed *see* El-Hodiri, Mohamed
- Hodkinson, I. M. (with Macpherson, H. D.) Relational structures determined by their finite induced substructures. *J. Symbolic Logic* **53** (1988), no. 1, 222–230. (G. Fuhrken) **89c:03047** 03C35 (03C15)
- Hodoshima, Jiro The class of BAN estimators of a single structural equation with structural change. *Econom. Lett.* **25** (1987), no. 4, 339–344. (Summary) **89b:62222** 62P20
- Estimation of a single structural equation with structural change. *Econometric Theory* **4** (1988), no. 1, 86–96. (Peter M. Robinson) **89j:62147** 62P20
- Hoechsman, Klaus (with Ritter, Jürgen) Logarithms and units in  $p$ -adic abelian group rings. *Arch. Math. (Basel)* **49** (1987), no. 1, 23–28. (Ulrich Rehmann) **89b:11097** 11S23 (16A26, 20C07)
- Units and class-groups in integral elementary abelian group rings. *J. Pure Appl. Algebra* **47** (1987), no. 3, 253–264. (S. K. Sehgal) **89b:16007** 16A26 (20C05)
  - Norms and traces in  $p$ -adic abelian group rings. *Arch. Math. (Basel)* **51** (1988), no. 1, 50–54. (S. K. Sehgal) **89g:20007** 20C05 (16A26)
  - (with Sehgal, Sudarshan K.) Units in regular abelian  $p$ -group rings. *J. Number Theory* **30** (1988), no. 3, 375–381. (Jürgen Ritter (Zbl 654:16006)) **89m:11105** 11R33 (20C05)
- Hoede, Cornelis Crystallization: a new type of heuristic for the traveling salesman problem and other combinatorial optimization problems. Eleventh British Combinatorial Conference (London, 1987). *Discrete Math.* **25** (1988), B, 115–131. (Peter J. M. van Laarhoven) **89h:90187** 90C27 (90B10)
- Hoegh-Krohn, R. (with Alberverio, S.; Gesztesy, F.; Holden, Helge) Point interactions in two dimensions: basic properties, approximations and applications to solid state physics. *J. Reine Angew. Math.* **380** (1987), 87–107. (Arne Jensen) **89d:81026** 81C10 (35P25, 35Q20, 47F05)
- (with Alberverio, S.; Holden, Helge) Stochastic multiplicative measures, generalized Markov semigroups, and group-valued stochastic processes and fields. *J. Funct. Anal.* **78** (1988), no. 1, 154–184. (Summary) **89k:60055** 60G20 (46N05, 47D05, 60H99, 60J30)
  - (with Alberverio, S.) Construction of interacting local relativistic quantum fields in four spacetime dimensions. *Phys. Lett. B* **200** (1988), no. 1–2, 108–114. (Gerhard C. Hegerfeldt) **89f:81089a** 81E08
  - (with Alberverio, S.) Erratum: "Construction of interacting local relativistic quantum fields in four spacetime dimensions". *Phys. Lett. B* **202** (1988), no. 4, 620. (Gerhard C. Hegerfeldt) **89f:81089b** 81E08
- Hoehn, Larry Some properties of polygons inside a circle. *College Math. J.* **18** (1987), no. 5, 397–401. (H. W. Guggenheimer) **89a:51044** 51M05
- Hoehnke, Hans-Jürgen Algebraic problems of Brandt's symbolics. *Algebra-Tagung Halle 1986*, 103–139. *Wissensch. Beitr.*, 33, Martin-Luther-Universität Halle-Wittenberg, Halle (Saale), 1987. (Kimmo I. Rosenthal) **89b:18009** 18C99 (11E99, 18D35, 20N10)
- 66 years of Brandt's groupoid—supplements and corrections: *Heinrich Brandt: 1886–1986* [Martin-Luther-Universität Halle-Wittenberg, Halle (Saale), 1986; MR 88f:01041] (German) *Algebra-Tagung Halle 1986*, 253–256. *Wissensch. Beitr.*, 33, Martin-Luther-Universität Halle-Wittenberg, Halle (Saale), 1987. (G. Frei-Imfeld) **89c:01045** 01A70 (01A60)
- Hoekzema, Dick Locality and realism in contextual theories. *Found. Phys.* **17** (1987), no. 8, 787–797. (Summary) **89g:81005** 81B05
- Hoem, Jan M. (with Linnemann, Per) The tails in moving average graduation. *Scand. Actuar. J.* **1988**, no. 4, 193–229. (Not in MR) **62P05**
- Hoenselaers, Cornelius A note on the Weyl solutions. *Classical Quantum Gravity* **5** (1988), no. 7, 1045–1050. (Jorge A. Pullin) **89k:83017** 83C15
- Equations admitting  $O(2, 1) \otimes R(t, t^{-1})$  as a prolongation algebra. *J. Phys. A* **21** (1988), no. 1, 17–31. (C. Rogers) **89c:58121** 58G35 (35Q20, 58A15, 58G37)
  - (with Skea, James E. F.) Generating solutions of Einstein's field equations by typing mistakes. *Gen. Relativity Gravitation* **21** (1989), no. 1, 17–20. (Nora Bretón Báez) **89m:83017** 83C15 (83-04)
- van den Hof, Paul M. J. Criterion based equivalence for equation error models. *IEEE Trans. Automat. Control* **34** (1989), no. 2, 191–193. (Summary) **89j:93027** 93B30 (93B10)
- Hofacker, G. L. (with Levine, R. D.) The evolution of complex systems. *Z. Naturforsch. A* **43** (1988), no. 1, 73–77. (Guy Jumarie) **89b:93011** 93A10 (92A12, 94A15, 94A17)
- Hofbauer, Dieter (with Kutsche, Ralf-Dietlef) Proving inductive theorems based on term rewriting systems. *Algebraic and logic programming* (Gaussig, 1988), 180–190. *Math. Res.*, 49, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) **68Q50** (68Q55)

- Hofbauer, Franz** Generic properties of invariant measures for simple piecewise monotonic transformations. *Israel J. Math.* 59 (1987), no. 1, 64–80. (Fumio Hiai) **89c:28020** 28D05 (54H20)
- Hofbauer, Josef** Heteroclinic cycles on the simplex. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations (Budapest, 1987)*, 828–831. János Bolvai Math. Soc., Budapest, 1987. (Andris Abakuks) **89c:58099** 58F21 (34C05, 92A15)
- (with Hutson, V.; Jansen, Wolfgang) Coexistence for systems governed by difference equations of Lotka-Volterra type. *J. Math. Biol.* 25 (1987), no. 5, 553–570. (Andris Abakuks) **89a:92059** 92A17
- Hofner, Gerhard** ★ Near-rings and group-automata. With a German introduction. Dissertationen der Johannes-Kepler-Universität Linz [Dissertationen der Johannes Kepler University of Linz], 66. *Verband der Wissenschaftlichen Gesellschaften Österreichs (VWGO)*, Vienna, 1987. vi+91 pp. ISBN 3-85369-667-8 (John D. P. Meldrum) **89i:16052** 16A76 (16A44, 68Q70)
- Principal series and minimal group automata. *Contributions to general algebra*, 5 (Salzburg, 1986), 185–188. Hölder-Pichler-Tempsky, Vienna, 1987. (H.-J. Hoehnke) **89g:68051** 68Q70 (20N99)
- Hofner, Helmut** (with Ekeland, Ivar) Global and local invariants for convex energy surfaces and their periodic trajectories: a survey. *Periodic solutions of Hamiltonian systems and related topics (Il Ciocco, 1986)*, 139–146. NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci., 209, Reidel, Dordrecht-Boston, MA, 1987. (Vittorio Coti Zelati) **89g:58064** 58F05 (58E05, 58F22)
- (with Ekeland, Ivar) Convex Hamiltonian energy surfaces and their periodic trajectories. *Comm. Math. Phys.* 113 (1987), no. 3, 419–469. (Shi Tao Deng) **89c:58035** 58F05 (58E05)
- (with Zehnder, E.) Periodic solutions on hypersurfaces and a result by C. Viterbo. *Invent. Math.* 90 (1987), no. 1, 1–9. (Michele Matzeu) **89a:58040** 58F05 (34C25, 58E05, 58F22)
- (with Ekeland, Ivar) Capacités symplectiques. (English summary) [Symplectic capacities] *C. R. Acad. Sci. Paris. Sér. I. Math.* 307 (1988), no. 1, 37–40. (Frans Cantrijn) **89i:53025** 53C15 (53C57, 54C99, 58F05, 70H15)
- Höfer, Thomas** (with Barthel, Gottfried; Hirzebruch, Friedrich) ★ Geradenkonfigurationen und Algebraische Flächen. (German) [Line configurations and algebraic surfaces] Aspects of Mathematics, D4. Friedr. Vieweg & Sohn, Braunschweig, 1987. xii+308 pp. ISBN 3-528-08907-5 (Hélène Ensault) **89a:14045** 14J29 (14J25)
- Hoff, C.** (with Pahl, P. J.) Development of an implicit method with numerical dissipation from a generalized single-step algorithm for structural dynamics. *Comput. Methods Appl. Mech. Engrg.* 67 (1988), no. 3, 367–385. (Summary) **89b:65172** 65L05
- Hoffding, Harald** see Wise, M. Norton, **89g:01041**
- Hoffman, Alan J.** (with Tucker, Alan C.) Greedy packing and series-parallel graphs. *J. Combin. Theory Ser. A* 47 (1988), no. 1, 6–15. (I. A. Klipker) **89c:05140** 05C50 (90C05)
- On greedy algorithms for series parallel graphs. *Math. Programming* 40 (1988), no. 2 (Ser. A), 197–204. (J. R. Griggs) **89d:90174** 90C27 (05C35, 90C08)
- Hoffman, D. D.** (with Bennett, Bruce Michael) Erratum: "The computation of structure from fixed-axis motion: rigid structures" [Biol. Cybernet. 54 (1986), no. 2, 71–83; MR 87i:92068]. *Biol. Cybernet.* 58 (1988), no. 6, 426. (Editors) **89c:92090** 92A27 (68T99)
- Hoffman, D. J.** (with Wheaton, J. H.; Chen, G. L.; Raridon, R. J.; McGaffey, R. W.; Jaeger, E. F.; Bell, M. A.) A 3D analysis of Maxwell's equations for cavities of arbitrary shape. *J. Comput. Phys.* 75 (1988), no. 1, 168–189. (W. L. Ko) **89g:78006** 78-08
- Hoffman, David A.** (with Callahan, Michael J.; Hoffman, James T.) Computer graphics tools for the study of minimal surfaces. *Comm. ACM* 31 (1988), no. 6, 648–661. (Editors) **89i:58063** 58E12 (58-04)
- Hoffman, Dean G.** (with Mullin, R. C.; Lindner, C. C.) A few more BIBDs with  $k = 6$  and  $\lambda = 1$ . *Combinatorial design theory*, 379–384. North-Holland Math. Stud., 149, North-Holland, Amsterdam-New York, 1987. (Frank E. Bennett) **89b:05037** 05B05
- (with Hartman, Alan) Steiner triple systems with an involution. *European J. Combin.* 8 (1987), no. 4, 371–378. (Chung Je Cho) **89c:05019** 05B07
- (with Rodger, C. A.) Class one graphs. *J. Combin. Theory Ser. B* 44 (1988), no. 3, 372–376. (Robin J. Wilson) **89d:05073** 05C15 (05C75)
- Hoffman, Dennis** see *Issues in econometric forecasting*, **89g:62173**
- Hoffman, Frederick** see *Conference: Combinatorics, Graph Theory, and Computing*, **89a:05004a**; **89a:05004b**; **89j:05002**; **89j:05003** and **89j:05004**
- Hoffman, James T.** (with Callahan, Michael J.; Hoffman, David A.) Computer graphics tools for the study of minimal surfaces. *Comm. ACM* 31 (1988), no. 6, 648–661. (Editors) **89i:58063** 58E12 (58-04)
- Hoffman, Karl L.** (with Padberg, Manfred) LP-based combinatorial problem solving. *Ann. Oper. Res.* 4 (1985), no. 1–4, 145–194. (Summary) **89b:90124** 90C05 (68M99, 68T20)
- Hoffman, Michael E.** An invariant of finite abelian groups. *Amer. Math. Monthly* 94 (1987), no. 7, 664–666. (P. L. Sperry) **89g:20084** 20K01
- Homological restrictions on free group actions. *Indiana Univ. Math. J.* 37 (1988), no. 2, 379–387. (M.-C. Ku) **89k:57079** 57S25 (20F38, 57S15, 57S17)
- (with Withers, Wm. Douglas) Generalized Chebyshev polynomials associated with affine Weyl groups. *Trans. Amer. Math. Soc.* 308 (1988), no. 1, 91–104. (Walter Schempp) **89m:33017** 33A65 (42C05, 58F13)
- Hoffman, Paul** ★ Archimedes' revenge. The joys and perils of mathematics. *W. W. Norton & Co. Inc.*, New York, 1988. x+285 pp. ISBN 0-393-02522-5 (Jeremy Gray) **89i:00016** 00A08 (01A65, 01A80)
- Hoffman, Peter** (with Reddy, K. C.) Numerical differentiation by high order interpolation. *SIAM J. Sci. Statist. Comput.* 8 (1987), no. 6, 979–987. (R. A. Lorentz) **89a:65032** 65D25 (41A05)
- Hoffman, William C.** A formal model for dialectical psychology. *Internat. Logic Rev.* No. 35 (1987), 40–68. (Not in MR) 03B60
- Hoffmann, Armin** Pointwise optimality criteria for optimal control problems governed by integral state relations. *I. Wiss. Z. Tech. Hochsch. Ilmenau* 33 (1987), no. 6, 75–85. (Dariusz Zagrodny) **89d:93054** 93C22 (49A34, 49A55, 49B34)
- Hoffmann, Berthold** (with Plump, Detlef) Jungle evaluation for efficient term rewriting. *Algebraic and logic programming (Gaussig, 1988)*, 191–203. Math. Res., 49, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) 68Q50 (68R10)
- Hoffmann, Christoph** (with Hopcroft, John) The potential method for blending surfaces and corners. *Geometric modeling*, 347–365. SIAM, Philadelphia, PA, 1987. (see **89b:65010**) 65D10
- (with Galil, Zvi; Luks, E. M.; Schnorr, C.-P.; Weber, Andreas) An  $O(n^3 \log n)$  deterministic and an  $O(n^3)$  Las Vegas isomorphism test for trivalent graphs. *J. Assoc. Comput. Mach.* 34 (1987), no. 3, 513–531. (Narsingh Deo) **89c:68043** 68Q20 (05C25, 68Q25, 68R10)
- Algebraic curves. *Mathematical aspects of scientific software (Minneapolis, Minn., 1986/87)*, 101–122. IMA Vol. Math. Appl., 14, Springer, New York-Berlin, 1988. (Summary) **89b:65040** 65D10 (12-04, 14-04, 65S05)
- (with Hopcroft, John) The geometry of projective blending surfaces. Geometric reasoning (Oxford, 1986). *Artificial Intelligence* 37 (1988), no. 1–3, 357–376. (H. W. Guggenheimer) **89m:68134** 68U05 (14N05, 51N15)
- Hoffmann, Dieter** ★ Эрвин Шрёдингер. (Russian) [Erwin Schrödinger] Translated from the German by A. S. Dobroslavskii. Translation edited and with a preface by A. T. Grigor'yan and V. P. Vizgin. "Mir", Moscow, 1987. 96 pp. (Editors) **89b:01049** 01A70
- Max Planck—teacher, organizer and popularizer of science. (Russian) *Studies in the history of physics and mechanics*, 1987 (Russian), 159–176, 245, "Nauka", Moscow, 1987. (Summary) **89c:01066** 01A70 (81-03)
- Albert Einstein as a patent referee (a new Einstein document). (Russian) Translated from the German by A. N. Temchin. *Einstein collection, 1984–1985 (Russian)*, 143–147, "Nauka", Moscow, 1988. (see **89m:01002**) 01A70
- Hoffmann, Frank** (with Kriegel, Klaus) Embedding rectilinear graphs in linear time. *Inform. Process. Lett.* 29 (1988), no. 2, 75–79. (Summary) **89k:68056** 68Q20 (05C10, 68Q25, 68R10)
- Hoffmann, K.** A new property of comodules answering a question of Sweedler. *Comm. Algebra* 16 (1988), no. 4, 667–680. (E. J. Taft) **89a:16010** 16A24 (16A53)
- Hoffmann, Karl-Heinz** (with Zheng, Song Mu) Uniqueness for structural phase transitions in shape memory alloys. *Math. Methods Appl. Sci.* 10 (1988), no. 2, 145–151. (Summary) **89d:35158** 35Q20
- Hoffmann, Karl-Heinz** (with Sprekels, Jürgen; Visintin, A.) Identification of hysteresis loops. *J. Comput. Phys.* 78 (1988), no. 1, 215–230. (Summary) **89i:82116** 82A99 (58F14, 76S05, 92A05, 93B30)
- (with Sibani, Paolo) Diffusion in hierarchies. *Phys. Rev. A* (3) 38 (1988), no. 8, 4261–4270. (Dieter H. Mayer) **89j:82062** 82A57 (82A41)
- Hoffmann, Walter** Solving linear systems by direct methods related to Gaussian elimination. *Algorithms and applications on vector and parallel computers (Amsterdam, 1985–86)*, 167–179. *Special Topics Supercomput.*, 3, North-Holland, Amsterdam-New York, 1987. (see **89f:65002**) 65F05
- Hoffmann-Jørgensen, J.** The general marginal problem. *Functional analysis, II (Dubrovnik, 1985)*, 77–367. *Lecture Notes in Math.*, 1242, Springer, Berlin-New York, 1987. (Donald L. Cohn) **89f:46140** 46N05 (28A35, 60B10)
- Hoffmann-Ostenhof, Maria** (with Hoffmann-Ostenhof, Thomas) On the asymptotics of nodes of  $L^2$ -solutions of Schrödinger equations in dimensions  $\geq 3$ . *Comm. Math. Phys.* 117 (1988), no. 1, 49–77. (B. Hellwig) **89k:35062** 35J10 (81C05)
- Asymptotics of the nodal lines of solutions of 2-dimensional Schrödinger equations. *Math. Z.* 198 (1988), no. 2, 161–179. (B. Hellwig) **89k:35061** 35J10
- Hoffmann-Ostenhof, Thomas** (with Hoffmann-Ostenhof, Maria) On the asymptotics of nodes of  $L^2$ -solutions of Schrödinger equations in dimensions  $\geq 3$ . *Comm. Math. Phys.* 117 (1988), no. 1, 49–77. (B. Hellwig) **89k:35062** 35J10 (81C05)
- Hoffstein, Jeffrey** (with Bump, Daniel) On Shimura's correspondence. *Duke Math. J.* 55 (1987), no. 3, 661–691. (Stephen Gelbart) **89i:11072** 11F37 (11F66, 11F70, 11R39, 22E55)
- Hoffmann, Bernd** On the analysis of a particular Volterra-Stieltjes convolution integral equation. (German and Russian summaries) *Z. Anal. Anwendungen* 7 (1988), no. 3, 247–257. (C. Corduneanu) **89f:45001** 45A05 (45D05, 45E10, 47B38)
- An algorithm for the control of a multiparameter regularization procedure. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 7, 1094–1097, 1119. (P. S. Milojević) **89i:65064** 65I15 (65H10)
- Hofmann, Gerald** ★ Topologies on tensor products. With a Russian summary. Собщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], E5-87-891. *Joint Inst. Nuclear Res., Dubna*, 1987. 13 pp. (A. Mallios) **89j:46070** 46M05 (81E05)
- Hofmann, J. E.** Über Rösselringe auf dem Brett von  $6^2$  Zellen. [On Rössel rings on the board of  $6^2$  squares] With a preface by C. J. Scriba. *Elem. Math.* 43 (1988), no. 1, 1–17. (E. J. F. Primeiro) **89b:05051** 05B15
- Hofmann, Karl Heinrich** (with Magill, K. D., Jr.) The smallest proper congruence on  $S(X)$ . *Glasgow Math. J.* 30 (1988), no. 3, 301–313. (Bernard L. Madison) **89m:20080** 20M20 (06B05, 22A20, 54H15)
- (with Ruppert, W. A. F.) The foliation of semigroups by congruence classes. *Monatsh. Math.* 106 (1988), no. 3, 179–204. (Bernard L. Madison) **89i:22003** 22A15
- (with Weiss, Wolfgang) More on cancellative semigroups on manifolds. *Semigroup Forum* 37 (1988), no. 1, 93–111. (J. W. Baker) **89c:22006** 22A15 (22E99)
- (with Hilgert, Joachim) Invariant cones in Lie algebras. *Semigroup Forum* 37 (1988), no. 2, 241–252. (V. V. Astrakhansev) **89e:17006** 17B05
- (with Morris, Sidney A.) Correction: "Free compact groups. I. Free compact abelian groups" [Topology Appl. 23 (1986), no. 1, 41–64; MR 88a:22011]. *Topology Appl.* 28 (1988), no. 1, 101–102. (Editors) **89a:22008** 22B05 (20K99, 22C05)
- (with Morris, Sidney A.) Free compact groups. II. The center. *Topology Appl.* 28 (1988), no. 3, 215–231. (Rangachari Venkataraman) **89g:22005** 22C05 (20E05, 22B05, 22E15)
- Hofmann, Steve** Weak (1, 1) boundedness of singular integrals with nonsmooth kernel. *Proc. Amer. Math. Soc.* 103 (1988), no. 1, 260–264. (Kenneth F. Andersen) **89f:42013** 42B20 (47G05)
- Hofmann-Wellenhof, B.** (with Moritz, Helmut) Introduction to spectral analysis. *Mathematical and numerical techniques in physical geodesy (Admont, 1986)*, 157–259. *Lecture Notes in Earth Sci.*, 7, Springer, Berlin-New York, 1986. (Menachem Dishon) **89g:86003** 86A30 (42A38, 65T05)
- Hofmeister, M.** Counting double covers of graphs. *J. Graph Theory* 12 (1988), no. 3, 437–444. (Samuel Stueckle) **89i:05146** 05C30 (05C25)
- Hofri, Micha** ★ Probabilistic analysis of algorithms. On computing methodologies for computer algorithms performance evaluation. Texts and Monographs in Computer Science. Springer-Verlag, New York-Berlin, 1987. xvi+240 pp. ISBN 0-387-96578-5 (Erol Gelenbe) **89g:68025** 68Q25 (05A15, 68-02, 68P10)
- (with Konheim, Alan G.) Padded lists revisited. *SIAM J. Comput.* 16 (1987), no. 6, 1073–1114. (Eberhard Lüdde) **89m:68016** 68P10 (68Q25)



- Reduced state-space heuristics for symmetric Markovian queueing systems. *Queueing theory and its applications*, 343–361, *CWI Monographs*, 7, North-Holland, Amsterdam-New York, 1988. (Bent Natvig) **89j:90124** 90B22 (60K25)
- Hofstee, P.** (with Tip, A.) Fourier transforms and the dilatation group. *J. Math. Phys.* **29** (1988), no. 4, 817–822. (Summary) **89b:47058** 47D10 (42A38, 47B38, 47B40, 81C05)
- Höft, Hartmut** Order preserving selections for multifunctions. *Contributions to general algebra*, 5 (Salzburg, 1986), 189–195, *Hölder-Pichler-Tempsky*, Vienna, 1987. (M. Kolibiar) **89h:06003** 06A10
- Bound sets in partial orders and the fixed point property. *Canad. Math. Bull.* **30** (1987), no. 4, 421–428. (Summary) **89g:06005** 06A10
- (with Chaudhuri, Ranjan) On rational solution of the state equation of a finite automaton. *Internat. J. Math. Math. Sci.* **11** (1988), no. 2, 355–364. (Summary) **89b:03062** 03D05 (68Q70)
- Höft, Margret** (with Graczyńska, Ewa) Sums of systems of ordered sets. *Contributions to general algebra*, 5 (Salzburg, 1986), 171–184, *Hölder-Pichler-Tempsky*, Vienna, 1987. (Summary) **89j:06002** 06A10
- A fixed point theorem for multifunctions and an application. *Algebra Universalis* **24** (1987), no. 3, 283–288. (M. Kolibiar) **89b:06004** 06A10
- Hogan, J. W.** Hausdorff topologies on the  $\alpha$ -bicyclic semigroup. *Semigroup Forum* **36** (1988), no. 2, 189–209. (Saraswathi Subbiah) **89a:22004** 22A15 (54H10)
- Hogan, Jeffrey A.** A qualitative uncertainty principle for locally compact abelian groups. *Miniconferences on harmonic analysis and operator algebras* (Canberra, 1987), 133–142, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (Y. Katznelson) **89a:43006** 43A25 (42B10, 43A70)
- Weighted norm inequalities for the Fourier transform on connected locally compact groups. *Pacific J. Math.* **131** (1988), no. 2, 277–290. (Gerald B. Folland) **89c:43009** 43A25 (43A15, 43A30)
- Hogan, N.** (with Colgate, J. E.) Robust control of dynamically interacting systems. *Internat. J. Control* **48** (1988), no. 1, 65–88. (Andrzej Świerniak) **89k:93006** 93B50 (93B35, 93D15)
- Hogan, Peter A.** (with Trautman, Andrzej) On gravitational radiation from bounded sources. *Gravitation and geometry*, 215–242, *Monographs Textbooks Phys. Sci.*, 4, Bibliopolis, Naples, 1987. (M. A. H. MacCallum) **89k:83036** 83C30
- Embedding gravitational radiation in cosmological models. *Astrophys. J.* **333** (1988), no. 1, part 1, 64–67. (Summary) **89f:83023** 83C15 (83F05)
- Hogan, S. J.** The superharmonic normal mode instabilities of nonlinear deep-water capillary waves. *J. Fluid Mech.* **190** (1988), 165–177. (Charles J. Amick) **89m:76044** 76E30 (76B15, 76B25)
- Hogbe-Nlend, H.** see **Functional analysis and its applications**, **89g:46002**
- Hogendijk, Jan P.** al-Kāhī's construction of an equilateral pentagon in a given square. *Z. Gesch. Arab.-Islam. Wiss.* **1** (1984), 100–144. (E. S. Kennedy) **89g:01011** 01A30
- On Euclid's lost *Porisms* and its Arabic traces. *Boll. Storia Sci. Mat.* **7** (1987), no. 1, 93–115. (Ahmad Salim Saidan) **89f:01012** 01A30 (01A20)
- Observations on the icosahedron in Euclid's *Elements*. *Historia Math.* **14** (1987), no. 2, 175–177. (Louis Charbonneau) **89k:01002** 01A20
- Three Islamic lunar crescent visibility tables. *J. Hist. Astronom.* **19** (1988), no. 1, 29–44. (E. S. Kennedy) **89c:01008** 01A30
- Hogeweg, P.** Cellular automata as a paradigm for ecological modeling. *Appl. Math. Comput.* **27** (1988), no. 1, 81–100. (Summary) **89d:92081** 92A17
- Hogg, B. W.** (with Wu, Q. H.) Robust self-tuning regulator for a synchronous generator. *Proc. IEEE-D* **135** (1988), no. 6, 463–473. (Not in MR) **93C75** (93C40, 93E20)
- Höglund, Thomas A.** A multidimensional renewal theorem. *Bull. Sci. Math.* (2) **112** (1988), no. 1, 111–138. (D. R. Grey) **89g:60264** 60K05 (45A05, 60F05)
- A one-dimensional model with phase transition. *J. Statist. Phys.* **53** (1988), no. 3–4, 825–834. (Jacek Miękisz) **89m:82076** 82A68 (82A25)
- Hogreve, H.** On the monotonic dependence of atomic excitation energies on the nuclear charge parameter  $Z$ . *J. Math. Phys.* **29** (1988), no. 8, 1937–1942. (L. Trlifaj) **89f:81276** 81G45 (81C05, 81H99)
- Rigorous bounds on eigenvalues of two-electron atomic Hamiltonians. *J. Phys. A* **21** (1988), no. 12, L625–L631. (Summary) **89h:81268** 81G45
- von Hohenbalken, Balder** An algorithm for set operations on nonconvex polygons (with an application to census tracts). *J. Comput. Appl. Math.* **23** (1988), no. 1, 11–24. (Peter Gritzmann) **89j:68148** 68U05 (52–04)
- Hohenberger, Holger** Volumenberechnungen beim schiefen Kreiskegelstumpf. (Computing the volume of the oblique circular frustum) *Praxis Math.* **30** (1988), no. 8, 464–472, 489–493. (H. W. Guggenheimer) **89f:51022** 51M25
- Höhle, Ulrich** A general theory of fuzzy plausibility measures. *J. Math. Anal. Appl.* **127** (1987), no. 2, 346–364. (Constantin Drossos) **89c:60007** 60A99 (03E72, 28E10, 94D05)
- Quotients with respect to similarity relations. *Mathematics and fuzziness*, Part 1 (Palma, 1985). *Fuzzy Sets and Systems* **27** (1988), no. 1, 31–44. (Janusz Kacprzyk) **89g:90011** 90A06 (03E72, 18B99, 18D10)
- von Höhne, Hans-Joachim** On weakly positive unit forms. *Comment. Math. Helv.* **63** (1988), no. 2, 312–336. (Alfred G. Wiedemann) **89j:15033** 15A63 (11E81, 16A64)
- Höholdt, Tom** (with Jensen, H. Elbrod; Justesen, Jørn) Double series representation of bounded signals. *IEEE Trans. Inform. Theory* **34** (1988), no. 4, 613–624. (Dale H. Mugler) **89k:94010** 94A12
- Hohli, Aarno** (with Junnila, Heikki) A note on homogeneous metrizable spaces. *Houston J. Math.* **13** (1987), no. 2, 231–234. (Ivan L. Reilly) **89a:54037** 54E35
- lê khai Hôl** see **Lê Khai Hôl**
- müller-Hoissen, Folkert** see **Müller-Hoissen, Folkert**
- Hojman, Roberto** (with Berger, Sonia; Santamarina, Jorge) General exact solutions of Einstein equations for static perfect fluids with spherical symmetry. *J. Math. Phys.* **28** (1987), no. 12, 2949–2950. (F. J. China) **89a:83011** 83C15 (83C55)
- (with Zanelli, Jorge) Constrained Hamiltonian formalism for unconstrained classical mechanics. *Phys. Rev. D* (3) **35** (1987), no. 12, 3825–3830. (José F. Cariñena) **89c:70020** 70H05 (58F05)
- Hojman, S.** (with Shepley, L. C.) Equivalent Lagrangians in classical field theory. *Found. Phys.* **16** (1986), no. 5, 465–481. (P. G. L. Leach) **89b:70004** 70G50 (58E30)
- (with Cordero, P.) Symmetry transformations in quantum mechanics. (Italian and Russian summaries) *Nuovo Cimento B* (11) **100** (1987), no. 1, 1–15. (Frans Cantrijn) **89b:58229** 58G35 (81C99)
- Hoke, Harry F., III** Lie groups that are closed at infinity. *Trans. Amer. Math. Soc.* **313** (1989), no. 2, 721–735. (Robert Brooks) **89j:58108** 58F18 (22E15)
- Williamson Hoke, Kathy** see **Williamson Hoke, Kathy**
- Hokkyo, Noboru** Variational formulation of transactional and related interpretations of quantum mechanics. *Found. Phys. Lett.* **1** (1988), no. 3, 293–299. (Summary) **89j:81008** 81B05
- Holá, L.** On relations approximated by continuous functions. 15th winter school in abstract analysis (Srní, 1987). *Acta Univ. Carolin.—Math. Phys.* **28** (1987), no. 2, 67–72. (V. V. Obukhovskii) **89c:54031** 54C60 (46E99)
- Hausdorff metric convergence of continuous functions. *General topology and its relations to modern analysis and algebra*, VI (Prague, 1986), 263–271, *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (Michel Valadier) **89k:54038** 54C35 (54C05)
- An extension theorem for continuous functions. *Czechoslovak Math. J.* **38** (113) (1988), no. 3, 398–403. (B. T. Sims) **89j:54016** 54C20
- An extension theorem for multifunctions and a characterization of complete metric spaces. (Russian summary) *Math. Slovaca* **38** (1988), no. 2, 177–182. (P. Maritz) **89d:54010** 54C60 (54C20, 54E50)
- (with Neubrunn, T.) On almost uniform convergence and convergence in Hausdorff metric. (Serbo-Croatian summary) *Rad. Mat.* **4** (1988), no. 1, 193–202. (A. I. Bashkirov) **89i:54023** 54C35 (54A20, 54B20)
- Holail, F. S.** (with Fawzy, Th.) (0, 2) lacunary interpolation with splines of degree 6. *Ann. Univ. Sci. Budapest. Sect. Comput.* **6** (1985), 27–35 (1987). (Len Bos) **89d:41023** 41A15 (41A05)
- Holbert, Karen S.** (with Chartrand, G.; Oellermann, O. R.; Swart, Henda C.)  $F$ -degrees in graphs. *Ars Combin.* **24** (1987), 133–148. (Koduvayur R. Parthasarathy) **89a:05125** 05C99
- Holbrook, John A. R.** Quaternionic Fatou-Julia sets. (French summary) *Ann. Sci. Math. Québec* **11** (1987), no. 1, 79–94. (Janina Kotus) **89c:58061** 58F08 (30D05, 30G35)
- (with Bhatia, Rajendra) On the Clarkson-McCarthy inequalities. *Math. Ann.* **281** (1988), no. 1, 7–12. (A. Alexiewicz) **89m:47005** 47A30 (47D25)
- (with Davidson, Kenneth R.) Numerical radii of zero-one matrices. *Michigan Math. J.* **35** (1988), no. 2, 261–267. (T. Ando) **89k:47007** 47A12 (15A60, 47A30)
- Holcomb, Harmon R., III** Latency versus complementarity: Margenau and Bohr on quantum mechanics. *British J. Philos. Sci.* **37** (1986), no. 2, 193–206. (Jeffrey Bub) **89f:81011** 81B05 (01A60, 03B30, 81–03)
- Holcomb, Katherine A.** Vacuum axisymmetric cosmologies. *Dynamical spacetimes and numerical relativity* (Philadelphia, PA, 1985), 187–200, *Cambridge Univ. Press*, Cambridge-New York, 1986. (Summary) **89c:83002** 83–04 (83–08)
- Holden, Aron V.** Spatio-temporal patterns of activity in neural systems: simulation and analysis. *Biomathematics and related computational problems* (Naples, 1987), 39–46, *Kluwer Acad. Publ.*, Dordrecht, 1988. (see **89f:92002**) **92A09**
- Holden, Helge** (with Gesztesy, F.) A new class of solvable models in quantum mechanics describing point interactions on the line. *J. Phys. A* **20** (1987), no. 15, 5157–5177. (Edward R. Vrsay) **89a:81016** 81C05 (81H20)
- (with Alberverio, S.; Gesztesy, F.; Hoegh-Krohn, R.) Point interactions in two dimensions: basic properties, approximations and applications to solid state physics. *J. Reine Angew. Math.* **380** (1987), 87–107. (Arne Jensen) **89d:81026** 81C10 (35P25, 35Q20, 47F05)
- (with Gesztesy, F.; Gurarie, D.; Klaus, M.; Sadun, L.; Simon, Barry; Vogl, P.) Trapping and cascading of eigenvalues in the large coupling limit. *Comm. Math. Phys.* **118** (1988), no. 4, 597–634. (Rainer Hempel) **89m:81049** 81C15 (34E20, 47A55, 47E05)
- (with Alberverio, S.; Hoegh-Krohn, R.) Stochastic multiplicative measures, generalized Markov semigroups, and group-valued stochastic processes and fields. *J. Funct. Anal.* **78** (1988), no. 1, 154–184. (Summary) **89k:60055** 60G20 (46N05, 47D05, 60H99, 60J30)
- (with Gesztesy, F.) Addendum: "A unified approach to eigenvalues and resonances of Schrödinger operators using Fredholm determinants" [*J. Math. Anal. Appl.* **123** (1987), no. 1, 181–198; MR **88c:35117**]. *J. Math. Anal. Appl.* **132** (1988), no. 1, 309. (Editors) **89d:35129** 35P05 (35J10)
- (with Holden, L.) On some recent results for an explicit conservation law of mixed type in one dimension. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 238–245, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) **65M99** (35L65, 76–08, 76T05)
- Holden, L.** (with Holden, Helge) On some recent results for an explicit conservation law of mixed type in one dimension. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 238–245, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) **65M99** (35L65, 76–08, 76T05)
- Holder, Morris E.** (with Thomason, Virgil A.) Using time moments to determine system response. *IEEE Trans. Circuits and Systems* **35** (1988), no. 9, 1193–1195. (C. Ilioi) **89h:93028** 93C10 (41A58)
- Holenda, Jiří** (with Schlegel, Miloš) Degrees of the invariant factors and the rank of principal submatrices of a matrix. *Linear and Multilinear Algebra* **21** (1987), no. 3, 297–301. (M. Pearl) **89g:15019** 15A45
- Holenderski, Leszek** (with Szalas, Andrzej) Propositional description of finite cause-effect structures. *Inform. Process. Lett.* **27** (1988), no. 3, 111–117. (T. Müldner) **89h:68010** 68N05 (68Q20)
- (with Szalas, Andrzej) Incompleteness of first-order temporal logic with until. *Theoret. Comput. Sci.* **57** (1988), no. 2–3, 317–325. (N. B. Cocchiarella) **89i:03040** 03B45 (03D35, 68C05)
- Holevo, A. S.** see **Kholevo, A. S.**
- Holgate, Philip** A train algebra that is not special triangular. *Arch. Math. (Basel)* **50** (1988), no. 2, 122–124. (H. Gonsior) **89a:17036** 17D92
- Holický, P.** (with Kotecký, R.; Zahradník, M.) Rigid interfaces for lattice models at low temperatures. *J. Statist. Phys.* **50** (1988), no. 3–4, 755–812. (Mary Lunn) **89j:82072** 82A68 (82A05, 82A25)
- Holladay, Kenneth** Estimating the size of context-free tiling languages. *Canad. J. Math.* **39** (1987), no. 6, 1413–1433. (From the introduction) **89k:68083** 68Q45 (05B50, 52A45, 68R05)
- Holland, Finbarr** (with Walsh, David) Hankel operators in von Neumann-Schatten classes. *Illinois J. Math.* **32** (1988), no. 1, 1–22. (V. V. Peller) **89f:47039** 47B35 (47B10, 47D25)
- Extensions of Milin's Tauberian theorem. *J. London Math. Soc.* (2) **37** (1988), no. 1, 128–140. (D. F. Shea) **89h:40001** 40E05

- (with Walsh, David) Growth estimates for functions in the Besov spaces  $A_p$ . *Proc. Roy. Irish Acad. Sect. A* **88** (1988), no. 1, 1–18. (D. Sarason) **89m:30074** 30D60 (30H05, 46E35)
- Holland, M. P.** (with Coutinho, S. C.) Module structure of rings of differential operators. *Proc. London Math. Soc.* (3) **57** (1988), no. 3, 417–432. (Marie-Paule Malliavin) **89i:32021** 32C38 (16A19, 16A54, 17B35)
- Holland, O.** (with Grötschel, M.) A cutting plane algorithm for minimum perfect 2-matchings. (German summary) *Computing* **39** (1987), no. 4, 327–344. (H. T. Lau) **89a:05108** 05C70 (90C27)
- Holland, P. G.** (with Fletcher, C. A. J.) Computational investigation of swirling turbulent flow in an annulus. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 271–280, North-Holland, Amsterdam-New York, 1988. (see **89b:00021**) 76-08
- Holland, P. R.** Relativistic algebraic spinors and quantum motions in phase space. *Found. Phys.* **16** (1986), no. 8, 701–719. (Summary) **89e:81068** 81D25
- (with Vigier, J.-P.; Dewdney, C.; Kyprianidis, A.) Causal particle trajectories and the interpretation of quantum mechanics. *Quantum implications*, 169–204, Routledge & Kegan Paul, London, 1987. (see **89m:81006**) 81B05
- (with Philippidis, C.) Anholonomic deformations in the ether: a significance for the electrodynamic potentials. *Quantum implications*, 295–311, Routledge & Kegan Paul, London, 1987. (see **89m:81006**) 81B05
- Causal interpretation of Fermi fields. *Phys. Lett. A* **128** (1988), no. 1-2, 9–18. (Matej Pavšič) **89b:81064** 81C99 (81B99)
- Holland, Paul W.** (with Wang, Yuchung J.) Dependence function for continuous bivariate densities. *Comm. Statist. Theory Methods* **16** (1987), no. 3, 863–876. (Mir Maswood Ali) **89a:62138** 62H20
- Holland, W. C.** (with Reilly, N. R.) Structure and laws of the Scrimger varieties of lattice-ordered groups. *Algebra and order* (Luminy-Marseille, 1984), 71–81, R & E Res. Exp. Math., 14, Heldermann, Berlin, 1986. (Stephen H. McCleary) **89a:06039** 06F15 (08B05)
- (with Mekler, Alan H.; Reilly, N. R.) Varieties of lattice-ordered groups in which prime powers commute. *Algebra Universalis* **23** (1986), no. 2, 196–214. (Stephen H. McCleary) **89a:06040** 06F15 (08B15)
- (with Reilly, N. R.) Metabelian varieties of  $l$ -groups which contain no nonabelian  $o$ -groups. *Algebra Universalis* **24** (1987), no. 3, 204–223. (Michael Darnel) **89b:06011** 06F15
- (with Smith, Dwight P.) Irrational ordered groups. *Order* **4** (1988), no. 4, 381–386. (Michael Darnel) **89i:06026** 06F15
- Hollander, A.** (with Haurie, A.) A note on incremental incentives in continuous time. *Optimal control theory and economic analysis*, 3 (Vienna, 1987), 143–150, North-Holland, Amsterdam-New York, 1988. (Summary) **89j:90024** 90A09 (90A16)
- den Hollander, F.** see **Seminar: Probability and Physics**, **89e:60005**
- den Hollander, W. Th. F.** Mixing properties for random walk in random scenery. *Ann. Probab.* **16** (1988), no. 4, 1788–1802. (Isaac Meilijson) **89i:60199** 60K99 (60F05, 60J15)
- (with Weiss, G. H.) On the range of a constrained random walk. *J. Appl. Probab.* **25** (1988), no. 3, 451–463. (Gregory F. Lawler) **89j:60097** 60J15 (90B15)
- (with Weiss, G. H.) A note on configurational properties of constrained random walks. *J. Phys. A* **21** (1988), no. 10, 2405–2415. (Gregory F. Lawler) **89j:60099** 60J15 (82A41)
- Hollatz, Horst** (with Schaper, Michael) LINOPT—ein Programmsystem zur linearen Optimierung. [LINOPT—a program system for linear optimization] *Wiss. Z. Tech. Univ. Magdeburg* **31** (1987), no. 5, 9–13. (Not in MR) 90C05
- Extended subdifferential and minimization of nondifferentiable functions. *Advances in mathematical optimization*, 80–85, *Math. Res.*, 45, Akademie-Verlag, Berlin, 1988. (L. V. Vasil'ev) **89j:90202** 90C25 (90C48)
- LINOPT—numerical treatment of linear programming models. *Arbeiten zur mathematischen Optimierung und zu verwandten Gebieten*, 59–80, *Seminarberichte*, 94, Humboldt Univ., Berlin, 1988. (see **89b:90118**) 90C05
- see also **Advances in mathematical optimization**, **89b:90117**
- Holler, Manfred J.** Moral sentiments and self-interest reconsidered. *Paradoxical effects of social behavior*, 223–233, *Physica, Heidelberg*, 1986. (see **89d:90019**) 90A05 (90D35)
- Holley, Richard** (with Stroock, Daniel W.) Logarithmic Sobolev inequalities and stochastic Ising models. *J. Statist. Phys.* **46** (1987), no. 5-6, 1159–1194. (From the introduction) **89e:82013** 82A68 (82A31)
- Holley, W. E.** (with Yuh, J.) On the development of an algorithm for solving stiff nonlinear dynamic equations based on the Brody's updating method. *Comm. Appl. Numer. Methods* **4** (1988), no. 4, 483–489. (Summary) **89d:65070** 65L05
- Höllig, Klaus** (with de Boor, Carl)  $B$ -splines without divided differences. *Geometric modeling*, 21–27, SIAM, Philadelphia, PA, 1987. (see **89b:65010**) 65D07
- (with de Boor, Carl) Minimal support for bivariate splines. *Proceedings of China-U.S. Joint Conference on Approximation Theory* (Hangzhou, 1985). *Approx. Theory Appl.* **3** (1987), no. 4, 11–23. (Rong Qing Jia) **89b:41022** 41A15 (41A63, 65D07)
- (with de Boor, Carl; Riemenschneider, Sherman) Some qualitative properties of bivariate Euler-Frobenius polynomials. *J. Approx. Theory* **50** (1987), no. 1, 8–17. (Len Bos) **89d:41019** 41A15 (41A05, 41A63)
- Algorithms for rational spline curves. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 287–300, *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Summary) **89c:65017** 65D07
- (with de Boor, Carl) Approximation power of smooth bivariate pp functions. *Math. Z.* **197** (1988), no. 3, 343–363. (Rong Qing Jia) **89b:41023** 41A15 (41A63, 65D07)
- Hollmann, H.** (with Duhamel, Pierre Raymond) On discrete Fourier transforms (number-theoretic transforms) with minimum number of rotations (shifts). (French and German summaries) *Signal Process.* **14** (1988), no. 3, 237–241. (Dale H. Mugler) **89d:94008** 94A11 (65T05)
- Hollet, C. V.** Bound invariant Lyapunov functions: a means for enlarging the class of stabilizable uncertain systems. *Internat. J. Control* **46** (1987), no. 1, 161–184. (K. B. Datta) **89f:93020** 93C05 (93B25, 93C40, 93D99)
- (with Bartlett, A. C.) A necessary and sufficient condition for Schur invariance and generalized stability of polytypes of polynomials. *IEEE Trans. Automat. Control* **33** (1988), no. 6, 575–578. (Edward W. Kamen) **89g:93078** 93D20
- Holloway, James Paul** (with Dorning, J. J.) The dynamics of coupled nonlinear model Boltzmann equations. *J. Statist. Phys.* **49** (1987), no. 3-4, 607–660. (Carlo Cercignani) **89d:82070** 82A40 (34C35, 76P05)
- Hollowood, T. J.** (with Myhill, R. G.) The 112 breakings of  $E_8$ . *Internat. J. Modern Phys. A* **3** (1988), no. 4, 899–911. (Hans F. de Groote) **89m:17041** 17B67 (17B25, 81E30, 81G10)
- (with Corrigan, E.) A bosonic representation of the twisted string emission vertex. *Nuclear Phys. B* **303** (1988), no. 1, 135–148. (Peter Bouwknegt) **89b:81175** 81E99 (17B10, 81E30)
- (with Corrigan, E.) Comments on the algebra of straight, twisted and intertwining vertex operators. *Nuclear Phys. B* **304** (1988), no. 1, 77–107. (Peter Bouwknegt) **89b:81176** 81E99 (17B67, 81D15, 81E30)
- (with Corrigan, E.) A string construction of a commutative nonassociative algebra related to the exceptional Jordan algebra. *Phys. Lett. B* **203** (1988), no. 1-2, 47–51. (Aleksandar R. Bogojević) **89i:81106** 81E99 (17A30, 17C40, 81E30)
- Hollstein, Ralf** Infinite-factorable holomorphic mappings on locally convex spaces. *Collect. Math.* **37** (1986), no. 3, 261–276. (Jorge Mujica) **89f:46101** 46G20 (46A22, 47D30)
- Holly, Alberto** (with Phillips, P. C. B.) The ET interview: Professor Edmond Malinvaud. *Econometric Theory* **3** (1987), no. 2, 273–295. (Tom Wansbeck) **89d:01060** 01A70
- (with Magnus, Jan R.) A note on instrumental variables and maximum likelihood estimation procedures. (French summary) *Ann. Econom. Statist.* **1988**, no. 10, 121–138. (Tom Wansbeck) **89j:62148** 62P20
- Holly, Elizabeth A.** (with Whittemore, Alice S.; Friend, Nina; Brown, Byron W., Jr.) Amendment to: "A test to detect clusters of disease." *Biometrika* **74** (1987), no. 3, 631–635; MR **88i:62184**; *Biometrika* **75** (1988), no. 2, 396. (Editors) **89d:62108** 62P10 (92A07)
- Holm, Christian** Neutrino spectrum of Einstein universes. *J. Math. Phys.* **29** (1988), no. 10, 2273–2279. (Matej Pavšič) **89k:81059** 81D25 (83E15, 83F05)
- Holm, Darryl D.** (with Kupersmidt, B. A.) The analogy between spin glasses and Yang-Mills fluids. *J. Math. Phys.* **29** (1988), no. 1, 21–30. (Summary) **89g:82050** 82A57 (58F05, 58F40, 81E13)
- (with Doering, Charles R.; Gibbon, J. D.; Nicolaenko, Basil) Low-dimensional behaviour in the complex Ginzburg-Landau equation. *Nonlinearity* **1** (1988), no. 2, 279–309. (Piotr Biler) **89g:35095** 35Q20 (58D25, 58F12, 76E99)
- Hamiltonian structure for two-dimensional hydrodynamics with nonlinear dispersion. *Phys. Fluids* **31** (1988), no. 8, 2371–2373. (Olivier Sero Guillaume) **89f:76023** 76B15 (58F05, 76A99, 86A05)
- (with Kupersmidt, B. A.) Hamiltonian formulation of ferromagnetic hydrodynamics. *Phys. Lett. A* **129** (1988), no. 2, 93–100. (Summary) **89c:58036** 58F05 (35Q20, 76W05)
- (with Doering, Charles R.; Elgin, J. N.; Gibbon, J. D.) Finite-dimensionality in the laser equations in the good cavity limit. *Phys. Lett. A* **129** (1988), no. 5-6, 310–316. (K. Wódkiewicz) **89k:81210** 81K05
- Holm, P.** (with Johannesen, S.) On subtransversality. *Ann. Mat. Pura Appl.* (4) **147** (1987), 93–103. (K. Lamotte) **89b:58033** 58C27 (57R35)
- The theorem of Brown and Sard. *Enseign. Math.* (2) **33** (1987), no. 3-4, 199–202. (Javier Gómez Gil) **89b:58030** 58C25 (57R45, 58C27)
- Holm, Søren** (with Tind, Jørgen) A unified approach for price directive decomposition procedures in integer programming. *Discrete Appl. Math.* **20** (1988), no. 3, 205–219. (Alexander H. G. Rinnooy Kan) **89f:90098** 90C10
- (with Barcia, Paulo) A revised bound improvement sequence algorithm. *European J. Oper. Res.* **36** (1988), no. 2, 202–206. (Summary) **89b:90142** 90C10
- Holmáker, K.** (with Bass, Ludvik; Bracken, A. J.; Jefferies, Brian) Integro-differential equations for the self-organisation of liver zones by competitive exclusion of cell-types. *J. Austral. Math. Soc. Ser. B* **29** (1987), no. 2, 156–194. (Matthew Witten) **89f:92015** 92A09 (45F10, 92A07)
- Holman, Richard** (with Gleiser, Marcelo; Neto, Nelson P.) First order formalism for quantum gravity. *Nuclear Phys. B* **294** (1987), no. 4, 1164–1179. (Summary) **89d:83036** 83C45 (81G25)
- (with Kephart, T. W.) Modular invariance and anomalies in lower-dimensional superstring theories. *Phys. Lett. B* **202** (1988), no. 1, 89–93. (Sorin Marculescu) **89c:81151** 81E99 (81E30, 83E30)
- Holmberg, Peter** August Fredrik Sundell—physicist, mathematician and astronomer. (Swedish. English summary) *Arkhimedes* **40** (1988), no. 1, 19–30. (Summary) **89a:01064** 01A70
- Holme, Audan** On the classification of smooth projective subvarieties of  $P^n$ . *Proceedings of the conference on algebraic geometry* (Berlin, 1985), 146–162, *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (Antonio Lanteri) **89c:14066** 14J40 (14H50, 14N05)
- (with Roberts, Joel) On the embeddings of projective varieties. *Algebraic geometry* (Sundance, UT, 1986), 118–146, *Lecture Notes in Math.*, 1311, Springer, Berlin-New York, 1988. (Sheldon H. Katz) **89i:14009** 14E25 (14C20, 14J26)
- The geometric and numerical properties of duality in projective algebraic geometry. *Manuscripta Math.* **61** (1988), no. 2, 145–162. (Susan J. Colley) **89k:14093** 14N10 (14N05)
- see also **Algebraic geometry, Sundance 1986**, **89b:14001**
- Holmes, C. A.** Some quadratic systems with a separatrix cycle surrounding a limit cycle. *J. London Math. Soc.* (2) **37** (1988), no. 3, 545–551. (Anthony D. Osborne) **89c:58100** 58F21 (34C05)
- Holmes, James M.** (with Manning, Richard) Memory and market stability: the case of the cobweb. *Econom. Lett.* **28** (1988), no. 1, 1–7. (Not in MR) **90A16** (90A12, 90A14)
- Holmes, M. H.** (with Rabbitt, R. D.) Three-dimensional acoustic waves in the ear canal and their interaction with the tympanic membrane. *J. Acoust. Soc. Amer.* **83** (1988), no. 3, 1064–1080. (T. W. Barrett) **89h:20332** 92A09 (92A06)
- Holmes, Philip** Knots and orbit genealogies in nonlinear oscillations. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations* (Budapest, 1987), 102–108, *János Bolyai Math. Soc., Budapest*, 1987. (From the introduction) **89c:58105** 58F22 (58F30)
- Knots and orbit genealogies in nonlinear oscillators. *New directions in dynamical systems*, 150–191, *London Math. Soc. Lecture Note Ser.*, 127, Cambridge Univ. Press, Cambridge-New York, 1988. (J. S. Birman) **89b:58165** 58F25 (70K40)
- (with Mielke, A.) Spatially complex equilibria of buckled rods. *Arch. Rational Mech. Anal.* **101** (1988), no. 4, 319–348. (Pierre-Louis Lions) **89c:73039** 73H05 (58F05, 73K05)
- (with Hockett, Kevin) Bifurcation to rotating Cantor sets in maps of the circle. *Nonlinearity* **1** (1988), no. 4, 603–616. (Leo Jonker) **89k:58242** 58F22 (58F14)



- (with Armbruster, D.; Guckenheimer, John) Heteroclinic cycles and modulated travelling waves in systems with  $O(2)$  symmetry. *Phys. D* **29** (1988), no. 3, 257–282. (A. Vanderbauwhede) **89h:58136** 58F14 (58C27, 76E30)
- (with Hockett, Kevin) Bifurcation to badly ordered orbits in one-parameter families of circle maps, or angels fallen from the devil's staircase. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 1031–1051. (J. Angel Rodríguez) **89g:58105** 58F08 (58F14)
- (with Wiggins, Stephen) Errata: "Homoclinic orbits in slowly varying oscillators" [*SIAM J. Math. Anal.* **18** (1987), no. 3, 612–629; MR 88i:34087b]. *SIAM J. Math. Anal.* **19** (1988), no. 5, 1254–1255. (Editors) **89f:34059** 34C25
- Holmquist, Björn** Correction to: "The direct product permuting matrices" [*Linear and Multilinear Algebra* **17** (1985), no. 2, 117–141; MR 87m:15066]. *Linear and Multilinear Algebra* **22** (1987), no. 2, 211. (Editors) **89h:15042** 15A69
- Estimating and testing the common mean direction of several von Mises populations with known concentrations. *Stochastic Anal. Appl.* **6** (1988), no. 4, 379–387. (Jon Stene) **89m:62020** 62F03 (62F10, 62F25)
- Holmström, Sören** (with Aasa, Annika; Nilsson, Christina) An efficiency comparison of some representations of purely functional arrays. *BIT* **28** (1988), no. 3, 490–503. (Summary) **89i:68005** 68N05 (68P05)
- Holschneider, Matthias** On the wavelet transformation of fractal objects. *J. Statist. Phys.* **50** (1988), no. 5–6, 963–993. (William Douglas Withers) **89m:44009** 44A15 (58F13)
- (with Arneodo, A.; Grasseau, G.) Wavelet transform of multifractals. *Phys. Rev. Lett.* **61** (1988), no. 20, 2281–2284. (Summary) **89i:58075** 58F13 (28A75, 58F08)
- Holst, Lars** On birthday, collectors', occupancy and other classical urn problems. (French summary) *Internat. Statist. Rev.* **54** (1986), no. 1, 15–27. (Lyuben R. Mutafchiev) **89g:60028** 60C05 (62G30)
- (with Kennedy, J. E.; Quine, M. P.) Rates of Poisson convergence for some coverage and urn problems using coupling. *J. Appl. Probab.* **25** (1988), no. 4, 717–724. (Lyuben R. Mutafchiev) **89i:60021** 60C05 (60F05)
- (with Barbour, A. D.) Some applications of the Stein-Chen method for proving Poisson convergence. *Adv. in Appl. Probab.* **21** (1989), no. 1, 74–90. (J. Hüsler) **89g:60046** 60F05 (60E15)
- Holst, U.** Recursive estimation of quantiles using recursive kernel density estimators. *Sequential Anal.* **6** (1987), no. 3, 219–237. (Liliana Spiricu) **89b:62082** 62G05
- van Holten, J. W.** Rigid symmetries and BRST-invariance in gauge theories. *Phys. Lett. B* **200** (1988), no. 4, 507–511. (Summary) **89a:81074** 81E13
- Holton, D. A.** (with Aldred, R. E. L.) Cycles through five edges in 3-connected cubic graphs. *Graphs Combin.* **3** (1987), no. 4, 299–311. (Hansjoachim Walther) **89c:05049** 05C38
- (with Aldred, R. E. L.; Bau, Sheng; Royle, Gordon F.) An 11-vertex theorem for 3-connected cubic graphs. *J. Graph Theory* **12** (1988), no. 4, 561–570. (Charles H. C. Little) **89k:05054** 05C38
- Holton, James R.** (with Yoden, Shigeo) A new look at equatorial quasi-biennial oscillation models. *J. Atmospheric Sci.* **45** (1988), no. 19, 2703–2717. (Summary) **89k:86012** 86A35 (76C20)
- Holtz-Eakin, Douglas** Testing for individual effects in autoregressive models. *J. Econometrics* **39** (1988), no. 3, 297–307. (Not in MR) **62M10**
- Holtzman, Jack M.** A note on Schrödinger's cat and the unexpected hanging paradox. *British J. Philos. Sci.* **39** (1988), no. 3, 397–401. (C. Ulises Moulines) **89k:03005** 03A05 (81B05)
- Holub, James R.** On shift operators. *Canad. Math. Bull.* **31** (1988), no. 1, 85–94. (Lawrence Fialkow) **89f:47041** 47B37 (47B38)
- The regularity of Dunford-Pettis operators. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 89–95. (K. K. Oberai) **89f:47048** 47B37 (47B38)
- Holtz, A.** (with Götzler, B.) Exact solutions to anisotropic  $SU(N^2 \geq 3)$  chains. *J. Phys. A* **20** (1987), no. 16, L1077–L1081. (M. Lawrence Glasser) **89a:82042** 82A68 (81E25)
- Holzbaur, Ulrich D.** (with Hipp, Sabine K.) Decision processes with monotone hysteretic policies. *Oper. Res.* **36** (1988), no. 4, 585–588. (Summary) **89h:90099** 90B22 (90C40)
- Holzer, Mark** Three classes of one-dimensional, two-tile Penrose tilings and the Fibonacci Kronig-Penney model as a generic case. *Phys. Rev. B* (3) **38** (1988), no. 3, 1709–1720. (A. G. Schlijper) **89i:52023** 52A45 (82A60)
- Nonlinear dynamics of localization in a class of one-dimensional quasicrystals. *Phys. Rev. B* (3) **38** (1988), no. 8, 5756–5759. (Summary) **89h:82036** 82A60
- Holzer, Silvano** (with Sempì, Carlo) A remark on metrics for finitely additive distribution functions. *Stochastica* **10** (1986), no. 2, 191–194. (B. Schweizer) **89c:60015** 60E05 (08A02, 46E99)
- Holzman, Ron** Sub-core solutions of the problem of strong implementation. *Internat. J. Game Theory* **16** (1987), no. 4, 263–289. (Summary) **89g:90251** 90D12 (90A08)
- To vote or not to vote: what is the quota? *Discrete Appl. Math.* **22** (1988/89), no. 2, 133–141. (Summary) **89j:90018** 90A08
- Hombas, V. C.** Characterizing the normal density as a solution of a differential equation. *Statist. Neerlandica* **39** (1985), no. 4, 387–388. (R. Yanushkevichius) **89f:62009** 62E10
- Hombria Maté, Andrés Emilio** ★ Sobre  $\lambda$ -sumabilidad absoluta y  $\lambda$ -nuclearidad. (Spanish) [On absolute  $\lambda$ -summability and  $\lambda$ -nuclearity] Publicaciones del Departamento de Matemáticas, Universidad de Extremadura [Publications of the Mathematics Department of the University of Extremadura], 13. Universidad de Extremadura, Facultad de Ciencias, Departamento de Matemáticas, Badajoz, 1986. vi+111 pp. ISBN 84-600-4204-9 (Pedro J. Paúl) **89g:46013** 46A45 (46B05, 47B10)
- $\lambda$ -nuclear and compact mappings. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 1* (Spanish) (Badajoz, 1986), 295–304. Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (Miguel Florencio Lora) **89h:46010** 46A45 (47B10)
- Home, D.** (with Landsberg, P. T.) Wave function collapse in the ensemble interpretation. *Microphysical reality and quantum formalism, Vol. 1*, 2 (Urbino, 1985), 65–69. *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89m:81019** 81B05
- (with Conrad, Michael; Josephson, Brian) Beyond quantum theory: a realist psycho-biological interpretation of physical reality. *Microphysical reality and quantum formalism, Vol. 1*, 2 (Urbino, 1985), 285–293. *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89m:92001** 92A05 (81B99)
- (with Gangopadhyay, Debashis) Exploring the meaning of an individual Feynman path. *Phys. Lett. A* **126** (1988), no. 4, 219–222. (Summary) **89a:81030** 81C35
- (with Datta, Amitava; Raychaudhuri, Amitava) Is quantum mechanics with CP nonconservation incompatible with Einstein's locality condition at the statistical level? *Phys. Lett. A* **130** (1988), no. 4–5, 187–191. (Jeffrey Bub) **89m:81012** 81B05
- Homentovschí, Dorel** On the Dirichlet-Neumann mixed boundary value problem for harmonic functions in plane multiply connected domains. *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 9, 801–810. (M. A. Atakhodjaev) **89d:31004** 31A25
- Homer, Steven** (with Long, Timothy J.) Honest polynomial degrees and  $P = ?NP$ . *Theoret. Comput. Sci.* **51** (1987), no. 3, 265–280. (Uwe Schöningh) **89a:68070** 68Q15 (03D15)
- Homma, Masaaki** Smooth curves with smooth dual varieties. *Comm. Algebra* **16** (1988), no. 7, 1507–1512. (Ragni Piene) **89d:14044** 14H45 (14H50)
- Homma, Shigeo** (with Takeno, S.) Sine-lattice equation. III. Nearly integrable kinks with arbitrary kink amplitude. *J. Phys. Soc. Japan* **56** (1987), no. 10, 3480–3490. (Summary) **89a:39003** 39A10 (34A25, 34A34, 35Q20, 47B39)
- (with Takeno, S.; Kisoda, K.) Approximate soliton solutions around an exact soliton solution of the Toda lattice equation. *Phys. Lett. A* **130** (1988), no. 4–5, 279–282. (Summary) **89d:58114** 58F37 (35Q20, 58F07, 82A68)
- Statistical mechanics of the one-dimensional plane rotator model in an external field. *Phys. Lett. A* **133** (1988), no. 6, 275–278. (A. Ventura) **89i:82010** 82A05
- (with Matsuda, Hirotsugu; Ishii, Kazushige; Ogita, Naofumi) Theoretical basis of the decoupled cell Monte Carlo simulation for quantum systems. *Progr. Theoret. Phys.* **80** (1988), no. 4, 583–587. (Summary) **89m:81004** 81–08 (65C20, 82–08, 82A15)
- Homobono, Nathalie** Connectivity of the undirected Imase and Itoh networks. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), C, 179–194. (C. Peyrat) **89c:05132** 05C40
- (with Peyrat, C.) Connectivity of Imase and Itoh digraphs. *IEEE Trans. Comput.* **37** (1988), no. 11, 1459–1461. (Toshimasa Watanabe) **89k:05041** 05C20 (05C40, 68M10, 68R10)
- Hon, Y. C.** (with Chan, Chiu Yeung) Computational methods for generalized Thomas-Fermi models of neutral atoms. *Quart. Appl. Math.* **46** (1988), no. 4, 711–726. (Jiaqi Mo) **89j:81274** 81G45 (34A50, 34B15, 34B27, 65L10)
- Honary, B. K.** (with Bate, S. D.; Farrell, P. G.) Soft and hard decision decoding of product codes for communication systems. (Russian and Polish summaries) *Systems Sci.* **12** (1986), no. 4, 79–85 (1987). (Not in MR) **93B35**
- Honary, Taher G.** The density of peak points in the Shilov boundary of a Banach function algebra. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 480–482. (Julia Cufi) **89c:46057** 46L10
- Honda, Masanobu** Minimal conditions for Lie algebras and finiteness of their dimensions. *Hiroshima Math. J.* **17** (1987), no. 2, 325–336. (Introduction) **89b:17028** 17B65
- Honda, Tsuyoshi** (with Tsukamoto, Tatsuo; Matsuzaki, Hisao; Ishii, Chikai) Linear surprisal and simple birth, death and immigration process. *Progr. Theoret. Phys.* **77** (1987), no. 2, 254–261. (W. Th. F. den Hollander) **89d:82164** 82A99 (60B85, 70H10, 82A31)
- Honda, Yuzo** On the optimality of some tests of the error covariance matrix in the linear regression model. *J. Roy. Statist. Soc. Ser. B* **51** (1989), no. 1, 71–79. (Summary) **89m:62066** 62J05
- Honein, T.** (with Herrmann, G.) The involution correspondence in plane elastostatics for regions bounded by a circle. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 3, 566–573. (P. P. Teodorescu) **89i:73013** 73C02
- Honerkamp, J.** (with Greiner, A.; Strittmatter, W.) Numerical integration of stochastic differential equations. *J. Statist. Phys.* **51** (1988), no. 1–2, 95–108. (W. Hackenbroch) **89k:60076** 60H10 (65U05, 82–08, 82A97)
- nguyên nam Hông** see Nguyễn Nam Hông
- Hong, C. H.** (with Bauchau, O. A.) Nonlinear response and stability analysis of beams using finite elements in time. *ALAA J.* **26** (1988), no. 9, 1135–1142. (Summary) **89i:73048** 73K12 (73H10, 73K25)
- Hong, Chong Sun** (with David, H. T.) Granularity and efficiency. *J. Amer. Statist. Assoc.* **83** (1988), no. 403, 880–885. (Tapas K. Chandra) **89m:62031** 62F12
- Hong, Chong Wei** Equation  $\Delta u + K(x)e^{2u} = f(x)$  on  $\mathbb{R}^2$  via stereographic projection. *J. Math. Anal. Appl.* **130** (1988), no. 2, 484–492. (John Urbas) **89f:35073** 35J60 (58G30)
- A note on prescribed Gaussian curvature on  $S^2$ . *J. Partial Differential Equations Ser. A* **1** (1988), no. 1, 13–20. (Michael Grüter) **89j:53004** 53A05 (35J60, 58E30)
- Hong, Deog Ki** (with Harari, Diego; Ramond, P.; Rodgers, V. G. J.) The superstring, Diff  $S^1/S^1$ , and holomorphic geometry. *Nuclear Phys. B* **294** (1987), no. 2, 556–572. (Kotik K. Lee) **89d:58021** 58D05 (53C80, 58B25, 58F06, 81E30)
- The conformal factor and Diff  $S^1/S^1$ . *Phys. Lett. B* **206** (1988), no. 4, 607–611. (C. J. Atkin) **89i:81113** 81E99 (22E65, 58B20, 58B25, 58D30, 81E30)
- Hong, Hui Min** (with Chen, Zhao Lin; Zhang, Ji Feng) Controllability of generalised dynamical systems with constrained control. *J. Austral. Math. Soc. Ser. B* **30** (1988), no. 1, 69–78. (Tsu-Tian Lee) **89i:93008** 93B05 (93B17, 93C30)
- Hong, J. R.** see Hong, Jia Rong
- Hong, Jia-Dong** (with Chandra, M. Jeya; Cavalier, Tom M.) The assignment of minimum crews among bases in an airlift operation. *European J. Oper. Res.* **38** (1989), no. 2, 208–212. (Not in MR) **90B35**
- Hong, Ji Zhi** (with Zhang, Ke Min; Wang, Hong De) The generalized exponent set of a tournament. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **4** (1987), no. 2, 117–122. (W.-K. Chen) **89g:05077** 05C50
- Hong, Jia Lin** Existence and uniqueness of generalized solution of discontinuous differential equations in Banach space. *Ann. Differential Equations* **4** (1988), no. 3, 327–339. (Zdzisław Wyderka) **89k:34112** 34G20 (34A10, 34A15)
- Hong, Jia Rong** see Olariu, Stephan et al., **89j:68149**
- Hong, Jia Xing** (with Gu, Chao Hao) Some developments of the theory of partial differential equations of mixed type. *Mixed type equations*, 120–135. *Teubner-Texte Math.*, 90. Teubner, Leipzig, 1986. (Megumi Saigo) **89b:35112** 35M05
- Surface in  $\mathbb{R}^3$  with prescribed Gauss curvature. A Chinese summary appears in Chinese Ann. Math. Ser. A **8** (1987), no. 3, 534. *Chinese Ann. Math. Ser. B* **8** (1987), no. 3, 332–342. (Keti Tenenblat) **89b:53007** 53A05 (58C15)
- Unreflecting phenomena of singularities for a class of degenerate hyperbolic operators. *Dongbei Shuxue* **3** (1987), no. 4, 389–398. (V. Ivrii) **89m:35126** 35L15 (35A20, 58G17)
- $L^2$ -hypoellipticity for a class of operators of mixed type. A Chinese summary appears in Chinese Ann. Math. Ser. A **9** (1988), no. 2, 242. *Chinese Ann. Math. Ser. B* **9** (1988), no. 2,

- 183–188. (David S. Tartakoff) **89h:35078** 35H05 (35M05, 35S05)
- Harmonic maps defined on a manifold with a degenerate metric. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 471–479. (Toru Ishihara) **89i:58068** 58E20
- Hong, Min Chun** Existence and partial regularity in the calculus of variations. *Ann. Mat. Pura Appl.* (4) **149** (1987), 311–328. (Summary) **89f:49004** 49A21 (49A50)
- Galerkin methods for compressible miscible displacement in porous media. (Chinese. English summary) *Math. Numer. Sinica* **10** (1988), no. 2, 119–128. (Summary) **89b:65178** 65N30 (76S05)
- Hong, Nguyen Nam** see **Nguyễn Nam Hùng**
- Hong, Oh Kim** On an  $F$ -algebra of holomorphic functions. *Canad. J. Math.* **40** (1988), no. 3, 718–741. (Anthony G. O'Farrell) **89j:46053** 46J15 (30H05)
- Hong, S. K.** (with Ünal, Aynur) Characterization of a strange attractor in a fully-developed turbulent channel flow. *Dynamics Stability Systems* **2** (1987), no. 3–4, 197–212. (Summary) **89e:76053** 76F99 (58F13)
- Hong, Seung Pyo** (with Lee, Sungyun) Tube formulas from Chern's kinematic formula. *Bull. Korean Math. Soc.* **25** (1988), no. 2, 261–266. (Lieven Vanhecke) **89i:53040** 53C40
- Hong, Shan Tao** Dynamics of multideformable bodies. *Appl. Math. Mech. (English Ed.)* **9** (1988), no. 1, 37–50; translated from *Appl. Math. Mech.* **9** (1988), no. 1, 37–48 (Chinese. English summary). (Summary) **89d:73021** 73D99 (70E99)
- Hong, Sheng Yan** (with Chen, Gui Jing; Hu, Shu He) Some convergence problems about the increments of a Wiener process. *Acta Math. Sinica (N.S.)* **3** (1987), no. 1, 38–44. (M. Csörgő) **89b:60192** 60J65 (60G17)
- Hong, Suk Ho** On relations between handle body and Morse complex. *Bull. Korean Math. Soc.* **25** (1988), no. 1, 127–131. (T. Banchoff) **89k:58062** 58E10 (57R45)
- Hong, Sung Sa** (with Choe, Tae Ho; Han, Yong-Hyeon) Separated locales. II. *Kyungpook Math. J.* **27** (1987), no. 2, 109–114. (Jiří Rosický) **89j:54002** 54A05 (06D99)
- (with Choe, Tae Ho) The duality between frames and ordered topological spaces. *J. Korean Math. Soc.* **25** (1988), no. 1, 115–123. (Jiří Rosický) **89g:54002** 54A05 (06D20, 06F30)
- Hong, Yeon-Chan** (with Kim, Jong-Hwan; Choi, Keh-Kun) Discrete adaptive observer with exponential weighting properties. *IEEE Trans. Automat. Control* **34** (1989), no. 2, 229–231. (Not in MR) 93B07
- Hong, Yi** (with Zhang, Ming Yao) On the maximum modulus of complete trigonometric sums. *Acta Math. Sinica (N.S.)* **3** (1987), no. 4, 341–350. (Ming Gao Lu) **89i:11068** 11L40
- Hong, Yi Guang** (with Huang, Lin) Small disturbance problems associated with the algebraic Riccati equations of discrete linear time-invariant systems. (Chinese. English summary) *Control Theory Appl.* **5** (1988), no. 3, 106–110. (Not in MR) 93B25 (93C55)
- Hong, Yiming** On the nonexistence of nontrivial perfect  $e$ -codes and tight 2 $e$ -designs in Hamming schemes  $H(n, q)$  with  $e \geq 3$  and  $q \geq 3$ . *Graphs Combin.* **2** (1986), no. 2, 145–164. (Henk van Tilborg) **89d:94046** 94B25 (93C30)
- Hong, Yoo Pyo** (with Horn, Roger A.) A canonical form for matrices under consimilarity. *Linear Algebra Appl.* **102** (1988), 143–168. (Moody T. Chu) **89i:15018** 15A21 (15A23)
- Hong, Yuan** A note on the coefficients of chromatic polynomials. (Chinese. English summary) *J. East China Norm. Univ. Natur. Sci. Ed.* **1984**, no. 4, 33–35. (Summary) **89i:05117** 05C15
- Bounds of eigenvalues of a graph. *Acta Math. Appl. Sinica (English Ser.)* **4** (1988), no. 2, 165–168. (W.-K. Chen) **89i:05197** 05C50 (05C35)
- Hong, Zhi Shen** (with Sheng, Shou Lin) A new algorithm for on-line security constrained economic dispatch. (Chinese. English summary) *Xi'an Jiaotong Daxue Xuebao* **21** (1987), no. 6, 99–110. (Not in MR) 90C31
- Hongan, M.** (with Komatsu, Hiroaki)  $(\sigma, \tau)$ -derivations with invertible values. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 4, 411–415. (Jeanne Wald Kerr) **89m:16067** 16A72
- (with Tominaga, H.) A commutativity theorem for rings with commuting powers. (Serbo-Croatian summary) *Glas. Mat. Ser. III* **22**(42) (1987), no. 1, 13–14. (Howard E. Bell) **89e:16049** 16A70
- (with Mogami, I.) On a theorem of D. J. Hansen. (Serbo-Croatian summary) *Glas. Mat. Ser. III* **22**(42) (1987), no. 2, 301–302. (Kazuo Kishimoto) **89i:16030** 16A72
- (with Hirano, Yasuyuki; Ōhori, Masayuki) Correction to: "On right p.p. rings" [Math. J. Okayama Univ. **24** (1982), no. 2, 99–109; MR 85b:16019]. *Math. J. Okayama Univ.* **30** (1988), 213–214. (From the text) **89k:16046** 16A50
- Hongfei, Zhang** see **Zhang, Hong Fei**
- Hongler, M.-O.** (with Streit, L.) On the origin of chaos in gearbox models. *Phys. D* **29** (1988), no. 3, 402–408. (Summary) **89c:70057** 70K50 (58F13, 70B15)
- (with Cartier, P.; Flury, P.) Numerical study of a model of vibro-transporter. *Phys. Lett. A* **135** (1989), no. 2, 106–112. (Summary) **89m:70048** 70K40 (70K50)
- ta Hông Quang** see **Ta Hông Quang**
- th Hông Tân** see **Đỗ Hồng Tân**
- nguyên Hồng Thái** see **Nguyễn Hồng Thái**
- dang Hong Tiem** see **Dang Hong Tiem**
- Hong Tuan, R.** (with Aoyama, S.) Conformally invariant  $U(1)$ -gauge theory in two dimensions. *Phys. Lett. B* **202** (1988), no. 1, 63–66. (Summary) **89b:81112** 81E13 (81E20, 81E30)
- le Hong Van** see **Le Hong Van**
- Honkala, Iiro S.** Lower bounds for binary covering codes. *IEEE Trans. Inform. Theory* **34** (1988), no. 2, 326–329. (John Karlof) **89f:94031** 94B60 (11T71)
- (with Hämaläinen, Heikki O.) A new construction for covering codes. Coding techniques and coding theory. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part II, 1343–1344. (see **89j:94002**) 94B60
- Honkala, Juha** A defect property of codes with unbounded delays. *Discrete Appl. Math.* **21** (1988), no. 3, 261–264. (Ludwig Staiger) **89j:94035** 94B45
- Honkapohja, Seppo** On continuity of compensated demand. *Internat. Econom. Rev.* **28** (1987), no. 3, 545–557. (Introduction) **89b:90029** 90A10
- de Honnecourt, Villard** see **Bechmann, Roland**, **89i:01008**
- Honsell, Furio** (with Forti, Marco) On the ordering of nonstandard real numbers. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **79** (1985), no. 1–4, 1–8 (1986). (Sauro Tulipani) **89f:03064** 03H05 (26E35)
- (with Forti, Marco) Axioms of choice and free construction principles. III. *Bull. Soc. Math. Belg. Sér. B* **39** (1987), no. 3, 259–276. (From the introduction) **89b:03083** 03E25 (03E30, 04A25)
- Honstetter, Wolfgang** ★ Beschränkte Ringe und minimale subdirekte Produkte. (German) [Bounded rings and minimal subdirect products] *Algebra Berichte [Algebra Reports]*, 58. Verlag Reinhard Fischer, München, 1988. iv+53 pp. ISBN 3-88927-043-3. (L. Bican) **89d:16018** 16A34 (16A33, 16A35)
- Hoo, C. S.** (with Ramana Murty, P. V.) The ideals of a bounded commutative BCK-algebra. *Math. Japon.* **32** (1987), no. 5, 723–733. (Marek Palasiński) **89a:06032** 06D99 (03G25)
- BCK-algebras with Iséki's condition (C). *Math. Japon.* **32** (1987), no. 5, 735–739. (A. B. Thaheem) **89b:06008** 06D99 (03G25)
- Quasicommutativity of BCI-algebras. *Math. Japon.* **32** (1987), no. 5, 741–748. (A. B. Thaheem) **89a:06033** 06D99 (03G25)
- BCI-algebras with condition (S). *Math. Japon.* **32** (1987), no. 5, 749–756. (A. B. Thaheem) **89a:06034** 06D99 (03G25)
- (with Ramana Murty, P. V.) Quasicommutative  $p$ -semisimple BCI algebras. *Math. Japon.* **32** (1987), no. 6, 889–894. (Wiesław A. Dudek) **89c:06015** 06D99 (03G25)
- The ideal algebra of a BCK-algebra. *Math. Japon.* **32** (1987), no. 6, 997–1002. (Wiesław A. Dudek) **89c:06016** 06D99 (03G25)
- Quasicommutative BCI-algebras. *Math. Japon.* **33** (1988), no. 1, 49–56. (Summary) **89a:06035** 06D99 (03G25)
- Injectives in the categories of BCK- and BCI-algebras. *Math. Japon.* **33** (1988), no. 2, 237–246. (Marek Palasiński) **89g:06029** 06D99 (03G25, 18B99)
- Free and injective BCI-algebras. *Math. Japon.* **33** (1988), no. 4, 523–528. (Summary) **89j:06011** 06D99 (03G25, 18G05)
- Ideals in BCK-algebras. *Math. Japon.* **33** (1988), no. 4, 529–533. (Summary) **89f:06023** 06D99 (03G25)
- (with Shum, K. P.) A note on commutative  $I$ -groups. *Southeast Asian Bull. Math.* **12** (1988), no. 1, 71–73. (From the text) **89k:06014** 06F20
- Hood, Christine E.** (with Jones, John D. S.) Some algebraic properties of cyclic homology groups. *K-Theory* **1** (1987), no. 4, 361–384. (Sue Geller) **89f:18011** 18G15 (18F25, 18G35, 19D55)
- Hooda, D. S.** (with Kumar, Ashok<sup>3</sup>) The mean and variance of an MLE of generalized "useful" information. *Math. Student* **49** (1981), no. 2–4, 263–269 (1985). (Not in MR) 62H99
- (with Singh, Umed) On useful information generating functions. (French and Italian summaries) *Statistica (Bologna)* **46** (1986), no. 4, 527–535. (Summary) **89a:94013** 94A17 (62B10)
- † Hooft, G.** Strings from gravity. *Unification of fundamental interactions (Marstrand, 1986)*, 143–150. *Royal Swedish Acad. Sci., Stockholm*, 1987. (see **89f:81005**) 83C47 (81E30, 83E30)
- Nonperturbative 2 particle scattering amplitudes in 2 + 1-dimensional quantum gravity. *Comm. Math. Phys.* **117** (1988), no. 4, 685–700. (Yu. N. Obukhov) **89b:83022** 83C45 (81E20, 83C47)
- On the factorization of universal poles in a theory of gravitating point particles. *Nuclear Phys. B* **304** (1988), no. 4, 867–876. (Markku Lehto) **89j:83039** 83C45 (81F99, 81G25)
- de Hoog, F.** (with Bojańczyk, A.; Brent, Richard P.; Van Dooren, Paul) Downtanding the Cholesky factorization. *Algorithms and applications on vector and parallel computers (Amsterdam, 1985–86)*, 307–323. *Special Topics Supercomput.*, 3, North-Holland, Amsterdam-New York, 1987. (Summary) **89i:65042** 65F30 (65W05)
- Hoogeboom, H. J.** (with Ehrenfeucht, Andrzej; Rozenberg, Grzegorz) Coordinated pair systems. I. Dyck words and classical pumping. (French summary) *RAIRO Inform. Théor. Appl.* **20** (1986), no. 4, 405–424. (J.-M. Autebert) **89a:68115** 68Q45
- (with Ehrenfeucht, Andrzej; Rozenberg, Grzegorz) Coordinated pair systems. II. Sparse structure of Dyck words and Ogden's lemma. (French summary) *RAIRO Inform. Théor. Appl.* **20** (1986), no. 4, 425–439. (J.-M. Autebert) **89a:68116** 68Q45
- (with Ehrenfeucht, Andrzej; Rozenberg, Grzegorz) On the active and full use of memory in right-boundary grammars and push-down automata. *Theoret. Comput. Sci.* **48** (1986), no. 2–3, 201–228 (1987). (M. Novotný) **89a:68133** 68Q50
- (with Ehrenfeucht, Andrzej; Rozenberg, Grzegorz) Recording the use of memory in right-boundary grammars and push-down automata. *Acta Inform.* **25** (1988), no. 2, 203–231. (Gheorghe Păun) **89d:68041** 68Q45 (68Q50)
- (with Engelfriet, Joost) Prefix and equality languages of rational functions are co-context-free. *Inform. Process. Lett.* **28** (1988), no. 2, 77–79. (Maxime Crochemore) **89b:68082** 68Q45
- Hoogewerff, G. J.** see **Offerhaus, Johannes**, (**89m:00011**)
- Hooghiemstra, Gerard** Comment to: "Asymptotic behaviour of a stopping time related to cumulative sum procedures and single-server queues" [J. Appl. Probab. **24** (1987), no. 1, 200–214; MR 88h:60136] by W. Stadje. With a reply by Stadje. *J. Appl. Probab.* **24** (1987), no. 4, 1012–1013. (Douglas P. Kennedy) **89b:60162** 60J15 (90B22)
- A path construction for the virtual waiting time of an  $M/G/1$  queue. *Statist. Neerlandica* **41** (1987), no. 3, 175–181. (Masakiyo Miyazawa) **89a:60221** 60K25 (60K30, 90B22)
- (with Greenwood, Priscilla E.) An extreme-type limit law for a storage process. *Math. Oper. Res.* **13** (1988), no. 2, 232–242. (J. Gani) **89d:60191** 60K30 (60F99, 60J10, 90B05)
- (with Keane, Michael; van de Ree, Simon) Power series for stationary distributions of coupled processor models. *SIAM J. Appl. Math.* **48** (1988), no. 5, 1159–1166. (A. Fuchs) **89b:68006** 68M20 (60K25)
- Hoogland, A.** (with Compagner, A.) Maximum-length sequences, cellular automata, and random numbers. *J. Comput. Phys.* **71** (1987), no. 2, 391–428. (M. Mendes France) **89a:65009** 65C10 (11K45, 58F08, 68Q80)
- Hoogland, H.** (with Bart, H.) Complementary triangular forms of pairs of matrices, realizations with prescribed main matrices, and complete factorization of rational matrix functions. *Linear Algebra Appl.* **103** (1988), 193–228. (L. Rodman) **89c:15017** 15A21 (15A23, 47A68, 93B25)
- Hooker, J. N.** Generalized resolution and cutting planes. *Ann. Oper. Res.* **12** (1988), no. 1–4, 217–239. (Costică Cazacu) **89g:68062** 68T15 (03B35, 90C10)
- Networklike metric spaces. *Discrete Math.* **68** (1988), no. 1, 31–43. (Peter J. Slater) **89d:05062** 05C05 (54E35, 94C15)
- Resolution vs. cutting plane solution of inference problems: some computational experience. *Oper. Res. Lett.* **7** (1988), no. 1, 1–7. (Summary) **89a:90090** 90C10 (03B35, 03D15)



- Solving nonlinear multiple-facility network location problems. *Networks* 19 (1989), no. 1, 117–133. (Summary) **89j:90092** 90B10
- Hooker, John W.** (with Ahlbrandt, Calvin D.) Recursive solutions of symmetric three term recurrence relations. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 3–42, *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (Summary) **89g:39007** 39A12 (15A24, 39A10, 39A70)
- (with Ahlbrandt, Calvin D.) Riccati matrix difference equations and disconjugacy of discrete linear systems. *SIAM J. Math. Anal.* 19 (1988), no. 5, 1183–1197. (Bernd Aulbach) **89m:39001** 39A10 (15A06, 34C10, 39A12)
- Hooley, Christopher** ★ *Применения методов решета в теории чисел.* (Russian) [Applications of sieve methods to the theory of numbers] Translated from the English and with a foreword by V. N. Chubarikov. "Nauka", Moscow, 1987. 136 pp. (Editors) **89c:11145** 11N35
- On nonary cubic forms. *J. Reine Angew. Math.* 386 (1988), 32–98. (D. R. Heath-Brown) **89h:11014** 11D72 (11E76, 11P55)
- de Hoop, Adrianus T.** Time-domain reciprocity theorems for acoustic wave fields in fluids with relaxation. *J. Acoust. Soc. Amer.* 84 (1988), no. 5, 1877–1882. (Summary) **89f:76083** 76Q05
- Acoustic radiation from impulsive sources in a layered fluid. *Nieuw Arch. Wisk.* (4) 6 (1988), no. 1–2, 111–129. (Summary) **89h:76031** 76Q05 (86A15)
- Hooper, A.** A note on the energy stability equation for Couette flow of two superposed viscous fluids. *Energy stability and convection* (Capri, 1986), 383–391, *Pitman Res. Notes Math. Ser.*, 168, Longman Sci. Tech., Harlow, 1988. (see **89c:76004**) **76E99** (76V05)
- (with Grimshaw, R.) Travelling wave solutions of the Kuramoto-Sivashinsky equation. *Wave Motion* 10 (1988), no. 5, 405–420. (Yu. Z. Aleshkov) **89h:76039** 76D33
- Hooper, Peter M.** Simultaneous estimation and prediction using the expected coverage measure criterion. *Ann. Statist.* 16 (1988), no. 1, 265–277. (H. L. Harter) **89g:62011** 62A05 (62F25)
- (with Thorisson, Hermann) On killed processes and stopped filtrations. *Stochastic Anal. Appl.* 6 (1988), no. 4, 389–395. (F. B. Knight) **89i:60074** 60G05
- Hoover, Douglas N.** A characterization of adapted distribution. *Ann. Probab.* 15 (1987), no. 4, 1600–1611. (Tom L. Lindström) **89b:60095** 60G05 (60H10)
- Hoover, Thomas B.** (with Hadwin, Donald W.) Operator algebras and the conjugacy of transformations. *J. Funct. Anal.* 77 (1988), no. 1, 112–122. (David R. Larson) **89e:47069** 47D30 (46L05, 46L55)
- Hoover, William G.** Reversible mechanics and time's arrow. *Phys. Rev. A* (3) 37 (1988), no. 1, 252–257. (Koichiro Matsuno) **89b:82044** 82A35 (58F11, 58F40)
- see also **Molecular-dynamics simulation of statistical-mechanical systems**, **89c:58032**
- Hooykaas, R.** The rise of modern science: when and why? *British J. Hist. Sci.* 20 (1987), no. 67, part 4, 453–473. (D. J. Struik) **89i:01020** 01A40 (01A45)
- Hopcraft, K. I.** (with Smith, P. R.) Inverse scattering and phase retrieval in one dimension. *Some topics on inverse problems* (Montpellier, 1987), 285–293, *World Sci. Publishing, Singapore*, 1988. (John Adam) **89k:34031** 34B25 (34A55, 81F99)
- Hopcroft, John** (with Hoffmann, Christoph) The potential method for blending surfaces and corners. *Geometric modeling*, 347–365, *SIAM, Philadelphia, PA*, 1987. (see **89b:65010**) **65D10**
- (with Hoffmann, Christoph) The geometry of projective blending surfaces. *Geometric reasoning* (Oxford, 1986). *Artificial Intelligence* 37 (1988), no. 1–3, 357–376. (H. W. Guggenheimer) **89m:68134** 68U05 (14N05, 51N15)
- Hopf, Frederic A.** (with Michod, Richard E.; Sanderson, Michael J.) The effect of the reproductive system on mutation load. *Theoret. Population Biol.* 33 (1988), no. 3, 243–265. (Summary) **89f:92044** 92A15 (92A12)
- Hopfield, John** (with Denker, John; Schwartz, Daniel B.; Wittner, Ben; Solla, Sara; Howard, Richard; Jackel, Lawrence) Large automatic learning, rule extraction, and generalization. *Complex Systems* 1 (1987), no. 5, 877–922. (Summary) **89k:92080** 92A25
- Höpfner, Reinhard** A remark on stopping times associated with continuous-time ergodic Markov chains and an application to statistical inference in birth-and-death processes. *Scand. J. Statist.* 14 (1987), no. 3, 211–219. (Wolfgang Winkler) **89c:62136** 62L10 (60G40, 60J27, 62M05)
- Asymptotic inference for continuous-time Markov chains. *Probab. Theory Related Fields* 77 (1988), no. 4, 537–550. (J. M. Stoyanov) **89h:62144** 62M05
- Hopke, P. K.** (with Kaufman, Linda; Rousseau, Peter J.) Using a parallel computer system for statistical resampling methods. *CSQ—Comput. Statist. Quart.* 4 (1988), no. 2, 129–141. (Not in MR) **62–04**
- Hopkins, Michael J.** Global methods in homotopy theory. *Homotopy theory* (Durham, 1985), 73–96, *London Math. Soc. Lecture Note Ser.*, 117, Cambridge Univ. Press, Cambridge-New York, 1987. (Douglas C. Ravenel) **89g:55022** 55Q45 (55P42, 55P60, 55Q10)
- (with Devinatz, Ethan S.; Smith, Jeffrey H.) Nilpotence and stable homotopy theory. *I. Ann. of Math.* (2) 128 (1988), no. 2, 207–241. (Frederick Cohen) **89m:55009** 55Q10 (55P42, 55Q52)
- Hopkins, Nora C.** Decomposition of Lie module triple systems. *Algebras Groups Geom.* 3 (1986), no. 4, 399–413. (Joseph C. Ferrar) **89c:17007** 17A40 (17B10, 17B60)
- On the derivation algebras of Lie module triple systems. *J. Algebra* 111 (1987), no. 2, 520–527. (Georgia M. Benkart) **89a:17002** 17A40 (17B40)
- Hopkins, William E., Jr.** (with Wong, Wing Shing) Implementation issues in product formulas for nonlinear filtering. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 351–358, *North-Holland, Amsterdam-New York*, 1986. (Summary) **89c:93072** 93E11 (60G35, 93C10)
- Optimal stabilization of families of linear stochastic differential equations with jump coefficients and multiplicative noise. *SIAM J. Control Optim.* 25 (1987), no. 6, 1587–1600. (V. Kolmanovskii) **89d:93080** 93D15 (49B60, 60H10, 93C05, 93E15, 93E20)
- Hopp, Wallace J.** (with Bean, James C.; Smith, Robert L.) A new optimality criterion for nonhomogeneous Markov decision processes. *Oper. Res.* 35 (1987), no. 6, 875–883. (A. Nowak) **89g:90232** 90C40
- Sensitivity analysis in discrete dynamic programming. *J. Optim. Theory Appl.* 56 (1988), no. 2, 257–269. (Jaap Wessels) **89f:90180** 90C39
- (with Jones, Philip C.; Zydiak, James L.) Stationary dual prices and depreciation. *Math. Programming* 41 (1988), no. 3 (Ser. A), 357–366. (Summary) **89c:90041** 90A11
- (with Wu, Sung-Chi) Multi-action maintenance under Markovian deterioration and incomplete state information. *Naval Res. Logist.* 35 (1988), no. 5, 447–462. (Benjamin Epstein) **89k:90073** 90B25 (60K10)
- Hoppe, Jens**  $\text{Diff}_g T^2$  and the curvature of some infinite-dimensional manifolds. *Phys. Lett. B* 215 (1988), no. 4, 706–710. (Summary) **89k:58046** 58D05 (17B65, 58B20, 81E30, 83E30)
- Hoppe, Ronald H. W.** Multigrid algorithms for variational inequalities. *SIAM J. Numer. Anal.* 24 (1987), no. 5, 1046–1065. (R. N. Pandey) **89h:65157** 65K10 (49A29, 65F10, 90C33, 90C39)
- (with Kornhuber, Ralf) Multigrid methods for the two-phase Stefan problem. *Multigrid methods* (Copper Mountain, CO, 1987), 267–297, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (S. F. McCormick) **89h:65165** 65N20
- Multigrid solutions to the elastic plastic torsion problem in multiply connected domains. *Internat. J. Numer. Methods Engrg.* 26 (1988), no. 3, 631–646. (Summary) **89a:73001** 73–08 (73E99)
- Hoppe, Veronika** Polymatroide im  $E_1^3$ . [Polymatroids in  $E_1^3$ ] *Wiss. Z. Tech. Hochsch. Ilmenau* 33 (1987), no. 3, 35–46. (A. E. Brouwer) **89a:05047** 05B35 (52A25, 90C27)
- Zu einem speziellen Maschinenbelegungsproblem. [On a special machine sequencing problem] *Wiss. Z. Tech. Hochsch. Ilmenau* 34 (1988), no. 3, 39–50. (Peter Brucker) **89f:90073** 90B35 (90C11)
- Hoppenstedt, Georg Ernst** see **Betsch, Gerhard**, **89j:01038**
- Hopper, Grace Brewster Murray** see **King, Amy C.**, (**89b:01071**)
- Hora, Akihito** (with Yamasaki, Yasuo) Differentiable shifts for measures on infinite-dimensional spaces. *Publ. Res. Inst. Math. Sci.* 23 (1987), no. 2, 275–296. (Richard Becker) **89b:46061** 46G12 (28C20, 58C35)
- Hora, Stephen C.** (with Iman, Ronald L.) Asymptotic relative efficiencies of the rank-transformation procedure in randomized complete block designs. *J. Amer. Statist. Assoc.* 83 (1988), no. 402, 462–470. (Not in MR) **62K10**
- Horáček, Jiří** Extrapolation technique for solution of scattering integral equations. *J. Phys. A* 22 (1989), no. 4, 355–363. (Summary) **89m:81174** 81F05 (81–08)
- Horadam, A. F.** (with Mahon, J. M.) A constellation of sequences of generalized Pell polynomials. *Fibonacci Quart.* 25 (1987), no. 2, 106–110. (Autorreferat [Zbl 617:10009]) **89c:11010** 11B37
- (with Mahon, J. M.) Mixed Pell polynomials. *Fibonacci Quart.* 25 (1987), no. 4, 291–299. (A. N. Philippou) **89f:11034** 11B83 (11B39)
- Generalization of a result of Morgado. *Portugal. Math.* 44 (1987), no. 2, 131–136. (Louis Shapiro) **89a:11021** 11B37
- (with Shannon, A. G.) Generalization of identities of Catalan and others. *Portugal. Math.* 44 (1987), no. 2, 137–148. (Volker Strehl) **89c:11029** 11B39
- Octave recurrence relations. *Portugal. Math.* 44 (1987), no. 2, 167–181. (G. Turnwald) **89a:11022** 11B37
- (with Shannon, A. G.) Asveld's polynomials  $p_i(n)$ . *Applications of Fibonacci numbers* (San Jose, CA, 1986), 163–176, *Kluwer Acad. Publ., Dordrecht*, 1988. (H. L. Abbott) **89j:11015** 11B37
- (with Shannon, A. G.) Fibonacci and Lucas curves. *Fibonacci Quart.* 26 (1988), no. 1, 3–13. (J. B. Roberts) **89c:11031a** 11B39 (51N20)
- (with Pethe, S.) Generalized Gaussian Lucas primordial functions. *Fibonacci Quart.* 26 (1988), no. 1, 20–30. (M. S. Cheema) **89m:11018** 11B39 (05A19, 11B37)
- Jacobsthal and Pell curves. *Fibonacci Quart.* 26 (1988), no. 1, 77–83. (J. B. Roberts) **89c:11031b** 11B39 (51N20)
- Elliptic functions and Lambert series in the summation of reciprocals in certain recurrence-generated sequences. *Fibonacci Quart.* 26 (1988), no. 2, 98–114. (Sri Gopal Mohanty) **89c:11013** 11B39
- (with Filipponi, Piero) A matrix approach to certain identities. *Fibonacci Quart.* 26 (1988), no. 2, 115–126. (A. N. Philippou) **89c:15040** 15A99
- (with Shannon, A. G.) Generalized Fibonacci continued fractions. *Fibonacci Quart.* 26 (1988), no. 3, 219–223. (Oto Strauch) **89m:11014** 11A55
- see also **Applications of Fibonacci numbers**, **89b:11003**
- Horák, Jiří** Predictability of fluid mechanical fields. *Acta Tech. ČSAV* 32 (1987), no. 4, 417–430. (Peter E. Kloeden) **89a:76033** 76E20 (58D05, 58E10)
- Horák, Karel** (with Müller, Vladimír; Vrbová, Pavla) A remark concerning uniqueness of the Wold decomposition of finite-dimensional stationary processes. (Russian and Czech summaries) *Appl. Mat.* 32 (1987), no. 5, 337–345. (Franz Schmidt) **89c:60054** 60G10 (47A15, 47B15, 60G25)
- Horák, Pavel** A note on the third-order strong divisibility sequences. *Fibonacci Quart.* 26 (1988), no. 4, 366–371. (A. G. Shannon) **89m:11016** 11B37
- Horák, Peter** (with Širáň, Jozef) On a construction of Thomassen. *Graphs Combin.* 2 (1986), no. 4, 347–350. (R. C. Entringer) **89j:05045** 05C35 (05C45)
- A generalization of Hall's theorem. *J. Combin. Math. Combin. Comput.* 2 (1987), 223–233. (C. St. J. A. Nash-Williams) **89c:05009** 05A05
- Subgraphs intersecting any Hamiltonian cycle. *J. Combin. Theory Ser. B* 44 (1988), no. 1, 75–86. (Summary) **89g:05062** 05C35 (05C45)
- Horálek, V.** (with Beneš, Viktor) On a special application of the truncation problem. *Metrika* 35 (1988), no. 2, 63–76. (Summary) **89b:62041** 62E15 (62P99)
- Hordijk, Arie** Insensitivity, sensitivity and partial insensitivity for some queueing models. *Queueing theory and its applications*, 363–373, *CWI Monographs*, 7, North-Holland, Amsterdam-New York, 1988. (Ralph L. Disney) **89k:60136** 60K25 (90B22)
- (with Ridder, Ad) Insensitive bounds for the stationary distribution of nonreversible Markov chains. *J. Appl. Probab.* 25 (1988), no. 1, 9–20. (Summary) **89m:60230** 60K25 (60J10)
- (with Dekker, Rommert) Average, sensitive and Blackwell optimal policies in denumerable Markov decision chains with unbounded rewards. *Math. Oper. Res.* 13 (1988), no. 3, 395–420. (Masami Kurano) **89k:90173** 90C40
- Hordijk, Leen** (with Bennett, Robert J.) Regional econometric and dynamic models. *Handbook of regional and urban economics*, Vol. 1, 407–441, *Handbooks in Econ.*, 7, North-Holland, Amsterdam-New York, 1986. (see **89m:90047**) **90A17** (90A16, 90A30)
- Hoteřák, J.** (with Novotný, J.; Záv'yalov, O. I.) Dimensional regularization of the VVA triangle graph as a continuous superposition of Pauli-Villars regularizations. *Phys. Lett. B* 213 (1988), no. 2, 173–176. (Summary) **89i:81078** 81E15

- Horgan, C. O.** Some applications of maximum principles in linear and nonlinear elasticity. *Maximum principles and eigenvalue problems in partial differential equations* (Knoxville, TN, 1987), 49–67, Pitman Res. Notes Math. Ser., 175, Longman Sci. Tech., Harlow, 1988. (Alexander Mielke) **89i:35028** 35B50 (35J15, 73C10, 73C50)
- (with Vafaeides, P.) Exponential decay estimates for solutions of the von Kármán equations on a semi-infinite strip. *Arch. Rational Mech. Anal.* **104** (1988), no. 1, 1–25. (D. Ieşan) **89i:73020** 73C50 (35B40, 35J60, 73C10, 73K10)
- Hori, Munee** (with Nemat-Nasser, S.) Erratum: "Interacting micro-cracks near the tip in the process zone of a macro-crack" [*J. Mech. Phys. Solids* **35** (1987), no. 5, 601–629; MR **88g:73079**]. *J. Mech. Phys. Solids* **36** (1988), no. 4, 499. (Editors) **89d:73042** 73M05
- Hori, Takayuki** Generalization of general relativity to the space of closed strings. *Phys. Lett. B* **194** (1987), no. 4, 487–489. (Miao Li) **89b:81155** 81E20 (81E30, 83E30)
- Horibe, Yasuichi** Entropy of terminal distributions and the Fibonacci trees. *Fibonacci Quart.* **26** (1988), no. 2, 135–140. (R. E. Pippert) **89f:05061** 05C05 (68R10)
- Horie, Kuniaki** On Iwasawa  $\lambda$ -invariants of imaginary abelian fields. *J. Number Theory* **27** (1987), no. 3, 238–252. (Yasumasa Akagawa) **89i:11110** 11R23
- (with Nakagawa, Jin) Elliptic curves with no rational points. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 20–24. (Ehud de Shalit) **89k:11113** 11R45 (11D25, 11G05, 11R11, 14G25)
- Iwasawa's  $\lambda$ -invariant and a supplementary factor in an algebraic class number formula. *Trans. Amer. Math. Soc.* **308** (1988), no. 1, 313–328. (T. Metsänkylä) **89i:11118** 11R23 (11R20, 11R29)
- Horie, Mitsuko** A note on central class fields. *Abh. Math. Sem. Univ. Hamburg* **57** (1987), 119–125. (Teruo Takeuchi) **89d:11093** 11R20 (11R37)
- Hori, Zen-ichiro** Tooth pattern: towards a mathematical principle to determine the patterns. *Science on form* (Sakura, 1985), 379–385, Reidel, Dordrecht-Boston, MA, 1987. (See **89g:82013**) 92A09
- Horikawa, Eiji** Local deformation of pencil of curves of genus two. *Proc. Japan Acad. Ser. A Math. Sci.* **64** (1988), no. 7, 241–244. (F. Gherardelli) **89m:32034** 32G05 (32J15)
- Horita, Takehiko** (with Morita, Terumitsu; Hata, Hiroki; Mori, Hazime; Tomita, Koji) Spatial and temporal scaling properties of strange attractors and their representations by unstable periodic orbits. *Progr. Theoret. Phys.* **79** (1988), no. 2, 296–312. (Andrew C. Fowler) **89h:58128** 58F13 (26A18)
- Horiuchi, Annick** La science calendérique de Takebe Katahiro (1664–1739). [The calendar science of Katahiro Takebe (1664–1739)] *Historia Sci. No.* **33** (1987), 3–24. (Brunetto Piochi) **89e:01007** 01A27 (01A50)
- Horiuchi, Kazuo** (with Sumi, Yuzo; Oishi, Shin'ichi; Takase, Tadaaki) A constructive approach to the analysis of nonlinear resistive circuits based on the fixed point algorithm theory. *Electron. Comm. Japan. Part I Comm.* **68** (1985), no. 6, 11–18. (Summary) **89j:94041** 94C05
- (with Onozawa, Akira; Inoue, Masayuki; Oishi, Shin'ichi) On principal partition of matroids with parity condition into strongly irreducible minors pairs. *Electron. Comm. Japan. Part I Comm.* **68** (1985), no. 11, 10–19. (András Recsiki) **89j:05029** 05B35
- (with Yamamura, Kiyotaka; Oishi, Shin'ichi) Simplicial homotopy method for the solution of nonlinear two-point boundary value problems. *Electron. Comm. Japan. Part I Comm.* **68** (1985), no. 11, 40–48. (Zhong Wu Chu) **89j:65059** 65L10 (58C30, 65H05)
- (with Yamamura, Kiyotaka) Steady-state analysis of nonlinear oscillatory circuits by iterative decomposition method. *Electron. Comm. Japan. Part I Comm.* **69** (1986), no. 9, 20–29. (Summary) **89j:94043** 94C05 (65H99)
- Horiuchi, Kenji** (with Kanamori, Tadashi) Polymorphic type inference in Prolog by abstract interpretation. *Logic programming '87* (Tokyo, 1987), 195–214, *Lecture Notes in Comput. Sci.* **315**, Springer, Berlin-New York, 1988. (See **89h:68137**) 68T25
- Horiuchi, Kiyomitsu** (with Murakami, Haruo) A note on fuzzy sets. *Southeast Asian Bull. Math.* **11** (1987), no. 1, 45–48. (From the introduction) **89f:03050** 03E72
- Mode-type operators on fuzzy sets. *Fuzzy Sets and Systems* **27** (1988), no. 2, 131–139. (Summary) **89e:03098** 03E72
- Horiuchi, Ryutarō** (with Kato, Takao) Weierstrass gap sequences at the ramification points of trigonal Riemann surfaces. *J. Pure Appl. Algebra* **50** (1988), no. 3, 271–285. (R. F. Lax) **89d:14045** 14H45 (14F07, 14H30, 30F20)
- (with Tanimoto, Tomihiko) Fixed points of automorphisms of compact Riemann surfaces and higher-order Weierstrass points. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 856–860. (I. Kra) **89i:30054** 30F35 (14F07, 14H99)
- Horiuchi, Toshio** On the potential theory for certain degenerated elliptic operators. *Bull. Fac. Sci. Ibaraki Univ. Ser. A No.* **20** (1988), 27–45. (G. Wildenhain) **89h:35129** 35J70 (31B35, 31C15)
- Hörmander, Lars** Remarks on the Klein-Gordon equation. *Journées "Équations aux dérivées partielles"* (Saint Jean de Monts, 1987), Exp. No. 1, 9 pp., École Polytech., Palaiseau, 1987. (Manuel Milla Miranda) **89b:35095** 35L70 (35Q20)
- ★ Анализ линейных дифференциальных операторов с частными производными. Том 4. (Russian) [The analysis of linear partial differential operators. Vol. 4] Интегральные операторы Фурье. [Fourier integral operators] Translated from the English by A. I. Komech. Translation edited and with a preface by M. A. Shubin. "Mir", Moscow, 1988. 448 pp. ISBN 5-03-001204-4 (Editors) **89k:35002** 35-02 (35Sxx, 47G05, 58G15)
- Pseudo-differential operators of type I, I. *Comm. Partial Differential Equations* **13** (1988), no. 9, 1085–1111. (William Margulies) **89k:35260** 35S05 (47G05)
- See also **Gårding, Lars**, **89m:01091**
- van den Horn, B. A.** (with Kuipers, M.) Strength and stiffness of a reinforced flexible hose. *Appl. Sci. Res.* **45** (1988), no. 3, 251–281. (Not in MR) **73K15** (73K20)
- Horn, Berthold K. P.** (with Hilden, Hugh M.; Negahdaripour, Shahrar) Closed-form solution of absolute orientation using orthonormal matrices. *J. Opt. Soc. Amer. A* **5** (1988), no. 7, 1127–1135. (Summary) **89g:78003** 78-08
- Horn, David** (with Weyers, J.) Hypercubic structures in orthogonal Hopfield models. *Phys. Rev. A* **3** **36** (1987), no. 10, 4968–4974. (Jacek Miękisz) **89c:82056** 82A57 (82A68)
- (with Langeveld, W. G. J.; Quinn, H. R.; Weinstein, Marvin) Operator renormalization group. *Phys. Rev. D* **3** **38** (1988), no. 10, 3238–3247. (Summary) **89j:81005** 81-08 (81E15, 81E25, 82A68)
- Horn, Günther** Characterization of the predual and ideal structure of a JBW\*-triple. *Math. Scand.* **61** (1987), no. 1, 117–133. (Josuke Hakeda) **89a:46140** 46L70 (17C65, 46H70)
- (with Barton, Thomas Joseph; Dang, Trien Bang) Normal representations of Banach Jordan triple systems. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 551–555. (Bruno Iochum) **89c:46065** 46H70 (17C65, 46L70, 47D99)
- (with Neher, Erhard) Classification of continuous JBW\*-triples. *Trans. Amer. Math. Soc.* **306** (1988), no. 2, 553–578. (C. Martin Edwards) **89c:46090** 46L70 (17C65, 46H70)
- Horn, K.** Weinhold's metric geometry and the second law of thermodynamics. Comment on: "Length and curvature in the geometry of thermodynamics" [*Phys. Rev. A* **3** **30** (1984), no. 4, 1994–1997; MR **86c:80001**] by R. Gilmore. *Phys. Rev. A* **3** **32** (1985), no. 5, 3142–3143. (Editors) **89d:80004a** 80A10 (53B50)
- See also **Gilmore, R.**, **89d:80004b**
- Horn, Laurence R.** ★ A natural history of negation. *University of Chicago Press, Chicago, IL*, 1989. xxii+637 pp. ISBN 0-226-35337-0; 0-226-35338-9 (Pierre Kerszberg) **89h:03003** 03-03 (01A05, 03A05, 03B65)
- Horn, Manfred** (with Rausch, W.) Applications and tabulations of the multivariate  $t$  distribution with  $\rho = 0$ . (German summary) *Biometrical J.* **30** (1988), no. 5, 595–605. (Not in MR) **62Q05**
- Horn, Paul S.** Some results on pooling. *Statistics* **19** (1988), no. 1, 9–14. (M. M. Siddiqui) **89h:62058** 62F05
- Horn, Roger A.** (with Johnson, Charles Royal) Hadamard and conventional submultiplicativity for unitarily invariant norms on matrices. *Linear and Multilinear Algebra* **20** (1987), no. 2, 91–106. (P. Rudra (Zbl 605:15017)) **89b:15037** 15A60
- (with Ando, Tsuyoshi; Johnson, Charles Royal) The singular values of a Hadamard product: a basic inequality. *Linear and Multilinear Algebra* **21** (1987), no. 4, 345–365. (M. Pearl) **89j:15018** 15A45
- (with Choudhury, Dipa; Pierce, Stephen) Quasi-positive definite operators and matrices. *Linear Algebra Appl.* **99** (1988), 161–176. (George P. Barker) **89i:15010** 15A18 (15A69, 47B99)
- (with Hong, Yoo Pyo) A canonical form for matrices under consimilarity. *Linear Algebra Appl.* **102** (1988), 143–168. (Moody T. Chu) **89i:15018** 15A21 (15A23)
- (with Choudhury, Dipa) An analogue of the Schur triangular factorization for complex orthogonal similarity and consimilarity. *SIAM Conference on Linear Algebra in Signals, Systems, and Control* (Boston, Mass., 1986). *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 1, 90–95. (Shao Kuan Li) **89b:15013** 15A21
- Horne, Michael A.** (with Zeilinger, Anton) A possible spin-less experimental test of Bell's inequality. *Microphysical reality and quantum formalism*, Vol. 1, 2 (Urbino, 1985), 401–411, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89m:81017** 81B05 (81-05)
- Hornor, H.** Dynamics of spin glasses and related models of neural networks. *Computational systems—natural and artificial* (Schloss Elmau, 1987), 118–132, *Springer Ser. Synergetics*, **38**, Springer, Berlin-New York, 1987. (Summary) **89b:92015** 92A09 (82A57)
- Hornfeck, K.** (with Di Vecchia, P.; Yu, Ming) Infinite number of conserved charges and the  $N$ -string vertex. *Phys. Lett. B* **195** (1987), no. 4, 557–562. (Helmut Rumpf) **89f:81168** 81E99 (81D15, 81E30)
- (with Di Vecchia, P.; Frau, M.; Lerda, A.; Sciuto, S.) BRST invariant operator formalism for the superstring. *Phys. Lett. B* **205** (1988), no. 2-3, 250–256. (Summary) **89e:81142** 81E99 (81E30)
- Hornig, Ing Rong** (with Chou, Jyh Horng) Shifted Jacobi series analysis of linear two-point boundary value problems. *Internat. J. Systems Sci.* **19** (1988), no. 1, 161–169. (Summary) **89b:34037** 34B05 (34K05)
- (with Chou, Jyh Horng) Algebraic method for the design of output deadbeat controller. *Internat. J. Systems Sci.* **19** (1988), no. 6, 1031–1037. (Summary) **89c:93046** 93B25 (93B50)
- (with Chou, Jyh Horng) On sufficient conditions for the stability of interval matrices. *J. Franklin Inst.* **326** (1989), no. 1, 19–25. (Mohamed Mansour) **89k:93184** 93D99 (34D99)
- Hornig Shiao, Jyh-Jen** See **Shiao, Jyh-Jen Hornig**
- Hornung, K.** (with Schick, P.) Nonstationary shock wave generation in droplet vapour mixtures. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 521–529, *Notes Numer. Fluid Mech.*, **24**, Vieweg, Braunschweig, 1988. (See **89j:35007**) 76L05 (76-08, 76T05)
- Horová, Ivana** On the variational principles for partial differential equations. *Arch. Math. (Brno)* **24** (1988), no. 1, 17–23. (Alfonso Castro) **89m:35004** 35A15 (47H99, 49A29)
- Horowitz, Gary T.** String theory without a background spacetime geometry. *Mathematical aspects of string theory* (San Diego, Calif., 1986), 127–144, *Adv. Ser. Math. Phys.*, **1**, World Sci. Publishing, Singapore, 1987. (See **89m:81001**) 81E99 (17B65, 81E30)
- (with Martin, Stephen P.) Conformal field theory and the symmetries of string field theory. *Nuclear Phys. B* **296** (1988), no. 1, 220–252. (Elias Kiritsis) **89b:81194** 81E99 (81E30, 81E40)
- (with Morrow-Jones, Jonathan; Martin, Stephen P.; Woodard, R. P.) New exact solutions for the purely cubic bosonic string field theory. *Phys. Rev. Lett.* **60** (1988), no. 4, 261–264. (George Siopsis) **89b:81156** 81E20 (81E30)
- (with Bowick, M. J.; Giddings, Steven B.; Harvey, Jeffrey A.; Strominger, Andrew) Axionic black holes and an Aharonov-Bohm effect for strings. *Phys. Rev. Lett.* **61** (1988), no. 25, 2823–2826. (C. Gauthier) **89j:83045** 83C47 (81G25, 83C99)
- Horowski, M.** (with Kryszewski, A.; Odziejewicz, A.) Classical and quantum mechanics on the unit ball in  $C^*$ . *Rep. Math. Phys.* **24** (1986), no. 3, 351–363. (Nicholas M. J. Woodhouse) **89e:58055** 58F06 (81D07, 81D30)
- Horrocks, G.** Vector bundles on the punctured spectrum of a local ring. II. *Vector bundles on algebraic varieties* (Bombay, 1984), 207–216, *Tata Inst. Fund. Res. Stud. Math.*, **11**, Tata Inst. Fund. Res., Bombay, 1987. (P. E. Newstead) **89b:14018** 14F05 (13H05)
- Horsky, Jan** (with Novotný, Jan; Kučera, Jaromír) On the plane symmetry in general relativity. *Differential geometry and its applications, communications* (Brno, 1986), 137–141, *Univ. J. E. Purkyně, Brno*, 1987. (P. C. Vaidya) **89a:83015a** 83C15
- (with Novotný, Jan; Kučera, Jaromír) On the gravitational field of a plane plate in general relativity. *Gen. Relativity Gravitation* **19** (1987), no. 12, 1195–1201. (P. C. Vaidya) **89a:83015b** 83C15
- Horspool, R. Nigel** (with Ryabko, B. Ya.; Cormack, Gordon V.) Comments to: "A locally adaptive data compression scheme" [*Comm. ACM* **29** (1986), no. 4, 320–330; MR **87c:68020**] by J. L. Bentley, D. D. Sleator, R. E. Tarjan and V. K. Wei. *Comm. ACM* **30** (1987), no. 9, 792–794. (Editors) **89c:68045** 68P99 (94A29)
- van Horssen, W. T.** An asymptotic theory for a system of weakly nonlinear wave equations. *Trends in applications of mathematics to mechanics* (Wassenaar, 1987), 53–61, *Springer, Berlin-New York*, 1988. (See **89g:58004**) 73J05



- (with van der Burgh, A. H. P.) On initial boundary value problems for weakly semilinear telegraph equations. Asymptotic theory and application. *SIAM J. Appl. Math.* **48** (1988), no. 4, 719–736. (Enrique Zuazua) **89j:35038** 35C20 (35B20, 35L70)
- Horst, Camilla** Two examples concerning hyperbolic quotients. *Arch. Math. (Basel)* **49** (1987), no. 5, 456–458. (Valentin Zdravkov Hristov) **89a:32027** 32H15
- Compact varieties of surjective holomorphic mappings. *Math. Z.* **196** (1987), no. 2, 259–269. (Thomas Peternell) **89d:32063** 32J99
- ter Horst, H. J.** Fundamental functions in equilibrium thermodynamics. *Ann. Physics* **176** (1987), no. 2, 183–217. (O. K. Davtyan) **89e:80002** 80A10
- Horst, Herold** Integralungleichungen mit Anwendungen auf lineare Differentialgleichungen. (English summary) [Integral inequalities, with application to linear differential equations] *Appl. Anal.* **29** (1988), no. 1–2, 55–62. (A. A. Martynyuk) **89i:26017** 26D15 (34C10)
- Horst, Reiner** (with Nguyen Van Thoi; Hoàng Tuy) Outer approximation by polyhedral convex sets. (German summary) *OR Spektrum* **9** (1987), no. 3, 153–159. (Summary) **89e:90141** 90C30
- (with Phan Thiên Thạch) A topological property of limes-arcwise strictly quasiconvex functions. *J. Math. Anal. Appl.* **134** (1988), no. 2, 426–430. (F. Giannessi) **89i:90059** 90C25 (49A50)
- Deterministic global optimization with partition sets whose feasibility is not known: application to concave minimization, reverse convex constraints, DC-programming, and Lipschitzian optimization. *J. Optim. Theory Appl.* **58** (1988), no. 1, 11–37. (Hoàng Tuy) **89i:90073** 90C30 (65K05)
- (with Hoàng Tuy) Convergence and restart in branch-and-bound algorithms for global optimization. Application to concave minimization and D.C. optimization problems. *Math. Programming* **41** (1988), no. 2 (Ser. A), 161–183. (J. Mockus) **89m:90140** 90C30 (90C25)
- (with de Vries, Jakob; Nguyen Van Thoi) On finding new vertices and redundant constraints in cutting plane algorithms for global optimization. *Oper. Res. Lett.* **7** (1988), no. 2, 85–90. (Summary) **89d:90189** 90C30 (90C31)
- Horsthemke, Werner** (with Lefever, René) ★ Индуцированные шумом переходы. (Russian) [Noise-induced transitions] Теория и применение в физике, химии и биологии. [Theory and application in physics, chemistry and biology] Translated from the English by Yu. A. Danilov and V. I. Emel'yanov. Translation edited and with a preface by D. N. Zubarev and A. S. Mikhailov. "Mir", Moscow, 1987. 399 pp. (Editors) **89d:82002** 82–01 (60–01, 82A31, 82A42, 92–01)
- (with Pearson, John E.) Turing instabilities with nearly equal diffusion coefficients. *J. Chem. Phys.* **90** (1989), no. 3, 1588–1599. (Summary) **89k:80028** 80A32 (92A40)
- Horváth, Ákos G.** On  $n$ -dimensional Minkowski-reduced and Hermite-reduced lattice bases. (Hungarian. English and Russian summaries) *Mat. Lapok* **33** (1982/86), no. 1–3, 93–98. (Summary) **89f:11090** 11H55
- Horváth, Emil** On optimum experimental design for ridge estimates. *Kybernetika (Prague)* **24** (1988), no. 3, 177–188. (A. I. Khuri) **89d:62117** 62J07 (62K05)
- Horváth, Gábor** Bionical investigation of the birch leaf roller's incisions. *Math. Biosci.* **91** (1988), no. 2, 131–150. (Summary) **89i:92017** 92A09 (92A17)
- Horváth, Gy.** (with Meduna, A.) On state grammars. *Acta Cybernet.* **8** (1988), no. 3, 237–245. (Sheng Yu) **89f:68076** 68Q50 (68Q45)
- Horvath, J. E.** (with Logiudice, E. A.; Riveros, C.; Vucetich, Héctor) Einstein equivalence principle and theories of gravitation: a gravitationally modified standard model. *Phys. Rev. D* (3) **38** (1988), no. 6, 1754–1760. (Summary) **89j:83063** 83D05
- Horváth, Jendő** Über das  $(r, R)_k$ -System von Unterräumen in  $E^n$ . [On the  $(r, R)_k$ -system of subspaces in  $E^n$ ] *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **30** (1987), 131–138. (J. M. Wills) **89a:52038** 52A45 (52A43)
- Horváth, Lajos** (with Csörgő, Sándor) On the passage of a random walk from generalized balls. *Adaptive statistical procedures and related topics (Upton, N.Y., 1985)*, 1–17. *IMS Lecture Notes—Monograph Ser.*, **8**, Inst. Math. Statist., Hayward, CA, 1986. (W. E. Pruitt) **89a:60077** 60F15 (60G50)
- (with Csörgő, Miklós; Steinebach, Josef) On the distribution of the suprema of weighted empirical processes. *Contributions to stochastic*, 1–18. *Physica, Heidelberg*, 1987. (Gutti J. Babu) **89c:60044** 60F17 (62G99)
- (with Csörgő, Miklós; Deheuevels, Paul) An approximation of stopped sums with applications in queueing theory. *Adv. in Appl. Probab.* **19** (1987), no. 3, 674–690. (Walter A. Rosenkrantz) **89c:60045** 60F17 (60K25)
- (with Vandell, Brian S.) Convergence rates for the bootstrapped product-limit process. *Ann. Statist.* **15** (1987), no. 3, 1155–1173. (M. D. Burke) **89b:62046** 62E20 (60F17, 62G05, 62G10)
- (with Csörgő, Miklós) Rates of convergence for random walk summation. *Bull. London Math. Soc.* **19** (1987), no. 6, 531–536. (Makoto Maejima) **89b:60072** 60F15 (40G99)
- (with Csörgő, Miklós; Révész, P.) Stability and instability of local time of random walk in random environment. *Stochastic Process. Appl.* **25** (1987), no. 2, 185–202. (H. Kesten) **89c:60078** 60J15 (60J55, 82A41)
- (with Csörgő, Miklós) On the distributions of  $L_p$  norms of weighted uniform empirical and quantile processes. *Ann. Probab.* **16** (1988), no. 1, 142–161. (J. Steinebach) **89a:60056** 60F05 (60F17, 60F25)
- (with Csörgő, Miklós) Asymptotics for  $L_p$ -norms of kernel estimators of densities. *Comput. Statist. Data Anal.* **6** (1988), no. 3, 241–250. (Lionel Weiss) **89d:62033** 62G05 (62E20)
- (with Csörgő, Miklós) Asymptotic representations of self-normalized sums. *Probab. Math. Statist.* **9** (1988), no. 1, 15–24. (Makoto Maejima) **89c:60041** 60F05
- (with Csörgő, Miklós) Rate of convergence of transport processes with an application to stochastic differential equations. *Probab. Theory Related Fields* **78** (1988), no. 3, 379–387. (Luis G. Gorostiza) **89k:60073** 60H10 (60H05)
- (with Burke, Murray D.; Csörgő, Sándor) A correction to and improvement of: "Strong approximations of some biometric estimates under random censorship" [Z. Wahrsch. Verw. Gebiete **56** (1981), no. 1, 87–112; MR **83a:62102**]. *Probab. Theory Related Fields* **79** (1988), no. 1, 51–57. (Niels Keiding) **89b:62058** 62G05 (62P10)
- (with Csörgő, Miklós) Central limit theorems for  $L_p$ -norms of density estimators. *Probab. Theory Related Fields* **80** (1988), no. 2, 269–291. (Zdzisław Rychlik) **89i:60046** 60F05 (62G05)
- (with Csörgő, Miklós) A note on strong approximations of multivariate empirical processes. *Stochastic Process. Appl.* **28** (1988), no. 1, 101–109. (Georg Neuhäus) **89d:60061** 60F17 (60F15)
- Limit laws for the averages of exponential random variables. *Math. Proc. Cambridge Philos. Soc.* **105** (1989), no. 2, 381–388. (N. H. Bingham) **89m:60051** 60F05 (60F15)
- Horváth, M.** (with Sövegjártó, A.) On convex functions. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **29** (1986), 193–198. (Jean-Paul Doignon) **89g:49015** 49A40 (26A51, 90C48, 90D05)
- Notes on a convexity. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **30** (1987), 259–264. (J. Parida) **89a:52026** 52A35 (52A20, 90C30)
- Vibrating strings with free ends. *Acta Math. Hungar.* **51** (1988), no. 1–2, 171–180. (Zbigniew Emirsajlow) **89c:49031** 49E15 (93B05, 93B60, 93C20)
- see also **Jóó, István**, **89g:49016**
- Horváth, Sándor** (with Kimber, Efim; Salomaa, Arto; Yu, Sheng) Decision problems resulting from grammatical inference. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **12** (1987), no. 2, 287–298. (Ranjana Chaudhuri) **89f:68034** 68Q45 (68Q50)
- (with Karhumäki, Juhani; Kleijn, Jetty) Results concerning palindromicity. (German and Russian summaries) Mathematical aspects of informatics (Mädgesprung, 1986). *J. Inform. Process. Cybernet.* **23** (1987), no. 8–9, 441–451. (Karel Culik II) **89d:68042** 68Q45
- Horváth, Z.** (with Balog, J.; Forgács, P.; Vecsernyés, P.) Lattice classification of the four-dimensional heterotic strings. *Phys. Lett. B* **197** (1987), no. 3, 395–399. (Richard H. Capps) **89b:81245** 81G20 (06B99, 81E30)
- Horváth, P. A.** (with Cordani, B.; Fehér, L. Gy.) Monopole scattering spectrum from geometric quantisation. *J. Phys. A* **21** (1988), no. 12, 2835–2837. (Richard Montgomery) **89k:58310** 58G40 (53C80, 58F06, 81E20)
- (with Cordani, B.; Fehér, L. Gy.)  $O(4, 2)$  dynamical symmetry of the Kaluza-Klein monopole. *Phys. Lett. B* **201** (1988), no. 4, 481–486. (L. M. Sokolowski) **89f:83084** 83E15 (81E20, 83C40)
- Horvatić-Baldasar, K.** (with Kramer, Erika; Matulić-Bedenić, I.) Projective planes of order 12 do not have an abelian group of order 6 as a collineation group. (Serbo-Croatian summary) *Punime Mat. No. 1* (1986), 75–81. (T. G. Ostrom) **89a:51019** 51E15 (20B25)
- (with Kramer, Erika; Matulić-Bedenić, I.) On the full collineation group of projective planes of order 12. (Serbo-Croatian summary) *Punime Mat. No. 2* (1987), 9–11. (Norman L. Johnson) **89f:51040** 51E15 (20B25)
- (with Kramer, Erika; Matulić-Bedenić, I.) A contribution to the classification of biplanes of order 9. (Serbo-Croatian summary) *Rad Jugoslav. Akad. Znan. Umjet.* **428** (1987), 25–29. (Albrecht Beutelspacher) **89j:05018** 05B05
- Horvitz, Alan L.** (with Rubel, Lee A.) The space of totally bounded analytic functions. *Proc. Edinburgh Math. Soc.* (2) **30** (1987), no. 2, 229–246. (V. P. Khavin) **89a:46057** 46E15 (30H05)
- (with Rubel, Lee A.) Totally positive functions and totally bounded functions on  $[-1, 1]$ . *J. Approx. Theory* **52** (1988), no. 2, 204–216. (Eli Passow) **89d:41002** 41A05
- Horvitz, L. P.** (with Arshansky, R. I.) Solutions of the quantum relativistic two-body bound state problem with invariant direct action potentials. *Phys. Lett. A* **128** (1988), no. 3–4, 123–128. (R. M. Dreizler) **89c:81027** 81C05
- (with Arshansky, R. I.) Covariant phase shift analysis for relativistic potential scattering. *Phys. Lett. A* **131** (1988), no. 4–5, 222–226. (W. O. Amrein) **89j:81233** 81F05
- Hübz, Herbert** (with Laab, Andreas) ★ Ludwig Boltzmanns Wege nach Berlin. (German) [Ludwig Boltzmann's paths to Berlin] Ein Kapitel österreichisch-deutscher Wissenschaftsbeziehungen. [A chapter in the Austrian-German scientific relationship] Studien zur Geschichte der Akademie der Wissenschaften der DDR [Studies in the History of the Academy of Sciences of the GDR], 13. *Akademie-Verlag, Berlin*, 1989. 120 pp. ISBN 3-05-500416-7 (D. ter Haar) **89m:01054** 01A55
- Horzela, A.** (with Kapuściak, Edward) ★ О волновых уравнениях, инвариантных относительно расширенной группы Галилея. (Russian) [Wave equations that are invariant with respect to the extended Galilei group] With an English summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R2-87-875. *Joint Inst. Nuclear Res., Dubna*, 1987. 8 pp. (Summary) **89b:81091** 81D25 (58G35)
- Hoschek, Josef** Algebraische Methoden zum Glätten und Schneiden von Splinflächen. [Algebraic methods for smoothing and intersecting of spline surfaces] *Resultate Math.* **12** (1987), no. 1–2, 119–133. (N. A. Nazarenko) **89f:65020** 65D10 (65D07)
- (with Weber, Ulrich) Geometrische Modellbildung der menschlichen Kniebewegung. (English summary) [Geometric modelling of the motion of the human knee] *Proceedings of the Congress of Geometry (Thessaloniki, 1987)*, 67–75. *Aristotle Univ. Thessaloniki, Thessaloniki*, 1988. (Summary) **89c:92007** 92A06 (70B99, 92A07, 92A09)
- Intrinsic parametrization for approximation. *Comput. Aided Geom. Design* **5** (1988), no. 1, 27–31. (Summary) **89c:65023** 65D10
- Spline approximation of offset curves. *Comput. Aided Geom. Design* **5** (1988), no. 1, 33–40. (Summary) **89c:65018** 65D07
- Hosein, Patrick A.** (with Bertsekas, Dimitri P.; Tseng, Paul) Relaxation methods for network flow problems with convex arc costs. *SIAM J. Control Optim.* **25** (1987), no. 5, 1219–1243. (Summary) **89h:90243** 90C35 (90B10)
- Hoshi, Katsuchi** (with Iku, Minoru) Tensor calculation on a Riemannian manifold. *Sci. Rep. Fac. Ed. Fukushima Univ.* **38** (1986), 7–10. (Summary) **89c:53026** 53B20
- Hoshimiyu, Nozomu** (with Futami, Ryoko) A neural network model based on short-term memories for the hierarchical recognition of temporal patterns. *Systems Comput. Japan* **19** (1988), no. 2, 102–109. (Not in MR) **92A09**
- Hoshina, Takao** Normality of product spaces. *Proceedings of the first Soviet-Japan joint symposium of topology (Tokyo, 1986)*. *Questions Answers Gen. Topology* **5** (1987), no. 1, 139–142. (C. E. Aull) **89c:54045** 54D15 (54D10)
- Hoshino, Ikuya** (with Mackawa, Yukihiko; Fujimoto, Takayuki; Kimura, Hiroshi<sup>2</sup>; Kimura, Hidenori) Observer-based multivariable control of the aluminum cold tandem mill. *Automatica—J. IFAC* **24** (1988), no. 6, 741–754. (Not in MR) **93C75** (93B07)
- Hoshino, Mitsuo** (with Miyachi, Jun-ichi) Tame triangular matrix algebras over self-injective algebras. *Tsukuba J. Math.* **11** (1987), no. 2, 383–391. (Andrzej Skowroński) **89c:16040** 16A64 (16A46, 16A48, 16A52)
- (with Miyachi, Jun-ichi) Tame two-point algebras. *Tsukuba J. Math.* **12** (1988), no. 1, 65–98. (Andrzej Skowroński) **89c:16045** 16A64 (16A46, 16A48, 16A90)

- Hoshino, Takashi** (with Edahiro, Masato; Tanaka, Katsuhiko; Asano, Takao) A bucketing algorithm for the orthogonal segment intersection search problem and its practical efficiency. *Computational geometry* (Waterloo, ON, 1987). *Algorithmica* 4 (1989), no. 1, 61–76. (Summary) **89m:68132** 68U05 (68Q25)
- Hoshiro, Toshihiko** Microlocal energy method of Mizohata and hypoellipticity. *J. Math. Kyoto Univ.* 28 (1988), no. 1, 1–12. (Yu. V. Egorov) **89e:35004** 35A27 (35H05, 58G16)
- Hoskin, Michael** Newton and the beginnings of stellar astronomy. *Newton and the new direction in science* (Cracow, 1987), 55–63, *Specola Vaticana, Vatican City*, 1988. (see **89b:01014**) 01A50
- Hoskins, Roy Frank** (with de Sousa Pinto, J.) Generalised sampling expansions using Taylor coefficients. *Mathematics in signal processing* (Bath, 1985), 59–69, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (Summary) **89c:94010** 94A11 (94A12)
- Höle, Vittorio** Raum, Zeit, Bewegung. [Space, time, motion] With discussion. *Hegel und die Naturwissenschaften* (Tübingen, 1983), 247–292, *Spekulation Erfahrung Abt. II: Unterr.*, 2, Frommann-Holzboog, Stuttgart, 1987. (see **89m:00020**) 00A25 (00A69)
- Hosmane, Balakrishna** (with Ebrahimi, Nader) On shrinkage estimation of the exponential location parameter. *Comm. Statist. Theory Methods* 16 (1987), no. 9, 2623–2637. (Tadashi Nakamura) **89b:62068** 62F10 (62F11)
- Improved likelihood ratio test for multinomial goodness of fit. *Comm. Statist. Theory Methods* 16 (1987), no. 11, 3185–3198. (Naganori Mori) **89c:62045** 62F03
- On a generalized Stein estimator of regression coefficients. *Comm. Statist. Theory Methods* 17 (1988), no. 6, 1735–1740. (D. E. A. Giles) **89j:62095** 62J07
- Hosni, A. K.** (with Gado, G. A.) Mean integrated square error of a recursive estimators [estimator] of a probability density. *Proc. Pakistan Acad. Sci.* 25 (1988), no. 1, 43–52. (Leslaw Gajek) **89m:62037** 62G05
- Hosoe, S.** (with Zhang, Feifei) An elementary state space approach to  $RH^\infty$  optimal control. *Systems Control Lett.* 11 (1988), no. 5, 369–380. (Kathryn E. Lenz) **89m:93017** 93B25 (93B35, 93B40, 93B50)
- Hosokawa, Fujitsugu** (with Suzuki, Shin'ichi) Linking 2-spheres in the 4-sphere. *Kobe J. Math.* 4 (1988), no. 2, 193–208. (J. P. Levine) **89j:57016** 57Q45
- Hosokawa, H.** (with Kimura, Tatsuo; Kasai, S.) Universal transitivity of simple and 2-simple prehomogeneous vector spaces. (French summary) *Ann. Inst. Fourier (Grenoble)* 38 (1988), no. 2, 11–41. (S. I. Gelfand) **89e:20083** 20G15 (11E72, 14L30)
- Hosokawa, Kazutaka** (with Sugimoto, Nobumasa; Kakutani, Tsuchiko) Reflection and transmission of a shallow-water soliton over a barrier. *J. Phys. Soc. Japan* 56 (1987), no. 8, 2744–2754. (Summary) **89a:76018** 76B15 (35Q20, 76B25)
- Hosokawa, Mizuhiko** (with Takeda, Gyo) Supersymmetries in extreme nonrelativistic systems. *Progr. Theoret. Phys.* 78 (1987), no. 5, 1142–1150. (A. I. Pashnev) **89j:81061** 81C40 (17B70, 81E99, 81J05)
- Hosono, Shinobu** (with Seo, Koichi) Current commutator anomalies and chiral anomalies in the canonical formalism. *Modern Phys. Lett. A* 3 (1988), no. 7, 691–701. (Giorgio Calucci) **89b:81133** 81E15 (81D15)
- Berry's phase, Schwinger term and explicit calculations in two dimensions. *Nuclear Phys. B* 300 (1988), no. 2 FS22, 238–252. (Gordon W. Semenoff) **89j:81100** 81E13 (81C99)
- Hosono, Toshio** Numerical algorithm for Taylor series expansion. *Electron. Comm. Japan. Part I Comm.* 69 (1986), no. 6, 10–18. (Summary) **89i:65014** 65D15 (65E05)
- Hosono, Yuzo** (with Fujii, Hiroshi; Nishiura, Yasumasa) On the structure of multiple existence of stable stationary solutions in systems of reaction-diffusion equations. *Patterns and waves, 157–219*, *Stud. Math. Appl.*, 18, North-Holland, Amsterdam-New York, 1986. (Summary) **89b:35074** 35K57 (58E07, 58F14, 92A09, 92A15)
- Hosotani, Yutaka** (with Hetrick, James E.) QED on a circle. *Phys. Rev. D* (3) 38 (1988), no. 8, 2621–2624. (P. Achuthan) **89k:81214** 81L05
- (with Ho, Choon Lin) Field theory of geometric membranes. *Phys. Rev. Lett.* 60 (1988), no. 10, 885–888. (Summary) **89k:81129** 81E99 (81E30)
- Hosoya, Haruo** (with Uchiyama, Atsuko; Kadota, Misa; Chida, Kanako; Aida, Misako; Yamaguchi, Tamie) Tables of the nonadjacent number, topological index, and characteristic polynomials of heptahex graphs. *Natur. Sci. Rep. Ochanomizu Univ.* 37 (1986), no. 2, 133–168. (N. Trinajstić) **89d:92097** 92A40 (05C99)
- On some counting polynomials in chemistry. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* 19 (1988), no. 1–3, 239–257. (Charles M. Grinstead) **89d:05006** 05A15 (92A40)
- Hosoya, Yuzo** The second-order Fisher information. *Biometrika* 75 (1988), no. 2, 265–274. (G. P. Bhattacharjee) **89i:62028** 62E20 (62M10)
- Hossain, Md. Fazlee** Existence of integral solution of  $y^3 = (x+a)(x+b)$  for given integers  $a$  and  $b$ . (Bengali summary) *Chittagong Univ. Stud. Part II Sci.* 10 (1986), no. 1–2, 47–48. (Zhen Fu Cao) **89f:11043** 11D25
- Metric properties in analytic set. *Chittagong Univ. Stud. Part II Sci.* 10 (1986), no. 1–2, 81–87. (Wieslaw Pawlucski) **89h:32015** 32B10 (26B35, 26D05, 32B20)
- Hossain, Moqbul** On an analogue of the Nevanlinna characteristics of functions of several complex variables. *Jahangirnagar Rev. Part A: Sci.* 7 (1983), 57–70 (1986). (Summary) **89h:32007** 32A22 (30D35)
- Hosseini-Hashemi, S.** (with Anderson, J. S.) Orthogonality and normalization of torsional modes of vibration of solid elastic spheres. *J. Sound Vibration* 121 (1988), no. 3, 511–524. (Summary) **89c:73027** 73D30
- Hossfeld, Paul** Studien zur Physik des Albertus Magnus. I. Ort, örtlicher Raum und Zeit. II. Die Verneinung der Existenz eines Vakuums. [Studies on the physics of Albertus Magnus. I. Locus, local space and time. II. The denial of the existence of a vacuum] *Aristotelisches Erbe im arabisch-lateinischen Mittelalter*, 1–42, *Miscellanea Mediaevalia*, 18, de Gruyter, Berlin-New York, 1986. (see **89i:01015**) 01A35
- Host, Bernard** (with Parreau, François) Sur une notion de pureté pour les mesures. (English summary) [On a notion of purity for measures] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 9, 409–412. (Summary) **89a:43001** 43A05 (43A10)
- Host, Linda H.** (with Bange, David W.; Barkauskas, Anthony E.; Slater, P. J.) Efficient near-domination of grid graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 83–92. (B. Zelinka) **89d:05104** 05C35
- (with Bange, David W.; Barkauskas, Anthony E.) Some consequences of the Harary-Palmer similarity property for total graphs. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 53–63. (Peter J. Slater) **89k:05078** 05C60
- Hostetter, Gene H.** see Cruz, J. B., Jr. et al., **89m:01081**
- Hostler, Levere** Relativistic Coulomb Sturmian matrix elements and the Coulomb Green's function of the second-order Dirac equation. *J. Math. Phys.* 28 (1987), no. 12, 2984–2989. (Summary) **89g:81108** 81G45
- Self-energy operator for an electron in an external Coulomb potential. II. *J. Math. Phys.* 29 (1988), no. 8, 1930–1936. (Summary) **89g:81100** 81G10
- Hostmann, Uwe** A note on an estimate for the convergence rate of the LSE in inadequate nonlinear regression models. *Statistics* 19 (1988), no. 1, 3–7. (K. C. Chanda) **89e:62077** 62J02 (62E20, 62F12)
- Asymptotic optimality of estimators and tests in inadequate nonlinear regression. *Statistics* 19 (1988), no. 2, 185–206. (A. Ya. Dorogovtsev) **89j:62080** 62J02 (62F12)
- Hotelling, Harold** see Darnell, Adrian C., **89i:01071**
- Hotes, S. A.** (with Chen, A. L.; DiCarlo, D. A.) Self-intersections in a three-parameter space of cosmic strings. *Phys. Rev. D* (3) 37 (1988), no. 4, 863–868. (Summary) **89d:83082** 83F05
- Hothersall, D. C.** (with Chandler-Wilde, S. N.) Integral equations in traffic noise simulation. *Computers in mathematical research* (Cardiff, 1986), 207–235, *Inst. Math. Appl. Conf. Ser. New Ser.*, 14, Oxford Univ. Press, New York, 1988. (see **89c:00032**) 76–08 (76–05, 76Q05)
- Hô Thuan** (with Le Van Bao) Translations of relational schemas. *Acta Math. Vietnam.* 11 (1986), no. 2, 180–192. (From the introduction) **89c:68023** 68P15
- Contribution to the theory of relational databases. *Tanulmányok—MTA Számítástech. Automat. Kutató Int. Budapest No. 184* (1986), viii+156 pp. (From the introduction) **89i:68019** 68P15
- (with Demetronics, János; Nguyễn Xuân Huy) Balanced relational schemes and keys in a relational scheme. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 296–316, "Nauka", Moscow, 1987. (A. V. Anisimov) **89c:68017** 68P15
- (with Demetronics, János) Some additional properties of keys for relation schemes. *Serdica* 13 (1987), no. 3, 267–271. (Donald P. Ballou) **89b:68023** 68P15
- Hotje, Herbert** Freie Möbiusebenen. [Free Möbius planes] *Abh. Math. Sem. Univ. Hamburg* 57 (1987), 1–6. (K. Strambach) **89c:51004** 51B10 (20B27)
- Kinematical Abbildungen. [Kinematic mappings] *Proceedings of the Congress of Geometry (Thessaloniki, 1987)*, 76–81, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1988. (Frieder Knüppel) **89f:51064** 51J15 (51F25)
- Hotta, R.** Holonomic  $\mathcal{D}$ -modules in representation theory. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 87–102, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Toshiyuki Tanisaki) **89c:22020** 22E46 (20G05, 58G07)
- Mathematical contributions of Professor Nagayoshi Iwahori. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* 34 (1987), no. 3, 8 pp. (Editors) **89c:01067** 01A70
- Hotz, V. Joseph** (with Kydland, Finn E.; Sedlacek, Guilherme L.) Intertemporal preferences and labor supply. *Econometrica* 56 (1988), no. 2, 335–360. (Not in MR) 90A14 (90A06)
- Hou, Bo** Nonuniform estimates for the remainder term in a central limit theorem for error variance estimators in a linear model. (Chinese. English summary) *J. Math. Res. Exposition* 6 (1986), no. 4, 133–142. (Summary) **89a:62050** 62E20 (60F05, 62J05)
- Hou, Bo Yu** (with Zhang, Yao Zhong) Cohomology in connection space, family index theorem, and abelian gauge structure. *J. Math. Phys.* 28 (1987), no. 8, 1709–1715. (J. Stasheff) **89a:58021** 58D15 (53C80, 55R35, 55R40, 57T10, 58B05, 58G10, 81E13)
- (with Li, Wei) New symmetries in stationary, axially symmetric Einstein-Maxwell fields. (Chinese. English summary) *High Energy Phys. Nuclear Phys.* 12 (1988), no. 2, 196–202. (Sheng Jiang) **89f:83052** 83C40 (83C15, 83C50)
- (with Zhang, Yao Zhong) Some remarks on the extension of loop groups. *J. Phys. A* 21 (1988), no. 2, 345–352. (Jouko Mickelson) **89h:81106** 81E13 (17B65, 22E65, 81D15)
- (with Zhou, Yu Kui; Yan, Mu Lin) Exact solution of the  $Z_2 \times Z_2$  symmetric generalisation of Baxter's eight-vertex model. *J. Phys. A* 21 (1988), no. 19, L929–L934. (Peter J. Forrester) **89k:82110** 82A68 (82A69)
- (with Chen, Yi Xin; Zhang, Yao Zhong) Cohomological analysis in Skyrme model and boundary effect of chiral bag model. *Sci. Sinica Ser. A* 31 (1988), no. 2, 172–182. (J. Stasheff) **89k:81146** 81E99 (58B05, 58D99, 58G40, 81G25)
- (with Li, Wei) Generating functions with new hidden symmetries for cylindrically symmetric gravitational fields. *Classical Quantum Gravity* 6 (1989), no. 2, 163–171. (Nora Breton Báez) **89k:83039** 83C40 (81E40, 83C20, 83C50)
- Hou, Ji Xin** Periodic points of analytical dynamical systems on hyperbolic Riemann surfaces. (Chinese. English summary) *Acta Sci. Natur. Univ. Sunyatseni* 1988, no. 1, 28–33. (Fuyao Ren) **89j:58109** 58F20 (30F99)
- Hou, Jin Chuan** Some new unicellular operators and attainable totally ordered lattices. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B 8 (1987), no. 3, 389–390. *Chinese Ann. Math. Ser. A* 8 (1987), no. 3, 403–412. (Sing Cheong Ong) **89c:47008** 47A15
- Rank-preserving linear mappings on  $B(X)$ . (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 10, 724–726. (Not in MR) 47B99 (47A60)
- Hou, Luo Ming** A general and formal method for the program static analysis. *J. Comput. Sci. Tech.* (English Ed.) 2 (1987), no. 2, 115–123. (Not in MR) 68N05
- The best parallel algorithm for solving the regular linear iterative sequence. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* 9 (1988), no. 2, 86–92. (Summary) **89h:65214** 65Q05 (65W05)
- Hou, Po** see Hou, Bo
- Hou, Shui Hung** Applications of alternative method to nonselfadjoint control problems at resonance. *Atti Sem. Mat. Fis. Univ. Modena* 36 (1988), no. 1, 129–140. (Jing Yue Lin) **89d:49004** 49A27 (34A60, 47H15, 49A50, 58E07)
- Hou, Thomas Y.** Homogenization for semilinear hyperbolic systems with oscillatory data. *Comm. Pure Appl. Math.* 41 (1988), no. 4, 471–495. (V. A. Galkin) **89k:35136** 35L60 (35B25)
- Hou, Xiang Dong** The Bloch functions in the unit ball of  $C^n$ . (Chinese) An English summary appears in Chinese Ann. Math. Ser. B 8 (1987), no. 3, 386. *Chinese Ann. Math. Ser. A* 8 (1987), no. 3, 287–299. (Summary) **89g:32007** 32A35



- Hou, Xiang Qian (with Chen, Wen Zhong) Approximation properties of Bernstein type operators in the space  $C_0$ . (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* 27 (1988), no. 1, 28–34. (Summary) **89d:41010** 41A10 (41A35)
- Hou, Xiao Hong (with Yuan, Yuan) The theory of constructions with a rusty compass. (Chinese) *J. China Univ. Sci. Tech.* 17 (1987), no. 1, 110–115. (Lu Yang) **89f:51081** 51M15
- Hou, Xue Lin (with Zhang, Zhi Huang) The Jacobson radicals of AF-rings and modules over AF-rings. (Chinese. English summary) *Natur. Sci. J. Harbin Normal Univ.* 4 (1988), no. 1, 9–12. (Not in MR) **16A21**
- Hou, Xue Zhang (with Zhao, Jie) Closed strongly quasidecomposable operators. (Chinese. English summary) *Dongbei Shida Xuebao* 1988, no. 1, 13–18. (Shan Li Sun) **89k:47052** 47B40
- Hou, Yao Ping Topological representations of pseudocomplemented lattices. (Chinese. English summary) *Neimenggu Daxue Xuebao* 19 (1988), no. 2, 224–238. (Summary) **89k:06008** 06D15
- Hou, Yi Bin Trinity algebra and its application to machine decompositions. *Inform. Process. Lett.* 26 (1987), no. 3, 127–134. (Arthur T. Poe) **89g:68033** 68Q35 (68Q05)
- Hou, Zhan Yuan (with Gao, Feng Xin; Zhang, Zhen Guo) The exponents of third-order differential equations with unbounded piecewise-constant matrices and of their perturbation equations. (Chinese. English summary) *Acta Math. Appl. Sinica* 11 (1988), no. 3, 340–357. (Liang Zhongchao) **89k:34072** 34D05
- Houacine, A. (with Demoment, G.) Stabilisation of fast RLS algorithms. *Mathematics in signal processing* (Bath, 1985), 579–591, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (Summary) **89c:94006** 94A05 (93E25)
- Houben, Geert-Jan (with Paredaens, Jan) A formal model for distributed information systems. *MFDBS 87* (Dresden, 1987), 128–158, *Lecture Notes in Comput. Sci.*, 305, Springer, Berlin-New York, 1988. (From the summary) **89g:68007** 68P15 (68M10)
- Hougaard, Philip A class of multivariate failure time distributions. *Biometrika* 73 (1986), no. 3, 671–678. (Summary) **89c:62035a** 62E15 (62N05)
- Modelling multivariate survival. *Scand. J. Statist.* 14 (1987), no. 4, 291–304. (Summary) **89c:62174** 62N05
- Correction to: "A class of multivariate failure time distributions". *Biometrika* 75 (1988), no. 2, 395. (Editors) **89c:62035b** 62E15 (62N05)
- Correction to: "Survival models for heterogeneous populations derived from stable distributions" [*Biometrika* 73 (1986), no. 2, 387–396; MR 88c:62154]. *Biometrika* 75 (1988), no. 2, 395. (Editors) **89d:62105** 62N05 (62P10)
- Hounie, J. (with Bergamasco, Adalberto P.; Cordaro, P.) Global properties of a class of vector fields in the plane. *J. Differential Equations* 74 (1988), no. 2, 179–199. (Makhlof Derridj) **89h:58175** 58G05 (35A05)
- Houser, Nathan A note on the Koenigsberger-Zeuner Repertorium. *Historia Math.* 14 (1987), no. 2, 178–179. (J. Corcoran) **89c:01031** 01A55 (01A75, 03-03)
- Houstis, E. N. (with Irodotou-Ellina, M.) An  $O(h^4)$  quintic spline collocation method for fourth order two-point boundary value problems. *BIT* 28 (1988), no. 2, 288–301. (Zhong-Hua Yang) **89c:65078** 65L10
- (with Christara, C. C.; Rice, John Rischard) Quadratic-spline collocation methods for two-point boundary value problems. *Internat. J. Numer. Methods Engrg.* 26 (1988), no. 4, 935–952. (M. M. Chawla) **89g:65103** 65L10
- (with Vavali, E. A.; Rice, John Rischard) Convergence of  $O(h^4)$  cubic spline collocation methods for elliptic partial differential equations. *SIAM J. Numer. Anal.* 25 (1988), no. 1, 54–74. (John Stephenson) **89c:65178** 65N35 (65N05)
- Houston, Evan (with Lucas, Thomas G.; Viswanathan, T. M.) Primary decomposition of divisorial ideals in Mori domains. *J. Algebra* 117 (1988), no. 2, 327–342. (Muhammad Zafrullah) **89i:13028** 13G05 (13A15, 13E99)
- (with Zafrullah, Muhammad) Integral domains in which each  $t$ -ideal is divisorial. *Michigan Math. J.* 35 (1988), no. 2, 291–300. (Sarah Glaz) **89i:13027** 13G05 (13A15, 13F05)
- (with Hamann, Eloise; Johnson, Jon L.) Properties of uppers to zero in  $R[x]$ . *Pacific J. Math.* 135 (1988), no. 1, 65–79. (Liam O'Carroll) **89j:13019** 13F20 (13A15, 13B25, 13F10)
- Houston, R. S. (with Brown, Dennison R.) Cancellative semigroups on manifolds. *Semigroup Forum* 35 (1987), no. 3, 279–302. (Haskell Cohen) **89a:22005** 22A20
- van der Houwen, P. J. (with Sommeijer, B. P.; Baker, Christopher T. H.) On the stability of predictor-corrector methods for parabolic equations with delay. *IMA J. Numer. Anal.* 6 (1986), no. 1, 1–23. (Summary) **89b:65206** 65N99
- (with Boon, C.; Wubs, F. W.) Analysis of smoothing matrices for the preconditioning of elliptic difference equations. (German and Russian summaries) *Z. Angew. Math. Mech.* 68 (1988), no. 1, 3–10. (Summary) **89b:65109** 65F35 (65N20)
- van Houwenlinghe, M. (with Frenk, J. B. G.; Rinnooy Kan, A. H. G.) Order statistics and the linear assignment problem. (German summary) *Computing* 39 (1987), no. 2, 165–174. (Luc P. Devroye) **89d:68069** 68R10 (62G30)
- Houzel, Christian La résolution algébrique des équations. [The algebraic solution of equations] *Sciences à l'époque de la Révolution Française*, 17–37, *Lib. Bicentenaire Révolution Française, Lib. Sci. Tech. Albert Blanchard, Paris*, 1988. (see **89m:01050**) 01A30
- van Hove, L. Negative binomial multiplicity distributions in continuous domains. *Phys. A* 147 (1987), no. 1–2, 19–32. (Summary) **89d:60014** 60C05 (60E05, 81F99, 81G25)
- Hovener, J. W. (with van der Meer, C. V. M.) Scattering of polarized light: properties of the elements of the phase matrix. *Astronom. and Astrophys.* 196 (1988), no. 1–2, 287–295. (Summary) **89d:85006** 85A25 (78A45)
- Hoving, Simen (with Ditters, E. J.) Sur la composante connexe du module de Tate covariant de la famille des courbes, donnée par l'équation  $y^2 = 1 + \mu x^N$ . (English summary) [On the connected component of the covariant Tate module of the family of curves given by the equation  $y^2 = 1 + \mu x^N$ ] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 14, 621–624. (Noriko Yui) **89d:14059** 14L05 (11G20, 14L10)
- Horstad, R. M. A reconsideration of the general parabola theorem in continued fractions. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 593–598. (L. J. Lange) **89c:30005** 30B70 (40A15)
- Howard, F. T. Recurrences related to the Bessel function. *Applications of Fibonacci numbers* (San Jose, CA, 1986), 7–16, *Kluwer Acad. Publ., Dordrecht*, 1988. (A. de Castro Brzezicki) **89g:33009** 33A40 (11B37)
- Howard, Joe On Pelczynski's property  $u$  for Banach spaces. *Acta Math. Hungar.* 52 (1988), no. 1–2, 53–55. (R. D. McWilliams) **89g:46019** 46B15
- Corrigendum to: "Weak sequential denseness in Banach spaces" [*Proc. Amer. Math. Soc.* 99 (1987), no. 2, 351–352; MR 88f:46039]. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 334. (Editors) **89g:46031** 46B20
- Howard, Mark A proofless proof of the Barwise compactness theorem. *J. Symbolic Logic* 53 (1988), no. 2, 597–602. (Summary) **89c:03059** 03C70 (03E40, 06A10)
- Howard, R. E. (with Bezdek, J. C.; Hathaway, R. J.; Wilson, Celia A.; Windham, M. P.) Local convergence analysis of a grouped variable version of coordinate descent. *J. Optim. Theory Appl.* 54 (1987), no. 3, 471–477. (Summary) **89f:90163** 90C31
- A note on Roe's characterization of the sine function. *Proc. Amer. Math. Soc.* 105 (1989), no. 3, 658–663. (W. A. Al-Salam) **89g:33001** 33A10 (42A38)
- Howard, Richard (with Denker, John; Schwartz, Daniel B.; Wittner, Ben; Solla, Sara; Jackel, Lawrence; Hopfield, John) Large automatic learning, rule extraction, and generalization. *Complex Systems* 1 (1987), no. 5, 877–922. (Summary) **89k:92080** 92A25
- Howard, S. D. (with Sirianunpiboon, S.; Roy, Sanat K.) A note on the Wronskian form of solutions of the KdV equation. *Phys. Lett. A* 134 (1988), no. 1, 31–33. (Summary) **89k:35230** 35Q20
- Howe, Eric C. (with Johnson, Charles Royal) Linear aggregation of input-output models. *SIAM J. Matrix Anal. Appl.* 10 (1989), no. 1, 65–79. (Carl-Louis Sandblom) **89k:90034** 90A15 (15A09, 15A18, 90A17)
- Howe, M. S. Attenuation and diffraction of bending waves at gaps in fluid loaded plates. *IMA J. Appl. Math.* 36 (1986), no. 3, 247–262. (Not in MR) **76Q05** (73D25, 73J06, 73K12)
- Production of sound by turbulent flow over an embedded strut. *IMA J. Appl. Math.* 39 (1987), no. 2, 99–120. (Summary) **89k:76083** 76Q05 (73J05, 76F99)
- Howe, P. S. Two-dimensional nonlinear  $\sigma$ -models. *Frontiers of high energy physics* (London, 1986), 35–87, *Hilger, Bristol*, 1987. (Introduction) **89b:81127** 81E13 (53C80, 58E20, 81E30)
- (with Papadopoulos, G.) Anomalies in two-dimensional supersymmetric nonlinear  $\sigma$  models. *Classical Quantum Gravity* 4 (1987), no. 6, 1749–1766. (Jouko Mickelsson) **89a:81132** 81E99 (81E40)
- (with Umerski, A.) Anomaly multiplets in six and ten dimensions. *Phys. Lett. B* 198 (1987), no. 1, 57–60. (W. Cox) **89b:81128** 81E13 (53C80)
- (with Henty, J. C.; Townsend, P. K.) Quantum mechanics of the relativistic spinning particle. *Classical Quantum Gravity* 5 (1988), no. 5, 807–823. (Marc Henneaux) **89h:81051** 81C35 (81D30)
- (with Papadopoulos, G.; Stelle, K. S.) The background field method and the nonlinear  $\sigma$ -model. *Nuclear Phys. B* 296 (1988), no. 1, 26–48. (Joan Soto) **89e:81108** 81E15 (81E20, 81E40, 83A47)
- (with Penati, S.; Pernici, M.; Townsend, P. K.) Wave equations for arbitrary spin from quantization of the extended supersymmetric spinning particle. *Phys. Lett. B* 215 (1988), no. 3, 555–558. (S. Deser) **89j:81142** 81E20 (81D25)
- Howe, Roger E. Small unitary representations of classical groups. *Group representations, ergodic theory, operator algebras, and mathematical physics* (Berkeley, Calif., 1984), 121–150, *Math. Sci. Res. Inst. Publ.*, 6, Springer, New York-Berlin, 1987. (From the text) **89c:22021** 22E45
- Small unitary representations of classical groups. *Symposia Mathematica, Vol. XXIX* (Cortona, 1984), 197–204, *Sympos. Math.*, 29, Academic Press, New York-London, 1987. (E. Thoma) **89m:22016** 22E45
- (with Cowling, Michael; Haagerup, Uffe) Almost  $L^2$  matrix coefficients. *J. Reine Angew. Math.* 387 (1988), 97–110. (Rebecca Herb) **89i:22008** 22D10 (22E46)
- Automatic continuity of concave functions. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1196–1200. (Jean-Pierre Crouzeix) **89g:90164** 90C20 (26B25, 52A20)
- Howell, Thomas D. Statistical properties of selected recording codes. *IBM J. Res. Develop.* 33 (1989), no. 1, 60–73. (L. L. Campbell) **89k:94080** 94B60
- Hoves, Frederick A. A model for the viscous attenuation of waves on the common boundary of two superposed fluids. *Wave Motion* 9 (1987), no. 5, 363–375. (P. W. Duck) **89g:76016** 76B15 (76D10)
- (with Chang, K. W.) ★ Нелинейные сингулярно возмущенные краевые задачи. (Russian) [Nonlinear singularly perturbed boundary value problems] Теория и приложения. [Theory and applications] Translated from the English by V. G. Sushko. Translation edited and with a preface by N. Kh. Rozov. "Mir", Moscow, 1988. 248 pp. (Editors) **89k:34035** 34Bxx (34E15)
- The asymptotic stability of steady solutions of reaction-convection-diffusion equations. *J. Reine Angew. Math.* 388 (1988), 212–220. (Reinhard Redinger) **89h:35038** 35B35 (35K57, 80A32)
- Howie, A. see Pin, J.-E., **89a:68125**
- Howie, James (with Fine, Benjamin; Rosenberger, Gerhard) One-relator quotients and free products of cyclics. *Proc. Amer. Math. Soc.* 102 (1988), no. 2, 249–254. (David Meier) **89a:20035** 20F05 (20E06)
- (with Edjvet, Martin) Star graphs, projective planes and free subgroups in small cancellation groups. *Proc. London Math. Soc.* (3) 57 (1988), no. 2, 301–328. (A. H. M. Hoare) **89m:20034** 20F05 (05C25, 20F06)
- Howie, John M. Why study semigroups? *Math. Chronicle* 16 (1987), 1–14. (D. C. Trueman) **89c:20104** 20M10 (20M35, 68Q70)
- (with Marques-Smith, M. Paula O.) A nilpotent-generated semigroup associated with a semigroup of full transformations. *Proc. Roy. Soc. Edinburgh Sect. A* 108 (1988), no. 1–2, 181–187. (B. Pondělíček) **89a:20067** 20M20
- (with Robertson, Edmund F.; Schein, Boris M.) A combinatorial property of finite full transformation semigroups. *Proc. Roy. Soc. Edinburgh Sect. A* 109 (1988), no. 3–4, 319–328. (G. Pollák) **89i:20105** 20M20 (20M05)
- Howison, S. D. Similarity solutions to the Stefan problem and the binary alloy problem. *IMA J. Appl. Math.* 40 (1988), no. 3, 147–161. (Summary) **89j:80012** 80A20 (35R35)
- (with Lacey, A.; Ockendon, J. R.) Hele-Shaw free-boundary problems with suction. *Quart. J. Mech. Appl. Math.* 41 (1988), no. 2, 183–193. (Summary) **89j:76049** 76E99
- (with Dewynne, J. N.; Ockendon, J. R.; Morland, L. C.; Watson, E. J.) Slot suction from inviscid channel flow. *J. Fluid Mech.* 200 (1989), 265–282. (Summary) **89m:76013** 76B10
- Howitt, Peter (with McAfee, R. Preston) Stability of equilibria with externalities. *Quart. J. Econom.* 103 (1988), no. 2, 261–277. (Summary) **89d:90048** 90A14 (90A16)

- Howlander, H.** (with Weiss, Günter M. T.) Linear scale estimation. *J. Statist. Comput. Simulation* 29 (1988), no. 2, 117-126. (Not in MR) 62F10
- Howland, James S.** Random perturbation theory and quantum chaos. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 197-204, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (M. Fukushima) 89b:47069 47E05 (47A55, 58F15, 58F30, 81C12, 82A42)
- Perturbation theory of dense point spectra. *J. Funct. Anal.* 74 (1987), no. 1, 52-80. (H. Baumgärtel) 89b:47023 47A55 (81C10)
- (with Dolph, C. L.) Dedication. *J. Math. Anal. Appl.* 127 (1987), no. 2, 298-311. (Editors) 89c:01055 01A70
- Howson, A. G.** (with Kahane, J.-P.; Pollak, Henry O.) The popularisation of mathematics. *Bull. Inst. Math. Appl.* 24 (1988), no. 9-10, 139-142. (Not in MR) 00A99
- Howson, Colin** On the consistency of Jeffreys's simplicity postulate, and its role in Bayesian inference. *Philos. Quart.* 38 (1988), no. 150, 68-83. (Lawrence Sklar) 89c:03034 03B48
- (with Franklin, Allan) It probably is a valid experimental result: a Bayesian approach to the epistemology of experiment. *Stud. Hist. Philos. Sci.* 19 (1988), no. 4, 419-427. (Pierre Crépel) 89k:00014 00A25 (01A50)
- Howze, J. W.** (with Bhattacharyya, Shankar Prashad; Keel, L. H.) Stabilizability conditions using linear programming. *IEEE Trans. Automat. Control* 33 (1988), no. 5, 460-463. (Not in MR) 93D15 (90C50, 93B50, 93C05)
- (with Bhattacharyya, Shankar Prashad; Keel, L. H.) Stabilization of linear systems with fixed order controllers. *Linear Algebra Appl.* 98 (1988), 57-76. (Zong Ji Chen) 89b:30066 93D15 (93B27, 93C05, 93C45)
- Hoy, Anneget** A relation between Newton and Gauss-Newton steps for singular nonlinear equations. (German summary) *Computing* 40 (1988), no. 1, 19-27. (A. de Castro Brzezicki) 89b:65123 65H10
- Hoy, E.** Über die Approximation einiger extremaler quasikonformer Abbildungen. (English, Russian and Polish summaries) [On the approximation of some extremal quasiconformal mappings] Proceedings of the 9th Conference on Analytic Functions (Lublin, 1986). *Ann. Univ. Mariae Curie-Skłodowska Sect. A* 40 (1986), 45-61 (1987). (Summary) 89m:30041 30C60
- Hoy, Michael** Insurance provision under a solvency requirement. *Econom. Lett.* 28 (1988), no. 3, 273-276. (Summary) 89i:62170 62P05 (90A12)
- Hoyer, Ulrich** Theorie der Lorentztransformationen. (English summary) [Theory of Lorentz transformations] *Z. Allgemeine Wissenschaftstheorie* 19 (1988), no. 1, 28-36. (Helmut K. Urbantke) 89k:83003 83A05
- Højrup, Else** ★ Women of science, technology, and medicine. A bibliography. Skriftserie fra Roskilde Universitetsbibliotek [Publication Series from Roskilde University Library], 15. Roskilde University Library, Roskilde, 1987. viii+132 pp. ISBN 87-7349-096-2 (Editors) 89f:01068 01A70 (00A15, 01-00, 01A80)
- Käthe Fenchel (1905-1983). *Women of mathematics*, 30-32, Greenwood, Westport, CT, 1987. (see 89b:01071) 01A70
- Some women mathematicians. *Women in science: options and access* (Berkeley, CA, 1985), 109-118, Museum Sci. Tech., Budapest, 1988. (Editors) 89b:01065 01A70 (01A80)
- Højrup, Jens** Jordanus de Nemore, 13th century mathematical innovator: an essay on intellectual context, achievement, and failure. *Arch. Hist. Exact Sci.* 38 (1988), no. 4, 307-363. (Jan P. Hogendijk) 89i:01010 01A35
- Hōzaki, Ryusuke** (with Iida, Kōji) The optimal search plan for a moving target minimizing the expected risk. *J. Oper. Res. Soc. Japan* 31 (1988), no. 3, 294-321. (Lawrence D. Stone) 89j:90154 90B40 (90D26)
- Häzer, Zoltán** Numerical solution of the Navier-Stokes equation in 2D two-phase flow. *Numerical methods* (Miskolc, 1986), 449-459, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (Dennis C. Jespersen) 89c:65098 65M05 (76-08, 76D05)
- Hraba, T.** (with Doležal, Jaroslav) On the choice of parameters in mathematical models of immunological tolerance. *System modelling and optimization* (Tokyo, 1987), 624-631, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (see 89f:00029) 92A07
- Hrbáček, Karel** Convex powerdomains. I. *Inform. and Comput.* 74 (1987), no. 3, 198-225. (Ana Pasztor) 89c:68074 68Q55 (06B35, 18B99)
- A powerdomain construction. *Mathematical foundations of programming language semantics* (New Orleans, LA, 1987), 200-212, *Lecture Notes in Comput. Sci.*, 298, Springer, Berlin-New York, 1988. (Summary) 89f:06010 06B99 (18B35)
- Hristov, V. Z.** see **Khristov, Valentin Zdravkov**
- Hristova, S. G.** see **Khristova, S. G.**
- Hromadka, Th. V., II** (with Doblaré, M.; Iso, Yuusuke; O'Callaghan, M. J. A.; Onishi, K.; Pina, H.; Quinlan, P. M.; Schippers, H.; Takahashi, Shuichi; Tanaka, Masataka; Telles, J. C. F.; Wrobel, L. C.) ★ Topics in boundary element research. Vol. 3. Computational aspects. Edited and with a preface by Carlos A. Brebbia. Springer-Verlag, Berlin-New York, 1987. xiv+296 pp. ISBN 3-540-16113-9 (Johannes Elschner) 89b:65005 65-02 (65N30)
- (with Yen, Ch.-Ch.; Pinder, G. F.) ★ The best approximation method. An introduction. *Lecture Notes in Engineering*, 27. Springer-Verlag, Berlin-New York, 1987. xiv+168 pp. ISBN 3-540-17572-5 (David F. Griffiths) 89b:65288 65N35 (65-02, 65E05, 65R20)
- Hromkovič, Juraj** Lower bound techniques for VLSI algorithms. *Trends, techniques, and problems in theoretical computer science* (Smolenice, 1986), 2-25, *Lecture Notes in Comput. Sci.*, 281, Springer, Berlin-New York, 1987. (Joseph Ja'Ja') 89b:68035 68Q35
- Reversal-bounded nondeterministic multicounter machines and complementation. *Theoret. Comput. Sci.* 51 (1987), no. 3, 325-330. (G. Wechsung) 89a:68071 68Q15 (03D05, 03D15)
- (with Janiga, Ladislav; Koubek, Václav) On automata with variable number of heads. Proceedings of the Fifth International Meeting of Young Computer Scientists (Smolenice Castle, 1988). *Tanulmányok—MTA Számítástech. Automat. Kutató Int. Budapest No. 208* (1988), 145-152. (see 89g:68002) 68Q05
- Hron, F.** (with Zheng, B. S.) On the role of higher order terms in asymptotic ray theory. *Some topics on inverse problems* (Montpellier, 1987), 326-340, *World Sci. Publishing*, Singapore, 1988. (see 89f:35007) 86A15
- Hronek, J.** Spinless strong-coupling solitons in a discrete Peierls model. *Soviet Phys. JETP* 65 (1987), no. 5, 1021-1024; translated from *Zh. Eksp. Teoret. Fiz.* 92 (1987), no. 5, 1822-1827 (Russian). (Summary) 89b:81273 81H20 (82A68, 82A69)
- Hrouda, Jaroslav** Multicriteria evaluation in economic analysis. (Czech. English summary) *Ekonom.-Mat. Obzor* 23 (1987), no. 4, 423-432. (Summary) 89a:90006 90A05 (90C31)
- Hrubek, Jaromír** The logical and the historical in the development of planimetry. (Czech. English summary) *Sb. Práct. Ped. Fak. v Ostravě Ser. A Mat. Fyz. No. 23* (1988), 15-28. (Summary) 89b:01001 01A05 (01A15, 01A20, 01A35, 01A50, 01A55)
- Hrubý, J.** (with Makhan'kov, V. G.) ★ On the SSQM and nonlinear equations. With a Russian summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research, Dubna], E2-87-890. *Joint Inst. Nuclear Res., Dubna*, 1987. 17 pp. (Summary) 89c:81054 81C99 (35Q20)
- Supersymmetric quantum mechanics and U(N)-nonlinear Schrödinger equation. Proceedings of the Winter School on Geometry and Physics (Srni, 1987). *Rend. Circ. Mat. Palermo (2) Suppl. No. 16* (1987), 65-70. (Asao Arai) 89f:81032 81C05
- Hrusa, William J.** (with Renardy, Michael; Nohel, John A.) ★ Mathematical problems in viscoelasticity. Pitman Monographs and Surveys in Pure and Applied Mathematics, 35. Longman Scientific & Technical, Harlow; John Wiley & Sons, Inc., New York, 1987. x+273 pp. ISBN 0-582-00320-2 (Hans Engler) 89b:35134 35Qxx (35K35, 35L70, 45K05, 73F15, 76A10)
- (with Renardy, Michael) An existence theorem for the Dirichlet problem in the elastodynamics of incompressible materials. *Arch. Rational Mech. Anal.* 102 (1988), no. 2, 95-117. (Alexander Mielke) 89i:35096 35L70 (35Q99, 73C50)
- (with Gurtin, Morton E.) On energies for nonlinear viscoelastic materials of single-integral type. *Quart. Appl. Math.* 46 (1988), no. 2, 381-392. (Michael Renardy) 89e:73020 73F99 (73B30, 73G10)
- (with Renardy, Michael) A model equation for viscoelasticity with a strongly singular kernel. *SIAM J. Math. Anal.* 19 (1988), no. 2, 257-269. (Summary) 89d:35159 35Q20 (45K05, 73F15)
- Hsia, Kuo Hsien** (with Hsieh, Ché Kuang) Inverse problems of linear feedback control systems: stabilization, tracking and disturbance rejection. (Chinese summary) *J. Chinese Inst. Engrs.* 10 (1987), no. 3, 273-282. (Valeriu Prepelitã) 89g:93073 93D15 (15A23, 93B50)
- Hsia, W.-S.** (with Lee, Tan Yu) Lagrangian function and duality theory in multiobjective programming with set functions. *J. Optim. Theory Appl.* 57 (1988), no. 2, 239-251. (Madhusudan Mishra) 89g:90213 90C31
- Hsia, Kuo Hsien** see **Hsia, Kuo Hsien**
- Hsiang, Jieh** (with Srivas, Mandayam) Automatic inductive theorem proving using PROLOG. *Theoret. Comput. Sci.* 54 (1987), no. 1, 3-28. (Summary) 89a:68189 68T15 (03B35)
- Hsiang, W. H.** On epigraphs of functions. *Ranchi Univ. Math. J.* 18 (1987), 38-42 (1988). (Ernest P. Lane) 89j:54018 54C30 (46N05)
- Hsiang, Wen Han** On sequential barrelledness of locally convex spaces. *Kyungpook Math. J.* 26 (1986), no. 2, 187-215. (José Bonet) 89a:46010 46A07
- Elementary proofs of some results in the duality of locally convex spaces. *Tamkang J. Math.* 17 (1986), no. 4, 59-65. (M. Valdivia) 89a:46016 46A20
- Hsiang, Wu-teh** (with Hsiang, Wu-yi; Tomter, Per) On the existence of minimal hyperspheres in compact symmetric spaces. *Ann. Sci. École Norm. Sup. (4)* 21 (1988), no. 2, 287-305. (Carol Blomstrom) 89k:53055 53C42 (53C35, 53C40)
- Hsiang, Wu-yi** (with Straume, Eldar) On the orbit structures of SU(n)-actions on manifolds of the type of Euclidean, spherical or projective spaces. *Math. Ann.* 278 (1987), no. 1-4, 71-97. (Sören Illman) 89a:57056 57S25
- (with Huynh, Hsueh-Ling) Generalized rotational hypersurfaces of constant mean curvature in the Euclidean spaces. II. *Pacific J. Math.* 130 (1987), no. 1, 75-95. (C.-C. Hsiung) 89b:53089 53C35 (53C40, 57R30, 57S30)
- (with Hsiang, Wu-teh; Tomter, Per) On the existence of minimal hyperspheres in compact symmetric spaces. *Ann. Sci. École Norm. Sup. (4)* 21 (1988), no. 2, 287-305. (Carol Blomstrom) 89k:53055 53C42 (53C35, 53C40)
- (with Palais, Richard S.; Terng, Chuu-Lian) The topology of isoparametric submanifolds. *J. Differential Geom.* 27 (1988), no. 3, 423-460. (Alan West) 89m:53104 53C42 (53C35, 53C40)
- Hsiao, Fêng Hsiang** (with Ch'ên, Po Hsien) Robustness optimization in LQG multivariable systems with time-varying nonlinear perturbations. *Internat. J. Systems Sci.* 19 (1988), no. 10, 2019-2046. (Engin Yaz) 89b:49031 49D40 (93B35, 93D15, 93E20)
- (with Ch'ên, Po Hsien) LQG optimal and robust controller designs for nonlinear stochastic systems: multivariable case. *J. Franklin Inst.* 325 (1988), no. 2, 189-206. (Summary) 89b:93081 93D10 (49D40, 93B50, 93C10, 93C35, 93E20)
- Hsiao, G. C.** Boundary element methods for a class of exterior singular perturbation problems. *BAIL IV* (Novosibirsk, 1986), 89-97, *Boole Press Conf. Ser.*, 8, Boole, Dun Laoghaire, 1986. (Summary) 89g:76008 76-08 (65N30, 73-08, 76D99)
- (with Porter, John F.) The coupling of BEM and FEM for exterior boundary value problems. *Boundary elements* (Beijing, 1986), 77-86, Pergamon, Oxford-Elmsford, NY, 1986. (see 89f:73003) 73-08 (76-08)
- (with Porter, John F.) A hybrid method for an exterior boundary value problem based on asymptotic expansion, boundary integral equation and finite element approximations. *Innovative numerical methods in engineering* (Atlanta, Ga., 1986), 83-88, *Comput. Mech.*, Southampton, 1986. (Mutsuto Kawahara) 89c:76012 76-08 (65N30)
- (with Monk, P. B.) A singular perturbation problem on microcomputers. *New computing environments: microcomputers in large-scale computing* (Newark, DE, 1985), 68-79, SIAM, Philadelphia, PA, 1987. (Summary) 89i:65130 65N99
- Boundary element methods for exterior problems in elasticity and fluid mechanics. *The mathematics of finite elements and applications*, VI (Uxbridge, 1987), 323-341, Academic Press, London-New York, 1988. (see 89c:65004) 65N30 (73M05, 76B20, 76D05)
- Hsiao, Ling** see **Xiao, Ling**
- Hsiao, Sheng Yen** Uniform ergodic theorems for operator semigroups. *Proceedings of the analysis conference*, Singapore 1986, 261-265, *North-Holland Math. Stud.*, 150, North-Holland, Amsterdam-New York, 1988. (R. J. Nagel) 89f:47014 47A35 (47D05)
- (with Lin, Charles S. C.) On the equations  $Ax = q$  and  $SX - XT = Q$ . *J. Funct. Anal.* 77 (1988), no. 2, 352-363. (R. J. Nagel) 89f:47065 47D05 (47A35, 47A62)
- Asymptotic behavior of pseudoresolvents on some Grothendieck spaces. *Publ. Res. Inst. Math. Sci.* 24 (1988), no. 2, 277-282. (G. F. Webb) 89g:47054 47D05 (47A05)
- Hsieh, Ché Kuang** (with Hsia, Kuo Hsien) Inverse problems of linear feedback control systems: stabilization, tracking and disturbance rejection. (Chinese summary) *J. Chinese*



- Inst. Engrs.* **10** (1987), no. 3, 273–282. (Valeriu Prepelija) **89g:93073** 93D15 (15A23, 93B50)
- (with Shih, Chên Feng)  $\sigma$ -stability and characterization of all  $\sigma$ -stabilizing compensators. (Chinese summary) *J. Chinese Inst. Engrs.* **10** (1987), no. 3, 309–316. (Summary) **89d:93081** 93D15 (93D25)
  - Some results on direct reduced order modeling of linear distributed parameter systems. (Chinese summary) *J. Chinese Inst. Engrs.* **11** (1988), no. 4, 391–398. (Not in MR) **93B17** (49D15, 93C20, 93C25)
- Hsieh, Chin Chiao** see **Tang, Ao Qing et al.** **89d:92102**
- Hsieh, Ch'ing Hsieh** (with Huang, Ch'i) An algorithm for evaluating Schwarz form. (Chinese summary) *J. Chinese Inst. Engrs.* **11** (1988), no. 4, 411–414. (Not in MR) **93B17** (93B10, 93C05)
- Hsieh, Din Yu** (with Chen, Feng Su) A model study of stability of Couette flow. (Chinese. English summary) *Comm. Appl. Math. Comput.* **1** (1987), no. 2, 22–33. (Summary) **89f:76056** 76E30
- Kelvin-Helmholtz stability and two-phase flow. *Applied mathematics, fluid mechanics, astrophysics* (Cambridge, MA, 1987), 144–149, *World Sci. Publishing, Singapore*, 1988. (See **89f:76002**) 76E99 (76T05)
- Hsieh, H. K.** (with Rukhin, Andrew L.) Survey of Soviet work in reliability. With discussion and a reply by the authors. *Statist. Sci.* **2** (1987), no. 4, 484–503. (Title) **89a:62210** 62N05 (01A65, 01A72, 90B25)
- Hsieh, Jer-Guang** see **Hsieh, Ch' Kuang**
- Hsieh, Nan Jui** (with Kuo, Hui-Hsiung) A generalized Itô's formula for multidimensional Brownian motions and its applications. *Chinese J. Math.* **15** (1987), no. 3, 163–174. (T. Hida) **89e:60156** 60J65 (60H99, 60J55)
- Collisions of Lévy processes. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 503–506. (Mamoru Kanda) **89k:60106** 60J30 (60J45)
- Hsieh, Po-Fang** (with Gingold, Harry) A global study of singularly perturbed almost diagonal systems. *Ann. Differential Equations* **2** (1986), no. 4, 383–398. (Hussain S. Nur) **89h:34048** 34E05 (34E20)
- (with Gingold, Harry) Asymptotic solutions of a Hamiltonian system in intervals with several turning points. *SIAM J. Math. Anal.* **19** (1988), no. 5, 1142–1150. (B. G. Pachpatte) **89g:34090** 34E20 (34C29, 58F05)
- Hsieh, Ying Hen** The phenomenon of unstable oscillation in population models. *Math. Comput. Modelling* **10** (1988), no. 6, 429–435. (Summary) **89d:92067** 92A15 (92A17)
- On the evolution of altruism in an age-structured population. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 472–475. (See **89d:00007**) 92A15 (92A12)
- Hsien, D. Y.** see **Hsieh, Din Yu**
- Hsien, Taitien** On the characterization of certain point processes. *Stochastic Process. Appl.* **26** (1987), no. 2, 297–316. (J. Hüster) **89b:60129** 60G55 (60E07, 60F05)
- Hsiung, Chao Agnes** (with Chang, I. Shou) Likelihood process in parametric model of censored data with staggered entry—asymptotic properties and applications. *J. Multivariate Anal.* **24** (1988), no. 1, 31–45. (Tapas K. Chandra) **89k:62023** 62E20 (60C44, 62F12)
- (with Chang, I. Shou) Counting process approach to time-sequential and sequential point estimation with censored data. *Sequential Anal.* **7** (1988), no. 2, 127–148. (Summary) **89j:62109** 62L10 (62L12)
- Hsiung, Chuan-Chih** (with Levko, John J.) Conformal invariants of submanifolds. II. *Indiana Univ. Math. J.* **37** (1988), no. 1, 181–189. (Bang-yen Chen) **89f:53078** 53C40
- (with Shiskowski, Kenneth Michael) Euler-Poincaré characteristic and higher order sectional curvature. I. *Trans. Amer. Math. Soc.* **305** (1988), no. 1, 113–128. (Summary) **89h:53092** 53C20 (53C55, 57R20)
- Hsu, C. S.** see **Hsu, Chieh Su**
- Hsu, Chien Fa** (with Wang, Sheng Tê; Kuo, Tê Sheng; Lin, Yu-Hwan; Chuang, Yao T'ang) Robust control design for linear systems with uncertain parameters. *Internat. J. Control* **46** (1987), no. 5, 1557–1567. (Mikolaj Buslowicz) **89a:93028** 93B50 (49D37, 93C05, 93C40)
- (with Chuang, Yao T'ang; Kuo, Tê Sheng; Wu, Chin Fu) Allowable perturbations for the stability robustness of systems with uncertain parameters. (Chinese summary) *J. Chinese Inst. Engrs.* **10** (1987), no. 6, 665–669. (Chao Shun Zhou) **89a:93040** 93D10 (49D37, 93C05, 93C35, 93C40, 93C50)
- Hsu, Chieh Su** ★ Cell-to-cell mapping. A method of global analysis for nonlinear systems. *Applied Mathematical Sciences*, **64**, Springer-Verlag, New York-Berlin, 1987. xii+352 pp. ISBN 0-387-96520-3 (Henk Broer) **89d:58115** 58F99
- (with Chiu, H. M.) Global analysis of a system with multiple responses including a strange attractor. *J. Sound Vibration* **114** (1987), no. 2, 203–218. (Summary) **89e:58078** 58F13 (70K50)
  - (with Desai, U. B.) Minimum phase model reduction of deterministic systems via stochastic balancing. *Control Theory Adv. Tech.* **4** (1988), no. 3, 349–358. (Summary) **89g:93012** 93B15 (93B20, 93E03)
  - (with Sun, J.-Q.) First-passage time probability of nonlinear stochastic systems by generalized cell mapping method. *J. Sound Vibration* **124** (1988), no. 2, 233–248. (Andrzej Tylikowski) **89m:70063** 70L05
  - (with Sun, J.-Q.) A statistical study of generalized cell mapping. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 3, 694–701. (Summary) **89i:70041** 70L05 (34F05, 58F08)
- Hsu, Chung-Hao** (with Hartwich, Peter-M.) High-resolution upwind schemes for the three-dimensional incompressible Navier-Stokes equations. *ALAA J.* **26** (1988), no. 11, 1321–1328. (Summary) **89j:76014** 76-08 (76D05)
- Hsu, Chyi Hung** (with Levy, Martin S.; Neill, James W.) The distribution of the ratio of independent central Wishart determinants. *Comm. Statist. Theory Methods* **17** (1988), no. 9, 3177–3190. (Summary) **89g:62078** 62H10
- Hsu, D. Frank** (with Harary, Frank) Node-graceful graphs. *Comput. Math. Appl.* **15** (1988), no. 4, 291–298. (Yousef Alavi) **89i:05231** 05C75 (05C99)
- Hsu, Deh-Shiu** see **Hsu, Tê Hsiu**
- Hsu, I.-S.** (with Truong, T. K.; Reed, I. S.; Shyu, Hsuen Chyun; Shao, H. M.) A pipeline design of a fast prime factor DFT on a finite field. *IEEE Trans. Comput.* **37** (1988), no. 3, 266–273. (R. A. Brualdi) **89c:94041** 94B35 (11Y05, 94B05)
- (with Truong, T. K.; Reed, I. S.; Glover, N.) A VLSI architecture for performing finite field arithmetic with reduced table lookup. *Linear Algebra Appl.* **98** (1988), 249–262. (John Karlof) **89b:11102** 11T30 (11T71, 68Q25, 94B05, 94B35)
- Hsu, J. P.** see **Hsu, Jong Ping**
- Hsu, Jason C.** (with Stefansson, Gunnar; Kim, Woo Chul) On confidence sets in multiple comparisons. *Statistical decision theory and related topics, IV, Vol. 2* (West Lafayette, Ind., 1986), 89–104, Springer, New York-Berlin, 1988. (H. L. Harter) **89f:62031** 62F25 (62J15)
- Sample size computation for designing multiple comparison experiments. *Comput. Statist. Data Anal.* **7** (1989), no. 1, 79–91. (Not in MR) **62J15**
- Hsu, Jong Ping** (with Pei, Shou Yong) Klauder's continuous representations and fuzzy coordinate variables. *Phys. Rev. A* (3) **37** (1988), no. 5, 1406–1410. (Brian DeFacio) **89f:81289** 81N05 (81C20, 81C35)
- (with Whan, Chagarn) Klauder's continuous representations and fuzzy coordinate variables. II. *Phys. Rev. A* (3) **38** (1988), no. 5, 2248–2254. (Brian DeFacio) **89k:81017** 81B99 (81D05, 81E99)
- Hsu, L. C.** see **Xu, Li Zhi**
- Hsu, Lie-Fern** (with Tapiero, Charles S.) Maintenance of an unreliable  $M/G/1$  queue-like job shop. *Queueing Systems Theory Appl.* **2** (1987), no. 4, 333–349. (P. R. Parthasarathy) **89b:60217** 60K25 (90B22)
- (with Tapiero, Charles S.) A Bayes approach to quality control of an  $M/G/1$  queue. *Naval Res. Logist.* **35** (1988), no. 3, 327–343. (Summary) **89b:62209** 62N10 (60K25, 62F15, 90B22, 90B25)
- Hsu, Lucas** (with Kamran, N.) Symmetries of second-order ordinary differential equations and Elie Cartan's method of equivalence. *Lett. Math. Phys.* **15** (1988), no. 2, 91–99. (Kotik K. Lee) **89d:58004** 58A15 (58F35, 58F40, 58H05)
- (with Kamran, N.; Olver, Peter J.) Equivalence of higher-order Lagrangians. II. The Cartan form for particle Lagrangians. *J. Math. Phys.* **30** (1989), no. 4, 902–906. (J. Chrastina) **89m:58063** 58F05 (58E30, 58F35)
  - (with Kamran, N.) Classification of second-order ordinary differential equations admitting Lie groups of fibre-preserving point symmetries. *Proc. London Math. Soc.* (3) **58** (1989), no. 2, 387–416. (D. H. Sattinger) **89k:58312** 58H05 (22E05, 34A34, 58F35)
- Hsu, Meichun** (with Madnick, Stuart E.) Shifting timestamps for concurrency control in an information hierarchy. *Inform. Process. Lett.* **27** (1988), no. 6, 291–297. (Manfred Broy) **89k:68032** 68P15 (68Q10)
- Hsu, Pei** (with Chung, Kai Lai) Gauge theorem for the Neumann problem. *Seminar on stochastic processes*, 1984 (Evanston, Ill., 1984), 63–70, *Progr. Probab. Statist.*, **9**, Birkhäuser Boston, Boston, MA, 1986. (O. Enchev (Zbl 585:60064)) **89i:60157** 60J65 (60H25, 60J55)
- Branching Brownian motion and the Dirichlet problem of a nonlinear equation. *Seminar on stochastic processes*, 1986 (Charlottesville, Va., 1986), 71–83, *Progr. Probab. Statist.*, **13**, Birkhäuser Boston, Boston, MA, 1987. (Michael Cranston) **89d:60155** 60J85 (35K99, 60J65)
  - Brownian motion and Riemannian geometry. *Geometry of random motion* (Ithaca, N.Y., 1987), 95–104, *Contemp. Math.*, **73**, Amer. Math. Soc., Providence, RI, 1988. (Jacques Vauthier) **89k:60119** 60J65 (53C20, 58G32)
  - (with March, P.) Brownian excursions from extremes. *Séminaire de Probabilités, XXII*, 502–507, *Lecture Notes in Math.*, **1321**, Springer, Berlin-New York, 1988. (Xiang Qun Yang) **89k:60120** 60J65 (60J25, 60J55)
  - (with Cranston, M.; March, P.) Smoothness of the convex hull of planar Brownian motion. *Ann. Probab.* **17** (1989), no. 1, 144–150. (S. J. Taylor) **89m:60190** 60J65
- Hsu, Rue Ron** (with Chen, Hui Hua; Chern, De Ching; Nester, James M.; Yeung, Wai Bong) Asymptotically Newtonian conditions for Poincaré gauge theory. *Progr. Theoret. Phys.* **79** (1988), no. 1, 77–85. (P. K. Smerz) **89e:83053** 83D05
- Hsü, Shih Hsiung** A convergence property of Dubins' representation of distributions. *Bull. Austral. Math. Soc.* **38** (1988), no. 1, 83–85. (Thomas S. Salisbury) **89i:60158** 60J65 (60G40)
- Hsu, Sei Bi** (with Hwang, Shin Feng) Analysis of large deformation of a heavy cantilever. *SIAM J. Math. Anal.* **19** (1988), no. 4, 854–866. (D. Durban) **89k:73043** 73K05 (34B15)
- Hsu, Tai Ran** ★ The finite element method in thermomechanics. *Allen & Unwin, Inc., Boston, MA*, 1986. xx+391 pp. ISBN 0-04-620013-4 (J. D. P. Donnelly) **89j:73005** 73-08 (65N30, 73C25, 73E25, 73E99)
- Hsü, Tê Hsiu** (with Lin, Hsien Hsiung) Optimal control with responses and control force constraints. (Chinese summary) *J. Chinese Inst. Engrs.* **11** (1988), no. 5, 533–541. (Summary) **89j:93062** 93C15 (73K99, 93C75)
- Hsu, Wen-Lian** The coloring and maximum independent set problems on planar perfect graphs. *J. Assoc. Comput. Mach.* **35** (1988), no. 3, 535–563. (Dominique Gouyou-Beauchamps) **89m:68049** 68Q20 (05C35, 68Q25, 68R10, 90C35)
- Hu, B. L.** (with Sinha, Sukanya) Symmetry behavior in cosmological spacetimes: effect of slowly varying background fields. *Phys. Rev. D* (3) **38** (1988), no. 8, 2423–2433. (Summary) **89j:83049** 83C47 (81E20, 83F05)
- Hu, Bambi** (with Mao, Jian-Min) Transitions to chaos in higher dimensions. *Directions in chaos*, Vol. 1, 206–271, *World Sci. Ser. Dir. Condensed Matter Phys.*, **3**, World Sci. Publishing, Singapore, 1987. (Mikhail Zaks) **89h:58116** 58F13 (58F08, 58F14, 70K50)
- (with Kim, Sang-Yoon) Singularity spectrum for period  $n$ -tupling in area-preserving maps. *Phys. Rev. A* (3) **38** (1988), no. 3, 1534–1537. (Summary) **89i:58089** 58F13 (26B99, 58F08)
- Hu, Bao Sheng** (with Wu, Nai Qi; Li, Ren Hou) Decentralized stabilization using local state feedback. (Chinese. English summary) *Control Theory Appl.* **5** (1988), no. 1, 51–56. (Cheng Zhi Li) **89j:93095** 93D15 (93A15)
- Hu, Bei** Fully nonlinear elliptic equations with gradient constraint. *Beijing Daxue Xuebao* **1986**, no. 5, 78–91. (Ya Zhe Chen) **89k:35102** 35J85
- Periodic solutions of the parabolic Bellman equation and their stability. (Chinese. English summary) *Adv. in Math. (Beijing)* **17** (1988), no. 2, 164–168. (Summary) **89i:35008** 35B10 (35K99, 35R10)
- Hu, Cheng Ming** Compactness in fuzzy metric spaces. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 6, suppl., 55–58. (Zike Deng) **89m:54009** 54A40 (03E72)
- Hu, Chin Kun** (with Tseng, Hsen-Che; Lai, Wu Yih; Chen, Wen Den) Renormalization-group method for transitions to chaos via period doubling and intermittency in the chaotic region. *Phys. Lett. A* **134** (1989), no. 7, 417–420. (Summary) **89k:58201** 58F13 (26A18, 58F08)

- Hu, De Kun** (with Zhang, Xi Guang) Principal component cluster analysis. (Chinese. English summary) *Beijing Daxue Xuebao* 1987, no. 5, 92-100. (Not in MR) 62H30 (62H25)
- Hu, Di He** A model of a doubly stochastic controlled branching process. (Chinese) *J. Math. (Wuhan)* 8 (1988), no. 1, 104. (Title) 89i:60163 60H00
- Hu, Gang** (with Zou, Jian) From the three-dimensional torus to chaos. (Chinese. English summary) *Beijing Shifan Daxue Xuebao* 1987, no. 2, 17-23. (Summary) 89a:58078 58F13
- Creation and annihilation operators for unstable particles. (Chinese) *Acta Math. Sci. (Chinese)* 8 (1988), no. 1, 27-32. (Not in MR) 81E99
- Stochastic properties of stationary solutions of multivariable master equations. (Chinese. English summary) *Beijing Shifan Daxue Xuebao* 1988, no. 1, 22-27. (Summary) 89j:80018 80A32
- A potential function for nonequilibrium systems. (Chinese. English summary) *Beijing Shifan Daxue Xuebao* 1988, no. 3, 44-53. (Summary) 89k:82042 82A35
- (with Yu, Jiang) Exact solutions of the invariant density for piecewise linear approximation to cubic maps. *J. Phys. A* 21 (1988), no. 12, 2717-2726. (Arkady S. Pikovsky) 89m:58128 58F11 (58F08)
- Power-series expansion of the potential of the Fokker-Planck equation. *Phys. Rev. A* (3) 38 (1988), no. 7, 3693-3701. (B. H. Lavenda) 89i:82029 82A35
- Hu, Guan Chu** (with Tang, Jian Kang) The ATOR method for solving large systems of linear equations. (Chinese. English summary) *J. Hangzhou Univ.* 15 (1988), no. 1, 1-7. (Zhimin Zhang) 89k:65031 65F10 (65F50)
- (with Tang, Jian Kang) Upper and lower error bound estimates for the SSOR method. (Chinese. English summary) *J. Hangzhou Univ.* 15 (1988), no. 4, 396-400. (Zeng Rong Chen) 89m:65032 65F10
- Hu, Hai Chang** (with Shen, Xin Zhuo) A new integral equation for plane harmonic functions. *Boundary elements* (Beijing, 1986), 111-118, Pergamon, Oxford-Elmsford, NY, 1986. (see 89f:73003) 73-08
- (with Shen, Xin Zhuo) A new boundary integral equation for plane harmonic functions. *Acta Mech. Sinica (English Ed.)* 3 (1987), no. 4, 335-343. (Summary) 89b:73008 73C02 (31A05, 73-08)
- (with Su, Xian Yue; Wu, Ji Ke) Large-displacement analysis of thin shells of revolution. *Sci. Sinica Ser. A* 30 (1987), no. 10, 1054-1068. (Summary) 89b:73032 73L99 (73-08)
- Hu, He Sheng** (with Wu, Siye) Nonexistence theorems for Yang-Mills fields and harmonic maps in the Schwarzschild spacetime. II. *Lett. Math. Phys.* 14 (1987), no. 4, 343-351. (Kotik K. Lee) 89b:81157 81E20 (58E20, 81E13)
- Hu, Hong Liang** (with Chen, Wei; Guo, Han Ying; Yu, Yue) Remarks on superstring field theories. II. *Modern Phys. Lett. A* 2 (1987), no. 11, 835-845. (Danny Birmingham) 89b:81172 81E99 (81E30, 83E30)
- (with Chen, Wei; Guo, Han Ying; Yu, Yue) Symmetry, cohomology and string field theories—a Fock space formalism. *Conformal field theory, anomalies and superstrings* (Singapore, 1987), 391-418, *World Sci. Publishing, Singapore*, 1988. (Tsou Sheung Tsun) 89k:81072 81E13 (81-02, 81E20, 81E30)
- Hu, Hui** An algorithm for rescaling a matrix positive definite. *Linear Algebra Appl.* 96 (1987), 131-147. (Ludwig Elsner) 89d:65046 65F35 (15A39, 15A48, 90C05)
- Hu, Ji Xuan** The end of utopia: on the nondesignability of social systems. *Cybernet. Systems* 19 (1988), no. 6, 491-500. (Not in MR) 90A08 (90A10)
- Hu, Jia Gan** The estimate of  $\|M^{-1}N\|_{\infty}$  and the optimally scaled matrix. *J. Comput. Math.* 2 (1984), no. 2, 122-129. (J. W. Neuberger) 89a:65073 65F35 (15A60)
- Seven-diagonal and nine-diagonal SIP algorithms. *J. Comput. Math.* 5 (1987), no. 2, 95-104. (Tudor Dumitrescu) 89a:65052 65F10
- Hu, Jia Zhen** (with Tang, Kun Fa) A disorder solution for a generalised mixed-spin model. *J. Phys. A* 20 (1987), no. 17, L1207-L1209. (Summary) 89b:82123 82A68 (82A69)
- (with Tang, Kun Fa) A renormalization group approach for Ising spin systems. (Chinese. English summary) *J. Shanghai Jiaotong Univ.* 1987, no. 4, 20-24, 120. (Summary) 89b:82124 82A68 (82A25)
- (with Tang, Kun Fa) Exact solution of a generalized mixed spin model on a disordered domain. (Chinese. English summary) *Acta Phys. Sinica* 37 (1988), no. 9, 1564-1568. (Summary) 89i:82101 82A68 (82A69)
- (with Tang, Kun Fa) Critical properties of the anisotropic Ising model on three-node hierarchical lattices. *J. Phys. A* 21 (1988), no. 3, 785-790. (Summary) 89a:82053 82A68 (82A25)
- (with Yao, Jian; Tang, Kun Fa) A disorder solution for a generalised mixed-spin model on anisotropic Kagomé lattices. *J. Phys. A* 21 (1988), no. 20, 3921-3925. (Paul A. Pearce) 89k:82109 82A68 (82A67)
- (with Tang, Kun Fa) Critical behaviour of surfaces on hierarchical lattices. *Phys. Lett. A* 127 (1988), no. 6-7, 325-327. (H. N. V. Temperley) 89c:82019 82A25 (82A68)
- Hu, Jie** (with Li, Lei) The complexity of sequential and parallel algorithms for the Vandermonde matrices. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* 9 (1988), no. 2, 125-127. (Ding Zhu Du) 89i:68060 68Q25 (65F05, 65W05)
- Hu, Kai Jian** Existence of periodic solutions for a class of perturbed systems. (Chinese. English summary) *J. Math. (Wuhan)* 7 (1987), no. 3, 323-328, 322. (Summary) 89j:34058 34C25 (58F14)
- Hu, Ke** On a theorem of Milin. *J. Math. Res. Exposition* 6 (1986), no. 4, 77-80. (D. H. Hamilton) 89j:30025 30C50 (30C55)
- Hu, Lai Zhao** (with Herro, Mark A.; Costello, Daniel J., Jr.) Capacity and cutoff rate calculations for a concatenated coding system. *IEEE Trans. Inform. Theory* 34 (1988), no. 2, 212-222. (Not in MR) 94B35 (94A40, 94B70)
- Hu, Liang Ping** An application of Markov chains to studying the law of distribution of blood types. (Chinese) *Math. Practice Theory* 1987, no. 4, 6-8. (Not in MR) 92A07
- Hu, Men Chang** (with Chang, Ch'ing Hui; Li, Hsuan Pei) Extremal analytic discs with prescribed boundary data. *Trans. Amer. Math. Soc.* 310 (1988), no. 1, 355-369. (John P. D'Angelo) 89f:32043 32H15 (32D15, 32H20)
- Hu, Ning** (with Zhang, Si Ying) A problem of collision avoidance between ships. (Chinese. English summary) *Control Theory Appl.* 4 (1987), no. 4, 105-113. (Summary) 89g:90261 90D26 (49A45)
- Hu, Qing Ping** Some notes on products of universal algebras. (Chinese) *Acta Math. Sinica* 30 (1987), no. 6, 780-787. (Editors) 89f:08006 08A30 (03G25, 06D99)
- Some remarks on universal algebras. I. (Chinese. English summary) *J. Northwest Univ.* 17 (1987), no. 3, 32-38. (Perry Smith) 89a:08005 08A99 (03G25, 06D99)
- Geometric characteristics of the natural partial order of a BCI-algebra. (Chinese. English summary) *J. Northwest Univ.* 18 (1988), no. 3, 5-8. (Summary) 89m:06017 06D99 (03G25)
- Hu, Sheng Qun** The relations among characteristic functions, subordinate functions and related functions. (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* 1987, no. 2, 8-13. (Summary) 89c:33087 03E72
- Hu, Shengxu Samuel** (with Shao, X. M.) Adaptive hybridized spline differentiators for numerical solution of the advection equation. Hyperbolic partial differential equations. *V. Comput. Math. Appl.* 15 (1988), no. 6-8, 525-534. (Summary) 89c:65139 65N99
- Hu, Shi Cai** (with Zang, Jun) The disturbance decoupling problem in decentralized linear multivariable systems by local dynamic feedback. *Systems Control Lett.* 10 (1988), no. 5, 309-316. (Summary) 89c:93008 93A15 (49D27, 93B27, 93B50, 93C05, 93C35)
- Hu, Shi Geng** Full normality of uniform lattices. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 1, 123-126. (Zike Deng) 89a:54046 54H12 (03E72, 06F30, 54A40)
- Pseudocompactness of uniform lattices. (Chinese. English summary) *J. Math. (Wuhan)* 7 (1987), no. 4, 341-344. (Summary) 89i:06028 06F30 (54H12)
- Hu, Shi Hua** Mathematics in the age of information processing. (Chinese. English summary) *Adv. in Math. (Beijing)* 17 (1988), no. 1, 12-20. (Summary) 89i:01051 01A65 (00A25, 03-03)
- Hu, Shou Chuan** (with Lakshmikantham, V.) Monotone iterative technique for integro-differential equations. (Russian summary) *Asymptotic methods in mathematical physics* (Russian), 263-270, 304, "Naukova Dumka", Kiev, 1988. (S. G. Deo) 89m:45010 45J05
- (with Leela, S.) Periodic boundary value problem for integro-differential equations of Hammerstein type. *Appl. Math. Comput.* 25 (1988), no. 1, part 1, 29-38. (O. Diekmann) 89d:45013 45J05 (34B15)
- (with Leela, S.) Periodic boundary value problem for a second order integro-differential equation of Hammerstein type. *Appl. Math. Comput.* 25 (1988), no. 3, 219-226. (D. Bainov) 89d:45014 45J05
- (with Lakshmikantham, V.; Rama Mohana Rao, M.) Nonlinear variation of parameters formula for integro-differential equations of Volterra type. *J. Math. Anal. Appl.* 129 (1988), no. 1, 223-230. (S. G. Deo) 89b:45007 45J05
- (with Deimling, Klaus) Fixed points of weakly inward maps in conical shells. *Nonlinear Anal.* 12 (1988), no. 3, 227-230. (Xie Ping Ding) 89b:47121 47H10
- Fixed points for discontinuous quasi-monotone maps in  $\mathbb{R}^n$ . *Proc. Amer. Math. Soc.* 104 (1988), no. 4, 1111-1114. (Summary) 89k:47093 47H10 (26B35, 47H05, 65H10)
- (with Bainov, D. D.; Khristova, S. G.; Lakshmikantham, V.) Periodic boundary value problems for systems of first order impulsive differential equations. *Differential Integral Equations* 2 (1989), no. 1, 37-43. (M. K. Grammatikopoulos) 89b:93038 93C57 (34A40, 34B15, 34C25)
- (with Lakshmikantham, V.; Leela, S.) Impulsive differential systems and the pulse phenomena. *J. Math. Anal. Appl.* 137 (1989), no. 2, 605-612. (Sheldon P. Gordon) 89k:93143 93C57 (34A99, 34C99)
- Hu, Shu An** On Marcus-Wang conjecture. *Acta Math. Sinica (N.S.)* 3 (1987), no. 4, 301-304. (Sing Cheong Ong) 89f:15019 15A60 (15A69)
- On Hermitian operator in tensor product space. A Chinese summary appears in Chinese Ann. Math. Ser. A 8 (1987), no. 5, 644. *Chinese Ann. Math. Ser. B* 8 (1987), no. 4, 428-433. (B. Reichstein) 89a:15026 15A69 (15A57, 47A05, 47B15)
- Generalized matrix rings over a ring  $R$  and their application. (Chinese. English summary) *J. Math. (Wuhan)* 7 (1987), no. 4, 407-415. (Yonghua Xu) 89j:16030 16A42
- Tensor products of homogeneous distinguishable completely reducible algebras of linear transformations. (Chinese. English summary) *J. Math. Res. Exposition* 8 (1988), no. 3, 333-337. (Bo Ying Wang) 89b:16023 16A48
- Hu, Shu He** (with Chen, Gui Jing; Hong, Sheng Yan) Some convergence problems about the increments of a Wiener process. *Acta Math. Sinica (N.S.)* 3 (1987), no. 1, 38-44. (M. Csörgő) 89b:60192 60J65 (60G17)
- Consistency of least squares estimators of linear regressions with dependent errors. (Chinese. English summary) *Acta Math. Appl. Sinica* 11 (1988), no. 3, 287-298. (Song Gui Wang) 89m:62067 62J05
- Hu, Si Zhu** (with Cai, Sheng Shan; Li, Xin Zhou) Fermion-generalized monopole dynamics in Kaluza-Klein theory. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* 26 (1987), no. 3, 289-296. (Summary) 89d:83062 83E15
- Hu, Te Chiang** (with Wachs, Michelle L.) Binary search on a tape. *SIAM J. Comput.* 16 (1987), no. 3, 573-590. (Linda Pagli) 89a:68034 68P10 (68Q25)
- Hu, Tien Chung** (with Taylor, Robert Lee) Consistency of kernel density estimators and laws of large numbers in  $C_0(\mathbb{R})$ . *Mathematical statistics and probability theory, Vol. A* (Bad Tatzmannsdorf, 1986), 253-266, *Reidel, Dordrecht-Boston, MA-London*, 1987. (Summary) 89b:62070 62G05 (60F15)
- Hu, Wen** An algorithm for recursive generation of rooted trees. (Chinese. English summary) *J. Tsinghua Univ.* 27 (1987), no. 6, 70-76. (Ding Zhu Du) 89i:68101 68R10 (05C05, 68Q25)
- Hu, Wen Rui** (with Long, Hui) Nonaxisymmetric magnetostatic equilibrium with strong twisted component of magnetic field. *Sci. Sinica Ser. A* 31 (1988), no. 2, 192-205. (Summary) 89m:85012 85A30 (78A30, 85A20)
- Hu, Xi Heng** (with Xu, Hong Yue) Robustness protection-time delay tracing adaptive control for varying time delay systems. (Chinese. English summary) *Inform. and Control* (Shenyang) 16 (1987), no. 1, 1-6. (Ye-Hwa Chen) 89b:93072 93C40 (34K35, 93C50, 93D15)
- Hu, Xing** (with Wu, You Lin) Quantum cosmological model with a scalar field as source. *Phys. Lett. A* 125 (1987), no. 8, 362-364. (Summary) 89g:83026 83C45 (81E20, 83F05)
- Hu, Xing Biao** (with Li, Yong<sup>3</sup>) On the symmetries of a multicomponent water wave equation. *Acta Math. Appl. Sinica (English Ser.)* 4 (1988), no. 1, 41-45. (Walter Strampp) 89h:35294 35Q20 (58F07, 58G35)
- (with Li, Yong<sup>3</sup>) Superposition formulae of a fifth order KdV equation and its modified equation. *Acta Math. Appl. Sinica (English Ser.)* 4 (1988), no. 1, 46-54. (Summary) 89k:35212 35Q20 (58G37)
- Hu, Xuan Da** Boundedness and invariant measures of semilinear stochastic evolution equations. (Chinese summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* 4 (1987),



- no. 1, 1-14. (Summary) **89h:60096** 60H10 (47H15)
- Hu, Y. Q. see Hu, You Qiu
- Hu, Y. Z. see Hu, Yao Zhong
- Hu, Ya Guang (with Li, Xi Guang) A trajectory-tracking control scheme for robotic manipulators. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 4, part II, 155-163. (Summary) **89g:93064** 93C75 (70B15, 93C40)
- (with Yu, Ming) A self-tuning control algorithm for robotic manipulators. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 4, part II, 165-170. (Not in MR) **93C75** (93C40)
- Hu, Yao Zhong Stochastic analysis of the stochastic functional on the basic space. *Acta Math. Sci. (English Ed.)* **6** (1986), no. 1, 67-74. (David Nualart Rodón) **89a:60139** 60H07 (60H05)
- (with Meyer, P.-A.) Chaos de Wiener et intégrale de Feynman. [Wiener chaos and the Feynman integral] *Séminaire de Probabilités, XXII*, 51-71, *Lecture Notes in Math.*, 1321, Springer, Berlin-New York, 1988. (Sheng Wu He) **89m:60193** 60J65 (28C10, 58D25, 60J55)
- (with Meyer, P.-A.) Sur les intégrales multiples de Stratonovitch. [On the Stratonovich multiple integrals] *Séminaire de Probabilités, XXII*, 72-81, *Lecture Notes in Math.*, 1321, Springer, Berlin-New York, 1988. (Sheng Wu He) **89k:60070** 60H05 (28C20, 58D20, 60B05, 60J65)
- Un nouvel exemple de distribution de Hida. [A new example of Hida distribution] *Séminaire de Probabilités, XXII*, 82-84, *Lecture Notes in Math.*, 1321, Springer, Berlin-New York, 1988. (Sheng Wu He) **89j:60115** 60J65 (28C20)
- Hu, Yen Chang On calculation of the gravitational force of a finite cylinder. *Classical Quantum Gravity* **5** (1988), no. 3, 507-513. (Summary) **89a:86006** 86A20
- Hu, Yi Min (with Cheng, Kan) Limiting behavior of a PH distribution and its application in a reliability model. *Asia-Pacific J. Oper. Res.* **5** (1988), no. 1, 90-97. (F. Beichtel) **89h:60148** 60K10 (60J20, 90B25)
- (with Cheng, Kan) Some inequalities under certain stochastic orders. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* **4** (1988), no. 1, 64-70. (Summary) **89d:60031** 60E15 (62E10, 90B25)
- Hu, Ying Sheng (with Chen, Han Lin) The bell-shaped property of the fundamental function for cardinal  $L$ -spline interpolation. Proceedings of China-U.S. Joint Conference on Approximation Theory (Hangzhou, 1985). *Approx. Theory Appl.* **3** (1987), no. 4, 24-31. (Avraham A. Melkman) **89h:41032** 41A17 (65D07)
- Hu, You Qiu On two-dimensional magnetostatic equilibria and their stability. *Astrophys. J.* **331** (1988), no. 1, part 1, 402-415. (Summary) **89f:76047** 76E25 (76W05, 85A20)
- Hu, Yu Da  $k$ -preference solutions with reference criteria for multiple objective programming. (Chinese) *Chinese J. Oper. Res.* **5** (1986), no. 1, 61-62. (Not in MR) **90C31**
- Hu, Yu Ren The application of graph theory to the limit analysis for torsion of thin-walled bars. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 12, 2765-2778. (Summary) **89j:73042** 73E20 (05C99, 73K05, 90C50)
- Hu, Yue Ming The periodic solutions of Volterra integro-differential equations. *Ann. Differential Equations* **3** (1987), no. 3, 267-274. (Narahari Parhi) **89g:45008** 45D05 (45J05)
- Periodic solutions of retarded systems with infinite delay. *J. Math. Res. Exposition* **8** (1988), no. 1, 89-94. (Narahari Parhi) **89f:34101** 34K15 (34C11, 34C25, 34D40)
- Hu, Yuming (with Rudnick, Joseph) Winding angle of a self-avoiding random walk. *Phys. Rev. Lett.* **60** (1988), no. 8, 712-715. (Cheng Xun Wu) **89d:82075** 82A41 (82A51)
- Hu, Zhan Solutions of row-monomial  $(0, 1)$  matrix equations and their application to transformation semigroups. (Chinese. English summary) *Neimengu Daxue Xuebao* **19** (1988), no. 2, 246-250. (J. B. Kim) **89i:15006** 15A06 (05B20, 20M20)
- Hu, Zheng Hao Three-valued by diagrams and their applications. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 2, 98-101. (Not in MR) **94C10** (03B50)
- Hu, Zheng Ming (with Yang, Yi Xian) A new proof for the higher-dimensional Hadamard conjecture. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **8** (1988), no. 1, 52-55. (Siu Lun Ma) **89i:05064** 05B20
- Hu, Zhong Li (with Zhang, Xian Guang) Fixation time and extinction time of neutral mutant genes in a nonsynchronized population. (Chinese. English summary) *J. Wuhan Univ. Natur. Sci. Ed.* **1988**, no. 2, 139-140. (Not in MR) **92A10**
- Hu, Zuo Sheng The asymptotic behavior of the solutions to a class of linear neutral equations with small delays. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B **9** (1988), no. 1, 150. *Chinese Ann. Math. Ser. B* **8** (1987), no. 6, 749-756. (Binggen Zhang) **89c:34129** 34K25
- Hua, Lao Gong see Lee, Peng Yee, **89g:01057**; Wang, Yuan<sup>1</sup>, **89g:01063**; Classical groups and related topics, **89h:20002**; Obituary: Hua, Lao Gong, (Not in MR) and Biography: Hua, Lao Gong, (Not in MR)
- Hua, Tong Xu The study of the astronomical intercourse between China and India before the Han Dynasty. Proceedings of the Fourth Asian-Pacific Regional Meeting of the International Astronomical Union (Beijing, 1987). *Vistas Astronom.* **31** (1988), 809-810. (From the text) **89j:01013** 01A25 (01A32)
- Hua, Wen Xiu The properties of some nonadditive measures. *Fuzzy Sets and Systems* **27** (1988), no. 3, 373-377. (T. Thiruvikraman) **89k:28012** 28E10 (03E72)
- Huang, Bo Qiu The unreasonableness of the ordering method and a modification. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **8** (1988), no. 1, 65-71. (Summary) **89i:62049** 62F25
- Huang, Bu Yu (with Huang, Wen Zhen; Dong, Xun) A matrix perturbation method in the eigenvalue problem for nonsymmetric systems. (Chinese. English summary) *J. Shanghai Jiaotong Univ.* **22** (1988), no. 2, 15-21, 112. (Man Kam Kwong) **89k:65037** 65F15 (15A18)
- Huang, Chang Quan A counterexample in two-parameter Markov processes. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 14, 1050-1052. (Not in MR) **60J25**
- Huang, Chao Cheng (with Chen, Xiao Man) On the representation of the joint spectrum for a commuting  $n$ -tuple of nonnormal operators. *Acta Math. Sinica (N.S.)* **3** (1987), no. 3, 215-226. (Raúl E. Curto) **89c:47030** 47B20 (47A10)
- The Putnam-Fuglede theorem for a class of nonnormal operators. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B **8** (1987), no. 4, 492. *Chinese Ann. Math. Ser. B* **8** (1987), no. 5, 557-564. (Jin-Chuan Hou) **89c:47032** 47B20
- Generalized  $k$ -quasihyponormal operators. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* **26** (1987), no. 1, 73-80. (Peng Fan) **89d:47038** 47B20
- Huang, Chao Guang (with Liu, Liao) Quantum cosmology in superstring theory—a toy model. Proceedings of the Johns Hopkins Workshop on Current Problems in Particle Theory. 11. *Frontiers in Particle Theory*, 319-324, World Sci. Publishing, Singapore, 1988. (Summary) **89c:83074** 83E15 (81E30, 83E30, 83F05)
- (with Liu, Liao) The quantum cosmology in the Brans-Dicke theory. *Gen. Relativity Gravitation* **20** (1988), no. 6, 583-587. (Byung Ha Cho) **89i:83052** 83D05 (83F05)
- Huang, Chao Shang (with Zhang, Zhao Xi) Compactification from  $E_8 \times E_8$  to the standard model. *Comm. Theoret. Phys.* **8** (1987), no. 4, 409-426. (P. Achuthan) **89m:81194** 81G20 (81E30)
- (with Chen, Wei; Zhao, Wei Dong) Modular invariance of twisted string theories on group manifolds. *Phys. Lett. B* **201** (1988), no. 1, 54-58. (Summary) **89h:81173** 81E99 (17B67, 58G35, 81E30)
- (with Zhao, Wei Dong; Zhao, Zhi Yong) Spinning string models on group manifolds with twisted boundary conditions. *Phys. Lett. B* **203** (1988), no. 1-2, 74-78. (Raiko Zaikov) **89f:81182** 81E99 (53C80, 81D15, 81E30, 83E30)
- Huang, Chaochen see Huang, Chao Cheng
- Huang, Chen Fang Phragmén-Lindelöf theorem for the minimal surface equation. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 825-828. (Friedrich Sauvigny) **89j:35016** 35B05 (35J20, 49F10, 53A10)
- Huang, Ch'yi (with Shyu, Kuo Kai) Series expansion approach to the analysis and identification of discrete Hammerstein systems. *Internat. J. Control* **47** (1988), no. 6, 1961-1972. (Not in MR) **93B30** (93C55)
- (with Ch'én, Mu Yang) Stable reduction of linear discrete-time systems via multipoint squared-magnitude CFE. *Internat. J. Systems Sci.* **19** (1988), no. 6, 945-951. (Not in MR) **93B17** (93C30)
- (with Shyu, Kuo Kai) Trajectory sensitivity analysis using discrete Legendre orthogonal polynomials. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1181-1187. (Not in MR) **93B35** (93B25)
- (with Hsieh, Ch'ing Hsieh) An algorithm for evaluating Schwarz form. (Chinese summary) *J. Chinese Inst. Engrs.* **11** (1988), no. 4, 411-414. (Not in MR) **93B17** (93B10, 93C05)
- (with Ch'én, Ch'i Chung; Shih, Yen P'ing) Analysis and optimal control of discrete time-varying systems via Hahn polynomials. (Chinese summary) *J. Chinese Inst. Engrs.* **11** (1988), no. 5, 519-532. (T. Kaczorek) **89k:93140** 93C55 (65Q05, 93B25, 93B40)
- (with Shyu, Kuo Kai) Optimal control of linear time-varying discrete systems via discrete Legendre orthogonal polynomials. *J. Franklin Inst.* **325** (1988), no. 4, 509-525. (Summary) **89c:93053** 93B25 (68Q25, 93B10, 93C05, 93C55)
- (with Ch'én, Mu Yang) Stable linear system reduction via a multipoint squared-magnitude continued-fraction expansion. *Proc. IEEE-D* **135** (1988), no. 6, 441-444. (Not in MR) **93B17**
- (with Lee, Ying Chin) Multifrequency Padé approximation via Jordan continued-fraction expansion. *IEEE Trans. Automat. Control* **34** (1989), no. 4, 444-446. (Not in MR) **41A21** (93B99)
- Huang, Ch'ín Hsiung A survey on Doob's problems in function theory and potential theory. II. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 1, 19-34. (George L. Csordas) **89i:30041** 30D40 (30C25, 31A15)
- Huang, Chung Hsing (with Ali, Agha Iqbal) Graphical-structure-based models for routing problems. *Internat. J. Systems Sci.* **19** (1988), no. 9, 1667-1686. (Summary) **89h:90079** 90B10 (00A71)
- Huang, Da Ren (with Ye, Zai Fei) Some elementary cases of Landau's problem concerning differential operators. (Chinese. English summary) *Zhejiang Daxue Xuebao* **21** (1987), no. 3, 102-108. (Jian Zhong Wang) **89a:34014** 34A30 (26D10)
- Huang, Da Wei Recursive method for ARMA model estimation. I. *Acta Math. Appl. Sinica (English Ser.)* **4** (1988), no. 2, 169-192. (Jiří Anděl) **89i:62146** 62M10
- Convergence rate of sample autocorrelations and autocovariances for stationary time series. *Sinica Ser. A* **31** (1988), no. 4, 406-424. (Zuzana Prásková) **89m:62103** 62M10 (62E20)
- Huang, Dan Run (with Chai, Jun) On the Riesz-Schauder theory for systems of compact operators. (Chinese. English summary) *Dongbei Shuxue* **3** (1987), no. 3, 350-358. (Shan Li Sun) **89k:47006** 47A10 (47B05)
- Some applications of Taylor's joint spectrum to operator equations. (Chinese. English summary) *J. East China Norm. Univ. Natur. Sci. Ed.* **1987**, no. 1, 15-21. (Sheng Wang Wang) **89d:47005** 47A10 (47A62)
- Huang, Dao Fang (with Luo, Shu Yuan) On the "Yao-Dian" culmination star of the four mid-seasons. (Chinese. English summary) *Hunan Shifan Daxue Ziran Kexue Xuebao* **11** (1988), no. 1, 69-76. (Summary) **89h:01007** 01A25
- Huang, Dao Ping (with Zhu, Xue Feng; Liu, Yong Qing) Modified dynamic matrix control. (Chinese summary) *Control Theory Appl.* **5** (1988), no. 2, 38-46. (Not in MR) **93B40** (93C55)
- Huang, Elizabeth T. (with Isaki, Cary T.) Variance estimation using auxiliary information under a one unit per stratum sample design—a Monte Carlo study. *Comm. Statist. Simulation Comput.* **17** (1988), no. 4, 1431-1447. (Not in MR) **62D05**
- Huang, Fa Lun (with Li, Hong<sup>2</sup>) A note on the exponential stability of linear dynamic system in Banach spaces. *Ann. Differential Equations* **4** (1988), no. 1, 1-7. (Vi. Răsvan) **89k:47059** 47D05
- On the mathematical model for linear elastic systems with analytic damping. *SIAM J. Control Optim.* **26** (1988), no. 3, 714-724. (Björn Textorius) **89k:34106** 34G10 (47D05)
- Huang, Gang (with Zaborsky, John; Zheng, Baohua; Leung, Tin-Chi) On the phase portrait of a class of large nonlinear dynamic systems such as the power system. *IEEE Trans. Automat. Control* **33** (1988), no. 1, 4-15. (Mihail Voicu) **89a:93037** 93C75 (93B60, 93C10, 93C15, 93D99)
- (with Tsai, Wei K.; Antonio, John K.; Tsai, Wei T.) Distributed iterative aggregation algorithms for box-constrained minimization problems and optimal routing in data networks. *IEEE Trans. Automat. Control* **34** (1989), no. 1, 34-46. (Summary) **89k:65079** 65K99 (49D07, 90C35, 94A05, 94C99)
- Huang, Guang Gu The method of undetermined coefficients for finding first integrals of systems of homogeneous linear ordinary differential equations with constant coefficients. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* **21** (1987), no. 3, 459-463. (Hong Xiang Li) **89d:34013** 34A30

- Huang, Gui Jin** Representation of planar regions using normalized linear quadrees. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **16** (1988), no. 3, 143-148. (Summary) **89k:68152** 68U10 (68P05)
- Huang, Guo Tai** Generalization of a theorem of Katona and Kleitman. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B **8** (1987), no. 3, 390. *Chinese Ann. Math. Ser. A* **8** (1987), no. 3, 413-419. (Ding Zhu Du) **89b:05025** 05A20 (05A05)
- The smallest size of a maximal family of subsets of a finite set, no  $k$  of which are pairwise disjoint. (Chinese. English summary) *J. Math. Res. Exposition* **7** (1987), no. 2, 185-188. (Hugo S. Sun) **89c:05002** 05A05 (05A19)
- Huang, Guo Xiang<sup>2</sup>** (with Liu, Jian<sup>2</sup>) A key-lock access control. *J. Comput. Sci. Tech.* (English Ed.) **2** (1987), no. 3, 236-243. (Not in MR) **68N25**
- Huang, Guo Xun** (with Li, Jiong Sheng) The pairs of score lists of  $t$ -reducible bipartite tournaments. (Chinese. English summary) *Acta Math. Appl. Sinica* **10** (1987), no. 4, 418-427. (Tian Xing Yao) **89b:05093** 05C20
- (with Li, Jiong Sheng) The pairs of initial vertex sets and terminal vertex sets of tournaments. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B **9** (1988), no. 1, 149. *Chinese Ann. Math. Ser. A* **8** (1987), no. 6, 703-712. (Tian Xing Yao) **89c:05089** 05C20
- (with Li, Jiong Sheng) Kotzig's problem for multipartite tournaments. (Chinese. English summary) *Adv. in Math.* (Beijing) **17** (1988), no. 4, 398-402. (Hugo S. Sun) **89c:05055** 05C20
- (with Li, Jiong Sheng) Score vectors of  $t$ -reducible tournaments. *J. Math. Res. Exposition* **8** (1988), no. 4, 521-525. (J. W. Moon) **89k:05043** 05C20
- Huang, Guoxiang** see **Huang, Guo Xiang<sup>2</sup>**
- Huang, H.** Continuous time Markovian decision processes with controllable drift. (German summary) *Operations research proceedings 1986* (Ulm, 1986), 666-673, Springer, Berlin-New York, 1987. (P. Neumann) **89b:90221** 90C40
- Huang, Hai** (with Kushner, Harold J.) Weak convergence and approximations for partial differential equations with stochastic coefficients. *Stochastics* **15** (1985), no. 3, 209-245. (G. Papanicolaou) **89a:60183** 60J60 (60F05, 60H15)
- Huang, Hai Yang** (with Liu, Lai Fu) Essential boundary value problems of analytic functions with two shifts. (Chinese. English summary) *Beijing Shifan Daxue Xuebao* **1987**, no. 2, 1-8. (J. S. Hwang) **89a:30034** 30E25
- Huang, Hong Ci** (with E. Wei Nan; Han, Wei Min) Error analysis of local refinements of polygonal domains. *J. Comput. Math.* **5** (1987), no. 1, 89-94. (H. D. Mittelmann) **89c:65119** 65N30
- Huang, Hou Ben** (with Feng, De Xing; Lin, You Hao) Stability of nonlinear age-dependent models of mutualism. (Chinese. English summary) *J. Biomath.* **3** (1988), no. 1, 57-61. (Summary) **89d:92060** 92A15
- Huang, Hsiao-Ping** (with Chen, Cheng-Liang; Chao, Yung-Cheng) Identification of MIMO continuous-time models by indirect methods. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1281-1297. (Not in MR) **93B30** (93C55)
- Huang, Huo Quang** A theorem on a stability criterion in the critical case. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* **27** (1988), no. 1, 46-52. (Lian Wang) **89f:34072** 34D20
- Huang, Jau-Inn** Solution to the inverse problem of the 1-D wave equation. *J. Math. Phys.* **30** (1989), no. 3, 735-739. (I. M. Longman) **89m:35214** 35R30 (35L05, 73D50, 86A20)
- Huang, Jem Chyuan** (with Steeb, W.-H.; Gou, Yih Shun) A comment on the chaotic behaviour of van der Pol equations with an external periodic excitation. *Z. Naturforsch.* **A 44** (1989), no. 2, 160-162. (Summary) **89m:58144** 58F13 (34C05, 58F21, 70K40, 70K50)
- Huang, Jian Dong** Spline approximations to two classes of probability distribution functions. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* **27** (1988), no. 2, 234-236. (Not in MR) **65U05**
- Huang, Jian Zhong** (with Yan, Ping Fan) A family of generalized adaptive algorithms. (Chinese. English summary) *Acta Automat. Sinica* **14** (1988), no. 2, 149-154. (Lei Guo) **89j:93149** 93E25 (49D10, 93C40)
- Huang, Jin Ming** (with Zou, Rui) Fault location in linear circuits with tolerance. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 6, 19-26. (Summary) **89g:94045** 94C05 (94C10)
- Huang, Jin Sheng** On the sequence space  $C_{p_1}(E)$ . (Chinese. English summary) *J. South China Normal Univ. Natur. Sci. Ed.* **1986**, no. 1, 16-28. (Summary) **89b:46012** 46A45 (40C05, 40G05)
- Huang, Jun Min** Notes on the  $\sigma$ -structures of rings. II. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **5** (1988), no. 1, 81-85. (Summary) **89j:16037** 16A48
- Huang, Justin C.** (with Sungar, Nilgun) GL(20, C) model for spin-1 and spin-2 fields. *Hadronic J.* **10** (1987), no. 5, 257-271. (Summary) **89c:81198** 81G20 (81D20)
- Huang, Kai Yuan** Three-valued diagnosable systems: diagnosability, optimal design and fault identification algorithm. *J. Comput. Sci. Tech.* (English Ed.) **2** (1987), no. 2, 99-114. (Summary) **89b:68009** 68M99 (68U99)
- Huang, Lan Jie** (with Shen, Jian Xiong) Numerical solution of the incompressible Navier-Stokes equations with singular perturbation considerations. *J. Comput. Math.* **6** (1988), no. 2, 175-192. (C. Wayne Mastin) **89k:76005** 76-08 (34E15, 76D30)
- Huang, Li Hong** The distribution of limit cycles and global structure for equations of type  $II_{m=0}$ ,  $m/a < -1$ . (Chinese. English summary) *Hunan Daxue Xuebao* **15** (1988), no. 1 *Special Issue of Math.*, 253-261. (Lian Wang) **89m:58169** 58F21 (34C05)
- Huang, Li Ping** Weak convergence of a class of jump processes. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* **3** (1987), no. 3, 243-249. (Summary) **89b:60087** 60F17 (60J60, 60J75)
- Huang, Lin** Some new results in multivariable linear system. Some achievements in China, 1980-1984. *Acta Math. Sci.* (English Ed.) **7** (1987), no. 1, 9-23. (J. M. Dion) **89c:93048** 93C35 (01A65, 93B10, 93B25, 93C05)
- (with Hong, Yi Guang) Small disturbance problems associated with the algebraic Riccati equations of discrete linear time-invariant systems. (Chinese. English summary) *Control Theory Appl.* **5** (1988), no. 3, 106-110. (Not in MR) **93B25** (93C55)
- Huang, Mei** (with Xia, Qing; Xiang, Nian De; Wang, Shi Ying; Zhang, Bo Ming) A new algorithm for nonlinear minimum cost network flow and its application. (Chinese. English summary) *J. Tsinghua Univ.* **27** (1987), no. 4, 1-10. (Summary) **89i:90033** 90B10 (90B35)
- Huang, Meng Chun** Another equivalence theorem for analytic functions. (Chinese. English summary) *Hunan Shifan Daxue Xuebao* **11** (1988), no. 3, 203-205. (From the summary) **89m:30002** 30A05
- Huang, Min Qiang** Attack algorithm for Pless systems. (Chinese) *Xekue Tongbao* (Chinese) **32** (1987), no. 17, 1347-1350. (Not in MR) **94A60**
- Analysis of SG sequences. (Chinese) *Xekue Tongbao* (Chinese) **32** (1987), no. 23, 1770-1773. (Not in MR) **94A60** (05A05)
- An attack to Pless' encryption scheme. *Xekue Tongbao* (English Ed.) **33** (1988), no. 11, 885-889. (Zhao Zhi Zhang) **89k:94045** 94A60
- Huang, Mong-Na Lo** Exact  $D$ -optimal designs for polynomial regression. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 1, 59-71. (N. Gaffke) **89k:62127** 62K05
- Huang, Nian Ning** (with Yan, Jia Ren) A comment on the method for solving the KdV equation. *Comm. Theoret. Phys.* **8** (1987), no. 3, 369-372. (Summary) **89k:35213** 35Q20 (58G37)
- An extended Riemann problem method with zeros. (Chinese. English summary) *J. Wuhan Univ. Natur. Sci. Ed.* **1988**, no. 1, 33-40. (Jian Ke Lu) **89j:30056** 30E25
- (with Chen, Zong Yun; Xiao, Yi) Method for finding solution solutions of the nonlinear Schrödinger equation. *Phys. Rev. A* (3) **38** (1988), no. 8, 4355-4358. (Summary) **89k:35199** 35Q20 (81C05)
- Huang, Peter H.** The robustness of multidimensional signalling equilibria. *Econom. Lett.* **25** (1987), no. 3, 217-220. (Summary) **89a:90044** 90A14
- Huang, Qi Ming** (with Li, Ji Bin) Bifurcations of limit cycles forming compound eyes in the cubic system. A Chinese summary appears in Chinese Ann. Math. Ser. A **8** (1987), no. 5, 643. *Chinese Ann. Math. Ser. B* **8** (1987), no. 4, 391-403. (Alan R. Haurath) **89d:58100** 58F15 (34C05, 58F21, 70K10)
- Huang, Qiang** Recognition of normal Sylow  $p$ -subgroups. (Chinese) *J. Math. Res. Exposition* **7** (1987), no. 1, 144-146. (Chat Yin Ho) **89c:20041** 20D20
- Huang, Qing Bo** (with Yang, Shi Xin) Local regularity of weak solutions for degenerate elliptic systems with diagonal form. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* **27** (1988), no. 1, 20-27. (Zuchi Chen) **89h:35065** 35D10 (35J70)
- Hölder estimates of solutions of a class of singular nonlinear parabolic equations. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* **27** (1988), no. 5, 483-490. (Summary) **89j:35075** 35K65 (35B65)
- Huang, Rong Pei** Buffon's long needle problem. (Chinese. English summary) *J. East China Norm. Univ. Natur. Sci. Ed.* **1987**, no. 4, 9-14. (Summary) **89m:60029** 60D05 (52A22)
- Huang, Sen Zhong** Constructing operators which cannot be isometrically approximated. *Acta Math. Sci.* (English Ed.) **6** (1986), no. 2, 195-200. (Peter Meyer-Nieberg) **89f:47056** 47B55 (46B30, 47A99)
- Isometries on the positive cone in  $A_p$  spaces ( $0 < p \leq 1$ ). (Chinese) *Acta Math. Sinica* **30** (1987), no. 4, 455-466. (Charn Huen Kan) **89d:47062** 47B38 (46E30)
- Huang, Shao Yun** (with Friedman, Avner) Asymptotic behavior of solutions of  $u_t = \Delta p_m(u)$  as  $m \rightarrow \infty$  with inconsistent initial values. *Analyse mathématique et applications*, 165-180, Gauthier-Villars, Paris, 1988. (Victor A. Galaktionov) **89m:35027** 35B40 (35K55)
- On the inhomogeneous dam problem. (Chinese) *Acta Math. Sinica* **31** (1988), no. 1, 137-144. (Li Shang Jiang) **89j:35132** 35R35 (35K85, 76S05)
- (with Yong, Jiong Min) On the restricted parameter identification problems for general variational inequalities. *J. Partial Differential Equations Ser. A* **1** (1988), no. 1, 53-60. (George Isaac) **89g:47093** 47H99 (49A29)
- (with Friedman, Avner; Yong, Jiong Min) Optimal periodic control for the two-phase Stefan problem. *SIAM J. Control Optim.* **26** (1988), no. 1, 23-41. (Petr Procházka) **89a:49036** 49D50 (35K85, 49A29, 49A36)
- Huang, Shing Tsan** A fully distributed termination detection scheme. *Inform. Process. Lett.* **29** (1988), no. 1, 13-18. (Summary) **89j:68047** 68Q10 (68M10)
- (with Nakatani, Toshio; Arden, Bruce W.; Tripathi, Satish K.)  $k$ -way bitonic sort. *IEEE Trans. Comput.* **38** (1989), no. 2, 283-288. (Summary) **89k:68027** 68P10
- Huang, Shou-Hsuan Stephen** A VLSI partition algorithm. *BIT* **28** (1988), no. 2, 215-226. (Not in MR) **68Q35** (68P10)
- Huang, Si Ming** A note on graphs with equal edge-connectivity and minimum degree. (Chinese) *Chinese J. Oper. Res.* **3** (1984), no. 1, 67-68. (Gui Zhen Liu) **89h:05032** 05C35 (05C40)
- Huang, Si Xun** Generalized solutions and the pseudo-Neumann problem for second-order hypercomplex equations. (Chinese. English summary) *Hunan Ann. Math.* **7** (1987), no. 2, 39-46. (Summary) **89i:30057** 30G35 (35J99)
- The properties of the  $T^*$ -operator on hypercomplex function spaces in the Douglas algebra sense. (Chinese. English summary) *J. Math. Res. Exposition* **8** (1988), no. 2, 229-236. (Summary) **89j:30067** 30G35
- On properties of some operators in Douglas algebra and their application to PDE. *J. Partial Differential Equations Ser. A* **1** (1988), no. 1, 21-30. (Heinrich Begehr) **89h:30063** 30G20 (35J99)
- (with Zhang, Ming) Periodic, solitary and discontinuous periodic solution of nonlinear waves in the atmosphere and their existence. I. On the pseudo-energy, the pseudo-energy influence function and their use. *Sci. Sinica Ser. B* **31** (1988), no. 12, 1474-1488. (Summary) **89m:86022** 86A35
- (with Zhang, Ming) Periodic, solitary and discontinuous periodic solution of nonlinear waves in the atmosphere and their existence. II. On the possibility of Taylor expansion,  $M$  criterion and nonlinear wave speed formulas. *Sci. Sinica Ser. B* **31** (1988), no. 12, 1489-1502. (Summary) **89m:86023** 86A35 (76C20)
- Huang, Su Jian** A derivation of the large deflection equations for plates from a generalized variational principle based on finite deformations. (Chinese. English summary) *J. Changsha Railway Inst.* **5** (1987), no. 1, 1-10. (Summary) **89f:73047** 73K10 (73G05)
- Huang, Teyan** An analogue of the Erdős-Ko-Rado theorem for the distance-regular graphs of bilinear forms. *Discrete Math.* **64** (1987), no. 2-3, 191-198. (Summary) **89a:05084** 05C30 (05A05, 94B25)
- Huang, Thomas S.** Determining three-dimensional motion and structure from two perspective views. *Handbook of pattern recognition and image processing*, 333-354, *Handbooks Sci. Tech., Academic Press, Orlando, FL*, 1986. (L. E. H. Trainor) **89c:92052** 92A25 (68U10, 70B10, 94A05)
- Huang, Ts'an Hui** (with Yeh, Ch'ao Hsiung) Three-dimensional analysis for tunnels in an elastic half-space with boundary integral equation method. (Chinese summary) *J. Chinese*



- Inst. Engrs.* **11** (1988), no. 5, 505-517. (Not in MR) 73C40
- Huang, Wan Zhen A new proof of optimality for an algorithm for one-machine scheduling problems. (Chinese. English summary) *Shanghai Keji Daxue Xuebao* **1987**, no. 4, 116-118. (Summary) **89e:90124** 90B35
- Huang, Wei-Min (with Hall, W. J.) Large deviations and estimation in infinite-dimensional models. *Statist. Probab. Lett.* **6** (1988), no. 6, 433-439. (Vishnu Dayal Jha) **89g:62059** 62G05 (62F10)
- Huang, Wen Hu (with Duan, Guang Ren; Wu, Guang Yu) Analysis of the robust stability of a discrete pole assignment control system. (Chinese. English summary) *J. Harbin Inst. Tech.* **1988**, no. 4, 57-64. (Summary) **89m:93032** 93B55 (93B35, 93C55)
- Huang, Wen Qi (with Yu, Xiang Dong) A DNF without regular shortest consensus path. *SIAM J. Comput.* **16** (1987), no. 5, 836-840. (Alexander Leitsch) **89i:68042** 68Q15 (68Q25)
- Huang, Wen T'ao (with Wu, Chin Chuan) Sequential selection of a best coin. *Tamkang J. Management Sci.* **8** (1987), no. 2, 15-23. (Nitis Mukhopadhyay) **89e:62026** 62F07 (62L99)
- On least favorable configurations for some Poisson selection rules and some conditional tests. *Statistical decision theory and related topics, IV, Vol. 2* (West Lafayette, Ind., 1986), 51-64, Springer, New York-Berlin, 1988. (S. Panchapakesan) **89b:62062** 62F07
- Huang, Wen Zao A bifurcation theorem for nonlinear equations. *Nonlinear analysis and applications* (Arlington, Tex., 1986), 249-259, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (M. Joshi) **89b:58046** 58E07 (47H15)
- (with Zhan, Han Sheng) On an example of Rabinowitz-Crandall. (Chinese) *J. Math. Res. Exposition* **7** (1987), no. 2, 246-248. (J. S. W. Wong) **89b:58047** 58E07 (47H15)
- Huang, Wen Zhen (with Huang, Bu Yu; Dong, Xun) A matrix perturbation method in the eigenvalue problem for nonsymmetric systems. (Chinese. English summary) *J. Shanghai Jiaotong Univ.* **22** (1988), no. 2, 15-21, 112. (Man Kam Kwong) **89k:65037** 65F15 (15A18)
- Huang, Weng Hong Bianchi type I cosmological model with bulk viscosity. *Phys. Lett. A* **129** (1988), no. 8-9, 429-432. (G. Mohanty) **89m:83018** 83C15
- Kaluza-Klein reduction of Gauss-Bonnet curvature. *Phys. Lett. B* **203** (1988), no. 1-2, 105-108. (Summary) **89b:83070** 83E15 (81E30, 83E30)
- Huang, Xi Wen (with Li, Yong Jun) The focal length of surface diffraction rays and the expansion factor. (Chinese) *Acta Math. Sci. (Chinese)* **7** (1987), no. 4, 375-382. (Summary) **89e:78014** 78A45
- Huang, Xi Yue (with Kameyama, Michitaka; Higuchi, Tatsuo) Design of a time-optimal digital control system for a DC-servomotor with amplitude limitation. *Systems Comput. Japan* **19** (1988), no. 2, 64-73. (Not in MR) 93C75 (93B50)
- Huang, Xiang You New suggestion to describe the radiation of atoms. *Sci. Sinica Ser. A* **31** (1988), no. 9, 1141-1152. (Summary) **89j:81297** 81K05
- Huang, Xiao Jun The problem of stress distribution in bonded dissimilar materials with cracks along a circular interface. (Chinese. English summary) *J. Wuhan Univ. Natur. Sci. Ed.* **1987**, no. 4, 25-30. (Summary) **89i:73066** 73M05
- Huang, Xiao Rong (with Sun, Yong Qiang; Lu, Ru Zhan) Termination preserving problem in the transformation of applicative programs. *J. Comput. Sci. Tech. (English Ed.)* **2** (1987), no. 3, 191-201. (Summary) **89i:68009** 68N05
- Huang, Xiao Yuan Study of a noncooperative differential game model of market prices. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **1987**, no. 4, 67-71. (David Yeung) **89f:90219** 90D25 (90D40)
- An optimal fishing strategy in fishery production. (Chinese) *Inform. and Control (Shenyang)* **17** (1988), no. 3, 39-40, 18. (Not in MR) 90A30
- Huang, Xiaojia A lower bound for the edit-distance problem under an arbitrary cost function. *Inform. Process. Lett.* **27** (1988), no. 6, 319-321. (Summary) **89d:68034** 68Q30 (68R05, 68U15)
- Huang, Xuan Guo Embedded hypersurfaces in  $S^{n+1}$  with prescribed mean curvature. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B **8** (1987), no. 3, 388. *Chinese Ann. Math. Ser. A* **8** (1987), no. 3, 356-361. (C.-C. Hsiung) **89b:53010** 53A07 (53A10, 53C40)
- Weingarten surfaces in three-dimensional spaces. (Chinese) *Acta Math. Sinica* **31** (1988), no. 3, 332-340. (Chuan Yu Ma) **89b:53019** 53A10
- Generalized torus in  $R^3$  with prescribed mean curvature. A Chinese summary appears in Chinese Ann. Math. Ser. A **9** (1988), no. 1, 104. *Chinese Ann. Math. Ser. B* **9** (1988), no. 1, 123-133. (Friedrich Sauvigny) **89b:53020** 53A10 (35J60)
- Huang, Xun Cheng A discrete L'Hôpital's rule. *College Math. J.* **19** (1988), no. 4, 321-329. (G. A. Heuer) **89b:26002** 26A06 (39A12)
- Uniqueness of limit cycles of generalised Liénard systems and predator-prey systems. *J. Phys. A* **21** (1988), no. 13, L685-L691. (Joseph So) **89i:92043** 92A15 (34C05)
- Huang, Y. J. (with Yeung, K. S.) On the determination of the zeros of a SISO system. *IEEE Trans. Automat. Control* **34** (1989), no. 4, 475-476. (Not in MR) 93B55
- Huang, Yi Fu (with Liu, Mei Hua; Lin, Wei<sup>2</sup>) A decentralized self-tuning controller with gravity compensation for robotic manipulators. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 4, part II, 141-146. (Not in MR) 93C75 (93C40)
- Huang, Yong Jian Variational principles for a rigid-plastic body in a completely plastic state. (Chinese. English summary) *Hunan Daxue Xuebao* **15** (1988), no. 1 Special Issue of Math., 129-136. (Summary) **89f:73033** 73E99
- Huang, Yong Kang (with Afabizadeh, A. R.; Wiener, Joseph) Bounded solutions for differential equations with reflection of the argument. *J. Math. Anal. Appl.* **135** (1988), no. 1, 31-37. (Erwin Kozakiewicz) **89j:34119** 34K15 (34C11)
- Huang, Yong Nian A discussion of the global stability of population models. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **4** (1987), no. 2, 40-43. (Summary) **89e:92063** 92A15 (58F08)
- Huang, You Du (with Su, Jia Duo) A new algorithm for oscillatory rational interpolation. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **9** (1987), no. 2, 170-176. (Jian-Min Zhu) **89g:65012** 65D05
- The conditions for the continuity of the Padé operator. (Chinese. English summary) *J. Math. Res. Exposition* **8** (1988), no. 1, 107-110. (Han Lin Chen) **89f:41024** 41A21
- Huang, You Qian (with Xie, Zhi Yun) The best interpolation nodes of operator spline functions of order two. (Chinese. English summary) *Acta Sci. Natur. Univ. Sunyatseni* **1987**, no. 4, 5-11. (Jian Zhong Wang) **89j:41014** 41A15 (65D07)
- (with Xu, Yue Sheng) A semidiscrete correction method for the first boundary value problem of a semilinear elliptic equation. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **9** (1987), no. 4, 371-375. (Ben-Yu Guo) **89i:65105** 65N10
- Huang, Yu Ying A direct method for deriving fundamental solution of half-plane problem. *Boundary elements* (Beijing, 1986), 665-672, Pergamon, Oxford-Elmsford, NY, 1986. (see **89f:73003**) 73C02
- A numerical solution of coupled vibration for moderately thick floating plate seated on the sea floor with variable water depth. *Acta Mech. Sinica (English Ed.)* **4** (1988), no. 3, 275-283. (Not in MR) 73J06
- Huang, Yun Qing Higher order expansion and extrapolation of finite element solutions to eigenvalue problems. (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* **10** (1988), no. 1, 19-29. (Zhong Wu Chu) **89k:65136** 65N30
- Huang, Yun Zhong A model of the electric field in a biomembrane. (Chinese. English summary) *J. Northwest Univ.* **18** (1988), no. 3, 26-30. (Not in MR) 92A08
- Huang, Zhi Jian (with Zhang, Lian Sheng) On the  $L_1$  exact penalty function with locally Lipschitz functions. *Acta Math. Appl. Sinica (English Ser.)* **4** (1988), no. 2, 145-153. (Marco Gaviano) **89m:90147** 90C30
- Huang, Zhi Qiang (with Fang, Hao Jian) Regular fuzzy matrices. (Chinese. English summary) *Shanghai Keji Daxue Xuebao* **11** (1988), no. 2, 5-11. (Summary) **89k:15047** 15A99 (03E72)
- Huang, Zhong (with Xu, Chong Ming; Wu, Xue Jun) A new spherically symmetric interior solution containing a cosmological term  $\Lambda$ . (Chinese) *Kexue Tongbao (Chinese)* **32** (1987), no. 15, 1135-1138. (Not in MR) 83C15
- Huang, Zu Qia On nonequilibrium statistical physics. (Chinese. English summary) *Beijing Shifan Daxue Xuebao* **1987**, no. 4, 50-59. (Summary) **89e:82027** 82A35
- Huard, P. (with Dodu, J. C.) Méthodes de quasi-Newton sous contraintes non linéaires: algorithmes à convergence locale superlinéaire. (English summary) [Quasi-Newton methods in the nonlinearly constrained case: locally and superlinearly convergent algorithms] With an English introduction. *EDF Bull. Direction Etudes Rech. Sér. C Math. Inform.* **1988**, no. 2, 64 pp. (Alfonso Laratta) **89i:90070** 90C30 (49D15, 65K05)
- Huba, J. D. (with Drake, J. F.; Mulbrandon, M.) Three-dimensional equilibrium and stability of ionospheric plasma clouds. *Phys. Fluids* **31** (1988), no. 11, 3412-3424. (Summary) **89i:86014** 86A35 (76E25)
- Hubbard, J. B. (with McQuarrie, D. A.) Mobility fluctuations and electrophoretic light scattering from macromolecular solutions. *J. Statist. Phys.* **52** (1988), no. 5-6, 1247-1261. (Summary) **89i:92076** 92A40 (82A55)
- Hubbard, James E., Jr. (with Burke, Shawn E.) Distributed actuator control design for flexible beams. *Automatica—J. IFAC* **24** (1988), no. 5, 619-627. (Not in MR) 93C75 (93C20)
- Hubbard, John H. (with Fisher, Yuval; Wittner, Ben S.) A proof of the uniformization theorem for arbitrary plane domains. *Proc. Amer. Math. Soc.* **104** (1988), no. 2, 413-418. (E. Bujalance) **89k:30044** 30F10
- Hubbard, M. (with Garcia, André) Spin reversal of the rattleback: theory and experiment. *Proc. Roy. Soc. London Ser. A* **418** (1988), no. 1854, 165-197. (Mary L. Boas) **89h:70003** 70E15
- Hubbuck, J. R. (with Mimura, Mamoru) Certain  $p$ -regular  $H$ -spaces. *Arch. Math. (Basel)* **49** (1987), no. 1, 79-82. (Charles A. McGibbon) **89a:55018** 55P45 (55S25)
- Unstable atomicity and loop spaces on Lie groups. *Math. Z.* **198** (1988), no. 3, 317-330. (J. F. Adams) **89e:55026** 55P99 (57T10)
- Hübener, Wolfgang "Notio completa". Die theologischen Voraussetzungen von Leibniz' Postulat der Unbeweisbarkeit der Existentialsätze und die Idee des logischen Formalismus. ["Notio completa". The theological premises of Leibniz' postulate of the unprovability of existential theorems and the idea of logical formalism] *Leibniz: questions de logique (Bruxelles/Louvain-la-Neuve, 1985)*, 107-116, *Studia Leibnitiana Sonderheft*, 15, Steiner, Wiesbaden, 1988. (see **89m:01041**) 01A45 (03-03, 03A05)
- Hübner, I. Probabilistic interpretation of radiative transfer. I. The  $\sqrt{e}$ -law. *Astronom. and Astrophys.* **185** (1987), no. 1-2, 332-335. (From the introduction) **89a:85005a** 85A25
- Probabilistic interpretation of radiative transfer. II. Rybicki equation. *Astronom. and Astrophys.* **185** (1987), no. 1-2, 336-342. (Summary) **89a:85005b** 85A25
- Huber, A. (with van Hemmen, J. L.; Grensing, D.; Kühn, Reimer) Nonlinear neural networks. I. General theory. *J. Statist. Phys.* **50** (1988), no. 1-2, 231-257. (E. Pessa) **89i:92018** 92A09 (68Q75, 82A57)
- (with van Hemmen, J. L.; Grensing, D.; Kühn, Reimer) Nonlinear neural networks. II. Information processing. *J. Statist. Phys.* **50** (1988), no. 1-2, 259-293. (E. Pessa) **89m:92020** 92A09 (68Q80, 82A57, 82A99, 92A25)
- Huber, Alfred see **Complex analysis**, **89j:30001**
- Huber, Martin (with Eklof, Paul C.) On  $\omega$ -filtered vector spaces and their application to abelian  $p$ -groups. II. *Rocky Mountain J. Math.* **18** (1988), no. 1, 123-136. (Carol L. Walker) **89d:20045** 20K10 (03E50, 20K45)
- Huber, Roland Ein semialgebraischer Beweis der topologischen Form des Hauptsatzes von Zariski. (English summary) [A semi-algebraic proof of the topological form of Zariski's main theorem] *Manuscripta Math.* **61** (1988), no. 1, 49-62. (Robert Silhol) **89j:32017** 32C20 (14G30, 32D20)
- Huberman, B. A. (with Bachas, C.) Complexity and ultradiffusion. *J. Phys. A* **20** (1987), no. 14, 4995-5014. (Hanna Nencka) **89b:82011** 82A05 (05C05)
- (with Keirstead, W. P.; Ceccatto, H. A.) Vibrational properties of hierarchical systems. *J. Statist. Phys.* **53** (1988), no. 3-4, 733-757. (Dieter H. Mayer) **89m:82007** 82A05 (58F05, 58F19, 82A42)
- (with Ceccatto, H. A.) The complexity of hierarchical systems. *Phys. Scripta* **37** (1988), no. 1, 145-150. (M. Mendes France) **89d:82157** 82A99
- Hübner, Albert (with Reiser, G.; Lüscher, E.) Algorithm for the determination of the resonances of anharmonic damped oscillators. *Z. Naturforsch.* **42** (1987), no. 8, 803-807. (Summary) **89g:58183** 58F30 (34C15, 70K30)
- Hübner, Albrecht (with Creutzburg, Egbert; Sjökor, O.) Geometric methods for on-line recognition of digital straight line segments. (Russian summary) *Comput. Artificial Intelligence* **7** (1988), no. 3, 253-276. (Summary) **89k:68142** 68U05 (68T10)
- Hubner, G. F. (with Titulaer, U. M.) Onsager-Casimir symmetry properties of the Burnett equations. *J. Statist. Phys.* **50** (1988), no. 5-6, 913-934. (Summary) **89d:82061** 82A35 (82A40)

- Höbner, G. A unified approach to adaptive control of average reward Markov decision processes. (German summary) *OR Spektrum* 10 (1988), no. 3, 161–166. (Masami Kurano) **89j:90265** 90C40 (93E20)
- Hölsch, Tristan (with Green, Paul S.) Calabi-Yau hypersurfaces in products of semi-ample surfaces. *Comm. Math. Phys.* 115 (1988), no. 2, 231–246. (L. Bădescu) **89c:14065** 14J40 (14J10, 14J25, 14J30, 32C10, 32J15, 32C55)
- Huckaba, James A.  $\star$  Commutative rings with zero divisors. Monographs and Textbooks in Pure and Applied Mathematics, 117. Marcel Dekker, Inc., New York, 1988. x+216 pp. ISBN 0-8247-7844-8 (Daniel D. Anderson) **89e:13001** 13-02 (13A15, 13A18)
- Huckaba, Sam Reduction numbers for ideals of higher analytic spread. *Math. Proc. Cambridge Philos. Soc.* 102 (1987), no. 1, 49–57. (Ngô Việt Trung) **89b:13023** 13C15 (13A15, 13C05)
- Huckaby, Dale A. (with Shinmi, Masato; Belfi, Victor A.) Exact two-phase coexistence surface for a three-component solution on a Bethe lattice. *Phys. A* 154 (1989), no. 3, 521–528. (Summary) **89b:82094** 82A68 (82A69)
- Huckemann, S. On the crossing-point of Green's function of an annulus. *Complex Variables Theory Appl.* 8 (1987), no. 3–4, 281–291. (Manfred W. Kracht) **89b:31003** 31A99
- Ein Extremalproblem für das harmonische Maß einer Familie von Kontinua im Einheitskreis. [An extremal problem for the harmonic measure of a family of continua in the unit disc] *Mitt. Math. Sem. Giessen No. 184* (1988), iv+64 pp. (H. Renelt) **89j:30032** 30C85 (30C30, 31C15)
- Huckenbeck, Ulrich  $\star$  Geometrische Maschinenmodelle. (German) [Geometric models of machines] Dissertation, Bayerische Julius-Maximilians-Universität Würzburg, Würzburg, 1986. *Bayerische Julius-Maximilians-Universität Würzburg, Fakultät für Mathematik, Würzburg*, 1986. vi+275 pp. (Peter Gritzmann) **89j:68038** 68Q05 (52-04, 68U05)
- Ein verschärfter und verallgemeinerter Satz von Alexandrov. (English summary) [A sharpened and generalized theorem of Alexandrov] *Manuscripta Math.* 59 (1987), no. 2, 147–173. (J. A. Lester) **89a:51011** 51B20 (51F99)
- Huckle, Thomas (with Freund, Roland) An extension problem for  $H$ -unitary matrices with applications to Hermitian Toeplitz matrices. *Linear Algebra Appl.* 108 (1988), 213–230. (L. Rodman) **89i:15029** 15A57
- Huckleberry, A. T. (with Oeljeklaus, E.) Complex analysis on solv-manifolds. *Journées Complexes 85* (Nancy, 1985), 126–132. *Inst. Elie Cartan, 10, Univ. Nancy, Nancy*, 1986. (Introduction) **89d:32069** 32M10 (32C25)
- Hucklenbroich, Peter (with Chuai, Benedito) Thesen und Probleme zu den Begriffen von Ordnung, Information und Emergenz. [Theses and problems on the concepts of order, information and emergence] *Modelle der Pathologischen Physiologie*, 57–70. *Veröffentl. Forschungsinstitut Theoret. Pathol. Heidelberg. Akad. Wiss., Springer, Berlin-New York*, 1987. (T. W. Barrett) **89c:92043** 92A12 (80A05, 92A05)
- Huda, S. (with Mukerjee, Rahul) Optimal weighing designs for estimating the total weight. *J. Statist. Res.* 19 (1985), no. 1–2, 21–29. (Summary) **89m:62077** 62K05
- (with Mukerjee, Rahul) Minimizing the average variance of the difference between two estimated responses. *J. Statist. Res.* 19 (1985), no. 1–2, 41–48. (Summary) **89k:62095** 62K05
- (with Bener, A.) Maximum likelihood estimation of components of variance and correlations in the analysis of family data. *Ann. Human Genetics* 51 (1987), no. 3, 259–264. (Summary) **89k:62038** 62F10 (62J10)
- (with Mukerjee, Rahul) Optimal design for the estimation of variance components. *Biometrika* 75 (1988), no. 1, 75–80. (William I. Notz) **89c:62116** 62J10 (62K05)
- Hudde, Johan see Grootendorst, A. W. **89c:01021**
- Hudez, T. Spacetime dynamical entanglement of quantum systems. *Lett. Math. Phys.* 16 (1988), no. 2, 151–161. (H. Araki) **89k:82023** 82A15 (46L55, 46L60)
- Hudry, A. Deux applications du principe d'additivité. [Two applications of the additivity principle] *Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliavin, 37ème année* (Paris, 1985), 118–129. *Lecture Notes in Math.*, 1220, Springer, Berlin-New York, 1986. (Martha K. Smith) **89c:16020** 16A34 (16A16, 16A72)
- Hudson, J. E. see Mathematics in signal processing. **89b:94004**
- Hudson, J. L. (with Rössler, Otto E.; Killory, Helen C.) Chaos in a four-variable piecewise-linear system of differential equations. *IEEE Trans. Circuits and Systems* 35 (1988), no. 7, 902–908. (Summary) **89f:58091** 58F13 (34D05)
- (with Kingston, J. G.) Stelling polyhedra. *Math. Intelligencer* 10 (1988), no. 3, 50–61. (J. M. Wills) **89c:52011** 52A25 (51M20, 52J04)
- Hudson, Richard H. (with Hardy, Kenneth; Richman, David; Williams, Kenneth S.) Determination of all imaginary cyclic quartic fields with class number 2. *Trans. Amer. Math. Soc.* 311 (1989), no. 1, 1–55. (Duncan A. Buell) **89f:11148** 11R16 (11R29)
- Hudson, William N. (with Jurek, Zbigniew J.; Veeh, Jerry Alan) The symmetry group and exponents of operator stable probability measures. *Ann. Probab.* 14 (1986), no. 3, 1014–1023. (J. D. Mason) **89b:60093** 60F99 (60B99, 60E07)
- (with Veeh, Jerry Alan; Weiner, Daniel Charles) Moments of distributions attracted to operator-stable laws. *J. Multivariate Anal.* 24 (1988), no. 1, 1–10. (Summary) **89g:60041** 60E05 (60F05)
- Hudzik, Henryk (with Kamińska, Anna; Kurc, Wiesław) Uniformly non- $\ell_1^{(1)}$  Musielak-Orlicz spaces. (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 7–8, 441–448. (Barry Turett) **89f:46060** 46E30
- Musielak-Orlicz algebras. Proceedings of the 14th winter school on abstract analysis (Šrní, 1986). *Rend. Circ. Mat. Palermo (2) Suppl. No. 14* (1987), 335–338. (Diethard Pallaschke) **89i:46057** 46J10 (46E30)
- (with Chen, Shu Tao) On some convexities of Orlicz and Orlicz-Bochner spaces. *Comment. Math. Univ. Carolin.* 29 (1988), no. 1, 13–29. (K. Sundaresan) **89g:46054** 46E30
- (with Kamińska, Anna; Musielak, Julian) On the convexity coefficient of Orlicz spaces. *Math. Z.* 197 (1988), no. 2, 291–295. (K. Sundaresan) **89b:46038** 46E30
- Hudzović, Peter Quasi-Newton gradient method with analytical determination of the direction and length of step. *Kybernetika (Prague)* 24 (1988), no. 5, 378–393. (Summary) **89m:65061** 65K05 (90C30)
- Hueber, H. (with Hansen, Wolfhard) Singularity of harmonic measure for sub-Laplacians. (French summary) *Bull. Sci. Math.* 122 (1988), no. 1, 53–64. (Lung Ock Chung) **89m:31007** 31C15 (22E30, 31C25, 58G99)
- The domination principle for the sum of squares of vector fields. *Exposition. Math.* 6 (1988), no. 2, 183–184. (R. M. Hervé) **89c:31015** 31D05
- (with Hansen, Wolfhard) Eigenvalues in potential theory. *J. Differential Equations* 73 (1988), no. 1, 133–152. (R. M. Hervé) **89c:31014** 31D05 (35P05, 47B38)
- Hueffmann, Andreas Classical stability and semiclassical ground state of a nonmoving, rigid glue loop. *Phys. Lett. B* 215 (1988), no. 3, 573–576. (Summary) **89j:81247** 81G05 (81E30)
- Huerre, P. Instabilités hydrodynamiques non linéaires et chaos déterministe. [Nonlinear hydrodynamical instabilities and deterministic chaos] *Équations aux dérivées partielles non linéaires dissipatives et systèmes dynamiques*, 187–199. *Travaux en Cours*, 28, Hermann, Paris, 1988. (Summary) **89f:76050** 76E30 (58F13, 76F99)
- On the absolute/convective nature of primary and secondary instabilities. *Propagation in systems far from equilibrium (Les Houches, 1987)*, 340–353. *Springer Ser. Synergetics*, 41, Springer, Berlin-New York, 1988. (John Adam) **89m:76045** 76E30 (35Q20, 76D10, 76E15)
- Huerta, I. P. Adaptation helps for some nonconvex classes. *J. Complexity* 2 (1986), no. 4, 333–352. (Henry Wolkowicz) **89a:65033** 65D30
- Huerta, L. (with Ruiz-Altamirano, M.) Boson-fermion transmutation in  $(2+1)$  dimensions. *Phys. Lett. B* 216 (1989), no. 3–4, 371–374. (Summary) **89k:81147** 81E99
- Hueso, José L. (with Motos, Joaquín) On  $\mathcal{F}_g$ -local sequential barreling in vector-valued continuous function spaces equipped with the topology of pointwise convergence. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 81 (1987), no. 1, 209–218. (Dinamérico P. Pombo, Jr.) **89c:46042** 46E40 (46E10)
- (with Motos, Joaquín) A note on Baire-hyperplane spaces. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 81 (1987), no. 1, 219–222. (Dinamérico P. Pombo, Jr.) **89d:46040** 46E40 (54C50)
- Huestis, David L. Degenerate Siebert states. *J. Math. Phys.* 29 (1988), no. 10, 2250–2253. (R. G. Newton) **89m:81175** 81F05
- Huet, Gérard Deduction and computation. *Logic of programming and calculi of discrete design (Marktoberdorf, 1986)*, 305–342. *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 36, Springer, Berlin-New York, 1987. (R. P. Nederpelt) **89i:68029** 68Q05 (03B15, 03B35, 03B40, 03B70, 68T25)
- (with Coquand, Thierry) The calculus of constructions. *Inform. and Comput.* 76 (1988), no. 2–3, 95–120. (R. P. Nederpelt) **89j:68096** 68Q55 (03B15, 03B35, 03B40, 03B70)
- Huet, Jean-Didier (with Vallet, Claude; Chastang, Jean) Autoreférence partielle dans des modèles de systèmes naturels et insuffisance du référentiel spatiotemporel des physiciens. [Partial self-reference in some models of natural systems and insufficiency of the referential space-time of physicists] *10<sup>e</sup> Congrès International de Cybernétique* (Namur, 1983), 353–368. *Assoc. Internat. Cybernét.*, Namur, 1984. (see **89a:93003**) 92A05 (00A71, 93A10)
- Huff, Barthel W. Remarks on mixtures of compound Poisson laws. *Sankhya Ser. A* 49 (1987), no. 1, 130–132. (F. W. Steutel) **89b:60034** 60E07 (60E10)
- Huff, James (with Griffith, Daniel A.; Sonis, Michael; Leifer, Lloyd A.; Straussfogel, Debra) Dynamic central place theory: an appraisal and future prospects. *Transformations through space and time (Hansholm, 1985)*, 121–151. *NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci.*, 29, Nijhoff, Dordrecht, 1986. (Introduction) **89j:92074** 92A20 (90A17, 90A30)
- Hüffel, Helmut (with Damgaard, Poul H.) Stochastic quantization. *Phys. Rep.* 152 (1987), no. 5–6, 227–398. (Demetris P. K. Ghikas) **89d:81033** 81C20 (81-02)
- van Huffel, Sabine see Van Huffel, Sabine
- Huffer, Fred W. (with Bock, M. E.; Diaconis, P.; Perlman, Michael D.) Inequalities for linear combinations of gamma random variables. (French summary) *Canad. J. Statist.* 15 (1987), no. 4, 387–395. (G. S. Lingappaiah) **89c:62020** 62E15
- Divided differences and the joint distribution of linear combinations of spacings. *J. Appl. Probab.* 25 (1988), no. 2, 346–354. (J. Glaz) **89c:60030** 60E05 (60D05, 62E99, 62G10)
- Some results concerning random arcs on the circle. *J. Appl. Probab.* 25 (1988), no. 4, 833–838. (M. Záhle) **89j:60025** 60D05
- Huffman, W. Cary (with Iorgov, Vasil I.) A  $[72, 36, 16]$  doubly even code does not have an automorphism of order 11. *IEEE Trans. Inform. Theory* 33 (1987), no. 5, 749–752. (Jonathan I. Hall) **89a:94021** 94B25 (11T71)
- On the  $[24, 12, 10]$  quaternary code and binary codes with an automorphism having two cycles. *IEEE Trans. Inform. Theory* 34 (1988), no. 3, 486–493. (Raymond Hill) **89i:94037** 94B05
- Hufnagel, G. On estimating missing values in linear discriminant analysis. I. *Biometrical J.* 30 (1988), no. 1, 69–75. (Not in MR) 62H30
- Huggi, M. R. (with Rattihalli, R. N.) Optimal Bayesian confidence interval of fixed width. *Comm. Statist. Theory Methods* 17 (1988), no. 10, 3477–3482. (Summary) **89g:62048** 62F15 (62F25)
- Huggins, S. R. (with Kunstatler, G.; Leivo, H. P.; Toms, David J.) The Vilkovisky-DeWitt effective action for quantum gravity. *Nuclear Phys. B* 301 (1988), no. 4, 627–660. (A. D. Popova) **89j:83040** 83C45 (81E20, 83C47, 83E15)
- Hughes, A. J. (with Lambert, D. M.) Keywords and concepts in structuralist and functionalist biology. *J. Theoret. Biol.* 133 (1988), no. 2, 133–145. (Not in MR) 92A05
- Hughes, Barnabas B. An early 15th-century algebra code: a description. (French and German summaries) *Historia Math.* 14 (1987), no. 2, 167–172. (Craig G. Fraser) **89c:01015** 01A35
- Hippocrates and Archytas double the cube: a heuristic interpretation. *College Math. J.* 20 (1989), no. 1, 42–48. (H. W. Guggenheimer) **89m:01009** 01A20
- Hughes, Barry D. (with Chan, Derek Y. C.) Ion diffusion in a Coulombic field. *J. Statist. Phys.* 52 (1988), no. 1–2, 383–394. (Summary) **89i:82107** 82A70 (60J15, 82A40, 82A41)
- (with Chan, Derek Y. C.; Paterson, Lincoln; Sirakoff, Christina) Simulating flow in porous media. *Phys. Rev. A* (3) 38 (1988), no. 8, 4106–4120. (Summary) **89k:76036** 76S05 (76-04, 76E99, 76T05, 82A42)
- Hughes, Brian (with Narayan, Prakash) The capacity of a vector Gaussian arbitrarily varying channel. *IEEE Trans. Inform. Theory* 34 (1988), no. 5, part 1, 995–1003. (Summary) **89k:94039** 94A40
- Hughes, C. Bruce Delooping controlled pseudo-isotopies of Hilbert cube manifolds. *Topology Appl.* 26 (1987), no. 2, 175–191. (Ross Geoghegan) **89a:57023** 57N37 (55R05, 57N20, 57Q10)
- Controlled homotopy topological structures. *Pacific J. Math.* 133 (1988), no. 1, 69–97. (Frank Quinn) **89c:57014** 57N65 (57R65)



- Hughes, D. R. *see* Hughes, Daniel R.
- Hughes, D. W. The *Principia* and comets. Newton's *Principia* and its legacy. *Notes and Records Roy. Soc. London* 42 (1988), no. 1, 53-74. (Peeter Müürsepp) **89d:01024** 01A45
- Hughes, Daniel R. (with Piper, Fred C.) ★ Design theory. Second edition. Cambridge University Press, Cambridge-New York, 1988. viii+240 pp. ISBN 0-521-35872-8 (Editors) **89h:05034** 05B05 (05-01)
- Hughes, J. W. B. (with King, Ronald Curtis) A conjectured character formula for atypical irreducible modules of the Lie superalgebra  $sl(m/n)$ . *J. Phys. A* 20 (1987), no. 16, L1047-L1052. (Summary) **89h:17041** 17B70
- Hughes, James (with Liu, Jun<sup>2</sup>)  $\beta$ -functions and the exact renormalization group. *Nuclear Phys. B* 307 (1988), no. 1, 183-197. (Summary) **89f:81119** 81E15
- Hughes, Mark Finite group actions on homotopy complex projective spaces. *Math. Z.* 199 (1988), no. 1, 133-151. (Amir H. Assadi) **89k:57075** 57S17 (57S25)
- Hughes, Peter C. (with McTavish, Donald J.) Stability of discrete-time attitude control systems. *Dynamics Stability Systems* 3 (1988), no. 1-2, 1-24. (Not in MR) **93C55** (93C60)
- Hughes, Philip Martin Beale: a personal memory. *Math. Programming* 42 (1988), no. 1 (Ser. B), 5-9. (Editors) **89i:01083** 01A70
- Hughes, Thomas J. R. (with Mallet, Michel) A new finite element formulation for computational fluid dynamics. III. The generalized streamline operator for multidimensional advective-diffusive systems. *Comput. Methods Appl. Mech. Engrg.* 58 (1986), no. 3, 305-328. (From the introduction) **89j:76015a** 76-08 (35Q10, 65N30, 76N10)
- (with Mallet, Michel) A new finite element formulation for computational fluid dynamics. IV. A discontinuity-capturing operator for multidimensional advective-diffusive systems. *Comput. Methods Appl. Mech. Engrg.* 58 (1986), no. 3, 329-336. (Summary) **89j:76015c** 76-08 (35Q10, 65N30, 76N10)
- (with Franca, Leopoldo P.; Balestra, M.) A new finite element formulation for computational fluid dynamics. V. Circumventing the Babuška-Brezzi condition: a stable Petrov-Galerkin formulation of the Stokes problem accommodating equal-order interpolations. *Comput. Methods Appl. Mech. Engrg.* 59 (1986), no. 1, 85-99. (Summary) **89j:76015d** 76-08 (35Q10, 65N30, 76D07)
- (with Mallet, Michel) Errata: "A new finite element formulation for computational fluid dynamics. III. The generalized streamline operator for multidimensional advective-diffusive systems". *Comput. Methods Appl. Mech. Engrg.* 62 (1987), no. 1, 111. (Editors) **89j:76015b** 76-08 (35Q10, 65N30, 76N10)
- (with Franca, Leopoldo P.; Balestra, M.) Errata: "A new finite element formulation for computational fluid dynamics. V. Circumventing the Babuška-Brezzi condition: a stable Petrov-Galerkin formulation of the Stokes problem accommodating equal-order interpolations". *Comput. Methods Appl. Mech. Engrg.* 62 (1987), no. 1, 111. (Editors) **89j:76015e** 76-08 (35Q10, 65N30, 76D07)
- (with Franca, Leopoldo P.; Mallet, Michel) A new finite element formulation for computational fluid dynamics. VI. Convergence analysis of the generalized SUPG formulation for linear time-dependent multidimensional advective-diffusive systems. *Comput. Methods Appl. Mech. Engrg.* 63 (1987), no. 1, 97-112. (From the introduction) **89j:76015f** 76-08 (35Q10, 65N30, 76N10)
- (with Franca, Leopoldo P.) A new finite element formulation for computational fluid dynamics. VII. The Stokes problem with various well-posed boundary conditions: symmetric formulations that converge for all velocity/pressure spaces. *Comput. Methods Appl. Mech. Engrg.* 65 (1987), no. 1, 85-96. (From the introduction) **89j:76015g** 76-08 (35Q10, 65N30, 76D07)
- (with Franca, Leopoldo P.) Some new classes of mixed finite element methods. *Numerical analysis 1987 (Dundee, 1987)*, 135-156. *Pitman Res. Notes Math. Ser.*, 170, Longman Sci. Tech., Harlow, 1988. (Manfred Dobrowolski) **89f:65124** 65N30
- (with Hulbert, Gregory M.) Space-time finite element methods for elastodynamics: formulations and error estimates. *Comput. Methods Appl. Mech. Engrg.* 66 (1988), no. 3, 339-363. (N. Gass) **89c:73060** 73K25 (65N30)
- (with Franca, Leopoldo P.) A mixed finite element formulation for Reissner-Mindlin plate theory: uniform convergence of all higher-order spaces. *Comput. Methods Appl. Mech. Engrg.* 67 (1988), no. 2, 223-240. (Summary) **89g:73033** 73K25 (73K10)
- (with Franca, Leopoldo P.; Loula, Abimael F. D.; Miranda, Isidoro) A new family of stable elements for nearly incompressible elasticity based on a mixed Petrov-Galerkin finite element formulation. *Numer. Math.* 53 (1988), no. 1-2, 123-141. (P. Rochus) **89f:65122** 65N30 (73-08)
- Hughes-Hallett, A. J. (with Petit, M. L.) The reversed trade-off problem in optimal economic policy selection. *Optimal control theory and economic analysis*, 3 (Vienna, 1987), 311-333. *North-Holland, Amsterdam-New York*, 1988. (see **89d:90002**) 90A17
- Corrigenda: "The convergence of accelerated overrelaxation iterations" [Math. Comp. 47 (1986), no. 175, 219-223; MR 87g:65046]. *Math. Comp.* 51 (1988), no. 183, 387. (Editors) **89d:65035** 65F10
- Hughston, L. P. Applications of  $SO(8)$  spinors. *Gravitation and geometry*, 243-277. *Monographs Textbooks Phys. Sci.*, 4, Bibliopolis, Naples, 1987. (Michael G. Eastwood) **89i:81035** 81C40 (15A66, 22E70, 32L25, 81D25, 81D27)
- (with Shaw, William T.) Real classical strings. *Proc. Roy. Soc. London Ser. A* 414 (1987), no. 1847, 415-422. (Michael G. Eastwood) **89i:53044** 53C42 (32L25, 53C80, 81D27, 81E30)
- (with Shaw, William T.) Classical strings in ten dimensions. *Proc. Roy. Soc. London Ser. A* 414 (1987), no. 1847, 423-431. (Michael G. Eastwood) **89i:53045** 53C42 (32L25, 53C80, 81D27, 81E30)
- (with Shaw, William T.) Constraint-free analysis of relativistic strings. *Classical Quantum Gravity* 5 (1988), no. 3, L69-L72. (Michael G. Eastwood) **89i:53046** 53C42 (32L25, 53C80, 81D27)
- grandet-Hugot, Marthe *see* Grandet-Hugot, Marthe
- Hugnet, L. (with Griera, Mercè) Association schemes and difference sets defined on two weight codes. *Applied algebra, algorithmics and error-correcting codes* (Toulouse, 1984), 107-111. *Lecture Notes in Comput. Sci.*, 228, Springer, Berlin-New York, 1986. (Summary) **89h:94030** 94B05 (05B10, 05B30)
- (with Basart, J. M.) From  $T(m)$  triangular graphs to single-error-correcting codes. *Applicable algebra, error-correcting codes, combinatorics and computer algebra* (Karlsruhe, 1986), 5-12. *Lecture Notes in Comput. Sci.*, 307, Springer, Berlin-New York, 1988. (Summary) **89d:94039** 94B05 (05C99)
- (with Rifa, Josep) Characterization of completely regular codes through  $P$ -polynomial association schemes. *Applicable algebra, error-correcting codes, combinatorics and computer algebra* (Karlsruhe, 1986), 157-167. *Lecture Notes in Comput. Sci.*, 307, Springer, Berlin-New York, 1988. (Siu Lun Ma) **89h:94060** 94B05 (05B30)
- Huh, Chan Invariants of finite abelian groups acting on the algebra of two  $2 \times 2$  generic matrices. *Proc. Amer. Math. Soc.* 104 (1988), no. 3, 716-722. (E. Formanek) **89h:16020** 16A38
- Huh, Myung-Hoe Simpson's paradox and randomization. *J. Korean Statist. Soc.* 16 (1987), no. 2, 113-116. (Not in MR) 62H17
- Huhn, A. P. On nonmodular  $n$ -distributive lattices. I. Lattices of convex sets. *Acta Sci. Math. (Szeged)* 52 (1988), no. 1-2, 35-45. (Ulrich Faigle) **89j:06006** 06B20
- Hui, Chang Chang Some problems on MHR rings. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B 8 (1987), no. 4, 495. *Chinese Ann. Math. Ser. A* 8 (1987), no. 4, 530-532. (J. Luh) **89g:16017** 16A22 (16A34)
- Hui, Stefan An extension of a theorem of J. Fernández. *Bull. London Math. Soc.* 20 (1988), no. 1, 34-36. (Richard M. Timoney) **89d:30037** 30D45 (46E15, 46J15)
- Hui, W. H. Exact solutions of the unsteady two-dimensional Navier-Stokes equations. (French summary) *Z. Angew. Math. Phys.* 38 (1987), no. 5, 689-702. (Summary) **89d:76016** 76D05 (35Q10)
- Hui, Y. V. (with Li, Wai Kee) An algorithm for the exact likelihood of periodic autoregressive moving average models. *Comm. Statist. Simulation Comput.* 17 (1988), no. 4, 1483-1494. (Not in MR) 62M10
- Huibrege, Mark E. Translation by torsion points and rational equivalence of 0-cycles on abelian varieties. *Rocky Mountain J. Math.* 18 (1988), no. 1, 147-155. (Steven E. Landsburg) **89j:14005** 14C25 (14K99)
- (with Johnsen, Trygve) Local properties of secant varieties in symmetric products. I. *Trans. Amer. Math. Soc.* 313 (1989), no. 1, 187-204. (Susan J. Colley) **89i:14025** 14H45 (14B12, 14M15, 14N10)
- Hujsmans, C. B. Elements with unit spectrum in a Banach lattice algebra. *Nederl. Akad. Wetensch. Indag. Math.* 50 (1988), no. 1, 43-51. (W. A. Feldman) **89f:46106** 46J05 (46B30, 46H05)
- An elementary proof of a theorem of Schaefer, Wolff and Arendt. *Proc. Amer. Math. Soc.* 105 (1989), no. 3, 632-635. (Peter Meyer-Nieberg) **89g:47050** 47B55 (46B30)
- Huillet, T. (with Monin, André-Paul-Valentin; Salut, G.) Lie algebraic canonical representations in nonlinear control systems. *Math. Systems Theory* 20 (1987), no. 2-3, 193-213. (Norman P. Coleman, Jr.) **89d:93018** 93B10 (93B25, 93C10)
- (with Monin, André-Paul-Valentin; Salut, G.) Représentations exponentielles en commande non linéaire. (English summary) [Exponential representations in nonlinear control] *RAIRO Automat.-Prod. Inform. Ind.* 21 (1987), no. 5, 419-448. (Anna Maria Perdon) **89g:93029** 93B27 (93B05, 93C10)
- zimmermann-Huisgen, B. *see* Zimmermann-Huisgen, B.
- Huisken, Gerhard The volume preserving mean curvature flow. *J. Reine Angew. Math.* 382 (1987), 35-48. (Michael Grüter) **89d:53015** 53A07 (35K99, 53C40)
- Huizing, C. (with Gerth, R.; de Roeper, W. P.) Modelling Statecharts behaviour in a fully abstract way. *CAAP'88 (Nancy, 1988)*, 271-294. *Lecture Notes in Comput. Sci.*, 299, Springer, Berlin-New York, 1988. (Summary) **89c:68078** 68Q55 (68Q60)
- Hujter, Mihály (with Vizvári, Béla) The exact solutions to the Frobenius problem with three variables. *J. Ramanujan Math. Soc.* 2 (1987), no. 2, 117-143. (István Gaál) **89f:11039** 11D04 (11P99, 90C10)
- Hulanicki, Andrzej (with Jenkins, Joe W.) Nilpotent Lie groups and eigenfunction expansions of Schrödinger operators. II. *Studia Math.* 87 (1987), no. 3, 239-252. (L. Corwin) **89f:22015** 22E30 (22E25, 43A80, 47E05, 58G05)
- (with Gaudry, G. I.; Giulini, S.; Mantero, Anna Maria) Hardy-Littlewood maximal functions on some solvable Lie groups. *J. Austral. Math. Soc. Ser. A* 45 (1988), no. 1, 78-82. (Christopher Meaney) **89c:43020** 43A80 (22E25, 22E30, 42B25)
- Hulbert, Gregory M. (with Hughes, Thomas J. R.) Space-time finite element methods for elastodynamics: formulations and error estimates. *Comput. Methods Appl. Mech. Engrg.* 66 (1988), no. 3, 339-363. (N. Gass) **89c:73060** 73K25 (65N30)
- Hule, H. (with Pilz, Günter F.) Equations over abelian groups. *Contributions to general algebra*, 5 (Salzburg, 1986), 197-211. *Hölder-Pichler-Tempsky, Vienna*, 1987. (L. Fuchs) **89f:20063** 20K99
- (with Pilz, Günter F.) Equations over varieties of abelian groups. *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* 196 (1987), no. 8-10, 389-398. (L. Fuchs) **89k:20083** 20K99
- Hulek, K. Geometry of the Horrocks-Mumford bundle. *Algebraic geometry, Bowdoin, 1985 (Brunswick, Maine, 1985)*, 69-85. *Proc. Sympos. Pure Math.*, 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (H. Lange) **89a:14017** 14F05 (32L10)
- (with Lange, Herbert) The Hilbert modular surface for the ideal  $(\sqrt{3})$  and the Horrocks-Mumford bundle. *Math. Z.* 198 (1988), no. 1, 95-116. (P. E. Newstead) **89d:14057** 14K22 (11F41, 14F05, 14J25)
- Hull, C. L. *see* Murray, David J. **89a:92070**
- Hull, C. M. Sigma-model conformal anomalies and string effective actions. *International Workshop on Superstrings, Cosmology, Composite Structures* (College Park, MD, 1987), 238-245. *World Sci. Publishing, Singapore*, 1987. (see **89a:81005**) 81E13 (81E30)
- (with Townsend, P. K.) String effective actions from sigma-model conformal anomalies. *Nuclear Phys. B* 301 (1988), no. 2, 197-223. (Aleksandar R. Bogojević) **89c:81114** 81E20 (81E30, 81E40)
- Covariant quantization of chiral bosons and anomaly cancellation. *Phys. Lett. B* 206 (1988), no. 2, 234-240. (B. Spence) **89k:81148** 81E99 (81E30, 81E40)
- Hull, David G. (with Eisler, G. Richard) Maximum terminal velocity turns at nearly constant altitude. *J. Guidance Control Dynamics* 11 (1988), no. 2, 131-136. (Not in MR) 49D29
- On the variational process in parameter optimization. *J. Optim. Theory Appl.* 56 (1988), no. 1, 31-38. (Rolf Klötzler) **89d:90190** 90C30
- Hulsch, Friedrich (with Bandemer, Hans; Lehmann, Arndt) A watershed algorithm adapted to functions on grids. (German and Russian summaries) *Elektron. Informationsverarb. Kybernet.* 22 (1986), no. 10-11, 553-564. (Răzvan Andonie) **89g:68066** 68U05 (68T10)
- Hulsebos, A. (with Atkinson, D.; Johnson, P. W.) Chiral symmetry breakdown. III. Delbourgo's gauge technique. *J. Math. Phys.* 28 (1987), no. 12, 2994-2998. (C. Cronström) **89d:81118** 81G05 (81F20)

- Hulshof, Josephus** An elliptic-parabolic free boundary problem: continuity of the interface. *Proc. Roy. Soc. Edinburgh Sect. A* **106** (1987), no. 3-4, 327-339. (Vasilios Alexiades) **89i:35133** 35R35 (35K65)
- Bounded weak solutions of an elliptic-parabolic Neumann problem. *Trans. Amer. Math. Soc.* **303** (1987), no. 1, 211-227. (Fouad A. Mohamed) **89g:35076** 35M05 (35R35)
- (with Wolanski, Noemi) Monotone flows in  $N$ -dimensional partially saturated porous media: Lipschitz-continuity of the interface. *Arch. Rational Mech. Anal.* **102** (1988), no. 4, 287-305. (Michel Chipot) **89i:76088** 76S05 (35R35)
- Hüllsmann, Jochen**  $L_1$ -norm Schätzung der Verteilungsfunktion. [ $L_1$ -norm estimation of the distribution function] *Ökonomie und Mathematik*, 297-301, Springer, Berlin-New York, 1987. (Summary) **89k:62056** 62G05
- Hultgren, Lennart S.** (with Goldstein, M. E.) Boundary-layer receptivity to long-wave free-stream disturbances. *Annual review of fluid mechanics*, Vol. 21, 137-166, *Annual Reviews*, Palo Alto, CA, 1989. (see **89g:76002**) 76E05 (76D10, 76D33)
- Hultquist, R. A.** (with Mullen, Gary L.; Niederreiter, Harald) Association schemes and derived PBIB designs of prime power order. *Ars Combin.* **25** (1988), 65-82. (Joe Hemminger) **89f:05032** 05B05 (62K10)
- Humberstone, I. L.** The lattice of extensional connectives: a correction to: "Extensionality in sentence position" [J. Philos. Logic **15** (1986), no. 1, 27-54; MR 87e:03033]. *J. Philos. Logic* **17** (1988), no. 3, 221-223. (Editors) **89h:03026** 03B45 (03B65)
- Operational semantics for positive R. *Notre Dame J. Formal Logic* **29** (1988), no. 1, 61-80. (Miroslaw Szatkowski) **89f:03010** 03B45 (03G25)
- Humbert, C.** (with Mehdi, D.) Simulation studies on sample convergence in parameter estimation of discrete time stochastic process with stochastic parameters. *Control Theory Adv. Tech.* **4** (1988), no. 3, 371-379. (Summary) **89g:93092** 93E10 (93C05, 93C55, 93E11)
- von Humboldt, Alexander** see Long term evolution of planetary systems, **89j:76002**
- Huml, Mayer** Representations and invariant equations of  $E(3)$ . *J. Math. Phys.* **28** (1987), no. 12, 2807-2811. (Summary) **89h:17006** 17B10 (81C40)
- Factorisation of separable partial differential equations. *J. Phys. A* **20** (1987), no. 14, 4577-4585. (Ernest G. Kalnins) **89f:35015** 35A25 (58G35, 81C40)
- d'Humières, D.** (with Clavin, Paul; Lallemand, P.; Pomeau, Y.) Automates cellulaires pour les problèmes à frontières libres en hydrodynamique à deux et trois dimensions. (English summary) *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **303** (1986), no. 13, 1169-1174. (Juliana Oprea) **89k:76004** 76-08 (68Q80, 76D25, 76E05, 82-04)
- (with Lallemand, P.) Numerical simulations of hydrodynamics with lattice gas automata in two dimensions. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems* **1** (1987), no. 4, 599-632. (Summary) **89a:82002** 82-04 (82A40)
- (with Frisch, Uriel; Hasslacher, Brosl; Lallemand, P.; Pomeau, Y.; Rivet, Jean-Pierre) Lattice gas hydrodynamics in two and three dimensions. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems* **1** (1987), no. 4, 649-707. (Tony C. Dorlas) **89h:82031** 82A50 (76D05, 82A69)
- (with Lallemand, P.; Boon, J.-P.; Dab, D.; Noullez, A.) Fluid dynamics with lattice gases. *Chaos and complexity* (Torino, 1987), 278-301, *World Sci. Publishing*, Singapore, 1988. (Summary) **89j:76016** 76-08 (65C20, 76R50, 82A40, 82A99)
- (with Lallemand, P.) Errata: "Numerical simulations of hydrodynamics with lattice gas automata in two dimensions" [Complex Systems **1** (1987), no. 4, 599-632; MR 89a:82002]. *Complex Systems* **2** (1988), no. 6, 725-726. (Editors) **89k:82002** 82-04 (82A40)
- Humke, P.** (with Brown, J. B.; Laczkovich, M.) Measurable Darboux functions. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 603-610. (Pavel Kostyrko) **89b:26003** 26A21
- Hummel, James A.** (with Pinchuk, Bernard) A minimal distance problem in conformal mapping. *Complex Variables Theory Appl.* **9** (1987), no. 2-3, 211-220. (J. G. Krzyż) **89g:30040** 30C70
- Humphreys, John F.** Blocks of certain classes of finite groups. *Arch. Math. (Basel)* **50** (1988), no. 6, 481-491. (Karin Erdmann) **89b:20017** 20C20 (20C15, 20C25)
- Humphries, S. P.** (with Long, D. D.) On the Mal'cev quotients of certain hyperbolic link groups. *Math. Proc. Cambridge Philos. Soc.* **102** (1987), no. 3, 475-480. (B. N. Apanasov) **89a:22018** 22E40 (11F06, 20F34)
- Free subgroups of  $SL(n, \mathbb{Z})$ ,  $n > 2$ , generated by transvections. *J. Algebra* **116** (1988), no. 1, 155-162. (J. L. Brenner) **89e:20091** 20H25 (11E57)
- Hunding, Axel** (with Sørensen, Preben Graae) Size adaptation of Turing prepatterns. *J. Math. Biol.* **26** (1988), no. 1, 27-39. (P. Bertrand) **89k:92002** 92A05 (92A09, 92A40)
- Hundsdoerfer, W. H.** A note on monotonicity of a Rosenbrock method. *Proceedings of the 2nd international conference on computational and applied mathematics* (Leuven, 1986). *J. Comput. Appl. Math.* **20** (1987), Special Issue, 267-273. (A. J. Rodrigues) **89e:65074** 65L05
- Huněk, M.** (with Kozel, K.; Vavřincová, M.) Numerical solution of transonic potential flow in 2D compressor cascades using multi-grid techniques. *Robust multi-grid methods* (Kiel, 1988), 145-154, *Notes Numer. Fluid Mech.*, 23, Vieweg, Braunschweig, 1989. (see **89m:65007**) 76-08 (76H05)
- Huneke, Craig** Hilbert functions and symbolic powers. *Michigan Math. J.* **34** (1987), no. 2, 293-318. (Ngô Việt Trung) **89b:13037** 13H15 (13H10, 14M05)
- (with Hochster, Melvin) Tightly closed ideals. *Bull. Amer. Math. Soc. (N.S.)* **18** (1988), no. 1, 45-48. (Matthew Miller) **89b:13003** 13A15 (13H10, 14B12)
- (with Ulrich, Bernd) Algebraic linkage. *Duke Math. J.* **56** (1988), no. 3, 415-429. (Matthew Miller) **89e:13023** 13H10 (13D10, 14M05)
- (with Sally, Judith D.) Birational extensions in dimension two and integrally closed ideals. *J. Algebra* **115** (1988), no. 2, 481-500. (W. V. Vasconcelos) **89e:13025** 13H10 (14E15)
- (with Ulrich, Bernd) Residual intersections. *J. Reine Angew. Math.* **390** (1988), 1-20. (Jürgen Herzog) **89j:13024** 13H10 (13C13, 13D10, 14B07)
- (with Ulrich, Bernd) Minimal linkage and the Gorenstein locus of an ideal. *Nagoya Math. J.* **109** (1988), 159-167. (Matthew Miller) **89e:13024** 13H10 (13D10, 14M05)
- An algebraist commuting in Berkeley. *Math. Intelligencer* **11** (1989), no. 1, 40-52. (Matthew Miller) **89m:13001** 13-02
- phạm việt Hùng** see Phạm Việt Hùng
- Hung, Chao-shun** (with Greenhut, Melvin L.; Norman, George) ★ The economics of imperfect competition. A spatial approach. *Cambridge University Press*, Cambridge-New York, 1987. xx+408 pp. ISBN 0-521-30552-7; 0-521-31564-6 (Beth Allen) **89g:90001** 90-02 (90A12, 90A14, 90A30)
- Hung, D. V.** see Dang Van Hung
- Hung, H. H.** A characterization of Laine spaces. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1278-1280. (Takemi Mizokami) **89i:54017** 54C10
- Hung, Ming S.** (with Divoky, James J.) A computational study of efficient shortest path algorithms. *Comput. Oper. Res.* **15** (1988), no. 6, 567-576. (Summary) **89j:90093** 90B10 (68R10)
- (with Chung, Chia-Shin; Rom, Walter O.) A hard knapsack problem. *Naval Res. Logist.* **35** (1988), no. 1, 85-98. (Rainer Burkard) **89e:90076** 90C10
- Hung, N. M.** (with Schmitt, Nicolas) Quality competition and threat of entry in duopoly. *Econom. Lett.* **27** (1988), no. 3, 287-292. (Summary) **89h:90044** 90A14 (90D45)
- Hung, S. T.** (with Kokotović, P. V.; Winkelman, J. R.) Self tuning of conflicting oscillatory modes: a case study. *IEEE Trans. Automat. Control* **34** (1989), no. 2, 250-253. (Summary) **89k:93120** 93C30 (93C40)
- Hung, Y. S.**  $H^\infty$  interpolation of rational matrices. *Internat. J. Control* **48** (1988), no. 4, 1659-1713. (Krzysztof Kuźmiński) **89i:93023** 93B25 (15A33, 93B28, 93B50)
- Hung Do Duc** (with Gawinecki, Jerzy; Piskorek, Adam) On thermoelastic potential. *Potential theory* (Prague, 1987), 127-129, *Plenum*, New York-London, 1988. (see **89j:31001**) 35L99 (31B35, 73C50, 73U05)
- phần Hùng Lợi** see Phan Hùng Lợi
- đặng Hùng Thắng** see Đặng Hùng Thắng
- Hunt, Bruce J.** The origins of the FitzGerald contraction. *British J. Hist. Sci.* **21** (1988), no. 68, part 1, 67-76. (H. Tredor) **89h:01033** 01A55
- Hunt, H. B., III** (with Ravi, S. S.) An application of the planar separator theorem to counting problems. *Inform. Process. Lett.* **25** (1987), no. 5, 317-321. (Narsingh Deo) **89a:68177** 68R10 (05C40, 68Q20, 90C27)
- (with Stearns, Richard E.) Nonlinear algebra and optimization on rings are "hard". *SIAM J. Comput.* **16** (1987), no. 5, 910-929. (Hans F. de Groote) **89h:68062** 68Q25 (16A99, 65K10, 68Q40, 90C27)
- (with Rosenkrantz, Daniel J.) Matrix multiplication for finite algebraic systems. *Inform. Process. Lett.* **28** (1988), no. 4, 189-192. (D. Z. Spicer) **89m:68053** 68Q20 (65F99, 68Q10)
- Hunt, K. J.** (with Šebek, M.; Grimbile, M. J.) LQG regulation with disturbance measurement feedforward. *Internat. J. Control* **47** (1988), no. 5, 1497-1505. (A. P. Roberts) **89e:93228** 93E20 (49D40, 93B25, 93B50, 93C55)
- General polynomial solution to the optimal feedback/feedforward stochastic tracking problem. *Internat. J. Control* **48** (1988), no. 3, 1057-1073. (Summary) **89j:93110** 93E20 (93B25, 93B35)
- A single-degree-of-freedom polynomial solution to the optimal feedback/feedforward stochastic tracking problem. *Kybernetika (Prague)* **24** (1988), no. 2, 81-97. (Jean-Pierre Lepeltier) **89e:93221** 93E20 (93B25, 93C75)
- (with Šebek, M.) Optimal multivariable regulation with disturbance measurement feedforward. *Internat. J. Control* **49** (1989), no. 1, 373-378. (Not in MR) 93B50 (93B25, 93C05, 93C55)
- Hunt, L. R.** (with Su, Ren Jeng) Approximation of nonlinear systems having outputs. *Circuits Systems Signal Process.* **5** (1986), no. 4, 465-479. (V. S. Zajačkovski) **89a:93032** 93B27 (93B15, 93C10, 93C15)
- (with Villarreal, Ramiro) Canonical coordinates for partial differential equations. *Systems Control Lett.* **11** (1988), no. 2, 159-165. (Summary) **89k:35011** 35A25
- Hunt, Roland** Single-level multigrid. *J. Comput. Appl. Math.* **23** (1988), no. 2, 133-139. (Summary) **89g:65150** 65N50
- Hunter, C.** Distribution functions for triaxial galaxies. *Applied mathematics, fluid mechanics, astrophysics* (Cambridge, MA, 1987), 350-357, *World Sci. Publishing*, Singapore, 1988. (see **89f:76002**) 85A05
- Hunter, D. B.** (with Macdonald, I. G.) Some sign properties of symmetric functions. *Math. Proc. Cambridge Philos. Soc.* **105** (1989), no. 2, 193-196. (Philip Hanlon) **89k:05008** 05A15 (05A20)
- Hunter, Geoffrey** Is consistency enough for existence in mathematics? *Analysis (Oxford)* **48** (1988), no. 1, 3-5. (Yehuda Rav) **89c:03008** 03A05
- Hunter, J. K.** (with Majda, A.; Rosales, R.) Resonantly interacting, weakly nonlinear hyperbolic waves. II. Several space variables. *Stud. Appl. Math.* **75** (1986), no. 3, 187-226. (Albert J. Milani) **89h:35199** 35L65 (35Q20, 76N15)
- (with Scheurle, Jürgen) Existence of perturbed solitary wave solutions to a model equation for water waves. *Phys. D* **32** (1988), no. 2, 253-268. (F. Ursell) **89j:76031** 76B15 (76B25)
- (with Keller, J. B.) Nonlinear hyperbolic waves. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1853, 299-308. (Summary) **89f:35129** 35L65 (73D99, 76B99, 76L05, 78A05)
- Transverse diffraction of nonlinear waves and singular rays. *SIAM J. Appl. Math.* **48** (1988), no. 1, 1-37. (F. Ursell) **89e:76089** 76Q05 (35Q20)
- Hunter, Jeffrey J.** Characterizations of generalized inverses associated with Markovian kernels. *Linear Algebra Appl.* **102** (1988), 121-142. (Richard Madsen) **89e:60131** 60I10 (15A09)
- Hunter, R. P.** On infinite words and dimension raising homomorphisms. *Fund. Math.* **129** (1988), no. 3, 211-214. (Bernard L. Madison) **89k:22001** 22A15 (68Q45)
- Certain finitely generated compact zero-dimensional semigroups. *J. Austral. Math. Soc. Ser. A* **44** (1988), no. 2, 265-270. (Anne L. Hudson) **89b:22004** 22A15
- Hunter, Thomas J.** On  $H_2(\Omega^{n+2} \otimes \mathbb{F}_2)$ . *Trans. Amer. Math. Soc.* **314** (1989), no. 1, 405-420. (Frederick Cohen) **89k:55011** 55P35 (55S12, 55T20)
- Huo, Teh M.** Observational equivalence of the overlapping-generations and the cash-in-advance economies. *Econom. Lett.* **25** (1987), no. 1, 9-13. (Summary) **89a:90033** 90A10 (90A15)
- Huo, Yu Ping** (with Zhao, Yong; Wang, Hai Da) Anomalous behavior of bifurcation in a system with delayed feedback. *Phys. Lett. A* **131** (1988), no. 6, 353-356. (Summary) **89f:58111** 58F14 (34K15)
- Huotari, R.** (with Legg, David; Meyerowitz, Aaron D.; Townsend, D.) The natural best  $L_1$ -approximation by nondecreasing functions. *J. Approx. Theory* **52** (1988), no. 2, 132-140. (Gerald D. Taylor) **89h:41025** 41A29 (41A30)
- (with Egger, A.) The Pólya algorithm on convex sets. *J. Approx. Theory* **56** (1989), no. 2, 212-216. (Christian Coattmelec) **89m:41018** 41A50



- Huppert, Bertram** (with Gow, Roderick) Degree problems of representation theory over arbitrary fields of characteristic 0. On theorems of N. Itô and J. G. Thompson. *J. Reine Angew. Math.* **381** (1987), 136–147. (Wolfgang Wilms) **89b:20029** 20C15
- (with Gow, Roderick) Degree problems of representation theory over arbitrary fields of characteristic 0. II. Groups which have only two reduced degrees. *J. Reine Angew. Math.* **389** (1988), 122–132. (Wolfgang Wilms) **89i:20021** 20C15
- Huppert, Herbert E.** Phase changes following the initiation of a hot turbulent flow over a cold solid surface. *J. Fluid Mech.* **198** (1989), 293–319. (Summary) **89k:80017** 80A20 (86A60)
- Huq, M.** Manifestly fermionic gauge covariant quantization of a massive superparticle. *Phys. Lett. B* **205** (1988), no. 4, 479–482. (Robert Marnelius) **89k:81149** 81E99
- On covariant quantization of a massive superparticle. *Nuclear Phys. B* **315** (1989), no. 1, 249–268. (Summary) **89m:81145** 81E99 (81E15, 81E30, 81E40)
- Huq, S. A.** Distributivity in semigroups. *Math. Japon.* **33** (1988), no. 4, 535–541. (N. R. Reilly) **89b:20089** 20M10
- Hurd, Alan J.** Resource letter FR-1: fractals. *Amer. J. Phys.* **56** (1988), no. 11, 969–975. (J. S. Joel) **89j:00037** 00A15 (00A69, 28A75, 58F13)
- Hurd, R. A.** (with Meister, Erhard) Generalized waveguide bifurcation problems. *Quart. J. Mech. Appl. Math.* **41** (1988), no. 1, 127–139. (W. L. Ko) **89i:78011** 78A45
- Hurd, T. R.** Renormalization of massless quantum electrodynamics. *Mathematical quantum field theory and related topics (Montreal, PQ, 1987)*, 161–167, CMS Conf. Proc., 9, Amer. Math. Soc., Providence, RI, 1988. (see **89g:81002**) 81E15 (81L05)
- A power counting formula for short distance singularities in quantum field theory. *J. Math. Phys.* **29** (1988), no. 9, 2112–2116. (K. J. Le Couteur) **89b:81134** 81E15 (81C30)
- Hurder, Steven** (with Katok, Anatole) Ergodic theory and Weil measures for foliations. *Ann. of Math. (2)* **126** (1987), no. 2, 221–275. (John Cantwell) **89d:57042** 57R30 (46L10, 46L99, 58F11)
- Ergodic theory of foliations and a theorem of Sacksteder. *Dynamical systems (College Park, MD, 1986–87)*, 291–328, *Lecture Notes in Math.*, 1342, Springer, Berlin-New York, 1988. (Artur Oscar Lopes) **89k:58155** 58F11 (57R30, 58F18)
- (with Douglas, Ronald G.; Kaminker, Jerome) Toeplitz operators and the eta invariant: the case of  $S^1$ . *Index theory of elliptic operators, foliations, and operator algebras (New Orleans, LA/Indianapolis, IN, 1986)*, 11–41, *Contemp. Math.*, 70, Amer. Math. Soc., Providence, RI, 1988. (John Roe) **89j:58132** 58G12 (19K56, 46L80, 47B35, 57R32)
- see also Moore, Calvin C., **89h:58184**
- van den Hurk, G. J.** (with Beelen, Th. G. J.; Praagman, C.) A new method for computing a column reduced polynomial matrix. *Systems Control Lett.* **10** (1988), no. 4, 217–224. (Not in MR) **93B25** (65F30, 93B40)
- Hurley, D. G.** Mathematical research at the aeronautical research laboratories 1939–1960. *J. Austral. Math. Soc. Ser. B* **30** (1989), no. 4, 389–413. (Summary) **89j:01076** 01A74
- Hurley, D. J.** (with Barry, P. D.) Generating functions for relatives of classical polynomials. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 839–846. (Mourad E. H. Ismail) **89f:33025** 33A99 (05A15)
- Hurley, Mike** Improbability of nonconvergence in a cubic root-finding method. *J. Math. Anal. Appl.* **133** (1988), no. 2, 461–465. (Joe Thrash) **89k:65062** 65H05 (58F13)
- Hurley, T. C.** Identifications in a free group. *J. Pure Appl. Algebra* **48** (1987), no. 3, 249–261. (N. D. Gupta) **89a:20025** 20E05 (20F12)
- Hursi, J.-P.** Young superalgebras of the basic Lie superalgebras. *J. Phys. A* **20** (1987), no. 17, 5755–5821. (Nigel B. Backhouse) **89i:17005** 17A70 (05A17)
- Hurst, C. A.** (with Grundling, Hendrik) The quantum theory of second class constraints: kinematics. *Comm. Math. Phys.* **119** (1988), no. 1, 75–93. (Camillo Trapani) **89k:81052** 81D07 (46L60, 58F05, 81E05)
- (with McGuire, J. B.) Three interacting particles in one dimension: an algebraic approach. *J. Math. Phys.* **29** (1988), no. 1, 155–168. (Summary) **89c:81178** 81F05 (81C05)
- (with Grundling, Hendrik) A note on regular states and supplementary conditions. *Lett. Math. Phys.* **15** (1988), no. 3, 205–212. (Camillo Trapani) **89f:46131** 46L60 (81D05, 81E05)
- (with Lohe, M. A.)  $N = 2$  case of nonabelian bosonization. *Phys. Rev. D* (3) **37** (1988), no. 4, 1094–1096. (Summary) **89c:81143** 81E99
- Hurt, Jan** Comparison of some reliability estimators in the exponential case under random censorship. *Probability theory and mathematical statistics with applications (Visegrad, 1985)*, 255–266, *Reidel, Dordrecht-Boston, MA*, 1988. (Masafumi Sasaki) **89i:62166** 62N05 (62F12)
- Huruya, Tadasi** A norm property for spaces of completely bounded maps between  $C^*$ -algebras. *Glasgow Math. J.* **29** (1987), no. 2, 181–184. (Sze-Kai Tsui) **89e:46066** 46L05
- Hurvich, Clifford M.** A mean squared error criterion for time series data windows. *Biometrika* **75** (1988), no. 3, 485–490. (Summary) **89j:62122** 62M10
- Hurwicz, Leonid** (with Marschak, Thomas) Discrete allocation mechanisms: dimensional requirements for resource-allocation mechanisms when desired outcomes are unbounded. Complexity of approximately solved problems (Morningside Heights, N.Y., 1985). *J. Complexity* **1** (1985), no. 2, 264–303. (Contents) **89e:90033** 90A10
- On the implementation of social choice rules in irrational societies. *Social choice and public decision making*, 75–96, Cambridge Univ. Press, Cambridge-New York, 1986. (From the text) **89k:90010** 90A08 (90A06)
- (with Jordan, James S.; Kannai, Yakar) On the demand generated by a smooth and concavifiable preference ordering. *J. Math. Econom.* **16** (1987), no. 2, 169–189. (Beth Allen) **89e:90012** 90A06 (26B25, 90A10)
- (with Majumdar, Mukul) Optimal intertemporal allocation mechanisms and decentralization of decisions. *J. Econom. Theory* **45** (1988), no. 2, 228–261. (Summary) **89j:90075** 90A16 (90A05)
- Husain, I.** (with Bector, C. R.; Chandra, Suresh) Second order duality in continuous-time nonlinear programming. Sixteenth Manitoba conference on numerical mathematics and computing (Winnipeg, Man., 1986). *Congr. Numer.* **56** (1987), 121–134. (B. Mond) **89b:90224** 90C48 (49A55, 49D37, 90C25)
- (with Chandra, Suresh; Craven, B. D.) A class of nondifferentiable control problems. *J. Optim. Theory Appl.* **56** (1988), no. 2, 227–243. (Halina Frankowska) **89g:49021** 49A52 (49A55, 90C48)
- (with Bector, Meena K.; Chandra, Suresh; Bector, C. R.) A duality model for a generalized minmax program. *Naval Res. Logist.* **35** (1988), no. 5, 493–501. (Dorel Duca) **89j:90214** 90C30 (90C25, 90C32)
- Husain, S. I.** (with Deshmukh, Sharief; Ali, Shahid) Submersions of CR-submanifolds of a Kähler manifold. *Indian J. Pure Appl. Math.* **19** (1988), no. 12, 1185–1205. (Aurel Bejancu) **89m:53094** 53C40
- Husain, Tahir** see **Hussain, Tahir**
- Hussain, Taqdir** (with El-Helaly, Sherif) Unconditionality of orthogonal bases in  $B_0$ -algebras. *Comment. Math. Prace Mat.* **27** (1988), no. 2, 237–251. (B. Yood) **89k:46063** 46H05 (46B15)
- (with Latif, Abdul) Fixed points of multivalued nonexpansive maps. *Math. Japon.* **33** (1988), no. 3, 385–391. (J. Matkowski) **89f:47107** 47H10 (54H25)
- (with El-Helaly, Sherif) Orthogonal bases are Schauder bases and a characterization of  $\Phi$ -algebras. *Pacific J. Math.* **132** (1988), no. 2, 265–275. (Peter Dixon) **89e:46055** 46J05 (46A35, 46A45, 46H05)
- Hussain, Viqar** The  $G_N \rightarrow \infty$  limit of quantum gravity. *Classical Quantum Gravity* **5** (1988), no. 4, 575–582. (A. D. Popova) **89f:83057** 83C45 (81G25)
- Weyl tensor and gravitational entropy. *Phys. Rev. D* (3) **38** (1988), no. 10, 3314–3317. (Enric Verdaguer) **89m:83049** 83C47 (81E20)
- Husch, L. S.** Embedding of continua. *Geometric topology and shape theory (Dubrovnik, 1986)*, 125–130, *Lecture Notes in Math.*, 1283, Springer, Berlin-New York, 1987. (Gerard A. Venema) **89a:57022** 57N35 (54C25, 54F20)
- $e$ -maps and embeddings. *General topology and its relations to modern analysis and algebra, VI (Prague, 1986)*, 273–280, *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (David G. Wright) **89g:54033** 54C25 (54C55, 54C56)
- Huseby, Arne Bang** Domination theory and the Crapo  $\beta$ -invariant. *Networks* **19** (1989), no. 1, 135–149. (B. Zelinka) **89i:05081** 05B35 (05C38)
- Husein, A.** (with Abu-Salih, M. S.; Ali Khan, M. S.) Prediction intervals of order statistics for the mixture of two exponential distributions. *Aligarh J. Statist.* **7** (1987), 11–22. (Summary) **89a:62120** 62G30
- Husek, M.** (with de Vries, Jan) Preservation of products by functors close to reflectors. Proceedings of the 8th international conference on categorical topology (L'Aquila, 1986). *Topology Appl.* **27** (1987), no. 2, 171–189. (Summary) **89e:54014** 54B10 (18A40, 20M99)
- (with de Vries, Jan) A note on compactifications of products of semigroups. *Semigroup Forum* **38** (1989), no. 1, 85–89. (Bernard L. Madison) **89m:22002** 22A15 (22A20, 43A07, 43A60)
- Husemoller, Dale** (with Deligne, P.) Survey of Drinfel'd modules. *Current trends in arithmetic algebraic geometry (Arcata, Calif., 1985)*, 25–91, *Contemp. Math.*, 67, Amer. Math. Soc., Providence, RI, 1987. (Glenn Stevens) **89f:11081** 11G20 (11S37, 14G10)
- Huseyin, K.** (with Yu, Pei) Static and dynamic bifurcations associated with a double-zero eigenvalue. *Dynamics Stability Systems* **1** (1986), no. 1, 73–86. (R. R. Huilgol) **89b:58164** 58F14 (34C35, 58F21)
- (with Yu, Pei) Bifurcations associated with a simple zero and two pairs of pure imaginary eigenvalues. *Oscillations, bifurcation and chaos (Toronto, Ont., 1986)*, 465–484, *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (Anthony D. Osborne) **89b:58151** 58F14 (34D05)
- (with Yu, Pei) On bifurcations into nonresonant quasiperiodic motions. *Appl. Math. Modelling* **12** (1988), no. 2, 189–201. (A. Vanderbauwhede) **89f:58101** 58F14 (70K99)
- (with Yu, Pei) A perturbation analysis of interactive static and dynamic bifurcations. *IEEE Trans. Automat. Control* **33** (1988), no. 1, 28–41. (Mikhail Zaks) **89g:58162** 58F14 (58F10, 58F21, 94C05)
- (with Yu, Pei) Bifurcations associated with a double zero of index two and a pair of purely imaginary eigenvalues. *Internat. J. Systems Sci.* **19** (1988), no. 1, 1–21. (Marco Antonio Teixeira) **89d:58098** 58F14 (34C05, 94C05)
- (with Yu, Pei) Bifurcations associated with a double zero and a pair of pure imaginary eigenvalues. *SIAM J. Appl. Math.* **48** (1988), no. 2, 229–261. (François Aribaud) **89g:58163** 58F14 (34E10)
- (with Yu, Pei) Bifurcations associated with a triple-zero eigenvalue of index two or three. *Z. Angew. Math. Mech.* **68** (1988), no. 4, T142–T145. (Jian Ying Zhou) **89b:58152** 58F14
- Husimi, Kōdō** Rolling a tetrahedron on the plane to produce periodic patterns of symmetry  $p2$  and drawing dragon curves as backbones of Escher figures. *M. C. Escher: art and science (Rome, 1985)*, 181–186, *North-Holland, Amsterdam-New York*, 1986. (see **89m:00011**) 52A45 (11H31)
- Hüsler, Jörg** Maximal, nonuniform spacings and the coverage problem. *J. Appl. Probab.* **25** (1988), no. 3, 519–528. (Lars Holst) **89f:60031** 60D05 (60F05)
- (with Schüpbach, Michel) Limit results for maxima in nonstationary multivariate Gaussian sequences. *Stochastic Process. Appl.* **28** (1988), no. 1, 91–99. (William P. McCormick) **89e:60046** 60F05 (60G15, 62H10)
- (with Riedwyl, H.) Comparison of the efficiency of nonparametric location tests based on grouped and individual data. *Statist. Probab. Lett.* **7** (1989), no. 4, 287–291. (Summary) **89k:62062** 62G10 (62G20)
- see also *Extreme value theory*, **89j:60002**
- Huson, Daniel** (with Dress, Andreas) On tilings of the plane. *Geom. Dedicata* **24** (1987), no. 3, 295–310. (E. Hertel) **89d:52030** 52A45
- Inayat-Hussain, A. A.** see **Inayat-Hussain, A. A.**
- Hussain, Imdad** A fixed point theorem for group-type algebras. *Islamabad J. Sci.* **9** (1984/87), no. 1–2, 47–48. (Editors) **89f:08001** 08A05 (20N99)
- Hussain, M. A.** On a nonlinear integrodifferential equation in Banach space. *Indian J. Pure Appl. Math.* **19** (1988), no. 6, 516–529. (G. S. Jordan) **89f:45020** 45N05 (45D05, 45M05, 47H20)
- Hussain, Tahir** (with Lone, A. G.; Ikram, Mohd.) On multi-queue with bulk arrivals and service parameters depending upon queue numbers. *Internat. J. Management Systems* **4** (1988), no. 3, 161–168. (U. Narayan Bhat) **89m:60231** 60K25 (90B22)
- Queues in series with arrivals and departures in bulks. *Pure Appl. Math. Sci.* **28** (1988), no. 1–2, 27–33. (R. Bergmann) **89k:60137** 60K25 (90B22)
- al-Hussaini, Ata N.** see **Al-Hussaini, Ata N.**
- Hussaini, M. Y.** (with Phillips, T. N.; Zang, T. A.) Preconditioners for the spectral multigrid method. *IMA J. Numer. Anal.* **6** (1986), no. 3, 273–292. (Summary) **89b:65063** 65F35 (65N20)

- (with Canuto, Claudio; Quateroni, A.; Zang, T. A.) ★ Spectral methods in fluid dynamics. Springer Series in Computational Physics. Springer-Verlag, New York-Berlin, 1988. xiv+557 pp. ISBN 0-387-17371-4 (From the preface) **89m:76004** 76-08 (65-02, 76-02)
- (with Erlebacher, G.; Zang, T. A.) Spectral multigrid methods for the solution of homogeneous turbulence problems. *Multigrid methods* (Copper Mountain, CO, 1987), 177–194, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (Murli M. Gupta) **89m:76007** 76-08 (65N05, 76F05)
- (with Macaraeg, Michèle G.; Streett, Craig L.) A spectral multi-domain technique applied to high-speed chemically reacting flows. *Domain decomposition methods* (Los Angeles, CA, 1988), 361–391, *SIAM, Philadelphia, PA*, 1989. (see **89j:65010**) 80A32 (76-08, 76V05) — see also *Finite elements*, **89e:65002**
- Hussein, D. (with Awad, Adnan M.; Azzam, M.) Sup-entropy of degree  $\alpha$ . (Arabic summary) *Arabian J. Sci. Engrg.* **12** (1987), no. 4, 473–480. (Ram Autar) **89a:94010** 94A17
- Hussein, G. M. (with Fahmy, Mohamed Hussein) A Galois algebra satisfying a condition of Jacobson. (Arabic summary) *Proc. Math. Phys. Soc. Egypt No. 60* (1985), 11–14 (1987). (P. Abellanas) **89i:16019** 16A45
- Hussein, M. S. (with Marques, G. C.) Symmetrical representation of the transition matrix. I. Formal development. *Ann. Physics* **172** (1986), no. 1, 191–212. (Luciano Canton) **89b:81232** 81F05 (81D10)
- (with Wreszinski, W.) On the second-order virial coefficient and the relationships between quantum and classical statistics and scattering. *Phys. Lett. A* **125** (1987), no. 4, 184–187. (W. O. Amrein) **89c:81177** 81F05 (82A15)
- Hussein, Suhan (with Fadell, Edward) Index theory for G-bundle pairs with applications to Borsuk-Ulam type theorems for G-sphere bundles. *Nonlinear analysis*, 307–336, *World Sci. Publishing, Singapore*, 1987. (David Handel) **89g:55029** 55R91 (55M20, 55N91)
- (with Fadell, Edward) An ideal-valued cohomological index theory with applications to Borsuk-Ulam and Bourgin-Yang theorems. *Ergodic Theory Dynamical Systems* **8** (1988), Charles Conley Memorial Issue, 73–85. (Christian Fenske) **89k:55002** 55M20 (55M30, 58F99)
- Husserl, Edmund see Sokolowski, Robert, **89e:03009** and McIntyre, Ronald, **89i:03002**
- Hussin, V. (with Beckers, J.) Superalgebras of symmetries in superquasars of mechanics. *Group theoretical methods in physics* (Varna, 1987), 116–125, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (see **89j:81001**) 81C40
- (with Beckers, J.; Dehin, D.) On the Heisenberg and orthosymplectic superalgebras of the harmonic oscillator. *J. Math. Phys.* **29** (1988), no. 7, 1705–1711. (Qi Zhi Han) **89m:17002** 17A70 (58F35, 81C40)
- (with Gagnon, L.; Winternitz, P.) Nonlinear equations with superposition formulas and exceptional group  $G_2$ . III. The superposition formulas. *J. Math. Phys.* **29** (1988), no. 10, 2145–2155. (Summary) **89j:58117** 58F35 (17B25, 22E05, 22E60, 34A34)
- (with Beckers, J.; Dehin, D.) Dynamical and kinematical supersymmetries of the quantum harmonic oscillator and the motion in a constant magnetic field. *J. Phys. A* **21** (1988), no. 3, 651–667. (A. I. Pashnev) **89k:81043** 81C40 (17B70)
- Hussmann, Heinrich Nondeterministic algebraic specifications and nonconfluent term rewriting. *Algebraic and logic programming* (Gausig, 1988), 31–40, *Math. Res.*, 49, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) 68Q50
- Husty, M. (with Röschel, Otto) Eine affin-kinematische Erzeugung gewisser Flächen vierter Ordnung mit zerfallendem Doppelkegelschnitt. I. (English and Serbo-Croatian summaries) [An affine-kinematic generation of certain surfaces of fourth order with decomposing double conic. II] *Glas. Mat. Ser. III* **22**(42) (1987), no. 1, 143–156. (K. Strubecker) **89f:53010** 53A15
- (with Röschel, Otto) Eine affin-kinematische Erzeugung gewisser Flächen vierter Ordnung mit zerfallendem Doppelkegelschnitt. II. (English and Serbo-Croatian summaries) [An affine-kinematic generation of certain surfaces of fourth order with decomposing double conic. II] *Glas. Mat. Ser. III* **22**(42) (1987), no. 2, 429–447. (K. Strubecker) **89h:53031** 53A15
- Über eine symmetrische Schrotung mit einer Cayleyfläche als Grundfläche. [On a symmetrical helical displacement with a Cayley surface as basic surface] *Studia Sci. Math. Hungar.* **22** (1987), no. 1–4, 463–469. (K. Strubecker) **89a:53015** 53A17
- (with Röschel, Otto) On a particular class of cyclides in isotropic, respectively, pseudoisotropic space. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 531–557, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Hans Robert Müller) **89b:53025** 53A40 (51N25)
- Hut, R. (with Olsder, Geert J.) An application of adaptive optimal control. *Stochastic processes in physics and engineering* (Bielefeld, 1986), 185–192, *Math. Appl.*, 42, Reidel, Dordrecht-Boston, MA, 1988. (Ryszard Gessing) **89i:93105** 93E10 (93C40)
- Hutchinson, George (with Czédli, Gábor) An irregular Horn sentence in submodule lattices. *Acta Sci. Math. (Szeged)* **51** (1987), no. 1–2, 35–38. (Klaus Denecke) **89h:03051** 03C05 (06B99)
- Free word problems for additive relation algebras of modules. *J. Pure Appl. Algebra* **50** (1988), no. 2, 139–153. (H.-B. Brinkmann) **89g:08006** 08A50 (03D40)
- (with Fuller, Kent R.) Exact embedding functors and left coherent rings. *Proc. Amer. Math. Soc.* **104** (1988), no. 2, 385–391. (Wolfgang Grözl) **89k:16075** 16A89 (18E20)
- Hutchinson, Joan P. (with Albertson, Michael O.) ★ Discrete mathematics with algorithms. *John Wiley & Sons, Inc., New York*, 1988. xiv+546 pp. ISBN 0-471-84902-2 (D. A. Klarner) **89i:05001** 05-01 (68Q25)
- Hutchinson, John E. Some regularity theory for curvature varifolds. *Miniconference on geometry and partial differential equations*, 2 (Canberra, 1986), 60–66, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 12, Austral. Nat. Univ., Canberra, 1987. (Fang Hua Lin) **89b:49064** 49F20
- Huth, Gaylord K. (with Cheng, Unjeng) Bounds on the bit error probability of a linear cyclic code over  $GF(2^f)$  and its extended code. *IEEE Trans. Inform. Theory* **34** (1988), no. 4, 776–785. (Arne Dür) **89i:94049** 94B70 (94B05, 94B15, 94B35)
- Huthnance, E. Dennis (with Wardolf, Joe) On using primes for public key encryption systems. *Appl. Math. Lett.* **1** (1988), no. 3, 225–227. (Eric Bach) **89k:94046** 94A60 (11T71, 68P25)
- Hutson, H. L. On zero-dimensional rings of quotients and the geometry of minimal primes. *J. Algebra* **112** (1988), no. 1, 1–14. (W. V. Vasconcelos) **89a:13009** 13B30
- Hutson, V. (with Hofbauer, Josef; Jansen, Wolfgang) Coexistence for systems governed by difference equations of Lotka-Volterra type. *J. Math. Biol.* **25** (1987), no. 5, 553–570. (Andrius Abakus) **89a:92059** 92A17
- The stability under perturbations of repulsive sets. *J. Differential Equations* **76** (1988), no. 1, 77–90. (D. O. Logofet) **89k:92055** 92A15 (34D10, 58F10)
- Hutter, K. (with Hindmarsh, R. C. A.; Morland, L. W.; Boulton, G. S.) The unsteady plane flow of ice-sheets: a parabolic problem with two moving boundaries. *Geophys. Astrophys. Fluid Dynamics* **39** (1987), no. 3, 183–225. (Andrew C. Fowler) **89a:86013** 86A60
- Huttner, Marc Monodromie et approximation diophantienne d'une constante liée aux fonctions elliptiques. (English summary) [Monodromy and Diophantine approximation for a number linked to elliptic functions] *C. R. Acad. Sci. Paris Sér. I Math.* **304** (1987), no. 12, 315–318. (P. L. Cijouw) **89e:11107** 11J72
- Irrationalité de certaines intégrales hypergéométriques. [Irrationality of some hypergeometric integrals] *J. Number Theory* **26** (1987), no. 2, 166–178. (P. L. Cijouw) **89a:11072** 11J72 (11J82, 33A30)
- hoàng Hà'u Du'ng see Hoàng Hà'u Du'ng
- phạm Hà'u Sách see Phạm Hà'u Sách
- nguyễn Hà'u Việt Hu'ng see Nguyễn Hà'u Việt Hu'ng
- Huxley, Julian see Dronamraju, Krishna R., **89d:01059**
- nguyên xuân Huy see Nguyễn Xuân Huy
- Huygens, Christian see Fellmann, E. A., **89d:01020** and Mignard, F., **89d:01027**
- phan Huy Khai see Phan Huy Khai
- dinh van Huynh see Dinh Van Huynh
- Huyên, Dũng T. On solving hard problems by polynomial-size circuits. *Inform. Process. Lett.* **24** (1987), no. 3, 171–176. (Norbert Blum) **89a:68072** 68Q15 (03D15)
- (with Cho, Sang) On a complexity hierarchy between L and NL. *Inform. Process. Lett.* **29** (1988), no. 4, 177–182. (Marius Zimand) **89m:68038** 68Q15 (03D15)
- Huynh, Hsueh-Ling (with Hsiang, Wu-yi) Generalized rotational hypersurfaces of constant mean curvature in the Euclidean spaces. II. *Pacific J. Math.* **130** (1987), no. 1, 75–95. (C.-C. Hsiung) **89b:53089** 53C35 (53C40, 57R30, 57S30)
- nguyễn Huynh Phan see Nguyễn Huynh Phan
- nguyên Huy Việt see Nguyễn Huy Việt
- Hvostov, Harry (with Bentsman, Joseph; Fakhfakh, Jamel; Lehman, Bradley) Vibrational stabilization of linear systems with time delay. *Analysis and optimization of systems* (Antibes, 1988), 72–79, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89f:34105** 34K20
- Hwa, Terence (with Medina, Ernesto; Kardar, Mehran; Zhang, Yi Cheng) Burgers' equation with correlated noise: renormalization-group analysis and applications to directed polymers and interface growth. *Phys. Rev. A* (3) **39** (1989), no. 6, 3053–3075. (Summary) **89m:82027** 82A31 (76R50, 82A25, 82A51, 82A70)
- Hwang, C. C. (with Pan, Ching Tsai) Comparison of finite element methods for the diffusion problem. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1165–1179. (Summary) **89d:49030** 49D25 (65N30, 93B40, 93C20)
- Hwang, C. L. (with Ch'ên, Po Hsien) Adaptive control of optimal model matching in  $H^\infty$ -norm space. *Proc. IEEE-D* **135** (1988), no. 4, 295–301. (Summary) **89e:93139** 93C40 (93B35, 93D15)
- Hwang, C. S. (with Mohler, Ronald R.) Nonlinear data observability and information. *J. Franklin Inst.* **325** (1988), no. 4, 443–464. (Peng Nian Chen) **89j:93011** 93B07 (94A15)
- Hwang, Chyi see Huang, Ch'i
- Hwang, F. K. Networks with shortest paths. (Chinese) *Chinese J. Oper. Res.* **2** (1983), no. 2, 18–25. (Not in MR) 90B10 (05C35, 90B15)
- (with Christen, Claude A.) Detecting the two complementary defectives with a balance scale. *Comm. Statist. Theory Methods* **16** (1987), no. 10, 3025–3032. (H. Bandemer) **89a:05023** 05A99 (62N10, 94A13)
- (with Du, Ding Zhu; Song, Guo Dong; Ding, Ji Yu) Steiner minimal trees on sets of four points. *Discrete Comput. Geom.* **2** (1987), no. 4, 401–414. (H. N. Djidjev) **89b:05073** 05C05 (05C35)
- (with Xu, Yong Hua) Group testing to identify one defective and one mediocre item. *J. Statist. Plann. Inference* **17** (1987), no. 3, 367–373. (Krzysztof Szajowski) **89c:90063** 90B40 (05A05, 62C99, 90C40)
- (with Sós, Vera T.) Nonadaptive hypergeometric group testing. *Studia Sci. Math. Hungar.* **22** (1987), no. 1–4, 257–263. (G. K. Bhattacharyya) **89c:62133** 62K99 (05A15, 62F03)
- (with Yu, Jia En) The existence of symmetric skew balanced starters for odd prime powers. *European J. Combin.* **9** (1988), no. 2, 153–160. (Jeffrey H. Dinitz) **89e:05046** 05B10 (05B30)
- (with Chen, Robert W.) Stronger players win more balanced knockout tournaments. *Graphs Combin.* **4** (1988), no. 2, 95–99. (J. W. Moon) **89d:05061** 05C05 (05C20, 90D99)
- (with Cheng, Ying) Diameters of weighted double loop networks. *J. Algorithms* **9** (1988), no. 3, 401–410. (Summary) **89k:90051** 90B10 (68M10, 94C15)
- (with Du, Ding Zhu) Generalized de Bruijn digraphs. *Networks* **18** (1988), no. 1, 27–38. (S. L. Hakimi) **89d:05085** 05C20 (68M10)
- (with Zhang, Xian Mo; Weng, Jia Feng) Optimal detection of two defectives with a parity check device. *SIAM J. Discrete Math.* **1** (1988), no. 1, 38–44. (Santosh Kumar) **89g:90121** 90B25 (05A99, 90C40)
- (with Yao, Y.-C.) A fundamental monotonicity in group testing. *SIAM J. Discrete Math.* **1** (1988), no. 2, 256–259. (A. C. Cohen) **89e:90208** 90C39 (62N05, 90B40)
- Hwang, Hark (with Kim, Kap H.) An incremental discount pricing schedule with multiple customers and single price break. *European J. Oper. Res.* **35** (1988), no. 1, 71–79. (Summary) **89b:90037** 90A12
- Hwang, J. S. see Huang, Chin Hsiung
- Hwang, Jenn-Fang see Huang, Chen Fang
- Hwang, Jing Jiang (with Lee, Chung-Yee; Chow, Yuan-Chieh; Anger, Frank D.) Multiprocessor scheduling with interprocessor communication delays. *Oper. Res. Lett.* **7** (1988), no. 3, 141–147. (Summary) **89g:90130** 90B35
- Hwang, Jun Shung (with Lin, Kuo Tung) Nonlinear approximation and moment problem. *Nonlinear analysis*, 337–353, *World Sci. Publishing, Singapore*, 1987. (Dietrich Braess) **89c:41020** 41A30 (44A60)
- Hwang, Kai see Proceedings: Conference on Parallel Processing, **89b:68010**
- Hwang, Shin Feng (with Hsu, Sze Bi) Analysis of large deformation of a heavy cantilever. *SIAM J. Math. Anal.* **19** (1988), no. 4, 854–866. (D. Durban) **89k:73043** 73K05 (34B15)



- Hwang, Shyh-Hong** (with Chang, Hsueh-Chia) Turbulent and inertial roll waves in inclined film flow. *Phys. Fluids* 30 (1987), no. 5, 1259-1268. (Summary) **89a:76040** 76F99 (58F14)
- Hwang, Stephen** (with Marnelius, R.) Interacting bosonic strings in subcritical dimensions. *Phys. Lett. B* 206 (1988), no. 2, 205-210. (Summary) **89c:81130** 81E99 (81E30)
- Hwang, Suk Geon** On a conjecture of E. Dittler. *Linear Algebra Appl.* 95 (1987), 161-169. (G. P. Egorychev) **89b:15032** 15A48 (15A51)
- Hwang, Thong Shing** (with Yeh, Fang Bo) Optimal sensitivity bound estimation and controller design. *Internat. J. Control* 47 (1988), no. 4, 979-984. (Not in MR) **93B35** (93B28, 93B50)
- (with Yeh, Fang Bo) A computational algorithm for the super-optimal solution of the model matching problem. *Systems Control Lett.* 11 (1988), no. 3, 203-211. (Summary) **89c:93080** 93B40 (93B35, 93B50)
- (with Yeh, Fang Bo) Pitch pointing flight control system design in the frequency domain. *J. Guidance Control Dynamics* 12 (1989), no. 1, 116-119. (Not in MR) **93B28**
- nguyên phụ Hy** see **Nguyễn Phụ Hy**
- Hyde, S. T.** (with Lidin, Sven) A construction algorithm for minimal surfaces. (French summary) *J. Physique* 48 (1987), no. 9, 1585-1590. (Thomas E. Cecil) **89b:53024** 53A10
- Hyland, D. C.** (with Greeley, S. W.) Reduced-order compensation: linear-quadratic reduction versus optimal projection. *J. Guidance Control Dynamics* 11 (1988), no. 4, 328-335. (Not in MR) **49D40**
- (with Bernstein, Dennis S.) Optimal projection equations for reduced-order modelling, estimation, and control of linear systems with multiplicative white noise. *J. Optim. Theory Appl.* 58 (1988), no. 3, 387-409. (Joseph D. Cole) **89j:93104** 93E10 (93A15, 93E20)
- Hyman, James M.** Moving mesh methods for partial differential equations. *Mathematics applied to science* (New Orleans, La., 1986), 129-153, Academic Press, Boston, MA, 1988. (Dennis C. Jespersen) **89b:65224** 65M50
- (with Stanley, E. Ann) Using mathematical models to understand the AIDS epidemic. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* 90 (1988), no. 1-2, 415-473. (see **89c:92002**) **92A15** (92A07)
- (with Dougherty, Randall L.; Edelman, Alan) Nonnegativity-, monotonicity-, or convexity-preserving cubic and quintic Hermite interpolation. *Math. Comp.* 52 (1989), no. 186, 471-494. (Eli Passow) **89c:41006** 41A05 (65D05)
- Hyodo, Osamu** Wild ramification in the imperfect residue field case. *Galois representations and arithmetic algebraic geometry* (Kyoto, 1985/Tokyo, 1986), 287-314, *Adv. Stud. Pure Math.*, 12, North-Holland, Amsterdam-New York, 1987. (Thống Nguyễn-Quang-Dỗ) **89j:11116** 11S15
- A note on  $p$ -adic étale cohomology in the semistable reduction case. *Invent. Math.* 91 (1988), no. 3, 543-557. (Gerd Faltings) **89h:14017** 14F30 (11G45, 14F15, 19D45)
- Hyon, Chol** Integral for equation of plane nonlinear vortex motion and variational principle for vortex flow over spillway. (Korean. English summary) *Cho-sôn In-min Kong-hwa-kuk Kwa-hak-wôn T'ong-bo* 1987, no. 1, 9-13. (Summary) **89a:76020** 76C05
- Hyun, Ung** On connectedness of fuzzy topological space. (Korean. English summary) *Cho-sôn In-min Kong-hwa-kuk Kwa-hak-wôn T'ong-bo* 1988, no. 2, 8-9. (Not in MR) **54A40**
- Hyattia** see **Mueller, Ian**, (**89b:01071**)
- Hyun, S. J.** (with Günaydin, M.) Unitary lowest weight representations of the noncompact supergroup  $OSp(2n/2m, R)$ . *J. Math. Phys.* 29 (1988), no. 11, 2367-2376. (Hideki Omori) **89k:22037** 22E65 (22E47, 22E60, 22E70)
- I —
- Iachan, Ronaldo** Sampling strategies, robustness and efficiency: the state of the art. (French summary) *Internat. Statist. Rev.* 52 (1984), no. 2, 209-218. (Summary) **89b:62013** 62D05
- Iachello, F.** (with Wu, Jian Shi; Stahlhofen, A.; Biedenharn, L. C.) A group theoretical calculation of the  $S$  matrix for the Dirac-Coulomb problem. *J. Phys. A* 20 (1987), no. 14, 4637-4652. (R. G. Newton) **89b:81238** 81F99 (20C35, 22E70, 81C05)
- Iacob, Caius** On a subsonic jet problem. I. *Rev. Roumaine Sci. Tech. Sér. Méc. Appl.* 31 (1986), no. 6, 591-601. (Simona Popp) **89g:76030** 76G05
- Sur un théorème de géométrie des masses et quelques-unes de ses applications. [On a theorem in the geometry of masses and some of its applications] *Rev. Roumaine Math. Pures Appl.* 32 (1987), no. 10, 895-899. (George Bozis) **89c:70003** 70C99
- On a subsonic jet problem. II. *Rev. Roumaine Sci. Tech. Sér. Méc. Appl.* 32 (1987), no. 1, 3-21. (Simona Popp) **89g:76031** 76G05 (76B10, 76G20)
- Iacobucci, Dawn** (with Wasserman, Stanley) Statistical analysis of discrete relational data. *British J. Math. Statist. Psych.* 39 (1986), no. 1, 41-64. (Summary) **89g:92061** 92A20
- Iacono, R.** (with Succì, S.) Self-similar evolution of one-dimensional Fokker-Planck systems. *Phys. Rev. A* (3) 36 (1987), no. 10, 5020-5024. (Carlo Cercignani) **89c:82036** 82A40 (35C05)
- Iagolnitzer, D.** Scattering and short-distance properties in field theory models. *Mathematical quantum field theory and related topics* (Montreal, PQ, 1987), 169-180, *CMS Conf. Proc.*, 9, Amer. Math. Soc., Providence, RI, 1988. (see **89g:81002**) **81E08**
- sangsupuk-lam, Suwanchai** see **Sangsupuk-lam, Suwanchai**
- Iancu, C.** Sur une fonction spline cubique complexe. [On a certain complex cubic spline function] *Seminar on Numerical and Statistical Calculus (Cluj-Napoca, 1987)*, 73-84, Preprint, 87-9, Univ. "Babeş-Bolyai", Cluj-Napoca, 1987. (H. P. Dikshit) **89j:41015** 41A15 (41A05)
- (with Mustăţa, C.) Error estimation in the approximation of functions by interpolation cubic splines. *Mathematica (Cluj)* 29(52) (1987), no. 1, 33-39. (A. Bleyer) **89f:41012** 41A15 (65D07)
- Ianilo, N.** (with Triolo, L.) Stationary Boltzmann equation for a degenerate gas in a slab: boundary value problem and hydrodynamics. *J. Statist. Phys.* 51 (1988), no. 3-4, 677-690. (Luigia Arlotti) **89b:82020** 82A40 (76P05)
- Iannacci, Rita** (with Conti, Giuseppe) Some results on boundary value problems for multivalued differential equations. *Ann. Polon. Math.* 47 (1987), no. 3, 319-329. (B. L. Shekhter) **89c:34022** 34B15 (34A60)
- Iannace, Donatella** (with Starita, Giulio) On the operator  $(u_t - eu_{xx}) - (u_t - u_{xx})_{xx}$  related to thermomechanics of fluids. (Italian summary) *Meccanica—J. Ital. Assoc. Theoret. Appl. Mech.* 23 (1988), no. 1, 29-35. (Summary) **89j:76070** 76N15 (80A20)
- Iannelli, Angela** Analysis of a mathematical model associated with an astrophysical problem. (Italian) *Istit. Lombardo Accad. Sci. Lett. Rend. A* 119 (1985), 117-131 (1987). (Gh. Procopiuc) **89b:85004** 85A30
- Iannelli, Mimmo** (with Busenberg, Stavros; Cooke, Kenneth) Endemic thresholds and stability in a class of age-structured epidemics. *SIAM J. Appl. Math.* 48 (1988), no. 6, 1379-1395. (H. W. Hethcote) **89k:92048** 92A15 (35Q99)
- see also **Advanced topics in the theory of dynamical systems**, **89k:58076**
- Ianus, S.** (with Vişinescu, M.) Kaluza-Klein theory with scalar fields and generalised Hopf manifolds. *Classical Quantum Gravity* 4 (1987), no. 5, 1317-1325. (Paul Baird) **89a:83059** 83E15 (53C80, 58E20, 81E20)
- (with Matsumoto, Koji; Ornea, L.) Complex hypersurfaces of a generalized Hopf manifold. *Publ. Inst. Math. (Beograd) (N.S.)* 42(56) (1987), 123-129. (Paolo Piccinni) **89f:53079** 53C40 (53C55)
- Research on the geometry of complex hypersurfaces in Kähler manifolds. (Romanian) *Proceedings of the National Conference on Geometry and Topology (Romanian) (Tirgoviste, 1986)*, 117-126, Univ. Bucureşti, Bucharest, 1988. (I. Vaisman) **89k:53049** 53C40 (53C55)
- Iarrobino, A.** Tangent cone of a Gorenstein singularity. *Proceedings of the conference on algebraic geometry* (Berlin, 1985), 163-176, *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (Joan Elias) **89c:14002** 14B05 (13H10)
- Hilbert scheme of points: overview of last ten years. *Algebraic geometry*, Bowdoin, 1985 (Brunswick, Maine, 1985), 297-320, *Proc. Sympos. Pure Math.*, 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Joan Elias) **89b:14007** 14C05 (14C25)
- Iashvili, N. D.** The stability of the solutions of a second-order quasilinear partial differential equation. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzin. SSR* 125 (1987), no. 3, 477-480. (Summary) **89a:35029** 35B35 (35A35, 35Q20)
- Iasnogrodski, R.** (with Blanc, J. P. C.; Nain, Ph.) Analysis of the  $M/G/1 \rightarrow \cdot /M/1$  queueing model. *Queueing Systems Theory Appl.* 3 (1988), no. 2, 129-156. (Jacqueline Loris-Teghem) **89b:60184** 60K25 (90B22)
- Iba, Yukito** (with Akutsu, Yasuhiro; Kaneko, Kunihiko) Phase transitions in 2-dimensional stochastic cellular automata. *Science on form* (Sakura, 1985), 103-111, *Reidel, Dordrecht-Boston, MA*, 1987. (see **89g:82013**) **82A25** (58F08, 68Q80)
- Ibadov, Dzh. Kh.** The mathematical section of the encyclopedia *Collection of the sciences by Fakhr ad-Din al-Razi*. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1988, no. 3, 82-83, 92. (Jan P. Hogendijk) **89j:01014** 01A30
- Ibadov, N. V.** An approximation problem for the convolution equation in a space of analytic functions. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 10, 10-13, 74. (N. K. Karapetyants) **89b:30031** 30E10 (46F10, 47B38)
- Inhomogeneous systems of convolution equations in a class of analytic functions. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 1, 39-49, 222; translated in *Siberian Math. J.* 29 (1988), no. 1, 29-38. (Anthony G. O'Farrell) **89b:45009** 45F05 (30D05, 46E25)
- Ibañez, J.** (with Ferrari, V.) A new exact solution for colliding gravitational plane waves. *Gen. Relativity Gravitation* 19 (1987), no. 4, 383-404. (Summary) **89a:83013** 83C15 (83C35)
- (with Ferrari, V.) On the collision of gravitational plane waves: a class of soliton solutions. *Gen. Relativity Gravitation* 19 (1987), no. 4, 405-425. (Summary) **89a:83014** 83C15 (83C35)
- (with Di Prisco, A.; Herrera, L.; Jiménez, Juan Francisco; Galina, V.) The Bondi metric and conformal motions. *J. Math. Phys.* 28 (1987), no. 11, 2692-2696. (Summary) **89b:83007** 83C15 (83C40)
- (with Ferrari, V.) Type-D solutions describing the collision of plane-fronted gravitational waves. *Proc. Roy. Soc. London Ser. A* 417 (1988), no. 1853, 417-431. (Nora Bretón Báez) **89f:83048** 83C35 (83C15, 83C20, 83C75)
- Ibáñez, L. E.** (with Mas, Javier; Nilles, H. P.; Quevedo, F.) Heterotic strings in symmetric and asymmetric orbifold backgrounds. *Nuclear Phys. B* 301 (1988), no. 1, 157-196. (Andrew A. Bytsenko) **89f:81183** 81E99 (22E40, 81E30)
- (with Font, A.; Nilles, H. P.; Quevedo, F.) Degenerate orbifolds. *Nuclear Phys. B* 307 (1988), no. 1, 109-129. (C. Gauthier) **89j:81179a** 81E99 (81E30, 81G20, 83E30)
- (with Font, A.; Nilles, H. P.; Quevedo, F.) Erratum: "Degenerate orbifolds". *Nuclear Phys. B* 310 (1988), no. 3-4, 764. (C. Gauthier) **89j:81179b** 81E99 (81E30, 81G20, 83E30)
- (with Font, A.; Nilles, H. P.; Quevedo, F.) Yukawa couplings in degenerate orbifolds: towards a realistic  $SU(3) \times SU(2) \times U(1)$  superstring. *Phys. Lett. B* 210 (1988), no. 1-2, 101-112. (Summary) **89m:81139a** 81E99 (81E30, 81G20, 83E30)
- (with Font, A.; Nilles, H. P.; Quevedo, F.) Errata: "Yukawa couplings in degenerate orbifolds: towards a realistic  $SU(3) \times SU(2) \times U(1)$  superstring". *Phys. Lett. B* 213 (1988), no. 4, 564. (Editors) **89m:81139b** 81E99 (81E30, 81G20, 83E30)
- de campos Ibáñez, Luis Miguel** see **Campos Ibáñez, Luis Miguel**
- Ibaraki, Toshihide** (with Morioka, Tsutomu; Ohnishi, Masamitsu) Optimal inspection and replacement problem of Markovian deterioration system and its computational algorithms. *Reliability theory and applications* (Shanghai, X'ian, Beijing, 1987), 245-254, *World Sci. Publishing, Singapore*, 1987. (S. Kalpakam) **89e:90116** 90B25 (90C32, 90C40)
- (with Katoh, Naoki) ★ Resource allocation problems. Algorithmic approaches. MIT Press Series in the Foundations of Computing. MIT Press, Cambridge, MA-London, 1988, xvi+229 pp. ISBN 0-262-09027-9 (Jan Weglarz) **89c:90179** 90C30 (65K05, 68-02, 68Q25, 68Q30, 90B50)
- (with Tanaka, Yoshihiro; Fukushima, Masao) A comparative study of several semi-infinite nonlinear programming algorithms. *European J. Oper. Res.* 36 (1988), no. 1, 92-100. (K. Schittkowski) **89b:90217** 90C30
- (with Itoh, Takehisa; Fukushima, Masao) An iterative method for variational inequalities with application to traffic equilibrium problems. (Japanese summary) *J. Oper. Res. Soc. Japan* 31 (1988), no. 1, 82-104. (Summary) **89c:90097** 90B20 (65K05)
- (with Yamasaki, Hiroshi; Hirata, Tomio; Imai, Masaharu) Computational complexity of the file allocation problem in distributed database systems. *Systems Comput. Japan* 19 (1988), no. 3, 53-63. (Summary) **89d:68011** 68P15 (68Q15)

- Ibarra, Oscar H.** (with Ravikumar, Bala) Relating the degree of ambiguity of finite automata to the succinctness of their representation. *Foundations of software technology and theoretical computer science* (Pune, 1987), 26–43, *Lecture Notes in Comput. Sci.*, 287, Springer, Berlin-New York, 1987. (Summary) **89a:68052** 68Q05 (68Q15, 68Q45)
- (with Palis, Michael A.) On efficient simulations of systolic arrays by random-access machines. *SIAM J. Comput.* **16** (1987), no. 2, 367–377. (Summary) **89c:68026** 68Q05 (68Q25)
- (with Jiang, Tao) On one-way cellular arrays. *SIAM J. Comput.* **16** (1987), no. 6, 1135–1154. (Karel Culik II) **89a:68166** 68Q80 (68Q05)
- (with Chang, Jik H.; Ravikumar, Bala) Erratum: "Some observations concerning alternating Turing machines using small space" [*Inform. Process. Lett.* **25** (1987), no. 1, 1–9; MR **88e:68026**] by the authors and L. Berman. *Inform. Process. Lett.* **27** (1988), no. 1, 53. (Editors) **89a:68048** 68Q05 (03D10, 03D15, 68Q15)
- (with Jiang, Tao; Ravikumar, Bala) Some subclasses of context-free languages in  $NC^1$ . *Inform. Process. Lett.* **29** (1988), no. 3, 111–117. (Summary) **89j:68055** 68Q15 (68Q45)
- (with Chang, Jik H.; Vergis, Anastasios) On the power of one-way communication. *J. Assoc. Comput. Mach.* **35** (1988), no. 3, 697–726. (D. M. Campbell) **89j:68037** 68Q05 (68Q45)
- (with Ravikumar, Bala) Sublogarithmic-space Turing machines, nonuniform space complexity, and closure properties. *Math. Systems Theory* **21** (1988), no. 1, 1–17. (Wen Qi Huang) **89i:68030** 68Q05 (03D15, 68Q15)
- (with Jiang, Tao) Relating the power of cellular arrays to their closure properties. *Theoret. Comput. Sci.* **57** (1988), no. 2–3, 225–238. (Summary) **89b:68111** 68Q80 (68Q45)
- Iblejuga, M. A.** (with Bamigbola, O. M.; Onumanyi, P.) Higher order Chebyshev basis functions for two-point boundary value problems. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 2, 313–327. (Summary) **89i:65124** 65L10
- (with Rubio, J. E.) A penalty optimization technique for a class of regulator problems. *J. Optim. Theory Appl.* **58** (1988), no. 1, 39–62. (S. Raczynski) **89k:49025** 49D40 (49D07, 49D30, 65K10, 93B40)
- Ibn al-Haitam** see **Ibn al-Haytham, Hasan**
- Ibn al-Haytham, Hasan** see **Ibn al-Haytham, Hasan**
- Ibn al-Naqqas al-Zarqalluh** see **al-Naqqas, Abd Ishah Ibrahim b. Yahya**
- Ibn al-Samh, Abd-I-Qasim Ashbag ibn Muhammad** see **Ibn al-Samh, Abd-I-Qasim Ashbag ibn Muhammad**
- Ibn Fallus, Isma'il b. Ibrahim** see **Ibn Fallus, Isma'il b. Ibrahim**
- Ibn Sina, Abu 'Ali al-Husayn** see **Said, Hakim Mohammed**, **89c:01083**
- Ibn Yunus** see **Ibn Yunus, 'Ali b. 'Abd al-Rahman**
- Ibn Yunus, 'Ali b. 'Abd al-Rahman** see **Ibn Yunus, 'Ali b. 'Abd al-Rahman**
- Ibort, Luis A.** Reduction of degenerate Lagrangians and the symplectic reduction theorem. *The physics of phase space* (College Park, Md., 1986), 372–374, *Lecture Notes in Phys.*, 278, Springer, Berlin-New York, 1987. (José F. Cariñena) **89b:58076** 58F05 (53C80)
- (with Cariñena, José F.; Lacomba, Ernesto A.) Time scaling as an infinitesimal canonical transformation. *Celestial Mech.* **42** (1987/88), no. 1–4, 201–213. (Mark J. Gotay) **89m:70031** 70H15 (53C57, 58F05, 70F15, 70H05)
- (with Cariñena, José F.) Noncanonical groups of transformations, anomalies, and cohomology. *J. Math. Phys.* **29** (1988), no. 3, 541–545. (Manfred Andrie) **89c:58042** 58F05 (58F06, 70G35, 70H05, 70H35)
- Ibragimov, F. I.** (with Orudzhiev, G. A.) Domain of convergence of some improper Stieltjes integrals with application to problems of interpolation [Reviewed in *RZhMat* 1982:11 B126]. (Russian) *Special problems in function theory*, No. 2 (Russian), 157–183, "Elm", Baku, 1980. (see **89f:30004**) 30E05
- (with Ibragimov, I. I.) Multiple completeness in the mean, in the sense of M. V. Keldysh, of a function of a real variable. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 2, 3–9. (Summary) **89g:42049** 42C30
- (with Ibragimov, I. I.) Multiple completeness in the sense of M. V. Keldysh of some systems of entire functions. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 4, 788–791; translated in *Soviet Math. Dokl.* **36** (1988), no. 2, 317–320. (A. A. Shkalikov) **89g:30008** 30B60 (30D20)
- Ibragimov, G. I.** (with Rikhsiev, B. B.) On a problem of group pursuit with fixed termination time. (Russian) *Equations of mixed type and free boundary value problems* (Russian), 238–246, 254–255, "Fan", Tashkent, 1987. (Summary) **89b:90252** 90D26 (49A45)
- On the representation of analytic functions of two variables in a product of infinite convex domains by Dirichlet series. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 6, 711–716, 813. (P. Agranovich) **89c:32001** 32A05
- Representation of analytic functions in a closed polydomain by Dirichlet series. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 2, 194–199, 220; translated in *Siberian Math. J.* **29** (1988), no. 2, 315–319. (P. Agranovich) **89h:32001** 32A05 (30B50)
- Ibragimov, I. A.** A probabilistic analogue of a theorem of Córdoba and Fefferman. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 1, 147–149; translated in *Theory Probab. Appl.* **33** (1988), no. 1, 137–139. (Dominique Lépingle) **89g:60161** 60G46
- Ibragimov, I. I.** (with Akhmedov, T. G.) The domain of convergence of a Laurent-Dirichlet series with complex exponents [Reviewed in *RZhMat* 1978:3 B186]. (Russian) *Special problems in function theory* (Russian), 31–45, "Elm", Baku, 1977. (see **89f:30003**) 30B50
- (with Gadzhiev, A. D.) Rate of convergence of singular integrals of I. I. Pivovarov type in the complex domain [Reviewed in *RZhMat* 1978:3 B87]. (Russian) *Special problems in function theory* (Russian), 46–57, "Elm", Baku, 1977. (see **89f:30003**) 30E20
- (with Gadzhiev, A. D.) A general sequence of positive linear operators in a space of continuous functions [Reviewed in *RZhMat* 1978:5 B62]. (Russian) *Special problems in function theory* (Russian), 58–71, "Elm", Baku, 1977. (see **89f:30003**) 41A36
- (with Kasimov, E. I.) A basis system of analytic functions and its application to the convergence of an Abel-Goncharov interpolation process [Reviewed in *RZhMat* 1978:2 B70]. (Russian) *Special problems in function theory* (Russian), 72–83, "Elm", Baku, 1977. (see **89f:30003**) 30E05
- (with Shikhaliev, N. I.) Best approximation in the mean of analytic functions in the space  $A_p(|z| < 1)$  [Reviewed in *RZhMat* 1978:5 B82]. (Russian) *Special problems in function theory* (Russian), 84–96, "Elm", Baku, 1977. (see **89f:30003**) 30E10
- (with Mamedkhanov, Dzhi. I.) Constructive characterization on closed sets in the complex plane [Reviewed in *RZhMat* 1983:1 B107]. (Russian) *Special problems in function theory*, No. 2 (Russian), 51–62, "Elm", Baku, 1980. (see **89f:30004**) 30E10
- (with Nagnibida, N. I.) Multiple completeness and the property of being a basis of systems of analytic functions [Reviewed in *RZhMat* 1982:11 B115]. (Russian) *Special problems in function theory*, No. 2 (Russian), 63–81, "Elm", Baku, 1980. (see **89f:30004**) 30H05
- (with Shikhaliev, N. I.) Best polynomial approximation of analytic functions of class  $E_p$  [Reviewed in *RZhMat* 1982:11 B124]. (Russian) *Special problems in function theory*, No. 2 (Russian), 82–103, "Elm", Baku, 1980. (see **89f:30004**) 30E10
- (with Ibragimov, F. I.) Multiple completeness in the mean, in the sense of M. V. Keldysh, of a function of a real variable. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 2, 3–9. (Summary) **89g:42049** 42C30
- (with Ibragimov, F. I.) Multiple completeness in the sense of M. V. Keldysh of some systems of entire functions. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 4, 788–791; translated in *Soviet Math. Dokl.* **36** (1988), no. 2, 317–320. (A. A. Shkalikov) **89g:30008** 30B60 (30D20)
- see also **Special problems in function theory**, **89f:30003** and **89f:30004**
- Ibragimov, N. Kh.** (with Akhatov, I. Sh.; Gazizov, R. K.) Quasilinear symmetries of equations in mathematical physics. (Russian) *Mathematical modeling* (Russian), 22–56, 280, "Nauka", Moscow, 1987. (B. G. Konopelchenko) **89h:58211** 58G35 (35A30, 35Q20)
- (with Baikov, V. A.; Gazizov, R. K.) Formal symmetries and Bäcklund transforms. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 226, 28 pp. (Summary) **89i:58120** 58G35 (35A30, 35Q20, 58G37)
- (with Akhatov, I. Sh.; Gazizov, R. K.) Fundamental types of invariant equations in one-dimensional gas dynamics. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 49, 26 pp. (Summary) **89j:58145** 58G35 (35L65, 58G37, 76N15)
- (with Baikov, V. A.; Gazizov, R. K.) Approximate group analysis of the equation  $u_{tt} - (f(u)u_x)_x + \varphi(u)u_t = 0$ . (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 68, 27 pp. (Summary) **89h:35015a** 35A30 (22E05, 35L70, 58G35)
- (with Baikov, V. A.; Gazizov, R. K.) Approximate group analysis of the nonlinear equation  $u_{tt} - (f(u)u_x)_x + \varphi(u)u_t = 0$ . (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1127–1138, 1283; translated in *Differential Equations* **24** (1988), no. 7, 719–728. (Summary) **89h:35015b** 35A30 (22E05, 35L70, 58G35)
- (with Baikov, V. A.; Gazizov, R. K.) Approximate symmetries. (Russian) *Mat. Sb. (N.S.)* **136**(178) (1988), no. 4, 435–450, 590. (J. Christina) **89k:35013** 35A30 (35Q20, 58G35)
- Ibragimov, R.** (with Mashrabbaev, A.) A lemma for branching processes with immigration. (Russian) *Investigations in degenerate differential equations and limit theorems of probability theory* (Russian), 56–57, Tashkent. Gos. Ped. Inst., Tashkent, 1985. (see **89f:60002**) 60J80
- Ibragimov, V. A.** (with Nifagin, V. A.) Convergence of the expansion method with respect to the loading parameter in problems of elastoplastic deformation of rods. (Russian) *Teoret. i Prikl. Mekh. (Minsk)* **15** (1988), 50–58. (Not in MR) 70–08 (73F30, 73K05)
- Ibrahim, Essam Y.** (with Lovass-Nagy, V.; Mukundan, Rangaswamy; Schilling, Robert J.) Free final-time optimal control of descriptor systems. *Internat. J. Control* **48** (1988), no. 1, 407–416. (Kenneth D. Clark) **89g:49033** 49B34 (49B05, 49D40, 93C30)
- Ibrahim, M. A.** see **Ibrahim, Mohamed A.**
- Ibrahim, M. A.-K.** (with Shamardan, A. B.; Yousef, Y. K.) On the numerical solution of singularly perturbed parabolic partial differential equations. *J. Natur. Sci. Math.* **27** (1987), no. 1, 41–50. (John Stephenson) **89b:65233** 65M99 (65N99)
- (with El-Gendi, S. E.; Shamardan, A. B.) The numerical treatment of a singular integro-differential equation arising from the diffusion of discrete particles in a turbulent fluid. *J. Natur. Sci. Math.* **28** (1988), no. 1, 95–106. (Summary) **89c:65149** 65R20 (76–08)
- Ibrahim, M. K.** (with Goutis, C. E.) New recursive algorithm for maximum likelihood Toeplitz covariance matrix estimation. *Mathematics in signal processing* (Bath, 1985), 543–553, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (see **89b:94004**) 94A11
- Ibrahim, Mohamed A.** (with Mishref, M. A. A.) Nilpotency of multiple extensions of finite groups. (Arabic summary) *Proc. Math. Phys. Soc. Egypt* **59** (1985), 177–181 (1987). (Summary) **89c:20067** 20F18
- (with Tawakkol, F.) Conditions of generalized nilpotency in classes of groups. (Arabic summary) *Proc. Math. Phys. Soc. Egypt* **60** (1985), 31–36 (1987). (Pin Chao Wang) **89c:20068** EA **89m** 20F19
- Ibrahim Hamouda, Kamal el din** (with Yehia, A. Y.) Analyse factorielle d'une mesure de probabilité continue sur trapèze. (English and Arabic summaries) [Factor analysis of a continuous probability measure on a trapezium] *Proc. Math. Phys. Soc. Egypt* **59** (1985), 201–214 (1987). (E. H. Lehman) **89i:62106** 62H99
- Ibraimkulov, A. M.** Spectral properties of a boundary value problem for an equation with a deviating argument. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat. Nauk*, **1988**, no. 3, 22–25. (S. A. Brykalov) **89j:34096** 34K10 (34B25)
- Icart, S.** (with Lafay, J. F.) Design of a minimal precompensator for the decoupling problem. *Systems Control Lett.* **10** (1988), no. 5, 325–332. (Summary) **89c:93042** 93B50 (49D27, 93B40)
- Ichihara, Kanji** Comparison theorems for Brownian motions on Riemannian manifolds and their applications. *J. Multivariate Anal.* **24** (1988), no. 2, 177–188. (Jacques Vauthier) **89c:58142** 58G32 (58G11, 60F15, 60J65)
- Ichihashi, H.** (with Tanaka, Hideo) A fuzzy fault test formulated by a class of fuzzy measures. *Bull. Univ. Osaka Prefect. Ser. A* **35** (1986), no. 2, 181–193 (1987). (Summary) **89k:03068** 03E72 (28E10, 90B25, 94D05)
- (with Tanaka, Hideo; Asai, Kiyoji) Fuzzy integrals based on pseudo-additions and multiplications. *J. Math. Anal. Appl.* **130** (1988), no. 2, 354–364. (Introduction) **89m:28039** 28E10 (03E72)
- (with Inuiguchi, Masahiro; Tanaka, Hideo) Fuzzy linear programming using a multiattribute value function. (Japanese. English summary) *J. Oper. Res. Soc. Japan* **31** (1988), no. 1, 121–142. (Summary) **89b:90126** 90C05 (03E72, 90A10)
- Ichilshi, Tatsuro** Strong equilibria. *Nonlinear and convex analysis* (Santa Barbara, Calif., 1985), 107–125, *Lecture Notes in Pure and Appl. Math.*, 107, Dekker, New York, 1987. (G. van der Laan) **89a:90166** 90D12
- Strong equilibria of a repeated game with randomized strategies. *Math. Social Sci.* **14** (1987), no. 3, 201–224. (Hans Keiding) **89f:90207** 90D12
- Core-like solutions for games with probabilistic choice of strategies. *Math. Social Sci.* **15** (1988), no. 1, 51–60. (T. Parthasarathy) **89k:90204** 90D30 (90D12)



- Ichijō, Yoshihiro** On the Finsler group and an almost symplectic structure on a tangent bundle. *J. Math. Kyoto Univ.* **28** (1988), no. 1, 153–163. (Makoto Matsumoto) **89c:53054** 53C60 (58F05)
- Ichikawa, Akira** (with Da Prato, G.) Bounded solutions on the real line to nonautonomous Riccati equations. (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **79** (1985), no. 5, 107–112 (1986). (H. J. Kuiper) **89d:34098** 34G10 (47A62)
- Bounded solutions and periodic solutions of a linear stochastic evolution equation. *Probability theory and mathematical statistics* (Kyoto, 1986), 124–130, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (Ludwig Arnold) **89f:60061** 60H10
- Stability and control of linear periodic systems. *System modelling and optimization* (Tokyo, 1987), 70–79, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (Daoyi Xu) **89k:49016** 49B27 (49D50, 93E20)
- (with Da Prato, G.) Quadratic control for linear periodic systems. *Appl. Math. Optim.* **18** (1988), no. 1, 39–66. (Francesco Zirilli) **89e:49029** 49D50 (93C05, 93E20)
- Ichikawa, Atsunobu** (with Hiraishi, Kunihiko) Analysis and control of discrete event systems represented by Petri nets. *Discrete event systems: models and applications* (Sopron, 1987), 115–134, *Lecture Notes in Control and Inform. Sci.*, 103, Springer, Berlin-New York, 1988. (see **89a:00019**) 68Q90
- Ichikawa, K.** Deadbeat characteristic of one-step-ahead control. *Internat. J. Control* **49** (1989), no. 1, 25–31. (Summary) **89m:93018** 93B25 (93C55)
- Ichikawa, Takashi** On algebraic groups of Mumford-Tate type. *Galois representations and arithmetic algebraic geometry* (Kyoto, 1985/Tokyo, 1986), 249–258, *Adv. Stud. Pure Math.*, 12, North-Holland, Amsterdam-New York, 1987. (Kenneth A. Ribet) **89f:14050** 14L10 (11G10, 11G15)
- Ichikawa, Yoshi Hiko** (with Abe, Yoshihiko) A note on Alfvén solitons. Recent developments in soliton theory. *Progr. Theoret. Phys. Suppl.* No. 94 (1988), 128–137. (Summary) **89k:35214** 35Q20 (76X05)
- Ichimori, Tetsuo** (with Fujishige, Satoru; Katoh, Naoki) The fair resource allocation problem with submodular constraints. *Math. Oper. Res.* **13** (1988), no. 1, 164–173. (Rainer Burkard) **89f:90094** 90C10 (90B99)
- (with Maeda, Shigeru) Unimodality of certain functions of several variables. *Onsearch* **25** (1988), no. 1, 61–64. (Jack B. Brown) **89b:26017** 26B25 (26B35, 90C05, 90C30)
- Ichimura, Atsushi** (with Nagai, Yoshinori; Tsuchiya, Takashi) Pearson-walk visualization of the characteristic function of the invariant measure for  $\text{Id}$  chaos. *Phys. A* **150** (1988), no. 1, 40–53. (Yong Nian Huang) **89b:58129** 58F13 (26A18, 58F08, 58F11, 82A99)
- Ichimura, Hideo** Time-like and space-like curves in Frenet-Serret formalisms. Dissertation, University of Windsor, Windsor, Ont., 1985. *Hadronic J. Suppl.* **3** (1987), no. 1, vi+94 pp. (J. D. Zund) **89b:53027** 53A45 (53A50, 83C99)
- Ichimura, Humio** On the class groups of pure function fields. *Proc. Japan Acad. Ser. A Math. Sci.* **64** (1988), no. 5, 170–173. (Xianke Zhang) **89m:11111** 11R58
- Ichimura, Minoru** (with Asano, Chooichiro) Runs and ties test applicable to finite discrete sequences. *Math. Japon.* **32** (1987), no. 4, 583–597. (A. L. Nagar) **89b:65022** 65C10
- Ichino, Shoichi** (with Abe, Mitsuo; Nakanishi, Noboru) Kerr metric, de Donder condition and gravitational energy density. *Progr. Theoret. Phys.* **78** (1987), no. 5, 1186–1201. (Enric Verdaguer) **89c:83028** 83C30 (83C15)
- Background-field approach to extended string theory. *Phys. Lett. B* **209** (1988), no. 4, 461–463. (Herbert Neuberger) **89b:81194** 81E99 (81E30)
- Ichino, Takashi** Path integral for a Weyl quantized relativistic Hamiltonian and the non-relativistic limit problem. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 205–210, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Summary) **89b:81061** 81C35
- (with Tamura, Hiroshi) Path integral approach to relativistic quantum mechanics. Two-dimensional Dirac equation. *Progr. Theoret. Phys. Suppl.* No. 92 (1987), 144–175. (Takashi Miura) **89e:81042** 81C35 (35Q20, 81G10)
- (with Tamura, Hiroshi) A remark on path integral for the Dirac equation. Functional integration with emphasis on the Feynman integral (Sherbrooke, PQ, 1986). *Rend. Circ. Mat. Palermo* (2) **Suppl. No. 17 (1987), 237–248 (1988). (M. Demuth) **89b:81052** 81C35**
- (with Tamura, Hiroshi) The Zitterbewegung of a Dirac particle in two-dimensional space-time. *J. Math. Phys.* **29** (1988), no. 1, 103–109. (Takashi Miura) **89e:81043** 81C35 (81G10)
- Ichino, Wataru** On  $L^2$  well posedness of the Cauchy problem for Schrödinger type equations on the Riemannian manifold and the Maslov theory. *Duke Math. J.* **56** (1988), no. 3, 549–588. (Jean Leray) **89g:58203** 58G17 (35J10, 35Q20)
- Ichimiyagi, M.** (with Ojima, I.; Hasegawa, Hiroshi) Entropy production and its positivity in nonlinear response theory of quantum dynamical systems. *J. Statist. Phys.* **50** (1988), no. 3–4, 633–655. (H. Araki) **89m:82015** 82A15 (46L55, 46N05)
- Ichliaroglou, S.** (with Bozis, G.) Existence and construction of dynamical systems having a prescribed integral of motion—an inverse problem. *Inverse Problems* **3** (1987), no. 2, 213–227. (Elisa Udeschini-Brinis) **89a:58039** 58F05 (34A55, 34C40, 70H99)
- (with Voyatzis, G.) Integrable potentials with logarithmic integrals of motion. *J. Phys. A* **21** (1988), no. 18, 3537–3546. (P. G. L. Leach) **89k:70019** 70F05 (58F07)
- Ida, Monica** A remark on the algebraic deformations of some complex structures. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 5–6, 329–331. (L. Bădescu) **89c:14050** 14A40 (14D15, 32G13)
- (with Manaresi, Mirella) Rank two vector bundles on  $\mathbb{P}^n$  uniform with respect to some rational curves. *Arch. Math. (Basel)* **51** (1988), no. 3, 266–273. (Jean-Marc Drezet) **89i:14011** 14F05
- Idczak, Włodzimierz** (with Winnicki, I.) Stability and convergence of a numerical method applied to the dynamics of inelastic membranes. (Polish. English and Russian summaries) *Rozprawy Inst.* **35** (1987), no. 3, 405–422. (Summary) **89d:73001** 73–08 (73K15)
- Idé, Toyonari** (with Takayama, Akira) Scale economies, perverse comparative statics results, the Marshallian stability and the long-run equilibrium for a small open economy. *Econom. Lett.* **27** (1988), no. 3, 257–263. (Summary) **89g:90070** 90A15 (90A14)
- (with Takayama, Akira) Marshallian stability, long-run equilibrium and the pattern of specialization under factor-market distortions in the pure theory of international trade. *Econom. Lett.* **27** (1988), no. 3, 265–270. (Summary) **89g:90071** 90A15 (90A14)
- Idemen, Mithat** (with Akduman, Ibrahim) Some geometrical inverse problems connected with two-dimensional static fields. *SIAM J. Appl. Math.* **48** (1988), no. 3, 703–718. (Erich Miersmann) **89b:35338** 35R30 (30C20, 35J25, 35R35)
- Ider, S. K.** (with Amirouche, F. M. L.; Jia, T.) A recursive Householder transformation for complex dynamical systems with constraints. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 3, 729–734. (Summary) **89g:70003** 70–08 (70B15, 70E99)
- (with Amirouche, F. M. L.) Coordinate reduction in the dynamics of constrained multibody systems—a new approach. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 4, 899–904. (Summary) **89m:70003** 70B15 (15A21, 70–04, 70F20, 70F25)
- Idrisov, Zh. M.** (with Bliev, N. K.) On a general boundary value problem for an elliptic system of first-order equations on the plane, in fractional spaces. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1987**, no. 3, 19–23. (Ai Nong Fang) **89k:35074** 35J55
- Idris, G. M.** On the problem of the mathematization of the science of science (axiomatic bases). (Russian) *The philosophy and sociology of science and technology* (Russian), 114–136, “Nauka”, Moscow, 1987. (A. A. Mullin) **89c:00049** 00A25 (03A05)
- al-Idrisi, Abu 'Abdallah Muhammad al-Sharif** see Kennedy, E. S., **89d:01011**
- Idrissi, H.** (with Loridan, P.; Michelot, C.) Approximation of solutions for location problems. *J. Optim. Theory Appl.* **56** (1988), no. 1, 127–143. (James G. Morris) **89e:90085** 90B10 (90C10)
- Janati-Idrissi, M.** see Janati-Idrissi, M.
- Idziak, Katarzyna** (with Idziak, Paweł M.) Decidability problem for finite Heyting algebras. *J. Symbolic Logic* **53** (1988), no. 3, 729–735. (S. Comer) **89m:03010** 03B25 (03G25, 08B99)
- Idziak, Paweł M.** Undecidability of free pseudocomplemented semilattices. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 3, 559–564. (H. P. Sankappanavar) **89a:06013** 06A12 (03D35)
- Undecidability of free pseudocomplemented distributive lattices. *Rep. Math. Logic* **No. 21** (1987), 97–100 (1988). (S. Comer) **89g:06026** 06D15 (03D35)
- Undecidability of relatively free Hilbert algebras. *Algebra Universalis* **25** (1988), no. 1, 17–26. (Marek Palasiński) **89c:03074** 03D35 (03G25, 06D99)
- Reduced subpowers and the decision problem for finite algebras in arithmetical varieties. *Algebra Universalis* **25** (1988), no. 3, 365–383. (S. Comer) **89k:08005** 08B25 (03B25, 03C13)
- (with Idziak, Katarzyna) Decidability problem for finite Heyting algebras. *J. Symbolic Logic* **53** (1988), no. 3, 729–735. (S. Comer) **89m:03010** 03B25 (03G25, 08B99)
- Idzik, Adam** On  $\gamma$ -almost fixed point theorems. The single-valued case. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 7–8, 461–464. (Olga Hadžić) **89f:47085** 47H10
- A dynamic production and consumption model. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 4, 674–679. (Bojan Popović) **89e:90056** 90A14 (90A16, 90D10)
- Characterizations of  $m$ -connected graphs. Proceedings of the International Conference on Combinatorial Analysis and its Applications (Poznań, 1985). *Zastos. Mat.* **19** (1987), no. 3–4, 443–448 (1988). (I. Ya. Gusak) **89k:05091** 05C75 (05C40)
- Almost fixed point theorems. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 779–784. (S. Swaminathan) **89f:47108** 47H10 (54H25, 55M20)
- Iengo, R.** (with Aldazabal, Gerardo; Bonini, M.; Núñez, Carmen) Intrinsic normal-ordered vertex operators from the multiloop  $N$ -tachyon amplitude. *Phys. Lett. B* **199** (1987), no. 1, 41–48. (Summary) **89b:81158** 81E99 (81E30)
- (with Bonini, M.) Correlation functions and zero modes on higher genus Riemann surfaces. *Internat. J. Modern Phys. A* **3** (1988), no. 4, 841–860. (Olaf Lechtenfeld) **89b:81169** 81E99 (14H15, 81E30, 81E40)
- (with Ivanov, B. V.) Fermionization of chiral string determinants in factorizable metrics. *Phys. Lett. B* **203** (1988), no. 1–2, 89–95. (Summary) **89m:81146** 81E99 (81E30)
- Ieşan, D.** ★ Saint-Venant's problem. *Lecture Notes in Mathematics*, 1279, Springer-Verlag, Berlin-New York, 1987. viii+162 pp. ISBN 3-540-18361-2 (Stan Chiriță) **89g:73012** 73C20 (73–02, 73C10, 73C25, 73C30)
- A theory of initially stressed thermoelastic materials with voids. *An. Ştiinţ. Univ. “Al. I. Cuza” Iaşi Sect. I a Mat. (N.S.)* **33** (1987), no. 2, 167–184. (From the introduction) **89c:73093** 73U05 (73C25)
- Plane strain problems in piezoelectricity. *Internat. J. Engrg. Sci.* **25** (1987), no. 11–12, 1511–1523. (Gérard A. Maugin) **89c:73076** 73R05 (73C15)
- Continuous dependence, uniqueness and existence theorems in nonlinear theory of elastic materials with voids. *Rev. Roumaine Sci. Tech. Sér. Méc. Appl.* **32** (1987), no. 4, 351–363. (Reza Malek-Madani) **89c:73034** 73G05 (73C50)
- Initially stressed thermoelastic dielectrics. *J. Thermal Stresses* **11** (1988), no. 4, 421–441. (N. Gass) **89j:73094** 73R05 (49H05, 73U05)
- Ievlev, I. I.** (with Popova, L. N.) Numerical determination of the interface of fluid dielectrics in an electrical field. (Russian) *Vestnik Khar'kov. Gos. Univ.* No. 298 *Mat. Mekh. i Voprosy Uprav.* (1987), 19–25. (From the text) **89c:78002** 78–08
- Ifantis, E. K.** On the convergence of power series whose coefficients satisfy a Poincaré-type linear and nonlinear difference equation. *Complex Variables Theory Appl.* **9** (1987), no. 1, 63–80. (A. B. Buche) **89b:39005** 39A10 (39A70, 47B39)
- (with Siafarikas, P. D.) Bounds for the first positive zero of a mixed Bessel function. *J. Comput. Appl. Math.* **21** (1988), no. 2, 245–249. (Boro Döring) **89i:33010** 33A40
- (with Siafarikas, P. D.) A differential equation for the positive zeros of the function  $\alpha J_\nu(z) + \gamma z J'_\nu(z)$ . (German and Russian summaries) *Z. Anal. Anwendungen* **7** (1988), no. 2, 185–192. (M. E. Muldoon) **89b:33009** 33A40
- (with Siafarikas, P. D.; Kouris, C. B.) The imaginary zeros of a mixed Bessel function. (German summary) *Z. Angew. Math. Phys.* **39** (1988), no. 2, 157–165. (M. E. Muldoon) **89d:33012** 33A40
- Ifrak, Georges** ★ Universalgeschichte der Zahlen. (German) [Universal history of numbers] Translated from the French by Alexander von Platen. *Campus Verlag GmbH, Frankfurt am Main*, 1986. 580 pp. ISBN 3-593-33666-9 (Jens Høyup) **89f:01005** 01A05 (01–01)
- ★ From one to zero. A universal history of numbers. Translated from the French by Lowell Bair. *Penguin Books, New York*, 1987. xvi+503 pp. ISBN 0-14-009919-0 (Jens Høyup) **89f:01006** 01A05 (01–01)
- Ifrimie, Viorel** Sur la complétude asymptotique dans le cas “longue portée” et “dépendant du temps”. [Asymptotic completeness in the time-dependent long-range case] *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 5, 407–433. (W. O. Amrein) **89b:35132** 35P25 (47A40, 47B99, 81F05)
- Ihode, Vasile** Asymptotic properties of the solutions of some nonlinear evolution equations. (Romanian. English summary) *Stud. Cerc. Mat.* **40** (1988), no. 1, 3–97. (Stefan Mirică

- (Zbl 642:49024) **89i:49022** 49C20 (34G20, 35F20, 47H20)
- Iga, M.** (with Reddy, J. N.) Penalty finite element analysis of free surface flows of power-law fluids. *The mathematics of finite elements and applications, VI* (Uxbridge, 1987), 423–433, *Academic Press, London-New York*, 1988. (see **89c:65004**) 76–08 (65M60)
- Igamberdiyev, T. M.** The number of solutions of systems of Boolean equations. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 2, 102–105, 135. (János Demetroyics) **89m:94026** 94C10 (03G05, 06E30, 60C05)
- Igari, Satoru** Uniqueness in the characteristic Cauchy problem under a convexity condition. *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 8, 295–297. (Peter R. Popivanov) **89h:35004** 35A05 (35L10)
- Igari, Satoru** Interpolation of operators in Lebesgue spaces with mixed norm and its applications to Fourier analysis. *Proceedings of the analysis conference, Singapore* 1986, 115–128, *North-Holland Math. Stud.*, 150, *North-Holland, Amsterdam-New York*, 1988. (Mario Milman) **89d:46031** 46E30 (42B20, 46M35)
- Ige, Abel F.** (with Tripathi, T. P.) On double sampling for stratification and use of auxiliary information. (Hindi summary) *J. Indian Soc. Agricultural Statist.* **39** (1987), no. 2, 191–201, vi. (Not in MR) 62D05
- Iglehart, Donald L.** (with Glynn, Peter W.) Simulation methods for queues: an overview. *Queueing Systems Theory Appl.* **3** (1988), no. 3, 221–255. (J. Teghem, Jr.) **89k:60135** 60K25 (90B22)
- (with Glynn, Peter W.) A new class of strongly consistent variance estimators for steady-state simulations. *Stochastic Process. Appl.* **28** (1988), no. 1, 71–80. (Kumar Joag-Dev) **89f:62029** 62F25 (60F99, 62M99)
- Iglesias, J. R.** (with de Almeida, Rita M. C.) Towards statistical mechanics of a 2D random cellular structure. *J. Phys. A* **21** (1988), no. 16, 3365–3377. (Summary) **89i:82112** 82A99 (82A30, 82A65, 92A05)
- Iglói, F.** Quantum Ising model on a quasiperiodic lattice. *J. Phys. A* **21** (1988), no. 18, L911–L915. (Henryk Zoladek) **89k:82085** 82A67 (81E40, 82A15)
- (with Zittartz, J.) Quantum Ising model with staggered interaction. *Z. Phys. B* **70** (1988), no. 3, 387–393. (Summary) **89b:82110** 82A68 (82A25, 82A69)
- Ignaczak, Józef** (with Carbonaro, Bruno) Some theorems in temperature-rate-dependent thermoelasticity for unbounded domains. *J. Thermal Stresses* **10** (1987), no. 3, 193–220. (S. Dost) **89g:73044** 73U05 (73C25)
- Ignatenko, V. N.** (with Strakhova, N. V.) The number of switchings that are time optimal and fuel efficient of controls of linear discrete systems. (Russian) *Adapt. Sistemy Avtomat. Upravleniya* No. 16 (1988), 122–125, v. (Not in MR) 93C55 (93B50)
- Ignatenko, V. V.** (with Krakhotko, V. V.) On the controllability of systems that are not solved with respect to the derivative. (Russian) *Boundary value problems (Russian)*, 82–85, vii–viii, *Perm. Politekh. Inst., Perm*, 1986. (see **89c:00009**) 93B05 (93C30)
- Ignat'ev, A. O.** On the asymptotic stability of a class of nonautonomous systems. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 12, 2161–2163, 2207. (Mihail Voicu) **89c:34046** 34D05
- Stability of motion with respect to some of the variables under constantly acting perturbations. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 10(44) (1988), 20–25, 87. (Miklós Farkas) **89i:34068** 34D10 (70K20)
- Ignat'ev, V. N.** (with Zadorin, A. I.) ★ О некоторых методах численного решения нелинейной сингулярно возмущенной краевой задачи. (Russian) [Some methods for the numerical solution of a nonlinear singularly perturbed boundary value problem] *Preprint* [Preprint], 677, *Akad. Nauk SSSR Sibsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1986, 28 pp. (Martin Hermann) **89d:65075** 65L10
- (with Zadorin, A. I.) Numerical solution of the singularly perturbed third boundary value problem for a second-order ordinary equation. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1986**, no. 11, 20–26, 85. (I. P. Gavriljuk) **89f:65089** 65L10
- Ignatkin, L. A.** Fundamental boundary value problems for a hyperbolic equation of type S. (Russian) *Differential equations and mathematical physics (Russian)*, 114–118, *Kuibyshev. Gos. Ped. Inst., Kuibyshev*, 1985. (see **89f:35006**) 35L80
- Ignator, Tsvetan G.** (with Kaishev, Vladimir K.) Multivariate B-splines, analysis of contingency tables and serial correlation. *Mathematical statistics and probability theory, Vol. B (Bad Tatzmannsdorf)*, 1986, 125–137, *Reidel, Dordrecht-Boston, MA-London*, 1987. (S. B. Nandi) **89g:62061** 62G05 (39A05, 41A15, 62H17)
- (with Kaishev, Vladimir K.) Limit theorems for B-splines and linear transformations of order statistics. (Bulgarian summary) *Mathematics and mathematical education (Bulgarian)* (*Sunny Beach (S'nechev Bryag)*), 1987, 418–425, *Bulg. Acad. Sci., Sofia*, 1987. (see **89c:00038**) 60F05 (41A15, 62G30)
- Ignator, Yu. A.** Rational nonfree points of the complex plane. (Russian) *Algorithmic problems in the theory of groups and semigroups (Russian)*, 72–80, 127, *Tul'sk. Gos. Ped. Inst., Tula*, 1986. (G. M. Lyan) **89i:1022** 11F06 (20H10, 30C99)
- Ignator, Z. G.** see Ignator, Tsvetan G.
- Ignator, Zvetan G.** see Ignator, Tsvetan G.
- Igoshin, V. I.** Lattices of intervals and lattices of convex sublattices of such lattices. (Russian) *Ordered sets and lattices*, No. 6 (Russian), 69–76, 79, *Saratov. Gos. Univ., Saratov*, 1980. (see **89a:06002**) 06C15
- Projective algebras of the normal closures of certain varieties. (Russian) *Ordered sets and lattices*, No. 9 (Russian), 33–37, 109–110, *Saratov. Gos. Univ., Saratov*, 1986. (G. Grätzer) **89m:08007** 08B25
- Igunov, V. P.** Construction of a solution of an integro-differential equation of Volterra type in the form of a Lie series. (Russian) *Theory of functions and approximations, Part 2 (Russian)* (*Saratov*), 1984, 118–120, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) 45D05 (45J05)
- Igusa, Jun-ichi** Some aspects of the arithmetic theory of polynomials. *Discrete groups in geometry and analysis (New Haven, Conn., 1984)*, 20–47, *Progr. Math.*, 67, *Birkhäuser Boston, Boston, MA*, 1987. (Introduction) **89i:11074** 11S80 (11D72, 11S05)
- Zeta distributions associated with some invariants. *Amer. J. Math.* **109** (1987), no. 1, 1–33. (S. Raghavan) (Zbl 616:12006) **89h:11075** 11R56 (11E45, 11F27, 11M41, 11R47)
- On the arithmetic of a singular invariant. *Amer. J. Math.* **110** (1988), no. 2, 197–233. (C. F. Woodcock) **89g:11116** 11S40 (11M41, 14G10, 15A72)
- Ihara, Shunsuke** Capacity of discrete time Gaussian channel with and without feedback. *I. Mem. Fac. Sci. Kochi Univ. Ser. A Math.* **9** (1988), 21–36. (Robert Gray) **89h:94009** 94A40 (94A15)
- Ihara, Yasutaka** Some problems on three-point ramifications and associated large Galois representations. *Galois representations and arithmetic algebraic geometry (Kyoto, 1985/Tokyo, 1986)*, 173–188, *Adv. Stud. Pure Math.*, 12, *North-Holland, Amsterdam-New York*, 1987. (Helmut Koch) **89f:11078** 11F80 (11G20, 11R58, 14E22)
- (with Anderson, Greg W.) Pro- $l$  branched coverings of  $\mathbb{P}^1$  and higher circular  $l$ -units. *Ann. of Math.* (2) **128** (1988), no. 2, 271–293. (David Goss) **89i:14023** 14H25 (11G20, 14H30)
- see also Galois representations and arithmetic algebraic geometry, **89a:11004**
- Ihoda, Jaime I.** Strong measure zero sets and rapid filters. *J. Symbolic Logic* **53** (1988), no. 2, 393–402. (Eva Hartová) **89h:03083** 03E15 (03E35, 04A20)
- $\Sigma_1^1$ -sets of reals. *J. Symbolic Logic* **53** (1988), no. 2, 636–642. (Péter Komjáth) **89h:03084** 03E15 (03E35)
- (with Shelah, Saharon)  $Q$ -sets do not necessarily have strong measure zero. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 681–683. (Lee J. Stanley) **89a:03091** 03E35 (03E15)
- Ihrig, Edwin** Cyclic perfect one factorizations of  $K_{2n}$ . *Combinatorial design theory, 259–272*, *North-Holland Math. Stud.*, 149, *North-Holland, Amsterdam-New York*, 1987. (Ian Anderson) **89b:05097** 05C25 (05C70)
- Hodge theory on compact two-dimensional spacetimes and the uniqueness of  $g_{ij}$  with a specified  $R_{ij}$ . *Canad. J. Math.* **39** (1987), no. 6, 1459–1474. (Andrzej Trautman) **89a:53075** 53C50 (58A14)
- Symmetry groups of perfect one factorizations of  $K_{2n}$ . *Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987)*. *Congr. Numer.* **60** (1987), 105–130. (Douglas R. Stinson) **89d:05098** 05C25 (05C70, 20B25)
- Ihringer, Thomas** On semirings, groups and congruence relations. *Mitt. Math. Sem. Giessen* No. 179 (1987), 54 pp. (Heinrich Werner) **89b:08002** 08A30 (05B30, 06B10, 06B15, 51A25)
- Iida, Kōji** (with Hōzaki, Ryusuke) The optimal search plan for a moving target minimizing the expected risk. *J. Oper. Res. Soc. Japan* **31** (1988), no. 3, 294–321. (Lawrence D. Stone) **89j:90154** 90B40 (90D26)
- Iida, Shinji** (with Kuratsuji, Hiroshi) Phase holonomy, zero-point energy cancellation and supersymmetric quantum mechanics. *Phys. Lett. B* **198** (1987), no. 2, 221–225. (Summary) **89j:81066** 81C99
- (with Kuratsuji, Hiroshi) Deformation of symplectic structure and anomalous commutators in field theories. *Phys. Rev. D* (3) **37** (1988), no. 2, 441–447. (Yisong Yang) **89b:81134** 81E13 (58F06)
- Iijima, Junichi** (with Nakano, Bunpei; Sato, Ryo) Meaning of state-space representation and its relation to canonical form. II. Controllability and constructibility. *Internat. J. Systems Sci.* **19** (1988), no. 4, 637–652. (Summary) **89c:93037** 93B15 (93B05, 93B10)
- Iijima, Taiso** Fundamental theory on natural observation of waveform. *Electron. Comm. Japan, Part I Comm.* **68** (1985), no. 7, 46–54. (Summary) **89b:92075** 92A27
- Iitaka, Shigeru** Theory of curves, new and old. *Algebraic Geometry Seminar (Singapore, 1987)*, 5–13, *World Sci. Publishing, Singapore*, 1988. (Ciro Ciliberto) **89k:14051** 14H35
- Iizuka, Kunihiko** Finiteness conditions for G-CW complexes. *Japan. J. Math. (N.S.)* **10** (1984), no. 1, 55–69. (From the introduction) **89a:57027** 57Q10 (57S15)
- Iizuka, Masaru** Weak convergence of a sequence of stochastic difference equations to a stochastic ordinary differential equation. *J. Math. Biol.* **25** (1987), no. 6, 643–652. (Eckhard Platen) **89b:60138** 60H10 (60H99, 92A15)
- Ikawa, M.** (with Mizohata, Sigeru; Ohya, Yūjiro) Comments on the development of hyperbolic analysis. *Hyperbolic equations and related topics (Kyoto, 1984)*, ix–xxxiv, *Academic Press, Boston, MA*, 1986. (Luiza Zanghirati) **89f:35003** 35–02 (35Axx, 35Lxx, 35S10)
- On the poles of the scattering matrix for two convex obstacles. *Differential equations and applications, I, II (Russian)* (Ruse, 1985), 719–726, *'Angel Kanchev' Tech. Univ., Ruse*, 1987. (Gustavo Perla Menzala) **89a:35158** 35P25 (35L05)
- On strongly hyperbolic mixed problems. *Calcul d'opérateurs et fronts d'ondes*, 65–72, *Travaux en Cours*, 29, *Hermann, Paris*, 1988. (Todor V. Gramchev) **89m:35128** 35L20 (35L05)
- Ikawa, Toshihiko** (with Aiyama, Reiko; Kwon, Jung-Hwan; Nakagawa, Hisao) Complex hypersurfaces in an indefinite complex space form. *Tokyo J. Math.* **10** (1987), no. 2, 349–361. (Alfonso Romero) **89c:53035** 53C40 (53C50)
- (with Nakagawa, Hisao) A remark on totally vicious space-time. *J. Geom.* **32** (1988), no. 1–2, 51–54. (Paul E. Ehrlich) **89j:53054** 53C50
- (with Nakagawa, Hisao; Romero, Alfonso) Product complex submanifold of indefinite complex space forms. *Rocky Mountain J. Math.* **18** (1988), no. 3, 601–615. (Bang-yen Chen) **89m:53105** 53C42 (53C40, 53C50, 53C55)
- Ikebe, Tetsuo** (with Shimada, Shin-ichi) Scattering with penetrable wall potentials. *Differential equations and mathematical physics (Birmingham, Ala., 1986)*, 211–214, *Lecture Notes in Math.*, 1285, *Springer, Berlin-New York*, 1987. (Arne Jensen) **89d:35136** 35P25 (35J10, 47F05, 81C10)
- Ikebe, Yasuhiko** (with Kamada, Masaru; Toraiichi, Kazuo; Mori, Ryoichi) Orthonormal basis for spline signal spaces. *Internat. J. Systems Sci.* **20** (1989), no. 1, 157–170. (B. D. Donevski) **89m:94004** 94A11 (41A15)
- Ikeda, Hideo** (with Mimura, Masayasu; Tsujikawa, T.) Slow traveling wave solutions to the Hodgkin-Huxley equations. *Recent topics in nonlinear PDE, III (Tokyo, 1986)*, 1–73, *North-Holland Math. Stud.*, 148, *North-Holland, Amsterdam-New York*, 1987. (Brian D. Sleeman) **89c:92022** 92A09 (35K55)
- Ikeda, Hideto** (with Kitagawa, Fumio) An existential problem of a weight-controlled subset and its application to school timetable construction. *Proceedings of the First Japan Conference on Graph Theory and Applications (Hakone, 1986)*. *Discrete Math.* **72** (1988), no. 1–3, 195–211. (Roman Ślowiński) **89k:90087** 90B35 (05C99, 90B10)
- Ikeda, Hiroshi** On stability of endomorphisms. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1287–1290. (J. W. Robbins) **89f:58078** 58F10
- Ikeda, Kazuyosi** (with Nisizima, Kunisuke) Cluster sums for lattice gases with second nearest neighbour interactions. II. One-dimensional lattice. *J. Phys. Soc. Japan* **53** (1984), no. 4, 1244–1251. (Summary) **89b:82095** 82A67
- (with Nisizima, Kunisuke) Cluster sums for lattice gases with second nearest neighbour interactions. III. Three-dimensional simple cubic lattice. *J. Phys. Soc. Japan* **56** (1987), no. 10, 3499–3511. (Summary) **89b:82096** 82A67



- Ikeda, Masao** (with Ohta, Yuzo; Šitjak, Dragoslav D.) Parametric stability of model ecosystems. *Biomathematics and related computational problems* (Naples, 1987), 539-554, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89m:92050** 92A17 (34D99, 93A15)
- Ikeda, Masatoshi** (with Abu-Saymeh, Sadi) On the higher derivations of commutative [commutative] rings. *Math. J. Okayama Univ.* **29** (1987), 83-90 (1988). (Andrzej Nowicki) **89d:13019** 13N05 (12H05, 13B10)
- Ikeda, Nobuyuki** Limit theorems for a class of random currents. *Probabilistic methods in mathematical physics* (Katata/Kyoto, 1985), 181-193, *Academic Press, Boston, MA*, 1987. (Hiroyuki Matsumoto) **89b:60186** 60J60 (58D25, 58G30, 60F15, 60H05)
- (with Kusuoka, Shigeo) Short time asymptotics for fundamental solutions of diffusion equations. *Stochastic analysis* (Paris, 1987), 37-49, *Lecture Notes in Math.*, 1322, *Springer, Berlin-New York*, 1988. (Kazuo Taira) **89i:35023** 35B40 (35K05, 58G32)
- Ikeda, Saburo** Economic-ecological models in regional total systems. *Economic-ecological modeling*, 185-202, *Stud. Regional Sci. Urban Econom.*, 16, *North-Holland, Amsterdam-New York*, 1987. (See **89d:90076**) 90A30
- Ikeda, Satoshi** (with Dragomir, Sorin) On the field equations in the theory of the gravitational fields in Finsler spaces. *Tensor (N.S.)* **44** (1987), no. 2, 157-163. (H. Rund) **89e:83055** 83D05 (53B40, 53B50)
- Ikeda, Shin** (with Herrmann, Manfred; Orbanz, U.) ★ Equimultiplicity and blowing up. An algebraic study. With an appendix by B. Moonen. *Springer-Verlag, Berlin-New York*, 1988. xviii+629 pp. ISBN 3-540-15289-X (L. Bădescu) **89g:13012** 13H15 (13H10, 14B15, 32B30)
- Ikeda, Tadashi** On interior G-algebras with the trivial defect group. *Proceedings of the 21st Symposium on Ring Theory* (Hiroaki, 1988), 52-58, *Okayama Univ., Okayama*, 1989. (See **89i:16001**) 16A26 (16A42)
- Ikeda, Tatsuhiko** (with Akimaru, Haruo; Takahashi, Haruhisa) Optimum design of alternative routing systems with partial overflow scheme. *Electron. Comm. Japan. Part I Comm.* **69** (1986), no. 2, 85-91. (Summary) **89a:90093** 90B15 (68M10)
- Ikeda, Toshiharu** Locally inner derivations of ideally finite Lie algebras. *Hiroshima Math. J.* **17** (1987), no. 3, 495-503. (J. Wiegand) **89m:17029** 17B40 (20F28)
- Ikeda, Tsutomu** (with Nagai, Toshihiko) Stability of localized stationary solutions. *Japan J. Appl. Math.* **4** (1987), no. 1, 73-97. (From the text) **89d:35016** 35B35 (35K55, 92A15)
- Ikeda, Yoshito** A note on Moscow spaces. *Bull. Tokyo Gakuue Univ.* (4) **39** (1987), 1-7. (B. T. Sims) **89c:54062** 54E99 (54C05, 54D60)
- Ikeda, Zykiti** (with Nishida, Toshio) Stability of M/G/1 queue with balking. *Tech. Rep. Osaka Univ.* **37** (1987), no. 1865-1888, 1-3. (Martin J. Fischer) **89g:60281** 60K25 (90B22)
- (with Nishida, Toshio) M/G/1 queue with balking. *Math. Japon.* **33** (1988), no. 5, 707-711. (R. Subramanian) **89m:60232** 60K25 (68M20, 90B22)
- Ikegami, Gikō** Vector fields tangent to foliations. *Japan. J. Math. (N.S.)* **12** (1986), no. 1, 95-120. (Shigenori Matsumoto) **89b:58152** 58F14 (58F18)
- Ikemori, Hitoshi** Superfield formulation of relativistic superparticle. *Phys. Lett. B* **199** (1987), no. 2, 239-242. (Enore Guadagnini) **89b:81074** 81C99 (81G20, 83E50)
- Ikesuchi, Satoru** (with Nozakura, Toshiya) Spiral patterns on a differentially rotating galactic disk: self-organized structures in galaxies. *Astrophys. J.* **333** (1988), no. 1, part 1, 68-77. (Summary) **89j:85087** 85A30
- Ikrum, Mohd.** (with Hussain, Tahir; Lone, A. G.) On multi-queue with bulk arrivals and service parameters depending upon queue numbers. *Internat. J. Management Systems* **4** (1988), no. 3, 161-168. (U. Narayan Bhat) **89m:60231** 60K25 (90B22)
- Ikrumov, Kh. D.** Round-off errors, the growth of elements and duality relations in nonorthogonal methods for solving linear systems. (Russian) *Computational methods in linear algebra* (Russian) (Moscow, 1982), 87-93, *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1983. (N. L. Vulchanov) **89a:65047** 65F05 (65G05)
- Numerical solution of matrix equations, and a symplectic matrix algebra. (Russian) *Computational processes and systems*, No. 5 (Russian), 154-163, "Nauka", Moscow, 1987. (F. Szidarovszky) **89c:65046** 65F15
- (with Zalkova, E. A.) J-singular value decomposition of nonsingular matrices of an even order. *Moscow Univ. Comput. Math. Cybernet.* **1988**, no. 1, 23-28; translated from *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1988**, no. 1, 23-27, 76 (Russian). (Jeffrey Stuart) **89c:15018** 15A23 (15A18, 15A57, 65F30)
- Singular numbers and the polar decomposition of an operator in a bilinear metric space. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 1, 127-129, 158; translated in U.S.S.R. *Comput. Math. and Math. Phys.* **28** (1988), no. 1, 85-87. (Bernd Carl) **89d:47001** 47A05 (47B10)
- Indecomposable Hamiltonian matrices with a purely imaginary spectrum. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 12, 1897-1902, 1920. (Anna Lee) **89m:15017** 15A57 (15A18, 15A21)
- See also Pissanetzky, Sergio, **89b:65008** and Gregory, R. T., **89j:65030**
- Ikrumov, I. A.** Reconstruction of a function from spherical means. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 5(257), 211-212. (Qing Yi Chen) **89i:44002** 44A05 (46F10)
- Ikuta, Seizo** Optimal stopping problem with uncertain recall. (Japanese summary) *J. Oper. Res. Soc. Japan* **31** (1988), no. 2, 145-171. (Toru Nakai) **89g:90228** 90C39 (90C40)
- Ilachinski, Andrew** (with Halpern, Paul) Structurally dynamic cellular automata. *Complex Systems* **1** (1987), no. 3, 503-527. (Summary) **89b:68111** 68Q80 (58F08)
- Ifchenko, A. V.** Mean-square stability of nonlinear stochastic differential equations. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 28 (1986), 38-42, 132. (Summary) **89d:93111** 93E15 (34F05, 60H10)
- Ifgamov, M. A.** (with Dowell, Earl H.) ★ Studies in nonlinear aeroelasticity. *Springer-Verlag, New York-Berlin*, 1988. xvi+455 pp. ISBN 0-387-96791-5 (E. G. Broadbent) **89k:73037** 73J05 (70K50, 73-02, 73-08, 73J06, 73J10)
- See also Statics and dynamics of flexible systems, **89b:73002**
- Ilgand, Hans-Joachim** NTM gratuliert Prof. Dr. sc. nat. Hans Wussing zum 60. Geburtstag. [NTM congratulates Prof. Hans Wussing on his 60th birthday] *NTM Schr. Geschichte Natur. Tech. Medizin* **24** (1987), no. 2, 1-5. (Editors) **89a:01065** 01A70
- Iladis, Ilias** (with Lien, Luke Y.-C.) Resequencing delay for a queueing system with two heterogeneous servers under a threshold-type scheduling. *IEEE Trans. Comm.* **36** (1988), no. 6, 692-702. (Summary) **89b:60218** 60K25 (90B22, 90B35)
- Iladis, S. D.** The rim-type of spaces and the property of universality. *Houston J. Math.* **13** (1987), no. 3, 373-388. (Aleksander Blaszczyk) **89c:4056** 54E35 (54F15)
- Sur la classification des continus héréditairement univoqués. (Serbo-Croatian summary) [On the classification of hereditarily univoherent continua] *Mat. Vesnik* **39** (1987), no. 3, 293-300. (Michel Smith) **89c:54066** 54F20 (54F55)
- Continua that are almost locally a bundle of arcs and the property of universality. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 281-290, *R. E. Res. Exp. Math.*, 16, *Heldermann, Berlin*, 1988. (Wayne Lewis) **89g:54076** 54F20 (54B10, 54C10, 54F50)
- Ilie, Marija** (with Sira-Ramirez, Hebert J.) A geometric approach to the feedback control of switch mode DC-to-DC power supplies. *IEEE Trans. Circuits and Systems* **35** (1988), no. 10, 1291-1298. (Not in MR) **93B27** (93B50, 94C05)
- Il'ichev, A. T.** (with Sibgatullin, N. R.) A new method for the integration of equations for axisymmetric and stationary electrovacuum fields and the construction of their general solution. (Russian) *Gravitatsiya i Teor. Otnosheniya* No. 24 (1987), 80-93. (Jan Novotný) **89f:83030** 83C15 (83C50)
- Il'ichev, V. G.** (with Obushchenko, N. I.) On the influence of spatial migration on the temporal dynamics of populations. (Russian) *Izv. Severo-Kavkaz. Nauchn. Tsentra Vyssh. Shkoly Estestv. Nauk*, 1987, no. 4, 113-117 (1988). (G. Bojadziev) **89g:92042** 92A15
- Il'icheva, O. A.** Semantics of quasi-identities that define models of constants. (Russian) *Vychisl. Sistemy* No. 116 *Prikladn. Logika* (1986), 16-32, 162. (Summary) **89d:68053** 68Q55 (03B70)
- Iliev, A. I.** Threefolds with a numerically effective canonical class of numerical dimension 1. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 1, 3-6, 105; translated in *Moscow Univ. Math. Bull.* **43** (1988), no. 1, 4-4. (A. S. Tikhomirov) **89g:14031** 14J30
- Iliev, B. Z.** Deviation equations in spaces with affine connection. V. Some approximate methods. (Russian summary) *Bulgar. J. Phys.* **14** (1987), no. 3, 215-220. (M. C. Chaki) **89f:53029** 53B05
- Iliev, I. D.** (with Kirchev, K. P.) ★ О6 устойчивости бегущих волн для нелинейных уравнений типа уравнения Бенжамена-Бона-Махони. (Russian) [Stability of traveling waves for nonlinear equations of Benjamin-Bona-Mahony type] With an English summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R5-87-508. *Joint Inst. Nuclear Res., Dubna*, 1987, 11 pp. (From the introduction) **89d:35160** 35Q20
- (with Kirchev, K. P.) Stability of solutions of kink type for some nonlinear equations similar to the Korteweg-de Vries equation. (Russian) *Serdica* **13** (1987), no. 4, 414-419. (Summary) **89c:35134** 35Q20
- Iliev, Lyubomir G.** ★ Mathematics and development. Methodological problems, essays. *Publishing House of the Bulgarian Academy of Sciences, Sofia*, 1985. 122 pp. (Pierre Crépel) **89b:00012** 00A25 (01A05)
- On Newton approximations for Laguerre entire functions. *Complex analysis and applications '85* (Varna, 1985), 276-280, *Bulgar. Acad. Sci., Sofia*, 1986. (Jack Williams) **89c:30062** 30D05 (30D15)
- ★ Laguerre entire functions. Second edition. *Publishing House of the Bulgarian Academy of Sciences, Sofia*, 1987. 188 pp. (S. M. Shah) **89b:30042** 30D15 (30-02, 30C15)
- Classical extremal problems in the theory of univalent functions. *Mathematics and mathematical education* (Bulgarian) (Sunny Beach (Slivnitsa) Bryag), 1987, 9-34, *Bulgar. Acad. Sci., Sofia*, 1987. (Yuk Leung) **89f:30018** 30C45 (30C55)
- Iliev, P. I.** (with Kunchev, R. K.; Nikolov, V. N.) Recognition of texture images using probability-structural analysis. (Bulgarian. English and Russian summaries) *Automat. Izchisl. Tekhn. Avtomat. Sistemy* **1988**, no. 2, 2, 3, 4, 9-14. (Not in MR) **68T10**
- Iliev, Valentin** On the canonical rings of some Horikawa surfaces. *I. Trans. Amer. Math. Soc.* **309** (1988), no. 1, 309-323. (Gang Xiao) **89i:14035** 14J29
- Ilievski, Borko** (with Dimitrovski, Dragan) L'équation différentielle aréolaire analytique. (Serbo-Croatian summary) [An analytic areolar differential equation] *Makedon. Akad. Nauk. Umet. Oddel. Mat.-Tehn. Nauk. Prilozi* **5** (1984), no. 1-2, 25-39. (Wazir Hasan Abdi) **89b:30066** 30G99
- Ilin, A. A.** (with Filatov, A. N.) Unique solvability of the Navier-Stokes equations on a two-dimensional sphere. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 1, 18-22; translated in *Soviet Math. Dokl.* **38** (1989), no. 1, 9-13. (Athanasios Cotsiolis) **89k:35183** 35Q10 (76D05, 76U05)
- Ilin, A. M.** Asymptotic behavior of solutions of bisingular problems. (Russian) *Current problems in mathematical physics, Vol. I* (Russian) (Tbilisi, 1987), 248-253, 484, *Tbilis. Gos. Univ., Tbilisi*, 1987. (See **89j:00030**) 35C20 (35B25)
- Ilin, A. V.** (with Rivkind, V. Ya.) An approximate method for solving a problem of the nonisothermal flow of a fluid layer. (Russian) *Metody Vychisl.* No. 15 (1988), 98-104, 181. (Summary) **89j:76040** 76D05 (35Q10, 65P05, 76-08)
- Ilin, I. V.** A remark on an estimate in the inhomogeneous Minkowski conjecture for small dimensions. (Russian) *Analytic number theory* (Russian), 24-30, 90, *Petrozavodsk. Gos. Univ., Petrozavodsk*, 1986. (Bela Uhrin) **89k:11052** 11H30 (52A43)
- Ilin, V. A.** (with Sadovnichii, V. A.) ★ Математический анализ. 2. (Russian) [Mathematical analysis. 2] Продолжение курса. [Continuation of the course] *Moskov. Gos. Univ., Moscow*, 1987. 358 pp. (Summary) **89d:26001** 26-01 (00A05, 40-01, 42-01)
- (with Joó, István) An inequality of Bessel type for the system of eigenfunctions of a nonselfadjoint Laplace operator. (Russian) *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **30** (1987), 171-176. (Monique Dauge) **89c:35127** 35P20 (35J05)
- (with Moiseev, E. I.) A nonlocal boundary value problem of the second kind for the Sturm-Liouville operator. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 8, 1422-1431, 1471. (From the introduction) **89c:34043** 34B25 (39A12)
- (with Bitsadze, A. V.; Vinogradov, V. S.; Dezin, A. A.) Partial differential equations. (Russian) *Mathematical physics and complex analysis* (Russian). Translated in *Proc. Steklov Inst. Math.* **1988**, no. 3, 263-300. *Trudy Mat. Inst. Steklov.* **176** (1987), 259-299, 328. (Summary) **89a:35001** 35-02 (35-03)
- (with Moiseev, E. I.) An a priori estimate for the solution of a problem associated with a nonlocal boundary value problem of the first kind. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 5, 795-804, 917; translated in *Differential Equations* **24** (1988), no. 5, 519-526. (E. S. Chichkin) **89i:34011** 34A45 (34B15)
- An estimate for the difference of the Riesz means of two spectral expansions for a function in the class  $L_2$ . (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 5, 852-863, 918; translated in *Differential Equations* **24** (1988), no. 5, 565-572. (P. Szeptycki) **89k:35165** 35P10

- (with Andreev, A. F.; Bitsadze, A. V.; Erugin, N. P.; Zubov, V. I.; Izobov, N. A.; Kiguradze, I. T.; Krasovskii, N. N.; Kudryavtsev, L. D.; Millionshchikov, V. M.; Pliss, V. A.; Samarskii, A. A.; Sibirskii, K. S.; Tikhonov, A. N.) Yuriil Stanislavovich Bogdanov. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 6, 1091–1097; translated in *Differential Equations* 24 (1988), no. 6, 692–699. (Editors) **89i:01055** 01A70
- see also Alimov, Sh. A. et al., **89h:01053**
- Ilin, V. P.** (with Kositsyna, L. K.) ★ О скорости сходимости итераций явного метода Булеана. (Russian) [The rate of convergence of iterations of the explicit Bulev method] Препринт [Preprint], 755. Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk, 1987. 17 pp. (Jiti Nedoma) **89f:65112** 65N20
- (with Kositsyna, L. K.) Iterative methods of incomplete factorization for solving block-tridiagonal systems. (Russian) *Computational processes and systems*, No. 5 (Russian), 218–231, "Nauka", Moscow, 1987. (O. Pokorná) **89b:65080** 65F10
- (with Dem'yanovich, Yu. K.; Koshelev, A. I.; Oleinik, O. A.; Sobolev, S. L.) Solomon Grigor'evich Mikhlin (on the occasion of his eightieth birthday). (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 4(262), 239–240; translated in *Russian Math. Surveys* 43 (1988), no. 4, 249–251. (Editors) **89m:01004** 01A70
- Incomplete factorization methods. *Soviet J. Numer. Anal. Math. Modelling* 3 (1988), no. 3, 179–198. (Ludwig Elsner) **89g:65032** 65F10 (65N20)
- (with Sander, S. A.) A diagonal connection shift method for solving five-point network equations. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 2, 277–280; translated in *Soviet Math. Dokl.* 37 (1988), no. 2, 369–372. (I. P. Gavriluk) **89g:65134** 65N20
- (with Dem'yanovich, Yu. K.; Koshelev, A. I.; Solomyak, M. Z.; Ural'tseva, N. N.) Solomon Grigor'evich Mikhlin (on the occasion of his eightieth birthday). (Russian) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1988, vyp. 2, 128–129. (Editors) **89b:01059** 01A70
- Ilin, Vladimir Aleksandrovich** see **Ilin, V. A.**
- Ilin, Yu. A.** Existence of a locally invariant surface in a periodic system of differential equations without linear approximation. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1988, vyp. 2, 105–106, 133; translated in *Vestnik Leningrad. Univ. Math.* 21 (1988), no. 2, 84–86. (V. Šeda) **89i:34054** 34C25 (34C30, 34D30)
- Ilima, I. L.** (with Vladimirov, V. V.; Kiklevich, E. A.; Nikolaevskii, E. S.) Breakdown of symmetry of the rotational motions of a closed relativistic string, and the singular points of the Regge trajectory. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jarmala, 1985), 221–230, "Nauka", Moscow, 1986. (see **89d:81001**) **81E99** (81E30)
- Ilnitskii, A. S.** (with Dmitriev, V. I.; Zakharov, E. V.; Sveshnikov, A. G.) Inverse problems in electrodynamics. III—posed problems in the natural sciences, 233–295. *Adv. Sci. Tech. USSR: Math. Mech. Ser., "Mir"*, Moscow, 1987. (I. Kay) **89d:78002** 78–08
- (with Kadomtseva, A. F.) The finite element method in a problem of wave propagation in an irregular waveguide (E-polarization). (Russian) *Numerical methods for solving inverse problems of mathematical physics* (Russian), 111–119, 264, *Moskov. Gos. Univ., Moscow*, 1988. (Summary) **89g:78004** 78–08
- (with Smirnov, Yu. G.) The variational method in a problem of natural waves in a partially filled waveguide with an irregular boundary. (Russian) *Numerical methods for solving inverse problems of mathematical physics* (Russian), 127–137, 264, *Moskov. Gos. Univ., Moscow*, 1988. (Summary) **89g:78024** 78A50
- (with Ivakhnenko, V. I.) Investigation of operator equations in the problem of diffraction by a plane bounded screen. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* 1988, no. 4, 23–29, 71; translated in *Moscow Univ. Comput. Math. Cybernet.* 1988, no. 4, 28–35. (Summary) **89h:78012** 78A45
- Ilnitskii, N. B.** Solution of an inverse boundary value problem of blast in a modified solid-fluid model. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 63 (1987), 82–86, 127. (Introduction) **89f:80009** 80A25
- Iliopoulos, Costas S.** (with Apostolito, Alberto; Landau, Gad M.; Schieber, Baruch; Vishkin, Uzi) Parallel construction of a suffix tree with applications. *Algorithmica* 3 (1988), no. 3, 347–365. (Do Long Van) **89i:68053** 68Q25
- On the computational complexity of the abelian permutation group structure, membership and intersection problems. *Theoret. Comput. Sci.* 56 (1988), no. 2, 211–222. (Jennifer Whitehead) **89k:20003** 20–04
- Iliopoulos, J.** (with Antoniadis, I.; Ditsas, P.; Floratos, E. G. F.) New realizations of the Virasoro algebra as membrane symmetries. *Nuclear Phys. B* 300 (1988), no. 4 FS22, 549–558. (Summary) **89i:17012** 17B65 (58D30, 81E30)
- (with Floratos, E. G. F.) A note on the classical symmetries of the closed bosonic membranes. *Phys. Lett. B* 201 (1988), no. 2, 237–240. (Sergey Merkulov) **89c:81074** 81E13 (81E30)
- (with Floratos, E. G. F.; Tiktopoulos, G.) A note on  $SU(\infty)$  classical Yang-Mills theories. *Phys. Lett. B* 217 (1989), no. 3, 285–288. (Henrik Pedersen) **89m:81094** 81E13
- Il'khamov, U.** (with Gaidalovich, V. G.; Sokolov, D. D.) Closed convex surfaces in a pseudo-Euclidean space. (Russian) *Trudy Inst. Mat. (Novosibirsk)* 9 (1987), Issled. Geom. "v tselom" i *Mat. Anal.*, 154–159, 207. (W. J. Firey) **89c:53047** 53C50
- Ilán, J.** see **Ilán González, Jesús**
- Ilanes Mejía, Alejandro** Irreducible Whitney levels with respect to finite and countable subsets. *An. Inst. Mat. Univ. Nac. Autónoma México* 26 (1986), 59–64 (1987). (J. Segal) **89c:54020** 54B20 (54F15)
- Hereditary multicoherence degree and multicoherence degree of remainders of perfect extensions. (Serbo-Croatian summary) *Glas. Mat. Ser. III* 22(42) (1987), no. 2, 463–479. (Hao Xuan Zhou) **89k:54088** 54F55 (54D35, 54D40)
- Cells and cubes in hyperspaces. *Fund. Math.* 130 (1988), no. 1, 57–65. (Vesko Valov) **89k:54025** 54B20 (54F20)
- Multicoherence of finite quotients and one-point compactifications. *Topology Appl.* 29 (1988), no. 1, 19–27. (Michel Smith) **89k:54089** 54F55 (54D35)
- Ilán González, Jesús** Note on the analytical function approximation and an associated linear problem. *Complex analysis and applications '85* (Varna, 1985), 281–289, *Bulgar. Acad. Sci., Sofia*, 1986. (G. López Lagomasino (Zbl 618:30035)) **89i:30061** 30E10 (30H05)
- (with López Lagomasino, Guillermo) The interpolation methods of numerical integration and their connection with rational approximation. (Spanish. English summary) *Cienc. Mat. (Havana)* 8 (1987), no. 2, 31–44. (Summary) **89b:65049** 65D15 (65D30)
- Ilarionova, O. G.** Stability of the central exponents of linear systems. I. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 6, 349–365, 1098; translated in *Differential Equations* 24 (1988), no. 6, 614–627. (Zhao-Pan Zeng) **89h:34045** 34D20 (34D05, 34D25)
- Stability of the central exponents of linear systems. II. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 8, 1324–1338, 1468; translated in *Differential Equations* 24 (1988), no. 8, 853–865. (Zhao-Pan Zeng) **89m:34062a** 34D05 (34A30)
- Stability of the central exponents of linear systems. III. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 9, 1492–1503, 1651; translated in *Differential Equations* 24 (1988), no. 9, 973–982. (Zhao-Pan Zeng) **89m:34062b** 34D05 (34A30)
- Ille, Pierre** L'intervalle relationnel et ses généralisations. (English summary) [The relational interval and its generalizations] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 1, 1–4. (Summary) **89a:04001** 04A05
- (with Gnanvo, Cyprien) La restructibilité des tournois. (English summary) [The reconstructibility of tournaments] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 14, 577–580. (William L. Kocay) **89f:05126** 05C60 (05C20)
- La restructibilité des relations binaires. (English summary) [The reconstructibility of binary relations] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 15, 635–638. (Joseph B. Klerlein) **89f:04002** 04A05 (03C13, 03C55, 05C60)
- Illert, Christopher Roy** (with Reverberi, Daniela) Holography reveals the soft anatomy of ancient cephalopods. *Bull. Math. Biol.* 50 (1988), no. 1, 19–34. (Summary) **89b:92016** 92A09
- Ilge, R.** Zur Gültigkeit des Huygensschen Prinzips bei hyperbolischen Differentialgleichungssystemen in statischen Raum-Zeiten. (English and Russian summaries) [On the validity of Huygens' principle in systems of hyperbolic differential equations in static space-times] *Z. Anal. Anwendungen* 6 (1987), no. 5, 385–407. (P. Günther) **89b:35077** 35L10 (35L40, 58G16, 83C99)
- On spinor field equations of Buchdahl and Wunsch. (German summary) *Astronom. Nachr.* 309 (1988), no. 4, 253–257. (Philippe-A. Dionne) **89m:81114** 81E20 (81D27)
- On potentials for several classes of spinor and tensor fields in curved spacetimes. *Gen. Relativity Gravitation* 20 (1988), no. 6, 551–564. (K. P. Tod) **89j:83053** 83C99 (81E20, 83C60)
- Illner, Reinhard** (with Cercignani, Carlo; Shinbrot, Marvin) A boundary value problem for discrete-velocity models. *Duke Math. J.* 55 (1987), no. 4, 889–900. (Paul F. Zweifel) **89d:82068** 82A40 (35Q20, 76P05)
- (with Pulvirenti, Mario) A derivation of the BBGKY-hierarchy for hard sphere particle systems. *Transport Theory Statist. Phys.* 16 (1987), no. 7, 997–1012. (Carlo Cercignani) **89b:82051** 82A40 (76P05)
- Derivation and validity of the Boltzmann equation: some remarks on reversibility concepts, the H-functional and coarse-graining. *Material instabilities in continuum mechanics* (Edinburgh, 1985–1986), 147–174, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1988. (V. Protopopescu) **89i:82037** 82A40 (76P05)
- (with Cercignani, Carlo; Shinbrot, Marvin) A boundary value problem for the two-dimensional Broadwell model. *Comm. Math. Phys.* 114 (1988), no. 4, 687–698. (Cor van der Mee) **89c:82031** 82A40 (76P05)
- (with Cercignani, Carlo; Pulvirenti, Mario; Shinbrot, Marvin) On nonlinear stationary half-space problems in discrete kinetic theory. *J. Statist. Phys.* 52 (1988), no. 3–4, 885–896. (François Golse) **89i:82033** 82A40 (35Q20)
- (with Platkowski, T.) Discrete velocity models of the Boltzmann equation: a survey on the mathematical aspects of the theory. *SIAM Rev.* 30 (1988), no. 2, 213–255. (Jürgen Batt) **89f:76066** 76P05 (35Q20, 82A40)
- Ilusie, L.** Deligne's  $\ell$ -adic Fourier transform. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 151–163, *Proc. Sympos. Pure Math.*, 46, Part 2, *Amer. Math. Soc., Providence, RI*, 1987. (Ernst-Ulrich Gekeler) **89h:11052** 11L40 (14G10, 14G15, 43A32)
- see also Oesterlé, Joseph, **89d:14029**
- Imonemi, R. J.** (with Hämmäläinen, M. S.; Sarvas, J.) Interdependence of information conveyed by the magnetoencephalogram and the electroencephalogram. *Theory and applications of inverse problems* (Helsinki, 1985), 27–37, *Pitman Res. Notes Math. Ser.*, 167, *Longman Sci. Tech., Harlow*, 1988. (Introduction) **89h:92008** 92A70 (78A60)
- Iftanov, N. A.** Construction of analytic integral manifolds that enter at a singular point. (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 7, 11–12. (A. A. Reinfelds) **89a:34053** 34C30 (34C05)
- An asymptotic method for the transformation of a canonical system of difference equations. (Russian) *Dokl. Akad. Nauk UzSSR* 1988, no. 2, 12–14. (Fu Tong) **89g:39002** 39A10 (58F07, 70H15)
- Ilohol, M.** On the existence of small periodic solutions of differential-difference equations in the critical case. (Russian. Tajiki summary) *Izv. Akad. Nauk Tadzhik. SSR Otdel. Fiz.-Mat. Khim. i Geol. Nauk* 1987, no. 1(103), 9–13. (Not in MR) **34K15** (34C25)
- magaril'Ilyayev, G. G.** see **Magaril'Ilyayev, G. G.**
- Ilyashenko, Yu. S.** (with Arnol'd, V. I.; Afraimovich, V. S.; Shil'nikov, L. P.) Bifurcation theory. (Russian) *Current problems in mathematics. Fundamental directions*, Vol. 5 (Russian), 5–218, i, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1986. (see **89a:58088**) **58F14**
- Algebraically and analytically solvable local problems of the theory of ordinary differential equations. (Russian. English summary) *Trudy Sem. Petrovsk.* No. 12 (1987), 118–136, 244. (Alois Kilič) **89g:58154** 58F14 (34C20, 34D30, 58F10, 58F21)
- (with Arnol'd, V. I.) Ordinary differential equations [Current problems in mathematics. Fundamental directions, Vol. 1, 7–149, *Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1985; MR 87e:34049]. Translated from the Russian by E. R. Dawson and D. O'Shea. *Dynamical systems, I*, 1–148, *Encyclopaedia Math. Sci.*, 1, *Springer, Berlin-New York*, 1988. (see **89g:58060**) **34Cxx** (58Fxx)
- Ilyasov, N. A.** On embedding theorems for generalized Nikol'skii-Besov spaces in  $L_p$ . (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 4, 785–787; translated in *Soviet Math. Dokl.* 36 (1988), no. 3, 528–531. (Vladimir D. Stepanov) **89a:46075** 46E35
- Ilyasov, Ya. Sh.** (with Komech, A. I.) Girsanov's theorem and ergodic properties of statistical solutions of nonlinear parabolic equations. (Russian. English summary) *Trudy Sem. Petrovsk.* No. 12 (1987), 88–117, 243–244. (G. A. Sokhadze) **89g:60193** 60H15 (35K55, 60G30)
- Ilyinskiy, A. S.** see **Ilnitskii, A. S.**
- Ilyunin, O. K.** (with Popov, B. V.; El'kin, L. N.) Majority functional operators in voting theory. (Russian. English summary) *Axiomat. i Telemekh.* 1988, no. 7, 137–145; trans-



- lated in *Automat. Remote Control* **49** (1988), no. 7, part 2, 927-933. (Andrzej Wiecezorek) **89m:90010** 90A08 (90A07)
- Ilyuta, G. G. On the Coxeter transform of an isolated singularity. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 2(254), 227-228. (Anatoly Libgober) **89h:32026** 32C40 (32B30)
- Im, Bok-Hee The automorphisms of the unipotent radical of certain parabolic subgroups of  $Sp_{2l}(K)$ . *Honam Math. J.* **9** (1987), no. 1, 7-17. (R. W. Carter) **89b:20094** 20G15
- Im, S. (with Watanabe, O.; Atluri, S. N.) Observations on phenomenological plasticity theories and constitutive modelling of finite deformation elastoplasticity based upon an internal time concept. *Constitutive models of deformation* (Blacksburg, VA, 1986), 85-108, SIAM, Philadelphia, PA, 1987. (Summary) **89k:73025** 73E05 (73B05, 73E25, 73G20)
- A note on heritability of a dichotomous trait. (French summary) *Biometrical J.* **29** (1987), no. 4, 407-411. (Byron J. T. Morgan) **89a:62218** 62P10 (92A10)
- Imaeda, K. (with Tachibana, H.; Imaeda, M.; Ohta, Susumu) Solutions of the octonion wave equation and the theory of functions of an octonion variable. (Italian and Russian summaries) *Nuovo Cimento B* (11) **100** (1987), no. 1, 53-71. (A. O. Barut) **89a:81044** 81D25 (30G35, 35Q99)
- Imaeda, M. (with Imaeda, K.; Tachibana, H.; Ohta, Susumu) Solutions of the octonion wave equation and the theory of functions of an octonion variable. (Italian and Russian summaries) *Nuovo Cimento B* (11) **100** (1987), no. 1, 53-71. (A. O. Barut) **89a:81044** 81D25 (30G35, 35Q99)
- Imai, Hideki (with Suda, Hirohito; Yashiro, Mitsuhiro) Adaptive decoding method for double-encoding systems. *Electron. Comm. Japan. Part I Comm.* **68** (1985), no. 11, 1-9. (J. J. Stiffler) **89m:94019** 94B35 (94A40)
- Multivariate polynomials in coding theory. *Applied algebra, algorithmics and error-correcting codes* (Toulouse, 1984), 36-60, *Lecture Notes in Comput. Sci.*, 228, Springer, Berlin-New York, 1986. (Harold N. Ward) **89a:94019** 94B15 (20C05, 94B20)
- (with Okano, Hirokazu) A construction method of high-speed decoders using ROMs for Bose-Chaudhuri-Hocquenghem and Reed-Solomon codes. *IEEE Trans. Comput.* **36** (1987), no. 10, 1165-1171. (Jonathan I. Hall) **89a:94016** 94B05 (94B35)
- Imai, Hiroshi (with Aurenhammer, F.) Geometric relations among Voronoi diagrams. *Geom. Dedicata* **27** (1988), no. 1, 65-75. (Herbert Edelsbrunner) **89h:51026** 51K99 (11H06, 51M20, 52A25)
- On the convexity of the multiplicative version of Karmarkar's potential function. *Math. Programming* **40** (1988), no. 1 (Ser. A), 29-32. (John J. Dinkel) **89b:90125** 90C05
- Imai, Hiroshi (with Kawarada, Hideo) One-component asymmetric plasmas in a symmetric vessel. *Japan J. Appl. Math.* **5** (1988), no. 2, 173-186. (Summary) **89d:76034** 76W05 (58E07)
- Kabaya-Imai, Keiko see Kabaya-Imai, Keiko
- Imai, Masaharu (with Yamasaki, Hiroshi; Hirata, Tomio; Ibaraki, Toshihide) Computational complexity of the file allocation problem in distributed database systems. *Systems Comput. Japan* **19** (1988), no. 3, 53-63. (Summary) **89d:68011** 68P15 (68Q15)
- Imai, Yasuyuki (with Seto, Yasuo; Tanaka, Shōtarō; Yutani, Hiroshi) An expansion of  $x^m$  and its coefficients. *Fibonacci Quart.* **26** (1988), no. 1, 33-39. (M. S. Cheema) **89b:05007** 05A10
- Imaikin, V. M. Exponential estimates for the probabilities of large deviations for the solutions of a nonlinear parabolic stochastic equation. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 2, 66-69; translated in *Moscow Univ. Math. Bull.* **43** (1988), no. 2, 35-38. (Jürgen von Scheidt) **89b:60062** 60F10 (35K55, 35R60, 60H15)
- (with Komech, A. I.) Large deviations of solutions of nonlinear stochastic equations. (Russian. English summary) *Trudy Sem. Petrovsk.* **13** (1988), 177-196, 258. (Ralf Manthey) **89m:60062** 60F10 (34F05, 60H15)
- Iman, Ronald L. (with Hora, Stephen C.) Asymptotic relative efficiencies of the rank-transformation procedure in randomized complete block designs. *J. Amer. Statist. Assoc.* **83** (1988), no. 402, 462-470. (Not in MR) **62K10**
- Imanaliyev, M. I. (with Pankov, P. S.) The phenomenon of burst for first-order scalar singularly perturbed differential equations. (Russian) *Izv. Akad. Nauk Kirgiz. SSR* **1987**, no. 3, 3-8, 81. (N. A. Sidorov) **89f:34080** 34E15
- see also *Studies in integro-differential equations*, **89b:00017**
- Imanaliyev, Z. K. Asymptotic construction of an optimal control for systems with a small parameter. (Russian) *Studies in integro-differential equations*, **20** (Russian), 161-168, 340-341, "Ilim", Frunze, 1987. (Asen L. Dontchev) **89g:93042** 93B50 (34E99)
- Imanov, M. G. A linear time-optimality problem with a phase constraint. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **7** (1986), no. 5, 50-55 (1987). (Vadim Komkov) **89b:93065** 93C05 (49B10, 49E10, 93C15)
- Sufficient conditions for optimality in a linear time-optimality problem with phase constraints. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **7** (1986), no. 6, 14-18 (1987). (V. I. Garkusha) **89b:49012** 49B10 (93C05)
- Imaoka, Mitsumori Some homotopy elements related to the quaternionic projective spaces. *Bull. Fac. Ed. Wakayama Univ. Natur. Sci.* **30** (1988), 1-9. (Michael Eggart) **89d:55034** 55Q40 (55Q50)
- Imaoka, Teruo Amalgamation for regular  $\ast$ -semigroups. *Proceedings of the 11th Symposium on Semigroups* (Kyoto, 1987), 12-18, *Reikichi Yoshida, Matsubara*, 1987. (see **89a:20001**) 20M07
- Free products and amalgamation of generalized inverse  $\ast$ -semigroups. *Mem. Fac. Sci. Shimane Univ.* **21** (1987), 55-64. (John W. Hogan) **89e:20113** 20M15 (20M10)
- Imase, Makoto (with Soneoka, Terunao; Manabe, Yoshifumi) A design of reliable networks using node redundancy. Nineteenth Southeastern Conference on Combinatorics, Graph Theory, and Computing (Baton Rouge, LA, 1988). *Congr. Numer.* **67** (1988), 145-157. (Summary) **89m:90079** 90B25 (90B10, 94C15)
- (with Manabe, Yoshifumi) Fault-tolerant routing in a  $k$ -connected network. *Inform. Process. Lett.* **28** (1988), no. 4, 171-175. (Antal Iványi) **89k:68005** 68M10 (68R10, 90B10)
- (with Waxman, Bernard M.) Worst-case performance of Rayward-Smith's Steiner tree heuristic. *Inform. Process. Lett.* **29** (1988), no. 6, 283-287. (Summary) **89k:68073** 68Q25 (68R10)
- Imayoshi, Yōichi (with Shiga, Hiroshige) A finiteness theorem for holomorphic families of Riemann surfaces. *Holomorphic functions and moduli, Vol. II* (Berkeley, CA, 1986), 207-219, *Math. Sci. Res. Inst. Publ.*, 11, Springer, New York-Berlin, 1988. (Frederick P. Gardiner) **89i:32046** 32G15
- escalada-Imaz, Gonzalo see Escalada-Imaz, Gonzalo
- bancora-Imbert, M. C. see Bancora-Imbert, M. C.
- Imbo, Tom D. (with Sudarshan, E. C. G.; Govindarajan, T. R.) Configuration space topology and quantum internal symmetries. *Phys. Lett. B* **213** (1988), no. 4, 471-476. (Peter Basarab-Horwath) **89f:81052** 81D07 (81E99)
- (with Sudarshan, E. C. G.) Inequivalent quantizations and fundamentally perfect spaces. *Phys. Rev. Lett.* **60** (1988), no. 6, 481-483. (Jouko Mickelsson) **89g:81032** 81D07
- Imbrie, John Z. (with Balaban, Tadeusz; Jaffe, Arthur) Effective action and cluster properties of the abelian Higgs model. *Comm. Math. Phys.* **114** (1988), no. 2, 257-315. (Alan D. Sokal) **89e:81077** 81E08 (81E13, 81E25, 82A25)
- (with Newman, C. M.) An intermediate phase with slow decay of correlations in one-dimensional  $1/(x-y)^2$  percolation, Ising and Potts models. *Comm. Math. Phys.* **118** (1988), no. 2, 303-336. (Thórhur Jónsson) **89g:82070** 82A68 (82A25, 82A43)
- Imdad, M. (with Khan, Mohd. Saeed; Sessa, Salvatore) On some weak conditions of commutativity in common fixed point theorems. *Internat. J. Math. Math. Sci.* **11** (1988), no. 2, 289-296. (Summary) **89k:54105** 54H25 (54C60)
- (with Khan, Mohd. Saeed; Sessa, Salvatore) On sequences of contractive mappings and their fixed points. *Internat. J. Math. Math. Sci.* **11** (1988), no. 3, 527-533. (Livia D'Apuzzo) **89f:54083** 54H25 (47H10)
- Imhof, J.-P. (with Kümmerling, P.) Operational derivation of some Brownian motion results. (French summary) *Internat. Statist. Rev.* **54** (1986), no. 3, 327-341. (L. C. G. Rogers) **89h:60138** 60G65
- Heuristic approach to some laws for Brownian motion. (French summary) *Canad. J. Statist.* **15** (1987), no. 3, 279-282. (Endre Csáki) **89e:60154** 60G65 (60I15)
- Imiya, Atsushi (with Sasaki, Toshio; Ogawa, Hidemitsu) Signal smoothing by summation—generalized Fejér method and generalized Lanczos method. *Electron. Comm. Japan. Part I Comm.* **69** (1986), no. 12, 21-28. (Summary) **89j:94005** 94A11 (40A25)
- Imkeller, Peter ★ Two-parameter martingales and their quadratic variation. *Lecture Notes in Mathematics*, 1308, Springer-Verlag, Berlin-New York, 1988. iv+177 pp. ISBN 3-540-19233-6 (Ely Merzbach) **89e:60098** 60G48 (60G07, 60G60, 60H05)
- Immerman, Neil (with Fischer, Michael) Interpreting logics of knowledge in propositional dynamic logic with converse. *Inform. Process. Lett.* **25** (1987), no. 3, 175-181. (Introduction) **89k:68095** 68Q55 (03B70, 68Q10, 68Q15, 68T30)
- Imomkulov, N. Ya. (with Normuratov, Kh.) Solution of the initialization problem for linear systems of  $n$ th-order integro-differential equations. (Russian) *Partial differential equations* (Russian), 95-103, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (M. Švec) **89h:45012** 45J05 (45A05)
- Imori, Masatoshi (with Matsumoto, Makoto; Yamada, Hisao) The line digraph of a regular and pancyclic digraph is also regular and pancyclic. *Graphs Combin.* **4** (1988), no. 3, 235-239. (R. L. Hemminger) **89i:05131** 05C20 (05C38)
- Impens, C. Local microcontinuity of nonstandard polynomials. *Israel J. Math.* **59** (1987), no. 1, 81-97. (Todor Dimitrov Todorov) **89a:03125** 03H05 (26E35, 46Q05)
- Imreh, B. (with Gécseg, F.) On metric equivalence of  $\nu_1$ -products. *Acta Cybernet.* **8** (1987), no. 2, 129-134. (V. Topencharov) **89a:68159** 68Q70 (08B25)
- (with Gécseg, F.) On  $\alpha_1$ -product of tree automata. *Acta Cybernet.* **8** (1987), no. 2, 135-141. (H.-J. Hoehne) **89a:68160** 68Q70
- A note on the generalized  $\nu_1$ -product. *Acta Cybernet.* **8** (1988), no. 3, 247-252. (I. Peák) **89k:68105** 68Q70
- Imrich, Wilfried (with Seifter, N.) On groups of nonplanar, locally finite graphs of finite genus. (Serbo-Croatian summary) *Glas. Mat. Ser. III* **22**(42) (1987), no. 2, 295-300. (Richard Mark Weiss) **89g:05054** 05C25 (05C10)
- (with Godsil, C. D.) Embedding graphs in Cayley graphs. *Graphs Combin.* **3** (1987), no. 1, 39-43. (Martin Skoviera) **89d:05097** 05C25
- Inaba, Hiroshi (with Wakayama, Takeshi) Disturbance rejection of linear control systems defined over the real polynomial ring  $\mathbb{R}[z]$ . *Res. Act. Fac. Sci. Engrg. Tokyo Denki Univ.* **10** (1988), 1-7. (Patrio Colaneri) **89k:93142** 93C55 (93B55, 93C05)
- Inaba, Hisao A semigroup approach to the strong ergodic theorem of the multistate stable population process. *Math. Population Stud.* **1** (1988), no. 1, 49-77. (Henk J. A. M. Heijmans) **89g:92043** 92A15 (47D05)
- Asymptotic properties of the inhomogeneous Lotka-Von Foerster system. (French summary) *Math. Population Stud.* **1** (1988), no. 3, 247-264, 317. (Henk J. A. M. Heijmans) **89g:92044** 92A15 (47D05)
- Inaba, Takashi Examples of exceptional minimal sets. *A fete of topology*, 95-100, *Academic Press, Boston, MA*, 1988. (Toshiyuki Nishimori) **89c:57034** 57R30
- Inada, Tomio An elementary proof of a theorem of Margulis for Kleinian groups. *Math. J. Okayama Univ.* **30** (1988), 177-186. (C. MacLachlan) **89m:30094** 30F40 (20H10, 22E40)
- Inagaki, Takeshi (with Fujikawa, Kazuo; Suzuki, Hiroshi) BRS anomaly and the Weyl free-dom in string theory. *Phys. Lett. B* **213** (1988), no. 3, 279-284. (Summary) **89h:81188** 81E99 (81E30)
- Inagaki, Yasuyoshi (with Aso, Hirotomo) Formal description of systolic algorithms and an analysis of the information flow. *Systems Comput. Japan* **19** (1988), no. 6, 14-24. (Ondrej Šýkora) **89m:68101** 68Q80 (68Q35)
- Inagaki, Yoshio (with Shirao, Yoshiaki; Kawabata, Hiroaki; Nagahara, Toshikuni; Kido, Masao) On the approximate characteristic between the system generated by the unsymmetrical curvilinear restoring force and the piecewise linear system with the unsymmetrical restoring force. *Bull. Univ. Osaka Prefect. Ser. A* **34** (1985), no. 1, 33-41. (Jaume Llibre) **89m:34048** 34C25 (70K40)
- (with Kawabata, Hiroaki; Hashizume, Hidekuni; Shirao, Yoshiaki; Nagahara, Toshikuni; Kido, Masao) A method of optimal control in nonlinear systems. *Bull. Univ. Osaka Prefect. Ser. A* **35** (1986), no. 1, 33-45. (Vimal Singh) **89k:93167** 93D15 (93C10, 93D20)
- Inami, T. (with Kanno, Hiroaki; Kubota, Takahiro) Hexagon gauge anomaly of the type-I superstring in the path integral method. *Phys. Lett. B* **199** (1987), no. 3, 389-394. (Summary) **89a:81133** 81E99 (81C35, 81E30)
- (with Duff, M. J.; Pope, C. N.; Sezgin, E.; Stelle, K. S.) Semiclassical quantization of the supermembrane. *Nuclear Phys. B* **297** (1988), no. 3, 515-538. (Gheorghe Zet) **89h:81179** 81E99 (81D07, 81E30, 83E30)

- Inamoto, Tadaashi** Becchi-Rouet-Stora-Tyutin Hamiltonian method and the membrane model. *Phys. Rev. D* (3) **37** (1988), no. 2, 406–412. (B. Spence) **89c:81131** 81E99 (81E13, 81E30)
- Inan, Kemal** (with Vairayi, P.) Finitely recursive processes. *Discrete event systems: models and applications* (Sopron, 1987), 1–18, *Lecture Notes in Control and Inform. Sci.*, 103, Springer, Berlin-New York, 1988. (Summary) **89c:68032** 68Q10 (68N99)
- (with Vairayi, P.) Finitely recursive process models for discrete event systems. *IEEE Trans. Automat. Control* **33** (1988), no. 7, 626–639. (Not in MR) **93C30** (93C75)
- Inasaridze, Kh. N.** On the homotopization of Karoubi-Villamayor algebraic  $K$ -theory. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **125** (1987), no. 1, 17–19. (Ross Staffeldt) **89d:18003** 18F25 (19D25, 55N15)
- Inawashiro, Sakari** (with Katsura, Shigetoshi; Morita, Tohru) The graph partitioning and the spin glass—comments on papers by Sherrington and his group. *J. Phys. A* **21** (1988), no. 8, 1937–1938. (Summary) **89j:82059** 82A57 (05C70)
- Inayat-Hussain, A. A.** New properties of hypergeometric series derivable from Feynman integrals. I. Transformation and reduction formulae. *J. Phys. A* **20** (1987), no. 13, 4109–4117. (H. M. Srivastava) **89b:81058** 81A15 (33A65, 42B99, 42C05)
- New properties of hypergeometric series derivable from Feynman integrals. II. A generalisation of the  $H$  function. *J. Phys. A* **20** (1987), no. 13, 4119–4128. (H. M. Srivastava) **89b:81059** 81C30 (33A30, 82A99)
- A new generalization of the Hankel integral transform. *J. Math. Phys.* **30** (1989), no. 1, 41–44. (J. M. H. Peters) **89k:44008** 44A15 (33A65, 42B99, 42C05)
- de la Incera, V.** (with Ferrer, E.; Shabad, A. E.) The Bose-condensation problem in gauge theory. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (Järnala, 1985), 280–285, "Nauka", Moscow, 1986. (see **89d:81001**) **81E13** (81E99)
- Incerti Carro, Fernando C.** see Sun, Kunquan et al., **89d:49036**
- Indihar, Stane** A combinatorial method for bilinear programming. (German summary) *Operations research proceedings 1986* (Ulm, 1986), 605–609, Springer, Berlin-New York, 1987. (Summary) **89a:90126** 90C30 (90C08)
- Indira, N. K.** (with Menon, V. V.) Some limit theorems in urn models with indistinguishable balls. Special issue for ICA 1988 Helsinki. *Scand. Actuar. J.* **1988**, no. 1–2, 117–123. (Moshe Shaked) **89j:60037** 60F05 (60C05)
- Indlekofer, Karl-Heinz** Gleichgradige Summierbarkeit bei verallgemeinerten Momenten additiver Funktionen. [Uniform summability for generalized moments of additive functions] *Arch. Math. (Basel)* **49** (1987), no. 6, 508–512. (Douglas Hensley) **89a:11098** 11N60 (11N64)
- (with Erdős, Paul) Multiplikative Funktionen auf kurzen Intervallen. [Multiplicative functions in short intervals] *J. Reine Angew. Math.* **381** (1987), 148–160. (A. Perelli) **89a:11091** 11N37
- (with Kátai, L.)  $B$ -numbers in short intervals. *Arch. Math. (Basel)* **50** (1988), no. 5, 453–458. (Friedrich Roesler) **89f:11124** 11N05 (11N35)
- Indow, Tarow** Alleys on an apparent frontoparallel plane. *J. Math. Psych.* **32** (1988), no. 3, 259–284. (Summary) **89j:92067** 92A25
- Indra, M.** (with Radil, T.; Lánský, P.; Mates, J.; Bohdanecký, Z.; Radilová, J.; Yakimoff, N.) Perception quantitatively analyzed. *Biomathematics and related computational problems* (Naples, 1987), 83–97, *Kluwer Acad. Publ., Dordrecht*, 1988. (see **89f:92002**) **92A27**
- Indumathi, V.** (with Deutsch, Frank; Schnatz, Klaus) Lower semicontinuity, almost lower semicontinuity, and continuous selections for set-valued mappings. *J. Approx. Theory* **53** (1988), no. 3, 266–294. (Zvi Artstein) **89g:54042** 54C65
- Induráin Eraso, Esteban** (with Plans, A.; Reyes, Andrés) ★ Notas sobre geometría de sucesiones en espacios de Banach. (Spanish) [Notes on the geometry of sequences in Banach spaces] With an English summary. Publicaciones del Departamento de Matemáticas, Universidad de Extremadura [Publications of the Mathematics Department of the University of Extremadura], 19. *Universidad de Extremadura, Facultad de Ciencias, Departamento de Matemáticas, Badajoz; Universidad de Zaragoza, Departamento de Matemáticas, Zaragoza*, 1987. x+262 pp. ISBN 84-600-5028-9 (E. R. Lorch) **89b:46016** 46B15 (46B05)
- Ineichen, Robert** Dante-Kommentare und die Vorgeschichte der Stochastik. (English and French summaries) [Dante commentaries and the prehistory of stochastics] *Historia Math.* **15** (1988), no. 3, 264–269. (P. Bockstaele) **89i:01011** 01A35 (60–03, 90–03)
- Inenaga, Yoshikazu** (with Nôno, Kiyoharu) On the Clifford linearization of Laplacian. *J. Indian Inst. Sci.* **67** (1987), no. 5–6, 203–208. (Franciscus C. Sommen) **89h:35068** 35E99 (30G35, 35C99)
- (with Nôno, Kiyoharu; Yanagiwara, Hiroki) Quaternionic analysis in  $C^2$ . *Bull. College Liberal Arts Kyushu Sangyo Univ.* **24** (1988), no. 2, 123–135. (Franciscus C. Sommen) **89m:32009** 32A30 (30G35)
- Inés Prada, Blanca** Reflections on certain aspects of Newtonian epistemology. (Spanish) *Rev. Integr. Temas Mat.* **5** (1987), no. 1, 7–23. (D. J. Struik) **89b:01021** 01A45 (01A70)
- Infeld, E.** (with Murawski, K.) Stability of mKdV-KdV waves. *Austral. J. Phys.* **41** (1988), no. 1, 1–10. (Summary) **89f:35187** 35Q20
- (with Rowlands, George) Simple model for the nonlinear evolution of the Rayleigh-Taylor instability. *Phys. Rev. Lett.* **60** (1988), no. 22, 2273–2275. (Summary) **89c:76065** 76E30 (76–08, 76V05)
- Nonlinear evolution of the Kruskal-Schwarzschild instability of a plasma above a vacuum. *Phys. Rev. A* (3) **39** (1989), no. 2, 723–727. (Summary) **89k:76054** 76E25 (76X05)
- Ingarden, R. S.** (with Kossakowski, Andrzej) The principle of maximum entropy and Boltzmann type kinetic equations. *Rep. Math. Phys.* **24** (1986), no. 2, 177–186. (Carlo Cercignani) **89h:82003** 82A05 (82A40, 94A17)
- see also **Obituary: Kawaguchi, Akitsugu**, **89b:01095**
- Ingber, Marc S.** (with Mitra, Ambar K.) The evaluation of the normal derivative along the boundary in the direct boundary element method. *Appl. Math. Modelling* **13** (1989), no. 1, 32–40. (Not in MR) **65D25** (65N30)
- Ingermanson, Randall** (with Aratyn, Henrik; Niemi, Antti J.) Covariant canonical superstrings. *Modern Phys. Lett. A* **2** (1987), no. 12, 957–965. (B. Spence) **89b:81172** 81E99 (81E30)
- (with Aratyn, Henrik; Niemi, Antti J.)  $OSp(1,1/2)$  and Parisi-Sourlas supersymmetry for closed strings. *Phys. Lett. B* **195** (1987), no. 2, 149–154. (Enore Guadagnini) **89a:81110** 81E99 (81E30, 81G20, 83E30)
- (with Aratyn, Henrik; Niemi, Antti J.) Parisi-Sourlas fermions from Ramond superstring. *Phys. Lett. B* **195** (1987), no. 2, 155–159. (Enore Guadagnini) **89a:81111** 81E99 (81E30, 81G20, 83E30)
- (with Aratyn, Henrik; Niemi, Antti J.) Interacting field theory of relativistic point particles. *Phys. Rev. Lett.* **58** (1987), no. 10, 965–968. (V. B. Serebrennikov) **89c:81100** 81E99 (81E30, 81G25)
- (with Aratyn, Henrik) Abelianising the Virasoro operators. *Classical Quantum Gravity* **5** (1988), no. 12, L213–L219. (Summary) **89j:58025** 58F05 (17B65, 81E13, 81E30)
- (with Aratyn, Henrik) Algebraic approach to the geometry of the (super-) string model. *Nuclear Phys. B* **299** (1988), no. 3, 507–547. (Roger Brooks) **89e:81153** 81E99 (81E30, 83E30)
- (with Aratyn, Henrik) Geometric interpretation of the string vertex operator. *Phys. Rev. Lett.* **61** (1988), no. 18, 2050–2053. (Robert Marnelius) **89m:81127** 81E99 (53C80, 81E13, 81E30)
- Ingled, Dzsh.** see England, James W.
- Inglese, Gabriele** (with Gautschi, Walter) Lower bounds for the condition number of Vandermonde matrices. *Numer. Math.* **52** (1988), no. 3, 241–250. (Ludwig Elsner) **89b:65108** 65F35 (15A12)
- Ingura, Ramarao** (with Baker-Jarvis, James) Principle of maximum entropy and inverse scattering problems. *Maximum entropy and Bayesian methods in applied statistics* (Calgary, Alta., 1984), 300–315, Cambridge Univ. Press, Cambridge-New York, 1986. (Introduction) **89a:81162** 81F99 (35Q99, 78A45)
- Iniasta Moreno, Miquela** (with Balibrea Gallego, Francisco) Toeplitz summability of independent random variables. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2* (Spanish) (Badajoz, 1986), 353–358, Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89g:60101** 60F15
- In'kov, A. V.** Estimation of unknown frequencies of harmonics from observations on noisy signal realizations. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom. D.* **1988**, vyp. 2, 106–107, 133–134. (Not in MR) **94A12**
- Inman, D. J.** (with Olsen, C. L.) Dynamics of symmetrizable nonconservative systems. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 1, 206–212. (N. D. Sengupta) **89b:73031** 73K99 (35F99)
- Inman, Robert P.** Markets, governments, and the "new" political economy. *Handbook of public economics, Vol. II*, 647–777, *Handbooks in Economics*, 4, North-Holland, Amsterdam-New York, 1987. (see **89m:9002b**) **90A08** (90A17)
- Innami, Nobuhiro** An extension of a theorem of D. Gromoll and J. A. Wolf. *Math. J. Okayama Univ.* **29** (1987), 245–248 (1988). (John Bolton) **89d:53086** 53C20 (53C22)
- Convex curves whose points are vertices of billiard triangles. *Kodai Math. J.* **11** (1988), no. 1, 17–24. (G. D. Chakerian) **89d:52064** 52A10
- Euclidean metric and flat metric outside a compact set. *Proc. Amer. Math. Soc.* **105** (1989), no. 3, 701–705. (Viktor Schroeder) **89h:53093** 53C20
- Innamorati, Stefano** (with Eugeni, Franco) Arcs and blocking sets in symmetric designs. *Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. I* (Catania, 1986). *Ars Combin.* **24** (1987), A, 29–45. (Sharad S. Sane) **89i:05047** 05B05 (05B25, 51E20, 51E30)
- (with Eugeni, Franco) On sets of fixed parity in Steiner systems. *Combinatorics '86* (Trento, 1986), 157–167, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (Giordano Gallina) **89b:05030** 05B05
- Ino, Taketoshi** (with Munakata, Yasuo; Nagamura, Fumiaki) A solvable composite system in relativistic quantum mechanics. *Progr. Theoret. Phys.* **79** (1988), no. 6, 1404–1411. (J. V. Greenman) **89m:81072** 81D10 (81C99)
- Inomata, A.** (with Barut, A. O.; Wilson, Raj) A new realisation of dynamical groups and factorisation method. *J. Phys. A* **20** (1987), no. 13, 4075–4082. (P. G. L. Leach) **89e:81014** 81C05 (58F07)
- (with Barut, A. O.; Wilson, Raj) Algebraic treatment of second Pöschl-Teller, Morse-Rosen and Eckart equations. *J. Phys. A* **20** (1987), no. 13, 4083–4096. (P. G. L. Leach) **89e:81015** 81C05 (58F07)
- (with Barut, A. O.; Junker, G.) Path integral treatment of the hydrogen atom in a curved space of constant curvature. *J. Phys. A* **20** (1987), no. 18, 6271–6280. (Takashi Miura) **89b:81060** 81C35 (81G40)
- Recent developments of techniques for solving nontrivial path integrals. *Path summation: achievements and goals* (Trieste, 1987), 114–146, *World Sci. Publishing, Singapore*, 1988. (see **89i:81034**) **81C35** (81–02)
- Inoue, Atsushi** An unbounded generalization of the Tomita-Takesaki theory. II. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 4, 673–726. (Camillo Trapani) **89d:47107** 47D40 (46L35)
- A generalization of Hilbert algebras by partial  $\ast$ -algebras. *Bull. Central Res. Inst. Fukuoka Univ.* **10** (1988), 57–69. (Camillo Trapani) **89f:46112** 46K15 (46L99, 47D40)
- Inoue, Katsushi** (with Takanami, Itsuo) Some considerations about NPRIORITY(I) without ROM. *Inform. Process. Lett.* **28** (1988), no. 4, 215–219. (Introduction) **89f:68048** 68Q10 (68Q05, 68Q15)
- (with Ito, Akira; Takanami, Itsuo) A note on three-way two-dimensional alternating Turing machines. *Inform. Sci.* **45** (1988), no. 1, 1–22. (Akira Nakamura) **89d:68013** 68Q05 (03D10, 03D15)
- (with Takanami, Itsuo) A survey of two-dimensional automata theory. *Proceedings of the Fifteenth International Meeting of Young Computer Scientists* (Smolenice Castle, 1988). *Tanulmányok—MTA Számítéstechn. Automat. Kutató Int. Budapest No.* **208** (1988), 21–35. (see **89g:68002**) **68Q70** (68–02)
- Inoue, Kazuhiko** (with Odaka, Kazuhiko; Omote, Minoru) Infinite number of conserved quantities and extended conformal algebra in the Thirring model. *J. Math. Phys.* **29** (1988), no. 2, 476–480. (Bo-Wei Xu) **89b:81195** 81E99 (17B65, 58F07, 81E40, 81G25)
- Inoue, Kazuyuki** Conjugate sets of Gaussian random fields on a Hilbert space. *J. Fac. Sci. Shinshu Univ.* **21** (1986), no. 2, 65–69 (1987). (N. M. Zinchenko) **89a:60108** 60G15 (60B11, 60G10, 60G60)
- Inoue, Kenji** Perturbed motion of a simple pendulum. *J. Phys. Soc. Japan* **57** (1988), no. 4, 1226–1237. (Robert Faure) **89k:70041** 70K10 (34C15, 34C25, 34E10)
- Inoue, Kenzo** (with Sakamoto, Makoto; Takano, Hiroshi) Nonabelian orbifolds. *Progr. Theoret. Phys.* **78** (1987), no. 4, 908–922. (C. Gauthier) **89a:81134** 81E99 (53C80, 81E30, 83E30)
- (with Nima, Shuji; Takano, Hiroshi) Zero mode and modular invariance in string on nonabelian orbifold. *Progr. Theoret. Phys.* **80** (1988), no. 5, 881–896. (Summary) **89j:81188** 81E99 (81E30, 83E30)



- Inoue, Koichi** (with Tanaka, Tsunehiko; Kumamoto, Hiromitsu) A coverage Monte Carlo method for reliability quantification. *System modelling and optimization* (Tokyo, 1987), 406–415, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (see 89f:00029) 90B25
- Inoue, Makoto**<sup>2</sup> (with Suzuki, Masuo) The ST-transformation approach to analytic solutions of quantum systems. I. General formulations and basic limit theorems. *Progr. Theoret. Phys.* 78 (1987), no. 4, 787–799. (Nick Yu. Reshetikhin) 89g:82012 82A05 (82A15)
- (with Suzuki, Masuo) On the convergence of the Trotter-like formula and the finite-Trotter-number scaling law in the transverse Ising chain. *Progr. Theoret. Phys.* 79 (1988), no. 1, 30–38. (From the introduction) 89k:81119 81E25 (82A68)
- (with Suzuki, Masuo) The ST-transformation approach to analytic solutions of quantum systems. II. Transfer-matrix and Pfaffian methods. *Progr. Theoret. Phys.* 79 (1988), no. 3, 645–664. (Nick Yu. Reshetikhin) 89k:82095 82A68 (58A17, 58F07)
- Inoue, Masayoshi** (with Fujisaka, Hirokazu) Analytic properties of characteristic exponents for chaotic dynamical systems. *Progr. Theoret. Phys.* 77 (1987), no. 5, 1077–1089. (Summary) 89a:58071 58F13 (82A05)
- (with Fujisaka, Hirokazu) Statistical-thermodynamics formalism of self-similarity. *Progr. Theoret. Phys.* 77 (1987), no. 6, 1334–1343. (Hanna Nencka) 89g:60244 60J60 (58F13, 58G40, 62M10, 82A30)
- (with Fujisaka, Hirokazu) Theory of diffusion and intermittency in chaotic systems. III. New approach to temporal correlations. *Progr. Theoret. Phys.* 78 (1987), no. 2, 268–281. (Summary) 89a:58069 58F13 (82A35, 82A99)
- (with Fujisaka, Hirokazu) Continued fraction expansion of fluctuation spectrum and generalized time correlation. *Progr. Theoret. Phys.* 78 (1987), no. 6, 1203–1208. (Editors) 89d:82013 82A05
- (with Fujisaka, Hirokazu; Yamaki, O.) Scaling behavior of fluctuation spectrum for pure intermittency chaos. *Phys. Lett. A* 132 (1988), no. 8–9, 403–407. (Summary) 89h:58117 58F13 (82A99)
- Inoue, Masayuki** (with Onozawa, Akira; Oishi, Shin'ichi; Horiuchi, Kazuo) On principal partition of matroids with parity condition into strongly irreducible minors pairs. *Electron. Comm. Japan. Part I Comm.* 68 (1985), no. 11, 10–19. (András Recski) 89j:05029 05B35
- Inoue, Tadashi** (with Kobayashi, Kazuya) Diffraction of a plane wave by an inclined parallel plate grating. *IEEE Trans. Antennas and Propagation* 36 (1988), no. 10, 1424–1434. (Summary) 89j:78029 78A45
- Inoue, Takakatsu** An expansion of the generalized ridge estimator in a linear regression model. *J. Japan Statist. Soc.* 18 (1988), no. 2, 131–140. (Not in MR) 62J07
- Inoue, Takeshi** (with Akimaru, Haruo; Kuribayashi, Hiroshi) Approximate evaluation for mixed delay and loss systems with renewal and Poisson inputs. *IEEE Trans. Comm.* 36 (1988), no. 7, 850–854. (Summary) 89d:90099 90B22
- Inoue, Yujiro** (with Kato, Koichi) Matrix-fraction descriptions and the McMillan form of a transfer function meromorphic in the unit disk. *Electron. Comm. Japan. Part I Comm.* 70 (1987), no. 12, 29–41. (Mihail Voicu) 89k:93051 93B25 (15A54, 93C05, 93C55)
- Inozemtseva, N. G.** (with Sadovnikov, B. I.) The evolution of the Bogolyubov functional hypothesis and nonlocality of transport processes in hard-sphere hydrodynamics. *Soviet J. Particles and Nuclei* 18 (1987), no. 4, 376–386; translated from *Fiz. Elementar. Chastits i Atom. Yadra* 18 (1987), no. 4, 878–903, 912 (Russian). (Carlo Cercignani) 89c:82033 82A40 (76P05)
- (with Sadovnikov, B. I.) A spatially inhomogeneous solution of the Kac model. (Russian) *IV International Symposium on Selected Topics in Statistical Mechanics* (Russian) (Dubna, 1987), 165–170, *Joint Inst. Nuclear Res., Dubna*, 1988. (V. Protopopescu) 89m:82034 82A40
- Inselberg, Alfred** (with Chomut, Tuval; Reif, Mordechai) Convexity algorithms in parallel coordinates. *J. Assoc. Comput. Mach.* 34 (1987), no. 4, 765–801. (H. W. Guggenheimer) 89a:68207 68U05 (68R10)
- de Iya Inera, V.** see de la Inera, V.
- Inkepp, Warren H.** On electromagnetic spinors and quantum theory. *Z. Naturforsch. A* 43 (1988), no. 7, 695–696. (Summary) 89f:81084 81D25 (78A25, 81D27)
- Intissar, Abdelkader** Sur une méthode de perturbation. (English summary) [On a perturbation method] *C. R. Acad. Sci. Paris Sér. I Math.* 304 (1987), no. 4, 95–98. (Summary) 89c:47017 47A55 (35P05, 47F05, 81C12)
- Étude spectrale d'une famille d'opérateurs non-symétriques intervenant dans la théorie des champs de reggeons. (English summary) [Study of the spectrum of a family of nonsymmetric operators arising in reggeon field theory] *Comm. Math. Phys.* 113 (1987), no. 2, 263–297. (H. Hogreve) 89k:81032 81C10 (47A10, 47D05, 81C12, 81G25)
- Intrator, Jacob** (with Szwarc, Włodzimierz) An inductive property of the transportation problem. *Asia-Pacific J. Oper. Res.* 5 (1988), no. 1, 79–83. (E. G. Gol'shtein) 89k:90105 90C08
- Intrigilator, Michael D.** (with Sheshinski, Eytan) Toward a theory of planning. *Social choice and public decision making*, 135–158, Cambridge Univ. Press, Cambridge-New York, 1986. (Introduction) 89b:90112 90B50 (90A05)
- (with Briio, Dagobert L.) A predator-prey model of guerrilla warfare. Formal analysis in international relations. *Synthese* 76 (1988), no. 2, 235–244. (see 89c:90218) 92A90 (90D40, 92A15)
- Isoiguchi, Masahiro** (with Ichihashi, H.; Tanaka, Hideo) Fuzzy linear programming using a multiattribute value function. (Japanese. English summary) *J. Oper. Res. Soc. Japan* 31 (1988), no. 1, 121–142. (Summary) 89b:90126 90C05 (03E72, 90A10)
- Izuzuka, Masaki** (with Kimura, Tatsuo; Kasai, S.; Yasukura, Osami) A classification of 2-simple prehomogeneous vector spaces of type I. *J. Algebra* 114 (1988), no. 2, 369–400. (G. E. Wall) 89f:32062 32M10 (20C05)
- (with Kimura, Tatsuo; Kasai, S.; Taguchi, Masanobu) Some P.V.-equivalences and a classification of 2-simple prehomogeneous vector spaces of type II. *Trans. Amer. Math. Soc.* 300 (1988), no. 2, 433–494. (T. Ono) 89k:11101 11R20 (11E99, 11N25, 11R18, 11R29, 32M10)
- Invernizzi, Sergio** On the periodic BVP for the forced Duffing equation. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* 19 (1987), no. 1, 64–75. (C. P. Gupta) 89f:34026 34B15 (34C25)
- Iu, I.** see Jui, István
- Iokimidis, Nikolaos I.** The successive approximations method for the airfoil equation. *J. Comput. Appl. Math.* 21 (1988), no. 2, 231–238. (Summary) 89c:65150 65R20
- A unified Riemann-Hilbert approach to the analytical determination of zeros of sectionally analytic functions. *J. Math. Anal. Appl.* 129 (1988), no. 1, 134–141. (Wolfgang Gawronski) 89b:30006 30C15 (30E25, 65E05, 65H05)
- (with Papadakis, K.) A new class of quite elementary closed-form integral formulae for roots of nonlinear equations. *Appl. Math. Comput.* 29 (1989), no. 2, part II, 185–196. (Summary) 89m:65050 65H05 (70F05)
- Iola, V.** see Joala, V.
- Ioannides, D.** (with Roussas, G. G.) Note on the uniform convergence of density estimates for mixing random variables. *Statist. Probab. Lett.* 5 (1987), no. 4, 279–285. (Summary) 89b:62083 62G05 (62M09)
- Ioannou, P. A.** (with Reed, John S.) Discrete-time decentralized adaptive control. *Automatica—J. IFAC* 24 (1988), no. 3, 419–421. (Not in MR) 93C40 (93A15)
- (with Tao, Gang) Strictly positive real matrices and the Lefschetz-Kalman-Yakubovich lemma. *IEEE Trans. Automat. Control* 33 (1988), no. 12, 1183–1185. (Summary) 89i:93026 93B25 (15A48)
- (with Sun, J.) Theory and design of robust direct and indirect adaptive-control schemes. *Internat. J. Control* 47 (1988), no. 3, 775–813. (Edward Jezierski) 89f:93014 93B50 (49D07, 93C30, 93C40, 93C60)
- Iochum, Bruno** (with Godefroy, G.) Arens-regularity of Banach algebras and the geometry of Banach spaces. *J. Funct. Anal.* 80 (1988), no. 1, 47–59. (Horst Behncke) 89j:46051 46H05 (46B20, 46L05)
- Ioffe, A. D.** Global surjection and global inverse mapping theorems in Banach spaces. *Reports from the Moscow refusenik seminar*, 181–188, *Ann. New York Acad. Sci.*, 491, New York Acad. Sci., New York, 1987. (From the text) 89k:47111 47H99 (58C15)
- Ioffe, L. B.** (with Vinokur, V. M.; Larkin, A. I.; Feigel'man, M. V.) System of Josephson junctions as a model of a spin glass. *Soviet Phys. JETP* 66 (1987), no. 1, 198–210 (1988); translated from *Zh. Eksp. Teoret. Fiz.* 93 (1987), no. 1, 343–365 (Russian). (Summary) 89k:82076 82A57 (82A25)
- Ioffe, M. V.** (with Andrianov, A. A.; Borisov, N. V.) Scattering theory for the supersymmetric Hamiltonian, and supersymmetry of nuclear interactions. (Russian. English summary) *Theoret. Mat. Fiz.* 72 (1987), no. 1, 97–111. (Horia Scutaru) 89a:81160 81F15 (81G20)
- (with Andrianov, A. A.) Pauli fermions as components of  $D = 2$  supersymmetrical quantum mechanics. *Phys. Lett. B* 205 (1988), no. 4, 507–510. (Summary) 89c:81191 81G10 (81C99)
- Iomin, A. M.** (with Berman, G. P.) Quasiclassical approximation for a nonlinear oscillator that is stochastic in the classical limit. (Russian. English summary) *Theoret. Mat. Fiz.* 77 (1988), no. 2, 277–284; translated in *Theoret. and Math. Phys.* 77 (1988), no. 2, 1197–1202. (Summary) 89j:81063 81C99 (81C20)
- Iommi Amundegui, G.** Sur la réduction des caractères induits du groupe symétrique. [Reducing the induced characters of the symmetric group] *Ann. Soc. Sci. Bruxelles Sér. I* 100 (1986), no. 3, 115–126 (1987). (A. O. Morris) 89b:20039 20C30
- Ion, Ion D.** (with Niță, Constantin) Ultraproducts of rings of fractions. *Proceedings of the Conference on Algebra (Romanian) (Timisoara, 1986)*, 55–59, Univ. Timisoara, Timisoara, 1987. (J. Jirásko) 89k:16007 16A08
- (with Niță, Constantin) Some results on ring ultraproducts. *Rev. Roumaine Math. Pures Appl.* 32 (1987), no. 7, 617–622. (Paul C. Eklof) 89b:03052 03C20 (03C60, 16A02, 16A08)
- Ion, O.** see John, Oldrich
- Ionescu, Cristodor** (with Brezuleanu, Alexandru) "Good" Noetherian rings. *Proceedings of the Conference on Algebra (Romanian) (Timisoara, 1986)*, 1–4, Univ. Timisoara, Timisoara, 1987. (Daniel D. Anderson) 89i:13020 13E05 (13–02, 13H99)
- Ionescu, D.** (with Rabah, R.) Stabilization problem in Hilbert spaces. *Internat. J. Control* 46 (1987), no. 6, 2035–2042. (K. Maciej Przyłuski) 89c:93059 93D15 (93C05, 93C25, 93C60)
- Ionescu, Ioan R.** (with Sofonea, Mircea) Quasistatic processes for elastic-viscoplastic materials. *Quart. Appl. Math.* 46 (1988), no. 2, 229–243. (Petr Procházka) 89j:73050 73F15 (73F30)
- Ionescu, Paltin** Ample and very ample divisors on surfaces. *Rev. Roumaine Math. Pures Appl.* 33 (1988), no. 4, 349–358. (Marino Paleschi) 89f:14037 14J25 (14C20, 14J10)
- Ionescu, Valentin** (with Suciu, Ion) The Wiener filter for stationary processes having parameter periodicities in correlations. (Romanian. English summary) *Stud. Cerc. Mat.* 39 (1987), no. 5, 422–432. (Summary) 89b:60113 60G25
- Ionescu-Pallas, N.** (with Sofonea, L.) Bernhard Riemann: a forerunner of classical electrodynamics (an historical epistemological approach). *Organon* No. 22–23 (1986/87), 259–272. (J. Z. Buchwald) 89k:01034 01A70 (01A55, 78–03)
- (with Sofonea, L.; Gottlieb, Ioan; Toró, T.) The relativistic conception of physics in Romania in the inter war period. Some historical-epistemological remarks. *An. Univ. Timisoara Stiint. Fiz.* 25 (1987), 37–57. (Summary) 89b:01047 01A60 (83–03)
- (with Gottlieb, Ioan) Cosmology of the observer. (Romanian. English summary) *Stud. Cerc. Fiz.* 39 (1987), no. 9, 800–809. (Summary) 89c:83090 83F05
- Ionin, L. L.** Investigation of the stability of linear stochastic systems under small Markov perturbations with almost periodic coefficients. (Russian) *Random search problems*, 11 (Russian), 131–139, 214, "Zinatne", Riga, 1988. (I. Gyöngy) 89j:93133 93E15 (34C27, 34F05, 60H10)
- (with Yanson, V. A.) Stabilization of dynamical systems with periodic coefficients by a diffusion process. (Russian) *Random search problems*, 11 (Russian), 140–149, 214, "Zinatne", Riga, 1988. (I. Gyöngy) 89k:93219 93E15 (60H10, 60J60)
- Iomin, V. K.** Structures that can be generated by sets of morphisms. (Russian) *Trudy Inst. Mat. (Novosibirsk)* 9 (1987), Issled. Geom. "v tselom" i Mat. Anal., 66–84, 206. (J. Sonner) 89c:18008 18B99 (08A05, 15A03, 54E35)
- Ionova, I. V.** (with Smirnova, T. G.) ★ Некоторые задачи приближенного агрегирования. (Russian) [Some problems of approximate aggregation] *Сообщения по Прикладной Математике*. [Reports in Applied Mathematics] *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1988. 36 pp. (Summary) 89c:93005 93A10 (90A07, 92A17, 93C60)
- On a case of approximate decomposition of a dynamical system. (Russian) *Kibernet. i Vychisl. Tekhn.* No. 77 (1988), 38–42, 109. (Not in MR) 49D27
- Ioss, G.** (with Chossat, P.; Demay, Y.) Competition of azimuthal modes and quasiperiodic flows in the Couette-Taylor problem. *Dynamics of infinite-dimensional systems* (Lisbon, 1986), 45–56, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 37, Springer, Berlin-New York, 1987. (Introduction) 89m:35176 35Q10 (58F14, 58F27, 76E30)

- (with Szemplińska-Stupnicka, Wanda; Moon, F.) ★ Chaotic motions in nonlinear dynamical systems. CISM Courses and Lectures, 298. Springer-Verlag, Vienna, 1988. vi+193 pp. ISBN 3-211-82062-0 (Editors) **89c:58001** 58-06 (58F13)
- Local techniques in bifurcation theory and nonlinear dynamics. *Chaotic motions in nonlinear dynamical systems*, 137-193. CISM Courses and Lectures, 298. Springer, Vienna, 1988. (N. D. Kazarinoff) **89i:58105** 58F14 (34D30, 70K99)
- (with Signoret, F.) Une singularité de codimension 3 dans le problème de Couette-Taylor. (English summary) [A codimension-3 singularity in the Taylor-Couette problem] *J. Méc. Théor. Appl.* 7 (1988), no. 5, 545-572. (Summary) **89m:76034** 76E10 (58E07, 58F14, 76C05)
- Jordan, Andrei Pseudoconvex domains with peak functions at each point of the boundary. *Pacific J. Math.* 133 (1988), no. 2, 277-287. (Steven George Krantz) **89c:32045** 32F15 (32A07, 32E25, 46J15)
- Jorgov, Vasil I. Extremality of self-dual doubly even codes of length 56. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian) (Sunny Beach (Sl'ncev Bryag), 1987)*, 435-439. *Bulg. Acad. Sci., Sofia*, 1987. (see **89c:00038**) 94B40
- (with Huffman, W. Cary) A [72, 36, 16] doubly even code does not have an automorphism of order 11. *IEEE Trans. Inform. Theory* 33 (1987), no. 5, 749-752. (Jonathan I. Hall) **89a:94021** 94B25 (11T71)
- Jorgulescu, Afrodita (1 + 0)-valued Lukasiewicz-Moisil and Post algebras. *Proceedings of the Conference on Algebra (Romanian) (Timisoara, 1986)*, 51-54. Univ. Timisoara, Timisoara, 1987. (S. Rudeanu) **89m:06014** 06D30 (03G20, 06D25)
- Jório, Rafael José, Jr. ★ Tópicos na teoria da equação de Schrödinger. (Portuguese) [Topics in the theory of Schrödinger equations] 16º Colóquio Brasileiro de Matemática. [16th Brazilian Mathematics Colloquium] Instituto de Matemática Pura e Aplicada, Rio de Janeiro, 1987. vi+212 pp. ISBN 85-244-0030-7 (Julio Alcântara-Bode) **89m:81038** 81C05 (34B25, 35J10, 35P25, 47F05, 81-01, 81F05)
- (with Lório, Valéria de Magalhães) ★ Equações diferenciais parciais: uma introdução. (Portuguese) [An introduction to partial differential equations] Projeto Euclides [Euclid Project], 17. Instituto de Matemática Pura e Aplicada, Rio de Janeiro, 1988. x+366 pp. ISBN 85-244-0035-8 (From the preface) **89k:35001** 35-01 (42-01, 46-01)
- see also Partial differential equations, **89c:35002**
- Jório, Valéria de Magalhães (with Lório, Rafael José, Jr.) ★ Equações diferenciais parciais: uma introdução. (Portuguese) [An introduction to partial differential equations] Projeto Euclides [Euclid Project], 17. Instituto de Matemática Pura e Aplicada, Rio de Janeiro, 1988. x+366 pp. ISBN 85-244-0035-8 (From the preface) **89k:35001** 35-01 (42-01, 46-01)
- Josellani, A. N. (with Kilasoniya, N. A.) A method for solving a system of linear algebraic equations with increased accuracy. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzii*. SSR 129 (1988), no. 1, 45-47. (Summary) **89c:65053** 65F30
- Josellani, Ts. L. (with Chernov, N. I.; Kurbatov, V. S.; Ososkov, G. A.) ★ Efficiency of the estimators of multivariate distribution parameters from the one-dimensional observed frequencies. With a Russian summary. *Сообщения Объединенного Института Ядерных Исследований. Дубна* [Communications of the Joint Institute for Nuclear Research. Dubna], ES-88-98. Joint Inst. Nuclear Res., Dubna, 1988. 9 pp. (Summary) **89c:62065** 62H12
- Josifescu, Marius Obituary notice: Octav Onicescu, 1892-1983. *Internat. Statist. Rev.* 54 (1986), no. 1, 97-108. (Editors) **89g:01056** 01A70
- Mixing properties for  $f$ -expansions: the bounded  $p$ -variation case. *Mathematical statistics and probability theory*, Vol. A (Bad Tatzmannsdorf, 1986), 195-199. Reidel, Dordrecht-Boston, MA-London, 1987. (V. Drobót) **89b:11069** 11K55 (60F99, 60G99)
- Mixing properties for  $f$ -expansions. *Probability theory and mathematical statistics*, Vol. II (Vilnius, 1985), 1-8. VNU Sci. Press, Utrecht, 1987. (M. Thaler) **89d:11061** 11K55 (28D05, 60F05)
- ★ Skończone procesy Markowa i ich zastosowania. (Polish) [Finite Markov processes and their applications] Translated from the English by Jacek Wesolowski. *Pracownice Wydawnictwo Naukowe (PWN)*, Warsaw, 1988. 292 pp. ISBN 83-01-07869-3 (Editors) **89m:60155** 60J10 (60J25, 92A25)
- Josifescu, Mircea (with Scutaru, H.) Second-degree kinematical constraints associated with dynamical symmetries. *J. Math. Phys.* 29 (1988), no. 4, 742-757. (Summary) **89m:17011** 17B10 (58F40, 70G99)
- Josifyan, G. A. (with Oleinik, O. A.; Shamaev, A. S.) Averaging of the solutions of the Neumann problem for a second-order elliptic equation, and systems in elasticity theory with rapidly oscillating periodic coefficients in a punctured domain. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 6 (258), 195-196. (From the text) **89f:35026** 35B25 (35J25, 73C40)
- (with Oleinik, O. A.; Shamaev, A. S.) On the homogenization of stratified structures. *Analyse mathématique et applications*, 401-419. Gauthier-Villars, Paris, 1988. (Cornelius O. Horgan) **89i:35014** 35B25 (35B45, 73C40, 73K20)
- (with Oleinik, O. A.; Shamaev, A. S.) Averaging problems for layered media. (Russian) *Asymptotic methods in mathematical physics (Russian)*, 73-83, 300, "Naukova Dumka", Kiev, 1988. (Dietrich Göhde) **89k:35030** 35B25 (35B30, 35B40, 35J25, 73C40)
- (with Oleinik, O. A.; Shamaev, A. S.) Asymptotic expansions of solutions of the Dirichlet problem for elliptic equations in perforated domains. *Nonlinear partial differential equations and their applications. Collège de France seminar, Vol. VIII (Paris, 1984-1985)*, 141-175. Pitman Res. Notes Math. Ser., 166. Longman Sci. Tech., Harlow, 1988. (Dietrich Göhde) **89h:35061** 35C20 (35B25, 35J25, 73C45)
- Iotova, Angelina Exact calculation of element matrices for a quadratic triangular finite element. (Bulgarian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Méc.* 77 (1983), no. 1, 17-23 (1988). (Summary) **89i:65118** 65N30
- Ioulidis, Stavros (with Mittas, Jean) Sur les hypergroupes polysymétriques commutatifs. (English and Italian summaries) [Commutative polysymmetric hypergroups] *Rend. Istit. Mat. Univ. Trieste* 18 (1986), no. 2, 125-135. (Umberto Cerruti) **89b:20149** 20N99
- Iovanovich, Boshko S. see Jovanović, Boško S.
- Ip, Chi Ming On least-change secant updates in factored form. *SIAM J. Numer. Anal.* 24 (1987), no. 5, 1126-1132. (Kaj Madsen) **89c:65065** 65K10 (15A23, 90C30)
- (with Todd, M. J.) Optimal conditioning and convergence in rank one quasi-Newton updates. *SIAM J. Numer. Anal.* 25 (1988), no. 1, 206-221. (M. Z. Nashed) **89b:65124** 65H10 (65F35)
- Ipatov, V. P. (with Kornievskii, V. I.; Platonov, V. D.) Minimum-power jamming of discrete periodic signals. *Soviet J. Comm. Tech. Electron.* 32 (1987), no. 11, 40-46; translated from *Radiotekhn. i elektron.* 32 (1987), no. 6, 1256-1264 (Russian). (Not in MR) **94A05** (49B40)
- (with Kamaletdinov, B. Zh.) Ensembles of  $p$ -ary sequences of bent functions. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 3, 26-32, 86; translated in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 3, 34-43. (Summary) **89d:94009** 94A11 (05A15)
- Ipinoyami, R. A. (with Freeman, Geoffrey H.) Equineighboured balanced nested row-column designs. *J. Statist. Plann. Inference* 20 (1988), no. 2, 191-199. (Sanpei Kageyama) **89m:05017** 05B05 (05B30, 62K99)
- Ipsen, Ilse C. F. Systolic algorithms for the parallel solution of dense symmetric positive-definite Toeplitz systems. *Numerical algorithms for modern parallel computer architectures (Minneapolis, MN, 1986-87)*, 85-108. IMA Vol. Math. Appl., 13. Springer, New York-Berlin, 1988. (see **89j:65093**) 65W05 (65F05)
- Iqbal, M. Numerical Laplace transform inversion by a regularization method. *Punjab Univ. J. Math. (Lahore)* 20 (1987), 71-96. (G. F. Miller) **89g:65162** 65R10
- Numerical inversion of Laplace transforms using cross-validation method. *J. Natur. Sci. Math.* 28 (1988), no. 1, 141-152. (Not in MR) **65R10**
- chkhikhen Ir see Chkhikhen Ir
- Iranpour, Reza (with Chacon, Paul) ★ Basic stochastic processes. The Mark Kac lectures. Macmillan Publishing Company, New York; Collier Macmillan Publishers, London, 1988. xiv+258 pp. ISBN 0-02-359820-4 (Paul Embrechts) **89i:60002** 60-01
- Iranzo, M. J. (with Pérez Monasor, F.) Existence of injectors in finite groups with respect to some Fitting classes. (Spanish) *Publ. Mat.* 32 (1988), no. 1, 57-59. (Juan Manuel de Olazábal) **89c:20037** 20D10
- Iri, M. A very personal reminiscence on the problem of computational complexity. *Discrete Appl. Math.* 17 (1987), no. 1-2, 17-27. (Richard A. DeMillo) **89b:01030** 01A65 (01A70)
- (with Kabaya-Imai, Keiko) Sum of uniformly distributed random variables and a family of nonanalytic  $C^\infty$ -functions. *Japan J. Appl. Math.* 4 (1987), no. 1, 1-22. (Summary) **89d:26023** 26E10 (58C25, 60F99)
- see also System modelling and optimization, **89f:00029**
- Iribarren, Ileana (with Berzin, Corinne) Estimation de la matrice des moments spectraux d'ordre 2 d'un champ aléatoire gaussien à l'aide des courbes de niveau. (English summary) [Estimation of the second-order spectral moments matrix of a Gaussian random field based on the level curves] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 18, 915-918. (Akio Noda) **89m:60090** 60G15 (60G60)
- Irk, Sitki Gaussian operators. (Turkish summary) *Doga Mat.* 11 (1987), no. 3, 153-160. (Summary) **89g:11120** 11T21
- Irlie, A. On the expectation of the maximum for sums of independent random variables. *Metrika* 32 (1985), no. 5, 315-325. (Adhir K. Basu) **89a:60127** 60G50 (60G40)
- On optimal stopping with concave costs of observation. *Sequential Anal.* 6 (1987), no. 1, 1-19. (Krzysztof Szajowski) **89a:62184** 62L15
- Irodotov-Eliina, M. (with Houstis, E. N.) An  $O(h^4)$  quintic spline collocation method for fourth order two-point boundary value problems. *BIT* 28 (1988), no. 2, 288-301. (Zhong-Hua Yang) **89c:65078** 65L10
- Irodov, V. F. The construction and convergence of evolutionary algorithms of random search for self-organization. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 4, 32-41 (1988); translated from *Avtomatika* 1987, no. 4, 34-43, 96 (Russian. English summary). (Summary) **89f:90077** 90B40 (92A12)
- Irodova, I. P. (with Brudnyi, Yu. A.) ★ Прикладная теория приближения. (Russian) [Applied approximation theory] Yaroslav. Gos. Univ., Yaroslavl, 1986. 88 pp. (Gheorghe Coman) **89a:65013** 65Dxx
- Iroshnikov, G. S. On the nonperturbative calculation of hadron field correlators. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jämsala, 1985), 325-332, "Nauka", Moscow, 1986. (see **89d:81001**) 81G25
- Iroshnikov, R. S. Later stages of the free evolution of the spectra of two-dimensional turbulence. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 1, 67-71. (Introduction) **89f:76055** 76F99
- On the free evolution of spectra of two-dimensional turbulence in a single-layer ocean with a free surface on the  $\beta$ -plane. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 2, 321-326. (Introduction) **89f:76056** 76F99 (82A99, 86A05)
- Irrerher, H. (with Bogacz, R.; Sikora, Jan) On limit cycles of two degrees of freedom system with dry friction. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations (Budapest, 1987)*, 611-614. János Bolyai Math. Soc., Budapest, 1987. (From the text) **89a:70020** 70K10 (34C05)
- Irshid, Mansour I. A simple method of determining Hadamard sequence vectors. *IEEE Trans. Comput.* 37 (1988), no. 6, 743-745. (Summary) **89d:94066** 94C30 (05B20)
- Irtel, Hans On specific objectivity as a concept in measurement. *Progress in mathematical psychology*, I, 35-45. North-Holland, Amsterdam-New York, 1987. (Summary) **89a:92074** 92A27 (90A10)
- Irvine, Douglas H. (with Savageau, Michael A.; Voit, Eberhard O.) Biochemical systems theory and metabolic control theory. I. Fundamental similarities and differences. *Math. Biosci.* 86 (1987), no. 2, 127-145. (Summary) **89c:92030** 92A09
- (with Savageau, Michael A.; Voit, Eberhard O.) Biochemical systems theory and metabolic control theory. II. The role of summation and connectivity relationships. *Math. Biosci.* 86 (1987), no. 2, 147-169. (Summary) **89c:92031** 92A09
- Efficient solution of nonlinear models expressed in S-system canonical form. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 123-128. (Summary) **89h:92018** 92A09 (93A10, 93B10, 93C10, 93C15)
- Irvine, Larry D. (with Marin, Samuel P.; Smith, Philip W.) Constrained interpolation and smoothing. *Constr. Approx.* 2 (1986), no. 2, 129-151. (Yury Girshovich) **89d:65008** 65D05 (41A05)
- Irving, A. C. (with Burkitt, A. N.) Identity of the conjugate gradient and Lanczos algorithms for matrix inversion in lattice fermion calculations. *Phys. Lett. B* 205 (1988), no. 1, 69-72. (Summary) **89c:81006** 81-08 (65F99, 81E25)
- Irving, E. (with Najim, K.; Youla, H.; Najim, M.) Linear quadratic self-tuning control of a liquid-liquid extraction column. *Optimal Control Appl. Methods* 9 (1988), no. 3, 273-284. (Not in MR) **49D40** (93C40, 93D10)
- Irving, R. H. (with Conrath, D. W.) The social context of multiperson, multiattribute decisionmaking. *IEEE Trans. Systems Man Cybernet.* 18 (1988), no. 3, 348-357.



- (Summary) **89h:92668** 92A25 (90A05)
- Irving, Ronald S.** The socle filtration of a Verma module. *Ann. Sci. École Norm. Sup.* (4) **21** (1988), no. 1, 47–65. (Anthony Joseph) **89h:17015** 17B35
- (with Collingwood, David H.; Shelton, Brad) Filtrations on generalized Verma modules for Hermitian symmetric pairs. *J. Reine Angew. Math.* **383** (1988), 54–86. (D. Milićić [Zbl 631:22014]) **89a:22030** 22E47 (17B10)
- (with Shelton, Brad) Loewy series and simple projective modules in the category  $\mathcal{O}_s$ . *Pacific J. Math.* **132** (1988), no. 2, 319–342. (Brian Boe) **89m:17012a** 17B10
- (with Shelton, Brad) Correction to: "Loewy series and simple projective modules in the category  $\mathcal{O}_s$ " [*Pacific J. Math.* **132** (1988), no. 2, 319–342]. *Pacific J. Math.* **135** (1988), no. 2, 395–396. (Brian Boe) **89m:17012b** 17B10
- Irwin, G. W.** (with Fleming, R. J.) Analysis of coloured filter controllers for bank-to-turn CLOS guidance. *Proc. IEEE-D* **135** (1988), no. 6, 486–492. (Not in MR) **93E11**
- Irwin, John M.** (with Khabbaz, S. A.) Submodules of direct products. *Comment. Math. Univ. St. Paul.* **36** (1987), no. 2, 133–143. (L. Fuchs) **89b:13019** 13C13 (20K20)
- (with Dugas, Manfred; Khabbaz, S. A.) Countable rings as endomorphism rings. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 154, 201–211. (B. Goldsmith) **89h:20081** 20K30 (20K20)
- Isaac, R. Mark** (with Walker, James M.) Group size effects in public goods provision: the voluntary contributions mechanism. *Quart. J. Econom.* **103** (1988), no. 1, 179–199. (Summary) **89a:90034** 90A10 (90A07, 90D40)
- Isaac, Richard** A limit theorem for probabilities related to the random bombardment of a square. *Acta Math. Hungar.* **51** (1988), no. 1–2, 85–98. (Roger E. Miles) **89d:60019** 60D05
- Rates of convergence for renewal sequences in the null-recurrent case. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 3, 381–388. (Sharaschandra R. Adke) **89i:60173** 60K05 (60J10)
- Isaacs, I. M.** Characters and Hall subgroups of solvable groups. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 51–55, *Proc. Sympos. Pure Math.*, **47**, Part 2, Amer. Math. Soc., Providence, RI, 1987. (P. Fong) **89d:20008** 20C15 (20D10)
- Characters of solvable groups. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 103–109, *Proc. Sympos. Pure Math.*, **47**, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Alexandre Turull) **89j:20009** 20C15 (20D10)
- Counting objects which behave like irreducible Brauer characters of finite groups. *J. Algebra* **117** (1988), no. 2, 419–433. (Roderick Gow) **89g:20015** 20C15
- (with Hawkes, Trevor) On the onset of  $p$ -subgroups of a  $p$ -solvable group. *J. London Math. Soc.* (2) **38** (1988), no. 1, 77–86. (Kenneth A. Brown) **89g:20083** 20J05
- Isaacson, Daniel** Arithmetical truth and hidden higher-order concepts. *Logic colloquium '85 (Orsay, 1985)*, 147–169, *Stud. Logic Found. Math.*, **122**, North-Holland, Amsterdam-New York, 1987. (Jamie Tapscott) **89b:03009** 03A05 (03F30)
- Isaacson, Dean** (with Johnson, Jean) Conditions for strong ergodicity using intensity matrices. *J. Appl. Probab.* **25** (1988), no. 1, 34–42. (Richard Madsen) **89a:60167** 60J27
- Isaacson, Eli L.** (with Marchesin, D.; Plohr, B.; Temple, B.) The Riemann problem near a hyperbolic singularity: the classification of solutions of quadratic Riemann problems. I. *SIAM J. Appl. Math.* **48** (1988), no. 5, 1009–1032. (Long Wei Lin) **89k:35139** 35L65 (35L80)
- (with Temple, B.) The Riemann problem near a hyperbolic singularity. II, III. *SIAM J. Appl. Math.* **48** (1988), no. 6, 1287–1301, 1302–1318. (Long Wei Lin) **89k:35140** 35L65 (35L80)
- Isaacson, R. A.** (with Gómez, R.; Welling, J. S.; Winicour, J.) Numerical relativity on null cones. *Dynamical spacetimes and numerical relativity (Philadelphia, PA, 1985)*, 236–255, *Cambridge Univ. Press, Cambridge-New York*, 1986. (Richard Hansen) **89d:83003** 83–08 (83C30, 83C99)
- Isaaks, E. H.** (with Srivastava, R. Mohan) Spatial continuity measures for probabilistic and deterministic geostatistics. *New advances in geostatistics (Redwood City, CA, 1987)*. *Math. Geol.* **20** (1988), no. 4, 313–341. (Summary) **89d:86010** 86A20 (86–08)
- Isac, G.** Un théorème de point fixe. Application au problème d'optimisation d'Eršov. [A fixed point theorem. Application to the Eršov optimization problem] *Math. Balkanica (N.S.)* **1** (1987), no. 1, 33–44. (Rainald Schöneberg) **89b:47088** 47H10 (90C48)
- Supernormal cones and fixed point theory. *Rocky Mountain J. Math.* **17** (1987), no. 2, 219–226. (Constantin Zălinescu) **89d:90235** 90C48 (46A40, 47H10)
- Fixed point theory, coincidence equations on convex cones and complementarity problem. *Fixed point theory and its applications (Berkeley, CA, 1986)*, 139–155, *Contemp. Math.*, **72**, Amer. Math. Soc., Providence, RI, 1988. (Ramesh Saigal) **89k:90159** 90C33 (47H10, 47H99, 90C48)
- (with Théra, M.) Complementarity problem and the existence of the post-critical equilibrium state of a thin elastic plate. *J. Optim. Theory Appl.* **58** (1988), no. 2, 241–257. (R. N. Mukherjee) **89m:49015** 49A29 (49A50, 73K10)
- Isachenko, A. N.** (with Abdulla, Mukhibulla) A polyhedron in a quadratic Boolean programming problem. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1988**, no. 3, 68–70, 79. (Summary) **89m:90110** 90C09 (90C20)
- Isaev, A. V.** (with Mishchenko, M. A.) Affine classification of tubular quadrics having one minus in the Levi form. (Russian) *Mat. Zametki* **44** (1988), no. 1, 145–146. (J. S. Joel) **89j:32022** 32E10
- Isaev, G. A.** (with Alamedov, M. S.; Aslanov, A. A.) Tensor determinants that are connected with multiparameter spectral problems. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 11, 3–8, 87. (L. Rodman) **89d:47081** 47B99 (47A70)
- Isaev, G. V.** Self-similar parametrization of the stationary baroclinic layer of the ocean in large-scale anticyclonic rotations. (Russian) *Dokl. Akad. Nauk SSSR* **295** (1987), no. 2, 493–497. (From the text) **89a:86003** 86A05
- Isaev, Hamlet** (with Browne, Patrick J.) Symmetric multiparameter problems and deficiency index theory. *Proc. Edinburgh Math. Soc.* (2) **31** (1988), no. 3, 481–488. (Erik G. F. Thomas) **89m:47014** 47A70 (47B25)
- Isaev, K. V.** The formulation of stopping laws in parameter identification problems. (Russian) *Izv. Severo-Kavkaz. Nauchn. Tsentra Vysht. Shkoly Estestv. Nauk.* **1987**, no. 4, 76–79 (1988). (Vladimir Katkovnik) **89g:93112** 93E12
- Isakhanov, R. S.** (with Banturi, R. D.) Some inverse problems in elasticity theory. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruz. SSR* **87** (1987), 3–20. (Introduction) **89b:73022** 73K10 (73K40)
- Isaki, Cary T.** (with Huang, Elizabeth T.) Variance estimation using auxiliary information under a one unit per stratum sample design—a Monte Carlo study. *Comm. Statist.*
- Simulation Comput.* **17** (1988), no. 4, 1431–1447. (Not in MR) **62D05**
- Isakov, A. V.** (with Sarychev, V. A.; Mirer, S. A.) The state of relative equilibrium of an axisymmetric rigid body suspended from a rod. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 94, 36 pp. (Summary) **89a:70010** 70E15
- Isakov, N. M.** Approximate differentiability on compact sets is equivalent to continuous differentiability. (Russian) *Differential equations and functional analysis (Russian)*, 45–54, *Univ. Druzhby Narodov, Moscow*, 1986. (Luděk Zajíček) **89a:26018** 26B05 (46E35)
- On approximately differentiable functions. (Russian) *Differential equations and functional analysis (Russian)*, 55–62, *Univ. Druzhby Narodov, Moscow*, 1986. (Luděk Zajíček) **89a:26020** 26B05
- Some problems in the theory of approximately differentiable functions. (Russian. English and German summaries) *Z. Anal. Anwendungen* **6** (1987), no. 4, 301–320. (Luděk Zajíček) **89a:26019** 26B05 (46E35)
- A remark on  $(T, p)$ -capacity. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 2, 200–203, 220; translated in *Siberian Math. J.* **29** (1988), no. 2, 319–322. (J. Král) **89e:28004** 28A12 (31C15)
- (with Mukamba, F.) Anisotropic analogue of the Whitney extension theorem. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 6, 46–49; translated in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 6, 62–65. (Georgi E. Karadzhev) **89j:46035** 46E35 (46E40)
- Isakova, E. A.** (with Taldykin, A. T.) Approximations and expansions of solutions of linear boundary value problems with parameters. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 11, 2014–2017, 2024. (Š. Schwabik) **89b:34038** 34B05 (47A50, 47B38)
- Isambert, Emmanuel** (with Gautheron, Véronique) Trace continue d'un chemin sur son ombre. (English summary) [Continuous trace of a path on its shadow] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 19, 935–938. (W. A. J. Luxemburg) **89j:26042** 26E35 (54D05)
- Isamukhamedov, S. S.** (with Oramov, Zh.) Boundary value problems of the Bitsadze-Samarskii problem type for an equation of mixed type of the second kind with a nonsmooth line of degeneracy. (Russian) *Nonclassical problems of mathematical physics (Russian)*, 48–62, 229–230, "Fan", Tashkent, 1985. (Editors) **89m:35152** 35M05
- Isaza, Pedro** Representability of  $V[h]$  as intersection of  $A$ -bounded variation classes. *Fund. Math.* **130** (1988), no. 3, 229–236. (B. Bongiorno) **89k:26005** 26A45 (46E99)
- Isbell, John** Polynomials in modules. I. Vector spaces. *J. Algebra* **112** (1988), no. 2, 478–493. (Winfried Müller) **89e:15040** 15A99
- $d$ -final continua. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 953–964. (B. J. Pearson) **89k:54083** 54F25 (54D35, 54F05, 54F50)
- İşcan, Hülya** The solution of the class number 3 problem. (Turkish. English summary) *Doga Mat.* **11** (1987), no. 3, 161–166. (Summary) **89a:11115** 11R29 (11R58)
- Lower bounds for the class number. (Turkish. English summary) *Doga Mat.* **12** (1988), no. 2, 39–41. (Summary) **89m:11112** 11R58
- Ischebeck, Friedrich** Seminormality and groups of  $K$ -theory. *Geometry Seminars, 1986 (Italian) (Bologna, 1986)*, 81–82, *Univ. Stud. Bologna, Bologna*, 1988. (see **89j:32001**) 13D15
- (with Schülting, Heinz-Werner) Rational and homological equivalence for real cycles. *Invent. Math.* **94** (1988), no. 2, 307–316. (Robert Silhol) **89k:14004** 14C15 (14G30, 57R95)
- Iscoe, I.** (with Dawson, D. A.; Perkins, Edwin A.) Sample path properties of the support process of super-Brownian motion. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 2, 83–88. (Summary) **89a:60112** 60G17 (60I65)
- (with McDonald, David R.) Large deviations for  $l^2$ -valued Ornstein-Uhlenbeck processes. *Ann. Probab.* **17** (1989), no. 1, 58–73. (Esa Nummelin) **89m:60136** 60H10 (60G15, 60G17)
- Addendum: "On the supports of measure-valued critical branching Brownian motion" [*Ann. Probab.* **16** (1988), no. 1, 200–221; MR 88j:60097]. *Ann. Probab.* **17** (1989), no. 2, 813. (Editors) **89m:60117** 60G57 (34B15, 60J80)
- van Iseghem, Jeannette** Laplace transform inversion and Padé-type approximants. *Appl. Numer. Math.* **3** (1987), no. 6, 529–538. (R. C. S. Chand) **89i:65137** 65R10 (33A65, 44A10)
- Vector orthogonal relations. Vector QD-algorithm. *J. Comput. Appl. Math.* **19** (1987), no. 1, 141–150. (Summary) **89c:65025** 65D15
- Iséki, Kanetsiro** On two theorems of the Nina Bari type. *Natur. Sci. Rep. Ochanomizu Univ.* **38** (1987), no. 2, 33–98. (K. Karták) **89k:26006** 26A46
- Iséki, Kiyoshi** Determination of special palindromic prime numbers. *J. Natur. Phys. Sci.* **1** (1987), 67–68. (Franco Eugeni) **89f:11018** 11A41
- Palindromic prime numbers. *Math. Japon.* **33** (1988), no. 6, 861–862. (Summary) **89k:11005** 11A67 (11A41, 11Y11)
- Isenberg, James A.** Parametrization of the space of solutions of Einstein's equations. *Phys. Rev. Lett.* **59** (1987), no. 21, 2389–2392. (Philippe-A. Dionne) **89d:83011** 83C05 (58D30, 58G16)
- see also *Mathematics and general relativity*, **89b:83006**
- Isleris, A.** Multistep discretization of linear hyperbolic equations. *IMA J. Numer. Anal.* **6** (1986), no. 3, 293–307. (Summary) **89b:65143** 65M10
- Generalized leapfrog methods. *IMA J. Numer. Anal.* **6** (1986), no. 4, 381–392. (Summary) **89b:65151** 65M99
- (with Nørsett, Syvert P.) Error control of rational approximation with a matrix argument. *Algorithms for approximation (Shrivenham, 1985)*, 293–305, *Inst. Math. Appl. Conf. Ser. New Ser.*, **10**, Oxford Univ. Press, New York, 1987. (Summary) **89f:65025** 65D15
- (with Blatt, H.-P.; Saff, E. B.) Remarks on the behaviour of zeros of best approximating polynomials and rational functions. *Algorithms for approximation (Shrivenham, 1985)*, 437–445, *Inst. Math. Appl. Conf. Ser. New Ser.*, **10**, Oxford Univ. Press, New York, 1987. (Myron S. Henry) **89c:41006** 41A10 (41A20, 41A50)
- (with Nørsett, Syvert P.) On the theory of biorthogonal polynomials. *Trans. Amer. Math. Soc.* **306** (1988), no. 2, 455–474. (L. Leindler) **89c:42027** 42C05 (33A65)
- Isermann, S.** (with Graham, Robert; Tél, T.) Quantization of Hénon's map with dissipation. II. Numerical results. *Z. Phys. B* **71** (1988), no. 2, 237–246. (Summary) **89k:81049** 81C99 (58F08, 58F13)
- Iskhak, S.** (with Bassily, N. L.) Maximal inequalities for nonnegative supermartingales. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **30** (1987), 201–212. (T. F. Mori [Zbl 641:60055]) **89k:60061** 60G42 (46E30)

- (with Bassily, N. L.; Mogyoródi, J.) On the representation of  $L^p$ -mean oscillating random variables. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **30** (1987), 213–222. (Tamotsu Tsuchikura) **89c:60060** 60G42 (46E30)
- Isham, C. J.** Group theory and the canonical quantization of strings on tori. *CAP-NISERC Summer Institute in Theoretical Physics, Vol. II (Edmonton, AB, 1987)*, 161–177. *World Sci. Publishing, Singapore*, 1988. (Summary) **89j:81189** 81E99 (81D07, 81E30)
- (with Linden, Noah) Group theoretic quantisation of strings on tori. *Classical Quantum Gravity* **5** (1988), no. 1, 71–93. (From the introduction) **89m:81070** 81D07 (58F05, 81E30)
- (with Pope, C. N.) Nowhere-vanishing spinors and topological obstructions to the equivalence of the NSR and GS superstrings. *Classical Quantum Gravity* **5** (1988), no. 2, 257–274. (Anatol Odziejewicz) **89g:53107** 53C80 (53A50, 57R20, 81E20, 81E30)
- see also **Quantum field theory and quantum statistics**, **89b:81007** and **89b:81008**
- Isham, Valerie** Marked point processes and their correlations. (French summary) *Spatial processes and spatial time series analysis (Brussels, 1985)*, 63–75. *Travaux Rech.*, 11, Publ. Fac. Univ. Saint-Louis, Brussels, 1987. (Peter Kiessler) **89f:60050** 60G55
- Mathematical modelling of the transmission dynamics of HIV infection and AIDS: a review. With discussion. *J. Roy. Statist. Soc. Ser. A* **151** (1988), no. 1, 5–30, 44–49. (K. Dietz) **89i:92044** 92A15 (62P10)
- (with Cox, David Roxbee) A simple spatial-temporal model of rainfall. *Proc. Roy. Soc. London Ser. A* **415** (1988), no. 1849, 317–328. (Summary) **89b:86004** 86A35 (60G55, 92A90)
- (with Rodriguez-Iturbe, I.; Cox, David Roxbee) A point process model for rainfall: further developments. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1853, 283–298. (Summary) **89i:86022** 86A99 (60G55)
- Ishchenko, A. A.** (with Liberof, B. D.; Rudenko, O. G.) Investigation of the convergence of identification algorithms with memory. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 3, 51–54 (1988); translated from *Automatika* **1987**, no. 3, 68–71, 95 (Russian). (Not in MR) **93B40** (93B30, 93C40)
- Ishibashi, N.** (with Kitazawa, Y.; Kato, Akishi; Kobayashi, Ken-ichiro; Matsuo, Yutaka; Odake, S.) Operator product expansion coefficients in  $N = 1$  superconformal theory and slightly relevant perturbation. *Nuclear Phys. B* **306** (1988), no. 2, 425–444. (Olaf Lechtenfeld) **89m:81149** 81E99 (81E40)
- Ishibashi, Yoshihiro** (with Nagaya, Tomoyuki; Orihara, Hiroshi) Collective motion of an assembly of disclinations in the nonorthogonally twisted nematics quenched below the clearing point. *J. Phys. Soc. Japan* **56** (1987), no. 9, 3086–3091. (Summary) **89a:82030** 82A57
- Ishida, Hisashi** Boundary values of HBD-functions on harmonic boundaries of Riemann surfaces. *Proc. Japan Acad. Ser. A Math. Sci.* **64** (1988), no. 6, 181–183. (Walter Pranger) **89k:30045** 30F15 (30E25)
- Ishida, Kazuhiro** Exact method for nonlinear fermions on finite lattice: two dimensions. *Phys. Rev. D* (3) **38** (1988), no. 4, 1189–1197. (Summary) **89h:81152** 81E25 (81–04, 82A25)
- Ishida, Masa-Nori** Torus embeddings and de Rham complexes. *Commutative algebra and combinatorics (Kyoto, 1985)*, 111–145. *Adv. Stud. Pure Math.*, 11, North-Holland, Amsterdam-New York, 1987. (Mina Teicher) **89j:14028** 14L32 (14F40)
- Convex bodies and algebraic geometry—toric varieties and applications. II. *Algebraic Geometry Seminar (Singapore, 1987)*, 15–32. *World Sci. Publishing, Singapore*, 1988. (G. Ewald) **89m:14027** 14L32 (52A25, 52A43)
- Ishida, Masayuki** (with Kikkawa, Sho) Number of degrees of freedom, correlation times, and equivalent bandwidths of a random process. *IEEE Trans. Inform. Theory* **34** (1988), no. 1, 151–155. (Summary) **89a:60120** 60G35 (94A05)
- Ishida, Toshiyuki** (with Sakurada, Kuninori; Abe, Yutaka; Hashimoto, Isao; Miyamoto, Yutaka) On quasi-ranked vector spaces. I. *J. Hokkaido Univ. Ed. Sect. II A* **38** (1987), no. 1, 33–40. (R. Anantharaman) **89c:46006** 46A15
- Ishida, Tsutomu** Three-level incentive schemes using follower's strategies in differential games. *Internat. J. Control* **46** (1987), no. 5, 1739–1750. (Ye-Hwa Chen) **89a:90177** 90D25 (90A16, 90D10, 93A13)
- Ishida, Yoshiteru** (with Tokumaru, Hidekatsu) Diagnosis model for dynamical systems. I. Discrete system. *Internat. J. Systems Sci.* **19** (1988), no. 11, 2291–2306. (Summary) **89i:90038** 90B25
- (with Tokumaru, Hidekatsu) Diagnosis model for dynamical systems. II. Continuous system. *Internat. J. Systems Sci.* **19** (1988), no. 11, 2307–2319. (Summary) **89i:90039** 90B25
- Ishiguro, Hidé** La notion dite confuse de l'infinitésimal chez Leibniz. [The so-called confused notion of the infinitesimal in Leibniz] *Leibniz: questions de logique (Bruxelles/Louvain-la-Neuve, 1985)*, 183–196. *Studia Leibnitiana Sonderheft*, 15, Steiner, Wiesbaden, 1988. (see **89m:01041**) 01A45 (03–03, 03A05, 03H05)
- Ishiguro, Kenshi** Classifying spaces and  $p$ -local irreducibility. *J. Pure Appl. Algebra* **49** (1987), no. 3, 253–258. (J. R. Hubbuck (Zbl 638:55016)) **89h:55027** 55R35 (19G99, 19M05, 55N15, 55R40, 55R50, 55T10)
- Ishiguro, Makio** (with Sakamoto, Yosiyuki) A Bayesian approach to nonparametric test problems. *Ann. Inst. Statist. Math.* **40** (1988), no. 3, 587–602. (Not in MR) **62G10**
- Ishiguro, Tomiko** (with Ogawa, Satoru; Takakura, Yoko) Hyperbolic grid generation scheme for simulating flow about three-dimensional complex configuration. *Computational techniques and applications: CTAC-87 (Sydney, 1987)*, 577–587. North-Holland, Amsterdam-New York, 1988. (Summary) **89c:65132** 65N50 (76–08)
- (with Wada, Y.; Kubota, Hiroshi; Ogawa, Satoru) A fully implicit high-resolution scheme for chemically reacting compressible flows. *Nonlinear hyperbolic equations—theory, computation methods, and applications (Aachen, 1988)*, 648–659. *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 76–08 (80–08, 80A32)
- Ishihara, Hideki** (with Tomimatsu, A.) Nonlinear wave propagation in the Gauss-Bonnet extended Einstein theory. *J. Math. Phys.* **28** (1987), no. 11, 2720–2725. (Summary) **89g:83049** 83E15
- (with Takahashi, Masaaki; Tomimatsu, A.) Gravitational Faraday rotation induced by a Kerr black hole. *Phys. Rev. D* (3) **38** (1988), no. 2, 472–477. (Nora Bretón Baez) **89m:83058** 83C25 (83C25)
- Ishihara, Hirokazu** (with Konishi, Katsunobu; Maegawa, Kouji; Yoshimura, Toshio) Multivariable discrete-time model reference adaptive control with input-smoothing property and its application. *Internat. J. Systems Sci.* **19** (1988), no. 5, 761–778. (Not in MR) **93B50** (93C40, 93C55)
- Ishihara, K. N.** (with Yamamoto, Akiji) Penrose patterns and related structures. I. Superstructure and generalized Penrose patterns. *Acta Cryst. Sect. A* **44** (1988), no. 4, 508–516. (Marjorie Senechal) **89g:82056** 82A60 (52A45)
- (with Yamamoto, Akiji) Penrose patterns and related structures. II. Decagonal quasicrystals. *Acta Cryst. Sect. A* **44** (1988), no. 5, 707–714. (Marjorie Senechal) **89m:82065** 82A60 (52A45)
- Ishihara, Kazuo** Successive overrelaxation method with projection with finite element solutions applied to the Dirichlet problem of the nonlinear elliptic equation  $\Delta u = bu^2$ . (German summary) *Computing* **40** (1988), no. 1, 51–65. (John Stephenson) **89c:65120** 65N30
- Ishihara, T.** (with Feisen, Leopold B.) Hybrid (ray)-(parabolic equation) analysis of propagation in ocean acoustic guiding environments. *J. Acoust. Soc. Amer.* **83** (1988), no. 3, 950–960. (Summary) **89f:76069** 76Q05 (86A05)
- Ishihara, Tadashi** Robust stability bounds for a class of discrete-time regulators with computation delays. *Automatica—J. IFAC* **24** (1988), no. 5, 697–700. (Not in MR) **93D10** (93C55)
- Ishihara, Tōru** On the stability of maximal submanifolds in pseudo-Riemannian manifolds. *J. Math. Tokushima Univ.* **21** (1987), 1–11 (1988). (Martin A. Magid) **89g:53096** 53C50 (53C40)
- Ishii, Chikai** (with Tsukamoto, Tatsuo; Honda, Tsuyoshi; Matsuzaki, Hisao) Linear surplisal and simple birth, death and immigration process. *Progr. Theoret. Phys.* **77** (1987), no. 2, 254–261. (W. Th. F. den Hollander) **89d:82164** 82A99 (60B85, 70H10, 82A31)
- Ishii, Hidenori** On the coincidence of  $L$ -functions. *Japan. J. Math. (N.S.)* **12** (1986), no. 1, 37–44. (Kiyoshi Nagata) **89c:11165** 11R42
- The nonexistence of elliptic curves with everywhere good reduction over certain quadratic fields. *Japan. J. Math. (N.S.)* **12** (1986), no. 1, 45–52. (H. G. Zimmer (Zbl 613:14021)) **89j:11054** 11G05 (14G25, 14K07)
- Ishii, Hiroaki** (with Morita, Hiroshi; Nishida, Toshio) Confidence region method for a stochastic programming problem. *J. Oper. Res. Soc. Japan* **30** (1987), no. 2, 218–231. (A. G. Žilinskais) **89b:90158** 90C15
- (with Matsutomi, Tatsuo; Nishida, Toshio) Chance constrained round trip location problem. *Math. Japon.* **32** (1987), no. 4, 609–620. (James G. Morris) **89c:90052** 90B10
- (with Morita, Hiroshi; Nishida, Toshio) Confidence region method for a stochastic linear knapsack programming problem. *Math. Japon.* **33** (1988), no. 4, 559–564. (Summary) **89h:90170** 90C15 (90C09)
- Ishii, Hitoshi** Perron's method for Hamilton-Jacobi equations. *Duke Math. J.* **55** (1987), no. 2, 369–384. (Martino Bardi) **89a:35053** 35F30 (35R15)
- Representation of solutions of Hamilton-Jacobi equations. *Nonlinear Anal.* **12** (1988), no. 2, 121–146. (E. O. Roxin) **89f:49030** 49C05 (35B25, 35F20, 49C20)
- On uniqueness and existence of viscosity solutions of fully nonlinear second-order elliptic PDEs. *Comm. Pure Appl. Math.* **42** (1989), no. 1, 15–45. (Pierre-Louis Lions) **89m:35070** 35J60 (35B25, 49A60, 49C20, 93E05)
- Ishii, Ipei** Combinatorial construction of a nonsingular flow on a 3-manifold. *Kobe J. Math.* **3** (1987), no. 2, 201–208. (N. A. Gusevskii) **89c:57010** 57N10 (58F25)
- Flow-spines and Seifert fibered structure of 3-manifolds. *Tokyo J. Math.* **11** (1988), no. 1, 95–104. (Paul Igodt) **89h:57009** 57N10 (55R65, 57M15, 58F25)
- Ishii, Kazushige** (with Matsuda, Hirotugu; Homma, Shigeo; Ogita, Naofumi) Theoretical basis of the decoupled cell Monte Carlo simulation for quantum systems. *Progr. Theoret. Phys.* **80** (1988), no. 4, 583–587. (Summary) **89m:81004** 81–08 (65C20, 82–08, 82A15)
- Ishii, Noburo** (with Chuman, Yasuhiro) On the quartic residue of quadratic units of negative norm. *Math. Japon.* **32** (1987), no. 3, 389–420. (Norikata Nakagoshi) **89a:11106** 11R11 (11R20, 11R27)
- On the eighth power residue of totally positive quadratic units. *Investigations in number theory*, 413–431. *Adv. Stud. Pure Math.*, 13, Academic Press, Boston, MA, 1988. (Amara Hédi) **89j:11106** 11R27 (11R20)
- Ishii, Shihoko** Isolated  $Q$ -Gorenstein singularities of dimension three. *Complex analytic singularities*, 165–198. *Adv. Stud. Pure Math.*, 8, North-Holland, Amsterdam-New York, 1987. (Ulrich Karras) **89d:32016** 32B30 (14E15, 32C45)
- Ishii, Tan** On propagation of regular singularities for solutions of nonlinear partial differential equations. I. *Proc. Japan Acad. Ser. A Math. Sci.* **64** (1988), no. 3, 74–77. (Jean-Marc Delort) **89j:35011** 35A20 (32C40, 35G20)
- Ishii, Yasunori** Welfare and efficiency under uncertainty. *Z. Nationalökonom.* **48** (1988), no. 2, 175–188. (conclusion) **89h:90028** 90A10
- Ishikawa, Goo** (with Fukuda, Takuo) On the number of cusps of stable perturbations of a plane-to-plane singularity. *Tokyo J. Math.* **10** (1987), no. 2, 375–384. (Jean-Jacques Gervais) **89b:58032** 58C27
- Ishikawa, Hirofumi** (with Tanigawa, Yoshio) The dimension formula of the space of cusp forms of weight one for  $\Gamma_0(p)$ . *Nagoya Math. J.* **111** (1988), 115–129. (Thomas R. Shemanske) **89j:11039** 11F12 (11F11)
- A table of the dimensions of the Hilbert modular type cusp forms over real quadratic fields. *Proc. Japan Acad. Ser. A Math. Sci.* **64** (1988), no. 3, 84–87. (K.-B. Gundlach) **89g:11040** 11F41 (11Y40)
- Ishikawa, Susumu** On Gauss map of immersion into space form. *Rep. Fac. Sci. Engrg. Saga Univ. Math.* **16** (1988), no. 1, 1–11. (Y. Muto) **89c:53043** 53C42 (53C20)
- Ishimaru, Akira** (with Jackson, Darrell R.; Winebrenner, Dale P.) Comparison of perturbation theories for rough-surface scattering. *J. Acoust. Soc. Amer.* **83** (1988), no. 3, 961–969. (Summary) **89f:76070** 76Q05 (78A45)
- Ishitani, H.** A central limit theorem of mixed type for 1-dimensional transformations. *Proceedings of the conference on ergodic theory and related topics, II (Georgenthal, 1986)*, 72–78. *Teubner-Texte Math.*, 94, Teubner, Leipzig, 1987. (Jacques Rousseau-Eggle) **89c:60047** 60F05 (28D05)
- Ishitoya, Kiminao** (with Kono, Akira) Squaring operations in mod 2 cohomology of quotients of compact Lie groups by maximal tori. *Algebraic topology, Barcelona, 1986*, 192–206. *Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (M. Mimura) **89c:57054** 57T15
- Ishizaka, Hiroki** Inductive inference of regular languages based on model inference. *Logic programming '87 (Tokyo, 1987)*, 178–194. *Lecture Notes in Comput. Sci.*, 315, Springer,



- Berlin-New York, 1988. (Cristian Calude) **89m:68060** 68Q25 (68Q45, 68T05)
- Ishizaka, S.** See science on form. **89g:82013**
- Ishizaka, Akio** (with Kajitani, Yoji; Ueno, Shuichi) Characterization of partial 3-trees in terms of three structures. *Graphs Combin.* 2 (1986), no. 3, 233–246. (R. E. Pippert) **89h:05024** 05C05 (05C75, 68Q25, 68R10)
- Ishizaka, Y.** Farkas' theorem of nonconvex type and its application to a min-max problem. *J. Optim. Theory Appl.* 57 (1988), no. 2, 341–354. (Vasile I. Ionescu) **89h:90199** 90C30
- Ishkhanyan, A. M.** New classes of analytic solutions of a two-level problem. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Fiz.* 23 (1988), no. 4, 190–197. (Summary) **89k:81211** 81K05 (81C05)
- Ishkin, Kh. K.** Asymptotics of the spectrum of a fourth-order differential operator. (Russian) *Investigations in the theory of the approximation of functions* (Russian), 46–61, *Akad. Nauk SSSR Bashkir. Filial, Otdel Fiz. Mat., Ufa, 1986.* (József Banaś) **89j:34032** 34B25
- Ishlinskii, A. Yu.** (with Malashenko, S. V.; Storozhenko, V. A.; Temchenko, M. E.; Shishkin, P. G.) Some problems of steady-state motion of a rigid body. (Russian) *Mechanics and scientific technological progress*, Vol. 1 (Russian), 102–116, 294, "Nauka", Moscow, 1987. (Summary) **89k:70006** 70E05 (70E99, 70K20)
- The world of classical Galilean-Newtonian mechanics. (Russian) *Studies in the history of physics and mechanics*, 1987 (Russian), 192–202, 246, "Nauka", Moscow, 1987. (Summary) **89a:01020** 01A45 (70–03)
- See also *Mechanics and scientific technological progress*, **89f:70001** and **Mitropolskii, Yu. A. et al.**, **89i:01095**
- Ishwar, Bholu** (with Raman, Om Prakash) First order normalization in the generalised circular restricted problem when two of the bodies are oblate spheroid. *Math. Soc.* 2 (1986), 89–98 (1987). (Summary) **89a:70012** 70F05
- (with Raman, Om Prakash) Existence of libration points in the generalised circular restricted three-body problem. *Math. Soc.* 3 (1987), 79–85 (1988). (V. Szebehely) **89m:70016** 70F07
- Ishlari, A.** (with Conte, Giuseppe; Di Benedetto, M. D.; Perdon, A.-M.) An input-output characterization of the structure at infinity for a nonlinear system. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 301–312, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:93029** 93B27 (93C10)
- (with Byrnes, Christopher I.; Castro-Linares, Rafael) Linear model matching with prescribed tracking error and internal stability for nonlinear systems. *Analysis and optimization of systems* (Antibes, 1988), 249–258, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89c:93085** 93B50 (93C05)
- (with Byrnes, Christopher I.) Heuristics for nonlinear control. *Modelling and adaptive control* (Sopron, 1986), 48–70, *Lecture Notes in Control and Inform. Sci.*, 105, Springer, Berlin-New York, 1988. (Jack David Katzberg) **89i:93087** 93D15 (34D40, 93C10)
- (with Moog, Claude H.) On the nonlinear equivalent of the notion of transmission zeros. *Modelling and adaptive control* (Sopron, 1986), 146–158, *Lecture Notes in Control and Inform. Sci.*, 105, Springer, Berlin-New York, 1988. (Summary) **89c:93121** 93C10 (93B55)
- (with Grizzle, Jessy W.) Fixed modes and nonlinear noninteracting control with stability. *IEEE Trans. Automat. Control* 33 (1988), no. 10, 907–914. (Zdzisław Wyderka) **89i:93088** 93D15 (57R27, 93B05, 93B27)
- (with Byrnes, Christopher I.) Local stabilization of minimum-phase nonlinear systems. *Systems Control Lett.* 11 (1988), no. 1, 9–17. (Peng Nian Chen) **89g:93071** 93D15 (93C10)
- Isidro, José M.** On the group of analytic automorphisms of the unit ball of  $J^*$ -algebras. *Acta Sci. Math. (Szeged)* 52 (1988), no. 1–2, 165–170. (Harald Upmeyer) **89i:32071** 32M15 (32M05, 46L70, 47D10)
- Iswata, Takeshi**  $\kappa$ -metric spaces and function spaces. Proceedings of the 1986 Topology Conference (Lafayette, LA, 1986). *Topology Proc.* 11 (1986), no. 2, 291–308. (Vesko Valov) **89f:54050** 54D35 (54C35, 54D60)
- Continuity of additive  $\kappa$ -metric functions and metrization of  $\kappa$ -metric spaces. *Proc. Amer. Math. Soc.* 104 (1988), no. 3, 988–992. (C. R. Borges) **89k:54065** 54E35 (54C05, 54E15, 54E99)
- Iskandarov, S.** Spherical conditions for the boundedness of the solutions of linear homogeneous integro-differential equations of Volterra type. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 24–27, 335–336, "Ilim", Frunze, 1987. (Summary) **89c:45003** 45D05 (45J05)
- (with Pakhyrov, Z.) A condition for the boundedness of the solutions of first-order linear integro-differential equations of Volterra type, unsolved with respect to the derivative, with complex-valued functions. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 28–33, 336, "Ilim", Frunze, 1987. (Summary) **89d:45005** 45D05
- Iskander-Zade, F. A.** (with Aliev, I. V.; Gerasimov, B. P.; Popov, Yu. P.) Mathematical modeling of a peristaltic pump. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 55, 22 pp. (Not in MR) 92A09
- Iske, P. L.** (with Caspers, W. J.) Exact ground states of one-dimensional valence-bond-solid Hamiltonians. *Modern Phys. Lett. B* 1 (1987), no. 5–6, 231–237. (H. N. V. Temperley) **89f:82079** 82A68
- Iskenderov, A. D.** (with Gardashov, T. B.) Solution of an inverse problem for the quasilinear heat equation with a self-similar regime. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* 43 (1987), no. 2, 17–20. (Alexander Doktor) **89c:35144** 35R30 (35K55)
- (with Abdullaev, U. G.) Well-posedness of the problem of determining the unknown boundary of a domain in a self-similar regime. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 7, 1108–1110, 1120. (Summary) **89h:35347** 35R35 (35K55)
- Iskenderov, B. A.** (with Akimov, A. B.) Radiation principles for the Helmholtz equation in a layer with boundary conditions of Zarembo type. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* 43 (1987), no. 1, 8–11. (D. G. Natroshvili) **89i:35034** 35J05
- (with Elvazov, E. Kh.; Efendieva, A. N.) Radiation principles for a higher-order elliptic equation in a tube domain. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 10, 1804–1807, 1838. (G. Wildenhain) **89c:35045** 35J40 (35L35)
- Iskenderov, I. T.** (with Namazov, G. K.) Energy estimate for the solution of a boundary value problem for a strongly connected system of nonlinear pseudoparabolic equations. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* 43 (1987), no. 1, 12–14. (Genowefa Majcher) **89g:35058** 35K70
- Iskenderova, M. B.** Abel summability of expansions in eigenfunctions of fourth-order differential pencils. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* 43 (1987), no. 8, 11–14 (1988). (Not in MR) 34B25 (47E05)
- Iskovskikh, V. A.** (with Klyachko, A. A.; Kostrikin, Aleksei Ivanovich; Manin, Yu. I.; Tyurin, A. N.; Shafarevich, I. R.) Valentin Evgen'evich Voskresenskii (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 2(260), 169–170; translated in *Russian Math. Surveys* 43 (1988), no. 2, 201–203. (Editors) **89i:01084** 01A70
- Iskra, K. K.** (with Minyuk, S. A.) Controllability and observability of first-order linear partial differential systems. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 32 (1988), no. 4, 300–302, 379. (Zbigniew Emirsajlow) **89c:93020** 93B05 (35B37, 49E15, 93B07, 93C05, 93C20)
- Islam, M. A.** (with Gulati, T. R.) A note on the weak Arrow-Hurwicz-Uzawa constraint qualification. *Optsearch* 24 (1987), no. 4, 249–252. (Panos M. Pardalos) **89h:90183** 90C30
- (with Gulati, T. R.) Proper efficiency in a linear fractional vector maximum problem with generalized convex constraints. *European J. Oper. Res.* 36 (1988), no. 3, 339–345. (S. R. Mohan) **89k:90152** 90C31 (90C32)
- Islam, M. N.** Periodic solutions of nonlinear integral equations. *Ann. Mat. Pura Appl.* (4) 150 (1988), 129–139. (T. A. Ebanoidze) **89m:45008** 45G10
- (with Eloe, P. W.) Periodic solutions of nonlinear integral equations with infinite memory. *Appl. Anal.* 28 (1988), no. 2, 79–93. (Zai-Feng Song) **89h:45003** 45D05 (34A10, 45J05)
- Periodic solutions of Volterra integral equations. *Internat. J. Math. Math. Sci.* 11 (1988), no. 4, 781–792. (P. M. Anselone) **89i:45004** 45D05 (45F10)
- Islamov, G. G.** A duality theorem in the theory of extremal perturbations. (Russian) *Functional-differential equations* (Russian), 83–85, vi, Perm. Politekh. Inst., Perm, 1985. (H. Baumgärtel) **89f:47022** 47A55
- Two-sided estimates for  $s$ -numbers of integral operators that increase smoothness. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 2, 353–356, 368. (Bernard Carl) **89h:47074** 47G05 (34K05)
- Islei, G.** (with Lockett, A. G.) Judgemental modelling based on geometric least square. *European J. Oper. Res.* 36 (1988), no. 1, 27–35. (Summary) **89d:92087** 92A25
- Isler, K.** (with Schmid, Christoph H.; Trugenberger, C. A.) Kinetic normal ordering and the  $1 + 1$  dimensional U(1). *Nuclear Phys. B* 301 (1988), no. 2, 327–345. (Summary) **89c:81132** 81E99 (81D15, 81G10)
- Isler, R.** (with Dimov, G. D.; Tironi, G.) On functions preserving almost radiality and their relations to radial and pseudoradial spaces. *Comment. Math. Univ. Carolin.* 28 (1987), no. 4, 751–781. (H. Herrlich) **89h:54007** 54C10 (54A25, 54D55)
- Isles, J. D.** (with Mills, R. J.; Kelly, D. W.; Reizes, J. A.; Miller, A. D.) Exact error estimates and adaptive mesh transformation control for elliptic boundary value problems in  $R^n$ . *Computational techniques and applications: CTAC-87* (Sydney, 1987), 487–498, North-Holland, Amsterdam-New York, 1988. (Summary) **89c:65131** 65N50 (65N15)
- Isomov, B.** (with Salakhitdinov, M. S.) The Tricomi problem for a general linear equation of mixed type with a nonsmooth line of degeneracy. (Russian) *Equations of mixed type and free boundary value problems* (Russian), 38–56, 249, "Fan", Tashkent, 1987. (Summary) **89d:35124** 35M05
- Ismagilov, R. S.** Correction to: "Application of a group algebra to problems on the tail  $\sigma$ -algebra of a random walk on a group and to problems on the ergodicity of a skew action". (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 52 (1988), no. 5, 1116. (Author's review (translated from RZhMat 1988:5 B927)) **89m:60159b** 60J15 (60B15)
- Application of a group algebra to problems on the tail  $\sigma$ -algebra of a random walk on a group and to problems on the ergodicity of a skew action. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 51 (1987), no. 4, 893–907, 912; translated in *Math. USSR-Izv.* 31 (1988), no. 1, 209–222. (Author's review (translated from RZhMat 1988:5 B927)) **89m:60159a** 60J15 (60B15)
- Ismagulov, M. R.** Sharp estimates for the approximation of continuous periodic functions by regular splines. (Russian) *Mat. Zametki* 42 (1987), no. 1, 9–20, 166. (N. A. Nazarenko) **89a:65019** 65D07 (41A17)
- Ismail, M. A.** (with Kamel, M. S.) Multidimensional data clustering utilizing hybrid search strategies. *Pattern Recognition* 22 (1989), no. 1, 75–89. (Not in MR) 68T10
- Ismail, Mourad E. H.** (with Stanton, Dennis; Viennot, Gérard) The combinatorics of  $q$ -Hermite polynomials and the Askey-Wilson integral. *European J. Combin.* 8 (1987), no. 4, 379–392. (Kevin Kadell) **89h:33015** 33A65 (05A15, 05A30)
- (with Zhang, Ruiming) On the Hellmann-Feynman theorem and the variation of zeros of certain special functions. *Adv. in Appl. Math.* 9 (1988), no. 4, 439–446. (H. Hochstadt) **89i:81150** 81G55 (33A65, 34C10)
- (with Stanton, Dennis) On the Askey-Wilson and Rogers polynomials. *Canad. J. Math.* 40 (1988), no. 5, 1025–1045. (R. A. Askey) **89m:33003** 33A15 (05A30, 33A65)
- (with Letessier, J.; Valent, G.) Linear birth and death models and associated Laguerre and Meixner polynomials. *J. Approx. Theory* 55 (1988), no. 3, 337–348. (Erik A. van Doorn) **89m:60204** 60J80 (33A65)
- (with Muldoon, Martin E.) On the variation with respect to a parameter of zeros of Bessel and  $q$ -Bessel functions. *J. Math. Anal. Appl.* 135 (1988), no. 1, 187–207. (Andrea Laforgia) **89i:33011** 33A40 (05A30)
- Ismail, Nazdar** On  $(m, n)$ -distributivity of pseudo-Boolean algebras. *Demonstratio Math.* 20 (1987), no. 1–2, 299–307 (1988). (Marcel Guillaume) **89d:06014** 06D10
- On  $m$ -representation of  $m$ -complete pseudo Boolean algebra. *Demonstratio Math.* 21 (1988), no. 1, 27–35. (U. Maddana Swamy) **89i:06010** 06B15 (06D20)
- Ismailov, A. Ya.** (with Tagieva, M. A.) Rate of approximation of generalized analytic functions by partial sums of a series in generalized Faber polynomials on continua with nonzero local geometric characteristic. (Russian) *Approximation by generalized analytic and spherical functions* (Russian), 3–7, Azerbaidzhan. Gos. Univ., Baku, 1983. (see **89b:41001**) 30E10 (30G20)
- (with Mekhtiev, G. D.; Tagieva, M. A.) The growth of entire generalized analytic functions represented by series in a generalized Goncharov polynomial. (Russian) *Approximation by generalized analytic and spherical functions* (Russian), 121–126, Azerbaidzhan. Gos. Univ., Baku, 1983. (see **89b:41001**) 30D10 (30D15)

- Ismailov, F. R.** On the theory of inverse problems for the Sturm-Liouville equation with discontinuous coefficients. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* 43 (1987), no. 10, 7-11 (1988). (Summary) **89d:34052** 34B25 (34A55, 47E05)
- Ismailov, V. I.** (with Agalarov, D. G.; Aliev, V. T.) Error estimates for the numerical solution of a problem of the propagation of visco-nonlinear elastic waves. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 5, 58-62 (1988). (Summary) **89k:73030** 73F15
- Ismailov, Z. I.** Extensions, without a spectrum, of the minimal operator generated by a first-order operator-differential expression. (Russian) *Application of methods of functional analysis in problems of mathematical physics* (Russian), 98-100, iii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (R. C. Gilbert) **89g:47060** 47E05 (34G10, 47A10, 47A20, 47B44)
- Ismailova, N. A.** (with Tairov, M. F.) Distribution of the maximum of the length of a queue and some functionals related to it in a queueing system with time-dependent parameters. (Russian) *Approximation by generalized analytic and spherical functions* (Russian), 133-145, *Azerbaidzhan. Gos. Univ., Baku*, 1983. (see **89b:41001**) 60K25
- Ismathodzhaev, S. K.** Asymptotic theorems on the variance of the average of stationary random processes. (Russian) *Dokl. Akad. Nauk UzSSR* 1988, no. 10, 5-7. (Zdzislaw Rychlik) **89k:60057** 60G25 (60G10)
- Ismatova, Kh. R.** Application of recognition algorithms for calculating estimates for the processing of a multizone video image. (Russian) *Mathematical methods in pattern recognition and discrete optimization* (Russian), 52-59, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1987. (Ulrich Eckhardt) **89h:68153** 68U10 (94A15)
- Ismatullayev, Sh. A.** Second-order asymptotics for decomposable statistics in a Pólya scheme. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1987, no. 5, 13-21, 109. (Gh. Oprisan) **89g:60076** 60F05 (60C05)
- (with Sirazhdinov, S. Kh.; Mirakhmedov, Sh. A.) Probabilities of deviations for randomized decomposable statistics in a multinomial scheme. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 5, 1062-1064; translated in *Soviet Math. Dokl.* 36 (1988), no. 3, 583-585. (Authors' review (translated from *RZhMat* 1988:6 V42)) **89j:60045** 60F10 (62E20)
- Ismoilov, D. A.** Method for the summation of arithmetic functions. I. (Russian. Tajiki summary) *Izv. Akad. Nauk Tadzhik. SSR Otdel. Fiz.-Mat. Khim. i Geol. Nauk* 1986, no. 2(100), 10-17. (Grigori Kolesnik) **89a:11093** 11N37
- A method for the summation of arithmetic functions. II. (Russian. Tajiki summary) *Izv. Akad. Nauk Tadzhik. SSR Otdel. Fiz.-Mat. Khim. i Geol. Nauk* 1986, no. 3(101), 11-18 (1987). (Grigori Kolesnik) **89a:11094** 11N37
- An asymptotic formula in additive number theory. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* 31 (1988), no. 1, 6-8. (From the text) **89m:11023** 11D04 (11P55)
- Iso, Yuusuke** (with Doblaré, M.; Hromadka, Th. V., II; O'Callaghan, M. J. A.; Onishi, K.; Pina, H.; Quinlan, P. M.; Schippers, H.; Takahashi, Shuichi; Tanaka, Masataka; Telles, J. C. F.; Wrobel, L. C.) ★ Topics in boundary element research. Vol. 3. Computational aspects. Edited and with a preface by Carlos A. Brebbia. *Springer-Verlag, Berlin-New York*, 1987. xiv+296 pp. ISBN 3-540-16113-9 (Johannes Eischner) **89b:65005** 65-02 (65N30)
- Isoke, M.** (with Kawato, M.; Maeda, Yoshiharu; Suzuki, Ryoji) Coordinates transformation and learning control for visually-guided voluntary movement with iteration: a Newton-like method in a function space. *Biol. Cybernet.* 59 (1988), no. 3, 161-177. (Summary) **89h:92022** 92A09 (65J99)
- Isoke, Yoshinori** On the maximum principle for a class of linear parabolic differential systems. *Hiroshima Math. J.* 18 (1988), no. 2, 413-424. (R. Z. Yeh) **89m:35034** 35B50
- Isola, Stefano** Understanding complex behaviour. Some remarks on method and interpretation. *Chaos and complexity* (Torino, 1987), 26-35, *World Sci. Publishing, Singapore*, 1988. (Steven Matthes) **89j:58078** 58F13 (58F11)
- Resonances in chaotic dynamics. *Comm. Math. Phys.* 116 (1988), no. 2, 343-352. (Holger Kantz) **89f:58079** 58F10 (58F13)
- Isozaki, Hiroshi** Singular limits for the compressible Euler equation in an exterior domain. *J. Reine Angew. Math.* 381 (1987), 1-36. (Michael Wiegner) **89h:35137** 35Q10 (76N10)
- ben-Israel, Adi** see **Ben-Israel, Adi**
- Israel, W.** Dark stars: the evolution of an idea. *Three hundred years of gravitation*, 199-276, *Cambridge Univ. Press, Cambridge-New York*, 1987. (see **89b:83007**) 83-03 (01A60, 83F05)
- (with Katz, Joseph; Lynden-Bell, D.) Quasical energy in static gravitational fields. *Classical Quantum Gravity* 5 (1988), no. 7, 971-987. (Tevian Dray) **89i:83035** 83C40
- (with Poisson, E.) Structure of the black hole nucleus. *Classical Quantum Gravity* 5 (1988), no. 12, L201-L205. (Summary) **89j:83047** 83C47 (83C75)
- see also *Three hundred years of gravitation*, **89b:83007**
- Israeli, A.** (with Awerbuch, B.; Shiloach, Y.) Finding Euler circuits in logarithmic parallel time. *Advances in computing research*, Vol. 4, 69-78, *JAI, Greenwich, CT*, 1987. (Norbert Blum) **89f:68015** 68Q05 (05C45, 68Q25, 68R10, 90B10)
- (with Gibbons, Alan; Rytter, Wojciech) Parallel  $O(\log n)$  time edge-colouring of trees and Halin graphs. *Inform. Process. Lett.* 27 (1988), no. 1, 43-51. (Summary) **89a:68100** 68Q25 (05C05, 05C15, 68R10)
- (with Dahlhaus, E.; Makowsky, J. A.) On the existence of polynomial time algorithms for interpolation problems in propositional logic. *Notre Dame J. Formal Logic* 29 (1988), no. 4, 497-509. (Juraj Hromkovic) **89j:03006** 03B05 (03C40, 03D15, 68Q20)
- Israeli, Moshe** Marching iterative methods for the parabolized and thin layer Navier-Stokes equations. *Progress and supercomputing in computational fluid dynamics* (Jerusalem, 1984), 211-233, *Progr. Sci. Comput.*, 6, *Birkhäuser Boston, Boston, MA*, 1985. (C. Wayne Mastin) **89b:65304** 65P05 (76-08)
- Israfilov, D. M.** An integral representation in domains with a BL boundary. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 120-123, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) 30E20
- Israïlov, M. I.** (with Eshdaviatov, B.) Sharpening of the remainder term of an interpolation spline. (Russian) *Voprosy Vychisl. i Prikl. Mat. (Tashkent)* No. 80 (1986), 10-26, 135. (Summary) **89d:41024** 41A15
- Isroilov, S. I.** Approximation of some ordered semigroups with a defined order relation. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* 31 (1988), no. 2, 82-85. (B. Pondělíček) **89i:06024** 06F05 (20M10)
- Isserman, Andrew** (with Taylor, Carol; Gerking, Shelby; Schubert, Uwe) Regional labor market analysis. *Handbook of regional and urban economics*, Vol. 1, 543-580, *Handbooks in Econometrics*, 7, North-Holland, Amsterdam-New York, 1986. (see **89m:90047**) 90A30
- Istomina, I. F.** (with Tolstol, V. N.; Smirnov, Yu. F.) The Gelfand-Tsetlin basis for the Lie superalgebra  $gl(n|m)$ . *Group theoretical methods in physics*, Vol. 1 (Yurmala, 1985), 337-348, *VNU Sci. Press, Uirecht*, 1986. (Bani Mitra) **89c:17037** 17B70 (17B10, 81G20)
- Istrătescu, Vasile Ion** ★ Inner product structures. Theory and applications. *Mathematics and its Applications*, 25, D. Reidel Publishing Co., Dordrecht-Boston, MA, 1987. xvi+895 pp. ISBN 90-277-2182-3 (E. Gerlach) **89c:46001** 46-00 (46-02, 46Cxx, 46N05, 47-02)
- Ito, Minoru** (with Hoshi, Katsuichi) Tensor calculation on a Riemannian manifold. *Sci. Rep. Fac. Ed. Fukushima Univ.* No. 38 (1986), 7-10. (Summary) **89c:53026** 53B20
- Itahshi, Shuichi** (with Toraiichi, Kazuo; Kamada, Masaru; Mori, Ryoichi) Window functions obtained by convolution integrals of rectangular windows. *Internat. J. Systems Sci.* 19 (1988), no. 12, 2491-2505. (Not in MR) 94A12
- Itai, Alon** (with Rodeh, Michael) The multi-tree approach to reliability in distributed networks. *Inform. and Comput.* 79 (1988), no. 1, 43-59. (Antal Iványi) **89k:68006** 68M10 (05C05, 68R10, 90B10, 90B25)
- Italiano, Giuseppe F.** (with Gambosi, Giorgio; Talamo, Maurizio) Getting back to the past in the union-find problem. *STACS 88 (Bordeaux, 1988)*, 8-17, *Lecture Notes in Comput. Sci.*, 294, *Springer, Berlin-New York*, 1988. (Summary) **89c:68046** 68Q25 (68R05)
- Finding paths and deleting edges in directed acyclic graphs. *Inform. Process. Lett.* 28 (1988), no. 1, 5-11. (William Gasarch) **89j:68021** 68P05 (05C20, 05C38, 68Q25)
- Itkin, V. E.** Deparallelizing of program superposition. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 4, 808-811; translated in *Soviet Phys. Dokl.* 32 (1987), no. 12, 948-949. (R. M. Nuriev) **89c:68005** 68N99
- Itô, Akira** (with Inoue, Katsushi; Takanami, Itsuo) A note on three-way two-dimensional alternating Turing machines. *Inform. Sci.* 45 (1988), no. 1, 1-22. (Akira Nakamura) **89d:68013** 68Q05 (03D10, 03D15)
- Itô, H. M.** Multiplication formulas of orthogonal polynomials of boson field operators: derivation based on the generalized phase-space method. *J. Math. Phys.* 29 (1988), no. 3, 696-701. (A. Badrikian) **89c:60124** 60H99 (81C20)
- (with Kotani, Shinichi; Yokota, T.) Size distribution of fractured areas in one-dimensional systems. *J. Statist. Phys.* 51 (1988), no. 3-4, 569-584. (Summary) **89h:73037** 73M05 (86A15)
- Stochastic disk dynamo as a model of reversals of the earth's magnetic field. *J. Statist. Phys.* 53 (1988), no. 1-2, 19-39. (Summary) **89j:86007** 86A25
- Itô, Hiroshi** On a property of elliptic Dedekind sums. *J. Number Theory* 27 (1987), no. 1, 17-21. (E. Grosswald) **89a:11050** 11F20
- On a problem of Yamamoto concerning biquadratic Gauss sums. II. *J. Math. Soc. Japan* 40 (1988), no. 4, 647-660. (John H. Loxton) **89k:11070** 11L05 (11M20)
- Itô, Hiroyuki** Intriguing properties of global structure in some classes of finite cellular automata. *Phys. D* 31 (1988), no. 3, 318-338. (Robert M. Baer) **89b:68112** 68Q80 (58F08, 58F13)
- Itô, Katsushi** Path-integral formulation of the fermionic strings on the light-cone slice. *Phys. Lett. B* 208 (1988), no. 3-4, 421-426. (Olaf Lechtenfeld) **89c:81077** 81E99 (81E30)
- Itô, Kazufumi** (with Teglas, Russell) Legendre-tau approximation for functional-differential equations. II. The linear quadratic optimal control problem. *SIAM J. Control Optim.* 25 (1987), no. 6, 1379-1408. (From the introduction) **89b:34070** 34K35 (49D40, 65N35)
- (with Banks, H. T.) A theoretical framework for convergence and continuous dependence of estimates in inverse problems for distributed parameter systems. *Appl. Math. Lett.* 1 (1988), no. 1, 13-17. (Not in MR) 93B30 (34A55, 34G20, 49D15, 93C20)
- (with Banks, H. T.) A unified framework for approximation in inverse problems for distributed parameter systems. *Control Theory Adv. Tech.* 4 (1988), no. 1, 73-90. (J. P. Babary) **89d:93034** 93B30 (93C20, 93C25)
- (with Powers, Robert K.) Chandrasekhar equations for infinite-dimensional systems. II. Unbounded input and output case. *J. Differential Equations* 75 (1988), no. 2, 371-402. (Igor Bock) **89m:49010** 49A27 (93C25)
- Itô, Kazuo** (with Kunimatsu, Noboru) Stabilization of a nonlinear distributed parameter vibratory system. *Internat. J. Control* 48 (1988), no. 6, 2389-2415. (Michel Cotsafitis) **89k:53169** 93D15 (93C10, 93C20)
- Itô, Kei** Quark lepton mass matrices in string theory on orbifolds. *International Workshop on Superstrings, Cosmology, Composite Structures* (College Park, MD, 1987), 285-294, *World Sci. Publishing, Singapore*, 1987. (see **89a:81005**) 81G25 (81E20)
- Itô, Keiichi R.** Renormalization group methods on hierarchical lattices and beyond. *Progr. Theoret. Phys. Suppl.* No. 92 (1987), 46-71. (Summary) **89i:81100** 81E25 (81E15, 82A25)
- Renormalization group method on a hierarchical lattice of Dyson-Wilson type. *Probability theory and mathematical statistics* (Kyoto, 1986), 131-139, *Lecture Notes in Math.*, 1299, *Springer, Berlin-New York*, 1988. (Tony C. Dorlas) **89g:81061** 81E25 (82A15, 82A25)
- Itô, Kiyoshi** Irreducible decomposition of the  $U_{n,m}$ -module of  $(r, s)$ -forms on the complex Grassmann manifold  $G_{n+m,n}$ . *J. Fac. Sci. Shinshu Univ.* 22 (1987), no. 1, 13-26. (J. A. Wolf) **89h:22031** 22E46 (53C30)
- Itô, Kiyosi** see *Dictionary: Mathematics, encyclopedic*, **89b:00033**
- Itô, M.** (with Watanabe, Yasunari; Soma, Tsuruhiko; Betsumiya, T.) Nonperiodic tessellation with eight-fold rotational symmetry. *Science on form* (Sakura, 1985), 471-477, *Reidel, Dordrecht-Boston, MA*, 1987. (see **89j:82013**) 52A45 (51M20)
- Itô, Masaaki** A REDUCE program for Hirota's bilinear operator and Wronskian operations. *Comput. Phys. Comm.* 50 (1988), no. 3, 321-330. (Summary) **89k:35003** 35-04 (35Q20)
- (with Hirota, Ryogo; Kako, Fujio) Two-dimensional Toda lattice equations. Recent developments in soliton theory. *Progr. Theoret. Phys. Suppl.* No. 94 (1988), 42-58. (Summary) **89k:35211** 35Q20 (58F35)
- Itô, Masami** (with Katsura, M.; Shih, Hui Jan; Yu, S. S.) Automata accepting primitive words. *Semigroup Forum* 37 (1988), no. 1, 45-52. (André Lentin) **89b:68037** 68Q45 (20M35)
- Itô, Masato** On compactness of Fourier integral operators. *Math. Japon.* 33 (1988), no. 6, 873-881. (Luigi Rodino) **89k:47079** 47G05 (35S05)
- Itô, Masayuki** Les noyaux de convolution de type logarithmique. [Convolution kernels of logarithmic type] *Théorie du potentiel* (Orsay, 1983), 347-392, *Lecture Notes in Math.*,



- 1096, Springer, Berlin-New York, 1984. (F.-Y. Maeda (Zbl 553:31005)) **89c:31006** 31C15
- Traveling train solutions of FitzHugh-Nagumo systems. *Recent topics in nonlinear PDE, III* (Tokyo, 1986), 75–104, North-Holland Math. Stud., 148, North-Holland, Amsterdam-New York, 1987. (Brian D. Sleeman) **89a:92022** 92A09 (35K55)
- Diffusion kernels of logarithmic type. *Potential theory* (Prague, 1987), 137–146, Plenum, New York-London, 1988. (Rong Wu) **89m:60181** 60J45 (31C99)
- Ito, Noboru** Hadamard graphs. II. *Graphs Combin.* 1 (1985), no. 4, 331–337. (M. Doob) **89g:05075** 05C50 (05C25)
- (with Enomoto, Hikoe; Frankl, Peter; Nomura, Kazumasa) Codes with given distances. *Graphs Combin.* 3 (1987), no. 1, 25–38. (Vera Pless) **89a:94015** 94B05 (05C15)
- (with Bhat-Nayak, Vasanti N.; Wirmani-Prasad, Anjana) Some new Hadamard matrices. *Graphs Combin.* 3 (1987), no. 3, 221–225. (Summary) **89h:05053** 05B20
- (with Tadokoro, Machio) On SD graphs. I. *Math. J. Okayama Univ.* 29 (1987), 1–9 (1988). (William L. Kocay) **89f:05093** 05C25 (05C75)
- Doubly regular asymmetric digraphs. *Proceedings of the First Japan Conference on Graph Theory and Applications* (Hakone, 1986), *Discrete Math.* 72 (1988), no. 1–3, 181–185. (W. D. Wallis) **89k:05042** 05C20
- Ito, Nobuyasu** (with Suzuki, Masuo) Fractal configurations of the two- and three-dimensional Ising models at the critical point. *Progr. Theoret. Phys.* 77 (1987), no. 6, 1391–1401. (Summary) **89a:82044** 82A68 (82–04, 82A25)
- Ito, Seichi** (with Yamada, Toshihiko) The degree of a Schur algebra. *TRU Math.* 22 (1986), no. 1, 53–61. (Donald S. Passman) **89h:20009** 20C05 (11R33, 11R54)
- Ito, Seizō** see Masuda, Kyōya, **89c:01073**
- Ito, Shunji** (with Mizutani, Masahiro) Dynamical systems on dragon domains. *Japan J. Appl. Math.* 4 (1987), no. 1, 23–46. (F. M. Dekking) **89c:58070** 58F11 (11K55, 28D05)
- Ergodic theory and Diophantine approximations: on natural extensions of algorithms. (Japanese) *Sūgaku* 39 (1987), no. 2, 140–158. (Hitoshi Nakada) **89k:11067** 11K50 (28D05, 58F11)
- On a Diophantine approximation of real numbers from below. *Prospects of mathematical science* (Tokyo, 1986), 41–62, World Sci. Publishing, Singapore, 1988. (Guang Shan Xu) **89f:11092** 11J04 (11J70)
- (with Nakada, Hitoshi) Approximations of real numbers by the sequence  $\{n\alpha\}$  and their metrical theory. *Acta Math. Hungar.* 52 (1988), no. 1–2, 91–100. (A. Spátaru) **89i:11092** 11K55 (11A55, 11K60)
- Ito, Tadamasu** (with Kobuchi, Youichi; Ogiwara, Atsushi) A model for rouleaux pattern formation of red blood cells. Enumeration of absolutely stable patterns. *Biometrics and related computational problems* (Naples, 1987), 371–379, Kluwer Acad. Publ., Dordrecht, 1988. (see **89f:92002**) 92A09
- Ito, Tadayu** (with Suematsu, Yoshikazu; Hase, Kenji; Hayase, Toshiyuki) Distribution patterns of eigenvalues of laminar pipe flow (classification of modes based on dynamics of the system). *JSMIE Internat. J. Ser. II* 31 (1988), no. 4, 632–638. (Summary) **89k:76032** 76D05 (76–04, 76E05)
- Ito, Takatoshi** Implicit contracts and risk aversion. *Equilibrium analysis*, 265–287, Cambridge Univ. Press, Cambridge-New York, 1986. (Erhard Kremer) **89c:90025** 90A09 (62P05, 90A30)
- Ito, Tatsuro** (with Bannai, Eiichi) Current research on algebraic combinatorics: supplements to our book, *Algebraic combinatorics. I. Graphs Combin.* 2 (1986), no. 4, 287–308. (Andrew Woldar) **89g:05001** 05–02 (05B05, 05C75)
- (with Bannai, Eiichi) On distance-regular graphs with fixed valency. *Graphs Combin.* 3 (1987), no. 2, 95–109. (Joe Hemminger) **89h:05105** 05C35
- (with Bannai, Eiichi) On distance-regular graphs with fixed valency. II. *Graphs Combin.* 4 (1988), no. 3, 219–228. (Joe Hemminger) **89g:05087** 05C75 (05C35)
- Ito, Toshiya** (with Kurosawa, Kaoru; Takeuchi, Masashi) Public key cryptosystem using a reciprocal number with the same intratability as factoring a large number. *Cryptologia* 12 (1988), no. 4, 225–233. (Zhen Fu Cao) **89k:94049** 94A60 (11T71, 11Y16)
- Ito, Yoshifumi** Theory of (vector valued) Fourier hyperfunctions. Their realization as boundary values of (vector valued) slowly increasing holomorphic functions. II. *J. Math. Tokushima Univ.* 19 (1985), 25–61. (J. S. Joel) **89a:32005** 32A45 (46F15)
- Itoh, Hiroshi** (with Ozawa, Takao) Complex bases in active CR networks and their relations with the network excitation. *Electron. Comm. Japan. Part I Comm.* 68 (1985), no. 7, 27–36. (Summary) **89h:94015** 94C05
- Itoh, Katsumi** (with Ogawa, Kaku; Suehiro, Kazuhiko) BRS invariance of the Witten type vertex. *Nuclear Phys. B* 289 (1987), no. 1, 127–156. (Tsou Sheung Tsun) **89d:81099** 81E99 (81E30)
- (with Hata, Hiroyuki; Kugo, Taichiro; Kunitomo, Hiroshi; Ogawa, Kaku) BRS invariant vertex of Neveu-Schwarz-Ramond superstring. *Progr. Theoret. Phys.* 78 (1987), no. 2, 453–486. (Robert Marnelius) **89c:81128** 81E99 (81E30)
- (with Kato, Mitsuhiro; Kunitomo, Hiroshi; Sakamoto, Makoto) Vertex construction and zero modes of twisted strings on orbifolds. *Nuclear Phys. B* 306 (1988), no. 2, 362–386. (Marc Henneaux) **89h:81195** 81E99 (22E40, 53C80, 81E30, 83E30)
- (with Kunitomo, Hiroshi) Covariant string field theory on  $Z_2$ -orbifold. *Progr. Theoret. Phys.* 79 (1988), no. 4, 953–990. (George Siopsis) **89i:81114** 81E99 (81E30)
- Itoh, Masaki** (with Shibasaki, Masashi) Hybrid distance and hybrid capacity on networks. *Electron. Comm. Japan. Part I Comm.* 68 (1985), no. 2, 21–28. (Summary) **89i:90032** 90B10 (05C35, 68M10)
- Itoh, Mitsuhiro** Yang-Mills connections over a complex surface and harmonic curvature. *Compositio Math.* 62 (1987), no. 2, 95–106. (N. J. Hitchin) **89c:33050** 53C55 (53C05, 53C80, 58A14, 58E15, 81E13)
- Singularities of the moduli space of Yang-Mills fields. *Proc. Japan Acad. Ser. A Math. Sci.* 63 (1987), no. 5, 170–173. (N. J. Hitchin) **89d:58023** 58D99 (53C80, 58B20, 58E15, 81E13)
- Geometry of anti-self-dual connections and Kuranishi map. *J. Math. Soc. Japan* 40 (1988), no. 1, 9–33. (P. E. Newstead) **89a:53037** 53C05 (14D20, 32G13, 53C25, 58D17, 58E15)
- Gauge fields and quaternion structure. *Kodai Math. J.* 11 (1988), no. 3, 344–360. (N. J. Hitchin) **89m:53076** 53C25 (32G13, 32L05, 53C55, 81E13)
- Itoh, Takafumi** (with Ohta, Yoshito; Maeda, Hajime; Kodama, Shinzo) Fault diagnosis of compartmental systems. *Electron. Comm. Japan. Part I Comm.* 68 (1985), no. 8, 11–19. (From the introduction) **89i:90040** 90B25 (92A09, 93B30, 94C05)
- Itoh, Takashi** On the completely bounded map of a  $C^*$ -algebra to its dual space. *Bull. London Math. Soc.* 19 (1987), no. 6, 546–550. (Trond Digernes) **89i:46066** 46L05
- $K^*$ -positive maps in  $C^*$ -algebras. *Proc. Amer. Math. Soc.* 101 (1987), no. 1, 76–80. (Sze-Kai Tsui) **89f:46115** 46L05
- (with Nagisa, Masaru) Complete positivity of mapping valued linear maps. *Math. Z.* 197 (1988), no. 2, 273–276. (Vern Paulsen) **89c:46067** 46L05 (47B99)
- Itoh, Takehiro** Isotropic minimal submanifolds in a space form. *Tsukuba J. Math.* 12 (1988), no. 2, 497–505. (M. do Carmo) **89i:53047** 53C42
- Itoh, Takehisa** (with Fukushima, Masao) A dual approach to asymmetric traffic equilibrium problems. *Math. Japon.* 32 (1987), no. 5, 701–721. (Alan Shuchat) **89f:90060** 90B20 (90B10, 90C25)
- (with Fukushima, Masao; Ibaraki, Toshihide) An iterative method for variational inequalities with application to traffic equilibrium problems. (Japanese summary) *J. Oper. Res. Soc. Japan* 31 (1988), no. 1, 82–104. (Summary) **89c:90097** 90B20 (65K05)
- Itoh, Toshiaki** (with Abe, Kanji) Hamiltonian-conserving discrete canonical equations based on variational difference quotients. *J. Comput. Phys.* 76 (1988), no. 1, 85–102. (Ram Krishan Sharma) **89j:70025** 70H05 (58F05, 70–08, 70F05)
- Itoh, Toshiharu** (with Odaka, Kazuhiko) Particle picture in external fields, quantum holonomy, and gauge anomaly. *Lett. Math. Phys.* 15 (1988), no. 4, 297–303. (Akira Asada) **89k:81109** 81E20 (81E15)
- Itoh, Toshiya** (with Tsujii, Shigeo) A fast algorithm for computing multiplicative inverses in  $GF(2^m)$  using normal bases. *Inform. and Comput.* 78 (1988), no. 3, 171–177. (Rudolf Lidl) **89j:11121** 11Y16 (11T71, 68Q25)
- (with Tsujii, Shigeo; Fujioka, Atsushi; Kurosawa, Kaoru; Matsumoto, Tsutomu) A public-key cryptosystem based on the difficulty of solving a system of nonlinear equations. *Systems Comput. Japan* 19 (1988), no. 2, 10–18. (Zhen Fu Cao) **89g:94026** 94A60 (11T71)
- Itoh, Yoshiaki** Toda lattice and a dynamical system on competition. (Japanese. English summary) *Proc. Inst. Statist. Math.* 35 (1987), no. 1, 73–80. (Summary) **89a:92041** 92A15 (34A34)
- Integrals of a Lotka-Volterra system of odd number of variables. *Progr. Theoret. Phys.* 78 (1987), no. 3, 507–510. (Alois Klič) **89a:92042** 92A15 (34A30, 92A12)
- Integrals of a Lotka-Volterra system of infinite species. *Progr. Theoret. Phys.* 80 (1988), no. 5, 749–751. (Curtis C. Travis) **89j:58032** 58F05 (34K05, 45J05, 92A15)
- Itoh, Yoshimasa** (with Teramoto, Kiyoshi) A new method of deriving inequalities to determine the ground state of the lattice gas. *Progr. Theoret. Phys.* 77 (1987), no. 5, 1125–1140. (N. D. Sengupta) **89d:82118** 82A67
- Itoh, Yutaka** (with Takeuchi, Masashi) Centrality functions defined by minimum cuts in a network. *Electron. Comm. Japan. Part I Comm.* 70 (1987), no. 8, 11–21. (Summary) **89j:90106** 90B10 (05C35)
- Itoi, Chigaku** String vertices in a weakly curved background. *Phys. Lett. B* 196 (1987), no. 1, 43–46. (Miao Li) **89b:81158** 81E20 (81E30, 83E30)
- (with Kubota, Hiroshi) BRST quantization of the string model with extrinsic curvature. *Phys. Lett. B* 202 (1988), no. 3, 381–384. (Gheorghe Zet) **89c:81152** 81E99 (81E30)
- It, A. R.** (with Novokoshenov, V. Yu.) ★ The isomonodromic deformation method in the theory of Painlevé equations. *Lecture Notes in Mathematics*, 1191. Springer-Verlag, Berlin-New York, 1986. iv+313 pp. ISBN 3-540-16483-9 (Alexander A. Pankov) **89b:34012** 34A20 (35Q20, 58F07)
- Asymptotic behavior of the solution of the Cauchy problem for the modified Korteweg-de Vries equation. (Russian) *Wave propagation. Scattering theory* (Russian), 214–224, 259, *Probl. Mat. Fiz.*, 12, Leningrad. Univ., Leningrad, 1987. (Summary) **89a:35047** 35C20 (35B40, 35Q20, 58F07)
- (with Kaptev, A. A.) The method of isomonodromic deformations and relation formulas for the second Painlevé transcendent. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 51 (1987), no. 4, 878–892, 912; translated in *Math. USSR-Izv.* 31 (1988), no. 1, 193–207. (Alexander A. Pankov) **89f:34004** 34A20 (35Q20, 58F07)
- (with Rybin, A. V.; Salp, M. A.) On the exact integration of the nonlinear Schrödinger equation. (Russian. English summary) *Teoret. Mat. Fiz.* 74 (1988), no. 1, 29–45; translated in *Theoret. and Math. Phys.* 74 (1988), no. 1, 20–32. (P. A. Kuchment) **89h:35295** 35Q20 (58F07, 81C05)
- (with Bikbaev, R. F.) Asymptotic behavior of the solution to the Cauchy problem as  $t \rightarrow \infty$  for the Landau-Lifshits equation. (Russian. English summary) *Teoret. Mat. Fiz.* 76 (1988), no. 1, 3–17; translated in *Theoret. and Math. Phys.* 76 (1988), no. 1, 665–675. (Song Mu Zheng) **89i:35115** 35Q20 (35B40, 35C20, 35Q15, 58F40, 82A05)
- Itskova, P. G.** (with Verzhbitskaya, I. S.) Investigation of dynamic regimes of catalytic oxidation. (Russian) *Numerical and analytical methods for solving boundary value problems* (Russian), 23–30, 83, Kazakh. Gos. Univ., Alma-Ata, 1986. (see **89m:00007**) 92A40
- Itskovich, É. L.** (with Sorkin, L. R.) Statistical optimization of continuous production: formulation of the problem, solution and realization. (Russian. English summary) *Automat. i Telemekh.* 1988, no. 7, 3–25; translated in *Automat. Remote Control* 49 (1988), no. 7, part 1, 821–837. (Not in MR) 93C75 (00A71, 49D27, 90C05, 93C60)
- Itskovits, M. A.** (with Lokshin, A. A.) A note concerning generalization of the Landau method for waves in nonlinear hereditary media. *Internat. J. Non-Linear Mech.* 23 (1988), no. 2, 125–129. (N. Cristescu) **89j:73027** 73D10 (73D35, 73F15)
- Itwweire, E. C.** (with Rohr, J. J.; Helland, K. N.; Van Atta, C. W.) Growth and decay of turbulence in a stably stratified shear flow. *J. Fluid Mech.* 195 (1988), 77–111. (Not in MR) 76F10
- rodriguez-Iturbe, I.** see Rodriguez-Iturbe, I.
- Itezun Iturralde, Mikel** see Lezaun Iturralde, Mikel
- Iturrazo, Luisa** Ordered structures in the description of quantum systems: mathematical progress. *Methods and applications of mathematical logic* (Campinas, 1985), 55–75, *Contemp. Math.*, 69, Amer. Math. Soc., Providence, RI, 1988. (Gudrun Kalmbach) **89d:06013** 06C15 (81B10)
- bar-Itzhack, I. Y.** see Bar-Itzhack, I. Y.
- avi-Itzhak, Benjamin** see Avi-Itzhak, Benjamin
- Itrykson, C.** Interacting electrons in a strong magnetic field. *Quantum field theory and quantum statistics*, Vol. 1, 415–448, Hilger, Bristol, 1987. (B. Geyer) **89h:81259** 81G10 (81H20)

- (with Cappelli, A.; Zuber, J.-B.) The A-D-E classification of minimal and  $A^{(1)}$  conformal invariant theories. *Comm. Math. Phys.* **113** (1987), no. 1, 1–26. (Andrew A. Bytsenko) **89b:81178** 81E99 (11F22, 17B67, 81E40, 82A68)
- Critical two-dimensional statistical systems: conformal and modular invariance. *Conformal field theory, anomalies and superstrings* (Singapore, 1987), 53–90, *World Sci. Publishing*, Singapore, 1988. (Philippe Christe) **89i:82017** 82A15 (81E40, 82A25)
- Iusem, Alfredo N. (with Moledo, Leonardo) A finitely convergent method of simultaneous subgradient projections for the convex feasibility problem. (Portuguese summary) *Mat. Apl. Comput.* **5** (1986), no. 2, 169–184. (S. R. Mohan) **89a:90111** 90C25 (65K05)
- (with De Pierro, Alvaro R.) A finitely convergent "row-action" method for the convex feasibility problem. *Appl. Math. Optim.* **17** (1988), no. 3, 225–235. (J. E. Spingarn) **89a:90108** 90C25
- Ivakhnenko, A. G. Objective clusterization on the basis of the theory of self-organization of models. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 5, 1–9; translated from *Avtomatika* **1987**, no. 5, 6–15, 95 (Russian. English summary). (Not in MR) **92A05** (94A40, 94D05)
- (with Kritskii, A. P.) Regularization of solutions in the problem of signal recognition using the locus of the minima of the maximum likelihood criterion. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 6, 63–66 (1988); translated from *Avtomatika* **1987**, no. 6, 60–63, 97 (Russian. English summary). (Not in MR) **94A12**
- Methods for obtaining unimodal characteristics with location of the minimum in the region of complex models. *Soviet J. Automat. Inform. Sci.* **21** (1988), no. 1, 89–92; translated from *Avtomatika* **1988**, no. 1, 88–91 (Russian). (Not in MR) **93A10**
- (with Belyaev, V. I.; Fleishman, B. S.) Cybernetic methods for optimizing the use of nature. *Soviet J. Automat. Inform. Sci.* **21** (1988), no. 2, 36–40; translated from *Avtomatika* **1988**, no. 2, 36–40, 94 (Russian. English summary). (Not in MR) **00A71** (92A17)
- Ivakhnenko, G. A. (with Kravtsevich, V. E.; Kovalenko, I. I.; Makarovskii, A. P.) Analysis of random spatial images. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 5, 56–61; translated from *Avtomatika* **1987**, no. 5, 65–70, 96 (Russian. English summary). (Not in MR) **68T10** (94A12)
- Ivakhnenko, V. I. (with Il'inskiĭ, A. S.) Investigation of operator equations in the problem of diffraction by a plane bounded screen. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1988**, no. 4, 23–29, 71; translated in *Moscow Univ. Comput. Math. Cybernet.* **1988**, no. 4, 28–35. (Summary) **89b:78012** 78A45
- Ivan, Gh. Finite quasisolvable groups. *Proceedings of the Conference on Algebra (Romanian)* (Timișoara, 1986), 60–65, *Univ. Timișoara, Timișoara*, 1987. (E. I. Khukhro) **89i:20060** 20F19
- Une généralisation des tissus associés aux fibrés principaux différentiables. [A generalization of the webs associated with differentiable principal bundles] *Proceedings of the National Conference on Geometry and Topology (Romanian)* (Tirgoviste, 1986), 127–130, *Univ. București, Bucharest*, 1988. (Vladislav Goldberg) **89k:55029** 55R10 (53A60)
- On some algebraic and topological properties of the normal Steenrod tissues. *Topics in differential geometry*, Vol. I, II (Debrecen, 1984), 559–585, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (D. I. Papuc) **89f:55015** 55R10
- Ivan, M. see Lukashov, A. L. (89j:00036)
- Ivanov, V. I. Efficient algorithms for the processing of experimental data. (Russian) *Data processing in multiprocessor distributed computer systems* (Russian), 34–40, iii, *Akad. Nauk Ukrain. SSR, Inst. Kibernet.*, Kiev, 1987. (Summary) **89d:65014** 65D10
- Ivanovskas, Feliksas (with Domarkas, Aleksas; Sheibak, Miroslaw) A mixed problem for a nonlinear nonstationary system of equations of Schrödinger type. (Russian. English and Lithuanian summaries) *Differentsial'nye Uravneniya i Primeneniya*, No. 40 (1987), 23–33. (Summary) **89b:35049** 35J65
- (with Domarkas, Aleksas) Solvability of a mixed problem for a nonlinear system of equations of Schrödinger type. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 3, 455–465. (M. Victor Wickerhauser) **89c:35130** 35Q20
- (with Domarkas, Aleksas) Existence of solutions of nonlinear equations of Schrödinger type. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 3, 466–480. (M. Victor Wickerhauser) **89f:35183** 35Q20
- Ivanchenko, T. S. (with Sakhnovich, L. A.) Operator identities in the theory of interpolation problems. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **22** (1987), no. 3, 298–308, 316. (Aurelian Gheondea) **89a:47023** 47A62 (15A24, 30G30, 42A70, 47B50)
- (with Sakhnovich, L. A.) An operator approach to V. P. Potapov's scheme for the investigation of interpolation problems. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 5, 573–578, 677. (D. Sarason) **89d:47085** 47B99 (30E05, 30G30, 47A56)
- Ivanchev, D. T. Determination of the  $k$  most essential nodes in a network with parametric node and arc transmitting capacities. (Bulgarian. English and Russian summaries) *Godishnik Vissh. Uchebn. Zaved. Plovdivska Mat.* **22** (1986), no. 2, 151–165 (1987). (Summary) **89g:90095** 90B10 (05C35, 68Q25)
- Ivanovich, J. (with Kozameh, C.; Newman, E. T.) Green's functions of the edh operators. *J. Math. Phys.* **30** (1989), no. 1, 45–52. (Tevian Dray) **89j:83027** 83C30 (83C60)
- Ivanenko, D. D. Translations of the works of I. Newton. (Russian) *Ocherki Ist. Estestvozn. Tekhn.* No. 33 (1987), 56–58, 112. (Editors) **89b:01076** 01A75 (01A60)
- see also Obituary: Kawaguchi, Akitsugu, **89b:01095**
- Ivanenko, S. A. (with Charkhch'yan, A. A.) An algorithm for constructing curvilinear grids consisting of convex quadrangles. (Russian) *Dokl. Akad. Nauk SSSR* **295** (1987), no. 2, 280–283; translated in *Soviet Math. Dokl.* **36** (1988), no. 1, 51–54. (B. M. Herbst) **89b:65148** 65M50 (65N50)
- (with Charkhch'yan, A. A.) Curvilinear grids from convex quadrangles. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 4, 503–514, 622. (Gerhard Telschow) **89f:65129** 65N50
- Ivanenko, V. I. Information problems in control theory. (Russian. English summary) *Prace Nauk. Inst. Cybernet. Tech. Politech. Wroclaw. Ser. Konfer.* **74** (1986), no. 31, 24–32. (H.-J. Engelbert) **89d:90154** 90C15 (62C10, 93B99, 94A17)
- Some questions regarding indeterminacy and dynamics in control problems. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 5, 31–41; translated from *Avtomatika* **1987**, no. 5, 38–49, 95 (Russian. English summary). (Zong Ji Chen) **89i:93003** 93-02 (93B35, 93B50, 93E20)
- (with Mel'nik, V. S.) The method of monotone operators in control problems for quasilinear systems. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 2, 63–67, 134; translated in *Cybernetics* **24** (1988), no. 2, 218–224. (Zbigniew Emirsajlow) **89g:93031** 93B28 (49A27, 49D30, 65J15, 65K10, 93C25)
- (with Mel'nik, V. S.) Optimal control of evolution equations with multivalued operators. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 1, 26–30; translated in *Soviet Math. Dokl.* **36** (1988), no. 3, 408–412. (P. P. Zabreiko) **89a:47086** 47H15 (47H20, 49A27)
- Ivanilov, Yu. P. The principal Hamiltonian function and optimality conditions. (Russian. English summary) *Automat. i Telemekh.* **1988**, no. 5, 51–61; translated in *Automat. Remote Control* **49** (1988), no. 5, part 1, 588–597. (N. N. Petrov) **89j:49024** 49C20 (70H20)
- Ivanov, A. L. Inverse problems of the determination of the parameters of the nonstationary transport equation that do not depend on certain space and velocity coordinates. (Russian) *Function-theoretic methods in problems of mathematical physics* (Russian), 50–53, *Energoatomizdat*, Moscow, 1986. (M. Drăganu) **89k:82113** 82A70 (35R30)
- Ivanov, P. L. Lower bounds for linear forms in the values of hypergeometric functions. (Russian) *Diophantine approximations, Part II* (Russian), 34–41, *Moskov. Gos. Univ.*, Moscow, 1986. (Yao Chen Zhu) **89j:11058** 11J72 (11J91)
- Ivanov, A. A. see Ivanov, Aleksandr Anatol'evich
- Ivanov, A. E. The interval of existence of the solution of a Cauchy problem. (Russian) *Partial differential equations* (Russian), 21–24, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (see **89c:00023**) **34A10**
- Ivanov, A. F. see Ivanov, Anatoli Fiodorovich
- Ivanov, A. G. Recognition of the occurrence of words in real time on finite multihead automata. (Russian) *Voprosy Kibernet. (Moscow)* No. 134 (1988), 72–103. (Anna Bagytinskii-Orosz) **89b:68055** 68Q20 (68Q70)
- Ivanov, A. O. Globally minimal symmetric surfaces in a Euclidean space. (Russian. English summary) *Geometry, differential equations and mechanics* (Russian) (Moscow, 1985), 69–71, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (K. Telemann) **89a:53070** 53C42 (53C30)
- Ivanov, A. P. Impacts in a system with certain unilateral couplings. *J. Appl. Math. Mech.* **51** (1987), no. 4, 436–442 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 4, 559–566 (Russian). (Gert Due Billing) **89m:70024** 70F35
- Ivanov, A. V. see Problems in geometry and topology, **89g:00012**
- Ivanov, Aleksandr Anatol'evich (with Ivanov, Andrei Vladimirovich) Some results of the classification of distance-transitive graphs obtained by means of the method of V-rings. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 42–44, 125. (Not in MR) **05C25**
- Nondecidability of the theory of matrix data. (Russian) *Vychisl. Sistemy* No. 116 *Prikladn. Logika* (1986), 138–139, 164. (Not in MR) **68Q65**
- On 2-transitive graphs of girth 5. *European J. Combin.* **8** (1987), no. 4, 393–420. (Cheryl E. Praeger) **89d:05099** 05C25 (20B25)
- (with Shektorov, S. V.) Geometries for sporadic groups related to the Petersen graph. I. *Comm. Algebra* **16** (1988), no. 5, 925–953. (Jonathan I. Hall) **89c:20031** 20D08 (05C25, 51B25)
- Simple existentially closed extensions of unoids. (Russian) *Mat. Zametki* **44** (1988), no. 4, 449–456, 556. (Klaus Denecke) **89k:03032** 03C05 (08A60)
- Ivanov, Aleksandr Vasil'evich (with Vysloukh, V. A.; Cherednik, I. V.) Statistics of the fluctuations of one-soliton solutions of the nonlinear Schrödinger equation. (Russian. English summary) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* **30** (1987), no. 8, 980–990. (Woodford W. Zachary) **89g:35105** 35Q20 (81K05)
- Hölder estimates for second-order quasilinear degenerate parabolic systems. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **163** (1987), *Kraev. Zadachi Mat. Fiz. i Smezhn. Vopr. Teor. Funktsii* **19**, 49–65, 187. (Guang Chang Dong) **89g:35054** 35K55 (35B45)
- Classical solvability of the Dirichlet problem for nonlinear nonuniformly elliptic equations. (Russian) *Boundary value problems of mathematical physics*, 13 (Russian). *Trudy Mat. Inst. Steklov.* **179** (1988), 54–79, 241. (Ya Zhe Chen) **89k:35093** 35J65
- Ivanov, Aleksandr Vladimirovich (with Leonenko, N. N.) ★ Статистический анализ случайных полей. (Russian) (Statistical analysis of random fields) With a preface by A. V. Skorokhod. "Vishcha Shkola", Kiev, 1986. 216 pp. (M. E. Thompson) **89e:62125** 62M30 (60G60)
- Ivanov, Anatoli Fiodorovich Periodic solutions of singularly perturbed differential-difference equations. (Russian) *Functional-differential equations and their application to nonlinear boundary value problems* (Russian), 11–17, i, *Akad. Nauk Ukrain. SSR, Inst. Mat.*, Kiev, 1987. (R. R. Akhmerov) **89i:34096** 34K15 (34C25, 34E15)
- Attracting cycles of the period of two mappings of the interval and asymptotically stable periodic solutions of singularly perturbed differential-difference equations. (Russian. English summary) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 38, 20 pp. (Publisher's description) **89e:58074** 58F12 (34E15, 34K20)
- (with Kusano, Takai) Oscillation of solutions of a class of functional-differential equations. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 6, 717–721, 814. (D. N. Cheban) **89a:34078** 34K15
- Periodic solutions of a nonlinear equation with delay. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 10(44) (1988), 18–20, 87. (A. Halanay) **89f:34102** 34K15 (34C25)
- Ivanov, Andrei Vladimirovich Amorphous cell rings. II. (Russian) *Investigations in the algebraic theory of combinatorial objects* (Russian), 39–49, *Vsesoyuz. Nauch.-Issled. Inst. Sistem. Issled.*, Moscow, 1985. (Jozsef Sirán) **89c:05029b** 05B99
- (with Ivanov, Aleksandr Anatol'evich) Some results of the classification of distance-transitive graphs obtained by means of the method of V-rings. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 42–44, 125. (Not in MR) **05C25**
- On edge but not vertex transitive regular graphs. *Combinatorial design theory*, 273–285, *North-Holland Math. Stud.*, 149, North-Holland, Amsterdam-New York, 1987. (Dragan Marušić) **89a:05079** 05C25
- Ivanov, B. A. (with Baryakhtar, V. G.; Sukstanskii, O. L.; Tartakovskaya, E. V.) Nonequilibrium thermodynamics of a kink-type soliton gas in quasi-one-dimensional systems. (Russian. English summary) *Teoret. Mat. Fiz.* **74** (1988), no. 1, 46–60; translated in *Theoret. and Math. Phys.* **74** (1988), no. 1, 32–42. (Summary) **89d:82087** 82A50 (81H99, 82A35)
- Ivanov, B. V. (with Iengo, R.) Fermionization of chiral string determinants in factorizable metrics. *Phys. Lett. B* **203** (1988), no. 1–2, 89–95. (Summary) **89m:81146** 81E99 (81E30)



- Ivanov, D. N. Orthogonal decompositions of semisimple associative algebras. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 1, 9–14, 105; translated in *Moscow Univ. Math. Bull.* 43 (1988), no. 1, 10–15. (I. Enescu) **89f:16025** 16A46 (17B20, 20F99)
- Ivanov, Evgenii Alekseevich<sup>1</sup> (with Shevchenko, V. P.) ★ Анализ параллельных алгоритмов при ограничениях на ресурсы. (Russian) [Analysis of parallel algorithms with constraints on the resources] Препринт [Preprint], 88–15. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988, 26 pp. (Christoph Meinel) **89k:68016** 68N25 (68–04, 68Q20)
- Ivanov, Evgenii Alekseevich<sup>2</sup> (with Gal'perin, A. S.; Ogievetskii, V. I.; Sokatchev, E. S.) Harmonic superspace and extended supersymmetries. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (*Järnala*, 1985), 42–52, "Nauka", Moscow, 1986. (see **89d:81001**) **81E99** (81E13, 83E50)
- (with Gal'perin, A. S.; Ogievetskii, V. I.; Sokatchev, E. S.) Conformal invariance in harmonic superspace. *Quantum field theory and quantum statistics*, Vol. 2, 233–248, Hilger, Bristol, 1987. (Sergey Merkulov) **89m:81096** 81E13 (32L25, 81D27, 81E40, 83E50)
- (with Gal'perin, A. S.; Ogievetskii, V. I.) Superspace actions and duality transformations for  $N = 2$  tensor multiplets. *Unification of fundamental interactions (Marstrand, 1986)*, 176–183, *Royal Swedish Acad. Sci., Stockholm*, 1987. (see **89f:81005**) **83E50** (58G40, 81G20)
- (with Gal'perin, A. S.; Ogievetskii, V. I.; Sokatchev, E. S.)  $N = 2$  supergravity in superspace: different versions and matter couplings. *Classical Quantum Gravity* 4 (1987), no. 5, 1255–1265. (Agostino Prastaro) **89a:83068** 83E50
- (with Gal'perin, A. S.; Ogievetskii, V. I.) Superspaces for  $N = 3$  supersymmetry. *Soviet J. Nuclear Phys.* 46 (1987), no. 3, 543–549 (1988); translated from *Yadernaya Fiz.* 46 (1987), no. 3, 948–960 (Russian). (Summary) **89m:81097** 81E13 (22E70, 81E40)
- (with Gal'perin, A. S.; Ogievetskii, V. I.; Sokatchev, E. S.) Harmonic superspace. Results and perspectives. (Russian) *Proceedings of the VIII International Conference on the Problems of Quantum Field Theory (Russian) (Alushta, 1987)*, 267–282, Joint Inst. Nuclear Res., Dubna, 1988. (see **89g:81003**) **81E99** (58A50, 81E13)
- (with Gal'perin, A. S.; Ogievetskii, V. I.; Sokatchev, E. S.) Gauge field geometry from complex and harmonic analyticities. I. Kähler and self-dual Yang-Mills cases. *Ann. Physics* 185 (1988), no. 1, 1–21. (R. S. Ward) **89i:53053** 53C80 (32C10, 81E13, 81E20, 83E50)
- (with Gal'perin, A. S.; Ogievetskii, V. I.; Sokatchev, E. S.) Gauge field geometry from complex and harmonic analyticities. II. Hyper-Kähler case. *Ann. Physics* 185 (1988), no. 1, 22–45. (R. S. Ward) **89i:53054** 53C80 (32C10, 81E13, 81E20, 83C60, 83E50)
- (with Bagger, J. A.; Gal'perin, A. S.; Ogievetskii, V. I.) Gauging  $N = 2$  sigma models in harmonic superspace. *Nuclear Phys. B* 303 (1988), no. 3, 522–542. (Sergey Merkulov) **89h:81097** 81E13 (81E20, 81G20, 83E50)
- (with Krivonos, S. O.; Leviant, V. M.) A new class of superconformal sigma models with the Wess-Zumino action. *Nuclear Phys. B* 304 (1988), no. 3, 601–627. (Enore Guadagnini) **89h:81196** 81E99 (58E20, 81E40)
- Ivanov, G. G. (with Chervon, S. V.) Exact solutions in the  $SO(3)$ -invariant nonlinear sigma-model that are connected with isometric and homothetic symmetries. (Russian) *Gravitatsiya i Teor. Otnositeli* No. 24 (1987), 37–45. (Anjan Kundu) **89i:81069** 81E13 (53C80, 58D10, 58E20, 81E40)
- Ivanov, K. G. (with Saff, E. B.; Totik, V.) Approximation by polynomials with locally geometric rates. *Proc. Amer. Math. Soc.* 106 (1989), no. 1, 153–161. (Hans-Jürgen Albrand) **89i:41023** 41A25
- Ivanov, L. D. ★ Интегрирование в многомерном пространстве. (Russian) [Integration in a multidimensional space] *Kalinin. Gos. Univ., Kalinin*, 1984, 84 pp. (Not in MR) 28–01 — see also Federer, Herbert, **89f:49034**
- Ivanov, Lyubomir L. An axiomatization of counters. *Serdica* 12 (1986), no. 4, 358–364 (1987). (Summary) **89e:03075** 03D75
- Distributive spaces. *Mathematical logic and its applications (Druzhba, 1986)*, 265–272, Plenum, New York-London, 1987. (Introduction) **89e:03076** 03D75
- Ivanov, M. A. Optimal reception of band-efficient discrete signals with phase-frequency modulation. (Russian summary) *Radiotekhn. (Khar'kov)* No. 85 (1988), 100–112, v. (Not in MR) 94A14
- Ivanov, M. F. (with Gal'bur, V. A.; Ryabov, O. A.) A method for calculating nonequilibrium gas dynamic flows taking into account both radiative transfer and ionization. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 7, 1071–1077, 1119. (Summary) **89i:76101** 76X05 (82A45)
- Ivanov, M. I. (with Georgieva, A.; Raichev, P. P.; Roussev, R.) Boson representation of  $Sp(24, \mathbb{R})$  and classification of even-even nuclei. *Group theoretical methods in physics (Varna, 1987)*, 408–413, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (Summary) **89k:81196** 81G30
- (with Vakilev, I. S.) Gauge transformations and generating operators for a quadratic pencil. (Russian. English summary) *Teoret. Mat. Fiz.* 77 (1988), no. 1, 60–76; translated in *Theoret. and Math. Phys.* 77 (1988), no. 1, 1044–1055. (Anjan Kundu) **89m:58104** 58F07 (35Q20, 58G37)
- Ivanov, M. L. The structure of non-Chebyshev systems of functions. (Russian) *Theory of functions and approximations, Part 2 (Russian) (Saratov, 1984)*, 114–117, Saratov. Gos. Univ., Saratov, 1986. (see **89j:00036**) 41A50
- Ivanov, M. Ya. (with Nigmatullin, R. Z.) S. K. Godunov's implicit scheme of increased accuracy for the numerical integration of Euler equations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 11, 1725–1735, 1759–1760. (Summary) **89h:65157** 65N05 (76–08)
- Ivanov, N. M. (with Belov, I. B.; Shashin, A. M.) Combined additive codes for the correction of multiple defects. (Russian) *Noise-resistant coding and computer reliability (Russian)*, 3–7, 189, "Nauka", Moscow, 1987. (see **89b:94001**) 94B50
- Ivanov, N. N. A queueing system with parallel batch servicing. (Russian. English summary) *Automat. i Telemekh.* 1987, no. 10, 75–80. (Summary) **89b:60219** 60K25 (90B22)
- (with Tynkovich, A. P.) Construction of a lattice point in a parallelepiped. (Russian. English summary) *Vestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1988, no. 3, 29–32, 124. (Béla Uhrin) **89k:90115** 90C10
- Ivanov, N. V. Algebraic properties of mapping class groups of surfaces. *Geometric and algebraic topology*, 15–35, *Banach Center Publ.*, 18, PWN, Warsaw, 1986. (Hugh M. Hilden) **89a:57009** 57M99 (22E40, 32G15)
- Automorphisms of Teichmüller modular groups. *Topology and geometry—Rohlin Seminar*, 199–270, *Lecture Notes in Math.*, 1346, Springer, Berlin-New York, 1988. (Hugh M. Hilden) **89m:57012** 57M99 (22E40, 32G15, 57N05, 57R50)
- Projective structures, flat bundles and Kähler metrics on moduli spaces. (Russian) *Mat. Sb. (N.S.)* 133(175) (1987), no. 2, 208–222, 272; translated in *Math. USSR-Sb.* 61 (1988), no. 1, 211–224. (R. R. Simha) **89b:32026** 32G15 (30F99, 32L05, 53C55)
- Coefficients of expansion of pseudo-Anosov homeomorphisms. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 167 (1988), Issled. Topol. 6, 111–116, 191. (Frederick P. Gardiner) **89i:32047** 32G15 (58F15)
- Ivanov, O. A. (with Pilyugin, S. Yu.) Lipschitz  $R$ -stability of attracting sets. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 5, 776–784, 916; translated in *Differential Equations* 24 (1988), no. 5, 504–510. (L. Janos) **89h:58102** 58F12 (34C25)
- Ivanov, O. V. On a theory of Bohr compactification of the number line. (Russian) *Theory of functions and approximations, Part 1 (Russian) (Saratov, 1984)*, 124–126, Saratov. Gos. Univ., Saratov, 1986. (see **89j:00035**) 54D35
- Ivanov, S. V. Approximate solution of a problem on the diffraction of radio waves around the spherical electrically inhomogeneous surface of the Earth. (Russian) *Mathematical physics (Russian)*, 71–79, 186, *Moskov. Gos. Ped. Inst., Moscow*, 1986. (Summary) **89a:78005** 78A45
- Ivanov, Stefan (with Ganchev, Georgi) The totally geodesic plane axiom on a differentiable manifold with a linear connection. *C. R. Acad. Bulgare Sci.* 40 (1987), no. 1, 33–35. (Sorin Dragomir) **89b:53050** 53C05
- Pure  $C$ -semisymmetric  $J$ -connections on an almost complex manifold. *Serdica* 13 (1987), no. 4, 408–413. (José A. Oubina) **89b:53062** 53C15
- see also Tsypkin, A. G., **89a:00028**
- Ivanov, Tsolo Neutral equilibrium and stability in the critical case of neutral equilibrium. (Russian and Bulgarian summaries) *Annuaire Univ. Sofia Fac. Math. Mec.* 77 (1983), no. 2, 49–59 (1987). (Hilmi Demiryay) **89e:73022** 73H99
- On the propagation of surface waves. *Recent developments in surface acoustic waves (Nottingham, 1987)*, 328–334, *Springer Ser. Wave Phenomena*, 7, Springer, Berlin-New York, 1988. (see **89g:73001**) 73D20
- Ivanov, V. I. (with Pichugov, S. A.) Approximation of periodic functions in  $L_p$  by linear positive methods, and multiple moduli of continuity. (Russian) *Mat. Zametki* 42 (1987), no. 6, 776–785, 909. (Włodzimierz Lenski) **89h:41048** 41A36 (42A10)
- Approximation of functions in  $C^r$  by splines of minimal deficiency. (Russian) *Mat. Zametki* 43 (1988), no. 6, 746–756, 847; translated in *Math. Notes* 43 (1988), no. 5–6, 428–435. (Jian Zhong Wang) **89m:41009** 41A15
- Approximation in  $L_p$  by polynomials in a Walsh system. (Russian) *Mat. Sb. (N.S.)* 134(176) (1987), no. 3, 386–403, 448; translated in *Math. USSR-Sb.* 62 (1989), no. 2, 385–402. (A. Oleviskii) **89f:42024** 42C10
- Ivanov, V. K. ★ Математическое моделирование и оптимизация лучевой терапии опухолей. (Russian) [Mathematical modeling and optimization of radiation therapy for tumors] *Energoatomizdat, Moscow*, 1986, 145 pp. (From the publisher's description) **89j:92013** 92A07 (62P10, 92A08)
- Ivanov, V. L. A method for approximation of systems of hyperbolic equations containing large parameters in nondifferential terms. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 9, 1388–1394, 1438–1439. (A. O. Oganeyan) **89a:65143** 65M25 (35L45, 65M10)
- Ivanov, V. M. (with Chentsov, A. G.) Control of discrete systems on an infinite time interval. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 12, 1780–1789, 1918. (O. A. Malafeev) **89c:90120** 90D20 (93C55)
- Ivanov, V. T. see Investigations in the theory of the approximation of functions, **89a:00007**
- Ivanov, V. V. see Ivanov, Vladimir Veniaminovich
- Ivanov, Valentin Konstantinovich Some estimates for quasisolutions of operator equations of the first kind. (Russian) *Differential equations and generalized functions (Russian)*, 38–46, 102, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1986. (A. B. Bakushinskii) **89b:47017** 47A50 (65J10)
- Hadamard conditions for well-posedness in spaces of generalized functions. (Russian) *Sibirsk. Mat. Zh.* 28 (1987), no. 6, 53–59, 218. (Bogdan Nowak) **89c:35150** 35R25 (45B05, 46F05)
- see also Nonlinear problems in generalized functions, **89j:00019**
- Ivanov, Viktor Vladimirovich ★ Методы вычисления на ЭВМ. [Computational methods on a computer] Справочное пособие. [Handbook] "Naukova Dumka", Kiev, 1986, 584 pp. (Lubor Malina) **89a:65001** 65–00 (65V05)
- Ivanov, Vladimir Veniaminovich Uniformly summable semigroups of operators. II. Perturbation of semigroups. (Russian) *Trudy Inst. Mat. (Novosibirsk)* 9 (1987), Issled. Geom. "v tselom" i Mat. Anal., 159–182, 208. (Ioana Ciorănescu) **89d:47090** 47D05 (47A55)
- (with Aleksandrov, A. D.; Vershik, A. M.; Kusarev, A. G.; Kutateladze, S. S.; Makarov, B. M.; Reshetnyak, Yu. G.; Khavin, V. P.) Gleb Pavlovich Akilov. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1(259), 181–182; translated in *Russian Math. Surveys* 43 (1988), no. 1, 221–223. (Editors) **89b:01031** 01A70
- see also Saponov, Yu. I., **89c:41030**
- Ivanov, Vyach. Vs. Language as a model of the world. (Russian) *Intellectual processes and their modeling (Russian)*, 142–153, 394–395, "Nauka", Moscow, 1987. (see **89b:92032**) 92A25 (92A09)
- Ivanova, A. N. (with Vol'pert, A. I.) Mathematical models in chemical kinetics. (Russian) *Mathematical modeling (Russian)*, 57–102, 280, "Nauka", Moscow, 1987. (Summary) **89d:80024** 80A30 (58E07, 92A08, 92A09, 92A15)
- Ivanova, E. V. Integrals of motion and transition amplitudes for a quadratic system with a nondiagonalizable Hamiltonian. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Järnala*, 1985), 298–302, "Nauka", Moscow, 1986. (see **89d:81002**) 70H05
- On a problem of the calculation by the method of integrals of motion of Einstein coefficients for periodic systems. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Järnala*, 1985), 303–311, "Nauka", Moscow, 1986. (see **89d:81002**) 81G99 (82A99)
- Ivanova, Jordanka (with Pastrone, Franco) Buckling of cylindrical plastic shells under axial compression. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 2 (1988), no. 3, 529–540. (D. Durban) **89k:73034** 73H05 (73K15)
- Ivanova, L. D. Orthogonal harmonic polynomials in two variables, and generalized functions. (Russian) *Application of functional analysis, in approximation theory (Russian)*, 55–61, 144, *Kalinin. Gos. Univ., Kalinin*, 1984. (see **89c:00006**) 42B05 (42C05)

- Ivanova, L. I.** (with Gurman, V. I.) Models and analysis of ecological-economic systems. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 2, 54–57 (1988); translated from *Avtomatika* **1987**, no. 2, 55–58, 96 (Russian). (Not in MR) **92A17** (90A30)
- Ivanova, S. Yu.** see **Haug, Edward J. et al.**, **89i:73062**
- Ivanova, T. O.** (with Vorobiev, S. A.) An estimate of the quality of operation of algorithms for the identification and segmentation of structural curves. (Russian) *Voprosy Kibernet.* (Moscow) No. 140 (1988), 42–48. (Not in MR) **68U10**
- Ivanova, T. S.** The use of nets that adapt to the solution in one-dimensional boundary value problems. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 196, 28 pp. (Summary) **89c:65091** 65L50
- Ivanova-Karatopraklieva, I.** Sufficient conditions for the rigidity of certain classes of surfaces that are uniquely projected on a plane. (Russian) *Differential geometry* (Warsaw, 1979), 83–93, *Banach Center Publ.*, 12, PWN, Warsaw, 1984. (Gr. Stanilov) **89m:53114** 53C45
- Ivanovic, I. D.** Mott scattering spin measurement as a generalised quantum measurement. *J. Phys. A* **21** (1988), no. 8, 1857–1865. (Summary) **89f:81012** 81B05
- Two models violating Bell's inequality. *Phys. Lett. A* **133** (1988), no. 3, 101–104. (Anatolij Dvurečenskij) **89j:81014** 81B10 (81C20)
- Ivanović, Momčilo** Theoretical bases for determining the elements of concentric curves. (Serbo-Croatian. English summary) *Akad. Nauka Umjet. Bosne Hercegov. Rad. Odjelj. Tehn. Nauka* No. 11 (1987), 71–110. (V. Volenec) **89a:51052** 51N20
- Ivanovskii, V. B.** Estimation of the service characteristics of a single-server discrete system from empirical data. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 10, 81–88. (Summary) **89b:60220** 60K25 (90B22)
- Ivanšić, I.** Danilo Blauša: 07.12.1903–08.08.1987. (Serbo-Croatian) *Glas. Mat. Ser. III* **22**(42) (1987), no. 2, 535–540. (Editors) **89i:01085** 01A70
- (with Čerin, Z.; Rubin, Leonard R.) Recognition of certain classes of closed maps. *Czechoslovak Math. J.* **38**(113) (1988), no. 2, 319–323. (John J. Walsh) **89g:54039** 54C56 (55P55)
- Embeddings up to shape in dimension two. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* No. 18 (1988), 73–81. (Sergey A. Antonjan) **89k:54044** 54C56 (54F43, 55P55)
- Ivanyuk, N. N.** (with Tereshchenko, M. I.) Construction of the solutions of a system of linear differential equations with polynomial coefficients in finite form. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 28 (1986), 99–103, 135. (Not in MR) **34A20** (34A25)
- Ivanyuk, N. V.** A scheme for the averaging of systems with multivalued impulse action. (Russian) *Problems of the stability of integral manifolds in equations of mathematical physics* (Russian), 23–28, ii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) **89f:34062** 34C29 (93C57)
- Ivanýuta, I. D.** Sylow  $p$ -subgroups of the group  $U(q^2)$ . (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 3, 400–404, 408; translated in *Ukrainian Math. J.* **40** (1988), no. 3, 346–349. (J. Wiegold) **89i:20049** 20E18 (20F26, 20F50)
- Ivashchenko, P. A.** ★ Адаптация в экономике. (Russian) [Adaptation in economics] “*Vishcha Shkola*”, Kharkov, 1986. 144 pp. (Carl-Louis Sandblom) **89g:90002** 90–02 (90A16, 90C15)
- Ivashchuk, V. D.** Regularization of an  $\epsilon$ -metric. I. (Russian) *Izv. Akad. Nauk Moldav. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **1987**, no. 3, 8–17, 78. (B. Geyer) **89j:81126** 81E15 (46F20)
- Ivashkina, G. A.** The Tricomi problem for an equation of mixed elliptic-hyperbolic type. (Russian) *Analytical methods in the theory of differential and integral equations* (Russian), 52–57, *Kuibyshev. Gos. Univ., Kuibyshev*, 1987. (see **89c:00005**) 35M05
- Ivasishen, S. D.** (with Dorogovtsev, A. Ya.; Kukush, A. G.) On the asymptotic behaviour of the linear stochastic heat equation solutions. *Probability theory and mathematical statistics*, Vol. I (Vilnius, 1985), 419–431, *VNU Sci. Press, Utrecht*, 1987. (From the text) **89g:60192** 60H15 (35K05, 35R60)
- Ivchenko, G. I.** (with Sevast'yanov, B. A.) The  $\chi^2$ -process and its application in statistics. (Russian) *Probability distributions and mathematical statistics* (Russian) (Fergana, 1983), 188–198, 492, “*Fan*”, Tashkent, 1986. (Jana Jurečková) **89m:62015** 62E20 (60F05, 60G99, 62L10)
- (with Levin, V. V.) Poisson convergence in a generalized distribution scheme. (Russian) *Mat. Zametki* **44** (1988), no. 3, 362–368, 411. (Gerd Christoph) **89m:60052** 60F05 (60K99)
- see also **Probabilistic problems in discrete mathematics**, **89j:60003**
- Ivers, D. J.** (with James, Ronald William) Antidynamo theorems for nonradial flows. *Geophys. Astrophys. Fluid Dynamics* **40** (1988), no. 1–2, 147–163. (A. Pozzi) **89c:76116** 76W05
- Iverson, Geoffrey J.** Thurstonian psychophysics: case III. *J. Math. Psych.* **31** (1987), no. 3, 219–247. (V. Ya. Kreinovich) **89e:92056** 92A27
- Ivert, Per-Anders** (with Giaquinta, Mariano) Partial regularity for minima of variational integrals. *Ark. Mat.* **25** (1987), no. 2, 221–229. (Dariusz Zagrodny) **89d:49021** 49B21 (26B35, 49A29, 58E20)
- Ives, Anthony R.** Covariance, coexistence and the population dynamics of two competitors using a patchy resource. *J. Theoret. Biol.* **133** (1988), no. 3, 345–361. (Summary) **89k:92067** 92A17 (92A15)
- Ivić, Aleksandar** Survey of new results in analytic number theory. (Serbo-Croatian) *Matematika* (Zagreb) **14** (1985), no. 2, 11–23. (Not in MR) **11–02** (11Nxx)
- (with Erdős, Paul; Pomerance, Carl) On sums involving reciprocals of the largest prime factor of an integer. *Glas. Mat. Ser. III* **21**(41) (1986), no. 2, 283–300. (Douglas Hensley) **89a:11090** 11N37 (11N25)
- The number of finite nonisomorphic abelian groups in mean square. *Hardy-Ramanujan J.* **9** (1986), 17–23. (D. Reardon) **89k:11089** 11N45 (11N56)
- On some estimates involving the number of prime divisors of an integer. *Acta Arith.* **49** (1987), no. 1, 21–33. (Friedrich Roesler) **89c:11146** 11N37
- The general divisor problem. *J. Number Theory* **27** (1987), no. 1, 73–91. (G. Greaves) **89a:11095** 11N37 (11N45, 20K01)
- Sums of products of certain arithmetical functions. *Publ. Inst. Math. (Beograd) (N.S.)* **41**(55) (1987), 31–41. (Hedi Daboussi) **89g:11084** 11N37 (11M41)
- Les zéros de la fonction zêta de Riemann sur la droite critique. [The zeros of the Riemann zeta function on the critical line] *Groupe de travail en théorie analytique et élémentaire des nombres*, 1986–1987, 47–51, *Publ. Math. Orsay*, 88–01, *Univ. Paris XI, Orsay*, 1988. (see **89b:11004**) 11M26
- The distribution of quotients of small and large additive functions. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **2** (1988), no. 1, 79–97. (Jean-Marie De Koninck) **89f:11128** 11N37 (11N25)
- (with Jutila, M.) Gaps between consecutive zeros of the Riemann zeta-function on the critical line. *Monatsh. Math.* **105** (1988), no. 1, 59–73. (Jürgen G. Hinze) **89c:11134** 11M26
- Ivković, Zoran A.** Nonlinear time-domain analysis of Gaussian process, general case. *Bull. Acad. Serbe Sci. Arts Cl. Sci. Math. Natur.* No. 15 (1986), 13–16. (H. Salehi) **89d:60070** 60G12 (60G15)
- Nonlinear time-domain analysis of Gaussian processes. *Probability theory and mathematical statistics*, Vol. II (Vilnius, 1985), 9–16, *VNU Sci. Press, Utrecht*, 1987. (J. B. Robertson) **89c:60055** 60G12
- Representation of the square integrable functional of the Gaussian process with the discrete spectral type. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **17** (1987), no. 1, 153–162. (Mohsen Pourahmadi) **89e:60086** 60G15
- (with Peruničić, P. M.) Transformation of a continuous Gaussian process by rarefying its innovation process. *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 4, 794–800. (Shigeo Takenaka) **89m:60093** 60G15 (60G12)
- Ivlev, E. T.** A rigging of the affine fibration  $A_{m,n}$  ( $m < n$ ). (Russian) *Differentsial'naya Geom. Mnogoobraz. Figur* No. 18 (1987), 35–38, 137. (Z. Nádeník) **89f:53011** 53A15
- (with Sukhotin, A. M.) On a space with projective connection and its subspaces. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 2, 75–78, 84. (Alan West) **89b:53033** 53B10
- Ivlev, Yu. V.** Intensional construction of systems of modal logic. (Russian) *The logic of scientific knowledge* (Russian), 159–172, “*Nauka*”, Moscow, 1987. (Kosta Došen) **89a:03037** 03B45
- Ivničskii, V. A.** Grouping of the customers of a recurrent stream. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 8, 9–12, 87. (L. B. Boguslavskii) **89a:60222** 60K25
- Ivochkina, N. M.** Solution of the Dirichlet problem for an equation of curvature of order  $m$ . (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 1, 35–38; translated in *Soviet Math. Dokl.* **37** (1988), no. 2, 322–325. (Philippe Delanoe) **89f:35081** 35J65 (53C42, 58G30)
- Variational problems connected with operators of Monge-Ampère type. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **167** (1988), Issled. Topol. 6, 186–189, 193. (Summary) **89f:35056** 35J60 (49F05)
- Ivokhin, E. V.** (with Khusainov, D. Ya.) An algorithm for finding a Lyapunov function that gives an extremal integral estimate. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 4 (1985), 62–67, 103. (Summary) **89k:34088** 34D99
- A criterion for the stability of V. D. Farusov linear comparison systems. (Russian) *Mathematical physics* (Russian), 40–46, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (see **89c:00019**) 34D20 (34A30)
- Ivonis, E.** An optimization method for a linear multidimensional dynamical system with respect to controls and parameters with polyhedral constraints. I. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **28** (1988), no. 3, 475–483. (Russell D. Rupp) **89i:49015** 49B10
- An optimization method for a linear multidimensional dynamical system with respect to controls and parameters with polyhedral constraints. II. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **28** (1988), no. 4, 680–683. (Not in MR) **49B34**
- A method for the optimization of a multidimensional linear nonstationary dynamical system with a variable set of controls. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1988**, no. 2, 69–70, 82. (Summary) **89f:49022** 49B10 (93C05)
- Ivrii, V. Ya.** Three spectral problems revised. *Hyperbolic equations and related topics* (Katata/Kyoto, 1984), 85–88, *Academic Press, Boston, MA*, 1986. (Editors) **89a:58111** 58G25 (35P20, 35S15)
- On the number of negative eigenvalues of Schrödinger operators with singular potentials. *Hyperbolic equations* (Padua, 1985), 74–81, *Pitman Res. Notes Math. Ser.*, 158, *Longman Sci. Tech., Harlow*, 1987. (David Gurarie) **89a:35154** 35P20 (58G25, 81C10)
- Estimates for a number of negative eigenvalues of the Schrödinger operator with singular potentials. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1084–1093, *Amer. Math. Soc., Providence, RI*, 1987. (N. L. Vulchanov) **89j:35098a** 35P15 (35J10, 81C10)
- Bounds for the number of negative eigenvalues of the Schrödinger operator with a strong magnetic field. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 5, 1043–1046; translated in *Soviet Math. Dokl.* **36** (1988), no. 3, 561–564. (N. L. Vulchanov) **89j:35098b** 35P15 (35J10, 81C10)
- Estimates for the spectrum of the Dirac operator. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 6, 1298–1302; translated in *Soviet Math. Dokl.* **36** (1988), no. 3, 599–602. (Andreas Juhl) **89c:58132** 58G25 (35P20, 47F05)
- Ivushkina, E. A.** Mathematical programming with randomness and fuzziness. (Russian) *Fuzzy systems: modeling of structure and optimization* (Russian), 76–82, *Kalinin. Gos. Univ., Kalinin*, 1987. (Janusz Kacprzyk) **89b:90144** 90C05 (03E72, 90C15)
- Iwahori, Nagayoshi** see **Hotta, R.**, **89c:01067**
- Iwai, Toshihiro** A geometric setting for classical molecular dynamics. (French summary) *Ann. Inst. H. Poincaré Phys. Théor.* **47** (1987), no. 2, 199–219. (Malcolm Adams) **89h:70006** 70G25 (58F05, 70G35)
- Iwakami, Tatsuo** The graded Witt ring of a quasi-Pythagorean field. *Hiroshima Math. J.* **17** (1987), no. 3, 651–657. (Ron Brown) **89a:11042** 11E81 (11E70, 12D15, 12G05, 19G12)
- Iwakiri, Takashi** (with Kamiya, Tsueharu; Mackawa, Takayoshi) Note on  $SO(1,3)$  and the Coulomb scattering. *Phys. Rep. Kumamoto Univ.* **8** (1988), no. 1, 1–11. (R. Mirman) **89m:81188** 81G10 (20C35, 22E70, 81C40)
- Iwama, Kazuo** Complementary approaches to CNF Boolean equations. *Discrete algorithms and complexity* (Kyoto, 1986), 223–236, *Perspect. Comput.*, 15, *Academic Press, Boston, MA*, 1987. (A. A. Mullin) **89a:03075** 03D15 (03B35, 03G05, 06E30)
- Iwamoto, Seiichi** (with Tomkins, R. J.; Wang, Chung-Lie) A generalization of the Hölder inequality through dynamic programming approach. *J. Math. Anal. Appl.* **135** (1988), no. 1, 8–30. (Guy Cohen) **89j:90261** 90C39 (26D15)
- Iwamoto, Takashi** Algebraic groups and co-compact subgroups of complex linear groups. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **42** (1988), no. 1, 1–7. (Dragomir Z. Djoković) **89d:22005** 22E10 (20G20)



- Lattices and automorphisms of Lie groups. *Osaka J. Math.* **25** (1988), no. 1, 233–242. (Joachim Schwermer) **89j:22020** 22E40
- Iwanaga, Yasuo (with Assem, Ibrahim) On a class of representation-finite QF-3 algebras. *Tsukuba J. Math.* **11** (1987), no. 2, 199–217. (Yutaka Kawada) **89b:16014** 16A36 (16A46, 16A64)
- Iwaniec, H. Spectral theory of automorphic functions and recent developments in analytic number theory. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 444–456, Amer. Math. Soc., Providence, RI, 1987. (From the introduction) **89k:11040** 11F72
- On Waldspurger's theorem. *Acta Arith.* **49** (1987), no. 2, 205–212. (Wen-Ch'ing Winnie Li) **89m:11044** 11F37 (11F85, 11L05)
- (with Mozzochi, C. J.) On the divisor and circle problems. *J. Number Theory* **29** (1988), no. 1, 60–93. (Aleksandar Ivić (Zbl 644:10031)) **89g:11091** 11N99 (11M06)
- (with Bombieri, Enrico; Friedlander, J. B.) Primes in arithmetic progressions to large moduli. III. *J. Amer. Math. Soc.* **2** (1989), no. 2, 215–224. (D. R. Heath-Brown) **89m:11087** 11N13
- Iwaniec, Tadeusz Hilbert transform in the complex plane and area inequalities for certain quadratic differentials. *Michigan Math. J.* **34** (1987), no. 3, 407–434. (A. Hinkkanen) **89a:42025** 42B20 (30C60, 30E20, 30F30)
- Iwanik, A. (with Janos, L.; Kowalski, Zbigniew S.) Periods in equicontinuous topological dynamical systems. *Nonlinear analysis*, 355–365, World Sci. Publishing, Singapore, 1987. (Katarina Jankova) **89c:54079** 54H20
- (with Downarowicz, Tomasz) Quasi-uniform convergence in compact dynamical systems. *Studia Math.* **89** (1988), no. 1, 11–25. (F. M. Dekking) **89j:54042** 54H20 (28D05)
- Iwankiewicz, R. (with Wójcicki, Z.) Threshold crossings in a linear oscillator due to a Poissonian train of general pulses. (Russian and Polish summaries) *Arch. Mech. (Arch. Mech. Stos.)* **39** (1987), no. 5, 527–539 (1988). (Summary) **89i:70039** 70L05 (34F05, 60G99, 73K35)
- Iwano, Kazuo (with Steiglitz, Kenneth) Planarity testing of doubly periodic infinite graphs. *Networks* **18** (1988), no. 3, 205–222. (Sergei L. Bezrukov) **89g:05047** 05C10
- Iwanuma, Koji (with Harao, Masateru) Knowledge representation and inference based on first-order modal logic. *Logic programming '87* (Tokyo, 1987), 236–251, *Lecture Notes in Comput. Sci.*, 315, Springer, Berlin-New York, 1988. (see **89b:68137**) **68T30** (03B45, 03B70)
- Iwasaki, Katsumori Inverse problem for Sturm-Liouville and Hill equations. *Ann. Mat. Pura Appl.* (4) **149** (1987), 185–206. (Zhaojun Liang) **89d:34053** 34B25 (34A55, 34B30)
- On the Riemann-Hilbert-Birkhoff problem for ordinary differential equations containing a parameter. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **35** (1988), no. 2, 251–312. (Donald A. Lutz) **89k:34007** 34A20 (32C38, 34C20, 34E05, 58G99)
- Scattering theory for 4th order differential operators. I, II. *Japan. J. Math. (N.S.)* **14** (1988), no. 1, 1–57, 59–96. (J. A. Goldstein) **89i:34023** 34B25 (47E05, 81C05)
- Riemann function of harmonic equation and Appell's  $F_4$ . *SIAM J. Math. Anal.* **19** (1988), no. 4, 902–917. (W. A. Al-Salam) **89d:33023** 33A75 (35C99, 35L10, 58G35)
- Iwasaki, N. The Cauchy problem for effectively hyperbolic equations (remarks). *Hyperbolic equations and related topics* (Katata/Kyoto, 1984), 89–100, Academic Press, Boston, MA, 1986. (Alan Jeffrey) **89c:35107** 35L99
- Examples of effectively hyperbolic equations. *Hyperbolic equations* (Padua, 1985), 82–94, *Pitman Res. Notes Math. Ser.*, 158, Longman Sci. Tech., Harlow, 1987. (L. Cattabriga) **89i:35137** 35L70 (35Q20)
- Iwasaki, Shiro An elementary and unified approach to the Mathieu-Witt systems. *J. Math. Soc. Japan* **40** (1988), no. 3, 393–414. (Johannes Siemons) **89i:05048** 05B05 (05B07)
- Iwasaki, Yumi (with Friedland, Peter E.) The concept and implementation of skeletal plans. *J. Automat. Reason.* **1** (1985), no. 2, 161–208. (Summary) **89j:68141** 68T20 (68T30)
- Iwase, Norio Certain missing terms in an unstable Adams spectral sequence. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **41** (1987), no. 2, 97–113. (Haynes R. Miller) **89i:55003** 55P15 (55T15)
- On the splitting of mapping spaces between classifying spaces. I. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 3, 445–453. (Haynes R. Miller) **89i:55004** 55P15 (55R35)
- Iwase, Zyun'iti (with Kiyoshi, Hiroe) Classification of Kanenobu's knots. *Kobe J. Math.* **4** (1988), no. 2, 187–191. (Quach Thi Cam Van) **89j:57006** 57M25
- Dehn-surgery along a torus  $T^2$ -knot. *Pacific J. Math.* **133** (1988), no. 2, 289–299. (G. Burde) **89m:57020** 57Q45 (57N10)
- Iwashita, Hirokazu A remark on the analyticity of spectral functions for some exterior boundary value problems. *Sci. Rep. Niigata Univ. Ser. A No.* **24** (1988), 25–31. (Yoshimi Saito) **89g:35081** 35P05 (35J25, 47F05)
- Iwata, Keiji (with Amano, Kazuo) A Euclidean algorithm on  $M_n(\Delta)$ . *Bull. Fac. Gen. Ed. Gifu Univ. No.* **23** (1987), 25–29 (1988). (C. R. Fletcher) **89e:16031** 16A42 (12E05, 13F07, 16A18)
- Iwazaki, A. Bosonization of conformal ghosts in Witten's string theory. (Italian summary) *Nuovo Cimento A* (11) **97** (1987), no. 3, 427–438. (V. P. Akulov) **89h:81197** 81E99 (81E30)
- Iwakumi, Tetsuo (with Kando, Hisashi; Ukai, Hiroyuki) Singular perturbation modelling of large-scale systems with multi-time-scale property. *Internat. J. Control* **48** (1988), no. 6, 2361–2387. (Peter A. Cook) **89k:93012** 93A15 (34E15)
- (with Ohashi, Yuichi; Kando, Hisashi; Ukai, Hiroyuki) Optimal design of FIR linear phase digital filters via convex quadratic programming method. *Internat. J. Systems Sci.* **19** (1988), no. 8, 1469–1482. (From the introduction) **89g:94003** 94A12 (49D40)
- Iwinski, Tadeusz B. Algebraic approach to rough sets. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 9–10, 673–683. (Branimir Šćelja) **89g:04002** 04A05 (06E15)
- Ixaru, L. Gr. Comment: "The Numerov method and singular potentials" [J. Comput. Phys. **60** (1985), no. 3, 561–564; MR 87j:65084] by E. Buendia and R. Guardiola. *J. Comput. Phys.* **72** (1987), no. 1, 270–274. (K. Böhrer) **89b:81011** 81–08 (34A50, 34B25, 65L10)
- Iyaben, S. O. On  $B(\mathcal{F})$ -spaces. *Math. Ann.* **281** (1988), no. 2, 205–208. (T. Husain) **89j:46002** 46A07
- A note on  $B$ -complete spaces and the closed graph theorem. *Math. Ann.* **282** (1988), no. 4, 615–619. (T. Husain) **89j:46005** 46A30
- Iyengar, R. Narayana Higher order linearization in nonlinear random vibration. *Internat. J. Non-Linear Mech.* **23** (1988), no. 5–6, 385–391. (Summary) **89k:70048** 70L05
- Stochastic response and stability of the Duffing oscillator under narrowband excitation. *J. Sound Vibration* **126** (1988), no. 2, 255–263. (Summary) **89g:70024** 70L05
- Iyengar, S. Sitharama (with Rao, Nageswara S. V.; Vaishnavi, Vijay K.) On the dynamization of data structures. *BIT* **28** (1988), no. 1, 37–53. (Summary) **89a:68029** 68P05
- (with Chandrasekharan, N.) NC algorithms for recognizing chordal graphs and  $k$ -trees. *IEEE Trans. Comput.* **37** (1988), no. 10, 1178–1183. (Summary) **89j:68119** 68R10 (05C99, 68Q25)
- (with Minoura, Toshimi) Data and time abstraction techniques for analyzing multilevel concurrent systems. *IEEE Trans. Software Engrg.* **15** (1989), no. 1, 47–59. (Not in MR) **68N05** (68P15)
- Iyengar, Satish Evaluation of normal probabilities of symmetric regions. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 3, 418–423. (E. A. Enneking) **89f:62048** 62H10 (62E15, 62H12, 65U05)
- Iyengar, Sattelluri R. K. (with Manohar, R.) High order difference methods for heat equation in polar cylindrical coordinates. *J. Comput. Phys.* **77** (1988), no. 2, 425–438. (Summary) **89g:65126** 65M99
- (with Manohar, R.; Anantha Krishnaiah, U.) High order difference methods for linear variable coefficient parabolic equation. *J. Comput. Phys.* **77** (1988), no. 2, 513–523. (Summary) **89g:65132** 65N10
- (with Pillai, A. C. Radhakrishna) Difference schemes of polynomial and exponential orders. *Appl. Math. Modelling* **13** (1989), no. 1, 58–62. (Not in MR) **65L10**
- Iyengar, Vijay S. (with Brand, Daniel) Timing analysis using functional analysis. *IEEE Trans. Comput.* **37** (1988), no. 10, 1309–1314. (A. Thayse) **89k:94100** 94C10
- Iyer, Ananth V. (with Ratliff, H. Donald; Vijayan, G.) Optimal node ranking of trees. *Inform. Process. Lett.* **28** (1988), no. 5, 225–229. (Summary) **89h:68119** 68R10 (05C05, 68Q25)
- Iyer, Balasubramanian Ramakrishna (with Vishveshwara, C. V.) Exact solutions for space-times with local rotational symmetry in which the Dirac equation separates. *J. Math. Phys.* **28** (1987), no. 6, 1377–1381. (B. K. Datta) **89a:83016** 83C15 (83C20)
- (with Vishveshwara, C. V.) The Frenet-Serret formalism and black holes in higher dimensions. *Classical Quantum Gravity* **5** (1988), no. 7, 961–970. (L. M. Sokolowski) **89g:83044** 83E15 (53C80, 83C40)
- Iyer, H. K. (with Yao, Y.-C.) A note on the completeness of the normal family with constant coefficient of variation. *Comm. Statist. Theory Methods* **17** (1988), no. 6, 2075–2083. (Friedrich Liese) **89j:62042** 62F10
- Iyer, Srinivas Asymptotic performance of a multistate coherent system. *Adv. in Appl. Probab.* **20** (1988), no. 1, 241–243. (Bent Natvig) **89d:60167** 60K20
- ganapathy Iyer, V. see Ganapathy Iyer, V.
- Iyogun, Paul O. (with Atkins, Derek R.) Periodic versus "can-order" policies for coordinated multi-item inventory systems. *Management Sci.* **34** (1988), no. 6, 791–796. (Not in MR) **90B05**
- Izawa, Tatsuo A generalization of composition series. *J. Algebra* **118** (1988), no. 2, 388–407. (M. Teply) **89m:16043** 16A53 (16A50, 16A63, 16A65)
- Quasi-injective modules satisfying certain relative finiteness conditions. *J. Austral. Math. Soc. Ser. A* **44** (1988), no. 3, 350–361. (Iuliu Crivei) **89b:16025** 16A52
- Izhbash, V. I. Structural definability of disassociative commutative torsion-free loops. (Russian) *Mat. Issled. No. 102 Issled. Oper. i Kvazigrupp* (1988), 66–69, 119. (Ján Duplák) **89f:20079** 20N05
- Ize, Jorge (with England, Roland; Sabina, Federico J.) Diffraction of waves by inhomogeneous obstacles. *Ann. Mat. Pura Appl.* (4) **146** (1987), 31–63. (Rolf Leis) **89g:35027** 35J05 (73D25, 86A15)
- Necessary and sufficient conditions for multiparameter bifurcation. *Nonlinear Partial Differential Equations Conference* (Salt Lake City, UT, 1986), *Rocky Mountain J. Math.* **18** (1988), no. 2, 305–337. (Jesús Hernández) **89i:58021** 58E07 (47H15)
- Izen, Steven H. A series inversion for the x-ray transform in  $n$  dimensions. *Inverse Problems* **4** (1988), no. 3, 725–748. (Frank Natterer) **89m:44010** 44A15 (45A05, 45H05, 78A99, 92A07)
- Izergin, A. G. (with Bogolyubov, N. M.; Reshetikhin, N. Yu.) Finite-size effects and critical indices of 1D quantum models. *JETP Lett.* **44** (1986), no. 9, 521–523 (1987); translated from *Pis'ma Zh. Eksp. Teoret. Fiz.* **44** (1986), no. 9, 405–407 (Russian). (Chris Athorne) **89a:81115** 81E99 (81E40, 82A15, 82A25)
- (with Korepin, V. E.; Reshetikhin, N. Yu.) Correlation functions in a one-dimensional Bose gas. *J. Phys. A* **20** (1987), no. 14, 4799–4822. (M. Lawrence Glasser) **89b:82021** 82A15
- (with Bogolyubov, N. M.; Reshetikhin, N. Yu.) Finite-size effects and infrared asymptotics of the correlation functions in two dimensions. *J. Phys. A* **20** (1987), no. 15, 5361–5369. (M. Lawrence Glasser) **89b:82020** 82A15 (81E25, 81E40)
- (with Korepin, V. E.; Slavnov, N. A.) Temperature correlation functions of the Heisenberg antiferromagnet. (Russian. English summary) *Theoret. Mat. Fiz.* **72** (1987), no. 2, 277–285. (Nicolae Aneglescu) **89b:82022** 82A15 (81H99, 82A68)
- Izgorov, M. Yu. (with Zaichenko, Yu. P.; Kovrigo, Yu. M.) Features of the application of the modal control principle to the synthesis of automatic control systems for a technological process. *Soviet J. Automat. Inform. Sci.* **21** (1988), no. 2, 50–54; translated from *Avtomatika* **1988**, no. 2, 49–53, 95 (Russian. English summary). (Not in MR) **93B55** (93B50)
- Izhvanov, Yu. L. (with Kusov, I. F.; Tumanov, M. P.) An algebraic approach to the analysis of nonstationary dynamical systems. (Russian) *Voprosy Kibernet. (Moscow) No.* **139** (1988), 105–116. (Valeriu Prepelita) **89i:93019** 93B15 (93B25, 93C05)
- Izmailov, R. N. Eigenvectors of matrices of asymptotic identifiers. (Russian. English summary) (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 12, 34–41; translated in *Avtomat. Remote Control* **48** (1987), no. 12, part 1, 1586–1592. (Andrzej Świerniak) **89g:93049** 93B25 (93B07, 93B60)
- Transient processes in linear stationary systems. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 5, 1068–1071; translated in *Soviet Phys. Dokl.* **32** (1987), no. 12, 952–953. (Mihail Voicu) **89g:93092** 93B50 (93B07, 93C05, 93C15)
- The "peak" effect in stationary linear systems with multidimensional input and output. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 1, 52–60; translated in *Avtomat. Remote Control* **49** (1988), no. 1, part 1, 40–47. (Jianxun He) **89g:93166** 93D15

-J-

- Izobov, N. A.** (with Rabtsevich, V. A.) The unprovability of the I. T. Kiguradze-G. Kvinikadze condition for the existence of unbounded regular solutions of the Emden-Fowler equation. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 11, 1872-1881, 2019-2020. (V. Seda) **89b:34005** 34A10 (34C11)
- The number of characteristic and lower exponents of an exponentially stable system with higher-order perturbations. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 5, 784-795, 916-917; translated in *Differential Equations* **24** (1988), no. 5, 510-519. (Sergei Mazanik) **89i:34066** 34D05
- (with Andreev, A. F.; Bitsadze, A. V.; Erugin, N. P.; Zubov, V. I.; Il'in, V. A.; Kiguradze, I. T.; Krasovskii, N. N.; Kudryavtsev, L. D.; Millionshchikov, V. M.; Pliss, V. A.; Samarskii, A. A.; Sibirskii, K. S.; Tikhonov, A. N.) Yuri Stanislavovich Bogdanov. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 6, 1091-1097; translated in *Differential Equations* **24** (1988), no. 6, 692-699. (Editors) **89i:01055** 01A70
- Izotov, A. V.** Groups with two infinite classes of conjugate elements. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 11, 13-20, 88. (Yu. I. Merzlyakov) **89c:20054** 20F24
- (with Sesekin, N. F.) Groups with a finite number of infinite classes of conjugate subgroups. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 3, 310-314, 405; translated in *Ukrainian Math. J.* **40** (1988), no. 3, 263-267. (Yu. I. Merzlyakov) **89h:20051** 20F24
- Groups with a finite number of infinite classes of conjugate elements. (Russian) *Ural. Gos. Univ. Mat. Zap.* **14** (1988), no. 3 *Algebr. Sistemy i ikh Mnogoobr.*, 85-88, iii. (J. Wiegold) **89i:20061** 20F24 (20F18)
- Izossava, L. A.** On the problem of the strengthened compactness of integral operators. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1988**, vyp. 1, 105-106, 119; translated in *Vestnik Leningrad Univ. Math.* **21** (1988), no. 1, 72-75. (Summary) **89e:47038** 47B35 (47B38, 47G05)
- Izquierdo Sebastián, Joaquín** On certain classes of semiconvex spaces. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* **80** (1986), no. 4, 549-562. (R. Aguilo-Fuster) **89j:46007** 46A07 (46A30)
- Izrailev, F. M.** (with Chirikov, B. V.; Shepelyanskii, D. L.) Quantum chaos: localization vs. ergodicity. Progress in chaotic dynamics. *Phys. D* **33** (1988), no. 1-3, 77-88. (Summary) **89k:81048** 81C99 (58F13)
- Quantum localization and statistics of quasienergy spectrum in a classically chaotic system. *Phys. Lett. A* **134** (1988), no. 1, 13-18. (Summary) **89j:81067** 81C99 (58F13, 81-08)
- see also Schuster, Heinz Georg, **89h:58130**
- Izrallevich, Ya. A.** On the theory of singular points of iterative processes. (Russian) *Geometry and the theory of singularities in nonlinear equations* (Russian), 146-151, 184-185, *Novoe Global. Anal., Voronezh. Gos. Univ., Voronezh*, 1987. (N. A. Sidorov) **89g:58022** 58C25
- Izuchi, Keiji** Closed subalgebras of bounded analytic functions containing the disk algebra. (Japanese) *Sci. Rep. Res. Inst. Engrg. Kanagawa Univ.* **4** (1981), 97-105. (Not in MR) **46J15** (30H05)
- Research at the University of California, Berkeley. (Japanese) *Sci. Rep. Res. Inst. Engrg. Kanagawa Univ.* **10**, 7 (1984), 109-118. (Editors) **89e:01049** 01A73
- Unitary equivalence of invariant subspaces in the polydisk. *Pacific J. Math.* **130** (1987), no. 2, 351-358. (D. N. Clark) **89g:46049** 46E15 (32A35, 46J15, 47A15, 47B38)
- A function theoretic proof of Axler's zero multiplier theorem. *Canad. Math. Bull.* **31** (1988), no. 1, 117-120. (Sheldon Axler) **89f:46053** 46E15 (30H05, 32A10, 32H10)
- (with Izuchi, Y.) Inner functions and division in Douglas algebras. II. *J. London Math. Soc.* (2) **38** (1988), no. 1, 146-152. (Pamela Gorkin) **89f:46108** 46J15 (30D55, 46J30)
- The one-radius theorem is not true for bounded real-analytic functions. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 823-830. (M. Hervé) **89h:26022** 26E05 (32C05)
- Izuchi, Y.** (with Izuchi, Keiji) Inner functions and division in Douglas algebras. II. *J. London Math. Soc.* (2) **38** (1988), no. 1, 146-152. (Pamela Gorkin) **89f:46108** 46J15 (30D55, 46J30)
- Izumida, Masanori** (with Murakami, Kenji; Aibara, Tsunehiro) Two-stepped association procedure and its application to reduction of memory areas of associative memory. *Electron. Comm. Japan. Part I Comm.* **68** (1985), no. 8, 20-28. (Summary) **89g:92021** 92A09
- Izumiya, Shyūichi** Local topological models of envelopes. *Hokkaido Math. J.* **16** (1987), no. 2, 201-206. (Peter Giblin) **89a:58016** 58C27 (58A35)
- On Legendrian singularities. *Proc. Amer. Math. Soc.* **101** (1987), no. 4, 748-752. (Jean-Jacques Gervais) **89c:58016** 58C27
- Izumoto, Yoshiro** (with Ojika, Takeo; Hashimoto, Takayuki; Nakazumi, Akira) Bang-bang control of rotating rigid body suspended by wire. (Japanese summary) *Mem. Osaka Kyoiku Univ. III Natur. Sci. Appl. Sci.* **36** (1987), no. 2, 181-191 (1988). (Summary) **89f:70042** 70Q05 (49B36, 93C15, 93C75)
- Izuyama, Takeo** (with Suzuki, Junji) Statistical mechanics of polymer melting transition. *J. Phys. Soc. Japan* **57** (1988), no. 3, 818-827. (H. N. V. Temperley) **89d:82095** 82A51 (82A25, 82A68)
- Izverceanu, P. N.** (with Popescu, C.) Applications of polynomial algebras. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara. Lucr. Sem. Mat. Fiz.* **1986**, November, 11-14. (John Chollet) **89f:34010** 34A30 (15A03, 15A78)
- Izydorek, Marek** Remarks on Borsuk-Ulam theorem for multivalued maps. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 7-8, 501-504. (Helga Schirmer) **89d:55008** 55M99 (54C60, 55M10, 55M20)
- Izumov, Yu. A.** (with Skryabin, Yu. N.) ★ Статистическая механика магнитоупорядоченных систем. (Russian) [Statistical mechanics of magneto-ordered systems] "Nauka", Moscow, 1987. 264 pp. (Jacek Mikszta) **89j:82073** 82A68 (81H99, 82-02, 82A25)
- Izumova, D. V.** Positive bounded solutions of second-order nonlinear ordinary differential equations. (Russian. English and Georgian summaries) *Tbilis. Gos. Univ. Inst. Prikl. Mat. Trudy* **22** (1987), 100-109, 234. (Miklós Farkas) **89f:34050** 34C11 (34A10)
- Jaarinen, J.** (with Vidberg, H. J.; Riska, D. O.) A thermal inversion problem. *Theory and applications of inverse problems* (Helsinki, 1985), 143-153, *Pitman Res. Notes Math. Ser.*, **167**, Longman Sci. Tech., Harlow, 1988. (see **89c:00029**) 80-08 (80A20)
- Jaballah, Ali** Monomiale Ideale und mengentheoretische vollständige Durchschnitte. [Monomial ideals and set-theoretic complete intersections] *Arch. Math. (Basel)* **51** (1988), no. 4, 308-312. (Gennady Lyubeznik) **89h:13012** 13C05 (13A15, 14M10)
- Minimale Erzeugendensysteme und minimale Primteiler von monomialen Radikaleidealen. [Minimal systems of generators and minimal prime divisors of monomial radical ideals] *Math. Ann.* **280** (1988), no. 4, 683-686. (W. V. Vasconcelos) **89d:13002** 13A99 (13F20)
- Jabbari, Faryar** (with Gibson, James S.) Vector-channel lattice filters and identification of flexible structures. *IEEE Trans. Automat. Control* **33** (1988), no. 5, 448-456. (Not in MR) **93E12** (93E11)
- Jablan, Slavik V.** Groups of simple and multiple antisymmetry of layers. *Z. Krist.* **176** (1986), no. 3-4, 283-290. (Vojtěch Kopský) **89k:20069** 20H15 (82A60)
- Simple and multiple antisymmetry point groups  $G_{32}$ . (Serbo-Croatian summary) *Mat. Vesnik* **39** (1987), no. 3, 301-308. (R. L. E. Schwarzenberger) **89b:20102** 20H15
- Groups of simple and multiple band antisymmetry. (Russian) *Publ. Inst. Math. (Beograd) (N.S.)* **41**(55) (1987), 53-61. (Summary) **89c:20072** 20H15 (51F15)
- A simplification of Bohm formula. (Serbo-Croatian summary) *Zb. Rad. No. 1* (1987), 23-29. (Vojtěch Kopský) **89j:20058** 20H15
- Antisymmetry and presentations of  $G_{32}$  layer symmetry groups. (Serbo-Croatian summary) *Zb. Rad. No. 2* (1988), 15-29. (R. L. E. Schwarzenberger) **89c:20076** 20H15
- Jablonski, Marian** (with Twardowska, Krystyna) On boundary value problems for differential equations with a retarded argument. *Univ. Iagel. Acta Math.* **26** (1987), 29-36. (P. R. Krishnamoorthy) **89g:34102** 34K10
- Jablonski, T. Henry, Jr.** (with Tirman, Alvin) Identities derived on a Fibonacci multiplication table. *Fibonacci Quart.* **26** (1988), no. 4, 328-331. (Not in MR) **11B39**
- Jacak, Dorota** Regular positive bases. Proceedings of the International Conference on Combinatorial Analysis and its Applications (Poznań, 1985). *Zastos. Mat.* **19** (1987), no. 3-4, 449-464 (1988). (John R. Reay) **89m:52003** 52A20 (46A35)
- Jack, I.** (with Jones, D. R. T.; Ross, Douglas A.) On the relationship between string low-energy effective actions and  $O(\alpha')^3$   $\sigma$ -model  $\beta$ -functions. *Nuclear Phys. B* **307** (1988), no. 1, 130-144. (Summary) **89g:81056** 81E15 (81E30)
- (with Jones, D. R. T.) Dilaton dependence of the two-loop effective action. *Phys. Lett. B* **200** (1988), no. 4, 453-460. (Summary) **89a:81135** 81E99 (81E15, 81E30)
- (with Jones, D. R. T.; Lawrence, A. M.) Ghost freedom and string actions. *Phys. Lett. B* **203** (1988), no. 4, 378-380. (B. Spence) **89f:81184** 81E99 (53C80, 81E30, 83C45, 83E30)
- (with Friedman, John L.) Formal commutators of the gravitational constraints are not well defined: a translation of Ashtekar's ordering to the Schrödinger representation. *Phys. Rev. D* **37** (1988), no. 12, 3495-3504. (Asghar Qadir) **89m:83042** 83C45
- Jacks, S. D.** A maximal inequality for martingale local times. *Séminaire de Probabilités, XXI*, 221-229, *Lecture Notes in Math.*, **1247**, Springer, Berlin-New York, 1987. (P. Sundar) **89d:60088** 60G44 (60J55)
- Doob's inequalities revisited: a maximal  $H^1$ -embedding. *Stochastic Process. Appl.* **29** (1988), no. 2, 281-290. (Sheng Wu He) **89j:60054** 60G07 (60E15, 60G40, 60G44)
- Jackel, Lawrence** (with Denker, John; Schwartz, Daniel B.; Wittner, Ben; Solla, Sara; Howard, Richard; Hopfield, John) Large automatic learning, rule extraction, and generalization. *Complex Systems* **1** (1987), no. 5, 877-922. (Summary) **89k:92080** 92A25
- Jackett, D. R.** (with Barton, N. G.) A computational method for the inverse scattering problem for ultrasound. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 281-290, *North-Holland, Amsterdam-New York*, 1988. (see **89b:00021**) 65P05
- Jackiewicz, Zdzisław** Variable-step variable-order algorithm for the numerical solution of neutral functional-differential equations. *Appl. Numer. Math.* **3** (1987), no. 4, 317-329. (Summary) **89b:65307** 65Q05 (65L99)
- Existence and uniqueness of solutions of neutral delay-differential equations with state dependent delays. *Funkcial. Ekvac.* **30** (1987), no. 1, 9-17. (S. A. Brykalov) **89b:34154** 34K05 (34A45)
- (with Bellen, Alfredo; Zennaro, Marino) Stability analysis of one-step methods for neutral delay-differential equations. *Numer. Math.* **52** (1988), no. 6, 605-619. (David K. Kahaner) **89b:65134** 65L20
- (with Bakke, V. L.) Stability of numerical methods for Volterra integro-differential equations of convolution type. (German and Russian summaries) *Z. Angew. Math. Mech.* **68** (1988), no. 2, 89-100. (Summary) **89a:65197** 65R20 (45D05, 45J05)
- Jackiw, R.** Chern-Simons terms and cocycles in physics and mathematics. *Quantum field theory and quantum statistics*, Vol. 2, 349-378, *Hilger, Bristol*, 1987. (Akira Asada) **89m:58208** 58G25 (53C80, 57R20, 81E13)
- (with Deser, S.) Comment on: "What is the most general abelian gauge theory in two spatial dimensions?" [Phys. Rev. Lett. **58** (1987), no. 11, 1074-1076; MR **88j:81038a**] by C. R. Hagen. With a reply by Hagen. *Phys. Rev. Lett.* **59** (1987), no. 17, 1981-1982. (Dennis B. Creamer) **89f:81129** 81E20 (81E13, 81G10)
- Functional representations for quantized fields. *Conformal field theory, anomalies and superstrings* (Singapore, 1987), 3-52, *World Sci. Publishing, Singapore*, 1988. (Oliver Piguet) **89h:81135** 81E15 (81-02)
- (with Deser, S.) Classical and quantum scattering on a cone. *Comm. Math. Phys.* **118** (1988), no. 3, 495-509. (Markku Lehto) **89k:81188** 81F20 (83C45)
- Three elaborations on Berry's connection, curvature and phase. *Internat. J. Modern Phys. A* **3** (1988), no. 2, 285-297. (Edward R. Vrscaj) **89b:81065** 81C99 (58F05)
- (with Floreanini, Roberto) Functional representation for fermionic quantum fields. *Phys. Rev. D* (3) **37** (1988), no. 8, 2206-2224. (Bo-Wei Xu) **89a:81058** 81D05 (81E08)
- (with Faddeev, L. D.) Hamiltonian reduction of unconstrained and constrained systems. *Phys. Rev. Lett.* **60** (1988), no. 17, 1692-1694. (Alan L. Carey) **89i:81051** 81D07 (58F05, 70H05)
- Jackowski, Stefan** A fixed-point theorem for  $p$ -group actions. *Proc. Amer. Math. Soc.* **102** (1988), no. 1, 205-208. (Gunnar Carlsson) **89a:57052** 57S17 (55P91)



- Jackowski, T.** (with Woźniakowski, Henryk) Complexity of approximation with relative error criterion in worst, average, and probabilistic settings. *J. Complexity* 3 (1987), no. 2, 114–135. (Lydia Kronsjö) **89a:68102** 64Q25 (65D15, 65J05)
- Jackson, Bill** (with Frieze, A. M.) Large holes in sparse random graphs. *Combinatorica* 7 (1987), no. 3, 265–274. (Andrzej Ruciński) **89a:05118** 05C80 (60C05)
- A Chvátal-Erdős condition for Hamilton cycles in digraphs. *J. Combin. Theory Ser. B* 43 (1987), no. 3, 245–252. (M. C. Heydemann) **89a:05073** 05C20 (05C45)
- (with Hilton, A. J. W.) A note concerning the chromatic index of multigraphs. *J. Graph Theory* 11 (1987), no. 3, 267–272. (Summary) **89b:05085** 05C15
- (with Ordaz, Oscar) Chvátal-Erdős conditions for 2-cyclability in digraphs. *Art. Combin.* 25 (1988), 39–49. (Carsten Thomassen) **89d:05088** 05C20 (05C45)
- (with Andersen, L. D.; Fleischner, Herbert) Removable edges in cyclically 4-edge-connected cubic graphs. *Graphs Combin.* 4 (1988), no. 1, 1–21. (H. Joseph Straight) **89c:05060** 05C75
- (with Frieze, A. M.; McDiarmid, Colin; Reed, B. A.) Edge-colouring random graphs. *J. Combin. Theory Ser. B* 45 (1988), no. 2, 135–149. (Zbigniew Polka) **89m:05101** 05C80 (05C15)
- Some remarks on arc-connectivity, vertex splitting, and orientation in graphs and digraphs. *J. Graph Theory* 12 (1988), no. 3, 429–436. (C. St. J. A. Nash-Williams) **89c:05060** 05C40 (05C20)
- Jackson, Brad** (with Hartsfield, Nora; Ringel, Gerhard) The splitting number of the complete graph. *Graphs Combin.* 1 (1985), no. 4, 311–329. (Jean-Claude Fournier) **89b:05027** 05C10
- Small  $r$ -regular  $r$ -connected non-Hamiltonian graphs. *Art. Combin.* 24 (1987), 77–83. (J. Sheehan) **89b:05114** 05C40
- Jackson, D. M.** Some combinatorial problems associated with products of conjugacy classes of the symmetric group. *J. Combin. Theory Ser. A* 49 (1988), no. 2, 363–369. (G. D. James) **89a:05009** 05A15 (20C30)
- Counting semiregular permutations which are products of a full cycle and an involution. *Trans. Amer. Math. Soc.* 305 (1988), no. 1, 317–331. (Ira Gessel) **89b:05013** 05A15 (05A05, 20C30)
- (with Andrews, G. E.; Goulden, I. P.) Generalizations of Cauchy's summation theorem for Schur functions. *Trans. Amer. Math. Soc.* 310 (1988), no. 2, 805–820. (Philip Hanlon) **89m:05009** 05A19 (05B15)
- see also *Proceedings: Meeting "Kombinatorik"*, **89f:05004**
- Jackson, Darrell R.** (with Winebrenner, Dale P.; Ishimaru, Akira) Comparison of perturbation theories for rough-surface scattering. *J. Acoust. Soc. Amer.* 83 (1988), no. 3, 961–969. (Summary) **89f:76070** 76Q05 (78A45)
- Jackson, I. R. H.** Convergence properties of radial basis functions. *Constr. Approx.* 4 (1988), no. 3, 243–264. (G. Baszenski) **89k:41005** 41A05 (41A30, 41A63)
- Jackson, Kenneth R.** The convergence of integrand-approximation formulas for the numerical solution of IVPs for ODEs. *SIAM J. Numer. Anal.* 25 (1988), no. 1, 163–188. (G. D. Byrne) **89b:65173** 65L05
- Jackson, Matthew** (with Barbã, Salvador) Maximin, leximin, and the protective criterion: characterizations and comparisons. *J. Econom. Theory* 46 (1988), no. 1, 34–44. (Bhaskar Dutta) **89j:90004** 90A05 (90A08)
- Jackson, Peter L.** (with Lynch, David F.) Revised Dantzig-Wolfe decomposition for staircase-structured linear programs. *Math. Programming* 39 (1987), no. 2, 157–179. (Andrew Russakoff) **89f:90082** 90C05
- (with Maxwell, William L.; Muckstadt, John A.) Determining optimal reorder intervals in capacitated production-distribution systems. *Management Sci.* 34 (1988), no. 8, 938–958. (Summary) **89g:90086** 90B05
- (with Muckstadt, John A.) Risk pooling in a two-period, two-echelon inventory stocking and allocation problem. *Naval Res. Logist.* 36 (1989), no. 1, 1–26. (Summary) **89j:90082** 90B05
- Jackson, Richard H. F.** (with McCormick, Garth P.) Second-order sensitivity analysis in factorable programming: theory and applications. *Math. Programming* 41 (1988), no. 1 (Ser. A), 1–27. (Alexander Shapiro) **89g:90214** 90C31
- Jackson, Steve** AD and the projective originals. *Cabal Seminar* 81–85, 117–220, *Lecture Notes in Math.*, 1333, Springer, Berlin-New York, 1988. (From the introduction) **89k:03055** 03E15 (03E60)
- Jaco, William** (with Rubinstein, J. Hyam) PL minimal surfaces in 3-manifolds. *J. Differential Geom.* 27 (1988), no. 3, 493–524. (G. Peter Scott) **89e:57009** 57N10 (57M99, 57Q99)
- Jacob, Bill** (with Arason, Jón Kr.; Elman, Richard) Rigid elements, valuations, and realization of Witt rings. *J. Algebra* 110 (1987), no. 2, 449–467. (Ron Brown) **89a:11041** 11E81 (11E04)
- Jacob, Calais** see *Jacob, Calais*
- Jacob, Christine** Stochastic limit cycles and confiners: definitions and comparative study in the case of Markovian processes. (French summary) *Spatial processes and spatial time series analysis* (Brussels, 1985), 77–114, *Travaux Rech.*, 11, Publ. Fac. Univ. Saint-Louis, Brussels, 1987. (Summary) **89j:60088** 60J05 (58F99)
- Cycles limites stochastiques et confineurs pour processus markoviens. (English summary) [Stochastic limit cycles and confiners for Markov processes] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 1, 51–54. (Kyle Siegrist) **89g:60225** 60J25 (60G07)
- Jacob, M. J.** (with Ramanarayanan, R.) General analysis of  $(s, S)$  inventory systems with random lead times and bulk demands. *Cahiers Centre Études Rech. Opér.* 29 (1987), no. 3–4, 249–254. (Summary) **89g:90068** 90B05
- (with Madhusoodanan, T. P.) Transient solution for a finite capacity  $M/G^a/1$  queueing system with vacations to the server. *Queueing Systems Theory Appl.* 2 (1987), no. 4, 381–386. (Summary) **89b:60138** 60K25 (90B22)
- (with Madhusoodanan, T. P.) Transient solution of an  $M/G/1$  queueing system with group arrivals and vacations to the server. *Oper. Res.* 25 (1988), no. 4, 279–284. (Hans Daduna) **89m:60233** 60K25 (68M20, 90B22)
- Jacob, Maurice** (with Wu, Tai Tsun) Quantum calculation of beamstrahlung: the spinless case. *Nuclear Phys. B* 303 (1988), no. 3, 373–388. (Summary) **89g:81101** 81G10
- (with Wu, Tai Tsun) Quantum calculation of beamstrahlung: the Dirac case. *Nuclear Phys. B* 303 (1988), no. 3, 389–406. (Summary) **89b:81260** 81G10
- Jacob, Niels** A converse to Garding's inequality for a class of formally hypoelliptic differential operators. *Arch. Math. (Basel)* 49 (1987), no. 4, 309–315. (Yu. V. Egorov) **89b:35020** 35H05 (35B45)
- Dirichlet forms and pseudo differential operators. *Exposition. Math.* 6 (1988), no. 4, 313–351. (Georgi E. Karadzhov) **89i:35136** 35S15 (47G05)
- $L^\infty$ -bounds for solutions of pseudo differential boundary problems in Dirichlet spaces. *Exposition. Math.* 6 (1988), no. 4, 363–371. (Georgi E. Karadzhov) **89i:35137** 35S15 (47G05)
- On Dirichlet's boundary value problem for some formally hypoelliptic differential operators. *J. Austral. Math. Soc. Ser. A* 44 (1988), no. 3, 324–349. (Jorge Hounie) **89j:35048** 35H05 (35G15)
- Jacobi, Carl Gustav Jacob** see *Stander, D.*, **89f:01076**
- Jacobi, Klaus** Peter Abelard's investigations into the meaning and functions of the speech sign "est". *The logic of being*, 145–180, *Synthese Hist. Lib.*, 28, Reidel, Dordrecht-Boston, MA, 1986. (see **89a:03004**) 01A35 (03-03, 03A05)
- Jacobowitz, Howard** ★ Homogeneous solvability and CR structures. *Notas de Curso* [Course Notes], 25, Universidade Federal de Pernambuco, Departamento de Matemática, Recife, 1988. i+101 pp. (Makhlof Derridj) **89f:35154** 35N10 (32F20, 35A05, 58G05)
- Systems of homogeneous partial differential equations with few solutions. *Partial differential equations* (Rio de Janeiro, 1986), 127–136, *Lecture Notes in Math.*, 1324, Springer, Berlin-New York, 1988. (Makhlof Derridj) **89f:35043** 35F05 (32F20, 32F25, 35N10)
- Jacobs, D. A. H.** A generalization of the conjugate-gradient method to solve complex systems. *IMA J. Numer. Anal.* 6 (1986), no. 4, 447–452. (Summary) **89b:65062** 65F35
- Jacobs, Dean** (with Feather, Martin) Corrections to: "A synthesis of several sorting algorithms" [Acta Inform. 11 (1978/79), no. 1, 1–30; MR 80c:68024] by J. Darling. *Acta Inform.* 26 (1988), no. 1–2, 19–23. (Summary) **89b:68051** 68Q20 (68P10, 68R05)
- Jacobs, E. E.** (with Yavin, Y.) Reaching a protected target site under detection-time constraints. *Math. Comput. Modelling* 10 (1988), no. 9, 661–668. (Summary) **89h:90275** 90D25 (93E20)
- Jacobs, F. J.** (with Schmidt, G. H.) Adaptive local grid refinement and multi-grid in numerical reservoir simulation. *J. Comput. Phys.* 77 (1988), no. 1, 140–165. (Jaroslaw Jelen) **89j:76083** 76T05 (65N30, 76-08)
- Jacobs, Marc** (with Chicone, Carmen) Bifurcation of critical periods for plane vector fields. *Trans. Amer. Math. Soc.* 312 (1989), no. 2, 433–486. (Ding Jun Luo) **89h:58139** 58F14 (34C25, 58F05, 58F30)
- Jacobs, Steven M.** see *Proceedings: Conference on Parallel Processing*, **89b:68010**
- Jacobson, Lisa** General correspondence for continued fractions. *J. Comput. Appl. Math.* 19 (1987), no. 1, 171–177. (Kh. I. Kuchmins'ka) **89d:30004** 30B70 (40A15, 41A21)
- Uniform convergence of limit periodic generalized continued fractions. *Analysis* 8 (1988), no. 1–2, 95–119. (Kh. I. Kuchmins'ka) **89m:30007** 30B70 (40A15)
- (with Cuyt, Annie A. M.; Verdonk, Brigitte M.) Instability and modification of Thiele interpolating continued fractions. *Appl. Numer. Math.* 4 (1988), no. 2–4, 253–262. (Claude Brezinski) **89c:41019** 41A20 (65D05)
- Meromorphic continuation of functions given by limit  $k$ -periodic continued fractions. *Appl. Numer. Math.* 4 (1988), no. 2–4, 323–336. (W. J. Thron) **89m:30008** 30B70
- Remarks to a definition of convergence acceleration illustrated by means of continued fractions  $K(a_n/1)$  where  $a_n \rightarrow 0$ . *J. Comput. Appl. Math.* 21 (1988), no. 1, 101–110. (D. Levin) **89b:65014** 65Bxx
- (with Waadeland, Haakon) Convergence acceleration of limit periodic continued fractions under asymptotic side conditions. *Numer. Math.* 53 (1988), no. 3, 285–298. (Claude Brezinski) **89b:65010** 65B99 (30B70, 40A15)
- Jacobson, Martin** Maximum likelihood estimation in the multiplicative intensity model: a survey. (French summary) *Internat. Statist. Rev.* 52 (1984), no. 2, 193–207. (Summary) **89b:62146** 62M09
- Jacobsen, S. E.** (with Hamami, M.) Exhaustive nondegenerate conical processes for concave minimization on convex polytopes. *Math. Oper. Res.* 13 (1988), no. 3, 479–487. (Vladimir I. Venets) **89m:90139** 90C30
- Jacobsen, Søren B.** The rearrangement process in a two-stage broadcast switching network. *IEEE Trans. Comm.* 36 (1988), no. 4, 484–491. (Summary) **89g:90096** 90B10 (94A05)
- Jacobson, Clas A.** (with Nett, Carl N.) Linear state-space systems in infinite-dimensional space: the role and characterization of joint stabilizability/detectability. *IEEE Trans. Automat. Control* 33 (1988), no. 6, 541–549. (A. Göpfert) **89c:93127** 93C25 (93C05, 93C15, 93D15)
- Jacobson, E.** see *Krämer, Helmut*, **89i:20015**
- Jacobson, Michael S.** (with Burr, S. A.; Erdős, Paul; Faudree, R. J.; Rousseau, C. C.; Schelp, R. H.; Gould, R. J.) Goodness of trees for generalized books. *Graphs Combin.* 3 (1987), no. 1, 1–6. (Zheng Sheng Wu) **89b:05122** 05C55
- (with Faudree, R. J.; Ordman, Edward T.; Schelp, R. H.; Tuza, Zsolt) Menger's theorem and short paths. *J. Combin. Math. Combin. Comput.* 2 (1987), 235–253. (C. Peyrat) **89c:05050** 05C38 (05C40)
- (with Faudree, R. J.; Gould, R. J.; Schelp, R. H.) Extremal problems involving neighborhood unions. *J. Graph Theory* 11 (1987), no. 4, 555–564. (Felix Lazebnik) **89a:05087** 05C35 (05C38, 05C70)
- (with Gyárfás, A.; Kinch, Lael F.) On a generalization of transitivity for digraphs. *Discrete Math.* 69 (1988), no. 1, 35–41. (J. W. Moon) **89a:05071** 05C20
- Jacobson, Nathan** Jordan algebras of real symmetric matrices. *Algebras Groups Geom.* 4 (1987), no. 3, 291–304. (Erhard Neher) **89i:17026** 17C15 (17C10, 17C25)
- Jacobson, Sheldon H.** (with Schruben, Lee W.) Optimization of stochastic dynamical systems in the frequency domain. *Analysis and optimization of systems* (Antibes, 1988), 925–938, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89c:00031**) 93E12
- Jacobson, Ted** Superspace in the self-dual representation of quantum gravity. *Mathematics and general relativity* (Santa Cruz, CA, 1986), 99–104, *Contemp. Math.*, 71, Amer. Math. Soc., Providence, RI, 1988. (Lionel J. Mason) **89j:83041** 83C45
- Supergravity. *New perspectives in canonical gravity*, 195–210, *Monographs Textbooks Phys. Sci. Lecture Notes*, 5, Bibliopolis, Naples, 1988. (see **89m:83003**) 83E50 (81E99)
- (with Smolin, Lee) Covariant action for Ashtekar's form of canonical gravity. *Classical Quantum Gravity* 5 (1988), no. 4, 583–594. (Lionel J. Mason) **89c:83011** 83C05 (83C60)
- New variables for canonical supergravity. *Classical Quantum Gravity* 5 (1988), no. 6, 923–935. (K. P. Tod) **89j:83087** 83E50 (83C05)

- (with Ashtekar, Abhay; Smolin, Lee) A new characterization of half-flat solutions to Einstein's equation. *Comm. Math. Phys.* **115** (1988), no. 4, 631–648. (Lionel J. Mason) **89f:83010** 83C05 (83C60)
- (with Smolin, Lee) Nonperturbative quantum geometries. *Nuclear Phys. B* **299** (1988), no. 2, 295–345. (Lionel J. Mason) **89g:83027** 83C45 (81G25)
- (with Tsamis, N. C.; Woodard, R. P.) Tachyons and perturbative unitarity. *Phys. Rev. D* (3) **38** (1988), no. 6, 1823–1834. (Summary) **89i:81135** 81F20
- Bosonic path integral for spin- $\frac{1}{2}$  particles. *Phys. Lett. B* **216** (1989), no. 1–2, 150–154. (Takashi Miura) **89m:81056** 81C35 (81D30, 81E99)
- Jacobsson, Carl** (with Félix, Yves; Halperin, Stephen; Löfwall, Clas; Thomas, Jean-Claude) The radical of the homotopy Lie algebra. *Amer. J. Math.* **110** (1988), no. 2, 301–322. (Lex Renner) **89d:55029** 55P62 (13H99, 17B56, 55P50)
- Jacod, Jean** (with Shiryaev, A. N.) ★ Limit theorems for stochastic processes. Grundlehren der Mathematischen Wissenschaften [Fundamental Principles of Mathematical Sciences], 288. Springer-Verlag, Berlin-New York, 1987. xviii+601 pp. ISBN 3-540-17882-1 (Dominique Lépine) **89k:60044** 60F17 (60-02, 60G48)
- (with Sadi, H.) Processus admettant un processus à accroissements indépendants tangent: cas général. [Processes admitting a tangent process with independent increments: the general case] *Séminaire de Probabilités, XXI*, 479–514, *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (Adam Jakubowski) **89m:60111** 60G48 (60F17, 60J30)
- Sur la convergence des processus ponctuels. (English summary) [On the convergence of point processes] *Probab. Theory Related Fields* **76** (1987), no. 4, 573–586. (Yu. M. Kabanov) **89a:60128** 60G55 (60F17)
- Partial likelihood process and asymptotic normality. *Stochastic Process. Appl.* **26** (1987), no. 1, 47–71. (Eric V. Slud) **89c:62025** 62F03 (60F17, 60G07, 62F05)
- (with Protter, Philip) Time reversal on Lévy processes. *Ann. Probab.* **16** (1988), no. 2, 620–641. (Michael Sharpe) **89j:60102** 60J30 (60G48)
- Jacque, Laurent L.** (with Tapiero, Charles S.) Premium valuation in international insurance. *Scand. Actuar. J.* **1987**, no. 1–2, 50–61. (Kurt Wolford) **89e:62136** 62P05 (90A09)
- Jacques, Ian** (with Judd, Colin) ★ Numerical analysis. Chapman & Hall, London-New York, 1987. viii+326 pp. ISBN 0-412-27950-9; 0-412-27960-6 (Ian Gladwell) **89b:65002** 65-01
- Jacques, Michel** (with Saint-Aubin, Yvan) Infinite-dimensional Lie algebras acting on the solution space of various  $\sigma$  models. *J. Math. Phys.* **28** (1987), no. 10, 2463–2479. (Andrew Pressley) **89c:58027** 58E15 (22E65, 58D15, 81E13, 81E20)
- (with Arsenault, Guy; Saint-Aubin, Yvan) The symmetry group of the Euclidean  $CP^n$  model as the invariance group of two bilinear forms. *Group theoretical methods in physics* (Varna, 1987), 507–512, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (Allan M. Din) **89k:22038** 22E70 (58E20, 58G35, 81E13)
- (with Antoine, J.-P.) Corrigendum: "Classical Yang-Mills fields with noncompact symmetry and an arbitrary compact gauge group" [Classical Quantum Gravity **4** (1987), no. 1, 181–194; MR 88i:53058]. *Classical Quantum Gravity* **5** (1988), no. 11, 1513. (Editors) **89h:53071** 53C05 (22E70, 53C80, 58G35, 81E13)
- (with Arsenault, Guy; Saint-Aubin, Yvan) Collapse and exponentiation of infinite symmetry algebras of Euclidean projective and Grassmannian  $\sigma$  models. *J. Math. Phys.* **29** (1988), no. 6, 1465–1471. (Thomas P. Branson) **89k:58298** 58G35 (17B65, 53C80, 58E20, 81E99)
- (with Arsenault, Guy; Saint-Aubin, Yvan)  $SL(n+1, \mathbb{C})$  strata and orbits in the solution space of Euclidean  $CP^m$  models. (French summary) *Lett. Math. Phys.* **15** (1988), no. 1, 65–73. (Allan M. Din) **89b:81114** 81E13 (22E45, 53C80, 58D30, 58E20)
- (with Abdalla, E.; Forger, M.) Higher conservation laws for ten-dimensional supersymmetric Yang-Mills theories. *Nuclear Phys. B* **307** (1988), no. 1, 198–220. (Summary) **89b:81096** 81E13 (53C80, 58E30)
- Jacquet, Hervé** Sur un résultat de Waldspurger. II. [On a result of Waldspurger. II] *Compositio Math.* **63** (1987), no. 3, 315–389. (Stephen Gelbart) **89c:11085** 11F70 (11F72, 22E55)
- Jacquez, John A.** A note on chain-binomial models of epidemic spread: what is wrong with the Reed-Frost formulation? *Math. Biosci.* **87** (1987), no. 1, 73–82. (K. Dietz) **89a:92043** 92A15
- (with Simon, Carl P.; Koopman, James; Sattenspiel, Lisa; Perry, Timothy) Modeling and analyzing HIV transmission: the effect of contact patterns. *Math. Biosci.* **92** (1988), no. 2, 119–199. (Summary) **89j:92054** 92A15 (58F40)
- see also *Nonlinearity in biology and medicine*, **89c:92002**
- Jacroux, M.** (with Lee, K. Y.) Some sufficient conditions for the  $E$ - and  $MV$ -optimality of block designs having blocks of unequal size. *Ann. Inst. Statist. Math.* **39** (1987), no. 2, 385–397. (N. Gaffke) **89a:62175** 62K05 (62K10)
- (with Lee, K. Y.) On the construction of  $E$ - and  $MV$ -optimal group divisible designs with unequal block sizes. *J. Statist. Plann. Inference* **16** (1987), no. 2, 193–201. (Summary) **89d:62068** 62K05 (62K10)
- (with Whittinghill, Dexter C., III) On the  $E$ - and  $MV$ -optimality of block designs having  $k \geq v$ . *Ann. Inst. Statist. Math.* **40** (1988), no. 2, 407–418. (Anant M. Kshirsagar) **89f:62061** 62K05
- Jaczewski, Krzysztof** (with Szurek, Michał; Wiśniewski, Jarosław A.) Geometry of the Tango bundle. *Proceedings of the conference on algebraic geometry* (Berlin, 1985), 177–185, *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (Jean-Marc Drezet) **89a:14018** 14F05
- Jadczyk, Arkadiusz Z.** (with Kastler, Daniel) Graded Lie-Cartan pairs. II. The fermionic differential calculus. *Ann. Physics* **179** (1987), no. 2, 169–200. (Alice Rogers) **89k:58026** 58A50 (17B65)
- (with Coquereaux, Robert) ★ Riemannian geometry, fiber bundles, Kaluza-Klein theories and all that. . . . World Scientific Lecture Notes in Physics, 16. World Scientific Publishing Co., Singapore, 1988. xiv+345 pp. ISBN 9971-50-426-X; 9971-50-427-8 (Thomas Schücker) **89c:53108** 53C80 (22E45, 81G20, 83E15)
- (with Kastler, Daniel) Graded Lie-Cartan pairs. I. *Rep. Math. Phys.* **25** (1988), no. 1, 1–51. (Alice Rogers) **89k:58026a** 58A50 (17B65)
- Jaeger, E. F.** (with Wheaton, J. H.; Chen, G. L.; Raridon, R. J.; McGaffey, R. W.; Bell, M. A.; Hoffman, D. J.) A 3D analysis of Maxwell's equations for cavities of arbitrary shape. *J. Comput. Phys.* **75** (1988), no. 1, 168–189. (W. L. Ko) **89g:78006** 78-08
- Jaeger, François** On Tutte polynomials and cycles of plane graphs. *J. Combin. Theory Ser. B* **44** (1988), no. 2, 127–146. (Ruth Bari) **89b:05086** 05C15
- Tutte polynomials and link polynomials. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 647–654. (Lorenzo Traldi) **89i:57004** 57M25 (05C10, 57M15)
- Jaeger, J. C.** (with Carslaw, H. S.) ★ Conduction of heat in solids. Reprint of the second edition. Oxford Science Publications. The Clarendon Press, Oxford University Press, New York, 1988. x+510 pp. ISBN 0-19-853368-3 (Editors) **89f:80004** 80A20 (80-01)
- Jaegermann, Michał** see Lipski, Witold, Jr., **89c:05002**
- Jaegermann, Michał** see Tomczak-Jaegermann, Nicole
- Jaen, X.** (with Jáuregui, R.; Llosa, J.; Molina, A.) Hamiltonian formalism for path-dependent Lagrangians. *Phys. Rev. D* (3) **36** (1987), no. 8, 2385–2398. (Takayuki Nono) **89c:58037** 58F05 (70H05, 70H35)
- abū Ja'far, Muḥammad ibn Ḥasan al-Ḥāzin** see Lorch, Richard, **89c:01009**
- Jafari, Saqib** (with Benhabib, Jess; Nishimura, Kazuo) The dynamics of efficient intertemporal allocations with many agents, recursive preferences, and production. *J. Econom. Theory* **44** (1988), no. 2, 301–320. (Rolf Färe) **89g:90033** 90A10
- Jaffar, Joxan** (with Laszlez, Jean-Louis) From unification to constraints. *Logic programming '87* (Tokyo, 1987), 1–18, *Lecture Notes in Comput. Sci.*, 315, Springer, Berlin-New York, 1988. (Summary) **89k:68132** 68T15 (03B70, 68T25)
- Jaffe, Arthur** (with Glimm, James) ★ Quantum physics. A functional integral point of view. Second edition. Springer-Verlag, New York-Berlin, 1987. xxii+535 pp. ISBN 0-387-96476-2 (P. D. F. Ion) **89k:81001** 81-02 (81E05)
- (with Lesniewski, Andrzej; Weitsman, Jonathan) The loop space  $S^1 \rightarrow \mathbb{R}$  and supersymmetric quantum fields. *Ann. Physics* **183** (1988), no. 2, 337–351. (Yi-Gao Liang) **89i:58135** 58G10 (19K56, 47A53, 58B15, 81E08, 81E40)
- (with Lesniewski, Andrzej; Weitsman, Jonathan) The two-dimensional,  $N = 2$  Wess-Zumino model on a cylinder. *Comm. Math. Phys.* **114** (1988), no. 1, 147–165. (Summary) **89i:81062** 81E08 (47A55, 47F05, 58G10, 58G11)
- (with Balaban, Tadeusz; Imbrie, John Z.) Effective action and cluster properties of the abelian Higgs model. *Comm. Math. Phys.* **114** (1988), no. 2, 257–315. (Alan D. Sokal) **89i:81077** 81E08 (81E13, 81E25, 82A25)
- (with Lesniewski, Andrzej) A priori estimates for  $N = 2$  Wess-Zumino models on a cylinder. *Comm. Math. Phys.* **114** (1988), no. 4, 553–575. (Summary) **89i:81063** 81E08 (47F05, 58G11)
- (with Lesniewski, Andrzej; Osterwalder, Konrad) On convergence of inverse functions of operators. *J. Funct. Anal.* **81** (1988), no. 2, 320–324. (From the text) **89k:47036** 47B25 (47A60)
- (with Lesniewski, Andrzej; Wiecekowsky, Christian) Supersymmetry and the spectral condition on a cylinder. *Lett. Math. Phys.* **16** (1988), no. 4, 385–388. (B. Spence) **89m:81085** 81E05 (81E08)
- Jaffe, Charles** (with Watanabe, Masakatsu) Time-independent adiabatic switching: nonintegrable classical systems. *J. Chem. Phys.* **89** (1988), no. 10, 6329–6338. (L. E. H. Trainor) **89k:70033** 70H05 (70-08, 70G35, 70K30, 81C25)
- Jaffe, David B.** Space curves which are the intersection of a cone with another surface. *Duke Math. J.* **57** (1988), no. 3, 859–876. (Ragni Piene) **89m:14015** 14H45 (14H50, 14M10)
- (with Arapura, Donu) On Kodaira vanishing for singular varieties. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 911–916. (L. Bădescu) **89h:14013** 14F15 (14F05, 32L20)
- Jaffe, Jeffrey M.** (with Rosberg, Zvi) Maximal throughput in a tandem multi-hop radio network. *Performance Evaluation* **9** (1988/89), no. 1, 55–68. (Summary) **89k:68007** 68M10 (68M20, 90B15, 90B22)
- Jaffray, Jean-Yves** (with Cohen, Michèle) Preponderance of the certainty effect over probability distortion in decision making under risk. *Risk, decision and rationality* (Aix-en-Provence, 1986), 173–187, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston, MA*, 1988. (M. Iosifescu) **89f:90017** 90A10 (62C05, 92A25)
- An axiomatic model of choice under risk which is compatible with the certainty effect. *Risk, decision and rationality* (Aix-en-Provence, 1986), 313–325, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston, MA*, 1988. (Conclusion) **89c:90005** 90A05 (90A06, 90A10)
- Choice under risk and the security factor: an axiomatic model. *Theory and Decision* **24** (1988), no. 2, 169–200. (Walter Trockel) **89f:90020** 90A10 (62C05, 90A05)
- Some experimental findings on decision making under risk and their implications. *European J. Oper. Res.* **38** (1989), no. 3, 301–306. (Summary) **89m:90022** 90A10 (90A05, 92A25)
- Jaffre, Jérôme** (with Hennart, Jean Pierre; Roberts, Jean Elizabeth) A constructive method for deriving finite elements of nodal type. *Numer. Math.* **53** (1988), no. 6, 701–738. (Summary) **89g:65144** 65N30
- Jagannathan, Raj** (with Simon, Rajiah; Sudarshan, E. C. G.; Vasudevan, R.) Dynamical maps and nonnegative phase-space distribution functions in quantum mechanics. *Phys. Lett. A* **120** (1987), no. 4, 161–164. (Summary) **89i:81054** 81C25
- Jagatap, B. N.** (with Lawande, S. V.) Violation of the Cauchy-Schwarz inequality in cooperative optical double resonance. *Phys. Lett. A* **126** (1988), no. 5–6, 329–335. (Summary) **89a:81184** 81K05 (81-05)
- Jäger, Edgar** Bifurcation in degenerate directions. *Bifurcation: analysis, algorithms, applications* (Dortmund, 1986), 131–138, *Internat. Schriftenreihe Numer. Math.*, 79, Birkhäuser, Basel-Boston, MA, 1987. (Introduction) **89f:58030** 58E07 (58C40)
- Jäger, Gerhard** Some proof-theoretic contributions to theories of sets. *Logic colloquium '85* (Orsay, 1985), 171–191, *Stud. Logic Found. Math.*, 122, North-Holland, Amsterdam-New York, 1987. (P. Štěpánek) **89a:03117** 03F35 (03E30)
- Some logical aspects of information processing. Multi-attribute decision making via O.R.-based expert systems (Passau, 1986). *Ann. Oper. Res.* **16** (1988), no. 1–4, 53–60. (see **89k:00007**) **68T30** (03B60)
- Jager, Henk** (with Amman, Hans M.) Constrained control algorithm for nonlinear control problems. *Internat. J. Systems Sci.* **19** (1988), no. 9, 1781–1793. (Summary) **89h:93027** 93C10 (90A16, 93C55)
- (with Liardet, Pierre) Distributions arithmétiques des dénominateurs de convergents de fractions continues. [Arithmetical distributions of the denominators of convergents of continued fractions] *Nederl. Akad. Wetensch. Indag. Math.* **50** (1988), no. 2, 181–197. (F. Schweiger) **89i:11085** 11K06 (11K50, 28D05)
- de Jager, P.** (with Reyn, J. W.) Phase portraits for quadratic systems with a higher order singularity. I. Third and fourth order points with two zero eigenvalues. *Proceedings of the*



- first international conference on industrial and applied mathematics (ICIAM 87) (Paris, 1987), 85-97. *CWI Tract*, 36, *Math. Centrum, Centrum Wisk. Inform., Amsterdam*, 1987. (Richard C. Churchill) **89c:34039a** 34C05 (58F14, 58F21)
- (with Reyn, J. W.) Addendum to: "Phase portraits for quadratic systems with a higher order singularity. I. Third and fourth order points with two zero eigenvalues". *Delft Progr. Rep.* 12 (1988), no. 1, 33-37. (Richard C. Churchill) **89c:34039b** 34C05 (58F14, 58F21)
- Jager, Thomas De re et de dicto. *Notre Dame J. Formal Logic* 29 (1988), no. 1, 81-90. (Neculai C. Căteanu) **89c:03025** 03B45 (03B65, 03C80)
- Jagerman, D. Approximations for waiting time in  $G/G/1$  systems. *Queueing Systems Theory Appl.* 2 (1987), no. 4, 351-361. (U. Narayan Bhat) **89c:60106** 60K25 (90B22)
- Jagers, A. A. (with Broersma, H. J.) The unique 4-regular graphs on 14 and 15 vertices with diameter 2. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), C, 55-62. (Ortrud R. Oellermann) **89c:05164** 05C75
- (with van Doorn, Erik A.; de Wit, J. S. J.) A fluid reservoir regulated by a birth-death process. *Comm. Statist. Stochastic Models* 4 (1988), no. 3, 457-472. (Summary) **89j:90080** 90B05 (60J85)
- Jagers, Peter (with Odén, A.; Truelsen, L.) Post-stratification and ratio estimation: usages of auxiliary information in survey sampling and opinion polls. (French summary) *Internat. Statist. Rev.* 53 (1985), no. 3, 221-238. (Summary) **89b:62014** 62D05
- Post-stratification against bias in sampling. (French summary) *Internat. Statist. Rev.* 54 (1986), no. 2, 159-167. (Ashok Sahai) **89b:62015** 62D05
- Jaggard, Dwight L. (with Sun, Xiaoguang; Engheta, Nader) Canonical sources and duality in chiral media. *IEEE Trans. Antennas and Propagation* 36 (1988), no. 7, 1007-1013. (Y. Hayashi) **89f:78005** 78A25 (78A40)
- Jaggi, Beat (with Mani-Levitska, Peter; Sturmels, Bernd; White, Neil L.) Uniform oriented matroids without the isotopy property. *Discrete Comput. Geom.* 4 (1989), no. 2, 97-100. (András Recski) **89j:05028** 05B35
- Jaggi, C. K. (with Aggarwal, S. P.) Optimum inventory level with partial backlogging. *J. Inform. Optim. Sci.* 9 (1988), no. 3, 437-444. (Summary) **89b:90076** 90B05
- (with Aggarwal, S. P.) Ordering policy for decaying inventory. *Internat. J. Systems Sci.* 20 (1989), no. 1, 151-155. (Not in MR) 90B05
- Jahn, Johannes Parametric approximation problems arising in vector optimization. *J. Optim. Theory Appl.* 54 (1987), no. 3, 503-516. (Juan-Enrique Martínez-Legaz) **89c:90100** 90C31 (49A50, 49B27, 62H99)
- (with Krabs, W.) Applications of multicriteria optimization in approximation theory. *Multicriteria optimization in engineering and in the sciences*, 49-75, *Math. Concepts Methods Sci. Engrg.*, 37, Plenum, New York-London, 1988. (see **89f:90171**) 41A50 (41A63, 90C31)
- A generalization of a theorem of Arrow, Barankin, and Blackwell. *SIAM J. Control Optim.* 26 (1988), no. 5, 999-1005. (Laura Martein) **89b:90224** 90C31 (46N05)
- Jahn, K.-U. (with Bauch, Hartmut; Oelschlägel, Dieter; Süss, H.; Wiebigke, Volkmar) ★ Intervallmathematik. (German) [Interval mathematics] Theorie und Anwendungen. [Theory and applications] Mathematisch-Naturwissenschaftliche Bibliothek [Mathematical-Scientific Library], 72. *BSB B. G. Teubner Verlagsgesellschaft, Leipzig*, 1987. 260 pp. ISBN 3-322-00384-1 (Manfred W. Kracht) **89c:65061** 65G10 (65-02)
- Enclosure functions for the solutions of initial value problems. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics (Poznań, 1986)*, 71-75, Wydawn. Politech. Poznań, Poznań, 1987. (H. Ratschek) **89b:65111** 65L05 (34A45, 65G10)
- Jahnke, Hans Niels (with Seeger, Falk) Piaget und Selz: logische Strukturen versus Erkenntnisinstrumente. [Piaget and Selz: logical structures versus means of cognition] *Grundfragen der Entwicklung mathematischer Fähigkeiten (Osnabrück, 1985)*, 87-104, *IDM-Reihe*, 13, Aulis/Deubner, Cologne, 1986. (Charles F. Kielkopf) **89c:00050** 00A25 (92A25)
- el Jal, A. see El Jal, A.
- Jai, Zhao Jun A modified Lanczos method for approximating eigenvalues using residual matrices. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* 27 (1988), no. 1, 94-102. (Summary) **89b:65041** 65F15
- Jaillet, Patrick A priori solution of a traveling salesman problem in which a random subset of the customers are visited. *Oper. Res.* 36 (1988), no. 6, 929-936. (Summary) **89j:90114** 90B15 (90C35)
- Jalme Chaves, M. (with Astakhov, N. D.) ★ Некоторые задачи составления плана работ и алгоритмы их решения. (Russian) [Some problems on job scheduling and algorithms for their solution] Сообщения по Прикладной Математике. [Reports in Applied Mathematics] *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1988. 28 pp. (Knut Richter) **89c:90083** 90B35 (90C10)
- gutierrez Jáimez, Ramón see Gutiérrez Jáimez, Ramón
- Jain, Anjani (with Mamer, John W.) Approximations for the random minimal spanning tree with application to network provisioning. *Oper. Res.* 36 (1988), no. 4, 575-584. (Summary) **89b:90188** 90C27 (05C99, 68R10, 90B10)
- Jain, D. L. (with Sampath, C.) Some boundary value problems in electrostatics. *J. Math. Phys. Sci.* 22 (1988), no. 2, 259-266. (Not in MR) 78A30
- Jain, Deepak Raj (with Bali, Raj) A gravitationally nondegenerate cosmological model with expanding and shearing viscous fluid in general relativity. *Astrophys. and Space Sci.* 139 (1987), no. 1, 175-181. (Jorge A. Pullin) **89a:83010** 83C15
- (with Bali, Raj) Some expanding and shearing viscous fluid cosmological models in general relativity. *Astrophys. and Space Sci.* 141 (1988), no. 2, 207-216. (Dieter Lorenz-Petzel) **89d:83017** 83C15 (83C55)
- Jain, Hemant K. (with Javalgi, Rajshakar G.) Integrating multiple criteria decision making models into the decision support system framework for marketing decisions. Multiple criteria decision making. *Naval Res. Logist.* 35 (1988), no. 6, 575-596. (see **89j:90161**) 90A05 (90B50, 90C31)
- Jain, J. P. (with Prabhakaran, V. T.) Probability of inadmissible estimates of heritability from full-sib analysis under a general model of gene action. *Biometrical J.* 30 (1988), no. 1, 47-57. (Summary) **89d:62107** 62P10 (92A10)
- Jain, K. C. On a characterization of information gain. *Ganita Sandesh* 2 (1988), no. 1, 39-44. (Not in MR) 94A15
- Jain, Mahendra Kumar (with Hassan Salem, Zeinab) Numerical solution of singular boundary value problems. *J. Math. Phys. Sci.* 20 (1986), no. 4, 309-315. (L. F. Shampline) **89b:65118** 65L10
- A modification of the Stiefel-Bettis method for nonlinearly damped oscillators. *BIT* 28 (1988), no. 2, 302-307. (E. H. Twizell) **89c:65079** 65L05
- Jain, Naresh C. (with Baxter, John Robert) A comparison principle for large deviations. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1235-1240. (J. Hübler) **89b:60043** 60F10 (60B05)
- Jain, Nirmal (with Agrawal, M. C.) Predictive estimation in double sampling procedures. *Amer. Statist.* 42 (1988), no. 3, 184-186. (Not in MR) 62D05
- Jain, Pawan Kumar (with Ahuja, Om P.) On the spiral-likeness of rational functions. *Rend. Circ. Mat. Palermo* (2) 35 (1986), no. 3, 376-385 (1987). (Herb Silverman) **89b:30007** 30C45
- (with Ahmad, Khalil) Schauder decomposition and best approximation in Banach spaces. *Portugal. Math.* 44 (1987), no. 1, 25-39. (R. H. Lohman) **89a:46033** 46B15 (41A65)
- Jain, Priti (with Tuteja, R. K.) On a coding theorem connected with "useful" entropy of order  $\alpha$  and type  $\beta$ . *Kybernetika (Prague)* 23 (1987), no. 5, 420-427. (Alexander V. Gnedin) **89b:94014** 94A17 (94A15, 94A24)
- (with Tuteja, R. K.) On coding theorem connected with "useful" entropy of order  $\beta$ . *Internat. J. Math. Math. Sci.* 12 (1989), no. 1, 193-198. (Andrea Sgarro) **89c:94033** 94A29 (94A17, 94A24)
- Jain, R. K. (with Rajoriya, M. K.) Nonunique fixed points in orbitally complete metric spaces. *Pure Appl. Math. Sci.* 25 (1987), no. 1-2, 55-57. (I. A. Rus) **89c:54088** 54H25
- Jain, R. M. Finite integrals involving general class of polynomials and the multi-variable  $H$ -function. *Acta Cienc. Indica Math.* 13 (1987), no. 3, 129-136. (Rekha Srivastava) **89f:33008** 33A35 (26A42)
- Finite double integrals involving multivariable  $H$ -functions. *Pure Appl. Math. Sci.* 26 (1987), no. 1-2, 59-64. (K. M. Saxena) **89c:33009** 33A35
- Jain, Rajendra Kumar<sup>1</sup> (with Ganguly, Ashok) On the strong Perron summability of Fourier series and its conjugate series. *J. Indian Acad. Math.* 8 (1986), no. 1, 64-67. (Gokulananda Das) **89c:42014** 42A24
- (with Dixit, S. P.) A result on fixed points. *J. Sci. Res.* 9 (1987), no. 1, 45-46. (Summary) **89i:54053** 54H25
- (with Bohre, S. K.) Fixed points of orbitally continuous mappings. *Math. Ed. (Siwan)* 21 (1987), no. 4, 120-123. (Summary) **89c:54092** 54H25
- Jain, Rajendra Kumar<sup>2</sup> Properties of estimators in simple random sampling using auxiliary variable. (Italian summary) *Metron* 45 (1987), no. 1-2, 265-271. (Not in MR) 62D05
- Unequal sample size allocation to optimal design for binomial logistic models. *Statist. Hefte* 28 (1987), no. 4, 285-290. (Summary) **89j:62101** 62K05
- Jain, Rajinder Kumar Single step methods for general second order singular initial value problems with spherical symmetry. *BIT* 28 (1988), no. 4, 817-824. (H. Brunner) **89c:65083** 65L05
- (with Goel, Rakesh) Superstable single-step methods for second-order initial value problems. *J. Comput. Appl. Math.* 23 (1988), no. 1, 121-125. (Summary) **89b:65071** 65L05
- Sixth-order superstable two-step methods for second-order initial-value problems. *J. Comput. Appl. Math.* 24 (1988), no. 3, 393-397. (Not in MR) 65L05
- (with Kumar, Rajive<sup>2</sup>) A sixth-order modification of the Stiefel-Bettis method for nonlinearly damped oscillators. *Comput. Methods Appl. Mech. Engrg.* 72 (1989), no. 2, 187-193. (Summary) **89m:65068** 65L05 (70-08, 70K40)
- Jain, Ramesh (with Khan, Naseem A.) Uncertainty management in a distributed knowledge based system. (Russian summary) *Comput. Artificial Intelligence* 7 (1988), no. 6, 543-564. (Not in MR) 68T05 (68T30, 90B50, 90C31)
- Jain, Sanjay Conformally invariant field theory in two dimensions and strings in curved spacetime. *Internat. J. Modern Phys. A* 3 (1988), no. 8, 1759-1846. (Ömer Oguz) **89i:81094** 81E20 (17B65, 81-02, 81E30)
- Jain, Satish K. Characterization of monotonicity and neutrality for binary Paretian social decision rules. *Math. Social Sci.* 15 (1988), no. 3, 307-312. (Andrzej Wiecek) **89j:90019** 90A08
- Jain, Sudha Robustness of the  $D$ -optimal design. (Italian summary) *Metron* 45 (1987), no. 1-2, 187-192. (Not in MR) 62K05
- (with Vignaux, G. A.) An approximate inventory model based on dimensional analysis. *Asia-Pacific J. Oper. Res.* 5 (1988), no. 2, 117-123. (Summary) **89c:90049** 90B05
- (with Templeton, J. G. C.) Statistical inference for  $G/M/1$  queueing system. *Oper. Res. Lett.* 7 (1988), no. 6, 309-313. (Summary) **89j:90125** 90B22 (60K25, 62M02)
- Jain, Surender Kumar (with Luh, Jiang; Zimmermann-Huisgen, B.) Finite uniserial rings of prime characteristic. *Comm. Algebra* 16 (1988), no. 10, 2133-2135. (S. S. Page) **89c:16024** 16A35
- (with Berman, Abraham) Nonnegative generalized inverses of powers of nonnegative matrices. Proceedings of the Victoria Conference on Combinatorial Matrix Analysis (Victoria, BC, 1987). *Linear Algebra Appl.* 107 (1988), 169-179. (Anna Lee) **89c:15006** 15A09 (15A48)
- (with López-Permouth, S. R.) A generalization of the Wedderburn-Artin theorem. *Proc. Amer. Math. Soc.* 106 (1989), no. 1, 19-23. (S. S. Page) **89i:16013** 16A36 (16A48)
- Jain, Sushma (with Dayal, Saheb) Pseudonorm topology on the space of continuous multilinear operators on linear topological spaces. *Indian J. Pure Appl. Math.* 18 (1987), no. 12, 1094-1102. (Deeb Hussein) **89d:46006** 46A32 (46M99)
- Jain, Vinod Kumar (with Verma, Arun) Some quadratic transformations of basic hypergeometric series and identities in Ramanujan's "lost" notebook. *Indian J. Pure Appl. Math.* 19 (1988), no. 8, 768-785. (W. A. Al-Salam) **89i:30022** 33A70 (05A30)
- Ja'Ja', Joseph (with Owens, Robert Michael) Optimal algorithms for mesh-connected parallel processors with serial memories. *Advances in computing research*, Vol. 4, 103-115, *JAI, Greenwich, CT*, 1987. (Dirk Janssens) **89b:68043** 68Q10 (68Q25)
- (with Kosaraju, S. Rao) Parallel algorithms for planar graph isomorphism and related problems. *IEEE Trans. Circuits and Systems* 35 (1988), no. 3, 304-311. (Narsingh Deo) **89c:68026** 68Q25 (05C10, 68R10)
- Jajodia, Sushil (with Mutchler, David) A pessimistic consistency control algorithm for replicated files which achieves high availability. *IEEE Trans. Software Engrg.* 15 (1989), no. 1, 39-46. (Not in MR) 68P15 (68M10)
- Jakes, Jaromir A numerical method of fitting a multiparameter nonlinear function to experimental data in the  $L_1$  norm. (Russian and Czech summaries) *Appl. Mat.* 33 (1988), no. 3, 161-170. (Summary) **89d:65015** 65D10 (65K05)

- Jakimavičius, Dainius** (with Statulevičius, Vytautas) Estimates for the cumulants and centered moments of random processes with intermixing. I. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **28** (1988), no. 1, 112–129; translated in *Lithuanian Math. J.* **28** (1988), no. 1, 67–80. (Zheng Yan Lin) **89g:60130** 60G05 (60F10)
- (with Statulevičius, Vytautas) Estimates for cumulants and centered moments of mixing random processes. II. (Russian) *Litovsk. Mat. Sb.* **28** (1988), no. 2, 360–375; translated in *Lithuanian Math. J.* **28** (1988), no. 2, 179–190. (Zheng Yan Lin) **89k:60021** 60E15 (60F10)
- Jakimovski, A.** (with Meyer-König, W.; Zeller, K.) Refined Tauberian gap theorems for power series methods of summability. *Rocky Mountain J. Math.* **17** (1987), no. 2, 355–369. (M. S. Rangachari) **89b:40005** 40E15 (40G10)
- Jakóbczak, Piotr** The local boundary regularity of the solution of the  $\bar{\partial}$ -equation. *Ann. Polon. Math.* **48** (1988), no. 1, 71–90. (Makhlof Derridj) **89e:32024** 32F20 (35N15)
- Jakóbczyk, L.** (with Strocchi, F.) Krein structures for Wightman and Schwinger functions. *J. Math. Phys.* **29** (1988), no. 5, 1231–1235. (Wolfgang Lücke) **89e:81076** 81E05 (46N05, 81E08, 81K05)
- (with Frydryszak, A.) Generalized Gelfand-Naimark-Segal construction for supersymmetric quantum mechanics. *Lett. Math. Phys.* **16** (1988), no. 2, 101–107. (Alan L. Carey) **89m:81081** 81D99 (46K10)
- Jakóbczski, Jan** Uniqueness of an extensibility of an affine plane into a Minkowski plane. *Zeszyty Nauk. Geom.* **16** (1987), 39–48. (B. Klotzek) **89a:51012** 51B20
- Jakobsche, W.** Local connectivity of spaces of finite group actions on 3-manifolds. *Topology Appl.* **25** (1987), no. 1, 13–23. (Summary) **89g:57013** 57N10 (57S17, 57S25)
- Jakobsen, Hans Plesner** (with Kac, Victor G.) A new class of unitarizable highest weight representations of infinite-dimensional Lie algebras. II. *J. Funct. Anal.* **82** (1989), no. 1, 69–90. (Andrew Pressley) **89m:17032** 17B65
- Jakobsen, Ivan Taffenberg** *see* Graph theory in memory of G. A. Dirac, **89g:05004**
- Jakobsen, Gabriel** ★ Soviet artificial intelligence research. The Tallinn Institute of Cybernetics. With a foreword by Raoul Smith. Monograph Series on Soviet Union. *Delphic Associates, Falls Church, VA*, 1985. vii+102 pp. (Hans-Joachim Goltz) **89k:68126** 68T01 (01A60, 01A72, 68T20, 68T30, 92A25)
- Jakobson, M. V.** *see* Yakobson, M. V.
- Jakševičius, Sėrūnas** Estimation of the derivatives of a composite function. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 2, 394–412. (A. A. Martynuk) **89a:26024** 26D10 (65D25)
- Jakubczyk, B.** Hamiltonian realizations of nonlinear systems. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 261–271, North-Holland, Amsterdam-New York, 1986. (Summary) **89k:93037** 93B15 (58F05, 93C10)
- Existence of global analytic realizations of nonlinear casual operators. (Russian summary) *Bull. Polish Acad. Sci. Math.* **34** (1986), no. 11–12, 729–735 (1987). (Summary) **89g:93015** 93B15 (47B38)
- Existence of Hamiltonian realizations of nonlinear casual operators. (Russian summary) *Bull. Polish Acad. Sci. Math.* **34** (1986), no. 11–12, 737–747 (1987). (Summary) **89g:93016** 93B15 (47B38)
- Feedback linearization of discrete-time systems. *Systems Control Lett.* **9** (1987), no. 5, 411–416. (Eduardo D. Sontag) **89g:93020** 93B17 (93B05, 93C05, 93C55)
- Jakubi, Alejandro S.** (with Chimento, Luis P.) How to get Casimir effect and trace anomaly results without use of regularization. *SILARG, VI (Rio de Janeiro, 1987)*, 196–207, *World Sci. Publishing, Singapore*, 1988. (Summary) **89e:81103** 81E15 (83C47)
- Jakubiec, Andrzej** (with Kijowski, Jerzy) On theories of gravitation with nonlinear Lagrangians. *Phys. Rev. D* (3) **37** (1988), no. 6, 1406–1409. (R. J. McKellar) **89e:83056** 83D05 (83C05)
- Jakubík, Ján** (with Pringerová, Gabriela) Representations of cyclically ordered groups. (Russian and Slovak summaries) *Časopis Pěst. Mat.* **113** (1988), no. 2, 184–196. (V. Novák) **89f:06028** 06F15
- On summability in convergence I-groups. (Russian and Slovak summaries) *Časopis Pěst. Mat.* **113** (1988), no. 3, 286–292. (S. J. Bernau) **89i:06027** 06F20 (06F15, 40J05)
- Closure operators on the lattice of radical classes of lattice ordered groups. *Czechoslovak Math. J.* **38** (113) (1988), no. 1, 71–77. (Michael Darnel) **89b:06012** 06F15
- Unequivocal linearly ordered groups. *Czechoslovak Math. J.* **38** (113) (1988), no. 2, 245–255. (R. H. Redfield) **89f:06033** 06F20 (08C99)
- $K$ -radical classes of abelian linearly ordered groups. (Russian summary) *Math. Slovaca* **38** (1988), no. 1, 33–44. (R. H. Redfield) **89f:06034** 06F20 (08C99)
- On direct product decompositions of directed sets. (Russian summary) *Math. Slovaca* **38** (1988), no. 1, 45–49. (Joel Berman) **89i:06004** 06A10 (08A30)
- Weak isometries of lattice ordered groups. (Russian summary) *Math. Slovaca* **38** (1988), no. 2, 133–138. (B. Šmarda) **89f:06029** 06F15
- Jakubíková-Studenovská, Danica** On completions of partial monounary algebras. *Czechoslovak Math. J.* **38** (113) (1988), no. 2, 256–268. (Ana Pasztor) **89i:08005** 08A55 (08A60)
- Jakubowicz, A.** On Otsuki- and Norden-endomorphisms connected with derivation of tensor spaces. *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 587–594, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (J. R. Vanstone) **89e:53022** 53B05 (15A69)
- Jakubowska, Matylda** One-dimensional initial-boundary value problem for a semispace in thermoelasticity with two relaxation times. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* **33** (1985), no. 5–6, 205–216. (Summary) **89b:73038** 73U05 (73C25)
- Jakubowski, Adam** On the Skorokhod topology. (French summary) *Ann. Inst. H. Poincaré Probab. Statist.* **22** (1986), no. 3, 263–285. (Nguyễn Duy Tiễn) **89a:60008** 60B05 (60F17, 60G05)
- Tightness criteria for random measures with application to the principle of conditioning in Hilbert spaces. *Probab. Math. Statist.* **9** (1988), no. 1, 95–114. (Evarist Giné) **89b:60003** 60B10 (60B12, 60G57)
- A note on the invariance principle for stationary  $\phi$ -mixing sequences: tightness via stopping times. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 5, 407–412. (Vladimir Mazalov) **89m:60075** 60F17 (60F05, 60G40)
- Jakubowski, Jacek** *see* Fomin, S. V. et al., **89e:28023**
- Jakubowski, Ryszard** A self-learning system for structural recognition of complex shapes. (Polish summary) *Podstawy Sterowania* **17** (1987), no. 1–2, 3–33. (Menachem Dishon) **89j:68129** 68T05 (68T10)
- Jakubowski, Z. J.** (with Majchrzak, W.; Szwankowski, A.) On some extremal problem in the class  $S$  of functions holomorphic and univalent in the unit disc. (Russian and Polish summaries) *Proceedings of the 9th Conference on Analytic Functions* (Lublin, 1986). *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **40** (1986), 63–78 (1987). (John G. Milcetic) **89e:30033** 30C50
- garcia de Jalon, Javier** *see* Garcia de Jalon, Javier
- Jambu, Michel Yves** Arrangements d'hyperplans. I. Les groupes de réflexions. (English summary) [Arrangements of hyperplanes. I. Reflection groups] *Ann. Sci. Math. Québec* **12** (1988), no. 1, 73–99. (P. Orlik) **89f:32022** 32C40 (20F36, 20H15, 57Q45)
- Algèbre d'holonomie de Lie et certaines fibrations topologiques. (English summary) [Holonomy Lie algebra and some topological fibrations] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 12, 479–482. (Toshitake Kohno) **89j:32018** 32C40 (20F14, 57R22)
- Sur l'algèbre d'Orlik-Solomon. (English summary) [On the algebra of Orlik-Solomon] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 3, 125–128. (Hiroaki Terao) **89f:32023** 32C40 (05B35, 14F40, 32B30)
- Jameel, M.** Quasilinearisation and three-dimensional oscillators. *J. Phys. A* **21** (1988), no. 7, 1719–1723. (Jing Shang Zhang) **89h:81038** 81C15
- James, A. T.** (with Wiskich, J. T.; Conyers, R. A. J.) Statistical modelling of mitochondrial power supply. *J. Math. Biol.* **27** (1989), no. 1, 29–48. (Summary) **89k:92018** 92A09
- James, Barry** (with James, Kang Ling; Siegmund, David) Conditional boundary crossing probabilities, with applications to change-point problems. *Ann. Probab.* **16** (1988), no. 2, 825–839. (K. F. Yu) **89b:60070** 60F10 (60J15, 62F03)
- James, Donald G.** Diagonalizable indefinite integral quadratic forms. *Acta Arith.* **50** (1988), no. 3, 309–314. (J. S. Hsia) **89j:11031** 11E12 (11D09)
- Representations of anisotropic unitary groups. *Trans. Amer. Math. Soc.* **306** (1988), no. 2, 791–804. (A. A. Bondarenko) **89f:11062** 11E57 (11E10, 20G05)
- Even quadratic forms with cube-free discriminant. *Proc. Amer. Math. Soc.* **106** (1989), no. 1, 73–79. (A. G. Earnest) **89j:11032** 11E12
- *see also* Classical groups and related topics, **89h:20002**
- James, Gordon** The representation theory of the symmetric groups. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 111–126, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (A. O. Morris) **89e:20030** 20C30
- Permanents, immanants, and determinants. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 431–436, *Proc. Sympos. Pure Math.*, 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (H. Mine) **89g:15008** 15A15 (20C30)
- James, I. M.** ★ Topological and uniform spaces. Undergraduate Texts in Mathematics. Springer-Verlag, New York-Berlin, 1987. x+163 pp. ISBN 0-387-96466-5 (Ivan L. Reilly) **89b:54001** 54-01 (54A05, 54E15)
- James, Kang Ling** (with James, Barry; Siegmund, David) Conditional boundary crossing probabilities, with applications to change-point problems. *Ann. Probab.* **16** (1988), no. 2, 825–839. (K. F. Yu) **89b:60070** 60F10 (60J15, 62F03)
- James, Lynne D.** Complexes and Coxeter groups—operations and outer automorphisms. *J. Algebra* **113** (1988), no. 2, 339–345. (David Singerman) **89m:20055** 20F28 (05C10, 57M15)
- James, M. R.** (with Baras, J. S.) An observer design for nonlinear control systems. *Analysis and optimization of systems* (Antibes, 1988), 170–180, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89e:93026** 93B07 (93C10)
- (with Baras, J. S.; Bensoussan, A.) Dynamic observers as asymptotic limits of recursive filters: special cases. *SIAM J. Appl. Math.* **48** (1988), no. 5, 1147–1158. (Joseph D. Cole) **89j:93010** 93B07 (93E10)
- (with Baras, J. S.) Nonlinear filtering and large deviations: a PDE-control theoretic approach. *Stochastics* **23** (1988), no. 3, 391–412. (Shin'ichi Aihara) **89m:93082** 93E11 (49C20, 60F10, 60G35)
- James, N. S.** (with Lidl, R.) Permutation polynomials on matrices. *Linear Algebra Appl.* **96** (1987), 181–190. (John H. Hodges) **89e:11077** 11T06 (15A33)
- James, R. D.** *see* James, Richard Dana
- James, R. W.** *see* James, Ronald William
- James, Richard Dana** (with Ball, J. M.) Fine phase mixtures as minimizers of energy. *Arch. Rational Mech. Anal.* **100** (1987), no. 1, 13–52. (Renuka Datta) **89e:80005** 80A15 (58E30, 73B30)
- James, Ronald William** (with Ivers, D. J.) Antidynamo theorems for nonradial flows. *Geophys. Astrophys. Fluid Dynamics* **40** (1988), no. 1–2, 147–163. (A. Pozzi) **89c:76116** 76W05
- James, T. G. H.** *see* Robins, Gay, **89a:01005**
- Jamerson, Antony** (with Venkatakrishnan, V.) Computation of unsteady transonic flows by the solution of Euler equations. *AIAA J.* **26** (1988), no. 8, 974–981. (Summary) **89i:76066** 76H05 (76-08)
- Computational transonics. *Comm. Pure Appl. Math.* **41** (1988), no. 5, 507–549. (Shijun Luo) **89k:76068** 76H05 (76L05, 76N10)
- Jamerson, Donald A.** (with Casey, Richard M.) Parallel and vector processing in landscape dynamics. *Appl. Math. Comput.* **27** (1988), no. 1, 3–22. (Summary) **89b:68155** 68U20 (68Q10, 90A30, 92A17)
- Jamerson, G. J. O.** ★ Summing and nuclear norms in Banach space theory. London Mathematical Society Student Texts, 8. Cambridge University Press, Cambridge-New York, 1987. xii+174 pp. ISBN 0-521-34134-5; 0-521-34937-0 (M. S. Ramanujan) **89c:46020** 46B20 (46Exx, 46M05, 47B10)
- Jamieson, M. J.** Acceleration techniques applied to some sequences of continued fractions. *Bull. Inst. Math. Appl.* **24** (1988), no. 3–4, 56–57. (Claude Brezinski) **89i:65004** 65B99 (40A15)
- Rapidly converging iterative formulae for finding square roots and their computational efficiencies. *Comput. J.* **32** (1989), no. 1, 93–94. (Summary) **89k:65063** 65H05
- Jamieson, S. M.** (with Sloan, D. M.) A Petrov-Galerkin method and boundary approximations for hyperbolic initial boundary-value problems. *Numer. Methods Partial Differential Equations* **2** (1986), no. 4, 299–316. (P. Bontoux) **89e:65112** 65N20 (65M10, 76-08)
- Jamiolkowski, Andrzej** Open quantum Markovian systems and their reconstructibility. *Proceedings of the conference on ergodic theory and related topics, II* (Geiranger, 1986), 83–86, *Teubner-Texte Math.*, 94, Teubner, Leipzig, 1987. (S. K. Srinivasan) **89d:82031** 82A15 (60J99, 81B05, 81K05)



- Jamison, Beverly** (with Olariu, Stephan) On the semi-perfect elimination. *Adv. in Appl. Math.* 9 (1988), no. 3, 364–376. (Mukka S. Krishnamoorthy) **89c:05169** 05C75 (90B10)
- Jamison, J. E.** (with Greim, P.) Hilbert spaces have the strong Banach-Stone property for Bochner spaces. *Math. Z.* 196 (1987), no. 4, 511–515. (Autorreferat (Zbl 618:46040)) **89m:46071** 46E40 (46C99)
- (with Lin, Pei-Kee) A result on Hermitian operators. *Glasgow Math. J.* 31 (1989), no. 1, 71–72. (From the introduction) **89m:47017** 47B15 (46C99)
- Jamison, Robert E.** (with Farber, Martin) On local convexity in graphs. *Discrete Math.* 66 (1987), no. 3, 231–247. (Henry Martyn Mulder) **89c:05167** 05C75
- Alternating Whitney sums and matchings in trees. I. *Discrete Math.* 67 (1987), no. 2, 177–189. (D. J. Kleitman) **89a:05054** 05C05 (05C70)
- On the null-homotopy of bridged graphs. *European J. Combin.* 8 (1987), no. 4, 421–428. (Henry Martyn Mulder) **89c:05153** 05C99
- (with Turner, Craig M.; Rowley, Ray; Laskar, R.) The edge achromatic number of small complete graphs. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 21–36. (H. Joseph Straight) **89i:05122** 05C15
- Jamjoom, Fatma B.** (with Zaheer, N.) A coincidence theorem for symmetric multilinear forms. *J. Math. Anal. Appl.* 130 (1988), no. 1, 171–190. (M. Marden) **89g:30010** 30C15 (15A69, 46N05)
- (with Zaheer, N.) On Hörmander's ratio theorems. *Proc. Amer. Math. Soc.* 102 (1988), no. 2, 311–316. (Doru Ștefănescu) **89c:30005** 30C15 (12D10)
- Jammalamadaka, S. Rao** (with Tiwari, Ram C.) Efficiencies of some disjoint spacings tests relative to a  $\chi^2$  test. *New perspectives in theoretical and applied statistics (Bilbao, 1986)*, 311–317. *Wiley Ser. Probab. Math. Statist.: Probab. Math. Statist.*, Wiley, New York, 1987. (André Antille) **89a:62109** 62G10
- (with Tiwari, Ram C.; Chib, Siddhartha) Bayes prediction in the linear model with spherically symmetric errors. *Econom. Lett.* 24 (1987), no. 1, 39–44. (Summary) **89g:62047** 62F15 (62J05)
- (with Chib, Siddhartha; Tiwari, Ram C.) Bayes prediction in regressions with elliptical errors. *J. Econometrics* 38 (1988), no. 3, 349–360. (R. W. Farebrother) **89j:62144** 62P20 (62J05)
- Jamnik, Peter** Securing the RSA-cryptosystem against cycling attacks. *Cryptologia* 12 (1988), no. 3, 159–164. (Thomas Beth) **89c:94047** 94A60 (11T71, 68P25)
- Jamshidi, M.** (with Malek-Zavarei, Manu) ★ Time-delay systems. Analysis, optimization and applications. North-Holland Systems and Control Series, 9. North-Holland Publishing Co., Amsterdam-New York, 1987. xvi+504 pp. ISBN 0-444-70204-0 (Jozef Komornik) **89h:49001** 49-02 (34K05, 34K35, 93-02)
- see also Li, Tsun Hseng S., **89g:93068** and Rotella, F., **89j:93085**
- Jamshidian, Mortaza** (with Jennrich, Robert I.) Nonorthogonal analysis of variance using gradient methods. *J. Amer. Statist. Assoc.* 83 (1988), no. 402, 483–489. (Not in MR) **62J10**
- Jamwal, Dalip Singh** (with Deo, Satya; Krishan, Ram) Cohomology with exotic supports and the generalized excision. *J. Austral. Math. Soc. Ser. A* 45 (1988), no. 3, 326–340. (Donald M. Davis) **89h:55010** 55N30 (55N40)
- Jan, Jinn-Ke** see Chan, Chin K'o
- Jan, Jiri** Recursive algorithms for solving systems of nonlinear equations. (Russian and Czech summaries) *Apl. Mat.* 34 (1989), no. 1, 33–45. (Summary) **89m:65054** 65H10 (58F08)
- Jan, Naeem** (with Poole, Peter H.; Coniglio, Antonio; Stanley, H. E.) Universality classes of the  $\theta$  and  $\theta'$  points. *Phys. Rev. B* (3) 39 (1989), no. 1, 495–504. (Summary) **89j:82054** 82A51 (82-04, 82A25, 82A41)
- Je Jan, Y.** see Le Jan, Y.
- Jan, Yih-Jen** (with Wang, Mao Ling; Chang, Jung Yü) Analysis and parameter identification of time-delay linear systems via generalized orthogonal polynomials. *Internat. J. Systems Sci.* 18 (1987), no. 9, 1645–1658. (Summary) **89d:93038** 93B30 (34K35, 93B25, 93C05)
- Jana, Rabindra Nath** (with Datta, Nanigopal) Flow and heat transfer in an elastico-viscous liquid over an oscillating plate in a rotating frame. (Turkish summary) *Istanbul Üniv. Fen Fak. Mecm. Ser. A* 43 (1978), 121–130 (1987). (Ajit Kumar Sharma) **89i:76021** 76A10 (76U05, 80A20)
- al-Janabi, A. Samee A. R.** see Al-Janabi, A. Samee A. R.
- Janardan, K. G.** Relationship between Morisita's model for estimating the environmental density and the generalized Eulerian numbers. *Ann. Inst. Statist. Math.* 40 (1988), no. 3, 439–450. (Summary) **89i:92068** 92A17 (62E10)
- Janardhan, Ravi** (with Frederickson, Greg N.) Space-efficient and fault-tolerant message routing in outerplanar networks. *IEEE Trans. Comput.* 37 (1988), no. 12, 1529–1540. (Summary) **89i:68118** 68R10 (68M10, 68Q25)
- Janas, Jan** Remarks on similarity and quasisimilarity of operators. *Colloq. Math.* 55 (1988), no. 1, 123–129. (Gerhard Garske) **89h:47019** 47A55 (47A05, 47A10, 47B20)
- Inductive limit of operators and its applications. *Studia Math.* 90 (1988), no. 2, 87–102. (P. Aiena) **89m:47001** 47A10 (47B10, 47B15, 47B20)
- Janati-Idrissi, M.** (with Youlal, H.; Najim, M.) Convergence properties of 2D adaptive gradient lattice algorithms. (French summary) *RAIRO Automat.-Prod. Inform. Ind.* 22 (1988), no. 1, 83–98. (Not in MR) 49D07 (93C55)
- Janc, Mirko** Nearly farthest points in normed linear spaces. (Serbo-Croatian summary) *Mat. Vesnik* 39 (1987), no. 3, 309–314. (C. Franchetti) **89c:46021** 46B20 (41A65)
- Janičauskas, Rimantas** (with Švitra, Donatas) A mathematical model for the biocenosis of a reservoir-cooler. (Russian, English and Lithuanian summaries) *Mathematical models in biology and medicine*, No. 2 (Russian), 66–89, 189, *Ad. Nauk Litovsk. SSR, Inst. Mat. i Kibernet.*, Vilnius, 1987. (Summary) **89a:92064** 92A17
- Jancovici, Bernard** (with Cornu, Françoise) On the two-dimensional Coulomb gas. *J. Statist. Phys.* 49 (1987), no. 1–2, 33–56. (Nicolae Angelescu) **89d:82113** 82A67
- (with Cornu, Françoise; Blum, Lesser) The two-dimensional one-component plasma in a doubly periodic background: exact results. *J. Statist. Phys.* 50 (1988), no. 5–6, 1221–1243. (W. I. Skrypnik) **89i:82056** 82A45 (82A05)
- Janlyn, E.** (with Švitra, Donatas) Investigation of some mathematical models for the dynamics of the level of thyroid hormones. (Russian, English and Lithuanian summaries) *Litovsk. Mat. Sb.* 28 (1988), no. 1, 170–180. (János Tóth) **89i:34100** 34K15 (92A09)
- Janecki, Dariusz** Parameter convergence of adaptive control algorithms for plants with purely deterministic disturbances. (Russian and Polish summaries) *Control Cybernet.* 17 (1988), no. 1, 45–63. (M. Spathopoulos) **89k:93080** 93B40 (65K99, 93C40)
- Model reference adaptive control using delta operator. *IEEE Trans. Automat. Control* 33 (1988), no. 8, 771–775. (Not in MR) 93C40 (93B28)
- Stability analysis of Elliott's direct adaptive pole placement. *Systems Control Lett.* 11 (1988), no. 1, 19–26. (Andrzej W. Olbrot) **89m:93030** 93B50 (93B55, 93C40)
- Janeček, Stanislav** (with Žoládek, Henryk) On singular images of Lagrangian submanifolds. (Russian summary) *Bull. Polish Acad. Sci. Math.* 34 (1986), no. 3–4, 215–224. (Ya. M. Eliashberg) **89a:58041** 58F05 (32B30, 58C27)
- Singularities in the geometry of an obstacle. Proceedings of the Winter School on Geometry and Physics (Srní, 1987). *Rend. Circ. Mat. Palermo (2) Suppl.* No. 16 (1987), 71–84. (Vesselin M. Petkov) **89k:58038** 58C27 (58G17)
- Deformations for singular Lagrangian submanifolds. *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 595–622, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (D. R. J. Chillingworth) **89m:58024** 58C27 (58F05, 70H99, 78A05)
- (with Kowalczyk, Adam) Isotropic varieties in the singular symplectic geometry. *Bull. Austral. Math. Soc.* 38 (1988), no. 2, 161–169. (I. Vaisman) **89m:58025** 58C27 (57R45, 58F05)
- Janeva, B.** (with Celakoski, N.) Vector-valued associates. *Proceedings of the Conference "Algebra and Logic"*, Cetinje 1986, 15–21, *Univ. Novi Sad, Novi Sad*, 1987. (B. Pondělčič) **89f:20083** 20N15
- (with Cupona, G.; Markovski, S.) Post theorem for vector-valued semigroups. *Proceedings of the Conference "Algebra and Logic"*, Cetinje 1986, 33–46, *Univ. Novi Sad, Novi Sad*, 1987. (Wiesław A. Dudek) **89e:20125** 20N15
- Jang, Joong Soon** (with Bai, Do Sun; Kim, Myung Soo) Efficient sequential estimation in a compound Poisson process. *J. Korean Statist. Soc.* 15 (1986), no. 2, 87–96. (René Flaviigny) **89a:62181** 62L12 (62M05)
- Jang, Sun Young** Classifying the extension of  $C^*$ -algebra. (Korean summary) *Univ. Ulsan Rep. Natur. Sci. Engr.* 17 (1986), no. 2, 203–208. (H. Schröder (Zbl 628:46060)) **89h:46099** 46L80 (46L05)
- On the stability of AF  $C^*$ -algebra. (Korean summary) *Univ. Ulsan Rep. Natur. Sci. Engr.* 18 (1987), no. 1, 47–49. (G. A. Elliott) **89j:46068** 46L80 (19K14)
- Jani, Mahendra** (with Hastings, Harold M.) Covering maps in  $\text{Top}^R$ . *Geometric topology and shape theory (Dubrovnik, 1986)*, 115–124, *Lecture Notes in Math.*, 1283, Springer, Berlin-New York, 1987. (Andrzej Kozłowski) **89a:55019** 55P55
- Jani, P. N.** The generalized logarithmic series distribution with zeroes. *J. Indian Soc. Agricultural Statist.* 38 (1986), no. 3, 345–351. (Summary) **89g:62025** 62E15 (62F10)
- The generalized Poisson distribution with zeroes. *Aligarh J. Statist.* 7 (1987), 23–30. (Summary) **89h:62042** 62E15 (62F10)
- Minimum variance unbiased estimation of reliability and its variance in exponential life model under censorings. *Calcutta Statist. Assoc. Bull.* 36 (1987), no. 143–144, 185–188. (Not in MR) 62F10
- Janiak, Adam** Time-optimal control of a sequence of projects of activities. *Systems Anal. Modelling Simulation* 4 (1987), no. 1, 43–52. (Summary) **89d:90118** 90B35 (49D45, 90B30)
- Minimization of the maximum tardiness in one-machine scheduling problem subject to precedence and resource constraints. *Systems Anal. Modelling Simulation* 4 (1987), no. 6, 549–556. (Summary) **89a:90070** 90B35
- Janiak, Teresa** (with Luczak-Kumorek, Elżbieta) The Bogolyubov's type theorem for functional-differential equations of neutral type. *Differential equations and optimal control (Zagat, 1985)*, 43–49, *Higher College Engrg., Zielona Góra*, 1986. (J. Jarník) **89f:34103** 34K15 (34A60, 34C29)
- (with Luczak-Kumorek, Elżbieta) The Filippov's type theorem for functional-differential equations of neutral type. *Discuss. Math.* 8 (1986), 79–83 (1987). (Qichang Huang) **89c:34108** 34K05 (34A60)
- (with Hadžić, O.) Some fixed point theorems for multivalued mappings in Banach spaces and their applications. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 16 (1986), no. 1, 27–43. (P. P. Zabrejko) **89m:47049** 47H10
- (with Luczak-Kumorek, Elżbieta) A theorem on partial middling for functional-differential equations of the neutral type. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 16 (1986), no. 2, 107–119. (Summary) **89d:34108** 34K05 (34A60, 34C29)
- An existence result for functional inclusions. *Differential equations and optimal control (Zagat, 1986)*, 14–16, *Higher College Engrg., Zielona Góra*, 1987. (see **89c:34002**) 34A60
- Janicka-Żuk, Irena** Strong amalgamation property of diagonalizable algebras. *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* 12 (1983), no. 3, 105–110. (Summary) **89g:03095** 03G25
- Janicki, Ryszard** A formal semantics for concurrent systems with a priority relation. *Acta Inform.* 24 (1987), no. 1, 33–55. (Rüdiger Valk) **89h:68044** 68Q10 (68Q55, 68Q60, 68Q90)
- Janicki, Sławomir** Direct sum of stochastic automata. (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 1–2, 117–131. (A. Paz) **89a:68164** 68Q75 (60J20)
- Janiga, Ladislav** (with Hromkovič, Juraj; Koubek, Václav) On automata with variable number of heads. Proceedings of the Fifth International Meeting of Young Computer Scientists (Smolenice Castle, 1988). *Tanulmányok—MTA Számítástech. Automat. Kutató Int. Budapest No.* 208 (1988), 145–152. (see **89g:68002**) 68Q05
- Janik, Tadeusz J.** The effect of quadrature errors on the finite element solution of some nonlinear elliptic problems. *Demonstratio Math.* 19 (1986), no. 4, 1023–1039 (1987). (M. Zlámal) **89f:65125** 65N30
- The effect of numerical integration in finite element methods for solving quasilinear parabolic equations. *Demonstratio Math.* 20 (1987), no. 3–4, 567–582 (1988). (Georges A. Lebaud) **89h:65179** 65N30
- Janiszowski, K.** (with Kortmann, M.; Unbehauen, H.) Application and comparison of different identification schemes under industrial conditions. *Internat. J. Control* 48 (1988), no. 6, 2275–2296. (Not in MR) 93C75 (93B30, 93E12)
- Janjčić, Milan** A note on the commutativity of rings. (Serbo-Croatian summary) *Rad. Mat.* 3 (1987), no. 2, 179–184. (Howard E. Bell) **89a:16045** 16A70

- (with Psomopoulos, Evangelos) Commutativity of  $n$ -torsion-free rings with commuting powers. *Resulante Math.* 13 (1988), no. 1-2, 135-136. (A. Yagub) **89c:16047** 16A70
- Jank, Walther** (with Weiß, Gunter) Spezielle erzeugendentreue Isometrien torsaler und windschiefer Flächen; ein Bericht. (English summary) [Special generator-conformal isometries of torsal and skew surfaces; a report] *Proceedings of the Congress of Geometry (Thessaloniki, 1987)*, 241-245, Aristotle Univ. Thessaloniki, Thessaloniki, 1988. (Josef Vala) **89h:53042** 53A25
- Janke, Wolfhard** (with Kleinert, H.) Self-avoiding random loops versus Ising model in three dimensions. *Phys. Lett. A* 128 (1988), no. 9, 463-469. (Summary) **89c:82069** 82A68 (82-04, 82A41)
- Jankó, Béla** On a unified theory of iteration methods for solving nonlinear operator equations. II. *Ann. Univ. Sci. Budapest. Sect. Comput.* 6 (1985), 183-189 (1987). (W. C. Rheinboldt) **89h:47102** 47H17 (58C15, 65J15)
- Janko, Wolfgang H.** (with Feuer, Reinhard) Eine Studie zur Beurteilung der sprachlichen Eignung der Programmiersprachen BASIC, PASCAL, APL, APL2, LISP und PROLOG zur Programmierung regelbasierter Systeme. [A study to assess the linguistic suitability of the programming languages BASIC, PASCAL, APL, APL2, LISP and PROLOG for the programming of rule-based systems] *Ökonomie und Mathematik*, 355-364, Springer, Berlin-New York, 1987. (see **89j:90002**) 68T25
- Janková, Katarina** On the stability of chaotic functions. (Russian and Slovak summaries) *Časopis Pěst. Mat.* 112 (1987), no. 4, 351-354. (Jaroslav Smital) **89c:26002** 26A18 (58F13)
- Janković, D. S.** (with Reilly, L. I.; Vamanamurthy, M. K.) On strongly compact topological spaces. *Questions Answers Gen. Topology* 6 (1988), no. 1, 29-40. (Olav Njåstad) **89c:54052** 54D30 (54A10)
- Jankovic, M. S.** Analytical solutions for the  $n$ th derivatives of eigenvalues and eigenvectors for a nonlinear eigenvalue problem. *AIJAA J.* 26 (1988), no. 2, 204-205. (Alan L. Andrew) **89h:65038** 65F15 (15A18, 15A54)
- Janković, Slobodan** Splitting random numbers in Monte-Carlo method. (Serbo-Croatian summary) *Zb. Rad. No. 2* (1988), 79-82. (B. L. Granovskii) **89m:65010** 65C05 (65C10)
- Janković, Slobodanka** On a functional equation occurring in the limit theorem for maxima with random indices. *Mathematical statistics and probability theory*, Vol. 4 (Bad Tatzmannsdorf, 1986), 209-215, Reidel, Dordrecht-Boston, MA-London, 1987. (N. R. Mohan) **89h:60094** 60F99 (60E99)
- A characteristic property for maxima of random variables with trivial analogue when sums are concerned. *Publ. Inst. Math. (Beograd) (N.S.)* 41(55) (1987), 133-135. (Theodore Artakis) **89d:60028** 60E10
- On a limit theorem for random sequences. *Publ. Inst. Math. (Beograd) (N.S.)* 42(56) (1987), 149-153. (W. Dziubdziela) **89f:60024** 60F05 (62G30)
- Janković, Svetlana** Almost surely limit theorems for stochastic differential equations. (Serbo-Croatian summary) *Mat. Vesnik* 39 (1987), no. 1, 57-64. (Toshio Yamada) **89d:60102** 60H10
- Iterative procedure for solving stochastic differential equations. *Math. Balkanica (N.S.)* 1 (1987), no. 1, 64-71. (G. N. Mil'shtein) **89b:60139** 60H10 (93E03)
- Some limit theorems for one type of stochastic integro-differential equations. *Publ. Inst. Math. (Beograd) (N.S.)* 41(55) (1987), 137-141. (Toshio Yamada) **89c:60120** 60H20
- Janković, Z.** Electromagnetic field and the 4-spinor space vector structure. *Topics in differential geometry*, Vol. 1, II (Debrecen, 1984), 623-664, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Guido Karrer) **89h:53050** 53A50 (53C80, 57R15, 78A25, 81D27)
- A critical remark on the concept of mass. *Z. Angew. Math. Mech.* 68 (1988), no. 5, T457-T459. (Raj Wilson) **89j:70002** 70A05 (81D25, 81G10)
- Jankovskí, P.** (with Heinig, Georg; Rost, Karla) Fast inversion algorithms of Toeplitz-plus-Hankel matrices. *Numer. Math.* 52 (1988), no. 6, 665-682. (V. S. Ziačkovskii) **89j:65054** 65L05 (15A09, 15A57)
- Jankowski, Tadeusz** On numerical solution of ordinary differential equations with discontinuities. (Russian and Czech summaries) *Apl. Mat.* 33 (1988), no. 6, 487-492. (John P. Coleman) **89k:65084** 65L05
- Jankowski, Wiktor** In remembrance of Professor Edward Otto. *Zeszyty Nauk. Geom.* 16 (1987), 5-7. (Editors) **89b:01050** 01A70
- Jannelli, Enrico** Explicit expressions for hyperbolic equations. *Hyperbolic equations (Padua, 1985)*, 258-263, *Pitman Res. Notes Math. Ser.*, 158, Longman Sci. Tech., Harlow, 1987. (Takeshi Mandai) **89a:35130** 35L30 (35L80)
- (with Colombini, Ferruccio; Spagnolo, S.) Nonuniqueness in hyperbolic Cauchy problems. *Ann. of Math. (2)* 126 (1987), no. 3, 495-524. (C. Wagschal) **89c:35086** 35L15 (35A07)
- Jannelli, Virginia Liberto** An application of the Riemann method to characterize hyperbolic quasilinear equations integrable in the "hodographic plane". (Italian) *Istit. Veneto Sci. Lett. Atti Atti Cl. Sci. Fis. Mat. Natur.* 141 (1983), 33-42. (M. Biondi (Zbl 582:35069)) **89h:35213** 35L70
- Janner, A.** (with Janssen, Ted W. J. M.) Incommensurability in crystals. *Adv. in Phys.* 36 (1987), no. 5, 519-624. (Marjorie Senechal) **89g:82055** 82A60 (51F15)
- Crystallography of quasicrystals. *Fractals, quasicrystals, chaos, knots and algebraic quantum mechanics (Maratea, 1987)*, 93-109, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 235, Kluwer Acad. Publ., Dordrecht, 1988. (Marjorie Senechal) **89m:20055** 20H15 (52A43, 82A60)
- Janssen, Uwe** Deligne homology, Hodge- $\mathcal{G}$ -conjecture, and motives. *Beilinson's conjectures on special values of  $L$ -functions*, 305-372, *Perspect. Math.*, 4, Academic Press, Boston, MA, 1988. (James Milne) **89h:14016** 14F25 (14F12, 32C35)
- Continuous étale cohomology. *Math. Ann.* 280 (1988), no. 2, 207-245. (Wayne Raskind) **89a:14022** 14F20 (11G25)
- Jannussis, A. D.** (with Vavougiou, D.; Leodaris, A.)  $Q$ -model in high energy physics. *Proceedings of the third workshop on hadronic mechanics*, Vol. 1 (Patras, 1986). *Hadronic J. Suppl.* 2 (1986), no. 3, 479-497. (Metin Arik) **89c:81059** 81D05 (81G25)
- (with Veljanoski, B.) Damped harmonic oscillator with complex coefficient of friction. *Hadronic J.* 10 (1987), no. 4, 193-197. (Summary) **89c:81036** 81C05
- (with Papatheou, V.; Skuras, E.) Tight-binding model and Harper's equations are partial cases of the Caldirola-Montaldi procedure. (Italian and Russian summaries) *Nuovo Cimento B* (11) 101 (1988), no. 4, 467-477. (Summary) **89k:81198** 81G45
- (with Mignani, Roberto) Algebraic structure of linear and nonlinear models of open quantum systems. *Phys. A* 152 (1988), no. 3, 469-476. (Robert Alicki) **89h:82043** 82A35 (82A15)
- (with Bartzis, B. S.) Coherent states for the harmonic oscillator with time-dependent mass and frequency. *Phys. Lett. A* 129 (1988), no. 5-6, 263-266. (K. Wódkiewicz) **89i:81059** 81D30
- (with Bartzis, V. E.) Exact calculation of the squeezed states in the  $q$ -representation. *Phys. Lett. A* 132 (1988), no. 6-7, 324-328. (Summary) **89j:81290** 81K05 (81D30)
- Janos, L.** (with Martelli, Mario) Sequentially condensing maps. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 16 (1986), no. 1, 85-94. (Jing Xian Sun) **89c:47068** 47H10 (47H09)
- (with Iwanik, A.; Kowalski, Zbigniew S.) Periods in equicontinuous topological dynamical systems. *Nonlinear analysis*, 355-365, *World Sci. Publishing, Singapore*, 1987. (Katarina Jankova) **89c:54079** 54H20
- Congruence and one-dimensionality of metric spaces. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1268-1270. (Yasunao Hattori) **89i:54047** 54F45 (54E35, 54E40, 54F50)
- Janous, W.** A further remark concerning Nagel Cevians. *Elem. Math.* 43 (1988), no. 4, 116-119. (H. W. Guggenheimer) **89f:51071** 51M05
- Janovská, Dáša** (with Janovský, Vladimír) Remarks on inflated mappings. *Comment. Math. Univ. Carolin.* 28 (1987), no. 3, 491-500. (P. P. Zabrejko) **89b:58048** 58E07 (47H15, 58C27)
- (with Janovský, Vladimír) Inflated mappings for singularities of codimension  $\leq 2$ . *Comment. Math. Univ. Carolin.* 28 (1987), no. 3, 501-515. (P. P. Zabrejko) **89b:58049** 58E07 (47H15, 58C27, 65J15)
- Janovská, Dáša** (with Janovský, Vladimír) Remarks on inflated mappings. *Comment. Math. Univ. Carolin.* 28 (1987), no. 3, 491-500. (P. P. Zabrejko) **89b:58048** 58E07 (47H15, 58C27)
- (with Janovská, Dáša) Inflated mappings for singularities of codimension  $\leq 2$ . *Comment. Math. Univ. Carolin.* 28 (1987), no. 3, 501-515. (P. P. Zabrejko) **89b:58049** 58E07 (47H15, 58C27, 65J15)
- Minimally extended defining conditions for singularities of codim  $\leq 2$ . *Numer. Funct. Anal. Optim.* 9 (1987/88), no. 11-12, 1309-1349. (Jürgen Scheurle) **89h:58024** 58C27 (58C40, 58F14, 65H99)
- Janovy, J., Jr.** (with Kutish, G. W.) A model of encounters between host and parasite populations. *J. Theoret. Biol.* 134 (1988), no. 3, 391-401. (Not in MR) 92A15
- Janowitz, Gerald S.** (with Zhang, Qing Hua; Pietrafesa, Leonard J.) Interaction between estuarine plumes and coastal waters. *Sci. Sinica Ser. A* 31 (1988), no. 10, 1222-1239. (Not in MR) 86A05
- Janowitz, M. F.** A model for ordinal filtering of digital images. *Statistical image processing and graphics (Luray, Va., 1983)*, 25-41, *Statist. Textbooks Monographs*, 72, Dekker, New York, 1986. (Zhen Hua Wang) **89b:94007** 94A12 (93E11)
- Induced social welfare functions. *Math. Social Sci.* 15 (1988), no. 3, 261-276. (Anjan Mukherji) **89b:90021** 90A08 (90A07)
- Jansen, Mathijs** Equilibrium points of bimatrix games. *Surveys in game theory and related topics*, 37-69, *CWI Tract*, 39, *Math. Centrum, Centrum Wisk. Inform., Amsterdam*, 1987. (C. B. Millham) **89a:90162** 90D05 (90C33)
- Jansen, P. S. M. Kop** (with Bart, H.) Upper triangularization of matrices by lower triangular similarities. *Linear Algebra Appl.* 103 (1988), 229-248. (John Maroulas) **89f:15005** 15A09
- Jansen, Willem G.** (with Zelmanowitz, J. M.)  $\star$  Duality for module categories. *Algebra Berichte [Algebra Reports]*, 59, Verlag Reinhard Fischer, München, 1988. 33 pp. ISBN 3-88927-045-X (Claudia Menini) **89f:16029** 16A49 (16A80)
- Jansen, Wolfgang** A permanence theorem for replicator and Lotka-Volterra systems. *J. Math. Biol.* 25 (1987), no. 4, 411-422. (K. E. Swick) **89a:92044** 92A15
- (with Hofbauer, Josef; Hutson, V.) Coexistence for systems governed by difference equations of Lotka-Volterra type. *J. Math. Biol.* 25 (1987), no. 5, 553-570. (Andris Abakus) **89a:92059** 92A17
- Janse van Rensburg, E. J.** Resistance of the Edwards walk. *J. Phys. A* 21 (1988), no. 1, 147-157. (Summary) **89c:82060** 82A67 (82-04, 82A25, 82A41)
- Janson, Agnes** (with Dilger, Werner) Intelligent backtracking in deduction systems by means of extended unification graphs. *J. Automat. Reason.* 2 (1986), no. 1, 43-62. (Summary) **89h:68131** 68T15 (03B35, 68R10, 68T20)
- Janson, Svante** Random self-avoiding walks in some one-dimensional lattices. *Random graphs '85 (Poznań, 1985)*, 91-109, *North-Holland Math. Stud.*, 144, North-Holland, Amsterdam-New York, 1987. (Gregory F. Lawler) **89b:60163** 60J15
- (with Cwikel, Michael) Real and complex interpolation methods for finite and infinite families of Banach spaces. *Adv. in Math.* 66 (1987), no. 3, 234-290. (Irina U. Asekritova) **89c:46082** 46M35
- (with Bradley, Richard C.; Bryc, Włodzimierz) On dominations between measures of dependence. *J. Multivariate Anal.* 23 (1987), no. 2, 312-329. (I. G. Zhurbenko) **89b:60058** 60G05
- On interpolation of multilinear operators. *Function spaces and applications (Lund, 1986)*, 290-302, *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (Naum Zobin) **89g:46114** 46M35 (47B38)
- Normal convergence by higher semi-invariants with applications to sums of dependent random variables and random graphs. *Ann. Probab.* 16 (1988), no. 1, 305-312. (M. Iosifescu) **89a:60062** 60F05 (05C80, 60C05)
- Random coverings of the circle by arcs with restricted endpoints. *J. Appl. Probab.* 25 (1988), no. 1, 215-219. (J. Häslér) **89b:60030** 60D05 (60F99)
- Some pairwise independent sequences for which the central limit theorem fails. *Stochastics* 23 (1988), no. 4, 439-448. (L. Hahn) **89c:60048** 60F05 (60G10)
- (with Peetre, Jaak) Paracommutators—boundedness and Schatten-von Neumann properties. *Trans. Amer. Math. Soc.* 305 (1988), no. 2, 467-504. (M. Cotlar) **89g:47034** 47B38 (42B20, 47B10, 47B35)
- (with Cima, Joseph A.; Yale, Keith) Completely continuous Hankel operators on  $H^\infty$  and Bourgain algebras. *Proc. Amer. Math. Soc.* 105 (1989), no. 1, 121-125. (Carl C. Cowen) **89g:30065** 30D55 (46J15, 47B35)
- Jansons, J.** (with Rieckstipš, E.) On Steffensen's iterative formula. (Russian) *Lav. Mat. Ezhgodnik No. 32* (1988), 160-164, 243. (Summary) **89j:65042** 65H05



- Jansons, Kalvis M. (with Lister, John R.) The general solution of Stokes flow in a half-space as an integral of the velocity on the boundary. *Phys. Fluids* **31** (1988), no. 6, 1321-1323. (Summary) **89f:76038** 76D07
- Janssen, A. J. E. M. The Zak transform: a signal transform for sampled time-continuous signals. *Philips J. Res.* **43** (1988), no. 1, 23-69. (Wiktor Kulesza) **89g:94005** 94A11 (94-02, 94A12)
- Positivity of time-frequency distribution functions. (French and German summaries) *Signal Process.* **14** (1988), no. 3, 243-252. (Xianggen Xia) **89d:94015** 94A12
- Janssen, Arnold Locally most powerful rank tests. *Comm. Statist. Theory Methods* **17** (1988), no. 5, 1325-1349. (Joachim Krauth) **89j:62065** 62G10
- Uniform convergence of sums of order statistics to stable laws. *Probab. Theory Related Fields* **78** (1988), no. 2, 261-271. (M. Csörgő) **89j:60038** 60F05 (60E07, 62G30)
- (with Reiss, R.-D.) Comparison of location models of Weibull type samples and extreme value processes. *Probab. Theory Related Fields* **78** (1988), no. 2, 273-292. (Sándor Csörgő) **89e:62006** 62B10 (62B05, 62G30)
- Janssen, H. K. (with Schaub, B.; Schmittmann, B.) The general epidemic process in a finite environment. *J. Phys. A* **21** (1988), no. 7, L427-L434. (Summary) **89f:92045** 92A15
- (with Schaub, B.; Schmittmann, B.) Finite size scaling for directed percolation and related stochastic evolution processes. *Z. Phys. B* **71** (1988), no. 3, 377-385. (Summary) **89e:82005** 82A25 (82A31, 82A43)
- Janssen, H. L. Recursive construction of a sequence of solutions to homogeneous linear partial differential equations with constant coefficients. Proceedings of the 2nd international conference on computational and applied mathematics (Leuven, 1986). *J. Comput. Appl. Math.* **20** (1987), Special Issue, 275-287. (E. H. Twizell) **89a:65186** 85N99
- Janssen, K. Representation of excessive measures. *Seminar on stochastic processes*, 1986 (Charlottesville, Va., 1986), 85-105, *Progr. Probab. Statist.*, **13**, Birkhäuser Boston, Boston, MA, 1987. (Michael Sharpe) **89f:60084** 60J35 (28A50)
- Janssen, Paul (with Härdle, W.; Serfling, R.) Strong uniform consistency rates for estimators of conditional functional. *Ann. Statist.* **16** (1988), no. 4, 1428-1449. (Lionel Weiss) **89i:62062** 62G05 (60F15)
- (with Gijbels, I.; Veraverbeke, N.) Weak and strong representations for trimmed U-statistics. *Probab. Theory Related Fields* **77** (1988), no. 2, 179-194. (N. C. Weber) **89b:60074** 60F15 (60F05, 60F17, 62G20)
- (with Helmers, R.; Serfling, R.) Glivenko-Cantelli properties of some generalized empirical DF's and strong convergence of generalized L-statistics. *Probab. Theory Related Fields* **79** (1988), no. 1, 75-93. (Sándor Csörgő) **89b:60046** 60F15 (62G99)
- Janssen, Peter H. M. (with Damen, A. A. H.) Comments on: "MFD models and time delays; some consequences for identification" [Internat. J. Control **45** (1987), no. 4, 1179-1196; MR 88f:93107] by Janssen. *Internat. J. Control* **46** (1987), no. 5, 1857-1859. (Norman P. Coleman, Jr.) **89e:93066** 93B30 (93E03, 93E12)
- (with Stoica, Petre; Söderström, Torsten; Eykhoff, P.) Model structure selection for multivariable systems by cross-validation methods. *Internat. J. Control* **47** (1988), no. 6, 1737-1758. (Not in MR) **93B30**
- General results on the McMillan degree and the Kronecker indices of ARMA and MFD models. *Internat. J. Control* **48** (1988), no. 2, 591-608. (Summary) **89e:93050** 93B25 (93C55)
- Janssen, Ted W. J. M. (with Janner, A.) Incommensurability in crystals. *Adv. in Phys.* **36** (1987), no. 5, 519-624. (Marjorie Senechal) **89g:82055** 82A60 (51F15)
- (with Slot, J. J. M.) Multi-kinks in modulated crystals: the soliton lattice of the frustrated  $\phi^4$  model. *J. Phys. A* **21** (1988), no. 18, 3559-3574. (Summary) **89j:82067** 82A60
- (with Slot, J. J. M.) Dynamics of kinks in modulated crystals. *Phys. D* **32** (1988), no. 1, 27-71. (Peter L. Christiansen) **89j:82099** 82A68 (82A55)
- Aperiodic crystals: a contradiction in terms? *Phys. Rep.* **168** (1988), no. 2, 55-113. (A. G. Schlijper) **89m:82062** 82A60 (05B40, 52A45, 82-01, 82A57)
- Janssens, Jozef (with Chen, Jiande; Vandewalle, Joos; Sansen, Willy M. C.; Vantrappen, Gaston) Detection of gastric signals from cutaneous abdominal measurements. *Analysis and optimization of systems (Antibes, 1988)*, 1117-1128, *Lecture Notes in Control and Inform. Sci.*, **111**, Springer, Berlin-New York, 1988. (see **89e:00031**) **92A07** (93E10)
- Jantzen, J. C. ★ Representations of algebraic groups. *Pure and Applied Mathematics*, **131**, Academic Press, Inc., Boston, MA, 1987. xiv+443 pp. ISBN 0-12-380245-8 (R. W. Carter) **89c:20001** 20-02 (17B10, 17B45, 17B56, 20G05, 22E45)
- Restricted Lie algebra cohomology. *Algebraic groups Utrecht 1986*, 91-108, *Lecture Notes in Math.*, **1271**, Springer, Berlin-New York, 1987. (J. S. Joel) **89h:17023** 17B56 (17B10, 17B50, 20G05, 20G10)
- Primitive ideals in the enveloping algebra of a semisimple Lie algebra. *Noetherian rings and their applications (Oberwolfach, 1983)*, 29-36, *Math. Surveys Monographs*, **24**, Amer. Math. Soc., Providence, RI, 1987. (From the text) **89e:17021** 17B35
- Representations of Chevalley groups in their own characteristic. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 127-146, *Proc. Sympos. Pure Math.*, **47**, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Leonard Chastkofsky) **89g:20076** 20G40 (17B10, 20C20, 20G05)
- Jantzen, Robert T. (with Rosquist, Kjell) Unified regularization of Bianchi cosmology. *Phys. Rep.* **166** (1988), no. 2, 89-124. (C. B. Collins) **89f:83053** 83C40 (83F05)
- Janiuskas, Algimantas Summation by the Abel method of series of orthogonal polynomials. (Russian. English and Georgian summaries) *Sem. Inst. Prikl. Mat. Dokl. No. 20* (1986), 41-43, 96. (Summary) **89d:33017** 33A65 (40G10, 42C10)
- Extending the Levi method to the study of the Dirichlet problem for elliptic equations that are degenerate on the boundary. (Russian) *Current problems in mathematical physics*, Vol. 1 (Russian) (Tbilisi, 1987), 465-472, 502, *Tbilis. Gos. Univ., Tbilisi*, 1987. (see **89j:00030**) **35J70** (35C99)
- Summation by the Abel method of series in eigenfunctions of differential operators. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 2, 413-417. (Jan Bochenek) **89b:35125** 35P10 (35J99)
- Integro-differential equations arising in the investigation of elliptic equations and systems. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 3, 601-611. (A. Borzymowski) **89f:35072** 35J55 (45K05)
- Janiuskaitienė, O. Rate of convergence of quasistable laws to the normal law. Stability problems of stochastic models. *J. Soviet Math.* **40** (1988), no. 4, 573-580. (Zdzisław Rychlik) **89i:60031** 60E07
- Janusz, G. J. Irving Reiner 1924-1986. *Illinois J. Math.* **32** (1988), no. 3, 315-328. (Editors) **89b:01066** 01A70
- An inequality in integral representation theory. *Illinois J. Math.* **32** (1988), no. 3, 484-488. (Jon F. Carlson) **89f:20008** 20C10
- Januszkiewicz, T. (with Botejko, Marek; Spatzier, R. J.) Infinite Coxeter groups do not have Kazhdan's property. *J. Operator Theory* **19** (1988), no. 1, 63-67. (K. A. Ross) **89i:22025** 22E46 (20G15, 22E30, 51F15)
- Janyszek, Henryk On the Riemannian metrical structure in the classical statistical equilibrium thermodynamics. *Rep. Math. Phys.* **24** (1986), no. 1, 1-10. (Koichiro Matsuno) **89f:82010** 82A05 (53C80)
- On the geometrical structure of the generalized quantum Gibbs states. *Rep. Math. Phys.* **24** (1986), no. 1, 11-19. (Koichiro Matsuno) **89f:82011** 82A15 (53C80)
- Janz, Raimund Holomorphic families of subspaces of a Banach space. *Special classes of linear operators and other topics (Bucharest, 1986)*, 155-167, *Oper. Theory. Adv. Appl.*, **28**, Birkhäuser, Basel-Boston, MA, 1988. (Alexander A. Pankov) **89h:46102** 46M35 (32L05, 46B99, 46M20, 47A05, 47A56)
- Janzura, M. Large deviations theorem for Gibbs random fields. *Probability theory and mathematical statistics with applications (Visegrad, 1985)*, 97-112, *Reidel, Dordrecht-Boston, MA*, 1988. (B. S. Nakshatryan) **89j:60068** 60G60 (60F10)
- Asymptotic theory of parameter estimation for Gauss-Markov random fields. *Kybernetika (Prague)* **24** (1988), no. 3, 161-176. (Raúl Pedro Mentz) **89k:62115** 62M10
- Prediction in zero-one random sequences. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **17** (1988), no. 1, 15-22. (H. W. Lotwick) **89c:60119** 60K35 (62M05)
- el-Jaouhari, Nouredine see El-Jaouhari, Nouredine
- Jara, P. see Jara Martínez, Pascual
- Járai, Antal (with Daróczy, Z.; Kátai, I.) Interval filling sequences. *Ann. Univ. Sci. Budapest. Sect. Comput.* **6** (1985), 53-63 (1987). (M. Thaler) **89e:11004** 11A67 (11B83)
- Jara Martínez, Pascual Torsion theories and modules. *Contributions to general algebra*, **4** (Krems, 1985), 37-44, *Hölder-Pichler-Tempsky, Vienna*, 1987. (Koichiro Ohtake) **89h:16034** 16A63
- see also Ring theory. **89c:16002**
- Jaramillo, J. A. Bounded real-analytic submanifolds of Banach spaces. *Proc. Amer. Math. Soc.* **105** (1989), no. 1, 126-128. (Martin Schottenloher) **89m:58016** 58B12 (32C05, 32E10, 46G20)
- Jarchow, Hans Weakly compact operators on  $C(K)$  and  $C^*$ -algebras. *Functional analysis and its applications (Nice, 1986)*, 263-299, *ICPAM Lecture Notes, World Sci. Publishing, Singapore*, 1988. (P. Wojtaszczyk) **89m:46019** 46B20 (46L05, 47B10, 47B38, 47D30)
- (with John, Kamil) On the equality of injective and projective tensor products. *Czechoslovak Math. J.* **38(113)** (1988), no. 3, 464-472. (Andreas Defant) **89j:46071** 46M05 (46A12, 47D30)
- Jarczyk, Witold (with Baron, Karol) On a way of division of segments. *Aequationes Math.* **34** (1987), no. 2-3, 195-205. (F. W. Carroll) **89b:39003** 39A10 (39B10)
- Generic properties of some iterative functional equations. *Ann. Polon. Math.* **47** (1987), no. 3, 361-369. (F. W. Carroll) **89f:39007** 39B10
- Jarden, Moshe (with Fried, M.) ★ Field arithmetic. *Ergebnisse der Mathematik und ihrer Grenzgebiete (3) [Results in Mathematics and Related Areas (3)]*, **11**, Springer-Verlag, Berlin-New York, 1986. xviii+458 pp. ISBN 3-540-16640-8 (R. Weissauer (Zbl 625:12001)) **89b:12010** 12Lxx (03B25, 03C10, 03C60, 03H05)
- Jarfi, M. (with Le Yaouanc, A.; Oliver, L.; Pene, O.; Raynal, J.-C.; Lazrak, O.) Critical line of symmetry restoration in lattice SU(2) QCD. *Phys. Lett. B* **201** (1988), no. 3, 345-352. (Summary) **89b:81167** 81E25 (81G05)
- Jarić, Marko V. Quasicrystals: a distanced overview. *Group theoretical methods in physics (Varna, 1987)*, 334-343, *Lecture Notes in Phys.*, **313**, Springer, Berlin-New York, 1988. (Summary) **89j:82065** 82A60 (52A45)
- vargas-Jarillo, Cristobal see Vargas-Jarillo, Cristobal
- Järnmark, Bernt (with Forsling, Göran) Optimal fuselage aiming of a modern fighter aircraft. *Theory and applications of nonlinear control systems (Stockholm, 1985)*, 43-52, *North-Holland, Amsterdam-New York*, 1986. (see **89b:93010**) **90D26** (49D45, 93B40)
- Optimal turn of an aircraft. *Theory and applications of nonlinear control systems (Stockholm, 1985)*, 53-64, *North-Holland, Amsterdam-New York*, 1986. (see **89b:93010**) **90D25** (49A45, 93B40)
- Jarník, M. A method of holomorphic retractions and pseudoinverse matrices in the theory of continuation of  $\delta$ -tempered functions. *Dissertationes Math. (Rozprawy Mat.)* **258** (1987), 50 pp. (Yukio Fukushima) **89g:32022** 32D15 (32E25)
- (with Pflug, Peter) Effective formulas for the Carathéodory distance. *Manuscripta Math.* **62** (1988), no. 1, 1-20. (J. T. Davidov) **89m:32044** 32H15
- Jarník, Jiri (with Kurzweil, Jaroslav) A general form of the product integral and linear ordinary differential equations. *Czechoslovak Math. J.* **37(112)** (1987), no. 4, 642-659. (From the introduction) **89i:34009** 34A30
- (with Kurzweil, Jaroslav) A convergence effect in ordinary differential equations. (Russian summary) *Asymptotic methods in mathematical physics (Russian)*, 134-144, 301, "Naukova Dumka", Kiev, 1988. (Summary) **89m:34014** 34A34 (40A05)
- (with Kurzweil, Jaroslav) A new and more powerful concept of the PU-integral. *Czechoslovak Math. J.* **38(113)** (1988), no. 1, 8-48. (Anna Salvadori) **89c:26022** 26B20 (26A39)
- see also Hlaváček, I. et al. **89i:73003**
- Jaromczyk, Jurek W. (with Gburzynski, Paweł) Comparison of two algorithms solving a version of the "ham-sandwich" problem. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **61** (1988), 249-258. (Franz Aurenhammer) **89m:68133** 68U05 (52-04, 68Q25)
- Jaros, Krzysztof Multipliers in complex Banach spaces and structure of the unit balls. *Studia Math.* **87** (1987), no. 3, 197-213. (Keith Rowlands) **89j:46017** 46B20 (46H25)
- $H^\infty(D)$  is stable. *J. London Math. Soc.* (2) **37** (1988), no. 3, 490-498. (Richard Rochberg) **89j:46054** 46J15 (46J35)
- (with Pathak, Vijay D.) Isometries between function spaces. *Trans. Amer. Math. Soc.* **305** (1988), no. 1, 193-206. (Richard Rochberg) **89c:46026** 46E15 (46J15)
- Jarque, Carlos M. (with Bera, Anil K.) A test for normality of observations and regression residuals. (French summary) *Internat. Statist. Rev.* **55** (1987), no. 2, 163-172. (Summary) **89b:62039** 62F03 (62J05)

- al-Jarrah, Radwan *see* Al-Jarrah, Radwan
- Jarratt, Mary (with Eggert, Norman; Lund, J. R.) Sinc function computation of the eigenvalues of Sturm-Liouville problems. *J. Comput. Phys.* **69** (1987), no. 1, 209-229. (Tassilo Küpper) **89c:65090** 65L15
- Jarre, F. (with Sonnevend, Gy.; Stoer, J.) An implementation of the method of analytic centers. *Analysis and optimization of systems (Antibes, 1988)*, 297-308, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89c:90160** 90C25 (65K99)
- Jarske, Petri (with Neuvo, Yrjö; Mitra, Sanjit K.) A simple approach to the design of linear phase FIR digital filters with variable characteristics. (French and German summaries) *Signal Process.* **14** (1988), no. 4, 313-326. (Not in MR) **94A12**
- Jarusková, Daniela Siegel's test for periodic components in multiple time series and its application in engineering practice. *Kybernetika (Prague)* **24** (1988), no. 2, 130-138. (Robert V. Foutz) **89j:62123** 62M10 (62M15)
- Järvi, Pentti On the continuation of meromorphic functions. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **12** (1987), no. 2, 177-184. (Y. Kusunoki) **89k:30046** 30F20 (30D30)
- An extension theorem for normal functions. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1171-1174. (M. Hervé) **89h:32048** 32H25
- Baker-Jarvis, James *see* Baker-Jarvis, James
- Jarvis, P. D. (with Yang, Mei; Wybourne, B. G.) Generalized quasispin for supergroups. *J. Math. Phys.* **28** (1987), no. 5, 1192-1197. (Summary) **89a:17003** 17A70 (81G30)
- Berezin integration and dimensional reduction. *Complex differential geometry and supermanifolds in strings and fields (Scheveningen, 1987)*, 168-174, *Lecture Notes in Phys.*, 311, Springer, Berlin-New York, 1988. (R. Delbourgo) **89k:58044** 58C35 (58A50, 58C30, 81C35, 83E50)
- The CSDR approach to covariant quantisation of vielbein gauge fields. *Classical Quantum Gravity* **5** (1988), no. 4, 619-626. (Summary) **89h:81107** 81E13 (83C45)
- (with Delbourgo, R.; Zhang, R. B.; Thompson, George) Gauge fixing of stringlike models via  $OSp(D/2)$ . *Modern Phys. Lett. A* **3** (1988), no. 3, 303-309. (Summary) **89a:81068** 81E13 (81E30)
- (with Henderson, Jenny Aline) Coset space dimensional reduction and one-loop corrections. *Nuclear Phys. B* **297** (1988), no. 3, 539-556. (Summary) **89c:81109** 81E15 (81E13)
- Jarzembski, Grzegorz Concrete ultraproducts in fibrations. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 11-12, 709-716. (H. A. Priestley) **89k:18004** 18A30 (03C20)
- (with Kurpiel, Andrzej) One more concept of multiadjointness. *Demonstratio Math.* **20** (1987), no. 1-2, 141-157 (1988). (Walter Tholen) **89c:18004** 18A40 (18A32, 18A35, 18C20)
- Finitary spectral algebraic theories. *J. Pure Appl. Algebra* **52** (1988), no. 1-2, 31-50. (Andreas Blass) **89g:18013** 18C15 (08A55, 08B99)
- Jas, Monoranjan (with Bainsab, A. P.) Positive definiteness in quasi-proximity spaces and fixed point theorems. *Bull. Calcutta Math. Soc.* **80** (1988), no. 3, 153-160. (Shieh Park) **89g:54097** 54H25 (54E05)
- Jasem, Milan Pairs of partially ordered groups with the same convex subgroups. (Russian summary) *Math. Slovaca* **37** (1987), no. 2, 173-189. (Introduction) **89d:06033** 06F20
- Jasinski, Bogdan (with Pykacz, Jaroslaw) Physical realization of max, min and  $1-f(x)$  fuzzy connectives. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics (Poznań, 1986)*, 185-188, *Wydział Politech. Poznań*, Poznań, 1987. (Kenji Onaga) **89j:94040** 94C05 (03B52, 03E72, 94D05)
- Jasinski, Grzegorz A necessary condition for the existence of the extension operator from the Fréchet algebra of Whitney fields on a locally closed subset of  $\mathbb{R}^n$ . *Univ. Jagel. Acta Math.* **26** (1987), 91-98. (Donald W. Kahn) **89g:58023** 58C25 (57N40, 57R99)
- A characterization of the differentiable retractions. *Univ. Jagel. Acta Math.* **26** (1987), 99-103. (Donald W. Kahn) **89h:57014** 57N40
- Jasinski, Heinrich (with Wagner, Peter) Zur Erreichbarkeitsmenge eines linearen dynamischen Systems mit unterschiedlicher Zeitverzögerung in den Phasenkoordinaten. (English and Russian summaries) [On the attainable set of a linear dynamic system with different time lag in the phase coordinates] *Wiss. Z. Tech. Hochsch. Leuna-Merseburg* **29** (1987), no. 6, 807-812. (Summary) **89c:49032** 49E15 (34K35, 49B36, 93C05)
- Jaskiewicz, Cz. (with Paszkiewicz, T.) The explicit time-dependence of moments of the distribution function for the Lorentz gas with planar symmetry in  $k$ -space. *Phys. A* **145** (1987), no. 1-2, 239-254. (Stefano L. Paveri-Fontana) **89g:82042** 82A40 (76P05)
- Jaskiewicz, Genadiusz (with Gołomska, Marian) Identification of the balance keeping process in standing position in the presence of short-term disturbances. (Polish. English and Russian summaries) *Postępy Cybernet.* **11** (1988), no. 1, 93-108. (Not in MR) **93D15** (34D10, 92A09)
- Jaskólski, Z. The integration of  $G$ -invariant functions and the geometry of the Faddeev-Popov procedure. *Comm. Math. Phys.* **111** (1987), no. 3, 439-468. (Jack Gegenberg) **89b:81196** 81E99 (53C80, 58D30, 81C35, 81E30)
- On the Gribov ambiguity in the Polyakov string. *J. Math. Phys.* **29** (1988), no. 4, 1034-1043. (Marc Henneaux) **89g:81078** 81E99 (32G15, 58B99, 58D05, 58D30, 81E30)
- Jasnow, David Renormalization group theory of interfaces. *Phase transitions and critical phenomena*, Vol. 10, 269-363, *Academic Press*, London-New York, 1986. (L. E. H. Trainor) **89d:82040** 82A25 (81E15, 82A05)
- Jasselette, Pierre Locality, causality, quantum events, and all that. *Microphysical reality and quantum formalism*, Vol. 1, 2 (Urbino, 1985), 295-298, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89m:81026** 81B99
- Jastrzębski, Jan Maximal additive families for some classes of Darboux functions. *Real Anal. Exchange* **13** (1987/88), no. 2, 351-354. (A. M. Bruckner) **89c:26006** 26A21
- On sums of directional essential cluster sets. *Bull. London Math. Soc.* **20** (1988), no. 2, 145-150. (Paul D. Humke) **89c:30085** 30D40
- Jawson, Maurice A. (with El-Damanawi, K. E. S.) Vector potential theory. *Betech* **86** (Cambridge, Mass., 1986), 433-445, *Comput. Mech.*, Southampton, 1986. 73-08
- (with El-Damanawi, K. E. S.) The representation of elastostatic fields by vector potentials (invited contribution). *Boundary elements IX*, Vol. 2 (Stuttgart, 1987), 129-141, *Comput. Mech.*, Southampton, 1987. (Summary) **89j:73006** 73-08 (31B15, 73C99)
- Jaulent, Jean-François Genre des corps surcircaires. [The genus of supercircular fields] *Théorie des nombres, Années 1984/85-1985/86*, Fasc. 2, Exp. No. 3, 39 pp., *Publ. Math.* Fac. Sci. Besançon, Univ. Franche-Comté, Besançon, 1986. (Teruo Takeuchi) **89b:11087** 11R23
- Jauent, M. (with Manna, M.) The "spectral Wronskian" tool and the  $\bar{\partial}$  investigation of the KdV hierarchy. *J. Math. Phys.* **28** (1987), no. 10, 2338-2342. (F. J. China) **89d:58134** 58G37 (35Q20, 58F07)
- (with Manna, M.; Martínez Alonso, L.)  $\bar{\partial}$  equations in the theory of integrable systems. *Inverse Problems* **4** (1988), no. 1, 123-150. (Alexander Yanovski) **89c:58119** 58F07
- (with Manna, M.; Martínez Alonso, L.) Matrix-bipolar asymptotic modules for solving  $(2+1)$ -dimensional nonlinear evolution equations with constraints. *J. Phys. A* **21** (1988), no. 21, L1019-L1024. (Summary) **89k:58120** 58F07 (35Q20)
- (with Manna, M.; Martínez Alonso, L.) Scalar-bipolar asymptotic modules for solving  $(2+1)$ -dimensional nonlinear evolution equations with constraints. *Phys. Lett. A* **132** (1988), no. 8-9, 414-418. (Summary) **89h:35296** 35Q20 (12H05, 58F07, 58G35)
- (with Manna, M.; Martínez Alonso, L.) A solvable hierarchy of  $(N+1)$ -dimensional nonlinear evolution equations with constraints. *J. Phys. A* **22** (1989), no. 1, L13-L18. (Summary) **89k:58121** 58F07 (12H20, 34A20)
- Jault, Dominique (with Le Mouél, Jean-Louis; Gire, Camille) Sur la forme des mouvements lents animant le fluide du noyau terrestre. (English summary) [On the form of the slow flow in the Earth's fluid core] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **305** (1987), no. 7, 619-624. (Summary) **89k:86015** 86A60 (35Q20, 76W05)
- Jaurand, Brigitte (with Crama, Y.; Hammer, P. L.; Simeone, B.) Product form parametric representation of the solutions to a quadratic Boolean equation. (French summary) *RAIRO Rech. Opér.* **21** (1987), no. 4, 287-305. (S. Rudeanu) **89c:90141** 90C09 (03G05, 05C99, 06E30)
- (with Ow, Peng Si; Simeone, B.) A selected artificial intelligence bibliography for operations researchers. *Ann. Oper. Res.* **12** (1988), no. 1-4, 1-50. (Summary) **89c:90074** 90Bxx (00A15, 68T99)
- (with Hansen, Pierre; Lu, Shi Hui) Approche analytique de l'optimisation globale. (English summary) [Analytical approach to global optimization] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 1, 29-32. (Summary) **89g:90186** 90C30
- Jaura, J. (with Tempelman, A. A.) Admissibility of a nonparametric analogue of the Pitman estimator in the case of one unknown parameter. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **28** (1988), no. 1, 130-143; translated in *Lithuanian Math. J.* **28** (1988), no. 1, 80-89. (Sándor Csörgö) **89k:62057** 62G05 (62C15)
- Jáuregui, R. (with Jaen, X.; Llosa, J.; Molina, A.) Hamiltonian formalism for path-dependent Lagrangians. *Phys. Rev. D* **36** (1987), no. 8, 2385-2398. (Takayuki Nöno) **89c:58037** 58F05 (70H05, 70H35)
- Jaustin, H. R. Nondifferentiable potentials for nonequilibrium steady states. *Phys. A* **144** (1987), no. 1, 179-191. (W. David Wick) **89f:82027** 82A31 (34F05, 60H10)
- Exact propagator and eigenfunctions for multistable models with arbitrarily prescribed  $N$  lowest eigenvalues. *J. Phys. A* **21** (1988), no. 10, 2337-2350. (L. S. Schulman) **89j:81029** 81C05 (34B25, 81F05)
- Javalgi, Rajshekhar G. (with Gensch, D. H.) The role of sequential processing models in marketing research. *Math. Modelling* **9** (1987), no. 12, 869-882. (Summary) **89b:90016** 90A07 (92A25)
- (with Jain, Hemant K.) Integrating multiple criteria decision making models into the decision support system framework for marketing decisions. Multiple criteria decision making. *Naval Res. Logist.* **35** (1988), no. 6, 575-596. (see **89j:90161**) 90A05 (90B50, 90C31)
- Javier, W. R. (with Gupta, Arjun K.) On testing the dimensionality of regression coefficients. *Metrika* **36** (1989), no. 1, 15-27. (Not in MR) **62H15**
- Javor, Petar Number systems—residual number systems and the Chinese remainder theorem. (Serbo-Croatian) *Matematika (Zagreb)* **16** (1987), no. 2, 5-26. (Editors) **89f:11011** 11A05
- Javorský, Petr An algorithm for optimal control of nonlinear systems. *Systems analysis and simulation 1988, I* (Berlin, 1988), 267-269, *Math. Res.*, 46, Akademie-Verlag, Berlin, 1988. (see **89g:00018**) 93B40 (93C10)
- Jawerth, Björn (with Frazier, Michael) The  $\phi$ -transform and applications to distribution spaces. *Function spaces and applications (Lund, 1986)*, 223-246, *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (S. J. L. van Eijndhoven) **89g:46064** 46E35 (42B30, 46F05, 46M35)
- Jawhar, Abdelali Mesures de transition et applications. [Transition measures and applications] *Séminaire d'analyse convexe*, Vol. 14 (Montpellier, 1984), Exp. No. 13, 62 pp., *Univ. Sci. Tech. Languedoc, Montpellier*, 1984. (From the introduction) **89g:49020** 49A50 (60B05)
- Jaworski, Jerzy (with Smit, Ipe H.) On a random digraph. *Random graphs '85 (Poznań, 1985)*, 111-127, *North-Holland Math. Stud.*, 144, North-Holland, Amsterdam-New York, 1987. (Zbigniew Palka) **89a:05119** 05C80 (60C05)
- Jaworski, W. (with Kociszewski, A.) Master equation—the information gain minimum approximation. *Z. Phys. B* **67** (1987), no. 2, 249-256. (Masanori Ohya) **89d:82062** 82A35
- *see also* Paladin, G., **89g:82025**
- Jay, C. Barry Local adjunctions. *J. Pure Appl. Algebra* **53** (1988), no. 3, 227-238. (R. H. Street) **89i:18004** 18D05 (18A40)
- Jayakumar, P. K. (with Erneux, Thomas; Reiss, Edward L.; Magnan, J. F.) Nonlinear stability control and  $\lambda$ -bifurcation. *SIAM J. Appl. Math.* **47** (1987), no. 6, 1163-1176. (D. K. Arrowsmith) **89g:73027** 73J10 (58F14, 58F40, 73H10)
- Jayakumar, R. (with Thulasiraman, K.; Swamy, M. N. S.) Planar embedding: linear-time algorithms for vertex placement and edge ordering. *IEEE Trans. Circuits and Systems* **35** (1988), no. 3, 334-344. (O. D'Antona) **89b:05080** 05C10 (68R10)
- Jayanthan, A. J. (with Kannan, V.) Spaces every quotient of which is metrizable. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 294-298. (Vesko Valov) **89f:54017** 54B15 (54C10, 54D10, 54E35, 54E45)
- Jayaprakash, C. (with Vannimenus, J.; Kirkpatrick, S.; Haldane, F. D. M.) Ground-state morphology of random frustrated XY systems. *Phys. Rev. B* **39** (1989), no. 7, 4634-4643. (Summary) **89m:82087** 82A68
- Jayaram, C. 0-modular semilattices. *Studia Sci. Math. Hungar.* **22** (1987), no. 1-4, 189-195. (Mária Tomková) **89c:06005** 06A12
- Regular rings. *Indian J. Pure Appl. Math.* **19** (1988), no. 7, 653-658. (L. J. Ratliff, Jr.) **89f:13062** 13A15 (06E99)



- Jayaram, S. R. Line domination in graphs. *Graphs Combin.* 3 (1987), no. 4, 357-363. (Michael Jacobson) **89b:05107** 05C35
- The nomatic number of a graph. *Nat. Acad. Sci. Lett.* 10 (1987), no. 1, 23-25. (Michael Jacobson) **89d:05108** 05C35
- Jayaraman, G. (with Mehrotra, R.) Flow in a stenosed artery. *J. Math. Phys. Sci.* 22 (1988), no. 3, 353-369. (Summary) **89c:92005** 92A06 (76Z05, 92A09)
- Jayaraman, T. (with Narain, K. S.) Gluing procedures for holomorphic conformal field theories on Riemann surfaces. *Phys. Lett. B* 203 (1988), no. 1-2, 63-68. (Ömer Ögüz) **89c:81153** 81E99 (14H15, 81E40)
- Jayassumana, A. P. (with Rajsuman, R.; Malaiya, Y. K.) On accuracy of switch-level modeling of bridging faults in complex gates. 24th ACM/IEEE Design Automation Conference (Miami Beach, FL, 1987), 244-250, ACM, New York, 1987. (James T. Wong) **89k:94104** 94C10
- Jayasuriya, Sohadu (with Kee, Chang-Doo) Circle-type criterion for synthesis of robust tracking controllers. *Internat. J. Control* 48 (1988), no. 3, 865-886. (Summary) **89g:93043** 93B50 (93B35, 93B55, 93C10)
- Jayawardene, S. A. Renaissance mathematics (and astronomy) in Baldassarre Boncompagni's *Bullettino di bibliografia e di storia delle scienze matematiche e fisiche* (1868-87). *Mathematics from manuscript to print, 1300-1600* (Oxford, 1984), 190-194, Oxford Sci. Publ., Oxford Univ. Press, New York, 1988. (Summary) **89h:01034** 01A55 (01A40)
- Jayawardena, Camillus Schwinger model on  $S^2$ . *Helv. Phys. Acta* 61 (1988), no. 5, 636-711. (Asao Arai) **89j:81305** 81L05 (81E20)
- Jayne, John W. Recursively generated polynomials and Geronimus' version of orthogonalization on a contour. *SIAM J. Math. Anal.* 19 (1988), no. 3, 676-686. (Mourad E. H. Ismail) **89f:30057** 30E05 (33A65, 42C05)
- Jaynes, E. T. Detection of extra-solar system planets. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 1 (Laramie, WY, 1985, and Seattle, WA, 1986/1987), 147-160, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89m:85003** 85-05 (85-08)
- Jazlicevich, Aron (with Hagstrom, T. M.; Tewarson, R. P.) Numerical experiments on a domain decomposition algorithm for nonlinear elliptic boundary value problems. *Appl. Math. Lett.* 1 (1988), no. 3, 299-302. (Not in MR) **65N99**
- Je, Hai Gon (with Yang, Young Oh) On the spatial numerical ranges and Hermitian operators. (Korean summary) *Ulsan Rep. Natur. Sci. Engrg.* 17 (1986), no. 2, 209-214. (M. Nakamura) **89a:47007** 47A12 (46L05, 47B15)
- Jean, Roger V. Number-theoretic properties of two-dimensional lattices. *J. Number Theory* 29 (1988), no. 2, 206-223. (Thomas Bier) **89b:92019** 92A09 (11H99)
- Jean, William H. (with Helms, Billy P.) Necessary conditions for stochastic dominance: a general approach. *Appl. Stochastic Models Data Anal.* 4 (1988), no. 2, 89-99. (Summary) **89d:90024** 90A09 (90A10)
- Jeanblanc-Picqué, Monique (with El Karoui, Nicole) Contrôle de processus de Markov. [Control of Markov processes] *Séminaire de Probabilités, XXII*, 508-541, *Lecture Notes in Math.*, 1321, Springer, Berlin-New York, 1988. (Jean-Yves Ouyard) **89m:93089** 93E20 (49A60, 49C10)
- Jeanerret, M. (with Elphick, Christian; Tirapegui, E.) Comment on bifurcations in fluctuating systems. *J. Statist. Phys.* 48 (1987), no. 3-4, 925-933. (V. A. Zagrebnov) **89c:58087** 58F14 (58F11)
- Jennin, Pierre (with Fiorot, Jean-Charles) Surfaces rationnelles sur un carré contrôlées par des points pondérés et des vecteurs. (English summary) [Rational surfaces on a square controlled by weighted points and vectors] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 2, 87-92. (Summary) **89a:55022** 65D10
- saint Jean Paulin, Jeannine see Saint Jean Paulin, Jeannine
- Jech, Thomas ★ Multiple forcing. *Cambridge Tracts in Mathematics*, 88. Cambridge University Press, Cambridge-New York, 1986. viii+136 pp. ISBN 0-521-26659-9 (From the preface) **89h:03001** 03-02 (03E35, 03E40, 03E50)
- First order theory of complete Stonean algebras (Boolean-valued real and complex numbers). *Canad. Math. Bull.* 30 (1987), no. 4, 385-392. (Summary) **89h:03091** 03E40 (03C60, 13L05, 46J99, 47D25)
- Jędrzejek, C. (with Strzeszewski, M.) Exact solution of the hierarchy of Green functions for the two-site Hubbard model. *Phys. Lett. A* 128 (1988), no. 6-7, 378-382. (C. A. Hurst) **89d:82143** 82A68
- (with Strzeszewski, M.) Evaluation of matrix elements for nonorthogonal states with use of path integrals. *Phys. Rev. A* (3) 37 (1988), no. 2, 645-648. (Summary) **89b:81254** 81G55 (81-08, 81C35)
- Jędrzejewicz, Joanna Infinite hierarchy of expressions containing shuffle closure operator. *Inform. Process. Lett.* 28 (1988), no. 1, 33-37. (Danièle Beauquier) **89j:68080** 68Q45
- Jedwab, J. (with Gillis, J.; Zeilberger, Doron) A combinatorial interpretation of the integral of the product of Legendre polynomials. *SIAM J. Math. Anal.* 19 (1988), no. 6, 1455-1461. (R. K. Raina) **89i:33015** 33A45 (05A10)
- Jefferies, Brian Egorov measurability and generator cores. *Math. Proc. Cambridge Philos. Soc.* 100 (1986), no. 1, 137-143. (J. Diestel) **89b:47059** 47D05 (28B05, 46G10)
- (with Bass, Ludvik; Bracken, A. J.; Holmøker, K.) Integro-differential equations for the self-organisation of liver zones by competitive exclusion of cell-types. *J. Austral. Math. Soc. Ser. B* 29 (1987), no. 2, 156-194. (Matthew Witten) **89f:92015** 92A09 (45F10, 92A07)
- Semicompact functionals. *Rev. Roumaine Math. Pures Appl.* 32 (1987), no. 3, 235-252. (Richard Becker) **89c:46010** 46A40 (28C05, 46G99)
- Perturbations of Schrödinger semigroups generated by stochastic integrals. *J. Funct. Anal.* 77 (1988), no. 1, 98-111. (J. A. Goldstein) **89g:35031** 35J10 (47D05, 60H99, 81C20)
- Jeffers, J. N. R. Ecological modeling: shortcomings and perspectives. *Economic-ecological modeling*, 36-48, *Stud. Regional Sci. Urban Econom.*, 16, North-Holland, Amsterdam-New York, 1987. (see **89d:90076**) 92A17
- Jefferson, J. H. Ray statistics beyond a fractal diffuser—an exactly soluble model. *J. Phys. A* 20 (1987), no. 14, 4841-4852. (Summary) **89b:78012** 78A45
- Jefferson, T. R. (with Scott, C. H.; Jorjani, S.) Duality for programs involving nonseparable objective functions. *Internat. J. Systems Sci.* 19 (1988), no. 9, 1911-1918. (Morgan A. Hanson) **89h:90180** 90C25 (90C30)
- Jefferys, W. H. (with Vázquez, E. C.; Sivaramakrishnan, Anand) Fractal distributions in conservative systems: direct observations of the stable manifold. *Phys. D* 29 (1987), no. 1-2, 84-94. (Jaroslav Smital) **89d:58077** 58F12 (54H20, 58F05, 58F13, 70F07)
- Jeffrey, A. (with Li, Ming) Singular perturbation of a linear hyperbolic system. *Appl. Anal.* 30 (1988), no. 4, 279-303. (Albert J. Milani) **89b:35133** 35L45 (35B25, 35C20)
- (with Dai, H. H.) On the reflection of a solitary wave at a sloping beach: analytical results. *Wave Motion* 10 (1988), no. 4, 375-389. (F. Pempinelli) **89m:86002** 86A05 (35Q20, 76B25)
- Jeffrey, Richard Biting the Bayesian bullet: Zeckhauser's problem. *Theory and Decision* 25 (1988), no. 2, 117-122. (Summary) **89b:90282** 90D35 (62C10, 90D15)
- Jeffries, Clark Energy density in classical electrodynamics. *C. R. Math. Rep. Acad. Sci. Canada* 10 (1988), no. 4, 187-192. (L. G. Chambers) **89m:78004** 78A25
- (with Bone, Terrence; Klee, Victor) A qualitative analysis of  $\dot{x} = Ax + b$ . *Discrete Appl. Math.* 20 (1988), no. 1, 9-30. (Pauline van den Driessche) **89f:92035** 92A15 (15A06, 34D20)
- (with van den Driessche, P.) Eigenvalues of matrices with tree graphs. *Linear Algebra Appl.* 101 (1988), 109-120. (Larry Basenpiller) **89i:05198** 05C50
- Eigenvalues, stability, and color tests. Proceedings of the Victoria Conference on Combinatorial Matrix Analysis (Victoria, BC, 1987). *Linear Algebra Appl.* 107 (1988), 65-76. (Pauline van den Driessche) **89k:15015** 15A18 (34C35, 58F10)
- (with Johnson, Charles Royal) Some sign patterns that preclude matrix stability. *SIAM J. Matrix Anal. Appl.* 9 (1988), no. 1, 19-25. (Bryan E. Cain) **89i:15031** 15A57 (15A18, 15A42)
- Jeffries, David J. (with Hamill, David C.) Subharmonics and chaos in a controlled switched-mode power converter. *IEEE Trans. Circuits and Systems* 35 (1988), no. 8, 1059-1061. (Not in MR) **94C05** (39A10, 58F13, 93D15)
- Jeffries, John S. (with Smith, Donald Ray) A Green function approach for a singularly perturbed vector boundary-value problem. *Adv. in Appl. Math.* 10 (1989), no. 1, 1-50. (P. W. Eloe) **89k:34039** 34B27 (34E15)
- Jeffs, Janice Embedding rule independent theory of graph grammars. *Graph-grammars and their application to computer science* (Warrenton, VA, 1986), 299-308, *Lecture Notes in Comput. Sci.*, 291, Springer, Berlin-New York, 1987. (see **89b:68009**) **68Q50** (05C99)
- Jeganathan, P. On the strong approximation of the distributions of estimators in linear stochastic models. I, II. Stationary and explosive AR models. *Ann. Statist.* 16 (1988), no. 3, 1283-1314. (E. J. Hannan) **89j:62043** 62F12 (60E05, 62M10)
- Jelić, Milena  $\mathfrak{S}_B$ -dimension function of bi-topological spaces. (Serbo-Croatian summary) *Mat. Vesnik* 39 (1987), no. 4, 393-398. (C. V. Riecke) **89f:54063** 54E55 (54D05, 54F45)
- Jelinek, Jiří (with Kratoš, Zdeněk) Les distributions intégrables sur un ouvert de  $\mathbb{R}^n$ . [Integrable distributions on an open set in  $\mathbb{R}^n$ ] *Czechoslovak Math. J.* 38 (113) (1988), no. 1, 49-70. (Hans-Joachim Petzsche) **89f:46087** 46F05
- Jelski, Daniel (with Arnoldus, Henk F.; George, Thomas F.) Confinement and redistribution of charges and currents on a surface by external fields. *J. Math. Phys.* 28 (1987), no. 5, 1069-1074. (Sergej M. Zverev) **89f:78025** 78A45
- Jeltsch, Rolf (with Kiani, Peywand; Raczek, Klaus) Counterexamples to a stability barrier. *Numer. Math.* 52 (1988), no. 3, 301-316. (R. Manohar) **89b:65213** 65M10
- see also Nonlinear hyperbolic equations—theory, computation methods, and applications, **89j:35007**
- Jeltsch-Fricker, Rita In memoriam: Alexander M. Ostrowski (1893 bis 1986). (German) [In memoriam: Alexander M. Ostrowski (1893 to 1986)] *Elem. Math.* 43 (1988), no. 2, 33-38. (Editors) **89c:01068** 01A70
- Jen, Bo Cho (with Lin, Liang Ying) A procedure for the selection of populations with means falling within certain normal limits. *Soochow J. Math.* 13 (1987), no. 2, 179-195. (Mir Masoom Ali) **89i:62034** 62F07
- Jen, Eric Scaling of preimages in cellular automata. *Complex Systems* 1 (1987), no. 6, 1045-1062. (Summary) **89b:68050** 68Q80
- Cylindrical cellular automata. *Comm. Math. Phys.* 118 (1988), no. 4, 569-590. (Eric Cornelius) **89j:58073** 58F12 (68Q70)
- Jen, J. F. (with Tewarson, R. P.) Solution of full and deficient rank linear equations. *Comm. Appl. Numer. Methods* 4 (1988), no. 2, 255-261. (Summary) **89b:65060** 65F30
- Jenda, Overoun M. G. (with Enoch, Edgar E.) Homological properties of pure injective resolutions. *Comm. Algebra* 16 (1988), no. 10, 2069-2082. (T. W. Hungerford) **89i:13017** 13D05 (13C15)
- On Gorenstein rings. *Math. Z.* 197 (1988), no. 1, 119-122. (J. C. Robson) **89c:16036** 16A60 (16A36, 16A52)
- Jendo, S. (with Stachowicz, A.) Multilevel optimization in civil engineering structural design. *Z. Angew. Math. Mech.* 68 (1988), no. 4, T199-T200. (Summary) **89b:73030** 73K40
- Jeng, Jiann-Hwa (with Varadan, Vasundara V.; Varadan, Vijay K.) Form invariant constitutive relations for transversely isotropic piezoelectric materials. *J. Acoust. Soc. Amer.* 82 (1987), no. 1, 337-341. (Summary) **89f:73070** 73R05 (73B05, 78A99)
- Jenkins, James A. Some estimates for harmonic measures. *Complex analysis, I* (College Park, Md., 1985-86), 210-214, *Lecture Notes in Math.*, 1275, Springer, Berlin-New York, 1987. (Albert Baernstein II) **89d:30028** 30C85 (31A15)
- On univalent functions with integral coefficients. *Complex Variables Theory Appl.* 9 (1987), no. 2-3, 221-226. (Johnny E. Brown) **89b:30015** 30C50 (30C45)
- On boundary correspondence for domains on the sphere. *Complex analysis*, 115-119, Birkhäuser, Basel-Boston, MA, 1988. (Frank D. Lesley) **89m:30069** 30D40 (30C35)
- (with Suita, Nobuyuki) On analytic maps of plane domains. *Kodai Math. J.* 11 (1988), no. 1, 38-43. (Helmut Kötitz) **89c:30017** 30C25 (30F10)
- Jenkins, Joe W. (with Hulanicki, Andrzej) Nilpotent Lie groups and eigenfunction expansions of Schrödinger operators. II. *Studia Math.* 87 (1987), no. 3, 239-252. (L. Corwin) **89f:22015** 22E30 (22E25, 43A80, 47E05, 58G05)
- Jenkins, W. Kenneth see Residue number system arithmetic, **89d:94002**
- Jenkins, T. A. (with Bell, Howard E.; Klein, Abraham A.; Laywine, C. F.) Rings with permutable products. *Resulata Math.* 13 (1988), no. 1-2, 12-22. (M. M. Parmenter) **89a:16043** 16A70
- Jenner, Birgit (with Kirsig, Bernd) Characterizing the polynomial hierarchy by alternating auxiliary pushdown automata. *STACS 88* (Bordeaux, 1988), 118-125, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (José L. Balcazar) **89f:68043** 68Q15 (03D05, 03D15, 68Q05, 68Q70)
- Jennings, Linda W. (with Young, Dean M.) Extended critical values of the multivariate extreme deviate test for detecting a single spurious observation. *Comm. Statist. Simulation Comput.* 17 (1988), no. 4, 1359-1373. (Not in MR) **62Q05**

- Jennings, R. E. (with Pelham, J. M.; O'Toole, R. R.) Modal undefinability in some alternative Leibnizian frames. *Z. Math. Logik Grundlag. Math.* 34 (1988), no. 1, 19–24. (Charles F. Kielkopf) **89c:03028** 03B45
- Jennison, R. C. Why are Newton's laws laws and why is this question of importance in astrophysics? *Vistas Astronom.* 30 (1987), no. 3–4, 255–267 (1988). (D. ter Haar) **89c:00021** 00A25 (01A45, 85A05)
- Jennrich, Robert I. (with Jamshidin, Mortaza) Nonorthogonal analysis of variance using gradient methods. *J. Amer. Statist. Assoc.* 83 (1988), no. 402, 483–489. (Not in MR) **62J10**
- (with Clarkson, Douglas B.) Quartic rotation criteria and algorithms. *Psychometrika* 53 (1988), no. 2, 251–259. (Not in MR) **62H30**
- (with Port, S. C.) Radial and directional parts of a random vector. *Statist. Probab. Lett.* 6 (1988), no. 3, 155–158. (Donald R. Jensen) **89b:62100** 62H05 (60E05)
- Jensen, Arne Commutator methods and asymptotic completeness for a new class of Stark effect Hamiltonians. *Differential equations and mathematical physics (Birmingham, Ala., 1986)*, 215–221, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (V. N. Pomerantsev) **89c:35130** 35P25 (47A40, 81F05)
- Art and science—the greatness and tragedy of applied science. *Queueing theory and its applications*, 443–446, *CWI Monographs*, 7, North-Holland, Amsterdam-New York, 1988. (Summary) **89i:01006** 01A70 (00A69)
- Bounds on resonances for Stark-Wannier and related Hamiltonians. *J. Operator Theory* 19 (1988), no. 1, 69–80. (Kalyan B. Sinha) **89i:81132** 81F05 (34B25, 47E05)
- Jensen, Bruce (with McLaughlin, John; Ottewill, Adrian) Renormalised electromagnetic energy density on the horizon of a Kerr black hole. *Classical Quantum Gravity* 5 (1988), no. 11, L187–L189. (Piotr Bizoń) **89m:83050** 83C47
- Jensen, D. R. Topics in the analysis of repeated measurements. *Multivariate statistical modeling and data analysis (Harrisonburg, Va., 1986)*, 147–161, *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (Julio Peixoto) **89a:62131** 62H15 (62J10, 62J15, 62K15)
- Jensen, E. B. (with Baddeley, A. J.; Gundersen, H. J. G.; Sundberg, R.) Recent trends in stereology. (French summary) *Internat. Statist. Rev.* 53 (1985), no. 1, 99–108. (Summary) **89f:62053** 62H99
- Design- and model-based stereological analysis of arbitrarily shaped particles. *Scand. J. Statist.* 14 (1987), no. 3, 161–180. (Summary) **89a:62042** 62E15 (62H30, 62P99)
- Jensen, E. Douglas (with Sha, Lui; Lehoczy, John P.) Modular concurrency control and failure recovery. *IEEE Trans. Comput.* 37 (1988), no. 2, 146–159. (Summary) **89a:68041** 68P15 (68N25)
- Jensen, Finn V. (with Larsen, Kim G.) Recursively defined domains and their induction principles. *Theoret. Comput. Sci.* 54 (1987), no. 1, 29–51. (Ana Pasztor) **89c:68079** 68Q55 (03B70, 03D80, 18C10)
- Jensen, Gary R. (with Rigoli, Marco) Harmonically immersed surfaces of  $\mathbb{R}^n$ . *Trans. Amer. Math. Soc.* 307 (1988), no. 1, 363–372. (Paul Baird) **89g:53006** 53A10 (53A07, 58E20)
- (with Rigoli, Marco) On the isotropy of compact minimal surfaces in  $\mathbb{C}P^n$ . *Math. Z.* 200 (1989), no. 2, 169–180. (James F. Glazebrook) **89m:53106** 53C42 (53C55, 58E20)
- (with Rigoli, Marco) Correction to: "Harmonically immersed surfaces in  $\mathbb{R}^n$ " [Trans. Amer. Math. Soc. 307 (1988), no. 1, 363–372; MR 89g:53006]. *Trans. Amer. Math. Soc.* 311 (1989), no. 1, 425–428. (Paul Baird) **89m:53009** 53A07 (53A10, 53C42)
- Jensen, H. Elbrønd (with Høholdt, Tom; Justesen, Jørn) Double series representation of bounded signals. *IEEE Trans. Inform. Theory* 34 (1988), no. 4, 613–624. (Dale H. Mugler) **89k:94010** 94A12
- Jensen, J. L. Asymptotic expansions for sums of dependent variables. *Memoirs*, 10, Aarhus University, Institute of Mathematics, Department of Theoretical Statistics, Aarhus, 1986. iv+158 pp. (Christian Hipp) **89f:60025** 60F05 (60G50, 60J10, 62E20)
- A note on asymptotic expansions for Markov chains using operator theory. *Adv. in Appl. Math.* 8 (1987), no. 4, 377–392. (Summary) **89g:60207** 60J05
- On asymptotic expansions in nonergodic models. *Scand. J. Statist.* 14 (1987), no. 4, 305–318. (I. V. Basawa) **89i:62046** 62F12 (62E20)
- Uniform saddlepoint approximations. *Adv. in Appl. Probab.* 20 (1988), no. 3, 622–634. (Claudia Klüppelberg) **89g:60042** 60E05 (60E10, 62E20, 62J05)
- bang-Jensen, Jørgen see Bang-Jensen, Jørgen
- Jensen, Karen Binary rules and binary trees: breaking down the concept of phrase structure. *Mathematics of language*, 65–86, *Benjamins*, Amsterdam, 1987. (see **89a:68006**) **68Q50**
- Jensen, L. G. (with Duncan, M. J.) The quantum cosmology of an anisotropic universe. *Nuclear Phys. B* 312 (1989), no. 3, 662–672. (Summary) **89k:83040** 83C45 (83C75, 83F05)
- Jensen, Mogens H. (with Gunaratne, Gemunu H.; Procaccia, Itamar) Universal strange attractors on wrinkled tori. *Nonlinearity* 1 (1988), no. 1, 157–180. (Summary) **89h:58114** 58F13
- Comment on: "Organization of chaos" [Phys. Rev. Lett. 59 (1987), no. 13, 1377–1380] by G. H. Gunaratne and I. Procaccia. *Phys. Rev. Lett.* 60 (1988), no. 16, 1680. (Editors) **89h:58118** 58F13 (82A99)
- Jensen, Paul A. (with Barnes, J. Wesley) Network flow programming. Reprint of the 1980 original. Robert E. Krieger Publishing Co., Inc., Melbourne, FL, 1987. xviii+408 pp. ISBN 0-89464-210-3 (Editors) **89a:90152** 90C35 (90B10)
- Jensen, Robert The maximum principle for viscosity solutions of fully nonlinear second order partial differential equations. *Arch. Rational Mech. Anal.* 101 (1988), no. 1, 1–27. (María J. Esteban) **89a:35038** 35B50 (35B25, 35J65)
- (with Barbu, Viorel; Barron, E. N.) The necessary conditions for optimal control in Hilbert spaces. *J. Math. Anal. Appl.* 133 (1988), no. 1, 151–162. (Dan Tibba) **89h:49018** 49B27 (47H15, 49C20)
- (with Lions, Pierre-Louis; Souganidis, P. E.) A uniqueness result for viscosity solutions of second order fully nonlinear partial differential equations. *Proc. Amer. Math. Soc.* 102 (1988), no. 4, 975–978. (T. I. Seidman) **89f:35027** 35B25 (35J60)
- (with Barron, E. N.) Total risk aversion, stochastic optimal control, and differential games. *Appl. Math. Optim.* 19 (1989), no. 3, 313–327. (Jati K. Sengupta) **89k:90203** 90D30 (90A10, 90D25, 93E20)
- Jensen, Rodney C. (with Hewings, Geoffrey J. D.) Regional, interregional and multiregional input-output analysis. *Handbook of regional and urban economics*, Vol. 1, 295–355, *Handbooks in Econom.*, 7, North-Holland, Amsterdam-New York, 1986. (see **89m:90047**) **90A17** (90A14)
- Jensen, Søren S. (with Babuška, I.) Dimensional reduction for nonlinear boundary value problems. *SIAM J. Numer. Anal.* 25 (1988), no. 3, 644–669. (Russell C. Thompson) **89m:65101** 65N30 (73-08, 73K25)
- Jensen, Thomas Assembling triangular and rectangular patches and multivariate splines. *Geometric modeling*, 203–220, *SIAM, Philadelphia, PA*, 1987. (see **89b:65010**) **65D07** (65D10)
- Jentsch, Lothar On a thermal stress problem for contacting half-spaces with inclusions of other material involving a new method for computing potentials and singular integrals. *Math. Methods Appl. Sci.* 10 (1988), no. 3, 225–243. (K. N. Srivastava) **89h:73011** 73C25 (73C40, 73T05)
- Jeon, Hong Tae (with Eslami, Mansour) Optimal time joint-trajectory planning for an industrial manipulator using linear interpolation. *Optimal Control Appl. Methods* 9 (1988), no. 2, 215–221. (Not in MR) **93C75**
- Jeon, Jong Woo (with Chung, Han Young; Bae, Jong Sig) Chances of Simpson's paradox. *J. Korean Statist. Soc.* 16 (1987), no. 2, 117–127. (Not in MR) **62H17**
- Jeon, T. J. (with Park, S. J.) Multiple time series model identification using concatenated sample cross-correlations. *Comm. Statist. Theory Methods* 17 (1988), no. 1, 1–16. (B. G. Quinn) **89j:62124** 62M10 (90A20)
- Jeon, W.-K. (with Lee, K. A.; Lee, Hong Jae; Lee, He. J.; Chun, D. S.; Kim, Yong-Woon; Kim, I. S.) A note on the Chern classes. *Honam Math. J.* 9 (1987), no. 1, 135–147. (Elmer G. Rees) **89a:57030** 57R20
- Jeong, Jang Chun (with Pak, Jin Suk; Oh, Gehwan) CR-submanifolds with simple geodesics immersed in a complex projective space. *Math. Rep. Toyama Univ.* 11 (1988), 129–136. (Kunio Sakamoto) **89i:53042** 53C40 (53C22)
- Jeong, Jong-Woo Some properties of Koszul complexes. *Honam Math. J.* 10 (1988), no. 1, 31–46. (José F. Andrade) **89i:13019** 13D25 (13H05)
- Jepsen, Charles H. Tiling with incomparable cuboids. *Math. Mag.* 59 (1986), no. 5, 283–292. (Heiko Harborth) **89a:50551** 50B45 (52A45)
- Jepson, A. D. (with Spence, A.) Numerical methods for bifurcation problems. *The state of the art in numerical analysis (Birmingham, 1986)*, 273–298, *Inst. Math. Appl. Conf. Ser. New Ser.*, 9, Oxford Univ. Press, New York, 1987. (Jürgen Scheurle) **89h:58042** 58E07 (65H05)
- Jerard, Robert B. (with Drysdale, Robert L., III; Schaudt, Barry; Hauck, Ken) Discrete simulation of NC machining. *Computational geometry (Waterloo, ON, 1987)*. *Algorithmica* 4 (1989), no. 1, 33–60. (Summary) **89m:68143** 68U30 (68U05)
- Jeremias López, Ana A direct proof of the normality criterion. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2. (Spanish) (Badajoz, 1986), 210–217, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Julius Crivei) **89h:13020** 13E05
- Jerinić, Ljubomir (with Stojmenović, I.) Finding the diameter of a point set on mesh-connected computers. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* 17 (1987), no. 1, 251–259. (Not in MR) **68U05** (68Q20)
- Jerison, David (with Sánchez-Calle, Antonio) Subelliptic, second order differential operators. *Complex analysis, III (College Park, Md., 1985–86)*, 46–77, *Lecture Notes in Math.*, 1277, Springer, Berlin-New York, 1987. (Makhlof Derridj) **89b:35021** 35H05 (32F20, 35K05)
- (with Lee, John M.) Extremals for the Sobolev inequality on the Heisenberg group and the CR Yamabe problem. *J. Amer. Math. Soc.* 1 (1988), no. 1, 1–13. (H. Jacobowitz) **89h:53063** 53C15 (32F25, 53C40, 58G30)
- Jermolajeva, Irina On a Hausdorffness function of a fuzzy space. *Zb. Rad. No. 2* (1988), 73. (Not in MR) **54A40** (03E72)
- Jeromin, Bernd (with Körner, F.) Some remarks on two degrees of asymmetry in the traveling salesman problem. (French summary) *RAIRO Rech. Opér.* 22 (1988), no. 3, 301–308. (Summary) **89j:90094** 90B10
- Untersuchungen zur Anwendbarkeit von heuristischen Verfahren beim traveling salesman problem und zur Verschärfung der Verhaltensschränken. [Investigations on the applicability of heuristic methods on the traveling salesman problem and on the sharpening of performance bounds] *Wiss. Z. Tech. Univ. Dresden* 37 (1988), no. 3, 167–169. (Summary) **89j:90095** 90B10
- Jeroslow, Robert G. Alternative formulations of mixed integer programs. *Ann. Oper. Res.* 12 (1988), no. 1–4, 241–276. (Knut Richter) **89f:90105** 90C11 (68T99)
- Jerrard, Richard On the sphere conjecture of Birkhoff. *Proc. Amer. Math. Soc.* 102 (1988), no. 1, 193–201. (Edward Slaminka) **89b:54045** 54H20 (55M99, 58F08)
- Jerrell, Max E. A random search strategy for function optimization. *Appl. Math. Comput.* 28 (1988), no. 3, part I, 223–229. (M. C. Cheng) **89m:65062** 65K05
- Jerri, Abdul J. An extended Poisson type sum formula for general transforms and aliasing error bound for the generalized sampling theorem. *Appl. Anal.* 26 (1988), no. 3, 199–221. (P. G. Rooney) **89d:44001** 44A05 (40A25, 65D05, 94A11)
- Jerrum, Mark Two-dimensional monomer-dimer systems are computationally intractable. *J. Statist. Phys.* 48 (1987), no. 1–2, 121–134. (H. N. V. Temperley) **89d:82008** 82-08 (68Q15, 82A68)
- Jera, I. I. The time inversion symmetry in case of time translation existing. *Group theoretical methods in physics (Varna, 1987)*, 344–346, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (Herbert Neuberger) **89m:81039** 81C05
- Jervis, Jane L. Christian H. F. Peters and the Litchfield Observatory. *From ancient omens to statistical mechanics*, 239–246, *Acta Hist. Sci. Nat. Med.*, 39, Univ. Lib. Copenhagen, Copenhagen, 1987. (From the text) **89h:01035** 01A55 (01A70)
- Jeske, Daniel R. (with Harville, David A.) Prediction-interval procedures and (fixed-effects) confidence-interval procedures for mixed linear models. *Comm. Statist. Theory Methods* 17 (1988), no. 4, 1053–1087. (A. I. Khuri) **89h:62119** 62J10 (62F25)
- Jespers, E. Jacobson rings and rings strongly graded by an abelian group. *Israel J. Math.* 63 (1988), no. 1, 67–78. (Jean-Pierre van Deuren) **89h:16003** 16A03 (16A27)
- (with Wauters, Paul) A general notion of noncommutative Krull rings. *J. Algebra* 112 (1988), no. 2, 388–415. (Jan van Geel) **89c:16010** 16A15 (16A03, 16A14, 16A27)
- Chain conditions and semigroup graded rings. *J. Austral. Math. Soc. Ser. A* 45 (1988), no. 3, 372–380. (Jan Okniński) **89j:16024** 16A34 (20M25)
- bang Jespersen, Niels Chr. see Bang Jespersen, Niels Chr.



- Jeter, Melvyn W.** (with Pye, Wallace C.) Structure properties of  $W$  matrices. *Linear Algebra Appl.* **111** (1988), 219–229. (S. R. Mohan) **89m:90156** 90C33 (15A57)
- Jetschke, G.** Systems with hysteresis in an extremely slowly fluctuating environment. (German summary) *Ann. Physik* **7** (1987), no. 8, 584–592. (Federico Marchetti) **89c:34060** 34F05 (58Fxx, 60J75)
- (with Stewie, Ch.) An ergodic theorem for intermittency of piecewise linear iterated maps. *J. Phys. A* **20** (1987), no. 11, 3185–3197. (B. S. Pickel) **89a:58060** 58F11 (26A18, 28D05, 58F08)
- Jetter, Kurt** A short survey on cardinal interpolation by box splines. *Topics in multivariate approximation* (Santiago, 1986), 125–139, Academic Press, Boston, MA, 1987. (Rong Qing Jia) **89d:41025** 41A15 (41A05, 41A63, 65D07)
- (with Riemenschneider, Sherman) Cardinal interpolation, submodules and the 4-direction mesh. *Constr. Approx.* **3** (1987), no. 2, 169–188. (Charles K. Chui) **89d:41003** 41A05 (41A15, 41A63)
- Jetto, L.** (with Germani, A.; Piccioni, M.) Galerkin approximation for optimal linear filtering of infinite-dimensional linear systems. *Stochastic modelling and filtering* (Rome, 1984), 42–63, Lecture Notes in Control and Inform. Sci., 91, Springer, Berlin-New York, 1987. (Summary) **89c:93071** 93E11 (34K35, 49D15, 93C25, 93E25)
- (with Germani, A.; Piccioni, M.) Galerkin approximation for optimal linear filtering of infinite-dimensional linear systems. *SIAM J. Control Optim.* **26** (1988), no. 6, 1287–1305. (Akira Ichikawa) **89j:93117** 93E11 (49D15, 93C05, 93C25)
- (with Fioretti, S.) Accurate derivative estimation from noisy data: a state-space approach. *Internat. J. Systems Sci.* **20** (1989), no. 1, 33–53. (Not in MR) **93E10**
- Jetzar, Philippe** (with Ellis, Jonathan Richard; Mizrahi, Leah) One-loop string corrections to the effective field theory. *Nuclear Phys. B* **303** (1988), no. 1, 1–35. (Summary) **89f:81173** 81E99 (81E30, 83E30)
- van der Jeugt, Joris** see **Van der Jeugt, Joris**
- Jewrisson, R. H.** His graph in theirs (the Coxeter graph in that of Hoffman and Singleton). Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), C, 31–36. (Edward R. Scheinerman) **89c:05100** 05C25
- A proof by graphs that  $PSL(2, 7) \cong PSL(3, 2)$ . *Discrete Math.* **70** (1988), no. 3, 315–317. (Marston Conder) **89f:05094** 05C25 (20F29)
- Magic graphs, a characterization. *European J. Combin.* **9** (1988), no. 4, 363–368. (C. St. J. A. Nash-Williams) **89f:05138** 05C75
- Jevicki, Ariel** Construction of interacting string and superstring field theory. *Internat. J. Modern Phys. A* **3** (1988), no. 2, 299–363. (George Siopsis) **89b:81198** 81E99 (81E30, 81E40)
- Jevtić, Miroslav** On the integral means of the fractional derivatives of the atomic inner function. *Complex analysis and applications '85* (Varna, 1985), 290–294, *Bulgar. Acad. Sci., Sofia*, 1986. (Kenneth Stephenson) **89c:30089** 30D50 (30D55)
- Interpolation by functions in mixed-norm spaces of analytic functions. *J. Math. Anal. Appl.* **126** (1987), no. 2, 556–565. (Introduction) **89f:30042** 30E05
- Jewell, W. S.** Lectures on utility and risk theory. *Theory of reliability* (Varenna, 1984), 254–264, *Proc. Internat. School of Phys. "Enrico Fermi", XCIV*, North-Holland, Amsterdam-New York, 1986. (Editors) **89b:90030** 90A10 (90A09)
- Jewett, Robert I.** (with Ross, Kenneth A.) Random walks on  $Z$ . *College Math. J.* **19** (1988), no. 4, 330–342. (J. Gillis) **89f:60140** 60J15
- Jewitt, Ian** (with Chesser, Andrew) The bias of a heteroskedasticity consistent covariance matrix estimator. *Econometrica* **55** (1987), no. 5, 1217–1222. (S. K. Tharthare) **89g:62099** 62J05 (62P20)
- Justifying the first-order approach to principal-agent problems. *Econometrica* **56** (1988), no. 3, 1177–1190. (Summary) **89f:90031** 90A14
- Jeworrek, Torsten** (with Schulz, Günther) Zur Lösung des Briefträgerproblems auf gemischten Graphen. [On the solution of the Chinese postman problem for mixed graphs] *Wiss. Z. Tech. Univ. Magdeburg* **31** (1987), no. 5, 58–62. (E. Olaru) **89j:90096** 90B10 (05C38, 90C35)
- Jeyakumar, V.** A general Farkas lemma and characterization of optimality for a nonsmooth program involving convex processes. *J. Optim. Theory Appl.* **55** (1987), no. 3, 449–461. (Giorgio Giorgi) **89b:90165** 90C25 (90C48)
- On optimality conditions in nonsmooth inequality constrained minimization. *Numer. Funct. Anal. Optim.* **9** (1987), no. 5–6, 535–546. (Summary) **89c:90213** 90C48 (90C30)
- Equivalence of saddle-points and optimality, and duality for a class of nonsmooth nonconvex problems. *J. Math. Anal. Appl.* **130** (1988), no. 2, 334–343. (Marco Gaviano) **89f:90142** 90C30
- Nonconvex infinite games. *Optimization* **19** (1988), no. 2, 289–296. (Tadeusz Radzik) **89g:90254** 90D13 (49A45)
- Jeyaratnam, S.** (with Panchapakesan, S.) Selection from uniform populations based on sample midranges and an associated estimation after selection. *Comm. Statist. Theory Methods* **17** (1988), no. 7, 2303–2314. (Summary) **89c:62027** 62F07 (62F10)
- (with Panchapakesan, S.) Prediction intervals for the random intercept linear model. *Comm. Statist. Theory Methods* **17** (1988), no. 9, 3067–3073. (Not in MR) **62J05**
- Jezek, D. M.** (with Hernández, E. S.) Determination of basins of attraction for  $SU(2)$  dissipative models. *J. Phys. A* **21** (1988), no. 13, 2899–2909. (Summary) **89g:58121** 58F12 (70K05, 81G40)
- Ježek, Jan** An efficient algorithm for computing real powers of a matrix and a related matrix function. (Russian and Czech summaries) *Appl. Mat.* **33** (1988), no. 1, 22–32. (N. N. Abdelmalek) **89b:65103** 65F30
- Ježek, Jaroslav** Minimal bounded varieties. *Comment. Math. Univ. Carolin.* **29** (1988), no. 2, 261–265. (Ralph Freese) **89f:08009** 08B15
- ekiel-Jelewska, Maria L.** see **Ekiel-Jelewska, Maria L.**
- Jelewska, W.** Measure of fat fractals in one-dimensional maps. *Phys. Rev. A* **3** (1988), no. 7, 3816–3819. (Summary) **89b:58119** 58F13 (26A18, 28A75)
- Jezierski, Edward** Remarks on pole assignment by constant output feedback. *Systems analysis and simulation 1988, I* (Berlin, 1988), 179–182, *Math. Res.*, 46, Akademie-Verlag, Berlin, 1988. (see **89g:00018**) **93B55**
- Jezierski, Jerzy** The Nielsen relation for multivalued maps. *Serdica* **13** (1987), no. 2, 174–181. (Summary) **89d:54036** 54H25 (54C60, 55M20)
- Jezmita, Kazimierz** (with Skwarczynski, Maciej) Holomorphic geometry of space-time. (Polish summary) *Bull. Soc. Sci. Lett. Łódź* **37** (1987), no. 1, 10 pp. (Phillip E. Parker) **89b:53059** 53B30 (32H15, 32M05, 53B50)
- Jha, Parmeshwar** Mm. Hemāṅga Thākura and his work "Rahoparagāhī". *Math. Ed. (Siwan)* **21** (1987), no. 2, 38–43. (R. C. Gupta) **89g:01014** 01A32
- Study of history of mathematics in Bihar. *Gaṇita Bhārat* **10** (1988), no. 1–4, 59–63. (Editors) **89m:01019** 01A32
- Jha, Ramanand** (with Lord, Eric A.; Sinha, K. P.) The Brans-Dicke scalar field in Einstein-Cartan theory. *Gen. Relativity Gravitation* **20** (1988), no. 9, 943–950. (Kenneth Dunn) **89f:83051** 83D05
- Jha, S. N.** (with Ranjana) Some summability processes in a non-Archimedean valued field of characteristic zero. *Math. Ed. (Siwan)* **22** (1988), no. 1, 14–18. (M. S. Rangachari) **89j:26021** 26E30 (40J05)
- Jha, Vikram** (with Johnson, Norman Lloyd<sup>1</sup>) Derivable nets defined by central collineations. *J. Combin. Inform. System Sci.* **11** (1986), no. 2–4, 83–91. (T. G. Ostrom) **89g:51003** 51A40 (51E15)
- (with Johnson, Norman Lloyd<sup>1</sup>) A note on rational covers of spreads. *Ars Combin.* **24** (1987), 175–177. (T. G. Ostrom) **89a:51020** 51E15 (05B25, 51A40)
- (with Johnson, Norman Lloyd<sup>1</sup>) Baer-elation planes. *Rend. Sem. Mat. Univ. Padova* **78** (1987), 27–45. (T. G. Ostrom) **89d:51002** 51A40 (20B25, 51E15)
- (with Johnson, Norman Lloyd<sup>1</sup>) The centre of a finite semifield plane is a geometric invariant. *Arch. Math. (Basel)* **50** (1988), no. 1, 93–96. (D. W. Erbach) **89f:51041** 51E15 (05B25, 51A40)
- (with Biliotti, Mauro; Johnson, Norman Lloyd<sup>1</sup>; Menichetti, Giampaolo) The collineation groups of Baer-elation planes. *Atti Sem. Mat. Fis. Univ. Modena* **36** (1988), no. 1, 23–35. (P. B. Kirkpatrick) **89f:51008** 51E15 (20B25, 51A40)
- (with Johnson, Norman Lloyd<sup>1</sup>) The linearity question for abelian groups on translation planes. *J. Math. Soc. Japan* **40** (1988), no. 1, 77–84. (T. G. Ostrom) **89b:51013** 51E15 (20B25, 51A40)
- Jha, H. S.** (with Srivastava, Surendra K.) On the estimation of finite population correlation coefficient. (Hindi summary) *J. Indian Soc. Agricultural Statist.* **38** (1986), no. 1, 82–91, iii. (Not in MR) **62D05**
- (with Srivastava, Surendra K.) Improved estimation in two phase and successive sampling. *J. Indian Statist. Assoc.* **25** (1987), 71–75. (Not in MR) **62D05**
- Jhang, Chang Hun** (with Kim, Yong Ryol) Research on numerical method for nonlinear multidimensional integral equation of Uryson type. (Korean. English summary) *Su-hak* **1988**, no. 1, 28–33. (Not in MR) **65R20** (45G10)
- Jhon, M.** Bootstrapping density estimates. *Comm. Statist. Theory Methods* **17** (1988), no. 1, 61–78. (Hung Trung Nguyen) **89c:62055** 62G15
- Jhung, Kwang Hwa Chung** (with Jung, Kyu Soo) Statistical mechanics of the single occupancy system. *J. Chem. Phys.* **87** (1987), no. 9, 5403–5414. (Summary) **89f:82055** 82A55 (82–04, 82A05)
- Jhung, Kyu Soo** (with Jung, Kwang Hwa Chung) Statistical mechanics of the single occupancy system. *J. Chem. Phys.* **87** (1987), no. 9, 5403–5414. (Summary) **89f:82055** 82A55 (82–04, 82A05)
- Ji, Chuanshu** Sequential scheduling of priority queues and arm-acquiring bandits. *J. Appl. Math. Simulation* **1** (1987), no. 2, 115–135. (Věra Lánská) **89k:60139** 60K25 (90B15, 90B22, 90C39, 93E20)
- Ji, D.** (with Fleming, W. H.; Pardoux, É.) Piecewise linear filtering with small observation noise. *Analysis and optimization of systems* (Antibes, 1988), 725–739, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (F. W. Stallmann) **89j:93116** 93E11
- Ji, Hui Kang** (with Ding, Da Gong) A general discussion on multikey problems. (Chinese) *Math. Practice Theory* **1987**, no. 4, 8–12. (Editors) **89k:05015** 05A99
- Ji, Liang** On establishing the basic equation for plant growth—the problem of the logistic equation. (Chinese) *Math. Practice Theory* **1988**, no. 3, 5–8. (Not in MR) **92A15**
- Ji, Ronghui** (with Xia, Jingbo) On the classification of commutator ideals. *J. Funct. Anal.* **78** (1988), no. 2, 208–232. (Raúl E. Curto) **89b:47042** 47B38 (46L80, 47D30)
- Ji, Shan Tao** (with Shen, Cheng Min) An exploration of the relationships among mathematical structures. (Chinese. English summary) *Dongbei Shida Xuebao* **1988**, no. 2, 55–60. (Not in MR) **03C07**
- Ji, Xin Hua** (with Chen, De Quan) The Tricomi's problem of the nonhomogeneous equation of mixed type in the real projective plane. *Mixed type equations*, 280–300, *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) **89b:35113** 35M05
- Ji, Yaodong** (with Chizeck, Howard J.) Controllability, observability and discrete-time Markovian jump linear quadratic control. *Internat. J. Control* **48** (1988), no. 2, 481–498. (Engin Yaz) **89c:93111** 93E20 (93B05, 93B07, 93C55)
- (with Chizeck, Howard J.) Optimal quadratic control of jump linear systems with separately controlled transition probabilities. *Internat. J. Control* **49** (1989), no. 2, 481–491. (George Yin) **89k:93224** 93E20 (49D40, 93B05, 93C55)
- Ji, Zhen Yi** (with Ye, Kai Yuan) Free vibration of nonlinear deformation ring- and stringer-stiffened nonuniform cylindrical shell. *Appl. Math. Mech. (English Ed.)* **9** (1988), no. 11, 1025–1037; translated from *Appl. Math. Mech.* **9** (1988), no. 11, 963–974 (Chinese. English summary). (Summary) **89k:73057** 73L20 (73K30)
- Ji, Zhi Fang** Equivalent forms of the continuity property of the real numbers. (Chinese) *Neimeigu Shida Xuebao Ziran Kexue Ban* **1987**, no. 2, 38–48. (Ling Yau Chan) **89j:26004** 26A03
- Jia, Chao Hua** The square-full integers in short intervals. (Chinese) *Acta Math. Sinica* **30** (1987), no. 5, 614–621. (Kai Man Tsang) **89e:11053** 11N25 (11L03)
- A generalization of a theorem on prime numbers. (Chinese. English summary) *Adv. in Math. (Beijing)* **16** (1987), no. 4, 419–426. (Kee Wai Lau) **89a:11088** 11N05 (11N37)
- The distribution of squarefree numbers. (Chinese. English summary) *Beijing Daxue Xuebao* **1987**, no. 3, 21–27. (Ming Gao Lu) **89b:11060** 11N37 (11N45)
- Jia, Guang Ju** On the Diophantine equation  $x^2 - Dy^{2n} = -1$ . (Chinese. English summary) *Natur. Sci. J. Harbin Normal Univ.* **3** (1987), no. 2, 5–8. (Zhen Fu Cao) **89m:11026** 11D41
- Jia, Rong Qing** (with Wu, Zheng Chang) Bernstein polynomials on simplices. (Chinese) *Acta Math. Sinica* **31** (1988), no. 4, 510–522. (Geng Zhe Chang) **89k:41007** 41A10
- Spline interpolation at knot averages. *Constr. Approx.* **4** (1988), no. 1, 1–7. (Summary) **89f:41003** 41A05 (41A15)
- $B$ -net representation of multivariate splines. *Kexue Tongbao (English Ed.)* **33** (1988), no. 10, 807–811. (Yu Yu Feng) **89k:41017** 41A15 (41A63, 65D07)

- Jia, T.** (with Amirouche, F. M. L.) Pseudotriangular decomposition method for constrained multibody systems using Kane's equations. *J. Guidance Control Dynamics* **11** (1988), no. 1, 39–46. (Summary) **89i:70004** 70-08 (70B15, 70E99, 70F20, 70F25)
- (with Amirouche, F. M. L.; Ider, S. K.) A recursive Householder transformation for complex dynamical systems with constraints. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 3, 729–734. (Summary) **89g:70003** 70-08 (70B15, 70E99)
- Jia, Xing De** Exact order of subsets of asymptotic bases in additive number theory. *J. Number Theory* **28** (1988), no. 2, 205–218. (H. G. Meijer) **89c:11022** 11B13
- Simultaneous systems of representatives for finite families of finite sets. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 33–36. (Georges Grekos) **89i:05004** 05A05 (11B99)
- On the distribution of a  $B_2$ -sequence. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Xue Ban* **14** (1988), no. 1, 12–18. (Summary) **89j:11023** 11B83 (11B13, 11B34)
- Jian, Ren Yi** Spectral decompositions for polynomials of a closed operator in a Banach space. (Chinese. English summary) *J. Math. Res. Exposition* **6** (1986), no. 3, 31–33. (Sheng Wang Jiang) **89c:47047** 47B40 (47A60)
- Jian, Zhisheng** see Jiang, Zhi Sheng
- Jiang, B.-N.** (with Carey, G. F.) Least-squares finite element approximation of nonlinear problems. *Nonlinear analysis and applications* (Arlington, Tex., 1986), 267–272, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (Andreas Felgenhauer) **89b:65267** 65N30 (76G99)
- (with Carey, G. F.) Least-squares finite element method and preconditioned conjugate gradient solution. *Internat. J. Numer. Methods Engrg.* **24** (1987), no. 7, 1283–1296. (Mutsuto Kawahara) **89a:65163** 65N30
- (with Carey, G. F.) A stable least-squares finite element method for nonlinear hyperbolic problems. *Internat. J. Numer. Methods Fluids* **8** (1988), no. 8, 933–942. (Summary) **89g:65123** 65M60
- Jiang, Ben Xian** (with Lin, Peng Cheng) A singular perturbation problem for periodic boundary differential equation. *Appl. Math. Mech. (English Ed.)* **8** (1987), no. 10, 929–937; translated from *Appl. Math. Mech.* **8** (1987), no. 10, 877–884 (Chinese. English summary). (P. F. Hsieh) **89c:65087** 65L10 (34A25, 34B05, 34C25, 34E15)
- Jiang, Bo Ju** A characterization of fixed point classes. *Fixed point theory and its applications* (Berkeley, CA, 1986), 157–160, *Contemp. Math.*, 72, Amer. Math. Soc., Providence, RI, 1988. (Helga Schirmer) **89j:55004** 55M20 (58F20, 58F22)
- Jiang, Chun Xuan** A mathematical model for particle classification. *Acta Math. Sci. (English Ed.)* **8** (1988), no. 2, 133–144. (Not in MR) **81G25**
- Nonlinear dynamics in Santilli's electronic model of hadronic structure. *Hadronic J.* **11** (1988), no. 3, 125–142. (Not in MR) **81G25**
- Jiang, Chung Li** Sufficient condition for the asymptotic stability of interval matrices. *Internat. J. Control* **46** (1987), no. 5, 1803–1810. (A. Göpfert) **89b:93094** 93D20 (65G10)
- Another sufficient condition for the stability of interval matrices. *Internat. J. Control* **47** (1988), no. 1, 181–186. (Andrzej W. Olbrot) **89c:93072** 93B35 (15A18, 15A42, 34D10, 93D99)
- Sufficient and necessary condition for the asymptotic stability of discrete linear interval systems. *Internat. J. Control* **47** (1988), no. 5, 1563–1565. (Not in MR) **93D20** (93C05, 93C40, 93C55)
- see also Kolla, S. R., (Not in MR) and Karl, W. Clem., (Not in MR)
- Jiang, Dong Ping** The logistic equation and the Lotka-Volterra equation with almost periodic coefficients. *Ann. Differential Equations* **4** (1988), no. 2, 143–157. (Hal Leslie Smith) **89j:92065** 92A17 (34C27, 34D20)
- Almost periodic solutions and periodic solutions of a forced Brusselator. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **5** (1988), no. 1, 96–101. (Tong Ren Ding) **89j:34062** 34C27 (34C25, 58F22, 58F27, 58F30, 92A09)
- Jiang, Er Xiong** An estimate of the difference between a diagonal element and the corresponding eigenvalue of a symmetric tridiagonal matrix. *J. Comput. Math.* **5** (1987), no. 2, 144–155. (K. Moszyński) **89c:65047** 65F15
- The inverse eigenvalue problem for a special class of matrices. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **9** (1987), no. 3, 198–208. (Ji-guang Sun) **89b:65053** 65F15 (15A18)
- Jiang, Guo Ying** Some nonexistence theorems on 2-harmonic and isometric immersions in Euclidean space. (Chinese) An English summary appears in *Chinese Ann. Math. Ser. B* **8** (1987), no. 3, 389. *Chinese Ann. Math. Ser. A* **8** (1987), no. 3, 377–383. (C.-C. Hsiung) **89a:53071** 53C42 (53C40)
- Jiang, Hao** A class of finite proper BCI-algebras. (Chinese. English summary) *J. Hangzhou Univ.* **15** (1988), no. 4, 388–395. (From the summary) **89k:06011** 06D99 (03G25)
- Jiang, He Yang** Variational bases for large deformed finite elements in plates and shells via a quasiconforming model. (Chinese. English summary) *J. Dalian Univ. Tech.* **28** (1988), no. 1, 23–28. (Not in MR) **73K25**
- Jiang, Hong** (with Rogers, Thomas D.) The discrete dynamics of symmetric competition in the plane. *J. Math. Biol.* **25** (1987), no. 6, 573–596. (Frederick R. Marotto) **89c:58083** 58F14 (92A15)
- Jiang, Hua Guang** Optimality conditions for a nonsmooth optimization problem. (Chinese) *J. Shanghai Jiaotong Univ.* **1987**, no. 5, 116–120. (Ding Zhu Du) **89b:90166** 90C25 (49A52, 90C30)
- Jiang, Ji Fa** (with Liu, Zeng Rong) The subharmonic bifurcations and horseshoes in a non-Hamiltonian system. (Chinese) *Acta Math. Appl. Sinica* **10** (1987), no. 4, 504–508. (Summary) **89b:58153** 58F14 (58F15)
- Jiang, Ji Guang** A characterization of paracompactness. II. (Chinese) *Kexue Tongbao (Chinese)* **32** (1987), no. 15, 1128–1131. (Not in MR) **54D18**
- Metrizability of topological spaces with a  $cs$ -regular base. *Questions Answers Gen. Topology* **5** (1987), no. 2, 243–248. (R. Hodel) **89a:54038** 54E35
- On  $\omega_\alpha$ -metrizability of topological spaces. (Chinese) *Acta Math. Sinica* **31** (1988), no. 1, 95–100. (Shu-Tang Wang) **89i:54040** 54E35 (54E30)
- A characterization of submetacompactness. A Chinese summary appears in *Chinese Ann. Math. Ser. A* **9** (1988), no. 2, 241. *Chinese Ann. Math. Ser. B* **9** (1988), no. 2, 151–155. (József Chaber) **89k:54051** 54D18 (54D15)
- Jiang, Jia He** Fixed point theorems for convex sets. *Acta Math. Sinica (N.S.)* **4** (1988), no. 4, 356–363. (Gérard Lebourg) **89m:47050** 47H10 (54C60, 54H25)
- Jiang, Jian Guo** (with Bi, Wen Yi; Luo, Xiao Nan) A general algorithm for the FFT, its minimization and the optimal radix. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **9** (1987), no. 3, 219–226. (Summary) **89g:65173** 65T05
- (with Bi, Wen Yi; Luo, Xiao Nan) The general algorithm of the FFT and its minimum. (Chinese. English summary) *Math. Numer. Sinica* **10** (1988), no. 1, 1–5. (Summary) **89i:65142** 65T05
- Jiang, Jin** (with Doraiswami, R.) Direct and blockwise identification of decomposable systems using recursive least-squares algorithm. *Internat. J. Systems Sci.* **19** (1988), no. 12, 2441–2447. (Summary) **89k:93064** 93B30 (93B40, 93C55)
- Jiang, Jyh-Ming** Starlike functions and linear functions of a Dirichlet distributed vector. *SIAM J. Math. Anal.* **19** (1988), no. 2, 390–397. (Gabriele Laue) **89c:60049** 60F05 (30C45)
- Jiang, Li Shang** (with Xie, Wei Qing) A two-phase Stefan-Signorini problem. (Chinese. English summary) *Beijing Daxue Xuebao* **1986**, no. 5, 1–14. (From the summary) **89g:80006** 80A20 (35R35)
- Jiang, Li Zhi** (with Chen, Jue Ting) A model of fuzzy quantification discrimination and its application. (Chinese. English summary) *Math. Appl.* **1** (1988), no. 4, 47–54. (Not in MR) **62H30** (03E99)
- Jiang, La** (with Chu, Fu Ming; Fang, Fu Kang) The operator method for solving the moment equation of Fokker-Planck equation. *Comm. Theoret. Phys.* **7** (1987), no. 2, 187–194. (Summary) **89d:82060** 82A35 (35Q20)
- Jiang, Mao Sen** A simple derivation for the number of combinations without unit separations. (Chinese. English summary) *J. Math. Res. Exposition* **8** (1988), no. 1, 42–44. (Summary) **89c:05014** 05A15 (05A05)
- Jiang, Mei Yue** Existence of periodic solutions for a class of Hamiltonian systems. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 5, 325–328. (Not in MR) **58F05** (34C25, 58F22, 70K99)
- Jiang, Ming De** A composition rule for generalized elements. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 8, 567–569. (Not in MR) **68Q60**
- On combinatory-logic essence of functions  $\rho$  and  $\mu$  in FFP. *Kexue Tongbao (English Ed.)* **33** (1988), no. 3, 246–250. (Simona Ronchi Della Rocca) **89m:68087** 68Q55 (03B40, 03B70)
- Jiang, Ming Yue** (with Zhou, Zheng Xin) A qualitative analysis of two kinds of group models. (Chinese. English summary) *Yangzhou Shiyan Xuebao Ziran Xue Ban* **1987**, no. 4, 7–12. (Zhu Jun Jing) **89j:92055** 92A15 (34C05)
- Jiang, Nai Chang** (with Han, De Hong) Memory condensation of the Jacobi matrix of pipe network equations and optimization of node symbols in pipe network graphs. (Chinese. English summary) *Hunan Daxue Xuebao* **14** (1987), no. 4, 37–42. (Not in MR) **90B10** (65F99)
- Jiang, Qing** On Noether's theorem and conservation laws in thermo-elasticity. *Acta Math. Sci. (English Ed.)* **6** (1986), no. 1, 37–44. (Summary) **89a:73062** 73U05 (49A29)
- Jiang, Ren Bi** A sufficient condition for a smooth mapping germ to be finitely determined with respect to the group  $\mathcal{H}$ . (Chinese. English summary) *Beijing Shifan Daxue Xuebao* **1988**, no. 2, 12–17. (Summary) **89k:58039** 58C27
- Jiang, Ren Fang** Relations between invariants of special matrices and their realization. (Chinese) *Acta Math. Sinica* **30** (1987), no. 5, 577–587. (Shao Kuan Li) **89a:15010** 15A21
- Jiang, Sheng** Spaces of generalized quasiconstant curvature. (Chinese) *Yangzhou Shiyan Xuebao Ziran Xue Ban* **1985**, no. 1, 2–7. (McKenzie Y. Wang) **89j:53125** 53C50 (53C25)
- Jiang, Sheng Yuan** Weak generalized inverses of morphisms in concrete categories. (Chinese. English summary) *J. Math. (Wuhan)* **8** (1988), no. 1, 79–82. (Summary) **89j:18001** 18A20
- $T$ -inverses of matrices and constrained linear equations. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Xue Ban* **14** (1988), no. 3, 50–55. (Shao Kuan Li) **89i:15003** 15A06 (15A09)
- Jiang, Shou Li** Every strict  $p$ -space is  $\theta$ -refinable. *Proceedings of the 1986 Topology Conference* (Lafayette, LA, 1986). *Topology Proc.* **11** (1986), no. 2, 309–316. (Heikki J. K. Junnila) **89j:54030** 54E18 (54D18)
- On a Junnila problem. *Questions Answers Gen. Topology* **6** (1988), no. 1, 43–47. (P. Fletcher) **89c:54042** 54D30
- Jiang, Shou Shan** (with Yang, Peng Ji)  $C^1$  rational interpolating surface under local coordinate systems. *Appl. Math. Mech. (English Ed.)* **8** (1987), no. 6, 503–508; translated from *Appl. Math. Mech.* **8** (1987), no. 6, 485–490 (Chinese. English summary). (Yury Girshovich) **89a:65015** 65D05
- $G^1$  and  $G^2$  interpolations to 3D scattered data. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **9** (1988), no. 2, 98–105. (Summary) **89i:65015** 65D15
- Jiang, Song** (with Li, Kai Tai) The coupling of finite element method and boundary element method for two-dimensional Helmholtz equation in an exterior domain. *J. Comput. Math.* **5** (1987), no. 1, 21–37. (Jan Mandel) **89c:65120** 65N30
- Jiang, Tao** (with Ibarra, Oscar H.) On one-way cellular arrays. *SIAM J. Comput.* **16** (1987), no. 6, 1135–1154. (Karel Culik II) **89a:68166** 68Q80 (68Q05)
- (with Ibarra, Oscar H.; Ravikumar, Bala) Some subclasses of context-free languages in  $NC^1$ . *Inform. Process. Lett.* **29** (1988), no. 3, 111–117. (Summary) **89j:68055** 68Q15 (68Q45)
- (with Ibarra, Oscar H.) Relating the power of cellular arrays to their closure properties. *Theoret. Comput. Sci.* **57** (1988), no. 2-3, 225–238. (Summary) **89b:68111** 68Q80 (68Q45)
- Jiang, Tao** (with Chu, Xue Dao) A fast identification method for the SISO CARMA model. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Xue Ban* **14** (1988), no. 3, 8–15. (George Yin) **89k:93211** 93E12 (93E25)
- Jiang, Xiao Hua** An algorithm with decreasing adaptive gains for multivariable discrete model reference adaptive systems. (Chinese. English summary) *J. Guizhou Inst. Tech.* **16** (1987), no. 1, 120–130. (Han Fu Chen) **89f:93027** 93C40 (93C35, 93E10)
- Jiang, Xing Yao** The Steiner problem on a surface. *Appl. Math. Mech. (English Ed.)* **8** (1987), no. 10, 969–974; translated from *Appl. Math. Mech.* **8** (1987), no. 10, 911–916 (Chinese. English summary). (Hellmuth Stachel) **89c:51021** 51M05 (51N20)
- Inequalities for vertex angles of higher-dimensional simplexes. (Chinese) An English summary appears in *Chinese Ann. Math. Ser. B* **9** (1988), no. 1, 147–148. *Chinese Ann. Math. Ser. A* **8** (1987), no. 6, 668–670. (Zhi Quan Kuang) **89f:52030** 52A40 (51K99)
- Jiang, Xun Dong** Complex-coordinate solutions for the eigenvalues of the harmonic oscillator and the hydrogen atom. (Chinese. English summary) *J. Northeast Univ. Tech.* **8** (1987), no. 4, 431–437. (Summary) **89f:81068** 81C99



- Jiang, Yin Sheng** Note on a proof of W. Rudin. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* 4 (1987), no. 3, 42–44. (Bor-Luh Lin) **89c:46036** 46E15 (42A16, 46N05)
- Jiang, You Lin** The qualitative analysis of two-species predator-prey systems with Holling's type II functional response. (Chinese. English summary) *Comm. Appl. Math. Comput.* 1 (1987), no. 2, 34–41. (Wei-Min Liu) **89j:92056** 92A15 (34C25)
- Jiang, Yuan Sheng** (with Tang, Ao Qing; Yan, Guo Sen; Tai, Shu Shan) ★ Graph theoretical molecular orbitals. Translated from the Chinese by Chin Chiao Hai. Science Press, Beijing, 1986. viii+247 pp. (N. Trinajstić) **89d:92102** 92A40 (05C99)
- Jiang, Yun Fei** A revision and proof for the definition principle in the book *A computational logic* by R. S. Boyer and J. S. Moore [Academic Press, New York, 1979; MR 81d:68127]. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* 1987, no. 4, 112–116. (Editors) **89c:68107** 68T15 (03-04, 03B35)
- Jiang, Z. H.** see **Jiang, Zhi Hua**
- Jiang, Ze Pei** Entropy of the stationary Gaussian random field. (Chinese summary) *Beijing Daxue Xuebao* 1987, no. 1, 25–35. (From the summary) **89d:60095** 60G60 (94A17)
- Jiang, Zeng Rong** Polynomial transforms with modulus  $z^{2k} - z^k + 1$ . (Chinese. English summary) *Hunan Ann. Math.* 7 (1987), no. 2, 1–9. (Summary) **89i:34007** 94A11 (65T05)
- Jiang, Zhi Hua** Block pulse function approach for the identification of Hammerstein model nonlinear systems. *Internat. J. Systems Sci.* 19 (1988), no. 12, 2427–2439. (Summary) **89k:93081** 93B40 (93B30)
- Jiang, Zhi Sheng** (with Sun, Yu Xiang) Criteria for nonsingularity of matrices. (Chinese) *Dongbei Shida Xuebao* 1987, no. 4, 14, 21. (Shao Kuan Li) **89f:15007** 15A09
- Jiang, Zhi Xing** (with Zhang, You Wen; Yu, Zhi Qiang) Ewald-Oseen extinction theorem and Lorentz-Lorenz formula for the general electromagnetic substance. *J. Opt. Soc. Amer. A* 5 (1988), no. 10, 1601–1604. (Summary) **89h:78007** 78A30
- Jiang, Zhuhan** (with Bullough, R. K.) Combined  $\bar{\partial}$  and Riemann-Hilbert inverse methods for integrable nonlinear evolution equations in  $(2+1)$  dimensions. *J. Phys. A* 20 (1987), no. 7, L429–L435. (Benno Fuchssteiner) **89a:35183** 35Q20
- Jiang, Zong Wen** (with Yang, Ming) An optimization algorithm for the best fitting of straight lines to transducer characteristics. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 4, part II, 181–186. (Not in MR) **65D10**
- Jian Rengyi** see **Jian, Ren Yi**
- Jibu, Mari** (with Yasue, Kunio; Misawa, Tetsuya; Zambrini, J.-C.) Stochastic neurodynamics. *Ann. Inst. Statist. Math.* 40 (1988), no. 1, 41–59. (T. W. Barrett) **89d:92038** 92A09
- Jie, Du** see **De, Jie**
- Jie, Fang Zhao** A result on the order of the product of two elements of finite order in a group. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* 22 (1988), no. 2, 139–140. (Not in MR) **20D60**
- Jieng, Zengrong** see **Jiang, Zeng Rong**
- kāshyār al-Jilī, Abū'l-Ḥasan** see **Kāshyār al-Jilī, Abū'l-Ḥasan**
- Jimbo, Masakazu** (with Kuriki, Shinji) A product theorem for cyclic graph designs. *Combinatorial design theory*, 287–295, North-Holland Math. Stud., 149, North-Holland, Amsterdam-New York, 1987. (Jean-Claude Bermond) **89c:05023** 05B30 (05C25)
- (with Mukerjee, Rahul; Kageyama, Sanpei) On cyclic semiregular group divisible designs. *Osaka J. Math.* 24 (1987), no. 2, 395–407. (From the introduction) **89h:05018** 05B05 (05B30, 62K05)
- Jimbo, Michio** (with Miwa, Tetsuji; Okado, Masato) Solvable lattice models whose states are dominant integral weights of  $A_n^{(1)}$ . *Lett. Math. Phys.* 14 (1987), no. 2, 123–131. (F. W. Nijhoff) **89c:82017** 82A69 (17B67, 82A68)
- (with Date, E.; Kuniba, A.; Miwa, Tetsuji; Okado, Masato) Exactly solvable SOS models: local height probabilities and theta function identities. *Nuclear Phys. B* 290 (1987), no. 2, 231–273. (George E. Andrews) **89d:82114** 82A67 (05A19, 11P57, 81E25, 81E40, 82A69)
- (with Miwa, Tetsuji; Okado, Masato) Solvable lattice models related to the vector representation of classical simple Lie algebras. *Comm. Math. Phys.* 116 (1988), no. 3, 507–525. (F. W. Nijhoff) **89j:17018** 17B65 (58F07, 82A68, 82A69)
- (with Okado, Masato; Miwa, Tetsuji) Two-dimensional solvable lattice models and modular functions. (Japanese) *Sugaku Expositions* 2 (1989), 29–54. *Sūgaku* 40 (1988), no. 1, 1–18. (Takayuki Nōno) **89j:82083** 82A69 (11F22, 17B65, 58G35, 81E40)
- see also **Conformal field theory and solvable lattice models**, **89f:81003**
- Jimbo, Shuichi** Singular perturbation of domains and the structure of the solutions of semilinear elliptic equations. *Recent topics in nonlinear PDE, III* (Tokyo, 1986), 105–117, North-Holland Math. Stud., 148, North-Holland, Amsterdam-New York, 1987. (Walter G. Kelley) **89f:35028** 35B25 (35B32, 35J65)
- Characterization of the eigenfunctions in the singularly perturbed domain. *Proc. Japan Acad. Ser. A Math. Sci.* 63 (1987), no. 8, 285–288. (Volker Vogelsang) **89f:35155** 35P05 (35B40, 35J05)
- Singular perturbation of domains and semilinear elliptic equation. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* 35 (1988), no. 1, 27–76. (Bernhard Kawohl) **89h:35036** 35B25 (35J65)
- Characterization of the eigenfunctions in the singularly perturbed domain. II. *Proc. Japan Acad. Ser. A Math. Sci.* 64 (1988), no. 1, 14–16. (Volker Vogelsang) **89m:35162** 35P05 (35J05, 35P20)
- Existence of the perturbed solutions of semilinear elliptic equation in the singularly perturbed domains. *Proc. Japan Acad. Ser. A Math. Sci.* 64 (1988), no. 2, 33–36. (Bernhard Kawohl) **89m:35079** 35J65 (35B20)
- Jimbo, Shuji** (with Maruoka, A.) Expanders obtained from affine transformations. *Combinatorica* 7 (1987), no. 4, 343–355. (Miroslav Krivánek) **89d:68071** 68R10 (05C99)
- alvarez Jimenez, Carlos** see **Alvarez Jimenez, Carlos**
- alvarez Jimenez, Carolina A.** see **Núñez Jiménez, Carolina A.**
- Jimenez, F.** see **Jimenez Lorenzo, Fernando**
- Jimenez, J. Alfredo** Existence of Hermitian  $n$ -symmetric spaces and of noncommutative naturally reductive spaces. *Math. Z.* 196 (1987), no. 2, 133–139. (O. Kowalski) **89b:53088a** 53C30 (32M15, 53C55)
- The focal locus of a Riemannian 4-symmetric space. *Canad. Math. Bull.* 31 (1988), no. 2, 175–181. (R. J. Crittenden) **89g:53074** 53C35 (53C22)
- Addendum to: "Existence of Hermitian  $n$ -symmetric spaces and of noncommutative naturally reductive spaces." *Math. Z.* 197 (1988), no. 3, 455–456. (O. Kowalski) **89b:53088b** 53C30 (32M15, 53C55)
- Jiménez, J. L.** (with Campos, I.) A "nonrelativistic" approach to the Lorentz-Dirac equation. (Italian and Russian summaries) *Nuovo Cimento B* (11) 101 (1988), no. 6,
- 687–696. (P. Achuthan) **89k:78013** 78A35
- Jiménez, Javier** Linear stability of a nonsymmetric, inviscid, Kármán street of small uniform vortices. *J. Fluid Mech.* 189 (1988), 337–348. (Summary) **89c:76066** 76E99 (76C05)
- Jiménez, Juan Francisco** (with Di Prisco, A.; Herrera, L.; Galina, V.; Ibañez, J.) The Bondi metric and conformal motions. *J. Math. Phys.* 28 (1987), no. 11, 2692–2696. (Summary) **89h:83007** 83C15 (83C40)
- (with Herrera, L.; Esculpi, M.) Surface phenomena in general relativistic stellar models: critical mass and stability. *Phys. Lett. A* 130 (1988), no. 4–5, 211–216. (Summary) **89d:83049** 83C99 (85A15)
- Jiménez, M.** see **Jiménez Pozo, Miguel A.**
- Jiménez, Raúl Francisco** (with Díaz Díaz, Jesús Ildefonso) Boundary behaviour of solutions of the Signorini problem. I. The elliptic case. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 2 (1988), no. 1, 127–139. (M. Biroli) **89f:35090** 35J85 (35B99, 49B22, 73C02)
- Jiménez Garjón, Pedro** Rational  $s$ -identities in Jordan algebras. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 218–222, Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89j:17024** 17C05
- Jiménez Guerra, Pedro** (with Balbás, A.) Representation of operators by bilinear integrals. *Czechoslovak Math. J.* 37(112) (1987), no. 4, 551–558. (R. Rao Chivukula) **89c:47052** 47B99 (46G10)
- (with Balbás, A.) A Radon-Nikodým theorem for a bilinear integral in locally convex spaces. *Math. Japon.* 32 (1987), no. 6, 863–870. (Z. Lipceki) **89f:46096** 46G10 (28B05)
- Jiménez Lorenzo, Fernando** (with Sierra, Germán) Quenched string field theory. *Phys. Lett. B* 202 (1988), no. 1, 58–62. (A. I. Pashnev) **89j:81190** 81E99 (22E70, 81E30)
- Jiménez Pozo, Miguel A.** (with López Lagomasino, Guillermo) Korovkin type theorems for certain classes of analytic functions. (Spanish summary) *Cienc. Mat. (Havana)* 8 (1987), no. 2, 25–29. (R. Gervais) **89c:30096** 30E10 (30H05, 41A65, 47B38)
- see also **Approximation and optimization**, **89k:41001**
- Jin, An Jun** (with Xiong, Chuan Sheng; Zhu, Zhong Yuan) Discussions on the general solutions to the Wess-Zumino conditions in higher dimensions. *Comm. Theoret. Phys.* 7 (1987), no. 3, 287–291. (Not in MR) **81E13**
- Jin, Chao Ding** (with Zhang, Hong Jun; Dai, Jian Hua; Wang, Peng Ye; Hao, Bai Lin) Analytical study of a bimodal map related to optical bistability. *Comm. Theoret. Phys.* 8 (1987), no. 3, 281–294. (Summary) **89k:58203** 58F13 (78A60)
- Jin, Chong Fang** Newton-like methods for solving singular problems. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* 1988, no. 1, 9–11, 8. (Summary) **89j:65047** 65J15 (58C15)
- Jin, Fei Fei** (with Zhu, Bao Zhen) Interaction of forced wave, free wave and zonal flow. I. Bifurcation of the equilibria. *Sci. Sinica Ser. B* 31 (1988), no. 4, 469–480. (Summary) **89m:86024a** 86A35 (58F14, 76C20)
- (with Zhu, Bao Zhen) The interaction between forced wave, free wave and zonal flow. II. Qualitative analysis for the transition and oscillation of high and low indexes. *Sci. Sinica Ser. B* 31 (1988), no. 5, 596–603. (Summary) **89m:86024b** 86A35 (58F14, 76C20)
- Jin, Fu Sheng** Some equations of higher order in analytical mechanics. (Chinese. English summary) *J. Wuhan Inst. Tech.* 1987, no. 1, 1–20. (Summary) **89c:70039** 70H99 (70F20, 70F25)
- A practical unified theory for basic problems of continuum mechanics of a certain class (continued)—properties of the basic model. (Chinese. English summary) *J. Wuhan Inst. Tech.* 1987, no. 2, 1–20. (Not in MR) **73B99**
- Jin, J.-D.** (with Matsuzaki, Y.) Bifurcations in a two-degree-of-freedom elastic system with follower forces. *J. Sound Vibration* 126 (1988), no. 2, 265–277. (Summary) **89g:70017** 70K40 (58F14, 70K20)
- Jin, Jing Ping** A new proof of the convex function theorem. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 14 (1988), no. 1, 76–77. (Guang Ya Chen) **89h:26016** 26B25 (26D20)
- Jin, Jun** On the uniform boundedness of the solution of the nonlinear differential equation of the fourth order. *Ann. Differential Equations* 4 (1988), no. 2, 159–171. (János Karsai) **89j:34048** 34C11
- On the global asymptotic stability of periodic solutions of a class of ecological system. *Appl. Math. Mech. (English Ed.)* 9 (1988), no. 8, 805–811; translated from *Appl. Math. Mech.* 9 (1988), no. 8, 753–758 (Chinese. English summary). (J. Milota) **89k:92069** 92A17
- Jin, Kun** Adaptive regression for a class of nonlinear models. (Chinese. English summary) *Adv. in Math. (Beijing)* 17 (1988), no. 2, 190–195. (Summary) **89f:62055** 62J02
- Jin, Mao Yuan** (with Zhu, Ben Ren) An explicit scheme for an inverse scattering problem and its stability analysis. *Numerical methods for partial differential equations* (Shanghai, 1987), 203–209, *Lecture Notes in Math.*, 1297, Springer, Berlin-New York, 1987. (Carlos A. de Moura) **89h:65306** 65P05
- (with Zhu, Ben Ren; Yang, Chun Sen; Zhang, Sheng Li) A class of universal iterative methods for solving systems of equations of the first kind. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* 9 (1987), no. 3, 209–218. (E. L. Yip) **89j:65035** 65F10
- Jin, Ting Zan** (with Zhu, Yi Ning) Computer generation of highly realistic three-dimensional images. (Chinese. English summary) *Zhejiang Daxue Xuebao* 22 (1988), no. 3, 10–23. (Not in MR) **68U10**
- Jin, Wei Yan** (with Liu, Yong Qing; Han, Jing Qing; Qin, Yuan Xun) A criterion for all the roots of an algebraic equation to have negative real parts. (Chinese. English summary) *Control Theory Appl.* 4 (1987), no. 4, 41–47. (Not in MR) **26C10** (93B25)
- Jin, Wen Zhou** The law of the iterated logarithm for subsequences of sums of random variables in a Banach space. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* 1987, no. 3, 51–58. (Summary) **89c:60024** 60B12
- Jin, Xiao Qing** (with Chan, W. L.) Singular extremal control problem with time delay. *Internat. J. Control* 47 (1988), no. 6, 1795–1810. (Summary) **89d:34123** 34K35 (49B36, 93B25)
- Jin, Xing** (with Yu, Ke Ming) On the convergence rates for the virtual waiting time of a  $G1/G1$  system. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* 3 (1987), no. 4, 298–305. (Summary) **89g:60282** 60K25 (90B22)
- On Berry-Esseen rate for queue length of the  $G1/G1$  system in heavy traffic. *J. Appl. Probab.* 25 (1988), no. 3, 596–611. (Douglas P. Kennedy) **89i:60182** 60K25 (90B22)

- Jin, Yong Kang** (with Zhang, Wei Ming) Improvement of multilevel continuous sampling plans. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* 3 (1987), no. 4, 318–325. (Not in MR) 62N10
- Jin, Yue Feng** A new condition for Clarke's normal cone to be weak\* closed. (Chinese) *J. Xinjiang Univ. Nat. Sci.* 3 (1986), no. 4, 45–47. (Kung-fu Ng) 89b:46027 46B99 (49A52)
- Jin, Zheng Da** On the realization of logic circuits for fuzzy functions. (Chinese. English summary) *Fuzzy Math.* 7 (1987), no. 3–4, 93–94, 78. (Not in MR) 94D05 (03E72)
- Jin, Zhi Ming** Multiobjective optimal stopping and constrained optimal stopping. (Chinese) *J. Math. Res. Exposition* 8 (1988), no. 1, 129–138. (Not in MR) 93E20
- Jin, Zhi Quan** (with Silberschatz, A.) Proof techniques for port-directed communication and broadcast. *J. Comput. Sci. Tech. (English Ed.)* 2 (1987), no. 2, 81–91. (Summary) 89i:68095 68Q60 (68M10)
- Jin, Zhi Ying** (with Lian, Qing Rong) A new algorithm for computing eigenvalues of skew-symmetric matrices. (Chinese. English summary) *Math. Numer. Sinica* 9 (1987), no. 2, 200–205. (Qinghua Zheng) 89e:65040 65F15
- Jin, Zhong Ji** (with Wang, Yue Yun; Zhang, Zhong Jun) Feedback control and a pole placement method for generalized systems. (Chinese. English summary) *Acta Automat. Sinica* 14 (1988), no. 4, 285–288. (Summary) 89i:93068 93C30 (93B55)
- Jinadasa, K. G.** (with Tracy, D. S.) Matrix derivatives of patterned matrices and statistical applications. *New perspectives in theoretical and applied statistics* (Bilbao, 1986), 341–351, *Wiley Ser. Probab. Math. Statist.: Probab. Math. Statist.*, Wiley, New York, 1987. (A. G. Žilinskas) 89f:65153 65U05 (62H12)
- Applications of the matrix operators vech and vec. *Linear Algebra Appl.* 101 (1988), 73–79. (D. S. Tracy) 89e:15039 15A69 (62H99)
- Jing, Feng Jie** Finite nonabelian groups with  $A(G)$  isomorphic to  $S_3$ . (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 13 (1987), no. 3, 203–204. (Chai Yin Ho) 89a:20022 20D45
- On derivations of T-rings. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 13 (1987), no. 4, 159–161. (Weixin Chen) 89a:16055 16A78 (16A70, 16A72)
- (with Guo, Wen Bin) Finite abelian groups with automorphism groups of order 6 or 8. (Chinese. English summary) *Yangzhou Shiyan Xuebao Ziran Kexue Ban* 1987, no. 4, 38–41. (Hugo S. Sun) 89j:20030 20D45 (20F28, 20K01)
- Jing, Si Cong** (with Ruan, Tu Nan; Fan, Hong Yi) A regularization scheme for obtaining Bardeen anomaly. *Comm. Theoret. Phys.* 9 (1988), no. 2, 227–234. (Summary) 89m:81112 81E15
- (with Ruan, Tu Nan) Joint invariance of generating functional and chiral anomalous term in gauge theory. *Sci. Sinica Ser. A* 31 (1988), no. 5, 563–575. (Summary) 89i:81127 81E99 (81E15)
- Jing, Xing** see **Jin, Xing**
- Jing, Yuan Wei** (with Zhang, Si Ying) The solution to a kind of Stackelberg game systems with multi-follower: coordinative and incentive. *Analysis and optimization of systems* (Antibes, 1988), 593–602, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) 89e:90225 90D10 (90D26)
- Jing, Zhu Jun** Qualitative analysis of a mathematical model for tissue inflammation dynamics. *Acta Math. Sinica (N.S.)* 3 (1987), no. 4, 327–339. (Brian D. Sleeman) 89d:92014 92A07 (34C05, 92A15)
- Jinyan, Zhang** see **Zhang, Jin Yan**
- Jiong, Jiang** Closed-loop strategies in continuous dynamic game with multilevel of hierarchy. *Internat. J. Control* 47 (1988), no. 3, 905–913. (E. O. Roxin) 89e:90226 90D10
- (with Ning, Jiang) Parameter or nonparameter identification of distributed parameter systems via block-pulse functions. *Internat. J. Systems Sci.* 19 (1988), no. 6, 1039–1045. (Not in MR) 93B30 (93B25, 93C20)
- Ji-Ping, Zhang** see **Zhang, Ji Ping**
- Jirasek, F.** (with Neustupa, Jiří) The Rothe approximations of solutions to the modified system of equations of motion of viscous compressible fluid and their convergence. (Russian and Bulgarian summaries) *Teoret. Prirozhna Mekh.* 19 (1988), no. 1, 4, 6, 9, 60–69. (Howard Swann) 89k:76074 76N10 (65M20, 76–08)
- Jirina, Marcel** Sensitivity paradox in multiprocessor computer systems. (Russian summary) *J. New Generation Comput. Systems* 1 (1988), no. 1, 21–29. (Not in MR) 68M20
- Jirina, Miloslav** (with Darroch, J. N.; Speed, T. P.) Sampling without replacement: approximation to the probability distribution. *J. Austral. Math. Soc. Ser. A* 44 (1988), no. 2, 197–213. (Zuzana Prášková) 89e:62023 62D05 (60F05, 62E20)
- Jirousek, J.** (with Venkatesh, A.) A simple stress error estimator for hybrid-Trefftz  $p$ -version elements. *Internat. J. Numer. Methods Engrg.* 28 (1989), no. 1, 211–236. (Summary) 89j:73005 73–08 (73K10, 73K25)
- Jirousek, R.** (with Kříž, O.) An expert system accepting knowledge in a form of statistical data. *COMPSTAT 1988* (Copenhagen, 1988), 123–128, *Physica, Heidelberg*, 1988. (see 89i:62004) 65U05
- Jiung, Xingyao** see **Jiang, Xing Yao**
- Jo, Armando** see **Seuc Jo, Armando**
- Joachimowicz, N.** (with Tabbara, W.; Duchêne, B.; Pichot, Ch.; Lesselier, D.; Chommeloux, L.) Diffraction tomography: contribution to the analysis of some applications in microwaves and ultrasonics. *Inverse Problems* 4 (1988), no. 2, 305–331. (Summary) 89f:76074 76Q05 78A55, 92–08, 92A07
- Joag-Dev, Kumar** (with Dharmadhikari, Sudhakar) ★ Unimodality, convexity, and applications. *Probability and Mathematical Statistics*. Academic Press, Inc., Boston, MA, 1988. xiv+278 pp. ISBN 0-12-214690-5 (Moshe Shaked) 89k:60020 60E15 (62E15)
- Joala, V.** (with Olman, V.) A method for estimating the coefficients of a one-dimensional linear regression. (Russian) *Eesti NSV Tead. Akad. Toimetised Füüs.-Mat.* 36 (1987), no. 4, 422–424, 440. (Summary) 89a:62161 62J05
- An estimation method for coefficients of polynomial trend in time series. (Russian summary) *Tartu Riikl. Ül. Toimetised* No. 798 (1988), 68–75. (Not in MR) 62M10
- Joannopoulos, J. D.** (with Gomez-Santos, G.) Application of spin-wave theory to the ground state of XY quantum Hamiltonians. *Phys. Rev. B* (3) 36 (1987), no. 16, 8707–8711. (Summary) 89b:82108 82A68
- Jódar, Lucas** On the analytic structure of quasinilpotent shift operators. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 80 (1986), no. 4, 563–569. (Summary) 89b:47041 47B37 (46J15)
- Integral equations and time varying linear systems. *Stochastica* 10 (1986), no. 2, 133–149. (J. M. Dion) 89d:45020 45N05 (47A50, 93C05, 93C35)
- Decomposition of operators with countable spectrum. *Stochastica* 10 (1986), no. 2, 171–180. (P. Aiena) 89d:47034 47B05
- Algebraic methods for solving boundary value problems. *Stochastica* 10 (1986), no. 3, 259–270. (D. Przeworska-Rolewicz) 89e:34035 34B99 (15A24, 47A62)
- Boundary value problems and Cauchy problem for the second-order Euler operator differential equation. *Linear Algebra Appl.* 91 (1987), 1–12. (V. Šeda) 89d:34003 34A05 (34B15, 34C20, 47E05)
- (with Mariton, M.) Explicit solutions for a system of coupled Lyapunov differential matrix equations. *Proc. Edinburgh Math. Soc.* (2) 30 (1987), no. 3, 427–434. (F. S. Van Vleck) 89a:34003 34A05 (34A30)
- (with Hernández, Vicente García) On the matrix equation  $(d/dt)X(t) = A(t)X(t) + X(t)B(t) + C(t)$  with periodic coefficients. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 81 (1987), no. 1, 117–130. (Alan R. Hausrath) 89e:34016 34A30 (34C25)
- Singular bilateral boundary value problems for discrete generalized Lyapunov matrix equations. *Stochastica* 11 (1987), no. 1, 45–52. (S. Lajos) 89m:15010 15A24 (39B60)
- (with Abou-Kandil, H.) Solution of coupled Riccati equations occurring in Nash games. *Analysis and optimization of systems* (Antibes, 1988), 581–592, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) 89e:90236 90D25 (49A45, 49D40, 93B17, 93B25)
- Existence, uniqueness and closed form solutions for boundary value matrix problems. *Appl. Math. Lett.* 1 (1988), no. 2, 147–150. (Summary) 89e:34001 34A05 (34A10, 34B05)
- Algebraic and differential operator equations. *Linear Algebra Appl.* 102 (1988), 35–53. (Nicolae H. Pavel) 89f:34086 34G10 (34A05, 34B05, 47E05)
- Explicit solutions for second order operator differential equations with two boundary value conditions. *Linear Algebra Appl.* 103 (1988), 73–86. (S. J. Lee) 89h:47070 47E05 (34A05, 34B05, 34G10)
- Explicit solutions of two-point boundary value operator problems. *Math. Z.* 199 (1988), no. 4, 555–564. (Elaidi Hanebaly) 89m:34082 34G10 (34B05, 47A62)
- An algorithm for solving generalized algebraic Lyapunov equations in Hilbert space, applications to boundary value problems. *Proc. Edinburgh Math. Soc.* (2) 31 (1988), no. 1, 99–105. (Š. Schwabik) 89c:47022 47A62 (34B05, 65J10)
- Joe, Harry** Majorization, randomness and dependence for multivariate distributions. *Ann. Probab.* 15 (1987), no. 3, 1217–1225. (Summary) 89b:62101 62H05 (62E10)
- Estimation of quantiles of the maximum of  $N$  observations. *Biometrika* 74 (1987), no. 2, 347–354. (M. D. Burke) 89a:62096 62G05 (62F10, 62G30)
- An ordering of dependence for distribution of  $k$ -tuples, with applications to lotto games. (French summary) *Canad. J. Statist.* 15 (1987), no. 3, 227–238. (Mir Maswood Ali) 89c:62191 62P20 (62E15, 90D99)
- Joensson, Dieter** Amplitude distribution independent prediction of fatigue life. (German summary) *Wiss. Z. Tech. Univ. Karl-Marx-Stadt* 30 (1988), no. 5, 703–713. (Summary) 89m:90075 90B25
- Joglekar, Satish D.** (with Misra, Anuradha) A uniqueness theorem regarding  $\theta_{\mu}$  in scalar theories. *Ann. Physics* 185 (1988), no. 2, 231–240. (Summary) 89k:81136 81E15
- Johannessen, S.** (with Holm, P.) On subtransversality. *Ann. Mat. Pura Appl.* (4) 147 (1987), 93–103. (K. Lamotte) 89b:58033 58C27 (57R35)
- Johannesma, P. I. M.** (with Aertsen, A. M. H. J.) Conservation and dissipation in neurodynamics. *Physics of cognitive processes* (Amalfi, 1986), 228–257, *World Sci. Publishing, Singapore*, 1987. (Brian D. Sleeman) 89a:92023 92A09
- Johannesson, Henrik** Central charge for the integrable higher-spin  $XXZ$  model. *J. Phys. A* 21 (1988), no. 11, L611–L614. (Roland Koberle) 89m:82077 82A68 (81E25, 81E40, 82A69)
- Universality classes of critical antiferromagnets. *J. Phys. A* 21 (1988), no. 23, L1157–L1162. (Summary) 89k:82096 82A68 (81E25, 81E40, 82A25, 82A69)
- Johansson, Klaus** Classification problems in low-dimensional topology. *Geometric and algebraic topology*, 37–59, *Banach Center Publ.*, 18, PWN, Warsaw, 1986. (Harrie Hendriks) 89f:57020 57N10
- On surfaces in one-relator 3-manifolds. *Low-dimensional topology and Kleinian groups* (Coventry/Durham, 1984), 157–192, *London Math. Soc. Lecture Note Ser.*, 112, Cambridge Univ. Press, Cambridge-New York, 1986. (Roger Fenn) 89a:57014 57N10
- Johansen, Helle** (with Asmussen, Søren) Über eine Stetigkeitsfrage betreffend das Bedienungssystem  $GI/GI/s$ . (English and Russian summaries) [On a robustness problem for the  $GI/GI/s$  queue] *Elektron. Informatsionverab. Kybernet.* 22 (1986), no. 10–11, 565–570. (Brian Conolly) 89j:60122 60K25 (90B22)
- Johansen, Thormod** (with Winther, Ragnar) The solution of the Riemann problem for a hyperbolic system of conservation laws modeling polymer flooding. *SIAM J. Math. Anal.* 19 (1988), no. 3, 541–566. (Rishi Ram Sharma) 89h:35200 35L65 (76S05)
- Johansson, Anders** (with Zetterberg, Lars H.) Approximation of recursively estimated AR-parameters for speech encoding. *Modelling, identification and robust control* (Stockholm, 1985), 625–631, *North-Holland, Amsterdam-New York*, 1986. (see 89b:93008) 94A05
- Johansson, Börje** (with Leonardi, Giorgio) Public facility location: a multiregional and multi-authority decision context. *Handbook of regional and urban economics*, Vol. 1, 133–170, *Handbooks in Econ.*, 7, North-Holland, Amsterdam-New York, 1986. (see 89m:90047) 90A17 (90B10)
- Johansson, Kurt** On Szegő's asymptotic formula for Toeplitz determinants and generalizations. (French summary) *Bull. Sci. Math.* (2) 112 (1988), no. 3, 257–304. (R. P. Boas, Jr.) 89m:47021 47B35 (30E99, 41A60, 42A82)
- Johansson, Rolf** Stability of direct adaptive control with RLS-identification. *Modeling, identification and robust control* (Stockholm, 1985), 29–43, *North-Holland, Amsterdam-New York*, 1986. (Summary) 89c:93050 93C40 (93B40, 93C55, 93D05)
- John, Andrew** (with Cooper, Russell) Coordinating coordination failures in Keynesian models. *Quart. J. Econom.* 103 (1988), no. 3, 441–463. (Not in MR) 90A16
- John, Fritz** Almost global existence of elastic waves of finite amplitude arising from small initial disturbances. *Comm. Pure Appl. Math.* 41 (1988), no. 5, 615–666. (Reza Malek-Madani) 89j:35087 35L70 (73C50)
- Existence for large times of finite amplitude elastic waves arising from small disturbances. *Proc. Nat. Acad. Sci. U.S.A.* 85 (1988), no. 7, 2027–2028. (Summary) 89d:35032 35G20



- (35L70, 73D99)
- John, G.** Reduced phase spaces of models of collective motion. *J. Phys. A* **21** (1988), no. 8, 1805–1810. (Frans Cantrijn) **89k:70031** 70G35 (22E70, 58F99)
- John, J. A.** (with Draper, N. R.) Response-surface designs for quantitative and qualitative variables. *Technometrics* **30** (1988), no. 4, 423–428. (Not in MR) **62K15**
- (with Williams, E. R.) Construction of row and column designs with contiguous replicates. *J. Roy. Statist. Soc. Ser. C* **38** (1989), no. 1, 149–154. (Not in MR) **62K10**
- John, Kamil** (with Grzysiewicz, Ryszard) Extreme elements of the unit ball of bilinear operators on  $l_2^2$ . *Arch. Math. (Basel)* **50** (1988), no. 3, 264–269. (Jerry A. Johnson) **89d:47095** 47D15 (46B99)
- (with Jarchow, Hans) On the equality of injective and projective tensor products. *Czechoslovak Math. J.* **38** (1988), no. 3, 464–472. (Andreas Defant) **89j:46071** 46M05 (46A12, 47D30)
- Operators whose tensor powers are  $\pi$ -continuous. *Czechoslovak Math. J.* **38** (1988), no. 4, 602–610. (A. Pietsch) **89m:47015** 47A70 (46M05, 47B10)
- John, Olaf** (with Malý, Jan; Stará, J.) A note on the regularity of autonomous quasi-linear elliptic and parabolic systems. *Comm. Partial Differential Equations* **13** (1988), no. 7, 895–903. (Bernhard Kawohl) **89b:35052** 35B65 (35J60, 35K55)
- (with Kondrat'ev, V. A.; Lekvishvili, D. M.; Nečas, Jindřich; Oleinik, O. A.) Solvability of the system of von Kármán equations with nonhomogeneous boundary conditions in nonsmooth domains. (Russian. English summary) *Trudy Sem. Petrovsk. No. 13* (1988), 197–205, 258. (R. Kodnar) **89m:35071** 35J60
- John, Peter Eugen** (with Sachs, Horst; Zernitz, H.) Counting perfect matchings in polyominoes with an application to the dimer problem. Proceedings of the International Conference on Combinatorial Analysis and its Applications (Pokrzywna, 1985). *Zastos. Mat.* **19** (1987), no. 3–4, 465–477 (1988). (Charles H. C. Little) **89c:05158** 05C70 (05B50)
- John, R. W.** The Hadamard construction of Green's functions on a curved space-time with symmetries. (German summary) *Ann. Physik* (7) **44** (1987), no. 7, 531–544. (Derek Raine) **89j:83046** 83C47 (58G16, 81E20)
- John, Sarah** (with Remler, E. A.) Solution of the quantum Liouville equation as a stochastic process. *Ann. Physics* **180** (1987), no. 1, 152–165. (Demetris P. K. Ghikas) **89b:81046** 81C25 (81–08)
- Johns, M. Vernon** Importance sampling for bootstrap confidence intervals. *J. Amer. Statist. Assoc.* **83** (1988), no. 403, 709–714. (Not in MR) **62F25**
- Johnsen, K.** Zu einem Satz von Rédei über Kreisteilungspolynome. [On a theorem of Rédei on cyclotomic polynomials] *Acta Math. Hungar.* **52** (1988), no. 1–2, 3–5. (John H. Loxton) **89j:11102** 11R18
- borch-Johnsen, Knut** see Borch-Johnsen, Knut
- Johnsen, Lars G.** Three-sentences and generalized quantifiers. *Generalized quantifiers* (Lund, 1985), 93–107. *Stud. Linguist. Philos.*, 31, Reidel, Dordrecht-Boston, MA, 1987. (see **89m:03003**) **03B65**
- Johnsen, Trygve** (with Huibregse, Mark E.) Local properties of secant varieties in symmetric products. I. *Trans. Amer. Math. Soc.* **313** (1989), no. 1, 187–204. (Susan J. Colley) **89i:14025** 14H45 (14B12, 14M15, 14N10)
- Local properties of secant varieties in symmetric products. II. *Trans. Amer. Math. Soc.* **313** (1989), no. 1, 205–220. (Susan J. Colley) **89i:14026** 14H45 (14B12, 14M15, 14N10)
- Johnson, Alan** (with Castelein, R.) Constrained optimal control. *IEEE Trans. Automat. Control* **34** (1989), no. 1, 122–126. (Mikolaj Buslowicz) **89k:93041** 93B17 (93B50, 93C35, 93C55)
- Johnson, Arthur R.** (with Quigley, C. J.) Element level elimination of nonlinear constraints in total Lagrangian finite element formulations. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 111–138. *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Summary) **89c:73004** 73-08 (73G99)
- (with Fried, Isaac) Condition of the finite element stiffness matrix of highly irregular triangular grids. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 139–147. *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (see **89b:00029**) **65N30**
- (with Fried, Isaac) A note on elastic energy density functions for largely deformed compressible rubber solids. *Comput. Methods Appl. Mech. Engrg.* **69** (1988), no. 1, 53–64. (C. F. M. Creasy) **89f:73034** 73G05 (73G10)
- Johnson, B. E.** Approximately multiplicative maps between Banach algebras. *J. London Math. Soc.* (2) **37** (1988), no. 2, 294–316. (Krzysztof Jarosz) **89b:46072** 46H05 (46H20)
- Johnson, Bruce McK.** (with Glaz, J.) Boundary crossing for moving sums. *J. Appl. Probab.* **25** (1988), no. 1, 81–88. (Adam T. Martinsek) **89b:60115** 60G40 (62L10)
- Johnson, C. A.** see Johnson, Chris A.
- Johnson, C. D.** The "unreachable poles" defect in LQR theory: analysis and remedy. *Internat. J. Control* **47** (1988), no. 3, 697–709. (Not in MR) **93B55** (93B50)
- A singular condition in linear adaptive control theory. *Internat. J. Control* **48** (1988), no. 2, 817–821. (Zong Ji Chen) **89i:93073** 93C40 (93C05)
- Optimal initial conditions for full-order observers. *Internat. J. Control* **48** (1988), no. 3, 857–864. (Not in MR) **93B07**
- Johnson, C. Richard, Jr.** (with Sethares, W. A.; Marcellis, I. M. Y.; Anderson, B. D. O.; Bitmead, Robert R.) Excitation conditions for signed regressor least mean squares adaptation. *IEEE Trans. Circuits and Systems* **35** (1988), no. 6, 613–624. (Not in MR) **94A11** (94A05)
- Johnson, Charles Royal** (with Helton, J. William; Ball, Joseph A.; Palmer, John N.) ★ Operator theory, analytic functions, matrices, and electrical engineering. CBMS Regional Conference Series in Mathematics, 68. Published for the Conference Board of the Mathematical Sciences, Washington, DC; by the American Mathematical Society, Providence, RI, 1987. xvi+134 pp. ISBN 0-8218-0718-8 (T. Ando) **89f:47001** 47-02 (46J15, 46N05, 47A15, 47A68, 47B50, 93B25, 93B28)
- (with Horn, Roger A.) Hadamard and conventional submultiplicativity for unitarily invariant norms on matrices. *Linear and Multilinear Algebra* **20** (1987), no. 2, 91–106. (P. Rudra (Zbl 605:15017)) **89b:15037** 15A60
- (with Pierce, Stephen) Permanent dominance of the normalized single-hook immanants on the positive semidefinite matrices. *Linear and Multilinear Algebra* **21** (1987), no. 3, 215–229. (Robert Grone) **89b:15007** 15A15 (15A45)
- (with Ando, Tsuyoshi; Horn, Roger A.) The singular values of a Hadamard product: a basic inequality. *Linear and Multilinear Algebra* **21** (1987), no. 4, 345–365. (M. Pearl)
- 89g:15018** 15A45
- (with Pierce, Stephen) Inequalities for single-hook immanants. *Linear Algebra Appl.* **102** (1988), 55–79. (Robert Grone) **89c:15012** 15A15 (15A45)
- Combinatorial matrix analysis: an overview. Proceedings of the Victoria Conference on Combinatorial Matrix Analysis (Victoria, BC, 1987). *Linear Algebra Appl.* **107** (1988), 3–15. (G. N. de Oliveira) **89k:15002** 15-02 (15A18, 15A42)
- (with Barnett, Stephen) Inverse comrade matrices. *Linear and Multilinear Algebra* **22** (1988), no. 4, 325–333. (Ar. Meenakshi) **89c:15005** 15A09 (15A57)
- (with Li, Chi-Kwong) Inequalities relating unitarily invariant norms and the numerical radius. *Linear and Multilinear Algebra* **23** (1988), no. 2, 183–191. (Shao Kuan Li) **89i:15010** 15A15 (15A60)
- (with Jeffries, Clark) Some sign patterns that preclude matrix stability. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 1, 19–25. (Bryan E. Cain) **89i:15031** 15A57 (15A18, 15A42)
- (with Rodman, Leiba) Completion of Toeplitz partial contractions. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 2, 159–167. (A. Böttcher) **89f:47040** 47B35 (15A57, 15A60, 47A20)
- (with Howe, Eric C.) Linear aggregation of input-output models. *SIAM J. Matrix Anal. Appl.* **10** (1989), no. 1, 65–79. (Carl-Louis Sandblom) **89k:90034** 90A15 (15A09, 15A18, 90A17)
- see also *Linear algebra in signals, systems, and control*, **89f:00025**
- Johnson, Chris A.** More on distributive ideals. *Fund. Math.* **128** (1987), no. 2, 113–130. (Jan Tryba) **89a:03095** 03E55 (03E05)
- Seminormal  $\lambda$ -generated ideals on  $P_K \lambda$ . *J. Symbolic Logic* **53** (1988), no. 1, 92–102. (Donna M. Carr) **89g:03065** 03E05
- Johnson, Claes** ★ Numerical solution of partial differential equations by the finite element method. *Cambridge University Press, Cambridge-New York, 1987*. 278 pp. ISBN 0-521-34514-6; 0-521-34758-0 (David C. Arney) **89b:65003a** 65-01 (65M60, 65N30)
- ★ Numerical solution of partial differential equations by the finite element method. *Studentlitteratur, Lund, 1987*. 278 pp. ISBN 91-44-25241-1 (David C. Arney) **89b:65003b** 65-01 (65M60, 65N30)
- (with Eriksson, Kenneth) An adaptive finite element method for linear elliptic problems. *Math. Comp.* **50** (1988), no. 182, 361–383. (William W. Hager) **89c:65119** 65N30 (65N50)
- Johnson, D. S.** see Johnson, David Stiffler
- Johnson, Dale M.** L. E. J. Brouwer's coming of age as a topologist. *Studies in the history of mathematics*, 61–97. *MAA Stud. Math.*, 26, Math. Assoc. America, Washington, DC, 1987. (see **89b:01002**) **01A60** (54-03, 55-03, 57-03)
- Johnson, David Lawrence** The group of formal power series under substitution. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 3, 296–302. (Paul M. Eakin) **89j:13021** 13F25 (20F29)
- Johnson, David Stiffler** (with Coffman, E. G., Jr.; Garey, M. R.) Bin packing with divisible item sizes. *J. Complexity* **3** (1987), no. 4, 406–428. (Richard D. Ringeisen) **89b:90172** 90C27 (90B99)
- (with Yannakakis, Mihalis; Papadimitriou, Christos H.) On generating all maximal independent sets. *Inform. Process. Lett.* **27** (1988), no. 3, 119–123. (T. R. S. Walsh) **89c:68051** 68Q25 (05C35, 68R10)
- The NP-completeness column: an ongoing guide. *J. Algorithms* **9** (1988), no. 3, 426–444. (From the text) **89j:68056** 68Q15
- (with Megiddo, Nimrod; Hakimi, S. Louis; Garey, M. R.; Papadimitriou, Christos H.) The complexity of searching a graph. *J. Assoc. Comput. Mach.* **35** (1988), no. 1, 18–44. (T. R. S. Walsh) **89d:68030** 68Q25 (05C75, 68R10, 90D26)
- Johnson, Dennis L.** (with Livingston, Charles) Peripherally specified homomorphisms of knot groups. *Trans. Amer. Math. Soc.* **311** (1989), no. 1, 135–146. (Roger Fenn) **89f:57006** 57M25
- Johnson, Diane L.** Fundamental theorem of algebra for generalized polynomial monosplines. *Studia Univ. Babeş-Bolyai Math.* **31** (1986), no. 2, 55–69. (Len Bos) **89d:41026** 41A15
- Johnson, Dudley Paul** A short proof of the central limit theorem for Markov chains. *Statist. Probab. Lett.* **6** (1988), no. 4, 225–227. (J. A. Goldstein) **89b:60171** 60J27 (47D07, 60F05)
- Johnson, E. W.** Modules: duals and principally generated fake duals. *Algebra Universalis* **24** (1987), no. 1–2, 111–119. (Johnny A. Johnson) **89a:13012** 13C05 (06F99, 13E05)
- Johnson, F. E. A.** (with Rees, E. G.) On the fundamental group of a complex algebraic manifold. *Bull. London Math. Soc.* **19** (1987), no. 5, 463–466. (Anatoly Libgober) **89j:32016** 32C10 (53C55, 57R19)
- On surface Bieberbach groups. *Mathematika* **34** (1987), no. 1, 82–85. (N. A. Gusevskii) **89d:57013** 57N05 (20F38, 22E40)
- On the existence of irreducible discrete subgroups in isotypic Lie groups of classical type. *Proc. London Math. Soc.* (3) **56** (1988), no. 1, 51–77. (Gopal Prasad) **89f:22017** 22E40
- Johnson, G. M.** (with Hemker, P. W.) Multigrid approaches to the Euler equations. *Multigrid methods*, 57–72. *Frontiers Appl. Math.*, 3, SIAM, Philadelphia, PA, 1987. (see **89m:65004**) **65-02**
- Johnson, Gerald W.** (with Skoug, David) Stability theorems for the Feynman integral. Proceedings of the conference commemorating the 1st centennial of the Circolo Matematico di Palermo (Italian) (Palermo, 1984). *Rend. Circ. Mat. Palermo* (2) *Suppl.* **No. 8** (1985), 361–377. (T. Ichinohe (Zbl 617:58013)) **89b:58042** 58D30 (28C20, 58G11, 81C35)
- (with Lapidus, Michel L.) Une multiplication non commutative des fonctionnelles de Wiener et le calcul opérationnel de Feynman. (English summary) [A noncommutative multiplication of Wiener functionals and Feynman's operational calculus] *C. R. Acad. Sci. Paris Sér. I Math.* **304** (1987), no. 17, 523–526. (L. L. Lee) **89b:28004** 28C20 (46G12, 81C35)
- (with Chang, Kun Soo; Skoug, David) Functions in the Banach algebra  $S(\nu)$ . *J. Korean Math. Soc.* **24** (1987), no. 2, 151–158. (L. L. Lee) **89g:46081** 46G12 (60H05)
- Feynman's paper revisited. Functional integration with emphasis on the Feynman integral (Sherbrooke, PQ, 1986). *Rend. Circ. Mat. Palermo* (2) *Suppl.* **No. 17** (1987), 249–270 (1988). (Cécile Dewitt-Morette) **89b:81044** 81C35 (01A60, 58C35, 58D30, 81-03)
- see also *Functional integration with emphasis on the Feynman integral*, **89a:81003**
- Johnson, James Daniel** (with Baker, George A., Jr.) Four-dimensional boson field theory. III. Nontriviality. *J. Math. Phys.* **28** (1987), no. 5, 1146–1158. (Summary) **89g:81038** 81E08 (81-04, 81E25)
- Johnson, Jean** (with Isaacson, Dean) Conditions for strong ergodicity using intensity matrices. *J. Appl. Probab.* **25** (1988), no. 1, 34–42. (Richard Madsen) **89a:60167** 60J27

- Johnson, John L.** Neural networks and the symmetric group  $S_N$ . *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 751-761. ARO Rep., 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (see **89b:00029**) 92A09 (20B30)
- Johnson, Jon L.** (with Hamann, Eloise; Houston, Evan) Properties of uppers to zero in  $R[x]$ . *Pacific J. Math.* **135** (1988), no. 1, 65-79. (Liam O'Carroll) **89j:13019** 13F20 (13A15, 13B25, 13F10)
- Johnson, Joseph F.** (with Adams, Jeffrey) Endoscopic groups and packets of nontempered representations. *Compositio Math.* **64** (1987), no. 3, 271-309. (Dan Barbasch) **89h:22022** 22E45 (11F70, 11F72, 22E50)
- Johnson, Kenneth D.** A strong generalization of Helgason's theorem. *Trans. Amer. Math. Soc.* **304** (1987), no. 1, 171-192. (Henrik Stetkaer) **89a:22026** 22E46
- A constructive approach to tensor product decompositions. *J. Reine Angew. Math.* **388** (1988), 129-148. (Stephen Slebarski) **89g:22021** 22E46
- The centralizer of a Lie algebra in an enveloping algebra. *J. Reine Angew. Math.* **395** (1989), 196-201. (Jorge A. Vargas) **89m:17025** 17B35
- Johnson, M. A.** (with Odondo, J. O.) Comments on: "Frequency-domain properties of Kalman filters" [Internat. J. Control **45** (1987), no. 3, 907-925; MR 88a:93066] by M. J. Grimble and K. J. Åström. *Internat. J. Control* **48** (1988), no. 3, 1351-1356. (Not in MR) 93E11 (34D25, 93B50, 93C75)
- Johnson, Marjorie** see **Bicknell-Johnson, Marjorie**
- Johnson, Mark Allyn** (with Naim, Mary; Nicholson, Victor; Tsai, Chun-Che) Unique mathematical features of the substructure metric approach to quantitative molecular similarity analysis. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 219-225. *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (see **89b:92038**) 92A40 (05C99)
- (with Tsai, Chun-Che; Nicholson, Victor; Naim, Mary) A topological approach to molecular similarity analysis and its application. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 231-236. *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (see **89b:92038**) 92A40
- (with Basak, Subhash; Maggiora, Gerald) A characterization of molecular similarity methods for property prediction. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 630-634. (see **89d:00007**) 92A40
- Johnson, Michael** (with Walters, R. F. C.) On the nerve of an  $n$ -category. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **28** (1987), no. 4, 257-282. (Ronald Brown) **89e:18014** 18D05 (55U10)
- Johnson, Norman Lee** (with Besnard, Didier; Harlow, Francis H.; Rauenzahn, Rick; Wolfe, Jonathan) Instabilities and turbulence. Stanislaw Ulam 1909-1984. *Los Alamos Sci.* No. 15 Special Issue (1987), 145-174. (see **89m:01133a**) 76E15
- Johnson, Norman Lloyd**<sup>1</sup> (with Jha, Vikram) Derivable nets defined by central collineations. *J. Combin. Inform. System Sci.* **11** (1986), no. 2-4, 83-91. (T. G. Ostrom) **89g:51003** 51A40 (51E15)
- (with Jha, Vikram) A note on rational covers of spreads. *Ars Combin.* **24** (1987), 175-177. (T. G. Ostrom) **89a:51020** 51E15 (05B25, 51A40)
- (with Jha, Vikram) Baer-elliptic planes. *Rend. Sem. Mat. Univ. Padova* **78** (1987), 27-45. (T. G. Ostrom) **89d:51002** 51A40 (20B25, 51E15)
- Semifield flocks of quadratic cones. *Simon Stevin* **61** (1987), no. 3-4, 313-326. (Theo Grundhöfer) **89g:51009** 51E20 (51A40)
- (with Jha, Vikram) The centre of a finite semifield plane is a geometric invariant. *Arch. Math. (Basel)* **50** (1988), no. 1, 93-96. (D. W. Erbach) **89f:51041** 51E15 (05B25, 51A40)
- (with Biliotti, Mauro; Jha, Vikram; Menichetti, Giampaolo) The collineation groups of Baer-elliptic planes. *Atti Sem. Mat. Fis. Univ. Modena* **36** (1988), no. 1, 23-35. (P. B. Kirkpatrick) **89i:51008** 51E15 (20B25, 51A40)
- (with Gevaert, H.) Flocks of quadratic cones, generalized quadrangles and translation planes. *Geom. Dedicata* **27** (1988), no. 3, 301-317. (Vikram Jha) **89m:51008** 51A40 (05B25, 05B30, 51E20)
- A note on translation planes with large dimension. *J. Geom.* **33** (1988), no. 1-2, 65-72. (M. J. Kallagher) **89i:51005** 51A40
- (with Jha, Vikram) The linearity question for abelian groups on translation planes. *J. Math. Soc. Japan* **40** (1988), no. 1, 77-84. (T. G. Ostrom) **89b:51013** 51E15 (20B25, 51A40)
- Tensor product and generalized Ott-Schaeffer planes. *Osaka J. Math.* **25** (1988), no. 2, 441-459. (T. G. Ostrom) **89f:51011** 51E15 (20B25, 51A35, 51A40)
- (with Gevaert, H.; Thas, J. A.) Spreads covered by reguli. *Simon Stevin* **62** (1988), no. 1, 51-62. (Gary L. Ebert) **89k:51004** 51A40
- Johnson, Norman Lloyd**<sup>2</sup> (with Kotz, S.; Gunther, Nina) Inspection errors in Graff-Roeloffs' modification of hierarchical Dorfman screening procedures. *Comm. Statist. Theory Methods* **17** (1988), no. 1, 139-168. (Not in MR) 62N10
- (with Kotz, S.) Estimation from binomial data with classifiers of known and unknown imperfections. *Naval Res. Logist.* **35** (1988), no. 1, 147-156. (D. S. Tracy) **89b:62070** 62F10 (62H30, 62N99)
- Johnson, P. D., Jr.** Two-colorings of real quadratic extensions of  $Q^2$  that forbid many distances. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **60** (1987), 51-58. (Hong Wen Lu) **89f:11159** 11R99 (05A17)
- (with Hilton, A. J. W.) Reverse class critical multigraphs. *Discrete Math.* **69** (1988), no. 3, 309-311. (Robin J. Wilson) **89d:05072** 05C15 (05C75)
- Johnson, P. W.** (with Atkinson, D.; Hulsebos, A.) Chiral symmetry breakdown. III. Delbourgo's gauge technique. *J. Math. Phys.* **28** (1987), no. 12, 2994-2998. (C. Cronström) **89d:81118** 81G05 (81F20)
- (with Atkinson, D.; Stam, K.) Chiral symmetry breaking beyond the Landau gauge. *Phys. Lett. B* **201** (1988), no. 1, 105-107. (Summary) **89a:81058** 81E13 (81E15)
- (with Atkinson, D.) Chiral-symmetry breaking in QCD. I. The infrared domain. *Phys. Rev. D* (3) **37** (1988), no. 8, 2290-2295. (Summary) **89f:81244a** 81G05 (81D20)
- (with Atkinson, D.) Chiral-symmetry breaking in QCD. II. Running coupling constant. *Phys. Rev. D* (3) **37** (1988), no. 8, 2296-2299. (Summary) **89f:81244b** 81G05 (81-08, 81D20)
- Johnson, R. M.** see **Johnson, Roy Michael**
- Johnson, R. W.** see **Johnson, Rodney W.**
- Johnson, Raymond L.** A survey on tent spaces and their application to weighted inequalities. *Nonlinear analysis, function spaces and applications, Vol. 3* (Lloms, 1986), 54-68. *Teubner-Texte Math.*, 93, Teubner, Leipzig, 1986. (Ron Kerman) **89g:46053** 46E30 (42B99)
- (with Bonami, Aline) Tent spaces based on the Lorentz spaces. *Math. Nachr.* **132** (1987), 81-99. (Ron Kerman) **89g:46052** 46E30 (42B99)
- Johnson, Richard A.** (with Weerahandi, Samaradasa) A Bayesian solution to the multivariate Behrens-Fisher problem. *J. Amer. Statist. Assoc.* **83** (1988), no. 401, 145-149. (B. Raja-Rao) **89f:62028** 62F15 (62F25, 62H12)
- (with Guerrero, Victor M.) Transforming grouped bivariate data to near normality. *Statist. Probab. Lett.* **6** (1988), no. 4, 213-224. (Khursheed Alam) **89a:62068** 62F10 (62H17, 62J05)
- (with Guttman, I.; Bhattacharyya, G. K.; Reiser, B.) Confidence limits for stress-strength models with explanatory variables. *Technometrics* **30** (1988), no. 2, 161-168. (A. C. Cohen) **89e:62129** 62N05 (62F25)
- Johnson, Rodney W.** (with Auslander, L.; Vulis, M.) Evaluating finite Fourier transforms that respect group symmetries. *Acta Cryst. Sect. A* **44** (1988), no. 4, 467-478. (Summary) **89b:65228** 65T05 (82A60)
- Johnson, Roy A.** (with Niewiarowski, Jerzy; Świątkowski, Tadeusz) Small systems convergence and metrization. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 105-112. (Harry I. Miller) **89f:28011** 28A20 (54A20)
- Johnson, Roy Michael** The solution of point/line/plane problems in three dimensions by means of one simple vector function. *Math. Sci.* **13** (1988), no. 1, 19-28. (V. Medek) **89b:51040** 51N15 (51-04)
- Johnson, Russell A.** (with Giachetti, R.) The Floquet exponent for two-dimensional linear systems with bounded coefficients. *J. Math. Pures Appl.* (9) **65** (1986), no. 2, 93-117. (Angelo B. Mingarelli) **89d:34044** 34B20 (34A30)
- On the Sato-Segal-Wilson solutions of the K-dv equation. *Pacific J. Math.* **132** (1988), no. 2, 343-355. (M. S. Agranovich) **89j:35117** 35Q20 (34B25, 58F07, 58G35)
- Johnson, W. B.** (with Lindenstrauss, Joram; Schechtman, G.) On Lipschitz embedding of finite metric spaces in low-dimensional normed spaces. *Geometrical aspects of functional analysis* (1985/86), 177-184. *Lecture Notes in Math.*, 1267, Springer, Berlin-New York, 1987. (Yves Raynaud) **89a:46047** 46B99 (54C25)
- Homogeneous Banach spaces. *Geometric aspects of functional analysis* (1986/87), 201-203. *Lecture Notes in Math.*, 1317, Springer, Berlin-New York, 1988. (R. H. Lohman) **89g:46032** 46B20 (46B25)
- (with Figiel, T.; Schechtman, G.) Random sign embeddings from  $l_p^n$ ,  $2 < p < \infty$ . *Proc. Amer. Math. Soc.* **102** (1988), no. 1, 102-106. (Summary) **89f:46041** 46B25 (47B10, 47B37, 47D30)
- (with Figiel, T.; Schechtman, G.) Factorizations of natural embeddings of  $l_p^n$  into  $L_r$ . *I. Studia Math.* **89** (1988), no. 1, 79-103. (R. C. James) **89g:46029** 46B20
- Johnson, S. Lennart** Ensemble architectures and their algorithms: an overview. *Numerical algorithms for modern parallel computer architectures* (Minneapolis, MN, 1986-87), 109-144. *IMA Vol. Math. Appl.*, 13, Springer, New York-Berlin, 1988. (see **89j:65093**) 65W05
- (with Ho, Ching-Tien) Algorithms for matrix transposition on Boolean  $N$ -cube configured ensemble architectures. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 3, 419-454. (Bruno Codenotti) **89b:68045** 68Q10 (65W05, 68Q25)
- Johnston, Desmond** (with Gilbert, Gerald) Equivalence of the Kallosh and Carlip quantizations of the Green-Schwarz action for the heterotic string. *Phys. Lett. B* **205** (1988), no. 2-3, 273-280. (Summary) **89d:81097** 81E99 (81E30)
- A local fermionic ghost number anomaly for the Kallosh quantization of the heterotic string? *Phys. Lett. B* **209** (1988), no. 2-3, 239-241. (Summary) **89i:81115** 81E99 (81E30)
- Johnston, Elgin** The Faber transform and analytic continuation. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 237-243. (F. W. Carroll) **89c:30003** 30B40 (30C99)
- Johnston, K. G.** Lattice isomorphisms of modular invariant semigroups. *Proc. Edinburgh Math. Soc.* (2) **31** (1988), no. 3, 441-446. (John W. Hogan) **89m:20073** 20M10
- Johnston, Richard D.** (with Nguyen, T.; Chan, Barton; Geoffrey W.; Perkins, John D.) A condition number scaling policy for stability robustness analysis. *AICHE J.* **34** (1988), no. 7, 1200-1206. (Not in MR) 93D10 (93B50)
- Johnstone, D. J.** Tests of significance following R. A. Fisher. *British J. Philos. Sci.* **38** (1987), no. 4, 481-499. (Lawrence Sklar) **89c:03038a** 03B48 (62F03)
- Erratum: "Tests of significance following R. A. Fisher". *British J. Philos. Sci.* **39** (1988), no. 2, i. (Lawrence Sklar) **89c:03038b** 03B48 (62F03)
- Hypothesis tests and confidence intervals in the single case. *British J. Philos. Sci.* **39** (1988), no. 3, 353-360. (Lawrence Sklar) **89i:03042** 03B48 (01A60, 62A99)
- Johnstone, Iain** (with MacGibbon, K. Brenda) Une mesure d'information caractérisant la loi de Poisson. [An information measure characterizing the Poisson distribution] *Séminaire de Probabilités, XXI*, 563-573. *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (Włodzimierz Bryc) **89b:62024** 62E10 (60E05, 94A17)
- On inadmissibility of some unbiased estimates of loss. *Statistical decision theory and related topics, IV, Vol. 1* (West Lafayette, Ind., 1986), 361-379. Springer, New York-Berlin, 1988. (Tadeusz Bromek) **89c:62017** 62C15 (62F10)
- see also **Härdle, W. et al.** **89g:62060**
- Johnstone, P. T.** ★ Notes on logic and set theory. Cambridge Mathematical Textbooks. Cambridge University Press, Cambridge-New York, 1987. x+111 pp. ISBN 0-521-33502-7; 0-521-33692-9 (R. E. Edwards) **89c:03003** 03-01 (04-01)
- A simple proof that localic subgroups are closed. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* **29** (1988), no. 2, 157-161. (Jiri Rosický) **89e:18019** 18D35 (22A99)
- Johri, Pravin K.** (with Katakakis, Michael N.) Scheduling service in tandem queues attended by a single server. *Stochastic Anal. Appl.* **6** (1988), no. 3, 279-288. (Yadavalli V. S. Sarma) **89g:60283** 60K25 (90B22, 90B35)
- Johri, V. B.** (with Sudharsan, R.) Friedmann universes with bulk viscosity. *Phys. Lett. A* **132** (1988), no. 6-7, 316-320. (Gh. Procopiuc) **89j:83094** 83F05
- Jokhadze, Otar** see **Dzhokhadze, O. M.**
- Jolicard, Georges** A recursive solution to the time dependent Schrödinger equation using a generalized quasideterminate Bloch formalism. *J. Chem. Phys.* **90** (1989), no. 4, 2320-2327. (Summary) **89m:81003** 81-08 (81K05)



- Jolicoeur, Pierre** (with Pontier, Jacques; Pernin, Marie-Odile) Analyse canonique complète. (English summary) [Complete canonical analysis] *Statist. Anal. Données* 12 (1987), no. 1-2, 124-148. (Summary) **89d:62049** 62H20
- Jolicoeur, T.** (with Hansel, D.; Maillard, J.-M.) Staggered lattice models. *J. Phys. A* 20 (1987), no. 14, 4923-4937. (Paul A. Pearce) **89f:82078** 82A68 (81E25, 82A67)
- (with Lacaze, R.; Napoly, O.) Anomalies for compact symmetries and the nonabelian anomaly on the lattice. *Nuclear Phys. B* 293 (1987), no. 1, 215-228. (Andrea Pelissetto) **89a:81103** 81E25 (81E13)
- Jollivet, Emmanuel** see Seminar: Nonlinear Regression. **89b:62005**
- Jollivet, J.-L.** (with Fouquet, Jean-Luc; Riviere, M.) Connexion-index in graphs. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), A, 127-158. (Arthur T. White) **89d:05121** 05C40 (05C75)
- Jolliffe, I. T.** Rotation of ill-defined principal components. *J. Roy. Statist. Soc. Ser. C* 38 (1989), no. 1, 139-147. (Not in MR) 62H25
- Jolly, M. S.** (with Foias, Ciprian; Kevrekidis, I. G.; Sell, George R.; Titi, E. S.) On the computation of inertial manifolds. *Phys. Lett. A* 131 (1988), no. 7-8, 433-436. (Summary) **89k:65154** 65P05 (35Q20, 58D25, 58F12, 58F14, 92A09)
- Joly, J.-L.** (with Rauch, J.) High frequency semilinear oscillations. *Wave motion: theory, modelling, and computation* (Berkeley, Calif., 1986), 202-216, *Math. Sci. Res. Inst. Publ.*, 7, Springer, New York-Berlin, 1987. (Albert J. Milani) **89c:35096** 35L60 (35B05)
- (with Hanouzet, B.) Applications bilinéaires compatibles avec un opérateur hyperbolique. (English summary) [Bilinear mappings compatible with a hyperbolic operator] *Ann. Inst. H. Poincaré Anal. Non Linéaire* 4 (1987), no. 4, 357-376. (Michael Oberguggenberger) **89c:35022** 35B40 (35L40)
- Joly, Patrick** (with Bamberger, A.; Kern, Michel) Mathematical and computational aspects of the determination of elastic surface waves along cylindrical cavities of general cross section. *Recent developments in surface acoustic waves* (Nottingham, 1987), 270-281, *Springer Ser. Wave Phenomena*, 7, Springer, Berlin-New York, 1988. (Summary) **89k:73021** 73D20 (35P99, 47F05, 76Q05, 78A50)
- (with Bamberger, A.; Kern, Michel; Nicoletis, L.; Quiblier, J.) Low frequency propagation of elastic waves in a fluid-filled borehole. *Recent developments in surface acoustic waves* (Nottingham, 1987), 282-290, *Springer Ser. Wave Phenomena*, 7, Springer, Berlin-New York, 1988. (see **89g:73001**) 76Q05 (73J06)
- (with Bamberger, A.; Engquist, Björn; Halpern, Laurence) Parabolic wave equation approximations in heterogeneous media. *SIAM J. Appl. Math.* 48 (1988), no. 1, 99-128. (Rishi Ram Sharma) **89h:35225** 35L99 (65P05, 73D99, 76Q05, 86A05, 86A15)
- (with Bamberger, A.; Engquist, Björn; Halpern, Laurence) Higher order paraxial wave equation approximations in heterogeneous media. *SIAM J. Appl. Math.* 48 (1988), no. 1, 129-154. (Rishi Ram Sharma) **89h:35226** 35L99 (65P05, 73D99, 76Q05, 86A05, 86A15)
- (with Cockburn, Bernardo) Maxwell equations in polarizable media. *SIAM J. Math. Anal.* 19 (1988), no. 6, 1372-1390. (Ll. G. Chambers) **89j:78023** 78A40
- Jonas, Peter** On a class of unitary operators in Krein space. *Advances in invariant subspaces and other results of operator theory* (Timișoara and Herculane, 1984), 151-172, *Oper. Theory Adv. Appl.*, 17, Birkhäuser, Basel-Boston, MA, 1986. (T. Ya. Azizov) **89a:47056** 47B50 (47A55)
- On a class of selfadjoint operators in Krein space and their compact perturbations. *Integral Equations Operator Theory* 11 (1988), no. 3, 351-384. (Aurelian Gheondea) **89f:47052** 47B50 (47A55, 47A60)
- On the trace formula of perturbation theory. I. *Math. Nachr.* 137 (1988), 257-281. (M. Demuth) **89k:47020** 47A55 (47B99)
- Jonckheere, Edmond** (with Kitapci, Aydin; Silverman, Leonard) Singular optimal filtering. *Frequency domain and state space methods for linear systems* (Stockholm, 1985), 271-284, *North-Holland, Amsterdam-New York*, 1986. (J. Bokor) **89a:93049** 93E11 (93A20, 93B27, 93C05)
- (with Glover, Keith) A comparison of two Hankel-norm methods for approximating spectra. *Modelling, identification and robust control* (Stockholm, 1985), 297-306, *North-Holland, Amsterdam-New York*, 1986. (Summary) **89c:93031** 93B28 (47A99, 47B38, 93B10, 93E03)
- (with Odenacker, Philippe C.) A state space approach to approximation by phase matching. *Modelling, identification and robust control* (Stockholm, 1985), 349-362, *North-Holland, Amsterdam-New York*, 1986. (From the text) **89c:93016** 93B15 (93B10, 93B28, 93E03)
- Variational calculus for descriptor problems. *IEEE Trans. Automat. Control* 33 (1988), no. 5, 491-495. (Marco Gaviano) **89f:49027** 49B34 (49A34, 49D29, 93C30)
- (with Juang, Jyh-Ching) On computing the spectral radius of the Hankel plus Toeplitz operator. *IEEE Trans. Automat. Control* 33 (1988), no. 11, 1053-1059. (Shunhua Sun) **89j:93034** 93B35 (47B35, 93B28)
- (with Odenacker, Philippe C.) A contraction mapping preserving balanced reduction scheme and its infinity norm error bounds. *IEEE Trans. Circuits and Systems* 35 (1988), no. 2, 184-189. (John Maroulas) **89b:93038** 93B20 (93B17, 93B25)
- (with Juang, Jyh-Ching) Vector-valued versus scalar-valued figures of merit in  $H^\infty$ -feedback system design. *J. Math. Anal. Appl.* 133 (1988), no. 2, 331-354. (Mihail Voicu) **89j:93035** 93B35 (93B50)
- (with Ma, Chingwo) A further simplification to Jury's stability test. *IEEE Trans. Circuits and Systems* 36 (1989), no. 3, 463-464. (Summary) **89m:30014** 30C15 (15A23, 41A20)
- Jondrup, S.** Automorphisms of upper triangular matrix rings. *Arch. Math. (Basel)* 49 (1987), no. 6, 497-502. (J. F. Watters) **89c:16049** 16A72 (16A46)
- When is the ring a projective module over the fixed point ring? *Comm. Algebra* 16 (1988), no. 10, 1971-1992. (Iuliu Crivei) **89f:16030** 16A50
- Jones, A. S.** Eigenvalues and eigenfunctions for general Graetz problems. *Appl. Math. Lett.* 1 (1988), no. 3, 229-233. (Not in MR) 76R05 (80A20)
- Quadratic eigenvalue problems. *Bull. Austral. Math. Soc.* 37 (1988), no. 2, 273-275. (R. N. Pandey) **89g:76040** 76R05 (35P30, 65P05)
- Quasi-additive solutions of nonlinear differential equations. II. *Bull. Austral. Math. Soc.* 38 (1988), no. 1, 19-21. (N. Hayek Calil) **89k:34011** 34A25 (34A34)
- Jones, Alan K.** Shape control of curves and surfaces through constrained optimization. *Geometric modeling*, 265-279, *SIAM, Philadelphia, PA*, 1987. (see **89b:65010**) 65D05
- Jones, Alfredo** (with Carlson, Jon F.) Wild categories of periodic modules. *Illinois J. Math.* 32 (1988), no. 3, 557-561. (David Benson) **89g:20021** 20C20 (20J06)
- Jones, Byron** (with Sinha, Kishore; Kageyama, Sanpei) Further equireplicate variance-balanced designs with unequal block sizes. *Utilitas Math.* 32 (1987), 5-10. (Shinji Kuriki) **89a:05027** 05B05 (62K10)
- Jones, C. A.** see Jones, Christopher Andrew
- Jones, C. H.** (with DeTemple, Duane; Robertson, Jack) A correction for a lattice path counting formula. *Ars Combin.* 25 (1988), 167-170. (Ira Gessel) **89i:05017** 05A15 (05A10)
- Jones, C. Kenneth** (with Glover, Fred) A stochastic generalized network model and large-scale mean-variance algorithm for portfolio selection. *J. Inform. Optim. Sci.* 9 (1988), no. 3, 299-316. (Thomas W. Epps) **89m:90016** 90A09
- Jones, Christopher Andrew** (with Proctor, M. R. E.) The interaction of two spatially resonant patterns in thermal convection. I. Exact 1:2 resonance. *J. Fluid Mech.* 188 (1988), 301-335. (Summary) **89d:76019** 76E30
- Jones, Christopher K. R. T.** An instability mechanism for radially symmetric standing waves of a nonlinear Schrödinger equation. *J. Differential Equations* 71 (1988), no. 1, 34-62. (B. G. Konopelchenko) **89a:35184** 35Q20 (35J15, 58G11, 81C05)
- (with Küpper, T.; Plakities, H.) A shooting argument with oscillation for semilinear elliptic radially symmetric equations. *Proc. Roy. Soc. Edinburgh Sect. A* 108 (1988), no. 1-2, 165-180. (From the text) **89d:35053** 35J60 (35A35, 65N99)
- Jones, Cliff B.** (with Moore, Richard) Muffin: a user interface design experiment for a theorem proving assistant. *VDM '88. VDM—the way ahead* (Dublin, 1988), 337-375, *Lecture Notes in Comput. Sci.*, 328, Springer, Berlin-New York, 1988. (see **89m:68093**) 68T15 (03B35)
- vere-Jones, D.** see Vere-Jones, D.
- Jones, D. R. T.** (with Jack, I.; Ross, Douglas A.) On the relationship between string low-energy effective actions and  $O(\alpha^2)$   $\alpha$ -model  $\beta$ -functions. *Nuclear Phys. B* 307 (1988), no. 1, 130-144. (Summary) **89g:81056** 81E15 (81E30)
- (with Jack, I.) Dilaton dependence of the two-loop effective action. *Phys. Lett. B* 200 (1988), no. 4, 453-460. (Summary) **89a:81135** 81E99 (81E15, 81E30)
- (with Jack, I.; Lawrence, A. M.) Ghost freedom and string actions. *Phys. Lett. B* 203 (1988), no. 4, 378-380. (B. Spence) **89f:81184** 81E99 (53C80, 81E30, 83C45, 83E30)
- Jones, D. S.** ★ Acoustic and electromagnetic waves. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1986. xx+745 pp. ISBN 0-19-853365-9 (John A. DeSanto) **89h:76032** 76Q05 (76-01, 78-01, 78A40)
- ★ Methods in electromagnetic wave propagation. Vol. 1. Theory and guided waves. Oxford Engineering Science Series, 8. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1987. viii+410+xxiii pp. ISBN 0-19-856189-X (Sergei M. Zverev) **89a:78001a** 78-02
- ★ Methods in electromagnetic wave propagation. Vol. 2. Radiating waves. Oxford Engineering Science Series, 8. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1987. pp. i-viii and 411-864 and i-xxiii. ISBN 0-19-856190-3 (Sergei M. Zverev) **89a:78001b** 78-02
- Surface radiation conditions. *IMA J. Appl. Math.* 41 (1988), no. 1, 21-30. (From the introduction) **89m:78008** 78A40
- Jones, E. E.** The 3-vertex single source Weber location problem. *Internat. J. Math. Ed. Sci. Tech.* 19 (1988), no. 5, 671-679. (Summary) **89g:90097** 90B10
- Jones, F. Burton** R. H. Bing. Proceedings of the 1987 Topology Conference (Birmingham, AL, 1987). *Topology Proc.* 12 (1987), no. 1, 181-186. (Editors) **89h:01067** 01A70
- Jones, G. S.** see Kleiner, Adam, **89k:54096**
- Jones, Gareth A.** (with Singerman, David) ★ Complex functions. An algebraic and geometric viewpoint. *Cambridge University Press, Cambridge-New York*, 1987. xiv+342 pp. ISBN 0-521-30893-3; 0-521-31366-X (Jane Gilman) **89b:30001** 30-02 (57-02)
- see also Serre, Jean-Pierre, **89b:17001**
- Jones, Gary D.** Asymptotic behavior of solutions of a fourth order linear differential equation. *Czechoslovak Math. J.* 38(113) (1988), no. 4, 578-584. (Jair Koiller) **89j:34016** 34A30 (34C10, 34C11)
- Jones, J. G.** An equivalence between deterministic and probabilistic design criteria for linear systems. *J. Sound Vibration* 125 (1988), no. 2, 341-356. (Summary) **89h:73032** 73K35 (60G99)
- Jones, John D. S.** (with Hood, Christine E.) Some algebraic properties of cyclic homology groups. *K-Theory* 1 (1987), no. 4, 361-384. (Sue Geller) **89f:18011** 18G15 (18F25, 18G35, 19D55)
- (with Petrack, S. B.) Le théorème des points fixes en cohomologie équivariante en dimension infinie. (English summary) [On the fixed-point theorem in equivariant cohomology in infinite dimensions] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 2, 75-78. (C. J. Atkin) **89b:58012** 58A10 (53C80, 55N35, 55N91, 58B05)
- Jones, John, Jr.** (with Narathong, Chiewchar) Estimation of variance and covariance components in linear models containing multiparameter matrices. *Mathematical modelling in science and technology* (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 1097-1100. (F. Szidarovsky) **89k:65030** 65F05 (15A24, 15A54)
- (with Mazumdar, Tapas) On zeros of solutions of certain Emden-Fowler like differential equations in Hilbert space. *Nonlinear Anal.* 12 (1988), no. 4, 365-373. (V. Lakshmikantham) **89j:34046** 34C10 (34G20)
- morrow-Jones, Jonathan** see Morrow-Jones, Jonathan
- Jones, Kathryn F.** (with Barefoot, Curtiss; Lundgren, J. Richard; Maybee, John S.) Biclique covers of regular digraphs. Proceedings of the seventeenth Southeastern international conference on combinatorics, graph theory, and computing (Boca Raton, Fla., 1986). *Congr. Numer.* 53 (1986), 147-154. (Giorgio Balconi) **89a:05067** 05C20 (05C70)
- (with Lundgren, J. Richard; Roberts, Fred S.; Seager, Suzanne M.) Some remarks on the double competition number of a graph. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 60 (1987), 17-24. (O. V. Borodin) **89i:05132** 05C20
- Jones, Lowell Edwin** (with Farrell, F. T.) K-theory and dynamics. II. *Ann. of Math.* (2) 126 (1987), no. 3, 451-493. (Christopher W. Stark) **89f:57029a** 57N37 (19D10, 57R30, 58F17)
- (with Farrell, F. T.) Foliated control with hyperbolic leaves. *K-Theory* 1 (1987), no. 4, 337-359. (Christopher W. Stark) **89f:57029b** 57N37 (19D10, 57R30, 58F17)
- (with Farrell, F. T.) Topological rigidity for hyperbolic manifolds. *Bull. Amer. Math. Soc. (N.S.)* 19 (1988), no. 1, 277-282. (Frank Quinn) **89f:57042** 57R52 (22E40, 57R67)
- (with Farrell, F. T.) The surgery L-groups of poly-(finite or cyclic) groups. *Invent. Math.* 91 (1988), no. 3, 559-586. (A. A. Ranicki) **89d:57049** 57R65 (19G24, 19L99)

- Jones, Michael C. On the relationship between the Poisson-exponential model and the noncentral chi-squared distribution. *Scand. Actuar. J.* 1987, no. 1-2, 104-109. (Summary) **89b:62212** 62P05 (62E10)
- (with Travis, C. H.) Bidiagonalization for linear inverse problems. *J. Opt. Soc. Amer. A* 5 (1988), no. 5, 660-665. (Summary) **89b:65136** 65J10 (15A09, 65F05)
- Jones, Michael E. (with Taransky, Karen) Investigation of precursor-product relationships in radiotracer studies. *Biostatistics and related computational problems* (Naples, 1987), 473-481, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89i:92006** 92A07 (62P10, 92A09)
- Jones, Michael P. (with O'Gorman, Thomas W.; Woolson, Robert F.; Lemke, Jon H.) A Monte Carlo study of three odds ratio estimators and four tests of association in several  $2 \times 2$  tables when the data are sparse. *Comm. Statist. Simulation Comput.* 17 (1988), no. 3, 813-835. (Not in MR) 62H17
- Jones, Peter Llewellyn (with Graham, Ian) ★ Expert systems. Knowledge, uncertainty and decision. Chapman and Hall Computing. *Chapman & Hall, London-New York*, 1988. xviii+363 pp. ISBN 0-412-28510-X (P. Rajagopal) **89m:68130** 68T99 (03B52, 03E72, 68-01, 68U99)
- Jones, Peter R. Basis properties, exchange properties and embeddings in idempotent-free semigroups. *Semigroups and their applications* (Chico, Calif., 1986), 69-82, *Reidel, Dordrecht-Boston, MA*, 1987. (Heinrich Seidel) **89d:20048** 20M10
- Congruence semimodular varieties of semigroups. *Semigroups, theory and applications* (Oberwolfach, 1986), 162-171, *Lecture Notes in Math.*, 1320, *Springer, Berlin-New York*, 1988. (Katherine Johnston) **89h:20085** 20M07
- Basis properties for semigroups. *Glasgow Math. J.* 30 (1988), no. 1, 101-109. (T. E. Hall) **89f:20066** 20M05 (20M17)
- Varieties generated by free completely simple semigroups. *Semigroup Forum* 38 (1989), no. 3, 269-282. (P. M. Higgins) **89m:20068** 20M07 (20M05)
- Jones, Peter Watts (with Madhi, S. A.) Bayesian minimum sample size designs for the Bernoulli selection problem. *Sequential Anal.* 7 (1988), no. 1, 1-10. (Peter Watts Jones) **89c:62105** 62L05 (62C10)
- Jones, Peter Wilcox (with Garnett, J. B.; Gehring, F. W.) Quasiconformal groups and the conical limit set. *Holomorphic functions and moduli, Vol. II* (Berkeley, CA, 1986), 59-67, *Math. Sci. Res. Inst. Publ.*, 11, *Springer, New York-Berlin*, 1988. (A. Hinkkanen) **89i:30021** 30C60
- (with Murai, Takafumi) Positive analytic capacity but zero Buffon needle probability. *Pacific J. Math.* 133 (1988), no. 1, 99-114. (Matts Essén) **89m:30050** 30C85
- Jones, Philip C. (with Zydiak, James L.; Hopp, Wallace J.) Stationary dual prices and depreciation. *Math. Programming* 41 (1988), no. 3 (Ser. A), 357-366. (Summary) **89c:90041** 90A11
- Jones, Phillip S. (with Bunt, Lucas N. H.; Bedient, Jack D.) ★ The historical roots of elementary mathematics. Reprint of the 1976 edition. *Dover Publications, Inc., New York*, 1988. xvi+299 pp. ISBN 0-486-25563-8 (Editors) **89b:01003** 01A05 (00A05)
- Jones, Rhys Price see Conference: Graph Theory, **89j:05005** and **89j:05006**
- Jones, Robert B. (with Felderhof, B. U.) Convective motion and transfer of force by many-body hydrodynamic interaction. *Phys. A* 146 (1987), no. 3, 404-416. (R. M. Kadobyan'skii) **89c:76105** 76T05 (76D99, 82A99)
- (with Felderhof, B. U.) Linear response theory of the viscosity of suspensions of spherical Brownian particles. *Phys. A* 146 (1987), no. 3, 417-432. (R. M. Kadobyan'skii) **89b:82139** 82A99
- (with Schmitz, Rudolf P.) Mobility matrix for arbitrary spherical particles in solution. *Phys. A* 149 (1988), no. 3, 373-394. (Summary) **89d:82089** 82A50 (82-04)
- Jones, Roger B. see VDM '88, VDM—the way ahead, **89m:68093**
- Jones, Roger L. Inequalities for pairs of ergodic transformations. (Serbo-Croatian summary) *Rad. Mat.* 4 (1988), no. 1, 55-61. (Manfred Denker) **89b:28026** 28D05 (47A35)
- Jones, S. E. (with Vujanović, B.) On the inverse Lagrangian problem. *Acta Mech.* 73 (1988), no. 1-4, 245-251. (Jair Koiller) **89m:70034** 70H35
- Joynton, James, Simon see Peyton Jones, Simon
- Jones, V. F. R. Subfactors of type II<sub>1</sub> factors and related topics. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 939-947, *Amer. Math. Soc., Providence, RI*, 1987. (Lothar M. Schmitt) **89h:46089** 46L35 (57M25)
- Hecke algebra representations of braid groups and link polynomials. *Ann. of Math.* (2) 126 (1987), no. 2, 335-388. (Pierre de la Harpe) **89c:46092** 46L99 (20F36, 22D25, 46L35, 46L55, 57M25)
- On knot invariants related to some statistical mechanical models. *Pacific J. Math.* 137 (1989), no. 2, 311-334. (Louis H. Kauffman) **89m:57005** 57M25 (82A69)
- Jones, W. P. (with Musonge, P.) Closure of the Reynolds stress and scalar flux equations. *Phys. Fluids* 31 (1988), no. 12, 3589-3604. (Summary) **89f:76012** 76-08 (76F05, 76F10)
- Jones, William B. (with Cooper, S. Clement; Magnus, Arne) General T-fraction expansions for ratios of hypergeometric functions. *Appl. Numer. Math.* 4 (1988), no. 2-4, 241-251. (E. P. Merkes) **89g:33005** 33A30 (30B70)
- de Jong, Piet The likelihood for a state space model. *Biometrika* 75 (1988), no. 1, 165-169. (Raúl Pedro Mentz) **89c:62120** 62M10
- (with Mackinnon, Murray J.) Covariances for smoothed estimates in state space models. *Biometrika* 75 (1988), no. 3, 601-602. (Jiri Anděl) **89i:62147** 62M10
- de Jong, T. J. (with Geritz, S. A. H.; Metz, J. A. J.; Klinkhamer, P. G. L.) Competition in safe-sites. *Theoret. Population Biol.* 33 (1988), no. 2, 161-180. (Summary) **89h:92061** 92A17
- de Jonge, Wiebren (with Chaum, David) Some variations on RSA signatures & their security. *Advances in cryptography—CRYPTO '86* (Santa Barbara, Calif., 1986), 49-59, *Lecture Notes in Comput. Sci.*, 263, *Springer, Berlin-New York*, 1987. (Do Long Van) **89b:94025** 94A60 (68P25)
- Jongen, H. Th. (with Möbert, T.; Rückmann, Jan; Tammer, Klaus) On inertia and Schur complement in optimization. *Linear Algebra Appl.* 95 (1987), 97-109. (J. R. Rajasekera) **89f:90143** 90C30 (15A18, 90C20, 93B35)
- (with Guddat, Jürgen) Structural stability in nonlinear optimization. *Optimization* 18 (1987), no. 5, 617-631. (Summary) **89h:90223** 90C31
- de Jongh, Dick H. J. A simplification of a completeness proof of Guaspari and Solovay. *Studia Logica* 46 (1987), no. 2, 187-192. (C. Smoryński) **89i:03034** 03B45 (03F30, 03F40)
- (with Montagna, Franco) Generic generalized Rosser fixed points. *Studia Logica* 46 (1987), no. 2, 193-203. (C. Smoryński) **89c:03030** 03B45 (03F40)
- (with Montagna, Franco) Provable fixed points. *Z. Math. Logik Grundlag. Math.* 34 (1988), no. 3, 229-250. (C. Smoryński) **89i:03033** 03B45 (03F40)
- de Jongh, P. J. (with de Wet, T.; Welsh, A. H.) Mallow-type bounded-influence-regression trimmed means. *J. Amer. Statist. Assoc.* 83 (1988), no. 403, 805-810. (M. Hušková) **89k:62088** 62J05 (62F35)
- Jonish, David P. (with Millett, K. C.) Extrinsic topological chirality indices of molecular graphs. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 82-90, *Stud. Phys. Theoret. Chem.*, 51, *Elsevier, Amsterdam-New York*, 1987. (D. W. L. Sumners) **89j:20098** 92A40 (05C10, 57M15, 57M25)
- Jonker, J. B. (with Keus, C.) A finite element dynamic analysis of robotic manipulators with flexible links. *Trends in applications of mathematics to mechanics* (Wassenaar, 1987), 160-171, *Springer, Berlin-New York*, 1988. (see **89g:58004**) 70B15
- Jonker, Roy (with Volgenant, Ton) An improved transformation of the symmetric multiple traveling salesman problem. *Oper. Res.* 36 (1988), no. 1, 163-167. (Summary) **89b:90077** 90B10
- Jonsson, Alf Markov's inequality and local polynomial approximation. *Function spaces and applications* (Lund, 1986), 303-316, *Lecture Notes in Math.*, 1302, *Springer, Berlin-New York*, 1988. (Wiesław Pleśniak) **89c:41017** 41A17 (26C05, 26D05, 41A10)
- Besov spaces on submanifolds of  $\mathbb{R}^n$ . *Analysis* 8 (1988), no. 3-4, 225-269. (H. Triebel) **89m:46065** 46E35 (58D15)
- Jonsson, Bjarni (with Day, Alan) Non-Arguesian configurations in a modular lattice. *Acta Sci. Math. (Szeged)* 51 (1987), no. 3-4, 309-318. (Christian Herrmann) **89f:06013** 06C05
- Relation algebras and Schröder categories. *Discrete Math.* 70 (1988), no. 1, 27-45. (S. Comer) **89g:03093** 03G15 (08C05, 18B99)
- Jónsson, Þórhur (with Ambjørn, Jan; Durhuus, Bergfinnur; Fröhlich, Jürg) Regularized strings with extrinsic curvature. *Nuclear Phys. B* 290 (1987), no. 4, 480-506. (Claus Montonen) **89b:81164** 81E25 (81E30, 81G25, 82A05)
- (with Ambjørn, Jan; Durhuus, Bergfinnur) Statistical mechanics of paths with curvature-dependent action. *J. Phys. A* 21 (1988), no. 4, 981-1000. (A. Comtet) **89f:82040** 82A42 (60J15, 81E30, 82A41, 82A68)
- Jóó, István Answer to a problem of M. Horváth and A. Sövegártó. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 29 (1986), 203-207 (1987). (Jean-Paul Doignon) **89g:49016** 49A40 (26A51, 90C48)
- (with Il'in, V. A.) An inequality of Bessel type for the system of eigenfunctions of a nonselfadjoint Laplace operator. (Russian) *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 30 (1987), 171-176. (Monique Dauge) **89c:35127** 35P20 (35J05)
- (with Erdős, Paul; Székely, L. A.) Some remarks on infinite series. *Studia Sci. Math. Hungar.* 22 (1987), no. 1-4, 395-400. (Amnon Jakimovski) **89g:40001** 40A05
- Joo, E. Quantum theory and the appearance of a classical world. *New techniques and ideas in quantum measurement theory* (New York, 1986), 6-13, *Ann. New York Acad. Sci.*, 480, *New York Acad. Sci., New York*, 1986. (see **89m:81005**) 81B05
- Joo, Konrad (with Hausler, Erich) A nonuniform bound on the rate of convergence in the martingale central limit theorem. *Ann. Probab.* 16 (1988), no. 4, 1699-1720. (Adhir K. Basu) **89b:60038** 60F05 (60G42)
- Joppich, Wolfgang ★ Ein Mehrgitteransatz zur Lösung einer nichtlinearen Diffusionsgleichung auf einem zeitabhängigen Gebiet unter Verwendung kartesischer Koordinaten. (German) [A multigrid method for the solution of a nonlinear diffusion equation on a time-dependent domain using Cartesian coordinates] *GMD-Studien* [GMD Studies], 122, *Gesellschaft für Mathematik und Datenverarbeitung m.b.H. Bonn, St. Augustin*, 1987. 53 pp. ISBN 3-88457-122-2 (Jiri Hřebíček) **89i:65131** 65N99
- Jordan, A. (with Bouayed, F.; Borucki, A.; Benmouna, M.) Numerical method for the resolution of nonlinear heat transfer problems. *Comm. Appl. Numer. Methods* 4 (1988), no. 1, 17-23. (Summary) **89c:80010** 80A20 (65N30)
- Jordan, A. K. (with Lakshmanasamy, S.; Mitra, S. S.) Soliton propagation in optical waveguides: a review. *Some topics on inverse problems* (Montpellier, 1987), 391-403, *World Sci. Publishing, Singapore*, 1988. (see **89f:35007**) 78A50
- (with Lakshmanasamy, S.) An inverse scattering theory applied to the design of single-mode planar optical waveguides: study of discrete and continuous spectra. *Some topics on inverse problems* (Montpellier, 1987), 404-415, *World Sci. Publishing, Singapore*, 1988. (see **89f:35007**) 78A50
- Jordan, Bruce W. (with Livné, Ron) Divisor classes on Shimura curves rational over local fields. *J. Reine Angew. Math.* 378 (1987), 46-52. (Yasutaka Ihara) **89c:11094** 11G18 (11G20, 14H25, 14H45)
- Jordan, D. A. Normalizing sequences and completions of noncommutative Noetherian rings. *Bull. London Math. Soc.* 20 (1988), no. 3, 228-234. (C. R. Hajarnavis) **89d:16017** 16A33
- Unique factorisation of normal elements in polynomial rings. *Proc. Roy. Soc. Edinburgh Sect. A* 110 (1988), no. 3-4, 241-247. (P. M. Cohn) **89k:16002** 16A02
- Jordan, D. W. (with Smith, Peter) ★ Nonlinear ordinary differential equations. Second edition. Oxford Applied Mathematics and Computing Science Series. *The Clarendon Press, Oxford University Press, New York*, 1987. x+381 pp. ISBN 0-19-859657-X; 0-19-859656-1 (C. S. Coleman) **89a:34001** 34-01 (34A34, 58Fxx)
- Jordan, James S. (with Hurwicz, Leonid; Kannai, Yakar) On the demand generated by a smooth and concavifiable preference ordering. *J. Math. Econom.* 16 (1987), no. 2, 169-189. (Beth Allen) **89c:90012** 90A06 (26B25, 90A10)
- A stability problem with nonstationary overlapping generations equilibria. *J. Econom. Theory* 45 (1988), no. 2, 425-433. (Summary) **89g:90058** 90A14
- Jordan, P. (with Höck, K.-H.; Hackenbrach, D.; Thomas, Harry) Degenerate Hopf bifurcation in the presence of symmetry. *Phys. D* 27 (1987), no. 3, 338-356. (Bernold Fiedler) **89h:58145** 58F14
- Jordan, Robert (with Gérard-Varet, Louis-André; Kirman, Alain) Dynamique des stocks et équilibre budgétaire dans un modèle où les prix sont contraints à la baisse. [The dynamics of stocks and budgetary equilibrium in a model with falling prices] With comments by Henri Sterdyniak. *Macrodynamique et déséquilibres*, 245-284, *Economica, Paris*, 1987. (see **89d:90065**) 90A17
- Jordan, Thomas F. Direct calculation of the Berry phase for spins and helicities. *J. Math. Phys.* 28 (1987), no. 8, 1759-1760. (H. Hogreve) **89d:81041** 81C99 (81D99)



- (with Chiao, Raymond Y.) Lorentz-group Berry phases in squeezed light. *Phys. Lett. A* 132 (1988), no. 2-3, 77-81. (Summary) **89j:81296** 81K05 (81D30)
- Jørgensen, Bent** Small dispersion asymptotics. *Reptape I* (1987), no. 1, 59-90. (Summary) **89k:62032** 62F05 (62F12)
- hoffmann-Jørgensen, J.** see **Hoffmann-Jørgensen, J.**
- Jørgensen, Leif Kjør** Extremal graphs for contractions to  $K_7$ . Eleventh British Combinatorial Conference (London, 1987). *Discrete Math.* 25 (1988), C, 133-148. (George R. T. Hendry) **89g:05063** 05C35 (05C75)
- Jørgensen, Palle E. T.** (with Pedersen, Steen) Harmonic analysis on tori. *Acta Appl. Math.* 10 (1987), no. 1, 87-99. (Roberto J. Miatello) **89e:22010** 22D10 (11F06, 22E40, 42C99)
- ★ Operators and representation theory. Canonical models for algebras of operators arising in quantum mechanics. North-Holland Mathematics Studies, 147. *Notas de Matemática* [Mathematical Notes], 120. North-Holland Publishing Co., Amsterdam-New York, 1988. viii+337 pp. ISBN 0-444-70321-7 (Konrad Schmüdgen) **89e:47001** 47-02 (17B35, 17B65, 22E65, 46Lxx, 47D40, 81D99)
- (with Klink, W. H.) Spectral transform for the sub-Laplacian on the Heisenberg group. *J. Analyse Math.* 50 (1988), 101-121. (Hans Plesner Jakobsen) **89k:58276** 58G11 (22E25, 58G35, 81C40)
- Jørgensen, T.** (with Marden, A.) Generic fundamental polyhedra for Kleinian groups. *Holomorphic functions and moduli*, Vol. II (Berkeley, CA, 1986), 69-85. *Math. Sci. Res. Inst. Publ.*, 11. Springer, New York-Berlin, 1988. (L. Keen) **89k:30061** 30F40 (22E40, 32G15)
- Jörcke, B.** Removable singularities of CR-functions. *Ark. Mat.* 26 (1988), no. 1, 117-143. (Emil Straube) **89j:32021** 32D20 (32D10)
- Joris, Henri** (with Preissmann, Emmanuel) Germes pseudo-immersifs de  $(\mathbb{R}^n, 0)$  dans  $(\mathbb{R}^n, 0)$ . (English summary) [Pseudoimmersive germs from  $(\mathbb{R}^n, 0)$  to  $(\mathbb{R}^n, 0)$ ] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 6, 261-263. (Jean-Jacques Gervais) **89g:58026** 58C27 (57R42)
- Jorjani, S.** (with Scott, C. H.; Jefferson, T. R.) Duality for programs involving nonseparable objective functions. *Internat. J. Systems Sci.* 19 (1988), no. 9, 1911-1918. (Morgan A. Hanson) **89h:90180** 90C25 (90C30)
- Jorland, Gérard** The Saint Petersburg paradox 1713-1937. *The probabilistic revolution*, Vol. 1, 157-190. *Bradford Book*, MIT Press, Cambridge, MA-London, 1987. (Zeno G. Swijink) **89d:01033** 01A50 (01A55, 01A60, 60-03)
- Jornet, V.** (with Goberna, M. A.) A note about linear inequality systems and duality. (German summary) *Z. Oper. Res. Ser. A-B* 31 (1987), no. 3, A71-A78. (Jürgen Köhler) **89a:90109** 90C25 (90C05)
- Jörnsten, K.** (with Hallefjord, Åsa) Constraint generation and surrogate relaxation. *J. Inform. Optim. Sci.* 9 (1988), no. 2, 215-218. (Summary) **89g:90155** 90C10
- (with Migdalas, S.) Designing a minimal spanning tree network subject to a budget constraint. *Optimization* 19 (1988), no. 4, 475-484. (Summary) **89e:90287** 90C35 (90C09)
- Jorrand, Philippe** Fundamental mechanisms for artificial intelligence programming languages. An introduction. *Advanced topics in artificial intelligence* (Oslo, 1987), 1-40. *Lecture Notes in Comput. Sci.*, 345. Springer, Berlin-New York, 1988. (see **89j:68126**) **68T25** (68-02)
- san José, Fernando** see **San José, Fernando**
- Joseph, Anthony** A surjectivity theorem for rigid highest weight modules. *Invent. Math.* 92 (1988), no. 3, 567-596. (Timo Neuvonen) **89d:17013** 17B35 (17B10)
- Rings which are modules in the Bernstein-Gelfand-Gelfand category. *J. Algebra* 113 (1988), no. 1, 110-126. (S. Paul Smith) **89e:17012** 17B35 (17B10)
- Joseph, Daniel D.** (with Guilfoyle, C.; Nguyen, K.; Rosso, F.) Nonlinear stability of rotating flow of two fluids. (French summary) *J. Mec. Théor. Appl.* 6 (1987), no. 5, 619-645. (L. Debnath) **89a:76037** 76D30 (76U05)
- Two fluids heated from below. *Energy stability and convection* (Capri, 1986), 364-382. *Pitman Res. Notes Math. Ser.*, 168. Longman Sci. Tech., Harlow, 1988. (Summary) **89e:76047** 76E15 (76V05)
- (with Preziosi, Luigi) Heat waves. *Rev. Modern Phys.* 61 (1989), no. 1, 41-73. (Summary) **89k:80001** 80-02 (01A60, 80A20)
- habu Joseph, K.** see **Babu Joseph, K.**
- Josephson, Brian** (with Conrad, Michael; Home, D.) Beyond quantum theory: a realist psycho-biological interpretation of physical reality. *Microphysical reality and quantum formalism*, Vol. 1, 2 (Urbino, 1985), 285-293. *Fund. Theories Phys., Kluwer Acad. Publ.*, Dordrecht, 1988. (Summary) **89m:92001** 92A05 (81B99)
- Joshi, A. D.** (with Thatte, A. D.) A generalization of weighted shifts and subnormality. *Modern analysis and its applications* (New Delhi, 1983), 179-190. *Prentice-Hall of India, New Delhi*, 1986. (Peng Fan) **89d:47053** 47B37 (47B20)
- Joshi, Amitabh** (with Puri, R. R.) Effects of the binomial field distribution on collapse and revival phenomena in the Jaynes-Cummings model. *J. Modern Opt.* 34 (1987), no. 11, 1421-1431. (Summary) **89k:81212** 81K05
- Joshi, Aravind K.** An introduction to tree adjoining grammars. *Mathematics of language*, 87-114. *Benjamins, Amsterdam*, 1987. (see **89a:68006**) **68Q50** (68S05)
- (with Vijay-Shanker, K.; Weir, David J.) On the progression from context-free to tree adjoining languages. *Mathematics of language*, 389-401. *Benjamins, Amsterdam*, 1987. (see **89a:68006**) **68Q45** (68Q50)
- Joshi, B. C.** (with Pandey, S. B.) Hyperbolic general differentiable manifold. *J. Sci. Res.* 9 (1987), no. 1, 43-44. (Ion Mihai) **89m:53056** 53C15
- Joshi, D. C.** (with Benjwal, M. P.; Kumar, Sunil) Hamiltonian formulation for the Yang-Mills fields associated with electric and magnetic charges in the Coulomb gauge. *Acta Phys. Polon. B* 18 (1987), no. 12, 1077-1086. (Yisong Yang) **89b:81117** 81E13 (53C80)
- (with Kumar, Sunil; Prasad, Rakesh; Benjwal, M. P.) Classical Yang-Mills theory in presence of extended electric and magnetic sources. *Acta Phys. Polon. B* 18 (1987), no. 12, 1087-1097. (Yisong Yang) **89b:81133** 81E13
- Joshi, G. C.** (with Nash, C. G.) Composite systems in quaternionic quantum mechanics. *J. Math. Phys.* 28 (1987), no. 12, 2883-2885. (Lawrence P. Horwitz) **89k:81014** 81B10 (46N05)
- (with Nash, C. G.) Component states of a composite quaternionic system. *J. Math. Phys.* 28 (1987), no. 12, 2886-2890. (J.-P. Antoine) **89g:81006** 81B05 (03G12)
- (with Foot, R.) String theories and the Jordan algebras. *Phys. Lett. B* 199 (1987), no. 2, 203-208. (B. Spence) **89b:81187** 81E99 (17C05, 81E30)
- (with Nash, C. G.) Phase transformations in quaternionic quantum field theory. *Internat. J. Theoret. Phys.* 27 (1988), no. 4, 409-416. (J. A. Helayel-Neto) **89b:81219** 81E99
- (with Foot, R.) Remark concerning the twistor formulation of a massless particle, and the division algebras. *Lett. Math. Phys.* 16 (1988), no. 1, 77-82. (Anatol Odziejewicz) **89m:81074** 81D25 (17A35, 81D27)
- (with Foot, R.) A connection between the octonions and the superstring. *Modern Phys. Lett. A* 3 (1988), no. 1, 47-55. (Summary) **89m:81140** 81E99 (81E30)
- (with Foot, R.) On a certain supersymmetric identity and the division algebras. *Modern Phys. Lett. A* 3 (1988), no. 10, 999-1004. (Summary) **89i:17003** 17A35 (81G20)
- Joshi, J. M. C.** (with Joshi, Narottam) On a generalised Stieltjes transform of two variables. (Hindi. English summary) *Vijnana Parishad Anusandhan Patrika* 29 (1986), no. 4, 215-224. (M. K. Jain) **89d:44005** 44A15
- Joshi, Mohan** Theory of monotone operators and random operator equations. *Modern analysis and its applications* (New Delhi, 1983), 197-206. *Prentice-Hall of India, New Delhi*, 1986. (Olga Hadžić) **89f:60068** 60H25 (47H15, 47H99)
- (with Ganesan, M.) Approximate solvability of Hammerstein equation. *Numer. Funct. Anal. Optim.* 9 (1987), no. 9-10, 1039-1058. (J. Kolomy) **89e:47080** 47H17 (47H05, 65J15)
- Nonlinear random equations involving completely closed operators. *Proc. Indian Acad. Sci. Math. Sci.* 96 (1987), no. 2, 75-85. (Shi Sheng Zhang) **89e:47089** 47H15 (60H25)
- (with George, Raju K.) Controllability of nonlinear systems. *Numer. Funct. Anal. Optim.* 10 (1989), no. 1-2, 139-166. (V. V. Krahokho) **89k:93015** 93B05 (47H15, 93B28)
- Joshi, N. A.** 4-perfect degree sequences. *J. Combin. Inform. System Sci.* 9 (1984), no. 2, 87-96. (Prabir Das) **89h:05055** 05C39 (05C75)
- Joshi, N. E.** (with Meshram, M. C.) The space-time functional formalism for turbulent multicomponent mixture with second order reactions. I, II. *J. Math. Phys. Sci.* 22 (1988), no. 6, 711-737, 739-755. (Not in MR) **76F99**
- Joshi, Nalin** Painlevé property of general variable-coefficient versions of the Korteweg-de Vries and nonlinear Schrödinger equations. *Phys. Lett. A* 125 (1987), no. 9, 456-460. (C. Rogers) **89a:35185** 35Q20 (58F07, 58G35)
- Joshi, Narottam** A theorem for generalized two-dimensional Laplace transform. (Hindi. English summary) *Vijnana Parishad Anusandhan Patrika* 29 (1986), no. 1, 21-26. (Summary) **89c:44001** 44A10
- (with Joshi, J. M. C.) On a generalised Stieltjes transform of two variables. (Hindi. English summary) *Vijnana Parishad Anusandhan Patrika* 29 (1986), no. 4, 215-224. (M. K. Jain) **89d:44005** 44A15
- A theorem for integral transforms. *Math. Ed. (Siwan)* 21 (1987), no. 1, 1-2. (Summary) **89k:44002** 44A05
- Joshi, P. C.** Estimation and testing under exchangeable exponential model with a single outlier. *Comm. Statist. Theory Methods* 17 (1988), no. 7, 2315-2326. (Not in MR) **62F10** (62F03)
- Joshi, Pankaj S.** (with Joshi, Sonal S.) Quantum effects near the singularity in a general cosmological scenario. *Phys. Lett. A* 121 (1987), no. 7, 334-336. (A. D. Popova) **89f:83058a**; **EA 89m** 83C45 (81E20, 83C75, 83F05)
- (with Joshi, Sonal S.) Quantum effects near the singularity in a general cosmological scenario. II. *Phys. Lett. A* 125 (1987), no. 4, 181-183. (A. D. Popova) **89f:83058b**; **EA 89m** 83C45 (81E20, 83C75, 83F05)
- (with Newman, Richard P. A. C.) Constraints on the structure of naked singularities in classical general relativity. *Ann. Physics* 182 (1988), no. 1, 112-119. (Laszlo B. Szabados) **89j:83051** 83C75
- (with Clarke, C. J. S.) On reflecting spacetimes. *Classical Quantum Gravity* 5 (1988), no. 1, 19-25. (J. K. Beem) **89b:83061** 83C75 (53C50)
- Joshi, S. M.** see **Joshi, Suneeta M.**
- Joshi, S. N.** (with Basu, A. P.; Ghosh, J. K.) On estimating change point in a failure rate. *Statistical decision theory and related topics, IV*, Vol. 2 (West Lafayette, Ind., 1986), 239-252. *Springer, New York-Berlin*, 1988. (A. Balogh) **89b:62158** 62N05 (62F10)
- Joshi, Sonal S.** (with Joshi, Pankaj S.) Quantum effects near the singularity in a general cosmological scenario. *Phys. Lett. A* 121 (1987), no. 7, 334-336. (A. D. Popova) **89f:83058a**; **EA 89m** 83C45 (81E20, 83C75, 83F05)
- (with Joshi, Pankaj S.) Quantum effects near the singularity in a general cosmological scenario. II. *Phys. Lett. A* 125 (1987), no. 4, 181-183. (A. D. Popova) **89f:83058b**; **EA 89m** 83C45 (81E20, 83C75, 83F05)
- Joshi, Suneeta M.** (with Nabar, S. P.) Sequential analysis applied to testing the scale parameter in the problem of the Nile. *Comm. Statist. Theory Methods* 18 (1989), no. 1, 239-243. (Not in MR) **62L10**
- Joshi, T. C.** (with Saxena, R. B.) Lacunary interpolation by even degree polynomial splines. *Southeast Asian Bull. Math.* 11 (1988), no. 2, 135-149. (H. V. Dikshit) **89m:65015** 65D07 (41A15)
- Joshi, V. M.** Admissibility of the best invariant estimator of a location parameter. *Sankhyā Ser. A* 49 (1987), no. 1, 63-71. (Dipak K. Dey) **89b:62071** 62F10 (62C15)
- Randomization versus the prediction approach in survey sampling. *J. Statist. Plann. Inference* 20 (1988), no. 2, 215-219. (Summary) **89j:62015** 62D05
- Joshi, Vinod** (with Narayana Rao, M. L.; Kuppaswamy Rao, K.) A translation plane of order 25 with small translation complement. *J. Indian Inst. Sci.* 66 (1986), no. 8, 533-541. (T. G. Ostrom) **89a:51023** 51E15 (20B25, 51A40)
- (with Narayana Rao, M. L.; Kuppaswamy Rao, K.) A translation plane of order 49 with orbit structure 2, 16 and 32. *J. Combin. Inform. System Sci.* 12 (1987), no. 1-2, 41-50. (T. G. Ostrom) **89j:51003** 51A40 (20B25, 51A35, 51E15)
- Josin, G.** Neural-space generalization of a topological transformation. *Biol. Cybernet.* 59 (1988), no. 4-5, 283-290. (Summary) **89h:92020** 92A09
- Jossang, T.** (with Aharony, Amnon; Osaal, U.; Murat, M.; Meir, Yigal; Boger, F.; Feder, Jens) Growth and viscous fingers on percolating porous media. *Random fluctuations and pattern growth* (Cargèse, 1988), 83-86. *NATO Adv. Sci. Inst. Ser. E: Appl. Sci.*, 157. *Kluwer Acad. Publ.*, Dordrecht, 1988. (see **89j:00034**) **82A43** (76S05)
- (with Furberg, Liv; Feder, Jens; Aharony, Amnon) Dynamics of invasion percolation. *Phys. Rev. Lett.* 61 (1988), no. 18, 2117-2120. (Summary) **89i:82050** 82A43
- Jost, Jürgen** Existence results for embedded minimal surfaces of controlled topological type. I. *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* 13 (1986), no. 1, 15-50. (G. Dziuk) **Zbl**

- 619:490(19). **89m:58040** 58E12 (49F10, 53A10)
- (with Grüter, Michael) Allard type regularity results for varifolds with free boundaries. *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* **13** (1986), no. 1, 129–169. (Harold Parks (Zbl 615:49018)) **89d:49048** 49F20
  - Existence results for embedded minimal surfaces of controlled topological type. II. *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* **13** (1986), no. 3, 401–426. (Introduction) **89m:58041** 58E12 (49F10, 53A10)
  - Two-dimensional geometric variational problems. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 1094–1100. *Amer. Math. Soc., Providence, RI*, 1987. (John C. Wood) **89g:58045** 58E12 (49F10, 53A10, 58E20)
  - On the existence of embedded minimal surfaces of higher genus with free boundaries in Riemannian manifolds. *Variational methods for free surface interfaces (Menlo Park, Calif., 1985)*, 65–75. *Springer, New York-Berlin*, 1987. (Klaus Steffen) **89b:58051** 58E12 (49F10, 49F22, 53C42)
  - Existence results for embedded minimal surfaces of controlled topological type. III. *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4)* **14** (1987), no. 1, 165–167. (From the text) **89m:58042** 58E12 (49F10, 53A10)
  - (with Gulliver, Robert) Harmonic maps which solve a free-boundary problem. *J. Reine Angew. Math.* **381** (1987), 61–89. (A. J. Tromba) **89k:58067** 58E20 (35R35)
  - ★ Nonlinear methods in Riemannian and Kählerian geometry. DMV Seminar, 10. *Birkhäuser Verlag, Basel-Boston, MA*, 1988. 153 pp. ISBN 3-7643-1920-8 (Helmut Kaul) **89m:58049** 58E20 (53C05, 53C80, 58E15, 58G11)
  - The geometric calculus of variations: a short survey and a list of open problems. *Exposition. Math.* **6** (1988), no. 2, 111–143. (J. Eells) **89h:58036** 58Exx (49F10, 53A10)
  - Embedded minimal disks with a free boundary on a polyhedron in  $\mathbb{R}^3$ . *Math. Z.* **199** (1988), no. 3, 311–320. (M. Elisa G. G. de Oliveira) **89h:53021** 53A10 (49F10)
- Jothiram, B.** (with Avudainayagam, A.) A circle theorem for plane Stokes flows. *Quart. J. Mech. Appl. Math.* **41** (1988), no. 3, 383–393. (A. M. J. Davis) **89i:76038** 76D07
- Jotov, Ognjan** An extension of symplectic geometry. (Serbo-Croatian summary) *Rad Jugoslav. Akad. Znan. Umjet.* No. 428 (1987), 59–69. (V. Oproini) **89h:53048** 53A45
- Jou, D.** (with Casas-Vázquez, J.; Lebon, G.) Extended irreversible thermodynamics. *Rep. Progr. Phys.* **51** (1988), no. 8, 1105–1179. (B. H. Lavenda) **89k:82044** 82A35
- Joubert, S. V.** (with Schoeman, M. J.) The largest nontrivial torsion class of modules. *Questions Math.* **10** (1987), no. 3, 301–315. (Jitendra Manocha) **89c:16038** 16A63
- Jourdain, G.** (with Hakizimana, G.; Loubet, G.) Adapted codes for communication through multipath channel. (French summary) *Coding theory and applications (Cachan, 1986)*, 173–182. *Lecture Notes in Comput. Sci.*, 311. *Springer, Berlin-New York*, 1988. (Summary) **89g:94023** 94A40
- Jourjine, A.** see **Bullinaria, J. A.**, **89b:81080**
- Jourlin, M.** (with Laget, B.; Matheron, G.; Meyer, Fernand Romain; Preteux, F.; Schmitt, Michel; Serra, J.) ★ Image analysis and mathematical morphology. Vol. 2. Theoretical advances. Edited and with a preface and introduction by Jean Serra. *Academic Press, Inc. [Harcourt Brace Jovanovich, Publishers], London-New York*, 1988. xvi+411 pp. ISBN 0-12-637241-1 (Răzvan Andonie) **89m:68139** 68U10 (00A69, 06A23, 52A22, 60D05, 92A05, 92A25)
- Journé, J.-L.** (with Meyer, P.-A.) Une martingale d'opérateurs bornés, non représentable en intégrale stochastique. [A martingale of bounded operators that is not representable as a stochastic integral] *Séminaire de Probabilités, XX*, 1984/85, 313–316. *Lecture Notes in Math.*, 1204. *Springer, Berlin-New York*, 1986. (Mario Milman) **89b:60075a** 60G48 (47B38, 60H05)
- (with Christ, Michael) Polynomial growth estimates for multilinear singular integral operators. *Acta Math.* **159** (1987), no. 1–2, 51–80. (Alberto Torchinsky) **89a:42024** 42B20 (47G05)
- see also **Parthasarathy, Kalyanapuram Rangachari**, **89b:60075b**
- Journé, A. G.** New distance measures: the route toward truly non-Gaussian geostatistics. New advances in geostatistics (Redwood City, CA, 1987). *Math. Geol.* **20** (1988), no. 4, 459–475. (Summary) **89d:86011** 86A20 (86-08)
- Jouron, Claude** (with Bruneau, Charles-Henri) Un nouveau schéma décentré pour le problème de la cavité entraînée. (English summary) [A new upwind scheme for the driven cavity flow] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 7, 359–362. (W. Langlois) **89f:76001** 76-04
- Jovanov, Djurica** The existence of an optimal control for a linear problem with a variable control domain. (Serbo-Croatian. English summary) *Mat. Vesnik* **40** (1988), no. 2, 133–140. (Summary) **89m:49003** 49A10 (49E10, 93B17)
- Jovanović, Aleksandar** Reduced products modulo measures. *Zb. Rad. No. 2* (1988), 31–32. (Zarko Mijajlović) **89j:03027** 03C20 (04A20, 28A99)
- Jovanović, Antonije D.** Combinatorial characterization of hexagonal systems. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1–3, 259–270. (T. R. S. Walsh) **89g:92083** 92A40 (05C99)
- Jovanović, B.** Sur la méthode des domaines fictifs pour une équation elliptique quasilineaire du quatrième ordre. [On the method of fictitious domains for a fourth-order quasilinear elliptic equation] *Publ. Inst. Math. (Beograd) (N.S.)* **42**(56) (1987), 167–173. (Summary) **89f:65074** 65N30
- Jovanović, Bora** An approximation of tabulated function. *Publ. Inst. Math. (Beograd) (N.S.)* **41**(55) (1987), 143–148. (Liliana Spircu) **89c:62167** 62M20
- Jovanović, Boško S.** Approximation of generalized solutions by means of finite differences. (Russian) *Arch. Math. (Brno)* **23** (1987), no. 1, 9–14. (Stanislav Burys) **89c:65108** 65N10
- Jovanović, Boyan** (with Rosenthal, Robert W.) Anonymous sequential games. *J. Math. Econom.* **17** (1988), no. 1, 77–87. (Marwan Simaan) **89e:90242** 90D40 (90A14, 90D15)
- torrecillas Jover, Blas** see **Torrecillas Jover, Blas**
- Jović, Dragoljub S.** Ptolemy's theorem and some of its applications. (Serbo-Croatian) *Matematika (Zagreb)* **14** (1985), no. 3–4, 74–90 (1986). (Not in MR) **01A20**
- Calculation of Ludloff's number. (Serbo-Croatian) *Matematika (Zagreb)* **15** (1986), no. 3, 49–64. (Not in MR) **11Y60**
- A triangle, one of whose sides is the harmonic mean of the remaining two sides. (Serbo-Croatian) *Matematika (Zagreb)* **15** (1986), no. 4, 38–46 (1987). (Not in MR) **51M05**
- Jow, Yung-Li Lily** (with Brandwajn, Alexandre) An approximation method for tandem queues with blocking. *Oper. Res.* **36** (1988), no. 1, 73–83. (Summary) **89b:90087** 90B22
- Jowhar, I. H.** (with Dahiya, R. S.) Two-dimensional Laplace transforms of generalized hypergeometric functions. *Internat. J. Math. Math. Sci.* **11** (1988), no. 1, 167–175. (Summary) **89j:44001** 44A10 (33A30)
- Joy, M. P.** (with Sabir, M.) Integrability of two-dimensional homogeneous potentials. *J. Phys. A* **21** (1988), no. 10, 2291–2299. (D. ter Haar) **89g:58067** 58F05 (70H05)
- Joyal, André** (with Reyes, Gonzalo E.) Separably real closed local rings. Proceedings of the fifth Latin American symposium on mathematical logic (Bogotá, 1981). *Rev. Colombiana Mat.* **19** (1985), no. 1–2, 107–115. (From the text) **89e:03054** 03C60 (03C10, 03G30, 12D15)
- Foncteurs analytiques et espèces de structures. [Analytic functors and species of structures] *Combinatoire énumérative (Montreal, Que., 1985/Quebec, Que., 1985)*, 126–159. *Lecture Notes in Math.*, 1234. *Springer, Berlin-New York*, 1986. (Joseph Kung) **89b:05014** 05A15 (05A19, 18B99)
- Joyal, Pierre** Generalized Hopf bifurcation and its dual generalized homoclinic bifurcation. *SIAM J. Appl. Math.* **48** (1988), no. 3, 481–496. (Alan R. Hausrath) **89f:58102** 58F14 (34C05)
- Joyce, Paul** (with Tavaré, Simon) Cycles, permutations and the structure of the Yule process with immigration. *Stochastic Process. Appl.* **25** (1987), no. 2, 309–314. (Edward Pollak) **89a:60168** 60J27 (90A10)
- Joyeux, Roselyne** Slowly changing processes and harmonizability. *J. Time Ser. Anal.* **8** (1987), no. 4, 425–431. (Hannu Niemi) **89b:60100** 60G12 (62M15)
- Joyner, David** Summation operators and “explicit formulas”. *Portugal. Math.* **44** (1987), no. 2, 119–130. (W. Narkiewicz) **89a:11120** 11R42 (11M41, 46F99, 47B99)
- On the metaplectic analog of Kazhdan's “endoscopic” lifting. *Israel J. Math.* **61** (1988), no. 2, 113–154. (Stephen Gelbart) **89i:11061** 11F70 (22E50)
- Jóźefiak, Tadeusz** (with Weyman, Jerzy) Representation-theoretic interpretation of a formula of D. E. Littlewood. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 2, 193–196. (S. Milne) **89g:05013** 05A19 (05A17, 13D25, 17B35)
- Jorza, Richard** An approach to the modelling of the physical continuum. *British J. Philos. Sci.* **37** (1986), no. 4, 395–404. (Adam Helfer) **89k:81018** 81B99 (03B30)
- montero de Juan, Francisco Javier** see **Montero de Juan, Francisco Javier**
- Juang, J. C.** see **Juang, Jyh-Ching**
- Juang, J.-N.** (with Cooper, J. E.; Wright, J. R.) An eigensystem realization algorithm using data correlations (ERA/DC) for modal parameter identification. *Control Theory Adv. Tech.* **4** (1988), no. 1, 5–14. (Not in MR) **93B15** (93B30, 93C55)
- Juang, Jong** (with Nelson, Paul, Jr.) Existence and uniqueness results for a nonlinear integro-differential initial-value problem arising in transport theory. *Nonlinear Anal.* **11** (1987), no. 12, 1351–1369. (Cor van der Mee) **89a:82060** 82A70
- Juang, Jyh-Ching** (with Jonckheere, Edmond) On computing the spectral radius of the Hankel plus Toeplitz operator. *IEEE Trans. Automat. Control* **33** (1988), no. 11, 1053–1059. (Shunhua Sun) **89j:93034** 93B35 (47B35, 93B28)
- (with Jonckheere, Edmond) Vector-valued versus scalar-valued figures of merit in  $H^\infty$ -feedback system design. *J. Math. Anal. Appl.* **133** (1988), no. 2, 331–354. (Mihail Voicu) **89j:93035** 93B35 (93B50)
- Juang, Y. T.** see **Chuang, Yao T'ang**
- gonzález Juarros, E.** see **González Juarros, E.**
- Jubian, Pierre** L'émergence du concept d'espace. [How the concept of space emerged] *Sciences, histoire, société*, 60–72. *Publ. Inst. Rech. Math. Rennes*, 1986–2, *Univ. Rennes I*, Rennes, 1986. (Roman Murawski) **89g:01003** 01A05 (00A25)
- Juberg, R. K.** Certain singular integral operators revisited. *Appl. Anal.* **27** (1988), no. 1–3, 125–132. (Philip Heywood) **89f:47077** 47G05 (26A33, 42B20, 44A15)
- Jucović, E.** (with Shevets, Sergej) On generalized neighbour packings of domains in the Euclidean plane. *Studia Sci. Math. Hungar.* **21** (1986), no. 3–4, 347–358. (E. Hertel) **89e:52027** 52A45 (05B40)
- Jucys, A.-A. A.** The algebra of subclasses of a finite group. (Russian. English and Lithuanian summaries) *Litovsk. Fiz. Sb.* **27** (1987), no. 4, 391–402. (E. S. Kryachko) **89c:20013** 20C05 (20C35)
- A remark on the inner product of Schur functions. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 4, 793–797. (Leonid Krop) **89d:20012** 20C30 (20C15)
- Judd, B. R.** (with Lister, G. M. S.) A class of generalised 9-j symbols for  $Sp(2n)$ . *J. Phys. A* **20** (1987), no. 11, 3159–3169. (Raj Wilson) **89a:81032** 81C40 (22E70)
- Judd, Colin** (with Jacques, Ian) ★ Numerical analysis. *Chapman & Hall, London-New York*, 1987. viii+326 pp. ISBN 0-412-27950-9; 0-412-27960-6 (Ian Gladwell) **89b:65002** 65-01
- Judge, George** (with Teräsvirta, Timo; Yi, Gang) Model selection, smoothing and parameter estimation in linear models under squared error loss. *CSQ—Comput. Statist. Quart.* **4** (1988), no. 3, 191–205. (Not in MR) **62J05**
- (with Yi, Gang) Statistical model selection criteria. *Econom. Lett.* **28** (1988), no. 1, 47–51. (Summary) **89h:62185** 62P20
- Jédice, J. J.** (with Faustino, A. M.) An experimental investigation of enumerative methods for the linear complementarity problem. *Comput. Oper. Res.* **15** (1988), no. 5, 417–426. (Summary) **89h:90238** 90C33
- (with Mitra, Gautam) An enumerative method for the solution of linear complementarity problems. *European J. Oper. Res.* **36** (1988), no. 1, 122–128. (Summary) **89e:90205** 90C33
- Judrups, Ojars** Classifications of dynamical systems. *Zb. Rad. No. 2* (1988), 75. (Not in MR) **54H20**
- Juhász, I.** (with Hajnal, A.; Soukup, L.) On saturated almost disjoint families. *Comment. Math. Univ. Carolin.* **28** (1987), no. 4, 629–633. (Eva Hartová) **89b:03079** 03E05 (03E55)
- On spaces in which large subspaces are separable. *General topology and its relations to modern analysis and algebra, VI (Prague, 1986)*, 291–296. *R & E Res. Exp. Math.*, 16. *Heldermann, Berlin*, 1988. (Dimitrina Stavrova) **89g:54010** 54A25 (54A35)
- (with Shelah, Saharon; Soukup, L.) More on countably compact, locally countable spaces. *Israel J. Math.* **62** (1988), no. 3, 302–310. (Andrzej Szymański) **89b:03097** 03E35 (54A35, 54C10)
- Juhl, Andreas** Scattering by obstacles in real hyperbolic spaces. *Seminar analysis of the Karl-Weierstraß-Institute of Mathematics 1985/86 (Berlin, 1985/86)*, 195–304. *Teubner-Texte Math.*, 96. *Teubner, Leipzig*, 1987. (V. Ivrii) **89k:58287** 58G25 (35P25, 47A40)



- Jukna, Steffen** Computations in lattices of partitions. (Russian and Lithuanian summaries) *Mat. Logika Primenen.* No. 5 (1987), 17–21. (Summary) **89d:94059** 94C10 (03G05)
- On an entropic method for obtaining lower bounds on the complexity of Boolean functions. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 3, 556–559; translated in *Soviet Math. Dokl.* **37** (1988), no. 1, 126–129. (Bolesław Mikolajczak) **89g:68020** 68Q20 (94A17, 94C10)
- Juknevičienė, D.** The central limit theorem in the space  $C(S)$  and majorizing measures. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **26** (1986), no. 2, 362–373. (Hò Dàng Phúc) **89a:60025** 60B12 (60F05, 60G17)
- Majorizing measures and operators of stable type in the space  $C(S)$ . (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 3, 593–600. (Aleksandr Koldobskii) **89b:47046** 47B38 (60B10)
- The rate of convergence in the central limit theorem in the  $C(S)$  space. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **28** (1988), no. 2, 399–409; translated in *Lithuanian Math. J.* **28** (1988), no. 2, 201–208. (Zdzisław Rychlik) **89j:60050** 60F17
- (with Paulauskas, Vyntas) The convergence rate in the central limit theorem in the space  $D[0, 1]$ . (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **28** (1988), no. 3, 507–519; translated in *Lithuanian Math. J.* **28** (1988), no. 3, 229–238. (Gerd Christoph) **89m:60018** 60B12 (60F05)
- Julg, Pierre** (with Valette, Alain) Fredholm modules associated to Bruhat-Tits buildings. *Miniconferences on harmonic analysis and operator algebras* (Canberra, 1987), 143–155. *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (Joachim Hilgert) **89g:22026** 22E50 (22D25, 46L80, 58B15)
- Julian, William H.** Bayesian models for the parallel implementation of the fast Fourier transform algorithm. *Comput. Math. Appl.* **15** (1988), no. 4, 311–317. (A. D. Booth) **89e:65161** 65T05 (05C05)
- (with Mines, Ray; Richman, Fred) The intermediate value theorem: preimages of compact sets under uniformly continuous functions. *Rocky Mountain J. Math.* **18** (1988), no. 1, 25–36. (A. Kučera) **89f:03057** 03F65 (26A03, 54E45)
- Jullien, Graham A.** *see* Residue number system arithmetic, **89d:94002**
- Julve, J.** (with Barbero, F.; Tiemblo, A.; Tresguerres, R.) Dynamical approach to conformal gravity and the bosonic string effective action. *Z. Phys. C* **40** (1988), no. 4, 619–626. (W. Cox) **89m:81089** 81E13 (81E30, 81E40, 83E30)
- Jumarie, Guy** Thermodynamic representation of dynamic systems defined by a syntactic space and a semantic space. *10<sup>e</sup> Congrès International de Cybernétique* (Namur, 1983), 196–211. *Assoc. Internat. Cybernét.*, Namur, 1984. (Summary) **89b:80002** 80A10 (92A05, 93A10, 94A15)
- On the definitions and the measures of the amount of information involved by a form. *11<sup>e</sup> congrès international de cybernétique* (Namur, 1986), 211–221. *Assoc. Internat. Cybernét.*, Namur, 1986. (Shunsuke Ihara) **89j:94019** 94A17 (94A15)
- Observation with informational invariance: introduction to a new modeling of fuzzy arithmetics. *Cybernet. Systems* **18** (1987), no. 5, 407–424. (Summary) **89d:94021** 94A15 (90A99, 93B07, 94D05)
- New results in the information theory of patterns and forms. *Systems Anal. Modelling Simulation* **4** (1987), no. 6, 483–520. (E. Pessa) **89e:92002** 92A05 (03E72, 94A15)
- Rényi entropy of maps: applications to fuzzy sets, pattern recognition, and chaotic dynamics. *Cybernet. Systems* **19** (1988), no. 2, 169–192. (Steven Matthyse) **89m:94007** 94A17 (58F13, 92A25)
- Simple general method to analyse the moment stability and sensitivity of nonlinear stochastic systems with or without delay. *Internat. J. Systems Sci.* **19** (1988), no. 1, 111–124. (Binggen Zhang) **89d:93112** 93E15 (34K35, 60H10, 93C10)
- Jun, Jae-Bok** On projective Killing  $p$ -forms in locally product Riemannian manifolds. *TRU Math.* **22** (1986), no. 2, 37–46. (J. R. Vanstone) **89a:53041** 53C15
- Jun, Jin Woo** (with Kim, Jae Kwan) Evaluation of the conformal anomaly of Polyakov's string theory by the stochastic quantization method. *Phys. Rev. D* **37** (1988), no. 8, 2238–2242. (Helmut Rumpf) **89f:81185** 81E99 (81C20, 81E30)
- Jun, L.** *see* Liu, Jun<sup>1</sup>
- del Junco, A.** (with Rudolph, Daniel J.) On ergodic actions whose self-joinings are graphs. *Ergodic Theory Dynamical Systems* **7** (1987), no. 4, 531–557. (Peter Walters) **89e:28029** 28D05 (22D40, 28D15)
- Juneja, O. P.** (with Reddy, T. R.) Integral operators on a class of meromorphic functions. *C. R. Acad. Bulgare Sci.* **40** (1987), no. 9, 21–23. (Paul Eenigenburg) **89b:30011** 30C45
- Junek, Heinz** Holomorphic functions on intermediate spaces. (German and Russian summaries) *Wiss. Z. Pädagog. Hochschule "Karl Liebknecht" Potsdam* **31** (1987), no. 1, 131–137. (Jorge Mujica) **89e:46102** 46G20 (46M35, 47D30)
- Jung, A.** (with Nelson, Evelyn M.; Adamek, Jiri; Reiterman, Jan; Tarlecki, A.) Comparison of subset systems. *Comment. Math. Univ. Carolin.* **29** (1988), no. 1, 169–177. (James W. Lea, Jr.) **89g:06016** 06A23
- Jung, Christof** Integrability and scattering systems. *Finite-dimensional integrable nonlinear dynamical systems* (Johannesburg, 1988), 141–150. *World Sci. Publishing, Singapore*, 1988. (Summary) **89k:58182** 58F13 (58F05, 58F19, 70F05)
- (with Scholz, Hans-Joachim) Chaotic scattering off the magnetic dipole. *J. Phys. A* **21** (1988), no. 10, 2301–2311. (Richard C. Churchill) **89f:78016** 78A35
- Jung, Hermann** (with Mehlich, Kurt) Parallel algorithms for computing maximal independent sets in trees and for updating minimum spanning trees. *Inform. Process. Lett.* **27** (1988), no. 5, 227–236. (Norbert Blum) **89f:68025** 68Q25 (05C05, 68Q10, 68R10, 90B10)
- Jung, K.** (with Noye, John) A spectral method of determining depth variations of currents in a two-layer stratified sea. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 333–346. *North-Holland, Amsterdam-New York*, 1988. (Summary) **89d:66003** 86A05 (86–08)
- Jungeck, Gerald** Compatible mappings and common fixed points. II. *Internat. J. Math. Math. Sci.* **11** (1988), no. 2, 285–288. (S. P. Singh) **89b:54029** 54H25
- Common fixed points for commuting and compatible maps on compacta. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 977–983. (S. L. Singh) **89h:54030** 54H25 (54E45)
- Jungclaussen, Hardwin** Mathematik und Informatik—Versuch einer Abgrenzung. [Mathematics and information sciences—an attempt at drawing a line between the two] *Mathematisierung—mathematische Modellierung—Wissenschaftsentwicklung* (Dresden, 1988), 53–57. *Dresdner Reihe Forsch.*, 6, Pädagogische Hochschule Dresden, Dresden, 1988. (see **89c:00039**) 00A25
- Jungeilges, Jochen** (with Gaertner, Wulf) A nonlinear model of interdependent consumer behaviour. *Econom. Lett.* **27** (1988), no. 2, 145–150. (Summary) **89h:90018** 90A07 (58F14)
- Jünger, Michael** (with Euler, Reinhardt; Reinelt, G.) Generalizations of cliques, odd cycles and anticycles and their relation to independence system polyhedra. *Math. Oper. Res.* **12** (1987), no. 3, 451–462. (H. T. Lau) **89e:05061** 05B35
- Jungnickel, Dieter** ★ Graphen, Netzwerke und Algorithmen. (German) [Graphs, networks and algorithms] *Bibliographisches Institut, Mannheim*, 1987. 405 pp. ISBN 3-411-03126-3 (William Cook) **89e:05001** 05-01 (90-01, 90C27)
- A new class of symmetric divisible designs. *Combinatorial design theory*, 297–299. *North-Holland Math. Stud.*, 149, North-Holland, Amsterdam-New York, 1987. (Tatiana Deretsky) **89a:05028** 05B05 (05B10, 05B25)
- Divisible semiplanes, arcs, and relative difference sets. *Canad. J. Math.* **39** (1987), no. 4, 1001–1024. (M. Kallaher (Zbl 637:05011)) **89f:51050** 51E20 (05B10, 05B25)
- On a theorem of Ganley. *Graphs Combin.* **3** (1987), no. 2, 141–143. (T. G. Ostrom) **89e:05042** 05B10 (05B25)
- (with Vanstone, S. A.) Hyperfactorizations of graphs and 5-designs. (Arabic summary) *J. Univ. Kuwait Sci.* **14** (1987), no. 2, 213–224. (J. H. van Lint) **89d:05027** EA **89m** 05B05 (05B25, 05C70)
- (with Vanstone, S. A.) Conical embeddings of Steiner systems. *Rend. Circ. Mat. Palermo* (2) **36** (1987), no. 1, 90–94. (Sharad S. Sane) **89e:05053** 05B25 (05B07, 51E10)
- (with Colbourn, Charles J.; Rosa, Alexander) The strong chromatic number of partial triple systems. *Discrete Appl. Math.* **20** (1988), no. 1, 31–38. (K. T. Phelps) **89c:05021** 05B30 (05C15, 05C65, 68R10)
- *see also* Proceedings: Meeting "Kombinatorik", **89f:05004**
- Jungeles, Douglas S.** (with Gallian, Joseph A.) Homomorphisms from  $Z_m[i]$  into  $Z_n[i]$  and  $Z_m[p]$  into  $Z_n[p]$ , where  $i^2 + 1 = 0$  and  $p^2 + p + 1 = 0$ . *Amer. Math. Monthly* **95** (1988), no. 3, 247–249. (Harald Niederreiter) **89c:11154** 11R11
- Generalized Hamiltonian circuits in the Cartesian product of two directed cycles. *J. Graph Theory* **12** (1988), no. 1, 113–120. (David Riley Witte) **89b:05091** 05C20 (05C45)
- Junius, Theo** Price formation in input-output analysis. *Econom. Lett.* **26** (1988), no. 2, 153–157. (Not in MR) **90A11**
- Junker, G.** (with Barut, A. O.; Inomata, A.) Path integral treatment of the hydrogen atom in a curved space of constant curvature. *J. Phys. A* **20** (1987), no. 18, 6271–6280. (Takashi Miura) **89b:81060** 81C35 (81G40)
- Jenkins, John L.** (with Lim, K. B.) Probability of stability: new measures of stability robustness for linear dynamical systems. *J. Astronaut. Sci.* **35** (1987), no. 4, 383–397. (Lin Huang) **89b:93082** 93D10 (93B60, 93C05, 93C40)
- (with Mook, D. Joseph) Minimum model error estimation for poorly modeled dynamic systems. *J. Guidance Control Dynamics* **11** (1988), no. 3, 256–261. (B. I. Anan'ev) **89m:93086** 93E12 (93B30, 93E10)
- (with Creamer, Nelson G.) Identification method for lightly damped structures. *J. Guidance Control Dynamics* **11** (1988), no. 6, 571–576. (Not in MR) **93B30**
- Jumilla, Heikki** (with Hohti, Aarno) A note on homogeneous metrizable spaces. *Houston J. Math.* **13** (1987), no. 2, 231–234. (Ivan L. Reilly) **89a:54037** 54E35
- Jumod, Bernard** Quelques résultats de non-immersion des espaces lenticulaires  $L^n(2^m)$ . (English summary) [Some nonimmersion results for the lens spaces  $L^n(2^m)$ ] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 5, 279–282. (R. A. Piccinini) **89g:55030** 55E35 (57N35, 57R42)
- Jupp, P. E.** A nonparametric correlation coefficient and a two-sample test for random vectors or directions. *Biometrika* **74** (1987), no. 4, 887–890. (Summary) **89a:62110** 62G10 (62H20)
- (with Barndorff-Nielsen, O. E.) Differential geometry, profile likelihood,  $L$ -sufficiency and composite transformation models. *Ann. Statist.* **16** (1988), no. 3, 1009–1043. (Bent Jørgensen) **89b:62055** 62F99 (62A10)
- Juraldan, M.** (with Salman, Mutasim A.; Kotob, S.) Optimal control of solar cooling systems. *Optimal Control Appl. Methods* **9** (1988), no. 2, 187–199. (Not in MR) **93C75**
- Jurchescu, M.** Coherent sheaves on mixed manifolds. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 1–2, 57–81. (R. Michael Range) **89j:32038** 32K99 (32G99)
- Jurčo, Branislav** (with Tolar, Jiří) Geometry and polarization of light. *Differential geometry and its applications, communications* (Brno, 1986), 303–309. *Univ. J. E. Purkyně, Brno*, 1987. (Kotik K. Lee) **89d:78014** 78A25
- Polarization of light and Hopf fibration. *Czechoslovak J. Phys. B* **37** (1987), no. 9, 1035–1038. (Summary) **89g:78009** 78A10
- (with Tolar, Jiří) Polarization of light and Hopf's fibration. (Russian and Czech summaries) *Acta Polytech. Práce ČVUT Hradec Ser. IV Tech. Teoret.* **1988**, no. 2, 39–56. (Summary) **89m:78009** 78A40
- Jurčević, V.** (with Kupka, I. A. K.) Linear systems with degenerate quadratic costs. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 2, 101–106. (T. R. Gichev) **89d:49018** 49B10 (58F05, 93C05, 93C15)
- Jurečková, Jana** (with Portnoy, Stephen) Asymptotics for one-step  $M$ -estimators in regression with application to combining efficiency and high breakdown point. *Comm. Statist. Theory Methods* **16** (1987), no. 8, 2187–2199. (M. Hušková) **89a:62097** 62G05 (62G20)
- (with Sen, Pranab Kumar) An extension of Billingsley's uniform boundedness theorem to higher-dimensional  $M$ -processes. *Kybernetika* (Prague) **23** (1987), no. 5, 382–387. (Summary) **89j:62049** 62F35 (60F99)
- (with Kallenberg, W. C. M.; Veraverbeke, N.) Moderate and Cramér-type large deviation theorems for  $M$ -estimators. *Statist. Probab. Lett.* **6** (1988), no. 3, 191–199. (Júlia Volavová) **89b:62047** 62E20 (60F10, 62F12)
- Jureškin, W. N.** The asymptotic behaviour of some semi-discrete and fully-discrete finite element schemes for the evolution Navier-Stokes equations. *Mathematical analysis and its applications* (Kuwait, 1985), 261–267. *KFAS Proc. Ser.*, 3, Pergamon, Oxford-Elmsford, NY, 1988. (Summary) **89j:76017** 76-08 (65N30, 76D05)
- Jurek, Zbigniew J.** (with Hudson, William N.; Veeh, Jerry Alan) The symmetry group and exponents of operator stable probability measures. *Ann. Probab.* **14** (1986), no. 3, 1014–1023. (J. D. Mason) **89b:60093** 60F99 (60B99, 60E07)
- Random integral representations for classes of limit distributions similar to Lévy class  $L_0$ . *Probab. Theory Related Fields* **78** (1988), no. 3, 473–490. (Werner Linde) **89h:60032** 60E07 (46N05, 60B10, 60B11)

## -K-

- Jurgelionis, Sagatas** (with Nemura, Antanas; Sakalauskas, Eligijus) Local-parametric approximation for the identification and control of multidimensional Hammerstein systems. (Russian. English and Lithuanian summaries) *Statist. Problemy Upravleniya* No. 79 (1987), 49-60. (Not in MR) 93E12
- Jürgens, Hartmut** (with Peitgen, Heinz-Otto; Saupe, Dietmar) The Mandelbrot set: a paradigm for experimental mathematics. *ECM/87. Educational computing in mathematics (Rome, 1987)*, 99-113, p. 284, North-Holland, Amsterdam-New York, 1988. (Summary) 89m:58108 58F08 (00A69)
- Jürgens, H.** (with Lindenmayer, Aristid) Inference algorithms for developmental systems with cell lineages. *Bull. Math. Biol.* 49 (1987), no. 1, 93-123. (Robert M. Baer) 89h:68093 68Q50
- see also Semigroups, theory and applications, 89c:20005
- Jurgutis, Marius** A remark on an inequality for the probability of deviation of the maximum likelihood estimate of a change point of the parameters of an autoregressive sequence. (Russian. English and Lithuanian summaries) *Statist. Problemy Upravleniya* No. 80 (1987), 38-47. (Summary) 89b:62190 62M10 (62E99)
- Jūrmā, E.** see Abstracts: Conference-Seminar of the Chairmen of the Departments and Head Instructors of Mathematics, 89f:00018a and 89f:00018b
- Juršić, Nikola** (with Perez, Estela) The electrodynamics of the nerve impulse. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* 90 (1988), no. 1-2, 71-85. (Summary) 89h:92021 92A09
- Juritz, June M.** (with Stein, Gillian Z.) Linear models with an inverse Gaussian-Poisson error distribution. *Comm. Statist. Theory Methods* 17 (1988), no. 2, 557-571. (Summary) 89h:62151 62J05
- Jurkat, W. B.** (with Sampson, G.) Two weighted estimates for oscillating kernels. I. *Studia Math.* 87 (1987), no. 3, 253-280. (B. Muckenhoupt) 89i:42024 42A85 (42B99, 44A35, 47G05)
- A local form of Carleson's theorem for trigonometric series. *Analysis* 8 (1988), no. 1-2, 65-68. (Babu Ram) 89j:42006 42A20
- (with Zwiesler, H. J.) On the meromorphic equivalence of standard matrix differential equations. *Asymptotic Anal.* 1 (1988), no. 4, 303-316. (Wolfgang Bühring) 89j:34012 34A20 (15A99, 34A30)
- (with Zwiesler, H. J.) Completeness of the reduction of scalar, meromorphic differential equations of second order. *Hokkaido Math. J.* 17 (1988), no. 2, 211-233. (Nicolaie Lungu) 89f:34005 34A20 (34C20)
- (with Balser, W.; Lutz, D. A.) On the reduction of connection problems for differential equations with an irregular singular point to ones with only regular singularities. II. *SIAM J. Math. Anal.* 19 (1988), no. 2, 398-443. (Günter Frank) 89d:34008 34A20 (34A25, 34C20)
- Jurkiewicz, Jerzy Maciej** A remark on the orbit spaces under multiplicative group actions. *Colloq. Math.* 54 (1987), no. 1, 67-70. (Ersan Akyildiz) 89f:14053 14L30
- Jurkiewicz, Jerzy Władysław** (with Burda, Z.) Ising model on a random lattice with a topology of a torus. *Phys. Lett. B* 214 (1988), no. 3, 425-428. (Thórhur Jónsson) 89k:82090 82A68
- Jurlewicz, T.** Wiener processes with values in  $p$ -homogeneous Fréchet spaces. *Probab. Math. Statist.* 9 (1988), no. 1, 133-138. (Yuh-Jia Lee) 89h:60007 60B11 (60J30, 60J65)
- Jury, E. I.** (with Bauer, Peter) Stability analysis of multidimensional (m-D) direct realization digital filters under the influence of nonlinearities. *IEEE Trans. Acoust. Speech Signal Process.* 36 (1988), no. 11, 1770-1780. (B. D. Doneski) 89j:94006 94A12
- (with Kraus, F.; Anderson, B. D. O.; Mansour, M.) On the robustness of low-order Schur polynomials. *IEEE Trans. Circuits and Systems* 35 (1988), no. 5, 570-577. (Ye-Hwa Chen) 89g:93085 93D99 (26C05, 93B35)
- Juškevič, Adolf Andrej P.** see Yushkevich, A. P.
- Jussila, Tapani** On extensions of Riemann surfaces. *Ann. Acad. Sci. Fenn. Ser. A I Math. Dissertationes* No. 67 (1988), 36 pp. (Tadashi Kuroda) 89h:30082 30F20
- Just, Bettina** (with Babai, László; Meyer auf der Heide, Friedhelm) On the limits of computations with the floor function. *Inform. and Comput.* 78 (1988), no. 2, 99-107. (Bruno Codenotti) 89h:68053 68Q20
- Just, Kurt** see Ludwig, Günther, 89b:81012
- Just, Winfried** (with Gronau, H.-D. O. F.; Schade, W.; Scheffler, Petra; Wojciechowski, J.) Path systems in acyclic directed graphs. Proceedings of the International Conference on Combinatorial Analysis and its Applications (Poznań, 1985). *Zastos. Mat.* 19 (1987), no. 3-4, 399-411 (1988). (Miro Křivánek) 89i:05128 05C20 (05C38, 68R10, 90B99)
- Just, Wolfram** (with Sauermann, Herwig) Ordinary differential equations for nonlinear stochastic oscillators. *Phys. Lett. A* 131 (1988), no. 4-5, 234-238. (T. Erber) 89i:82011 82A05 (34F05, 70L05, 82A31)
- Jøstesen, Jørn** (with Jensen, H. Elbrønd; Høholdt, Tom) Double series representation of bounded signals. *IEEE Trans. Inform. Theory* 34 (1988), no. 4, 613-624. (Dale H. Mugler) 89k:94010 94A12
- zinn-Justin, J.** see Zinn-Justin, J.
- Justin, Jacques** (with Pirillo, Giuseppe) Une condition de finitude pour les semi-groupes finiment engendrés. (English summary) [A finiteness condition for finitely generated semigroups] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 2, 63-65. (D. C. Trueman) 89b:20129 20M10
- Jutila, M.** ★ Lectures on a method in the theory of exponential sums. Tata Institute of Fundamental Research Lectures on Mathematics and Physics, 80. Published for the Tata Institute of Fundamental Research, Bombay; by Springer-Verlag, Berlin-New York, 1987. viii+134 pp. ISBN 3-540-18366-3 (S. W. Graham) 89g:11069 11L03 (11M06)
- (with Ivić, Aleksandar) Gaps between consecutive zeros of the Riemann zeta-function on the critical line. *Monatsh. Math.* 105 (1988), no. 1, 59-73. (Jürgen G. Hinze) 89c:11134 11M26
- Jáza, Miloslav** Mathematical foundations of thermodynamics of ideal gas. (Russian and Czech summaries) *Časopis Pěst. Mat.* 113 (1988), no. 1, 1-22. (Marek Elzanowski) 89e:80003 80A10 (80A97)
- emamy-K., M. R.** see Emamy-K., M. R.
- Kaarli, K.** Survey on the radical theory of near-rings. *Contributions to general algebra*, 4 (Krems, 1985), 45-62, Hölder-Pichler-Tempsky, Vienna, 1987. (Günter Pilz) 89c:16050 16A76 (01A65)
- (with Anderson, Tim; Wiegandt, R.) On left strong radicals of near-rings. *Proc. Edinburgh Math. Soc.* (2) 31 (1988), no. 3, 447-456. (Günter Pilz) 89i:16032 16A76
- Kaarna, A.** (with Haslinger, J.; Neittaanmäki, Pekka; Tiuhonen, Timo) Optimal shape design and unilateral boundary value problems. I, II. *Optimal Control Appl. Methods* 9 (1988), no. 2, 127-144, 145-163. (Klaus Steffen) 89j:49001 49A29 (49D15, 49D30, 65K10, 73K40)
- Kaase, W.** Noniterative solutions of the Bethe-Salpeter equation in a model with noncanonical propagators. *J. Phys. A* 21 (1988), no. 7, 1607-1621. (Gordon Feldman) 89e:81061 81D10
- Kaashoek, M. A.** (with Gohberg, I.) Various minimalities for systems with boundary conditions and integral operators. *Modelling, identification and robust control (Stockholm, 1985)*, 181-196, North-Holland, Amsterdam-New York, 1986. (B. G. Mertzios) 89h:93017 93B20 (93B10, 93B28)
- (with Gohberg, I.; Lerer, L.) Nodes and realization of rational matrix functions: minimality theory and applications. *Topics in operator theory and interpolation*, 181-232, *Oper. Theory. Adv. Appl.*, 29, Birkhäuser, Basel-Boston, MA, 1988. (L. Rodman) 89e:93045 93B20 (47A56, 93B15, 93B17)
- (with Woerdeman, H. J.) Unique minimal rank extensions of triangular operators. *J. Math. Anal. Appl.* 131 (1988), no. 2, 501-516. (L. Rodman) 89d:47026 47A65 (47B38, 47G05)
- see also Linear algebra in signals, systems, and control, 89f:00025
- Kaas-Petersen, Chr.** Computation, continuation, and bifurcation of torus solutions for dissipative maps and ordinary differential equations. *Phys. D* 25 (1987), no. 1-3, 288-306. (Jan A. Sanders) 89g:58155 58F14 (34C35, 65L99)
- (with Brindley, J.; Merkin, J. H.; Scott, Stephen K.) A simple model for sustained oscillations in isothermal branched-chain or autocatalytic reactions in a well-stirred open system. III. Multiple stationary states and Hopf bifurcations. *Proc. Roy. Soc. London Ser. A* 417 (1988), no. 1853, 463-496. (Summary) 89i:20773 92A40 (58F14)
- Kaasschiet, E. F.** A practical termination criterion for the conjugate gradient method. *BIT* 28 (1988), no. 2, 308-322. (R. P. Tewarson) 89b:65061 65F10
- Kabadi, Santosh N.** (with Murty, Katta G.) Some NP-complete problems in quadratic and nonlinear programming. *Math. Programming* 39 (1987), no. 2, 117-129. (Panos M. Pardalos) 89b:90189 90C30 (90C48)
- (with Chandrasekaran, R.) Pseudomatroids. *Discrete Math.* 71 (1988), no. 3, 205-217. (Ulrich Faigle) 89i:05077 05B35
- Kabaila, V.** Interpolation in Hardy classes. (Russian) *Theory of functions and approximations, Part 2 (Russian) (Saratov, 1984)*, 123-124, *Saratov. Gos. Univ., Saratov*, 1986. (see 89j:00036) 30E05 (30D55)
- Kabak, Bert** (with Schaumberger, Norman) Another proof of Jensen's inequality. *College Math. J.* 20 (1989), no. 1, 57-58. (Not in MR) 26D15
- Kabak, G. I.** (with Gavrin, V. P.) A criterion for the existence of the Green function of a boundary value problem for a singular integro-differential operator. (Russian) *Boundary value problems (Russian)*, 79-83, 197, *Perm. Politekh. Inst., Perm*, 1983. (see 89c:00068) 47G05
- (with Gavrin, V. P.) A boundary value problem that admits discontinuous solutions. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 12, 2154-2157, 2206. (I. Kiguradze) 89d:34029 34B10 (34B27)
- (with Gavrin, V. P.) On the invertibility of a functional-differential operator. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 31 (1987), no. 11, 968-970, 1052. (I. Kiguradze) 89b:34153 34K05
- Kabanikhin, S. I.** Regularization of multidimensional inverse problems for hyperbolic equations on the basis of a projection method. (Russian) *Dokl. Akad. Nauk SSSR* 292 (1987), no. 3, 534-537. (G. W. Hedstrom) 89f:65131 65N99 (35L20, 35R30, 65P05)
- Kabanov, N. I.** Geometric theory of Carathéodory transforms in a singular variational problem for an ordinary integral. (Russian) *Differential geometry*, No. 5 (Russian), 31-46, 102-103, *Saratov. Gos. Univ., Saratov*, 1980. (see 89a:53061) 53B40 (49C05)
- Kabanov, Yu. M.** Contiguity of distributions of multivariate point processes. *Probability theory and mathematical statistics (Kyoto, 1986)*, 140-157, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (Friedrich Liese) 89d:60079 60G30 (60G55)
- Kabat, Waldo C.** (with Parrello, Bruce D.; Wos, Larry) Job-shop scheduling using automated reasoning: a case study of the car-sequencing problem. *J. Automat. Reason.* 2 (1986), no. 1, 1-42. (Summary) 89j:68144 68T20 (68Q25, 90B35)
- Kabaya-Imai, Keiko** (with Iri, M.) Sum of uniformly distributed random variables and a family of nonanalytic  $C^\infty$ -functions. *Japan J. Appl. Math.* 4 (1987), no. 1, 1-22. (Summary) 89d:26023 26E10 (58C25, 60F99)
- Kabbane, L.** (with Gryl, H.) Kinetic equation for Ising model in a convolutionless formalism. *Acta Phys. Polon. A* 72 (1987), no. 6, 721-727. (Robert Alicki) 89d:82128 82A68 (82A97)
- Kabbaj, Salah** La formule de la dimension pour les  $S$ -domaines forts universels. [The dimension formula for universal strong  $S$ -domains] *Boll. Un. Mat. Ital. D* (6) 5 (1986), no. 1, 145-161 (1987). (Marco Fontana) 89b:13024 13C15 (13B25, 13E99, 13G05)
- (with Anderson, David F.; Bouvier, Alain; Dobbs, David E.; Fontana, Marco) On Jaffard domains. *Exposition. Math.* 6 (1988), no. 2, 145-175. (J. W. Brewer) 89c:13014 13C15
- (with Bouvier, Alain) Examples of Jaffard domains. *J. Pure Appl. Algebra* 54 (1988), no. 2-3, 155-165. (Marco Fontana) 89c:13019 13G05 (13A18, 13C15, 13F20)
- (with Anderson, David F.; Dobbs, David E.; Mulay, S. B.) Universally catenarian domains of  $D + M$  type. *Proc. Amer. Math. Soc.* 104 (1988), no. 2, 378-384. (Alain Bouvier) 89i:13014 13C15 (13G05)
- Kabe, D. G.** On some unresolved conjectures in statistics. *Indust. Math.* 37 (1987), no. 2, 107-117 (1988). (Donald R. Jensen) 89k:62069 62H05 (60E15)
- On the statistical security of a statistical database. *Indust. Math.* 37 (1987), no. 2, 119-129 (1988). (Summary) 89e:68020 68P15



- On pseudoquadratic programming. *Studia Sci. Math. Hungar.* 22 (1987), no. 1-4, 361-364. (Introduction) **89k:90125** 90C20
- On solving hypercomplex linear and quadratic programming problems. *Indust. Math.* 38 (1988), no. 1, 1-15. (Summary) **89i:90197** 90C20 (90C05)
- On some multivariate generalizations of linear and quadratic programming problems. *Indust. Math.* 38 (1988), no. 1, 17-26. (Summary) **89k:90160** 90C33
- Kabell, Jerald A.** Co-balance in signed graphs. *J. Combin. Inform. System Sci.* 10 (1985), no. 1-2, 5-8. (J. Sheehan) **89i:05232** 05C75
- Kablov, S. K.** (with Saleimenov, Zh. S.; Lobanova, N. I.) On the role of the bifurcation value of the small parameter in the simplification of some complex mechanical systems. (Russian) *Some problems in functional analysis, differential equations and their applications* (Russian), 57-64, 110-111, Kazakh. Gos. Univ., Alma-Ata, 1985. (see **89a:00016**) 58F14
- Kabuli, M. G.** (with Desoer, C. A.) Right factorization of a class of time-varying nonlinear systems. *IEEE Trans. Automat. Control* 33 (1988), no. 8, 755-757. (Summary) **89d:93053** 93C10 (93B17)
- (with Desoer, C. A.) Stabilization and robustness of nonlinear unity-feedback system: factorization approach. *Internat. J. Control* 47 (1988), no. 4, 1133-1148. (Summary) **89a:93042** 93D15 (93C10)
- Kabulov, A. V.** (with Balzhanov, A. A.) A method for determining the maximal compatible subsystems of a system of Boolean equations. (Russian) *Voprosy Vychisl. i Prikl. Mat. (Tashkent)* No. 80 (1986), 27-33, 135-136. (Jürgen Dassow) **89i:94057** 94C10 (68Q15)
- Kabulov, R.** Singular solutions of nonlinear equations. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 314-325, 345, "Ilim", Frunze, 1987. (Yu. V. Trubnikov) **89k:47102** 47H15
- Kabulov, V. K.** Propositional logic and methods for theorem proving. (Russian) *Voprosy Vychisl. i Prikl. Mat. (Tashkent)* No. 81 (1987), 4-20, 126. (Summary) **89h:03018** 03B35 (03B05, 68T15)
- Kabon, Hideyuki** (with Yamakawa, Takeshi) A programmable fuzzifier integrated circuit—synthesis, design, and fabrication. *Inform. Sci.* 45 (1988), no. 2, 75-112. (Witold Pedrycz) **89f:94036** 94D05 (03E72, 94C05)
- Kaburagi, Makoto** (with Takasagi, Koichi; Tonegawa, Takashi) Exact ground states of the lattice gas model with two kinds of particles and the finite-field three-state Potts model on the square lattice. *J. Phys. Soc. Japan* 57 (1988), no. 2, 570-579. (Summary) **89g:82078** 82A68
- Kabritskii, Jacek K.** BCI-algebras from the point of view of logic. *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* 12 (1983), no. 3, 126-129. (Martin W. Bunder) **89h:03044** 03B60 (03G25, 06D99)
- Quasivarieties for BCK-logic. *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* 12 (1983), no. 3, 130-133. (Introduction) **89g:06030** 06D99 (03G25, 08B99)
- Kac, Mark** see Seminar: Probability and Physics, **89e:60005** and Iranpour, Reza, **89i:60002**
- Kac, Victor G.** (with Peterson, Dale H.) On geometric invariant theory for infinite-dimensional groups. *Algebraic groups Utrecht 1986*, 109-142, *Lecture Notes in Math.*, 1271, Springer, Berlin-New York, 1987. (Zi-Xin Hou) **89b:22028** 22E65 (14D25, 17B67)
- Lectures on infinite wedge representation and soliton equations. (Chinese summary) *Adv. in Math. (Beijing)* 16 (1987), no. 4, 343-376. (Alex Jay Feingold) **89g:17015** 17B65 (20C45, 22E65, 58F07)
- (with van de Leur, J. W.) Super boson-fermion correspondence. (French summary) *Ann. Inst. Fourier (Grenoble)* 37 (1987), no. 4, 99-137. (Alex Jay Feingold) **89i:17006** 17A70 (17B65, 58F07, 81E99)
- (with Wakimoto, Minoru) Modular and conformal invariance constraints in representation theory of affine algebras. *Adv. in Math.* 70 (1988), no. 2, 156-236. (Sen Qiu) **89h:17036** 17B67 (17B65)
- (with Arbarello, E.; De Concini, C.; Procesi, C.) Moduli spaces of curves and representation theory. *Comm. Math. Phys.* 117 (1988), no. 1, 1-36. (Yukihiko Namikawa) **89i:14019** 14H15 (17B65, 22E65, 32G15, 58F07, 81E40)
- (with Sanielevici, Mihaela Niculescu) Decompositions of representations of exceptional affine algebras with respect to conformal subalgebras. *Phys. Rev. D* (3) 37 (1988), no. 8, 2231-2237. (Summary) **89h:17037** 17B67 (81E40)
- (with Wakimoto, Minoru) Modular invariant representations of infinite-dimensional Lie algebras and superalgebras. *Proc. Nat. Acad. Sci. U.S.A.* 85 (1988), no. 14, 4956-4960. (Vijayanthi Chari) **89j:17019** 17B65 (17A70, 17B67)
- (with Jakobsen, Hans Plesner) A new class of unitarizable highest weight representations of infinite-dimensional Lie algebras. II. *J. Funct. Anal.* 82 (1989), no. 1, 69-90. (Andrew Pressley) **89m:17032** 17B65
- Kaciewicz, B. Z.** (with Wasilkowski, G. W.) How powerful is continuous nonlinear information for linear problems? *J. Complexity* 2 (1986), no. 4, 306-316. (Richard A. Alb) **89a:65099** 65J99 (68Q25)
- Optimal solution of ordinary differential equations. *J. Complexity* 3 (1987), no. 4, 451-465. (S. Hitotumatu) **89a:65106** 65L05
- (with Milanese, M.; Vicino, A.) Conditionally optimal algorithms and estimation of reduced order models. *J. Complexity* 4 (1988), no. 1, 73-85. (Summary) **89e:93039** 93B40 (65J99, 93B30, 94A15)
- Minimum asymptotic error of algorithms for solving ODE. *J. Complexity* 4 (1988), no. 4, 373-389. (I. Norman Katz) **89k:65085** 65L05 (34A50)
- Kachalov, V. I.** (with Lomov, S. A.) Smoothness of the solutions of differential equations with respect to a singularly entering parameter. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 4, 805-808; translation in *Soviet Math. Dokl.* 37 (1988), no. 2, 465-467. (Jianxun He) **89f:34081** 34E15 (34A08, 34A10, 34A25, 34A45)
- Kachalovskaya, N. E.** (with Troshin, V. G.) Application of the method of continuation with respect to the parameter in multi-extremal optimization problems. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 6 (1987), 66-71, 116. (Summary) **89m:90150** 90C31
- Kachoyan, B. J.** The finite Dean problem: nonlinear theory. *IMA J. Appl. Math.* 38 (1987), no. 1, 71-86. (Summary) **89k:76058** 76E30 (58F14, 76-04, 76E05)
- (with Blennerhassett, P. J.) On the finite Dean problem: linear theory. *J. Austral. Math. Soc. Ser. B* 30 (1988), no. 2, 157-178. (Salvatore Rionero) **89k:76048** 76E10 (76U05)
- Kachur, V. G.** (with Abramovich, Yu. I.; Arov, D. Z.) Adaptive cancellation filters for stationary interference with a Toeplitz correlation matrix. *Soviet J. Comm. Tech. Electron.* 33 (1988), no. 4, 54-61; translated from *Radiotekhn. i Elektron.* 32 (1987), no. 12, 2525-2533 (Russian). (Not in MR) **94A05**
- ait-Kaci, Hassan** see Ait-Kaci, Hassan
- el Kacimi-Alaoui, A.** see El Kacimi-Alaoui, A.
- Kacnelsons, L.** (with Freivalds, Rusigs) E. I. Arin'. (Russian) *Lav. Mat. Ezhegodnik* No. 32 (1988), 3-8. (Editors) **89m:01093** 01A70
- Kacprzyk, Janusz** (with Fedrizzi, Mario) A "soft" measure of consensus in the setting of partial (fuzzy) preferences. *European J. Oper. Res.* 34 (1988), no. 3, 316-325. (Summary) **89a:90011** 90A06
- Katur, Jozef** Application of Rothe's method to evolution integro-differential equations. *J. Reine Angew. Math.* 388 (1988), 73-105. (V. A. Galkin) **89i:45015** 45K05 (35A35, 35R20, 45N05, 47H15, 47H17)
- Kaczmarczyk, Jacek** A difference analogue of nonlinear parabolic differential inequalities with nonlinear boundary conditions. *Univ. Iagel. Acta Math.* No. 26 (1987), 75-83. (From the introduction) **89i:39009** 39A12 (35R45)
- Kaczmarek, Jerzy** On the configurations of orthopoles. *Bull. Inst. Math. Acad. Sinica* 15 (1987), no. 4, 399-401. (J. Hoschek) **89e:51013** 51M05 (51M15)
- Kaczmarek, Ludwika** (with Charzyński, Zygmunt) Bounds of univalent functions in terms of iterated extrema. (Polish summary) *Bull. Soc. Sci. Lett. Łódź* 37 (1987), no. 3, 8 pp. (T. H. MacGregor) **89k:30016** 30C50 (30C75)
- Kaczorek, T.** Extension of the method of continuants for  $n$ -order linear difference equations with variable coefficients. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* 33 (1985), no. 7-8, 395-400. (Sui Sun Cheng) **89b:39006** 39A10
- Zero-degree solutions to the bilateral polynomial matrix equations. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* 34 (1986), no. 9-10, 547-552. (V. S. Zajačkovski) **89h:93019** 93B25 (15A22)
- Zero-degree solutions to  $AX + BY = C$  and invariant factors assignment problem. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* 34 (1986), no. 9-10, 553-558. (Anna Maria Perdon) **89e:93112** 93B55 (15A24)
- A new method for finding of row minimal degree solution to the matrix polynomial equation  $A(s)X(s) + B(s)Y(s) = C(s)$ . (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* 34 (1986), no. 9-10, 559-562. (M. M. Konstantinov) **89e:15026** 15A54 (93B25)
- Straight line reachability of two-dimensional linear systems. *Found. Control Engrg.* 12 (1987), no. 3, 143-149. (V. S. Zajačkovski) **89h:49060** 49E15 (93C05)
- (with Świerkosz, M.) Coefficient assignment using periodic feedback for general model of 2-D systems. *Found. Control Engrg.* 13 (1988), no. 2, 67-78. (John Maroulas) **89m:93055** 93C55 (49D50)
- The singular general model of 2-D systems and its solution. *IEEE Trans. Automat. Control* 33 (1988), no. 11, 1060-1061. (Not in MR) **93C55** (93C05)
- Sufficient conditions for impulse uncontrollability and impulse unobservability of singular systems. *IEEE Trans. Automat. Control* 33 (1988), no. 12, 1174-1176. (From the introduction) **89k:93121** 93C30 (93B05, 93B07, 93C05)
- (with Klamka, Jerzy) Minimum energy control for general model of 2-D linear systems. *Internat. J. Control* 47 (1988), no. 5, 1555-1562. (V. Popescu) **89f:93008** 93B05 (93C55)
- (with Świerkosz, M.) General model of  $n$ -D system with variable coefficients and its reduction to 1-D system with variable structure. *Internat. J. Control* 48 (1988), no. 2, 609-623. (Jerzy Klamka) **89j:93019** 93B17 (93C05, 93C50, 93C55)
- Kaczorowski, J.** On sign-changes in the remainder-term of the prime-number formula. III. *Acta Arith.* 48 (1987), no. 4, 347-371. (V. Sita Ramaiah) **89d:11074** 11N05
- On sign-changes in the remainder-term of the prime-number formula. IV. *Acta Arith.* 50 (1988), no. 1, 15-21. (V. Sita Ramaiah) **89h:11081** 11N05
- Kaczynski, A.** (with Matysiak, S. J.) On the complex potentials of the linear thermoelasticity with microlocal parameters. *Acta Mech.* 72 (1988), no. 3-4, 245-259. (Summary) **89f:73077** 73U05 (73C03)
- Kaczynski, T.** (with Krawczyński, W.) Solvability of boundary value problems for the inclusion  $u_0 - u_{xx} \in g(t, x, u)$  via the theory of multi-valued  $A$ -proper maps. (German and Russian summaries) *Z. Anal. Anwendungen* 7 (1988), no. 4, 337-346. (Sergiu Aizicovici) **89j:35078** 35L20 (35R99, 47H09, 47H15)
- Kadaijajoo, Mohan K.** (with Reddy, Y. N.) A boundary value method for a class of nonlinear singular perturbation problems. *Comm. Appl. Numer. Methods* 4 (1988), no. 4, 587-594. (Summary) **89d:65076** 65L10
- (with Reddy, Y. N.) An approximate method for solving a class of singular perturbation problems. *J. Math. Anal. Appl.* 133 (1988), no. 2, 306-323. (Summary) **89e:65079** 65L10 (34A50, 34E15)
- (with Singh, Arindama) A boundary value technique for solving singularly perturbed, fixed end-point optimal control problems. *Optimal Control Appl. Methods* 9 (1988), no. 4, 443-448. (Summary) **89k:49026** 49D40 (34B15, 34E15)
- Kadane, Joseph B.** Parallel and sequential computation: a statistician's view. Complexity of approximately solved problems (Morningside Heights, N.Y., 1985). *J. Complexity* 1 (1985), no. 2, 256-263. (G. P. Bhattacharjee) **89k:65331** 65W05 (62C10, 68Q10, 68Q25)
- (with Winkler, Robert L.) de Finetti's methods of elicitation. *Probability and Bayesian statistics* (Innsbruck, 1986), 279-284, *Plenum, New York-London*, 1987. (Title) **89a:62014** 62A99 (62P20, 90A10)
- (with Bayarri, M. J.; DeGroot, Morris H.) What is the likelihood function? With discussion by Mark Berliner [L. Mark Berliner] and R. W. Butler and a reply by the authors. *Statistical decision theory and related topics, IV, Vol. 1* (West Lafayette, Ind., 1986), 3-27, Springer, New York-Berlin, 1988. (Title) **89a:62005** 62A10
- (with Trader, Ramona L.) A Bayesian treatment of multivariate normal data with observations missing at random. *Statistical decision theory and related topics, IV, Vol. 1* (West Lafayette, Ind., 1986), 225-233, Springer, New York-Berlin, 1988. (Title) **89a:62026** 62C10 (62F15, 62H99)
- (with Winkler, Robert L.) Separating probability elicitation from utilities. *J. Amer. Statist. Assoc.* 83 (1988), no. 402, 357-363. (Summary) **89i:90012** 90A10 (62A15)
- Kadanoff, Leo P.** (with McNamara, Guy R.; Zanetti, Gianluigi) A Poiseuille viscometer for lattice gas automata. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems* 1 (1987), no. 4, 791-803. (Summary) **89e:76013** 76-08 (76D05, 82-08)
- (with Feingold, Mario; Piro, Oreste) Passive scalars, three-dimensional volume-preserving maps, and chaos. *J. Statist. Phys.* 50 (1988), no. 3-4, 529-565. (G. Benettin) **89h:58167** 58F30 (70K50, 76E99, 82A50)
- si-Kaddour, Hamza** see Si-Kaddour, Hamza

- Kadeishvili, T. V.** The functor  $D$  for a category of  $A(\infty)$ -algebras. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* 125 (1987), no. 2, 273–276. (Marek Golasinski) **89b:55022** 35U15 (16A05, 18G35, 57T30)
- Kadekodi, G. K.** (with Kumar, T. K.; Sengupta, Jati K.) The scientific work of Gerhard Tintner. *Econometrics of planning and efficiency*, 3–22, *Adv. Stud. Theoret. Appl. Econometrics*, 11, Kluwer Acad. Publ., Dordrecht, 1988. (Editors) **89d:01061** 01A70
- Kadell, Kevin W. J.** A proof of some  $q$ -analogues of Selberg's integral for  $k = 1$ . *SIAM J. Math. Anal.* 19 (1988), no. 4, 944–968. (David M. Bressoud) **89h:33006a** 33A30 (05A30, 11P57, 17B65)
- A proof of Askey's conjectured  $q$ -analogue of Selberg's integral and a conjecture of Morris. *SIAM J. Math. Anal.* 19 (1988), no. 4, 969–986. (David M. Bressoud) **89h:33006b** 33A30 (05A30, 11P57, 17B65)
- Abdul Kader, N. A.** see Abdul Kader, N. A.
- Kadets, V. M.** Riemann integral sums and the geometry of a Banach space. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1987, no. 12, 12–14, 85. (J. Reif) **89d:46018** 46B20 (28B05, 46G10)
- (with Domanskii, E. N.) On the basis regularizability of inverse operators. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 5, 104–108, 238; translation in *Siberian Math. J.* 29 (1988), no. 5, 771–774. (S. Kurepa) **89k:47002** 47A05 (46B15, 47A50)
- Bases with individual brackets and bases with individual permutations. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 49 (1988), 43–51, 124. (J. Reif) **89k:46018** 46B15 (40A05)
- Kadner, H.** Genähert-analytische Berechnung Greenscher Funktionen. [Approximate analytical computation of Green's functions] *Mathematische Verfahrenstechnik* (Weißig, 1985), 43–48, *Studientexte*, 89, *Tech. Univ. Dresden, Dresden*, 1986. (Erich Bohl) **89b:65189** 65L10
- Kadomtsev, B. B.** Dynamics and information. (Russian) *Nonlinear waves* (Russian), 45–53, 394, "Nauka", Moscow, 1987. (Summary) **89g:58131** 58F13 (92A05)
- ★ Коллективные явления в плазме. (Russian) [Collective phenomena in plasma] Second edition. "Nauka", Moscow, 1988. 304 pp. ISBN 5-02-014199-2 (Editors) **89j:76092** 76X05 (35Q20, 76E25, 76W05, 82A45)
- (with Arnold, V. I.; Barkov, L. M.; Belyaev, S. T.; Dimov, G. I.; Kruglyakov, E. P.; Meshkov, I. N.; Rytov, D. D.; Sidorov, V. A.; Skrinkii, A. N.) Boris Valerianovich Chirikov (on his sixtieth birthday). *Soviet Phys. Uspekhi* 31 (1988), no. 7, 682–683 (1989); translated from *Spektr Fiz. Nauk* 155 (1988), no. 3, 543–544 (Russian). (Not in MR) 01A70
- Kadomtsev, M. B.** (with Vinitskii, S. I.) Adiabatic representation for the three-body problem in hyperspherical coordinates. I. Statement of the problem. *J. Phys. B* 20 (1987), no. 21, 5723–5736. (Summary) **89b:81253** 81G45
- Kadomtseva, A. F.** (with Il'inskiĭ, A. S.) The finite element method in a problem of wave propagation in an irregular waveguide ( $E$ -polarization). (Russian) *Numerical methods for solving inverse problems of mathematical physics* (Russian), 111–119, 264, *Moskov. Gos. Univ., Moscow*, 1988. (Summary) **89g:78004** 78–08
- Kadota, Misa** (with Hosoya, Haruo; Uchiyama, Atsuko; Chida, Kanako; Aida, Misako; Yamaguchi, Tamiē) Tables of the nonadjacent number, topological index, and characteristic polynomials of heptahex graphs. *Natur. Sci. Rep. Ochonomizu Univ.* 37 (1986), no. 2, 133–168. (N. Trinajstić) **89d:92097** 92A40 (05C99)
- Kadota, Noriya** Relativized ordinal recursive functions and Paris-Harrington principles. *Comment. Math. Univ. St. Paul.* 36 (1987), no. 2, 149–171. (Summary) **89g:03063** 03D60 (03D20, 03F30)
- (with Aoyama, Kiwamu) A note on built-upness. *Mem. Fac. Sci. Kyushu Univ. Ser. A* 42 (1988), no. 2, 159–165. (Sergei N. Artemov) **89m:03053** 03F15 (03D55)
- Kadoure, Jif** On the word problem for free bands of groups and for free objects in some other varieties of completely regular semigroups. *Semigroup Forum* 38 (1989), no. 1, 1–55. (P. G. Trotter) **89k:20085** 20M05
- Kadowaki, Shinji** (with Ueda, Akira<sup>2</sup>) A new Monte Carlo approach to quantum spin systems. Direct evaluation of the partition function. *Progr. Theoret. Phys.* 78 (1987), no. 2, 224–236. (Summary) **89b:82006** 82–08 (65C05, 82–04, 82A68)
- Kadyrov, R. R.** Behavior of the solutions of higher-order parabolic equations in a neighborhood of a boundary point. (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 11, 3–5. (I. N. Tavkhelidze) **89e:35069** 35K35 (35B05)
- Estimates for the modulus of the generalized solution of the Dirichlet problem for higher-order elliptic equations in a neighborhood of a boundary point. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1987, no. 5, 21–27, 109. (G. Wildenhain) **89d:35050** 35J40 (35D10)
- (with Dzhueraev, T. D.) On the asymptotic behavior of solutions of parabolic equations as  $t \rightarrow \infty$ . (Russian) *Dokl. Akad. Nauk UzSSR* 1988, no. 1, 3–5. (Piotr Biler) **89h:35042** 35B40 (35K35)
- Kadyrov, Z.** A boundary value problem with discontinuous gluing conditions for an equation of mixed type with nonsmooth lines of degeneracy. (Russian) *Equations of mixed type and free boundary value problems* (Russian), 87–107, 251, "Fan", Tashkent, 1987. (A. M. Nakhushev) **89e:35109** 35M05
- Kadyrzhanov, R. K.** (with Zhumadilov, A. B.; Rakisheva, A. T.) ★ Философско-социологические проблемы математики. (Russian) [Philosophical-sociological problems in mathematics] Научно-аналитический обзор. [A scientific-analytic survey] Общественные Науки. [Social Sciences] "Nauka" Kazakh. SSR, Alma-Ata, 1986. 54 pp. (Roman Murawski) **89d:00016** 00A25 (01A80)
- Kaehler, Klaus E.** Enthaltensein und Negation. Zur logischen Bedeutung von Leibniz' "großen Prinzipien" für Quantität und Qualität der Aussage. [Containment and negation. On the logical meaning of Leibniz' "great principles" for the quantity and quality of statements] *Leibniz: questions de logique* (Bruxelles/Louvain-la-Neuve, 1985), 16–26, *Studia Leibnitiana Sonderheft*, 15, Steiner, Wiesbaden, 1988. (see **89m:01041**) 01A45 (03-03, 03A05)
- Kafadar, Karen** (with Tukey, John W.) A bidec  $t$  table. *J. Amer. Statist. Assoc.* 83 (1988), no. 402, 532–539. (Summary) **89i:62006** 62A05
- Kafai, A.** (with Pugh, A. C.; Hayton, G. E.) Some local results for linear systems and implications for state variable feedback. *Internat. J. Control* 48 (1988), no. 5, 1755–1767. (T. Kaczorek) **89k:93114** 93C05 (93B55)
- Kafali, Kemal** Dedication. *Istanbul Tek. Univ. Bül.* 39 (1986), no. 3–4, v–ix. (Editors) **89c:01069** 01A70
- Kafarov, N. I.** (with Dzhaferov, Arif S.) The structural characterization of a class of functions. (Russian) *Approximation by generalized analytic and spherical functions* (Russian), 55–59, *Azerbaijdzhan. Gos. Univ., Baku*, 1983. (see **89k:41001**) 41A10 (41A27, 41A50)
- Kafarov, V. V.** (with Cherepanov, A. I.; Shumikhin, A. G.; Shcherbakova, S. V.) Self-organization of spatial structures in radical polymerization processes. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 1, 144–149. (From the text) **89a:92085** 92A40
- Kaftal, Victor** (with Berman, Kenneth A.; Halpern, Herbert; Weiss, Gary) Matrix norm inequalities and the relative Dixmier property. *Integral Equations Operator Theory* 11 (1988), no. 1, 28–48. (J. P. Sproston) **89e:46063** 46L05
- Kagan, A. M.** Analytic refinement of the Heyde theorem on the linear forms of independent random variables. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 166 (1988), Issled. po Mat. Statist. 8, 54–59, 187. (N. Leonenko) **89h:62025** 62E10 (60E99)
- Kagan, F. M.** Local properties of some statistics. (Russian) *Methods for solving boundary value problems in applied mechanics and control* (Russian), 20–25, 81, Tashkent. Gos. Univ., Tashkent, 1985. (see **89c:00022**) 62E10
- Kaganov, B. G.** (with Vasil'ev, F. P.; Kostomarov, D. P.; Kukulin, V. I.) Application of the penalty function method for solving multiparticle quantum mechanics problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 10, 1520–1529, 1598. (Summary) **89j:81035** 81C05 (49D30)
- Kaganov, M. I.** see Peieris, Rudolf, **89i:81002**
- Kaganova, E. M.** The Lyapunov exponent of the product of random operators. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 2, 10–14, 101; translation in *Moscow Univ. Math. Bull.* 43 (1988), no. 2, 12–17. (Igor N. Litvin) **89j:60085** 60H25 (34D05, 47A99)
- Kaganova, I. M.** see Peieris, Rudolf, **89i:81002**
- Kagawa, Yuki** (with Yamabuchi, Tatsuo) Finite element approach to unbounded Poisson and Helmholtz problems using hybrid-type infinite element. *Electron. Comm. Japan. Part I Comm.* 69 (1986), no. 3, 65–74. (Not in MR) 65N30 (78–08)
- Kageyama, Sanpei** (with Mohan, R. N.) Two constructions of group divisible designs. *J. Combin. Inform. System Sci.* 9 (1984), no. 2, 81–86. (William I. Notz) **89g:05023** 05B05 (62K10)
- (with Mohan, R. N.) On the reduction of associate classes for the Kronecker product designs of a certain generalised type. *J. Combin. Inform. System Sci.* 11 (1986), no. 2–4, 92–98. (William I. Notz) **89g:05024** 05B05
- Comparison of three general bounds on the number of mutually disjoint blocks in incomplete block designs. *J. Indian Soc. Agricultural Statist.* 38 (1986), no. 2, 169–172. (R. A. Bailey) **89k:62098** 62K10
- (with Shah, Shantilal M.; Gujarathi, C. C.) Some improved bounds on the number of blocks in BIB designs. *J. Indian Soc. Agricultural Statist.* 38 (1986), no. 2, 187–192. (Girdhar G. Agarwal) **89h:62135** 62K10
- (with Mukerjee, Rahul) General balanced designs through reinforcement. *Sankhya Ser. B* 48 (1986), no. 3, 380–387. (Gregory M. Constantine) **89a:62178a** 62K10
- Some characterization of locally resistant BIB designs of degree one. *Ann. Inst. Statist. Math.* 39 (1987), no. 3, 661–669. (E. Seiden) **89e:62099** 62K10 (05B05)
- (with Banerjee, Snigdha; Bhagandas) Some constructions of two-associate class PBIB designs. *Ann. Inst. Statist. Math.* 39 (1987), no. 3, 671–679. (Kishan Lal Sharma) **89e:62098** 62K10
- On the determinant and the inverse for the covariance matrix of a moving average process. *Bull. Fac. School Ed. Hiroshima Univ. Part II* 10 (1987), 73–85. (Robert V. Foutz) **89g:62150** 62M10 (15A09, 15A15)
- (with Bhagandas) A method of construction of resolvable incomplete block designs with more than two replications. *Bull. Fac. School Ed. Hiroshima Univ. Part II* 10 (1987), 87–92. (Nicholas Krier) **89f:05033** 05B05 (05B30, 62K99)
- (with Mukerjee, Rahul) Search for GD designs with small values of characteristics. *J. Japan Statist. Soc.* 17 (1987), no. 1, 1–10. (Summary) **89d:62073** 62K10
- (with Mukerjee, Rahul; Jimbo, Masakazu) On cyclic semiregular group divisible designs. *Osaka J. Math.* 24 (1987), no. 2, 395–407. (From the introduction) **89h:05018** 05B05 (05B30, 62K05)
- (with Mukerjee, Rahul) Addendum: "General balanced designs through reinforcement". *Sankhya Ser. B* 49 (1987), no. 1, 103. (Gregory M. Constantine) **89a:62178b** 62K10
- (with Jones, Byron; Sinha, Kishore) Further equireplicate variance-balanced designs with unequal block sizes. *Utilitas Math.* 32 (1987), 5–10. (Shinji Kuriki) **89a:05027** 05B05 (62K10)
- (with Mukerjee, Rahul) Classification of semiregular group divisible designs. *Ars Combin.* 25 (1988), 51–57. (D. V. Chopra) **89c:05033** 05B05
- (with Saha, G. M.; Mukerjee, Rahul)  $D^{-1}$ -partially efficiency-balanced designs with at most two efficiency classes. *Comm. Statist. Theory Methods* 17 (1988), no. 5, 1669–1683. (S. K. Tharthare) **89k:62103** 62K15
- (with Saha, G. M.; Mukerjee, Rahul) Bounds on the number of constraints for balanced arrays of strength  $t$ . *J. Statist. Plann. Inference* 18 (1988), no. 2, 255–265. (Ryoh Fuji-Hara) **89f:05050** 05B30 (62K10)
- On orthogonal arrays attaining Rao's bounds. *J. Statist. Plann. Inference* 19 (1988), no. 3, 395–400. (Sudhir C. Gupta) **89k:05018** 05B15 (62K15)
- (with Sinha, Kishore) Some constructions of balanced bipartite block designs. *Utilitas Math.* 33 (1988), 137–162. (William I. Notz) **89a:05029** 05B05 (62K10)
- Kågström, Bo** (with Demmel, James W.) Accurate solutions of ill-posed problems in control theory. *SIAM Conference on Linear Algebra in Signals, Systems, and Control* (Boston, Mass., 1986). *SIAM J. Matrix Anal. Appl.* 9 (1988), no. 1, 126–145. (Summary) **89b:65131** 65H15 (65G99, 93B05, 93B07, 93B40, 93B60)
- Kahane, Charles S.** On the nonnegativity of solutions of reaction diffusion equations. *Rocky Mountain J. Math.* 17 (1987), no. 3, 491–498. (Summary) **89h:35159** 35K57 (35B05, 92A15)
- Kahane, J.-P.** Un modèle de chaos multiplicatif. [A model of multiplicative chaos] *Seminaire d'analyse harmonique, 1984–1985, Exp. No. 1, 17 pp.*, *Publ. Math. Orsay*, 86–2, *Univ. Paris XI, Orsay*, 1986. (Autorreferat (Zbl 595:60055)) **89k:60066** 60G57 (60G15)
- Disintegration of measures according to the dimension and its relation with random coverings and multiplicative chaos. *Miniconference on harmonic analysis and operator*



- algebras (Canberra, 1987), 66–76, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 15, Austral. Nat. Univ., Canberra, 1987. (Ai Hua Fan) **89j:28017** 28C15 (28A50, 60D05)
- Enseignement mathématique, ordinateurs et calculatrices. [Teaching of mathematics: computers and calculators] *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 1682–1696, Amer. Math. Soc., Providence, RI, 1987. (J. Kuntzmann) **89d:00017** 00A25
- Distribution des valeurs des fonctions analytiques gaussiennes. [Value distribution of analytic Gaussian functions] *Colloq. Math.* **51** (1987), 175–187. (Introduction) **89d:30002** 30B20 (30D35)
- (with Howson, A. G.; Pollak, Henry O.) The popularisation of mathematics. *Bull. Inst. Math. Appl.* **24** (1988), no. 9–10, 139–142. (Not in MR) **00A99**
- Désintégration des mesures selon la dimension. (English summary) [Disintegration of measures according to dimension] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 3, 107–110. (M. P. Eršov) **89f:28015** 28A50 (28A75)
- (with Blei, Ron C.) A computation of the Littlewood exponent of stochastic processes. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 2, 367–370. (S. J. Taylor) **89a:60138** 60H07 (60G17)
- see also *Fractals*, **89f:00046**
- Kahle, Waltraud (with Tiedge, Jürgen) Konfidenzbereiche für die Parameter des Wiener-Prozesses und einige Kenngrößen der Zuverlässigkeit. [Confidence regions for the parameters of the Wiener process and some characteristics of reliability] *Wiss. Z. Tech. Univ. Magdeburg* **31** (1987), no. 5, 30–35. (Paul Embrechts) **89m:62099** 62M05 (60J70)
- Kahlert, Claus (with Rösler, Otto E.) Analogues to a Julia boundary away from analyticity. *Z. Naturforsch.* **A 42** (1987), no. 3, 324–328. (Summary) **89h:58120** 58F13 (58F08)
- The ranges of transfer and return maps in three-region piecewise-linear dynamical systems. *Internat. J. Circuit Theory Appl.* **16** (1988), no. 1, 11–23. (Ding Jun Luo) **89b:58135** 58F13 (34C35)
- The chaos producing mechanism in Chua's circuit. *Internat. J. Circuit Theory Appl.* **16** (1988), no. 2, 227–232. (Not in MR) **94C05** (58F)
- (with Klein, Michael) On the role of transformations destroying analyticity. *Z. Naturforsch.* **A 43** (1988), no. 12, 1091–1093. (Summary) **89k:58140** 58F08 (30D05)
- Kahn, Arthur B. (with Sigler, John N.) A network model for problem solving. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **61** (1988), 199–209. (see **89c:00033**) **05C20** (68Q90, 68T20)
- Kahn, Bruno Erratum: "The group of classes modulo 2, following Conner and Perlis" [*Seminar on number theory, 1984–1985* (French), Exp. No. 26, Univ. Bordeaux I, Talence, 1985; MR **88f:11044]. (French) *Séminaire de théorie des nombres, 1985–1986* (Talence, 1985–1986), 163, Univ. Bordeaux I, Talence, 1986. (Editors) **89a:11116** 11R29 (11E39, 11S15)**
- Sommes de Gauss attachées aux caractères quadratiques: une conjecture de Pierre Conner. [Gauss sums associated with quadratic characters: a conjecture of Pierre Conner] *Comment. Math. Helv.* **62** (1987), no. 4, 532–541. (Donald Maurer) **89c:11128** 11L05 (11E08)
- Kahn, Charles H. Retrospect on the verb "to be" and the concept of being. *The logic of being*, 1–28, *Synthese Hist. Lib.*, 28, Reidel, Dordrecht-Boston, MA, 1986. (see **89a:03004**) **00A23**
- Kahn, Charles Milton (with Malueg, David A.; Solow, John L.) Erratum: "The durable goods monopolist and consistency with increasing costs" [*Econometrica* **54** (1986), no. 2, 275–294; MR **87d:90046**] by Kahn. *Econometrica* **56** (1988), no. 3, 754. (Editors) **89f:90029** 90A14 (90A11)
- (with Mookherjee, Dilip) A competitive efficiency wage model with Keynesian features. *Quart. J. Econom.* **103** (1988), no. 4, 609–645. (Summary) **89i:90017** 90A14
- Kahn, David see *Cryptography*, **89m:01143**
- Kahn, J. (with Lagarias, J. C.; Witsenhausen, H. S.) Single-suit two-person card play. II. Dominance. *Order* **5** (1988), no. 1, 45–60. (G. A. Heuer) **89j:90279** 90D05 (68Q25, 68R99, 90D42)
- (with Seymour, Paul D.) On forbidden minors for GF(3). *Proc. Amer. Math. Soc.* **102** (1988), no. 2, 437–440. (Ulrich Faigle) **89b:05067** 05B35
- Kahn, M. S. (with Sahab, Salem M. A.) Some results on best approximation. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **17** (1987), no. 1, 143–152. (Gheorghe Micula) **89f:41041** 41A65
- Kahn, Steven M. Involutions on odd-dimensional manifolds and the de Rham invariant. *Topology* **26** (1987), no. 3, 287–296. (David C. Royster) **89c:57050** 57S17 (57R20, 57S25)
- Involutions on  $8r + 2$ -Spin manifolds. *Topology Appl.* **29** (1988), no. 3, 285–295. (P. S. Landweber) **89f:57053** 57S17 (57R20)
- Kai, Ping An (with Xu, Hui) Calculating the greatest common divisor of  $n$  polynomials and deciding the stability of linear systems with constant complex coefficients by using matrix transformations. (Chinese. English summary) *Control Theory Appl.* **5** (1988), no. 3, 65–76. (Peng Nian Chen) **89j:93084** 93D05 (12D05, 12D10)
- Kalikhmanov, K. E. The perturbation of  $\omega$ -linearly independent systems in a Banach space that contains its own square. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* **No. 47** (1987), 89–94. (G. J. O. Jameson) **89b:46017** 46B15
- Kaldasov, Zh. (with Shikin, E. V.) Isometric immersion in  $E^3$  of expanding strips on manifolds of type  $\Lambda$ . (Russian) *Mat. Zametki* **42** (1987), no. 6, 842–853, 911. (Alan West) **89b:53006** 53A05
- Kalil, El Amin Mokhtar (with Essannouni, Hassane) Semiprime alternative rings with a.c.c. *Ring theory (Granada, 1986)*, 82–93, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (Harry F. Smith) **89f:17044** 17D05
- (with Sanghare, Mamadou) Une caractérisation des anneaux artiniens à idéaux principaux. (English summary) [A characterization of Artinian rings with principal ideals] *Ring theory (Granada, 1986)*, 245–254, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (M. Djabali) **89f:13021** 13E10 (16A35)
- (with Benslimane, Mohamed) Structure des algèbres de Jordan-Banach non commutatives complexes régulières ou semi-simples à spectre fini. [Structure of noncommutative complex Jordan-Banach algebras that are regular or semisimple with finite spectrum] *J. Algebra* **113** (1988), no. 1, 201–206. (Bruno Iochum) **89c:17004** 17A15 (46H70, 46L70)
- Kalpe, W. see Wang, Kai Ge
- Kalsh, W. D. (with Driscoll, Michael F.) Characterizations and  $O$ -statistic representations of  $LU$ -statistics. *Comm. Statist. Theory Methods* **17** (1988), no. 8, 2763–2777. (K. D. Ling) **89j:62025** 62E10 (62G30)
- Kailath, Thomas A theorem of I. Schur and its impact on modern signal processing. *I. Schur methods in operator theory and signal processing*, 9–30, *Oper. Theory Adv. Appl.*, 18, Birkhäuser, Basel-Boston, MA, 1986. (Editors) **89c:00051** 00A69 (00A05, 01A65, 30B10, 94A12)
- Signal processing applications of some moment problems. *Moments in mathematics (San Antonio, Tex., 1987)*, 71–109, *Proc. Sympos. Appl. Math.*, 37, Amer. Math. Soc., Providence, RI, 1987. (Gongli Zhang) **89c:94001** 94A05 (15A23, 44A60, 47A50, 47B35, 68Q10, 93E11)
- To the friends and admirers of Professor M. G. Krein. *Gaz. Math. No.* **32** (1987), 62–67. (Editors) **89c:01070** 01A70
- (with Bruckstein, Alfred M.) On discrete Schrödinger equations and their two-component wave equation equivalents. *J. Math. Phys.* **28** (1987), no. 12, 2914–2924. (Pierre C. Sabatier) **89a:34019** 34A55 (34B25, 35J10, 39A12, 81C05)
- (with Chun, J.; Lev-Ari, H.) Fast parallel algorithms for  $QR$  and triangular factorization. *SIAM J. Sci. Statist. Comput.* **8** (1987), no. 6, 899–913. (E. L. Yip) **89c:65035** 65F05 (15A06, 65F30)
- (with Bruckstein, Alfred M.; Citron, T. K.) Inverse scattering and minimal partial realizations. *Internat. J. Control* **48** (1988), no. 4, 1537–1550. (Vimal Singh) **89k:93032** 93B15 (93A20, 93C05)
- (with Paulraj, A.) Direction of arrival estimation by eigenstructure methods with imperfect spatial coherence of wave fronts. *J. Acoust. Soc. Amer.* **83** (1988), no. 3, 1034–1040. (Summary) **89i:94003** 94A05 (15A18, 94-04)
- (with Bistritz, Yuval) Inversion and factorization of non-Hermitian quasi-Toeplitz matrices. *Linear Algebra Appl.* **98** (1988), 77–121. (I. Meznik) **89b:65067** 65F05 (15A09, 15A23, 65F30, 93B25, 94A11)
- Kaimanovich, V. A. Boundaries of random walks on polycyclic groups and the law of large numbers for solvable Lie groups. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 4, 93–95, 112. (Summary) **89j:60098** 60J15 (60B15, 60F15)
- Lyapunov exponents, symmetric spaces and a multiplicative ergodic theorem for semisimple Lie groups. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **164** (1987), *Differentsial'naya Geom. Gruppy Li i Mekh. IX*, 29–46, 196–197. (Caroline Series) **89m:22006** 22D40 (22E30, 58F11, 60F05)
- see also *Martin, Nathaniel F. G.*, **89m:28032**
- Kainz, Gerd (with Michor, Peter W.) Natural transformations in differential geometry. *Czechoslovak Math. J.* **37(112)** (1987), no. 4, 584–607. (I. Kolář) **89b:58010** 58A05 (53C99)
- Kaipov, V. Kh. (with Kozhanova, E. V.) Application of the theory of fuzzy sets in control problems (a survey). (Russian) *Izv. Akad. Nauk Kirgiz. SSR* **1988**, no. 1, 52–61, 106. (Marian B. Gorzalczyk) **89k:94113** 94D05 (03E72, 93-02)
- Kairytė, Genė (with Norvaišas, Saulius; Čiegis, Raimondas) On the problem of the numerical integration of an ordinary differential equation. (Russian. English and Lithuanian summaries) *Differentsial'nye Uravneniya i Primeneniya*. No. 41 (1987), 9–15. (E. S. Chichkin) **89b:65174** 65L05
- Kaise, Tetsuo ★ Représentations de Weil et  $GL_2$ . Algèbres de dimension et  $GL_n$ . (French) [Weil representations and  $GL_2$ . Division algebras and  $GL_n$ . Vers les corps de classes galoisiens. I, II. [Towards Galois class-fields. I, II] *Lecture Notes in Mathematics*, 1252, Springer-Verlag, Berlin-New York, 1987. viii+203 pp. ISBN 3-540-17827-9 (Marie-France Vignéras) **89f:22023** 22E50
- Kaiser, André (with Gutknecht, Martin) Iterative  $k$ -step methods for computing possibly repulsive fixed points in Banach spaces. *J. Math. Anal. Appl.* **125** (1987), no. 1, 104–123. (Erich Bohl) **89b:65144** 65J15 (47H10, 65H10)
- Kaiser, Dieter Zur Berechnung von Zweipunktrandwertproblemen mit partiell separierten Randbedingungen mit der Methode der komplementären Funktionen bzw. dem Stabilized March Verfahren. [On the computation of two-point boundary value problems with partially separated boundary conditions by the method of complementary functions and the stabilized march method] *Numerische Behandlung von Differentialgleichungen, IV (Georgenthal, 1985)*, 78–115, *Wissensch. Beitr., Friedrich-Schiller-Universität, Jena*, 1987. (R. M. M. Mattheij) **89b:65190** 65L10
- Kaiser, H. K. see *Contributions to general algebra*, **89b:00022**
- Kaiser, Heiner Zum Problem der Zerlegbarkeit von Simplex in Orthoscheme. [On the problem of decomposing simplices into orthoschemes] *Studia Sci. Math. Hungar.* **21** (1986), no. 1–2, 227–242. (W. J. Firey) **89a:52017** 52A25
- Kaiser, Klaus (with Gehrke, Mai) On the maximality of some conormal extensions of a lattice. *Z. Math. Logik Grundlag. Math.* **33** (1987), no. 1, 13–18. (Autorreferat (Zbl 623:06004)) **89a:06022** 06D05
- Kaiser, Ralf Joachim Supersymmetric gauge anomalies in 2 and 4 dimensions from generalized descent-equations. *Z. Phys. C* **39** (1988), no. 4, 585–589. (Enore Guadagnini) **89f:81099** 81E13 (53C80)
- Kaiser, Thomas (with Tröltzsch, F.) An inverse problem arising in the steel cooling process. *Wiss. Z. Tech. Univ. Karl-Marx-Stadt* **29** (1987), no. 2, 212–218. (Summary) **89f:35201** 35R30 (80A20)
- Kaiser, Uwe (with Li, Bang He) Enumeration of immersions of  $m$ -manifolds in  $(2m-2)$ -manifolds by the singularity method. *Differential topology (Siegen, 1987)*, 171–187, *Lecture Notes in Math.*, 1350, Springer, Berlin-New York, 1988. (J. P. E. Hodgson) **89f:57063** 57R42 (57R25, 57R45, 57R75)
- Immersions in codimension 1 up to regular homotopy. *Arch. Math. (Basel)* **51** (1988), no. 4, 371–377. (Shigeki Kikuchi) **89m:57018** 57N35
- Kaishev, Vladimir K. (with Ignatov, Tsvetan G.) Multivariate  $B$ -splines, analysis of contingency tables and serial correlation. *Mathematical statistics and probability theory, Vol. B (Bad Tatzmannsdorf, 1986)*, 125–137, Reidel, Dordrecht-Boston, MA-London, 1987. (S. B. Nandi) **89g:62061** 62G05 (39A05, 41A15, 62H17)
- (with Ignatov, Tsvetan G.) Limit theorems for  $B$ -splines and linear transformations of order statistics. (Bulgarian summary) *Mathematics and mathematical education (Bulgarian) (Sunny Beach (Slivnitsa) Bryug, 1987)*, 418–425, *Bulgar. Acad. Sci., Sofia*, 1987. (see **89c:00038**) **60F05** (41A15, 62G30)
- Kaitala, V. (with Ehtamo, H.; Ruusunen, J.; Hämmäläinen, R. P.) Solution for a dynamic bargaining problem with an application to resource management. *J. Optim. Theory Appl.* **59** (1988), no. 3, 391–405. (Theo Driessen) **89j:90292** 90D12 (90A30, 90D25)

- (with Pohjola, M.) Optimal recovery of a shared resource stock: a differential game model with efficient memory equilibria. *Natur. Resource Modeling* 3 (1988), no. 1, 91–119. (William J. Reed) **89m:90187** 90D45 (90A30, 92A15)
- Kalza, Hiroyuki** (with Taniguchi, Tsuneo) New approach to the synthesis of a stabilizing control method for a power system. *Internat. J. Control* 49 (1989), no. 2, 691–712. (Summary) **89k:93151** 93C75 (93D15)
- Kaj, Ingemar** Time reversal and stationarity of infinite-dimensional Markov birth-and-death processes. *Stochastic Process. Appl.* 29 (1988), no. 1, 1–50. (Jia Gang Wang) **89c:60161** 60J75 (60H05, 60K35)
- Kaji, Ikue** (with Yamaguchi, Tadashi) Some location problems on grid graphs. *Electron. Comm. Japan. Part I Comm.* 70 (1987), no. 10, 31–40. (Summary) **89j:90109** 90B10
- Kajii, Atsushi** Note on equilibria without ordered preferences in topological vector spaces. *Econ. Lett.* 27 (1988), no. 1, 1–4. (Nicholas C. Yannelis) **89m:90031** 90A14 (46N05, 90A15)
- A general equilibrium model with fuzzy preferences. *Fuzzy Sets and Systems* 26 (1988), no. 1, 131–133. (Not in MR) **90A14** (03E72)
- Kajikawa, Yasushi** New models of synergetics topology and their reciprocal space-filling transformations. *Science on form* (Sakura, 1985), 459–469. Reidel, Dordrecht-Boston, MA, 1987. (see **89g:82013**) **51M20** (51–04)
- Kajimoto, Hiroshi** (with Doi, Hideo) The first eigenvalue of the Laplacian on a certain generalized flag manifold. *Hiroshima Math. J.* 17 (1987), no. 3, 505–511. (H. D. Fegan) **89f:58134** 58G25
- The first eigenvalue of the Laplacian for the compact quotient of a certain Riemannian symmetric space. *Hiroshima Math. J.* 17 (1987), no. 3, 513–520. (H. D. Fegan) **89c:58114** 58G25
- On the steady state of the heat conduction on a Riemannian symmetric space. *Hiroshima Math. J.* 18 (1988), no. 1, 53–58. (From the introduction) **89m:58195** 58G11
- Kajitani, Kunihiko** The Cauchy problem for uniformly diagonalizable hyperbolic systems in Gevrey classes. *Hyperbolic equations and related topics* (Katata/Kyoto, 1984), 101–123. Academic Press, Boston, MA, 1986. (Luiza Zanghirati) **89j:35125** 35L45 (35S10)
- Wellposedness in Gevrey class of the Cauchy problem for hyperbolic operators. (French summary) *Bull. Sci. Math.* (2) 111 (1987), no. 4, 415–438. (Yu. V. Egorov) **89b:35082** 35L30
- Kajitani, Yoji** (with Ishizuka, Akio; Ueno, Shuichi) Characterization of partial 3-trees in terms of three structures. *Graphs Combin.* 2 (1986), no. 3, 233–246. (R. E. Pippert) **89h:05024** 05C05 (05C75, 68Q25, 68R10)
- (with Ueno, Shuichi; Gotoh, Shin'ya) On the nonseparating independent set problem and feedback set problem for graphs with no vertex degree exceeding three. Proceedings of the First Japan Conference on Graph Theory and Applications (Hakone, 1986). *Discrete Math.* 72 (1988), no. 1–3, 355–360. (Toshimasa Watanabe) **89k:05085** 05C70 (05C65, 68R10, 90C10, 90C27)
- Kajitori, Kazuaki** Precipitous extensions of ideals on cBas. *Kobe J. Math.* 4 (1987), no. 1, 107–114. (Thomas J. Jech) **89a:03096** 03E35 (03E35)
- (with Takahashi, Joji) Precipitousness of a sum of ideals on complete Boolean algebras. *Z. Math. Logik Grundlag. Math.* 34 (1988), no. 4, 323–330. (Eva Hartová) **89g:03066** 03E05 (03E40)
- Kajiura, Tsuyoshi** Traces on double crossed products. *Math. Japon.* 32 (1987), no. 2, 251–256. (Steve Wright) **89h:46094** 46L55
- Remarks on strongly Morita equivalent  $C^*$ -crossed products. *Math. Japon.* 32 (1987), no. 2, 257–260. (Steve Wright) **89h:46095** 46L55
- Kak, A. C.** (with Roberts, B. A.) Reconstruction from projections: applications in computerized tomography. *Handbook of pattern recognition and image processing*, 649–693. Handbooks Sci. Tech., Academic Press, Orlando, FL, 1986. (Frank Natterer) **89c:92006** 92A07 (44A15, 45L10, 65R10)
- Kak, Subhash** The Aryabhata cipher. *Cryptologia* 12 (1988), no. 2, 113–117. (Hans K. Kaiser) **89f:11165** 11T71 (01A32)
- Multilayered array computing. *Inform. Sci.* 45 (1988), no. 3, 347–365. (Not in MR) **68Q10** (68Q25)
- Kakas, A. C.** (with Bakas, I.) Quantum mechanics of nonlinear systems. *J. Phys. A* 20 (1987), no. 12, 3713–3725. (Lionel J. Mason) **89a:81028** 81C25 (81D07)
- Kakazu, Kiyotaka** (with Matsumoto, Shuichi) Supergravity on principal fibre bundle. *Progr. Theoret. Phys.* 78 (1987), no. 4, 932–950. (W. Cox) **89e:83084** 83E50 (53C80)
- Kakhichko, A. A.** Construction of perfect matchings of a graph. (Russian) *Methods for solving nonlinear problems, and data processing* (Russian), 41–44, 106. Dnepropetrovsk. Gos. Univ., Dnepropetrovsk, 1986. (see **89f:00011**) **05C70**
- Kakhkhharov, V. G.** Integration of an equation of Bessel type by means of generalized series. (Russian) *Investigations in degenerate differential equations and limit theorems of probability theory* (Russian), 97–101, Tashkent. Gos. Ped. Inst., Tashkent, 1985. (see **89g:60002**) **34A25**
- Kakhkhharov, Ya. M.** A problem of simple pursuit with a collective goal. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1987, no. 4, 17–23, 88. (Zdzisław Wyderka) **89d:90265** 90D26 (49A45)
- Kakhramanov, A. Sh.** (with Gasymov, M. G.; Petrosyan, S. K.) On the spectral theory of linear differential operators with discontinuous coefficients. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* 43 (1987), no. 3, 13–16. (Summary) **89d:34048** 34B25 (47E05)
- Kakie, Kunio** Symmetrizable hyperbolic systems of nonlinear partial differential equations. *Comment. Math. Univ. St. Paul.* 36 (1987), no. 2, 215–226. (Michael Oberguggenberger) **89c:35090** 35L60 (35L45)
- Kakihara, Yūichirō** Series representations and Karhunen processes. *J. Multivariate Anal.* 25 (1988), no. 1, 10–24. (H. Salehi) **89g:60137** 60G12 (60G10)
- A note on bounded and continuous processes. *Res. Act. Fac. Sci. Engrg. Tokyo Denki Univ.* 10 (1988), 93–94. (V. K. Rohatgi) **89j:60056** 60G12 (60G05)
- Kakimizu, Osamu** Finding boundary for the semistable ends of 3-manifolds. *Hiroshima Math. J.* 17 (1987), no. 2, 395–403. (Wolfgang H. Heil) **89c:57008** 57N10
- Kaklis, P. D.** (with Sapidis, N. S.) An algorithm for constructing convexity- and monotonicity-preserving splines in tension. *Comput. Aided Geom. Design* 5 (1988), no. 2, 127–137. (Summary) **89f:65015** 65D07 (41A15)
- Kake, Fujio** (with Hirota, Ryogo; Ito, Masao) Two-dimensional Toda lattice equations. Recent developments in soliton theory. *Progr. Theoret. Phys. Suppl.* No. 94 (1988), 42–58. (Summary) **89k:35211** 35Q20 (58F35)
- Kake, Takashi** Essential spectrum of linearized operator for MHD plasma in cylindrical region. (French summary) *Z. Angew. Math. Phys.* 38 (1987), no. 3, 433–449. (Jaroslav Barták) **89c:76117** 76W05
- Essential spectrum of a linearized operator for MHD plasma in a cylindrical region. Mathematical analysis of fluid and plasma dynamics, I (Kyoto, 1986). *Sūrikaiseikenkyōsho Kōkyūroku No.* 656 (1988), 1–24. (see **89g:76004**) **76W05**
- Kakei, Jerry** On some dense dual-separating subspaces in  $F$ -spaces. (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 9–10, 557–560. (Klaus-Dieter Bierstedt) **89h:46003** 46A15 (46B20)
- Basic sequences and nonlocally convex topological vector spaces. *Rend. Circ. Mat. Palermo* (2) 36 (1987), no. 1, 95–102. (Zoran Kadelburg) **89g:46007** 46A15 (46A06)
- Kaku, Michio** Generally covariant lattices, the random calculus, and the strong coupling approach to the renormalisation of gravity. *Quantum field theory and quantum statistics*, Vol. 2, 141–163. Hilger, Bristol, 1987. (Matthias Zahringer) **89k:83052** 83C99 (81E13, 81E15, 81E25, 83C27)
- Why are there two BRST string field theories? *Phys. Lett. B* 200 (1988), no. 1–2, 22–30. (George Siopsis) **89c:81133** 81E99 (81E30)
- Kakutani, Tsunehiko** (with Sugimoto, Nobumasa; Hosokawa, Kazutaka) Reflection and transmission of a shallow-water soliton over a barrier. *J. Phys. Soc. Japan* 56 (1987), no. 8, 2744–2754. (Summary) **89a:76018** 76B15 (35Q20, 76B25)
- Kalaba, Robert E.** (with Wexler, Anthony S.) New methods for boundary value problems. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 855–857. (W. H. Enright) **89k:65096** 65L10
- (with Tesfatsion, Leigh) Exact sequential filtering, smoothing and prediction for nonlinear systems. *Nonlinear Anal.* 12 (1988), no. 6, 599–615. (Zhen Hua Wang) **89j:93105** 93E10 (62M05, 93E14)
- Kalachov, L. V.** (with Butuzov, V. F.) Asymptotics of the solution of a problem of combustion in the case of an autocatalytic reaction. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 5, 683–694, 782. (Summary) **89c:80018** 80A25
- Kalai, Ehud** Solutions to the bargaining problem. *Social goals and social organization*, 77–105. Cambridge Univ. Press, Cambridge-New York, 1985. (Esther Gal-Or) **89c:90253** 90D30 (90A06, 90A14, 90D10)
- (with Stanford, William) Finite rationality and interpersonal complexity in repeated games. *Econometrica* 56 (1988), no. 2, 397–410. (J. Rosenmüller) **89c:90227** 90D10 (90D20)
- (with Samet, D.; Stanford, William) A note on reactive equilibria in the discounted prisoner's dilemma and associated games. *Internat. J. Game Theory* 17 (1988), no. 3, 177–186. (Françoise Forges) **89k:90194** 90D15
- Kalai, Gil** (with Björner, Anders) An extended Euler-Poincaré theorem. *Acta Math.* 161 (1988), no. 3–4, 279–303. (Sergey Yuzvinsky) **89m:52009** 52A37 (51H99, 55N99)
- Many triangulated spheres. *Discrete Comput. Geom.* 3 (1988), no. 1, 1–14. (P. McMullen) **89c:52025** 52A45
- A simple way to tell a simple polytope from its graph. *J. Combin. Theory Ser. A* 49 (1988), no. 2, 381–383. (Andrew Vince) **89m:52006** 52A25 (05C10)
- Kalaide, A. F.** (with Yudenko, G. P.) Matrix methods for solving initial value problems for equations with delays. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 28 (1986), 43–47, 132. (Not in MR) **65L05**
- Kalamatiannou, A. G.** A model for responding to promotion blockages. *J. Appl. Probab.* 25 (1988), no. 2, 268–278. (Howard Taylor) **89j:90045** 90B99 (60K30, 92A20)
- Kalamkarov, A. L.** (with Kudryavtsev, B. A.; Parton, V. Z.) The asymptotic homogenization method in the mechanics of composite materials of regular structure. (Russian. English summary) *Mechanics of a solid deformable body*, Vol. 19 (Russian), 78–147, 187–188. *Itoji Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (Summary) **89a:73049** 73K20
- (with Parton, V. Z.) Equations on the stability of three-dimensional bodies made of composites of regular structure. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 2, 308–311; translation in *Soviet Phys. Dokl.* 33 (1988), no. 5, 389–390. (Not in MR) **73K20** (73H99)
- Kalandarishvili, D. G.** An elliptic integro-differential equation with small parameter in the nonregular case. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruz. SSR* 87 (1987), 62–81. (Hana Petzeltová) **89c:45019** 45K05 (35C20, 35J70)
- Kalantarov, V. K.** Global behavior of the solutions of an initial-boundary value problem for a class of systems of nonlinear equations. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 2, 47–51. (O. Vejvoda) **89j:35027** 35B40 (35L70, 35Q20, 58F12, 73F15)
- Global behavior of solutions of the Cauchy problem for second-order operator-differential equations. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 6, 28–34 (1988). (O. Vejvoda) **89k:35246** 35R20 (35B40)
- Global behavior of the solutions of some fourth-order nonlinear equations. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 163 (1987), *Kraev. Zadachi Mat. Fiz. i Smezhnye Vopr. Teor. Funktsii* 19, 66–75, 187–188. (Guang Chang Dong) **89g:35056** 35K60
- Attractors for some nonlinear problems of mathematical physics. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 152 (1986), *Kraev. Zadachi Mat. Fiz. i Smezhnye Vopr. Teor. Funktsii* 18, 50–54, 182; translation in *J. Soviet Math.* 40 (1988), no. 5, 619–622. (Dan Socolescu) **89a:58061** 58F12 (35Q20)
- Kalamatzopoulos, F.** see **Rooppani-Kalamatzopoulos, F.**
- Kalara, S.** (with Ellis, Jonathan Richard; Enqvist, K.; Nanopoulos, D. V.; Olive, K. A.) Phenomenological studies of rank-5 Calabi-Yau models. *Nuclear Phys. B* 306 (1988), no. 3, 445–469. (Summary) **89f:81259** 81G25 (32C10, 53C80, 81E30, 81G05, 83E30)
- (with Kounnas, Costas; Olive, K. A.) Gravitational equations of motion at the string scale. *Phys. Lett. B* 215 (1988), no. 2, 265–272. (Summary) **89j:83078** 83E15 (81E30, 83E30, 83F05)
- Kalászek, Pavel** (with Balcar, Bohuslav; Williams, Scott W.) On the multiple Birkhoff recurrence theorem in dynamics. *Comment. Math. Univ. Carolin.* 28 (1987), no. 4, 607–612. (L. Janos) **89a:54048** 54H20
- Kalashnikov, A. L.** A. N. Tikhonov's regularization method in an ill-posed optimal control problem. (Russian) *Optimal computation methods and their application*, No. 7 (Russian),



- 28–38, 161–162, *Penz. Politekh. Inst.*, Penza, 1985. (see **89g:65006**) 49D15 (65K10)
- Kalashnikov, A. S.** (with Arnold, V. I.; Vishik, M. I.; Egorov, Yuri Vladimirovich; Novikov, S. P.; Sobolev, S. L.) *Ol'ga Arsen'evna Oleinik (on the occasion of her sixtieth birthday)*. (Russian) *Trudy Sem. Petrosk. No. 12* (1987), 3–21. (Editors) **89b:01034** 01A70
- Heat propagation in linear and nonlinear media with strongly nonstationary properties. (Russian. English summary) *Trudy Sem. Petrosk. No. 12* (1987), 137–148, 244. (Victor A. Galaktionov) **89f:35105** 35K35 (35B99)
- Kalashnikov, O. K.** (with Burova, M. V.) Stability of the hierarchy of interactions in grand unification theory. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (*Jarmala*, 1985), 286–293, "Nauka", Moscow, 1986. (see **89d:81001**) 81G20
- Kalashnikov, V. V.** (with Vsekhsvyat'skii, S. Yu.) Estimates in the Rényi theorem in terms of renewal theory. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 2, 369–373; translation in *Theory Probab. Appl.* **33** (1988), no. 2, 347–352. (Stefan P. Niculescu) **89g:60088** 60F05 (60K05)
- Kalashnikov, Yu. V.** (with Podgaets, R. M.; Khar'kov, V. S.) Investigation of the loaded-deformed state of a tetrahedral pyramidal shell. (Russian) *Boundary value problems* (Russian), 109–113, 160–161, *Perm. Politekh. Inst.*, Perm, 1984. (see **89b:00008**) 73K25
- Kalashnikova, S. F.** (with Chikrii, A. A.) Pursuit by a controllable object of a group of evading objects. (Russian. English summary) *Kibernetika (Kiev)* **1987**, no. 4, 1–8, 133. (Phan Huy Khai) **89b:90250** 90D26 (49A45, 90D25)
- (with Chikrii, A. A.; Sobolenko, L. A.) A numerical method for solving a problem of successive pursuit. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 1, 44–49, 134; translation in *Cybernetics* **24** (1988), no. 1, 53–59. (Not in MR) **90D42** (90D26)
- Kalašová, Elena** Infinite sets of primes and of powers of an integer  $a$  are not context-free. (Russian and Slovak summaries) *Acta Math. Univ. Comenian.* **48/49** (1986), 319–323 (1987). (Summary) **89f:11016** 11B34 (68Q40)
- Kalat, J.** (with Paraskevopoulos, P. N.) Solution of multipoint boundary value problems via block-pulse functions. *J. Franklin Inst.* **324** (1987), no. 1, 73–81. (Summary) **89h:93020** 93B30 (34B10)
- Kalchev, B. D.** Some equilibria in a cooperative differential game without side payoffs. (Russian) *Differential equations and applications, I, II* (Russian) (*Ruse*, 1985), 171–174, "Angel Kanchev" Tech. Univ., Ruse, 1987. (From the text) **89f:90208** 90D12 (90D25)
- (with Donchev, Asen L.) On convex and nonnegative best interpolation. *C. R. Acad. Bulgare Sci.* **41** (1988), no. 6, 21–24. (From the introduction) **89j:41006** 41A05
- Kale, B. K.** (with Bendre, S. M.) Masking effect on tests for outliers in normal samples. *Biometrika* **74** (1987), no. 4, 891–896. (Naganori Mori) **89b:62053** 62F03
- Essential uniqueness of optimal estimating functions. *J. Statist. Plann. Inference* **17** (1987), no. 3, 405–407. (A. P. Basu) **89c:62057** 62F10
- (with Gather, U.) Maximum likelihood estimation in the presence of outliers. *Comm. Statist. Theory Methods* **17** (1988), no. 11, 3767–3784. (Not in MR) **62F10**
- Kale, P. P.** (with Deshpande, N. V.) A note on  $K^2$ -summability of Fourier series. *J. Indian Acad. Math.* **8** (1986), no. 2, 78–82. (Gokulananda Das) **89g:42013** 42A24
- (with Deshpande, N. V.) Corrections to: "The neighbourhood number of a graph" [*Indian J. Pure Appl. Math.* **16** (1985), no. 2, 126–132; MR 86k:05069] by E. Sampathkumar and P. S. Neeralagi. *Indian J. Pure Appl. Math.* **19** (1988), no. 9, 927–929. (Editors) **89i:05255** 05C99
- Kale, R. G.** (with Srirangarajan, H. R.) Optimum ultraspherical polynomial index for approximate analysis of nonlinear vibration problems. *J. Sound Vibration* **128** (1989), no. 3, 513–518. (Introduction) **89h:70002** 70-08 (70K99)
- Kalenge, M. C.** (with Lloyd, N. G.; Blows, T. R.) Some cubic systems with several limit cycles. *Nonlinearity* **1** (1988), no. 4, 653–669. (Hassan El-Owaidy) **89k:34043** 34C05 (34C10, 58F14, 58F21)
- Kalhoff, Franz** Zur Vervollständigung natürlich angeordneter Cartesischer Gruppen. (English summary) [On the completion of naturally ordered Cartesian groups] *Resultate Math.* **12** (1987), no. 3–4, 289–296. (J. André) **89d:06031** 06F15 (20F60, 51G05)
- Eine Kennzeichnung anordnungsfähiger Ternärkörper. (English summary) [A characterization of orderable ternary fields] *J. Geom.* **31** (1988), no. 1–2, 100–113. (H. Salzmann) **89j:51013** 51G05 (06F25, 12D99)
- Kaliev, E. Zh.** Algorithms for solving the problem of the location of plants for processing of agricultural production without constraints on the volume of the processing. (Russian) *Numerical and analytical methods for solving boundary value problems* (Russian), 73–81, 86–87, Kazakh. Gos. Univ., Alma-Ata, 1986. (From the text) **89m:90062** 90B10 (90A30, 90B30)
- (with Astakhov, N. D.) A dynamic problem of water resource distribution and the modification of successive calculation algorithms for its solution. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1988**, no. 1, 7–11. (R. Petrović) **89g:90137** 90B99 (93C55)
- Kalkinskil, I. I.** Excitation by a uniformly moving charge of a plane waveguide with impedance walls. (Russian) *Mathematical physics* (Russian), 134–137, 189, *Moskov. Gos. Ped. Inst.*, Moscow, 1986. (Summary) **89a:78011** 78A50
- Kalikow, S.** (with Weiss, Benjamin) When are random graphs connected. *Israel J. Math.* **62** (1988), no. 3, 257–268. (Zbigniew Palka) **89i:05246** 05C80 (05C40)
- Kalin, Dieter** (with Benzing, H.; Theodorescu, R.) Optimal policies for sequential Bernoulli experiments with switching costs. (German and Russian summaries) *J. Inform. Process. Cybernet.* **23** (1987), no. 12, 599–607. (Peter Watts Jones) **89d:62081** 62L15 (90C40, 90D35)
- Kalina, Martin** The central limit theorem on compact commutative groups. *Wiss. Z. Martin-Luther-Univ. Halle-Wittenberg Math.-Natur. Reihe* **37** (1988), no. 5, 63–66. (H. Heyer) **89m:60025** 60B15 (28C10, 43A05, 60F05)
- Kalinde, A. K.** On a fixed point theorem for Kannan's type mappings. *Math. Japon.* **33** (1988), no. 5, 721–723. (Livia D'Apuzzo) **89k:54106** 54H25
- Kalinikos, B. A.** (with Dmitriev, V. F.) Excitation of propagating magnetization waves by microband antennas. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **31** (1988), no. 11, 24–53. (Summary) **89k:78026** 78A50
- Kalinin, A. I.** (with Schastny, S. F.) Minimization of quadratic functionals on the trajectories of linear singularly perturbed systems. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1987**, no. 3, 42–46, 80–81. (V. A. Sobolev) **89c:49024** 49D40 (34E15, 34H05, 49A36)
- An algorithm for the asymptotic solution of a quasilinear time-optimality problem. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **32** (1988), no. 3, 197–200, 284. (Summary) **89d:93040** 93B40 (93C10, 93C15)
- Optimization of quasilinear control systems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 3, 325–334, 477. (V. A. Dykhta) **89f:49016** 49B10 (49B40)
- Kalinin, I. O.** Realization of quadratic forms by smooth manifolds. (Russian) *Mat. Sb. (N.S.)* **134**(176) (1987), no. 2, 177–185, 287; translation in *Math. USSR-Sb.* **62** (1989), no. 1, 177–184. (A. A. Ranicki) **89a:57046** 57R75 (11E39)
- Kalinin, S. I.** (with Vasil'ev, V. I.) On the problem of the calculation of the maximum of a pre-image from a given image. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 5, 19–25, 87. (A. Haimovici) **89a:65195** 65R10
- Kalinin, V. M.** (with Volitsekhevskii, S. A.; Makarov, Vladimir Leonidovich) An estimate for the rate of convergence of difference schemes for a system of equations of the equilibrium of an inhomogeneous anisotropic elastic solid under conditions of rigid fixing. (Russian) *Vychisl. Prikl. Mat. (Kiev)* **62** (1987), 14–19, 129. (Summary) **89b:65244** 65N10 (73-08, 73C30)
- Kalinin, V. N.** (with Shikin, E. V.) The construction of ellipsoids of extreme volume. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 1, 64–69; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 4, 60–65, 223 (Russian). (Summary) **89c:49033** 49E15 (51M25, 90C25)
- Kalinowski, Georges** La logique aléthico-déontique et la présupposition. [Alethico-deontic logic and presupposition] *Leibniz: questions de logique (Bruxelles/Louvain-la-Neuve, 1985)*, 72–81, *Studia Leibnitiana Sonderheft*, 15, Steiner, Wiesbaden, 1988. (see **89m:01041**) 03A05 (01A20, 03-03, 03B45)
- Kalinowski, M. W.** (with Seweryński, M.; Szymanowski, Lech) On the  $F$ -equation. *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **117** (1983), no. 4–6, 191–203 (1986). (R. K. Saxena) **89h:33021** 33A99
- The program of geometrization of physics: some philosophical remarks. *Synthese* **77** (1988), no. 2, 129–138. (Lawrence Sklar) **89j:83001** 83-02 (81E13, 83E15)
- Kalinyak, M. I.** (with Briksa, M. S.) Solution of the quasilinear differential heat equation for domains that are conformally mapped onto a half plane. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* **28** (1986), 64–68, 133. (Summary) **89g:35043** 35K05 (80A20)
- Kalis, Haris Edmunds** Some difference schemes for solving boundary value problems of hydrodynamics and magnetohydrodynamics in a broad range of variation of parameters. (Russian) *Latv. Mat. Ezhegodnik* **31** (1988), 160–166, 254. (Summary) **89c:76014** 76-08 (76W05)
- (with Boyarevich, V. V.) A procedure for calculating the stationary magnetic field on the basis of the Biot-Savart-Laplace law in multilayered media. (Russian. English summary) *Latvijas PSR Zinat. Akad. Vestis Fiz. Tehn. Zinaty.* **1988**, no. 3, 113–119, 128. (Summary) **89j:78018** 78A30
- Kalish, Diane** The Morse index theorem where the ends are submanifolds. *Trans. Amer. Math. Soc.* **308** (1988), no. 1, 341–348. (Karsten Grove) **89i:58024** 58E10
- Kalisher, O. N.** A method for diagnosing measuring channels with account taken for prehistory. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 6, 135–144; translation in *Automat. Remote Control* **49** (1988), no. 6, part 2, 795–801. (H. Bandemer) **89i:62167** 62N99 (90B25)
- Kaliski, Burton S., Jr.** A pseudorandom bit generator based on elliptic logarithms. *Advances in cryptography—CRYPTO '86* (Santa Barbara, Calif., 1986), 84–103, *Lecture Notes in Comput. Sci.*, 263, Springer, Berlin-New York, 1987. (O. Moreno) **89c:49032** 94A60 (11T71, 11Y16)
- (with Rivest, Ronald L.; Sherman, Alan T.) Is the data encryption standard a group? (Results of cycling experiments on DES). *J. Cryptology* **1** (1988), no. 1, 3–36. (Zhen Fu Cao) **89f:94017** 94A60 (68P25)
- Kaliszewski, Ignacy** A characterization of properly efficient solutions by an augmented Tchebycheff norm. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* **33** (1985), no. 7–8, 415–420. (Summary) **89b:90209** 90C31
- Norm scalarization and proper efficiency in vector optimization. *Found. Control Engrg.* **11** (1986), no. 3, 117–131. (A. Göpfert (Zbl 613:90086)) **89a:90143** 90C31
- Kalitin, B. S.** Pseudostability and first prolongations. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 4, 571–574, 730; translation in *Differential Equations* **24** (1988), no. 4, 391–393. (Jan Andres) **89c:34044** 34C35 (54H20, 58F10)
- Invariance of stability properties under homomorphism of dynamical systems. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **32** (1988), no. 10, 869–871, 956. (L. Janos) **89j:54044** 54H20
- Kalitsin, S. N.** see **Kalitzin, S.**
- Kalitzin, A. S.** The spectrum of some classes of operators with partial integrals. (Russian) *Operators and their applications* (Russian), 27–35, *Leningrad. Gos. Ped. Inst., Leningrad*, 1985. (see **89f:00013**) 47G05 (47A10, 47B38)
- The multispectrum of linear operators. (Russian) *Operators and their applications* (Russian), 91–99, *Leningrad. Gos. Ped. Inst., Leningrad*, 1985. (see **89f:00013**) 47A10 (47A50)
- Kalitzin, S.** see **Green, Michael B.**, **89e:81149**
- Kaljabin, G. A.** see **Kalyabin, G. A.**
- Kalka, Morris** (with Duchamp, T.) Invariants of complex foliations and the Monge-Ampère equation. *Michigan Math. J.* **35** (1988), no. 1, 91–115. (Andreas Nestke) **89h:32020** 32C10 (32L99, 53C12, 57R30, 58G30)
- Kalkanli, Ayte** Prolongation structure and Painlevé property of the Gürses-Nutku equations. *Internat. J. Theoret. Phys.* **26** (1987), no. 11, 1085–1092. (From the introduction) **89m:35195** 35Q20 (58G37)
- Kalker, J. J.** Contact mechanical algorithms. *Comm. Appl. Numer. Methods* **4** (1988), no. 1, 25–32. (Summary) **89c:73084** 73T05 (65K05, 73-08, 90C50)
- Kalker, Ton A. C. M.** (with van Laarhoven, P. J. M.) On the computation of Lauricella functions of the fourth kind. *J. Comput. Appl. Math.* **21** (1988), no. 3, 369–375. (Sang Lung Chan) **89f:33002** 33A30 (65D20)
- Kall, P.** On approximations and stability in stochastic programming. *Parametric optimization and related topics* (Pauze, 1985), 387–407, *Math. Res.*, 35, Akademie-Verlag, Berlin, 1987. (Werner Römisch) **89g:90160** 90C15
- Stochastic programming with recourse: upper bounds and moment problems—a review. *Advances in mathematical optimization*, 86–103, *Math. Res.*, 45, Akademie-Verlag, Berlin,

1988. (Riho Lepp) **89g:90159** 90C15
- (with Fraumendorfer, Karl) A solution method for SLP recourse problems with arbitrary multivariate distributions—the independent case. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **17** (1988), no. 4, 177–205. (Klaus Tammer) **89h:90165** 90C15
- see also *Advances in mathematical optimization*, **89h:90117**
- Kalla, S. L.** (with Al-Sagabi, Bader; Conde, Salvador) Some results related to radiation-field problems. *Hadronic J.* **10** (1987), no. 4, 221–230. (Wolfgang Bühring) **89d:78023** 78A40 (33A30)
- (with Yakubovich, S. B.; Vu Kim Tuan; Marichev, O. I.) A class of index integral transforms. (Spanish summary) *Rev. Técn. Fac. Ingr. Univ. Zulia* **10** (1987), no. 1, 105–118. (N. Hayek Calil) **89a:44012** 44A15
- (with Dimovski, I. H.) Explicit convolution for Hermite transform. *Math. Japon.* **33** (1988), no. 3, 345–351. (L. Debnath) **89m:44005** 44A15
- Kallaher, Michael J.** The multiplicative groups of quasifields. *Canad. J. Math.* **39** (1987), no. 4, 784–793. (V. Havel) **89c:12007** 12K99
- Kallay, Michael** Plane curves of minimal energy. *ACM Trans. Math. Software* **12** (1986), no. 3, 219–222. (Summary) **89c:53002** 53A04 (58E10, 73K05)
- Kallenberg, Olav** An informal guide to the theory of conditioning in point processes. (French summary) *Internat. Statist. Rev.* **52** (1984), no. 2, 151–164. (Summary) **89g:60168** 60G55
- Spreading and predictable sampling in exchangeable sequences and processes. *Ann. Probab.* **16** (1988), no. 2, 508–534. (David J. Aldous) **89b:60097** 60G09 (60G40)
- An elementary approach to the Daniell-Kolmogorov theorem and some related results. *Math. Nachr.* **139** (1988), 251–265. (M. Zähle) **89m:60081** 60G05 (60B05, 60G55, 60G57)
- Some new representations in bivariate exchangeability. *Probab. Theory Related Fields* **77** (1988), no. 3, 415–455. (David J. Aldous) **89a:60101** 60G09 (60G60)
- One-dimensional uniqueness and convergence criteria for exchangeable processes. *Stochastic Process. Appl.* **28** (1988), no. 2, 159–183. (David J. Aldous) **89f:60038** 60G09 (60F17)
- Kallenberg, W. C. M.** (with Jurečková, Jana; Veraverbeke, N.) Moderate and Cramér-type large deviation theorems for M-estimators. *Statist. Probab. Lett.* **6** (1988), no. 3, 191–199. (Júlia Volaufová) **89b:62047** 62E20 (60F10, 62F12)
- Kallianpur, G.** (with Christensen, S. K.) Stochastic differential equations for neuronal behavior. *Adaptive statistical procedures and related topics* (Upton, N.Y., 1985), 400–416, *IMS Lecture Notes—Monograph Ser.*, **8**, Inst. Math. Statist., Hayward, CA, 1986. (Robert L. Wolpert) **89c:60070** 60H15 (60G20, 60H10, 60H20, 92A09)
- (with Wolpert, Robert L.) Weak convergence of stochastic neuronal models. *Stochastic methods in biology* (Nagoya, 1985), 116–145, *Lecture Notes in Biomath.*, **70**, Springer, Berlin-New York, 1987. (From the introduction) **89g:92017** 92A09
- (with Karandikar, Rajeeva L.) The filtering problem for infinite-dimensional stochastic processes. *Stochastic differential systems, stochastic control theory and applications* (Minneapolis, Minn., 1986), 215–223, *IMA Vol. Math. Appl.*, **10**, Springer, New York-Berlin, 1988. (Michael Kohlmann) **89f:60045** 60G35 (93E11)
- (with Pérez-Abreu, Víctor) Stochastic evolution equations driven by nuclear-space-valued martingales. *Appl. Math. Optim.* **17** (1988), no. 3, 237–272. (Wilfried Grecksch) **89b:60146** 60H15 (35K99, 35R15, 35R60)
- Kalliongis, John** (with Miller, Andy) Equivalence and strong equivalence of actions on handlebodies. *Trans. Amer. Math. Soc.* **308** (1988), no. 2, 721–745. (József H. Przytycki) **89k:57080** 57S25 (57M12, 57M15)
- Kallman, Robert R.** Subseries and category. *J. Math. Anal. Appl.* **132** (1988), no. 1, 234–237. (Peter W. Day) **89g:46074** 46E40 (28A20, 40A05, 54C50)
- Kalloniatis, A. C.** SO(4) group generators for  $k$ -ordered atomic systems. *J. Phys. A* **21** (1988), no. 11, L573–L578. (Not in MR) **81G40**
- Kallosh, R.** Strings and superspace. *Unification of fundamental interactions* (Marstrand, 1986), 118–125, *Royal Swedish Acad. Sci., Stockholm*, 1987. (see **89f:81005**) **83E15** (58G40, 81E30, 83E30, 83E50)
- (with Morozov, A. Yu.) Green-Schwarz action and loop calculations for superstring. *Internat. J. Modern Phys. A* **3** (1988), no. 8, 1943–1958. (Helmut Rumpf) **89j:81191** 81E99 (81E30)
- (with Morozov, A. Yu.) Renormalization theorems for heterotic strings. *JETP Lett.* **47** (1988), no. 11, 635–638; translated from *Pis'ma Zh. Eksp. Teoret. Fiz.* **47** (1988), no. 11, 545–547 (Russian). (Summary) **89j:81127** 81E15 (81E30)
- (with Morozov, A. Yu.) On the vanishing of multipole contributions to the 0-, 1-, 2-, 3-point functions in the Green-Schwarz formalism for heterotic strings. *Phys. Lett. B* **207** (1988), no. 2, 164–168. (Paul Howe) **89f:81186** 81E99 (81E30)
- (with Rakhmanov, M. A.) Covariant quantization of the Green-Schwarz superstring. *Phys. Lett. B* **209** (1988), no. 2-3, 233–238. (Summary) **89f:81187** 81E99 (81E30)
- (with Rakhmanov, M. A.) Gauge algebra and quantization of type II superstrings. *Phys. Lett. B* **211** (1988), no. 1-2, 71–75. (B. Spence) **89i:81116** 81E99 (81D30, 81E30)
- (with Troost, W.; Van Proeyen, A.) Quantization of superparticle and superstring with Siegel's modification. *Phys. Lett. B* **212** (1988), no. 4, 428–436. (Helmut Rumpf) **89m:81147** 81E99 (81E30)
- Kalman, R. E.** Identification of systems with noise. (Hungarian) *Alkalmaz. Mat. Lapok* **13** (1987/88), no. 1-2, 171–185. (R. Haber) **89b:93107** 93E12
- Kalmár, I. G.** On some kinds of event algebras in non-Kolmogorovian probability theory. *Probability theory and mathematical statistics with applications* (Visegrád, 1985), 113–121, *Reidel, Dordrecht-Boston, MA*, 1988. (A. I. Dale) **89i:60006** 60A05
- Kalmbach, Gudrun** (with Gensheimer, H.) Measures and dimension lattices. *Recent developments in quantum logic* (Cologne, 1984), 285–290, *Grundlehren Exakt. Naturwiss.*, **6**, Bibliographisches Inst., Mannheim, 1985. (see **89h:81008**) **06C15**
- $\star$  Diskrete Mathematik. (German) [Discrete mathematics] Ein Intensivkurs für Studienanfänger mit Turbo Pascal-Programmen. [An intensive course for beginning students with Turbo Pascal programs] *Friedr. Vieweg & Sohn, Braunschweig*, 1988. viii+184 pp. ISBN 3-528-06303-3 (H.-J. Vollrath) **89m:00004** 00A05 (00A07, 05-01, 68R99, 68T99)
- Kalmykov, A. A.** On the theory of the rotation of noncompact vector fields. (Russian) *Boundary value problems* (Russian), 112–116, 199, *Perm. Politekh. Inst., Perm*, 1983. (see **89c:00008**) **47H10**
- Kal'ner, V. D.** (with Bogomolova, I. A.; Glasko, V. B.; Kulik, N. I.; Kondorakaya, E. E.; Tikhonov, A. N.; Yurasov, S. A.) Inverse problems associated with the control of diffusional and thermal processes. *J. Engng. Phys.* **53** (1987), no. 5, 1329–1335 (1988); translated from *Inzh.-Fiz. Zh.* **53** (1987), no. 5, 835–842 (Russian). (Summary) **89d:80007** 80A20 (93C20)
- Kalniga, Dace** (with Tsarkova, V. N.) Random perturbations of the parameters of linear iterations. (Russian) *Random search problems*, 11 (Russian), 150–166, 214, "Zinatne", Riga, 1988. (Summary) **89c:39007** 39A11 (34D05, 60H25)
- Kalmíns, E. G.** (with Miller, Willard, Jr.) Equivalence classes of related evolution equations and Lie symmetries. *J. Phys. A* **20** (1987), no. 16, 5435–5446. (S. I. Rosencrans) **89a:35013** 35A30 (35Q20, 58G35)
- (with Miller, Willard, Jr.)  $q$ -series and orthogonal polynomials associated with Barnes' first lemma. *SIAM J. Math. Anal.* **19** (1988), no. 5, 1216–1231. (W. A. Al-Salam) **89m:33018** 33A65
- Kalnynya, D. A.** see **Kalniga, Dace**
- Kalocsai, Viktor** Sufficient condition on the global asymptotic stability of the zero equilibrium of a second-order differential equation. (Hungarian. English summary) *Alkalmaz. Mat. Lapok* **13** (1987/88), no. 1-2, 77–81. (L. Hatvani) **89a:34055** 34D05 (34D20)
- Kalogeropoulos, G.** (with Karcianias, N.) Relationships between invariant subspaces and deflating subspaces of a regular pair  $(F, G)$ . *Math. Balkanica (N.S.)* **2** (1988), no. 1, 54–63. (John Maroulas) **89k:15020** 15A22 (47A15)
- Kaloni, P. N.** (with Yu, Qin) A Cartesian-tensor solution of the Brinkman equation. *J. Engng. Math.* **22** (1988), no. 2, 177–188. (Summary) **89c:76078** 76S05
- Kalorkoti, K.** The trace invariant and matrix inversion. *Theoret. Comput. Sci.* **59** (1988), no. 3, 277–286. (Summary) **89i:68057** 68Q25
- Kaloutsidis, N.** (with Bacciotti, Andrea; Tsiniias, J.) Topological dynamics of control systems. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 483–496, *North-Holland, Amsterdam-New York*, 1986. (Summary) **89b:93006** 93A10 (49E15, 54H20)
- (with Tsiniias, J.) Prolongations and stability analysis via Lyapunov functions of dynamical polysystems. *Math. Systems Theory* **20** (1987), no. 2-3, 215–233. (Norihiko Adachi) **89g:93053** 93C20 (93D20)
- (with Tsiniias, J.) Controllable cascade connections of nonlinear systems. *Nonlinear Anal.* **11** (1987), no. 11, 1229–1244. (Mihail Voicu) **89b:93019** 93A20 (93B05, 93C10, 93C15)
- Efficient computation of multichannel Wiener filters with linear phase. *IEEE Trans. Circuits and Systems* **35** (1988), no. 4, 433–438. (Not in MR) **93E11**
- Kalovics, Ferenc** An algorithm for the best Chebyshev approximations. *Ann. Univ. Sci. Budapest. Sect. Comput.* **6** (1985), 19–25 (1987). (H. L. Loeb) **89b:41033** 41A50 (65D15)
- A fast iteration for uniform approximation. (Russian and Czech summaries) *Apl. Mat.* **33** (1988), no. 4, 269–276. (C. Dierieck) **89i:65016** 65D15 (41A50)
- Kaloyerou, P. N.** Comments on the Hegerfeldt "paradox". *Phys. Lett. A* **129** (1988), no. 5-6, 285–290. (A. Crumeyrolle) **89f:81088** 81E05 (81B99)
- (with Vigier, J.-P.) Derivation of a nonlinear Schrödinger equation describing possible vacuum dissipative effects. *Phys. Lett. A* **130** (1988), no. 4-5, 260–266. (N. D. Sengupta) **89b:81044** 81C20
- (with Vigier, J.-P.) Evolution time Klein-Gordon equation and derivation of its nonlinear counterpart. *J. Phys. A* **22** (1989), no. 6, 663–673. (Not in MR) **81C05**
- Kalpakam, S.** (with Arivarigann, G.) A continuous review inventory system with semi-Markovian demands. *Mathematical modelling in science and technology* (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 1172–1177. (see **89d:00007**) **90B05**
- Kalpana, Km.** (with Srivastava, Meera) Ricci quarter symmetric metric connexion in Riemannian manifold. *Math. Soc. I* (1985), 93–102 (1986). (Adrian C. Albu) **89c:53015** 53B05 (53B20)
- (with Srivastava, Meera) Structure connexion in hyperbolic contact metric manifold. *Bull. Calcutta Math. Soc.* **79** (1987), no. 5, 307–313. (Hani Farran) **89c:53048** 53C05 (53C15, 53C25)
- (with Sinha, B. B.; Srivastava, Meera) On the  $F$ -concurrent connection. *Pure Appl. Math. Sci.* **26** (1987), no. 1-2, 43–49. (J. J. Etayo) **89c:53024** 53B05 (53C15)
- Kalpaizidou, Sofia** On the representation of finite multiple Markov chains by weighted circuits. *J. Multivariate Anal.* **25** (1988), no. 2, 241–271. (M. Iosifescu) **89g:60210** 60J10 (05C38, 60K99)
- Khintchine's constant for Lüroth representation. *J. Number Theory* **29** (1988), no. 2, 196–205. (M. Iosifescu) **89f:11105** 11K16
- Kalra, K. R.** (with Bagga, P. C.) Minimization of waiting cost in  $n \times m$  permutation flowshop scheduling with precedence constraints. *Indian J. Management Systems* **3** (1987), no. 3, 127–132. (Summary) **89j:90149** 90B35
- (with Bansal, S. P.; Bagga, P. C.) Equivalent job for block of jobs in  $n \times 2$  flowshop scheduling with setup times separated. *Internat. J. Management Systems* **4** (1988), no. 3, 169–176. (Summary) **89k:90086** 90B35
- Kalra, M. S.** (with Hasan, A.) Comparison of some numerical schemes for the KdV equation. *Solitons* (Tiruchirappalli, 1987), 184–187, *Springer Ser. Nonlinear Dynamics*, Springer, Berlin-New York, 1988. (see **89b:00027**) **65M60**
- Kaltoffen, Erich** (with Krishnamoorthy, M. S.; Saunders, B. David) Fast parallel computation of Hermite and Smith forms of polynomial matrices. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 4, 683–690. (R. E. Funderlic) **89j:15004** 15A06 (15A18, 65F99, 65W03)
- Greatest common divisors of polynomials given by straight-line programs. *J. Assoc. Comput. Mach.* **35** (1988), no. 1, 231–264. (Heinrich Rolletschek) **89i:12002** 12-04 (68Q20, 68Q40)
- Kalton, N. J.** Compact convex sets and complex convexity. *Israel J. Math.* **59** (1987), no. 1, 29–40. (S. Rolewicz) **89a:46025** 46A55 (46A10)
- Unusual traces on operator ideals. *Math. Nachr.* **134** (1987), 119–130. (H. Jarchow) **89c:47070** 47D25
- Harmonic functions in non-locally convex spaces. *Arch. Math. (Basel)* **50** (1988), no. 6, 538–549. (Michèle Mastrangelo-Dehen) **89i:31011** 31C05 (46E40)
- Sums of idempotents in Banach algebras. *Canad. Math. Bull.* **31** (1988), no. 4, 448–451. (M. J. Crabb) **89i:46052** 46H05
- Nonlinear commutators in interpolation theory. *Mem. Amer. Math. Soc.* **73** (1988), no. 385, iv+85 pp. (Yu. A. Abramovich) **89h:47104** 47H99 (46E30, 46M35, 47B38)



- Kafits, A. L.** (with Zhubaev, N. Zh.; Karymsakov, K. U.; Kim, V. T.; Kozhabeok, Zh. T.; Nurzhanova, Sh. Zh.; Sarsenov, B. Sh.; Sinyayev, A. Ya.; Turekulova, A. N.) ★ Численные методы исследования двухмерных волн напряжений (в упругих и упругоэластических средах). (Russian) [Numerical methods for the study of two-dimensional stress waves (in elastic and elastoplastic media)] "Nauka" Kazakh. SSR, Alma-Ata, 1988. 216 pp. ISBN 5-628-00065-5 (Summary) **89g:73015** 73Dxx (65Mxx, 73-08, 73F15, 73F30)
- Kalagin, P. A.** (with Kuz'min, A. B.; Shramko, V. I.) The principle of absolute invariance in the functional control of information systems. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 11, 177-184. (Not in MR) **94A12**
- Kaluska, Marek** On a unified approach to a Cramér-Rao-type inequality. (Polish. English summary) *Mat. Stos.* **30** (1987), 5-20, 127 (1988). (I. Vajda) **89f:62024** 62F10
- Kaluzhnia, L. A.** (with Zefirov, N. S.; Trach, S. S.) A generalization of the concept of the wreath product of permutation groups and its application for the description of the structural formulas of chemical compounds. (Russian) *Investigations in the algebraic theory of combinatorial objects* (Russian), 175-186, *Vsesoyuz. Nauch.-Issled. Inst. Sistem. Issled.*, Moscow, 1985. (N. Trinajstić) **89c:20032** 20E22 (05C99, 20B99, 82A99)
- (with Zavalo, S. T.; Drozd, Yu. A.) Development of the algebraic school at Kiev University. (Ukrainian. Russian summary) *Viznik Kiiv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 48-52, 125. (Editors) **89g:01064** 01A72 (01A73)
- (with Beletskii, P. M.; Feinberg, V. Z.) ★ Kranzprodukte. (German) [Wreath products] With English, French and Russian summaries. Teubner-Texte zur Mathematik [Teubner Texts in Mathematics], 101. BSB B. G. Teubner Verlagsgesellschaft, Leipzig, 1987. 167 pp. ISBN 3-322-00425-2 (Ya. G. Berkovich) **89g:20001** 20-02 (20E22)
- Kalvin, Alan** (with Wolfson, Haim; Schonberg, Edith; Lamdan, Yeheskel) Solving jigsaw puzzles by computer. *Ann. Oper. Res.* **12** (1988), no. 1-4, 51-64. (Not in MR) **90C27** (90B30)
- Kalyabin, G. A.** On the moduli of smoothness of functions given on a sphere. (Russian) *Dokl. Akad. Nauk SSSR* **294** (1987), no. 5, 1051-1054. (D. K. Ugulava) **89c:41019** 41A17
- (with Lizorkin, P. I.) Spaces of functions of generalized smoothness. *Math. Nachr.* **133** (1987), 7-32. (L. I. Nikolova) **89b:46046** 46E35
- Characterization of spaces of Besov-Lizorkin-Triebel type by means of generalized differences. (Russian) Studies in the theory of differentiable functions of several variables and its applications, XII (Russian). *Trudy Mat. Inst. Steklov.* **181** (1988), 95-116, 270. (S. K. Vodop'yanov) **89c:46047** 46E35
- Kalyaev, A. V.** (with Tishchenko, A. G.) Organization of parallel-sequential algorithms for base problems of linear algebra with structural realization of large-scale operations. (Russian. English summary) *Kibernetika (Kiev)* **1987**, no. 6, 98-100, 135. (Not in MR) **65W05** (03F30)
- Kalyagin, V. A.** Simultaneous Padé approximants of two logarithms. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 127-129, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) 41A21
- (with Aptekarev, A. I.) Analytic properties of two-dimensional continued  $P$ -fraction expansions with periodic coefficients and their simultaneous Padé-Hermite approximants. *Rational approximation and applications in mathematics and physics (Lańcut, 1985)*, 145-160, *Lecture Notes in Math.*, 1237, Springer, Berlin-New York, 1987. (Guillermo López Lagomasino) **89c:30006** 30B70 (30E15, 41A21)
- Kalyákin, L. A.** Asymptotic transitions from discrete to continuous models. (Russian. English summary) (Russian) *Teoret. Mat. Fiz.* **76** (1988), no. 3, 323-327; translation in *Theoret. and Math. Phys.* **76** (1988), no. 3, 891-894. (Piotr Biler) **89c:35215** 35Q20 (35R10, 58F07)
- The matching method in a problem of asymptotic decomposition of a plane wave packet in a dispersive medium. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 5, 1048-1052; translation in *Soviet Math. Dokl.* **38** (1989), no. 1, 174-178. (Piotr Biler) **89c:35216** 35Q20 (35C20, 81C05)
- Kalyana Rama, S.** (with Louis, Jan; Ovrut, Burt A.) Topological approach to Weyl and super-Weyl anomalies in string theory. *Phys. Rev. D* (3) **38** (1988), no. 10, 3094-3104. (Frans R. Klinkhamer) **89m:81152** 81E99 (58G40, 81C35, 81E30)
- Kalyanov, E. V.** (with Starkov, S. O.) The effect of noise on a self-induced oscillating system with delay. (Russian) *Pisma Zh. Tekhn. Fiz.* **14** (1988), no. 11, 961-964. (Not in MR) **70K99** (58F12)
- Kalybaev, A. A.** (with Erzhano, Zh. S.) A condition of Betti type for mechanical systems with an energy conservation law. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1988**, no. 5, 83-86. (Summary) **89j:58114** 58F27 (34C35, 70F15, 70K20)
- Kalyuzhnaia, S. A.** Boolean systems of functional dependencies. (Russian) *Problems of bionics*, No. 38 (Russian), 50-55, ii, "Vishcha Shkola", Kharkov, 1987. (Summary) **89c:68039** 68P15
- Kamachkin, A. M.** Qualitative analysis of a nonlinear control system with double hysteresis. (Russian) *Analysis and synthesis of control systems* (Russian), 53-58, 177, *Voprosy Mekh. Protess. Upravl.*, 10, Leningrad. Univ., Leningrad, 1987. (Piotr Grabowski) **89c:34136** 34K35 (93C10)
- Kamada, Masaru** (with Torachi, Kazuo; Itahshi, Shuichi; Mori, Ryoichi) Window functions obtained by convolution integrals of rectangular windows. *Internat. J. Systems Sci.* **19** (1988), no. 12, 2491-2505. (Not in MR) **94A12**
- (with Torachi, Kazuo; Ikebe, Yasuhiko; Mori, Ryoichi) Orthonormal basis for spline signal spaces. *Internat. J. Systems Sci.* **20** (1989), no. 1, 157-170. (B. D. Donevski) **89m:94004** 94A11 (41A15)
- Kamae, Tetsuro** Cyclic extensions of odometer transformations and spectral disjointness. *Israel J. Math.* **59** (1987), no. 1, 41-63. (V. Drobot) **89c:28026** 28D15 (11K16)
- Kamal, Mahmood A.** (with Müller, Bruno J.) The structure of extending modules over Noetherian rings. *Osaka J. Math.* **25** (1988), no. 3, 539-551. (Yonghua Xu) **89m:16040** 16A52 (16A33)
- Kamaletdinov, B. Zh.** Ternary sequences with ideal periodic autocorrelation properties. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 4, 157-162; translated from *Radiotekhn. i Elektron.* **32** (1987), no. 1, 77-82 (Russian). (Summary) **89b:62152** 62M10 (94A14)
- An optimal ensemble of binary sequences based on the union of ensembles of Kasami sequences and bent functions. (Russian) *Problemy Peredachi Informatsii* **24** (1988), no. 2, 104-107; translation in *Problems Inform. Transmission* **24** (1988), no. 2, 167-169. (Summary) **89h:94001** 94A11
- (with Ipatov, V. P.) Ensembles of  $p$ -ary sequences of bent functions. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 3, 26-32, 86; translation in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 3, 34-43. (Summary) **89d:94009** 94A11 (05A15)
- Kamata, Masaru** (with Osanai, A.; Saito, Satoru) An application of half-order differential operators to two-dimensional supersymmetric theories. (Italian and Russian summaries) *Nuovo Cimento A* (11) **99** (1984), no. 4, 471-488. (B. Spence) **89g:81088** 81E99 (58G05, 81E30)
- Kambara, Hikoji** (with Oshiro, Kiyoichi) On  $P$ -exchange rings. *Osaka J. Math.* **25** (1988), no. 4, 833-842. (Iuliu Crivei) **89m:16030** 16A45
- Kambartel, Friedrich** see Frege, Gottlob, **89g:01068**
- Kambe, Tsutomu** (with Giga, Yoshikazu) Large time behavior of the vorticity of two-dimensional viscous flow and its application to vortex formation. *Comm. Math. Phys.* **117** (1988), no. 4, 549-568. (Summary) **89k:35182** 35Q10 (35K10, 76D05, 76E99)
- Kamber, Franz W.** (with Tondeur, Philippe) de Rham-Hodge theory for Riemannian foliations. *Math. Ann.* **277** (1987), no. 3, 415-431. (Introduction) **89d:53070** 53C12 (57R30, 58A12, 58G05)
- (with Ruh, Ernst A.; Tondeur, Philippe) Comparing Riemannian foliations with transversally symmetric foliations. *J. Differential Geom.* **27** (1988), no. 3, 461-475. (Min-oo Maung) **89h:53079** 53C12 (53C35, 57R30)
- Kamberi, Dervish** On symmetric block design of order 49. (Albanian summary) *Punime Mat.* No. 2 (1987), 49-54. (Dieter Jungnickel) **89i:05049** 05B05
- Kamberov, Georgi** (with DeTurck, D.) A singular problem in elasticity theory. *Differential geometry: the interface between pure and applied mathematics* (San Antonio, Tex., 1986), 77-84, *Contemp. Math.*, 68, Amer. Math. Soc., Providence, RI, 1987. (L. P. Lebedev) **89f:73016** 73C50 (58G40)
- Kambo, N. S.** (with Handa, B. R.) Power of a test for equality of  $K$  exponential location parameters. *Comm. Statist. Theory Methods* **16** (1987), no. 9, 2755-2769. (Summary) **89h:62037** 62F03
- Kamburov, V. F.** (with Kolesov, V. S.; Kolesov, Yu. S.; Ukolov, V. V.) Formulas for self-induced oscillations in a two-level model of a chemical laser with an unstable telescopic resonator. (Russian) *Qualitative and approximate methods for investigating operator equations* (Russian), 11-16, 140, *Yaroslav. Gos. Univ., Yaroslavl*, 1986. (Summary) **89c:78016** 78A60
- Kamburovski, Jerzy** On the computational complexity of the shortest route and maximum flow problems in stochastic networks. *Found. Control Engrg.* **11** (1986), no. 4, 167-175. (Summary) **89i:90034** 90B15 (68Q25)
- An overview of the computational complexity of the PERT shortest route and maximum flow problems in stochastic networks. *Stochastics in combinatorial optimization* (Udine, 1986), 187-196, *World Sci. Publishing, Singapore*, 1987. (From the introduction) **89j:90115** 90B15
- Kameda, Masumi** Invariant submanifolds in a Riemannian product manifold. *TRU Math.* **22** (1986), no. 1, 19-29. (Chuan Yu Ma) **89g:53079** 53C40
- Submanifolds in a Riemannian product manifold of Sasakian manifolds. II. *TRU Math.* **23** (1987), no. 1, 17-24. (Aurel Bejancu) **89c:53037** 53C40 (53C25)
- Non-negatively curved  $C$ -totally real submanifolds in a Sasakian manifold. *Tsukuba J. Math.* **11** (1987), no. 2, 265-272. (Ion Mihai) **89d:53098** 53C40 (53C25)
- Kamel, Elzaburo** A satellite to Furuta's inequality. *Math. Japon.* **33** (1988), no. 6, 883-886. (Jack D. Gray) **89m:47011** 47A60 (47B15)
- Kamel, Masato** Congruences of Ankeny-Artin-Chowla type for pure quartic and septic fields. *Nagoya Math. J.* **108** (1987), 131-144. (Wells Johnson) **89a:11107** 11R16 (11R21, 11R29)
- Kamel, M. S.** (with Ismail, M. A.) Multidimensional data clustering utilizing hybrid search strategies. *Pattern Recognition* **22** (1989), no. 1, 75-89. (Not in MR) **68T10**
- Kamen, Edward W.** (with Poola, K. R.; Khargonekar, Pramod P.) Polynomial and stable proper factorizations of transfer-function matrices for linear time-varying systems. *Frequency domain and state space methods for linear systems* (Stockholm, 1985), 59-72, *North-Holland, Amsterdam-New York*, 1986. (Zbigniew Nahorski) **89d:93020** 93B15 (93B25, 93C05, 93C50, 93C55)
- The poles and zeros of a linear time-varying system. Conference on linear and nonlinear mathematical control theory. *Rend. Sem. Mat. Univ. Politec. Torino* **1987**, Special Issue, 125-148. (Summary) **89c:93113** 93B55 (93C05, 93C50, 93C55, 93D20)
- Kamenarović, Ivan** (with Pavković, Boris J.) The equiform differential geometry of curves in the Galilean space  $G_3$ . (Serbo-Croatian summary) *Glas. Mat. Ser. III* **22**(42) (1987), no. 2, 449-457. (K. Strubecker) **89f:53021** 53A40
- (with Pavković, Boris J.) The general solution of the Frenet system in the doubly isotropic space  $I_2^2$ . (Serbo-Croatian summary) *Rad Jugoslav. Akad. Znan. Umjet.* No. 428 (1987), 17-24. (Hans Sachs) **89m:53028** 53A35
- Kamenskii, V. S.** see Davison, Mark L., **89b:62130**
- Kamerina, L. A.** Generalized characteristic functions of linear operators in a space with involution. (Russian) *Functional analysis*, No. 26 (Russian), 115-121, *Ul'yanovsk. Gos. Ped. Inst., Ul'yanovsk*, 1986. (T. Ya. Azizov) **89g:47015** 47A45 (47B50)
- Kameyama, Michitaka** (with Huang, Xi Yue; Higuchi, Tatsuo) Design of a time-optimal digital control system for a DC-servomotor with amplitude limitation. *Systems Comput. Japan* **19** (1988), no. 2, 64-73. (Not in MR) **93C75** (93B50)
- Kamgar-Parisi, B.** (with de Schepper, I. M.; Cohen, E. G. D.) On the calculation of equilibrium time correlation functions in hard-sphere fluids. *J. Statist. Phys.* **54** (1989), no. 1-2, 273-313. (Carlo Cercignani) **89m:82039** 82A40 (82A50)
- Kamien, Morton I.** (with Tauman, Yair; Zang, Israel) Optimal license fees for a new product. *Math. Social Sci.* **16** (1988), no. 1, 77-106. (Summary) **89g:90059** 90A14 (90A11, 90D10)
- Kamien, Randall D.** (with Politzer, H. David; Wise, Mark B.) Universality of random-matrix predictions for the statistics of energy levels. *Phys. Rev. Lett.* **60** (1988), no. 20, 1995-1998. (Claude Itzykson) **89d:81126** 81G35 (82A31)
- Kamilov, M. Kh.** Estimates for double trigonometric sums. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **30** (1987), no. 8, 471-474 (1988). (Ekkhard Krätzel) **89j:11074** 11L40
- Kaminura, Kiyoshi** (with Fukuyama, Takeshi) Dynamical time variable in cosmology. *Modern Phys. Lett. A* **3** (1988), no. 4, 333-343. (C. Gauthier) **89f:83115** 83F05
- (with Fukuyama, Takeshi) Anomalies in two-dimensional gravity. *Phys. Lett. B* **200** (1988), no. 1-2, 75-79. (Gheorghe Zet) **89c:81120** 81E99 (81E13, 83C45)

- (with Tatewaki, Machiko) Modified superstring in the light-cone gauge. *Phys. Lett. B* 205 (1988), no. 2-3, 257-261. (Summary) **89d:81100** 81E99 (81E30)
- Kamimura, Tsutomu** (with Tang, Adrian) Continuous auxiliary relations. *Mathematical foundations of programming language semantics* (New Orleans, LA, 1987), 364-371, *Lecture Notes in Comput. Sci.*, 298, Springer, Berlin-New York, 1988. (Summary) **89c:68060** 68Q55 (06B35)
- Kamin, Samuel** The expressive theory of stacks. *Acta Inform.* 24 (1987), no. 6, 695-709. (Alexey P. Stolboushkin) **89d:68054** 68Q60 (03B70)
- Kamin, Shoshana** (with Peletier, L. A.; Vázquez, Juan Luis) Classification de solutions singulières à l'origine pour une équation de la chaleur non linéaire. (English summary) [Classification of singular solutions of a nonlinear heat equation] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 13, 595-598. (Maurice Gauthier) **89d:35085** 35K55
- (with Ughi, M.) On the behaviour as  $t \rightarrow \infty$  of the solutions of the Cauchy problem for certain nonlinear parabolic equations. *J. Math. Anal. Appl.* 128 (1987), no. 2, 456-469. (From the introduction) **89m:35029** 35B40 (35K50)
- Elliptic perturbation for linear and nonlinear equations with a singular point. *J. Analyse Math.* 50 (1988), 241-257. (Walter G. Kelley) **89j:35023** 35B25 (35F99, 35J25)
- Kaminker, Jerome** (with Xia, Jingbo) The spectrum of operators elliptic along the orbits of  $R^n$  actions. *Comm. Math. Phys.* 110 (1987), no. 3, 427-438. (R. J. Plymen) **89b:58220** 58G25 (46L99, 58G12)
- (with Douglas, Ronald G.; Hurder, Steven) Toeplitz operators and the eta invariant: the case of  $S^1$ . *Index theory of elliptic operators, foliations, and operator algebras* (New Orleans, LA/Indianapolis, IN, 1986), 11-41, *Contemp. Math.*, 70, Amer. Math. Soc., Providence, RI, 1988. (John Roe) **89j:58132** 58G12 (19K56, 46L80, 47B35, 57R32)
- see also *Index theory of elliptic operators, foliations, and operator algebras*, **89a:46003**
- Kaminogō, Takashi** Continuous dependence of solutions for integro-differential equations with infinite delay. *J. Math. Anal. Appl.* 129 (1988), no. 2, 307-314. (T. A. Burton) **89c:45004** 45D05 (34K05)
- Kamińska, Anna** (with Hudzik, Henryk; Kurc, Wiesław) Uniformly non- $(f_1)$  Musielak-Orlicz spaces. (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 7-8, 441-448. (Barry Turett) **89f:46060** 46E30
- (with Hudzik, Henryk; Musielak, Julian) On the convexity coefficient of Orlicz spaces. *Math. Z.* 197 (1988), no. 2, 291-295. (K. Sundaresan) **89b:46038** 46E30
- Kaminskas, Vytautas** (with Sakalauskas, Eligijus) An algorithm for the identification of linear distributed-parameters systems. *Soviet J. Comput. Systems Sci.* 25 (1987), no. 6, 167-172 (1988); translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 3, 184-188, 223-224 (Russian). (Not in MR) **93B30** (93C05, 93C20)
- (with Vitkute, Daiva) Adaptive control of linear objects with internal feedback circuits. (Russian. English and Lithuanian summaries) *Statist. Problemy Upravleniya* No. 79 (1987), 61-76. (Not in MR) **93E12** (93C40)
- Kamiński, A.** (with Aniszczak, Bohdan; Burzyk, J.) Borel and monotone hierarchies and extension of Rényi probability spaces. *Colloq. Math.* 51 (1987), 9-25. (A. I. Dale) **89k:60004** 60A05 (28A05)
- (with Sherwood, H.; Taylor, M. D.) Doubly stochastic measures with mass on the graphs of two functions. *Real Anal. Exchange* 13 (1987/88), no. 1, 253-257. (Peter W. Day) **89f:28005** 28A12 (28A35)
- On the Urysohn condition and the convergence of probability distributions. *Czechoslovak Math. J.* 38(113) (1988), no. 1, 173-180. (O. Lipovan) **89a:60011** 60B10
- Kamiński, Brunon** Perfect  $\sigma$ -algebras of  $Z^2$ -actions with finite entropy. *Proceedings of the conference on ergodic theory and related topics, II* (Geirgental, 1986), 87-90, *Teubner-Texte Math.*, 94, Teubner, Leipzig, 1987. (Belaoslav Riečan) **89c:28030** 28D20
- Facteurs principaux d'une action de  $Z^d$ . (English summary) [Principal factors of a  $Z^d$ -action] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 19, 979-980. (Summary) **89j:28005** 28D20
- Kamiński, Jerzy Zdzisław** Photon correlation effects in scattering. *J. Phys. A* 21 (1988), no. 3, 699-707. (Adriaan Tipler) **89c:81221** 81K05 (78A60, 81F05)
- Kamiński, Michael** A linear time algorithm for residue computation and a fast algorithm for division with a sparse divisor. *J. Assoc. Comput. Mach.* 34 (1987), no. 4, 968-984. (Kevin S. McCurley) **89f:68033** 68Q40 (11Y16)
- An algorithm for polynomial multiplication that does not depend on the ring constants. *J. Algorithms* 9 (1988), no. 1, 137-147. (Kevin S. McCurley) **89c:68066** 68Q25 (11Y05, 12-04, 13-04, 68Q40)
- (with Kirkpatrick, David; Bshouty, Nader H.) Addition requirements for matrix and transposed matrix products. *J. Algorithms* 9 (1988), no. 3, 354-364. (D. Z. Spicer) **89m:68061** 68Q25 (15-04, 65F05)
- Cyclotomic polynomials and units in cyclotomic number fields. *J. Number Theory* 28 (1988), no. 3, 283-287. (Enric Nart) **89d:11014** 11C08 (11J86, 11R09, 11R27)
- Nonstandard connectives of intuitionistic propositional logic. *Notre Dame J. Formal Logic* 29 (1988), no. 3, 309-331. (J. A. Kalman) **89i:03015** 03B20
- Kamiński, W. A.** see *Newton's Philosophiae naturalis principia mathematica*, **89m:01042**
- Kamishima, Yoshinobu** Conformally flat 3-manifolds with compact automorphism groups. *J. London Math. Soc.* (2) 38 (1988), no. 2, 367-378. (Kyung Bai Lee) **89k:57083** 57S30 (57N10)
- Kamiya, Norio** (with Sawaki, Y.) An efficient BEM for some inhomogeneous and nonlinear problems. *Boundary elements VII, Vol. I, II* (Como, 1985), 13.59-13.68, *Comput. Mech., Southampton*, 1985. (see **89f:65003**) 65R20
- Kamiya, Tsueharu** (with Iwakiri, Takashi; Maekawa, Takayoshi) Note on  $SO(1, 3)$  and the Coulomb scattering. *Phys. Rep. Kumamoto Univ.* 8 (1988), no. 1, 1-11. (R. Mirman) **89m:81188** 81G10 (20C35, 22E70, 81C40)
- Kamiah, Andreas** The decline of the Laplacian theory of probability: a study of Stumpf, von Kries, and Meinong. *The probabilistic revolution, Vol. 1*, 91-116, *Bradford Book, MIT Press, Cambridge, MA-London*, 1987. (Summary) **89g:01037** 01A55 (01A60)
- Kamlesh** (with Kumar, Deepak) Mode condensation in a hierarchical system. *Phys. Rev. Lett.* 57 (1986), no. 24, 3101-3104. (Summary) **89a:82046** 82A68 (82A25)
- Kamolov, A. I.** (with Mirzakhmedov, M. A.) Asymptotically best approximations of random processes and fields. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 39 (1988), 90-97, 128. (Sándor Csörgö) **89f:60040** 60G12
- Kamont, Z.** (with Turo, Jan) A boundary value problem for quasilinear hyperbolic systems with a retarded argument. *Ann. Polon. Math.* 47 (1987), no. 3, 347-360. (Maria Cinquini-Cibrario) **89b:35163** 35R10 (35L50)
- (with Zacharek, S.) The line method for parabolic differential-functional equations with initial boundary conditions of the Dirichlet type. *Atti Sem. Mat. Fis. Univ. Modena* 35 (1987), no. 2, 249-262 (1988). (J. Mikliček) **89c:65120** 65M20
- Kamornikov, A. F.** (with Golik, S. I.) Efficient difference schemes with advancement for three-dimensional quasilinear hyperbolic equations of gradient type. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1987, no. 4, 45-51, 124-125. (A. O. Oganessian) **89a:65151** 65N10
- Symmetric locally one-dimensional difference schemes for solving a class of multidimensional quasilinear equations of hyperbolic type. (Russian) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1988, no. 5, 120. (Not in MR) 65M10
- Kamornikov, S. F.** Pronormal projectors of finite  $\omega$ -solvable groups. (Russian) *Problems in algebra*, No. 2 (Russian), 80-86, 127, "Universitet'skoe", Minsk, 1986. (Gerhard Pazderski) **89d:20018** 20D10
- Kamoun, M.** (with Titi, A.) Implicit self-tuning control for a class of large-scale systems. *Internat. J. Control* 49 (1989), no. 2, 713-722. (Summary) **89k:93131** 93C40 (93A15)
- Kamoun, Nouri** Représentations unitaires et opérateurs à trace. (English summary) [Unitary representations and trace operators] *J. Funct. Anal.* 77 (1988), no. 2, 233-260. (Rainer Felix) **89h:22028** 22E45 (22E30, 43A80, 47D10)
- Kamowitz, David** Multigrid applied to singular perturbation problems. *Appl. Math. Comput.* 25 (1988), no. 2, part II, 145-174. (Tassilo Küpper) **89c:65085** 65L10 (34E15)
- Kamowitz, Herbert** (with Wortman, Dennis) Compact weighted composition operators on Sobolev related spaces. *Rocky Mountain J. Math.* 17 (1987), no. 4, 767-782. (Summary) **89b:47043** 47B38 (47B05)
- (with Wortman, Dennis) Endomorphisms of an extremal algebra. *Proc. Amer. Math. Soc.* 104 (1988), no. 3, 852-858. (Jan Janas) **89g:47035** 47B38 (39B70, 46J99)
- Kamp, Johan A. W.** (with Asher, Nicholas M.) The knower's paradox and representational theories of attitudes. *Theoretical aspects of reasoning about knowledge* (Monterey, Calif., 1986), 131-147, *Morgan Kaufmann, Palo Alto, CA*, 1986. (Summary) **89a:03027** 03B45
- Kamp, L. P. J.** (with Miesen, R. H. M.; Sluiter, F. W.) On the application of the Boussinesq approximation for nonlinear gravity waves in the atmosphere. *Phys. Scripta* 38 (1988), no. 6, 857-859. (Summary) **89f:76029** 76B15 (76V05, 86A35)
- Kamp, Y.** (with Bourlaid, H.) Auto-association by multilayer perceptrons and singular value decomposition. *Biol. Cybernet.* 59 (1988), no. 4-5, 291-294. (Summary) **89f:92016** 92A09 (92A27)
- (with Delsarte, P.) Low rank matrices with a given sign pattern. *SIAM J. Discrete Math.* 2 (1989), no. 1, 51-63. (B. Kellogg) **89m:92014** 92A09 (15A03)
- van Kampen, Nico G.** Explicit calculation of a model for diffusion in nonconstant temperature. *J. Math. Phys.* 29 (1988), no. 5, 1220-1224. (J. R. Ockendon) **89c:80011** 80A20 (35K99)
- see also *van Beijeren, H. et al.*, (Not in MR) and *Meijer, Paul H. E.*, (Not in MR)
- Kämpke, Thomas** Optimal scheduling of jobs with exponential service times on identical parallel processors. *Oper. Res.* 37 (1989), no. 1, 126-133. (Summary) **89m:90086** 90B35
- Kamps, K. H.** (with Hardie, K. A.) The homotopy category of homotopy factorizations. *Algebraic topology, Barcelona, 1986*, 162-170, *Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (Ronald Brown) **89c:55028** 55Q05 (18G55)
- (with Hardie, K. A.) Homotopy over  $B$  and under  $A$ . (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* 28 (1987), no. 3, 183-196. (J. W. Rutter) **89f:55032** 55P99
- Note on the gluing theorem for groupoids and van Kampen's theorem. (French summary) *Cahiers Topologie Géom. Différentielle Catégoriques* 28 (1987), no. 4, 303-306. (Marek Golański) **89c:55012** 55Q20 (20L15, 55U35)
- Kamran, N.** (with Shadwick, W. F.) Cartan's method of equivalence and the classification of second-order ordinary differential equations. *Differential geometry: the interface between pure and applied mathematics* (San Antonio, Tex., 1986), 133-141, *Contemp. Math.*, 68, Amer. Math. Soc., Providence, RI, 1987. (H. Kilp) **89c:58008** 58A15 (34C20, 58F35)
- (with McLenaghan, R. G.) Separation of variables for higher spin, zero rest-mass field equations on type D vacuum backgrounds with cosmological constant. *Gravitation and geometry*, 279-292, *Monographs Textbooks Phys. Sci.*, 4, Bibliopolis, Naples, 1987. (Enric Verdaguer) **89g:83020** 83C40 (83C20)
- (with Légaré, M.; McLenaghan, R. G.; Winternitz, P.) The classification of complete sets of operators commuting with the Dirac operator in Minkowski space-time. *J. Math. Phys.* 29 (1988), no. 2, 403-411. (Mayer Humi) **89c:81019** 81C05 (53C80, 83C40)
- (with Hsu, Lucas) Symmetries of second-order ordinary differential equations and Elie Cartan's method of equivalence. *Lett. Math. Phys.* 15 (1988), no. 2, 91-99. (Kotik K. Lee) **89d:58004** 58A15 (58F35, 58F40, 58H05)
- (with Hsu, Lucas; Oliver, Peter J.) Equivalence of higher-order Lagrangians. II. The Cartan form for particle Lagrangians. *J. Math. Phys.* 30 (1989), no. 4, 902-906. (J. Christina) **89m:58063** 58F05 (58E30, 58F35)
- (with Hsu, Lucas) Classification of second-order ordinary differential equations admitting Lie groups of fibre-preserving point symmetries. *Proc. London Math. Soc.* (3) 58 (1989), no. 2, 387-416. (D. H. Sattinger) **89k:58312** 58H05 (22E05, 34A34, 58F35)
- Kamthan, P. K.** Nuclear operators and nuclear sequence spaces. *Modern analysis and its applications* (New Delhi, 1983), 49-64, *Prentice-Hall of India, New Delhi*, 1986. (Bernad Rosenberger) **89d:46008** 46A45 (47B10)
- (with Deheri, G. M.) Addendum: "Extended classes of analytic functions of several variables" [Libertas Math. 4 (1984), 21-59; MR 86m:46025]. *Libertas Math.* 8 (1988), 135-139. (From the introduction) **89j:46024** 46E10 (32A15, 32E25)
- Kamula, P. A.** (with Corneil, D. G.) Extensions of permutation and interval graphs. *Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing* (Boca Raton, Fla., 1987). *Congr. Numer.* 58 (1987), 267-275. (Alan Tucker) **89c:05076** 05C10
- Kamupingene, A. H.** (with Palev, T. D.) Irreducible finite-dimensional representations of the Lie superalgebra  $sl(1, 2)$  in a Gelfand-Zeitlin basis. (Russian summary) *Bulgar. J. Phys.* 14 (1987), no. 2, 124-137. (Qi Zhi Han) **89b:17030** 17B70 (17B10, 81C40)
- (with Antonov, N. A.) Generalized Hermitian representations of the Lie superalgebra  $sl(1, 3)$ . (Russian summary) *Bulgar. J. Phys.* 14 (1987), no. 5, 397-406. (Ronald C. King) **89i:17007** 17A70
- Kamynin, L. I.** On the existence of solutions of the Cauchy problem and of linear boundary value problems for a second-order parabolic equation in an unbounded domain. I.



- (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 11, 1937–1948, 2021. (A. Dzhrav) **89i:35074** 35K20 (35K15)
- (with Khimchenko, B. N.) An isotropic uniqueness theorem for the solution to the Cauchy problem for a second-order parabolic equation. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 1, 73–85, 182; translation in *Differential Equations* 24 (1988), no. 1, 57–66. (From the introduction) **89e:35063** 35K10 (35A05)
- On the existence of solutions of the Cauchy problem and of linear boundary value problems for a second-order parabolic equation in an unbounded domain. II. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 3, 445–455, 548; translation in *Differential Equations* 24 (1988), no. 3, 314–322. (A. Dzhrav) **89i:35075** 35K20 (35K15)
- A theorem on an oblique derivative for second-order parabolic equations that admit weak degeneration. I. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 4, 650–661, 732; translation in *Differential Equations* 24 (1988), no. 4, 456–464. (I. Lojczyk-Królikiewicz) **89i:35071a** 35K15 (35K65)
- A theorem on an oblique derivative for second-order parabolic equations that admit weak degeneration. II. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 5, 863–875, 918; translation in *Differential Equations* 24 (1988), no. 5, 572–582. (I. Lojczyk-Królikiewicz) **89i:35071b** 35K15 (35K65)
- A theorem on the interior derivative for a second-order uniformly parabolic equation. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 2, 280–283; translation in *Soviet Math. Dokl.* 37 (1988), no. 2, 373–376. (I. Lojczyk-Królikiewicz) **89i:35072** 35K15
- Kamyshan, A. V. (with Kamyshan, V. V.; Lesikova, T. I.) Construction of a correctness set for the discretization of an inverse problem. (Russian) *Vestnik Khar'kov. Gos. Univ.* No. 298 *Mat. Mekh. i Voprosy Uprav.* (1987), 108–111. (B. T. Polyak) **89e:65055** 65J10
- Kamyshan, V. V. (with Kamyshan, A. V.; Lesikova, T. I.) Construction of a correctness set for the discretization of an inverse problem. (Russian) *Vestnik Khar'kov. Gos. Univ.* No. 298 *Mat. Mekh. i Voprosy Uprav.* (1987), 108–111. (B. T. Polyak) **89e:65055** 65J10
- Kamyshova, G. A. (with Müller, B. M.) The Flamant problem for a half plane weakened by a periodic system of inclined slots. (Russian. Armenian summary) *Izv. Akad. Nauk Armyan. SSR Ser. Mekh.* 40 (1987), no. 6, 43–51, 66. (Summary) **89d:73011** 73C45
- rimooy Kan, A. H. G. see Rimooy Kan, A. H. G.
- Kan, Charn Huen A family of  $2 \times 2$  extreme matrices and a generalization of Clarkson's inequalities. *Linear and Multilinear Algebra* 21 (1987), no. 2, 191–199. (T. A. Gillespie) **89a:15024** 15A60 (15A33)
- Kan, D. M. (with Dwyer, W. G.) Equivalences between homotopy theories of diagrams. *Algebraic topology and algebraic K-theory* (Princeton, N.J., 1983), 180–205, *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (L. Gaunce Lewis, Jr.) **89d:55051** 55U35 (18A25, 18G30, 55U10)
- (with Dwyer, W. G.; Smith, Jeffrey H.) Towers of fibrations and homotopical wreath products. *J. Pure Appl. Algebra* 56 (1989), no. 1, 9–28. (Paul Selick) **89i:55009** 55P15 (55R35, 55S45, 55U10)
- Kanada, Hiroyuki (with Otufuji, T.; Saito, Sakae; Yasuno, M.; Seki, R.) Spin-orbit potential in the Skyrme model. *Phys. Lett. B* 205 (1988), no. 2–3, 145–150. (Summary) **89d:81123** 81G20
- Kanaev, B. G. Hexagonal three-webs formed by planes of the space  $P^4$ . (Russian) *Webs and quasigroups* (Russian), 92–97, Kalinin. Gos. Univ., Kalinin, 1988. (Vladislav Goldberg) **89f:53026** 53A60 (53A20)
- Kanal, Masahiko Tensorial ergodicity of geodesic flows. *Geometry and analysis on manifolds* (Katata/Kyoto, 1987), 142–157, *Lecture Notes in Math.*, 1339, Springer, Berlin-New York, 1988. (Midori Goto) **89i:58156** 58F11 (53C22, 58F17)
- Geodesic flows of negatively curved manifolds with smooth stable and unstable foliations. *Ergodic Theory Dynamical Systems* 8 (1988), no. 2, 215–239. (Wolfgang Ziller) **89i:58230** 58F15 (53C22, 58F17)
- Kanakis, L. (with Flytzanis, E.) Linear measure preserving transformations in Hilbert spaces. *Proceedings of the conference on ergodic theory and related topics, II* (Georgenthal, 1986), 53–56, Teubner-Texte Math., 94, Teubner, Leipzig, 1987. (R. Anantharaman) **89f:28039** 28D05 (47A35, 47B38)
- Kanal, Laveen (with Perlis, Donald) Uniform accountability for multiple modes of reasoning. *Internat. J. Approx. Reason.* 2 (1988), no. 3, 233–246. (Christian Posthoff) **89i:68106** 68T01 (03B48, 68T30, 92A25)
- Kanamori, Akihiro Diamonds, large cardinals, and ultrafilters. *Methods and applications of mathematical logic* (Campania, 1985), 35–42, *Contemp. Math.*, 69, Amer. Math. Soc., Providence, RI, 1988. (Eva Hartová) **89c:03084** 03E55 (03E45)
- Kanamori, Hirotoshi (with Matsumoto, Masao) Analysis of high-voltage waveforms in 3-phase 12-pulse type X-ray units. *J. Franklin Inst.* 325 (1988), no. 3, 345–358. (Not in MR) **94C05**
- Kanamori, Tadashi (with Horiuchi, Kenji) Polymorphic type inference in Prolog by abstract interpretation. *Logic programming '87* (Tokyo, 1987), 195–214, *Lecture Notes in Comput. Sci.*, 315, Springer, Berlin-New York, 1988. (see **89i:68137**) **68T25**
- (with Maeji, Machi) Top-down zooming diagnosis of logic programs. *Mathematical methods in software science and engineering* (Japanese). *Sūrikaiseikenkyūsho Kōkyūroku* No. 655 (1988), 147–166. (see **89i:68001**) **68T25**
- Kanapenas, Rimantas (with Norvaišas, Saulius; Petruškevičius, Raimondas; Čiegis, Raimondas) Numerical solution of a problem of the laser heating of metals. (Russian. English and Lithuanian summaries) *Differentsial'nye Uravneniya i Primenen.* No. 43 (1988), 49–67. (Summary) **89i:65155** 65P05 (80-08)
- Kanaroglou, P. S. (with Papageorgiou, Y. Y.) Disequilibrium in the Canadian regional system: preliminary evidence, 1961–1983. *Transformations through space and time* (Hansholm, 1985), 212–233, *NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci.*, 29, Nijhoff, Dordrecht, 1986. (see **89e:90072**) **90A30**
- Kanatsani, Ken-ichi (with Chou, Tsai-Chia) Shape from texture: general principle. *Artificial Intelligence* 38 (1989), no. 1, 1–48. (Summary) **89m:68140** 68U10
- Kanaun, S. K. Stationary waves in a homogeneous medium perturbed by an inclusion in the form of a curvilinear rod. *J. Appl. Math. Mech.* 51 (1987), no. 2, 227–236 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 2, 293–304 (Russian). (Summary) **89c:73021** 73C40 (80A20)
- Kanaya, Fumio (with Nakagawa, Kenji) A new geometric capacity characterization of a discrete memoryless channel. *IEEE Trans. Inform. Theory* 34 (1988), no. 2, 318–321. (Summary) **89c:94029** 94A40
- Kanazawa, Yuichiro An optimal variable cell histogram. *Comm. Statist. Theory Methods* 17 (1988), no. 5, 1401–1422. (Vishnu Dayal Jha) **89i:62063** 62G05
- Kanbur, S. M. Ravi (with Strömberg, Jan-Olov) Income transitions and income distribution dominance. *J. Econom. Theory* 45 (1988), no. 2, 408–416. (Summary) **89g:90041** 90A10
- Kanchan, V. R. (with Venkataraman, S.; Rao, Kamisetty Ramamohan; Mohanty, M.) Discrete transforms via the Walsh-Hadamard transform. (French and German summaries) *Signal Process.* 14 (1988), no. 4, 371–382. (Not in MR) **94A11**
- khe Kan Cher see Khe Kan Cher
- Kanda, Akira Recursion theorems and effective domains. *Ann. Pure Appl. Logic* 38 (1988), no. 3, 289–300. (Alexander Leitsch) **89h:03076** 03D45
- Kanda, Shigeru Some properties related to the T-condition of Finsler spaces. *TRU Math.* 22 (1986), no. 1, 39–51. (L. Tamásy) **89e:53034** 53B40
- Kandall, G. A. see Sallit, V. N., **89a:06001** and Postnikov, A. G., **89a:11001**
- Kandel, Abraham (with Schneider, Moti) Properties of the fuzzy expected value and the fuzzy expected interval. *Fuzzy Sets and Systems* 26 (1988), no. 3, 373–385. (Not in MR) **60E99** (03E72)
- (with Friedman, M.; Bar-Noy, T.; Blau, Matthias) Certain computational aspects of fuzzy decision trees. *Fuzzy Sets and Systems* 28 (1988), no. 2, 163–170. (Summary) **89i:68055** 68Q25 (03E72, 68T20)
- Kandel, Daniel Analysis of a dynamic renormalization-group technique. *Phys. Rev. B* (3) 38 (1988), no. 1, 486–492. (Summary) **89d:82041** 82A25 (82A68)
- (with Domany, Eytan; Ron, Dorit; Brandt, Achi; Loh, Eugene, Jr.) Simulations without critical slowing down. *Phys. Rev. Lett.* 60 (1988), no. 16, 1591–1594. (Summary) **89b:82007** 82-08 (82A68)
- Kandelaki, N. P. A collection of Gaussian random vectors. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* 127 (1987), no. 1, 21–23. (Summary) **89a:60039** 60E05 (60B11)
- (with Vakhaniya, N. N.) A generalization of the Hurwitz-Radon-Eckmann theorem, and orthogonal random vectors. (Russian) *Dokl. Akad. Nauk SSSR* 296 (1987), no. 2, 265–266; translation in *Soviet Math. Dokl.* 36 (1988), no. 2, 245–246. (Thomas Kühn) **89a:47061** 47B99 (60B99)
- Kandil, A. (with El-Shafee, M. E.) Regularity axioms in fuzzy topological spaces and  $F_R$ -proximities. *Fuzzy Sets and Systems* 27 (1988), no. 2, 217–231. (Run Sheng Yang) **89i:54011** 54A40 (03E72)
- abou-Kandil, H. see Abou-Kandil, H.
- Kandil, O. A. (with Liu, Chen-Huei; Wong, T. C.) Separation-bubble flow solution using Euler/Navier-Stokes zonal approach with downstream compatibility conditions. *J. Sci. Comput.* 3 (1988), no. 2, 121–137. (Not in MR) **76-08** (65P05)
- Kandilakis, Dimitrios (with Papageorgiou, Nikolaos S.) Nonsmooth analysis and approximation. *J. Approx. Theory* 52 (1988), no. 1, 58–81. (B. Sh. Mordukhovich) **89c:49012** 49A52 (41A50, 49A50, 49A55, 93B40, 93E25)
- Kandilarov, B. D. (with Decheva, V.) A theorem of Bloch and Bloch wave functions. (Bulgarian) *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* 30(63) (1988), no. 1, 22–25. (From the text) **89i:01046** 01A60 (81H99)
- Kando, Hisashi (with Iwazumi, Tetsuo; Ukai, Hiroyuki) Singular perturbation modelling of large-scale systems with multi-time-scale property. *Internat. J. Control* 48 (1988), no. 6, 2361–2387. (Peter A. Cook) **89k:93012** 93A15 (34E15)
- (with Ohashi, Yuichi; Ukai, Hiroyuki; Iwazumi, Tetsuo) Optimal design of FIR linear phase digital filters via convex quadratic programming method. *Internat. J. Systems Sci.* 19 (1988), no. 8, 1469–1482. (From the introduction) **89c:49003** 94A12 (49D40)
- Kandri-Rody, Abdellah (with Kapur, Deepak) Computing a Gröbner basis of a polynomial ideal over a Euclidean domain. *J. Symbolic Comput.* 6 (1988), no. 1, 37–57. (Bernd Sturmfels) **89i:13002** 13-04 (13F07, 68Q40, 68Q50)
- Kandrup, Henry E. Entropy and galaxy clustering. *Astrophys. J.* 326 (1988), no. 1, part 1, 77–83. (Summary) **89b:85002** 85A05
- Conditional probabilities and entropy in (minisuperspace) quantum cosmology. *Classical Quantum Gravity* 5 (1988), no. 6, 903–921. (A. D. Popova) **89g:83028** 83C45 (81B99, 83F05)
- “Discreteness fluctuations” and relaxation in stellar dynamical systems. *Monthly Notices Roy. Astronom. Soc.* 235 (1988), no. 4, 1157–1167. (Summary) **89m:85007** 85A05
- Entropy generation in curved spaces as a diagnostic for particle creation. *Phys. Lett. B* 202 (1988), no. 2, 207–210. (Summary) **89a:81093** 81E20 (83C47)
- Generalized Wigner functions in curved spaces: a new approach. *Phys. Rev. D* (3) 37 (1988), no. 8, 2165–2169. (Summary) **89f:81055** 81C25
- Entropy generation, particle creation, and quantum field theory in a cosmological spacetime: when do number and entropy increase? *Phys. Rev. D* (3) 37 (1988), no. 12, 3505–3521. (Markku Lehto) **89m:83051** 83C47 (81E20, 83F05)
- Particle number and random phases. *Phys. Rev. D* (3) 38 (1988), no. 6, 1773–1779. (Markku Lehto) **89m:83052** 83C47 (83F05)
- Kanda, Devendra Certain expansions associated with basic hypergeometric functions of three variables. *Indian J. Pure Appl. Math.* 19 (1988), no. 6, 562–566. (H. M. Srivastava) **89c:33003** 33A30
- Kandulski, Maciej The equivalence of nonassociative Lambek categorial grammars and context-free grammars. *Z. Math. Logik Grundlag. Math.* 34 (1988), no. 1, 41–52. (From the introduction) **89j:68091** 68Q50 (03D05)
- Phrase structure languages generated by categorial grammars with product. *Z. Math. Logik Grundlag. Math.* 34 (1988), no. 4, 373–383. (Hans-Joachim Goltz) **89j:68092** 68Q50
- Kane, V. D. (with Bhat-Nayak, Vasanti N.) Two families of simple and irreducible BIBDs. *Discrete Math.* 68 (1988), no. 2–3, 311–313. (Summary) **89i:05013** 05B05
- Kaneda, Masaharu On the inverse Kazhdan-Lusztig polynomials for affine Weyl groups. *J. Reine Angew. Math.* 381 (1987), 116–135. (Bhama Srinivasan) **89a:20048** 20G05 (20H15)
- Kaneko, Akira On Hartogs type continuation theorem for regular solutions of linear partial differential equations with constant coefficients. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* 35 (1988), no. 1, 1–26. (Richard F. Bonner) **89m:35043** 35E99 (32A45)
- Kaneko, Hideaki Generalized contractive multivalued mappings and their fixed points. *Math. Japon.* 33 (1988), no. 1, 57–64. (Simeon Reich) **89g:54098** 54H25 (54C60)
- Kaneko, Hiroshi (with Taniguchi, Setsuo) A stochastic approach to the Silov boundary. *J. Funct. Anal.* 74 (1987), no. 2, 415–429. (Jacques Vauthier) **89a:32015** 32E25 (46J15,

- 58G32)
- A stochastic resolution of a complex Monge-Ampère equation on a negatively curved Kähler manifold. *Osaka J. Math.* 24 (1987), no. 2, 307–319. (Eric Bedford) **89c:32034** 32F05 (31C99, 58G32)
  - Kaneko, Kunihiko** (with Crutchfield, James P.) Phenomenology of spatio-temporal chaos. *Directions in chaos*, Vol. 1, 272–353, *World Sci. Ser. Dir. Condensed Matter Phys.*, 3, World Sci. Publishing, Singapore, 1987. (Dieter H. Mayer) **89f:58087** 58F13 (58F08, 58F99)
  - (with Iba, Yukito; Akutsu, Yasuhiro) Phase transitions in 2-dimensional stochastic cellular automata. *Science on form (Sakura, 1985)*, 103–111, *Reidel, Dordrecht-Boston, MA*, 1987. (see **89g:82013**) **82A25** (58F08, 68Q80)
  - (with Crutchfield, James P.) Are attractors relevant to turbulence? *Phys. Rev. Lett.* 60 (1988), no. 26, 2715–2718. (Andrew C. Fowler) **89j:76057** 76F99 (58F13, 82A99)
  - Kaneko, Makoto** Estimates of the area integrals by the nontangential maximal functions. *Tôhoku Math. J.* (2) 39 (1987), no. 4, 589–596. (Takahide Kurokawa) **89f:42016** 42B25 (31B05)
  - Kaneko, Masanobu** (with Asada, Mamoru) On the automorphism group of some pro-fundamental groups. *Galois representations and arithmetic algebraic geometry (Kyoto, 1985/Tokyo, 1986)*, 137–159, *Adv. Stud. Pure Math.*, 12, North-Holland, Amsterdam-New York, 1987. (Helmut Koch) **89h:20053** 20F28 (20E18)
  - Kaneko, Noboru** (with Morita, Kazuhiko) The modified Lagrangian equations of general-relativistic hydrodynamics for a nonideal fluid. *Astrophys. and Space Sci.* 145 (1988), no. 2, 355–376. (Gh. Procopciuc) **89h:76050** 76Y05 (83C55)
  - Kaneko, Tetsuo** (with Fujihira, Hideyuki) Normal structure of weakly compact sets of Banach spaces. *Sci. Rep. Niigata Univ. Ser. A No. 24* (1988), 33–36. (S. Swaminathan) **89a:46038** 46B20
  - Kanellakis, A.** (with Tzafestas, Spyros G.; Theodorou, N.) Recent advances in the stability analysis of multi-dimensional systems. *Inform. Decision Tech.* 14 (1988), no. 3, 195–211. (Introduction) **89k:93191** 93D99 (39A11, 93C30, 93C55)
  - (with Theodorou, N.; Tzafestas, Spyros G.) A new stability test for two-dimensional discrete systems using bilinear continuous fractions. *IEEE Trans. Circuits and Systems* 36 (1989), no. 1, 141–144. (Not in MR) **39A11**
  - Kanellakis, Paris C.** (with Dwork, Cynthia; Stockmeyer, Larry) Parallel algorithms for term matching. *SIAM J. Comput.* 17 (1988), no. 4, 711–731. (Luis Fariñas del Cerro) **89m:68057** 68Q25 (03B35, 68T15)
  - Kanemaki, Shōji** On quasi-Sasakian manifolds. *Differential geometry (Warsaw, 1979)*, 95–125, *Banach Center Publ.*, 12, PWN, Warsaw, 1984. (Y. Tashiro) **89j:53035** 53C15 (53C25)
  - Kanemitsu, Mitsuo** On locally pseudovaluation domains. *Hiroshima Math. J.* 17 (1987), no. 3, 447–455. (Evan G. Houston) **89c:13029** 13G05 (13F05)
  - Kanemitsu, Shigeru** (with Nagasaka, Kenji; Rauzy, Gérard; Jau Shyong) On Benford's law: the first digit problem. *Probability theory and mathematical statistics (Kyoto, 1986)*, 158–169, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (Peter Schatte) **89d:11059** 11K06 (60E99)
  - On an exponential sum. I. *Prospects of mathematical science (Tokyo, 1986)*, 63–72, *World Sci. Publishing, Singapore*, 1988. (E. Stankus) **89j:11070** 11L03
  - Kanenobu, Masatsugu** (with Nishimura, Michiko) On the existence of limit cycle in Bonhoeffer-van der Pol equation. *Bull. Univ. Osaka Prefect. Ser. A* 34 (1985), no. 2, 241–246 (1986). (L. Pintér) **89m:34037** 34C05 (58F21, 92A09)
  - Kanenobu, Taizo** Unions of knots as cross sections of 2-knots. *Kobe J. Math.* 4 (1988), no. 2, 147–162. (G. Burde) **89m:57006** 57M25 (57Q45)
  - (with Birman, Joan S.) Jones' braid-plat formula and a new surgery triple. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 687–695. (Hugh Reynolds Morton) **89c:57003** 57M25
  - Deforming twist spun 2-bridge knots of genus one. *Proc. Japan Acad. Ser. A Math. Sci.* 64 (1988), no. 4, 98–101. (C. Kearton) **89k:57045** 57Q45
  - Kaneta, Hitoshi** (with Maruta, Tatsuya; Kikumasa, Isao) Singleton arrays in coding theory. *Bull. Austral. Math. Soc.* 37 (1988), no. 3, 333–335. (Vera Pless) **89j:94029** 94B05 (11T71)
  - Fourier-Laplace transforms decaying exponentially. *Math. Proc. Cambridge Philos. Soc.* 103 (1988), no. 2, 321–322. (Philip Heywood) **89a:42020** 42A38 (44A15)
  - Kanevskii, A. Ya.** Inversion of Marachkov's theorem in the case of nonuniqueness of solutions of equations. II. (Russian) *Lav. Mat. Ezhegodnik* No. 31 (1988), 48–53, 251. (Summary) **89c:34005** 34A10
  - Kanevsky, Dimitri** (with Colliot-Thélène, J.-L.; Sansuc, Jean-Jacques) Arithmétique des surfaces cubiques diagonales. [Arithmetic of diagonal cubic surfaces] *Diophantine approximation and transcendence theory (Bonn, 1985)*, 1–108, *Lecture Notes in Math.*, 1290, Springer, Berlin-New York, 1987. (Andrew Bremner) **89g:11051** 11G35 (11D25, 14J20)
  - Application of the conjecture on the Manin obstruction to various Diophantine problems. *Journées arithmétiques de Besançon (Besançon, 1985)*, *Astérisque* No. 147-148 (1987), 307–314, 345. (Joseph H. Silverman) **89b:11032** 11E76 (11D25, 11G35, 14G25, 14J20)
  - Kaneyama, Tamafumi** Torus-equivariant vector bundles on projective spaces. *Nagoya Math. J.* 111 (1988), 25–40. (T. Oda) **89i:14012** 14F05 (14L32)
  - Kaneyoshi, T.** Contribution to the theory of mixed Ising spin systems. *Z. Phys.* B 71 (1988), no. 1, 109–116. (Summary) **89d:82129** 82A68
  - Kaneyuki, Soji** A decomposition theorem for simple Lie groups associated with para-Hermitian symmetric spaces. *Tokyo J. Math.* 10 (1987), no. 2, 363–373. (Mogens Fløten-Jensen) **89g:22008** 22E15 (32M15, 53C35)
  - (with Asano, Hiroshi) On compact generalized Jordan triple systems of the second kind. *Tokyo J. Math.* 11 (1988), no. 1, 105–118. (Erhard Neher) **89k:17010** 17A40 (17B70, 17C20)
  - Kang, Dok Gil** (with Kim, Song Ryon) Optimal control problem of mixed parameter system expressed by the differential inclusion. (Korean. English summary) *Su-hak* 1987, no. 4, 1–4. (Not in MR) **49A50** (34A60)
  - On boundary problem of linear parabolic system. (Korean. English summary) *Cho-sôn In-min Kong-hwa-kuk Kwa-hak-wôn T'ong-bo* 1988, no. 3, 15–18. (Not in MR) **35K50**
  - Optimal control problem of mixed parameter system expressed by the differential inclusion. (Korean. English summary) *Su-hak* 1988, no. 1, 47–51. (Not in MR) **49E10** (90C)
  - Kang, G. T.** (with Sugeno, M.) Structure identification of fuzzy model. *Fuzzy Sets and Systems* 28 (1988), no. 1, 15–33. (Janusz Kacprzyk) **89c:93116** 93E12 (03E72, 94D05)
  - Kang, Li Shao** Parallel algorithms and domain decomposition. *Numerical methods for partial differential equations (Shanghai, 1987)*, 61–75, *Lecture Notes in Math.*, 1297, Springer, Berlin-New York, 1987. (Dirk Roose) **89f:65113** 65N20 (65W05)
  - (with Shao, Jian Ping; Lin, Cai Han) The weak approximation Galerkin method for the solution of evolution equations. (Chinese. English summary) *J. Math. (Wuhan)* 7 (1987), no. 4, 345–350. (Summary) **89k:65115** 65M60
  - (with Xiao, You En) The convergence rate of the Schwarz algorithms. (Chinese. English summary) *Comm. Appl. Math. Comput.* 2 (1988), no. 1, 59–67. (Shuzi Zhou) **89k:65129** 65N20 (65F10, 65L10)
  - Kang, Lian Cheng** (with Fang, Pei De) The general heat conduction problem with moving boundary in three-dimensional space. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 13 (1987), no. 4, 19–23. (Summary) **89a:35227** 35R35 (35K05, 80A20)
  - (with Qin, Sheng Li; Zhang, Ai Shu) The axisymmetric nonlinear bending problem for thin circular plates. (Chinese. English summary) *Acta Math. Sci. (Chinese)* 8 (1988), no. 2, 123–130. (Zheng You Zhu) **89j:73062** 73K10 (34E15)
  - Kang, Ming Chang** (with Chu, Hua; Ch'en, Yung Ch'iu) The corestriction of  $p$ -symbols. *Comm. Algebra* 16 (1988), no. 4, 735–741. (Jan van Geel) **89d:11011** 11R34 (11R70, 12G05, 16A16)
  - Metacyclic  $p$ -algebras. *Proc. Amer. Math. Soc.* 104 (1988), no. 3, 697–698. (David J. Saltzman) **89c:16023** 16A39 (12E15, 19C30)
  - Kang, Pyung-Lyun** A note on the variety of plane curves with nodes and cusps. *Proc. Amer. Math. Soc.* 106 (1989), no. 2, 309–312. (Mei Chu Chang) **89k:14046** 14H10 (14H20)
  - Kang, Qing De** A recurrence construction of LD-designs. (Chinese. English summary) *Acta Math. Appl. Sinica* 10 (1987), no. 4, 481–490. (Hugo S. Sun) **89c:05014** 05B05 (05B30)
  - Kang, Sheng Liang** (with Chen, Qi) Singular perturbation of nonlinear vector boundary value problem. *Appl. Math. Mech. (English Ed.)* 9 (1988), no. 9, 873–880; translated from *Appl. Math. Mech.* 9 (1988), no. 9, 817–824 (Chinese. English summary). (Shu Mei Miao) **89k:34099** 34E15 (34B15)
  - Kang, Song Jik** On the 2-recurrent properties of curvature tensors in Riemannian spaces. (Korean. English summary) *Su-hak* 1987, no. 3, 16–17. (H. S. Park) **89c:53025** 53B20
  - Kang, Tae-Ho** (with Pak, Jin Suk) Submanifolds with cubic geodesic immersed in quaternionic projective spaces. *Soochow J. Math.* 13 (1987), no. 1, 77–90. (Paolo Piccinni) **89a:53063** 53C40
  - (with Shin, Yong Ho) Note on quaternionic CR-submanifolds of a quaternionic projective space. (Korean summary) *Univ. Ulsan Rep. Natur. Sci. Engrg.* 18 (1987), no. 1, 43–46. (Shoichi Funabashi) **89b:53093** 53C40 (53C15)
  - (with Pak, Jin Suk) Planar geodesic submanifolds in a quaternionic projective space. *Geom. Dedicata* 26 (1988), no. 2, 139–155. (Shoichi Funabashi) **89k:53053** 53C40 (53C15)
  - Kang, Tai** (with Chen, Ting Huai; Yao, Rong) The connectivity of hypergraphs and the design of a fault-tolerant multibus. *Sci. Sinica Ser. A* 31 (1988), no. 5, 597–610. (Oleg Tarasow) **89m:68109** 68R10 (05C65, 68M15, 90B25, 94C30)
  - Kanguzhin, B. E.** (with Dzhumabaev, S. A.) On a nonregular problem on a finite segment. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1988, no. 1, 14–18. (Summary) **89d:34047** 34B25
  - Kani, Ernst J.** see Heilbronn, Hans Arnold, **89i:01140**
  - Kaniuskas, J.** (with Šimonis, V.; Rudzikis, E. B.) Application of groups of four- and five-dimensional rotations for describing the approximate symmetries of multi-electron atoms. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jarmala*, 1985), 473–478, "Nauka", Moscow, 1986. (see **89d:81002**) **81G40**
  - Kanibolot skii, M. A.** (with Gabysheva, L. N.) Optimization of the mass of a layered shell made up of a finite collection of materials. (Russian) *General problems and methods for the investigation of the plasticity and viscoelasticity of materials and structures (Russian)*, 29–35, 130, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1986. (Summary) **89h:49020** 49B36 (73K20, 73K40, 73L99, 93C75)
  - (with Urzhumtsev, Yu. S.) Synergism in the mechanics of laminated structures. (Russian) *General problems and methods for the investigation of the plasticity and viscoelasticity of materials and structures (Russian)*, 54–60, 132, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1986. (S. Matsyia) **89h:73031** 73K20 (73K40)
  - Kanie, Yukihiro** (with Tsuchiya, Akihiro) Unitary representations of the Virasoro algebra and branching law of representations of affine Lie algebras. *Probabilistic methods in mathematical physics (Katata/Kyoto, 1985)*, 385–419, *Academic Press, Boston, MA*, 1987. (H. de Vries) **89k:17040** 17B65 (17B67, 81E40)
  - (with Tsuchiya, Akihiro) Vertex operators in the conformal field theory on  $P^1$  and monodromy representations of the braid group. *Lett. Math. Phys.* 13 (1987), no. 4, 303–312. (H. Yamada (Zbl 631:17010)) **89f:58073** 58F07 (17B65, 81E40)
  - (with Tsuchiya, Akihiro) Vertex operators in conformal field theory on  $P^1$  and monodromy representations of braid group. *Conformal field theory and solvable lattice models (Kyoto, 1986)*, 297–372, *Adv. Stud. Pure Math.*, 16, Academic Press, Boston, MA, 1988. (Philippe Christe) **89m:81166** 81E99 (17B65, 17B67, 58F07, 81E40)
  - Kaniiovskii, Yu. M.** (with Arthur, W. Brian; Ermol'ev, Yu. M.) Strong laws for a class of path-dependent stochastic processes with applications. *Stochastic optimization (Kiev, 1984)*, 287–300, *Lecture Notes in Control and Inform. Sci.*, 81, Springer, Berlin-New York, 1986. (Gh. Oprisan) **89a:60076** 60F15 (60C05)
  - (with Arthur, W. Brian; Ermol'ev, Yu. M.) ★ Предельные теоремы для долей шаров в обобщенной схеме урны с шарами  $N$  цветов, добавляемыми порциями случайного объема. (Russian) [Limit theorems for fractions of balls in a generalized urn scheme with balls of  $N$  colors that can be supplemented with portions of random size] *Препринт [Preprint]*, 87–8, *Akad. Nauk Ukrain. SSR, Inst. Kibernet.*, Kiev, 1987, 25 pp. (Summary) **89d:60060** 60F17 (60C05, 60F15)
  - Convergence of one-dimensional stochastic processes of optimization and estimation in multiextremal problems. (Russian) *Analysis of stochastic systems by methods in operations research and reliability theory (Russian)*, 7–13, *Akad. Nauk Ukrain. SSR, Inst. Kibernet.*, Kiev, 1987. (Summary) **89d:60056** 60F15 (60J25, 90C31)
  - (with Arthur, W. Brian; Ermol'ev, Yu. M.) Adaptive growth processes that can be modeled by urn schemes. (Russian. English summary) *Kibernetika (Kiev)* 1987, no. 6, 49–57, 134. (Lyuben R. Mutafchiev) **89d:60011** 60C05 (60F05, 60F15)



- Limit theorems for stochastic approximation processes in the case when the regression function has several roots. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 2, 120–122, 136. (V. Dupac) **89i:62137** 62L20
- Limit behavior of fractions of balls in a generalized urn scheme with balls of two colors. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 39 (1988), 60–65, 126. (Lyuben R. Mutafchiev) **89i:60021** 60C05 (60F15)
- Sufficient conditions for the convergence of the method of successive approximations with discontinuous functions. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 3, 307–315, 477. (Summary) **89i:65151** 65K05 (90C30)
- Limit distribution of processes of stochastic approximation type when the regression function has several roots. (Russian) *Dokl. Akad. Nauk SSSR* 301 (1988), no. 6, 1308–1309; translation in *Soviet Math. Dokl.* 38 (1989), no. 1, 210–211. (Pawel J. Szablowski) **89m:62098** 62L20
- Kantschneider, Bernulf** Quantum mechanics—realism at bay? *Microphysical reality and quantum formalism*, Vol. 1, 2 (Urbino, 1985), 53–65, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89m:81018** 81B05
- Kaniuth, Eberhard** On topological Frobenius reciprocity for locally compact groups. *Arch. Math. (Basel)* 48 (1987), no. 4, 286–297. (Autorreferat (Zbl 595:22007)) **89d:22002** 22D10 (22D30, 43A05)
- Irreducible representations that cannot be separated from the trivial representation. *Miniconferences on harmonic analysis and operator algebras (Canberra, 1987)*, 156–160, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, Austral. Nat. Univ., Canberra, 1988. (Jean Ludwig) **89i:22010** 22D12 (22E27, 43A65)
- (with Bekka, Mohammed E. B.) Irreducible representations of locally compact groups that cannot be Hausdorff separated from the identity representation. *J. Reine Angew. Math.* 385 (1988), 203–220. (Detlef Horst Müller) **89j:22005** 22D10 (22A25)
- Kaniyets, V. A.** (with Lisovik, L. P.) Equivalence problems for A-transformers. (Russian) *Methods for the realization of programming systems (Russian)*, 75–79, vii, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. (see **89i:68003**) **68Q50** (68Q45)
- Kanjia, Yüchi** Convergence and divergence almost everywhere of spherical means for radial functions. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1063–1069. (Satoru Igari) **89i:42030** 42B25
- Kankaanpää, T.** (with Kurki-Suonio, R.) On the design of reactive systems. *BIT* 28 (1988), no. 3, 581–604. (Summary) **89i:68128** 68T05 (68Q50)
- Kankiya, M. K.** (with Gvaramadze, M. G.; Nikolashvili, Sh. S.; Peradze, R. K.) The moment method and its generalized form in connection with the calculation of neutron distributions in homogeneous media. (Russian. English and Georgian summaries) *Approximate methods for solving some problems of the transfer of neutron and gamma radiation (Russian)*, 98–116, 171–172, *Tbilis. Gos. Univ., Inst. Prikl. Mat., Tbilisi*, 1986. (see **89i:82003**) **82A75**
- Kanková, Vlasta** A note on the differentiability in two-stage stochastic nonlinear programming problems. *Kybernetika (Prague)* 24 (1988), no. 3, 207–215. (Riho Lepp) **89j:90161** 90C15
- Kannai, Yakar** (with Hurwicz, Leonid; Jordan, James S.) On the demand generated by a smooth and concavifiable preference ordering. *J. Math. Econom.* 16 (1987), no. 2, 169–189. (Beth Allen) **89i:90012** 90A06 (26B25, 90A10)
- Existence and smoothness for certain degenerate parabolic boundary value problems. *Osaka J. Math.* 25 (1988), no. 1, 1–18. (Zhao Qun Wu) **89i:35142** 35K20 (35K65)
- Kannan, D.** (with Hazareesingh, L.) Stochastic product integration and stochastic equations. *Stochastic partial differential equations and applications (Trento, 1985)*, 72–120, *Lecture Notes in Math.*, 1236, Springer, Berlin-New York, 1987. (Summary) **89i:60136** 60H05 (28A50, 60H10)
- Kannan, Rangachary** (with Ortega, Rafael) Global existence and approximation of solutions of hyperbolic equations arising in population dynamics. *Differential equations and applications, I, II (Russian)* (Ruse, 1985), 731–738, *Angel Kanchev' Tech. Univ., Ruse*, 1987. (R. C. MacCamy) **89i:20064** 92A15 (35L99)
- (with Nieto, Juan J.) Periodic solutions of semilinear partial differential equations of parabolic type. *Ann. Mat. Pura Appl. (4)* 148 (1987), 1–16. (H. J. Kuiper) **89i:35025** 35B10 (35K60)
- Kannan, Ravindran** (with Lovász, L.) Covering minima and lattice point free convex bodies. *Foundations of software technology and theoretical computer science (New Delhi, 1986)*, 193–213, *Lecture Notes in Comput. Sci.*, 241, Springer, Berlin-New York, 1986. (Claus-Peter Schnorr) **89i:11055** 11H06 (11H31, 11Y16, 68Q25)
- Algorithmic geometry of numbers. *Annual review of computer science*, Vol. 2, 231–267, *Annual Reviews, Palo Alto, CA*, 1987. (Joachim von zur Gathen) **89i:11131** 11Y16 (11H06, 11J69, 68Q40)
- Minkowski's convex body theorem and integer programming. *Math. Oper. Res.* 12 (1987), no. 3, 415–440. (Uwe Zimmermann) **89i:90079** 90C10 (68Q25)
- (with Lovász, L.) Covering minima and lattice-point-free convex bodies. *Ann. of Math. (2)* 128 (1988), no. 3, 577–602. (J. M. Wills) **89i:52020** 52A43 (11H06, 11H31, 52A45, 90C10)
- (with Lenstra, A. K.; Lovász, L.) Polynomial factorization and nonrandomness of bits of algebraic and some transcendental numbers. *Math. Comp.* 50 (1988), no. 181, 235–250. (From the introduction) **89j:68061** 68Q20 (11A51, 11A63, 11J99, 11Y16, 68Q25)
- (with Frieze, A. M.; Hastad, Johan; Lagarias, J. C.; Shamir, Adi) Reconstructing truncated integer variables satisfying linear constraints. Special issue on cryptography. *SIAM J. Comput.* 17 (1988), no. 2, 262–280. (Harald Niederreiter) **89d:11115** 11Y16 (11T71, 94A60)
- see also IEEE Symposium: Foundations of Computer Science, **89i:68001**
- Kannan, Sampath** (with Brassard, Gilles) The generation of random permutations on the fly. *Inform. Process. Lett.* 28 (1988), no. 4, 207–212. (Summary) **89i:68016** 68P05 (68Q20)
- Kannan, V.** (with Rajagopalan, Minakshisundaram) Topological characterization of some countable metric spaces. (Italian summary) *Boll. Un. Mat. Ital. A (7)* 1 (1987), no. 3, 351–357. (J. M. Aarts) **89i:54040** 54E65 (54E35)
- (with Jayanthan, A. J.) Spaces every quotient of which is metrizable. *Proc. Amer. Math. Soc.* 103 (1988), no. 1, 294–298. (Vesko Valov) **89i:54017** 54B15 (54C10, 54D10, 54E35, 54E45)
- Kannappan, P.** Characterization of some measures of information theory and the sum form functional equations. Generalized directed divergence. I. *Uncertainty in knowledge-based systems (Paris, 1986)*, 385–394, *Lecture Notes in Comput. Sci.*, 286, Springer, Berlin-New York, 1987. (Răzvan Andonie) **89i:94028** 94A17 (39B20)
- On some functional equations from additive and nonadditive measures. *V.I. J. Math. Phys. Sci.* 22 (1988), no. 1, 67–77. (Summary) **89i:94029** 94A17 (39B40)
- (with Chung, J. K.; Ng, C. T.) On two trigonometric functional equations. *Math. Rep. Toyama Univ.* 11 (1988), 153–165. (Shigeru Haruki) **89j:39010** 39B30 (39B50)
- Kanno, Hiroaki** (with Inami, T.; Kubota, Takahiro) Hexagon gauge anomaly of the type-I superstring in the path integral method. *Phys. Lett. B* 199 (1987), no. 3, 389–394. (Summary) **89i:81133** 81E99 (81C35, 81E30)
- (with Nishimura, Kimihide; Tamekiyo, Akira) Two-point functions on superpore and supermodular invariance. *Phys. Lett. B* 202 (1988), no. 4, 525–529. (Jeffrey M. Rabin) **89i:81132** 81E20 (81E30, 81E40, 83E30)
- Algebraic cohomology versus topological cohomology in constructing the Wess-Zumino term of the  $\sigma$ -model. *Phys. Lett. B* 206 (1988), no. 1, 81–85. (Enore Guadagnini) **89i:81253** 81G20 (81E13)
- Kano, Mikio** (with Enomoto, Hikoe; Ota, Katsuhiro) A sufficient condition for a bipartite graph to have a  $k$ -factor. *J. Graph Theory* 12 (1988), no. 1, 141–151. (H. Joseph Straight) **89i:05131** 05C70
- (with Cui, Yu Ting) Some results on odd factors of graphs. *J. Graph Theory* 12 (1988), no. 3, 327–333. (Dieter Kratsch) **89i:05083** 05C70
- Kano, Takeshi** see *Prospects of mathematical science*, **89i:00022**
- Kano, Yutaka** (with Shapiro, Alexander) On asymptotic variances of uniqueness estimates in factor analysis. *South African Statist. J.* 21 (1987), no. 2, 131–139. (Yasuko Chikuse) **89i:62072** 62H25
- Kanoh, Satoru** The reduction of the width of confidence bands in linear regression. *J. Amer. Statist. Assoc.* 83 (1988), no. 401, 116–122. (Yasuko Chikuse) **89i:62106** 62J05 (62F25)
- Kanovich, M. I.** A general method for constructing concrete strongly independent propositions. (Russian) *Dokl. Akad. Nauk SSSR* 296 (1987), no. 5, 1046–1050; translation in *Soviet Math. Dokl.* 36 (1988), no. 2, 348–352. (Roman Murawski) **89i:03074** 03D35
- Kansa, E. J.** Shock computations with adaptive mesh refinement and moving grids. Hyperbolic partial differential equations. V. *Comput. Math. Appl.* 15 (1988), no. 6–8, 623–634. (Summary) **89i:76010** 76–08 (76L05)
- Numerical simulation of three phase porous flow under shock conditions. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 180–185. (see **89d:00007**) **76T05** (76S05)
- Kant, Immanuel** see *Krüger, Lorenz*, **89i:01036** and *Hintikka, Jaakko*, **89i:03004**
- Kanter, Ide** Potts-glass models of neural networks. *Phys. Rev. A* (3) 37 (1988), no. 7, 2739–2742. (Summary) **89i:92023** 92A09 (82A68)
- Asymmetric neural networks with multispin interactions. *Phys. Rev. A* (3) 38 (1988), no. 11, 5972–5975. (Summary) **89i:92031** 92A09 (82A57)
- Inhomogeneous magnetization in dilute asymmetric and symmetric systems. *Phys. Rev. Lett.* 60 (1988), no. 19, 1891–1894. (Muthiah Daniel) **89i:82057** 82A57
- Kanto, Antti J.** Covariances between estimated autocorrelations of an ARMA process. *Econom. Lett.* 26 (1988), no. 3, 253–258. (Summary) **89i:62125** 62M10
- Kantor, M. J.** (with Kantor, P. B.) Decision making with barely any information: the role of mixed strategies. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 2 (Laramie, WY, 1985 and Seattle, WA, 1986/1987), 421–426, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (Introduction) **89j:90312** 90D35 (03B48)
- Kantor, P. B.** (with Kantor, M. J.) Decision making with barely any information: the role of mixed strategies. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 2 (Laramie, WY, 1985 and Seattle, WA, 1986/1987), 421–426, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (Introduction) **89j:90312** 90D35 (03B48)
- Kantor, W. M.** Classification of 2-transitive symmetric designs. *Graphs Combin.* 1 (1985), no. 2, 165–166. (Ferenc Wettl) **89i:05030** 05B05 (20B25, 51E05)
- Some locally finite flag-transitive buildings. *European J. Combin.* 8 (1987), no. 4, 429–436. (Mark A. Ronan) **89d:20023** 20E32 (20G30, 51B25)
- (with Taylor, D. E.) Polynomial-time versions of Sylow's theorem. *J. Algorithms* 9 (1988), no. 1, 1–17. (M. F. Newman) **89i:20004** 20B35 (20D20, 20F10, 68Q25)
- Kantor, Yacov** (with Hassold, Gregory N.) Topological entanglements in the percolation problem. *Phys. Rev. Lett.* 60 (1988), no. 15, 1457–1460. (Summary) **89i:82001** 82–04 (82A43, 82A51)
- Kantorovich, L. V.** see *Fet, Ya. I.*, **89i:01041**; *Kusraev, A. G.*, **89i:01044**; *Petrova, L. T.*, **89i:01046**; *Vladimirov, D. A.*, **89i:01049** and *Anniversary: Birth of Kantorovich, L. V.*, **89i:01086**
- Kantowski, R.** (with Birmingham, Danny; Milton, Kimball A.) Scalar and spinor Casimir energies in even-dimensional Kaluza-Klein spaces of the form  $M^4 \times S^{2k} \times S^{2l} \times \dots$ . *Phys. Rev. D* (3) 38 (1988), no. 6, 1809–1822. (Summary) **89j:83044** 83C47 (81E20, 83E15)
- Kanwal, R. P.** (with Krall, A. M.; Littlejohn, L. L.) Distributional solutions of ordinary differential equations. *Oscillations, bifurcation and chaos (Toronto, Ont., 1986)*, 227–246, *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (N. Hayek Calil) **89i:34040** 34B30 (33A30, 46F10)
- (with Estrada, Ricardo) Moment sequences for a certain class of distributions. *Complex Variables Theory Appl.* 9 (1987), no. 1, 31–39. (J. A. Kelings) **89i:30041** 30E05 (46F20)
- (with Estrada, Ricardo) Higher order fundamental forms of a surface and their applications to wave propagation and generalized derivatives. *Rend. Circ. Mat. Palermo (2)* 36 (1987), no. 1, 27–62. (David E. Betounes) **89i:46045** 46F10 (53A07, 53A45, 73D40)
- A differential geometric solution of a problem in electrostatics. *SIAM Rev.* 30 (1988), no. 2, 301. (Summary) **89i:78005** 78A30
- Kanyaszkas, Yu. M.** see *Kaniauskas, J.*
- Kanzaki, Tetsuo** (with Watanabe, Yutaka) Azumaya algebras split by real closure. *Proc. Japan Acad. Ser. A Math. Sci.* 64 (1988), no. 5, 163–166. (Stefaan Caenepeel) **89j:13003** 13A20 (12G05, 16A16)
- Kanzaki, Yoshiya** Consideration on approximation of matrix. *Bull. Gen. Ed. Dokkyo Univ. School Medicine* 10 (1987), 35–47. (R. Kala) **89i:15015** 15A42
- Kao, Chihwa** (with Schnell, John F.) Errors in variables in the multinomial response model. *Econom. Lett.* 25 (1987), no. 3, 249–254. (Summary) **89i:62223** 62P20
- (with Schnell, John F.) Erratum: "Errors in variables in a random-effects probit model for panel data" [*Econom. Lett.* 24 (1987), no. 4, 339–342]. *Econom. Lett.* 25 (1987), no. 4, 393. (Not in MR) **62P20**

- Kao, Edward P. C.** (with Chang, Sheng-Lin) Modeling time-dependent arrivals to service systems: a case in using a piecewise-polynomial rate function in a nonhomogeneous Poisson process. *Management Sci.* **34** (1988), no. 11, 1367–1379. (Not in MR) 89b:60K25 (90B22)
- Kao, W. F.** (with Park, Q-Han; Schnitzer, Howard J.) Low energy effective action, to two-loop order, for strings on a group manifold, from compactification of closed Bose strings. *Phys. Lett. B* **200** (1988), no. 1–2, 53–58. (Summary) 89b:81129 81E13 (81E30, 81G20)
- Kapadia, C. H.** (with Lee, K. R.) Maximum likelihood estimators of the variance components based on the  $Q$ -reduced model. *Metrika* **35** (1988), no. 3–4, 177–189. (Not in MR) 62J10
- Kapanev, A. A.** (with It's, A. R.) The method of isomonodromic deformations and relation formulas for the second Painlevé transcendent. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **51** (1987), no. 4, 878–892, 912; translation in *Math. USSR-Izv.* **31** (1988), no. 1, 193–207. (Alexander A. Pankov) 89f:34004 34A20 (35Q20, 58F07)
- Kapanadze, D. V.** Uniqueness of the solution of an inverse problem of potential theory. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **129** (1988), no. 2, 313–316. (A. S. Alekseev) 89i:86008 86A20 (31B20)
- Kapanadze, R. V.** Investigation of boundary value problems in elasticity theory for anisotropic media by potential methods. I. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruz. SSR* **87** (1987), 82–113. (From the text) 89c:73018 73C30 (35J99, 45F05, 45F15, 45K05)
- Kapelo, A.** see **Capelo, António**
- Kaper, Hans G.** (with Kwong, Man Kam) Asymptotics of the Titchmarsh-Weyl  $m$ -coefficient for integrable potentials. II. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 222–229, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (J. S. Bradley) 89b:34125 34E05 (34E20)
- (with Kwong, Man Kam) Oscillation theory for linear second-order differential systems. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 187–197, *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (Anthony Uyi Afuwape) 89a:34045 34C10 (34A30)
- (with Leaf, G. K.; Matkowsky, B. J.; Olmstead, W. E.) Dynamics of nonadiabatic premixed flames in a gravitational field. *SIAM J. Appl. Math.* **47** (1987), no. 3, 544–555. (V. L. Roytburd) 89b:80007 80A25 (35K99)
- (with Kwong, Man Kam) Uniqueness results for some nonlinear initial and boundary value problems. *Arch. Rational Mech. Anal.* **102** (1988), no. 1, 45–56. (Pavel Drábek) 89d:35059 35J65 (34A10)
- (with Kwong, Man Kam) Concavity and monotonicity properties of solutions of Emden-Fowler equations. *Differential Integral Equations* **1** (1988), no. 3, 327–340. (R. Guenther) 89b:34027 34A34 (34C10)
- (with Kwong, Man Kam) Uniqueness for a class of nonlinear initial value problems. *J. Math. Anal. Appl.* **130** (1988), no. 2, 467–473. (Ioan I. Vrabie) 89c:34005 34A10 (34A34)
- Kapishov, G. K.** A general boundary value problem for a generalized analytic vector-valued function in fractional spaces. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1987**, no. 5, 29–33. (Guo Chun Wen) 89b:30064 30G20 (30E25, 35J55)
- A boundary value problem of general type for an elliptic equation of odd order. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1988**, no. 1, 25–29. (Wolfgang Rüpprich) 89c:35075 35J55
- Kapitanets, P. I.** (with Lunév, V. V.) Shock-characteristic method for solving discontinuous gas dynamic problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 6, 945–950, 960. (Summary) 89i:65156 65P05 (35L99)
- Kapitaniak, T.** Quantifying chaos with amplitude probability density function. *J. Sound Vibration* **114** (1987), no. 3, 588–592. (From the text) 89b:70009 70K50 (34C15, 58F13)
- ★ Chaos in systems with noise. *World Scientific Publishing Co., Singapore*, 1988. x+130 pp. ISBN 9971-50-542-8 (Dieter H. Mayer) 89c:58183 58F13 (58F30, 70K50, 70L05)
- (with Wojewoda, Jerzy) Chaos in a limit-cycle system with almost periodic excitation. *J. Phys. A* **21** (1988), no. 17, L843–L847. (Not in MR) 34C05
- Combined bifurcations and transition to chaos in a nonlinear oscillator with two external periodic forces. *J. Sound Vibration* **121** (1988), no. 2, 259–268. (Summary) 89b:70010 70K50 (58F13, 58F14)
- Response of a nonlinear system to two-step Markov noise: non-Markovian averaging. *J. Sound Vibration* **121** (1988), no. 2, 369–374. (From the introduction) 89m:70060 70L05
- Kapitanets, L. V.** The Cauchy problem for the semilinear wave equation. I. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **163** (1987), *Kraev. Zadachi Mat. Fiz. i Smezhn. Vopr. Teor. Funktsii* **19**, 76–104, 188. (Peter R. Popivanov) 89j:35088 35L70
- Kapitonov, B. V.** Behavior as  $t \rightarrow \infty$  of the solutions of an exterior boundary value problem with the Leontovich condition for a Maxwell system. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 2, 284–287; translation in *Soviet Math. Dokl.* **37** (1988), no. 2, 377–380. (Piero Bassanini) 89j:35029 35B40 (35Q20, 78A25)
- Kapitonova, Yu. V.** (with Klyaus, P. S.; Kovalenko, N. S.) A mathematical model of the pipeline organization of competing processes. (Russian) *Dokl. Akad. Nauk SSSR* **293** (1987), no. 6, 1320–1324. (N. N. Mirenkov) 89a:68024 68N25 (68M10, 90B35)
- see also **Algorithms, software and hardware for computer systems**, 89b:68006
- Kaplan, A. A.** Stable algorithms for the penalty method. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 1, 38–42; translation in *Soviet Math. Dokl.* **37** (1988), no. 2, 326–329. (Alexander Shapiro) 89d:65064 EA 89m 65K05 (90C25)
- Stability of methods for solving convex programming problems and variational inequalities. (Russian) *Trudy Inst. Mat. (Novosibirsk)* **10** (1988), *Modeli i Metody Optim.*, 132–159, 265. (Alexander Shapiro) 89b:90176 90C25 (49A29, 90C31)
- Kaplan, Alexander E.** Bistable solitons of highly-nonlinear Schrödinger equations in nonlinear optics. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 106–111. (Summary) 89b:35297 35Q20 (78A60)
- Kaplan, Arnold** (with Cattani, Eduardo; Schmid, Wilfried) Some remarks on  $L^2$  and intersection cohomologies. *Hodge theory* (Sant Cugat, 1985), 32–41, *Lecture Notes in Math.*, 1246, Springer, Berlin-New York, 1987. (J. H. de Boer (Zbl 624:14013)) 89f:32018 32C35 (32G20)
- Kaplan, Daniel T.** (with Smith, Joseph M.; Saxberg, Bo E. H.; Cohen, Richard J.) Nonlinear dynamics in cardiac conduction. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1–2, 19–48. (Raphael Zahler) 89j:92014 92A07
- Kaplan, G. A.** (with Veliev, Ch. K.) A class of convex nonseparable optimal distribution problems. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **7** (1986), no. 5, 116–124 (1987). (Summary) 89d:90167 90C25
- Kaplan, Harvey** A cartoon-assisted proof of Sarkowski's theorem. *Amer. J. Phys.* **55** (1987), no. 11, 1023–1032. (Frederick R. Marotto) 89f:58103 58F14 (58F08)
- Kaplan, Pierre** (with Hardy, Kenneth; Williams, Kenneth S.) The representation of a pair of integers by a pair of positive-definite binary quadratic forms. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 847–855. (Yoshio Mimura) 89i:11049 11E16 (11D85)
- Kaplan, Stéphane** Simplifying conditional term rewriting systems: unification, termination and confluence. *J. Symbolic Comput.* **4** (1987), no. 3, 295–334. (Laurent Kott) 89d:68049 68Q50 (03B70, 68Q65, 68T15)
- Kaplansky, Irving** Hilbert's 7th problem: on certain irrational and transcendental numbers. (Swedish. English summary) Translated from the English. *Normat* **36** (1988), no. 2, 41–47, 90. (Editors) 89j:11059 11J72 (11J81)
- see also **Biography: LeVeque, William J.**, 89b:01090
- Kaplunovich, G. Ya.** On the uniqueness of a convex surface with given integral curvature in an elliptic space. (Russian) *Riemannian spaces and methods of the theory of elliptic differential equations* (Russian), 38–43, *Leningrad. Gos. Ped. Inst., Leningrad*, 1986. (Vladislav Goldberg) 89b:53024 53A35 (53C45)
- Kaplunov, Vadim S.** (with Dixon, Lance J.; Vafa, Cumrun) On four-dimensional gauge theories from type II superstrings. *Nuclear Phys. B* **294** (1987), no. 1, 43–82. (Andrew A. Bytsenko) 89g:81045 81E13 (81E30)
- One-loop threshold effects in string unification. *Nuclear Phys. B* **307** (1988), no. 1, 145–156. (Summary) 89f:81254 81G20 (81E30)
- Kapoor, G. P.** (with Nautiyal, A.) Growth and approximation of generalized bi-axially symmetric potentials. *Indian J. Pure Appl. Math.* **19** (1988), no. 5, 464–476. (Peter A. McCoy) 89f:31006 31B99 (30D10, 30D15, 35J05)
- Kapoor, Kunwar J.** (with Sarma, V. L. N.) Some properties of a class of Bergman operators. *Progr. Math. (Varanasi)* **20** (1986), no. 1, 35–50. (Vojislav Maric) 89a:35046 35C15
- Kaporin, I. E.** (with Erëmin, A. Yu.; Kerimov, M. K.) Calculation of derivatives of the Riemann zeta function in a complex domain. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 8, 1135–1148, 1277. (H. J. Godwin) 89i:11096 11M06 (11M41, 11Y35, 65E05)
- see also **Pissanetzky, Sergio**, 89b:65008
- skorin-Kapov, Jadranka** see **Skorin-Kapov, Jadranka**
- Kappe, Louise-Charlotte** (with Morse, Robert Fitzgerald) Groups with 3-abelian normal closures. *Arch. Math. (Basel)* **51** (1988), no. 2, 104–110. (H. Heineken) 89b:20048 20F18 (20F12, 20F45)
- Finite coverings by 2-Engel groups. *Bull. Austral. Math. Soc.* **38** (1988), no. 1, 141–150. (K. W. Weston) 89c:20052 20F45
- (with Brodie, M. A.; Chamberlain, Robert F.) Finite coverings by normal subgroups. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 669–674. (H. Heineken) 89i:20062 20F26 (20F24)
- Kappel, F.** (with Kunisch, K.) Invariance results for delay and Volterra equations in fractional order Sobolev spaces. *Trans. Amer. Math. Soc.* **304** (1987), no. 1, 1–51. (R. F. Datko) 89b:45006 45D05 (34K15, 45J05, 46E35)
- (with Schmitt, Klaus) Periodic solutions of systems of ordinary differential equations which approximate delay equations. *Differential Integral Equations* **1** (1988), no. 2, 183–212. (D. Izyumova) 89g:34106 34K15 (34C25)
- Kappeler, Thomas** (with Cohen, Amy) The asymptotic behavior of solutions of the Korteweg-de Vries equation evolving from very irregular data. *Ann. Physics* **178** (1987), no. 1, 144–185. (Alan Jeffrey) 89c:35020 35B40 (35Q20)
- (with Trubowitz, Eugene) Properties of the scattering map. II. *Comment. Math. Helv.* **63** (1988), no. 1, 150–167. (Walter Eberhard) 89f:34032 34B25 (34A55, 35J25, 35P25)
- Multiplicities of the eigenvalues of the Schrödinger equation in any dimension. *J. Funct. Anal.* **77** (1988), no. 2, 346–351. (Günter Berger) 89d:35130 35P05 (35J10)
- (with Burghela, Dan) Multiplicities of the eigenvalues of the discrete Schrödinger equation in any dimension. *Proc. Amer. Math. Soc.* **102** (1988), no. 2, 255–260. (Summary) 89c:15013 15A18 (39A12)
- Kappelman, Russell F.** Detection of symmetry or lack of it and applications. *Comm. Statist. Theory Methods* **17** (1988), no. 12, 4163–4177. (Not in MR) 62F35
- A simple method for choosing between the lognormal and Weibull models. *Statist. Probab. Lett.* **7** (1988), no. 2, 123–126. (Not in MR) 62F03
- Kapranov, Stoyan N.** (with Landgev, Ivan N.; Tonchev, Vladimir D.) 2-(25, 10, 6) designs invariant under the dihedral group of order ten. *Combinatorial design theory*, 301–306, *North-Holland Math. Stud.*, 149, North-Holland, Amsterdam-New York, 1987. (Rudolf Mathon) 89c:05031 05B05
- (with Landgev, Ivan N.; Tonchev, Vladimir D.) Quasiresidual 2-(25, 10, 6) designs, invariant under the dihedral group of order 10. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian)* (Sunny Beach (Sl'nev Bryag), 1987), 447–452, *Bulgar. Acad. Sci., Sofia*, 1987. (see 89c:00038) 05B05 (20B25)
- Combinatorial 2-(22, 8, 4) designs with automorphisms of order 3 that fix a point. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian)* (Sunny Beach (Sl'nev Bryag), 1987), 453–458, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) 89c:05015 05B05 (20B25)
- Kapralski, Adam** (with Skarbek, Władysław) Problem of searching minimum base in Boolean tables. (Polish summary) *Podstawy Sterowania* **16** (1986), no. 3–4, 257–265 (1987). (Not in MR) 68Q25 (94C10)
- Kapranov, M. M.** On the derived categories of coherent sheaves on some homogeneous spaces. *Invent. Math.* **92** (1988), no. 3, 479–508. (Steven E. Landsburg) 89g:18018 18E30 (14F05, 18F20, 22E47, 32C38, 32M10)
- Cuspidal divisors on the modular varieties of elliptic modules. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **51** (1987), no. 3, 568–583, 688; translation in *Math. USSR-Izv.* **30** (1988), no. 3, 533–547. (Reinhard Bölling) 89c:11095 11G18 (11F99, 14I10)
- (with Gelfand, I. M.; Zelevinskii, A. V.) Equations of hypergeometric type and Newton polyhedra. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 3, 529–534; translation



- in *Soviet Math. Dokl.* 37 (1988), no. 3, 678-682. (J. S. Joel) **89j:22015** 22E30 (32C42, 33A30, 58G07)
- On the derived category and  $K$ -functor of coherent sheaves on intersections of quadrics. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 52 (1988), no. 1, 186-199; translation in *Math. USSR-Izv.* 32 (1989), no. 1, 191-204. (Werner Kleinert) **89f:14014** 14F15 (13D15, 14M10, 18E30, 19D10)
- Kaptagayev, E. S.** Asymptotic equilibrium of systems of second-order sum-difference equations. (Russian) *Studies in integro-differential equations*, No. 19 (Russian), 129-144, 315, "Ilim", Frunze, 1986. (Stanislav Kus) **89c:39007** 39A10
- The Cauchy limit problem for systems of difference and sum-difference equations of arbitrary order. (Russian) *Studies in integro-differential equations*, No. 19 (Russian), 145-158, 315, "Ilim", Frunze, 1986. (Stanislav Kus) **89c:39008** 39A10
- Asymptotic equilibrium of linear difference systems. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 302-309, 345, "Ilim", Frunze, 1987. (A. D. Mednykh) **89c:39001** 39A10
- Kaptsov, O. V.** Elliptic solutions of the stationary Euler equations. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 3, 597-600; translation in *Soviet Phys. Dokl.* 33 (1988), no. 1, 44-46. (Summary) **89c:35042** 35J60 (35Q10, 58D25, 58F40)
- Kapur, Deepak** (with Mohan, Chilukuri K.; Srivas, Mandayam) Reasoning in systems of equations and inequations. *Foundations of software technology and theoretical computer science* (Pune, 1987), 305-325, *Lecture Notes in Comput. Sci.*, 287, Springer, Berlin-New York, 1987. (Summary) **89a:68192** 68T15 (03B35)
- (with Narendran, Paliath; Zhang, Hantao) On sufficient-completeness and related properties of term rewriting systems. *Acta Inform.* 24 (1987), no. 4, 395-415. (Klaus Madlener) **89a:68136** 68Q50 (03B25, 03B35, 68Q65)
- (with Benav, Dan; Narendran, Paliath) Complexity of matching problems. Rewriting techniques and applications (Dijon, 1985). *J. Symbolic Comput.* 3 (1987), no. 1-2, 203-216. (Alexander Leitsch) **89a:68131** 68Q50 (03B35, 03D15, 68Q25, 68Q40, 68T15)
- (with Zhang, Hantao) First-order theorem proving using conditional rewrite rules. *9th International Conference on Automated Deduction* (Argonne, IL, 1988), 1-20, *Lecture Notes in Comput. Sci.*, 310, Springer, Berlin-New York, 1988. (see **89c:68004**) 68T15 (03B35, 68Q50)
- (with Zhang, Hantao; Krishnamoorthy, M. S.) A mechanizable induction principle for equational specifications. *9th International Conference on Automated Deduction* (Argonne, IL, 1988), 162-181, *Lecture Notes in Comput. Sci.*, 310, Springer, Berlin-New York, 1988. (see **89c:68004**) 68T15 (03B35)
- (with Mundy, J. L.) Wu's method and its application to perspective viewing. *Geometric reasoning* (Oxford, 1986). *Artificial Intelligence* 37 (1988), no. 1-3, 15-36. (Summary) **89m:68120** 68T15 (03B35, 51-04)
- (with Barry, Michele; Cyrluk, David; Mundy, J. L.; Nguyen, Van-Duc) A multi-level geometric reasoning system for vision. *Geometric reasoning* (Oxford, 1986). *Artificial Intelligence* 37 (1988), no. 1-3, 291-332. (see **89j:68007**) 68T10 (13-04)
- (with Musser, David R.; Narendran, Paliath) Only prime superpositions need be considered in the Knuth-Bendix completion procedure. *J. Symbolic Comput.* 6 (1988), no. 1, 19-36. (Jürgen Dassow) **89j:68093** 68Q50 (03B35, 68Q40)
- (with Kandri-Rody, Abdelilah) Computing a Gröbner basis of a polynomial ideal over a Euclidean domain. *J. Symbolic Comput.* 6 (1988), no. 1, 37-57. (Bernd Sturmfels) **89h:13002** 13-04 (13F07, 68Q40, 68Q50)
- (with Srivas, Mandayam) Computability and implementability issues in abstract data types. *Sci. Comput. Programming* 10 (1988), no. 1, 33-63. (Summary) **89a:68155** 68Q65
- see also **Geometric reasoning**, **89j:68007**
- Kapur, J. N.** Some personal reminiscences of Professor Ram Behari. *Math. Student* 51 (1983), no. 1-4, 5-6 (1988). (Title) **89m:01094** 01A70
- New measures of information improvement. *J. Combin. Inform. System Sci.* 11 (1986), no. 1, 39-46. (N. S. Kambo) **89j:94020** 94A17
- (with Kesavan, H. K.) ★ The generalized maximum entropy principle (with applications). *Sandford Educational Press, Waterloo, ON*, 1987. x+213 pp. ISBN 0-920574-25-4 (L. L. Campbell) **89d:62008** 62B10 (92A15, 94A17)
- A new model for population dynamics. *Acta Cienc. Indica Math.* 13 (1987), no. 4, 195-206. (T. J. Mahar) **89j:92045** 92A15
- (with Kumar, Vinod; Kumar, Uma) A measure of mutual divergence among a number of probability distributions. *Internat. J. Math. Math. Sci.* 10 (1987), no. 3, 597-607. (J. Aczél) **89d:94030** 94A17 (26D15, 90C39, 90C50)
- Twelve wise men look at the elephant called mathematics. *Math. Ed.* 4 (1987), no. 2, 86-89. (Not in MR) 00A25
- ★ Mathematical modelling. *John Wiley & Sons, Inc., New York*, 1988. xii+259 pp. ISBN 0-470-20088-X (John Adam) **89j:00048** 00A71 (00A25, 00A69)
- Some new nonadditive measures of entropy. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 2 (1988), no. 2, 253-266. (N. S. Kambo) **89b:94004** 94A17
- A brief history of mathematics education in India. *Ganita Bharati* 10 (1988), no. 1-4, 31-39. (Summary) **89m:01020** 01A32
- (with Tripathi, G. P.) New measures of directed and symmetric-divergence based on  $m$  probability distributions. *Indian J. Pure Appl. Math.* 19 (1988), no. 7, 617-626. (N. S. Kambo) **89c:94016** 94A17
- see also **Bansal, S. P.**, **89j:01057**
- Kapur, P. K.** (with Garg, R. B.) Ordering policies based on repair cost limit criterion. *Opsearch* 25 (1988), no. 4, 245-258. (Summary) **89j:90027** 90B05
- Kapuscik, Edward** (with Horzela, A.) ★ О волновых уравнениях, инвариантных относительно расширенной группы Галлея. (Russian) [Wave equations that are invariant with respect to the extended Galilei group] With an English summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R2-87-875. *Joint Inst. Nuclear Res., Dubna*, 1987. 8 pp. (Summary) **89b:81091** 81D25 (58G35)
- Kapustin, N. Yu.** (with Shoniya, Z. V.) On a problem of the generalized solvability of the first Darboux problem. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 1, 85-91, 182; translation in *Differential Equations* 24 (1988), no. 1, 67-71. (K. A. Yagdzhyan) **89c:35063** 35L20
- The Tricomi problem for a parabolic-hyperbolic equation with a degenerate hyperbolic side. II. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 8, 1379-1386, 1470; translation in *Differential Equations* 24 (1988), no. 8, 898-903. (A. S. Berdyshev) **89m:35153** 35M05
- A property of the  $W^2$ -solution of the Cauchy-Goursat problem. (Russian) *Dokl. Akad. Nauk SSSR* 301 (1988), no. 3, 536-539; translation in *Soviet Math. Dokl.* 38 (1989), no. 1, 106-108. (From the text) **89m:65090** 65M99 (35L15)
- Kapustik, E.** see **Kapuscik, Edward**
- Kapustyan, V. E.** (with Zaitsev, V. G.) Application of the method of characteristics for constructing optimal controls in the one-phase Stefan problem. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 2, 60-63 (1988); translated from *Avtomatika* 1987, no. 2, 60-63, 96 (Russian). (Not in MR) 93B40 (93C20)
- Kar, P. K.** (with Krori, K. D.; Borgohain, P.; Das, Dipali) Exact scalar and spinor solutions in some rotating universes. *J. Math. Phys.* 29 (1988), no. 7, 1645-1649. (Reinhard Illge) **89i:83010** 83C10 (83C15)
- Karabali, Dimitra** (with Schnitzer, Howard J.) Gauge symmetry enlargement and accidental massless spectrum of string models on group manifolds. *Nuclear Phys. B* 299 (1988), no. 3, 548-558. (Pierre Gravel) **89f:81188** 81E99 (81E30, 83E30)
- (with Park, Q-Han; Schnitzer, Howard J.) Nonabelian Bose-Fermi equivalence in the background of Kaluza-Klein scalars and compactifications of closed bosonic strings. *Phys. Lett. B* 205 (1988), no. 2-3, 267-272. (Summary) **89k:81080** 81E13 (81E30)
- Karabali, A. A.** On the ejection solutions in a central force field. (French summary) *Celestial Mech.* 41 (1987/88), no. 1-4, 323-332. (Yi-Sui Sun) **89f:70011** 70F05
- Karabash, M. A.** Feedback controls for stochastic equations with monotone coefficients. (Russian) *Theory of random processes*, No. 16 (Russian), 28-33, 108, "Naukova Dumka", Kiev, 1988. (From the text) **89j:49011** 49A60 (93B50, 93E20)
- Karabatzos, George** (with Stratis, Ioannis G.) Solution-bounds for a class of difference equations. *Bull. Soc. Math. Grèce (N.S.)* 27 (1986), 31-37. (L. A. V. Carvalho) **89c:39008** 39A11 (39A12, 47B39)
- Karabed, Razmik** (with Marcus, Brian) Sliding-block coding for input-restricted channels. *IEEE Trans. Inform. Theory* 34 (1988), no. 1, 2-26. (Summary) **89j:94024** 94A40 (94B35)
- Karabegov, A. V.** Quantization on a one-sheeted hyperboloid. (Russian) *Funktsional. Anal. i Prilozhen.* 21 (1987), no. 4, 75-76. (From the text) **89d:58050** 58F06
- Karabotov, N. N.** (with Salyga, V. I.) The method of  $\varphi$ -algorithms, and its application in control problems. (Russian) *Adapt. Sistemy Avtomat. Upravleniya* No. 16 (1988), 73-80, iii. (Wei Bing Gao) **89k:93094** 93B50 (49B22, 93C40)
- Karachik, V. V.** Some problems for linear differential equations with constant coefficients. (Russian) *Voprosy Vychisl. i Prikl. Mat. (Tashkent)* No. 80 (1986), 34-44, 136. (Leonid Yu. Motylev) **89h:35067** 35E20 (34A30)
- (with Bondarenko, B. A.) Analogues of the Euler formula for generalized-homogeneous polynomials and functions. (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 5, 5-7. (Gradimir V. Milovanovic) **89a:26022** 26C05 (26B35, 33A70)
- Karadzhev, G. E.** Semiclassical asymptotic of spectral function for some  $h$ -admissible operators. *Math. Nachr.* 132 (1987), 329-346. (William Margulies) **89b:47074** 47G05 (35P20, 35S05)
- Karaev, Zh. A.** An optimal control problem for loaded equations of parabolic type. (Russian) *Theoretical and applied problems of mathematical modeling* (Russian), 46-54, 196, "Nauka" Kazakh. SSR, Alma-Ata, 1986. (Summary) **89a:49006** 49A22 (35K99)
- Karagabakyan, S. G.** Subconstructive logic. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* 85 (1987), no. 1, 21-25. (M. A. Taitslin) **89c:03051** 03B60
- Karageorghis, Andreas** (with Phillips, T. N.) Chebyshev collocation methods for the solution of the incompressible Navier-Stokes equations in complex geometries. *Numerical methods for fluid dynamics, III* (Oxford, 1988), 500-506, *Inst. Math. Appl. Conf. Ser. New Ser.*, 17, Oxford Univ. Press, New York, 1988. (see **89j:76004**) 76-08 (76D05)
- A note on the Chebyshev coefficients of the general order derivative of an infinitely differentiable function. *J. Comput. Appl. Math.* 21 (1988), no. 1, 129-132. (Menachem Dishon) **89b:65056** 65D25 (26A24, 41A50)
- A note on the Chebyshev coefficients of the moments of the general order derivative of an infinitely differentiable function. *J. Comput. Appl. Math.* 21 (1988), no. 3, 383-386. (Summary) **89b:65046** 65D15
- (with Phillips, T. N.) Efficient direct methods for solving the spectral collocation equations for Stokes flow in rectangularly decomposable domains. *SIAM J. Sci. Statist. Comput.* 10 (1989), no. 1, 89-103. (Summary) **89m:65103** 65N30 (76-08, 76D07)
- Karagodor, V. P.** (with Galitsyn, A. S.; Zhukovskii, A. N.) Solution of nonlinear convection problems in a closed volume of a viscous fluid by a projection-difference method. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 9, 43 pp. (Summary) **89j:76007** 76-08 (76R10, 80A20)
- Karagulyan, G. A.** On the selection of subsystems of convergence with lacunary density of numbers from arbitrary orthonormal systems. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* 84 (1987), no. 1, 17-20. (B. Osilenker (translated from RZhMat 1987:9 B75)) **89a:42033** 42C05
- Equivalent orthonormal systems. (Russian) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* 22 (1987), no. 5, 510-513, 516. (A. Olevskii) **89b:42029** 42C05
- The choice of a convergence subsystem with logarithmic density from an arbitrary orthonormal system. (Russian) *Mat. Sb. (N.S.)* 136(178) (1988), no. 1, 41-55, 160. (Hans-Jürgen Glaeske) **89c:42041** 42C05
- al-Karaji, Abū Bakr Muḥammad ibn al-Ḥusain** ★ al-kāfi fi'l ḥisāb. (Arabic) [The sufficient (treatise) on arithmetic] Edited by Sami Chalhoub. Quellen und Studien über die Geschichte der Arabischen Mathematik [Sources and Studies on the History of Arabic Mathematics], 5. *University of Aleppo, Institute for the History of Arabic Science, Aleppo*, 1986. 320 pp. (Jan P. Hogendijk) **89c:01011** 01A30 (01A75)
- Karakashian, Oshannes A.** (with Bales, L. A.; Serbin, S. M.) On the  $A_0$ -acceptability of rational approximations to the exponential function with only real poles. *BIT* 28 (1988), no. 1, 70-79. (Syvert P. Norsett) **89f:65080** 65L07 (65D20)
- (with Rust, William) On the parallel implementation of implicit Runge-Kutta methods. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 6, 1085-1090. (Summary) **89b:65112** 65L05
- Karakhanyan, M. I.** Asymptotic properties of the commutators for bounded operators in the strongest operator topology. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1984, no. 1(155), 3-6. (Not in MR) 47B47
- An asymptotic property of commutators in a Banach algebra. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1985, no. 2(159), 17-20. (Not

- in MR) 46H05 (47B47)
- (with Akopyan, G. S.) Some spectral properties of normal operators in a Banach space. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1986, no. 3(163), 3–10. (T. Ya. Azizov) **89f:47032** 47B15
- Karakisawa, Takao** (with Sato, Ken-ichi) Explicit criteria by  $L_\infty$  ( $4p = L^2 + 27M^2$ ) for cubic residuacity. (Japanese. English summary) *J. College Engrs. Nihon Univ. Ser. B* 30 (1989), 117–119. (Summary) **89m:11005** 11A05
- Karakostas, G.** (with Györi, I.) Global stability in job systems. *J. Math. Anal. Appl.* 131 (1988), no. 1, 85–96. (K. R. Schneider) **89e:34083** 34D20 (34C11, 92A15)
- (with Staikos, V. A.)  $\mu$ -like-continuous operators and some oscillation results. *Nonlinear Anal.* 12 (1988), no. 11, 1149–1165. (P. Szeptycki) **89k:35243** 35R10 (35L99, 47B38, 47H99)
- Karamanlidis, Dimitrios** On a modified Hellinger/Reissner variational theorem for the analysis of elastoplastic solids. *Trans. ASME Ser. E J. Appl. Mech.* 55 (1988), no. 3, 536–538. (Summary) **89f:73029** 73E99 (73E05, 73K25)
- Karamatsu, Yoshikazu** A note on the first case of Fermat's last theorem. *Prospects of mathematical science* (Tokyo, 1986), 73–77, *World Sci. Publishing, Singapore*, 1988. (Itaru Yamaguchi) **89f:11043** 11D41 (11B68)
- Karamyan, G. G.** (with Davtyan, O. K.) ★ Теория инерциального поля и квантовой корреляции. (Russian) [Inertial field and quantum correlation theories] *Akad. Nauk Armyan. SSR, Erevan*, 1987. 136 pp. (Summary) **89e:81141** 81E99 (81-02)
- Karamzin, Yu. N.** (with Zakharova, I. G.; Trofimov, V. A.) A difference method for solving a problem on the steady-state propagation of a light beam in a chemically active gas medium. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 7, 1192–1196, 1285; translation in *Differential Equations* 24 (1988), no. 7, 772–775. (Summary) **89j:78008** 78-08
- Karan, Ram** (with Vermani, L. R.) A note on polynomial maps. *J. Pure Appl. Algebra* 51 (1988), no. 1-2, 169–173. (D. A. R. Wallace) **89f:20007** 20C07 (16A27)
- Karande, B. K.** (with Patil, K. R.; Nayagude, D. M.) On some properties of orthogonal polynomials related to generalized Hermite polynomials. *Pure Appl. Math. Sci.* 27 (1988), no. 1-2, 105–113. (Donald Richards) **89c:33020** 33A65 (33A75)
- Karandikar, Rajeeva L.** (with Kallianpur, G.) The filtering problem for infinite-dimensional stochastic processes. *Stochastic differential systems, stochastic control theory and applications* (Minneapolis, Minn., 1986), 215–223, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (Michael Kohlmann) **89f:60045** 60G35 (93E11)
- A general principle for limit theorems in finitely additive probability: the dependent case. *J. Multivariate Anal.* 24 (1988), no. 2, 189–206. (E.-A. Weiss, Jr.) **89b:60057** 60F05 (60G05)
- Karandzhulov, Lyudmil** A method of differentiation with respect to a parameter for solving nonlinear two-point boundary value problems. Program realization. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 4, 69–78 (1987). (Summary) **89d:34036** 34B15 (34A50, 65L10)
- (with Manolov, S.) Existence of periodic solutions of an  $n$ -dimensional autonomous system with common characterization of the initial conditions and the inner resonances. (Bulgarian. English summary) *Mathematics and mathematical education* (Bulgarian) (Sunny Beach (Slivnitshe Bryag), 1987), 289–294, *Bulg. Acad. Sci., Sofia*, 1987. (Summary) **89d:34076** 34C25
- Karanikas, A. I.** (with Ktorides, C. N.) Nonlocal bosonization in two dimensions and an effective string field theory with phase transition. *Phys. Lett. B* 201 (1988), no. 2, 228–232. (Summary) **89a:81136** 81E99 (81E30)
- (with Ktorides, C. N.) An exact solution of a regularized Makeenko-Migdal equation in two dimensions for small Wilson loops. *Phys. Lett. B* 213 (1988), no. 2, 181–185. (Summary) **89i:81070** 81E13
- Karanikolov, A. F.** (with Kotelya, V. V.) Universal relations in a relational model. (Russian) *Mat. Issled. No. 100 Sistemy Optim. Obrab. Danykh* (1988), 48–54, 150. (Not in MR) 68P15
- Karapetyan, A. O.** (with Dzhrbashyan, M. M.) Integral representations of some classes of functions that are analytic in a Siegel domain. (Russian) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* 22 (1987), no. 4, 399–405, 414. (Burgind Jörcke) **89e:32011** 32A25
- Integral representations in tube domains. (Russian) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* 23 (1988), no. 1, 91–96, 105; translation in *Soviet J. Contemporary Math. Anal.* 23 (1988), no. 1, 90–95. (P. Agranovich) **89i:32005** 32A25
- Karapetyan, A. T.** Complexity of the determination of stability of finite-automaton mappings with respect to the Hamming distance. (Russian) *Models and systems of information processing*, No. 7 (Russian), 31–35, 108, "Vyscha Shkola", Kiev, 1988. (see **89j:68011**) 68Q70
- Karapetyan, G. A.** (with Arakelyan, M. Z.) Theorems of Liouville and of Phragmén-Lindelöf type for semi-elliptic equations with general initial conditions. (Russian. Armenian summary) *Mathematics*, No. 4 (Russian), 81–92, *Erevan. Univ., Erevan*, 1986. (Peter R. Popivanov) **89b:35021** 35B05 (35H05, 35J99)
- The Galerkin method for a general class of regular and irregular quasilinear equations. (Russian. Armenian summary) *Mathematics*, No. 4 (Russian), 93–107, *Erevan. Univ., Erevan*, 1986. (Stavros A. Belbas) **89m:35065** 35J35 (65N30)
- A boundary value problem for quasilinear regular equations in unbounded domains. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* 23 (1988), no. 1, 22–38, 102; translation in *Soviet J. Contemporary Math. Anal.* 23 (1988), no. 1, 21–37. (Genowefa Majcher) **89m:35050** 35G30
- Karapetyants, N. K.** Smoothness of the solutions of equations of convolution type. (Russian) *Mathematical analysis and its applications* (Russian), 59–64, 164, *Rostov. Gos. Univ., Rostov-on-Don*, 1985. (Summary) **89g:45015** 45E10 (45D05)
- (with Rubin, B. S.) Integral equations of the first kind with a weak singularity with a radial right-hand side. (Russian) *Differential and integral equations and complex analysis* (Russian), 87–106, iii, *Kalmytsk. Gos. Univ., Elista*, 1986. (Zbigniew Binderman) **89g:45010** 45E05 (45P05, 73C99)
- Complete continuity of convolution operators and operators with homogeneous kernels in Hölder classes. (Russian) *Izv. Severo-Kavkaz. Nauchn. Tsentra Vyssh. Shkoly Estestv. Nauk* 1987, no. 2, 34–39, 140–141. (Summary) **89m:47024** 47B38 (47G05)
- (with Askhabov, S. N.; Yakubov, A. Ya.) Discrete equations of convolution type with power nonlinearity. (Russian) *Dokl. Akad. Nauk SSSR* 296 (1987), no. 3, 521–524; translation in *Soviet Math. Dokl.* 36 (1988), no. 2, 273–276. (William L. Perry) **89a:45010** 45E10 (39A12)
- (with Rubin, B. S.) Fractional integrals with a limit index. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 3, 69–72, 86; translation in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 3, 98–102. (A. S. Silbergleit) **89g:26005** 26A33
- Karasz, V. M.** Stability of approximate solutions of the graph partitioning problem. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 3, 55–59 (1988); translated from *Avtomatika* 1987, no. 3, 72–76, 96 (Russian). (Summary) **89f:90123** 90C27 (05C99)
- Stability of approximate combinatorial optimization. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 3, 114–117, 135. (From the text) **89j:90210** 90C27
- Karasev, A. I.** (with Kremer, N. Sh.; Savel'eva, T. I.) ★ Математические методы и модели в планировании. (Russian) [Mathematical methods and models in planning] "Ekonomika", Moscow, 1987. 241 pp. (From the introduction) **89e:90002** 90Axx (90A11)
- Karasev, M. V.** (with Vorob'ev, Yu. M.) Poisson manifolds and the Schouten bracket. (Russian) *Funktsional. Anal. i Prilozhen.* 22 (1988), no. 1, 1–11, 96; translation in *Functional Anal. Appl.* 22 (1988), no. 1, 1–9. (S. D. Grigoryan) **89k:58011** 58A12 (58F05)
- (with Vorob'ev, Yu. M.) Corrections to the classical dynamics and to the quantization conditions arising in the deformation of Poisson brackets. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 6, 1294–1298; translation in *Soviet Math. Dokl.* 36 (1988), no. 3, 594–598. (Wojciech Lisiecki) **89c:58046** 58F05 (58F06, 58H15, 81D07)
- Karasev, V. P.** Invariant-algebraic methods for and symmetry analysis of cooperative phenomena. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (Järvala, 1985), 250–259, "Nauka", Moscow, 1986. (see **89d:81002**) 81C40 (58G35)
- (with Sazonova, Z. S.) A matrix method for calculating nonaligned optical systems, taking aberrations into account. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (Järvala, 1985), 456–465, "Nauka", Moscow, 1986. (see **89d:81002**) 78A05
- Invariant algebraic methods and symmetric analysis of cooperative phenomena. *Group theoretical methods in physics*, Vol. II (Järvala, 1985), 201–210, *VNU Sci. Press, Utrecht*, 1986. (D. ter Haar) **89i:81036** 81C40 (22E70)
- The theory of angular momenta and higher  $SU(n)$ -symmetries. *J. Phys. A* 20 (1987), no. 15, 5061–5069. (Raj Wilson) **89a:81033** 81C40 (22E70)
- (with Gorelik, V. S.) Structural phase transitions in crystals and the theory of invariants. (Russian) *Group-theoretic methods in fundamental and applied physics* (Russian) (Vladivostok, 1986), 174–185, "Nauka", Moscow, 1988. (Vojtěch Kopský) **89f:82018** 82A25 (82A60)
- Karastoyanov, A.** (with Marinchev, E.) Use of generalized integral exponential functions for the atomic nucleus. I. Comparison of the Laplace and Yukawa potentials for a homogeneous spherical nucleus. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Tekhn. Fiz.* 23 (1986), no. 1, 63–72 (1987). (Summary) **89h:81270** 81G45
- (with Marinchev, E.) Use of generalized integral exponential functions for the atomic nucleus. II. A potential hole of a spherical nucleus with bell-shaped density in the presence of a force of Laplace type. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Tekhn. Fiz.* 23 (1986), no. 1, 73–80 (1987). (Summary) **89h:81271** 81G45
- Karatava, T. V.** Homeomorphism of multiplicative and additive semigroups without continuity conditions. (Russian) *Ukrain. Mat. Zh.* 39 (1987), no. 3, 309–315, 405. (Uwe Küchler) **89a:47068** 47D07 (20M10, 46H99)
- On the mixed product of evolution multiplicative systems without continuity conditions. (Russian) *Ukrain. Mat. Zh.* 39 (1987), no. 4, 444–450, 542. (Uwe Küchler) **89a:47069** 47D07 (20M10)
- Ivanova-Karatopraklieva, I.** see **Ivanova-Karatopraklieva, I.**
- Karatopraklieva, M. G.** On the theory of equations of mixed type with discontinuous coefficients. II. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 1, 91–105, 182; translation in *Differential Equations* 24 (1988), no. 1, 72–82. (A. S. Berdyshev) **89c:35115** 35M05
- Karatsuba, A. A.** (with Arkhipov, G. I.; Chubarikov, V. N.) ★ Теория кратных тригонометрических сумм. (Russian) [Theory of multiple trigonometric sums] "Nauka", Moscow, 1987. 368 pp. (Matti Jutila (Zbl 638:10037)) **89i:11050** 11L03 (11L15)
- (with Berdikhin, B. M.; Voskresenskii, V. E.; Lavrik, A. F.; Malyshev, A. V.; Postnikov, A. G.; Sprindzhuk, V. G.) Nikolai Grigor'evich Chudakov. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 5(257), 189–190. (Editors) **89b:01037** 01A70
- Distribution of pairs of residues and nonresidues of special form. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 51 (1987), no. 5, 994–1009, 1117–1118; translation in *Math. USSR-Izv.* 31 (1988), no. 2, 307–323. (Adolf Hildebrand) **89c:11129** 11L20 (11N69)
- (with Bernik, V. A.; Kubilyus, I. P.; Platonov, V. P.; Suprunenko, D. A.) Vladimir Gennadiyevich Sprindzhuk. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 4(262), 161–162; translation in *Russian Math. Surveys* 43 (1988), no. 4, 195–197. (Editors) **89m:01076** 01A70
- (with Berdikhin, B. M.; Vladimirov, V. S.; Mishchenko, E. F.; Nikol'skii, S. M.) Aleksandr Fedorovich Lavrik (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 4(262), 237–238; translation in *Russian Math. Surveys* 43 (1988), no. 4, 245–247. (Editors) **89m:01079** 01A70
- see also **Ribenboim, Paulo**, **89c:11181**
- Karatzas, Ioannis** (with Lehoczky, John P.; Shreve, Steven E.) Optimal portfolio and consumption decisions for a "small investor" on a finite horizon. *SIAM J. Control Optim.* 25 (1987), no. 6, 1557–1586. (Lorenzo Peccati) **89d:90025** 90A09 (60G44, 93E20)
- (with Shreve, Steven E.) ★ Brownian motion and stochastic calculus. Graduate Texts in Mathematics, 113. Springer-Verlag, New York-Berlin, 1988. xxiv+470 pp. ISBN 0-387-96535-1 (A. N. Al-Hussaini) **89c:60096** 60J65 (35K99, 35R60, 60G44, 60H10, 60J60)
- Stochastic control under finite-fuel constraints. *Stochastic differential systems, stochastic control theory and applications* (Minneapolis, Minn., 1986), 225–240, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (Jan H. Van Schuppen) **89d:93118** 93E20
- Karavaev, A. G.** (with Belov, V. V.) Higher approximations for the quasiclassical trajectory-coherent states of a nonrelativistic particle. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 30 (1987), no. 10, 14–18. (Summary) **89e:81027** 81C15 (81D30)
- Karazeeva, N. A.** (with Cotsiolis, Athanase; Oskolkov, A. P.) A dynamical system generated by the equations of the motion of Oldroyd fluids of order  $L$ . (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 164 (1987),



- Differentsial'naya Geom. Gruppy Li i Mekh. IX*, 46–53, 197. (Summary) **89c:76022** 76A10 (58D25, 58F12)
- Karbe, M. J. (with Kurdachenko, L. A.) Just infinite modules over locally soluble groups. *Arch. Math. (Basel)* **51** (1988), no. 3, 401–411. (John S. Wilson) **89m:20009** 20C07 (20F19)
- Karbovskii, I. N. Cycles in communities of threshold automata. (Russian) *Problemy Peredachi Informatsii* **24** (1988), no. 2, 86–93; translation in *Problems Inform. Transmission* **24** (1988), no. 2, 152–158. (Anton Černý) **89j:68039** 68Q05 (92A09)
- Karcanias, N. (with Laios, B.; Giannakopoulos, C.) Decentralized determinantal assignment problem: fixed and almost fixed modes and zeros. *Internat. J. Control* **48** (1988), no. 1, 129–147. (Not in MR) **93B55** (93B27, 93B50)
- (with Kalogeropoulos, G.) Relationships between invariant subspaces and deflating subspaces of a regular pair  $(F, G)$ . *Math. Balkanica (N.S.)* **2** (1988), no. 1, 54–63. (John Maroulas) **89k:15020** 15A22 (47A15)
- Karch, M. (with Dvorak, R.) New results on the possible chaotic motion of Enceladus. Long term evolution of planetary systems (Ramsau, 1988). *Celestial Mech.* **43** (1987/88), no. 1–4, 361–369. (see **89j:76002**) **70F10** (58F13, 70K50)
- Karcher, H. (with Pinkall, U.; Sterling, I.) New minimal surfaces in  $S^3$ . *J. Differential Geom.* **28** (1988), no. 2, 169–185. (Kichoon Yang) **89j:53050** 53C42 (53A10)
- Embedded minimal surfaces derived from Scherk's examples. *Manuscripta Math.* **62** (1988), no. 1, 83–114. (Kichoon Yang) **89i:53009** 53A10
- (with Croke, Christopher B.) Volumes of small balls on open manifolds: lower bounds and examples. *Trans. Amer. Math. Soc.* **309** (1988), no. 2, 753–762. (Victor Bangert) **89m:53060** 53C20 (53C45)
- Karchevskii, M. M. (with Badriev, I. B.) ★ Методы двойственности в прикладных задачах. (Russian) [Duality methods in applied problems] Общая теория. [General theory] *Kazan. Gos. Univ., Kazan'*, 1987. 148 pp. (Dinh Thê Luc) **89d:49015** 49A55 (46N05, 47Hxx, 49A50, 90–01)
- (with Voloshanovskaya, S. N.) A difference scheme for the mixed boundary value problem of strong bending of shallow shells. Investigations in applied mathematics, No. 5. *J. Soviet Math.* **42** (1988), no. 3, 1685–1696. (Not in MR) **73L99** (73K25)
- Karchner, Mauricio (with Naor, Joseph) A fast parallel algorithm to color a graph with  $\Delta$  colors. *J. Algorithms* **9** (1988), no. 1, 83–91. (Summary) **89i:05118** 05C15 (68Q25, 68R10)
- Karczewski, W. Inverse eigenvalue problem for periodic block Jacobi matrices. *Zastos. Mat.* **19** (1987), no. 2, 279–284. (From the introduction) **89d:65039** 65F15 (15A18)
- Kardar, Mehran Replica Bethe ansatz studies of two-dimensional interfaces with quenched random impurities. *Nuclear Phys. B* **290** (1987), no. 4, 582–602. (C. Eugene Wayne) **89f:82058** 82A57 (82A25, 82A42)
- (with Nelson, David R.) Statistical mechanics of self-avoiding tethered manifolds. *Phys. Rev. A* **31** (1988), no. 2, 966–982. (Summary) **89f:82052** 82A51 (58F40, 81E25, 82A25, 82A41)
- (with Medina, Ernesto; Hwa, Terence; Zhang, Yi Cheng) Burgers' equation with correlated noise: renormalization-group analysis and applications to directed polymers and interface growth. *Phys. Rev. A* **31** (1987), no. 6, 3053–3075. (Summary) **89m:82027** 82A31 (76R50, 82A25, 82A31, 82A70)
- Kardentsever, H. see *Handbook: Finite element*, **89j:65001**
- Karel, Martin L. Special values of Hilbert modular functions. *Rev. Mat. Iberoamericana* **2** (1986), no. 4, 367–380. (Shigeaki Tsuyumine) **89d:11041** 11F41 (11G18, 14K22)
- Karenin, L. Ya. Interpolation on perfect subsets of the unit circle. (Russian) *Application of functional analysis, in approximation theory* (Russian), 61–69, 144–145, Kalinin. Gos. Univ., Kalinin, 1984. (see **89c:00066**) **30E05**
- Karetnyi, O. Ya. (with Kipnis, M. M.) Periodic operating modes of pulse-width control systems. II. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 12, 42–48; translation in *Automat. Remote Control* **48** (1987), no. 12, part 1, 1593–1599. (Hans Benker) **89j:49034** 49D50 (92A09)
- (with Kipnis, M. M.) Periodic operating modes of pulse-width control systems. I. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 11, 46–54. (Hans Benker) **89j:49033** 49D50 (92A09, 93C99)
- (with Gelig, A. Kh.; Yudkevich, M. L.) Stability and ultimate boundedness of processes in systems with pulse-width modulation. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 5, 31–41; translation in *Automat. Remote Control* **49** (1988), no. 5, part 1, 570–579. (Summary) **89c:93157** 93D10 (93C30)
- (with Kipnis, M. M.; Petrova, Yu. B.) Application of pulse-frequency characteristics for the study of periodic states in systems with an integral wide-pulse modulator. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 8, 59–68; translation in *Automat. Remote Control* **49** (1988), no. 8, part 1, 1005–1012. (Not in MR) **49D50**
- Karger, Adolf (with Trojak, Jan) Affine Darboux motions with vector part one-parametric subgroup. (Russian and Czech summaries) *Acta Polytech. Práce ČVUT Praha Ser. IV Tech. Teoret.* **1983**, no. 2, 95–104. (K. Strubecker) **89a:53016** 53A17
- Geometry of the motion of robot manipulators. *Manuscripta Math.* **62** (1988), no. 1, 115–126. (Hans Robert Müller) **89k:53010** 53A17 (70B15)
- Karhumäki, Juhani The equivalence of mappings on languages. *Trends, techniques, and problems in theoretical computer science* (Smolenice, 1986), 26–38, *Lecture Notes in Comput. Sci.*, **281**, Springer, Berlin-New York, 1987. (D. M. Campbell) **89g:68039** 68Q45 (03D05, 68–02, 68Q15)
- The Ehrenfeucht conjecture for transducers. (German and Russian summaries) *Mathematical aspects of informatics (Māgesprung, 1986)*. *J. Inform. Process. Cybernet.* **23** (1987), no. 8–9, 389–401. (Dominique Perrin) **89d:68043** 68Q45 (20M35)
- (with Horváth, Sándor; Kleijn, Jetty) Results concerning palindromicity. (German and Russian summaries) *Mathematical aspects of informatics (Māgesprung, 1986)*. *J. Inform. Process. Cybernet.* **23** (1987), no. 8–9, 441–451. (Karel Culik II) **89d:68042** 68Q45
- (with Culik, Karel, II) Systems of equations over a finitely generated free monoid having an effectively findable equivalent finite subsystem. *Semigroups, theory and applications (Oberwolfach, 1986)*, 18–27, *Lecture Notes in Math.*, **1320**, Springer, Berlin-New York, 1988. (André Lentin) **89k:20084** 20M05 (68Q70)
- (with Culik, Karel, II) On totalistic systolic networks. *Inform. Process. Lett.* **26** (1988), no. 5, 231–236. (J. Gruska) **89c:68096** 68Q80 (68U20)
- Kari, Jarkko A cryptanalytic observation concerning systems based on language theory. *Discrete Appl. Math.* **21** (1988), no. 3, 265–268. (Zhen Fu Cao) **89k:94048** 94A60
- Security of ciphering in view of complexity theory. *Proceedings of the Fifth International Meeting of Young Computer Scientists (Smolenice Castle, 1988)*. *Tanulmányok—MTA Számítástech. Automat. Kutató Int. Budapest No. 208* (1988), 163–169. (see **89c:68002**) **68P25**
- Karimov, Dzh. Kh. (with Shabadiyov, K. Kh.) Investigation of the Lipschitz property with respect to the parameter of the solution of a mixed problem for a quasilinear differential equation with a small parameter multiplying the highest mixed derivative. (Russian) *Investigations in degenerate differential equations and limit theorems of probability theory (Russian)*, 3–9, Tashkent. Gos. Ped. Inst., Tashkent, 1985. (see **89g:60002**) **35B25**
- see also *Investigations in degenerate differential equations and limit theorems of probability theory*, **89g:60002**
- Karimov, I. A. On a group expert estimation of indices measured on a ratio scale. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 3, 114–121; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 6, 13–21, 203 (Russian). (Summary) **89j:90013** 90A07 (90A05)
- Karimova, D. Kh. A parallel variant of a relaxation method. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **30** (1987), no. 9, 548–551 (1988). (O. Pokorná) **89g:65033** 65F10 (65W05)
- The nonlinear relaxation method. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **31** (1988), no. 3, 150–154. (Hong Kun Xu) **89i:65065** 65J15 (47H17)
- Karimzhanov, A. (with Martynyuk, A. A.) Limit equations and the stability of unsteady motions. (Russian) *Prikl. Mekh.* **23** (1987), no. 10, 67–73, 134. (Summary) **89c:70047** 70K20 (34D20, 70K15)
- Karłowicz, Ch. G. On pairwise almost compactness. *Ann. Soc. Sci. Bruxelles Sér. I* **100** (1986), no. 4, 129–137 (1988). (Ivan L. Reilly) **89g:54068** 54E55 (54D20)
- On minimal pairwise Hausdorff bitopological spaces. *Indian J. Pure Appl. Math.* **19** (1988), no. 8, 751–760. (Mila Mrčević) **89k:54071** 54E55
- Karls, D. (with Ostermeyer, G.-P.) On the numerical integration of systems containing Dirac's delta distribution. *Numerical methods (Miskolc, 1986)*, 327–336, *Colloq. Math. Soc. János Bolyai*, **50**, North-Holland, Amsterdam-New York, 1988. (Summary) **89m:65080** 65L99
- Kariv, Oded (with Hakimi, S. Louis) A generalization of edge-coloring in graphs. *J. Graph Theory* **10** (1986), no. 2, 139–154. (Summary) **89a:05064** 05C15
- Kariya, Takeaki (with Sinha, Bimal Kumar; Giri, N. C.) Robustness of  $t$ -test. *J. Japan Statist. Soc.* **17** (1987), no. 2, 165–173. (Mir Maswood Ali) **89c:62068** 62F35 (62F03)
- The class of models for which the Durbin-Watson test is locally optimal. *Internat. Econom. Rev.* **29** (1988), no. 1, 167–175. (C. R. Rao) **89i:62109** 62J05
- Karkashvili, G. S. (with Makarov, Vladimir Leonidovich) Solution of integral equations in fractional Sobolev spaces. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 63 (1987), 3–19, 125. (Eberhard Schock) **89d:65111** 65R20
- An integro-differential equation of Fredholm type. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 64 (1988), 8–16, 147. (Summary) **89h:65222** 65R20 (45B05)
- Karkowski, J. Supersymmetric electric and magnetic monopoles. *Acta Phys. Polon. B* **18** (1987), no. 12, 1123–1129. (Thomas Schücker) **89b:81130** 81E13 (53C80, 81G20)
- Karl, W. Clem (with Verghese, George C.) Comments on: "Sufficient and necessary condition for the asymptotic stability of discrete linear interval systems" [Internat. J. Control **47** (1988), no. 5, 1563–1565] by C. L. Jiang. *Internat. J. Control* **48** (1988), no. 5, 2159–2160. (Not in MR) **93D20** (93C05, 93C40, 93C55)
- Karlhede, A. (with Lindström, U.) Super-Weyl-invariant spinning  $p$ -branes. *Phys. Lett. B* **209** (1988), no. 4, 441–444. (C. Gauthier) **89j:83079** 83E15 (81E30, 83E30, 83E50)
- (with Roček, M.) Topological quantum field theory and  $N = 2$  conformal supergravity. *Phys. Lett. B* **212** (1988), no. 1, 51–55. (K. Schoutens) **89k:81102** 81E20 (81E40, 83E30, 83E50)
- Karlin, Samuel Comparative analysis of structural relationships in DNA and protein sequences. *Evolutionary processes and theory* (Israel, 1985), 329–363, *Academic Press, Orlando, FL*, 1986. (see **89h:92001**) **92A10** (92A09)
- (with Matessi, Carlo) Altruistic behavior in sibling groups with unrelated intruders. *Evolutionary processes and theory* (Israel, 1985), 689–724, *Academic Press, Orlando, FL*, 1986. (Summary) **89k:92032** 92A10
- (with Ost, Friedemann) Maximal length of common words among random letter sequences. *Ann. Probab.* **16** (1988), no. 2, 535–563. (P. Révész) **89h:60047** 60F15 (60G50)
- see also *Evolutionary processes and theory*, **89h:92001**
- Karlin, V. A. (with Belova, O. N.) Investigation of some model problems connected with the parabolized Navier-Stokes equations. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 24, 24 pp. (Summary) **89h:65242** 65N10 (35Q10)
- Karlíner, Marek (with Sharpe, Stephen R.; Chang, Y. F.) Zeroing in on  $SU(3)$ . *Nuclear Phys. B* **302** (1988), no. 2, 204–250. (Summary) **89e:81125** 81E25 (81–08, 81G20)
- Karloff, Howard J. (with Boyar, Joan F.) Coloring planar graphs in parallel. *J. Algorithms* **8** (1987), no. 4, 470–479. (François Jaeger) **89d:68067** 68R10 (05–04, 05C15, 68Q25)
- How long can a Euclidean traveling salesman tour be? *SIAM J. Discrete Math.* **2** (1989), no. 1, 91–99. (Edward Minieka) **89m:90063** 90B10 (05C45)
- Karlov, Emil A. (with Boyanov, Todor P.) Polynomial approximations of nonrectifiable sets in the plane. (Bulgarian summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **72** (1978), 5–9 (1986). (Martin Bartel) **89a:41005** 41A10 (41A25)
- Thoughts on a theorem of Miquel. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian)* (Sunny Beach (Sl'nech Bryag), 1987), 673–677, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89f:51026** 51B10
- Karlov, V. I. (with Krasil'shchikov, M. N.) Optimization of the measurement process in dynamic systems for different optimality criteria. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 1, 167–174; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 3, 191–197, 224 (Russian). (Summary) **89c:93222** 93E20 (93C55, 93E10)
- Karlovich, Yu. I. (with Mardiev, R.) The one-sided invertibility of functional operators and the  $n(d)$ -normality of singular integral operators with shift in Hölder spaces. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 3, 488–499, 549; translation in *Differential Equations* **24** (1988), no. 3, 350–359. (N. K. Karapetyants) **89j:47022** 47B38 (45E05, 47A53, 47G05)
- A local-trajectory method for the study of invertibility in  $C^*$ -algebras of operators with discrete groups of shifts. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 3, 546–550;

- translation in Soviet Math. Dokl. 37 (1988), no. 2, 407-412. (W. Żelazko) 89e:46068 46L05 (22D25, 47G05)
- Karlqvist, A. (with Andersson, Å. E.; Casti, J.; Christiansen, P. L.) Emerging paradigms in applied mathematical modelling—an introduction. Special issue on emerging paradigms in applied mathematical modelling. *J. Comput. Appl. Math.* 22 (1988), no. 2-3, 143-181. (David Yeung) 89j:92001 92-01 (58F40, 90A16, 93A10)
- see also Special issue: Emerging paradigms in applied mathematical modelling. 89c:00028
- Karlsson, Hans (with Tjøstheim, Dag) Consistent estimates for the NEAR(2) and NLAR(2) times series models. *J. Roy. Statist. Soc. Ser. B* 50 (1988), no. 2, 313-320. (I. V. Basawa) 89m:62104 62M10
- Karlsson, Anders (with Coronas, James) Transient direct and inverse scattering for inhomogeneous viscoelastic media: obliquely incident SH mode. *Inverse Problems* 4 (1988), no. 3, 643-660. (Summary) 89m:73016 73D25 (73D50, 73F15)
- Karlsson, Rolf G. Greedy matching on a grid. *BIT* 28 (1988), no. 1, 19-26. (Summary) 89a:68026 68P05 (68Q25)
- (with Overmars, Mark H.) Scanline algorithms on a grid. *BIT* 28 (1988), no. 2, 227-241. (Summary) 89b:68058 68U05
- (with Overmars, Mark H.) Normalized divide-and-conquer: a scaling technique for solving multidimensional problems. *Inform. Process. Lett.* 26 (1988), no. 6, 307-312. (Summary) 89a:68089 68Q20 (68U05)
- Karlsson, T. (with Birolini, M.) Wiener estimates for a class of systems of parabolic variational inequalities. *Ann. Mat. Pura Appl. (4)* 147 (1987), 197-210. (Igor Bock) 89a:35122 35K85
- Karmakar, P. K. (with Ghosh, Dilip Kumar) Some series of efficiency balanced designs. *Austral. J. Statist.* 30 (1988), no. 1, 47-51. (Ryoh Fuji-Hara) 89k:62102 62K15
- Karmanov, V. G. (with Bereznev, V. A.; Tret'yakov, A. A.) Choice of parameters in the method of penalty functions. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 10, 1451-1461, 1597. (D. Klatte) 89g:90209 90C31 (49D30, 90C30)
- (with Bereznev, V. A.; Tret'yakov, A. A.) Unconstrained minimization of nonconvex functions. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 11, 1752-1756, 1760. (R. Šerban) 89e:90171 90C30
- Karmazin, A. P. (with Shemetkov, L. A.) On complementability of coradicals in extensions of finite groups. (Russian) *Problems in algebra*, No. 3 (Russian), 38-48, 126-127, "Universitet'skoe", Minsk, 1987. (Gerhard Pazderski) 89k:20029 20D10
- Karni, Edi (with Safra, Zvi) "Preference reversals" and the theory of decision making under risk. *Risk, decision and rationality (Aix-en-Provence, 1986)*, 163-172, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston, MA, 1988*. (Introduction) 89e:90013 90A06 (90A10)
- On the equivalence between descending bid auctions and first price sealed bid auctions. *Theory and Decision* 25 (1988), no. 3, 211-217. (Hans Peters) 89m:90023 90A10 (90A12, 90D10, 90D30)
- Kárník, Igor On the possibility of using a generalized two-dimensional Poisson distribution in pairwise linear regression. (Czech. English summary) *Ekonom.-Mat. Obzor* 24 (1988), no. 2, 215-220. (Title) 89i:62110 62J05
- Karnishin, S. G. On the question of the stability, with respect to some variables, of the solutions of systems of linear differential equations. (Russian) *Boundary value problems (Russian)*, 9-14, i, Perm. Politekh. Inst., Perm, 1986. (see 89c:00009) 34D99 (34A30)
- Kárny, Miroslav (with Hangos, Katalin M.) One-sided approximation of Bayes rule and its application to regression model with Cauchy noise. *Kybernetika (Prague)* 24 (1988), no. 5, 321-339. (Kurt Marti) 89j:93106 93E10 (62F15)
- Karobis, Antanas Local limit theorems for sums of independent random vectors. (Russian) *Probability distributions and mathematical statistics (Russian) (Fergana, 1983)*, 198-212, 493, "Fan", Tashkent, 1986. (Zdzisław Rychlik) 89e:60050 60F05
- Karolos, Serafimidis see Serafimidis, Karolos
- Karetkin, Drora (with Nitzal, Samuel; Paroush, Jacob) The essential ranking of decision rules in small panels of experts. *Theory and Decision* 24 (1988), no. 3, 253-268. (Summary) 89d:90016 90A07 (90A05)
- Karoubi, Max Homologie cyclique et K-théorie. (English summary) [Cyclic homology and K-theory] *Astérisque* No. 149 (1987), 147 pp. (K. R. Coombes) 89b:18019 18G55 (18F25, 19D55, 19L10, 22E41, 53C05, 55R40)
- el Karoui, Nicole see El Karoui, Nicole
- Karov, Kh. M. The Hausdorff-Young inequality for the eigen- and associated functions of a second-order differential operator. (Russian) *Mat. Zametki* 42 (1987), no. 3, 411-421, 476. (A. A. Shkalkov) 89a:34034 34B25 (47E05)
- Karp, Carol see Green, Judy. (89b:01071)
- Karp, Larry S. Dynamic hedging with uncertain production. *Internat. Econom. Rev.* 29 (1988), no. 4, 621-637. (Not in MR) 90A12 (90A11)
- Karp, Leon (with Pinsky, Mark) Mean exit time from an extrinsic ball. *From local times to global geometry, control and physics (Coventry, 1984/85)*, 179-186, *Pitman Res. Notes Math. Ser.*, 150, Longman Sci. Tech., Harlow, 1986. (Yu. L. Daletskii) 89e:60155 60J65 (58G32)
- (with Dodziuk, Jozef) Spectral and function theory for combinatorial Laplacians. *Geometry of random motion (Ithaca, N.Y., 1987)*, 25-40, *Contemp. Math.*, 73, Amer. Math. Soc., Providence, RI, 1988. (Robert Brooks) 89b:58220 58G99 (58G25)
- (with Pinsky, Mark) First-order asymptotics of the principal eigenvalue of tubular neighborhoods. *Geometry of random motion (Ithaca, N.Y., 1987)*, 105-119, *Contemp. Math.*, 73, Amer. Math. Soc., Providence, RI, 1988. (Steven Rosenberg) 89g:58206 58G25 (53C40)
- (with Pinsky, Mark) Volume of a small extrinsic ball in a submanifold. *Bull. London Math. Soc.* 21 (1989), no. 1, 87-92. (Steven Rosenberg) 89i:53038 53C40 (53A07)
- Karp, Richard M. (with Rabin, Michael O.) Efficient randomized pattern-matching algorithms. *IBM J. Res. Develop.* 31 (1987), no. 2, 249-260. (Summary) 89g:68021 68Q20
- (with Adler, Ilan; Shamir, Ron) A simplex variant solving an  $m \times d$  linear program in  $O(\min(m^2, d^2))$  expected number of pivot steps. *J. Complexity* 3 (1987), no. 4, 372-387. (M. Bastian (Zbl 61:65054)) 89m:90094 90C05 (65K05, 68Q25)
- (with Upfal, Eli; Wigderson, Avi) The complexity of parallel search. 17th Annual ACM Symposium on the Theory of Computing (Providence, RI, 1985). *J. Comput. System Sci.* 36 (1988), no. 2, 225-253. (Helmut Alt) 89i:68037 68Q10 (68P10, 68Q25, 68R10)
- (with Motwani, Rajeev; Raghavan, Prabhakar) Deferred data structuring. *SIAM J. Comput.* 17 (1988), no. 5, 883-902. (Marc Gyssens) 89m:68013 68P05 (68P10, 68Q20)
- Karpe, R. Continuity of tricomplex and quadricomplex functions. (Czech summary) *Šk. Vysoké. Učent. Tech. v Brně* 1985, no. 1-4, 161-166. (Summary) 89k:30065 30G35
- Karpenko, D. Ya. (with Borgardt, A. A.) The light cone in linear and nonlinear field theory. (Russian. English summary) *Ukrain. Fiz. Zh.* 32 (1987), no. 7, 965-971, 1114. (Summary) 89g:81034 81D25
- Karpinskaya, L. V. (with Onishchenko, S. M.; Fedorenko, A. D.) A mathematical model of the motion of a rigid body along a spheroid under the action of central forces. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1988, no. 23, 39 pp. (Summary) 89k:70016 70E99 (70-04)
- Karpiński, Janusz Checking policy for deteriorating multistate systems. *Naval Res. Logist.* 35 (1988), no. 2, 259-268. (Summary) 89b:90093 90B25
- Karpiński, M. (with Verbeek, Rutger) On the Monte Carlo space constructible functions and separation results for probabilistic complexity classes. *Inform. and Comput.* 75 (1987), no. 2, 178-189. (Claus-Peter Schnorr) 89b:68032 68Q25
- (with Wagner, Klaus Werner) The computational complexity of graph problems with succinct multigraph representation. (German summary) *Z. Oper. Res.* 32 (1988), no. 3-4, 201-211. (Norbert Blum) 89e:68052 68Q25 (05C99, 68R10, 90B10, 90C27)
- (with Lingas, Andrzej) Subtree isomorphism is NC reducible to bipartite perfect matching. *Inform. Process. Lett.* 30 (1989), no. 1, 27-32. (Summary) 89k:68120 68R10 (05C05, 68Q25)
- Karpio, A. (with Kryszewski, A.; Odziejewicz, A.) Two-twistor conformal Hamiltonian spaces. *Rep. Math. Phys.* 24 (1986), no. 1, 65-80. (Michael G. Eastwood) 89g:58068 58F05 (32L25, 53C80, 81D27)
- Karpus, Martin Molecular dynamics: from H + H<sub>2</sub> to biomolecules. *Schrödinger (London, 1987)*, 85-101, Cambridge Univ. Press, Cambridge-New York, 1987. (see 89m:01069) 92A40
- Karponas, I. (with Cherruault, Y.) Application of mathematical models in pharmaceutical industry: identification and optimal control applied to therapeutics. (French summary) *Proceedings of the First European Symposium on Mathematics in Industry (Amsterdam, 1985)*, 11-30, European Consort. Math. Indust., 1, Teubner, Stuttgart, 1988. (Summary) 89g:92009 92A07
- Karpov, A. O. Minimally defining relations in information structures. (Russian) *Programirovanie* 1988, no. 2, 68-80, 111; translation in *Programming and Comput. Software* 14 (1988), no. 2, 91-99. (Summary) 89e:68024 68P20 (68T30)
- Karpov, O. N. (with Segeda, N. E.) Self-learning in a problem of automated speech recognition. (Russian) *Methods for solving nonlinear problems, and data processing (Russian)*, 33-41, 106, Dnepropetrovsk. Gos. Univ., Dnepropetrovsk, 1986. (see 89f:00011) 68T10
- Karpov, V. Ya. A method for calculating Rayleigh-Taylor instability in Euler variables. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 94, 26 pp. (Summary) 89j:76018 76-08 (76E05, 76N15, 76V05)
- Karpov, Yu. G. Coherence of systems of parallel informational processes. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 3, 91-97; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 5, 179-186, 223 (Russian). (A. Aiello) 89m:68035 68Q10 (68M10, 68Q90)
- Karpukhin, Yu. P. (with Rodionova, I. N.) The singular G problem for an equation of mixed type of the second kind. (Russian) *Analytic methods for solving differential equations (Russian)*, 52-55, 146, Kuibyshev. Gos. Univ., Kuibyshev, 1986. (Summary) 89b:35233 35M05
- Karpushkin, V. N. Uniform estimates for oscillatory integrals and volumes under partial deformation of a phase. (Russian) *Geometry and the theory of singularities in nonlinear equations (Russian)*, 151-159, 185, *Novoe Global. Anal.*, Voronezh. Gos. Univ., Voronezh, 1987. (Eckehard Krätzel) 89b:58205 58G15 (41A60, 58C27)
- Karr, A. F. (with Chornoboy, E. S.; Schramm, L. P.) Maximum likelihood identification of neural point process systems. *Biol. Cybernet.* 59 (1988), no. 4-5, 265-275. (Summary) 89i:92012 92A09 (62F10)
- Karr, Michael Theory of summation in finite terms. *J. Symbolic Comput.* 1 (1985), no. 3, 303-315. (Summary) 89a:12016 12H10 (68Q20, 68Q40)
- Karras, Ulrich Equimultiplicity of deformations of constant Milnor number. *Proceedings of the conference on algebraic geometry (Berlin, 1985)*, 186-209, *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (Kurt Behnke) 89f:32012 32B30 (32C40, 32C42, 32C45)
- Karrison, Theodore Restricted mean life with adjustment for covariates. *J. Amer. Statist. Assoc.* 82 (1987), no. 400, 1169-1176. (Subhash C. Kocher) 89c:62185 62P10
- Karshiev, A. Sh. (with Brekhov, O. M.) An exponential two-node multiphase queueing system with loss of customers. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 11, 103-110. (Summary) 89f:60107 60K25 (90B22)
- Kartashev, A. P. (with Rozhdetsvenskii, B. L.) ★ Analyse mathématique. (French) [Mathematical analysis] Translated from the Russian by Djilali Embarek. Traduit du Russe: Mathématiques. [Translations of Russian Works: Mathematics] "Mir", Moscow, 1988. 472 pp. ISBN 5-03-000160-3 (Editors) 89i:00003 00A05 (26-01)
- Kartashev, N. V. Estimates for the geometric asymptotics of Markov times on homogeneous chains. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 37 (1987), 66-77, 135. (Summary) 89c:60075 60J10
- Asymptotic expansions and inequalities in stability theorems for general Markov chains with relatively bounded perturbations. Stability problems of stochastic models. *J. Soviet Math.* 40 (1988), no. 4, 509-518. (Bernard Ycart) 89f:60089 60J05
- Kartashev, S. I. The structure of lattices of closed classes of some functional systems of Post type. (Russian) *Proceedings of the All-Union seminar on discrete mathematics and its applications (Russian) (Moscow, 1984)*, 34-40, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow, 1986*. (János Demetrovics) 89a:03053 03B50 (03G05, 06E30)
- Finiteness of the number of closed classes in  $(P_n, P_n)$ . (Russian) *Logical-algebraic constructions (Russian)*, 42-48, *Kalinin. Gos. Univ., Kalinin, 1987*. (V. B. Kudryavtsev) 89f:03017 03B50 (08A40)
- Kartavtsev, O. I. (with Belyaev, V. B.; Kochkin, V. I.) ★ Конечномерная аппроксимация дифференциального оператора в уравнениях Якубовского. (Russian) [Finite-dimensional approximation of a differential operator in the Yakubovskii equations] With an English summary. Сообщения Объединенного Института Ядерных Исследований.



- Дубна [Communications of the Joint Institute for Nuclear Research, Dubna], R4-88-574. *Joint Inst. Nuclear Res., Dubna*, 1988, 8 pp. (Summary) **89m:81178** 81F10
- Kártesi, Ferenc see Bolyai, János, 89m:01052
- Kartsatos, Athanasios G. (with Dannon, Vitali C.) The controllability of a quasilinear functional-differential system. *Ann. Polon. Math.* **47** (1987), no. 3, 371–380. (Jerzy Klamka) **89e:93017** 93B05 (34K35, 93C10, 93C50)
- (with Calvert, Bruce D.) On the compactness of the nonlinear evolution operator in a Banach space. *Bull. London Math. Soc.* **19** (1987), no. 6, 551–558. (Ricardo Torrejón) **89e:47094** 47H20 (47H06)
- On the solvability of abstract operator equations involving compact perturbations of  $m$ -accretive operators. *Nonlinear Anal.* **11** (1987), no. 9, 997–1004. (Simeon Reich) **89e:47090** 47H15 (47H06)
- (with Parrott, M. E.) Using fixed point theory to find the weak solutions of an abstract functional-differential equation. *Fixed point theory and its applications (Berkeley, CA, 1986)*, 161–165, *Contemp. Math.*, **72**, Amer. Math. Soc., Providence, RI, 1988. (A. Corduneanu) **89i:34078** 34D30 (34G20, 47H06)
- A direct method for the existence of evolution operators associated with functional evolutions in general Banach spaces. *Funkcial. Ekvac.* **31** (1988), no. 1, 89–102. (S. Raczynski) **89i:34093** 34G20 (47H15)
- (with Parrott, M. E.) The weak solution of a functional-differential equation in a general Banach space. *J. Differential Equations* **75** (1988), no. 2, 290–302. (Mats Gyllenberg) **89i:34134** 34K30 (34K20, 35L60, 35R10, 47H15)
- (with Calvert, Bruce D.) On the convexity of the interior of the domain of an  $m$ -accretive operator in a Banach space. *Nonlinear Anal.* **12** (1988), no. 7, 727–732. (A. J. B. Potter) **89i:47099** 47H06 (46B20)
- Kartyshev, S. V. (with Gulina, A. V.; Drozdova, O. M.; Koshelev, I. M.) Numerical investigation of the stability of higher-order differential-algebraic systems with delay. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 141, 23 pp. (Summary) **89i:65121** 65L07
- Karube, Takashi Fundamental and important conjectures in the theory of topological transformation groups. (Japanese. English summary) *Sci. Bull. Fac. Ed. Nagasaki Univ.* **39** (1988), 5–13. (Masami Wakae) **89d:57052** 57S05
- Karule, Erna Calculation of the two-photon ionization of a hydrogen atom over the photo-ionization threshold by the method of analytic continuation. (Russian) *Group-theoretic methods in physics, Vol. 2 (Russian) (Jurmala, 1985)*, 525–532, "Nauka", Moscow, 1986. (see **89d:81002**) 81G55
- Karulina, N. I. Design of an optimal control for a class of bilinear systems. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 9, 31–36. (O. Hájek) **89i:93055** 93B50 (49B10)
- A sufficient condition for optimality for differential inclusions. (Russian) *Optimal control and differential games (Russian)*. *Trudy Mat. Inst. Steklov.* **185** (1988), 84–86. (Pavel Krbec) **89m:49036** 49B10 (34A60, 49E10)
- Karunamuni, Rohana J. (with Gilliland, Dennis C.) On empirical Bayes with sequential component. *Ann. Inst. Statist. Math.* **40** (1988), no. 1, 187–193. (Albrecht Irlé) **89i:62015** 62C10 (62C12)
- On empirical Bayes testing with sequential components. *Ann. Statist.* **16** (1988), no. 3, 1270–1282. (Françoise Garcia-Brouaye) **89i:62129** 62L10 (62C12)
- Karwan, Mark H. (with Sarin, Sanjiv; Rardin, Ronald L.) Surrogate duality in a branch-and-bound procedure for integer programming. *European J. Oper. Res.* **33** (1988), no. 3, 326–333. (Horst W. Hamacher) **89i:90079** 90C10
- (with Ram, Balasubramanian; Babu, A. J. G.) Aggregation of constraints in integer programming. *European J. Oper. Res.* **35** (1988), no. 2, 216–227. (B. Jeromin) **89i:90102** 90C10 (65K10)
- (with Köksalan, Murat; Zionts, Stanley) An approach for solving discrete alternative multiple criteria problems involving ordinal criteria. Multiple criteria decision making. *Naval Res. Logist.* **35** (1988), no. 6, 625–641. (Summary) **89i:90093** 90B50 (90C31, 92A25)
- (with Ram, Balasubramanian) A result in surrogate duality for certain integer programming problems. *Math. Programming* **43** (1989), no. 1 (Ser. A), 103–106. (Summary) **89m:90116** 90C10 (90C11)
- sterna-Karwal, A. see Sterna-Karwal, A.
- Karymsakov, K. U. (with Zhubaev, N. Zh.; Kal'ts, A. L.; Kim, V. T.; Kozhabekov, Zh. T.; Nurzhanova, Sh. Zh.; Sarsenov, B. Sh.; Sinyayev, A. Y.; Turekulova, A. N.) \* Численные методы исследования двумерных волн напряжения (в упругих и упругопластических средах). (Russian) [Numerical methods for the study of two-dimensional stress waves (in elastic and elastoplastic media)] "Nauka" Kazakh. SSR, Alma-Ata, 1988. 216 pp. ISBN 5-628-00065-5 (Summary) **89g:73015** 73Dxx (65Mxx, 73-08, 73F15, 73F30)
- Karyukin, V. V. Linear equations connected with optimization of the Monte Carlo method in calculations of radiative transfer. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 2, 14–22, 132. (Summary) **89a:82061** 82A70 (65C05, 82-08, 85A25)
- Acceleration of the convergence of an iterative process in the solution of integral equations by the Monte Carlo method. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 4, 14–18, 109. (L. Berg) **89i:65017** 65C05 (65J10, 65R20)
- Karzanov, A. V. Half-integral five-terminus flows. *Discrete Appl. Math.* **18** (1987), no. 3, 263–278. (M. M. Syslo) **89d:90092** 90B10 (05C99, 90C35)
- Kása, Z. (with Tãmbulea, Leon) Binary trees and number of states in buddy systems. *Ann. Univ. Sci. Budapest. Sect. Comput.* **7** (1987), 3–10 (1988). (M. S. Cheema) **89i:05020** 05A15 (05A19)
- Cellular automata in graphs. *Studia Univ. Babeş-Bolyai Math.* **32** (1987), no. 3, 17–23. (Robert M. Baer) **89d:68065** 68Q90 (05C99)
- Kasabov, Ognjan T. (with Borisov, Adriyan V.) On the sectional curvature of Kähler manifolds of indefinite metrics. *Pliska Stud. Math. Bulg.* **9** (1987), 66–70. (From the introduction) **89d:53044** 53B30 (53B35)
- Kasahara, Masao (with Sasano, Hiroshi) A new method of obtaining the weight distribution of convolutional codes. (Japanese. English summary) *J. Fac. Sci. Tech. Kinki Univ.* **24** (1988), 219–224. (Summary) **89i:94065** 94B10
- Kasahara, Yuji (with Csáki, Endre; Földes, Antónia) Around Yor's theorem on the Brownian sheet and local time. *J. Math. Kyoto Univ.* **28** (1988), no. 2, 373–381. (Robert
- J. Adler) **89i:60085** 60G17 (60G60, 60J55)
- Kasai, Masumi The triangulation in a perturbed Friedmann universe. *Progr. Theoret. Phys.* **79** (1988), no. 4, 777–789. (Summary) **89i:83117** 83F05 (83C15)
- Kasai, S. (with Kimura, Tatsuo; Hosokawa, H.) Universal transitivity of simple and 2-simple prehomogeneous vector spaces. (French summary) *Ann. Inst. Fourier (Grenoble)* **38** (1988), no. 2, 11–41. (S. I. Gelfand) **89e:20083** 20G15 (11E72, 14L30)
- (with Kimura, Tatsuo; Inuzuka, Masaaki; Yasukura, Osami) A classification of 2-simple prehomogeneous vector spaces of type I. *J. Algebra* **114** (1988), no. 2, 369–400. (G. E. Wall) **89i:32062** 32M10 (20G05)
- (with Kimura, Tatsuo; Taguchi, Masanobu; Inuzuka, Masaaki) Some P.V.-equivalences and a classification of 2-simple prehomogeneous vector spaces of type II. *Trans. Amer. Math. Soc.* **308** (1988), no. 2, 433–494. (T. Ono) **89i:11101** 11R20 (11E99, 11N25, 11R18, 11R29, 32M10)
- Kasai, Tamotsu (with Yamada, Shoichiro; Harashima, Katsumi) Analysis of a heuristic algorithm for planar assignment problem. *Electron. Comm. Japan. Part I Comm.* **70** (1987), no. 6, 1–10. (Summary) **89i:90120** 90C10
- Kasami, Tadao (with Fujiwara, Tohru; Taniguchi, Kenichi) Decision problem concerning security for cryptographic protocols. *Systems Comput. Japan* **18** (1987), no. 5, 67–78. (Summary) **89f:94015** 94A60 (68P25)
- (with Fujiwara, Tohru; Takata, Toyoo; Lin, Shu) A cascaded coding scheme for error control and its performance analysis. *IEEE Trans. Inform. Theory* **34** (1988), no. 3, 448–462. (J. A. Thiong-Ly) **89i:94073** 94B35 (94B05, 94B70)
- (with Lin, Shu) The binary weight distribution of the extended  $(2^m, 2^m - 4)$  code of the Reed-Solomon code over  $GF(2^m)$  with generator polynomial  $(x - \alpha)(x - \alpha^2)(x - \alpha^3)$ . *Linear Algebra Appl.* **98** (1988), 291–307. (Summary) **89i:93016** 93B05 (11T71, 93B15)
- (with Seki, Hiroyuki; Taniguchi, Kenichi) On operational semantics of congruence relation defined in algebraic language ASL\*. Mathematical methods in software science and engineering (Japanese). *Sûrikaiseikikenkyûsho Kôkyûroku No. 655* (1988), 104–123. (see **89i:68001**) 68Q55
- Kasana, Harvir S. (with Prasad, Govind) On linear methods of summations of a Fourier series. *Arch. Math. (Brno)* **23** (1987), no. 2, 63–68. (Summary) **89i:42006** 42A24
- (with Srivastava, Hari M.) A note on the construction of the proximate type of an entire Dirichlet series with index-pair  $(p, q)$ . *Rend. Sem. Mat. Univ. Padova* **78** (1987), 145–154. (A. G. Azpeitia) **89d:30030** 30D10 (30D15)
- (with Agrawal, Purshotam Narain) On sharp estimates and linear combinations of modified Bernstein polynomials. *Bull. Soc. Math. Belg. Sér. B* **40** (1988), no. 1, 61–71. (M. W. Müller) **89i:41024** 41A25 (41A10, 41A36)
- An existence theorem for the proximate order of analytic functions. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 1, 117–121, 135; translation in *Ukrainian Math. J.* **40** (1988), no. 1, 100–103. (R. P. Boas, Jr.) **89i:30108** 30E99 (30B50)
- Kasangan, Stefano (with Labella, Anna; Pettorossi, Alberto) Enriched categories for local and interaction calculi. *Category theory and computer science (Edinburgh, 1987)*, 57–70, *Lecture Notes in Comput. Sci.*, **283**, Springer, Berlin-New York, 1987. (David B. Benson) **89f:68017** 68Q05 (18D20, 68Q55)
- Kasch, Friedrich \* Partiiel invertierbare Homomorphismen und das Total. (German) [Partially invertible homomorphisms and the total] *Algebra Berichte [Algebra Reports]*, **60**, Verlag Reinhard Fischer, München, 1988. iv+14 pp. ISBN 3-88927-046-8 (J. Hausen) **89f:16044** 16A65 (13C13)
- Käschel, Joachim Numerische Betrachtungen zur Realisierung der primalen Dekomposition in glatten Optimierungsproblemen. [Numerical considerations on the realization of the primal decomposition in smooth optimization problems] *Wiss. Z. Tech. Univ. Karl-Marx-Stadt* **30** (1988), no. 1, 50–54. (Summary) **89f:90144** 90C30
- Kaschier, M. S. (with Abrashkevich, A. G.; Vinitskii, S. I.; Puzynin, I. V.) Two-dimensional basic functions for the three-body problem in hyperspherical coordinates. *Soviet J. Nuclear Phys.* **48** (1988), no. 4, 602–608; translated from *Yadernaya Fiz.* **48** (1988), no. 4, 945–955 (Russian). (Summary) **89m:81200** 81G40
- Kaschlun, L. (with Bordag, M.) On the light-cone expansion in gauge field theories (QED). *Ann. Physik (7)* **44** (1987), no. 4, 265–282. (H. S. Green) **89b:81129** 81E15 (81L05)
- Kase, Hiromi (with Aramaki, Seiya; Morita, Katsusada) Stochastic quantization and chiral anomalies. *Progr. Theoret. Phys.* **78** (1987), no. 3, 654–674. (Summary) **89a:81109a** 81E99 (81C20)
- (with Aramaki, Seiya; Morita, Katsusada) Errata: "Stochastic quantization and chiral anomalies". *Progr. Theoret. Phys.* **79** (1988), no. 1, 250. (Editors) **89a:81109b** 81E99 (81C20)
- Kasenally, E. M. (with Limebeer, D. J. N.) Closed formulae for a parametric mixed sensitivity problem. *Systems Control Lett.* **12** (1989), no. 1, 1–7. (Summary) **89i:93074** 93B35 (93B28)
- Kasenov, S. Z. Optimal accuracy calculation of the Fourier transform of functions of the class  $CL_{N, \alpha}$ . (Russian) *Vychisl. Prikl. Mat. (Kiev)* **61** (1987), 20–27, 129. (Manfred Tasche) **89f:65152** 65T05 (65D32)
- Kashcheer, V. N. A method for obtaining kink-type solutions of nonlinear equations. (Russian. English summary) *Latvijas PSR Zinat. Akad. Vestis Fiz. Tehn. Zinat. Ser.* **1987**, no. 5, 3–7, 126. (Summary) **89d:35161** 35Q20
- Existence of periodic solutions of equations of sine-Gordon type in condensed media. (Russian. English summary) *Latvijas PSR Zinat. Akad. Vestis Fiz. Tehn. Zinat. Ser.* **1988**, no. 3, 8–16, 126. (Summary) **89i:35030** 35B10 (35Q20)
- Kinks in systems with cubic and quartic anharmonism. (Russian. English summary) *Teoret. Mat. Fiz.* **74** (1988), no. 1, 61–68; translation in *Theoret. and Math. Phys.* **74** (1988), no. 1, 43–48. (E. Wiecek) **89i:81018** 81C05 (73D99, 81E99)
- Kashchenetskii, L. Ya. (with Piragas, K. A.; Sol'ts, R. Kh.) A one-dimensional nonautonomous system with chaotic oscillations. (Russian) *Dynamics of systems (Russian)*, 66–70, 197, *Gorkov. Gos. Univ., Gorki*, 1986. (Summary) **89i:58132** 58F13 (70K50)
- Kashchenko, S. A. Asymptotic behavior of steady-state regimes of parabolic equations with coefficients rapidly oscillating with respect to time and with a variable domain of definition. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 5, 578–582, 678. (Victor A. Galaktionov) **89i:35082** 35K55 (35B40)
- Miniversal deformations of matrices. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 1(259), 201–202; translation in *Russian Math. Surveys* **43** (1988), no. 1, 241–242. (Alexandru Dimca) **89f:58020** 58C27

- Quasilinear forms for parabolic equations with small diffusion. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 5, 1049–1052; translation in *Soviet Math. Dokl.* 37 (1988), no. 2, 510–513. (O. Vejvoda) **89h:35163** 35K60 (35B25)
- Kashin, B. S.** (with Vitushkin, A. G.; Gonchar, A. A.; Kostrikin, Aleksei Ivanovich; Nikolskii, S. M.; Novikov, S. P.; Ufyanov, P. L.; Faddeev, L. D.) Evgenii Mikhailovich Nikishin. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 5(257), 183–188. (Editors) **89b:01066** 01A70
- The properties of random trigonometric polynomials with  $\pm 1$  coefficients. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1987, no. 5, 40–46, 105. (G. Cenuşa) **89a:60135** 60G99 (42A61)
- (with Potapov, M. K.) Petr Lavrent'evich Ufyanov (on the occasion of his sixtieth birthday). (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 4, 3–5. (Editors) **89m:01095** 01A70
- see also Brandsted, Arne, **89h:52006**
- Kashina, E. A.** Generalized theta series in algebraic number fields. (Russian) *Analytic number theory* (Russian), 30–34, 90, Petrozavodsk. Gos. Univ., Petrozavodsk, 1986. (K.-B. Gundlach) **89j:11050** 11F41
- Kashina, O. A.** (with Zabolotn, Ya. I.) A relaxation method for solving a problem of the conditional minimization of the maximum function. (Russian) *Issled. Prikl. Mat.* No. 14 (1987), 25–34. (Bernd Engelmann) **89g:90204** 90C30 (65K05)
- (with Zabolotn, Ya. I.) A general method for determining a conditional minimax. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 1, 18–25, 86; translation in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 1, 20–29. (Alexei Gaivoronski) **89h:65107** 65K10 (90C30)
- Kashiwa, Tarō** (with Fukutaka, Hiroki) Canonical transformations in the path integral and the operator formalism. *Ann. Physics* 185 (1988), no. 2, 301–329. (Takashi Miura) **89i:81033** 81C35
- (with Funakubo, Koichi) Chiral gauge theories on a lattice. *Phys. Rev. Lett.* 60 (1988), no. 21, 2113–2116. (Summary) **89b:81165** 81E25 (81E13)
- (with Fukutaka, Hiroki) Privileged role of the mid-point prescription in path integrations for constrained systems. *Progr. Theoret. Phys.* 80 (1988), no. 1, 151–161. (Summary) **89h:81049** 81C35 (58F05)
- Kashiwa, Tatsuya** (with Yoshida, Norinobu; Kukuetsu, Naoya; Fukai, Ichiro) Three-dimensional formulation of time-dependent wave propagation in a gyroanisotropic medium by Bergeron's method. *Wave Motion* 10 (1988), no. 6, 611–626. (Summary) **89j:78007** 78–08 (78A40)
- Kashiwara, Toshinobu** (with Masuda, Sumio; Fujisawa, Toshio) On single layer routing with no wires passing between adjacent pins. *Electron. Comput. Japan. Part I Comm.* 68 (1985), no. 7, 8–16. (Summary) **89h:94016** 94C15 (68Q35)
- Kashiwara, Hiroko** Fonctions rationnelles de type (0, 1) sur le plan projectif complexe. [Rational functions of type (0, 1) on the complex projective plane] *Osaka J. Math.* 24 (1987), no. 3, 521–577. (J. Kajiwara) **89b:14015** 14E05 (32A15)
- Kashiwara, Masaki** (with Kawai, Takahiro) Hodge structure and holonomic systems. *Proc. Japan Acad. Ser. A Math. Sci.* 62 (1986), no. 1, 1–4. (From the introduction) **89c:32066** 32G20 (14C30)
- A study of variation of mixed Hodge structure. *Publ. Res. Inst. Math. Sci.* 22 (1986), no. 5, 991–1024. (From the introduction) **89i:32050** 32G20 (32C20, 32C35, 32C42)
- Poincaré lemma for a variation of polarized Hodge structure. *Hodge theory* (Sant Cugat, 1985), 115–124, *Lecture Notes in Math.*, 1246, Springer, Berlin-New York, 1987. (C. Bănică (Zbl 625:14005)) **89c:32033** 32G20 (14C30)
- (with Kawai, Takahiro) The Poincaré lemma for variations of polarized Hodge structure. *Publ. Res. Inst. Math. Sci.* 23 (1987), no. 2, 345–407. (M. Muro (Zbl 629:14005)) **89g:32035** 32G20 (32C38, 32C40)
- Algebraic analytical research applied in mathematical physics. (Japanese) *Sūgaku* 40 (1988), no. 1, 63–68. (Editors) **89g:58191** 58G07 (17B65, 81–02, 81E25, 82A69)
- see also Algebraic analysis, **89j:00006** and **89j:00007**
- Kashkinbaev, O.** (with Tereshchenko, M. I.) A method for investigating the solutions of the Mathieu equation. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 104–108, 128. (Summary) **89c:33014** 33A55
- Kashyap, B. R. K.** (with Liu, Liming; Templeton, J. G. C.) The service system  $M/M^{\infty}$  with impatient customers. *Queueing Systems Theory Appl.* 2 (1987), no. 4, 363–372. (Charles Tier) **89d:60183** 60K25 (90B22)
- Kashyap, R. L.** (with Cheng, Yizong) Comparison of Bayesian and Dempster's rules in evidence combination. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 2 (Laramie, WY, 1985 and Seattle, WA, 1986/1987), 427–433, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (see **89f:62002**) 62C10
- (with Eom, Kie-Bum) Estimation in long-memory time series model. *J. Time Ser. Anal.* 9 (1988), no. 1, 35–41. (M. Arató) **89d:62091** 62M10
- Kasl, M. S.** On a class of analytic functions with negative coefficients. *Acta Cienc. Indica Math.* 13 (1987), no. 4, 185–188. (O. P. Ahuja) **89h:30019** 30C45
- A starlike function. *J. Math. Phys. Sci.* 22 (1988), no. 2, 251–257. (G. P. Bhargava) **89i:30009** 30C45
- A generalised Bazilevich function. *Math. Ed. (Siwan)* 22 (1988), no. 1, 21–22. (K. S. Padmanabhan) **89m:30021** 30C45
- Kasimov, E. I.** (with Ibragimov, I. I.) A basis system of analytic functions and its application to the convergence of an Abel-Goncharov interpolation process [Reviewed in *RZh-Mat* 1978:2 B70]. (Russian) *Special problems in function theory* (Russian), 72–83, “*Elm*”, Baku, 1977. (see **89f:30003**) 30E05
- Linear combinations of systems of functions that are close to exponential [Reviewed in *RZh-Mat* 1978:5 B75]. (Russian) *Special problems in function theory* (Russian), 97–110, “*Elm*”, Baku, 1977. (see **89f:30003**) 30B50
- mir-Kasimov, R. M.** see Mir-Kasimov, R. M.
- Kasim-Zade, O. M.** see Cybernetics collection. New series, **89i:00019**
- Kaskeviv, V. I.** The structure of unitary and orthogonal groups over Henselian discretely valued Azumaya algebras. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 31 (1987), no. 12, 1073–1076, 1149. (P. M. Cohn) **89g:16009** 16A16 (12E15, 19B20)
- Kaskosz, B.** (with Frankowska, H.) Linearization and boundary trajectories of nonsmooth control systems. *Canad. J. Math.* 40 (1988), no. 3, 589–609. (Pham Huy Di'en) **89m:49029** 49A52 (34A60, 49E30)
- (with Frankowska, H.) A maximum principle for differential inclusion problems with state constraints. *Systems Control Lett.* 11 (1988), no. 3, 189–194. (Ivan Ginchev) **89j:49036** 49E10 (34A60, 49B10)
- Kasner, M.** (with Weller, Wolfgang) Localization in  $N$  coupled disordered chains—recursion method. *Localization in disordered systems* (Bad Schandau, 1986), 43–55, *Teubner-Texte Phys.*, 16, Teubner, Leipzig, 1988. (see **89f:82003**) 82A57
- Kasparian, Azaly** (with Drenski, Veselin S.) Polynomial identities of eighth degree for  $3 \times 3$  matrices. (Russian summary) *Annuaire Univ. Sofia Fac. Math. Méc.* 77 (1983), no. 1, 175–195 (1988). (E. Formanek) **89h:16019** 16A38
- Calabi-Yau manifolds of some special forms. *Lett. Math. Phys.* 15 (1988), no. 2, 171–174. (Nicholas Buchdahl) **89f:32056** 32J25 (53C55, 81E30)
- Kasper, U.** On the importance of quantum mechanics for the axiomatic approach to the theory of gravitation. *Differential geometry and its applications, communications* (Brno, 1986), 157–165, *Univ. J. E. Purkyně, Brno*, 1987. (Jorge Zanelli) **89c:83038** 83C47 (81E99, 81G10, 83E99)
- (with Fuchs, Helmut; Liebscher, D.-E.; Müller, Volker; Schmidt, Hans-Jürgen) The singularity problem of gravitation. *Fortschr. Phys.* 36 (1988), no. 6, 427–452. (László B. Szabados) **89m:83063** 83C75 (83–02)
- Kasperiokov, P.** (with Dirl, R.; Kotzev, J. N.; Aroyo, M. I.; Angelova, M. N.) The symmetry of the group representations and the reduction of the multiplicity problem. *Group-theoretic methods in physics*, Vol. 1 (Russian) (*Järjala*, 1985), 583–590, “*Nauka*”, Moscow, 1986. (see **89d:81001**) 22E70 (20C35, 22E40)
- (with Dirl, R.; Kotzev, J. N.; Aroyo, M. I.; Angelova, M. N.) The symmetry of group representations and the reduction of the multiplicity problem. *Group theoretical methods in physics*, Vol. II (*Järjala*, 1985), 409–417, *VNU Sci. Press, Utrecht*, 1986. (Nigel B. Backhouse) **89e:20014** 20C15 (81C40)
- (with Dirl, R.; Aroyo, M. I.; Kotzev, J. N.; Davies, B. L.) Generating relations for reducing matrices. III. Kronecker products. *J. Math. Phys.* 28 (1987), no. 9, 1947–1971. (John J. Sullivan) **89e:20028** 20C35 (81C40)
- (with Foidl, Ch.; Eder, O. J.) Inhomogeneous hard rod systems: comparison of theoretical and numerical results. *J. Phys. A* 20 (1987), no. 9, 2497–2510. (Summary) **89h:82049** 82A40 (82–04)
- (with Dirl, R.; Moshinsky, M.) Wigner distribution functions and the representation of a nonbijective canonical transformation in quantum mechanics. *J. Phys. A* 21 (1988), no. 8, 1835–1846. (Virendra Singh) **89k:81037** 81C25
- (with Foidl, Ch.) Velocity dependent invariants for hard particles in one dimension. *J. Phys. A* 21 (1988), no. 21, 4039–4052. (From the text) **89k:70029** 70F99 (58F40, 70F35, 82A99)
- (with Kotzev, J. N.; Peev, M. K.; Aroyo, M. I.; Dirl, R.) Generating relations for reducing matrices. IV. Subduced representations. *J. Math. Phys.* 30 (1989), no. 1, 9–17. (John J. Sullivan) **89m:20014** 20C35 (22E65, 81C40)
- Kasperiokov, Andzej** Modular approximation by a filtered family of sublinear operators. *Comment. Math. Prace Mat.* 27 (1987), no. 1, 109–114. (O. P. Kapoor) **89b:47094** 47H99 (46E30)
- Kaspi, Haya** (with Maisonneuve, Bernard) Predictable local times and exit systems. *Séminaire de Probabilités, XX*, 1984/85, 95–100, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (Joanna B. Mitro) **89b:60115** 60J55 (60J25)
- Random time changes for processes with random birth and death. *Ann. Probab.* 16 (1988), no. 2, 586–599. (M. G. Shur) **89f:60080** 60J25 (60J50)
- (with Maisonneuve, Bernard) Regenerative systems on the real line. *Ann. Probab.* 16 (1988), no. 3, 1306–1332. (Joseph Glover) **89j:60121** 60K15
- (with Mitro, Joanna B.) Homogeneous random measures for Markov processes in weak duality: study via an entrance boundary. *Stochastic Process. Appl.* 29 (1988), no. 2, 291–308. (Michael Sharpe) **89i:60143** 60J25 (60J55)
- Kaspihtskaya, M. F.** (with Sergienko, I. V.) Properties of fuzzy discrete sets. (Russian) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 4, 70–72, 89. (Summary) **89c:03090** 03E72 (54A40)
- (with Alekseenko, M. A.; Stiranca, A. I.) A method for solving the fundamental cluster problem. (Russian) *Issled. Operatsii i ASU* No. 31 (1988), 62–68, 113. (Victor S. Grinberg) **89j:68116** 68R05 (62H30)
- Kassabov, Ognian** see Kassabov, Ognian T.
- Kassam, Saleem A.** ★ Signal detection in non-Gaussian noise. *Springer Texts in Electrical Engineering*. A Dowden & Culver Book. Springer-Verlag, New York-Berlin, 1988. x+234 pp. ISBN 0-387-96680-3 (H. Vincent Poor) **89f:94005** 94A13 (62F05, 93E10, 94A12)
- (with Peterson, Steven R.; Lee, Yong Hoon) Spectral performance characterizations of some generalized median filters. *J. Franklin Inst.* 326 (1989), no. 2, 151–166. (Not in MR) 94A12
- Kassay, G.** The asymptotic center and fixed points in metric spaces. *Seminar on mathematical analysis*, 69–74, Preprint, 87–7, Univ. “Babeş-Bolyai”, Cluj-Napoca, 1987. (M. Edelstein) **89d:54037** 54H25
- Kassel, Christian**  $K$ -théorie algébrique et cohomologie cyclique bivariables. (English summary) [Bivariant algebraic  $K$ -theory and cyclic cohomology] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 20, 799–802. (Sue Geller) **89j:18012** 18G50 (18F25, 18G35, 19D55)
- L'homologie cyclique des algèbres enveloppantes. (English summary) [The cyclic homology of enveloping algebras] *Invent. Math.* 91 (1988), no. 2, 221–251. (Anthony Joseph) **89e:17015** 17B56 (17B35, 18G99, 19D55, 57T15)
- Kassimatis, Nick** Bass and Serre theory and Nielsen transformations (free and free product case). *Bull. Soc. Math. Grèce (N.S.)* 27 (1986), 39–46. (Stephen J. Pride) **89e:20052** 20E06
- Kast, Robert** A generalisation of rational behaviour. *Risk, decision and rationality (Aix-en-Provence, 1986)*, 419–434, *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston*, MA, 1988. (Manjuri Basu) **89e:90034** 90A10 (62P20, 90A09)
- Kastanas, Ilias G.** Initial segments of  $\Delta^1_{n+1}$ -degrees. *J. Symbolic Logic* 53 (1988), no. 1, 259–268. (David E. Marker) **89b:03071** 03D30 (03E15)
- Kasteleyn, P. W.** On two types of obstructed random walks. *Phys. A* 147 (1987), no. 1–2, 315–343. (Cheng Xun Wu) **89h:60164** 60J15 (82A41)
- Kastil, Alfred** see Brentano, Franz, **89e:01051**



- Kastler, Daniel** (with Stora, R.) A differential geometric setting for BRS transformations and anomalies. I. *II. J. Geom. Phys.* 3 (1986), no. 4, 437–505. (J. Stasheff) **89a:53085** 53C80 (17B56, 17B65, 55P62, 55R35, 55R40, 58D15, 58H05)
- (with Jadczyk, Arkadiusz Z.) Graded Lie-Cartan pairs. II. The fermionic differential calculus. *Ann. Physics* 179 (1987), no. 2, 169–200. (Alice Rogers) **89k:58026b** 58A50 (17B65)
- $\star$  Cyclic cohomology within the differential envelope. An introduction to Alain Connes' noncommutative differential geometry. *Travaux en Cours [Works in Progress]*, 30. Hermann, Paris, 1988. viii+184 pp. ISBN 2-7056-6044-5 (Zbigniew Marciniak) **89h:18013** 18F25 (16A62, 17B35, 19D35, 58A12)
- (with Jadczyk, Arkadiusz Z.) Graded Lie-Cartan pairs. I. *Rep. Math. Phys.* 25 (1988), no. 1, 1–51. (Alice Rogers) **89k:58026a** 58A50 (17B65)
- Kastor, David** (with Martinec, Emil; Qiu, Zonghan) Current algebra and conformal discrete series. *Phys. Lett. B* 200 (1988), no. 4, 434–440. (Itzhak Roditi) **89b:81197** 81E99 (17B65, 58F40, 58H10, 81E40)
- Kastrati, R.** (with Berisa, Muharem Č.) Moduli of smoothness and coefficients of double lacunary trigonometric series. (Russian. English and Serbo-Croatian summaries) *Punime Mat. No. 1* (1986), 29–41. (Ryszard Gajewski) **89d:42001** 42A05 (42A16)
- (with Berisa, Muharem Č.) Fourier coefficients of lacunary double trigonometric series belonging to the function classes  $S^p H^{p/p}$ . (Russian. English and Albanian summaries) *Punime Mat. No. 2* (1987), 43–48. (Summary) **89g:42009** 42A16 (42A32)
- Kastritsa, O. A.** Sensitivity of the spectrum of a Lyapunov function. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* 1987, no. 3, 77–78, 82. (Josef Diblík) **89h:34118** 34D20 (34B25)
- Kastrop, H. A.** Canonical formalisms—including Hamilton-Jacobi theories—for classical fields. *Constraint's theory and relativistic dynamics (Florence/Arcetri, 1986)*, 10–25. World Sci. Publishing, Singapore, 1987. (H. S. P. Grässer) **89e:58037** 58E30 (49C10, 49F05, 70G50, 70H30)
- Kasture, D. Y.** (with Shastri, R. P.) A note on Bihari type inequalities in two independent variables. *Indian J. Pure Appl. Math.* 19 (1988), no. 7, 659–663. (Hussain S. Nur) **89g:26016** 26D10 (26D15)
- Kasue, Atsushi** (with Sugahara, Kunio) Gap theorems for certain submanifolds of Euclidean spaces and hyperbolic space forms. *Osaka J. Math.* 24 (1987), no. 4, 679–704. (Michael T. Anderson) **89a:53072** 53C42
- Harmonic functions with growth conditions on a manifold of asymptotically nonnegative curvature. I. *Geometry and analysis on manifolds (Katata/Kyoto, 1987)*, 158–181. *Lecture Notes in Math.*, 1339. Springer, Berlin-New York, 1988. (Robert Brooks) **89i:53030** 53C20 (58G99)
- Kasumov, N. Z.** Solvability of a nonlinear parabolic problem. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 8 (1987), no. 2, 36–41. (Zi Qian Yan) **89h:35164** 35K60
- Kas'yanov, V. A.** (with Udartsev, E. P.) Increasing the stability of estimates by the least squares method. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 3, 44–48 (1988); translated from *Avtomatika* 1987, no. 2, 66–70, 97 (Russian). (Not in MR) 62J05 (62P20)
- Kas'yanov, V. I.** (with Kas'yanova, G. B.) Direct methods for solving singular integro-differential equations on the real axis. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 8, 1438–1443, 1471; translation in *Differential Equations* 24 (1988), no. 8, 945–949. (M. Švec) **89m:45011** 45J05 (45E99)
- Kas'yanov, V. N.**  $\star$  Оптимизирующие преобразования программ. (Russian) [Optimizing transformations of programs] Библиотека Программиста. [Library for the Programmer] "Nauka", Moscow, 1988. 336 pp. ISBN 5-02-013778-2 (Siegmar Gerber) **89k:68017** 68N99 (68-02, 68Q60)
- Kas'yanova, G. B.** (with Kas'yanov, V. I.) Direct methods for solving singular integro-differential equations on the real axis. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 8, 1438–1443, 1471; translation in *Differential Equations* 24 (1988), no. 8, 945–949. (M. Švec) **89m:45011** 45J05 (45E99)
- Kas'yanyuk, V. S.** (with Belov, Yu. A.) On the set of values of a linear functional subject to constraints involving  $m$  other linear functionals. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 10, 6–10, 74. (Jerzy Sztajnic) **89e:49009** 49B05 (41A65)
- Optimal control from data affected by noise. (Russian) *Vychisl. Prikl. Mat. (Kiev) No. 64* (1988), 122–130, 151. (Wilfried Grecksch) **89j:93141** 93E20 (93B28, 93C30)
- Kasymov, K. A.** Estimates for solutions of a boundary value problem with an initial jump for linear differential equations. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat. Nauk*, no. 5, 36–41. (M. Tvrdý) **89m:34026** 34B05 (34E15)
- Kasymov, N. Kh.** (with Khusainov, B. M.) Finitely generated enumerable and absolutely locally finite algebras. (Russian) *Vychisl. Sistemy No. 116 Prikladn. Logika* (1986), 3–15, 162. (Summary) **89d:68055** 68Q65
- Kasymova, S. S.** Semisimple spaces over the algebra of real matrices. (Russian) *Studies in geometry (Russian)*, 50–60. Azerbaidzhan. Gos. Univ., Baku, 1987. (V. Cruceanu) **89g:51021** 51N25 (53A40)
- Kasymova, Zh. S.** Completeness and decidability of calculi with special quantifiers. (Russian) *Vychisl. Sistemy No. 117 Anal. Dannyykh v Ekspert. Sistemakh* (1986), 36–62, 129. (Detlef G. Seese) **89e:03060** 03C80 (68T99)
- Nontrivial methods for the detection of regularities. (Russian) *Vychisl. Sistemy No. 118 Mashin. Anal. Slozhn. Struktury* (1986), 100–128, 152. (Florica Luban) **89i:68117** 68T20 (03B70, 03D05, 68R10)
- Kaszkiewicz, E.** (with Resende, P.) On the absolute stability of linearly interconnected nonlinear systems. *Large scale systems: theory and applications 1983 (Warsaw, 1983)*, 309–314. IFAC Proc. Ser., 10, IFAC, Laxenburg, 1984. (Lj. T. Grujić) **89h:93080** 93D05 (93A15, 93C10)
- Katagishi, Kazuki** (with Torachi, Kazuo; Sekita, Iwao; Mori, Ryoichi) Computational complexity of spline interpolation. *Internat. J. Systems Sci.* 18 (1987), no. 5, 945–954. (Summary) **89a:65021** 65D07
- Kátai, I.** (with Daróczy, Z.; Járai, Antal) Interval filling sequences. *Ann. Univ. Sci. Budapest. Sect. Comput.* 6 (1985), 53–63 (1987). (M. Thaler) **89e:11004** 11A67 (11B83)
- (with Galambos, Janos) The gaps in a particular sequence of integers of positive density. *J. London Math. Soc. (2)* 36 (1987), no. 3, 429–435. (Karl-Heinz Indlekofer) **89f:11135** 11N60 (11B05, 11K65)
- (with Daróczy, Z.) On additive arithmetical functions with values in the circle group. *Publ. Math. Debrecen* 34 (1987), no. 3–4, 307–312. (Jean-Marie De Koninck) **89e:11008** 11A25 (11A63)
- (with Galambos, Janos) Some remarks on random walks in multidimensional time. *Probability theory and mathematical statistics with applications (Visegrad, 1985)*, 65–74. Reidel, Dordrecht-Boston, MA, 1988. (Gerold Alsmeyer) **89h:60145** 60K05 (60G50, 60J50)
- (with Daróczy, Z.) On functions additive with respect to interval filling sequences. *Acta Math. Hungar.* 51 (1988), no. 1–2, 185–200. (F. Brooks) **89c:26012** 26A30 (39B05)
- Uniform distribution of sequences connected with arithmetical functions. *Acta Math. Hungar.* 51 (1988), no. 3–4, 401–408. (Harald Niederreiter) **89i:11086** 11K06 (11K65)
- (with Indlekofer, Karl-Heinz)  $B$ -numbers in short intervals. *Arch. Math. (Basel)* 50 (1988), no. 5, 453–458. (Friedrich Roesler) **89f:11124** 11N05 (11N35)
- Katajainen, Jyrki** The region approach to computing relative neighbourhood graphs in the  $L_p$  metric. (German summary) *Computing* 40 (1988), no. 2, 147–161. (Peter Gritzmann) **89m:68135** 68U05 (05C99)
- (with Koppinen, Markku) Constructing Delaunay triangulations by merging buckets in quadtree order. *Fund. Inform.* 11 (1988), no. 3, 275–288. (Ivan Stojmenović) **89h:68067** 52D25 (52-04, 68U05)
- (with van Leeuwen, Jan; Penttonen, Martti) Fast simulation of Turing machines by random access machines. *SIAM J. Comput.* 17 (1988), no. 1, 77–88. (John Michael Robson) **89c:68029** 68Q05 (03D10, 03D15, 68Q30)
- Kataoka, Saburō** (with Hasumi, Morisuke) Remarks on Hardy-Orlicz classes. *Arch. Math. (Basel)* 51 (1988), no. 5, 455–463. (Waleed M. Deeb) **89k:46034** 46E10 (30D55, 30H05)
- Kataoka, Seiji** (with Morito, Susumu) An algorithm for single constraint maximum collection problem. (Japanese summary) *J. Oper. Res. Soc. Japan* 31 (1988), no. 4, 515–531. (Summary) **89k:90055** 90B10
- Katapa, R. S.** (with Srivastava, M. S.; Keen, K. J.) Estimation of interclass and intraclass correlations in multivariate familial data. (French summary) *Biometrics* 44 (1988), no. 1, 141–150. (Summary) **89a:62220** 62P10 (62H20)
- Katase, Kiyoshi** On the value of Dedekind sums and eta-invariants for 3-dimensional lens spaces. *Tokyo J. Math.* 10 (1987), no. 2, 327–347. (Italo José Dejeir) **89b:11038** 11F20 (53C25)
- Katayama, Tōhru** (with Fujinaka, Toru) Discrete-time optimal regulator with closed-loop poles in a prescribed region. *Internat. J. Control* 47 (1988), no. 5, 1307–1321. (Vicente Hernández) **89g:93048** 93B55 (93B17, 93B50, 93B60)
- (with Tanaka, Masahiro) Robust fixed-lag smoother for linear systems including outliers in the system and observation noises. *Internat. J. Systems Sci.* 19 (1988), no. 11, 2243–2259. (Keigo Watanabe) **89k:93218** 93E14 (93E11)
- Katayama, Tsuyoshi** A cyclic service tandem queueing model with parallel queues in the first stage. *Comm. Statist. Stochastic Models* 4 (1988), no. 3, 421–443. (Rong Xin Wang) **89m:60234** 60K25 (90B22)
- Mean sojourn times in a multi-stage tandem queue served by a single server. (Japanese summary) *J. Oper. Res. Soc. Japan* 31 (1988), no. 2, 233–251. (Jacqueline Loris-Teghem) **89g:60284** 60K25 (90B22)
- Katayama, Yoshishige** (with Terauti, Ryutaro) A consideration on behaviours of solution near Turing instability point. (Japanese. English summary) *J. College Engrg. Nihon Univ. Ser. B* 29 (1988), 37–44. (Not in MR) 92A09 (76E15)
- Effects of convection on Turing instability. (Japanese. English summary) *J. College Engrg. Nihon Univ. Ser. B* 29 (1988), 45–50. (Not in MR) 92A09 (76E15)
- (with Terauti, Ryutaro) A consideration on behaviours of solution near Turing instability point. II. (Japanese. English summary) *J. College Engrg. Nihon Univ. Ser. B* 30 (1989), 111–115. (Not in MR) 58F14 (35Q20, 82A99, 92A09)
- Katchalski, M.** (with Meir, A.) On empty triangles determined by points in the plane. *Acta Math. Hungar.* 51 (1988), no. 3–4, 323–328. (L. M. Kelly) **89f:52021** 52A37
- (with Abbott, H. L.) On the snake in the box problem. *J. Combin. Theory Ser. B* 45 (1988), no. 1, 13–24. (Chris Rodger) **89i:05173** 05C38 (05C35, 94B25)
- Katchalski-Katzir, E.** From chemical to biological organization: a snapshot. *From chemical to biological organization*, 3–5. Springer Ser. Synergetics, 39, Springer, Berlin-New York, 1988. (Editors) **89m:01096** 01A70
- el djallil Kateb, Mohamed** see El Djallil Kateb, Mohamed
- Katehakis, Michael N.** (with Veinott, Arthur F., Jr.) The multi-armed bandit problem: decomposition and computation. *Math. Oper. Res.* 12 (1987), no. 2, 262–268. (Aleksandr A. Yushkevich) **89a:90154** 90C39 (62L05, 90C40)
- (with Johri, Pravin K.) Scheduling service in tandem queues attended by a single server. *Stochastic Anal. Appl.* 6 (1988), no. 3, 279–288. (Yadavalli V. S. Sarma) **89g:60283** 60K25 (90B22, 90B35)
- Kateřínák, Josef** Mini-programs for hidden lines on surface. (Russian and Czech summaries) *Apl. Mat.* 32 (1987), no. 5, 355–363. (Summary) **89d:51038** 51N20 (51-04)
- Katerinokhina, N. N.** A problem on the search for a maximal upper zero for some subclasses of monotone Boolean functions. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 9, 1402–1411, 1439. (Juraj Hromkovič) **89c:94052** 94C10 (03G05, 06E30, 68R05, 68T99)
- Kates, R. E.** Nonlinear evolution of acoustic waves in dust interacting with dark matter in Newtonian cosmology. Biasing, voids, and the Kadomtsev-Petviashvili equation. *Astronom. and Astrophys.* 194 (1988), no. 1–2, 3–10. (Summary) **89d:85008** 85A30 (35Q20)
- Katětov, Miroslav** On dimensions of semimetrized measure spaces. *Comment. Math. Univ. Carolin.* 28 (1987), no. 3, 399–411. (Introduction) **89h:94005** 94A17 (28A75)
- On universal metric spaces. *General topology and its relations to modern analysis and algebra, VI (Prague, 1986)*, 323–330. *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (Stoyan Nedev) **89k:54066** 54E35 (54A25, 54E40)
- On the differential and residual entropy. *Comment. Math. Univ. Carolin.* 29 (1988), no. 2, 319–349. (Adnan M. Awad) **89m:94008** 94A17 (28D20)
- see also Frolík, Z., **89a:01059**; **89c:01058** and **89c:01059**
- Kath, Ines** (with Friedrich, Thomas) Variétés riemanniennes compactes de dimension 7 admettant des spineurs de Killing. (English summary) [7-dimensional compact Riemannian manifolds admitting Killing spinors] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 19, 967–969. (Oussama Hijazi) **89m:53074** 53C25 (58C40, 58G25)
- Kath, William L.** (with Kriegsmann, Gregory A.) Optical tunnelling: radiation losses in bent fibre-optic waveguides. *IMA J. Appl. Math.* 41 (1988), no. 2, 85–103. (Summary) **89h:78027** 78A50

- Kathirkamanayagan, M.** (with Ladde, G. S.) Diagonalization and stability of large-scale singularly perturbed linear system. *J. Math. Anal. Appl.* **135** (1988), no. 1, 38–60. (Ji Bin Li) **89i:34082** 34E15 (34A30, 34C20, 34D20, 94C05)
- Katkauskaitė, Aldona** (with Žilinskis, Antanas) Statistical models for global optimization in the presence of noise. (Russian. English and Lithuanian summaries) *Teor. Optimal. Reshenii* **No. 12** (1987), 43–53. (Werner Römisch) **89h:90173** 90C15 (65K05, 90C30)
- Katkevicius, Ovidas** (with Vanagas, Vladislav) Structure and spectrum of the Hamiltonian of constant SU(2) nonabelian fields. *Soviet J. Nuclear Phys.* **46** (1987), no. 4, 750–755 (1988); translated from *Yadernaya Fiz.* **46** (1987), no. 4, 1283–1292 (Russian). (Summary) **89f:81112** 81E13 (58F05, 81G05)
- Katkov, O. M.** (with Ostrovskii, I. V.) Zero sets of entire generating functions of finite-order Pólya frequency sequences. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 1, 13–15, 86. (Summary) **89g:30011** 30C15 (30D20)
- Entire functions with asymptotically multiply positive sequences of coefficients. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* **No. 49** (1988), 51–59, 124. (R. P. Boas, Jr.) **89j:30036** 30D15
- Katkovnik, V. Ya.** (with Kheisin, V. E.) Adaptive control of a static essentially nonstationary object. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 4, 85–96; translation in *Automat. Remote Control* **49** (1988), no. 4, part 2, 465–474. (Benjamin Goldys) **89e:93140** 93C40 (93C55, 93E20)
- Kato, Akishi** Classification of modular invariant partition functions in two dimensions. *Modern Phys. Lett. A* **2** (1987), no. 8, 585–600. (Claude Itzykson) **89d:81101** 81E99 (11F99, 17B67, 81E40, 82A05)
- (with Kitazawa, Y.; Ishibashi, N.; Kobayashi, Ken-ichiro; Matsuo, Yutaka; Otake, S.) Operator product expansion coefficients in  $N = 1$  superconformal theory and slightly relevant perturbation. *Nuclear Phys. B* **306** (1988), no. 2, 425–444. (Olaf Lechtenfeld) **89m:81149** 81E99 (81E40)
- Kato, Hisao** (with Koyama, A.) The role of refinable maps—a survey. Proceedings of the 1986 Topology Conference (Lafayette, LA, 1986). *Topology Proc.* **11** (1986), no. 2, 317–348. (Zvonko Čerin) **89f:54030** 54C10 (54F15, 54F43, 54F45)
- Geometric properties of Whitney continua. Proceedings of the first Soviet-Japan joint symposium of topology (Tokyo, 1986). *Questions Answers Gen. Topology* **5** (1987), no. 1, 143–150. (Lee Mohler) **89c:54065** 54F15 (54F43, 54F45)
- Shape equivalences of Whitney continua of curves. *Canad. J. Math.* **40** (1988), no. 1, 217–227. (Alejandro Illanes Mejía) **89c:54021** 54B20 (54F43)
- Limiting subcontinua and Whitney maps of tree-like continua. *Compositio Math.* **66** (1988), no. 1, 5–14. (P. Krupski) **89f:54020** 54B20 (54F40, 54F45, 54F50)
- Whitney continua of graphs admit all homotopy types of compact connected ANRs. *Fund. Math.* **129** (1988), no. 3, 161–166. (Alejandro Illanes Mejía) **89k:54026** 54B20 (54F43, 55M15)
- Various types of Whitney maps on  $n$ -dimensional compact connected polyhedra ( $n \geq 2$ ). *Topology Appl.* **28** (1988), no. 1, 17–21. (Alejandro Illanes Mejía) **89c:54022** 54B20 (54F43)
- The dimension of hyperspaces of certain 2-dimensional continua. *Topology Appl.* **28** (1988), no. 1, 83–87. (L. E. Ward, Jr.) **89b:54012** 54B20 (54F20, 54F45)
- Kato, Junji** Boundedness theorems on Liénard type differential equations with damping. *Dongbei Shida Xuebao* **1988**, no. 2, 1–35. (T. A. Burton) **89i:34079** 34D40 (34C11, 34C25)
- Kato, Kazuhisa** Stability and the pseudo-orbit tracing property for diffeomorphisms. *Mem. Fac. Sci. Kōchi Univ. Ser. A Math.* **9** (1988), 37–58. (Jerzy Ombach) **89g:58164** 58F15 (58F10)
- Kato, Kazuya** On  $p$ -adic vanishing cycles (application of ideas of Fontaine-Messing). *Algebraic geometry, Sendai, 1985*, 207–251, *Adv. Stud. Pure Math.*, **10**, North-Holland, Amsterdam-New York, 1987. (Gerd Faltings) **89i:14014** 14F30 (11G25, 14F15, 19F27)
- Swan conductors with differential values. *Galois representations and arithmetic algebraic geometry (Kyoto, 1985/Tokyo, 1986)*, 315–342, *Adv. Stud. Pure Math.*, **12**, North-Holland, Amsterdam-New York, 1987. (V. P. Snaith) **89k:11117** 11S15 (11G45, 11R37, 11S31, 19C30, 19F27)
- Duality theories for  $p$ -primary étale cohomology. II. *Compositio Math.* **63** (1987), no. 2, 259–270. (Wayne Raskind) **89k:14032** 14F30 (11G25)
- (with Saito, Shuji; Saito, Takeshi) Artin characters for algebraic surfaces. *Amer. J. Math.* **110** (1988), no. 1, 49–75. (David Cox) **89d:14027** 14F20 (11G45, 11G99, 20C11)
- Kato, Koichi** (with Inouye, Yujiro) Matrix-fraction descriptions and the McMillan form of a transfer function meromorphic in the unit disk. *Electron. Comm. Japan. Part I Comm.* **70** (1987), no. 12, 29–41. (Mihail Voicu) **89k:93051** 93B25 (15A54, 93C05, 93C55)
- Kato, Masahide** Erratum to: “Topology of Hopf surfaces” [*J. Math. Soc. Japan* **27** (1975), 222–238; MR **53** #5949]. *J. Math. Soc. Japan* **41** (1989), no. 1, 173–174. (Editors) **89i:32055** 32J15
- Erratum: “Compact differentiable 4-folds with quaternionic structures” [*Math. Ann.* **248** (1980), no. 1, 79–96; MR **81h**:53037]. *Math. Ann.* **283** (1989), no. 2, 352. (From the text) **89m:53054** 53C15 (32J99)
- Kato, Mitsuhiro** (with Matsuda, Satoshi) Oscillator representation of Virasoro algebra and Kac determinant. *Progr. Theoret. Phys.* **78** (1987), no. 1, 158–165. (From the introduction) **89c:17026** 17B65 (81E30, 81E40)
- (with Koikawa, Takao; Hattuda, Machiko Tatewaki) Can SST-II contain the standard model? *Modern Phys. Lett. A* **3** (1988), no. 16, 1603–1617. (Summary) **89j:81255** 81G20 (17B67, 81E30)
- (with Itoh, Katsumi; Kunitomo, Hiroshi; Sakamoto, Makoto) Vertex construction and zero modes of twisted strings on orbifolds. *Nuclear Phys. B* **306** (1988), no. 2, 362–386. (Marc Henneaux) **89h:81195** 81E99 (22E40, 53C80, 81E30, 83E30)
- Kato, Mitsuyoshi** On uniformizations of orbifolds. *Homotopy theory and related topics (Kyoto, 1984)*, 149–172, *Adv. Stud. Pure Math.*, **9**, North-Holland, Amsterdam-New York, 1987. (N. V. Ivanov) **89e:57035** 57S30 (22E40)
- On biholomorphisms between some Kummer branched covering spaces of complex projective plane. *A Rite of topology*, 365–389, Academic Press, Boston, MA, 1988. (Richard Randell) **89h:14010** 14E20
- Kato, Nobuyuki** On the existence and asymptotic behavior of solutions of nonlinear heat flow with memory. *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 7, 250–253. (Simion Reich) **89f:45017** 45K05 (35K55, 45N05, 47B38, 47H20)
- Unbounded behavior and convergence of solutions of nonlinear Volterra equations in Banach spaces. *Nonlinear Anal.* **12** (1988), no. 11, 1193–1201. (Krishnan Balachandran) **89m:45003** 45D05 (45E10, 47H06)
- Kato, Shin-ichi** A remark on Maass wave forms attached to real quadratic fields. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **34** (1987), no. 2, 193–201. (Marvin I. Knopp) **89g:11038** 11F27
- Kato, Shuhiro** (with Sano, Shigeru; Aoki, Shigeru) A note on connection formulas for invariant eigendistributions on certain semisimple symmetric spaces. *Bull. Inst. Vocat. Train.* **1985**, no. 14, 99–108. (Jacques Faraut) **89a:43014** 43A85 (22E30, 22E45)
- Kato, Takao** (with Horiuchi, Ryutaro) Weierstrass gap sequences at the ramification points of trigonal Riemann surfaces. *J. Pure Appl. Algebra* **50** (1988), no. 3, 271–285. (R. F. Lax) **89d:14045** 14H45 (14F07, 14H30, 30F20)
- Kato, Toshiro** (with Ponce, Gustavo) On nonstationary flows of viscous and ideal fluids in  $L^p_2(\mathbb{R}^2)$ . *Duke Math. J.* **55** (1987), no. 3, 487–499. (P. L. Sulem) **89a:35165** 35Q10 (76D05)
- see also Dolph, C. L., **89c:01055**
- Kato, Yoshifumi** (with Aomoto, Kazuhiko) Green functions and spectra on free products of cyclic groups. (French summary) *Ann. Inst. Fourier (Grenoble)* **38** (1988), no. 1, 59–86. (G. V. Rozenblyum) **89m:58201** 58G25 (20E06, 47B39, 58G05)
- Kato, Yoshihiro** see Science on form, **89g:82013**
- Kato, Yusuke** Fredholm determinants and the Cauchy problem of a class of nonlinear evolution equations. *Progr. Theoret. Phys.* **78** (1987), no. 2, 198–213. (Tuncay Aktosun) **89b:35145** 35Q20
- Kato, Yutaka** Central limit theorem for Weyl automorphism. *Rep. Statist. Appl. Res. Un. Japan. Sci. Engrs.* **34** (1987), no. 3, 1–10. (Manfred Denker) **89k:28008** 28D05 (54H20, 60E99, 60F05)
- Katoh, Naoki** (with Ibaraki, Toshihide) ★ Resource allocation problems. Algorithmic approaches. MIT Press Series in the Foundations of Computing. MIT Press, Cambridge, MA-London, 1988. xvi+229 pp. ISBN 0-262-09027-9 (Jan Weglarz) **89e:90179** 90C30 (65K05, 68-02, 68Q25, 68Q30, 90B50)
- (with Fujishige, Satoru; Ichimori, Tetsuo) The fair resource allocation problem with submodular constraints. *Math. Oper. Res.* **13** (1988), no. 1, 164–173. (Rainer Burkard) **89i:90094** 90C10 (90B99)
- Katok, Anatole** (with Hurder, Steven) Ergodic theory and Weil measures for foliations. *Ann. of Math. (2)* **126** (1987), no. 2, 221–275. (John Cantwell) **89d:57042** 57R30 (46L10, 46L99, 58F11)
- Four applications of conformal equivalence to geometry and dynamics. *Ergodic Theory Dynamical Systems* **8** (1988), Charles Conley Memorial Issue, 139–152. (Holger Kantz) **89m:58165** 58F17 (53C22)
- Katona, G. O. H.** (with Erdős, P. L.) Convex hulls of more-part Sperner families. *Graphs Combin.* **2** (1986), no. 2, 123–134. (J. R. Griggs) **89d:05002** 05A05
- (with Burosch, Gustav; Demetrovics, János) The poset of closures as a model of changing databases. *Order* **4** (1987), no. 2, 127–142. (J. Paredaens) **89f:68013** 68P15 (06A10, 68P05)
- (with Erdős, P. L.) A 3-part Sperner theorem. *Studia Sci. Math. Hungar.* **22** (1987), no. 1–4, 383–393. (G. F. Clements) **89e:05008** 05A05
- Katona, P. G.** (with Voss, G. I.; Chizeck, Howard J.) Self-tuning controller for drug delivery systems. *Internat. J. Control* **47** (1988), no. 5, 1507–1520. (Not in MR) **93C75** (92A06, 93C40)
- Katori, H.** (with Hara, Shinji; Kondō, R.) Properties of zeros in digital control systems with computational time delay. *Internat. J. Control* **49** (1989), no. 2, 493–511. (Summary) **89h:93105** 93B55 (93C60, 93D15)
- Katović, V.** (with Randić, M.; Klein, D. J.; Oakland, D. O.; Seitz, W. A.; Balaban, Alexandru T.) Symmetry properties of chemical graphs. X. Rearrangement of axially distorted octahedra. *Graph theory and topology in chemistry (Athens, Ga., 1987)*, 266–284, *Stud. Phys. Theoret. Chem.*, **51**, Elsevier, Amsterdam-New York, 1987. (N. Trinajstić) **89g:92088** 92A40 (05C99)
- Katranov, A. G.** A property of bounded solutions of nonlinear differential equations. (Russian) *Mathematical physics (Russian)*, 104–107, Leningrad. Gos. Ped. Inst., Leningrad, 1987. (see **89c:00019**) **34C11** (34A34)
- (with Likhachëv, V. M.) On the asymptotics of the amplitudes of oscillating solutions of two-dimensional differential systems. (Russian) *Partial differential equations (Russian)*, 76–80, Leningrad. Gos. Ped. Inst., Leningrad, 1987. (Pavol Marušák) **89i:34036** 34C10 (34C15)
- Katriel, Jacob** (with Novoselsky, Akiva; Gilmore, R.) Coefficients of fractional parentage in the L-S coupling scheme. *J. Math. Phys.* **29** (1988), no. 6, 1368–1388. (G. Vanden Bergh) **89f:81271** 81G35 (81-08, 81G45)
- Katrinák, T.** (with El-Assar, S.)  $p$ -algebras with Stone congruence lattices. *Acta Sci. Math. (Szeged)* **51** (1987), no. 3–4, 371–386. (R. Beazer) **89f:06019** 06D15 (06B10)
- (with Mikula, K.) On a construction of MS-algebras. *Portugal. Math.* **45** (1988), no. 2, 157–163. (T. S. Blyth) **89m:06015** 06D30
- Kats, Amos** Erratum: “Location-price equilibria in a spatial model of discriminating pricing” [*Econom. Lett.* **25** (1987), no. 2, 105–109]. *Econom. Lett.* **25** (1987), no. 3, 299. (Not in MR) **90A14**
- Errata: “Location-price equilibria in a spatial model of discriminatory pricing” [*Econom. Lett.* **25** (1987), no. 2, 105–109]. *Econom. Lett.* **26** (1988), no. 3, 296–297. (Not in MR) **90A14**
- Kats, B. A.** The Riemann boundary value problem with power shift. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 8, 18–26, 87. (P. Yu. Alekna) **89b:30033** 30E25
- Kats, I. Ya.** Stability up to the first approximation of stochastic systems with Markov parametric perturbations. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems (Irkutsk, 1985)* (Russian), 83–92, 323, “Nauka” Sibirsk. Otdel., Novosibirsk, 1987. (From the introduction) **89i:31119** 93E15 (34D10, 34F05, 70L05)
- Stability of the motion of stochastic systems with discontinuous phase trajectories. (Russian) *Problems in the qualitative theory of differential equations (Russian)* (Irkutsk, 1986), 179–185, 285, “Nauka” Sibirsk. Otdel., Novosibirsk, 1988. (see **89j:34002**) **93E15** (93C57)
- Kats, M. A.** (with Kinsht, N. V.; Ragulin, P. G.) Diagnosis of a parametric circuit. (Russian. English summary) *Teoret. Elektrotekh. No. 41* (1986), 105–113. (From the text) **89f:94033** 94C05 (93B30)



- Katsaran, T. K.** (with Baskakov, A. G.) Spectral analysis of integro-differential operators with nonlocal boundary conditions. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 8, 1424-1433, 1471; translation in *Differential Equations* 24 (1988), no. 8, 934-941. (M. Tvrdý) **89k:47087** 47G05 (45J05)
- Katsaras, A. K.** On linear fuzzy neighborhood spaces. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics* (Poznań, 1986), 77-92, Wydawn. Politech. Poznań, 1987. (Jin Xuan Fang) **89k:46004** 46A15 (03E72)
- Fuzzy quasi-proximities and fuzzy quasi-uniformities. *Fuzzy Sets and Systems* 27 (1988), no. 3, 335-343. (Jin Xuan Fang) **89k:54012** 54A40 (03E72)
- (with Petalas, C. G.) Fuzzy topologies and fuzzy quasi-uniformities. (Serbo-Croatian summary) *Rad. Mat.* 4 (1988), no. 1, 15-29. (Run Sheng Yang) **89j:54008** 54A40 (03E72)
- Katsarkov, L. V.** The intersection of quadrics passing through a canonical curve and chord. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1987, no. 4, 24-28, 101-102. (Paltin Ionescu) **89k:14032** 14H10 (14H40)
- Katsell, Nelli** (with Dalla, Leoni; Girotopoulos, S.) Skeletons of the unit ball of a  $C^*$ -algebra. *Math. Balkanica (N.S.)* 1 (1987), no. 1, 83-88. (Introduction) **89k:46077** 46L05
- Katsman, G. L.** (with Kovalev, S. I.; Litsyn, S. N.) New codes obtained by lengthening methods. (Russian) *Noise-resistant coding and computer reliability* (Russian), 7-10, 189, "Nauka", Moscow, 1987. (A. Pethő) **89h:94011** 94B05
- Katsnelson, L. Z.** See Katsnelson, L.
- Katsnelson, V. E.** Extremal and factorization properties of the radii of a problem on the representation of a matrix Hermitian positive function. I. (Russian) *Mathematical physics, functional analysis* (Russian), 80-94, 146, "Naukova Dumka", Kiev, 1986. (T. Ya. Azizov) **89k:47028** 47A68 (47B15)
- Katsuda, Atsushi** Density theorems for closed orbits. *Geometry and analysis on manifolds (Katata/Kyoto, 1987)*, 182-202, *Lecture Notes in Math.*, 1339, Springer, Berlin-New York, 1988. (Artur Oscar Lopes) **89j:58066** 58F11 (11M41)
- (with Sunada, Toshikazu) Homology and closed geodesics in a compact Riemann surface. *Amer. J. Math.* 110 (1988), no. 1, 145-155. (Midori Goto) **89e:58093** 58F17 (30F99, 58F15)
- The isometry groups of compact manifolds with negative Ricci curvature. *Proc. Amer. Math. Soc.* 104 (1988), no. 2, 387-388. (Viktor Schroeder) **89h:53094** 53C20
- (with Sunada, Toshikazu) Dynamical  $L$ -functions and homology of closed orbits. *Bull. Amer. Math. Soc. (N.S.)* 20 (1989), no. 1, 73-76. (Manfred Denker) **89m:58160** 58F15 (28D20, 58F17, 58F22)
- A pinching problem for locally homogeneous spaces. *J. Math. Soc. Japan* 41 (1989), no. 1, 57-74. (Min-oo Maung) **89m:53065** 53C20 (53C30, 53C35)
- Katsura, Koichi** (with Ogata, Yoshihiko) Likelihood analysis of spatial inhomogeneity for marked point patterns. *Ann. Inst. Statist. Math.* 40 (1988), no. 1, 29-39. (Summary) **89f:62093** 62P99 (62M30)
- Katsura, M.** On a problem of Ádám concerning precodes assigned to finite Moore automata. *Acta Cybernet.* 8 (1987), no. 2, 143-151. (A. Ádám) **89k:68161** 68Q70
- (with Shih, Hui Jan) Decomposition of languages into disjunctive output codes. *Semigroups, theory and applications (Oberwolfach, 1986)*, 172-175, *Lecture Notes in Math.*, 1320, Springer, Berlin-New York, 1988. (M. Kunze) **89k:68084** 68Q45 (20M35)
- (with Ito, Masami; Shih, Hui Jan; Yu, S. S.) Automata accepting primitive words. *Semigroup Forum* 37 (1988), no. 1, 45-52. (André Lentin) **89k:68037** 68Q45 (20M35)
- Disjunctive splittability of languages. *Semigroup Forum* 37 (1988), no. 2, 201-213. (A. A. Iskander) **89f:68035** 68Q45 (20M35)
- Katsura, Shigetoshi** (with Inawashiro, Sakari; Morita, Tohru) The graph partitioning and the spin glass—comments on papers by Sherrington and his group. *J. Phys. A* 21 (1988), no. 8, 1937-1938. (Summary) **89f:82059** 82A57 (05C70)
- Errata: "Theory of spin glass by the method of the distribution function of an effective field" [*Progr. Theoret. Phys. Suppl.* No. 87 (1986), 139-154; MR 88d:82090]. *Progr. Theoret. Phys.* 79 (1988), no. 1, 251. (Editors) **89c:82057** 82A57 (82A25)
- (with Sasaki, Mitsuhiro) The distribution function of the effective field of the Ising spin glass on the Bethe lattice for the coordination number  $z = 4, 5, 6$ . *Phys. A* 155 (1989), no. 2, 206-220. (Summary) **89m:82058** 82A57 (82A68)
- Katsura, Toshiyuki** Theorem of Lóthar and related topics. *Algebraic Geometry Seminar (Singapore, 1987)*, 41-52, *World Sci. Publishing, Singapore*, 1988. (Alexandru Buium) **89k:14065** 14J26 (14J10)
- A remark on the locus of abelian surfaces of  $p$ -rank  $\leq 1$ . *C. R. Math. Rep. Acad. Sci. Canada* 11 (1989), no. 1, 9-14. (Alexey N. Rudakov) **89m:14018** 14J10 (14J28, 14K10, 14K15)
- Katsurada, Hidenori** On étale  $SL_2(F_p)$ -coverings of algebraic curves of genus 2. *J. Math. Soc. Japan* 39 (1987), no. 3, 397-434. (H. Lange) **89j:14018** 14H30 (14E20)
- Katsurada, Masanori** Linear independence measures for certain numbers. *Resuliate Math.* 14 (1988), no. 3-4, 318-329. (Noriko Hirata-Kohno) **89k:11058** 11J72 (11J82)
- Katsumura, Hidefumi** Dispersion points and continuous functions. *Topology Appl.* 28 (1988), no. 3, 233-240. (Eldon J. Vought) **89c:54009** 54H25 (54F50, 54G20)
- Katsylo, P. I.** Rationality of moduli varieties of plane curves of degree  $3k$ . (Russian) *Mat. Sb. (N.S.)* 136(178) (1988), no. 3, 377-383, 431. (Werner Kleinert) **89m:14011** 14H10 (14D25, 14G05, 14H45, 20G05)
- Kathage, Karl-Heinrich** Die Eindeutigkeit der konstruktiven Geometrie. (English summary) [The unambiguity of constructive geometry] *Z. Allgemeine Wissenschaftstheorie* 18 (1987), no. 1-2, 285-295. (B. Klotz) **89k:51030** 51M99 (03B30, 03F65)
- Kat Kyong** see Bui Kat Kyong
- Katulska, K.** (with Ceranka, B.) New construction of optimum chemical balance weighing designs. *Calcutta Statist. Assoc. Bull.* 36 (1987), no. 143-144, 165-170. (S. Mejza) **89j:62100** 62K05 (05B05)
- Katz, Alan R.** Semiclassical limit of the Dirac equation and the  $g$  minus 2 experiment. *Let. Math. Phys.* 15 (1988), no. 1, 39-46. (Summary) **89k:81187** 81L05 (81M05)
- Katz, André** (with Ogney, Christophe; Duneau, Michel) A geometrical approach of quasiperiodic tilings. *Comm. Math. Phys.* 118 (1988), no. 1, 99-118. (A. G. Schlijper) **89j:52024** 52A45 (82A60)
- Theory of matching rules for the 3-dimensional Penrose tilings. *Comm. Math. Phys.* 118 (1988), no. 2, 263-288. (J. M. Willis) **89f:52037** 52A45 (05B45)
- Katz, Barbara Goody** (with Owen, Joel) Rationed and Walrasian markets for the same good: a rational expectations determination of the relative prices. *Econom. Lett.* 25 (1987), no. 3, 221-224. (Summary) **89a:90043** 90A14
- Katz, Barry P.** (with Brown, Morton) Detection of a random alteration in a multivariate observation when knowing probable direction. *Comput. Statist. Data Anal.* 6 (1988), no. 2, 145-155. (Summary) **89a:62132** 62H15 (62F15)
- Katz, C.** Analytic integration of isoparametric 2D-boundary elements. *Boundary elements VII, Vol. I, II* (Como, 1985), 13.115-13.130, *Comput. Mech., Southampton*, 1985. (see **89f:65003**) 65E05
- Katz, Daniel** (with Ratliff, L. J., Jr.) Two notes on ideal-transforms. *Math. Proc. Cambridge Philos. Soc.* 102 (1987), no. 3, 389-397. (Evan G. Houston) **89a:13003** 13A15 (13B20)
- (with Ratliff, L. J., Jr.) On the prime divisors of  $IJ$  when  $I$  is integrally closed. *Arch. Math. (Basel)* 51 (1988), no. 6, 520-522. (Stephen McAdam) **89k:13003** 13A17 (13B20)
- Note on multiplicity. *Proc. Amer. Math. Soc.* 104 (1988), no. 4, 1021-1026. (Rüdiger Achilles) **89d:13017** 13H15 (13B20)
- Katz, Eliakim** (with Appelbaum, E.) Portfolio diversification and taxation. *Econom. Lett.* 26 (1988), no. 2, 189-195. (Not in MR) 90A09 (90A10)
- Katz, G. R.** (with Davies, C. T. H.; Batrouni, G.; Kronfeld, A.; Lepage, G. P.; Wilson, K.; Rossi, Pietro; Svetitsky, B.) Fourier acceleration in lattice gauge theories. I. Landau gauge fixing. *Phys. Rev. D* (3) 37 (1988), no. 6, 1581-1588. (Summary) **89g:81004a** 81-08 (81E25)
- (with Batrouni, G.; Davies, C. T. H.; Kronfeld, A.; Lepage, G. P.; Rossi, Pietro; Svetitsky, B.; Wilson, K.) Fourier acceleration in lattice gauge theories. II. Matrix inversion and the quark propagator. *Phys. Rev. D* (3) 37 (1988), no. 6, 1589-1596. (Summary) **89g:81004b** 81-08 (81E25, 81G05)
- Katz, Gabriel** Witt analogs of the Burnside ring and integrality theorems. I. *Amer. J. Math.* 108 (1986), no. 6, 1277-1302. (Introduction) **89d:57053** 57S17 (11E81)
- Witt analogs of the Burnside ring and integrality theorems. II. *Amer. J. Math.* 109 (1987), no. 4, 591-617. (Introduction) **89d:57054** 57S17 (11E81)
- On normal representations of  $G$ -actions on projective varieties. *Comment. Math. Helv.* 63 (1988), no. 2, 169-183. (Karl Heinz Dovermann) **89h:57033** 57S17
- Katz, I. Norman** (with Ying, Xingren) Computation of eigenvalues and eigenfunctions for the stress singularity in a composite wedge. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 256-259. (From the summary) **89g:73034** 73K25 (65N25, 73-04, 73K20, 73M05)
- (with Ying, Xingren) A reliable argument principle algorithm to find the number of zeros of an analytic function in a bounded domain. *Numer. Math.* 53 (1988), no. 1-2, 143-163. (A. Bultheel) **89g:65068** 65H05 (30C15, 65E05)
- Katz, Joseph** (with Lynden-Bell, D.; Israel, W.) Quasilocal energy in static gravitational fields. *Classical Quantum Gravity* 5 (1988), no. 7, 971-987. (Tevidan Dray) **89f:83035** 83C40
- Katz, Mikhail** The first diameter of 3-manifolds of positive scalar curvature. *Proc. Amer. Math. Soc.* 104 (1988), no. 2, 591-595. (Viktor Schroeder) **89j:53040** 53C20
- Diameter-extremal subsets of spheres. *Discrete Comput. Geom.* 4 (1989), no. 2, 117-137. (P. McMullen) **89k:52013** 52A40
- Katz, Nicholas M.** On a certain class of exponential sums. *J. Reine Angew. Math.* 377 (1987), 12-17. (Yasutaka Ihara) **89c:14030** 14G15 (11L03, 11L05)
- Katz, Sheldon H.** (with Ein, Lawrence; Eisenbud, David) Varieties cut out by quadrics: scheme-theoretic versus homogeneous generation of ideals. *Algebraic geometry (Sundance, UT, 1986)*, 51-70, *Lecture Notes in Math.*, 1311, Springer, Berlin-New York, 1988. (Luciana Picco Botta) **89f:14029** 14H45 (14H10)
- Iteration of multiple point formulas and applications to conics. *Algebraic geometry (Sundance, UT, 1986)*, 147-155, *Lecture Notes in Math.*, 1311, Springer, Berlin-New York, 1988. (Ragni Piene) **89j:14032** 14N10 (14C17, 14H50)
- Katz, Shmuel** (with Francez, Nissim) Fairness and the axioms of control predicates. *Internat. J. Parallel Programming* 16 (1987), no. 4, 263-278. (Not in MR) 68Q55 (68N15)
- Katz, Victor J.** The calculus of the trigonometric functions. (French and German summaries) *Historia Math.* 14 (1987), no. 4, 311-324. (Gordon Fisher) **89d:01034** 01A50
- Who is the Jordan of Gauss-Jordan? *Math. Mag.* 61 (1988), no. 2, 99-100. (Desmond Fearnley-Sander) **89f:01034** 01A55 (15-03, 15A06)
- Katzenbeisser, Walter** On the joint distribution of the random variables "number of inversions" and "number of outstanding variables" in a randomly arranged sequence. *Statist. Hefte* 29 (1988), no. 2, 133-141. (Mir Maswood Ali) **89f:62023** 62E15
- katchalski-katzir, E.** see Katchalski-Katzir, E.
- Katznelson, Y.** (with Malliavin, Paul) Image des points critiques d'une application régulière. [Image of the critical points of a regular mapping] *Stochastic analysis (Paris, 1987)*, 85-92, *Lecture Notes in Math.*, 1322, Springer, Berlin-New York, 1988. (Jacques Vauthier) **89j:58144** 58G32 (58C35, 60B05, 60H99)
- (with Malliavin, Paul) Un contre-exemple au théorème de Sard en dimension infinie. (English summary) [A counterexample to the Sard theorem in infinite dimension] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 1, 37-41. (Thomas Kühn) **89g:58032** 58C35 (58C25)
- Kauffman, Louis H.** ★ Map reformulation. *Princeton Editions, Champaign, IL*, 1986. 249 pp. ISBN 0-86298-030-5 (Hugh Reynolds Morton) **89j:05033** 05C10 (05C15, 57M15)
- ★ On knots. *Annals of Mathematics Studies*, 115. *Princeton University Press, Princeton, NJ*, 1987. xvi+481 pp. ISBN 0-691-08434-3; 0-691-08435-1 (Charles Livingston) **89c:57005** 57M25 (57-01, 57-02)
- Statistical mechanics and the Jones polynomial. *Braids (Santa Cruz, CA, 1986)*, 263-297, *Contemp. Math.*, 78, *Amer. Math. Soc., Providence, RI*, 1988. (H. N. V. Temperley) **89j:57002** 57M25 (05C15, 82A69)
- New invariants in the theory of knots. *Amer. Math. Monthly* 95 (1988), no. 3, 195-242. (Hugh Reynolds Morton) **89d:57005** 57M25
- Invariants of graphs in three-space. *Trans. Amer. Math. Soc.* 311 (1989), no. 2, 697-710. (Hugh Reynolds Morton) **89f:57007** 57M25 (05C10)
- Kauffman, Stuart A.** Origins of order in evolution: self organization and selection. *Biomathematics and related computational problems (Naples, 1987)*, 311-330, *Kluwer Acad. Publ., Dordrecht*, 1988. (From the introduction) **89k:92038** 92A12
- Origins of order in evolution: self organization and selection. *Chaos and complexity (Torino, 1987)*, 349-387, *World Sci. Publishing, Singapore*, 1988. (Steven Matthysse) **89m:92039** 92A12
- Käufel, Thomas** Reasoning about systems of linear inequalities. *9th International Conference on Automated Deduction (Argonne, IL, 1988)*, 563-572, *Lecture Notes in Comput. Sci.*,

- 310, Springer, Berlin-New York, 1988. (see 89c:68004) 68T15 (90C05)
- Kaufman, Allan N.** (with Friedland, Lazar) Phase-space solution of the linear mode-conversion problem. *Phys. Lett. A* **123** (1987), no. 8, 387-389. (Summary) 89f:35190 35Q99 (58F05)
- (with McDonald, Steven W.) Wave chaos in the stadium: statistical properties of short-wave solutions of the Helmholtz equation. *Phys. Rev. A* (3) **37** (1988), no. 8, 3067-3086. (Summary) 89b:81075 81C99
- Kaufman, Arie** Efficient algorithms for 3D scan-conversion of parametric curves, surfaces, and volumes. *SIGGRAPH '87* (Anaheim, CA, 1987). *Comput. Graphics* **21** (1987), no. 4, 171-179. (see 89j:68151) 68U05 (68U10)
- Kaufman, C.** (with DeJesus, Edmund X.) Routh-Hurwitz criterion in the examination of eigenvalues of a system of nonlinear ordinary differential equations. *Phys. Rev. A* (3) **35** (1987), no. 12, 5288-5290. (Sui Sun Cheng) 89c:34051 34D20 (34B25)
- (with Srivastava, Niraj; Müller, Gerhard; Weber, René Willi; Thomas, Harry) Integrable and nonintegrable classical spin clusters. Trajectories and geometric structure of invariants. *Z. Phys. B* **70** (1988), no. 2, 251-268. (Summary) 89d:82142 82A68 (58F05, 58F07, 58F13)
- Kaufman, E. H., Jr.** (with Leeming, David J.; Taylor, G. D.) Uniform rational approximation on subsets of  $[0, \infty]$ . *J. Approx. Theory* **51** (1987), no. 3, 218-230. (Franz Peherstorfer) 89c:41012 41A20
- (with Taylor, G. D.) Infinite-interval nonlinear approximations. *Constr. Approx.* **4** (1988), no. 2, 211-221. (D. E. Wulbert) 89b:65047 65D15 (41A50)
- Kaufman, François** (with Henry, Jacques; Landau, Mayer; Pierret, C.) Utilisation de la méthode de continuation-bifurcation en électrophysiologie cardiaque. [Use of the bifurcation-continuation method in cardiac electrophysiology] 11<sup>e</sup> congrès international de cybernétique (Namur, 1986), 1313-1327. *Assoc. Internat. Cybernét., Namur, 1986*. (see 89a:94001) 92A09
- Kaufman, Howard** (with Angwin, Denise L.) Image restoration using reduced order models. (French and German summaries) Multidimensional signal processing, Part II (Noordwijkerhout, 1987). *Signal Process.* **16** (1989), no. 1, 21-28. (see 89j:94003) 94A12 (68U10)
- Kaufman, J. H.** (with Melroy, O. R.; Dimino, G. M.) Information-theoretic study of pattern formation: rate of entropy production of random fractals. *Phys. Rev. A* (3) **39** (1989), no. 3, 1420-1428. (Summary) 89k:82071 82A57 (58F13, 82A35)
- Kaufman, J. S.** (with Doshi, Bharat) Sojourn time in an  $M/G/1$  queue with Bernoulli feedback. *Queueing theory and its applications*, 207-233, *CWI Monographs*, 7, North-Holland, Amsterdam-New York, 1988. (Masao Mori) 89k:60132 60K25 (90B22)
- Kaufman, Linda** (with Hopke, P. K.; Rousseau, Peter J.) Using a parallel computer system for statistical resampling methods. *CSQ—Comput. Statist. Quart.* **4** (1988), no. 2, 129-141. (Not in MR) 62-04
- Kaufman, M.** Memory and paralysis phenomena in the immune response: interpretation in terms of multiple steady state transitions. *From chemical to biological organization*, 263-272, *Springer Ser. Synergetics*, 39, Springer, Berlin-New York, 1988. (see 89g:92002) 92A09
- Kaufman, Robert** Hausdorff measures and removable sets. *Complex analysis, I* (College Park, Md., 1985-86), 215-222, *Lecture Notes in Math.*, 1275, Springer, Berlin-New York, 1987. (James Dudziak) 89a:30031 30D99
- (with Wu, Jang-Mei) Parabolic measure on domains of class  $Lip \frac{1}{2}$ . *Compositio Math.* **65** (1988), no. 2, 201-207. (N. G. Makarov) 89g:31001 31A15
- Kaufmann, F.** see Kaufman, François
- Kaufmann, Heinz** A note on a paper of J. Parida and K. L. Roy on existence of optimal solutions: "An existence theorem for a nonlinear nondifferentiable programming problem" [*Optsearch* **24** (1987), no. 1, 7-18]. *Optsearch* **25** (1988), no. 1, 57-60. (Not in MR) 90C30
- On directions of strictness, affinity and constancy and the minimum set of a proper convex function. *Optimization* **19** (1988), no. 2, 157-167. (Hoàng Tuy) 89e:26012 26B25 (90C25)
- Kaufmann, Karl** (with Baumeister, Werner) Single-centre expansion of Gaussian basis functions and the angular decomposition of their overlap integrals. *J. Phys. B* **22** (1989), no. 1, 1-12. (Summary) 89j:81271 81G40
- Kaufmann, Z.** (with Szépfaussy, P.; Tél, T.) Unusual maps and their use to approach usual ones. *Acta Phys. Hungar.* **62** (1987), no. 2-4, 321-346 (1988). (Andrew Osbaldestin) 89h:58121 58F13 (26A18, 58F12)
- Kaul, Nancy** (with Raina, B. L.; Warikoo, Sunita) Error bound for an osculatory quadrature formula. *BIT* **27** (1987), no. 4, 623-626. (Summary) 89b:65040 65D32
- Kaul, R. N.** (with Lyall, Vinod; Kaur, Surjeet) Semilocal pseudolinearity and efficiency. *European J. Oper. Res.* **36** (1988), no. 3, 402-409. (Han Ch'ing Lai) 89h:90239 90C33 (90C25, 90C31)
- (with Lyall, Vinod) Nonconvex and semi-differentiable functions. *Indian J. Pure Appl. Math.* **19** (1988), no. 12, 1167-1179. (Quan Zheng) 89m:90141 90C30 (26B25, 49A52)
- (with Lyall, Vinod; Kaur, Surjeet) Locally connected sets and functions. *J. Math. Anal. Appl.* **134** (1988), no. 1, 30-45. (Pierre Lorian) 89i:52001 52A01 (90C99)
- Kaul, S. K.** (with Elaydi, Saber) Semiflows with global extensions. II. Notions of negative stability. *Nonlinear Anal.* **12** (1988), no. 7, 733-746. (W. R. Utz) 89f:54076 54H20 (34C35, 54H15)
- Kaul, Upender K.** Do large structures control their own growth in a mixing layer? An assessment. *J. Fluid Mech.* **190** (1988), 427-450. (Summary) 89m:76047 76F10 (76E05, 86A05)
- Kaulbach, Friedrich** see Frege, Gottlob, 89g:01068
- Kaunzner, Wolfgang** Über Charakteristika in der mittelalterlichen abendländischen Mathematik. [On characteristics of medieval occidental mathematics] *Math. Semesterber.* **34** (1987), no. 2, 143-186. (Autorreferat translated from Zbl 638:01004) 89h:01016 01A35
- On the transmission of mathematical knowledge to Europe. *Sudhoffs Arch.* **71** (1987), no. 2, 129-140. (P. Bockstaele) 89f:01018 01A35 (01A40)
- Kaup, B.** (with Borel, Armand; Grivel, Pierre-Paul; Häflicher, André; Malgrange, B.; Ehlers, F.)  $\star$  Algebraic  $D$ -modules. Perspectives in Mathematics, 2. Academic Press, Inc., Boston, MA, 1987. xii+355 pp. ISBN 0-12-117740-8 (Emmanuel Andronikof) 89g:32014 32C38 (58G07)
- Kaup, D. J.** Cavities are solitons: an integrable ponderomotive system. *Phys. Fluids* **31** (1988), no. 6, 1465-1470. (Summary) 89c:76125 76X05 (58F07, 82A45)
- Kaup, Lodger** (with Fieseler, Karl-Heinz) Intersection cohomology of  $q$ -complete complex spaces. *Proceedings of the conference on algebraic geometry* (Berlin, 1985), 83-104, *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (Thomas Peterzell) 89d:32027 32C42 (32C35, 32F10)
- (with Fieseler, Karl-Heinz) On the hard Lefschetz theorem in intersection homology for complex varieties with isolated singularities. *Aequationes Math.* **34** (1987), no. 2-3, 240-263. (K. Lamotte) 89c:14026 14F45 (32C42, 32J99, 55N35)
- (with Fieseler, Karl-Heinz) Vanishing theorems for the intersection homology of Stein spaces. *Math. Z.* **197** (1988), no. 2, 153-176. (Thomas Peterzell) 89c:32030 32C42 (32C35, 32F10)
- (with Fieseler, Karl-Heinz) Theorems of Lefschetz type in intersection homology. I. The hyperplane section theorem. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 3, 175-195. (K. Lamotte) 89k:32024 32C42 (14F99, 55N35)
- Kaup, U.** (with Ring, P.; Nikam, R. S.) A microscopic boson model for collective transition nuclei: Schwinger representation of the  $SO(8)$  shell model algebra. *Nuclear Phys. A* **480** (1988), no. 2, 222-252. (Summary) 89a:81173 81G30
- Kaur, Bhupinder** (with Shrivastava, P. N.) Some theorems, associated with bilateral generating functions involving Hermite, Laguerre and Gegenbauer polynomials. *J. Indian Math. Soc. (N.S.)* **49** (1985), no. 3-4, 179-183 (1987). (Walter Van Assche) 89f:33022 33A65
- Kaur, D.** (with Wallach, Y.) Parallel methods for tridiagonal equations. (German summary) *Computing* **40** (1988), no. 3, 267-272. (Summary) 89h:65043 65F05 (65W05)
- Kaur, Jagroop** (with Singh, Manjit) A new solution of a balanced incomplete block design. *Calcutta Statist. Assoc. Bull.* **36** (1987), no. 143-144, 189-192. (William I. Notz) 89f:05036 05B05 (62K10)
- Kaur, Surjeet** (with Lyall, Vinod) Decomposition in generalised fractional programming and its optimal dual solution. *Indian J. Pure Appl. Math.* **18** (1987), no. 11, 973-978. (S. S. Chaddha) 89d:90223 90C32
- (with Kaul, R. N.; Lyall, Vinod) Semilocal pseudolinearity and efficiency. *European J. Oper. Res.* **36** (1988), no. 3, 402-409. (Han Ch'ing Lai) 89h:90239 90C33 (90C25, 90C31)
- (with Kaul, R. N.; Lyall, Vinod) Locally connected sets and functions. *J. Math. Anal. Appl.* **134** (1988), no. 1, 30-45. (Pierre Lorian) 89i:52001 52A01 (90C99)
- Kaushal, M. B.** (with Gupta, J. R.) Generalized hydromagnetic Rayleigh-Taylor instability. *J. Math. Anal. Appl.* **134** (1988), no. 1, 51-63. (Jean Pierre Brancher) 89j:76047 76E25
- (with Gupta, J. R.) Rotatory hydromagnetic double-diffusive convection with viscosity variations. *J. Math. Phys.* **22** (1988), no. 3, 301-320. (Jean Pierre Brancher) 89j:76048 76E25 (76E15, 76U05, 76W05)
- Kaushal, R. S.** Construction of exact invariants for one- and two-dimensional classical systems. *Solitons* (Tiruchirappalli, 1987), 226-232, *Springer Ser. Nonlinear Dynamics*, Springer, Berlin-New York, 1988. (P. G. L. Leach) 89c:70021 70H15 (58F07)
- Kausmann, Ulrich** Näherungsverfahren für das Transportproblem. [Approximation procedures for the transportation problem] *Arbeiten zur mathematischen Optimierung und zu verwandten Gebieten*, 81-92, *Seminarberichte*, 94, Humboldt Univ., Berlin, 1988. (Summary) 89h:90133 90C08
- Kavalov, An. R.** (with Sedrakyan, A. G.) Fermion representation of the three-dimensional Ising model. *Nuclear Phys. B* **285** (1987), no. 2, 264-278. (Feodor Smirnov) 89g:82071 82A68 (81E30)
- (with Mkrtchyan, R. L.) Lagrangian for the self-duality equation and  $d = 10$ ,  $N = 2b$  supergravity. *Soviet J. Nuclear Phys.* **46** (1987), no. 4, 728-731 (1988); translated from *Yadernaya Fiz.* **46** (1987), no. 4, 1246-1252 (Russian). (Summary) 89d:83074 83E50 (81E13, 81G20)
- Kaveh, A.** Topological properties of skeletal structures. *Comput. & Structures* **29** (1988), no. 3, 403-411. (From the introduction) 89g:73065 73K99
- (with Behraves, A.; Nani, M.; Sabet, S.) A set theoretical approach for configuration processing. *Comput. & Structures* **30** (1988), no. 6, 1293-1302. (Summary) 89j:73072 73K25
- Suboptimal cycle bases of graphs for the flexibility analysis of skeletal structures. *Comput. Methods Appl. Mech. Engrg.* **71** (1988), no. 3, 259-271. (Summary) 89j:73081 73K99 (05C38)
- Kaverin, S. V.** (with Formanov, Sh. K.) Markov branching processes with emigration. II. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 3, 36-41, 97. (Kostov V. Mitov) 89a:60195 60J80
- (with Atamotov, A. S.) Branching random processes with unbounded migration of particles. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 1, 22-27, 92. (P. Jagers) 89c:60167 60J80
- Kavian, Otar** Remarks on the large time behaviour of a nonlinear diffusion equation. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* **4** (1987), no. 5, 423-452. (H. J. Kuiper) 89b:35013 35B40 (35K55)
- Kavokin, A. A.** (with Besinbaev, S.; Luk'yanov, A. T.) Numerical solution of a system of equations of convective diffusion of a multicomponent solution taking into account interphase interactions. (Russian) *Some problems in functional analysis, differential equations and their applications* (Russian), 15-21, 108, *Kazakh. Gos. Univ., Alma-Ata*, 1985. (see 89a:00016) 65N05 (65N10)
- Kavvadias, Dimitris** (with Georgakopoulos, George; Papadimitriou, Christos H.) Probabilistic satisfiability. *J. Complexity* **4** (1988), no. 1, 1-11. (Mark R. Jerrum) 89c:68036 68Q15 (03B05, 03B48, 03D15, 68T30)
- Kawabata, Hiroaki** (with Shirao, Yoshiaki; Inagaki, Yoshio; Nagahara, Toshikuni; Kido, Masao) On the approximate characteristic between the system governed by the unsymmetrical curvilinear restoring force and the piecewise linear system with the unsymmetrical restoring force. *Bull. Univ. Osaka Prefect. Ser. A* **34** (1985), no. 1, 33-41. (Jaume Llibre) 89m:34048 34C25 (70K40)
- (with Hashizume, Hidekuni; Inagaki, Yoshio; Shirao, Yoshiaki; Nagahara, Toshikuni; Kido, Masao) A method of optimal control in nonlinear systems. *Bull. Univ. Osaka Prefect. Ser. A* **35** (1986), no. 1, 33-45. (Vimal Singh) 89k:93167 93D15 (93C10, 93D20)
- Kawada, Yukiyo** Information and statistics. (Japanese. English summary) *Proc. Inst. Statist. Math.* **35** (1987), no. 1, 1-57. (Shunsuke Ihara) 89b:94010 94A15 (62B10)
- Information and statistics. I. *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 7, 281-284. (Kurt Marti) 89b:94015a 94A17 (62B10)



- Information and statistics. II. *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 8, 307–310. (Kurt Marti) **89b:94015b** 94A17 (62B10)
- Kawaguchi, Akitsugu** see **Obituary: Kawaguchi, Akitsugu**, **89b:01095**
- Kawaguchi, Kimio** (with Wada, Koichi; Luo, Yupin) Fault-tolerant network routings for  $(k+1)$ -node connected and  $(k+1)$ -edge connected graphs. *Systems Comput. Japan* **18** (1987), no. 11, 50–60. (Summary) **89b:68015** 68M15 (05C40, 68M10, 68R10, 90B10, 90B25)
- Kawaguchi, Tsuyoshi** (with Kyan, Seiki) Deterministic scheduling in computer systems: a survey. (Japanese summary) *J. Oper. Res. Soc. Japan* **31** (1988), no. 2, 190–217. (M. M. Syslo) **89j:90150** 90B35 (68M20, 68N25)
- Kawahara, Kenji** (with Hiraishi, Hiromi; Yajima, Shuzo) Locally exhaustive testing of combinational circuits using linear logic circuits. *J. Inform. Process.* **11** (1988), no. 3, 191–198. (Not in MR) **68R10**
- Kawahara, M.** (with Kodama, Toshio; Kinoshita, Masataka) Finite element method for tsunami wave propagation analysis considering the open boundary condition. *Comput. Math. Appl.* **16** (1988), no. 1–2, 139–152. (Summary) **89e:76011** 76–08 (76B15, 86A05)
- Kawahara, Takaji** (with Takaoka, Masanori) Chaotic motions in an oscillatory soliton lattice. *J. Phys. Soc. Japan* **57** (1988), no. 11, 3714–3732. (Summary) **89k:58184** 58F13 (35Q20)
- (with Toh, Sadayoshi) Pulse interactions in an unstable dissipative-dispersive nonlinear system. *Phys. Fluids* **31** (1988), no. 8, 2103–2111. (Summary) **89f:76029** 76B25 (35Q20, 58F40)
- Kawahara, Yasuo** Applications of relational calculus to computer mathematics. *Bull. Inform. Cybernet.* **23** (1988), no. 1–2, 67–78. (Summary) **89c:68027** 68Q05 (03B70, 03D80, 68Q55)
- Kawai, E.** Fields and their propagators on hyperspheres. (Italian and Russian summaries) *Nuovo Cimento A* (11) **100** (1988), no. 2, 195–211. (Ziemowit Popowicz) **89k:81103** 81E20 (81C05, 81D25, 81E13)
- Kawai, Hajime** (with Tanaka, Ken-ichi) Replacement problem with variance criterion. *Reliability theory and applications (Shanghai, Xi'an, Beijing, 1987)*, 158–167, *World Sci. Publishing, Singapore*, 1987. (R. Petrović) **89e:90113** 90B25
- Kawai, Hikaru** (with Lewellen, D. C.; Tye, S.-H. H.) Construction of four-dimensional fermionic strings: a brief review. *International Workshop on Superstrings, Cosmology, Composite Structures (College Park, MD, 1987)*, 169–177, *World Sci. Publishing, Singapore*, 1987. (see **89a:81005**) 81–02 (81E13)
- (with Chaudhuri, Shyamoli; Tye, S.-H. H.) Path-integral formulation of closed strings. *Phys. Rev. D* (3) **36** (1987), no. 4, 1148–1168. (Andrew A. Bytsenko) **89d:81088** 81E99 (81E30)
- (with Lewellen, D. C.; Schwartz, J. A.; Tye, S.-H. H.) The spin structure construction of string models and multiloop modular invariance. *Nuclear Phys. B* **299** (1988), no. 3, 431–470. (Marc Henneaux) **89h:81199** 81E99 (81E30)
- Kawai, Hiroya** Sequential calculus for a first-order infinitary temporal logic. *Z. Math. Logik Grundlag. Math.* **33** (1987), no. 5, 423–432. (Henry Africk) **89e:03029** 03B45 (03B70, 03F05)
- Completeness theorems for temporal logics  $T_0$  and  $\square T_0$ . *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 5, 393–398. (Marcus Kracht) **89j:03013** 03B45
- Kawai, Shigeo** Operator  $\Delta - \alpha K$  on surfaces. *Hokkaido Math. J.* **17** (1988), no. 2, 147–150. (Friedbert Prüfer) **89j:58149** 58G40 (53A10, 53C42, 58E12)
- Kawai, Takahiro** Systems of microdifferential equations of infinite order. *Hyperbolic equations and related topics (Katata/Kyoto, 1984)*, 143–154, *Academic Press, Boston, MA*, 1986. (J.-L. L. Lieutnant) **89b:58193** 58G07 (33A25, 35A27, 35R50)
- (with Kashiwara, Masaki) Hodge structure and holonomic systems. *Proc. Japan Acad. Ser. A Math. Sci.* **62** (1986), no. 1, 1–4. (From the introduction) **89c:32066** 32G20 (14C30)
- (with Kashiwara, Masaki) The Poincaré lemma for variations of polarized Hodge structure. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 2, 345–407. (M. Muro (Zbl 629:14005)) **89g:32035** 32G20 (32C38, 32C40)
- see also **Algebraic analysis**, **89j:00006** and **89j:00007**
- Kawai, Toshiharu** Energy-momentum and angular momentum in Poincaré gauge theory of gravity. *Progr. Theoret. Phys.* **79** (1988), no. 4, 920–935. (M. Carmeli) **89h:83031** 83D05
- Kawai, Toshiya** Two-cocycle and transformation law of the current. *Phys. Lett. B* **199** (1987), no. 2, 214–218. (José F. Cariñena) **89g:81033** 81D15 (22E45, 58D30, 81E30)
- Kawai, Yasuhiko** (with Hayasida, Kazuya) On a degenerate quasilinear elliptic equation with mixed boundary conditions. *Tokyo J. Math.* **10** (1987), no. 2, 437–470. (D. E. Edmunds) **89g:35035** 35J60
- Kawakami, Hiroshi** (with Sakamoto, Akio; Yoshikawa, Kenichi) A graph theoretical approach to complex reaction networks. *Chem. Phys. Lett.* **146** (1988), no. 5, 444–448. (Summary) **89k:92092** 92A40
- Kawakami, Satoshi** A remark on the relative entropy. *Miniconferences on harmonic analysis and operator algebras (Canberra, 1987)*, 161–168, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, *Austral. Nat. Univ., Canberra*, 1988. (Vaughan Jones) **89i:46068** 46L10
- (with Yoshida, Hiroaki) The constituents of Jones' index analysed from the structure of the Galois group. *Math. Japon.* **33** (1988), no. 4, 551–557. (Vaughan Jones) **89i:46070** 46L35
- Kawakubo, Katsuo** An  $s$ -cobordism theorem for semifree  $S^1$ -manifolds. *A fête of topology*, 565–583, *Academic Press, Boston, MA*, 1988. (B. Hajduk) **89c:57046** 57R85 (57S15)
- (with Araki, Shōrō) Equivalent  $s$ -cobordism theorems. *J. Math. Soc. Japan* **40** (1988), no. 2, 349–367. (R. E. Stong) **89f:57048** 57R80 (57R85)
- Kawamata, Yujiro** The Zariski decomposition of log-canonical divisors. *Algebraic geometry, Bowdoin, 1985 (Brunswick, Maine, 1985)*, 425–433, *Proc. Sympos. Pure Math.*, 46, Part I, *Amer. Math. Soc., Providence, RI*, 1987. (Takao Fujita) **89b:14052** 14J10 (14E30)
- (with Matsuda, Katsumi; Matsuki, Kenji) Introduction to the minimal model problem. *Algebraic geometry, Sendai, 1985*, 283–360, *Adv. Stud. Pure Math.*, 10, *North-Holland, Amsterdam-New York*, 1987. (David R. Morrison) **89e:14015** 14E30 (14E05, 14J40)
- Crepant blowing-up of 3-dimensional canonical singularities and its application to degenerations of surfaces. *Ann. of Math. (2)* **127** (1988), no. 1, 93–163. (I. Dolgachev) **89d:14023** 14E30 (14B05, 14E35, 14J10, 14J30)
- A classification theory of higher-dimensional algebraic varieties—towards a theory of minimal models. (Japanese) *Sūgaku* **40** (1988), no. 2, 97–114. (Yoichi Miyaoka) **89k:14020** 14E30
- Kawamoto, Noboru** (with Hayashi, Masahito; Kuramoto, Tetsuji; Shigemoto, Kazuyasu) Modular invariance and the gravitational anomaly in type II superstring theory. *Nuclear Phys. B* **294** (1987), no. 2, 459–497. (Roger Brooks) **89a:81131** 81E99 (81E30, 83E30)
- (with Namikawa, Yukihiko; Tsuchiya, Akihiro; Yamada, Yasuhiko) Geometric realization of conformal field theory on Riemann surfaces. *Comm. Math. Phys.* **116** (1988), no. 2, 247–308. (Emma Previato) **89i:14020** 14H15 (14K25, 17B65, 32G15, 35Q20, 58F07, 81E40)
- (with Hayashi, Masahito; Kuramoto, Tetsuji; Shigemoto, Kazuyasu) Gravitational anomaly cancellation in type I superstring theory. *Nuclear Phys. B* **296** (1988), no. 2, 373–401. (Roger Brooks) **89b:81193** 81E99 (81E20, 81E30, 83E30)
- Kawamoto, Takuji** (with Yoshino, Yuji) The fundamental module of a normal local domain of dimension 2. *Trans. Amer. Math. Soc.* **309** (1988), no. 1, 425–431. (Jürgen Herzog) **89h:13033** 13H10 (13C13, 14B05, 14J17)
- Kawamura, Kazuhiro** On some properties on span. *J. Math. Soc. Japan* **40** (1988), no. 4, 605–613. (J. J. Charatonik) **89j:54037** 54F20 (54C10)
- A direct proof that each Peano continuum with a free arc admits no expansive homeomorphisms. *Tsukuba J. Math.* **12** (1988), no. 2, 521–524. (Wayne Lewis) **89k:54095** 54H20 (54F25, 58F15)
- Kawamura, Kazutomo** The condition for an approximation of Poisson distribution to Bernoulli sums in multivariate distribution. *Kodai Math. J.* **11** (1988), no. 2, 280–286. (Pawel J. Szablowski) **89m:60053** 60F05 (62E20, 62H05)
- Kawamura, Shozo** (with Yasuda, Kimihiko; Watanabe, Koutaro) Identification of nonlinear multi-degree-of-freedom systems (presentation of an identification technique). *JSME Internat. J. Ser. III* **31** (1988), no. 1, 8–14. (Summary) **89i:93035** 93B30 (70K99)
- Kawamura, Toshio** (with Ohwada, Hayato; Mizoguchi, Fumio) CS-PROLOG: a generalized unification based constraint solver. *Logic programming '87 (Tokyo, 1987)*, 19–39, *Lecture Notes in Comput. Sci.*, 315, *Springer, Berlin-New York*, 1988. (see **89h:68137**) 68T25
- Kawamura, Yoshiharu** (with Suzuki, Tsuneo; Yamada, Eiji) A comment on a new interpretation of the chiral anomaly. *Progr. Theoret. Phys.* **78** (1987), no. 1, 32–37. (Henryk Arodz) **89e:81105** 81E15 (81E13)
- Kawanaka, Noriaki** Shintani lifting and Gelfand-Graev representations. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 147–163, *Proc. Sympos. Pure Math.*, 47, Part I, *Amer. Math. Soc., Providence, RI*, 1987. (Marie-France Vignéras) **89h:22037** 22E50 (20G05)
- Orbits and stabilizers of nilpotent elements of a graded semisimple Lie algebra. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **34** (1987), no. 3, 573–597. (James F. Hurley) **89j:17012** 17B20 (17B10, 17B45, 20G05)
- see also **Digne, François**, **89a:20051**
- Kawarabayashi, K.** see **Wandering in the fields**, **89m:81002**
- Kawarada, Hideo** (with Imai, Hitoshi) One-component asymmetric plasmas in a symmetric vessel. *Japan J. Appl. Math.* **5** (1988), no. 2, 173–186. (Summary) **89d:76034** 76W05 (58E07)
- Kawasaki, Hidefumi** Second-order necessary conditions of the Kuhn-Tucker type under new constraint qualifications. *J. Optim. Theory Appl.* **57** (1988), no. 2, 253–264. (Laura Marten) **89i:90145** 90C30
- An envelope-like effect of infinitely many inequality constraints on second-order necessary conditions for minimization problems. *Math. Programming* **41** (1988), no. 1 (Ser. A), 73–96. (Panos M. Pardalos) **89d:90191** 90C30 (90C48)
- Kawasaki, Kyozi** (with Ohta, Takao) Euclidean invariant phase dynamics for propagating pattern. *Phys. D* **27** (1987), no. 1–2, 21–42. (Giles Auchmuty) **89f:76050** 76E15 (58F14, 76R05, 76R50, 80A32, 82A99)
- (with Nagai, Tatsuzo; Nakamura, Katsuhiko) Vertex dynamics of two-dimensional cellular patterns. *J. Phys. Soc. Japan* **57** (1988), no. 7, 2221–2224. (Summary) **89f:82002** 82–04 (82A57)
- Kawasaki, Naoya** (with Kobayashi, Hisato; Shimemura, E.) Relation between pole assignment and LQ regulator. *Internat. J. Control* **47** (1988), no. 4, 947–951. (Pranod Kumar Sharma) **89e:93115** 93B55 (93B50)
- (with Shimemura, E.) Pole placement in a specified region based on a linear quadratic regulator. *Internat. J. Control* **48** (1988), no. 1, 225–240. (Mihail Voicu) **89e:93114** 93B55 (15A24, 49D40, 93B50)
- Kawasaki, Toshikazu** (with Yoshida, Masaaki) Crystallographic flat origamis. *Mem. Fac. Sci. Kyushu Univ. Ser. A* **42** (1988), no. 2, 153–157. (J. J. Burckhardt) **89h:51020** 51F15 (20H15)
- Kawashima, Shuichi** The Boltzmann equation and thirteen moments. *Recent topics in nonlinear PDE, III (Tokyo, 1986)*, 157–172, *North-Holland Math. Stud.*, 148, *North-Holland, Amsterdam-New York*, 1987. (Carlo Cercignani) **89c:82034** 82A40 (76P05)
- (with Makino, Tetu; Ukai, Seiji) On compactly supported solutions of the compressible Euler equation. *Recent topics in nonlinear PDE, III (Tokyo, 1986)*, 173–183, *North-Holland Math. Stud.*, 148, *North-Holland, Amsterdam-New York*, 1987. (Introduction) **89d:35144** 35Q10 (76N10)
- (with Yanagisawa, Taku; Shizuta, Yasushi) Mixed problems for quasi-linear symmetric hyperbolic systems. *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 7, 243–246. (Introduction) **89e:35091** 35L60
- Large-time behaviour of solutions to hyperbolic-parabolic systems of conservation laws and applications. *Proc. Roy. Soc. Edinburgh Sect. A* **106** (1987), no. 1–2, 169–194. (Summary) **89d:35022** 35B40 (35K55, 35L65)
- (with Cabannes, Henri) Le problème aux valeurs initiales en théorie cinétique discrète. (English summary) [The initial-value problem in discrete kinetic theory] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 9, 507–511. (Carlo Cercignani) **89m:82030** 82A40 (76P05)
- Kawata, Shigetō** Auslander-Reiten quivers and Green correspondence. *Proceedings of the 21st Symposium on Ring Theory (Hiroaki, 1988)*, 64–69, *Okayama Univ., Okayama*, 1989. (see **89k:16001**) 16A64
- Kawata, Tatsuo** (with Nakata, Tomochi) Remarks on the mean concentration function of a random variable. *Keio Sci. Tech. Rep.* **40** (1987), no. 1, 18 pp. (Zhi-Dong Bai) **89g:60043** 60E05 (60E15)
- Kawata, Tsutomu** On a derivation of Gelfand-Levitan equation by means of Riemann-Hilbert problem. *J. Phys. Soc. Japan* **57** (1988), no. 1, 57–65. (Tuncay Aktosun) **89f:81240** 81F99 (35Q15)

- Inverse scattering transform of the higher-order eigenvalue problem. *J. Phys. Soc. Japan* 57 (1988), no. 2, 422–435. (Summary) **89d:35183** 35R30 (35Q20)
- Kawato, M.** (with Isobe, M.; Maeda, Yoshiharu; Suzuki, Ryōji<sup>1</sup>) Coordinates transformation and learning control for visually-guided voluntary movement with iteration: a Newton-like method in a function space. *Biol. Cybernet.* 59 (1988), no. 3, 161–177. (Summary) **89h:92022** 92A09 (65J99)
- Kawauchi, Akio** (with Kobayashi, Tsuyoshi; Sakuma, Makoto) On 3-manifolds with no periodic maps. *Japan. J. Math. (N.S.)* 10 (1984), no. 2, 185–193. (From the introduction) **89b:57020** 57S17 (57M25, 57N10, 57S25)
- On the integral homology of infinite cyclic coverings of links. *Kobe J. Math.* 4 (1987), no. 1, 31–41. (Dončo Dimovski) **89g:57007** 57M25 (55U99, 57M12, 57Q45)
- Knots in the stable 4-space; an overview. *A fte of topology*, 453–470, Academic Press, Boston, MA, 1988. (Roger Fenn) **89f:57034** 57Q45
- The imbedding problem of 3-manifolds into 4-manifolds. *Osaka J. Math.* 25 (1988), no. 1, 171–183. (Charles Livingston) **89g:57042** 57R40 (57N35, 57Q35)
- Imitation of (3, 1)-dimensional manifold pairs. (Japanese) *Sūgaku* 40 (1988), no. 3, 193–204. (Masayuki Yamasaki) **89j:57003** 57M25 (57N10, 92A40)
- Kawazoe, Takeshi** Fourier transform associated with holomorphic discrete series. *Miniconference on harmonic analysis and operator algebras* (Canberra, 1987), 77–88, Proc. Centre Math. Anal. Austral. Nat. Univ., 15, Austral. Nat. Univ., Canberra, 1987. (Mitsuo Sugiura) **89i:22020** 22E45
- (with Tahani, Taoufik) A characterization of the Poisson kernel associated with  $SU(1, n)$ . *Tokyo J. Math.* 11 (1988), no. 1, 37–55. (Jacques Faraut) **89h:22016** 22E30 (43A85)
- Kawazu, K.** (with Tamura, Yozo; Tanaka, Hiroshi<sup>1</sup>) One-dimensional diffusions and random walks in random environments. *Probability theory and mathematical statistics* (Kyoto, 1986), 170–184, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (Gregory F. Lawler) **89g:60246** 60I60
- Kawohl, Bernhard** (with Sweers, G.) Remarks on eigenvalues and eigenfunctions of a special elliptic system. (German summary) *Z. Angew. Math. Phys.* 38 (1987), no. 5, 730–740. (Volker Vogelsang) **89c:35125** 35P15 (35J50)
- Kawki, Matthias** A necessary condition for local controllability. *Differential geometry: the interface between pure and applied mathematics* (San Antonio, Tex., 1986), 143–155, *Contemp. Math.*, 68, Amer. Math. Soc., Providence, RI, 1987. (Constantin Vărsan) **89a:49038** 49E15 (49B10, 93B05, 93C15)
- (with Hermes, Henry) Local controllability of a single input, affine system. *Nonlinear analysis and applications* (Arlington, Tex., 1986), 235–248, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (M. Răduică) **89h:93009** 93B05 (49E15, 93D15)
- An angular open mapping theorem. *Analysis and optimization of systems* (Antibes, 1988), 361–371, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Jean-Pierre Aubin) **89m:49068** 49E15 (93D15)
- Control variations with an increasing number of switchings. *Bull. Amer. Math. Soc. (N.S.)* 18 (1988), no. 2, 149–152. (Henryk Górecki) **89b:49042** 49B36 (49E15, 58F40, 93B05)
- Nilpotent Lie algebras of vectorfields. *J. Reine Angew. Math.* 388 (1988), 1–17. (Janusz Grabowski) **89h:17011** 17B30 (57S20, 58F99)
- Kay, Bernard S.** Quantum field theory in curved spacetime. *Differential geometrical methods in theoretical physics* (Como, 1987), 373–393, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 250, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89k:81104** 81E20 (81–02, 83C47)
- Kay, Kenneth G.** (with Ramachandran, B.) Local ergodicity as a probe for chaos in quantum systems: application to the Hénon–Heiles system. *J. Chem. Phys.* 86 (1987), no. 8, 4628–4647. (Dieter H. Mayer) **89b:81076** 81C99 (58F11)
- Kay, S. R.** (with Scott, Stephen K.) Multiple stationary states, sustained oscillations and transient behaviour in autocatalytic reaction-diffusion equations. *Proc. Roy. Soc. London Ser. A* 418 (1988), no. 1855, 345–364. (Summary) **89i:92077** 92A40 (58C28, 58F14)
- Kay, W.** (with Hall, G. S.) Curvature structure in general relativity. *J. Math. Phys.* 29 (1988), no. 2, 420–427. (J. K. Beem) **89c:83022** 83C20 (53C50, 53C80)
- (with Hall, G. S.) Holonomy groups in general relativity. *J. Math. Phys.* 29 (1988), no. 2, 428–432. (J. K. Beem) **89c:83023** 83C20 (53C50, 53C80)
- Kaya, Arif** (with Argac, Nuran; Kisir, Alev)  $(\sigma, \tau)$ -derivations in prime rings. *Math. J. Okayama Univ.* 29 (1987), 173–177 (1988). (Andrzej Nowicki) **89f:16046** 16A70 (16A72)
- Kaya, Kâzım** On prime rings with weak  $\alpha$ -derivations. (Turkish. English summary) *Doğa Mat.* 12 (1988), no. 2, 46–51. (Summary) **89k:16061** 16A70 (16A72)
- Kaya, Rustem** (with Çiftüci, Süleyman; Ferrar, Joseph C.) On 4-transitivity in the Moufang plane. *J. Geom.* 31 (1988), no. 1–2, 65–68. (Elena Brožiková) **89f:51015** 51A35 (17A35, 17D05, 51A25)
- Kayalar, Selahattin** (with Weinert, Howard L.) Error bounds for the method of alternating projections. *Math. Control Signals Systems* 1 (1988), no. 1, 43–59. (M. Z. Nashed) **89b:65137** 65J10 (47A50)
- (with Weinert, Howard L.) Oblique projections: formulas, algorithms, and error bounds. *Math. Control Signals Systems* 2 (1989), no. 1, 33–45. (Not in MR) **93B28** (94A12)
- Kayanello, E. R.** see Caianello, Eduardo R.
- Kaye, R.** see Kaye, Richard William
- Kaye, R. John** (with Dasgupta, Soura; Anderson, B. D. O.) Identification of physical parameters in structured systems. *Automatica—J. IFAC* 24 (1988), no. 2, 217–225. (J. P. Babary) **89i:93030** 93B30
- Kaye, Richard William** (with Paris, Jeff B.; Dimitracopoulos, C.) On parameter free induction schemas. *J. Symbolic Logic* 53 (1988), no. 4, 1082–1097. (Roman Murawski) **89c:03079** 03F30
- Kazachek, S. A.** Estimates for the values of the Lebesgue functions of systems of orthogonal polynomials at the ends of the interval of orthogonality. (Russian) *Application of functional analysis in approximation theory* (Russian), 49–53, Kalinin. Gos. Univ., Kalinin, 1987. (From the text) **89d:42031** 42C05
- Kazachenok, V. V.** Construction of discontinuous regressive models in the multidimensional case. (Russian) *Vestis Akad. Nauk SSSR Ser. Fiz.-Mat. Nauk* 1988, no. 5, 117. (Not in MR) **62J05**
- Kazakevich, G. I.** Extension of an explosion cavity in a geomaterial with very rapidly changing properties. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* 1988, no. 8, 25–32. (Not in MR) **73D05** (73D15, 86A15)
- Kazakevich, V. A.** (with Martynenko, M. D.) The method of Green quasifunctions in the theory of steady oscillations of elastic bodies. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 32 (1988), no. 10, 876–878, 956. (Summary) **89j:73036** 73D30
- Kazakov, D.** (with Gauthier, J.-P.) Observabilité et observateurs de systèmes non linéaires. (English summary) [Observability and observers of nonlinear systems] *RAIRO Automat.-Prod. Inform. Ind.* 22 (1988), no. 2, 201–212. (Guy Jumarie) **89d:93012** 93B07 (93E10)
- papantoni-Kazakov, P.** see Papantoni-Kazakov, P.
- Kazakov, D. I.** A generalization of the renormalization group equations for quantum field theories of arbitrary type. (Russian. English summary) *Theoret. Mat. Fiz.* 75 (1988), no. 1, 157–160; translation in *Theoret. and Math. Phys.* 75 (1988), no. 1, 440–442. (Summary) **89e:81110** 81E15
- see also Conference: Renormalization Group, **89a:81002** and Renormalization group, **89k:82003**
- Kazakov, D. I.** (with Gladkov, D. I.) ★ Методы оптимизации стохастических систем. (Russian) [Methods for optimization of stochastic systems] Теоретические Основы Технической Кибернетики [Theoretical Foundations of Engineering Cybernetics], 89. “Nauka”, Moscow, 1987. 304 pp. (Claudia Simionescu) **89g:93088** 93Exx (93–02)
- Synthesis of a conditionally optimal control according to a local criterion in a nonlinear stochastic system. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 12, 72–80; translation in *Automat. Remote Control* 48 (1987), no. 12, part 1, 1621–1627. (Wilfried Grecksch) **89e:93223** 93E20 (93B50)
- (with Bukhalev, V. A.; Efimov, E. V.) Complex processing of information from gauges and indicators in dynamical systems with conditionally Markov structure. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 1, 61–71; translation in *Automat. Remote Control* 49 (1988), no. 1, part 1, 48–56. (Summary) **89c:94016** 94A15 (60J27, 93C15, 93E12)
- Kazakov, V. A.** Multivalued moving singular points of a class of differential equations. (Russian) *Mathematical physics (Russian)*, 153–157, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Marian Mureşan) **89c:34058** 34C05 (34A20, 34C20)
- Kazakov, V. A.** An approach to the application of B-splines in splitting schemes for the solution of Navier-Stokes equations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 7, 1038–1046, 1118. (Summary) **89h:65198** 65N35 (76–08, 76D05)
- Kazakov, Vladimir Aleksandrovich** Kinetic equations for probability densities of non-Markov processes. Evolution of moment and cumulant functions. (Russian. English summary) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* 30 (1987), no. 11, 1309–1320. (Not in MR) **60K99** (82)
- Kazakova, N. M.** Orders of Lebesgue constants of Fourier-Jacobi sums in the spaces  $(QL)^2$ . (Russian) *Theory of functions and approximations, Part 2* (Russian) (Sarator, 1984), 124–126, *Sarator. Gos. Univ., Sarator*, 1986. (see **89j:00036**) **42C15**
- Kazama, Yoichi** Introduction to twisted conformal fields. *Conformal field theory, anomalies and superstrings* (Singapore, 1987), 300–347, *World Sci. Publishing, Singapore*, 1988. (Philippe Christe) **89g:81079** 81E99 (81E30, 81E40)
- Kazamaki, Norihiko** (with Sekiguchi, Takeshi) A remark on  $L^\infty$  in the space of BMO-martingales. *Math. Rep. Toyama Univ.* 10 (1987), 169–173. (Mario Milman) **89b:60122** 60G46 (46E30, 60G44)
- (with Kikuchi, Masato) Martingale inequalities for ratios of the maximal function and the square function. *Math. Rep. Toyama Univ.* 10 (1987), 181–186. (R. F. Gundy) **89d:60090** 60G46 (42B25)
- A new aspect of  $L_\infty$  in the space of BMO-martingales. *Probab. Theory Related Fields* 78 (1988), no. 1, 113–126. (Mario Milman) **89e:60094** 60G44 (60G46)
- Kazanas, Demosthenes** (with Mannheim, Philip D.) Energy-momentum tensor of fields in the standard cosmology. *Gen. Relativity Gravitation* 20 (1988), no. 3, 201–220. (M. A. H. MacCallum) **89g:83060** 83F05 (83C50, 83C55)
- Kazanchyan, T. P.** The law of the iterated algorithm in Chung's form for  $m$ -dependent random variables. (Russian. Armenian summary) *Eravan. Gos. Univ. Uchen. Zap. Estestv. Nauk* 1984, no. 2(156), 22–29. (Not in MR) **60F15**
- Kazarinoff, Nicholas D.** (with Coutias, Evangelos A.) On Cornu spirals. Disorder, self-similarity, and Jacobi's  $\theta_3(v, \tau)$ . *Bifurcation: analysis, algorithms, applications* (Dortmund, 1986), 139–152, *Internat. Schriftenreihe Numer. Math.*, 79, Birkhäuser, Basel-Boston, MA, 1987. (From the text) **89d:58084** 58F13 (11F27, 11L03, 58F08)
- (with Wang, Li) On the universal sequence generated by a class of unimodal functions. *J. Combin. Theory Ser. A* 46 (1987), no. 1, 39–49. (William A. Beyer) **89c:58063** 58F08 (26A18, 34C35, 54H20)
- Kazaryan, K. S.** see Kazaryan, K. S.
- Kazaryan, A. R.** (with Bogolyubov, N. N., Jr.; Kurbatov, A. M.; Neskoromnyi, V. N.) The nonequilibrium description of superradiant state on the basis of exact evolution equation. *Internat. J. Modern Phys. B* 1 (1987), no. 1, 69–88. (Summary) **89a:81183** 81K05
- Kazaryan, G. G.** (with Markaryan, V. N.) Estimates for the solutions of nonhyperbolic equations with a given carrier of hypoellipticity. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* 22 (1987), no. 4, 315–336, 412. (Peter R. Popivanov) **89h:35079** 35H05 (35E20)
- Kazaryan, K. S.** Summability of generalized Fourier series and Dirichlet's problem in  $L^p(d\mu)$  and weighted  $H^p$ -spaces ( $p > 1$ ). (Russian summary) *Anal. Math.* 13 (1987), no. 3, 173–197. (B. Muckenhoupt) **89b:42023** 42C30 (32A35, 42A24, 42C20)
- Weighted inequalities for families of operators generated by truncated Cesàro kernels. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 52 (1988), no. 2, 287–309, 446; translation in *Math. USSR-Izv.* 32 (1989), no. 2, 289–311. (Weiyi Su) **89g:42008** 42A15 (42A24)
- Kazaryan, S. S.** Inequalities in Orlicz spaces for a maximal function. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* 22 (1987), no. 4, 358–377, 413. (W. R. Madych) **89f:42017** 42B25 (46E30)
- Kazbaras, A.** An adaptive projection estimator for the density of a distribution. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* 27 (1987), no. 4, 688–698. (Z. Sidák) **89c:62073** 62G05
- Kazdan, Jerry L.** Unique continuation in geometry. *Comm. Pure Appl. Math.* 41 (1988), no. 5, 667–681. (Steven George Krantz) **89k:35039** 35B60 (35J25, 58G30)
- Kazemi, Hossein B.** A multiperiod asset-pricing model with unobservable market portfolio: a note. *J. Finance* 43 (1988), no. 4, 1015–1024. (From the text) **89m:90017** 90A09 (90A12)



- Kazemi-Dehkordi, M. A.** A method of successive approximations for optimal control of distributed parameter systems. *J. Math. Anal. Appl.* **133** (1988), no. 2, 484–497. (Claudia Simionescu) **89g:49039** 49D05 (93C20, 93E25)
- Kazerooni, H.** Loop shaping design related to LQG/LTR for SISO minimum phase plants. *Internat. J. Control* **48** (1988), no. 1, 241–255. (Not in MR) **93B50** (93B07, 93C35)
- Kazur, William H.** (with Gabai, David) The classification of maps of surfaces. *Invent. Math.* **90** (1987), no. 2, 219–242. (Hugh M. Hilden) **89a:57002** 57M12
- (with Gabai, David) The classification of maps of nonorientable surfaces. *Math. Ann.* **281** (1988), no. 4, 687–702. (Allan Edmonds) **89j:57001** 57M12
- Kazhdan, D.** Algebraic geometry and representation theory. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 849–852, *Amer. Math. Soc., Providence, RI*, 1987. (James Milne) **89d:22014** 22E50 (14G99, 22E99)
- (with Flicker, Yuval Z.) On the symmetric square: unstable local transfer. *Invent. Math.* **91** (1988), no. 3, 493–504. (David Soudry) **89e:11031** 11F70 (22E50)
- (with Lusztig, G.) Fixed point varieties on affine flag manifolds. *Israel J. Math.* **62** (1988), no. 2, 129–168. (Dennis Snow) **89m:14025** 14L30 (20G25, 32M10)
- Kazi, M. H.** (with Ahmad, Munir) On exact and asymptotic moments of inverse of mean of a normal population. *Punjab Univ. J. Math. (Lahore)* **20** (1987), 63–70. (Javad Behboodian) **89f:62021** 62F10
- Kazíć, M.** (with Bulatović, R.) On the inversion of the Lagrange-Dirichlet theorem. *Z. Angew. Math. Mech.* **68** (1988), no. 4, T61–T63. (Gerard Thompson) **89f:70028** 70K20
- Kaziev, V. M.** Some algorithms and programs for the identification of mathematical models of biomass accumulation of plants. (Russian) *Methods for mathematical modeling in systems of automated design and planning* (Russian), 135–144, 235, *Kabardino-Balkarsk. Gos. Univ., Nal'chik*, 1985. (Summary) **89m:92048** 92A17
- Kazlauskas, K.** The theory of discrete periodic systems. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 1, 137–142; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 4, 159–163, 223 (Russian). (Summary) **89d:93064** 93C55 (49D50)
- Kazmierkowski, M. P.** (with Nilsen, R.) Reduced-order observer with parameter adaption for fast rotor flux estimation in induction machines. *Proc. IEEE-D* **136** (1989), no. 1, 35–43. (Not in MR) **93C75** (93B07)
- Kar'imin, Yu. A.** Basis functions in some spaces of analytic functions. (Russian) *Investigations in the theory of the approximation of functions* (Russian), 133–175, *Akad. Nauk SSSR Bashkir. Filial, Odel Fiz. Mat., Ufa*, 1987. (P. Wojtaszczyk) **89m:46039** 46E10 (30B60)
- Approximation properties in  $L_2$  of some function sequences. (Russian) *Mat. Zametki* **43** (1988), no. 5, 593–603, 701; translation in *Math. Notes* **43** (1988), no. 5–6, 342–348. (V. Totik) **89j:42009** 42A65
- Kazymov, S. S.** (with Gasanov, E. E.) Modal control of multidimensional objects. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **7** (1986), no. 6, 68–74 (1987). (Andrzej Świerniak) **89e:93089** 93B50 (93B17, 93B55, 93C05)
- Ke, Yan** (with O'Rourke, Joseph) Lower bounds on moving a ladder in two and three dimensions. Third ACM Symposium on Computational Geometry (Waterloo, Ont., 1987). *Discrete Comput. Geom.* **3** (1988), no. 3, 197–217. (Summary) **89b:68059** 68U05
- Keagy, Thomas A.** (with Ford, William F.) Acceleration by subsequence transformations. *Pacific J. Math.* **132** (1988), no. 2, 357–362. (Claude Brezinski) **89e:65004** 65B10 (40D20)
- Keane, Michael** (with Cooke, Roger Marvin; Moran, William) An elementary version of Gleason's theorem. *Recent developments in quantum logic* (Cologne, 1984), 299–313, *Grundlehren Exakt. Naturwiss.*, **6**, *Bibliographisches Inst., Mannheim*, 1985. (see **89b:81008**) **81B10** (46L50)
- (with Charnes, A.; Golany, B.; Rousseau, John James) Extremal principle solutions of games in characteristic function form: core, Chebyshev and Shapley value generalizations. *Econometrics of planning and efficiency*, 123–133, *Adv. Stud. Theoret. Appl. Econometrics*, **11**, *Kluwer Acad. Publ., Dordrecht*, 1988. (Akira Okada) **89e:90232** 90D12 (90C20, 90C50)
- (with Gandolfi, A.; Russo, L.) On the uniqueness of the infinite occupied cluster in dependent two-dimensional site percolation. *Ann. Probab.* **16** (1988), no. 3, 1147–1157. (William Bernard Krebs) **89m:62044** 62A43 (60K35)
- (with Hooghiemstra, Gerard; van de Ree, Simon) Power series for stationary distributions of coupled processor models. *SIAM J. Appl. Math.* **48** (1988), no. 5, 1159–1166. (A. Fuchs) **89b:68006** 68M20 (60K25)
- (with Aaronson, Jon; Gilat, David; de Valk, Vincent) An algebraic construction of a class of one-dependent processes. *Ann. Probab.* **17** (1989), no. 1, 128–143. (P. Laurie Davies) **89m:60084** 60G10 (28D05)
- Kearnes, Keith A.** On the relationship between AP, RS and CEP. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 827–839. (E. W. Kiss) **89m:08006** 08B10 (03C05, 03G99, 08B25, 20M07)
- Kearney, Colm** (with MacDonald, Ronald) On the specification of Granger-causality tests using the cointegration methodology. *Econom. Lett.* **25** (1987), no. 2, 149–153. (Summary) **89a:62228** 62P20 (62M10)
- Kearton, C.** (with Hillman, J. A.) Seifert matrices and 6-knots. *Trans. Amer. Math. Soc.* **309** (1988), no. 2, 843–855. (Alexander I. Suciu) **89j:57015** 57Q45
- Mutation of knots. *Proc. Amer. Math. Soc.* **105** (1989), no. 1, 206–208. (Lorenzo Traldi) **89c:57001** 57M25
- Keating, J. P.** (with Berry, M. V.) False singularities in partial sums over closed orbits. *J. Phys. A* **20** (1987), no. 17, L1139–L1141. (Summary) **89c:58102** 58F19 (81C99)
- Kechris, Alexander S.** The complexity of antidifferentiation, Denjoy totalization, and hyperarithmetic reals. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 307–313, *Amer. Math. Soc., Providence, RI*, 1987. (Howard Becker) **89g:03067** 03E15 (04A15, 26A36)
- (with Ajtai, Miklós) The set of continuous functions with everywhere convergent Fourier series. *Trans. Amer. Math. Soc.* **302** (1987), no. 1, 207–221. (Edward Azoff) **89b:40005** 04A15 (26A21, 42A20)
- “AD + UNIFORMIZATION” is equivalent to “half  $AD_{\aleph_1}$ ”. *Cabal Seminar* **81–85**, 98–102, *Lecture Notes in Math.*, **1333**, *Springer, Berlin-New York*, 1988. (Yutaka Yasuda) **89f:03093** 03E15 (03E60)
- Subsets of  $\aleph_1$  constructible from a real. *Cabal Seminar* **81–85**, 110–116, *Lecture Notes in Math.*, **1333**, *Springer, Berlin-New York*, 1988. (L. Bukovský) **89f:03099** 03E55 (03E15, 03E45)
- (with Lyons, Russell) Ordinal rankings on measures annihilating thin sets. *Trans. Amer. Math. Soc.* **310** (1988), no. 2, 747–758. (Colin C. Graham) **89m:43013** 43A46 (03E15, 43A05, 54H05)
- see also *Seminar: Cabal*, **89c:03005**
- Kechter, G. E.** (with Achenbach, J. D.; Xu, Yong Lin) Off-boundary approach to the boundary element method. *Comput. Methods Appl. Mech. Engrg.* **70** (1988), no. 2, 191–201. (Summary) **89g:73002** 73-08 (73-04, 73D25)
- Kečkić, Jovan D.** (with Adamović, Dušan D.) On general solutions of linear differential equations. *Publ. Inst. Math. (Beograd) (N.S.)* **42(56)** (1987), 47–56. (Vladimir Vilek) **89d:34012** 34A30
- On a system of functional equations. *Publ. Inst. Math. (Beograd) (N.S.)* **43(57)** (1988), 85–91. (Anna Lee) **89b:15007** 15A09 (15A24, 15A54)
- Kodem, Zvi Meir** (with Lee, Peizong) Synthesizing linear array algorithms from nested for loop algorithms. *IEEE Trans. Comput.* **37** (1988), no. 12, 1578–1598. (Not in MR) **68Q35** (68Q20, 68Q90)
- Kee, Chang-Doo** (with Jayasuriya, Suhada) Circle-type criterion for synthesis of robust tracking controllers. *Internat. J. Control* **48** (1988), no. 3, 865–886. (Summary) **89g:93043** 93B50 (93B35, 93B55, 93C10)
- Kedwell, A. D.** (with Dénes, J.) Latin squares and 1-factorizations of complete graphs. I. Connections between the enumeration of Latin squares and rectangles and  $r$ -factorizations of labelled graphs. Eleventh British Combinatorial Conference (London, 1987). *Discrete Math.* **25** (1988), no. 1, 109–126. (Jeffrey H. Dinitz) **89i:05058** 05B15 (05C50)
- Simple constructions for elliptic cubic curves with specified small numbers of points. *European J. Combin.* **9** (1988), no. 5, 463–481. (José Felipe Voloch) **89j:14013** 14G15 (11D25)
- Keef, Patrick** On the Tor functor and some classes of abelian groups. *Pacific J. Math.* **132** (1988), no. 1, 63–84. (Luigi Salce) **89b:20115** 20K10 (18G15, 20K40)
- Keegel, J. C.** (with Kullback, S.; Kullback, J. H.) ★ Topics in statistical information theory. *Lecture Notes in Statistics*, **42**, *Springer-Verlag, Berlin-New York*, 1987. x+158 pp. *ISBN* 3-540-96512-2 (I. Vajda) **89b:62015** 62B10 (62F12, 62Mxx, 94A15)
- Keel, L. H.** (with Bhattacharya, Shankar Prashad) Robust stability and stabilization in parameter space. *Linear algebra in signals, systems, and control* (Boston, MA, 1986), 576–593, *SIAM, Philadelphia, PA*, 1988. (Mohamed Mansour) **89m:93064** 93D10 (49D07, 93B35, 93D15)
- (with Bhattacharya, Shankar Prashad; Howze, J. W.) Stabilizability conditions using linear programming. *IEEE Trans. Automat. Control* **33** (1988), no. 5, 460–463. (Not in MR) **93D15** (90C50, 93B50, 93C05)
- (with Bhattacharya, Shankar Prashad; Howze, J. W.) Stabilization of linear systems with fixed order controllers. *Linear Algebra Appl.* **98** (1988), 57–76. (Zong Ji Chen) **89b:93086** 93D15 (93B27, 93C05, 93C45)
- Keeler, James D.** (with Pichler, Elgar E.; Ross, John) Noise in neural networks: thresholds, hysteresis, and neuromodulation of signal-to-noise. *Proc. Nat. Acad. Sci. U.S.A.* **86** (1989), no. 5, 1712–1716. (Summary) **89m:92022** 92A09 (82A57, 82A99)
- Keem, C.** (with Kim, Seon Ja) On the Clifford index of a general  $(e+2)$ -gonal curve. *Manuscripta Math.* **63** (1989), no. 1, 83–88. (R. F. Lax) **89m:14016** 14H45 (14C20, 14H10)
- Keen, K. J.** (with Srivastava, M. S.; Katapa, R. S.) Estimation of interclass and intraclass correlations in multivariate familial data. (French summary) *Biometrics* **44** (1988), no. 1, 141–150. (Summary) **89a:62220** 62P10 (62H20)
- Keenan, Edward L.** Unreducible  $n$ -ary quantifiers in natural language. *Generalized quantifiers* (Lund, 1985), 109–150, *Stud. Linguist. Philos.*, **31**, *Reidel, Dordrecht-Boston, MA*, 1987. (see **89m:03003**) **03B65**
- Keener, James P.** (with Tyson, John J.) Spiral waves in the Belousov-Zhabotinskii reaction. *Phys. D* **21** (1986), no. 2–3, 307–324. (Summary) **89b:92017** 92A09 (92A40)
- ★ Principles of applied mathematics. Transformation and approximation. *Addison-Wesley Publishing Company, Advanced Book Program, Redwood City, CA*, 1988. xvi+560 pp. *ISBN* 0-201-15674-1 (P. Szeptycki) **89f:00004** 00A05
- (with Keener, James P.) The patterns of circulating patterns of excitation in anisotropic excitable media. *J. Math. Biol.* **26** (1988), no. 1, 41–56. (G. Eason) **89d:92028** 92A09 (73P10, 92A06)
- The dynamics of three-dimensional scroll waves in excitable media. *Phys. D* **31** (1988), no. 2, 269–276. (Summary) **89f:92080** 92A40
- (with Tyson, John J.) The motion of untwisted untorted scroll waves in Belousov-Zhabotinsky reagent. *Science* **239** (1988), no. 4845, 1284–1286. (Summary) **89d:92029** 92A09
- Keener, Robert** Asymptotic expansions in nonlinear renewal theory. *New perspectives in theoretical and applied statistics* (Bilbao, 1986), 479–502, *Wiley Ser. Probab. Math. Statist.: Probab. Math. Statist.*, *Wiley, New York*, 1987. (From the introduction) **89g:60265** 60K05 (60F05, 62L12)
- A note on the variance of a stopping time. *Ann. Statist.* **15** (1987), no. 4, 1709–1712. (Robert Kertz) **89f:6067** 62L15 (60G40)
- see also *Berger, J. O.*, **89c:62134**
- Keeney, R. L.** Building models of values. *European J. Oper. Res.* **37** (1988), no. 2, 149–157. (Kyoichi Kijima) **89j:90034** 90A10
- see also *Multi-attribute decision making via O.R.-based expert systems*, **89k:00007**
- Keerthi, S. S.** (with Gilbert, E. G.) Optimal infinite-horizon feedback laws for a general class of constrained discrete-time systems: stability and moving-horizon approximations. *J. Optim. Theory Appl.* **57** (1988), no. 2, 265–293. (Michael E. Fisher) **89d:93082** 93D15 (93C50, 93C55)
- Keisling, James** Hausdorff dimension. *Proceedings of the 1986 Topology Conference* (Lafayette, LA, 1986). *Topology Proc.* **11** (1986), no. 2, 349–383. (K. J. Falconer) **89f:28017** 28A75 (54F45)
- Using solenoids in the study of the Stone-Čech compactification. *Geometric topology and shape theory* (Dubrovnik, 1986), 131–147, *Lecture Notes in Math.*, **1283**, *Springer, Berlin-New York*, 1987. (Allan Calder) **89a:54031** 54D40 (55P55)
- Keidel, M.** (with Mayer-Kress, Gottfried; Yates, F. E.; Benton, L.; Tirsch, W.; Pöppel, S. J.; Geist, Karlheinz) Dimensional analysis of nonlinear oscillations in brain, heart, and muscle. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1–2, 155–182. (Summary) **89f:92020** 92A09
- Keiding, Hans** (with Volkovich, V. L.) Multicriteria optimization in the coalitional unification of criteria. (Russian. English summary) *Kibernetika (Kiev)* **1987**, no. 6,

- 109-111, 136. (M. Vlach) **89j:90246** 90C31
- Kelding, Niels** The method of expected number of deaths, 1786-1886-1886. (French summary) *Internat. Statist. Rev.* **55** (1987), no. 1, 1-20. (Summary) **89b:01029** 01A50 (01A55, 92-03, 92A15)
- Keilman, N. E.** Stabilization of solutions of an initial-boundary value problem for equations of a barotropic gas with viscosity depending on the density. (Russian) *Dinamika Sploshn. Sredy* No. 79 (1987), 36-44, 156. (Summary) **89e:76064** 76N15
- Keilson, J.** (with Servi, L. D.) Dynamics of the  $M/G/1$  vacation model. *Oper. Res.* **35** (1987), no. 4, 575-582. (Brian Conolly) **89g:60285** 60K25 (90B22)
- (with Ramaswamy, Ravi) The backlog and depletion-time process for  $M/G/1$  vacation models with exhaustive service discipline. *J. Appl. Probab.* **25** (1988), no. 2, 404-412. (Jacqueline Loris-Teghem) **89f:60111** 60K25 (90B22)
- (with Zachmann, M.) Homogeneous row-continuous bivariate Markov chains with boundaries. A celebration of applied probability. *J. Appl. Probab.* **1988**, Special Vol. 25A, 237-256. (Antonin Lešanovský) **89j:60101** 60J27
- Keimel, Klaus** (with Wieczorek, Andrzej) Kakutani property of the polytopes implies Kakutani property of the whole space. *J. Math. Anal. Appl.* **130** (1988), no. 1, 97-109. (J. Danés) **89e:47086** 47H10 (52A01)
- Samuel Wolfenstein in memoriam. *Order* **5** (1988), no. 2, 105-106. (Editors) **89i:01087** 01A70
- Keinert, F.** (with Dáng Dinh Áng; Stenger, Frank) A nonlinear two-phase Stefan problem with melting point gradient: a constructive approach. *J. Comput. Appl. Math.* **23** (1988), no. 2, 245-255. (Summary) **89h:35350** 35R35 (65P05)
- Keirstead, W. P.** (with Ceccatto, H. A.; Huberman, B. A.) Vibrational properties of hierarchical systems. *J. Statist. Phys.* **53** (1988), no. 3-4, 733-757. (Dieter H. Mayer) **89m:82007** 82A05 (58F05, 58F19, 82A42)
- Keisler, H. Jerome** Infinitesimals in probability theory. *Nonstandard analysis and its applications* (Hull, 1986), 106-139, *London Math. Soc. Stud. Texts*, 10, Cambridge Univ. Press, Cambridge-New York, 1988. (see **89m:03060**) 60A05 (03H05)
- Keiter, H. F. G.** Simple applications of generalized functions in theoretical physics: the case of many-body perturbation expansions. *Generalized functions, convergence structures, and their applications* (Dubrovnik, 1987), 47-55, Plenum, New York-London, 1988. (see **89i:00025**) 46F10 (81E15)
- Keizer, Joel** Electrical activity and insulin release in pancreatic beta cells. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1-2, 127-138. (see **89c:92002**) 92A09 (92A07)
- Kejka, Michal** Simulation of fuzzy system dynamics models. *Systems analysis and simulation 1988, I* (Berlin, 1988), 205-208, *Math. Res.*, 46, Akademie-Verlag, Berlin, 1988. (see **89g:00018**) 94D05
- Kelarev, A. V.** Prevarieties and bundles of associative rings. (Russian) *Ural. Gos. Univ. Mat. Zap.* **14** (1987), no. 2 Issled. Algebr. Sist. po Svoist. ikh Podst., 47-53, ii. (L. Bican) **89d:16008** 16A21 (08B25)
- Radicals and semigroup rings. (Russian) *Mat. Issled. No. 105 Moduli, Algebr., Topol.* (1988), 81-92, 196. (Jan Okniński) **89k:16011** 16A21 (20M25)
- A simple matrix semigroup which is not completely simple. *Semigroup Forum* **37** (1988), no. 1, 123-125. (Jan Okniński) **89h:20137** 20M20 (20M30)
- On band sums of quasiregular and strongly regular rings. (Russian) *Ural. Gos. Univ. Mat. Zap.* **14** (1988), no. 3 *Algebr. Sistemy i ikh Mnogobr.*, 89-95, iii. (P. M. Cohn) **89k:16024** 16A30
- Kelbakiani, L. V.** Boundary values of analytic functions of a certain class. (Russian. English and Georgian summaries) *Sovetsk. Akad. Nauk Gruz. SSR* **131** (1988), no. 1, 41-44. (Summary) **89m:30073** 30D55 (30D40)
- Kel'bert, M. Ya.** (with Borovikov, V. A.) Adaptation of initial conditions for internal waves in a weakly compressible fluid. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* **1988**, no. 5, 89-94, 175; translation in *J. Appl. Mech. Tech. Phys.* **29** (1988), no. 5, 683-687. (Summary) **89k:76029** 76C10 (35Q10, 76L05, 76N10)
- (with Kontsevich, M. L.; Rybko, A. N.) Jackson networks on countable graphs. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 2, 379-382; translation in *Theory Probab. Appl.* **33** (1988), no. 2, 358-361. (Walter Warmuth) **89m:60235** 60K25 (90B15)
- Keldysh, M. V.** see Markus, A. S., **89h:47023**
- Kelemen, Jozef** (with Kelemenová, Alica) The state in Europe of mathematical information science—an interview with Arto Salomaa. (Slovak) *Pokroky Mat. Fyz. Astronom.* **33** (1988), no. 3, 164-170. (Editors) **89h:01068** 01A70 (01A65, 68-03, 94-03)
- Measuring cognitive resources use (a grammatical approach). (Russian summary) *Comput. Artificial Intelligence* **8** (1989), no. 1, 29-42. (Summary) **89m:92055** 92A25 (68Q50, 68T99)
- see also **Proceedings: Meeting of Young Computer Scientists**, **89g:68002**
- Kelemenová, Alica** (with Kelemen, Jozef) The state in Europe of mathematical information science—an interview with Arto Salomaa. (Slovak) *Pokroky Mat. Fyz. Astronom.* **33** (1988), no. 3, 164-170. (Editors) **89h:01068** 01A70 (01A65, 68-03, 94-03)
- Kelkel, K.** (with Hagedorn, Peter; Wallaschek, J.) Vibrations and impedances of rectangular plates with free boundaries. *Lecture Notes in Engineering*, 23, Springer-Verlag, Berlin-New York, 1986. vi+152 pp. ISBN 3-540-17043-X (B. A. Boley) **89k:73047** 73K12 (73D30)
- Kella, Offer** (with Yechiali, Uri) Priorities in  $M/G/1$  queue with server vacations. *Naval Res. Logist.* **35** (1988), no. 1, 23-34. (Ralph L. Disney) **89b:60221** 60K25 (90B22)
- Kelleher, Laura L.** (with Cozzens, Margaret B.) Dominating sets in social network graphs. *Math. Social Sci.* **16** (1988), no. 3, 267-279. (K. B. Reid) **89j:92075** 92A20 (05C99)
- Keller, Bernhard** (with Vossieck, Dieter) Dualité de Grothendieck-Roos et basculement. (English summary) [Grothendieck-Roos duality and tilting] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 11, 543-546. (Dieter Happel) **89j:16035** 16A46 (13H05, 18E30)
- A remark on quadratic spaces over noncommutative semilocal rings. *Math. Z.* **198** (1988), no. 1, 63-71. (R. Parimala) **89i:11055** 11E88 (16A10)
- Keller, Clayton** (with Lui, Roger) Existence of steady-state solutions to predator-prey equations in a heterogeneous environment. *J. Math. Anal. Appl.* **123** (1987), no. 2, 306-323. (From the introduction) **89a:35113** 35K57 (92A15)
- Keller, Georg** (with Silvotti, Roberto) Quantum measure and Weyl anomaly of two-dimensional bosonic nonlinear  $\sigma$ -models. *Ann. Physics* **183** (1988), no. 2, 269-308. (Robert Coquereaux) **89j:58020** 58E20 (58G11, 81E20, 81E30, 81E40)
- Keller, Gerhard** (with Denker, Manfred; Puri, Madan L.) Linear rank statistics, bounded operators, and weak convergence. *New perspectives in theoretical and applied statistics* (Bilbao, 1986), 171-206, *Wiley Ser. Probab. Math. Statist.: Probab. Math. Statist.*, Wiley, New York, 1987. (Rashid Ahmad) **89g:62028** 62E20 (62G10)
- (with Kersting, G.; Rösler, Uwe) On the asymptotic behaviour of first passage times for discussions [diffusions]. *Probab. Theory Related Fields* **77** (1988), no. 3, 379-395. (John Kent) **89d:60141** 60J60 (60F05)
- Keller, Gordon E.** (with Costa, Douglas L.) On the normal subgroups of  $SL(2, A)$ . *J. Pure Appl. Algebra* **53** (1988), no. 3, 201-226. (L. N. Vaserstein) **89h:20069** 20H05
- Keller, H. B.** ★ Lectures on numerical methods in bifurcation problems. With notes by A. K. Nandakumaran and Mythili Ramaswamy. Tata Institute of Fundamental Research Lectures on Mathematics and Physics, 79. *Published for the Tata Institute of Fundamental Research, Bombay; by Springer-Verlag, Berlin-New York*, 1987. iv+155 pp. ISBN 3-540-20228-5 (Jesús Hernández) **89f:58031** 58E07 (58C15, 65H10)
- (with Fier, J. M.) Equilibrium chaos and related parameter sequences. *Analyse mathématique et applications*, 235-244, Gauthier-Villars, Paris, 1988. (Introduction) **89i:58088** 58F13 (34C35, 73H05)
- (with Nelson, Paul, Jr.) Closed linear one-cell functional spatial approximations: consistency implies convergence and stability. *Transport Theory Statist. Phys.* **17** (1988), no. 2-3, 191-208. (Hassan Emami) **89h:82060** 82A70 (65M10, 82-08)
- Keller, Hans A.** Measures on orthomodular vector space lattices. *Studia Math.* **88** (1988), no. 2, 183-195. (Tim Traynor) **89m:28024** 28C99 (06C15, 12J10, 46G99, 81B10)
- Keller, Heinz-Dieter** Large deviations of the empirical characteristic function. *Acta Sci. Math. (Szeged)* **52** (1988), no. 1-2, 207-214. (Paolo Baldi) **89m:60063** 60F10
- Keller, Helmut Philipp** Nonlinear observer design by transformation into a generalized observer canonical form. *Internat. J. Control* **46** (1987), no. 6, 1915-1930. (Huashu Qin) **89d:93013** 93B07 (93B10, 93B17)
- Keller, J. B.** (with Newton, Paul K.) Stability of periodic plane waves. *SIAM J. Appl. Math.* **47** (1987), no. 5, 959-964. (B. P. Tkach) **89f:35032** 35B35 (35Q20, 76E30)
- (with Maddocks, J. H.) Ropes in equilibrium. *SIAM J. Appl. Math.* **47** (1987), no. 6, 1185-1200. (Zheng You Zhu) **89g:73037** 73K99 (70C99)
- Resonantly interacting water waves. *J. Fluid Mech.* **191** (1988), 529-534. (Summary) **89m:76016** 76B15
- (with Hunter, J. K.) Nonlinear hyperbolic waves. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1853, 299-308. (Summary) **89f:35129** 35L65 (73D99, 76B99, 76L05, 78A05)
- (with Newton, Paul K.) Stability of plane wave solutions of nonlinear systems. *Wave Motion* **10** (1988), no. 2, 183-191. (Introduction) **89e:76021** 76B15 (35Q20, 76W05)
- (with Vanden-Broeck, J.-M.) Surfing on solitary waves. *J. Fluid Mech.* **198** (1989), 115-125. (Summary) **89k:76013** 76B10
- (with Rubinstein, Jacob; Sternberg, Peter) Fast reaction, slow diffusion, and curve shortening. *SIAM J. Appl. Math.* **49** (1989), no. 1, 116-133. (Robert A. Gardner) **89m:35117** 35K57 (35R25, 58G99)
- Keller, Jeffrey M.** (with Rothman, Daniel H.) Immiscible cellular-automaton fluids. *J. Statist. Phys.* **52** (1988), no. 3-4, 1119-1127. (Summary) **89i:82005** 82-08 (68Q80, 76-08, 76D05, 82-04)
- Keller, Robert M.** see **IEEE Symposium: Logic Programming**, **89j:68008**
- Keller, U.** (with Thomas, Bernhard; Pohley, H.-J.) Comment on a genetic application of square-lattice Kauffman models. *J. Statist. Phys.* **52** (1988), no. 3-4, 1129-1132. (Summary) **89j:92045** 92A10 (82A99, 92A12)
- Kellerer, Hans G.** Measure theoretic versions of linear programming. *Math. Z.* **198** (1988), no. 3, 367-400. (George Isaac) **89f:90193** 90C48 (28C15, 46N05)
- Kelley, C. T.** (with Sachs, E. W.) Quasi-Newton methods and unconstrained optimal control problems. *SIAM J. Control Optim.* **25** (1987), no. 6, 1503-1516. (Summary) **89g:49043** 49D15 (65K10)
- The  $F_x$  method in slab geometries with a polynomial basis. *Transport Theory Statist. Phys.* **17** (1988), no. 2-3, 295-303. (Cor van der Mee) **89h:82061** 82A70
- Kelley, Henry J.** (with Ben-Asher, Joseph; Cliff, Eugene M.) Optimal evasion with a path-angle constraint and against two pursuers. *J. Guidance Control Dynamics* **11** (1988), no. 4, 300-304. (Summary) **89j:90303** 90D26 (49A45)
- see also **Cliff, Eugene M.**, **89i:01069**
- Kelley, John L.** (with Srinivasan, T. P.) ★ Measure and integral. Vol. 1. Graduate Texts in Mathematics, 116. *Springer-Verlag, New York-Berlin*, 1988. x+150 pp. ISBN 0-387-96633-1 (Pedro Jiménez Guerra) **89e:28001** 28-01 (46-01)
- Kelley, Patricia** (with Ferguson, Pamela A.) Hall  $\pi$ -subgroups which are direct products of nonabelian simple groups. *J. Algebra* **120** (1989), no. 1, 40-46. (M. E. Harris) **89k:20039** 20D20
- Kelley, Walter G.** Existence and uniqueness of solutions for vector problems containing small parameters. *J. Math. Anal. Appl.* **131** (1988), no. 2, 295-312. (Frederick A. Howes) **89d:34093** 34E20 (34B15, 34D15)
- Kellogg, R. B.** Some singular perturbation problems in renal models. *J. Math. Anal. Appl.* **128** (1987), no. 1, 214-240. (Hilmi Demiray) **89a:92006** 92A06 (92A09)
- (with Garner, J. B.) Existence and uniqueness of solutions in general multisolute renal flow problems. *J. Math. Biol.* **26** (1988), no. 4, 455-464. (G. Eason) **89k:92017** 92A09 (76Z05, 92A06)
- Discontinuous solutions of the linearized, steady state, compressible, viscous, Navier-Stokes equations. *SIAM J. Math. Anal.* **19** (1988), no. 3, 567-579. (Summary) **89g:35090** 35Q10 (76L05, 76N10)
- Kelly, D. W.** (with Mills, R. J.; Reizes, J. A.; Miller, A. D.) A posteriori estimates of the solution error caused by discretization in the finite element, finite difference and boundary element methods. *Internat. J. Numer. Methods Engrg.* **24** (1987), no. 10, 1921-1939. (Summary) **89f:65111** 65N15
- (with Mills, R. J.; Reizes, J. A.; Isles, J. D.; Miller, A. D.) Exact error estimates and adaptive mesh transformation control for elliptic boundary value problems in  $\mathbb{R}^1$ . *Computational techniques and applications: CTAC-87* (Sydney, 1987), 487-498, North-Holland, Amsterdam-New York, 1988. (Summary) **89e:65131** 65N50 (65N15)
- (with Mills, R. J.; Reizes, J. A.; Miller, A. D.) A posteriori error estimates in finite difference techniques. *J. Comput. Phys.* **74** (1988), no. 1, 214-232. (P. Laasonen) **89b:65246** 65N15
- Kelly, David** (with Grätzer, George) The lattice variety  $D \circ D$ . *Acta Sci. Math. (Szeged)* **51** (1987), no. 1-2, 73-80. (From the introduction) **89f:06008** 06B20



- (with Grätzer, George) Addendum to: "The lattice variety  $D \circ D$ " [Acta Sci. Math. (Szeged) 51 (1987), no. 1-2, 73-80; MR 89f:06008]. *Acta Sci. Math. (Szeged)* 52 (1988), no. 3-4, 465. (From the text) **89a:06007** 06B20
- (with Grätzer, George) Subdirectly irreducible members of products of lattice varieties. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 483-489. (M. E. Adams) **89c:06007** 06B20
- Kelly, F. P.** Routing in circuit-switched networks: optimization, shadow prices and decentralization. *Adv. in Appl. Probab.* 20 (1988), no. 1, 112-144. (Summary) **89k:90062** 90B15 (60K20, 94C99)
- On a class of approximations for closed queueing networks. *Queueing Systems Theory Appl.* 4 (1989), no. 1, 69-76. (Hans Daduna) **89m:60236** 60K25 (68M20, 90B22)
- Kelly, G. M.** (with Albert, M. H.) The closure of a class of colimits. *J. Pure Appl. Algebra* 51 (1988), no. 1-2, 1-17. (Walter Tholen) **89g:18003a** 18A35 (18A30, 18D15)
- (with Paré, Robert) A note on the M. H. Albert-G. M. Kelly paper: "The closure of a class of colimits" [J. Pure Appl. Algebra 51 (1988), no. 1, 1-17]. *J. Pure Appl. Algebra* 51 (1988), no. 1-2, 19-25. (Walter Tholen) **89g:18003b** 18A35 (18A30, 18D15)
- Kelly, J. S.** Voting sets. *Soc. Choice Welf.* 4 (1987), no. 3, 235-239. (Joseph D. Cole) **89a:90015** 90A04
- Social choice and computational complexity. *J. Math. Econom.* 17 (1988), no. 1, 1-8. (Ki Hang Kim) **89d:90022** 90A08 (03D15, 68Q05)
- Minimal manipulability and local strategy-proofness. *Soc. Choice Welf.* 5 (1988), no. 1, 81-85. (From the text) **89d:90021** 90A08
- Computational complexity. *Soc. Choice Welf.* 5 (1988), no. 4, 313-317. (Ki Hang Kim) **89j:90020** 90A08
- The Ostrogorski paradox. *Soc. Choice Welf.* 6 (1989), no. 1, 71-76. (Fouad T. Aleskerov) **89m:90011** 90A08
- Kelly, Michael R.** Fixed points through homotopies. *Fixed point theory and its applications* (Berkeley, CA, 1986), 167-169, *Contemp. Math.* 72, Amer. Math. Soc., Providence, RI, 1988. (Helga Schirmer) **89j:55005** 55M20 (57M99, 57N05)
- Kelly, P. F.** (with Mann, R. B.) Static spherically symmetric solutions in a new algebraically extended theory of gravity. *Classical Quantum Gravity* 4 (1987), no. 6, 1593-1608. (Summary) **89a:83065** 83E10 (83D05)
- (with Gegenberg, J.; Mann, R. B.; McArthur, Randall Douglas; Vincent, D. E.) Reinterpretation of the nonlinear sigma model with torsion. *Modern Phys. Lett. A* 3 (1988), no. 18, 1791-1796. (Summary) **89j:81099** 81E13 (81E20)
- (with Gegenberg, J.; Mann, R. B.; Vincent, D. E.) Theories of gravitation in two dimensions. *Phys. Rev. D* (3) 37 (1988), no. 12, 3463-3471. (Agostino Prastaro) **89k:83061** 83D05
- Kelly, Rafael** (with Ortega, Romeo; Lozano Leal, Rogelio) On global stability of adaptive systems using an estimator with parameter freezing. *IEEE Trans. Automat. Control* 34 (1989), no. 3, 343-346. (Not in MR) **93C40**
- Kelly, S. Graham** Development of normal mode theory for multi-degree-of-freedom systems using an energy inner product. *SIAM Rev.* 30 (1988), no. 2, 302-304. (Summary) **89b:70005** 70J05 (15A18, 70J10, 70J15)
- Kelly, W. E.** (with Bárdossy, A.; Bogardi, I.) Imprecise (fuzzy) information in geostatistics. New advances in geostatistics (Redwood City, CA, 1987). *Math. Geol.* 20 (1988), no. 4, 287-311. (Summary) **89f:86008** 86A20 (03E72)
- Kelmans, A. K.** On 3-keins in a 3-connected graph. *Studia Sci. Math. Hungar.* 22 (1987), no. 1-4, 265-273. (J. Lauri) **89b:05115** 05C40 (05C38)
- Cubic bipartite cyclically 4-connected graphs with no Hamiltonian cycles. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 3(261), 181-182; translation in *Russian Math. Surveys* 43 (1988), no. 3, 205-206. (Larry Basenpiller) **89e:05170** 05C75
- Matroids and Whitney theorems on the 2-isomorphism and on the planarity of graphs. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 5(263), 199-200. (Daniel Turzik) **89k:05092** 05C75 (05B35, 05C10)
- Kelmans, G. K.** Identification of auto-regression plants subjected to moving average noise. (Polish summary) *Podstawy Sterowania* 16 (1986), no. 2, 185-203 (1987). (Keigo Watanabe) **89d:93106** 93E12 (93C57, 93E25)
- Indirect adaptive noise-nonminimal-phase control of dynamic objects. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 11, 121-132. (Benjamin Goldys) **89d:93107** 93E12 (93C40, 93C55, 93E20)
- Kelsey, David** (with Deb, Rajat) On constructing a generalized Ostrogorski paradox: necessary and sufficient conditions. *Math. Social Sci.* 14 (1987), no. 2, 161-174. (Maurice Salles) **89a:90014** 90A08
- What is responsible for the "Paretian epidemic"? *Soc. Choice Welf.* 5 (1988), no. 4, 303-306. (Summary) **89m:90012** 90A08
- Kelso, J. A. S.** (with de Guzman, G. C.) Order in time: how the cooperation between the hands informs the design of the brain. *Neural and synergetic computers* (Schloss Elmau, 1988), 180-196, *Springer Ser. Synergetics*, 42, Springer, Berlin-New York, 1988. (Introduction) **89m:92023** 92A09
- (with Schöner, G.) A dynamic pattern theory of behavioral change. *J. Theoret. Biol.* 135 (1988), no. 4, 501-524. (Summary) **89j:92061** 92A18 (92A05, 92A25)
- Kelter, Udo** Variants of determinacy in parallel program schemata. *Fund. Inform.* 10 (1987), no. 3, 225-246. (Siegmund Gerber) **89a:68065** 68Q10 (68N05, 68Q05, 68Q55)
- Kelton, W. David** (with Murray, Joseph R.) The transient behavior of the  $M/E_k/2$  queue and steady-state simulation. *Comput. Oper. Res.* 15 (1988), no. 4, 357-367. (Summary) **89e:90105** 90B22
- Kelvin, William Thomson, Lord** see Harman, P. M., **89c:01004**
- Kemer, A. R.** Solution of the problem as to whether associative algebras have a finite basis of identities. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 2, 273-277; translation in *Soviet Math. Dokl.* 37 (1988), no. 1, 60-64. (Yu. N. Mal'tsev) **89d:16023** 16A38
- Kemmerich, S.** (with Benninghofen, Benjamin; Richter, Michael M.) ★ Systems of reductions. With a chapter by Friedrich Otto. *Lecture Notes in Computer Science*, 277. *Springer-Verlag, Berlin-New York*, 1987. x+265 pp. ISBN 3-540-18598-4 (Muklai S. Krishnamoorthy) **89a:68132** 68Q30 (03B70, 08A99, 20M05, 68-02, 68T15)
- Kemna, A. G. Z.** (with Vorst, Ton) The value of an option based on an average security value. *Stochastic processes in physics and engineering* (Bielefeld, 1986), 193-203, *Math. Appl.*, 42, Reidel, Dordrecht-Boston, MA, 1988. (Summary) **89e:90026** 90A09
- Kemnitz, A.** (with Fejes Tóth, G.) Characterization of centrally symmetric convex domains in planes of constant curvature. *Intuitive geometry* (Sofok, 1985), 179-189, *Colloq. Math.*
- Soc. János Bolyai*, 48, North-Holland, Amsterdam-New York, 1987. (Peter M. Gruber) **89a:52004** 52A10 (52A55)
- Kemoto, Nobuyuki** Consistency results on locally connected submeta-Lindelöf normal spaces. *Math. Japon.* 33 (1988), no. 3, 393-402. (W. Stephen Watson) **89k:54052** 54D18 (03E35, 54A35, 54D20, 54D45)
- Kemp, A. W.** A note on Stirling's expansion for factorial  $n$ . *Statist. Probab. Lett.* 7 (1988), no. 2, 139-143. (Summary) **89m:65020** 65D15 (65C10)
- (with Shenton, L. R.) An S-fraction and  $\ln^2(1+x)$ . *J. Comput. Appl. Math.* 25 (1989), no. 1, 121-124. (Summary) **89k:65027** 65D99 (33A10)
- Kemp, Paula A.** (with Abian, A.) A fundamental property of inductive partially ordered sets. *J. Natur. Sci. Math.* 28 (1988), no. 1, 121-126. (Judith Roitman) **89e:06001** 06A10 (54D30, 54F05)
- (with Abian, A.) An everywhere defined unbounded invertible linear operator in a Hilbert space. *Nieuw Arch. Wisk.* (4) 6 (1988), no. 1-2, 43-45. (Seymour Goldberg) **89i:47001** 47A05
- Kemp, R. R. D.** Operators on  $L_2(I) \otimes C^*$ . *Canad. J. Math.* 39 (1987), no. 1, 33-53. (Introduction) **89c:47057** 47E05 (34B25)
- Kemp, Rainer** Additive weights of nonregularly distributed trees. *Random graphs '85* (Poznań, 1985), 129-155, *North-Holland Math. Stud.*, 144, North-Holland, Amsterdam-New York, 1987. (Summary) **89f:68025** 68P10 (05C05)
- The analysis of an additive weight of random trees. (German and Russian summaries) *J. Inform. Process. Cybernet.* 23 (1987), no. 10-11, 517-528. (Helmut Prodinger) **89i:68058** 68Q25 (05C05, 05C80, 68R10)
- Kemperman, J. H. B.** Geometry of the moment problem. *Moments in mathematics* (San Antonio, Tex., 1987), 16-53, *Proc. Sympos. Appl. Math.*, 37, Amer. Math. Soc., Providence, RI, 1987. (U. Krengel) **89b:44004** 44A60 (28A99, 60E15)
- The median of a finite measure on a Banach space. *Statistical data analysis based on the  $L_1$ -norm and related methods* (Neuchâtel, 1987), 217-230, *North-Holland, Amsterdam-New York*, 1987. (Michel Valadier) **89b:46032** 46B99 (28C20, 46G12, 60B11)
- Kempf, George R.** The singularities of some invariant hypersurfaces. *Proceedings of the conference on algebraic geometry* (Berlin, 1985), 210-216, *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (Tomás Sánchez-Giralda) **89i:14016** 14E15
- Computing invariants. *Invariant theory*, 81-94, *Lecture Notes in Math.*, 1278, Springer, Berlin-New York, 1987. (V. L. Popov) **89b:20057** 20G05 (15A72)
- (with Ness, Linda) Tensor products of fundamental representations. *Canad. J. Math.* 40 (1988), no. 3, 633-648. (James E. Humphreys) **89m:20046** 20G05 (17B10)
- (with Schreyer, F.-O.) A Torelli theorem for osculating cones to the theta divisor. *Compositio Math.* 67 (1988), no. 3, 343-353. (Olivier Debarre) **89j:14020** 14H40
- Stability in representations. *J. Pure Appl. Algebra* 52 (1988), no. 1-2, 51-57. (H. H. Andersen) **89j:20043** 20G05 (14L30)
- Kempf, Hubert** Rational expectations, imperfect price adjustment and the optimality of monetary policy. *Z. Nationalökonom.* 48 (1988), no. 3, 223-241. (conclusion) **89i:90018** 90A14 (90A16)
- Kemphorne, Peter J.** Dominating inadmissible procedures using compromise decision theory. *Statistical decision theory and related topics. IV, Vol. 1* (West Lafayette, Ind., 1986), 381-396, *Springer, New York-Berlin*, 1988. (Khurshed Alam) **89b:62021** 62C15 (62C10)
- Controlling risks under different loss functions: the compromise decision problem. *Ann. Statist.* 16 (1988), no. 4, 1594-1608. (Khurshed Alam) **89i:62016** 62C10 (62C20, 90A05)
- Kendall, Claribel** see Struik, Ruth Rebekka, **(89b:01071)**
- Kendall, David G.** (with Le, Hui Ling) The structure and explicit determination of convex-polygonally generated shape-densities. *Adv. in Appl. Probab.* 19 (1987), no. 4, 896-916. (Summary) **89g:60032** 60D05
- Applied probability—past, present and future. A celebration of applied probability. *J. Appl. Probab.* 1988, Special Vol. 25A, 25-30. (Editors) **89m:01062** 01A60 (01A74, 60-03, 60D05)
- Kendall, Wilfrid S.** Symbolic computation and the diffusion of shapes of triads. *Adv. in Appl. Probab.* 20 (1988), no. 4, 775-797. (Ulrich Zähle) **89m:60030** 60D05 (68Q40)
- Kenderov, P. S. C(T)** is weak Asplund for every Gul'ko compact  $T$ . *C. R. Acad. Bulgare Sci.* 40 (1987), no. 2, 17-19. (Gabriel Debs) **89d:46019** 46B20 (46B15, 54D20)
- (with Beer, Gerald) On the ARG MIN multifunction for lower semicontinuous functions. *Proc. Amer. Math. Soc.* 102 (1988), no. 1, 107-113. (John A. Eidswick) **89f:26001** 26A15 (49A50, 54C60, 90C48)
- Kenig, C. E.** Carleman estimates, uniform Sobolev inequalities for second-order differential operators, and unique continuation theorems. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 948-960, *Amer. Math. Soc., Providence, RI*, 1987. (Gerald B. Folland) **89e:35005** 35Bxx (35J10, 46E35, 47F05)
- (with Pipher, Jill) The oblique derivative problem on Lipschitz domains with  $L^p$  data. *Amer. J. Math.* 110 (1988), no. 4, 715-737. (Bruno Franchi) **89i:35047** 35J25
- (with Barceló, B.; Ruiz, Alberto; Sogge, C. D.) Weighted Sobolev inequalities and unique continuation for the Laplacian plus lower order terms. *Illinois J. Math.* 32 (1988), no. 2, 230-245. (Gary M. Lieberman) **89h:35048** 35B60 (35J15, 46E35)
- (with Dahlberg, Björn E. J.) Nonnegative solutions of the initial-Dirichlet problem for generalized porous medium equations in cylinders. *J. Amer. Math. Soc.* 1 (1988), no. 2, 401-412. (Peter Knabner) **89e:35078** 35K60 (76S05)
- (with Sogge, C. D.) A note on unique continuation for Schrödinger's operator. *Proc. Amer. Math. Soc.* 103 (1988), no. 2, 543-546. (Jean Leray) **89i:35043** 35J10 (35B45)
- Kenku, M. A.** (with Momose, F.) Torsion points on elliptic curves defined over quadratic fields. *Nagoya Math. J.* 109 (1988), 125-149. (Bert van Geemen) **89i:11091** 11G05 (11D25, 14G25, 14K07)
- Kenmochi, Nobuyuki** (with Colli, Pierluigi) Nonlinear semigroup approach to a class of evolution equations arising from percolation in sandbanks. *Ann. Mat. Pura Appl.* (4) 149 (1987), 113-133. (Jan Prüss) **89h:47103** 47H20 (35K85, 35R35, 47H05, 76S05)
- Two-phase Stefan problems with nonlinear boundary conditions described by time-dependent subdifferentials. (Russian and Polish summaries) *Control Cybernet.* 16 (1987), no. 3-4, 7-31 (1988). (Li Shang Jiang) **89i:35134** 35R35 (35K55)
- (with Kubo, Masahiro) Periodic solutions to a class of nonlinear variational inequalities with time-dependent constraints. *Funkcial. Ekvac.* 30 (1987), no. 2-3, 333-349. (Gianfranco Bottaro) **89k:34113** 34G20 (34C11, 34C25, 47H15, 49A29)

- (with Pawlow, Irena) The vanishing viscosity method and a two-phase Stefan problem with nonlinear flux condition of Signorini type. *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 3, 58–61. (Russell C. Thompson) **89a:35228** 35R35 (35K55)
- (with Primicerio, Mario) One-dimensional heat conduction with a class of automatic heat-source controls. *IMA J. Appl. Math.* **40** (1988), no. 3, 205–216. (S. Bhargava) **89m:49008** 49A22 (35K05, 80A20, 93C20)
- (with Pawlow, Irena) Parabolic-elliptic free boundary problems with time-dependent obstacles. *Japan J. Appl. Math.* **5** (1988), no. 1, 87–121. (Mario Primicerio) **89d:35187** 35R35 (35M05, 76S05)
- (with Damilamian, Alain) Periodicity and almost periodicity of solutions to a multi-phase Stefan problem in several space variables. *Nonlinear Anal.* **12** (1988), no. 9, 921–934. (Li Shang Jiang) **89i:35131** 35R35 (35B10, 35B15, 35K60)
- Kenmoku, M. (with Okamoto, Yuko; Shigemoto, Kazuyasu) Möbius and super-Möbius gauge fixing for the closed string amplitudes on the disk. *Phys. Lett. B* **213** (1988), no. 2, 160–164. (Summary) **89j:81192** 81E99 (81E30)
- Kenmotsu, Katsuei (with Colares, A. Gervasio) Isometric deformation of surfaces in  $R^3$  preserving the mean curvature function. *Pacific J. Math.* **136** (1989), no. 1, 71–80. (Friedrich Sauvigny) **89m:53011** 53A10
- Kenneway, J. Richard (with Barendregt, H. P.; Klop, Jan Willem; Sleep, M. R.) Needed reduction and spine strategies for the lambda calculus. *Inform. and Comput.* **75** (1987), no. 3, 191–231. (J. P. Seldin) **89h:03020** 03B40 (68N15, 68Q55)
- On "On graph rewritings" [Theoret. Comput. Sci. **32** (1984), no. 1–2, 1–24; MR **86h:68102**] by J.-C. Raoult. *Theoret. Comput. Sci.* **52** (1987), no. 1–2, 37–58. (Summary) **89a:68137** 68Q50
- (with Barendregt, H. P.; van Eekelen, M. C. J. D.; Plasmeijer, M. J.; Glauret, J. R. W.; Sleep, M. R.) LEAN: an intermediate language based on graph rewriting. *PARLE: Conference on Parallel Architectures and Languages—Europe* (Eindhoven, 1987). *Parallel Comput.* **9** (1988/89), no. 2, 163–177. (see **89j:68053**) **68N05** (68Q50, 68R10)
- Corrigendum: "On 'On graph rewritings' by J.-C. Raoult" [Theoret. Comput. Sci. **52** (1987), no. 1–2, 37–58; MR **89a:68137**]. *Theoret. Comput. Sci.* **61** (1988), no. 2–3, 317–320. (From the text) **89k:68091** 68Q50
- Kennedy, David (with Williams, F. W.) Fast Gauss-Doolittle matrix triangulation. *Comput. & Structures* **28** (1988), no. 2, 143–148. (Cs. J. Hegedüs) **89d:65032** 65F05
- Some branch and bound techniques for nonlinear optimization. *Math. Programming* **42** (1988), no. 1 (Ser. B), 147–157. (R. Serban) **89g:90193** 90C30 (90C10, 90C11)
- Kennedy, E. S. (with Haddad, Foad I.; Pingree, David) al-Biruni's treatise on astronomical lots. *Z. Gesch. Arab.-Islam. Wiss.* **1** (1984), 9–54. (Author's review (E.S.K.)) **89g:01010** 01A30
- (with Debarnot, Marie-Thérèse) Two mappings proposed by Biruni. *Z. Gesch. Arab.-Islam. Wiss.* **1** (1984), 145–147. (Author's review (E.S.K.)) **89g:01012** 01A30
- Geographical latitudes in al-Idrisi's world map. (Arabic summary) *Z. Gesch. Arab.-Islam. Wiss.* **3** (1986), 265–268. *Arabic* page 51. (George Saliba) **89d:01011** 01A30
- Suhrah and the world-map of Ma'mun. *From ancient omens to statistical mechanics*, 113–119. *Acta Hist. Sci. Nat. Med.*, **39**, Univ. Lib. Copenhagen, Copenhagen, 1987. (Ahmad Salim Saidan) **89j:01015** 01A30
- Two medieval approaches to the equation of time. *Centaurus* **31** (1988), no. 1, 1–8. (George Saliba) **89h:01009** 01A30 (01A35)
- Kennedy, Gary (with Yokura, Shoji) Specialization of Segre classes of singular algebraic varieties. *J. Reine Angew. Math.* **388** (1988), 65–72. (Ragni Pione) **89k:14094** 14N10 (14C17)
- Kennedy, Gerard (with Fulling, S. A.) A closed form for the symbol of the resolvent parametrix of an elliptic operator. *Differential equations and mathematical physics (Birmingham, Ala., 1986)*, 126–133. *Lecture Notes in Math.*, **1285**, Springer, Berlin-New York, 1987. (D. E. Edmunds) **89g:58215** 58G30 (35S05, 47G05, 81C10)
- Kennedy, Hubert Maria Gaetana Agnesi (1718–1799). *Women of mathematics*, 1–5. Greenwood, Westport, CT, 1987. (see **89b:01071**) 01A70
- Kennedy, J. E. (with Holst, Lars; Quine, M. P.) Rates of Poisson convergence for some coverage and urn problems using coupling. *J. Appl. Probab.* **25** (1988), no. 4, 717–724. (Lyuben R. Mutafchiev) **89i:60021** 60C05 (60F05)
- Kennedy, J. G. (with Simo, J. C.; Govindjee, S.) Nonsmooth multisurface plasticity and viscoplasticity. Loading/unloading conditions and numerical algorithms. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 10, 2161–2185. (Summary) **89i:73009** 73-08 (73E05, 73E99, 73F30)
- Kennedy, John W. (with Bloom, Gary S.; Quintas, Louis V.) A characterization of graphs of diameter two. *Amer. Math. Monthly* **95** (1988), no. 1, 37–38. (J. Sheehan) **89e:05162** 05C75
- (with Gross, Robert; Yarmush, Martin L.; Quintas, Louis V.) Antigenesis: a cascade-theoretical analysis of the size distributions of antigen-antibody complexes. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1–3, 177–194. (Summary) **89c:92019** 92A09 (82A99)
- see also *Applications of graphs in chemistry and physics*, **89b:92037** and **89j:92101**
- Kennedy, Judy Stable extensions of homeomorphisms on the pseudo-arc. *Trans. Amer. Math. Soc.* **310** (1988), no. 1, 167–178. (Wayne Lewis) **89d:54023** 54F20 (54F50, 54H20)
- Kennedy, Michael Peter (with Chua, Leon O.) Neural networks for nonlinear programming. *IEEE Trans. Circuits and Systems* **35** (1988), no. 5, 554–562. (Summary) **89d:90192** 90C30 (92A09, 94C05)
- Kennedy, Robert E. (with Cooper, Curtis N.) A partial asymptotic formula for the Niven numbers. *Fibonacci Quart.* **26** (1988), no. 2, 163–168. (Graham Lord) **89c:11036** 11B83 (11A25, 11B05)
- Kennedy, Tom (with Brydges, D. C.) Mayer expansions and the Hamilton-Jacobi equation. *J. Statist. Phys.* **48** (1987), no. 1–2, 19–49. (Gerhard C. Hegerfeldt) **89f:82004** 82A05 (81E25)
- Isotropic quantum antiferromagnets with valence-bond ground states. *Mathematical quantum field theory and related topics (Montreal, PQ, 1987)*, 91–97. *CMS Conf. Proc.*, **9**, Amer. Math. Soc., Providence, RI, 1988. (see **89g:81002**) **82A68**
- (with Affleck, Ian; Lieb, Elliott H.; Tasaki, Hal) Valence bond ground states in isotropic quantum antiferromagnets. *Comm. Math. Phys.* **115** (1988), no. 3, 477–528. (Claus Montonen) **89d:82025** 82A15 (82A68)
- Kennedy, William (with Gorman, D. G.) ★ Applied solid dynamics. *Butterworth, London-Boston, MA*, 1988. xii+251 pp. ISBN 0-408-02309-0 (N. Gass) **89h:73001** 73-01 (65N30, 70-01, 70E15, 73K12)
- Kennedy, William J. (with Chang, Stephen F.) Error-free computer solution of certain systems of linear equations. *J. Comput. Appl. Math.* **18** (1987), no. 3, 279–287. (Alfonso Laratta) **89c:65036** 65F05 (65G05)
- Kennel, C. F. (with Buti, B.; Hada, T.; Pellat, R.) Nonlinear, dispersive, elliptically polarized Alfvén waves. *Phys. Fluids* **31** (1988), no. 7, 1949–1961. (Summary) **89d:76035** 76W05
- Kennelly, B. Welfareism, IIA and Arrowian constitutional rules. *Soc. Choice Welf.* **5** (1988), no. 4, 307–311. (Summary) **89j:90021** 90A08 (90A10)
- Kenney, Charles (with Laub, Alan J.) Controllability and stability radii for companion form systems. *Math. Control Signals Systems* **1** (1988), no. 3, 239–256. (Hong Xing Zhou) **89j:93006** 93B05 (93B10, 93D15)
- Kennington, Alan U. Convexity of level curves for an initial value problem. *J. Math. Anal. Appl.* **133** (1988), no. 2, 324–330. (H. J. Kuiper) **89m:35119** 35K60 (35B50)
- Kennington, Jeff (with Helgason, R. V.; Zaki, H. A.) A parallelization of the simplex method. *Ann. Oper. Res.* **14** (1988), no. 1–4, 17–40. (Summary) **89h:90143** 90C05 (65K05)
- (with Ali, Agha Iqbal; Shetty, Bala) The equal flow problem. *European J. Oper. Res.* **36** (1988), no. 1, 107–115. (Summary) **89c:90078** 90B10
- Kenny, Brian G. (with Artuso, Roberto; Cvitanović, Predrag) Phase transitions on strange irrational sets. *Phys. Rev. A* (3) **39** (1989), no. 1, 268–281. (Summary) **89k:28003** 28A75 (11K55, 58F13, 82A25)
- Kenschalk, Patricia Clark Evelyn Boyd Granville (1924–). *Women of mathematics*, 57–61. Greenwood, Westport, CT, 1987. (see **89b:01071**) 01A70
- Charlotte Angus Scott (1858–1931). *Women of mathematics*, 193–203. Greenwood, Westport, CT, 1987. (see **89b:01071**) 01A70
- Kent, Adrian (with Riggs, Harold) Determinant formulae for the  $N = 4$  superconformal algebras. *Phys. Lett. B* **198** (1987), no. 4, 491–496. (From the text) **89g:81080** 81E99 (17A70, 17B10, 81E40)
- (with Mattis, Michael; Riggs, Harold) Highest weight representations of the  $N = 3$  superconformal algebras and their determinant formulae. *Nuclear Phys. B* **301** (1988), no. 3, 426–438. (Peter Bouwknegt) **89h:17029** 17B65 (81E40)
- Kent, D. C. (with Vainio, R.) The category of ordered Cauchy spaces is Cartesian closed. *General topology and its relations to modern analysis and algebra, VI (Prague, 1986)*, 331–336. *R & E Res. Exp. Math.*, **16**, Heldermann, Berlin, 1988. (H. Herrlich) **89h:18006** 18B30 (54E15, 54F05)
- (with Richmond, T. A.) Ordered compactification of totally ordered spaces. *Internat. J. Math. Math. Sci.* **11** (1988), no. 4, 683–694. (D. J. Lutzer) **89m:54045** 54F05 (54D35)
- (with Vainio, R.) Ordered Cauchy and convergence spaces. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* **18** (1988), 83–95. (Ray Gazik) **89f:54066** 54F05 (54B30, 54E15)
- Kent, R. D. (with Schlesinger, Mordechai) Two-body-operator matrix elements in  $SU(n)$  for application to complex spectroscopy. *Phys. Rev. A* (3) **36** (1987), no. 10, 4737–4746. (Summary) **89h:81063** 81C40 (22E70, 81-08)
- (with Schlesinger, Mordechai; Ponnappalli, Pardu S.) Two-body-operator matrix-element factorization technique in  $U(n) \times S_N$  unitary bases: raising-raising operators. *Phys. Rev. A* (3) **39** (1989), no. 1, 19–27. (Summary) **89k:81045** 81C40 (22E70)
- Kent, Robert E. The metric closure powerspace construction. *Mathematical foundations of programming language semantics (New Orleans, LA, 1987)*, 173–199. *Lecture Notes in Comput. Sci.*, **298**, Springer, Berlin-New York, 1988. (Summary) **89k:68097** 68Q55 (18A30)
- Kephart, T. W. (with Holman, Richard) Modular invariance and anomalies in lower-dimensional superstring theories. *Phys. Lett. B* **202** (1988), no. 1, 89–93. (Sorin Marcescu) **89e:81151** 81E99 (81E30, 83E30)
- Kepka, T. (with Drbohlav, K.; Némec, P.) Associativity semihypergroups and related problems. *Hypergroups, other multivalued structures and their applications (Italian) (Udine, 1985)*, 75–86. *Univ. Studi Udine, Udine*, 1985. (Umberto Cerruti) **89f:20086** 20N99 (20M10)
- (with Bican, L.; Drápal, A.) Cancellative relations and matrices. (Russian and Czech summaries) *Acta Univ. Carolin.—Math. Phys.* **28** (1987), no. 1, 21–31. (Wiesław A. Dudek) **89b:15045** 15A99 (08A99, 13C99)
- (with Drápal, A.) Parity of orthogonal permutations. *Comment. Math. Univ. Carolin.* **28** (1987), no. 3, 427–432. (Cheryl E. Praeger) **89b:20144** 20N05 (20B99)
- (with Némec, P.; Niemennaa, Markku) On representable pairs. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **13** (1988), no. 1, 71–80. (John M. Howie) **89m:20074** 20M10 (20L99)
- Kepler, Johannes ★ Vom sechseckigen Schnee. (German) [On hexagonal snowflakes] *Strena seu de Nive sexangula*. Translated from the Latin and with an introduction and notes by Dorothea Goetz. *Ostwalds Klassiker der Exakten Wissenschaften [Ostwald's Classics of the Exact Sciences]*, **273**. Akademische Verlagsgesellschaft Geest & Portig K.-G., Leipzig, 1987. 60 pp. ISBN 3-321-00021-0 (H. S. M. Coxeter) **89c:01052** 01A75 (01A45, 05B40, 51-03)
- see also Field, J. V., **89d:01021**; Baigrie, Brian S., **89e:01017**; Stephenson, Bruce, **89f:01024**; Hallyn, Fernand, **89g:01019** and Copernicus, Nicolaus, **89m:01027**
- Keppel, W. J. (with DaDeppo, D. A.) Betti's theorem for rotationally symmetric infinitesimal deformations superimposed on the finite deformation of a thin shell of revolution. *Indust. Math.* **38** (1988), no. 1, 71–82. (Summary) **89j:73054** 73K15 (73G05)
- Keppens, Dirk On polarities in the  $k$ -uniform  $n$ -dimensional projective Hjelmslev space  $PH(n, GF(q)[t]/t^k)$ ,  $q$  odd. *Resulatae Math.* **12** (1987), no. 3–4, 297–324. (Dieter Jungnickel) **89c:51006** 51C05
- Möbius planes with neighbor relation. *Simon Stevin* **61** (1987), no. 2, 157–170. (J. Yaqub) **89a:51014** 51C05 (51B10)
- Polarities in  $n$ -uniform projective Hjelmslev planes. *Geom. Dedicata* **26** (1988), no. 2, 185–214. (Günter Törner) **89f:51031** 51C05
- de Kepper, P. see De Kepper, P.
- Kera, Kazuo  $S$ -sequential and  $S$ -ultrabornological topological vector spaces. *TRU Math.* **23** (1987), no. 1, 25–32. (N. Adasch) **89f:46006** 46A09
- Kerber, Adalbert Enumeration under finite group action: symmetry classes of mappings. *Combinatoire énumérative (Montreal, Que., 1985/Quebec, Que., 1985)*, 160–176. *Lecture Notes in Math.*, **1234**, Springer, Berlin-New York, 1986. (Dennis White) **89d:05007** 05A15 (20B25)



- (with Grabmeier, Johannes) The evaluation of irreducible polynomial representations of the general linear groups and of the unitary groups over fields of characteristic 0. *Acta Appl. Math.* **8** (1987), no. 3, 271–291. (Michael Clausen) **89c:20029** 20C30 (20C32)
- Kerbrat, Yvan** (with Kerbrat-Lunc, Hélène) Géométrie et physique. Les outils de la géométrie différentielle dans les théories de jauge de la physique. (English summary) [Geometry and physics. The tools of differential geometry in the gauge theories of physics] *Actes du 112<sup>e</sup> Congrès National des Sociétés Savantes* (Lyon, 1987), 83–90, *Com. Trav. Hist. Sci., Paris*, 1987. (Thomas Schücker) **89m:53135** 53C80 (81E13, 81G20)
- Kerbrat-Lunc, Hélène** (with Kerbrat, Yvan) Géométrie et physique. Les outils de la géométrie différentielle dans les théories de jauge de la physique. (English summary) [Geometry and physics. The tools of differential geometry in the gauge theories of physics] *Actes du 112<sup>e</sup> Congrès National des Sociétés Savantes* (Lyon, 1987), 83–90, *Com. Trav. Hist. Sci., Paris*, 1987. (Thomas Schücker) **89m:53135** 53C80 (81E13, 81G20)
- Kérchy, László** Contractions weakly similar to unitaries. II. *Acta Sci. Math. (Szeged)* **51** (1987), no. 3–4, 475–489. (Mitsuru Uchiyama) **89i:47033** 47A65 (47A45)
- On a conjecture of Teodorescu and Vasyunin. *Special classes of linear operators and other topics* (Bucharest, 1986), 169–172, *Oper. Theory. Adv. Appl.*, **28**, Birkhäuser, Basel-Boston, MA, 1988. (Arthur Lubin) **89f:47011** 47A20 (47A45, 47B35)
- On the multiplicity of the commutant of operators. *Topics in operator theory and interpolation*, 233–243, *Oper. Theory. Adv. Appl.*, **29**, Birkhäuser, Basel-Boston, MA, 1988. (Arthur Lubin) **89f:47005** 47A10 (47A05)
- Kerckhoffs, E. J. H.** Multiprocessor algorithms for ODEs. *Algorithms and applications on vector and parallel computers* (Amsterdam, 1985–86), 325–345, *Special Topics Supercomput.*, **3**, North-Holland, Amsterdam-New York, 1987. (Summary) **89j:65092** 65W05 (65L05)
- de Kerf, E. A.** (with Bergvelt, M. J.) Symplectic structure and Poisson brackets. *CAP-NISER Summer Institute in Theoretical Physics, Vol. I* (Edmonton, AB, 1987), 227–237, *World Sci. Publishing, Singapore*, 1988. (see **89h:81005**) 58F05
- Particles, fields and scattering in relativistic quantum theory. *Proceedings Seminar 1984–1986. Mathematical Structures in Field Theories, Vol. I* (Amsterdam, 1984–1986), 49–102, *CWI Syllabi*, **16**, Math. Centrum, Centrum Wisk. Inform., Amsterdam, 1988. (see **89m:81083**) 81F20 (22E43, 46N05)
- see also *Proceedings Seminar on Mathematical Structures in Field Theories*, **89m:81083**
- Kéri, Gerzson** (with Rubik, Ernő; Varga, Tamás; Marx, György; Vekerdy, Tamás) ★ Rubik's cubic compendium. Translated from the Hungarian. Translation edited and with an introduction and afterword by David Singmaster. *Recreations in Mathematics*, **3**, The Clarendon Press, Oxford University Press, New York, 1987. xii+225 pp. ISBN 0-19-853202-4 (W. M. Kantor) **89i:00017** 00A08 (05B99, 20B25)
- Kerimkulov, S. E.** On an eigenvalue problem for an equation of mixed type. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1986**, no. 5, 20–23. (Summary) **89d:35122** 35M05
- Kerimov, A. A.** Ground states of the Ising model with infinite radius of interaction. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **43** (1987), no. 7, 3–5. (Jacek Miękisz) **89f:82080** 82A68
- Non-translation-invariant Gibbs states in the Ising model with long-range potential. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 2, 15–21. (Jacek Miękisz) **89f:82081** 82A68
- Interface sharpness in the Ising model with long-range interaction. *J. Statist. Phys.* **52** (1988), no. 1–2, 69–98. (M. Lawrence Glasser) **89j:82074** 82A68 (60K35)
- Kerimov, A. M.** (with Baimov, Sh. K.) Some properties of a boundary value problem with a small parameter. (Russian) *Applied problems in functional analysis* (Russian), 14–19, *115*, Azerbaidzhan. Gos. Univ., Baku, 1986. (Summary) **89b:35025** 35J05 (35C99)
- Properties of an optimal mapping in a problem of mathematical economics. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **9** (1988), no. 1, 126–131. (Summary) **89m:90024** 90A11
- Kerimov, Azer** see **Kerimov, A. A.**
- Kerimov, M. K.** (with Skorokhodov, S. L.) Calculation of multiple complex zeros of derivatives of cylindrical Bessel functions. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 11, 1628–1639, 1758. (Hans-Jürgen Albrand) **89b:65053** 65D20 (33A40, 65H05)
- (with Skorokhodov, S. L.) Multiple complex zeros of the derivatives of cylindrical Bessel functions. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 3, 614–618; translation in *Soviet Phys. Dokl.* **33** (1988), no. 3, 196–198. (Boro Döring) **89b:33010** 33A40
- (with Erëmin, A. Yu.; Kaporin, I. E.) Calculation of derivatives of the Riemann zeta function in a complex domain. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 8, 1135–1148, 1277. (H. J. Godwin) **89i:11096** 11M06 (11M41, 11Y35, 65E05)
- (with Babushkina, L. V.; Nikitin, A. I.) Algorithms for the calculation of Bessel functions of half-integer indices with complex arguments. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 10, 1449–1460, 1597. (Walter Gautschi) **89m:65022a** 65D20 (65–04)
- (with Babushkina, L. V.; Nikitin, A. I.) Algorithms for calculating spherical Bessel functions in the complex domain. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 12, 1779–1788, 1918. (Walter Gautschi) **89m:65022b** 65D20 (65–04)
- Kerimov, T. M.** The Hölder exponent of the solutions of the Zaremba problem at the contact point of the boundary conditions. (Russian. English and Azerbaijani summaries) *Akad. Nauk Azerbaidzhan. SSR Dokl.* **43** (1987), no. 5, 3–7. (A. Borzyskowski) **89h:35091** 35J25
- Kerkhove, Thomas** A spectral analysis of the decoupling algorithm for semiconductor simulation. *SIAM J. Numer. Anal.* **25** (1988), no. 6, 1299–1312. (A. O. Garder) **89k:65008** 65C20 (35J55, 47H12, 82A70)
- Kerler, Edgárd** Fraktale Strukturen. [Fractal structures] *Praxis Math.* **30** (1988), no. 5, 262–273. (Editors) **89i:58065** 58F11 (00A69, 54F45)
- Kerman, R. A.** Convolution with odd kernels having a tempered singularity. *Canad. Math. Bull.* **31** (1988), no. 1, 3–12. (Akihiko Miyachi) **89b:42009** 42A50 (46E30, 47B35, 47B38)
- (with Sawyer, Eric T.) Carleson measures and multipliers of Dirichlet-type spaces. *Trans. Amer. Math. Soc.* **309** (1988), no. 1, 87–98. (M. Hervé) **89i:30044** 30D55 (46E99)
- (with Sawyer, Eric T.) On weighted norm inequalities for positive linear operators. *Proc. Amer. Math. Soc.* **105** (1989), no. 3, 589–593. (Kenneth F. Andersen) **89g:26020** 26D15 (26A33, 44A10, 47B38)
- Kern, Jörg-Detlef** On Jaffe fields at a point and algebras of local observables. *Math. Nachr.* **136** (1988), 99–118. (Camillo Trapani) **89b:81092** 81E05 (46L60, 46N05)
- Kern, Lucian** (with Räder, Hans-Georg) On explaining the rise of the new social movements in Germany. *Paradoxical effects of social behavior*, 169–185, *Physica, Heidelberg*, 1986. (see **89d:90019**) 92A20
- Kern, Michel** (with Bamberger, A.; Joly, Patrick) Mathematical and computational aspects of the determination of elastic surface waves along cylindrical cavities of general cross section. *Recent developments in surface acoustic waves* (Nottingham, 1987), 270–281, *Springer Ser. Wave Phenomena*, **7**, Springer, Berlin-New York, 1988. (Summary) **89k:73021** 73D20 (35P99, 47F05, 76Q05, 78A50)
- (with Bamberger, A.; Joly, Patrick; Nicoletis, L.; Quiblier, J.) Low frequency propagation of elastic waves in a fluid-filled borehole. *Recent developments in surface acoustic waves* (Nottingham, 1987), 282–290, *Springer Ser. Wave Phenomena*, **7**, Springer, Berlin-New York, 1988. (see **89g:73001**) 76Q05 (73J06)
- Kern, Walter** (with Bachem, A.) On sticky matroids. *Discrete Math.* **69** (1988), no. 1, 11–18. (Daniel Turzik) **89e:05059** 05B35
- On finite locally projective planar spaces. *J. Combin. Theory Ser. A* **48** (1988), no. 2, 247–254. (Albrecht Beutelspacher) **89f:51022** 51A45 (05B25, 51E30)
- Kerner, Otto** Preprojective components of wild tilted algebras. *Manuscripta Math.* **61** (1988), no. 4, 429–445. (Ibrahim Assem) **89m:16034** 16A46 (16A64)
- see also *Dictionary: Mathematical*, **89f:00032**
- Kerner, Richard** Croissance des structures cristallines et amorphes. (English summary) [Growth of crystalline and amorphous structures] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Universi Sci. Terre* **304** (1987), no. 3, 109–114. (Summary) **89k:82072** 82A57 (58F21, 58F40, 82A55)
- Électrodynamique non linéaire en théorie de Kaluza et Klein. (English summary) [Nonlinear electrodynamics in Kaluza-Klein theory] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Universi Sci. Terre* **304** (1987), no. 12, 621–624. (Kotik K. Lee) **89k:83042** 83C50 (83E15)
- (with Nikolova, Lora; Rizov, V.) A two-level Kaluza-Klein theory. *Lett. Math. Phys.* **14** (1987), no. 4, 333–341. (Robert Coquereaux) **89c:53060** 53C80 (53C05, 83E15)
- (with dos Santos, Dina Maria L. F.) Nucleation and amorphous and crystalline growth: a dynamical model in two dimensions. *Phys. Rev. B* (3) **37** (1988), no. 8, 3881–3893. (Summary) **89b:82082** 82A55
- Kernévez, J.-P.** (with Chung, S.; Deng, S. M.; Liu, Yu<sup>3</sup>; Wang, Ziron) Shape optimization and continuation method. *Boundary control and boundary variations* (Nice, 1986), 137–152, *Lecture Notes in Comput. Sci.*, **100**, Springer, Berlin-New York, 1988. (see **89h:93006**) 49F10
- (with Trubuil, A.; Seoane, M.) Control of folds. *Control of partial differential equations* (Santiago de Compostela, 1987), 289–296, *Lecture Notes in Control and Inform. Sci.*, **114**, Springer, Berlin-New York, 1989. (Summary) **89m:92032** 92A09 (49D30, 93C75)
- Kernohan, Andrew** Teleology and logical form. *British J. Philos. Sci.* **38** (1987), no. 1, 27–34. (Not in MR) 03A05
- Kerov, S. V.** Realizations of representations of the Brauer semigroup. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **164** (1987), *Differentsial'naya Geom. Gruppy Li i Mekh. IX*, 188–193, 199. (Joachim Hilgert) **89j:22029** 22E45 (20M30)
- (with Vershik, A. M.) Characters and realizations of representations of the infinite-dimensional Hecke algebra and knot invariants. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 4, 777–780; translation in *Soviet Math. Dokl.* **38** (1989), no. 1, 134–137. (Helmut Boseck) **89k:17011** 17A40 (17D99, 22E47, 57M25)
- Kerr, Fiona H.** A distributional approach to Namias' fractional Fourier transforms. *Proc. Roy. Soc. Edinburgh Sect. A* **108** (1988), no. 1–2, 133–143. (Jean Lavoine) **89g:42019** 42A38 (46F12)
- Kerr, Jeanne Wald** (with Brown, W. C.) Derivations and the Cohen-Macaulay type of points in generic position in  $n$ -space. *J. Algebra* **112** (1988), no. 1, 159–172. (Andrew Kustin) **89e:14024** 14H20 (13H10)
- (with Brown, W. C.) A matrix problem associated with computing Cohen-Macaulay type. *Linear and Multilinear Algebra* **22** (1988), no. 3, 213–227. (William H. Gustafson) **89e:15025** 15A30 (14M05, 18G10)
- (with Hadwin, Donald W.) Scalar-reflexive rings. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 1–8. (David C. Lantz) **89d:13013** 13C13 (13E10)
- Kerr, John D.** Introduction of statistical design and analysis by the Queensland Bureau of Sugar Experiment Stations. Bicentennial history issue. *Austral. J. Statist.* **30** (1988), *Special Vol. B*, 44–53. (Summary) **89m:01135** 01A74 (01A60)
- Kerr, W. C.** (with Lomdahl, P. S.) Finite temperature effects on models of hydrogen-bonded polypeptides. (Russian summary) *Physics of multiparticle systems*, No. 12 (Russian), 20–33, 95, 96, "Naukova Dumka", Kiev, 1987. (Summary) **89e:92066** 92A40
- Kerre, Etienne E.** A call for crispness in fuzzy set theory. *Fuzzy Sets and Systems* **29** (1989), no. 1, 57–65. (Summary) **89j:03045** 03E72
- Kersch, A.** (with Heil, A.; Reifenhäuser, B.; Vogel, H.) Application of topological ideas to the Aharonov-Bohm effect. *European J. Phys.* **9** (1988), no. 3, 200–208. (Not in MR) 81B99 (58A10, 78A99)
- Kerschenshtein, Georg** see **Gordan, Paul**, **89g:01034**
- Kersch, Wolfgang** (with Nagel, Rainer) Positivity and stability for Cauchy problems with delay. *Partial differential equations* (Rio de Janeiro, 1986), 216–235, *Lecture Notes in Math.*, **1324**, Springer, Berlin-New York, 1988. (Olusola Akinyele) **89k:34107** 34G10 (34K30, 47D05)
- Kersken, M.** Ein Regularitätskriterium für analytische Algebren. [A regularity criterion for analytic algebras] *Arch. Math. (Basel)* **51** (1988), no. 5, 434–439. (P. Abellanas) **89k:32014** 32B30 (13H99, 14F10, 32C38)
- Kerner, R.** (with Diaz Diaz, Jesús Ildefonso) The one-dimensional porous media equation with convection. *Nonlinear parabolic equations: qualitative properties of solutions* (Rome, 1985), 94–102, *Pitman Res. Notes Math. Ser.*, **149**, Longman Sci. Tech., Harlow, 1987. (Antonio Fasano) **89a:35119** 35K65 (35R35)
- (with Diaz Diaz, Jesús Ildefonso) On the behaviour and cases of nonexistence of the free boundary in a semibounded porous medium. *J. Math. Anal. Appl.* **132** (1988), no. 1, 281–289. (Antonio Fasano) **89h:35351** 35R35 (35K55, 76S05)
- Kersten, Gregory E.** (with Michalowski, Wojtek; Matwin, Stan; Szpakowicz, Stan) Representing the negotiation process with a rule-based formalism. *Theory and Decision* **25** (1988), no. 3, 225–257. (Not in MR) 90D35 (90B12)

- Kersten, I. (with Michaliček, Johannes) Kummer theory without roots of unity. *J. Pure Appl. Algebra* 50 (1988), no. 1, 21–72. (F. DeMeyer) **89h:12009** 12F10 (11R23, 12G05, 13B05)
- Kersten, P. H. M. Infinitesimal symmetries of partial differential equations with an application to the construction of the instanton and monopole solution of the self-dual Yang-Mills equations. *Proceedings Seminar 1984–1986. Mathematical Structures in Field Theories, Vol. 1* (Amsterdam, 1984–1986), 103–137, *CWT Syllabi*, 16, *Math. Centrum, Centrum Wisk. Inform., Amsterdam*, 1988. (see **89m:81083**) 58G35 (81E13)
- Nonlocal symmetries and the linearization of the massless Thirring and the Federbush models. *J. Math. Phys.* 29 (1988), no. 4, 1050–1053. (Summary) **89c:81134** 81E99 (58G37)
- Symmetries for the super modified KdV equation. *J. Math. Phys.* 29 (1988), no. 10, 2187–2189. (Introduction) **89i:58131** 58F35 (35Q20, 58A15, 58F07, 58G35)
- (with Gragert, P. K. H.) Symmetries for the super-KdV equation. *J. Phys. A* 21 (1988), no. 11, L579–L584. (Ramajayam Sahadevan) **89j:58147** 58G35 (35Q20, 58–04, 58F07)
- Higher order supersymmetries and fermionic conservation laws of the supersymmetric extension of the KdV equation. *Phys. Lett. A* 134 (1988), no. 1, 25–30. (From the introduction) **89k:58122** 58F07 (17A70, 35Q20, 58G35)
- Kersting, G. (with Keller, Gerhard; Rösler, Uwe) On the asymptotic behaviour of first passage times for discussions [diffusions]. *Probab. Theory Related Fields* 77 (1988), no. 3, 379–395. (John Kent) **89d:60141** 60J60 (60F05)
- Kersberg, Pierre On the alleged equivalence between Newtonian and relativistic cosmology. *British J. Philos. Sci.* 38 (1987), no. 3, 347–380. (H. Tredner) **89a:83001** 83–03 (01A60)
- Kertész, G. (with Bezdek, K.; Connelly, R.) On the average number of neighbors in a spherical packing of congruent circles. *Intuitive geometry* (Södör, 1985), 37–52, *Colloq. Math. Soc. János Bolyai*, 48, North-Holland, Amsterdam-New York, 1987. (A. Florian) **89a:52034** 52A45 (52B40, 52A40)
- On totally separable packings of equal balls. *Acta Math. Hungar.* 51 (1988), no. 3–4, 363–364. (R. Blind) **89b:52014** 52A45
- Kertész, J. (with Csuti, J.) Asymptotic number of needles in Laplacian growth. *J. Phys. A* 20 (1987), no. 13, 4561–4563. (Hanna Nencka) **89d:82045** 82A30 (35B99, 35J05)
- Morphological transitions in pattern growth phenomena. *Random fluctuations and pattern growth* (Cargèse, 1988), 42–55, *NATO Adv. Sci. Inst. Ser. E: Appl. Sci.*, 157, Kluwer Acad. Publ., Dordrecht, 1988. (see **89j:00034**) **82A57** (58F30, 82A25)
- Kertz, Robert P. (with Heath, David C.) Leaving an interval in limited playing time. *Adv. in Appl. Probab.* 20 (1988), no. 3, 635–645. (Sylvain Sorin) **89i:90102** 90D15 (60G40, 90C40, 93E05)
- Kerzyuk, V. I. (with Samoilenko, A. M.; Momot, I. P.) Oscillations of weakly nonlinear systems with  $n$  degrees of freedom and with an essential gyroscopic constraint. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 7(41) (1987), 37–47, 80. (Summary) **89c:70050** 70K20
- Kesavan, H. K. (with Kapur, J. N.) ★ The generalized maximum entropy principle (with applications). *Sandford Educational Press, Waterloo, ON*, 1987. x+213 pp. ISBN 0-920574-25-4 (L. L. Campbell) **89d:62008** 62B10 (92A15, 94A17)
- Keshishyan, V. A. (with Goncharik, L. I.) Formulation of parametric transfer functions of discrete switched-capacitor circuits. (Russian) *Avtomat. i Vychisl. Tekhn. (Minsk)* No. 16 (1987), 71–75, iii. (Not in MR) 94C05
- Kesler, Stanislav B. see Modern spectrum analysis, **89d:94001**
- Kessels, J. L. W. An exercise in proving self-stabilization with a variant function. *Inform. Process. Lett.* 29 (1988), no. 1, 39–42. (From the text) **89i:68106** 68Q60 (68Q10)
- Kessl, A. Équations différentielles homogènes de quatrième degré sans points critiques mobiles. [Homogeneous differential equations of fourth order with no moving critical points] *Cahiers Math.* 1988, no. 1, 55–56. (Not in MR) 34C20
- Kessler, Christoph (with Cutland, Nigel J.; Kopp, P.; Ekkehard; Ross, David Andrew) On Cauchy's notion of infinitesimals. *British J. Philos. Sci.* 39 (1988), no. 3, 375–378. (Andreas Blass) **89k:03085** 03H05 (01A55, 01A60, 26E35)
- On hyperfinite representations of distributions. *Bull. London Math. Soc.* 20 (1988), no. 2, 139–144. (Todor Dimitrov Todorov) **89b:46057** 46F10 (03H05, 46Q05)
- Markov type properties for mixtures of probability measures. *Probab. Theory Related Fields* 78 (1988), no. 2, 253–259. (Kai Long Ren) **89g:60304** 60K35
- Kessler, Hans W. (with Pflug, Georg Ch.) Linear probing with a nonuniform address distribution. *J. Assoc. Comput. Mach.* 34 (1987), no. 2, 397–410. (Luc P. Devroye) **89c:68012** 68P10 (68Q25)
- Kessler, Ilan (with Sidi, Moshe) Mixing collision resolution algorithms exploiting information of successful messages. *IEEE Trans. Inform. Theory* 34 (1988), no. 3, 531–536. (Not in MR) 94A40
- Kessler, J. O. (with Pedley, T. J.; Hill, N. A.) The growth of bioconvection patterns in a uniform suspension of gyrotactic micro-organisms. *J. Fluid Mech.* 195 (1988), 223–237. (Summary) **89m:92004** 92A05 (76E15, 76Z10)
- Kessoglidis, M. (with Konguetsof, L.; Vougiouklis, Th.; Spartal, St.) On cyclic hypergroups with period. (Russian and Czech summaries) *Acta Univ. Carolin.—Math. Phys.* 28 (1987), no. 1, 3–7. (P. Corsini) **89c:20107** 20N99
- Kesteloot, E. (with Broeckhove, J.; Van Leuven, P.) Rotational motion, shell structure and coherent state dynamics. *Phys. Lett. B* 202 (1988), no. 1, 1–4. (John J. Sullivan) **89f:81260** 81G30 (81D30)
- Kestemont, E. (with Prigogine, Ilya; Mareschal, M.) Velocity correlations and irreversibility: a molecular dynamics approach. *From chemical to biological organization*, 22–26, *Springer Ser. Synergetics*, 39, Springer, Berlin-New York, 1988. (see **89g:92002**) **82A35** (81G55)
- Kesten, Harry Random walks on random clusters at criticality. *Probabilistic methods in mathematical physics* (Katata/Kyoto, 1985), 211–218, *Academic Press, Boston, MA*, 1987. (R. T. Smythe) **89d:60195** 60K35 (82A41, 82A43)
- Correction: “The influence of Mark Kac on probability theory” [Ann. Probab. 14 (1986), no. 4, 1103–1128; MR 88j:60002]. *Ann. Probab.* 15 (1987), no. 3, 1228. (Editors) **89c:60002** 60–03 (01A60, 01A70)
- (with Aizenman, Michael; Newman, C. M.) Uniqueness of the infinite cluster and continuity of connectivity functions for short and long range percolation. *Comm. Math. Phys.* 111 (1987), no. 4, 505–531. (G. R. Grimmett) **89b:82060** 82A43 (60K35, 82A05)
- (with Zhang, Yu’l) Strict inequalities for some critical exponents in two-dimensional percolation. *J. Statist. Phys.* 46 (1987), no. 5–6, 1031–1055. (John C. Wierman) **89g:60305** 60K35 (82A43)
- Hitting probabilities of random walks on  $Z^d$ . *Stochastic Process. Appl.* 25 (1987), no. 2, 165–184. (Gregory F. Lawler) **89a:60163** 60J15 (31C20, 82A41, 82A67)
- (with Bendler, John T.; Dishon, Menachem; Weiss, G. H.) A first passage time problem for random walk occupancy. *J. Statist. Phys.* 50 (1988), no. 5–6, 1069–1087. (Cheng Xun Wu) **89m:82051** 82A51 (60J15, 60J65, 62E20, 82A41)
- Kestenband, Barbu C. Partitioning projective planes into arcs. *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 3, 435–440. (J. W. P. Hirschfeld) **89i:51014** 51E20
- Kestřánek, Zdeněk Numerical analysis for optimal shape design in elliptic boundary value problems. (Russian and Czech summaries) *Appl. Mat.* 33 (1988), no. 4, 322–333. (Shuzi Zhou) **89h:65207** 65N99 (49A22, 49A29, 49D37, 65K99)
- Ketov, S. V. (with Tyutin, I. V.) Self-action for  $N = 2$  multiplets in  $d = 4$  and the ultraviolet finiteness of two-dimensional  $N = 4$   $\sigma$ -models. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (Järvala, 1985), 87–94, “Nauka”, Moscow, 1986. (see **89d:81001**) **81E13** (81E15, 81E40)
- (with Lokhvitskii, B. B.) Some generalisations of  $N = 2$  Yang-Mills matter couplings. *Classical Quantum Gravity* 4 (1987), no. 4, L137–L142. (Youssef A. Hassoun) **89c:81075** **81E13** (81G20, 83E50)
- Supersymmetric  $\sigma$ -models with torsion in supergravity background and critical dimensions for string theories. *Classical Quantum Gravity* 4 (1987), no. 5, 1163–1182. (Elcio Abdalla) **89a:81094** **81E20** (81E30, 83E30, 83E50)
- (with Tyutin, I. V.) A new nonlinear  $\sigma$ -model with  $N = 4$  extended supersymmetry. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 30 (1987), no. 9, 70–74. (Summary) **89b:81131** **81E13** (81E40)
- (with Lokhvitskii, B. B.; Tyutin, I. V.) Hyper-Kähler sigma-models in extended superspace. (Russian. English summary) *Teoret. Mat. Fiz.* 71 (1987), no. 2, 226–237. (A. D. Popova) **89b:81247** **81G20** (58E20, 58E30, 81E99)
- New  $N = 2$  matter couplings in superspace. *Internat. J. Modern Phys. A* 3 (1988), no. 3, 703–719. (Enore Guadagnini) **89f:83101** **83E50** (53C80, 81E20)
- (with Lokhvitskii, B. B.)  $N = 4$  irreducible scalar superfields. *J. Math. Phys.* 29 (1988), no. 5, 1244–1252. (Summary) **89m:81148** **81E99** (83E50)
- Three-loop finiteness of the two-dimensional supersymmetric nonlinear  $\sigma$ -models on generalized Ricci-flat manifolds with torsion. *Phys. Lett. B* 207 (1988), no. 2, 140–144. (João Soto) **89m:81106** **81E15** (58E15, 81E20, 81E30, 81G20)
- Anomalies in 6-dimensional gauge theories. *Soviet J. Nuclear Phys.* 47 (1988), no. 5, 943–948; translated from *Yadernaya Fiz.* 47 (1988), no. 5, 1484–1494 (Russian). (Summary) **89j:81143** **81E20** (58G10, 83E50)
- Equations of the renormalization group for a two-dimensional nonlinear sigma model with torsion. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 31 (1988), no. 9, 37–40; translation in *Soviet Phys. J.* 31 (1988), no. 9, 720–722. (Summary) **89j:81128** **81E15** (58E15, 81E13)
- (with Bukhbinder, I. L.) The one-loop counterterm for the four-dimensional sigma model with higher derivatives. (Russian. English summary) *Teoret. Mat. Fiz.* 77 (1988), no. 1, 42–50; translation in *Theoret. and Math. Phys.* 77 (1988), no. 1, 1032–1038. (Summary) **89j:81122** **81E15** (81E13)
- Ketra, Neuman Makhul see Makhul, Ketra
- Kettenring, J. R. (with Fowlkes, E. B.; Gnanadesikan, R.) Variable selection in clustering. *J. Classification* 5 (1988), no. 2, 205–228. (Summary) **89b:62093** 62H30
- Keus, C. (with Jonker, J. B.) A finite element dynamic analysis of robotic manipulators with flexible links. *Trends in applications of mathematics to mechanics* (Wassenaar, 1987), 160–171, Springer, Berlin-New York, 1988. (see **89g:58004**) 70B15
- Kevelson, Roberta ★ Charles S. Peirce's method of methods. *Foundations of Semiotics*, 17, John Benjamins B.V., Amsterdam, 1987. xiv+180 pp. ISBN 90-272-3289-X (Randall R. Dipert) **89d:01042** 01A55 (03–03, 03A05)
- Kevrekidis, I. G. (with Foias, Ciprian; Jolly, M. S.; Sell, George R.; Titi, E. S.) On the computation of inertial manifolds. *Phys. Lett. A* 131 (1988), no. 7–8, 433–436. (Summary) **89k:65154** 65P05 (35Q20, 58D25, 58F12, 58F14, 92A09)
- Kexie'er, J. see Koszul, Jean-Louis
- Key, Jennifer D. Incidence structures with regular sets. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 60 (1987), 211–220. (David Gluck) **89j:20007** 20B25
- Regular sets in geometries. *Combinatorics '86* (Trento, 1986), 217–227, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (Johannes Siemons) **89a:51025** **51E20** (20B25, 51E30)
- (with Rostom, N. K. A.) Unitary designs with regular sets of points. *Discrete Math.* 69 (1988), no. 3, 235–239. (Johannes Siemons) **89i:05066** 05B25 (05B05, 20B25)
- Keyfitz, Barbara Lee (with Chossat, P.; Golubitsky, M.) Hopf-Hopf mode interactions with  $O(2)$  symmetry. *Dynamics Stability Systems* 1 (1986), no. 4, 255–292. (D. H. Sattinger) **89b:58147** **58F14** (80A25)
- Keyfitz, Nathan A Markov chain for calculating the durability of marriage. *Math. Population Stud.* 1 (1988), no. 1, 101–121. (Summary) **89h:92065** 92A20 (62P25)
- Keys, C. David (with Shahidi, Freydoon) Artin L-functions and normalization of intertwining operators. *Ann. Sci. École Norm. Sup.* (4) 21 (1988), no. 1, 67–89. (Stephen Gelbart) **89k:22034** **22E50** (11F70)
- de Keyser, R. M. C. see De Keyser, R. M. C.
- Kezerashvili, M. I. On the solution of a problem on the bending by a transverse force of a composite anisotropic rod with a slightly curved axis. (Russian. English and Georgian summaries) *Thiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* 29 (1988), 196–210, 242. (Not in MR) **73K05** (73K20)
- Kezlan, Thomas P. On identities which imply commutativity. *Math. Japon.* 33 (1988), no. 3, 403–408. (A. Yağub) **89h:16034** 16A70
- Kezunovic, M. (with Perunić, B.; Kreso, S.) Bilinear form approach to synthesis of a class of electric circuit digital signal processing algorithms. *IEEE Trans. Circuits and Systems* 35 (1988), no. 9, 1197–1200. (Mitsuhiko Kameyama) **89j:94052** 94C05 (94C30)
- Kfoury, A. J. (with Urzyczyn, P.) Concurrent program schemes. *Fund. Inform.* 10 (1987), no. 4, 337–361. (Summary) **89i:68038** **68Q10** (68N05, 68Q55)
- (with Moll, Robert N.; Arbib, Michael A.) ★ An introduction to formal language theory. With contributions by James Pustejovsky. Texts and Monographs in Computer Science. AKM Series in Theoretical Computer Science. Springer-Verlag, New York-Berlin, 1988. x+203 pp. ISBN 0-387-96698-6 (Paulo A. S. Veloso) **89j:68084** **68Q45** (03B65, 03D05, 68–01, 68S05)



- A linear-time algorithm to decide whether a binary word contains an overlap. (French summary) *RAIRO Inform. Théor. Appl.* 22 (1988), no. 2, 135–145. (D. M. Campbell) **89h:68056** 68Q20
- Khabbaz, S. A.** (with Irwin, John M.) Submodules of direct products. *Comment. Math. Univ. St. Paul.* 36 (1987), no. 2, 133–143. (L. Fuchs) **89b:13019** 13C13 (20K20)
- (with Dugas, Manfred; Irwin, John M.) Countable rings as endomorphism rings. *Quart. J. Math. Oxford Ser. (2)* 39 (1988), no. 154, 201–211. (B. Goldsmith) **89h:20081** 20K30 (20K20)
- Khabibullin, B. N.** Smallness of growth on the imaginary axis of entire functions of exponential type with given zeros. (Russian) *Mat. Zametki* 43 (1988), no. 5, 644–650, 702; translation in *Math. Notes* 43 (1988), no. 5–6, 372–375. (László Kérchy) **89h:30043** 30D15 (30B60, 30C15)
- vo Khac, Khoan** see **Vo Khac, Khoan**
- ta Khac Cu** see **Ta Khac Cu**
- Khachatryan, G. G.** Construction of codes for a switching channel with two users. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* 86 (1988), no. 2, 51–53. (Not in MR) **94A40**
- Construction of  $k$ -decodable codes for an adder channel with  $T$ -users. (Russian) *Problemy Peredachi Informatsii* 24 (1988), no. 2, 94–99; translation in *Problems Inform. Transmission* 24 (1988), no. 2, 159–163. (Not in MR) **94B35**
- Khachatryan, I. O.** (with Akopyan, S. A.) Quasi-analytic classes of functions that are representable by integrals with Mittag-Leffler kernels. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* 23 (1988), no. 3, 199–215, 302; translation in *Soviet J. Contemporary Math. Anal.* 23 (1988), no. 3, 1–19. (W. H. J. Fuchs) **89m:30075** 30D60 (30G10)
- Khachatryan, N. K.** Stability of a problem on the Hamiltonian cycle of a graph. (Russian. English and Armenian summaries) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1987, no. 1(164), 27–31. (Hansjochim Walther) **89a:05101** 05C45 (05C38)
- Khachatryan, R. V.** Dynamically stable optimality principles in multicriterial multistage games. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* 86 (1988), no. 1, 23–26. (L. F. Pau) **89g:90257** 90D20 (49A45, 90C31)
- Khachatryan, V. Kh.** A theorem on mixed derivatives for multivalued mappings. (Russian) *Approximation theory and related problems in analysis and topology* (Russian), 94–96, v. *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev, 1987.* (Zbigniew Grande) **26B02** 26E25 (26B05, 54C60)
- Khachaturov, V. R.** Supermodular functions on lattices. (Russian) *Problems in applied mathematics and information science* (Russian), 251–262, 296, "Nauka", Moscow, 1987. (Mária Tomková) **89g:06025** 06C15
- (with Utkin, S. L.; Hoang Tuy) Conical algorithms for solving the concave programming problem and some of its generalizations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 7, 992–999, 1117. (S. Zlobec) **89k:90148** 90C30
- Khachiyun, L. G.** ★ Сложность задач линейного программирования. (Russian) [Complexity of linear programming problems] Новое в Жизни, Науке, Технике: Серия "Математика, Кибернетика" [Current Life, Science and Technology: Series "Mathematics and Cybernetics"], 87–10. "Znanie", Moscow, 1987. 32 pp. (F. Szidarovszky) **89b:90127** 90C05
- (with Tarasov, S. P.; Erikkh, I. I.) The method of inscribed ellipsoids. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 5, 1081–1085; translation in *Soviet Math. Dokl.* 37 (1988), no. 1, 226–230. (E. G. Gof'shtein) **89k:90132** 90C25 (90C30)
- Khademian, H.** Catastrophe theory: an application to a business cycle model. *Math. Comput. Modelling* 10 (1988), no. 4, 257–262. (Summary) **89g:90076** 90A16 (58C28)
- Khadzhizhskii, V. Kh.** Analytically negligible sets with respect to the  $L^p$ -norm. (Russian) *C. R. Acad. Bulgare Sci.* 41 (1988), no. 2, 33–34. (I. P. Ramadanov) **89g:30073** 30E10
- Khadzhilivanov, Nikolai** (with Nenov, Nedyalko) The minimum number of 4-anticliques of some graphs without triangles. (Russian. English summary) *Annuaire Univ. Sofia Fac. Math. Méc.* 77 (1983), no. 1, 163–174 (1988). (Pavel Tomasta) **89m:05063** 05C35
- (with Nenov, Nedyalko) The minimum number of monochromatic 4-cliques for noncovering 2-colorings of the edges of a complete graph. (Russian. English and Bulgarian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 2, 137–149 (1987). (Ioan Tomescu) **89f:05101** 05C35 (05C15)
- phan huy Khai** see **Phan Huy Khai**
- al-Khailat, Hussain** see **Al-Khailat, Hussain**
- Khaidarov, A.** Reconstruction of the source of waves of distribution type of a simple layer. (Russian) *Questions of well-posedness and methods for the investigation of inverse problems* (Russian), 34–40, 158, *Akad. Nauk SSSR Sibirs. Otdel., Vychisl. Tsentr, Novosibirsk, 1986.* (Summary) **89f:35202** 35R30 (35L10)
- le Khai Hoi** see **Lé Khai Hoi**
- Khalilov, E. N.** Analytic parametrization of the set of controllability in a linear control problem. (Russian) *Mat. Zametki* 44 (1988), no. 3, 405–406. (From the text) **89j:49038** 49E15 (93B05, 93C05)
- Khatime Chaves, M.** see **Jaime Chaves, M.**
- Khatirullin, E. M.** (with Nekrasova, T. V.) Solution of a system of integro-differential equations in  $R^n$ . (Russian) *Theory of functions, equations of mathematical physics and their applications* (Russian), 66–72, 88, *Kazakh. Gos. Univ., Alma-Ata, 1988.* (Summary) **89m:45016** 45K05 (45D05)
- Khatirullin, R. Kh.** Estimation of functionals from the solutions of homogeneous integral equations by the Monte Carlo method. (Russian) *Issled. Prikl. Mat. No. 14* (1987), 144–159. (A. Haimovici) **89d:65109** 65R20 (45E99, 65C05)
- Khatirullin, R. S.** A problem for the equation  $u_{tt} - (u_x)_t - u_{xx} = 0$ . (Russian) *Differential equations and mathematical physics* (Russian), 133–137, *Kutubyshev. Gos. Ped. Inst., Kutubyshev, 1985.* (see **89f:35006**) **35L80**
- A boundary value problem for the Euler-Poisson-Darboux equation with strong degeneration. (Russian) *Trudy Sem. Kraev. Zadacham No. 23* (1987), 231–238. (Eduard Feireisl) **89m:35174** 35Q05 (35L80)
- Khatirullin, R. Z.** (with Golubev, Yu. F.; Grushevskii, A. V.) Control laws that ensure maximal range for the descent of a satellite in the atmosphere. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 14, 28 pp. (Summary) **89b:65156** 65K10 (93C75)
- Khatun, S. D.** Nonreversibility and Newtonian mechanics. (Russian) *Voprosy Ist. Estestvozn. i Tekhn.* 1988, no. 1, 119–120. (Editors) **89e:01069** 01A70
- Khaje-Khalili, Parviz** Note on some S-shaped bifurcation curves. *Appl. Anal.* 27 (1988), no. 1–3, 229–234. (Henryk Żoładek) **89j:34025** 34B15 (58F14)
- Khajehepour, M. R. H.** (with Abolghasem, G.; Mansouri, R.) How to test the special theory of relativity on the rotating earth. *Phys. Lett. A* 132 (1988), no. 6–7, 310–312. (Jan Novotný) **89i:83001** 83A05 (83B05)
- Khakhanyan, V. Kh.** Nonderivability of the uniformization principle from Church's thesis in intuitionistic set theory. (Russian) *Mat. Zametki* 43 (1988), no. 5, 685–691, 703; translation in *Math. Notes* 43 (1988), no. 5–6, 394–398. (G. E. Mints) **89g:03089** 03F50 (03F55)
- Khakhlyutin, V. P.** Determination of a function of two variables from its weighted integrals along a family of lines. (Russian) *Questions of well-posedness and methods for the investigation of inverse problems* (Russian), 142–145, 163, *Akad. Nauk SSSR Sibirs. Otdel., Vychisl. Tsentr, Novosibirsk, 1986.* (L. A. Shepp) **89f:44009** 44A15
- Khakimdzhanov, Yu. B.** Cohomologies et déformations de certaines algèbres de Lie nilpotentes. [Cohomology and deformations of certain nilpotent Lie algebras] *Comm. Algebra* 16 (1988), no. 10, 2149–2192. (Roger Charles) **89k:17023** 17B20 (17B30, 17B56)
- Khakimov, M. Kh.** (with Yuldashev, U. Yu.) Models for problems in the design of a vertical layout. (Russian) *Methods for solving boundary value problems in applied mechanics and control* (Russian), 64–68, 83, *Tashkent. Gos. Univ., Tashkent, 1985.* (see **89c:00022**) **90C31**
- Khakimova, T. Kh.** Calculation of eigenvalues and eigenfunctions by the method of spherical harmonics. (Russian) *Some problems in functional analysis, differential equations and their applications* (Russian), 83–90, 112, *Kazakh. Gos. Univ., Alma-Ata, 1985.* (see **89a:00016**) **65F15**
- Khalatnikov, I. M.** (with Belinskii, V. A.) On the generality of inflationary solutions in cosmological models with a scalar field. *Soviet Phys. JETP* 66 (1987), no. 3, 411–449 (1988); translated from *Zh. Eksp. Teoret. Fiz.* 93 (1987), no. 3, 784–799 (Russian). (C. Gauthier) **89d:83110** 83F05 (58F12)
- Khalbekov, U. T.** On the solution of a boundary value problem for equations of hyperbolic type with a small parameter. (Russian) *Investigations in degenerate differential equations and limit theorems of probability theory* (Russian), 14–23, *Tashkent. Gos. Ped. Inst., Tashkent, 1985.* (see **89g:60002**) **35L10**
- Khalchulua, S. M.** Some results in  $S$ -barrelled spaces. *Tamkang J. Math.* 18 (1987), no. 2, 43–48. (W. H. Ruckle) **89a:46011** 46A07 (46A30)
- $S$ -ultrabarrelled spaces. *Tamkang J. Math.* 18 (1987), no. 3, 13–19. (T. Husain) **89b:46008** 46A07 (46A30)
- Khalifa, E. Kh.** A boundary value problem of Bitsadze-Samarskii type for an equation of mixed type with singular coefficients in a mixed domain. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1987, vyp. 1, 39–42, 125. (Megumi Saigo) **89a:35146** 35M05
- Khalid, L. H.** (with Aldeen, I. K.) Comparison of numerical methods in the solution of eigenvalue problems. (Arabic summary) *Arab J. Math.* 6 (1985), no. 1–2, 21–34. (K. Najjar) **89m:65071** 65L10 (34B25, 65L15)
- hayat Khalid, M.** see **Hayat Khalid, M.**
- Khalidov, R. B.** An algorithm for constructing the solution of nonlinear evolution equations. (Russian) *Voprosy Vychisl. i Prikl. Mat. (Tashkent) No. 80* (1986), 68–73, 137. (Not in MR) **35C99**
- Khalil, Hassan K.** (with Kokotović, P. V.; O'Reilly, John) ★ Singular perturbation methods in control: analysis and design. Academic Press, Inc. [Harcourt Brace Jovanovich, Publishers], London-New York, 1986. xii+371 pp. ISBN 0-12-417635-6 (V. G. Gaitsgori) **89h:93022** 93B50 (34E15, 93E20)
- see also *Singular perturbations in systems and control*, **89c:93002**
- Khalil, Mohammed** (with Rigal, Alain) Convergence des méthodes SOR à paramètre variable. (English summary) [On the convergence of variable parameter point SOR methods] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 14, 629–634. (Summary) **89b:65249** 65N20 (65W05)
- Local mode smoothing analysis of various incomplete factorization iterative methods. *Robust multi-grid methods* (Kiel, 1988), 155–164, *Notes Numer. Fluid Mech.* 23, Vieweg, Braunschweig, 1989. (see **89m:65007**) **65F10**
- Khalil, R.** (with Faour, N.) On the spectrum of weighted operator shifts. *Houston J. Math.* 13 (1987), no. 4, 549–556. (Hong W. Kim) **89d:47049** 47B37
- (with Deeb, W.)  $\varphi$ -summing operators in Banach spaces. *J. Math. Anal. Appl.* 127 (1987), no. 2, 577–584. (Bernard Rosenberger) **89e:47027** 47B10 (47D30)
- Best approximation in  $L^1$ . *Numer. Funct. Anal. Optim.* 9 (1987), no. 9–10, 1031–1037. (G. Godini) **89e:46043** 46E40 (41A65, 46E30)
- (with Deeb, W.) Best approximation in  $L(X, Y)$ . *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 3, 527–531. (G. Godini) **89k:47064** 47D15 (41A65)
- Best approximation in metric spaces. *Proc. Amer. Math. Soc.* 103 (1988), no. 2, 579–586. (Khalil Ahmad) **89i:41033** 41A65 (54E35)
- khajeh-Khalili, Parviz** see **Khajeh-Khalili, Parviz**
- Khalilov, Sh. B.** The Dirichlet problem for a multidimensional elliptic system of partial differential equations. (Russian) *Studies in multidimensional elliptic systems of partial differential equations* (Russian), 119–128, 157, *Akad. Nauk SSSR Sibirs. Otdel., Inst. Mat., Novosibirsk, 1986.* (Summary) **89a:35072** 35J55
- The Dirichlet problem for a multidimensional system of differential equations of elliptic type. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* 30 (1987), no. 6, 339–342. (Guo Chun Wen) **89e:35049** 35J55
- Khalilova, L. G.** (with Vasil'ev, D. G.) Asymptotic behavior of the spectrum of a differential operator on a surface of revolution. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 7 (1986), no. 6, 23–28 (1987). (Andreas Juhl) **89d:35134** 35P20 (58G25)
- Khalil, V. G.** Minimal representation of an element in the Brauer group of a multidimensional local field. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1987, vyp. 2, 117–118, 135. (Helmut Koch) **89c:11174** 11S45
- Khalig, A. Q. M.** (with Al-Sadah, Fayez S. H.; Bashir, M.) Finite difference analysis for Navier-Stokes and energy equations of Couette-Poiseuille flow. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 71–81, *North-Holland, Amsterdam-New York, 1988.* (see **89b:00021**) **76-08** (76D05, 80A20)
- (with Al-Hawaj, A. Y.) A third order finite-difference method for two-dimensional parabolic equations. *Mathematical analysis and its applications* (Kuwait, 1985), 281–288,

- KFAS Proc. Ser., 3, Pergamon, Oxford-Elmsford, NY, 1988. (A. O. Garder) 89e:65103 65N05
- (with Twizell, E. H.)  $L_q$ -stable methods for constant coefficient parabolic equations. *Mathematical analysis and its applications* (Kuwait, 1985), 349–358, KFAS Proc. Ser., 3, Pergamon, Oxford-Elmsford, NY, 1988. (A. V. Dzishkariani) 89h:65152 65N99
  - (with Twizell, E. H.) Global extrapolation methods for fourth order parabolic partial differential equations. (Arabic summary) *Arab Gulf J. Sci. Res. A. Math. Phys. Sci.* 6 (1988), no. 1, 1–15. (Rudolf Gorenflo) 89e:65092 65M05 (65N05)
  - (with Twizell, E. H.) A family of predictor-corrector methods for second-order hyperbolic equations. *Comm. Appl. Numer. Methods* 5 (1989), no. 1, 47–51. (Not in MR) 89m:65N99
- Khamukhamedov, A. R.** (with Alimov, Sh. A.) Uniform summability of spectral expansions of continuous functions in  $L_2$ . (Russian) *Equations of mixed type and free boundary value problems* (Russian), 147–156, 252–253, "Fan", Tashkent, 1987. (P. Szeptycki) 89j:35095 35P10 (35J10)
- Khamuradov, Ch. G.** On a boundary value problem for a quasilinear parabolic equation. (Russian. English summary) *Izv. Akad. Nauk Turkmen. SSR Ser. Fiz.-Tekhn. Khim. Geol. Nauk* 1987, no. 6, 88–90. (J. Kacur) 89h:35168 35K65
- Khamuradov, D.** On the Cauchy problem for a third-order parabolic-hyperbolic equation with a noncharacteristic line of change of type. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1987, no. 2, 39–44, 79. (A. M. Nakhushev) 89e:35110 35M05
- Some boundary value problems for third-order equations of parabolic-hyperbolic type. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1988, no. 1, 44–50, 93. (Jia Xing Hong) 89h:35234 35M05
- Khamdamov, I. M.** (with Gafurov, M. U.) The role of extreme order statistics in the formation of a large deviation of sums of independent random variables. (Russian) *Asymptotic methods in mathematical statistics* (Russian), 38–46, 159, "Fan", Tashkent, 1987. (S. A. Book) 89h:60069 60F10 (62G30)
- Theorems on super-large deviations for sums of order statistics. (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 8, 5–7. (Introduction) 89a:60073 60F10 (62G30)
  - On a generalization of Feller's theorem on the law of the iterated logarithm. (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 9, 3–4. (From the introduction) 89a:60081 60F15
- Khamis, H. J.** A measure of partial association between disease and genotype for the two-parent problem. *Comm. Statist. Theory Methods* 16 (1987), no. 7, 2029–2060. (Victor Kotov) 89a:92009 92A07 (62P10, 92A10, 92A15)
- The monofactorial model for recurrence risks with generalized penetrance. *Biometrical J.* 30 (1988), no. 2, 209–222. (Summary) 89g:92027 92A10
- Khamitov, M. Kh.** (with Dosumov, T. B.; Sabirov, T.) Some questions of the stability of the solution of differential equations in a Banach space. (Russian) *Some problems in functional analysis, differential equations and their applications* (Russian), 40–45, 109, Kazakh. Gos. Univ., Alma-Ata, 1985. (see 89a:00016) 34G20 (34D05)
- Khamisi, M. A.** La propriété du point fixe dans les espaces de Banach avec base inconditionnelle. [The fixed-point property in Banach spaces with unconditional basis] *Math. Ann.* 277 (1987), no. 4, 727–734. (Claudio Morales) 89b:47078 47H10 (46B20)
- James quasireflexive space has the fixed point property. *Bull. Austral. Math. Soc.* 39 (1989), no. 1, 25–30. (Steven F. Bellent) 89k:47094 47H10 (46B20)
- Khamukhin, A. A.** (with Savinov, A. P.) Application of generalized block diagonal dominance to the solution of linear systems. (Russian) *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 363–367, "Angel Kanchev" Tech. Univ., Ruse, 1987. (Introduction) 89f:65051 65F99 (15A06)
- Khamza, F.** (with Chikadia, O. O.) Investigation of basic problems of the moment theory of elasticity for anisotropic media. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 128 (1987), no. 3, 469–472 (1988). (Summary) 89h:73012 73C30 (73B25, 73C35)
- Khan, Abdul Hamid** (with Khan, Irshad Ahmad) Moments of order statistics from Burr distribution and its characterizations. (Italian summary) *Metron* 45 (1987), no. 1–2, 21–29. (Summary) 89b:62035 62E10 (62G30)
- Khan, Abdul Rauf** Maximum modulus principle and rings of continuous complex functions. *Proc. Pakistan Acad. Sci.* 24 (1987), no. 2, 161–167. (Summary) 89d:46053 46J10 (30H05)
- Closed ideals in algebra of continuous complex functions. *Proc. Pakistan Acad. Sci.* 25 (1988), no. 1, 67–72. (R. H. Cox) 89m:46089 46J10 (46J20)
  - Complex homomorphisms of rings of analytic functions. *Proc. Pakistan Acad. Sci.* 25 (1988), no. 2, 177–180. (Joachim Bruna) 89j:46055 46J15 (46J20)
- Khan, E. A.** (with Khan, Z. A.) Integer solution on the concave quadratic programs through simple branching. *Pure Appl. Math. Sci.* 28 (1988), no. 1–2, 43–49. (Summary) 89j:90198 90C20
- Khan, I. A.** see Khan, Irshad Ahmad
- Khan, I. S.** Structure of the limit sets of the trajectories of control systems. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1987, vyp. 4, 104–105, 112. (Summary) 89a:49039 49E15 (58F40, 93A10)
- Khan, Irshad Ahmad** (with Khan, Abdul Hamid) Moments of order statistics from Burr distribution and its characterizations. (Italian summary) *Metron* 45 (1987), no. 1–2, 21–29. (Summary) 89b:62035 62E10 (62G30)
- Khan, J. A.** On an integral transform of two variables. *J. Indian Acad. Math.* 8 (1986), no. 2, 71–77. (L. Debnath) 89a:44010 44A15
- Khan, K. A.** (with Singh, Udai Pratap) Special curves of a hypersurface of a Finsler space from the standpoint of nonlinear connections. *Univ. Nac. Tucumán Rev. Ser. A* 29 (1979), no. 1, 31–36 (1987). (Sándor Bácsó) 89g:53042 53B40
- Projective motion in normal projective symmetric Finsler space. *Univ. Nac. Tucumán Rev. Ser. A* 29 (1979), no. 1, 161–168 (1987). (L. Tamásy) 89m:53044 53B40
- Khan, K. A.** (with Lodhi, R. K.) Isolation of a new class of axially symmetric stationary fields. *Riazi J. Karachi Math. Assoc.* 9 (1987), 29–33. (P. C. Vaidya) 89b:83025 83C15
- Khan, Kh.** see Hahn, Hans Georg
- Khan, Liaquat Ali** Mackey space problem for double centralizer algebras. *Punjab Univ. J. Math. (Lahore)* 20 (1987), 7–12. (Robert S. Doran) 89f:46109 46K05 (46A05, 46L05)
- Fixed point theorems for Mann iterates in metrizable linear topological spaces. *Math. Japon.* 33 (1988), no. 2, 247–251. (S. P. Singh) 89g:47079 47H10
  - On seminorm separability for vector-valued function spaces. *Studia Sci. Math. Hungar.* 24 (1989), no. 1, 43–45. (S. Swaminathan) 89m:46073 46E40
- Khan, M. A.** see Khan, Moharram A.
- Khan, M. Ali** (with Vohra, Rajiv) On approximate decentralization of Pareto optimal allocations in locally convex spaces. *J. Approx. Theory* 52 (1988), no. 2, 149–161. (Diethard Pallaschke) 89h:90045 90A14 (58E17)
- (with Vohra, Rajiv) Pareto optimal allocations of nonconvex economies in locally convex spaces. *Nonlinear Anal.* 12 (1988), no. 9, 943–950. (Erwin Klein) 89i:90032 90A14
- Khan, M. K.** Optimal Bayesian estimation of the median effective dose. *J. Statist. Plann. Inference* 18 (1988), no. 1, 69–81. (Kailash C. Kapur) 89e:62138 62P10 (62C10)
- (with Yazdi, A. A.) On  $D$ -optimal designs for binary data. *J. Statist. Plann. Inference* 18 (1988), no. 1, 83–91. (A. Hedayat) 89d:62066 62K05
- Khan, M. S.** see Khan, Mohd. Saeed
- Khan, M. Zohair** On  $h$ -purity in QTAG-modules. *Comm. Algebra* 16 (1988), no. 12, 2649–2660. (Luigi Salce) 89m:16044 16A33 (20K10)
- (with Bano, R.) On  $h$ -divisible QTAG-module. *Arch. Math. (Basel)* 52 (1989), no. 1, 38–41. (Delmar L. Boyer) 89j:20060 20K99
- Khan, Masood Amjad** Small sample distribution of minimum- $B$  estimate. *Pakistan J. Statist.* 4 (1988), no. 1, 1–6. (Not in MR) 62F10
- Small sample comparison of  $X^2$ ,  $B$ ,  $G$  and  $F$  goodness of fit test. I, II. *Pakistan J. Statist.* 4 (1988), no. 1, 7–19, 21–39. (Not in MR) 62G10
- Khan, Moharram A.** (with Quadri, Murtaza A.; Ashraf, Mohd.) A commutativity theorem for semi-prime rings. *Math. Student* 50 (1982), no. 1–4, 264–267 (1987). (A. Yaqub) 89m:16064 16A70 (16A12)
- (with Quadri, Murtaza A.) A commutativity theorem for left  $s$ -unitary rings. *Bull. Inst. Math. Acad. Sinica* 15 (1987), no. 3, 323–327. (Hazar Abu-Khuzam) 89h:16035 16A70
  - (with Bell, Howard E.; Quadri, Murtaza A.) Two commutativity theorems for rings. (Serbo-Croatian summary) *Rad. Mat.* 3 (1987), no. 2, 255–260. (A. Yaqub) 89e:16046 16A70
  - (with Quadri, Murtaza A.) A commutativity theorem for associative rings. *Math. Japon.* 33 (1988), no. 2, 275–279. (Hazar Abu-Khuzam) 89h:16036 16A70
- Khan, Mohd. Saeed** (with Cho, Yeol Je) Common fixed points of compatible mappings. *Bull. Malaysian Math. Soc. (2)* 10 (1987), no. 1, 9–14. (Livia D'Apuzzo) 89h:54107 54H25 (47H10)
- (with Imdad, M.; Sessa, Salvatore) On some weak conditions of commutativity in common fixed point theorems. *Internat. J. Math. Math. Sci.* 11 (1988), no. 2, 289–296. (Summary) 89k:54105 54H25 (54C60)
  - (with Sessa, Salvatore; Rhoades, B. E.) On common fixed points of compatible mappings in metric and Banach spaces. *Internat. J. Math. Math. Sci.* 11 (1988), no. 2, 375–392. (Summary) 89k:54111 54H25 (47H10)
  - (with Imdad, M.; Sessa, Salvatore) On sequences of contractive mappings and their fixed points. *Internat. J. Math. Math. Sci.* 11 (1988), no. 3, 527–533. (Livia D'Apuzzo) 89f:54083 54H25 (47H10)
  - (with Kubiaczyk, L.) Fixed point theorems for point to set maps. *Math. Japon.* 33 (1988), no. 3, 409–415. (J. Matkowski) 89g:54099 54H25 (54C60)
- najm al-din Khan, Muhammad** see Najm al-Din Khan, Muhammad
- Khan, Naseem A.** (with Jain, Ramesh) Uncertainty management in a distributed knowledge based system. (Russian summary) *Comput. Artificial Intelligence* 7 (1988), no. 6, 543–564. (Not in MR) 68T05 (68T30, 90B50, 90C31)
- Khan, Rasul A.** A note on a Bernstein-type operator of Bleimann, Butzer, and Hahn. *J. Approx. Theory* 53 (1988), no. 3, 295–303. (P. L. Butzer) 89j:41033 41A35 (41A25)
- Khan, Z. A.** (with Sakaguchi, Minoru) A multiobjective stochastic shortest-route problem. *Math. Japon.* 33 (1988), no. 3, 417–423. (Summary) 89h:90094 90B15 (90C35, 90C39)
- (with Khan, E. A.) Integer solution on the concave quadratic programs through simple branching. *Pure Appl. Math. Sci.* 28 (1988), no. 1–2, 43–49. (Summary) 89j:90198 90C20
- Khandekar, D. C.** (with Wiegand, F. W.) Distribution of the area enclosed by a plane random walk. *J. Phys. A* 21 (1988), no. 10, L563–L566. (Cheng Xun Wu) 89j:62052 62A51 (60J15, 62A41)
- (with Bhagwat, K. V.; Wiegand, F. W.) On a path integral with a topological constraint. *Phys. Lett. A* 127 (1988), no. 8–9, 379–382. (Summary) 89a:81031 81C35
- phan quốc Khánh** see Phan Quốc Khánh
- Khánh, P. Q.** see Phan Quốc Khánh
- Khaniev, T. A.** Distribution of an additive functional of a semi-Markov walk process with two delaying screens and dependent components. (Russian) *Asymptotic problems in the theory of random processes* (Russian), 97–101, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev, 1987*. (O. K. Zakusilo) 89k:60128 60K15 (60J15)
- Khamin, A. G.** (with Turbin, A. F.) Asymptotic properties of  $S$ -statistics. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1987, no. 11, 14–17, 83. (M. Husková) 89f:62067 62G05
- Khamin, K. M.** (with Sinal, Ya. G.; Shchur, L. N.) A new approach to the construction of fixed points of the renormalization group in dynamical systems. (Russian. English summary) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* 29 (1986), no. 9, 1061–1066. (Summary) 89a:58074 58F13 (58F08)
- (with Gol'berg, A. I.; Gurvich, V. A.; Rozenblyum, M. Yu.) Conditions for dominance solvability of concave  $n$ -person games. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 2(254), 223–224. (Introduction) 89b:90238 90D10
- Khanna, F. C.** see Institute: Theoretical Physics, 89b:81005 and 89b:81006
- Khanna, I. K.** (with Yadava, Krishna) A generalized polynomial set of several variables. *Math. Soc.* 1 (1985), 111–118 (1986). (Harold Eaton) 89h:33004 33A30
- (with Yadava, Krishna) A linear generating relation for  $R_n^*(\{x_n\}, y)$  and its applications. *Math. Soc.* 1 (1985), 137–146 (1986). (K. C. Gupta) 89e:33024 33A70 (33A30)
  - (with Yadava, Krishna) Addition and multiplication theorems. *Math. Soc.* 2 (1986), 145–150 (1987). (S. L. Kalla) 89f:33018 33A65
  - (with Yadava, Krishna) On a polynomial set defined by a multiple hypergeometric series. *Math. Soc.* 2 (1986), 195–207 (1987). (K. C. Gupta) 89e:33025 33A70 (33A30)
  - (with Yadava, Krishna) Characterization and asymptotic behaviour for the generalized polynomial. *Pure Math. Manuscript* 5 (1986), 13–19. (B. D. Agrawal) 89h:33017 33A70
- Khanna, Saroj** (with Verma, Vanita; Puri, M. C.) "Bad-points" in linear fractional program: a comparative study. *Cahiers Centre Études Rech. Opér.* 29 (1987), no. 1–2, 123–131. (Summary) 89a:90150 90C32
- Khapaev, A. M.** (with Ternov, I. M.; Ponomarev, I. V.) On some solutions of relativistic wave equations. (German summary) *Ann. Physik* (7) 45 (1988), no. 4, 278–284. (Piero de



- Mottoni) **89i:81056** 81D25 (35L05, 81G10)
- (with Ponomarev, I. V.) On the variational method for solving the problem of electron-wave interaction. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 10, 1828–1831, 1840. (Summary) **89j:81250** 81G10
- Khapaev, Mikhail Mikhailovich** (with Mal'kov, K. V.) Some methods in perturbation theory connected with averaging. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 10, 1693–1704, 1835. (S. D. Milusheva) **89c:34043** 34C29 (34D20, 92A09)
- ★ Асимптотические методы и устойчивость в теории нелинейных колебаний. (Russian) [Asymptotic methods and stability in the theory of nonlinear oscillations] "Vyssh. Shkola", Moscow, 1988. 184 pp. ISBN 5-06-001276-X (A. Halanay) **89g:34047** 34C15 (34-02, 34C29, 34D20, 34F05, 70F07, 70K20, 70L05)
- (with Osipov, S. G.; Ternovskii, V. V.) Properties of the solution of a nonlinear variational problem. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1274–1276, 1288. (Not in MR) **89A:21** (78A)
- (with Filatov, O. P.) Stability of differential inclusions with multivalued perturbations. (Russian) *Mat. Zametki* **43** (1988), no. 3, 346–355, 429; translation in *Math. Notes* **43** (1988), no. 3–4, 199–204. (Pavel Krbeć) **89d:34082** 34D10 (34A60)
- (with Mal'kov, K. V.) On the suppression of soliton-like solutions of shallow water equations by the outstripping resistance. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 5, 1052–1059; translation in *Soviet Math. Dokl.* **37** (1988), no. 3, 777–783. (B. G. Konopelchenko) **89h:35307** 35Q20 (76B25)
- Khapaev, A. P.** (with Rudnitskii, A. S.) Exact solution of wave equation in a tetrahedron with impedance boundary conditions. *Soviet J. Comm. Tech. Electron.* **33** (1988), no. 2, 177–179; translated from *Radiotekhn. i Elektron.* **32** (1987), no. 10, 2207–2209 (Russian). (From the text) **89j:76078** 76Q05 (78A25)
- Khapho, R. S.** (with Lyudkevich, I. V.) Numerical solution of the Neumann problem for the Helmholtz equation in the case of nonclosed surfaces by the method of integral equations. (Russian. English summary) *Teoret. Elektrotekh.* No. 39 (1985), 27–31, 136. (Not in MR) **65N99**
- Kharadze, A. K.** see *Mandzhavidze, G. F.*, **89h:01054**
- al-Kharafi, A. A.** see *Al-Kharafi, A. A.*
- Kharaghani, H.** Construction of orthogonal designs. II. *Ars Combin.* **25** (1988), 59–64. (Navin Madhavprasad Singh) **89j:05019** 05B05 (05B30)
- The convolution of Radon measures. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1189–1191. (James C. S. Wong) **89b:43002** 43A05 (22A20)
- Kharalanova, E. A.** (with Madzharov, N. E.) An adaptive aperiodic regulator. (Bulgarian. English and Russian summaries) *Automat. Izchisl. Tekhn. Avtomat. Sistemi* **1988**, no. 4, 2, 3, 4, 5–10. (Not in MR) **93B50**
- Kharatishvili, G. L.** (with Tadamadze, T. A.; Avalishvili, N. M.) Differentiable mappings in optimal problems with delays. (Russian) *Current problems in mathematical physics, Vol. I* (Russian) (Tbilisi, 1987), 394–398, 496, Tbilis. Gos. Univ., Tbilisi, 1987. (see **89j:00030**) **34K35** (49A51)
- (with Tadamadze, T. A.) Optimal problems with delays and with nonfixed initial moment. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* **129** (1988), no. 3, 473–476. (Not in MR) **49B10** (34K35)
- Revaz Valerianovich Gamkrelidze (on the occasion of his sixtieth birthday). (Russian) *Tbilis. Gos. Univ. Inst. Prikl. Mat. Trudy* **27** (1988), 5–8. (Editors) **89h:01069** 01A70
- Kharatishvili, A. B.** (with Buldygin, V. V.) ★ Неравенство Брунна-Минковского и его приложения. (Russian) [The Brunn-Minkowski inequality and its applications] "Naukova Dumka", Kiev, 1985. 200 pp. (Yu. A. Brudnyi) **89b:52019** 52A40 (28A75, 60G15)
- Some properties of isodyne topological spaces. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* **127** (1987), no. 2, 261–264. (P. A. Biryukov) **89f:54008** 54A25 (04A30)
- Borel mappings of metric spaces. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* **127** (1987), no. 3, 485–488. (Zbigniew Grande) **89c:48057** 54E50 (28A05, 54C50, 54H05)
- Some properties of Jordan curves. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* **129** (1988), no. 1, 29–32. (V. M. Kharlamov) **89i:52004** 52A15
- On perfect probability spaces. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* **131** (1988), no. 1, 37–40. (Rastislav Potocký) **89m:60007** 60A10
- e-shifts and realizations of abstract graphs. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* **131** (1988), no. 2, 265–268. (B. Zelinka) **89k:05033** 05C10
- Kharbouch, M.** (with Gawthrop, P. J.) Two-loop self-tuning cascade control. *Proc. IEE-D* **135** (1988), no. 4, 232–238. (Not in MR) **93A20** (93B35, 93C40)
- Kharchenko, V. K.** (with Bokut', L. A.; L'vov, I. V.) Noncommutative rings. (Russian) *Current problems in mathematics. Fundamental directions, Vol. 18* (Russian), 5–116, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform.*, Moscow, 1988. (J. S. Joel) **89j:16001** 16-02
- Khare, Avinash** (with Paul, Samir K.) Erratum: "Charged vortices in an abelian Higgs model with Chern-Simons term" [Phys. Lett. B **174** (1986), no. 4, 420–422; MR **87j:81269a**]. *Phys. Lett. B* **182** (1986), no. 3–4, 415. (Editors) **89b:81243** 81G10 (81E13)
- (with Kumar, C. Nagraj) Q-ball solutions in 1 + 1 dimensions for a class of  $SO(2)$ -invariant potentials. *J. Phys. A* **20** (1987), no. 18, L1219–L1222. (Yisong Yang) **89b:81132** 81E13 (35Q20)
- (with Dabrowska, J. W.; Sukhatme, Uday P.) Explicit wavefunctions for shape-invariant potentials by operator techniques. *J. Phys. A* **21** (1988), no. 4, L195–L200. (Henryk Arodz) **89j:81024** 81C05 (34C15, 81F05)
- (with Sukhatme, Uday P.) Scattering amplitudes for supersymmetric shape-invariant potentials by operator methods. *J. Phys. A* **21** (1988), no. 9, L501–L508. (Asao Arai) **89m:81185** 81F99 (81C05)
- Khare, B. B.** Allocation in stratified sampling in presence of nonresponse. (Italian summary) *Metron* **45** (1987), no. 1–2, 213–221. (Not in MR) **62D05**
- Khare, S. S.** (with Choudhury, F. P.; Chakraborty, A. B.) A note on fuzzy subgroups and fuzzy homomorphism. *J. Math. Anal. Appl.* **131** (1988), no. 2, 537–553. (Prabir Bhattacharya) **89m:20086** 20N99 (03E72)
- Khare, Satgur Prasad** On the integral solution of  $\sum_{j=1}^n (x+j)^2 = y^2$ . *Indian J. Math.* **30** (1988), no. 3, 219–225. (David Lee Hilliker) **89i:11035** 11D09
- Khare, Satya Prakash** On the  $(N, p_n^2)$  summability of Jacobi series. *Proc. Nat. Acad. Sci. India Sect. A* **56** (1986), no. 3, 234–241. (B. P. Mishra) **89a:40007** 40G05
- (with Tripathi, Surendra Kumar) Logarithmic summability of ultraspherical series. (Hindi. English summary) *Vijnana Parishad Anusandhan Patrika* **29** (1986), no. 3, 177–181. (Shri Nivas Bhatt) **89c:42031** 42C10 (33A45)
- (with Singh, Peetam) Summability of Fourier series and its conjugate series. *Utilitas Math.* **33** (1988), 217–224. (S. Izumi) **89g:42015** 42A24
- Khargonekar, Pramod P.** (with Poola, K. R.; Kamen, Edward W.) Polynomial and stable-proper factorizations of transfer-function matrices for linear time-varying systems. *Frequency domain and state space methods for linear systems* (Stockholm, 1985), 59–72, North-Holland, Amsterdam-New York, 1986. (Zbigniew Nahorski) **89d:93020** 93B15 (93B25, 93C05, 93C50, 93C55)
- (with Poola, K. R.; Tannenbaum, Allen) Periodic controllers for robust control of linear time-invariant plants. *Modelling, identification and robust control* (Stockholm, 1985), 137–145, North-Holland, Amsterdam-New York, 1986. (Cheng Zhi Li) **89i:93048** 93B50 (49D50, 93B35, 93D15)
- (with Petersen, Ian R.; Rotea, Mario A.)  $H_\infty$ -optimal control with state-feedback. *IEEE Trans. Automat. Control* **33** (1988), no. 8, 786–788. (Not in MR) **93B35** (93B50)
- (with Rotea, Mario A.) Stabilizability of linear time-varying and uncertain linear systems. *IEEE Trans. Automat. Control* **33** (1988), no. 9, 884–887. (P. C. Parks) **89j:93092** 93D15 (15A23, 93C05)
- (with Lenz, Kathryn E.; Doyle, John C.) When is a controller  $H^\infty$ -optimal? *Math. Control Signals Systems* **1** (1988), no. 2, 107–122. (Summary) **89b:93053** 93B35 (93B50)
- (with Zhou, Kemin) Robust stabilization of linear systems with norm-bounded time-varying uncertainty. *Systems Control Lett.* **10** (1988), no. 1, 17–20. (Jer-Guang Hsieh) **89c:93061** 93D15 (93C05, 93C40)
- (with Zhou, Kemin) An algebraic Riccati equation approach to  $H^\infty$  optimization. *Systems Control Lett.* **11** (1988), no. 2, 85–91. (Summary) **89c:93056** 93B25 (93B28, 93B35, 93D15)
- see also *Ortega, Romeo*, (Not in MR)
- Kharibegashvili, S. S.** A characteristic problem for second-order degenerate hyperbolic systems. (Russian) *Current problems in mathematical physics, Vol. I* (Russian) (Tbilisi, 1987), 399–403, 496, Tbilis. Gos. Univ., Tbilisi, 1987. (see **89j:00030**) **35L80**
- Solvability of a boundary value problem for second-order hyperbolic equations. (Russian. English and Georgian summaries) *Tbilis. Gos. Univ. Inst. Prikl. Mat. Trudy* **19** (1987), 122–173, 208–209. (V. Duriković) **89b:35181** 35L20 (35A07)
- Kharin, Yu. S.** (with Mel'nikova, E. N.) Classification of a series of multidimensional observations by the random length of the series. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1988**, no. 2, 43–48, 81. (Ilya S. Molchanov) **89h:93052** 93E12 (62H30)
- Khariton, N. G.** (with Svetovoi, V. B.) A gauge theory in a space with nontrivial topology. *Soviet J. Nuclear Phys.* **48** (1988), no. 1, 177–180; translated from *Nadernaya Fiz.* **48** (1988), no. 1, 280–286 (Russian). (Summary) **89j:81145** 81E20 (81E13)
- Kharitonov, V. L.** (with Sokolova, E. Yu.) Positive definiteness of the solutions of linear matrix equations. (Russian) *Analysis and synthesis of control systems* (Russian), 145–150, 183, *Voprosy Mekh. Protsess. Upravl.*, 10, Leningrad. Univ., Leningrad, 1987. (Summary) **89i:15004** 15A06 (93B25)
- Kharitonova, M. O.** The development of the mathematical theory of diffraction by G. Stokes. (Russian) *Ocherki Ist. Estestvozn. Tekhn.* No. 34 (1988), 26–29, 102. (Summary) **89j:01041** 01A55
- Kharitonovskii, A. M.** (with Samoilenko, Yu. S.) Representation of the relations  $AB = B\varphi(A)$  by bounded selfadjoint operators. (Russian) *Application of methods of functional analysis in problems of mathematical physics* (Russian), 53–61, ii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Wacław Szymański) **89f:47036** 47B25 (47A45)
- Kharkevich, A. D.** see *Models and investigation methods in systems in information science*, **89m:94001**
- Khar'halis, N. R.** (with Nebola, I. I.) A superspace-group examination of the dynamics of a lattice of complex crystals. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (*Jarmala*, 1985), 643–650, "Nauka", Moscow, 1986. (see **89d:81001**) **82A60**
- Khar'kov, V. S.** (with Podgaets, R. M.; Kalashnikov, Yu. V.) Investigation of the loaded-deformed state of a tetrahedral pyramidal shell. (Russian) *Boundary value problems* (Russian), 109–113, 160–161, *Perm. Politekh. Inst., Perm*, 1984. (see **89b:00008**) **73K25**
- Kharlamov, B. P.** A time change relating continuous semi-Markov and Markov processes. *Probability theory and mathematical statistics* (Kyoto, 1986), 111–123, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (F. B. Knight) **89d:60130** 60J25 (60K15)
- Kharlamov, M. P.** ★ Топологический анализ интегрируемых задач динамики твердого тела. (Russian) [Topological analysis of integrable problems of rigid body dynamics] *Leningrad. Univ., Leningrad*, 1988. 200 pp. ISBN 5-288-00284-3 (Alois Klit) **89i:58036** 58F05 (58F07, 70E15, 70G35)
- Kharlamov, P. V.** The concept of force in Newton's mechanics. (Russian) *Mekh. Tverd. Tela* No. 20 (1988), 46–67, 112. (Peeter Müürsepp) **89i:01036** 01A50 (70-03)
- Kharlamov, V. M.** Surfaces non amphichérales de degré 4 dans  $RP^3$ . [Nonamphicheiral surfaces of degree 4 in  $RP^3$ ] *Séminaire sur la géométrie algébrique réelle, Tome I, II*, 67–72, *Publ. Math. Univ. Paris VII*, 24, Univ. Paris VII, Paris, 1986. (A. Tognoli) **89f:57044** 57R52 (14G30)
- Nonamphicheiral surfaces of degree 4 in  $RP^3$ . *Topology and geometry—Rohlin Seminar*, 349–356, *Lecture Notes in Math.*, 1346, Springer, Berlin-New York, 1988. (Robert Silhol) **89j:14014** 14G30 (14F45, 57N37)
- Kharlamova, E. I.** (with Mozalevskaya, G. V.) ★ Интегро-дифференциальное уравнение динамики твёрдого тела. (Russian) [An integro-differential equation for the dynamics of a rigid body] "Naukova Dumka", Kiev, 1986. 296 pp. (Gh. Silas) **89a:70007** 70E05 (70E15)
- (with Stepanova, L. A.) On the isomorphism of some classical problems of the dynamics of a rigid body and on attempts at constructing new solutions by a change of variables. (Russian) *Mekh. Tverd. Tela* No. 20 (1988), 1–13, 111. (Summary) **89f:70005** 70E15
- (with Mozalevskaya, G. V.) Significance of S. V. Kovalevskaya's work for the development of research in the dynamics of a rigid body. (Russian) *Ocherki Ist. Estestvozn. Tekhn.* No. 34 (1988), 38–46, 102. (Summary) **89j:01042** 01A55

- Kharlamova, V. I.** Finite groups with  $\pi$ -subnormal subgroups. (Russian) *Problems in algebra*, No. 3 (Russian), 67–73, 127, "Universitet'skoe", Minsk, 1987. (Gerhard Pazderski) **89k:20030** 20D10 (20D30)
- Kharlampovich, O. G.** The word problem for subvarieties of the variety  $\mathfrak{A}_2$ . (Russian) *Algebra i Logika* **26** (1987), no. 4, 481–501, 526. (O. V. Belegredsk) **89m:20036** 20F10 (20E10)
- Kharmer, A. A.** (with Mart'yanov, V. I.; Yakovlev, N. P.) Realization of proof schemes in the method of invariant transformations. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 3, 79–83, 133; translation in *Cybernetics* **24** (1988), no. 3, 368–374. (Neculai Curteanu) **89j:68135** 68T15 (03B35, 68Q60, 68T25)
- Mokhtar-Kharroubi, Mustapha** see **Mokhtar-Kharroubi, Mustapha**
- Kharshiladze, A. F.** (with Muranov, Yu. V.) Obstructions to splitting along one-sided submanifolds. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 4, 25–30, 124. (A. A. Ranicki) **89k:57067** 57R67 (19G24)
- Khar'ybin, N. I.** (with Baranov, V. V.; Podtyskin, N. S.) Optimal decision methods in controllable Markov systems with a nonobservable state. (Russian) *Vestnik Khar'kov. Gos. Univ.* No. 298 *Mat. Mekh. i Voprosy Upravl.* (1987), 49–52. (Ryszard Gessing) **89d:93115** 93E20 (90C40, 93C30, 93C40, 93C55)
- Khasanov, A. Yu.** (with Akhmetgaleev, I. L.) A method of almost Euler matrices for determining the first integrals of nonlinear systems. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems (Irkutsk, 1985)* (Russian), 92–98, 324, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (see **89c:00040**) 34A10 (34A34)
- Khasanov, S. V.** Correspondence of boundaries under biholomorphic mappings in  $\mathbb{C}^n$ . (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 3, 156–162, 222; translation in *Siberian Math. J.* **29** (1988), no. 3, 462–467. (J. T. Davidov) **89m:32046** 32H99 (32D15)
- (with Pinchuk, S. L.) Asymptotically holomorphic functions and their applications. (Russian) *Mat. Sb. (N.S.)* **134**(176) (1987), no. 4, 546–555, 576; translation in *Math. USSR-Sb.* **62** (1989), no. 2, 541–550. (M. Klimek) **89f:32009** 32A40
- Khasenov, K. A.** Solution of a class of  $n$ th-order linear differential equations. (Russian) *Some problems in functional analysis, differential equations and their applications* (Russian), 90–98, 112–113, Kazakh. Gos. Univ., Alma-Ata, 1985. (see **89a:00016**) 34A30
- Khashimov, Sh. A.** (with Muminov, M. S.) The limit distribution of maximal deviations of spline-estimates of a probability density. (Russian) *Probability distributions and mathematical statistics (Russian) (Fergana, 1983)*, 447–467, 500, "Fan", Tashkent, 1986. (Summary) **89h:62061** 62G05
- Asymptotic properties of statistical kernel estimates for densities of distributions. (Russian) *Asymptotic methods in mathematical statistics (Russian)*, 134–140, 161, "Fan", Tashkent, 1987. (W. Greblicki) **89a:62098** 62G05
- Limit distribution of integral statistics that are connected with nonparametric estimates of a probability distribution and a regression curve. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 6, 27–32, 74. (M. Hušková) **89h:62062** 62G05 (62E20)
- Limit theorems for distributions of generalized von Mises functionals. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 3, 607–612. (Slobodanka Janković) **89k:60028** 60F05 (62E20)
- Limit distribution of a two-sample von Mises functional with variable kernel. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 1, 192–196; translation in *Theory Probab. Appl.* **33** (1988), no. 1, 179–182. (Paul Deheuvels) **89e:62021** 62E20 (60F05, 62G10)
- Khashimov, Zh.** (with Badalov, F. B.) ★ Решение неоднородных и нелинейных краевых задач теории пластин и оболочек методом сведения к задачам Коши. (Russian) [Solution of nonhomogeneous and nonlinear boundary value problems in the theory of plates and shells by the method of reduction to Cauchy problems] "Fan", Tashkent, 1988. 124 pp. ISBN 5-648-00001-4 (Vadim Komkov) **89k:73044** 73K10 (73-08, 73F99, 73K05, 73K15, 73K40, 73L99)
- Khasin, L. S.** (with Krichevskii, R. E.) Construction of universal numerators and formulas for threshold functions. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 5, 143–152, 239; translation in *Siberian Math. J.* **29** (1988), no. 5, 801–808. (Juraj Hromkovič) **89m:94023** 94C05 (03G05, 06E30)
- Khas'minskii, R. Z.** (with Nevel'son, M. B.) On the parameter estimation for the linear regression. *Goodness-of-fit (Debrecen, 1984)*, 237–264, *Colloq. Math. Soc. János Bolyai*, 45, North-Holland, Amsterdam-New York, 1987. (A. Ya. Dorogovtsev) **89e:62081** 62J05 (62M09)
- (with Pastukhova, Yu. I.) Nonparametric estimates for a linear functional of a regression under a given observation plan. (Russian) *Problemy Peredachi Informatsii* **24** (1988), no. 3, 55–65; translation in *Problems Inform. Transmission* **24** (1988), no. 3, 215–223. (Sándor Csörgő) **89m:62062** 62J02 (62G20)
- Controllable Markov processes and optimization of random multiple access algorithms. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 5, 1057–1060; translation in *Soviet Math. Dokl.* **38** (1989), no. 1, 184–187. (Zbigniew Nahorski) **89j:93147** 93E25 (94A40)
- Khatchaturov, V.** (with Hoang Tuy; Utkin, S. L.) A class of exhaustive cone splitting procedures in conical algorithms for concave minimization. *Optimization* **18** (1987), no. 6, 791–807. (Kaj Madsen) **89e:65062** 65K05 (90C25)
- Khater, A. H.** (with El Sheikh, M. G.; Callebaut, Dirk K.) A class of semi-analytical solutions for a rotating toroidal plasma. *Astrophys. and Space Sci.* **145** (1988), no. 2, 277–286. (R. K. Jain) **89i:76102** 76X05 (76U05)
- Khatlashvili, G. M.** Solution in displacements of problems on the deformation of loaded cylinders with anisotropy plane. (Russian) *Trudy Inst. Vychisl. Mat. Akad. Nauk Gruzin. SSR* **26** (1986), no. 1, 242–254. (Introduction) **89a:73011** 73C30
- Khatlashvili, N. G.** A system of singular integral equations. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **19** (1987), 174–185, 209. (J. Švejška) **89d:45007** 45E05 (31A25)
- Khatri, C. G.** (with Talwalkar, Sheela) On the solutions of two generalized Cauchy functional equations. (Italian summary) *Metron* **44** (1986), no. 1–4, 163–178. (Z. Govindarajulu) **89b:62037** 62E10 (39B20, 62E15)
- Quadratic forms to have a specified distribution. *Advances in multivariate statistical analysis*, 161–190, *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (B. K. Shah) **89d:62043** 62H10
- (with Rao, Calyampuli Radhakrishna) Test for a specified signal when the noise covariance matrix is unknown. *J. Multivariate Anal.* **22** (1987), no. 2, 177–188. (Summary) **89k:62074** 62H15 (62F03, 94A12)
- (with Bhavsar, C. D.) Probability models on scale invariant functions for a complex random vector. *J. Ramanujan Math. Soc.* **2** (1987), no. 2, 145–164. (Yasunori Fujikoshi) **89k:62073** 62H12
- Estimation of the location parameters. *Probab. Math. Statist.* **8** (1987), 17–25. (Khurshed Alam) **89e:62011** 62C12 (62H12, 62J05)
- (with Mukerjee, Rahul) Erratum: "Characterization of normality within the class of elliptical contoured distributions" [Statist. Probab. Lett. **5** (1987), no. 3, 187–190; MR **88c:62086**]. *Statist. Probab. Lett.* **7** (1988), no. 3, 265. (Editors) **89m:62049** 62H05
- Khatskevich, V. L.** (with Perov, A. I.) Regularity classes of bilinear forms, and nonlinear elliptic boundary value problems. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 3, 464–476, 548; translation in *Differential Equations* **24** (1988), no. 3, 330–339. (Pavel Drábek) **89h:35054** 35B65 (35J65)
- Khatun, M.** (with Barry, J. H.; Tanaka, Tomoyasu) Exact solutions for Ising-model even-number correlations on planar lattices. *Phys. Rev. B* **37** (1988), no. 10, part A, 5193–5204. (H. N. V. Temperley) **89h:82102** 82A68
- Khanes, F.** see **Howes, Frederick A.**
- Khavarin, Mohammad** (with Lakshmikantham, V.) The method of mixed monotony and second order boundary value problems. *Nonlinear analysis and applications (Arlington, Tex., 1986)*, 273–278, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (C. N. Kaul) **89f:34027** 34B15 (34A45, 65L10)
- The method of mixed monotony and second-order integro-differential systems. *Appl. Anal.* **28** (1988), no. 3, 199–206. (M. Tvrdý) **89i:45013** 45J05 (34B15)
- Khavin, V. P.** (with Aleksandrov, A. D.; Vershik, A. M.; Ivanov, Vladimir Veniaminovich; Kusraev, A. G.; Kutateladze, S. S.; Makarov, B. M.; Reshetnyak, Yu. G.) Gleb Pavlovich Akilov. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 1(259), 181–182; translation in *Russian Math. Surveys* **43** (1988), no. 1, 221–223. (Editors) **89b:01031** 01A70
- (with Vinogradov, S. A.; Vladimirov, D. A.; Gavurin, M. K.; Ermakov, S. M.; Makarov, B. M.; Natanson, G. I.; Solomyak, M. Z.; Faddeev, D. K.) Grigorii Mikhailovich Fikhtengol'ts (on the 100th anniversary of his birth). (Russian) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1988**, vyp. 3, 3–6. (Editors) **89m:01112** 01A70
- Khavinson, Dmitry** On uniform approximation by harmonic functions. *Michigan Math. J.* **34** (1987), no. 3, 465–473. (Daniel H. Luecking) **89a:41026** 41A30 (31B15)
- Khavinson, S. Ya.** see **Gonchar, A. A. et al.** **89i:01078**
- Khavronina, M. A.** (with Bordetskii, A. B.) The use of automatic classification algorithms for adjusting parameters of an interactive procedure for finding extrema. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 2, 178–181; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 4, 208–211, 224 (Russian). (Not in MR) 90C31
- Khazanov, A. M.** (with Koganov, G. A.; Gordov, E. P.) Time-dependent projection operator used for separating subsystem variables and its application in laser theory. *Phys. Lett. A* **133** (1988), no. 1–2, 7–10. (Robert Alicki) **89k:82045** 82A35 (81K05)
- Khazanov, M. V.** A method for the numerical solution of one-dimensional equations of the hydrodynamics of a two-phase gas-liquid mixture. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 5, 730–740, 783. (Corneliu Berbente) **89i:65087** 65M05 (76-08, 76T05)
- On the solution of equations of the dynamics of a fluid when external oscillations are imposed on the channel wall. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **29** (1989), no. 1, 132–135, 159. (Not in MR) 76-08 (76T05)
- Khazanov, V. B.** Application of a method of simultaneous iterations for  $\lambda$ -matrices. (Russian) *Computational methods in linear algebra (Russian) (Moscow, 1982)*, 219–232, *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1983. (O. Pokorná) **89a:65061** 65F15
- (with Kublanovskaya, V. N.) Deflation in spectral problems for matrix pencils. (Russian) *Computational processes and systems, No. 5 (Russian)*, 138–147, "Nauka", Moscow, 1987. (J. Segethová) **89c:65048** 65F15 (65H99)
- Kha Zai Bang** see **Ha Duy Bang**
- Khechyan, G. A.** On the theory of complex inversions of transforms of convolution type. (Russian. Armenian summary) *Mathematics*, No. 5 (Russian), 172–188, *Erevan. Univ., Erevan*, 1986. (R. P. Boas, Jr.) **89a:44013** 44A35
- Khdeir, Ahmed A.** (with Nayfeh, Ali Hasan) Rolling of ships in large-amplitude waves. *Dynamical systems approaches to nonlinear problems in systems and circuits (Henniker, NH, 1986)*, 290–303, *SIAM, Philadelphia, PA*, 1988. (Summary) **89f:70033** 70K40 (34A45, 70K05, 70K10, 70K50, 76B99)
- Khedr, F. H.** On functions with pairwise  $\theta$ -closed graphs. (Arabic summary) *Bull. Fac. Sci. Assiut Univ.* **13** (1984), no. 2, 103–107. (S. A. Naimpally) **89g:54029** 54C10
- (with Mashhour, A. S.; Zeyada, F. M.) On fuzzy S-closed spaces and fuzzy almost-compact spaces. (Arabic summary) *Bull. Fac. Sci. Assiut Univ.* **15** (1986), no. 1, 137–146. (Run Sheng Yang) **89e:54010** 54A40 (03E72)
- Properties of pairwise S-closed spaces. (Arabic summary) *Bull. Fac. Sci. Assiut Univ.* **15** (1986), no. 1, 167–173. (R. M. Stephenson, Jr.) **89c:54042** 54D10 (54E55)
- Kheifets, A. Ya.** The Parseval equality in an abstract problem of interpolation, and the union of open systems. I. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* **49** (1988), 112–120, 126. (L. Rodman) **89k:47015** 47A45 (30E05, 42C99)
- Kheifets, A. I.** A case of the Riemann boundary value problem with infinite index. (Russian) *Izv. Severo-Kavkaz. Nauchn. Tsentra Vyssh. Shkoly Estestv. Nauk.* **1987**, no. 2, 40–44, 141. (P. Yu. Alekna) **89e:30071** 30E25
- Kheliou, M.** The matricant of the multigroup system of  $P_N$  equations in the slab periodic reactor lattice. (Czech summary) *Sb. Vysoké. Učení Tech. v Brně* **1985**, no. 1–4, 23–26. (M. Dráganu) **89k:82114** 82A75
- Khein, R. M.** see **Hain, Richard M.**
- Kheisn, V. E.** (with Katkovnik, V. Ya.) Adaptive control of a static essentially nonstationary object. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 4, 85–96; translation in *Automat. Remote Control* **49** (1988), no. 4, part 2, 465–474. (Benjamin Goldys) **89e:93140** 93C40 (93C55, 93E20)
- Khe Kan Cher** The singular Cauchy problem for equations of hyperbolic type that degenerate inside the domain and on the initial surface. (Russian) *Qualitative analysis of solutions of partial differential equations (Russian)*, 110–125, 141–142, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Mat., Novosibirsk*, 1985. (From the introduction) **89a:35141** 35L80
- On the singular Cauchy problem for an equation with the Euler-Poisson-Darboux multiple differential operator. (Russian) *Dinamika Sploshn. Sredy* **79** (1987), 118–128, 158–159. (Summary) **89f:35162** 35Q05
- Kheladze, Sh. V.** On the divergence of multiple Fourier series on a given set of zero measure. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruzin. SSR* **82** (1986),



- 142-146. (M. D'yachenko (translated from RZhMat 1987:1 B95)) **89a:42021** 42B05
- Divergence of Fourier series in general multiplicative systems. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruz. SSR* **86** (1987), 86-100. (W. R. Wade) **89a:42037** 42C10
- Khegason, S.** see **Khegason, Sigurdur**
- Khemasim, M.** (with Feschiev, I.) Upper bounds on the best approximations by trigonometric polynomials on the classes  $W^r H^m$  in the space  $L$ . (Russian. English and Bulgarian summaries) *Plodiv. Univ. Nauchn. Trud.* **22** (1984), no. 2, 105-123 (1986). (Summary) **89i:42004** 42A10
- Khikhe Khen Ir** see **Chkhikhe Khen Ir**
- Khenkin, G. M.** (with Novikov, R. G.) The  $\bar{\partial}$ -equation in the multidimensional inverse scattering problem. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 3(255), 93-152, 255. (Roman Dwilewicz) **89d:35043** 35J10 (32F20, 35N15, 35P25, 35Q20, 58G25)
- (with Novikov, R. G.) A multidimensional inverse problem in quantum and acoustic scattering. *Inverse Problems* **4** (1988), no. 1, 103-121. (A. G. Ramm) **89i:35129** 35R30 (35J10, 35P25, 76Q05, 81F20)
- see also **Several complex variables**, **89m:32002**
- Khentov, A. A.** Stability of lunar rotation by Cassini's laws. *Soviet Astronom.* **31** (1987), no. 5, 577-581 (1988); translated from *Astronom. Zh.* **64** (1987), no. 5, 1105-1113 (Russian). (Summary) **89c:70019** 70F15
- Kher, Lav Kumar** (with Sorooshian, Soroosh) A predictive demand model for systems planning, using noisy realization theory. *Automatica—J. IFAC* **24** (1988), no. 5, 671-676. (Summary) **89j:93129** 93E12 (90A30, 90B30, 93B15)
- Kh  rmander, L.** see **H  rmander, Lars**
- Khervig, Khelge** The mathematization of physical theories: problems of the rational in the epistemology of the natural sciences. (Russian) *Vestnik Akad. Nauk Kazakh. SSR* **1988**, no. 5, 41-46. (Not in MR) 00A25
- Khesin, B. A.** (with Ovsienko, V. Yu.) The super Korteweg-de Vries equation as an Euler equation. (Russian) *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 4, 81-82. (Woodford W. Zachary) **89g:58095** 58F07 (17A70, 35Q20)
- Homogeneous vector fields and the Whitney umbrellas. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 5(257), 217-218. (I. R. Porteous) **89h:58025** 58C27 (57R25)
- Kheyfets, Arkady** (with LaFave, Norman Joseph; Miller, Warner A.) Quantum insights from null-strut geometrodynamics. Loyola Conference on Mathematical and Interpretational Problems in Relativistic Quantum Theory (New Orleans, 1987). *Internat. J. Theoret. Phys.* **27** (1988), no. 2, 133-158. (Ruth M. Williams) **89j:83042** 83C45 (83C27, 83C60)
- (with Norris, Larry K.)  $P(4)$  affine and super-Hamiltonian formulations of charged particle dynamics. Loyola Conference on Mathematical and Interpretational Problems in Relativistic Quantum Theory (New Orleans, 1987). *Internat. J. Theoret. Phys.* **27** (1988), no. 2, 159-182. (Hans P. K  nzle) **89m:53136** 53C80 (58F05, 78A25)
- (with Miller, Warner A.; Wheeler, John A.) Null-strut calculus: the first test. *Phys. Rev. Lett.* **61** (1988), no. 18, 2042-2045. (Ruth M. Williams) **89m:83067** 83C99 (83C27)
- Khilnik, A. I.** (with Sedov, V. Yu.; Yakobson, M. V.) Feigenbaum universality and multipliers of  $2^n$ -cycles for multidimensional systems. (Russian. English summary) *Conference "Renormalization Group—86"* (Russian) (Dubna, 1986), 266-279, 399, 408-409, Joint Inst. Nuclear Res., Dubna, 1987. (Alois Kili) **89k:58146** 58F08 (58F14)
- Khilnir, Yu. E.** The one-sided elastoplastic bending of a rigidly fixed plate. (Russian) *Qualitative and approximate methods for investigating operator equations* (Russian), 57-62, 143, Yaroslavl. Gos. Univ., Yaroslavl, 1986. (Summary) **89a:73040** 73K10 (73E99)
- Khilenko, V. V.** Convergence of the method of reduction of order for solving stiff systems of linear differential equations. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 8, 76-79. (V. R. Ibragimov) **89a:65107** 65L05
- Determination of redundant differential constraints in rigid dynamic models. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 3, 72-74, 88. (Constantin Simirad) **89i:34046** 34C20 (34A30)
- Khimchenko, B. N.** (with Kamynin, L. I.) An isotropic uniqueness theorem for the solution to the Cauchy problem for a second-order parabolic equation. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 1, 73-85, 182; translation in *Differential Equations* **24** (1988), no. 1, 57-66. (From the introduction) **89c:35063** 35K10 (35A05)
- Khimenko, V. I.** (with Tikhonov, V. I.) ★ Выборсы траекторий случайных процессов. (Russian) [Excursions of the trajectories of random processes] "Nauka", Moscow, 1987. 304 pp. (M. I. Yadrenko) **89a:60118** 60G17
- Khinchashvili, G. N.** On the connection between the Fredholm index and analytic geometry. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **127** (1987), no. 3, 465-468. (Summary) **89e:58111** 58G10 (32C40, 47B35)
- Khinchich, V. A.** (with Shekhtman, V. V.) On homotopy limit of homotopy algebras. *K-theory, arithmetic and geometry* (Moscow, 1984-1986), 240-264, *Lecture Notes in Math.*, 1289, Springer, Berlin-New York, 1987. (V. P. Snaith) **89d:55052** 55U35 (18D35, 19D99)
- Khinov, Kh. M.** (with Shishkov, G. V.; Peev, R. P.) Design of an optimal regulator for multistation tunnel kilns. (Bulgarian. English and Russian summaries) *Automat. Izchisl. Tekhn. Avtomat. Sistemi* **1988**, no. 2, 3, 4, 5-8. (Not in MR) 49D40 (93B50)
- Khismatov, N. G.** Nonconstructibility of some ordered fields of real numbers. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 5, 193-195. (O. V. Belegradek) **89h:03059** 03C57 (03D45, 12L99)
- Khismatulinov, A. I.** ★ Несмещенные оценки в методах Монте-Карло для интегральных уравнений. (Russian) [Unbiased estimates in Monte Carlo methods for integral equations] *Akad. Nauk SSSR Sibirsk. Otdel. Vychisl. Tsentr, Novosibirsk*, 1986. 148 pp. (J  n Pek  r) **89h:65012** 65C05 (65R20)
- Khizha, A. L.** On the approximation of differentiable functions by local splines. (Russian) *Approximation theory and related problems in analysis and topology* (Russian), 97-104, vi, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (N. A. Nazarenko) **89m:41010** 41A15
- Approximation by local splines of functions of two variables on a special grid. (Russian) *Some problems in analysis and differential topology* (Russian), 103-110, v, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1988. (Gheorghe Micula) **89j:41016** 41A15 (65D07)
- Local spline approximation by tensor products on some classes of differentiable functions. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1988**, no. 12, 40 pp. (Summary) **89f:41013** 41A15
- Estimates for the stability of some methods for approximation by local splines. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 2, 263-267, 273; translation in *Ukrainian Math. J.* **40** (1988), no. 2, 229-232. (Zhen Xiang Xiong) **89f:41014** 41A15 (65D07)
- Khizhnyak, A. N.** (with Litvinenko, L. N.; Prosvirnin, S. L.) Diffraction of a plane acoustic wave by a lattice of circular disks. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 10, 64-67, 87. (Summary) **89i:76084** 76Q05
- Khilamov, E. V.** (with Bludov, V. V.) Mechanization of investigations in group theory. (Russian) *Theory of algebraic structures* (Russian), 12-18, Karag  nd. Gos. Univ., Karag  nda, 1985. (M. Greendlinger) **89b:20003** 20-04 (03B35, 20F05, 20F10)
- Khlebnikov, D. G.** Contact interaction of two transversally isotropic plates. (Russian) *Boundary value problems* (Russian), 165-170, 202-203, Perm. Politekh. Inst., Perm, 1983. (see **89c:00008**) 73T05
- Khlebnikov, V. I.** Replacement modes in the cosmology of a two-component Friedmann universe. (Russian) *Gravitatsiya i Teor. Otnositel'nosti* **No. 24** (1987), 100-107. (Jan Novotny) **89f:83118** 83F05 (83-03, 83C25)
- Strong gravitational waves in semiclosed electromagnetic universes. Formulation and analysis of the problem in terms of the method of spin coefficients. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **30** (1987), no. 11, 74-78. (Andrzej Trautman) **89f:83049** 83C35 (53B50)
- Strong gravitational waves in semiclosed electromagnetic universes. The complete system of Newman-Penrose equations and the radial dependence of the field variables. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **30** (1987), no. 12, 29-33. (Thomas Sch  cker) **89j:83031** 83C35 (83C50)
- (with Polubarinova-Kochina, P. Ya.) "Father of the expanding universe" A. A. Fridman. (Russian) *Istor.-Astronom. Issled.* **No. 20** (1988), 310-322. (H. Treder) **89j:01064** 01A70
- Khlobystov, V. V.** (with Porov, Yu. D.) ★ Задача дискретной оптимизации при оценивании координат объектов фазовыми методами. (Russian) [Discrete optimization problems in the estimation of the coordinates of objects by phase methods] Препринт [Preprint], 87-20, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. 18 pp. (Publisher's description) **89d:90243** 90C30
- (with Makarov, Vladimir Leonidovich) On the identification of nonlinear operators and its application (invited contribution). *Boundary elements IX, Vol. 1* (Stuttgart, 1987), 43-58, *Comput. Mech., Southampton*, 1987. (Y. Cherruault) **89j:93030** 93B30 (41A15, 65R20)
- (with Vinokurov, Yu. O.) Determining source coordinates of signals from phase measurements in a near field with an arbitrary distribution of measuring devices. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* **No. 6** (1987), 15-18, 113. (Not in MR) 94A12
- (with Makarov, Vladimir Leonidovich) An interpolation method for solving the identification problem for a function system described by the Uryson operator. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 6, 1332-1336; translation in *Soviet Phys. Dokl.* **33** (1988), no. 6, 406-407. (Andrzej Wierniak) **89i:41008** 41A05 (41A15, 47H15, 65J15, 93B30)
- Khlopov, M. Yu.** (with Kogan, Ya. I.) Homotopically stable particles in the theory of superstrings. *Soviet J. Nuclear Phys.* **46** (1987), no. 1, 193-194; translated from *Yadernaya Fiz.* **46** (1987), no. 1, 314-316 (Russian). (Gheorghe Zet) **89c:81135** 81E99 (81E30, 83E30)
- Khudnev, A. M.** On a variational inequality for a shallow shell operator with a constraint on the boundary. *J. Appl. Math. Mech.* **51** (1987), no. 2, 269-272 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 2, 345-348 (Russian). (L. P. Lebedev) **89f:73064** 73L99 (49A29)
- Khmaladze, E. V.** (with Nikabadze, A. M.) On goodness-of-fit tests for parametric hypotheses in  $R^m$ . (Russian) *Dokl. Akad. Nauk SSSR* **294** (1987), no. 5, 1058-1060. (Frantisek Rublik) **89b:62059** 62F05 (62E20)
- An innovation approach to goodness-of-fit tests in  $R^m$ . *Ann. Statist.* **16** (1988), no. 4, 1503-1516. (Ken-ichi Yoshihara) **89i:62073** 62G10
- nguen kong Khoan** see **Nguyen Kong Khoan**
- Khoang, Tui** see **Ho  ng Tuy**
- Khoang Din' Zung** see **Ho  ng-Dinh Dung**
- Khoang Khu Dyong** see **Ho  ng Hu   Du'o'ng**
- Khoang Le Min'** see **Ho  ng L   Minh**
- Khoang Van Tao** see **Ho  ng Van Tao**
- Khoar, Ch.** see **Hoare, C. A. R.**
- Khodakovskii, A. N.** (with Chentsov, A. G.) On a problem of programmed control with a nonsmooth criterion. (Russian) *Methods for nonsmooth optimization and control problems* (Russian), 118-125, 152, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1986. (A. B. N  meth) **89c:49004** 49A10 (49A52)
- Khodzhaniyazov, D.** A class of exact solutions of a multidimensional analogue of the equation of sound propagation in a viscous fluid. (Russian) *Voprosy Vychisl. i Prikl. Mat. (Tashkent)* **No. 80** (1986), 74-77, 137-138. (Summary) **89c:76072** 76Q05
- Khodzhiev, I. Kh.** Mathematical questions in Tajik classical poetry. (Russian) *Tajiki summary* *Izv. Akad. Nauk Tadzhik. SSR Otdel. Fiz.-Mat. Khim. i Geol. Nauk* **1986**, no. 4(102), 19-23 (1987). (Summary) **89j:01016** 01A30
- see also **Najm al-Din Khan, Muhammad**, **89j:01018**
- Khodzinski, A. N.** Investigation of the range of values of the objective function of a linear assignment problem. (Russian) *Design and development of program packages* (Russian), 20-24, ii, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (Summary) **89c:90169** 90C27 (90C08)
- Khoffman, D.** see **Hoffmann, Dieter**
- Khofman, D.** see **Hoffmann, Dieter**
- Khofmann, B.** see **Hoffmann, Bernd**
- Khog, E.** see **Haug, Edward J.**
- b  i Kho't-D  m** see **Bui Kho't-D  m**
- Khokhlov, A. V.** see **Hain, Richard M.**, **89j:55013**
- Khokhlyuk, V. I.** ★ Параллельные алгоритмы целочисленной оптимизации. (Russian) [Parallel algorithms for integer optimization] "Radio i Svyaz", Moscow, 1987. 224 pp. (Knut Richter) **89a:90091** 90C10 (65W05)
- Khokhryakova, M. M.** (with Strakhov, V. N.; Efimov, A. B.) Methods for the synthesis of series in spherical functions that represent elements of potential geodesic fields. (Russian)

- Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* 1988, no. 5, 41-57. (Not in MR) 86A20 (86-04, 86-08)
- Kholevo, A. S.** Conditionally positive definite functions in quantum probability. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Berkeley, Calif., 1986), 1011-1020, Amer. Math. Soc., Providence, RI, 1987. (S. Gudder) 89d:46061 46L05 (46L50, 60E07, 81C20)
- see also **Quantum random processes and open systems**, 89f:00031
- Kholin, N. N.** (with Andriankin, E. I.; Andrushchenko, V. A.) Numerical methods for solving three-dimensional time-dependent problems of the dynamics of elastoplastic media. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 11, 1711-1718, 1759. (Summary) 89k:73027 73E50 (73-08, 73D05, 73D99)
- Kholin, A. M.** (with Rofe-Beketov, F. S.) The connection between the spectral and oscillation properties of operator-differential equations of arbitrary order. I. Theorems of Sturm type. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 48 (1987), 101-111. (A. Devinatz) 89b:34150 34G20 (34B25, 47E05)
- Kholmator, K. Kh.** On a local limit theorem for densities. (Russian) *Investigations in degenerate differential equations and limit theorems of probability theory* (Russian), 24-26, Tashkent. Gos. Ped. Inst., Tashkent, 1985. (see 89g:60002) 60F05
- Kholmuradov, M. K.** Probabilities of unimodal deviations for sums of independent random variables with multidimensional indices. (Russian) *Investigations in degenerate differential equations and limit theorems of probability theory* (Russian), 84-89, Tashkent. Gos. Ped. Inst., Tashkent, 1985. (see 89g:60002) 60F10 (60G50)
- (with Gafurov, M. U.) Convergence of series of probabilities of large deviations for sums of random variables with multidimensional indices. (Russian) *Probability distributions and mathematical statistics* (Russian) (Fergana, 1983), 114-131, 490, "Fan", Tashkent, 1986. (Thomas Mikosch) 89g:60094 60F10
- Kholod, E. G.** (with Andrianov, I. V.) Some exact solutions in the theory of flexible plates. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* 1988, no. 2, 131-133, 167; translation in *J. Appl. Mech. Tech. Phys.* 29 (1988), no. 2, 284-286. (S. Matsuyaki) 89g:73029 73K10
- Kholodilin, A. N.** (with Zeghda, S. A.; Ozhigova, E. P.; Treshchevskii, V. N.; Yushkov, M. P.) Nikolai Nikolaevich Polyakov. (Russian) *Voprosy Istor. Estestvozn.* i *Tekhn.* 1987, no. 4, 166-167. (Editors) 89c:01088 01A70
- Kholodov, A. N.** Multidimensional two-valued commutative formal groups. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1(259), 213-214; translation in *Russian Math. Surveys* 43 (1988), no. 1, 243-244. (P. S. Landweber) 89d:55012 55N22 (14L05)
- Kholodov, A. S.** (with Magomedov, K. M.) ★ Сеточно-характеристические численные методы. (Russian) [Difference-characteristic numerical methods] Edited and with a foreword by O. M. Belotserkovskii. "Nauka", Moscow, 1988. 288 pp. ISBN 5-02-006613-3 (Jiji Nedoma) 89m:65001 65-02 (73-08, 76-08, 76J10, 82-08)
- (with Andreev, A. A.) A supersonic three-dimensional flow past blunt bodies that takes interference into account. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 29 (1989), no. 1, 142-147, 160. (Not in MR) 76-08 (76J10)
- Kholopova, V. V.** (with Puchka, G. N.) Nonlinear oscillations of an ellipsoid with a fluid containing spherical inclusions. (Russian) *Prikl. Mekh.* 24 (1988), no. 8, 108-114, 134; translation in *Soviet Appl. Mech.* 24 (1988), no. 8, 825-831. (Summary) 89i:70016 70E99 (70K20, 70K40, 76B99, 76D99)
- Kholov, N. A.** Solvability of an overdetermined system of linear differential equations in a space of almost periodic functions. (Russian. Tajiki summary) *Izv. Akad. Nauk Tadzhik. SSR Otdel. Fiz.-Mat. Khim. i Geol. Nauk* 1987, no. 1(103), 71-73. (Bolis Basit) 89h:35239 35N10
- Kholstevnikov, K. V.** (with Sokolov, L. L.) Exactness of the solution of the  $N$ -body problem in a domain of large energies. (Russian. English summary) *Leningrad. Gos. Univ. Uchen. Zap. Ser. Mat. Nauk* No. 63 *Trudy Astronom. Observatorii Vol. 41* (1987), 175-193, 206. (A. S. Baranov) 89g:70010 70F10 (34A10, 34A15)
- Properties of coefficients of the basic series of Kepler motion. (Russian. English summary) *Kinemat. Fiz. Nebesn. Tel* 4 (1988), no. 6, 79-83. (Summary) 89j:70011 70F05
- Kholstevnikova, O. K.** An estimate for a Hamiltonian that is asymptotically normalized in a neighborhood of an equilibrium. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1987, vyp. 3, 124-126, 131. (Summary) 89a:58042 58F05 (70H05)
- Kholuyar, Ya. M.** Simultaneous approximations of the invariants of an elliptic function by algebraic numbers. (Russian) *Diophantine approximations, Part II* (Russian), 114-121, Moscow. Gos. Univ., Moscow, 1986. (Guang Shan Xu) 89b:11062 11J72
- Khoma, G. P.** (with Gromyak, M. I.; Chornyi, V. Z.) Periodic solutions of second-order nonlinear wave ordinary integro-differential equations. (Russian) *Some problems in the theory of asymptotic methods in nonlinear mechanics* (Russian), 79-83, iv, Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev, 1986. (Summary) 89a:45017 45J05 (34C25)
- (with Gromyak, M. I.) Construction of periodic solutions of second-order wave differential equations of hyperbolic type. (Russian) *Application of asymptotic methods in the theory of nonlinear differential equations* (Russian), 96-103, vi, Akad. Nauk Ukrain. SSR, Kiev, 1987. (Pavel Krejčí) 89c:35012 35B10 (35L70)
- (with Gromyak, M. I.; Smakula, B. I.) Periodic solutions of second-order equations with delay. (Russian) *Problems of the stability of integral manifolds in equations of mathematical physics* (Russian), 97-99, v, Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev, 1987. (see 89c:00026) 34K15 (34C25)
- Classical periodic solutions of a second-order wave equation. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 7(41) (1987), 72-77, 81. (Pavel Krejčí) 89c:35013 35B10 (35L70)
- Khomchenko, A. N.** A variant of the projection-difference method. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 65 (1988), 100-103, 128. (Not in MR) 65J99
- Khomenko, N. P.** (with Vyvrot, T. M.) Euler and Kirchhoff—initiators of the main directions in graph theory. II. (Russian) *Sketches on the history of mathematical physics* (Russian), 28-34, 183, "Naukova Dumka", Kiev, 1985. (W. Dörfler) 89e:01035 01A55 (05-03)
- Khomenko, V. M.** (with Pavenko, E. N.) Interactive exchange of information in the solution of inverse problems of mathematical programming. (Russian) *Mathematical models for the representation of information and data processing problems* (Russian), 138-146, Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk, 1986. (From the text) 89f:90197 90C99 (90C50)
- Khomichkov, I. I.** Calculation of the characteristics of a queueing system with repeated customers and with paired connections. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 4, 77-84; translation in *Automat. Remote Control* 49 (1988), no. 4, part 1, 458-463. (Bruce D. Craven) 89g:60226 60K25 (68M20, 90B22)
- A single-server system with repeated calls and second-order Cox arrival stream. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* 1988, no. 1, 70-71, 80. (Summary) 89c:60107 60K25
- A queueing system with an unreliable instrument in the presence of repeated calls. (Russian) *Vestnik Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1988, no. 5, 119. (Not in MR) 60K25
- Khomin, A. V.** (with Chikrit, A. A.) A discrete pursuit problem. (Russian) *Kibernet. i Vychisl. Tekhn.* No. 75 (1987), 25-28, 95. (Summary) 89c:90124 90D26 (49A45, 93C55)
- Khooll, K.** see **Hooley, Christopher**
- Khopiter, Khr. T.** (with Pavlov, E. V.; Vassileva, Maria Kirilova) Manifolds, CH-equivalent to locally decomposable Riemannian manifolds. (Bulgarian summary) *Mathematics and mathematical education* (Bulgarian) (*Sunny Beach (Slivachev Bryag)*, 1987), 241-247, *Bulgar. Acad. Sci., Sofia*, 1987. (Luis A. Cordero) 89g:53058 53C15
- (with Pavlov, E. V.) Manifolds that are CH-equivalent to  $B$ -manifolds. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 10, 44-48. (Gheorghe Munteanu) 89c:53042 53C15
- Khorasani, K.** An optimal feedback regulation of nonlinear singularly perturbed systems via slow manifold approach. *Automatica—J. IFAC* 24 (1988), no. 1, 105-108. (José Gonçalves) 89c:93093 93B50 (34E15, 93C10)
- (with Pai, M. A.) Two time scale decomposition and stability analysis of power systems. *Proc. IEEE-D* 135 (1988), no. 3, 205-212. (Yen Ping Shih) 89c:93055 93C75 (49D27, 93D05)
- Khor'kova, N. G.** Recursion operators for partial differential equations. (Russian) *Geometry, differential equations and mechanics* (Russian) (Moscow, 1985), 156-158, Moscow. Gos. Univ., Mekh.-Mat. Fak., Moscow, 1986. (P. A. Kuchment) 89i:58143 58G37 (35A30, 35Q20, 58G35)
- Conservation laws and nonlocal symmetries. (Russian) *Mat. Zametki* 44 (1988), no. 1, 134-144, 157; translation in *Math. Notes* 44 (1988), no. 1-2, 562-568. (J. Christina) 89i:58159 58G35 (35L65, 35Q20)
- Khoromskii, B. N.** (with Zhidkov, E. P.) ★ Граничные интегральные уравнения на специальных поверхностях и их приложения. (Russian) [Boundary integral equations on special surfaces and their applications] Препринт [Preprint], 137, Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow, 1986. 40 pp. (Gheorghe Micula) 89c:65159 65R20
- (with Zhidkov, E. P.) Boundary integral equations on special surfaces and their applications. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* 2 (1987), no. 6, 463-488. (Summary) 89h:65227 65R20 (78A30)
- Khoroshilov, V. S.** (with Zakrzhevskii, A. E.) An approach to truncation of the dimension in a mathematical model of a solid body with internal degrees of freedom. (Russian) *Prikl. Mekh.* 24 (1988), no. 8, 98-103, 134; translation in *Soviet Appl. Mech.* 24 (1988), no. 8, 816-820. (Summary) 89k:49027 49D40 (70Q05, 93B25, 93D15)
- Khoroshan, L. P.** On the foundations of the thermomechanics of porous saturated media. (Russian) *Prikl. Mekh.* 24 (1988), no. 4, 3-13, 132; translation in *Soviet Appl. Mech.* 24 (1988), no. 4, 315-325. (Summary) 89i:73012 73B30 (73U05, 76B05)
- (with Shikula, E. N.) Equations of coupled processes of deformation and filtration in media with quasispherical pores. (Russian) *Prikl. Mekh.* 24 (1988), no. 8, 11-18, 131; translation in *Soviet Appl. Mech.* 24 (1988), no. 8, 736-742. (Summary) 89j:76082 76S05 (73C40, 73S99, 76T05, 82A42)
- Khorseva, L. Yu.** Particular solutions to three-body problems possessing symmetry relative to two mutually perpendicular planes. *Soviet Astronom.* 31 (1987), no. 5, 586-587 (1988); translated from *Astronom. Zh.* 64 (1987), no. 5, 1120-1123 (Russian). (Summary) 89c:70014 70F07
- Periodic rotational motions of a rigid body in the vicinity of a collinear libration point of the circular, restricted three-body problem. *Soviet Astronom.* 31 (1987), no. 6, 694-696 (1988); translated from *Astronom. Zh.* 64 (1987), no. 6, 1320-1323 (Russian). (V. Szebehely) 89f:70019 70F15 (70E99)
- Khorsthemke, V.** see **Horsthemke, Werner**
- Khoruzhenko, B. A.** (with Pastur, L. A.) Existence of long-range order in some quantum systems. (Russian) *Mathematical physics, functional analysis* (Russian), 17-25, 143, "Naukova Dumka", Kiev, 1986. (Mario Škrinjar) 89c:82020 82A15 (82A25)
- (with Pastur, L. A.) Phase transitions in quantum models of rotators and ferroelectrics. (Russian. English summary) *Teoret. Mat. Fiz.* 73 (1987), no. 1, 111-124. (Summary) 89c:82017 82A25 (82A15)
- Khoruzhii, S. S.** ★ Введение в алгебраическую квантовую теорию поля. (Russian) [Introduction to algebraic quantum field theory] "Nauka", Moscow, 1986. 304 pp. (A. S. Wightman) 89k:81064 81E05 (46L60, 47D45, 81-02)
- Khorvat, Ya.** (with Bukov, V. N.) A comparative analysis of some algorithms for the identification of parameters of a linear dynamic object. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* 17 (1988), no. 4, 239-251. (J. Bokor) 89i:93111 93E12 (93C05)
- Khoshevisan, H.** (with Harrison, P. G.) Algebraic transformation techniques for functional languages. *Comput. J.* 31 (1988), no. 3, 229-242. (Not in MR) 68N05 (68N15)
- Khosrovan, O. M.** Transitive actions of semisimple Lie groups on a punctured affine space. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 6, 65-72, 93. (A. L. Onishchik) 89c:70551 57S25
- Khot, N. S.** (with Rao, S. S.; Venkayya, V. B.) Game theory approach for the integrated design of structures and controls. *AIAA J.* 26 (1988), no. 4, 463-469. (Summary) 89e:73033 73K40 (90D45)
- (with Öz, H.; Grandhi, R. V.; Eastep, F. E.; Venkayya, V. B.) Optimal structural design with control gain norm constraint. *AIAA J.* 26 (1988), no. 5, 604-611. (Not in MR) 93B60 (49D40, 73K )
- Kho Thuan** see **Hò Thuan**
- Khovanova, T. G.** Lie superalgebra  $osp(1/2)$ , Neveu-Schwarz superalgebra and superization of Korteweg-de Vries equation. *Group theoretical methods in physics, Vol. I* (Yurmala, 1985), 307-314, VNU Sci. Press, Utrecht, 1986. (From the text) 89k:58123 58F07 (17B65, 17B70, 35Q20, 81E99)
- The Korteweg-de Vries superequation connected with the Lie superalgebra of Neveu-Schwarz-2 string theory. (Russian. English summary) *Teoret. Mat. Fiz.* 72 (1987), no. 2, 306-312. (Ziemowit Popowicz) 89j:58047 58F07 (17B67, 17B70, 35Q20, 81G20)



- Khovanskii, G. S.** ★ Номография сегодня. (Russian) [Nomography today] Новое в Жизни, Науке, Технике: Серия "Математика, Кибернетика" [Current Life, Science and Technology: Series "Mathematics and Cybernetics"], 87-12. "Znanie", Moscow, 1987. 31 pp. (Summary) **89b:65323** 65505 (65-01)
- A procedure for constructing nomograms from equidistant points for a system of equations. (Russian) *Problems in applied mathematics and information science* (Russian), 240-250, 296, "Nauka", Moscow, 1987. (L. Bal) **89f:65150** 65505
- Khozheva, A.** see **Horzela, A.**
- Khorayniov, V. T.** Differential-geometric aspects of the theory of ferroelectrics. (Russian) *IV International Symposium on Selected Topics in Statistical Mechanics* (Russian) (Dubna, 1987), 380-386, *Joint Inst. Nuclear Res., Dubna*, 1988. (see **89g:82003**) 81H20
- Khranov, Yu. A.** I. Newton and classical physics on the 300th anniversary of the publication of I. Newton's *Principia*. (Russian) *Ocherki Istor. Estestvozn. Tekhn.* No. 33 (1987), 42-56, 112. (Summary) **89c:01006** 01A05
- Khrantsov, D. G.** Finite subgroups of groups of outer automorphisms of free groups. (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 9, 8-10. (From the introduction) **89j:20031** 20E05 (20F28)
- Khrimich, M. V.** (with Nagaev, A. V.) A local theorem for boundary functionals. (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 9, 8-10. (From the introduction) **89b:60060** 60F05 (60G50)
- Khrilovich, I. B.** (with Dolgov, A. D.) Does a static solution exist for a gravitating planar wall? *Gen. Relativity Gravitation* 21 (1989), no. 1, 13-16. (Nora Bretón Báez) **89m:83007** 83C05
- Khrisun, M. S.** (with Popov, L. D.; Kornilova, G. F.; Korotaeva, L. T.; Glezer, N. N.; Kostina, M. A.) A system of DELTA-PLAN software for the numerical analysis of improper problems in linear programming for the BESM-6 computer. (Russian) *Models and methods in operations research* (Russian), 31-38, 212, "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (see **89j:00018**) 90C05
- Khrisunov, A. P.** (with Taras'ev, A. M.; Ushakov, V. N.) On a computational algorithm for solving game control problems. *J. Appl. Math. Mech.* 51 (1987), no. 2, 167-172 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 2, 216-242 (Russian). (Witold Rzymowski) **89b:90280** 90D26 (65L99, 93B40)
- Khrisov, E. Kh.** Spectral properties of operators connected with expansions in products of the solutions of two radial Schrödinger equations. I. Expansion formulas. (Russian. English summary) *Annuaire Univ. Sofia Fac. Math. Méc.* 75 (1981), no. 2, 197-213 (1985). (József Banás) **89g:34027a** 34B25 (47E05)
- Spectral properties of operators connected with expansions in products of the solutions of two radial Schrödinger equations. II. Spectral theory. (Russian. English summary) *Annuaire Univ. Sofia Fac. Math. Méc.* 75 (1981), no. 2, 215-230 (1985). (József Banás) **89g:34027b** 34B25 (47E05)
- Expansions over products of the solutions of two Schrödinger equations on a semi-axis. I. Integral representations. (Russian. English summary) *Annuaire Univ. Sofia Fac. Math. Méc.* 76 (1982), no. 2, 167-190 (1987). (Alexander Alenitsyn) **89e:34044** 34B25 (34A25)
- Expansions over products of the solutions of two Schrödinger equations on a semi-axis. II. Perturbation theory. (Russian. English summary) *Annuaire Univ. Sofia Fac. Math. Méc.* 76 (1982), no. 2, 191-207 (1987). (Alexander Alenitsyn) **89e:34045** 34B25 (34E10)
- Khrisov, Kh. I.** see **Christov, Christo I.**
- Khrisov, Khr. Ya.** Erwin Schrödinger—a man devoted to physics. (Bulgarian) *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* 29(62) (1987), no. 4, 292-300. (Editors) **89f:01070** 01A70
- Khrisov, Nikolai D.** (with Petkov, Petko Khr.; Konstantinov, Mikhail M.) On the numerical properties of the Schur approach to solving the matrix Riccati equation. (Bulgarian summary) *Mathematics and mathematical education* (Bulgarian) (Sunny Beach (Sl'nevo Bryag), 1987), 522-525, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89e:65048** 65F99 (15A06, 93B25)
- (with Petkov, Petko Khr.; Konstantinov, Mikhail M.) The interactive system SYSLAB for the analysis and design of linear multidimensional systems. (Bulgarian. English and Russian summaries) *Avtomat. Izchisl. Tekhn. Avtomat. Sistemi* 1988, no. 11, 2, 3, 4, 25-31. (Not in MR) **93C35** (93C05)
- Khrisov, Valentin Zdravkov** A property of typical Kobayashi pseudodistance on compact complex spaces. *C. R. Acad. Bulgare Sci.* 40 (1987), no. 9, 17-19. (Masaaki Suzuki) **89a:32028** 32H15
- Maximum principle and Schwarz lemma for the Möbius and Carathéodory distances on bounded complete circular domains in  $\mathbb{C}^n$ . *C. R. Acad. Bulgare Sci.* 41 (1988), no. 8, 13-16. (K. T. Hahn) **89k:32049** 32H15 (30C80)
- Khrisova, S. G.** (with Bainov, D. D.) Numeric-analytic method for finding the periodic solutions of nonlinear differential-difference equations with impulses. (German summary) *Computing* 38 (1987), no. 4, 363-368. (Summary) **89m:65110** 65Q05
- (with Bainov, D. D.) Numeric-analytic method for finding the solution of a boundary-value problem for a system of differential equations with impulses. *Math. Rep. Toyama Univ.* 10 (1987), 1-22. (A. Coțiu) **89a:65119** 65L10
- (with Bainov, D. D.) The method of the small parameter in the theory of differential equations with impulse effect. *Riv. Mat. Univ. Parma* (4) 13 (1987), 91-100 (1988). (József Banás) **89k:34122** 34K15 (34C25, 93C57)
- (with Bainov, D. D.) Bounded solutions of systems of differential equations with impulses. *Ann. Polon. Math.* 48 (1988), no. 2, 191-206. (Hong Xing Zhou) **89i:34041** 34C11 (93C57)
- (with Bainov, D. D.) Monotone-iterative method for solving the periodic problem for systems of impulsive differential equations. *Internat. J. Theoret. Phys.* 27 (1988), no. 6, 757-766. (Patrio Colaneri) **89j:93075** 93C57 (34C25)
- (with Bainov, D. D.; Hu, Shou Chuan; Lakshmikantham, V.) Periodic boundary value problems for systems of first order impulsive differential equations. *Differential Integral Equations* 2 (1989), no. 1, 37-43. (M. K. Grammatikopoulos) **89b:93038** 93C57 (34A40, 34B15, 34C25)
- Khomov, A. P.** The method of Lagrange multipliers and L. S. Pontryagin's maximum principle. (Russian) *Theory of functions and approximations, Part 1* (Russian) (Saratov, 1984), 78-84, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00035**) 49D29 (49B10)
- Khomova, L. N.** (with Vasil'ev, F. P.) Iterative regularization of a method for the minimization of functionals. (Russian) *Methods for solving boundary value problems in applied mechanics and control* (Russian), 17-20, 80-81, *Tashkent. Gos. Univ., Tashkent*, 1985. (see **89c:00022**) 49D15 (90C48)
- Khrustalev, A. F.** (with Mazlumyan, T. M.) Some theorems on molecular formulas. (Russian) *Dynamic systems*, No. 6 (Russian), 114-116, 126, "Vishcha Shkola", Kiev, 1987. (Summary) **89d:92099** 92A40
- Khrustalev, M. M.** An accurate description of feasibility sets and conditions for the global optimality of dynamical systems. I. Estimates for and an accurate description of feasibility sets and controllability sets. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 5, 62-70; translation in *Avtomat. Remote Control* 49 (1988), no. 5, part 1, 597-604. (Zbigniew Bartosiewicz) **89m:49072** 49E15 (49B10, 93B05, 93C15)
- An accurate description of feasibility sets and conditions for the global optimality of dynamic systems. II. Conditions for global optimality. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 7, 70-80; translation in *Avtomat. Remote Control* 49 (1988), no. 7, part 1, 874-881. (Zbigniew Bartosiewicz) **89m:49073** 49E30 (49E15, 93B05, 93C15)
- Khudaiberganov, G.** The Carathéodory-Fejér problem in  $\mathbb{C}^n$ . (Russian) *Mat. Zametki* 42 (1987), no. 3, 358-368, 475. (Harold P. Boas) **89a:32032** 32H35 (32A07)
- A formula of Carleman for functions of matrices. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 1, 207-208, 226; translation in *Siberian Math. J.* 29 (1988), no. 1, 159-160. (D. Sarason) **89d:30038** 30D55 (32A40)
- Khudai-Verenov, M. G.** Estimation of the number of algebraic integrals of the equation  $y' = P/Q$  where  $P$  and  $Q$  are polynomials. (Russian) *Izv. Akad. Nauk Turkmen. SSR Ser. Fiz.-Tekhn. Khim. Geol. Nauk* 1989, no. 1, 80-81. (J. S. Joel) **89m:58170** 58F21 (34A34)
- Khudak, Yu. I.** The local structure of a class of solutions of a homogeneous system of Maxwell's equations. *Soviet J. Comm. Tech. Electron.* 32 (1987), no. 5, 132-137; translated from *Radiotekhn. i Elektron.* 32 (1987), no. 2, 225-231 (Russian). (Summary) **89a:35186** 35Q20 (35J15, 78A25)
- Khudik, V. N.** (with Berezin, Yu. A.; Pekker, M. S.) Conservative finite-difference schemes for the Fokker-Planck equation not violating the law of an increasing entropy. *J. Comput. Phys.* 69 (1987), no. 1, 163-174. (P. C. Jain) **89g:82004** 82-08 (82A40, 82A45)
- Khudjakov, S. P.** (with Azbelev, N. V.; Maksimov, V. P.) On the problem of the regularizability of equations. (Russian) *Boundary value problems* (Russian), 3-8, 152, *Perm. Politekh. Inst., Perm*, 1984. (see **89b:00008**) 34K10
- Khukhashvili, N. M.** A theorem on the correct decomposition of the traveling salesman problem with free boundary conditions. (Russian) *Trudy Inst. Vychisl. Mat. Akad. Nauk Gruzin. SSR* 27 (1987), no. 2, 112-115. (From the text) **89m:90064** 90B10
- Khukhro, E. I.** Finite  $p$ -groups which are near to groups of prime period. (Russian) *Algebra i Logika* 25 (1986), no. 2, 227-240, 244. (D. I. Zaitsev) **89a:20019** 20D15
- A new identity in the Lie ring of a free group of prime period and of a group without the Hughes property. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 50 (1986), no. 6, 1308-1325, 1344. (A. E. Zalesskii) **89a:17018** 17B60 (20F45)
- Khurana, Surjit Singh** Weak compactness in  $L^1_\infty$ . *Acta Math. Hungar.* 52 (1988), no. 1-2, 49-51. (J. Diestel) **89f:46041** 46E40 (46E30)
- A vector form of Alexandrov's theorem. *Math. Nachr.* 135 (1988), 73-77. (N. Din-culeanu) **89f:28025** 28B05 (28C15, 47B38)
- Extensions of certain compact operators on vector-valued continuous functions. *Proc. Amer. Math. Soc.* 102 (1988), no. 2, 268-270. (S. D. Chatterji) **89d:47063** 47B38 (28B05, 46G10, 47B05)
- Khuri, André L.** (with Sahai, Hardeo) Variance components analysis: a selective literature survey. (French summary) *Internat. Statist. Rev.* 53 (1985), no. 3, 279-300. (Summary) **89b:62120** 62J10
- (with Cornell, John A.) ★ Response surfaces. Designs and analyses. Statistics: Textbooks and Monographs, 81. Marcel Dekker, Inc., New York; ASQC Quality Press, Milwaukee, WI, 1987. xiv+405 pp. ISBN 0-8247-7653-4 (Anant M. Kshirsagar) **89d:62079** 62K99 (62-01)
- Khurumov, Yu. V.** On limit values of holomorphic functions on submanifolds. (Russian) *Multidimensional complex analysis* (Russian), 258-261, *Akad. Nauk SSSR Sibirsk. Otdel., Inst. Fiz., Krasnoyarsk*, 1985. (Harold P. Boas) **89b:32012** 32A40
- Khusalnov, B. M.** Strongly effective unars and nonautoequivalent constructivizations. (Russian) *Some problems in differential equations and discrete mathematics* (Russian), 33-44, *Novosibirsk. Gos. Univ., Novosibirsk*, 1986. (Danica Jakubiková-Studenovská) **89g:08007** 08A60 (03D45)
- (with Kasymov, N. Kh.) Finitely generated enumerable and absolutely locally finite algebras. (Russian) *Vychisl. Sistemy No. 116 Prikladn. Logika* (1986), 3-15, 162. (Summary) **89d:68055** 68Q65
- Constants and classes of auto-equivalent constructivizations. (Russian) *Computable invariants in the theory of algebraic systems* (Russian), 46-50, *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1987. (Andrey Morozov) **89m:03027** 03C57
- Khusalnov, D. Ya.** (with Ivokhin, E. V.) An algorithm for finding a Lyapunov function that gives an extremal integral estimate. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 4 (1985), 62-67, 103. (Summary) **89k:34088** 34D99
- The effect of delay in systems of neutral type. (Russian) *Functional-differential equations and their application to nonlinear boundary value problems* (Russian), 97-103, *iv, Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (V. M. Popov) **89f:34096** 34K05 (34K20)
- Optimization of an estimate for the time of a transient process in control problems. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 61 (1987), 106-112, 132. (Jianxun He) **89g:93067** 93D05 (93B50)
- (with Yun'kova, E. A.) Investigation of the stability of linear systems of neutral type by the method of Lyapunov functions. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 4, 613-621, 731; translation in *Differential Equations* 24 (1988), no. 4, 424-431. (Snezhana Khristova) **89e:34126** 34K20
- (with Kiselevskii, A. G.) Optimization of an estimate for a transient process in linear systems. (Russian) *Issled. Operatsii i ASU* No. 31 (1988), 78-81, 114. (Summary) **89d:34014** 34A30 (49E15)
- Khusanov, M.** (with Drabkin, L.) The relation between two potentials in the queueing system  $M|G|1|_{\infty}$ . (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1986, no. 4, 42-46, 90. (A. M. Zakharin) **89g:60287** 60K25 (60I15, 90B22)
- Khusanov, Z. Kh.** Maximal  $q$ -subharmonic functions. (Russian) *Dokl. Akad. Nauk UzSSR* 1988, no. 4, 9-10. (From the text) **89f:32031** 32F05 (31C05)
- Khuskivadze, G. A.** (with Paatashvili, V. A.) A derivative of a conformal mapping. (Russian. English and Georgian summaries) *Sootsch. Akad. Nauk Gruzin. SSR* 127 (1987), no. 3, 473-475. (Summary) **89c:30016** 30C20

- Khusnutdinova, N. V.** A boundary value problem for a degenerate system of parabolic equations arising in boundary layer theory. (Russian) *Dinamika Sploshn. Sredy* No. 81 (1987), 127-137, 154. (Summary) **89i:35085** 35K65 (76N05)
- Khutortser, V. V.** (with Bulychev, Yu. G.; Taran, V. N.) Stochastic semigroups of operators for space-time filtering. *Soviet J. Comm. Tech. Electron.* 32 (1987), no. 11, 36-40; translated from *Radiotekhn. i Elektron.* 32 (1987), no. 6, 1251-1255 (Russian). (Not in MR) 94A05 (60H99)
- Khutoryanskii, N. M.** The method of boundary-time elements in three-dimensional nonstationary problems of diffraction of elastic waves. (Russian) *Prikl. Problemy Proch. i Plast.* 1987, 17-23, 119. (Summary) **89k:73022** 73D25 (73-08)
- Abi-Khuzam, Faruk** see **Abi-Khuzam, Faruk**
- Abi-Khuzam, Hazar** see **Abi-Khuzam, Hazar**
- Khuzhayarov, N. Yu.** (with Badalov, F. B.) A method for the exact solution of integro-differential equations of dynamic problems of the linear theory of viscoelasticity. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 1, 71-75; translation in *Soviet Phys. Dokl.* 33 (1988), no. 3, 229-231. (G. F. Miller) **89i:65138** 65R20 (45J05, 73F15)
- Khvan, A. M.** Canonical transformations in Nambu mechanics. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 5, 912-915, 920. (Summary) **89f:70020** 70G35 (58F05, 70H15)
- Khvedelidze, N. N.** Integral conditions for the oscillation of the solutions of a third-order linear differential equation. (Russian. English and Georgian summaries) *Tbilis. Gos. Univ. Inst. Prikl. Mat. Trudy* 22 (1987), 218-231, 238. (Summary) **89c:34064** 34C10 (34A30)
- Khreshchenko, D. V.** (with Chubukov, A. V.) Properties of one-dimensional antiferromagnets with integer and half-integer spins. *Soviet Phys. JETP* 66 (1987), no. 5, 1088-1094 (1988); translated from *Zh. Eksp. Teor. Fiz.* 93 (1987), no. 5, 1904-1916 (Russian). (Nicolae Angelescu) **89i:82018** 82A15 (81H99, 82A67)
- Khvostov, A. P.** Representation of best approximations of polynomials of lower degrees in terms of their coefficients. (Russian) *Analytic methods for solving differential equations* (Russian), 125-132, 151, *Kulbyshev. Gos. Univ., Kuybyshev*, 1986. (Hans-Jürgen Albrand) **89h:41054** 41A50
- A criterion for the uniqueness of the polynomial of best simultaneous approximation of several functions. (Russian) *Analytical methods in the theory of differential and integral equations* (Russian), 117-121, *Kulbyshev. Gos. Univ., Kuybyshev*, 1987. (see **89c:00005**) 41A10
- Kh'yult, E.** see **Hewitt, Edwin**
- Ki, U-Hang** (with Ayabe, Shuka; Yamaguchi, Seichi) On conformal Killing and special Killing  $p$ -forms in Riemannian manifolds with boundary. *J. Ramanujan Math. Soc.* 2 (1987), no. 1, 17-41. (J. R. Vanstone) **89j:53045** 53C21 (53C65)
- (with Nakagawa, Hisao) Totally real submanifolds with harmonic curvature. *Kyungpook Math. J.* 27 (1987), no. 2, 99-107. (Yi Hong) **89i:53039** 53C40 (53C25)
- (with Oh, Won Tae) Submanifolds with harmonic curvature in a Euclidean  $2m$ -space. *Tensor (N.S.)* 44 (1987), no. 2, 164-170. (J. R. Vanstone) **89f:53080** 53C40 (53C15)
- (with Pak, Jin Suk) Submanifolds of a Euclidean  $m$ -space  $E^m$  with totally umbilical Gauss image. *Tensor (N.S.)* 44 (1987), no. 3, 233-239. (Y. Muto) **89m:53097** 53C40
- (with Nakagawa, Hisao) Reduction of the codimension of totally real submanifolds of a complex space form. *Tsukuba J. Math.* 11 (1987), no. 2, 399-412. (F. Urbano) **89f:53081** 53C40
- (with Nakagawa, Hisao) Complex submanifolds of an indefinite Kaehler-Einstein manifold. *J. Korean Math. Soc.* 25 (1988), no. 1, 1-10. (Alfonso Romero) **89j:53047** 53C40 (53C25, 53C50, 53C55)
- Cyclic-parallel real hypersurfaces of a complex space form. *Tsukuba J. Math.* 12 (1988), no. 1, 259-268. (Bang-yen Chen) **89f:53082** 53C40
- Kiang, Yuan-sun** see **Jiang, Yuan Sheng**
- Kiani, Peywand** (with Jeltsch, Rolf; Raczek, Klaus) Counterexamples to a stability barrier. *Numer. Math.* 52 (1988), no. 3, 301-316. (R. Manohar) **89b:65213** 65M10
- Kibble, T. W. B.** Gauge fields, topological defects and cosmology. *Schrödinger (London, 1987)*, 201-212, *Cambridge Univ. Press, Cambridge-New York*, 1987. (see **89m:01069**) 83F05 (81E13)
- (with Copeland, E.; Haws, D.; Mitchell, David; Turok, Neil) Monopoles connected by strings and the monopole problem. *Nuclear Phys. B* 298 (1988), no. 3, 445-457. (Summary) **89b:83100** 83F05 (81G25)
- see also **Everett, Allen E.**, **89a:81070**
- Kibirev, V. V.** Some cases of a problem on a directional derivative with polynomial coefficients for harmonic functions. (Russian. English and Lithuanian summaries) *Differentsial'nye Uravneniya i Primeneniya* No. 40 (1987), 41-46. (M. A. Atakhodzhaev) **89d:31005** 31A25
- Kibkalo, A. A.** Pattern recognition algorithms using short tests. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 2, 62-65; translation in *Moscow Univ. Math. Bull.* 43 (1988), no. 2, 28-31. (Victor V. Krasnoprosin) **89i:68108** 68T10 (68R99)
- Kibler, Maurice** (with Winternitz, P.) Lie algebras under constraints and nonbijective canonical transformations. *J. Phys. A* 21 (1988), no. 8, 1787-1803. (Manfred Andrie) **89i:58037** 58F05 (17B10, 17B65, 70H15)
- Kibzun, A. I.** (with Malyshev, V. V.; Chernov, D. E.) Two approaches to the solution of probabilistic optimization problems. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 3, 20-25 (1988); translated from *Avtomatika* 1987, no. 3, 29-36, 94 (Russian. English summary). (I. M. Stancu-Minasian) **89f:90110** 90C15
- Kichenassamy, Satyanad** Compactness theorems for differential forms. *Comm. Pure Appl. Math.* 42 (1989), no. 1, 47-53. (M. P. Heble) **89k:58008** 58A10 (49F20)
- Kida, Takuro** The optimum interpolatory approximation of waves using time limited interpolation functions. *Electron. Comm. Japan. Part I Comm.* 70 (1987), no. 6, 54-64. (B. D. Donevski) **89m:94006** 94A12 (42C15)
- Kida, Teruhiko** An asymptotic approach on Lagerstrom mathematical model for viscous flow at low Reynolds numbers. *Bull. Univ. Osaka Prefect. Ser. A* 36 (1987), no. 2, 83-97 (1988). (F. Feuillebois) **89f:76035** 76D07 (34B10, 34E05)
- Kidd, Richard** (with Ardini, James; Anton, Anatol) Evolution of the modern photon. *Amer. J. Phys.* 57 (1989), no. 1, 27-35. (From the summary) **89j:81002** 81-03 (01A60, 78A02, 81B99)
- Kido, Kazuo** Strong convergence of resolvents of monotone operators in Banach spaces. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 755-758. (Simeon Reich) **89i:47094** 47H05 (47H15)
- Kido, Masao** (with Shirao, Yoshiaki; Inagaki, Yoshio; Kawabata, Hiroaki; Nagahara, Toshikuni) On the approximate characteristic between the system governed by the unsymmetrical curvilinear restoring force and the piecewise linear system with the unsymmetrical restoring force. *Bull. Univ. Osaka Prefect. Ser. A* 34 (1985), no. 1, 33-41. (Jaume Llibre) **89m:34048** 34C25 (70K40)
- (with Kawabata, Hiroaki; Hashizume, Hidekuni; Inagaki, Yoshio; Shirao, Yoshiaki; Nagahara, Toshikuni) A method of optimal control in nonlinear systems. *Bull. Univ. Osaka Prefect. Ser. A* 35 (1986), no. 1, 33-45. (Vimal Singh) **89k:93167** 93D15 (93C10, 93D20)
- Kidwell, Mark E.** (with Richter, Robert Bruce) Trees and Euler tours in a planar graph and its relatives. *Amer. Math. Monthly* 94 (1987), no. 7, 618-630. (Brian Alspach) **89b:05081** 05C10
- On the degree of the Brandt-Lickorish-Millett-Ho polynomial of a link. *Proc. Amer. Math. Soc.* 100 (1987), no. 4, 755-762. (Kenneth C. Millett) **89b:57003** 57M25
- Kieboom, R. W.** New lifting properties of weak fibrations. *An. Stiint. Univ. "Al. I. Cuza" Iasi Sect. I a Mat. (N.S.)* 33 (1987), no. 1, 63-66. (Robert D. Ridgdon) **89b:55016** 55R05 (55P05)
- Note on a theorem of Dold on cofibrations. *Bull. Soc. Math. Belg. Sér. B* 39 (1987), no. 2, 203-207. (Š. Ungar) **89d:55015** 55P05 (55R05)
- Kieda, A.** (with Yano, Hideo; Nishioka, Katsuhiko) A combined scheme of finite elements and finite differences. *J. Franklin Inst.* 326 (1989), no. 1, 131-137. (Summary) **89m:65106** 65N30 (49D25)
- Kiefer, Claus** Wave packets in minisuperspace. *Phys. Rev. D* (3) 38 (1988), no. 6, 1761-1772. (Summary) **89i:83038** 83C45
- Kiefer, Jack Carl** see **Prabhu, N. U.**, **89a:60228**
- Kiefer, Jerry** (with Gerry, Christopher C.) Radial coherent states for the Coulomb problem. *Phys. Rev. A* (3) 37 (1988), no. 3, 665-671. (Adriaan Tip) **89m:81202** 81G40 (58G40, 81C05, 81D30)
- Kiefer, Nicholas M.** (with Easley, David) Controlling a stochastic process with unknown parameters. *Econometrica* 56 (1988), no. 5, 1045-1064. (Boženna Pasik-Duncan) **89i:90003** 90A05 (90C40)
- Kiehl, Reinhardt** (with Freitag, Eberhard) ★ Étale cohomology and the Weil conjecture. Translated from the German by Betty S. Waterhouse and William C. Waterhouse. With an historical introduction by J. A. Dieudonné. *Ergebnisse der Mathematik und ihrer Grenzgebiete (3) [Results in Mathematics and Related Areas (3)]*, 13. *Springer-Verlag, Berlin-New York*, 1988. xviii+317 pp. ISBN 3-540-12175-7 (James Milne) **89f:14017** 14F20 (11G25, 14G13)
- Kiehn, Astrid** On the interrelation between synchronized and nonsynchronized behaviour of Petri nets. (German and Russian summaries) *J. Inform. Process. Cybernet.* 24 (1988), no. 1-2, 3-18. (Rüdiger Valk) **89i:68083** 68Q55 (68Q05, 68Q10, 68Q90)
- Kielanowski, P.** (with Böhm, Arno; Kmiecik, M.; Loewe, M.) Relativistic spectrum generating groups: spectrum and radiative transitions in a collective model of hadrons. *Group theoretical methods in physics (Varna, 1987)*, 208-222, *Lecture Notes in Phys.*, 313, *Springer, Berlin-New York*, 1988. (Summary) **89j:81254** 81G20
- (with Böhm, Arno; Boya, L. J.; Kmiecik, M.; Loewe, M.; Magnollay, P.) Theory of relativistic extended objects. *Internat. J. Modern Phys. A* 3 (1988), no. 5, 1103-1121. (Summary) **89c:81199** 81G25
- Kielbasinski, A.** (with Schwetlick, H.) ★ Numerische lineare Algebra. (German) [Numerical linear algebra] Eine computerorientierte Einführung. [A computer-oriented introduction] Mathematik für Naturwissenschaft und Technik [Mathematics for Science and Technology], 18. *VEB Deutscher Verlag der Wissenschaften, Berlin*, 1988. 472 pp. ISBN 3-326-00194-0 (A. Bultheel) **89c:65001** 65-01 (15-01, 65Fxx)
- Kielhöfer, Hansjörg** A bifurcation theorem for potential operators. *J. Funct. Anal.* 77 (1988), no. 1, 1-8. (Keren Liao) **89f:58032** 58E07 (47H15)
- Kielpiński, Roman** A characterization of rings over which abelian Hopf algebras form an abelian category. *J. Pure Appl. Algebra* 52 (1988), no. 1-2, 59-76. (E. J. Taft) **89f:16011** 16A24 (18E10, 18G05)
- see also **Simson, Daniel**, **89g:01059**
- pham le Kien** see **Pham Le Kien**
- Kienzie, Reinhold** (with Hauck, Peter) Modular Fitting functors in finite groups. *Bull. Austral. Math. Soc.* 36 (1987), no. 3, 475-483. (Hartmut Laue) **89a:20015** 20D10
- Kierat, Władysław** (with Skórnik, Kr.) A remark on the operational exponential functions. (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 5-6, 383-386. (Elias Deeba) **89a:44014** 44A45
- Kierstead, H. A.** (with Trotter, W. T.) A Ramsey theoretic problem for finite ordered sets. Special issue: ordered sets (Oberwolfach, 1985). *Discrete Math.* 63 (1987), no. 2-3, 217-223. (From the introduction) **89a:05014** 05A17
- (with Trotter, W. T.; Zhou, B.) Representing an ordered set as the intersection of super greedy linear extensions. *Order* 4 (1987), no. 3, 293-311. (R. P. Dilworth) **89g:06096** 06A10 (06A05)
- A minimax theorem for chain complete ordered sets. *Order* 5 (1988), no. 1, 75-83. (Michael Saks) **89k:06001** 06A10
- Klessler, Peter C.** (with Disney, Ralph L.) ★ Traffic processes in queueing networks. A Markov renewal approach. Johns Hopkins Series in the Mathematical Sciences, 4. *Johns Hopkins University Press, Baltimore, MD*, 1987. xx+251 pp. ISBN 0-8018-3454-6 (F. J. Beutler) **89b:90081** 90B15 (60K15, 60K20, 60K25, 90B20, 90B22)
- On the equivalence of input and output processes in networks of infinite server queues. *Asia-Pacific J. Oper. Res.* 5 (1988), no. 1, 84-89. (Jacqueline Loris-Teghem) **89g:60288** 60K25 (90B22)
- (with Melamed, B.; Yadin, M.; Foley, Robert D.) Analysis of a three-node queueing network. *Queueing Systems Theory Appl.* 3 (1988), no. 1, 53-72. (Hans Daduna) **89d:60177** 60K25 (68M20, 90B22)
- (with Foley, Robert D.) Positive correlations in a three-node Jackson queueing network. *Adv. in Appl. Probab.* 21 (1989), no. 1, 241-242. (Carl M. Harris) **89m:60227** 60K25 (90B15, 90B22)
- Klessling, Michael** Existence and uniqueness of the pressure profile  $p(A)$  of a current-carrying quasineutral equilibrium plasma. *J. Math. Phys.* 29 (1988), no. 5, 1258-1263. (Summary) **89c:76126** 76X05
- Kieu, T. D.** Chiral anomalies and lattice fermionic regularisations. *CAP-NSERC Summer Institute in Theoretical Physics, Vol. I (Edmonton, AB, 1987)*, 354-370, *World Sci.*



- Publishing, Singapore, 1988. (see 89h:81005) 81E25*
- Kifer, Yuri** ★ Ergodic theory of random transformations. *Progress in Probability and Statistics*, 10. Birkhäuser Boston, Inc., Boston, MA, 1986. x+210 pp. ISBN 0-8176-3319-7 (Karl Petersen) **89c:58069** 58F11 (28Dxx, 60J27)
- (with Eizenberg, Alexander) The asymptotic behavior of the principal eigenvalue in a singular perturbation problem with invariant boundaries. *Probab. Theory Related Fields* **76** (1987), no. 4, 439–476. (Ludwig Arnold) **89d:58109** 58F30 (35B25, 58G25, 60H10)
- Harmonic functions on Riemannian manifolds. *Geometry of random motion* (Ithaca, N.Y., 1987), 159–172, *Contemp. Math.*, 73, Amer. Math. Soc., Providence, RI, 1988. (Luen-fai Tam) **89c:58156** 58G32
- A note on integrability of  $G'$ -norms of stochastic flows and applications. *Stochastic mechanics and stochastic processes* (Swansea, 1986), 125–131, *Lecture Notes in Math.*, 1325, Springer, Berlin-New York, 1988. (Uwe Röser) **89k:60107** 60J30 (58F11, 58F30, 60G10)
- Bounded harmonic functions on nonamenable covers of compact manifolds. *Israel J. Math.* **61** (1988), no. 2, 170–178. (Michael T. Anderson) **89c:58138** 58G30 (53C20)
- Kigami, Jun** (with Yamaguti, Masaya) Some remarks on Dirichlet problem of Poisson equation. *Analyse mathématique et applications*, 465–471, Gauthier-Villars, Paris, 1988. (B. Bongiorno) **89j:31003** 31A25 (31A35, 35J05)
- Kiguradze, I. T.** Boundary value problems for systems of ordinary differential equations. (Russian) Translated in *J. Soviet Math.* **43** (1988), no. 2, 2259–2339. *Current problems in mathematics. Newest results*, Vol. 30 (Russian), 3–103, 204, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow, 1987. (L. Janos) 89d:34020 34Bxx*
- (with Shekhter, B. L.) Singular boundary value problems for second-order ordinary differential equations. (Russian) Translated in *J. Soviet Math.* **43** (1988), no. 2, 2340–2417. *Current problems in mathematics. Newest results*, Vol. 30 (Russian), 105–201, 204, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow, 1987. (L. P. Lebedev) 89f:34022 34Bxx (34–02, 34C11, 34Exx)*
- (with Andreev, A. F.; Bitsadze, A. V.; Erugin, N. P.; Zubov, V. I.; Izobov, N. A.; Ilin, V. A.; Krasovskii, N. N.; Kudryavtsev, L. D.; Millionshnikov, V. M.; Pliss, V. A.; Samarskii, A. A.; Sibirskii, K. S.; Tikhonov, A. N.) Yuri Stanislavovich Bogdanov. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 6, 1091–1097; translation in *Differential Equations* **24** (1988), no. 6, 692–699. (Editors) **89i:01055** 01A70
- see also *Current problems in mathematical physics*, **89j:00030**
- Kihara, M.** (with Okada, Tsuyoshi; Mizukura, Y.) A control system equalizing pilot handling characteristics. *Control Theory Adv. Tech.* **3** (1987), no. 2, 129–139. (Not in MR) **93B30** (93C75)
- Kiho, T.** Optimal choice of parameter in the Lavrent'ev method on a class of sourcewise representable solutions. (Russian. English summary) *Tartu Riikl. Ül. Toimetised* No. 762 (1987), 31–39. (Anton Suhadolc) **89a:65090** 65J10 (47A50)
- Kilbi, J. C. de Souza** Bordisms of involutions. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo* (2) Suppl. No. 18 (1988), 97–108. (R. E. Stong) **89c:57029** 57R85
- Kilbas, K.** (with Hallap, T.) Lie point transformations admitted by E. Witten equations. (Russian summary) *Eesti NSV Tead. Akad. Toimetised Füüs.-Mat.* **36** (1987), no. 4, 431–433, 440. (Summary) **89c:58230** 58G35 (35A30, 81E13)
- (with Rosenhaus, V.) Gauge invariance as the Lie-Bäcklund transformation group. *J. Phys. A* **21** (1988), no. 13, L681–L684. (J. Christina) **89f:78009** 78A25 (81E13)
- Kilver, H. T.** An incomplete data approach to the analysis of covariance structures. *Psychometrika* **52** (1987), no. 4, 539–554. (M. S. Srivastava) **89c:62066** 62H12
- Kijima, Daiji** Cuts of ordered fields. *Hiroshima Math. J.* **17** (1987), no. 2, 337–347. (James J. Madden) **89k:12015** 12J15 (13A18, 16A86)
- (with Nishi, Mico; Sakaibara, Miyoko) Maximal ordered fields of rank  $n$ . II. *Hiroshima Math. J.* **18** (1988), no. 1, 219–225. (Ron Brown) **89f:12012** 12J15
- Kijima, Masaaki** Some results for unifierizable semi-Markov processes. *Austral. J. Statist.* **29** (1987), no. 2, 193–207. (J. G. Basterfield) **89d:60165** 60K15 (60J10, 60J27, 90B15, 90B25)
- (with Morimura, Hidenori; Suzuki, Yasuhide) Periodical replacement problem without assuming minimal repair. *European J. Oper. Res.* **37** (1988), no. 2, 194–203. (Summary) **89g:90115** 90B25
- On passage and conditional passage times for Markov chains in continuous time. *J. Appl. Probab.* **25** (1988), no. 2, 279–290. (Martin Jacobsen) **89g:60230** 60J27 (60J75)
- Distribution properties of discrete characteristics in  $M/G/1$  and  $GI/M/1$  queues. (Japanese summary) *J. Oper. Res. Soc. Japan* **31** (1988), no. 2, 172–189. (B. M. Kirstein) **89f:60183** 60K25 (60J10, 90B22)
- Kijowski, Jerzy** On positivity of gravitational energy. *Proceedings of the fourth Marcel Grossmann meeting on general relativity, Part A, B* (Rome, 1985), 1681–1686, North-Holland, Amsterdam-New York, 1986. (Introduction) **89a:83032** 83C30 (83C99)
- (with Rudolph, Gerd; Thielmann, Artur) Symplectic structure of a nonabelian Higgs model on the lattice. *Rep. Math. Phys.* **24** (1986), no. 3, 377–384. (Kornél Szlachányi) **89d:81082** 81E25 (58F05, 58G40, 81E13)
- (with Jakubiec, Andrzej) On theories of gravitation with nonlinear Lagrangians. *Phys. Rev. D* (3) **37** (1988), no. 6, 1406–1409. (R. J. McKellar) **89c:83056** 83D05 (83C05)
- Kikho, T.** see Kihō, T.
- Kikkawa, Keiji** Covariant field theory of the interacting string. *Unification of fundamental interactions* (Marstrand, 1986), 89–94, *Royal Swedish Acad. Sci., Stockholm, 1987. (see 89f:81005) 81E99* (81E30)
- (with Maeno, Masahiro; Sawada, Shiro) String field theory in curved space. *Phys. Lett. B* **197** (1987), no. 4, 524–530. (Tsou Sheung Tsun) **89f:81133** 81E20 (81E30)
- Kikkawa, Michihiko** Affine homogeneous structures on analytic loops. *Mem. Fac. Sci. Shimane Univ.* **21** (1987), 1–15. (M. A. Akivis) **89k:53047** 53C30 (53C05)
- Kikkawa, Sho** (with Ishida, Masayuki) Number of degrees of freedom, correlation times, and equivalent bandwidths of a random process. *IEEE Trans. Inform. Theory* **34** (1988), no. 1, 151–155. (Summary) **89a:60120** 60G35 (94A05)
- Kiklevich, E. A.** (with Vladimirov, V. V.; Ilin, I. L.; Nikolaevskii, E. S.) Breakdown of symmetry of the rotational motions of a closed relativistic string, and the singular points of the Regge trajectory. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jarmala, 1985), 221–230, “Nauka”, Moscow, 1986. (see **89d:81001**) **81E99** (81E30)
- Kiku, A. G.** (with Romanchenko, T. B.) Preliminary processing of a structure in identification problems. (Russian) *Adapt. Sistemy Avtomat. Upravleniya* No. 16 (1988), 64–68, ii. (Not in MR) **93B30**
- Kikuchi, Fumio** Mixed and penalty formulations for finite element analysis of an eigenvalue problem in electromagnetism. *Proceedings of the first world congress on computational mechanics* (Austin, Tex., 1986). *Comput. Methods Appl. Mech. Engrg.* **64** (1987), no. 1–3, 509–521. (Vladimir Janovsky) **89g:78005** 78–08
- Finite element analysis of a nondifferentiable nonlinear problem related to MHD equilibria. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **35** (1988), no. 1, 77–101. (Summary) **89a:65189** 65P05 (76W05)
- Kikuchi, Koji** Steady-state wave propagation problem in inhomogeneous anisotropic media including crystals. *Osaka J. Math.* **24** (1987), no. 3, 605–650. (From the introduction) **89m:35130** 35L50
- Kikuchi, Masato** (with Kazamaki, Norihiko) Martingale inequalities for ratios of the maximal function and the square function. *Math. Rep. Toyama Univ.* **10** (1987), 181–186. (R. F. Gundy) **89d:60090** 60G46 (42B25)
- Kikuchi, Noboru** (with Oden, J. T.) ★ Contact problems in elasticity: a study of variational inequalities and finite element methods. *SIAM Studies in Applied Mathematics*, 8. *Society for Industrial and Applied Mathematics (SIAM)*, Philadelphia, PA, 1988. xiv+495 pp. ISBN 0-89871-202-5 (N. Gass) **89j:73097** 73T05 (49A29, 49D15, 65N30, 73–02, 73–08, 73C60)
- (with Bendsoe, Martin P.) Generating optimal topologies in structural design using a homogenization method. *Comput. Methods Appl. Mech. Engrg.* **71** (1988), no. 2, 197–224. (Summary) **89i:73058** 73K40 (73C40, 73K25)
- Kikumasa, Isao** (with Nagahara, Takasi) Primitive elements of cyclic extensions of commutative rings. *Math. J. Okayama Univ.* **29** (1987), 91–102 (1988). (Lindsay N. Childs) **89b:13006** 13B05
- (with Maruta, Tatsuya; Kaneta, Hitoshi) Singleton arrays in coding theory. *Bull. Austral. Math. Soc.* **37** (1988), no. 3, 333–335. (Vera Pless) **89j:94029** 94B05 (11T71)
- (with Nagahara, Takasi) On primitive elements of Galois extensions of commutative rings. *Proceedings of the 21st Symposium on Ring Theory* (Hiroaki, 1988), 14–20, *Okayama Univ., Okayama, 1989. (see 89k:16001)* 13B05
- Kikuno, Tohru** (with Miyao, Jun'ichi; Tominaga, Kazuyuki; Yoshida, Noriyoshi) Optimization of multiple queries in relational database systems. *Systems Comput. Japan* **19** (1988), no. 4, 56–65. (Not in MR) **68P15**
- Kikuta, Kensaku** A condition for a game to be convex. *Math. Japon.* **33** (1988), no. 3, 425–430. (Akira Okada) **89k:90191** 90D12
- Kikvadez, T. F.** (with Chumburidze, G. G.) An approach to the solution of a discrete minimax problem with constraints. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **129** (1988), no. 2, 277–280. (Summary) **89c:90173** 90C30
- Kikyo, Hirotsugu** An implementation of a theorem proving system based on proof procedures using knowledge on mathematical structures. *Bull. Centre Inform.* **7** (1988), 1–10. (Not in MR) **68T15** (03B35)
- Remarks on Zil'ber's results: on the simplicity of the representation of groups and rings. *Tsukuba J. Math.* **12** (1988), no. 1, 235–240. (John T. Baldwin) **89j:03030** 03C60 (03C45, 20A15)
- Kilasoniya, N. A.** (with Ioseliani, A. N.) A method for solving a system of linear algebraic equations with increased accuracy. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **129** (1988), no. 1, 45–47. (Summary) **89c:65053** 65F30
- Kilbas, A. A.** (with Samko, S. G.; Marichev, O. I.) ★ Интегралы и производные дробного порядка и некоторые их приложения. (Russian) [Integrals and derivatives of fractional order and some of their applications] Edited and with a preface by S. M. Nikol'skii. “Nauka i Tekhnika”, Minsk, 1987. 688 pp. (A. S. Silberleit) **89a:26009** 26A33 (44A05)
- Asymptotic expansions of fractional integrals and of the solutions of the Euler-Poisson-Darboux equation. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 10, 1764–1778, 1837–1838; translation in *Differential Equations* **24** (1988), no. 10, 1174–1185. (Summary) **89k:35048** 35C20 (35Q05, 41A60)
- Kilby, Karen E.** (with Sloane, N. J. A.) On the covering radius problem for codes. I. Bounds on normalized covering radius. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 4, 604–618. (Iiro Honkala) **89c:94012a** 94B05 (05B40, 11H31)
- (with Sloane, N. J. A.) On the covering radius problem for codes. II. Codes of low dimension; normal and abnormal codes. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 4, 619–627. (Iiro Honkala) **89c:94012b** 94B05 (05B40, 11H31)
- Kilcup, Gregory W.** (with Gupta, Rajan; Patel, Apoorva; Sharpe, Stephen R.; de Forcrand, Philippe) Comparison of update algorithms for pure gauge SU(3). *Modern Phys. Lett. A* **3** (1988), no. 14, 1367–1378. (Summary) **89h:81007** 81–08 (81E25)
- Kilgore, Theodore** A note on optimal interpolation with rational functions. *Acta Sci. Math. (Szeged)* **52** (1988), no. 1–2, 113–116. (J. Szabados) **89i:41008** 41A05
- Kilgour, D. Marc** (with Hartley, Richard) The geometry of the uncovered set in the three-voter spatial model. *Math. Social Sci.* **14** (1987), no. 2, 175–183. (S. G. Novikov) **89g:90017** 90A08
- (with Brams, Steven J.) Optimal threats. *Oper. Res.* **35** (1987), no. 4, 524–536. (Summary) **89a:90160** 90D05
- (with Brams, Steven J.) ★ Game theory and national security. *Basil Blackwell, Inc., New York*, 1988. xiv+199 pp. ISBN 1-557-86003-3; 1-557-86004-1 (A. Rapoport) **89c:90245** 90D45 (00A25, 00A69, 90D05, 90D35, 92A90)
- (with Brams, Steven J.) National security games. Formal analysis in international relations. *Synthese* **76** (1988), no. 2, 185–200. (see **89c:90218**) **92A90** (90D40)
- (with Fraser, Niall M.) A taxonomy of all ordinal  $2 \times 2$  games. *Theory and Decision* **24** (1988), no. 2, 99–117. (C. B. Millham) **89f:90199** 90D05
- Killing, Wilhelm** see Hawkins, Thomas, (89b:01002)
- Killingback, T. P.** Global anomalies, string theory and spacetime topology. *Classical Quantum Gravity* **5** (1988), no. 9, 1169–1185. (Robert Coquereaux) **89i:53055** 53C80 (57R20, 58D15, 58G10, 81E30)
- Killingbeck, J.** The rotating oscillator. *J. Phys. A* **20** (1987), no. 5, 1285–1288. (Charles A. Nelson) **89c:81033** 81C05 (81–04, 81C12)
- The exponential cosine screened potential. *J. Phys. A* **21** (1988), no. 1, 111–117. (Ernest R. Davidson) **89d:81021** 81C05 (81–08)

- Moment approach for mixed parity potentials. *J. Phys. A* **21** (1988), no. 8, 1917–1920. (Summary) **89f:81047** 81C15
- Boolean functions and finite difference eigenvalues. *J. Phys. A* **21** (1988), no. 16, 3399–3403. (Summary) **89h:81244** 81F05 (81–08)
- An adaptable summation algorithm. *Phys. Lett. A* **132** (1988), no. 5, 223–225. (Summary) **89h:81039** 81C15 (41A21, 81–08)
- Killory, Helen C.** (with Hudson, J. L.; Rössler, Otto E.) Chaos in a four-variable piecewise-linear system of differential equations. *IEEE Trans. Circuits and Systems* **35** (1988), no. 7, 902–908. (Summary) **89f:58091** 58F13 (34D05)
- Kilmister, C. W.** The automorphism group of  $C_4$ . *Quantum implications*, 267–277, Routledge & Kegan Paul, London, 1987. (see **89m:81006**) 15A66
- Introduction. *Schrödinger* (London, 1987), 1–3, Cambridge Univ. Press, Cambridge-New York, 1987. (see **89m:01069**) 81–03 (01A70)
- Obituary: J. T. Cambridge. *Bull. London Math. Soc.* **20** (1988), no. 2, 156–158. (Editors) **89a:01066** 01A70
- see also Schrödinger, **89m:01069**
- Kilp, H.** Structural equations and flag structures of a quasilinear system of the type  $S_{m|n}^1$  (Russian. English summary) *Tartu Riikl. Ül. Toimetised* No. 803 (1988), 52–68. (Josef Janyška) **89m:58008** 58A15 (53A55)
- Kilpatrick, Jeremy** Reflection and recursion. (Bulgarian) Translated from the English by I. Eskenazi. *Fiz.-Mat. Spis. B'lgar. Akad. Nauk.* **28(61)** (1986), no. 4, 288–304 (1987). (Editors) **89b:00036** 00A25 (92A25)
- George Pólya's influence on mathematics education. *Math. Mag.* **60** (1987), no. 5, 299–300. (Editors) **89i:01088** 01A70 (00A25)
- Kilpeläinen, Tero** (with Heinonen, Juha)  $A$ -superharmonic functions and supersolutions of degenerate elliptic equations. *Ark. Mat.* **26** (1988), no. 1, 87–105. (P. Lindqvist) **89k:35079** 35J60 (31B99, 49A29)
- (with Heinonen, Juha) On the Wiener criterion and quasilinear obstacle problems. *Trans. Amer. Math. Soc.* **310** (1988), no. 1, 239–255. (Igor Bock) **89m:35091** 35J85 (49A29)
- Kim, A. V.** The dynamic programming method and optimal synthesis in systems with aftereffect. (Russian) *Some methods for positional and programmed control* (Russian), 12–21, 149, *Akad. Nauk SSSR, Ural. Nauchn. Tsent, Sverdlovsk*, 1987. (Vl. Rásvan) **89f:34117** 34K35 (49C20, 93B50)
- On the method of Lyapunov functions for systems with aftereffect. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 79–83, 323, “Nauka” Sibirsk. Otdel., Novosibirsk, 1987. (From the introduction) **89g:34070** 34D20 (34K05)
- On a problem of multiplication of linear functionals and generalized functions. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 6, 69–71; translation in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 6, 93–97. (Qing Yi Chen) **89i:46046** 46F10
- Kim, Buy Yong** (with Sherali, H. D.; Skarpness, Bradley O.) An assumption-free convergence analysis for a perturbation of the scaling algorithm for linear programs, with application to the  $L_1$  estimation problem. *Naval Res. Logist.* **35** (1988), no. 5, 473–492. (Summary) **89h:90147** 90C05
- Kim, Byung Hak** (with Tashiro, Yoshihiro) Almost complex and almost contact structures in fibred Riemannian spaces. *Hiroshima Math. J.* **18** (1988), no. 1, 161–188. (Ramhit Ojha) **89g:53060** 53C15
- Kim, Byung Hwee** Admissibility of some stepwise Bayes estimators. *J. Korean Statist. Soc.* **16** (1987), no. 2, 102–112. (Dipak K. Dey) **89h:62005** 62C10 (62C15)
- Kim, C. S.** (with Yeh, Cavour W. H.) Erratum: “The diffraction of waves by a penetrable ribbon” [*J. Math. Phys.* **4** (1963), 65–71; MR **26** #1023] by Yeh. *J. Math. Phys.* **29** (1988), no. 3, 721–722. (From the text) **89c:78015** 78A45
- Kim, Chung Wook** (with Murphy, Philip) Solution of the horizon and flatness problems by multiple inflations. *Phys. Rev. D* (3) **37** (1988), no. 10, 2732–2742. (Summary) **89b:83104** 83F05
- Kim, Chang-Ho** (with I'Yi, W. S.; Kim, Kee Yong; Kim, Yong Duk; Park, Young-Jai)  $SU(2/2)$  and five-dimensional supergravities. *Modern Phys. Lett. A* **3** (1988), no. 10, 1005–1011. (Summary) **89i:83063** 83E50
- Kim, Chang Son** The maximum principle of singular control of the variable distributive retardation. (Korean. English summary) *Cho-sŏn In-min Kong-hwa-kuk Kwa-hak-wŏn T'ong-bo* **1988**, no. 4, 1–6. (Not in MR) **89k:35491** 35B10
- Kim, Changwook** (with Sudborough, Ivan Hal) The membership and equivalence problems for picture languages. *Theoret. Comput. Sci.* **52** (1987), no. 3, 177–191. (Rani Siromoney) **89a:68119** 68Q45
- Kim, Chon Ul** On the approximate solving of stochastic integral equation with jump component. (Korean. English summary) *Su-hak* **1987**, no. 4, 26–31. (Summary) **89d:65110** 65R20 (60H20)
- Some problems on approximate solving of stochastic integral equation with jump component. (Korean. English summary) *Su-hak* **1988**, no. 1, 20–23. (Summary) **89k:60083** 60H20
- Kim, Choo Whan** Shift invariant Markov measures and the entropy map of the shift. *Proceedings of the analysis conference, Singapore 1986*, 129–149, North-Holland Math. Stud., 150, North-Holland, Amsterdam-New York, 1988. (Kenneth R. Berg) **89a:28016** 28D05
- Kim, Chul** (with Baxter, Laurence A.) Bounding the stochastic performance of continuum structure functions. *I. J. Appl. Probab.* **23** (1986), no. 3, 660–669. (Summary) **89c:60027** 60E05 (60E15)
- (with Baxter, Laurence A.) Bounding the stochastic performance of continuum structure functions. *II. J. Appl. Probab.* **24** (1987), no. 3, 609–618. (Summary) **89c:60028** 60E05 (60E15)
- (with Baxter, Laurence A.) Axiomatic characterizations of continuum structure functions. *Oper. Res. Lett.* **6** (1987), no. 6, 297–300. (Summary) **89c:90056** 90B25
- Kim, Dongsu** The number of convex polyominoes with given perimeter. *Discrete Math.* **70** (1988), no. 1, 47–51. (Ira Gessel) **89i:05021** 05A15 (05B50, 82A67)
- Kim, Doochul** (with Pearce, Paul A.) Continuously varying exponents in magnetic hard squares. *J. Phys. A* **20** (1987), no. 18, 6471–6485. (Jacques H. H. Perk) **89g:82075** 82A68 (82A05, 82A25, 82A69)
- Kim, Du Jin** Nonlinear continuous perturbation of evolution system of linear operators. (Korean. English summary) *Cho-sŏn In-min Kong-hwa-kuk Kwa-hak-wŏn T'ong-bo* **1987**, no. 3, 9–12. (Summary) **89d:47145** 47H99 (34G20, 45G10)
- A study of a differential evolution equation with an operator of monotone type by the theory of evolution system of operators. (Korean summary) *Su-hak* **1988**, no. 1, 34–41. (Yoshio Yamada) **89j:47037** 47H20 (34G20, 35K60, 47H06)
- Kim, E. I.** (with Abenov, M. M.) Conditions for the solvability of a boundary value problem for a two-dimensional equation of heat conduction in a half strip. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1987**, no. 3, 35–39. (Alexander Doktor) **89m:35095** 35K05
- (with Abenov, M. M.) On a problem with an oblique derivative for a two-dimensional equation of heat conduction in a half strip. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1987**, no. 5, 33–36. (Alexander Doktor) **89m:35096** 35K05
- Kim, H. S.** (with Park, D. K.; Cho, B. H.; Yi, S. H.) Extended Sugawara model with anomaly. *Modern Phys. Lett. A* **3** (1988), no. 1, 41–45. (Summary) **89b:81085** 81D15 (81E99)
- Kim, Hae Kyung** (with Lee, Sang Gōne) Asymptotic efficiency of a nonparametric test in nonlinear regression parameters. *Honam Math. J.* **9** (1987), no. 1, 121–134. (Z. Šidák) **89a:62151** 62J02 (62G10, 62G20)
- Kim, Han Soo** (with Kim, Tae-Hwa) Asymptotic behavior of semigroups of asymptotically nonexpansive type on Banach spaces. *J. Korean Math. Soc.* **24** (1987), no. 2, 169–178. (Kok Keong Tan) **89k:47091** 47H20 (47H10)
- (with Kim, Tae-Hwa) Weak convergence theorems for mappings of asymptotically nonexpansive type in Banach spaces. *Math. Japon.* **33** (1988), no. 3, 431–438. (Simeon Reich) **89k:47086** 47H09
- Kim, Hea-Jung** Empirical Bayes posterior odds ratio for heteroscedastic classification. *J. Korean Statist. Soc.* **16** (1987), no. 2, 92–101. (Not in MR) **62H30**
- Kim, Ho** A Fourier analysis for the inverse Cauchy problem of linear parabolic equations. I. (Korean. English summary) *Su-hak* **1986**, no. 4, 1–6. (Summary) **89a:35124** 35K99 (34G10, 35R25)
- (with Song, Chang Ho) Solving a heat conduction problem with radiant heat exchange by the finite difference method. II. (Korean. English summary) *Cho-sŏn In-min Kong-hwa-kuk Kwa-hak-wŏn T'ong-bo* **1987**, no. 5, 8–11. (From the summary) **89f:65107** 65N05
- A Fourier analysis for the inverse Cauchy problem of linear parabolic equations. II. (Korean. English summary) *Su-hak* **1987**, no. 3, 43–47. (Summary) **89g:35115** 35R30 (35K05)
- Remark on the order relation between space ideals. (Korean. English summary) *Su-hak* **1988**, no. 2, 6–9. (Not in MR) **47D30** (46M99)
- Kim, Hong Oh** Iterations of the unit singular inner function. *Bull. Korean Math. Soc.* **25** (1988), no. 2, 243–246. (Carl C. Cowen) **89h:30040** 30D05
- Kim, Hong Su** (with Kim, Pyong San) Part stability of the set with respect to delay nonautonomous differential systems. (Korean. English summary) *Cho-sŏn In-min Kong-hwa-kuk Kwa-hak-wŏn T'ong-bo* **1988**, no. 5, 19–23. (Not in MR) **34K20**
- Kim, Hyeekyung** A generalization of prime ideals in semigroups. *J. Korean Math. Soc.* **24** (1987), no. 2, 207–216. (K. Todorov) **89a:20066** 20M11 (20M12)
- Kim, Hyak** Extensions of left-symmetric algebras. *Algebras Groups Geom.* **4** (1987), no. 1, 73–117. (K. Strambach) **89c:17043** 17D99 (22E99, 53C05, 57R99)
- Kim, I. S.** (with Lee, K. A.; Lee, Hong Jae; Lee, He. J.; Chun, D. S.; Jeon, W.-K.; Kim, Yong-Woon) A note on the Chern classes. *Honam Math. J.* **9** (1987), no. 1, 135–147. (Elmer G. Rees) **89a:57030** 57R20
- Kim, J. P.** see Kim, Ju Pil
- Kim, J. Y.** (with Cho, I.-H.; Lim, J. I.; Park, D. Y.) Compressibility and annihilator conditions. *J. Korean Math. Soc.* **25** (1988), no. 2, 303–308. (S. K. Berberian) **89i:16016** 16A40 (16A39, 16A42)
- Kim, Jae Kwan** (with Chung, Ki Soo; Han, Chang Woo; Koh, I. G.) Becchi-Rouet-Stora structure and gauge-invariant actions for higher-spin fields. *Phys. Rev. D* (3) **37** (1988), no. 4, 1079–1082. (Richard H. Capps) **89j:81096** 81E13 (81E30, 83E15)
- (with Jun, Jin Woo) Evaluation of the conformal anomaly of Polyakov's string theory by the stochastic quantization method. *Phys. Rev. D* (3) **37** (1988), no. 8, 2238–2242. (Helmut Rumpf) **89f:81185** 81E99 (81C20, 81E30)
- Kim, Jae-Ryong** (with Woo, Moo Ha) Generalizations of  $H$ -groups and co- $H$ -groups. *J. Korean Math. Soc.* **24** (1987), no. 2, 121–132. (M. Mahowald) **89d:55026** 55P45
- Kim, Jaeseok** (with McDonald, John F.) Transient and crosstalk analysis of slightly lossy interconnection lines for wafer scale integration and wafer scale hybrid packaging—weak coupling case. *IEEE Trans. Circuits and Systems* **35** (1988), no. 11, 1369–1382. (Not in MR) **94C05** (94A11)
- Kim, Jai Heui** Stochastic calculus related to nonsymmetric Dirichlet forms. *Osaka J. Math.* **24** (1987), no. 2, 331–371. (Autorreferat (Zbl 625:60087)) **89k:60111** 60J45 (31C25, 46N05, 60J55)
- Probabilistic interpretation of nonsymmetric Dirichlet forms. *J. Korean Math. Soc.* **25** (1988), no. 2, 343–350. (Yves Le Jan) **89k:60112** 60J45
- (with Ha, Ki Sik) Monotone iterative technique for 1-dimensional stochastic differential equations. *Stochastic Anal. Appl.* **6** (1988), no. 2, 191–203. (Toshio Yamada) **89d:60101** 60H10
- Kim, Jee Soo** A subset selection procedure for exponential populations under random censoring. *Comm. Statist. Theory Methods* **17** (1988), no. 1, 183–206. (Summary) **89h:62041** 62F07
- (with Proschan, Frank; Sethuraman, Jayaram) Stochastic comparisons of order statistics, with applications in reliability. *Comm. Statist. Theory Methods* **17** (1988), no. 7, 2151–2172. (K. D. Ling) **89i:62082** 62G30 (62N05, 90B25)
- Kim, Jeng In** see Kim, Jong In
- Kim, Jih E.** The strong CP problem in orbifold compactifications and an  $SU(3) \otimes SU(2) \otimes U(1)^4$  model. *Phys. Lett. B* **207** (1988), no. 4, 434–440. (Summary) **89f:81255** 81G20 (81E30)
- Kim, Jin Bai** Matrix algebra motivated by essentially stochastic matrices. *J. Math. Res. Exposition* **7** (1987), no. 4, 545–549. (Ray C. Shiflett) **89f:15012** 15A33 (15A51)
- A class of convolution algebras on compact fuzzy semigroups. *Fuzzy Sets and Systems* **26** (1988), no. 3, 365–372. (Miloslav Duchoň) **89c:43003** 43A10 (03E72)
- (with Kymn, Kern O.) Rational choice function derived from a fuzzy preference. *Internat. J. Math. Math. Sci.* **11** (1988), no. 1, 43–45. (Jifi Šustál) **89j:90010** 90A06 (03E72)



- (with Baartmans, Alphonse; Sahadin, Nor Shakila) Determinant theory for fuzzy matrices. *Fuzzy Sets and Systems* 29 (1989), no. 3, 349–356. (Summary) **89j:15048** 15A99 (03E72)
- Kim, Jin Hwan** (with Kim, Jong Chul) Properties of causally continuous space-time. *Bull. Korean Math. Soc.* 25 (1988), no. 2, 195–201. (László Szabó) **89j:53055** 53C50 (83C75, 83C99)
- Kim, Jong Chul** (with Kim, Jin Hwan) Properties of causally continuous space-time. *Bull. Korean Math. Soc.* 25 (1988), no. 2, 195–201. (László Szabó) **89j:53055** 53C50 (83C75, 83C99)
- Kim, Jong-Hwan** (with Hong, Yeon-Chan; Choi, Keh-Kun) Discrete adaptive observer with exponential weighting properties. *IEEE Trans. Automat. Control* 34 (1989), no. 2, 229–231. (Not in MR) 93B07
- Kim, Jong In** (with Li, Hyong Won) Statistical optimization of the normal linear system under the action of non-Gaussian stochastic internal noise. (Korean. English summary) *Su-hak* 1988, no. 3, 49–56. (Not in MR) 93E12 (45D05, 60H20)
- Kim, Jongsik** See Recipients of the Korean Mathematical Society prizes for 1987. **89h:01098**
- Kim, Joong-Ho** A note on the quotient ring  $R((X))$  of the power series ring  $R[[X]]$ . *J. Korean Math. Soc.* 25 (1988), no. 2, 265–271. (Sarah Glaz) **89j:13008** 13B30 (13F25)
- Kim, Ju Pil** (with Park, Young So; Sohn, Mun-Gu) Semiprime ideals in semigroups. *Math. Japon.* 33 (1988), no. 2, 269–273. (St. Schwarz) **89f:20073** 20M12
- Kim, Junhyong** (with Ginzburg, Lev R.; Akçakaya, H. Rejit) Evolution of community structure: competition. *J. Theoret. Biol.* 133 (1988), no. 4, 513–523. (Summary) **89j:92063** 92A17
- Kim, K. D.** (with Bose, N. K.) Invariance of the strict Hurwitz property for bivariate polynomials under coefficient perturbations. *IEEE Trans. Automat. Control* 33 (1988), no. 12, 1172–1174. (Not in MR) 93D05
- Kim, Kap H.** (with Hwang, Hark) An incremental discount pricing schedule with multiple customers and single price break. *European J. Oper. Res.* 35 (1988), no. 1, 71–79. (Summary) **89h:90037** 90A12
- Kim, Kee Yong** (with Kim, Chang-Ho; Yi, W. S.; Kim, Yong Duk; Park, Young-Jai)  $SU(2,2)$  and five-dimensional supergravities. *Modern Phys. Lett. A* 3 (1988), no. 10, 1005–1011. (Summary) **89i:83063** 83E50
- (with Yi, W. S.; Kim, Yong Duk) Ricci-flat and  $D = 26$  conditions from the string functional measures. *Phys. Rev. D* (3) 38 (1988), no. 4, 1338–1340. (Summary) **89h:81242** 81E99 (53C80, 81E30, 81E40)
- Kim, Ki Hang** (with Cao, Zhi Qiang; Roush, F. W.) ★ Incline algebra and applications. Ellis Horwood Series: Mathematics and its Applications. Ellis Horwood Ltd., Chichester; Halsted Press [John Wiley & Sons, Inc.], New York, 1984. xiv+165 pp. ISBN 0-85312-765-4 (S. V. Ovchinnikov) **89h:08001** 08-02 (03E72, 90A05, 90A08, 92A25)
- (with Roush, F. W.) Strategic tariff equilibrium and optimal tariffs. *Math. Social Sci.* 15 (1988), no. 2, 105–134. (Tatsuro Ichishii) **89j:90019** 90A14
- Kim, Ki-Onk** (with Wallerstein, David V.) Modal design sensitivities for multiple eigenvalues. *Comput. & Structures* 29 (1988), no. 5, 755–762. (Summary) **89e:73032** 73K40
- Kim, Kilhong** (with Cross, M. C.) Linear instability and the codimension-2 region in binary fluid convection between rigid impermeable boundaries. *Phys. Rev. A* (3) 37 (1988), no. 10, 3909–3920. (Summary) **89c:76060** 76E15
- Kim, Kyo** (with Neumann, Dean; O'Brien, Thomas; Hoag, John) Policy functions for capital accumulation paths. *J. Econom. Theory* 46 (1988), no. 1, 205–214. (V. V. Obukhovskii) **89j:90068** 90A16
- Kim, Kyung-A** Numbers of generators of maximal ideals in polynomial rings. *Honam Math. J.* 9 (1987), no. 1, 83–87. (David C. Lantz) **89a:13021** 13F20
- Kim, Kyungmann** (with Demets, David L.) Confidence intervals following group sequential tests in clinical trials. (French summary) *Biometrics* 43 (1987), no. 4, 857–864. (Mayer Alvo) **89j:62164** 62P10 (62L10)
- Improved approximation for estimation following closed sequential tests. *Biometrika* 75 (1988), no. 1, 121–128. (M. B. Woodroofe) **89b:62171** 62L10 (62F25)
- Kim, L. S.** A modular criterion for membership of a homeomorphism in the Carathéodory class. (Russian) *Some problems in differential equations and discrete mathematics (Russian)*, 70–76, Novosibirsk. Gos. Univ., Novosibirsk, 1986. (P. Caraman) **89h:30030** 30C60 (31B15)
- Kim, L. V.** (with Abdushukurov, A. A.) Cramér-Rao and Bhattacharyya lower bounds under random censoring of observations. (Russian) *Probability distributions and mathematical statistics (Russian)* (Fergana, 1983), 20–40, 487, "Fan", Tashkent, 1986. (Julia Volaufova) **89e:62029** 62F10
- Kim, Mi He** On the multiharmonic orthogonal projection in the space  $\tilde{D}(\Omega)$ . (Korean. English summary) *Su-hak* 1987, no. 2, 44–45. (Summary) **89a:35067** 35J40 (31B15)
- Kim, Mi-Kyung** (with Park, Chan-Bong) General multiplicity as a mapping. *J. Korean Math. Soc.* 25 (1988), no. 2, 169–174. (Rüdiger Achilles) **89k:13023** 13H15
- Kim, Moo-Hyun** (with Yue, Dick K. P.) The complete second-order diffraction solution for an axisymmetric body. I. Monochromatic incident waves. *J. Fluid Mech.* 200 (1989), 235–264. (Summary) **89m:76017** 76B15
- Kim, Mu Yong** On  $p$ -valent  $m$ -symmetric  $\lambda$ -spiral-like functions. II. (Korean. English summary) *Su-hak* 1987, no. 3, 30–37. (Summary) **89g:30020** 30C45
- Kim, Myong Gil** (with Sim, Sen Suk) Existence and convergence of regular solutions of an ill-posed nonlinear operator equation. (Korean. English summary) *Su-hak* 1987, no. 4, 20–25. (Not in MR) 47H15 (65J15)
- Kim, Myung Soe** (with Bai, Do Sun; Jang, Joong Soon) Efficient sequential estimation in a compound Poisson process. *J. Korean Statist. Soc.* 15 (1986), no. 2, 87–96. (René Flaviy) **89a:62181** 62L12 (62M05)
- Kim, Pyong San** (with Kim, Hong Su) Part stability of the set with respect to delay nonautonomous differential systems. (Korean. English summary) *Cho-sôn In-min Kong-hwa-kuk Kwa-hak-wôn Tong-bo* 1988, no. 5, 19–23. (Not in MR) 34K20
- Kim, Ryon Sun** Parallel algorithm of numerical solution for a boundary value problem of a system of linear ordinary differential equations of the first order with constant coefficients. (Korean. English summary) *Su-hak* 1988, no. 3, 31–34. (Not in MR) 65L10
- Kim, S. W.** See Kim, Sang Woo
- Kim, Sang Og** (with Cho, Sung Je; Lee, Sa Ge) On linear maps preserving projections. *Bull. Korean Math. Soc.* 25 (1988), no. 1, 83–85. (Steve Wright) **89j:46062** 46L05 (46K05, 46L70)
- Kim, Sang Woo** (with Lee, Sang Jeong; Kwon, W. H.) LQG/LTR methods for linear input-delayed systems. *Internat. J. Control* 47 (1988), no. 5, 1179–1194. (Summary) **89c:34088** 34K35 (49D40, 93B50, 93C05, 93D05)
- Kim, Sang-Yoon** (with Hu, Bambi) Singularity spectrum for period  $n$ -tupling in area-preserving maps. *Phys. Rev. A* (3) 38 (1988), no. 3, 1534–1537. (Summary) **89i:58089** 58F13 (26B99, 58F08)
- Kim, Sehun** (with Cho, Seong-cheol) A shadow price in integer programming for management decision. *European J. Oper. Res.* 37 (1988), no. 3, 328–335. (Summary) **89h:90157** 90C10 (90A05, 90B50)
- (with Koh, Seokha) On Poljak's improved subgradient method. *J. Optim. Theory Appl.* 57 (1988), no. 2, 355–360. (Summary) **89f:90146** 90C30
- Kim, Seon Ja** (with Keem, C.) On the Clifford index of a general  $(e+2)$ -gonal curve. *Manuscripta Math.* 63 (1989), no. 1, 83–88. (R. F. Lax) **89m:14016** 14H45 (14C20, 14H10)
- Kim, Seong-Ju** On the condition that two hyper-ellipsoids have no points in common. *J. Korean Statist. Soc.* 16 (1987), no. 1, 45–51. (Yasunori Fujikoshi) **89a:62123** 62H05
- Kim, Seung-hwan** (with Ostlund, Stellan; Yu, Gang) Fourier analysis of multi-frequency dynamical systems. *Phys. D* 31 (1988), no. 1, 117–126. (Summary) **89h:58122** 58F13 (58F19)
- Kim, Siwhan** (with Guignard, Monique) Lagrangean decomposition: a model yielding stronger Lagrangean bounds. *Math. Programming* 39 (1987), no. 2, 215–228. (Summary) **89h:90151** 90C11
- (with Guignard, Monique) Lagrangean decomposition for integer programming: theory and applications. (French summary) *RAIRO Rech. Opér.* 21 (1987), no. 4, 307–323. (Horst W. Hamacher) **89f:90096** 90C10
- Kim, Se In** On the commutative structure of  $S$ -fields of differential operators. (Korean. English summary) *Cho-sôn In-min Kong-hwa-kuk Kwa-hak-wôn Tong-bo* 1987, no. 4, 1–3. (Not in MR) 12H05
- Kim, Song Ho** On the uniqueness and existence for complete flow tree of parallel flow chart. (Korean. English summary) *Su-hak* 1988, no. 1, 52–56. (Summary) **89j:68122** 68R10 (05C05, 68N05)
- Kim, Song Ryon** (with Kang, Dok Gil) Optimal control problem of mixed parameter system expressed by the differential inclusion. (Korean. English summary) *Su-hak* 1987, no. 4, 1–4. (Not in MR) 49A50 (34A60)
- Kim, Soon Ja** Semi-invariant submanifolds with parallel Ricci tensor of a complex hyperbolic space. *J. Korean Math. Soc.* 25 (1988), no. 2, 227–243. (Y. Tashiro) **89k:53050** 53C40
- Kim, Sung Ki** Asymptotic behavior of a generalized Fourier-Laplace transform. *J. Korean Math. Soc.* 25 (1988), no. 1, 133–148. (Norbert Orner) **89i:46048** 46F12 (42A38)
- Kim, Tae-Hwa** (with Kim, Han Soo) Asymptotic behavior of semigroups of asymptotically nonexpansive type on Banach spaces. *J. Korean Math. Soc.* 24 (1987), no. 2, 169–178. (Kok Keong Tan) **89b:47091** 47H20 (47H10)
- Fixed point theorems for semigroups of asymptotically nonexpansive type. *Bull. Korean Math. Soc.* 25 (1988), no. 1, 115–121. (Paul Milnes) **89k:47095** 47H10
- (with Kim, Han Soo) Weak convergence theorems for mappings of asymptotically nonexpansive type in Banach spaces. *Math. Japon.* 33 (1988), no. 3, 431–438. (Simeon Reich) **89k:47086** 47H09
- Kim, Tae-Sung** (with Choi, Jeong-Yeol) Weak association of random variables, with applications. *Honam Math. J.* 9 (1987), no. 1, 113–119. (Teresa Kowalczyk) **89c:62085** 62H05 (62H20)
- (with Burton, Robert M., Jr.) An invariance principle for associated random fields. *Pacific J. Math.* 132 (1988), no. 1, 11–19. (Gail Ivanoff) **89d:60094** 60G57 (60F17)
- Kim, Tae Yon** A numerical method of solution of nonlinear elliptic system of partial differential equations. (Korean. English summary) *Cho-sôn In-min Kong-hwa-kuk Kwa-hak-wôn Tong-bo* 1987, no. 4, 9–13. (Summary) **89c:65132** 65N99
- Kim, Taehwan** (with Bezdek, J. C.; Hathaway, R. J.) Optimality tests for fixed points of the fuzzy  $c$ -means algorithm. *Pattern Recognition* 21 (1988), no. 6, 651–663. (Summary) **89m:65063** 65K05 (03E72, 68T10, 90C99)
- Kim, Taejeong** (with Neuhoof, David L.) Delta codes for line drawings. *IEEE Trans. Inform. Theory* 34 (1988), no. 3, 400–416. (Andrea Sgarro) **89g:94020** 94A29 (94A34)
- Kim, V. B.** A class of one-parameter families of cubics in  $P_3$ . (Russian) *Theory of functions and its applications (Russian)*, 59–61, Kemerovo. Gos. Univ., Kemerovo, 1985. (Introduction) **89c:53008** 53A20
- Kim, V. F.** ★ Две неявные схемы для численного решения задач баротропной атмосферы. (Russian) [Two implicit schemes for the numerical solution of barotropic atmosphere problems] Препринт [Preprint], 740. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1987. 17 pp. (Summary) **89f:86012** 86A35 (65P05, 86-08)
- Kim, V. T.** (with Zhubaev, N. Zh.; Kal'ts, A. L.; Karymsakov, K. U.; Kozhabeikov, Zh. T.; Nurzhanova, Sh. Zh.; Sarsenov, B. Sh.; Sinyaev, A. Ya.; Turekulova, A. N.) ★ Численные методы исследования двумерных волн напряжений (в упругих и упругопластических средах). (Russian) [Numerical methods for the study of two-dimensional stress waves (in elastic and elastoplastic media)] "Nauka" Kazakh. SSR, Alma-Ata, 1988. 216 pp. ISBN 5-628-00065-5 (Summary) **89g:73015** 73Dxx (65Mxx, 73-08, 73F15, 73F30)
- Kim, W. T.** (with Park, D. K.; Cho, B. H.) BRS analysis of the nonabelian chiral Schwinger model. *Phys. Rev. D* (3) 38 (1988), no. 8, 2586–2590. (Summary) **89j:81101** 81E13
- Kim, Wan Soon** On the concept of completions and explicit determination of an invariant pairing for general Kac-Moody Lie algebras. *Comm. Algebra* 16 (1988), no. 1, 185–222. (Brian Boe) **89d:17025** 17B67 (17B10)
- Kim, Won** (with Korth, Henry F.; Bancelon, François) On long-duration CAD transactions. *Inform. Sci.* 46 (1988), no. 1-2, 73–107. (Summary) **89h:68156** 68U99 (68P15)
- Kim, Won Kyu** Some intersection theorems of the KKM-maps. *Bull. Korean Math. Soc.* 24 (1987), no. 2, 139–144. (Christian Fenske) **89k:47096** 47H10
- (with Park, Sehie) On generalized KKM-theorems. *J. Korean Math. Soc.* 24 (1987), no. 2, 199–206. (S. Swaminathan) **89a:47081** 47H10 (54H25)
- Remark on a generalized quasivariational inequality. *Proc. Amer. Math. Soc.* 103 (1988), no. 2, 667–668. (D. Pascali) **89g:49012** 49A29 (47H15, 49A40)
- Kim, Woo Chul** (with Han, Kyung Soo) A two-stage selection procedure for exponential populations. *J. Korean Statist. Soc.* 16 (1987), no. 1, 37–44. (I. D. Dhariyal) **89g:62037** 62P07

- (with Stefansson, Gunnar; Hsu, Jason C.) On confidence sets in multiple comparisons. *Statistical decision theory and related topics, IV*, Vol. 2 (West Lafayette, Ind., 1986), 89–104. Springer, New York-Berlin, 1988. (H. L. Harter) **89f:62031** 62F25 (62J15)
- Kim, Y. S.** (with Han, Daesoo; Noz, Marilyn E.) Linear canonical transformations of coherent and squeezed states in the Wigner phase space. *Phys. Rev. A* (3) **37** (1988), no. 3, 807–814. (K. Wódkiewicz) **89b:81264** 81K05 (81C25)
- (with Han, Daesoo) Special relativity and interferometers. *Phys. Rev. A* (3) **37** (1988), no. 11, 4494–4496. (Summary) **89c:83005** 83A05
- (with Wigner, E. P.) Covariant phase-space representation for harmonic oscillators. *Phys. Rev. A* (3) **38** (1988), no. 3, 1159–1167. (Summary) **89h:81047** 81C25
- Kim, Yong Chan** (with Lee, Sangbae) Multipliers of  $G^*$  and Bloch functions. *Math. Japon.* **32** (1987), no. 3, 421–426. (P. L. Duren) **89c:30090** 30D55 (46E15, 46J15)
- (with Lee, Sangbae; Kwon, Oh Sang) Convolution of univalent functions with negative coefficients. *Math. Japon.* **33** (1988), no. 2, 261–268. (Herb Silverman) **89c:30019** 30C45
- Kim, Yong Duk** (with Kim, Chang-Ho; Yi, W. S.; Kim, Kee Yong; Park, Young-Jai)  $SU(2/2)$  and five-dimensional supergravities. *Modern Phys. Lett. A* (3) **3** (1988), no. 10, 1005–1011. (Summary) **89i:83063** 83E50
- (with Yi, W. S.; Kim, Kee Yong) Ricci-flat and  $D = 26$  conditions from the string functional measures. *Phys. Rev. D* (3) **38** (1988), no. 4, 1338–1340. (Summary) **89h:81242** 81E99 (53C80, 81E30, 81E40)
- Kim, Yong Guk** On the radical of a Banach superalgebra and the  $s$ -tangent mapping space. (Korean. English summary) *Cho-sŏn In-min Kong-hwa-kuk Kwa-hak-wŏn T'ong-bo* **1988**, no. 5, 14–15. (Not in MR) **46H05** (46G05, 58C50)
- Kim, Yong Ho** Representation of solutions to nonlinear nonautonomous functional-differential equations in  $L^p$ -spaces. (Korean. English summary) *Su-hak* **1988**, no. 2, 24–27. (Not in MR) **34K30**
- Kim, Yong Ryol** (with Jhang, Chang Hun) Research on numerical method for nonlinear multidimensional integral equation of Uryson type. (Korean. English summary) *Su-hak* **1988**, no. 1, 28–33. (Not in MR) **65R20** (45G10)
- Kim, Young-Woon** (with Lee, K. A.; Lee, Hong Jae; Lee, He. J.; Chun, D. S.; Jeon, W.-K.; Kim, I. S.) A note on the Chern classes. *Honam Math. J.* **9** (1987), no. 1, 135–147. (Elmer G. Rees) **89a:57030** 57R20
- Kim, Young Kook** Studies on Dunford-Pettis operators and its extension. *Bull. Korean Math. Soc.* **25** (1988), no. 1, 59–65. (R. W. Cross) **89g:47052** 47B99
- Kim, Young Seog** (with Bien, Zeungnam) Two stable MRAC algorithms for linear discrete-time multivariable plants. *Internat. J. Control* **48** (1988), no. 3, 1043–1056. (Not in MR) **93C55** (93C05)
- vo Kim An' see Vo Kim An'
- Kimber, Gordon** (with Yen, Yang) Analysis of pivotal-differential evolutionary patterns. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 23, 9106–9108. (Summary) **89i:92030** 92A12
- Kimber, P.** (with Day, Brian; Fitt, P.; Richardson, D.) A mathematical framework for modular simulation. *Math. Comput. Simulation* **29** (1987), no. 5, 373–383. (Summary) **89f:65011** 65C20
- Kimedenova, T. K.** (with Romanovich, V. A.) Local dimension of an ordered product of lattices. (Russian) *Ordered sets and lattices*, No. 9 (Russian), 80–88, 112, *Saratov. Gos. Univ., Saratov*, 1986. (V. Novák) **89c:06021** 06B05 (06A10)
- Kimling, Ian** Structure and derived length of finite  $p$ -groups possessing an automorphism of  $p$ -power order having exactly  $p$  fixed points. *Math. Scand.* **62** (1988), no. 2, 153–172. (Norman Blackburn) **89i:20035** 20D15 (20D45)
- Kimmel, Marek** (with Arino, Ovide) On active linear compartments. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 1189–1194. (see **89d:00007**) **92A09**
- de grande-de Kimpe, N. see De Grande-De Kimpe, N.
- vũ Kim Tuấn see Vũ Kim Tuấn
- Kim Tuan, V.** see Vũ Kim Tuấn
- Kim-Tyan, L. R.** (with Loginov, B. V.) On the stability of bifurcating solutions. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 4, 695–698, 734. (Jacobo Pejsachowicz) **89f:58033** 58E07 (34G20)
- Kimura, Hidenori** Positive partial realization of covariance sequences. *Modelling, identification and robust control* (Stockholm, 1985), 499–513, North-Holland, Amsterdam-New York, 1986. (see **89b:93008**) **93B15** (93B25)
- (with Hoshino, Ikuya; Maekawa, Yukihiro; Fujimoto, Takayuki; Kimura, Hiroshi<sup>2</sup>) Observer-based multivariable control of the aluminum cold tandem mill. *Automatica—J. IFAC* **24** (1988), no. 6, 741–754. (Not in MR) **93C75** (93B07)
- (with Zhao, Yao) Multivariable dead-beat control with robustness. *Internat. J. Control* **47** (1988), no. 1, 229–255. (Krystof Kuzniński) **89c:93078** 93B35 (93B50, 93C35, 93C55)
- (with Zhao, Yao) Two-degrees-of-freedom dead-beat control system with robustness. *Internat. J. Control* **48** (1988), no. 1, 303–315. (Summary) **89c:93079** 93B35 (93B50)
- Directional interpolation in the state space. *Systems Control Lett.* **10** (1988), no. 5, 317–324. (Summary) **89c:93032** 93B28 (93B35)
- Conjugation, interpolation and model-matching in  $H^\infty$ . *Internat. J. Control* **49** (1989), no. 1, 269–307. (Mihail Voicu) **89k:93060** 93B28 (93B35, 93C05)
- Kimura, Hideyuki** (with Kuribayashi, Akikazu) On automorphism groups of compact Riemann surfaces of genus 5. (Japanese. English summary) *Bull. Fac. Sci. Engng. Chuo Univ. Ser. I Math.* **29** (1986), 1–80 (1987). (Takao Kato) **89c:30081a** 30F10 (14H99, 32M05)
- (with Kuribayashi, Akikazu) Remarks on the existence theorem. *Bull. Fac. Sci. Engng. Chuo Univ. Ser. I Math.* **30** (1987), 1–6 (1988). (E. Bujalance) **89b:30058** 30F30 (14H99)
- (with Kuribayashi, Akikazu) On automorphism groups of compact Riemann surfaces of genus 5. II. (Japanese. English summary) *Bull. Fac. Sci. Engng. Chuo Univ. Ser. I Math.* **30** (1987), 7–42 (1988). (Takao Kato) **89c:30081b** 30F10 (14H99, 32M05)
- Kimura, Hiroshi<sup>1</sup>** (with Ohmori, Hiroyuki) Construction of Hadamard matrices of order 28. *Graphs Combin.* **2** (1986), no. 3, 247–257. (W. D. Wallis) **89b:05019** 05B20
- On equivalence of Hadamard matrices. *Hokkaido Math. J.* **17** (1988), no. 1, 139–146. (Jennifer Seberry) **89f:05045** 05B20
- Kimura, Hiroshi<sup>2</sup>** (with Hoshino, Ikuya; Maekawa, Yukihiro; Fujimoto, Takayuki; Kimura, Hidenori) Observer-based multivariable control of the aluminum cold tandem mill. *Automatica—J. IFAC* **24** (1988), no. 6, 741–754. (Not in MR) **93C75** (93B07)
- Kimura, Kaoru** (with Takeuchi, Shin) Possible sphere packings of quasicrystal. *Science on form* (Sakura, 1985), 625–630, Reidel, Dordrecht-Boston, MA, 1987. (see **89g:82013**) **82A60** (51M20, 52A45)
- Kimura, Makoto** Some real hypersurfaces of a complex projective space. *Saitama Math. J.* **5** (1987), 1–5. (Thomas E. Cecil) **89d:53099** 53C40 (32F25, 53C55)
- Kimura, Masahiro** (with Otsuka, Ken'ichi) Some remarks on the positivity of fundamental solutions for certain parabolic equations with constant coefficients. *J. Math. Kyoto Univ.* **28** (1988), no. 1, 87–90. (V. S. Rabinovich) **89c:35067** 35K30 (35B05, 35E05)
- Kimura, Morishige** Convergence of the doubling algorithm for the discrete-time algebraic Riccati equation. *Internat. J. Systems Sci.* **19** (1988), no. 5, 701–711. (Sebastian Engell) **89j:93040** 93B40 (65Q05, 93C05, 93C55, 93E10)
- Kimura, Noriaki** On the degree of an irreducible factor of the Bernoulli polynomials. *Acta Arith.* **50** (1988), no. 3, 243–249. (Wells Johnson) **89j:11019** 11B68
- Kimura, Tadahiko** (with Oda, Ichiro; Nakamura, Atsushi) Superparticles and division algebras—ten dimensions and octonions. *Progr. Theoret. Phys.* **80** (1988), no. 3, 367–372. (Summary) **89j:81080** 81D25 (17A35, 81G20)
- Kimura, Takashi** Solution to a compactification problem of Sklyarenko. *Fund. Math.* **131** (1988), no. 1, 25–33. (G. D. Dimov) **89m:54037** 54D40 (54D35, 54F45)
- The gap between  $\text{cmp } X$  and  $\text{def } X$  can be arbitrarily large. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 1077–1080. (J. van Mill) **89f:54051** 54D35 (54F45)
- Homeomorphisms of zero-dimensional spaces. *Tsukuba J. Math.* **12** (1988), no. 2, 489–495. (B. J. Pearson) **89k:54069** 54E45 (54F05)
- Kimura, Tatsuo** (with Kasai, S.; Hosokawa, H.) Universal transitivity of simple and 2-simple prehomogeneous vector spaces. (French summary) *Ann. Inst. Fourier (Grenoble)* **38** (1988), no. 2, 11–41. (S. I. Gelfand) **89c:20083** 20G15 (11E72, 14L30)
- (with Kasai, S.; Inuzuka, Masaaki; Yasukura, Osami) A classification of 2-simple prehomogeneous vector spaces of type I. *J. Algebra* **114** (1988), no. 2, 369–400. (G. E. Wall) **89c:23062** 32M10 (20G05)
- (with Kasai, S.; Taguchi, Masanobu; Inuzuka, Masaaki) Some P.V.-equivalences and a classification of 2-simple prehomogeneous vector spaces of type II. *Trans. Amer. Math. Soc.* **308** (1988), no. 2, 433–494. (T. Ono) **89k:11101** 11R20 (11E99, 11N25, 11R18, 11R29, 32M10)
- Kimura, Toshie** (with Ohta, Tadayuki) Center of inertia for the post-post-Newtonian two-body problem in general relativity. *Phys. Lett. A* **129** (1988), no. 8–9, 436–439. (Larry L. Smalley) **89h:83017** 83C25 (83C20)
- Kimura, Toshihisa** On Fatou-Bieberbach domains in  $\mathbb{C}^2$ . *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **35** (1988), no. 1, 103–148. (I. P. Ramadanov) **89f:32051** 32H99
- Kimura, Yoshifumi** (with Okamoto, Hisashi) Vortex motion on a sphere. *J. Phys. Soc. Japan* **56** (1987), no. 12, 4203–4206. (Summary) **89a:76021** 76C05
- Kinber, B. E.** (with Borovikov, V. A.) The inaccuracy of “universal and sufficient” heuristic conditions for estimating the boundaries of applicability of geometric optics and geometric diffraction theory. (Russian. English summary) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* **30** (1987), no. 10, 1226–1237. (A. S. Silbergleit) **89g:78019** 78A45
- see also Kravtsov, Yu. A., **89g:78020**
- Kinber, Efim** (with Horváth, Sándor; Salomaa, Arto; Yu, Sheng) Decision problems resulting from grammatical inference. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **12** (1987), no. 2, 287–298. (Ranjana Chaudhuri) **89f:68034** 68Q45 (68Q50)
- Kincald, David R.** (with Oppé, Thomas C.) A parallel algorithm for the general  $LU$  factorization. *Comm. Appl. Numer. Methods* **4** (1988), no. 3, 349–359. (Not in MR) **65F30** (65W05)
- Kincald, Harold** Supervenience and explanation. *Synthese* **77** (1988), no. 2, 251–281. (Not in MR) **03B30**
- Kincald, Rex K.** (with Lowe, Timothy J.; Morin, Thomas L.) The location of central structures in trees. *Comput. Oper. Res.* **15** (1988), no. 2, 103–113. (Not in MR) **90C27** (90B99)
- Kinch, Luel F.** (with Gyárfás, A.; Jacobson, Michael S.) On a generalization of transitivity for digraphs. *Discrete Math.* **69** (1988), no. 1, 35–41. (J. W. Moon) **89a:05071** 05C20
- Kincses, J.** (with Bárány, I.) A characterization of the Helly dimension of convex bodies. *Studia Sci. Math. Hungar.* **22** (1987), no. 1–4, 401–406. (John R. Reay) **89d:52019** 52A35
- How big can the circuits of a bridge of a maximal circuit be? *Combinatorica* **8** (1988), no. 2, 201–205. (Daniel Turzik) **89i:05082** 05B35 (05C38)
- hochstein-kind, Maria see Hochstein-Kind, Maria
- Kinderlehrer, David** Remarks about equilibrium configurations of crystals. *Material instabilities in continuum mechanics* (Edinburgh, 1985–1986), 217–241, Oxford Sci. Publ., Oxford Univ. Press, New York, 1988. (see **89f:73005**) **82A60** (73C60, 73U05)
- see also Calculus of variations and partial differential equations, **89f:00022**
- Kindervater, G. A. P.** (with Lenstra, J. K.) Parallel computing in combinatorial optimization. *Ann. Oper. Res.* **14** (1988), no. 1–4, 245–289. (Summary) **89i:90063** 90C27 (68Q10, 68Q15, 68Q25, 68Rxx, 90–02)
- (with Trienekens, H. W. J. M.) Experiments with parallel algorithms for combinatorial problems. *European J. Oper. Res.* **33** (1988), no. 1, 65–81. (Summary) **89a:90117** 90C27 (65W05)
- Kindler, Jürgen** Supermodular and tight set functions. *Math. Nachr.* **134** (1987), 131–147. (T. Thrivikraman) **89b:28001** 28A10 (28A20)
- Kindlmann, Pavel**  $K$ -stability as an ecologically more relevant stability concept. *Dynamical systems and environmental models* (Eisenach, 1986), 14–23, Math. Ecol., Akademie-Verlag, Berlin, 1987. (D. O. Logofet) **89d:20068** 92A15 (58F12, 93D99)
- King, A. M.** (with Desai, U. B.; Skelton, Robert E.) A generalized approach to  $q$ -Markov covariance equivalent realizations for discrete systems. *Automatica—J. IFAC* **24** (1988), no. 4, 507–515. (Summary) **89c:93181** 93E03 (93B15, 93C05, 93C35, 93C55, 93D20)
- King, Amy C.** (with Schachl, Tina) Grace Brewster Murray Hopper (1906–). *Women of mathematics*, 67–73, Greenwood, Westport, CT, 1987. (see **89b:01071**) **01A70**
- King, Andrew Charles** Periodic approximations to an elliptical function. *Appl. Anal.* **27** (1988), no. 4, 271–278. (F. Pempinelli) **89d:33003** 33A25 (41A60)
- (with Bloor, M. I. G.) A note on the free surface induced by a submerged source at infinite Froude number. *J. Austral. Math. Soc. Ser. B* **30** (1988), no. 2, 147–156. (E. G. Broadbent) **89k:76024** 76B99
- King, Christopher K.** Meson masses in lattice QCD at strong coupling. *Mathematical quantum field theory and related topics* (Montreal, PQ, 1987), 205–217, CMS Conf. Proc., 9, Amer. Math. Soc., Providence, RI, 1988. (see **89g:81002**) **81G05** (81E25)



- King, David Anthony** ★ Islamic mathematical astronomy. Collected Studies Series, CS231. *Variorum Reprints, London*, 1986. 342 pp. ISBN 0-86078-178-X (Jan P. Hogendijk) 89e:01053 01A75 (01A30)
- The earliest Islamic mathematical methods and tables for finding the direction of Mecca. (Arabic summary) *Z. Gesch. Arab.-Islam. Wiss.* 3 (1986), 82-149, Arabic paging 48-49. (E. S. Kennedy) 89e:01013 01A30
- Universal solutions in Islamic astronomy. *From ancient omens to statistical mechanics*, 121-132, *Acta Hist. Sci. Nat. Med.*, 39, Univ. Lib. Copenhagen, Copenhagen, 1987. (E. S. Kennedy) 89h:01010 01A30
- Ibn Yunus on lunar crescent visibility. *J. Hist. Astronom.* 19 (1988), no. 3, 155-168. (George Saliba) 89j:01017 01A30
- King, Henry Churchill** (with Akbulut, S.) Polynomial equations of immersed surfaces. *Pacific J. Math.* 131 (1988), no. 2, 209-217. (A. Tognoli) 89e:57028 57R19 (14G30)
- see also Reid, Les, 89a:57040
- King, J. Thomas** (with Murio, D. A.) Numerical differentiation by finite-dimensional regularization. *IMA J. Numer. Anal.* 6 (1986), no. 1, 65-85. (Summary) 89h:65032 65D25
- King, James R.** see Manin, Yu. I., 89d:32001
- King, John Robert** (with Elliott, Charles M.; Herrero, M. A.; Ockendon, J. R.) The mesa problem: diffusion patterns for  $u_t = \nabla \cdot (u^m \nabla u)$  as  $m \rightarrow +\infty$ . *IMA J. Appl. Math.* 37 (1986), no. 2, 147-154. (Summary) 89m:76061 76S05 (35B40, 35K55, 35R35)
- (with Pleese, C. P.) Diffusion of dopant in crystalline silicon: an asymptotic analysis. *IMA J. Appl. Math.* 37 (1986), no. 3, 185-197. (Summary) 89m:82089 82A70
- Approximate solutions to a nonlinear diffusion equation. *J. Engrg. Math.* 22 (1988), no. 1, 53-72. (Summary) 89e:76099 76R50 (76S05)
- Interacting dopant diffusions in crystalline silicon. *SIAM J. Appl. Math.* 48 (1988), no. 2, 405-415. (Summary) 89d:35086 35K55 (35C20, 80A20, 82A57, 94C05)
- King, Jonathan L.** (with Friedman, N.; Gabriel, Patrick) An invariant for rigid rank-1 transformations. *Ergodic Theory Dynamical Systems* 8 (1988), no. 1, 53-72. (Nathaniel F. G. Martin) 89e:28028 28D05
- Lightly mixing is closed under countable products. *Israel J. Math.* 62 (1988), no. 3, 341-346. (Nathaniel Friedman) 89h:28027 28D05
- Joining-rank and the structure of finite rank mixing transformations. *J. Analyse Math.* 51 (1988), 182-227. (Nathaniel Friedman) 89e:28069 28D05
- King, Maxwell L.** (with Evans, Merran A.) A further class of tests for heteroscedasticity. *J. Econometrics* 37 (1988), no. 2, 265-276. (Summary) 89a:62159 62J05
- King, P. J. B.** (with Robert, Philippe; Mitran, I.) An intermittently served discrete time queue with applications to meteor scatter communications. *Queueing Systems Theory Appl.* 3 (1988), no. 1, 25-40. (S. Csibi) 89g:60273 60K20 (68M20, 90B22, 94A05)
- King, Peter Robert** see Mathematics in oil production, 89j:76003
- King, R. A.** see King, Robert A.
- King, R. Bruce** Topological aspects of infinite metal clusters and superconductors. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 325-343, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (see 89b:92038) 92A40 (82A57)
- Chemical applications of topology and group theory. XXIV. Chiralization of chemically significant polyhedra. *J. Math. Chem.* 1 (1987), no. 4, 415-421. (W. T. Tutte) 89d:92098 92A40 (52A25)
- Topological aspects of immunological control networks. *Math. Comput. Modelling* 10 (1988), no. 6, 451-461. (Summary) 89d:92030 92A09 (92A07)
- (with Randić, M.; El-Basil, Sherif) On nonsymmetry equivalence. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 641-646. (see 89d:00007) 92A40 (05C99)
- see also Graph theory and topology in chemistry, 89b:92038
- King, R. C.** see King, Ronald Curtis
- King, Robert A.** (with Gorgui-Naguib, R. N.) Comments on: "Matrix processors using  $p$ -adic arithmetic for exact linear computations" [IEEE Trans. Comput. 26 (1977), no. 7, 633-639; MR 57 #7963] by E. V. Krishnamurthy. *IEEE Trans. Comput.* 35 (1986), no. 10, 928-930. (Summary) 89f:68024 68Q20 (11T35, 65F99, 94B60)
- (with Gorgui-Naguib, R. N.) A class of integer sequences with ideal correlation properties in the Möbius domain. *Mathematics in signal processing* (Bath, 1985), 45-57, *Inst. Math. Appl. Conf. Ser. New Ser.*, 12, Oxford Univ. Press, New York, 1987. (Summary) 89c:94017 94A15 (11B83)
- King, Ronald Curtis** (with Cummins, C. J.) Young diagrams, supercharacters of  $\text{OSP}(M/N)$  and modification rules. *J. Phys. A* 20 (1987), no. 11, 3103-3120. (A. U. Klimyk) 89a:22039 22E70 (81C40)
- (with Hughes, J. W. B.) A conjectured character formula for atypical irreducible modules of the Lie superalgebra  $\text{sl}(m/m)$ . *J. Phys. A* 20 (1987), no. 16, L1047-L1052. (Summary) 89h:17041 17B70
- (with Srinivasa Rao, K.; Rajeswari, V.) Solutions of Diophantine equations and degree-one polynomial zeros of Racah coefficients. *J. Phys. A* 21 (1988), no. 9, 1959-1970. (John J. Sullivan) 89i:81038 81C40 (22E70)
- King-Hale, D. G.** Introductory remarks. Newton's Principia and its legacy. *Notes and Records Roy. Soc. London* 42 (1988), no. 1, 3. (Editors) 89b:01077 01A75 (01A45)
- Kingman, J. F. C.** Typical polymorphisms maintained by selection at a single locus. A celebration of applied probability. *J. Appl. Probab.* 1988, Special Vol. 25A, 113-125. (Ivar Heuch) 89k:92029 92A10
- Random dissections and branching processes. *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 1, 147-151. (Eric V. Stud) 89g:60258 60J80 (60F15, 60K35)
- Kingston, J. G.** (with Hudson, J. L.) Stelling polyhedra. *Math. Intelligencer* 10 (1988), no. 3, 50-61. (J. M. Wills) 89e:52011 52A25 (51M20, 52-04)
- Kingston, Jeffrey H.** A new proof of the Garsia-Wachs algorithm. *J. Algorithms* 9 (1988), no. 1, 129-136. (Ding Zhu Du) 89b:05075 05C05
- Kinkar, T.** Generation of weakly correlated pseudorandom numbers. (Russian) *Trudy Vychisl. Tsentra Tartu. Gos. Univ. No. 55* (1988), 106-113. (P. Neumann) 89h:65019 65C10
- Kinkladze, G. N.** see School-Colloquium: Probability Theory and Mathematical Statistics, 89c:60004
- Kinen, Edwin** (with Kózmínski, Krzysztof A.) Rectangular dualization and rectangular dissections. *IEEE Trans. Circuits and Systems* 35 (1988), no. 11, 1401-1416. (A. T. Amin) 89k:94108 94C15 (68R10)
- Kinnarsley, Nancy G.** (with Langston, Michael A.) Online variable-sized bin packing. *Discrete Appl. Math.* 22 (1988/89), no. 2, 143-148. (Summary) 89j:90083 90B05 (68Q25, 90C10, 90C27)
- Kinney, John R.** (with Pitcher, Tom S.) Julia sets for certain rational functions. *Adv. in Appl. Math.* 9 (1988), no. 1, 51-55. (Nobuya Watanabe) 89b:58108 58F08 (28A75, 30D05, 58F12)
- Kinmark, Ingemar P. E.** (with Gray, William G.) Fourth-order accurate one-step integration methods with large imaginary stability limits. *Numer. Methods Partial Differential Equations* 2 (1986), no. 1, 63-70. (H. Brunner) 89b:65175 65L05 (65L07)
- Kinnunen, Seppo** Linear connections on hypersurfaces of Banach spaces. *Ann. Acad. Sci. Fenn. Ser. A I Math. Dissertationes* No. 65 (1987), 89 pp. (Efsthathios Vassiliou) 89e:58012 58B20 (53C05)
- Kinoshita, Masataka** (with Kawahara, M.; Kodama, Toshio) Finite element method for tsunami wave propagation analysis considering the open boundary condition. *Comput. Math. Appl.* 16 (1988), no. 1-2, 139-152. (Summary) 89e:76011 76-08 (76B15, 86A05)
- Kinouchi, Yohsuke** (with Endo, Shuji; Ushita, Tomiyuki) A neural network model composed of multioscillators to generate low-frequency biological rhythms. *Systems Comput. Japan* 19 (1988), no. 8, 97-106. (Not in MR) 92A09
- Kinsella, John A.** Simulated annealing—new developments in combinatorial optimization. *Irish Math. Soc. Bull. No. 19* (1987), 22-32. (Editors) 89d:90175 90C27 (90B10)
- Kinsey, L. Christine** Pseudoisotopies and submersions of a compact manifold to the circle. *Topology* 26 (1987), no. 1, 67-78. (Christopher W. Stark) 89a:57042 57R52 (57N37, 57Q10)
- Kinsht, N. V.** (with Kats, M. A.; Ragulin, P. G.) Diagnosis of a parametric circuit. (Russian. English summary) *Teoret. Élektronika* No. 41 (1986), 105-113. (From the text) 89f:94033 94C05 (93B30)
- Kiosak, V. A.** (with Mikesh, I.) On the degree of mobility of Riemannian spaces with respect to geodesic mappings. (Russian) *The geometry of imbedded manifolds* (Russian), 35-39, 124, *Moskov. Gos. Ped. Inst., Moscow*, 1986. (Summary) 89e:53027 53B20
- Kipiani, A. E.**  $\Pi$ -isomorphisms of binary relations and some of their applications. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* 20 (1987), 51-67, 121. (Eva Butkovicová) 89a:04004 04A20 (05C99)
- Kipnis, M. M.** (with Karetyni, O. Ya.) Periodic operating modes of pulse-width control systems. II. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 12, 42-48; translation in *Automat. Remote Control* 48 (1987), no. 12, part 1, 1593-1599. (Hans Benker) 89j:49034 49D50 (92A09)
- (with Karetyni, O. Ya.) Periodic operating modes of pulse-width control systems. I. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 11, 46-54. (Hans Benker) 89j:49033 49D50 (92A09, 93C99)
- (with Karetyni, O. Ya.; Petrova, Yu. B.) Application of pulse-frequency characteristics for the study of periodic states in systems with an integral wide-pulse modulator. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 8, 59-68; translation in *Automat. Remote Control* 49 (1988), no. 8, part 1, 1005-1012. (Not in MR) 49D50
- Kipnis, Victor** (with Pinsker, I. Sh.; Grechanovskii, Evgenii) The use of conditional cutoffs in a forward selection procedure. *Comm. Statist. Theory Methods* 16 (1987), no. 8, 2227-2241. (Summary) 89g:62106 62J05
- Király, Júlia** Inhomogeneous population in growth models. (Hungarian. English summary) *Szigma—Mat.-Közgazdasági Folyóirat* 20 (1987/88), no. 1, 23-42. (Not in MR) 90A16
- Kiranagi, B. S.** (with Prema, G.) Lie algebra bundles defined by Jordan algebra bundles. *Bull. Math. Soc. Sci. Math. R. S. Roumanie (N.S.)* 31 (79) (1987), no. 3, 255-264. (Hyo C. Myung) 89d:17028 17C10 (17B99, 55R99)
- Kirby, E. C.** Coding and factorisation of polycyclic chemical graphs. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 529-536, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (Summary) 89c:92102 92A40 (05C70)
- A note on some coefficients of the Chebyshev polynomial form of the characteristic polynomial  $J$ . *Math. Chem.* 2 (1988), no. 1, 83-87. (E. J. Farrell) 89d:05163 05C99
- Kirchberg, K.-D.** An estimation for the first eigenvalue of the Dirac operator on closed Kähler manifolds of positive scalar curvature. *Ann. Global Anal. Geom.* 4 (1986), no. 3, 291-325. (Domenico Perrone) 89b:58221 58G25 (53C25, 53C55)
- Compact six-dimensional Kähler spin manifolds of positive scalar curvature with the smallest possible first eigenvalue of the Dirac operator. *Math. Ann.* 282 (1988), no. 1, 157-176. (Oussama Hijazi) 89i:58147 58G25 (53C55)
- Kirchen, Alfons** ★ Schätzung zeitveränderlicher Strukturparameter in ökonomischen Prognosemodellen. (German) [Estimation of time-variable structural parameters in econometric forecasting models] With a preface by Wilhelm Krelle. *Mathematical Systems in Economics*, 111. *Athenäum Verlag GmbH, Frankfurt am Main*, 1988. xii+259 pp. ISBN 3-610-09806-6 (H. T. Amundsen) 89f:62091 62P20
- Kirichev, K. P.** (with Iliev, I. D.) ★ Об устойчивости бегущих волн для нелинейных уравнений типа уравнения Бесжамана-Бона-Махони. (Russian) [Stability of traveling waves for nonlinear equations of Benjamin-Bona-Mahony type] With an English summary. *Сообщения Объединенного Института Ядерных Исследований. Дубна* [Communications of the Joint Institute for Nuclear Research. Dubna], R5-87-508. *Joint Inst. Nuclear Res., Dubna*, 1987. 11 pp. (From the introduction) 89d:35160 35Q20
- (with Iliev, I. D.) Stability of solutions of kink type for some nonlinear equations similar to the Korteweg-de Vries equation. (Russian) *Serdica* 13 (1987), no. 4, 414-419. (Summary) 89e:35134 35Q20
- Kirchgässner, Klaus** (with Amick, Charles J.) A theory of solitary water-waves in the presence of surface tension. *Arch. Rational Mech. Anal.* 105 (1989), no. 1, 1-49. (Alan Jeffrey) 89k:76020 76B25 (35Q20)
- Kirchgraber, U.** An ODE-solver based on the method of averaging. *Numer. Math.* 53 (1988), no. 6, 621-652. (J. M. Sanz-Serna) 89k:65086 65L05 (70M05)
- see also Dynamics reported, 89a:58033
- Kirchherr, Walter W.** Transposition of an  $l \times l$  matrix requires  $\Omega(\log l)$  reversals on conservative Turing machines. *Inform. Process. Lett.* 28 (1988), no. 2, 55-59. (Eric Bach) 89h:68063 68Q25 (05B99, 68Q05)
- Kirchhoff, G.** see Khomeenko, N. P., 89f:01035 and Archibald, Thomas, 89m:01051
- Kirchner, Claude** (with Goguen, Joseph A.; Meseguer, José) Concurrent term rewriting as a model of computation. *Graph reduction* (Santa Fe, N.M., 1986), 53-93, *Lecture Notes in Comput. Sci.*, 279, Springer, Berlin-New York, 1987. (Ursula Martin) 89a:68134 68Q50 (03B70, 68N20, 68Q05)

- (with Gnaedig, Isabelle; Kirchner, Hélène) Equational completion in order-sorted algebras (extended abstract). *CAAP '88 (Nancy, 1988)*, 165–184. *Lecture Notes in Comput. Sci.*, 299, Springer, Berlin-New York, 1988. (see 89c:68003) 68Q50 (68T15)
- Kirchner, Hélène** (with Gnaedig, Isabelle; Kirchner, Claude) Equational completion in order-sorted algebras (extended abstract). *CAAP '88 (Nancy, 1988)*, 165–184. *Lecture Notes in Comput. Sci.*, 299, Springer, Berlin-New York, 1988. (see 89c:68003) 68Q50 (68T15)
- (with Serafini, P.; Ukovich, W.; Giardina, F.; Tiozzo, F.) Job shop scheduling: a case study. *Operations research models in flexible manufacturing systems (Udine, 1987)*, 237–246. *CISM Courses and Lectures*, 306, Springer, Vienna, 1989. (see 89k:90082) 90B35
- Kirchner, R.** (with Kulisch, U.) Schaltungsanordnung und Verfahren zur schnellen Berechnung von Summen und Skalarprodukten von Gleitkommazahlen mit maximaler Genauigkeit mittels Pipelinteknik. [Circuit diagrams and methods for fast computation of sums and scalar products of floating point numbers with maximal accuracy via pipeline technique] *Beiträge zur angewandten Mathematik und Statistik*, 139–177. *Hanser, Munich*, 1987. (see 89i:00018) 68Q25 (68Q10)
- (with Kulisch, U.) Fast and accurate computation of sums and inner products. *Computational techniques and applications: CTAC-87 (Sydney, 1987)*, 3–28. *North-Holland, Amsterdam-New York*, 1988. (Summary) 89b:65235 65W05 (65G10)
- Kireeva, S. V.** On a class of mappings. (Russian) *Differentsial'naya Geom. Mnogobraz.* **Figur No. 18** (1987), 39–41, 137. (Z. Nádeník) 89b:53040 53A20
- Kireitov, V. R.** ★ К теории уравнений распространения средней пространственной освещенности. (Russian) [On the theory of the equations of propagation of mean spatial illumination] Препринт [Preprint], 85–610. *Akad. Nauk SSSR Sibirsk. Otdel. Vychisl. Tsentr, Novosibirsk*, 1985. 42 pp. (V. R. Kireitov) 89a:53082 53C65 (35R30, 78A99)
- ★ Уравнения распределения средней пространственной освещенности. Одна обратная задача для уравнения Пауэрса. (Russian) [Equations of the propagation of mean spatial illumination. An inverse problem for the Peierls equation] Препринт [Preprint], 86–670. *Akad. Nauk SSSR Sibirsk. Otdel. Vychisl. Tsentr, Novosibirsk*, 1986. 49 pp. (Gottfried Anger) 89f:35203 35R30 (45K05, 78A45)
- Kirfel, Christoph** Stabilität bei symmetrischen  $h$ -Basen. [Stability for symmetric  $h$ -bases] *Acta Arith.* **51** (1988), no. 1, 85–96. (P. Erdős) 89h:11007 11B13
- Kiriaki, Kiriaki** (with Athanasiadis, Christodoulos) Low-frequency electromagnetic scattering theory for a dielectric. *Bull. Soc. Math. Grèce (N.S.)* **27** (1986), 47–59. (From the summary) 89b:78012 78A45
- (with Dassios, George) A useful application of Gauss theorem. *Bull. Soc. Math. Grèce (N.S.)* **28** (1987), part A, 40–43. (I. M. Longman) 89d:26011 26B20
- (with Dassios, George; Polyzos, Demosthenes) On the scattering amplitudes for elastic waves. *Z. Angew. Math. Phys.* **38** (1987), no. 6, 856–873. (Summary) 89a:73019 73D25
- (with Athanasiadis, Christodoulos) Electromagnetic scattering theory for a dielectric with a perfect conductor core in low-frequencies. *Math. Balkanica (N.S.)* **2** (1988), no. 1, 64–77. (I. M. Longman) 89j:78028 78A45
- Kirichenko, N. A.** (with Bunkin, F. V.; Galaktionov, V. A.; Kurdyumov, S. P.; Samarskii, A. A.) A nonlinear boundary value problem of ignition by radiation. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 4, 549–559, 623. (Summary) 89d:80008 80A20 (35K20)
- Kirichenko, N. F.** Algorithms for the adaptive control of manipulated robots. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist. No. 5* (1986), 3–6, 94. (Summary) 89k:70053 70Q05 (70B15, 93C40, 93C75)
- Kirichenko, V. F.** (with Akivis, M. A.; Galin, G. Ya.; Morozova, E. A.; Novikov, S. P.; Fedenko, A. S.) Anatolii Mikhailovich Vasil'ev. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 4(262), 159–160; translation in *Russian Math. Surveys* **43** (1988), no. 4, 191–193. (Editors) 89m:01073 01A70
- Kirichenko, V. V.** (with Gregul', O. E.) Finitely generated modules over semimaximal rings. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh. No. 27* (1985), 37–42, 124. (Summary) 89d:16034 16A53
- (with Kostyukevich, P. P.) Biserial rings. (Russian) *Ukrain. Mat. Zh.* **38** (1986), no. 6, 718–723, 814. (J. Jirásko) 89b:16037 16A64 (16A51)
- (with Bernik, O. Ya.) Semi-perfect rings of distributive-module type. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 3, 15–17, 84. (Andrzej Skowroński) 89m:16045 16A53 (16A35, 16A48, 16A51)
- (with Yaremchenko, Yu. V.) Noetherian biserial rings. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 4, 435–440, 543; translation in *Ukrainian Math. J.* **40** (1988), no. 4, 372–377. (Iuliu Crivei) 89h:16012 16A33
- Kirichenko, P. A.** (with Tkachenko, S. G.) An operator-valued function of Mittag-Leffler type. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 68, 32–52. (From the summary) 89f:47073 47D05 (47A56)
- Kirik of Novgorod** see Pashkov, A. M., 89d:01015
- Kirilenko, T. V.** (with Chetverikov, G. G.) A generalized method for minimizing the totality of finite predicates. (Russian) *Problems of bionics*, No. 39 (Russian), 44–49, ii, "Vishcha Shkola", Kharkov, 1987. (Korolov Gilezan) 89b:03101 03G05 (06E30, 94C10)
- Kirilich, V. M.** A nonlocal problem of Stefan type for a first-order hyperbolic system. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 1, 121–124, 136; translation in *Ukrainian Math. J.* **40** (1988), no. 1, 104–106. (Si Ning Zheng) 89e:35146 35R35 (35L60)
- Kirillov, A. A.** Kähler structure on the  $K$ -orbits of a group of diffeomorphisms of the circle. (Russian) *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 2, 42–45. (Janusz Grabowski) 89a:58019 58D05 (22E65, 58B20)
- (with Yur'ev, D. V.) Kähler geometry of the infinite-dimensional homogeneous space  $M = \text{Diff}_c(S^1)/\text{Rot}(S^1)$ . (Russian) *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 4, 35–46, 96. (C. J. Atkin) 89e:22032 22E65 (22E70, 58B20, 58D05)
- (with Kochnev, A. A.) Cellular structure of space near a singularity in time in Einstein's equations. *JETP Lett.* **46** (1987), no. 9, 435–438 (1988); translated from *Pisma Zh. Eksp. Teoret. Fiz.* **46** (1987), no. 9, 345–348 (Russian). (Mark D. Roberts) 89k:83047 83C75 (83F05)
- (with Gvishiani, A. D.) ★ Теоремы и задачи функционального анализа. (Russian) [Theorems and problems of functional analysis] Second edition. "Nauka", Moscow, 1988. 398 pp. ISBN 5-02-013797-9 (From the preface) 89j:46001 46-01 (00A05, 28-01, 43-01, 47-01)
- see also Berezin, F. A., 89b:58006 and Gelfand, I. M., 89k:01042b
- Kirillov, A. N.** (with Reshetikhin, N. Yu.) Representations of Yangians and multiplicities of the inclusion of the irreducible components of the tensor product of representations of simple Lie algebras. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **160** (1987), Anal. Teor. Chisel i Teor. Funkts. **8**, 211–221, 301. (S. I. Gelfand) 89b:17012 17B10 (16A24)
- (with Smirnov, F. A.) Solution of some combinatorial problems arising in the calculation of correlators in exactly solvable models. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **164** (1987), *Differentsial'naya Geom. Gruppy Li i Mekh. IX*, 67–79, 197. (M. Lawrence Glasser) 89f:82082 82A68 (81E99, 82A69)
- Identities for the Rogers dilogarithmic function connected with simple Lie algebras. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **164** (1987), *Differentsial'naya Geom. Gruppy Li i Mekh. IX*, 121–133, 198. (H. de Vries) 89j:17007 17B10
- (with Smirnov, F. A.) Form factors in  $O(3)$  nonlinear  $\sigma$ -model. *Internat. J. Modern Phys. A* **3** (1988), no. 3, 731–741. (Enore Guadagnini) 89f:81091 81E08 (58E20, 81F15)
- Kirillov, P. V.** A construction for the investigation of random equations. (Russian) *Investigations in differential equations and mathematical analysis (Russian)*, 78–80, 173, "Shtiintsa", Kishinev, 1988. (Shi Sheng Zhang) 89k:60066 60H25
- Kirillova, F. M.** (with Gabasov, R.; Kostyukova, O. I.; Raketskii, V. M.) ★ Конструктивные методы оптимизации. Часть 4. (Russian) [Constructive methods of optimization. Part 4] Выпуклые задачи. [Convex problems] "Universitet-sko", Minsk, 1987. 224 pp. (W. W. Breckner) 89f:49023 49D40 (49D30, 49D45, 90C25)
- (with Gabasov, R.; Nguen Chan) An approach to the solution of an optimal control problem with trajectory retention for a linear system with delay. (Russian. English summary) *Vestsi Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* **1987**, no. 3, 3–9, 123. (Alfredo Gómez) 89b:34171 34K35 (49A55, 49D35, 93C05)
- Kirillova, L. G.** (with Stepanov, A. E.) ★ Математическое моделирование процессов выращивания кристаллических полупроводниковых материалов. (Russian) [Mathematical modeling of the growth processes of crystal semiconductor materials] "Naukova Dumka", Kiev, 1988. 184 pp. ISBN 5-12-009333-7 (Summary) 89f:80001 80-01 (80-08, 80A20, 82A60)
- Kirlychev, V. N.** (with Emel'yanov, S. V.; Burovoi, I. A.) Controllability of linear dynamical systems. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 4, 832–835; translation in *Soviet Phys. Dokl.* **33** (1988), no. 4, 245–246. (Jerzy Klamka) 89j:93005 93B05 (49E15, 93C05, 93C60)
- Kirlyuk, O. P.** (with Godunov, S. K.) A new variant of equations for the parameters of orthogonal transformations for the deflation of bidiagonal matrices. (Russian) *Computational processes and systems*, No. 5 (Russian), 5–15, "Nauka", Moscow, 1987. (Jiri Hřebíček) 89e:65044 65F30 (65G99)
- Kirin, N. E.** (with Zaika, Yu. V.) Conjugate problems of the identification of dynamical systems. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 5, 770–776, 916; translation in *Differential Equations* **24** (1988), no. 5, 499–504. (Introduction) 89g:93034 93B30 (93B07)
- Kirin, Vladimir G.** What kind of set is every family of the subsets of a given set? (Serbo-Croatian) *Matematika (Zagreb)* **14** (1985), no. 3–4, 5–14 (1986). (Djuro Kurepa) 89e:04004 04A05
- A first-order formal language with equality. (Serbo-Croatian) *Matematika (Zagreb)* **15** (1986), no. 3, 23–36. (G. E. Mints) 89e:03004 03-01
- Another simple form of the axiom of choice. (Serbo-Croatian summary) *Rad Jugoslav. Akad. Znan. Umjet.* **428** (1987), 13–15. (Not in MR) 04A25
- Kiritis, Elias B.** A bosonic representation of the Ising model. *Phys. Lett. B* **198** (1987), no. 3, 379–383. (Omar Foda) 89d:81102 81E99 (81E30, 82A15)
- Character formulae and the structure of the representations of the  $N = 1$ ,  $N = 2$  superconformal algebras. *Internat. J. Modern Phys. A* **3** (1988), no. 8, 1871–1906. (Ronald C. King) 89k:17048 17B70 (81E40)
- The  $\hat{e} = \hat{f}$  minimal  $N = 1$  superconformal system and its realisation in the critical  $O(2)$  Gaussian model. *J. Phys. A* **21** (1988), no. 2, 297–306. (Summary) 89e:81126 81E25 (81E40, 81E99)
- Proof of the completeness of the classification of rational conformal theories with  $c = 1$ . *Phys. Lett. B* **217** (1989), no. 4, 427–430. (Summary) 89k:81150 81E99 (11F66, 22E40, 81E40)
- Kiriya, Hiroshi** (with Origuchi, Tadashi; Matsuo, Yoshio) A table of the explicit formulas for the sums of powers  $S_p(n) = \sum_{k=1}^n k^p$  for  $p = 1(1)61$ . *Rep. Fac. Sci. Kagoshima Univ. Math. Phys. Chem. No. 20* (1987), 11–31. (Samuel S. Wagstaff, Jr.) 89e:11016 11B68 (11Y55)
- Kirjackis, Edward G.** (with Mieliauskas, J.) Some estimates for the  $n$ th divided difference of functions that are regular in the unit disk. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 2, 273–278. (Wazir Hasan Abdi) 89d:30001 30A10
- Kirk, W. A.** (with Martínez-Yañez, Carlos) Nonexpansive and locally nonexpansive mappings in product spaces. *Nonlinear Anal.* **12** (1988), no. 7, 719–725. (A. J. B. Potter) 89h:47084 47H09 (47H10)
- Kirkaldy, J. S.** (with Brechet, Y.) Contribution to the theory of diffusion-reaction controlled Liesegang patterns. *J. Chem. Phys.* **90** (1989), no. 3, 1499–1504. (Summary) 89k:80027 80A32 (92A40)
- Kirkhof, G.** see Kirchhoff, G.
- Kirklin, Kelley H.** (with Greene, Brian R.; Miron, Paul) Topology and geometry in superstring-inspired phenomenology. *Mathematical aspects of string theory (San Diego, Calif., 1986)*, 441–487. *Adv. Ser. Math. Phys.*, 1, World Sci. Publishing, Singapore, 1987. (see 89m:81001) 53C80 (81E30, 83E30)
- (with Greene, Brian R.) On the equivalence of the two most favoured Calabi-Yau compactifications. *Comm. Math. Phys.* **113** (1987), no. 1, 105–114. (Sergey Merkulov) 89b:32017 32C10 (32G10, 53C55, 81G20, 83E15)
- (with Aspinwall, P. S.; Greene, Brian R.; Miron, Paul) Searching for three-generation Calabi-Yau manifolds. *Nuclear Phys. B* **294** (1987), no. 1, 193–222. (Pankaj Topiwala) 89b:53071 53C25 (14J30, 32G13, 32F99, 81E99, 83E30)
- (with Distler, Jacques; Greene, Brian R.; Miron, Paul) Evaluation of  $27^3$  Yukawa couplings in a three-generation superstring model. *Phys. Lett. B* **195** (1987), no. 1, 41–49. (Andrew A. Bytsenko) 89c:81114 81E99 (53C80, 81E30, 81G20)



- Kirkovits, Magdalen Sz.** On the integral-tensor calculus. *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces* (Braşov, 1986), 165-176, Soc. Ştiinţe Mat. R.S. România, Bucharest, 1986. (Ramhit Ojha) **89h:53049** 53A45 (53B40)
- Kirkpatrick, David** Establishing order in planar subdivisions. Third ACM Symposium on Computational Geometry (Waterloo, Ont., 1987). *Discrete Comput. Geom.* **3** (1988), no. 3, 267-280. (Rephael Wenger) **89g:68068** 68U05 (05C10, 68P10, 68R10)
- (with Kaminski, Michael; Bshouty, Nader H.) Addition requirements for matrix and transposed matrix products. *J. Algorithms* **9** (1988), no. 3, 354-364. (D. Z. Spicer) **89m:68061** 68Q25 (15-04, 65F05)
- (with Hell, Pavol; Kratochvíl, Jan; Kříž, Igor) On restricted two-factors. *SIAM J. Discrete Math.* **1** (1988), no. 4, 472-484. (H. Joseph Straight) **89m:05092** 05C70
- (with Abrahamson, Karl; Adler, Andrew; Gelbart, Rachel; Higham, Lisa) The bit complexity of randomized leader election on a ring. *SIAM J. Comput.* **18** (1989), no. 1, 12-29. (Cristian Calude) **89k:68038** 68Q10 (03D05, 68Q25)
- Kirkpatrick, Mark** (with Lande, Russell) Ecological speciation by sexual selection. *J. Theoret. Biol.* **133** (1988), no. 1, 85-98. (Summary) **89f:92057** 92A17 (92A10)
- Kirkpatrick, S.** (with Vannimenus, J.; Haldane, F. D. M.; Jayaprakash, C.) Ground-state morphology of random frustrated XY systems. *Phys. Rev. B* **39** (1989), no. 7, 4634-4643. (Summary) **89m:82087** 82A68
- Kirku, P. I.** The number of locally compact group topologies of torsion-free divisible abelian groups. (Russian) *Mat. Issled.* **105** *Moduli, Algebr., Topol.* (1988), 93-104, 196. (Gheorghe Ivan) **89k:22004** 22B05 (20K15, 20K20)
- Kiriling, Gabriela** Permanence of some ecological systems with several predator and one prey species. *J. Math. Biol.* **26** (1988), no. 2, 217-232. (P. Waltman) **89e:92044** 92A17
- Kirman, Alain** (with Gérard-Varet, Louis-André; Jordan, Robert) Dynamique des stocks et équilibre budgétaire dans un modèle où les prix sont contraints à la baisse. [The dynamics of stocks and budgetary equilibrium in a model with falling prices] With comments by Henri Sterdyniak. *Macrodynamique et déséquilibres*, 245-284, *Economica*, Paris, 1987. (see **89d:90065**) 90A17
- Kirman, S. N. U. A.** (with Gupta, Ramesh C.) On order relations between reliability measures. *Comm. Statist. Stochastic Models* **3** (1987), no. 1, 149-156. (Summary) **89c:60101** 60K10 (60E05, 62N05, 90B25)
- Kirnasov, E. G.** Coverings of Wahlquist-Estabrook type over the heat equation. (Russian) *Mat. Zametki* **42** (1987), no. 3, 422-434, 476. (Alexander Yanovski) **89h:58017** 58A20 (35Q20, 58A15, 58G37)
- Kiro, Shmuel** On the global existence of holomorphic solutions and the semiglobal existence of real analytic solutions of linear partial differential equations. *J. Analyse Math.* **48** (1987), 225-246. (T. Kawai (Zbl 632:35010)) **89h:35007** 35A20
- Kirousis, Leferis M.** (with Papadimitriou, Christos H.) Searching and pebbling. *Theoret. Comput. Sci.* **47** (1986), no. 2, 205-218. (Andreas Brandstädt) **89a:68073** 68Q15 (68R10)
- Kirpichnikova, N. Ya.** Waves on the surface of a heavy fluid from the point of view of the space-time ray method and its modifications (linear theory). (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **165** (1987), *Mat. Vopr. Teor. Rasprostran.* **Voln** **17**, 91-101, 190. (Summary) **89a:35144** 35L99 (35J05, 76B15)
- (with Kiselev, A. P.) Polarization-spectral anomalies of surface waves in an almost layered elastic half space. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **165** (1987), *Mat. Vopr. Teor. Rasprostran.* **Voln** **17**, 102-114, 191. (L. P. Lebedev) **89a:73017** 73D20 (35C99)
- Kirsanov, B. V.** Decomposition in problems of the investigation of an integrated system of active control, dominant control. (Russian) *Voprosy Kibernet. (Moscow)* **No. 139** (1988), 116-126. (Summary) **89h:49026** 49D27 (93B17, 93C15)
- Kirsanov, V. S.** The annotated copy of the first edition of I. Newton's *Principia* in the library of Moscow University. (Russian) *Studies in the history of physics and mechanics*, 1987 (Russian), 214-233, 246, "Nauka", Moscow, 1987. (Peeter Müürsepp) **89d:01025** 01A45
- On the history of the origin of I. Newton's *Principia*. (Russian. English summary) With an appendix by Newton. *Voprosy Istor. Estestvoznani. i Tekhn.* **1987**, no. 3, 51-78. (Peeter Müürsepp) **89a:01021** 01A45 (76-03)
- Kirsch, Andreas** (with Kress, Rainer) An optimization method in inverse acoustic scattering (invited contribution). *Boundary elements IX, Vol. 3* (Stuttgart, 1987), 3-18, *Comput. Mech., Southampton*, 1987. (Introduction) **89h:76033** 76Q05 (35J05, 35R30, 49D15, 49D37)
- (with Kress, Rainer; Monk, P. B.; Zinn, A.) Two methods for solving the inverse acoustic scattering problem. *Inverse Problems* **4** (1988), no. 3, 749-770. (Fadil Santosa) **89k:73024** 73D50 (35J05, 35R30, 76Q05)
- (with Schomburg, B.; Berendt, G.) The Backus-Gilbert method. *Inverse Problems* **4** (1988), no. 3, 771-783. (M. Z. Nashed) **89m:86011** 86A15 (44A60)
- (with Wilde, Peter) The optimization of directivity and signal-to-noise ratio of an arbitrary antenna array. *Math. Methods Appl. Sci.* **10** (1988), no. 2, 153-164. (Summary) **89h:93077** 93C75 (93B28)
- (with Colton, David) Karp's theorem in acoustic scattering theory. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 783-788. (V. M. Isakov) **89h:35334** 35R30 (35J05, 35P25, 76Q05)
- Kirsch, Arnold** ★ Mathematik wirklich verstehen. (German) [Really understanding mathematics] Eine Einführung in ihre Grundbegriffe und Denkweisen. [An introduction to its basic concepts and ways of thinking] Aulis Verlag Deubner & Co. KG, Cologne, 1987. 330 pp. ISBN 3-7614-0931-1 (H.-J. Vollrath) **89i:00032** 00A25 (00A05, 03-01, 26-01)
- Kirsch, S.** Remarks on extremal problems in a class of quasiconformal mappings in the mean. (Russian and Polish summaries) Proceedings of the 9th Conference on Analytic Functions (Lublin, 1986). *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **40** (1986), 79-96 (1987). (K. Strebel) **89m:30042** 30C60 (30C70)
- Funktionalabschätzungen bei quasikonformen Abbildungen. [Functional estimates for quasiconformal mappings] *Math. Nachr.* **131** (1987), 127-148. (K. Strebel) **89d:30021** 30C60 (30C70, 30C75)
- Kirsch, Ulf** Optimal topologies of truss structures. *Comput. Methods Appl. Mech. Engrg.* **72** (1989), no. 1, 15-28. (Summary) **89k:73053** 73K40
- Kirsch, Werner** Estimates on the difference between succeeding eigenvalues and Lifshitz tails for random Schrödinger operators. *Stochastic processes—mathematics and physics, II* (Bielefeld, 1985), 138-151, *Lecture Notes in Math.*, 1250, Springer, Berlin-New York, 1987. (Introduction) **89g:60201** 60H25 (34B25, 35R60, 47F05, 82A15)
- (with Simon, Barry) Comparison theorems for the gap of Schrödinger operators. *J. Funct. Anal.* **75** (1987), no. 2, 396-410. (David Gurarie) **89h:35127** 35P15 (35J10, 81C10, 82A05)
- Kirschbaum, D.** The algebra of the classical Hamiltonian mechanics as the closure of two finite-dimensional algebras. *J. Phys. A* **21** (1988), no. 4, 865-874. (Paulo R. Rodrigues) **89i:58038** 58F05 (22E70, 70H05, 70H15)
- Kirschenhofer, Peter** A tree enumeration problem involving the asymptotic of the "diagonals" of a power series. *Random graphs '85* (Poznań, 1985), 157-170, *North-Holland Math. Stud.*, 144, North-Holland, Amsterdam-New York, 1987. (Edward A. Bender) **89h:05076** 05C05 (05A15)
- (with Prodinger, Helmut; Tichy, Robert F.) A contribution to the analysis of in situ permutation. (Serbo-Croatian summary) *Glas. Mat. Ser. III* **22** (42) (1987), no. 2, 269-278. (Dominique Gouyou-Beauchamps) **89i:05023** 05A15 (68R05)
- (with Prodinger, Helmut) Further results on digital search trees. Thirteenth International Colloquium on Automata, Languages and Programming (Rennes, 1986). *Theoret. Comput. Sci.* **58** (1988), no. 1-3, 143-154. (Norbert Blum) **89j:68022** 68P05 (68P20)
- Kirschink, Heribert** (with Butzer, Paul L.; Schulz, Dietmar) An extension of the Lindberg-Trotter operator-theoretic approach to limit theorems for dependent random variables. II. Approximation theorems with  $O$ -rates, applications to martingale difference arrays. *Acta Sci. Math. (Szeged)* **51** (1987), no. 3-4, 423-433. (Dominik Szyal) **89g:60068** 60F05 (60G42)
- Kirschner, R.** Parisi-Sourlas type symmetry and Hamiltonian BRST formalism. *Phys. Lett. B* **205** (1988), no. 2-3, 285-288. (Sergey Merkulov) **89f:81189** 81E99 (22E65, 81E30)
- Kirschner, Bernd** (with Jenner, Birgit) Characterizing the polynomial hierarchy by alternating auxiliary pushdown automata. *STACS 88* (Bordeaux, 1988), 118-125, *Lecture Notes in Comput. Sci.*, 294, Springer, Berlin-New York, 1988. (José L. Balcázar) **89i:68043** 68Q15 (03D05, 03D15, 68Q05, 68Q70)
- Kirson, Michael W.** (with Leviatan, Amiram) Intrinsic and collective structure of an algebraic model of molecular rotation-vibration spectra. *Ann. Physics* **188** (1988), no. 1, 142-185. (Summary) **89j:81282** 81G50
- Kirstein, Bernd** (with Fritzsche, Bernd) A Schur type matrix extension problem. *Math. Nachr.* **134** (1987), 257-271. (Dan Timotin) **89a:15019** 15A48 (15A12)
- (with Fritzsche, Bernd) An extension problem for nonnegative Hermitian block Toeplitz matrices. III. *Math. Nachr.* **135** (1988), 319-341. (M. Tismenetsky) **89f:15018** 15A57 (47B35)
- (with Fritzsche, Bernd) A matrix extension problem with entropy optimization. *Optimization* **19** (1988), no. 1, 85-99. (T. Ando) **89j:15035** 15A48 (47A20)
- (with Fritzsche, Bernd) A Schur parametrization of nonnegative Hermitian and contractive block matrices and the corresponding maximum extension problems. *Optimization* **19** (1988), no. 5, 737-755. (M. Tismenetsky) **89m:15015** 15A57 (60G10, 60G25)
- (with Fritzsche, Bernd) On the structure of the maximum extension problem. *Optimization* **20** (1989), no. 2, 177-191. (L. Rodman) **89m:15016** 15A57 (15A23)
- müller-Kirsten, H. J. W.** see Müller-Kirsten, H. J. W.
- Kirtadze, A. P.** (with Pantsulaya, G. R.) The property of essential uniqueness of invariant measures in vector spaces. (Russian. English and Georgian summaries) *Sootshch. Akad. Nauk Gruzin. SSR* **127** (1987), no. 1, 33-35. (Ivan Dobrovok) **89j:28029** 28C10 (43A05)
- Kirwan, F. C.** Rational intersection cohomology of quotient varieties. II. *Invent. Math.* **90** (1987), no. 1, 153-167. (Jean-Luc Brylinski) **89e:14010** 14D25 (14I30, 32M10, 55N25, 55N35)
- (with Lee, Ronnie; Weintraub, Steven H.) Quotients of the complex ball by discrete groups. *Pacific J. Math.* **130** (1987), no. 1, 115-141. (Summary) **89j:32034** 32J05 (11F25, 14J15, 22E40, 32C40, 32M10)
- Intersection homology and torus actions. *J. Amer. Math. Soc.* **1** (1988), no. 2, 385-400. (Andrew J. Sommese) **89c:14072** 14L30 (32M05)
- The topology of reduced phase spaces of the motion of vortices on a sphere. *Phys. D* **30** (1988), no. 1-2, 99-123. (Malcolm Adams) **89h:58091** 58F05 (58E05, 86A35)
- Kiryakova, V. S.** Applications of the generalized Poisson transform for the solution of hyper-Bessel differential equations. (Bulgarian. English and Russian summaries) *Godishnik Vissih. Uchebn. Zaved. Prirodna Mat.* **22** (1986), no. 4, 129-140 (1987). (Summary) **89d:34057** 34B30 (34C20, 44A05)
- A new differential formula for Meijer's  $G$ -function. *C. R. Acad. Bulgare Sci.* **41** (1988), no. 5, 27-30. (A. M. Mathai) **89f:33069** 33Q35 (34A05)
- Kiryman, A. I.** (with Bykova, A. N.) Stability of a second-order quasipolynomial. (Russian) *Partial differential equations* (Russian), 87-89, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (see **89c:00023**) 34K20
- Kiryakova, L. V.** (with Rotar, V. I.) A lemma on "corrected" distributions. (Russian) *Teor. Veroyatnost. i Primenen.* **31** (1986), no. 4, 801-805. (V. J. Paulauskas) **89b:60021** 60B12 (60G50)
- (with Rotar, V. I.) Some remarks on the summation of dependent summands. (Russian) *Mat. Zametki* **42** (1987), no. 5, 747-750, 764. (Zdzisław Rychlik) **89a:60063** 60F05
- Kiryatskii, E. G.** see Kirjackis, Edward G.
- Kirzhner, V. M.** (with Lyubich, Yu. I.) A dynamical system arising in mathematical genetics. (Russian) *Vestnik Khar'kov. Gos. Univ. No. 298* *Mat. Mekh. i Voprosy Upravl.* (1987), 91-94. (A. Somolinos) **89e:92029** 92A12
- (with Vainer, V. G.; Zaitsev, I. D.) A dynamic problem of the linking of a communication network. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 6, 70-73, 88. (Summary) **89j:90107** 90B10 (68M10, 94C99)
- (with Vainer, V. G.; Zaitsev, I. D.) An estimate for the optimum of an objective functional in the problem of linking a communications network. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 8, 71-74, 88. (Summary) **89k:90061** 90B10
- Kirzhnits, D. A.** On the "Moscow-zero" problem. *Quantum field theory and quantum statistics, Vol. 1*, 349-369, *Hilger, Bristol*, 1987. (Henryk Arodz) **89h:81281** 81L05 (81E15, 82A57)
- Kis, Bela** Connection theory and parameter transformations. Proceedings of the Winter School on Geometry and Physics (Srní, 1987). *Rend. Circ. Mat. Palermo (2) Suppl.* **16** (1987), 85-99. (H. Rund) **89e:53045** 53C05 (53C50, 55R10)
- Kis, O.** (with Hermann, Thomas; Vértési, P.) On certain rational interpolatory operators. *Acta Math. Hungar.* **49** (1987), no. 1-2, 29-49. (A. Sharma (Zbl 621:42005)) **89h:41036** 41A20 (41A05, 42A15)
- Kischka, Peter** Bayesian methods in multiperiod financial decision making. *Probability and Bayesian statistics* (Innsbruck, 1986), 295-303, *Plenum, New York-London*, 1987.

- (Lorenzo Peccati) **89a:90021** 90A09
- Kiselev, A. P.** (with Kirpichnikova, N. Ya.) Polarization-spectral anomalies of surface waves in an almost layered elastic half space. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **165** (1987), *Mat. Vopr. Teor. Rasprostran. Voln* **17**, 102–114, 191. (L. P. Lebedev) **89a:73017** 73D20 (35C99)
- Kiselev, A. V.** On estimation of the global minimum of a problem with signomial constraints and signomial objective functions. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 4, 156–161; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1988**, no. 1, 60–64, 219 (Russian). (Summary) **89j:90211** 90C27
- Kiselev, N. V.** (with Grunin, V. K.; Kurtser, G. M.; Yakubovskii, E. G.) An algorithm for estimating the parameters of the regular and irregular components of an echo signal in a classification problem. (Russian) *Algorithms, software and hardware for flexible production systems* (Russian), 13–25, 209, *Avtomat. Proizvod., 7*, Leningrad. Univ., Leningrad, 1988. (D. Stanimir) **89g:94008** 94A12
- Kiselev, O. M.** Asymptotic behavior of the solution of the Cauchy problem for the perturbed Klein-Fock-Gordon equation. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **165** (1987), *Mat. Vopr. Teor. Rasprostran. Voln* **17**, 115–121, 191. (O. Vejvoda) **89c:35104** 35L70 (35C20, 35Q20)
- Kiselev, V. G.** (with Yakovlev, A. F.) Some mathematical problems arising in the computer realization of geographical information systems. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 277–286, "Nauka", Moscow, 1987. (V. Ya. Kreinovich) **89h:92066** 92A20 (68U30, 86A30, 94A99)
- (with Selivanov, K. G.) Quantum correction to the monopole mass. *Phys. Lett. B* **213** (1988), no. 2, 165–167. (From the summary) **89i:81079** 81E15
- Kiselev, V. V.** (with Borisov, A. B.) Topological defects in incommensurate magnetic and crystal structures and quasi-periodic solutions of the elliptic sine-Gordon equation. *Phys. D* **31** (1988), no. 1, 49–64. (Peter L. Christiansen) **89f:82099** 82A99 (35Q20)
- Kiseleva, E. M.** A generalization of a problem of optimal partitioning with constraints. (Russian) *Methods for solving nonlinear problems, and data processing* (Russian), 44–48, 106–107, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1986. (see **89f:00011**) 90C30 (05A17)
- Kiseleva, L. V.** Distribution of the zeros of the function  $\zeta(s)$  in a neighborhood of the critical line. (Russian) *Mat. Zametki* **43** (1988), no. 1, 3–11, 153; translation in *Math. Notes* **43** (1988), no. 1–2, 3–8. (Matti Jutila) **89c:11135** 11M26
- The number of zeros of the function  $\zeta(s)$  on "almost all" short intervals of the critical line. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **52** (1988), no. 3, 479–500, 670; translation in *Math. USSR-Izv.* **32** (1989), no. 3, 475–499. (Aleksandar Ivić) **89i:11097** 11M06
- Kiselevskii, A. G.** (with Khushanov, D. Ya.) Optimization of an estimate for a transient process in linear systems. (Russian) *Issled. Operatsii i ASU* No. 31 (1988), 78–81, 114. (Summary) **89d:40114** 34A30 (49E15)
- Kiseliev, V. V.** see **Kiselev, V. V.**
- Kiselman, Christor O.** Smoothness of vector sums of plane convex sets. (Esperanto summary) *Math. Scand.* **60** (1987), no. 2, 239–252. (Michel Valadier) **89a:52005** 52A10 (26A51)
- Kiser, Terry L.** Distributional solutions to a generalized wave equation for gravity waves on deep water. *J. Math. Anal. Appl.* **126** (1987), no. 2, 437–454. (Robert D. Brown) **89a:35129** 35L20 (35C10, 35D99, 76B15)
- Kishi, Kazuo** A certain logmodular algebra and its Gleason parts. *Hokkaido Math. J.* **17** (1988), no. 2, 241–277. (Pamela Gorkin) **89i:46058** 46J10 (46J20)
- Kishida, Kuniharu** (with Yamada, Sumasu; Bekki, Keisuke) Notes on poles and convergence rate of autoregressive model. *J. Statist. Comput. Simulation* **25** (1986), no. 3–4, 273–293. (Pham Dinh Tuan) **89m:62107** 62M10
- Kishimoto, Akitaka** (with Effros, Edward G.) Module maps and Hochschild-Johnson cohomology. *Indiana Univ. Math. J.* **36** (1987), no. 2, 257–276. (Vern Paulsen) **89b:46068** 46L05 (46M05, 46M20)
- (with Bratteli, Ola; Robinson, Derek W.) Embedding product type actions into  $C^*$ -dynamical systems. *J. Funct. Anal.* **75** (1987), no. 1, 188–210. (Hisashi Choda) **89c:46086** 46L55
- Type I orbits in the pure states of a  $C^*$ -dynamical system. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 2, 321–336. (From the introduction) **89i:46072** 46L55 (46L30)
- (with Evans, David E.) Duality for automorphisms on a compact  $C^*$ -dynamical system. *Ergodic Theory Dynamical Systems* **8** (1988), no. 2, 173–189. (C. J. K. Batty) **89m:46107** 46L55
- Kishimoto, Kazuo<sup>1</sup>** (with Krempa, Jan; Nowicki, Andrzej Wladyslaw) On rings whose number of centralizers of ideals is finite. *Rend. Circ. Mat. Palermo (2)* **35** (1986), no. 3, 349–363 (1987). (J. C. Robson) **89e:16011** 16A15 (16A12)
- (with Nowicki, Andrzej Wladyslaw) A note on the Jacobian conjecture in two variables. *J. Fac. Sci. Shinshu Univ.* **22** (1987), no. 1, 11–12. (L. Andrew Campbell) **89d:13004** 13B10 (14E20)
- Kishimoto, Kazuo<sup>2</sup>** On a distance between two curves. *Science on form* (Sakura, 1985), 121–128, *Reidel, Dordrecht-Boston, MA*, 1987. (see **89g:82013**) 53A04 (65D10)
- A stable spatially nonconstant equilibrium of Lotka-Volterra two-patch system with May-Leonard dynamics. *Biomathematics and related computational problems* (Naples, 1987), 331–335, *Kluwer Acad. Publ., Dordrecht*, 1988. (Joseph So) **89j:92057** 92A15 (92A17)
- Kishka, Z. M. G.** Exponential set of polynomials of two complex variables. II. (Arabic summary) *Bull. Fac. Sci. Assiut Univ. A* **15** (1986), no. 1, 99–105. (Summary) **89c:32003** 32A05
- Kishkis, K. Yu.** The index of the Bitsadze-Samarskii problem for harmonic functions. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 1, 105–110, 182; translation in *Differential Equations* **24** (1988), no. 1, 83–87. (Summary) **89h:35092** 35J25 (31A25)
- Kishukov, Kh. M.** On the change of the extrinsic curvature of a variable surface in a Riemannian manifold. (Russian) *Riemannian spaces and methods of the theory of elliptic differential equations* (Russian), 43–47, *Leningrad. Gos. Ped. Inst., Leningrad*, 1986. (M. C. Chaki) **89b:53039** 53B25
- Kisilewicz, Andrzej** Characterization of  $p_n$ -sequences for nonidempotent algebras. *J. Algebra* **108** (1987), no. 1, 102–115. (G. Grätzer) **89a:08003** 08A40 (08B20)
- Kisilewicz, Michal** see **Differential equations and optimal control**, **89a:34002** and **89a:49001**
- Kisilevsky, H.** (with Dummit, D. S.) Abelian extensions generated by division points. *J. Number Theory* **29** (1988), no. 1, 21–30. (Alan Candiotti) **89j:11104** 11R20
- Kisir, Alev** (with Argaç, Nuran; Kaya, Arif)  $(\sigma, \tau)$ -derivations in prime rings. *Math. J. Okayama Univ.* **29** (1987), 173–177 (1988). (Andrzej Nowicki) **89f:16046** 16A70 (16A72)
- Kislinskii, V. B.** (with Yukalov, V. I.) Crossover between short- and long-range interactions in the one-dimensional Ising model. *J. Phys. A* **21** (1988), no. 1, 227–232. (Summary) **89c:82070** 82A68 (82A25)
- Kislov, V. V.** (with Kriksin, Yu. A.) Numerical modeling of the effect of a brief external action on a soliton. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 162, 20 pp. (Summary) **89a:65011** 65C20 (35Q20)
- Kislov, V. Ya.** (with Dmitriev, A. S.; Gulyaev, Yu. V.; Panas, A. I.) Mode pulling and competition in a system with chaotic dynamics. *Phys. Lett. A* **128** (1988), no. 3–4, 172–176. (Summary) **89b:70007** 70K50 (34C15, 58F13)
- (with Gulyaev, Yu. V.; Dmitriev, A. S.; Panas, A. I.) Bifurcations of strange attractors. The connection of Lyapunov characteristic exponents with the spectrum. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 3, 593–597; translation in *Soviet Phys. Dokl.* **33** (1988), no. 1, 42–44. (From the text) **89b:58132** 58F13 (58F14)
- Kislyakov, S. V.** Fourier coefficients of continuous functions and a class of multipliers. (French summary) *Ann. Inst. Fourier (Grenoble)* **38** (1988), no. 2, 147–183. (Y. Katznelson) **89j:42004** 42A16
- Kisoda, K.** (with Takeno, S.; Homma, Shigeo) Approximate soliton solutions around an exact soliton solution of the Toda lattice equation. *Phys. Lett. A* **130** (1988), no. 4–5, 279–282. (Summary) **89d:58114** 58F37 (35Q20, 58F07, 82A68)
- Kiss, Emil W.** (with Day, Alan) Frames and rings in congruence modular varieties. *J. Algebra* **109** (1987), no. 2, 479–507. (Ralph Freese) **89c:08007** 08B10 (16A42)
- Kiss, Péter** Primitive divisors of Lucas numbers. *Applications of Fibonacci numbers* (San Jose, CA, 1986), 29–38, *Kluwer Acad. Publ., Dordrecht*, 1988. (A. G. Shannon) **89j:11016** 11B39
- On the number of solutions of the Diophantine equation  $(\frac{x}{n}) = (\frac{y}{n})$ . *Fibonacci Quart.* **26** (1988), no. 2, 127–130. (Jannis A. Antoniadis) **89f:11050** 11D57
- (with Erdős, Paul; Sárközy, András) A lower bound for the counting function of Lucas pseudoprimes. *Math. Comp.* **51** (1988), no. 183, 315–323. (Samuel S. Wagstaff, Jr.) **89e:11011** 11B39 (11Y55)
- Kissin, Edward** On lattices of invariant subspaces of operator algebras. *J. Operator Theory* **18** (1987), no. 2, 373–392. (Kenneth R. Davidson) **89d:47100** 47D25 (46L99, 47A15)
- Totally symmetric algebras and the similarity problem. *J. Funct. Anal.* **77** (1988), no. 1, 88–97. (Stephen Power) **89c:47065** 47D25 (46L99)
- Symmetric operator extensions of unbounded derivations of  $C^*$ -algebras. *J. Funct. Anal.* **81** (1988), no. 1, 38–53. (Steve Wright) **89c:46076** 46L40 (47D25)
- Invariant subspaces for derivations. *Proc. Amer. Math. Soc.* **102** (1988), no. 1, 95–101. (Kenneth R. Davidson) **89d:47101** 47D25 (47A15)
- Kiss-Tóth, Tibor** Exact solutions of nonlinear SU(N) principal  $\sigma$ -models. *Internat. J. Modern Phys. A* **3** (1988), no. 5, 1147–1154. (Peter Basarab-Horwath) **89j:81102** 81E13 (58E15)
- Kist, Günter** Theorie der verallgemeinerten kinematischen Räume. [Theory of generalized kinematic spaces] *Resultate Math.* **12** (1987), no. 3–4, 325–347. (J. André) **89d:51023** 51J15 (51J10)
- Inzidenzräume mit Süßscher Kollineationsgruppe. (English summary) [Incidence spaces with Süß collineation group] *J. Geom.* **32** (1988), no. 1–2, 55–68. (J. André) **89g:51001** 51A10 (51J20)
- Kister, Jane E.** see **Bibliography: Mathematical logic**, **89e:03001f**
- Kita, Michitake** On the number of parameters of linear differential equations with regular singularities on a compact Riemann surface. *Tokyo J. Math.* **10** (1987), no. 1, 69–75. (Helmut Hamm) **89c:32026** 32C40 (30F10, 32G20, 34A20, 34A30)
- Kitada, Akihiko** Comment on: "On a property of a classical solution of the nonlinear mass transport equation  $u_t = u_{xx}/1 + u^2$ , II" [*J. Math. Phys.* **28** (1987), no. 3, 536–537; MR 88e:82035] by Kitada and H. Umehara. *J. Math. Phys.* **28** (1987), no. 12, 2982–2983. (Gert Due Billing) **89g:82068** 82A70 (35Q20, 82A55)
- Kitada, Hitoshi** A relation between the modified wave operators  $W_t^\pm$  and  $W_0^\pm$ . *Sci. Papers College Arts Sci. Univ. Tokyo* **36** (1987), no. 2, 91–105. (From the text) **89m:35171** 35P25 (47F05, 81F05)
- Fundamental solutions and eigenfunction expansions for Schrödinger operators. I. Fundamental solutions. *Math. Z.* **198** (1988), no. 2, 181–190. (Volker Vogelsang) **89f:35058** 35J10 (35P10, 35S10)
- Kitada, Toshiyuki**  $HP$ -multiplier theorems on certain totally disconnected groups. *Sci. Rep. Hiroaki Univ.* **34** (1987), no. 1, 1–7. (C. W. Onneweer) **89a:43011** 43A70 (43A17, 43A22)
- Multipliers on weighted Hardy spaces over certain totally disconnected groups. *Internat. J. Math. Math. Sci.* **11** (1988), no. 4, 665–674. (C. W. Onneweer) **89k:43003** 43A17 (43A22, 43A70)
- Kitae, A. V.** The method of isomonodromic deformations for the "degenerate" third Painlevé equation. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **161** (1987), *Vopr. Kvant. Teor. Polya i Statist. Fiz.* **7**, 45–53, 175–176, 179. (P. A. Kuchment) **89h:35298** 35Q20 (58F07)
- The method of isomonodromic deformations and the asymptotics of the solutions of the "complete" third Painlevé equation. (Russian) *Mat. Sb. (N.S.)* **134**(176) (1987), no. 3, 421–444, 448; translation in *Math. USSR-Sb.* **62** (1989), no. 2, 421–444. (J. Christina) **89h:35146** 35Q20 (34A20, 34E20, 58F07)
- Kitagawa, Fumio** (with Ikeda, Hideto) An existential problem of a weight-controlled subset and its application to school timetable construction. Proceedings of the First Japan Conference on Graph Theory and Applications (Hakone, 1986). *Discrete Math.* **72** (1988), no. 1–3, 195–211. (Roman Słowiński) **89k:90087** 90B35 (05C99, 90B10)
- Kitagawa, Takashi** A deterministic approach to optimal regularization. The finite-dimensional case. *Japan J. Appl. Math.* **4** (1987), no. 3, 371–391. (Heinz W. Engl) **89b:45010** 45L05 (65R20)
- On the numerical stability of the method of fundamental solution applied to the Dirichlet problem. *Japan J. Appl. Math.* **5** (1988), no. 1, 123–133. (M. K. Kadalbajoo) **89a:65152** 65N10
- On the effectiveness of the method of regularization in numerical procedures for ill-conditioned linear systems. *Japan J. Appl. Math.* **5** (1988), no. 2, 305–311. (Cs. J. Hegedüs) **89i:65033** 65F05



- Kitagawa, Yoshihisa** Periodicity of the asymptotic curves on flat tori in  $S^3$ . *J. Math. Soc. Japan* **40** (1988), no. 3, 457–476. (Sheila Carter) **89g:53080** 53C40
- Rigidity of the Clifford tori in  $S^3$ . *Math. Z.* **198** (1988), no. 4, 591–599. (Joel L. Weiner) **89g:53081** 53C40 (53C42)
- Kitahara, Kazuaki** (with Ogawa, Shiro) An extension of Müntz's theorems in multivariables. *Bull. Austral. Math. Soc.* **36** (1987), no. 3, 375–387. (Martin E. Price) **89g:41006** 41A10 (41A63)
- On Tchebyshev systems. *Proc. Amer. Math. Soc.* **105** (1989), no. 2, 412–418. (Manfred Sommer) **89f:41004** 41A05 (26A24, 41A50)
- Kitahara, Kiyoshi** (with Nakada, Hiromitsu; Koike, Minoru; Koshigoe, Hideyuki; Takato, Setsuo) On the existence of solutions for an abstract functional equation. (Japanese. English summary) *Gen. Ed. Rev. Toho Univ.* **19** (1987), 1–9 (1988). (Summary) **89k:45011** 45N05 (39B20, 45J05, 47H15)
- Kitahara, Teisuke** (with Nomachi, Yukio; Nomachi, Toshifumi) On some two-stage estimators utilizing prior informations after the preliminary tests. *Mem. Fac. Sci. Kōchi Univ. Ser. A Math.* **9** (1988), 77–88. (Vo-Khac Khoan) **89d:62028** 62F10 (62H15)
- Kitamori, Toshiyuki** (with Shin, Seichi) Continuous-time model reference adaptive control for an unknown nonlinear system. *Internat. J. Control* **49** (1989), no. 2, 513–520. (Not in MR) **93C40** (93C10, 93C15)
- Kitamura, Yoshimi** Fixed rings of simple rings. *Math. J. Okayama Univ.* **30** (1988), 21–24. (N. Sankaran) **89k:16049** 16A56
- Kitano, Yoshiyuki** Modular forms of degree  $n$  and representation by quadratic forms. IV. *Nagoya Math. J.* **107** (1987), 25–47. (O. M. Fomenko) **89a:11036** 11E45 (11F46)
- Kitapel, Aysin** (with Jonckheere, Edmond; Silverman, Leonard) Singular optimal filtering. *Frequency domain and state space methods for linear systems* (Stockholm, 1985), 271–284. North-Holland, Amsterdam-New York, 1986. (J. Bokor) **89a:93049** 93E11 (93A20, 93B27, 93C05)
- Kitazawa, Y.** Explicit parametrizations of degenerate surfaces from the KP equation and closed bosonic string amplitudes. *Nuclear Phys. B* **297** (1988), no. 2, 338–348. (Mauro Bregola) **89e:81154** 81E99 (14H15, 32G20, 35Q20, 81E30)
- (with Ishibashi, N.; Kato, Akishi; Kobayashi, Ken-ichiro; Matsuo, Yutaka; Otake, S.) Operator product expansion coefficients in  $N = 1$  superconformal theory and slightly relevant perturbation. *Nuclear Phys. B* **306** (1988), no. 2, 425–444. (Olaf Lechtenfeld) **89m:81149** 81E99 (81E40)
- Kitazoe, T.** (with Nishimura, Haruhiko; Tabuse, M.) Orbifold compactifications of  $D < 10$  dimensional fermionic heterotic string. *Modern Phys. Lett. A* **3** (1988), no. 10, 989–997. (Summary) **89h:81200** 81E99 (81E30, 83E30)
- Kitazume, Masaaki** Code loops and even codes over  $F_4$ . *J. Algebra* **118** (1988), no. 1, 140–149. (Michele Elia) **89k:94071** 94B25 (20N05)
- Kitchens, Bruce** (with Schmidt, Klaus D.) Periodic points, decidability and Markov subgroups. *Dynamical systems* (College Park, MD, 1986–87), 440–454. *Lecture Notes in Math.*, 1342, Springer, Berlin-New York, 1988. (Fred W. Roush) **89m:28027** 28D05 (54H20)
- (with Tuncel, Selim) On measures induced on subsystems. *Dynamical systems* (College Park, MD, 1986–87), 455–464. *Lecture Notes in Math.*, 1342, Springer, Berlin-New York, 1988. (Fred W. Roush) **89m:28031** 28D20 (54H20)
- Kitcher, Philip** Mathematical naturalism. *History and philosophy of modern mathematics* (Minneapolis, MN, 1985), 293–325. *Minnesota Stud. Philos. Sci.*, XI, Univ. Minnesota Press, Minneapolis, MN, 1988. (Pierre Crépel) **89f:00034** 00A25
- see also *History and philosophy of modern mathematics*, **89f:00023**
- Kitney, R. L.** (with Treiber, J.) Cooperative dynamics of a coupled-oscillator system and the forced free shear layer. *Phys. Lett. A* **134** (1988), no. 2, 108–114. (Summary) **89f:76061** 76F10 (70K50, 76E30, 82A99)
- Kiturogi, M. D.** Some subquasigroups of  $A$ -quasigroups. (Russian) *Mat. Issled.* **102** *Issled. Oper. i Kvazigrupp* (1988), 70–72, 119. (M. A. Akivis) **89k:20104** 20N05
- Kitson, C. P.** (with Titterton, D. M.; Torsney, B.) An optimal design problem in rhythmometry. (French summary) *Biometrics* **44** (1988), no. 3, 657–671. (Summary) **89h:62128** 62K05 (92A09)
- Kittaneeh, Foad** Linear operators for which  $\|T\| = \|Re T\|$ . *Kyungpook Math. J.* **27** (1987), no. 2, 163–168. (Thomas Hoover) **89m:47062** 47A10 (47B10)
- On the operator equation  $AX = X^*V$ . *Chinese J. Math.* **16** (1988), no. 1, 29–40. (Mehdi Radjabalipour) **89a:47032** 47B20 (47A62)
- Notes on some inequalities for Hilbert space operators. *Publ. Res. Inst. Math. Sci.* **24** (1988), no. 2, 283–293. (Takayuki Furuta) **89f:47012** 47A30 (47B10)
- Kitler, Dietmar** (with Thron, Reinhard) On semigroups with least generating sets. *Semigroup Forum* **36** (1987), no. 3, 341–350. (From the introduction) **89f:20070** 20M10 (20M07)
- Kiuchi, Isao** On an exponential sum involving the arithmetic function  $\sigma_n(n)$ . *Math. J. Okayama Univ.* **29** (1987), 193–205 (1988). (Daniel A. Goldston) **89g:11085** 11N37
- Kivistik, L.** Acceleration of Gomory's first algorithm. (Russian) *Eesti NSV Tead. Akad. Toimetised Füüs.-Mat.* **37** (1988), no. 1, 85–88, 123. (Summary) **89a:90092** 90C10
- Kivshar, Yu. S.** (with Bass, F. G.; Konotop, V. V.; Sinitsyn, Yu. A.) Dynamics of solitons under random perturbations. *Phys. Rep.* **157** (1988), no. 2, 63–181. (F. Pempinelli) **89a:35231** 35R60 (00A69, 35Q20, 78B25)
- Kiw, M.** (with Rönsler, J.; Markus, Mario) Ecosystems under varying ambient conditions. *From chemical to biological organization*, 319–330. *Springer Ser. Synergetics*, 39, Springer, Berlin-New York, 1988. (Summary) **89k:92071** 92A17
- Kiwiel, K. C.** A method for solving certain quadratic programming problems arising in nonsmooth optimization. *IMA J. Numer. Anal.* **6** (1986), no. 2, 137–152. (Summary) **89h:65102** 65K05 (90C20)
- A subgradient selection method for minimizing convex functions subject to linear constraints. (German summary) *Computing* **39** (1987), no. 4, 293–305. (Summary) **89f:65101** 65K05 (90C25)
- Decomposition method of descent for minimizing the sum of convex nonsmooth functions. *J. Optim. Theory Appl.* **52** (1987), no. 2, 255–271. (Autorreferat (Zbl 585:90072)) **89b:90167** 90C25
- A direct method of linearization for continuous minimax problems. *J. Optim. Theory Appl.* **55** (1987), no. 2, 271–287. (Laura Martein) **89d:90193** 90C30 (65K05)
- A constraint linearization method for nondifferentiable convex minimization. *Numer. Math.* **51** (1987), no. 4, 395–414. (Alfonso Laratta) **89b:65152** 65K05 (90C25)
- Descent methods for quasidifferentiable minimization. *Appl. Math. Optim.* **18** (1988), no. 2, 163–180. (G. D. Maystrovsky) **89g:90194** 90C30
- Kiyasheili, Sh. A.** (with Vladimirov, E. I.; Shishonok, N. A.) Uncertainty theory in the realization of problems of the reliability of complex systems. (Russian) *Decision-making methods and systems. Applied problems in the analysis of solutions in technical systems* (Russian), 17–21, 145, *Rizhsk. Politekh. Inst., Riga*, 1986. (see **89h:00001**) 93A99 (03E72, 60K10)
- (with Mamedov, V. M.) Differences between fuzzy set and probability theories. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 3, 60–62 (1988); translated from *Avtomatika* **1987**, no. 3, 76–78, 96 (Russian). (Summary) **89c:94054** 94D05 (60A99)
- Kiyohara, Kazuyoshi** Riemannian metrics with periodic geodesic flows on projective spaces. *Japan. J. Math. (N.S.)* **13** (1987), no. 2, 209–234. (J. J. Duistermaat) **89a:53051** 53C22 (58E10, 58F17, 58G30)
- Kiyoshi, Hiroe** (with Iwase, Zyun'iti) Classification of Kanenobu's knots. *Kobe J. Math.* **4** (1988), no. 2, 187–191. (Quach thi Cam Van) **89g:57006** 57M25
- Kiyota, Masao** (with Cameron, Peter J.) Sharp characters of finite groups. *J. Algebra* **115** (1988), no. 1, 125–143. (Olaf Manz) **89b:20026** 20C15
- Kiyotaki, Nobuhiko** Multiple expectational equilibria under monopolistic competition. *Quart. J. Econom.* **103** (1988), no. 4, 695–713. (Not in MR) **90A14**
- Kizeweter, Krystyna** see **Billingsley, Patrick**, **89b:60001**
- Kjær, N. J.** (with Flyvbjerg, H.) Exact solution of Kauffman's model with connectivity one. *J. Phys. A* **21** (1988), no. 7, 1695–1718. (F. Ventriglia) **89j:92027** 92A09 (58F40, 82A99)
- Kjurkchiev, N.** see **Kyurkchiev, Nikolai V.**
- Kjurkchiev, Nikolai V.** see **Kyurkchiev, Nikolai V.**
- Klaassen, C. A. J.** Consistent estimation of the influence function of locally asymptotically linear estimators. *Ann. Statist.* **15** (1987), no. 4, 1548–1562. (Thomas W. Sager) **89e:62022** 62E20 (62F12, 62G05)
- (with Does, R. J. M. M.; Helmers, R.) On the Edgeworth expansion for the sum of a function of uniform spacings. *J. Statist. Plann. Inference* **17** (1987), no. 2, 149–157. (J. A. Melamed) **89a:62047** 62E20 (60F05, 62G30)
- (with van der Vaart, A. W.; van Zwet, W. R.) On estimating a parameter and its score function. II. *Statistical decision theory and related topics, IV, Vol. 2* (West Lafayette, Ind., 1986), 281–288, Springer, New York-Berlin, 1988. (M. Hušková) **89d:62029** 62F11 (62F35)
- Klabukova, L. S.** (with Chechel', I. I.) A variational-difference method for solving boundary value problems of the theory of shells of I. N. Vekua's moment theory. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 3, 375–389, 478. (L. P. Lebedev) **89g:73041** 73L99
- A variational-difference method for solving problems of infinitesimal bendings of surfaces of positive curvature. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 7, 1047–1057, 1118. (Summary) **89h:65212** 65P05 (53A05)
- Klafszy, Emil** (with Terlaky, Tamás) The "Bland" pivoting rule for the primal and dual simplex method. (Hungarian. English summary) *Alkalmaz. Mat. Lapok* **13** (1987/88), no. 1–2, 1–7. (Summary) **89a:90081** 90C05
- (with Terlaky, Tamás) Remarks on the feasibility problem of oriented matroids. *Ann. Univ. Sci. Budapest. Sect. Comput.* **7** (1987), 155–157 (1988). (Bernd Sturmfels) **89m:90101** 90C05 (05B35)
- Klafter, J.** (with Zumofen, G.; Blumen, A.) Fractal patterns in chemistry. *Fractals, quasicrystals, chaos, knots and algebraic quantum mechanics* (Maratea, 1987), 1–20. *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 235, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89c:92067** 92A40
- (with Blumen, A.; Zumofen, G.) Fractal concepts in reaction kinetics. *Fractals, quasicrystals, chaos, knots and algebraic quantum mechanics* (Maratea, 1987), 21–52. *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 235, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89g:80009** 80A30 (92A40)
- Klainerman, S.** Linear and nonlinear field equations. *Journées "Équations aux dérivées partielles"* (Saint Jean de Monts, 1987), *Exp. No. XIV, 8 pp.*, École Polytech., Palaiseau, 1987. (Philippe A. Dionne) **89d:53125** 53C80 (35L99, 58D30, 83C05)
- Einstein geometry and hyperbolic equations. *Mathematics and general relativity* (Santa Cruz, CA, 1986), 125–156, *Contemp. Math.*, 71, Amer. Math. Soc., Providence, RI, 1988. (Philippe A. Dionne) **89m:35125** 35L05 (58D30, 83C05)
- Klamka, Jerzy** (with Kaczorek, T.) Minimum energy control for general model of 2-D linear systems. *Internat. J. Control* **47** (1988), no. 5, 1555–1562. (V. Popescu) **89f:93008** 93B05 (93C55)
- Klamkin, Murray** ★ U.S.A. Mathematical Olympiads, 1972–1986. New Mathematical Library, 33. *Mathematical Association of America, Washington, DC*, 1988. xvi+127 pp. ISBN 0-88385-634-4 (Not in MR) 00A08
- (with Bateman, Don) Bounds for the log mean radius for heat conduction in a multilagged cylindrical pipe. *SIAM Rev.* **30** (1988), no. 2, 298–300. (N. D. Sengupta) **89d:80005** 80A20 (80–08)
- (with Petarić, Josip E.) Extensions of the Weierstrass product inequalities. III. *Southeast Asian Bull. Math.* **11** (1988), no. 2, 123–126. (I. Gavrea) **89m:26033** 26D15 (26A51)
- see also *Mathematical modelling*, **89f:00047** and **Alexanderson, Gerald L.** (Not in MR)
- Klapka, L.** The problem of differentiable Poisson bracket of coordinates in mechanics. *Differential geometry and its applications, communications* (Brno, 1986), 167–174, *Univ. J. E. Purkyně, Brno*, 1987. (Gerard Thompson) **89h:58060** 58F05 (70H05, 70H35)
- Klarbring, A.** (with Mikić, A.; Shillor, M.) Frictional contact problems with normal compliance. *Internat. J. Engrg. Sci.* **26** (1988), no. 8, 811–832. (J. N. Flavin) **89j:73098** 73T05
- On discrete and discretized nonlinear elastic structures in unilateral contact (stability, uniqueness and variational principles). *Internat. J. Solids and Structures* **24** (1988), no. 5, 459–479. (Summary) **89c:73085** 73T05
- Klarf, F.** see **Clarke, Frank H.**
- Klass, Michael J.** A best possible improvement of Wald's equation. *Ann. Probab.* **16** (1988), no. 2, 840–853. (Douglas P. Kennedy) **89g:60155** 60G40 (60B11)
- (with Takkar, Michael; Assaf, David) A diffusion model for optimal portfolio selection in the presence of brokerage fees. *Math. Oper. Res.* **13** (1988), no. 2, 277–294. (Thomas W. Epps) **89d:90028** 90A09 (93E20)
- Klatte, Diethard** (with Tammer, Klaus) On second-order sufficient optimality conditions for  $C^{1,1}$ -optimization problems. *17. Jahrestagung "Mathematische Optimierung"*

- (Rostock, 1986), 49–58a, *Seminarberichte*, 85, Humboldt Univ., Berlin, 1986. (Jean-Paul Penot) **89a:90127** 90C30
- A note on quantitative stability results in nonlinear optimization. 19. *Jahrestagung "Mathematische Optimierung"* (Sellin, 1987), 77–86, *Seminarberichte*, 90, Humboldt Univ., Berlin, 1987. (Asen L. Dontchev) **89g:90215** 90C31
  - On strongly stable local minimizers in nonlinear programs. *Advances in mathematical optimization*, 104–113, *Math. Res.*, 45, Akademie-Verlag, Berlin, 1988. (Madhusudan Mishra) **89k:90142** 90C30
  - Zur Lipschitz-Stetigkeit bei parametrischen konvexen Optimierungsproblemen. (English summary) [On Lipschitz continuity in parametric convex optimization problems] *Arbeiten zur mathematischen Optimierung und zu verwandten Gebieten*, 93–103, *Seminarberichte*, 94, Humboldt Univ., Berlin, 1988. (Peter Recht) **89h:90225** 90C31
  - (with Tammer, Klaus) On second-order sufficient optimality conditions for  $C^{1,1}$ -optimization problems. *Optimization* 19 (1988), no. 2, 169–179. (Krzysztof C. Kiwiel) **89h:90200** 90C30 (49D39)
  - see also *Advances in mathematical optimization*, **89g:90117**
  - Klauder, John R.** Stochastic quantization: theme and variation. *Quantum field theory and quantum statistics*, Vol. 1, 577–586, Hilger, Bristol, 1987. (see **89b:81007**) 81C20
  - Some recent results on wave equations, path integrals, and semiclassical approximations. *Random media* (Minneapolis, Minn., 1985), 163–182, *IMA Vol. Math. Appl.*, 7, Springer, New York-Berlin, 1987. (Summary) **89f:81069** 81C99 (81C35)
  - Global, uniform, asymptotic wave-equation solutions for large wavenumbers. *Ann. Physics* 180 (1987), no. 1, 108–151. (Claude Itzykson) **89f:78019** 78A40 (35L99, 76Q05, 81D30)
  - Semiclassical quantization of classically chaotic systems. *Phys. Rev. Lett.* 59 (1987), no. 7, 748–750. (Summary) **89c:81040** 81C15 (81D30)
  - Stochastic quantization and the complex Langevin method. *CAP-NISERC Summer Institute in Theoretical Physics*, Vol. I (Edmonton, AB, 1987), 117–143, *World Sci. Publishing*, Singapore, 1988. (see **89b:81005**) 81C20 (81E99)
  - Quantization is geometry, after all. *Ann. Physics* 188 (1988), no. 1, 120–141. (Matej Pavšić) **89j:81051** 81C25 (58D30, 58F06, 81D07)
  - (with Fan, Hong Yi) Canonical coherent-state representation of some squeeze operators. *J. Phys. A* 21 (1988), no. 14, L725–L730. (Summary) **89f:81058** 81D30 (81K05)
  - New asymptotics for old wave equations. *Science* 239 (1988), no. 4841, part 1, 760–762. (John Albert) **89f:35041** 35C20 (35Q20, 58C27, 76Q05)
  - Klaus, M.** (with Bollé, D.; Gesztesy, F.) Scattering theory for one-dimensional systems with  $\int dx V(x) = 0$ . *J. Math. Anal. Appl.* 122 (1987), no. 2, 496–518. (Summary) **89k:34028a** 34B25 (47E05, 81F05)
  - (with Gesztesy, F.; Gurarie, D.; Holden, Helge; Sadun, L.; Simon, Barry; Vogl, P.) Trapping and cascading of eigenvalues in the large coupling limit. *Comm. Math. Phys.* 118 (1988), no. 4, 597–634. (Rainer Hempel) **89m:81049** 81C15 (34E20, 47A55, 47E05)
  - Low-energy behaviour of the scattering matrix for the Schrödinger equation on the line. *Inverse Problems* 4 (1988), no. 2, 505–512. (Pierre C. Sabatier) **89k:81185** 81F05 (34B25)
  - (with Bollé, D.; Gesztesy, F.) Errata: "Scattering theory for one-dimensional systems with  $\int dx V(x) = 0$ ". *J. Math. Anal. Appl.* 130 (1988), no. 2, 590. (Editors) **89k:34028b** 34B25 (47E05, 81F05)
  - Exact behavior of Jost functions at low energy. *J. Math. Phys.* 29 (1988), no. 1, 148–154. (Yusuke Kato) **89b:81036** 81C05 (81F05)
  - (with Smith, Robert T.) A Hilbert space approach to maximum entropy reconstruction. *Math. Methods Appl. Sci.* 10 (1988), no. 4, 397–406. (Summary) **89m:44011** 44A15 (92A07)
  - Klavishv, V. I.** Relative extremal dimension. (Russian) *The geometry of imbedded manifolds* (Russian), 39–44, 124, *Moskov. Gos. Ped. Inst.*, Moscow, 1986. (Editors) **89a:54045** 54F45
  - Klitz, Matthias P.** Quantum logic properties of hypergraphs. *Found. Phys.* 17 (1987), no. 10, 1019–1036. (S. Gudder) **89b:81025** 81B10 (05C65, 06C15)
  - Klebaner, Fima C.** Conditions for fixation of an allele in the density-dependent Wright-Fisher models. *J. Appl. Probab.* 25 (1988), no. 2, 247–256. (Reinhard Bürger) **89k:92030** 92A10 (60J10, 60J20)
  - Klebanov, B. S.** On closed and inductively closed images of products of metric spaces. *Czechoslovak Math. J.* 38(113) (1988), no. 3, 381–388. (Stoyan Nedev) **89i:54007** 54B10 (54C10, 54E35)
  - Klebanov, Igor** (with Susskind, Leonard) Continuum strings from discrete field theories. *Nuclear Phys. B* 309 (1988), no. 1, 175–187. (Summary) **89k:81151** 81E99 (81E30)
  - (with Susskind, Leonard) Renormalization group and string amplitudes. *Phys. Lett. B* 200 (1988), no. 4, 446–452. (Roger Brooks) **89h:81149** 81E15 (81E30)
  - Klebanov, L. B.** (with Zinger, A. A.; Yanushkevichius, R.) Estimates for stability in a theorem of G. Pólya. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* 27 (1987), no. 3, 481–488. (M. Riedel) **89b:62039** 62E10 (60E10)
  - Reconstruction of a distribution from the mean values of the minima of a random number of random variables. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 166 (1988), Issled. po Mat. Statist. 8, 60–62, 159, 188. (Eugeniusz Rychlik) **89k:60014** 60E05 (62E10)
  - Klebanovich, D. M.** (with Malysko, V. V.) An approximate algorithm for the packing of a tree on a rectangular grid with minimization of area. (Russian. English summary) *Vestis Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1987, no. 5, 25–30, 125. (Summary) **89a:68173** 68R10 (05C05)
  - Kleczka, M.** (with Kreuzer, E.) Ljapunov-Exponenten zur Analyse nichtlinearer dynamischer Systeme. [Lyapunov exponents for the analysis of nonlinear dynamical systems] *Z. Angew. Math. Mech.* 67 (1987), no. 4, T94–T95. (Silvio Nocilla) **89g:58182** 58F30 (34D05, 70K99)
  - Kleczkowski, A. S.** Formal properties of the time-symmetry-breaking operator. *Acta Phys. Polon. A* 73 (1988), no. 1, 19–24. (Dieter H. Mayer) **89g:82033** 82A35 (28D10, 58F11)
  - Klee, Victor** Do infinite-dimensional Banach spaces admit nice tilings? *Studia Sci. Math. Hungar.* 21 (1986), no. 3–4, 415–427. (M. I. Kadets) **89h:52015** 52A45 (46A99, 46B20)
  - (with Kleinschmidt, Peter) The d-step conjecture and its relatives. *Math. Oper. Res.* 12 (1987), no. 4, 718–755. (G. Ewald) **89a:52018** 52A25 (52A40, 90C10)
  - (with Bone, Terrence; Jeffries, Clark) A qualitative analysis of  $k = Ax + b$ . *Discrete Appl. Math.* 20 (1988), no. 1, 9–30. (Pauline van den Driessche) **89f:92035** 92A15 (15A06, 34D20)
  - Klee, W. E.** The topology of crystal structures: invariants. *Z. Krist.* 179 (1987), no. 1–4, 67–76. (Marjorie Senechal) **89m:82063** 82A60 (92A40)
  - Kleeman, R.** (with Frederiksen, Jørgen S.; Bell, R. C.) Statistical dynamics of quasi-geostrophic flows. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 347–356, North-Holland, Amsterdam-New York, 1988. (Summary) **89g:82028** 82A31 (76D05, 82–04)
  - Kleene, Stephen C.** Gödel's impression on students of logic in the 1930s. *Gödel remembered* (Salzburg, 1983), 49–64, *Hist. Logic*, IV, Bibliopolis, Naples, 1987. (see **89f:01083**) 01A70 (03–03)
  - The work of Kurt Gödel [J. Symbolic Logic 41 (1976), no. 4, 761–778; MR 55 #12441; addendum; MR 58 #16080]. *Gödel's theorem in focus*, 48–73, *Croom Helm Philos. Focus Ser.*, Croom Helm, London, 1988. (see **89m:01068**) 01A70 (03–03, 03D35, 03F40)
  - Kleffe, J.** (with Rao, C. C.) Estimation of variance components and applications. North-Holland Series in Statistics and Probability, 3. North-Holland Publishing Co., Amsterdam-New York, 1988. xiv+370 pp. ISBN 0-444-70023-4 (Friedrich Pukelsheim) **89g:62119** 62J10
  - (with Seifert, Burkhardt) On the role of MINQUE in testing of hypotheses under mixed linear models. *Comm. Statist. Theory Methods* 17 (1988), no. 4, 1287–1309. (Robert Hultquist) **89h:62121** 62J10 (62F03)
  - Kleiber, Michal** (with Mróz, Z.) Computer-aided inelastic analysis for design and instruction. *Computational plasticity, Part I, II* (Barcelona, 1987), 161–179, *Pineridge*, Swansea, 1987. (see **89c:73030**) 73E99
  - Kleiber, R.** (with Goedbloed, J. P.) A high-beta tokamak equilibrium. *Plasma Phys. Control. Fusion* 30 (1988), no. 13, 1939–1959. (Summary) **89m:76070** 76W05 (76E25)
  - (with Goedbloed, J. P.) Alfvén wave spectrum of an analytic high-beta tokamak equilibrium. *Plasma Phys. Control. Fusion* 30 (1988), no. 13, 1961–1987. (Summary) **89m:76071** 76W05 (76E25)
  - Kleidman, Peter B.** (with Liebeck, Martin W.) A survey of the maximal subgroups of the finite simple groups. Geometries and groups (Noordwijkerhout, 1986). *Geom. Dedicata* 25 (1988), no. 1–3, 375–389. (R. H. Dye) **89c:20058** 20E28 (20D05, 20E32)
  - (with Conway, J. H.; Wilson, Robert A.) New families of ovoids in  $O_8^+$ . *Geom. Dedicata* 26 (1988), no. 2, 157–170. (Ulrich Dempwolff) **89h:51014** 51E20 (05B25)
  - The maximal subgroups of the Steinberg triality groups  ${}^3D_4(q)$  and of their automorphism groups. *J. Algebra* 115 (1988), no. 1, 182–199. (E. M. Palchik) **89f:20024** 20D08 (20E28)
  - The maximal subgroups of the Chevalley groups  $G_2(q)$  with  $q$  odd, the Ree groups  ${}^2G_2(q)$ , and their automorphism groups. *J. Algebra* 117 (1988), no. 1, 30–71. (Ulrich Dempwolff) **89j:20055** 20G40 (20E28)
  - The 2-transitive ovoids. *J. Algebra* 117 (1988), no. 1, 117–135. (Ulrich Dempwolff) **89j:51008** 51E20 (20B20)
  - (with Wilson, Robert A.) The maximal subgroups of  $J_4$ . *Proc. London Math. Soc.* (3) 56 (1988), no. 3, 484–510. (Gernot Stroth) **89b:20044** 20D08 (20E28)
  - Kleijn, H. C. M.** Basic ideas of selective substitution grammars. *Trends, techniques, and problems in theoretical computer science* (Smolenice, 1986), 75–95, *Lecture Notes in Comput. Sci.*, 281, Springer, Berlin-New York, 1987. (Rani Siromoney) **89c:68072** 68Q50 (68Q45)
  - Kleijn, Jetty** (with Horváth, Sándor; Karhumäki, Juhani) Results concerning palindromicity. (German and Russian summaries) *Mathematical aspects of informatics* (Mädgesprung, 1986). *J. Inform. Process. Cybernet.* 23 (1987), no. 8–9, 441–451. (Karel Culik II) **89d:68042** 68Q45
  - Kleiman, Steven L.** (with Speiser, Robert) Enumerative geometry of nodal plane cubics. *Algebraic geometry* (Sundance, UT, 1986), 156–196, *Lecture Notes in Math.*, 1311, Springer, Berlin-New York, 1988. (Ragni Piene) **89k:14095** 14N10 (14C17, 14H45)
  - Kleimanov, A. F.** On a hierarchical three-level differential game. (Russian) *Design of an optimal control in game systems* (Russian), 62–78, 123, *Adak. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1986. (Summary) **89d:90257** 90D25
  - Investigation of a hierarchical three-level differential game. (Russian) *Differential equations and applications*, I, II (Russian) (Ruse, 1985), 183–186, *Angel Kanchev Tech. Univ., Ruse*, 1987. (Boleslaw Tolwinski) **89g:90188** 90D40 (90D20, 90D25, 93A13)
  - Modified Stackelberg strategies for hierarchical differential two-person games. (Russian summary) With the Russian original. *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* 16 (1987), no. 2, 73–87, P1–P15. (Boleslaw Tolwinski) **89h:90247** 90D25 (90D05, 93A13)
  - Klein, Abel** (with Speis, Athanasios) Smoothness of the density of states in the Anderson model on a one-dimensional strip. *Ann. Physics* 183 (1988), no. 2, 352–398. (Massimo Campanino) **89k:82012** 82A05 (60K35, 82A57)
  - (with Bovier, Anton; Campanino, Massimo; Perez, J. Fernando) Smoothness of the density of states in the Anderson model at high disorder. *Comm. Math. Phys.* 114 (1988), no. 3, 439–461. (Aernout C. D. van Enter) **89c:82050** 82A57 (81H99, 82A42)
  - (with Bovier, Anton) Weak disorder expansion of the invariant measure for the one-dimensional Anderson model. *J. Statist. Phys.* 51 (1988), no. 3–4, 501–517. (Massimo Campanino) **89k:82007** 82A05 (60K35, 82A57)
  - Klein, Abraham** (with Une, Tsutomu) Pseudo-Hamiltonian approach to a theory of effective interactions in the particle-hole channel: phenomenology. *Phys. Rev. C* (3) 38 (1988), no. 4, 1886–1896. (Summary) **89m:81198** 81G35
  - (with Une, Tsutomu) Pseudo-Hamiltonian approach to a theory of effective interactions in the particle-hole channel: microscopic foundations. *Phys. Rev. C* (3) 38 (1988), no. 4, 1897–1910. (Summary) **89m:81199** 81G35
  - (with Marshalek, E. R.) A new derivation of the Marshalek-Okubo realization of the shell-model algebra  $SO(2\nu + 1)$  for even and odd systems with  $\nu$  single-particle levels. *Z. Phys. A* 329 (1988), no. 4, 441–449. (David J. Rowe) **89i:17010** 17B35 (81G30)
  - Klein, Abraham A.** (with Bell, Howard E.) On rings with redundancy in multiplication. *Arch. Math. (Basel)* 51 (1988), no. 6, 500–504. (A. Yaqub) **89m:16063** 16A70
  - (with Bell, Howard E.; Jenkins, T. A.; Laywine, C. F.) Rings with permutable products. *Resultate Math.* 13 (1988), no. 1–2, 12–22. (M. M. Parmenter) **89a:16043** 16A70
  - Klein, Cerry M.** (with Ventura, Jose A.) A note on multi-item inventory systems with limited capacity. *Oper. Res. Lett.* 7 (1988), no. 2, 71–75. (Summary) **89d:90085** 90B05
  - Klein, D. J.** (with Randić, M.; Katović, V.; Oakland, D. O.; Seitz, W. A.; Balaban, Alexandru T.) Symmetry properties of chemical graphs. X. Rearrangement of axially distorted octahedra. *Graph theory and topology in chemistry* (Athens, Ga., 1987),



- 266-284, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (N. Trinajstić) **89g:2088** 92A40 (05C99)
- (with Alexander, S. A.) Organic polyradicals, high-spin hydrocarbons, and organic ferromagnets. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 404-419, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (see **89g:2038**) 92A40 (05C99, 82A55)
- (with Seitz, W. A.; Hite, G. E.; Schmalz, T. G.) Resonance in poly-polyphenanthrenes: a transfer matrix approach. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 458-465, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (see **89g:2038**) 92A40
- (with Seitz, W. A.; Hite, G. E.) Interacting dimers on a Sierpiński gasket. Applications of graphs in chemistry and physics. *Discrete Appl. Math.* **19** (1988), no. 1-3, 339-348. (H. N. V. Temperley) **89c:82063** 82A67 (05C10)
- Klein, David** (with Yang, Wei-Shih) Absence of phase transitions for continuum models of dimension  $d > 1$ . *J. Math. Phys.* **29** (1988), no. 5, 1130-1133. (R. M. Kadobyan/kii) **89f:82019** 82A25
- (with Yang, Wei-Shih) Phase transition for a one-dimensional lattice gas with hard core. *J. Statist. Phys.* **52** (1988), no. 3-4, 735-745. (Jacek Miękisz) **89k:82033** 82A25 (82A68)
- (with Yang, Wei-Shih) A note on the critical dimension for weakly self-avoiding walks. *Probab. Theory Related Fields* **79** (1988), no. 1, 99-114. (Anton Bovier) **89c:60137** 60D15
- Klein, F.** ★ Funktionentheorie in geometrischer Behandlungsweise. (German) [Function theory with geometrical treatment] Vorlesung, gehalten in Leipzig 1880/81. Mit zwei Originalarbeiten von F. Klein aus dem Jahre 1882. [Course given in Leipzig 1880/81. With original works by F. Klein from the year 1882] Edited and with a foreword and an appendix by Fritz König. With English, French and Russian summaries. Teubner-Archiv zur Mathematik [Teubner Archive on Mathematics], 7. BSB B. G. Teubner Verlagsgesellschaft, Leipzig, 1987. 296 pp. ISBN 3-322-00383-3 (J. Dieudonné) **89b:01022** 01A55 (01A75, 30-03)
- ★ Элементарная математика с точки зрения высшей. Том I. (Russian) [Elementary mathematics from the viewpoint of higher mathematics. Vol. I] Арифметика, алгебра, анализ. [Arithmetic, algebra, analysis] Translated from the German by D. A. Kryzhanovskii. Translation edited and with a preface by V. G. Boltyanskii. Fourth edition. "Nauka", Moscow, 1987. 432 pp. (Editors) **89b:01078** 01A75 (00A05)
- ★ Элементарная математика с точки зрения высшей. Том II. (Russian) [Elementary mathematics from the viewpoint of higher mathematics. Vol. II] Геометрия. [Geometry] Translated from the German by D. A. Kryzhanovskii. Translation edited by V. G. Boltyanskii. Second edition. "Nauka", Moscow, 1987. 416 pp. (Editors) **89b:01079** 01A75 (00A05)
- see also Yaglom, I. M., **89e:01033**; Birkhoff, Garrett, **89f:01032** and Shields, Allen, **89h:01112**
- Klein, John P.** (with Moeschberger, M. L.) Bounds on net survival probabilities for dependent competing risks. (French summary) *Biometrics* **44** (1988), no. 2, 529-538. (Peter A. Lachenbruch) **89m:62112** 62P10
- Klein, Joseph** Almost symplectic structures in dynamics. *Differential geometry and its applications* (Brno, 1986), 79-90, *Math. Appl. (East European Ser.)*, 27, Reidel, Dordrecht-Boston, MA, 1987. (Frans Cantrijn) **89b:58077** 58F05 (53C37, 53C80, 70H35, 70H99)
- On Lie algebras of vector fields defined by vector forms. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 665-686, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Janusz Grabowski) **89f:17019** 17B65 (57R25, 57S20, 58F05)
- Klein, Lawrence R.** see *Lives of the laureates*, **89d:01074**
- Klein, Manfred** (with Ramspott, Karl Josef) Ein Transformationssatz für Idealbasen holomorpher Funktionen. [A transformation theorem for ideal bases of holomorphic functions] *Bayer. Akad. Wiss. Math.-Natur. Kl. Sitzungsber.* **1987**, 93-100 (1988). (G. G. Weill) **89m:30100** 30H05 (30F99)
- Klein, Markus** On the mathematical theory of predissociation. *Ann. Physics* **178** (1987), no. 1, 48-73. (Mary Beth Ruskai) **89f:81278** 81G55 (81C12)
- Klein, Martin J.** Postscript. From ancient omens to statistical mechanics, xvi, *Acta Hist. Sci. Nat. Med.*, 39, Univ. Lib. Copenhagen, Copenhagen, 1987. (Editors) **89i:01089** 01A70
- Some historical remarks on the statistical mechanics of Josiah Willard Gibbs. *From ancient omens to statistical mechanics*, 281-289, *Acta Hist. Sci. Nat. Med.*, 39, Univ. Lib. Copenhagen, Copenhagen, 1987. (D. ter Haar) **89j:01043** 01A55 (82-03)
- Klein, Michael** Mandelbrot set in a nonanalytic map. *Z. Naturforsch. A* **43** (1988), no. 8-9, 819-820. (From the text) **89k:58141** 58F08
- (with Kahlert, Claus) On the role of transformations destroying analyticity. *Z. Naturforsch. A* **43** (1988), no. 12, 1091-1093. (Summary) **89k:58140** 58F08 (30D05)
- Klein, Rolf** (with Wood, Derrick) The node visit cost of brother trees. *Inform. and Comput.* **75** (1987), no. 2, 107-129. (Summary) **89j:68023** 68P05 (68P10, 68Q25)
- Klein, William** (with Hartman, Hyman; Tamayo, Pablo) Inhomogeneous cellular automata and statistical mechanics. *Complex Systems* **1** (1987), no. 2, 245-256. (Summary) **89b:82140** 82A99 (58F08, 58F11, 68Q80, 82A57)
- (with Given, James A.) Born-Green hierarchy for continuum percolation. *J. Chem. Phys.* **90** (1989), no. 2, 1116-1127. (Summary) **89m:82045a** 82A43 (82A42)
- (with Given, James A.) Erratum: "Born-Green hierarchy for continuum percolation". *J. Chem. Phys.* **90** (1989), no. 10, 5892. (Editors) **89m:82045b** 82A43 (82A42)
- Kleinbaum, David G.** (with Kupper, Lawrence L.; Muller, Keith E.) ★ Applied regression analysis and other multivariable methods. Second edition. The Duxbury Series in Statistics and Decision Sciences. PWS-KENT Publishing Co., Boston, MA, 1988. xvii+718 pp. ISBN 0-87150-123-6 (D. V. Chopra) **89i:62001** 62-01 (62J03)
- Kleinberg, Norman L.** (with Weiss, Jeffrey H.) Correction: "The orthogonal decomposition of games and an averaging formula for the Shapley value" [Math. Oper. Res. **11** (1986), no. 1, 117-124; MR 87c:90250]. *Math. Oper. Res.* **13** (1988), no. 1, 190. (From the text) **89c:90228** 90D10
- Kleine, Regina** Discreteness conditions for the Laplacian on complete, noncompact Riemannian manifolds. *Math. Z.* **198** (1988), no. 1, 127-141. (G. Tsagas) **89m:58209** 58G25 (35P05)
- Kleine Döning, Hans** (with Löwen, Ulrich) Optimization aspects for propositional binary Prolog programs. (German and Russian summaries) *J. Inform. Process. Cybernet.* **24** (1988), no. 11-12, 585-599. (Not in MR) **68T25**
- (with Lettmann, Theodor) First-order formulas in conjunctive quantificational form. *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 1, 53-64. (Alexey P. Stolboushkin) **89c:03015** 03B25 (03D15, 68Q15)
- Kleiner, Adam** Remarks on G. S. Jones' paper: "The existence of critical points in generalized dynamical systems" [in *Seminar on Differential Equations and Dynamical Systems* (College Park, MD, 1967), 7-19, Lecture Notes in Math., 60, Springer, Berlin, 1968; MR 38 #1358]. *Univ. Jagel. Acta Math. No.* **27** (1988), 203-209. (From the text) **89k:54096** 54H20
- Kleiner, Israel** A sketch of the evolution of (noncommutative) ring theory. *Enseign. Math.* (2) **33** (1987), no. 3-4, 227-267. (Hubert Grassmann) **89d:01043** 01A55 (16-03)
- Kleinert, Andreas** "Messen, was meßbar ist." Über ein angebliches Galilei-Zitat. ["Measure what is measurable." On an alleged quotation of Galilei] *Ber. Wiss.-Gesch.* **11** (1988), no. 4, 253-255. (William R. Shea) **89k:01013** 01A45
- Kleinert, Ernst** A theorem on units of integral group rings. *J. Pure Appl. Algebra* **49** (1987), no. 1-2, 161-171. (S. K. Sehgal) **89b:16008** 16A26 (19B28, 20C05)
- On the class number of some quaternion group rings. *J. Algebra* **117** (1988), no. 1, 81-92. (Helmut Koch) **89j:11103** 11R18 (11R29)
- Kleinert, H.** (with Janke, Wolfhard) Self-avoiding random loops versus Ising model in three dimensions. *Phys. Lett. A* **128** (1988), no. 9, 463-469. (Summary) **89c:82069** 82A68 (82-04, 82A41)
- Fundamental phase space identities for gauge fields in superfluids and solids. *Phys. Lett. A* **130** (1988), no. 2, 59-64. (Darko Kapor) **89i:81154** 81J05 (73B99)
- (with Miller, Wolfram) Renormalization of charge due to magnetic monopoles in the Villain form of U(1) lattice gauge theory. *Phys. Rev. D* (3) **38** (1988), no. 4, 1239-1259. (Summary) **89h:81108** 81E13 (81E15, 81E25)
- Kleinfield, Erwin** On rings satisfying  $(x, y, z) = (x, z, y)$ . *Algebras Groups Geom.* **4** (1987), no. 2, 129-138. (Hyo C. Myung) **89a:17001** 17A30
- Local versions of some well-known identities. *Algebras Groups Geom.* **5** (1988), no. 2, 187-190. (Ernest Stitzinger) **89k:17008** 17A30
- Rings with  $(x, y, x)$  and commutators in the left nucleus. *Comm. Algebra* **16** (1988), no. 10, 2023-2029. (Hyo C. Myung) **89h:17001** 17A30
- A generalization of strongly  $(-1, 1)$  rings. *J. Algebra* **119** (1988), no. 1, 218-225. (Harry F. Smith) **89j:17027** 17D15
- Kleinman, R. E.** (with Senior, Thomas B. A.) Rayleigh scattering. *Low and high frequency asymptotics*, 1-70, *Mech. Math. Methods. Ser. III: Acoust. Electromagnet. Elastic Wave Scatt.*, 2, North-Holland, Amsterdam-New York, 1986. (John A. DeSanto) **89i:78012b** 78A45
- (with Martin, Paul Andrew) Single integral equations for scattering by a penetrable obstacle. *Advanced boundary element methods* (San Antonio, Tex., 1987), 207-213, Springer, Berlin-New York, 1988. (Summary) **89c:76090** 76Q05 (76-08)
- (with van den Berg, Peter M.) The conjugate gradient spectral iterative technique for planar structures. *IEEE Trans. Antennas and Propagation* **36** (1988), no. 10, 1418-1423. (Summary) **89j:78002** 78-08 (78A45)
- (with Roach, G. F.) Iterative solutions of boundary integral equations in acoustics. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1852, 45-57. (John A. DeSanto) **89d:76027** 76Q05 (65R20)
- (with Martin, Paul Andrew) On single integral equations for the transmission problem of acoustics. *SIAM J. Appl. Math.* **48** (1988), no. 2, 307-325. (R. F. Millar) **89f:35053** 35J05 (45B05, 76Q05)
- Kleinmichel, H.** (with Schönefeld, K.) Newton-type methods for nonlinearly constrained programming problems. Algorithms and theory. *Optimization* **19** (1988), no. 3, 397-412. (Joachim Hirsche) **89j:90223** 90C30 (65K05)
- Kleinrock, Leonard** (with Levy, Hanoach) The analysis of random polling systems. *Oper. Res.* **36** (1988), no. 5, 716-732. (Summary) **89h:90100** 90B22 (90A06)
- Kleinschmidt, Peter** (with Klee, Victor) The d-step conjecture and its relatives. *Math. Oper. Res.* **12** (1987), no. 4, 718-755. (G. Ewald) **89a:52018** 52A25 (52A40, 90C10)
- A classification of toric varieties with few generators. *Aequationes Math.* **35** (1988), no. 2-3, 254-266. (G. Ewald) **89f:14056** 14J32 (14J40, 52A25)
- Kleinsteins, Gerald G.** On the nonpersistence of irrotational motion in a viscous heat-conducting fluid. *Arch. Rational Mech. Anal.* **101** (1988), no. 2, 95-105. (A. C. Srivastava) **89c:76024** 76A99 (76D99, 76N10)
- Kleisli, Heinrich** ★ A convenient base category for the theory of group representations. *Algebra Berichte* [Algebra Reports], 62. Verlag Reinhard Fischer, München, 1988. 25 pp. ISBN 3-88927-051-4 (K. H. Hofmann) **89j:22006** 22D10 (18D15, 18D20)
- Kleitman, D. J.** (with Alon, Noga; Thomassen, Carsten; Saks, M. E.; Seymour, Paul D.) Subgraphs of large connectivity and chromatic number in graphs of large chromatic number. *J. Graph Theory* **11** (1987), no. 3, 367-371. (Introduction) **89e:05131** 05C40 (05C15)
- (with Fellows, Michael R.) Radius and diameter in Manhattan lattices. *Proceedings of the Oberwolfach Meeting "Kombinatorik"* (1986). *Discrete Math.* **73** (1989), no. 1-2, 119-125. (D. P. Roselle) **89k:05003** 05A05 (52A43)
- Klikis, E. A.** see Kiliokys, Edvardas
- Kléman, M.** (with Pavlovitch, A.) Generalised 2D Penrose tilings: structural properties. *J. Phys. A* **20** (1987), no. 3, 687-702. (Summary) **89c:82059** 82A60 (52A45)
- (with Entin-Wohlman, O.; Pavlovitch, A.) Penrose tiling approximants. (French summary) *J. Physique* **49** (1988), no. 4, 587-598. (A. G. Schlijper) **89m:52019** 52A45 (05B45, 82A60)
- (with Lequeux, F.) Helicoidal instability in cholesteric capillary tubes. (French summary) *J. Physique* **49** (1988), no. 5, 845-855. (Summary) **89d:82100** 82A57
- (with Gefen, Yuval; Pavlovitch, A.; Peyrière, Jacques) Inflationary character of Penrose tilings. (French summary) *J. Physique* **49** (1988), no. 7, 1111-1118. (Summary) **89d:82098** 82A57 (52A45)
- Klement, Erich Peter** A Radon-Nikodým theorem for fuzzy-valued measures. Mathematics and fuzziness, Part I (Palma, 1985). *Fuzzy Sets and Systems* **27** (1988), no. 1, 45-51. (T. Thrivikraman) **89m:28040** 28E10 (03E72, 28A25)
- Klemes, Ivo** (with Bañuelos, Rodrigo; Moore, Charles N.) An analogue for harmonic functions of Kolmogorov's law of the iterated logarithm. *Duke Math. J.* **57** (1988), no. 1, 37-68. (Rainer Wittmann) **89k:42019** 42B25 (31A05, 60F15)
- Klemms, Michael** Über die Identität von MacWilliams für die Gewichtsfunktion von Codes. [On the identity of MacWilliams for the weight function of codes] *Arch. Math. (Basel)* **49**

- (1987), no. 5, 400-406. (Brian Mortimer) **89b:94031** 94B05 (94C30)
- Klemperer, P.** (with Meyer, Margaret A.) Consistent conjectures equilibria. A reformulation showing nonuniqueness. *Econom. Lett.* **27** (1988), no. 2, 111-115. (Not in MR) **90A14**
- (with Cramton, P.; Gibbons, Robert Scott) Erratum: "Dissolving a partnership efficiently" [*Econometrica* **55** (1987), no. 3, 615-632; MR **88f:90018**]. *Econometrica* **56** (1988), no. 6, 1493. (Editors) **89j:90012** 90A07 (90A05)
- Klepikov, N. P.** On the uniqueness of the relativistic center of a system of events. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **29** (1988), no. 1, 17-20, 106; translation in *Moscow Univ. Phys. Bull.* **43** (1988), no. 1, 16-19. (M. C. Chaki) **89f:83006** 83A05
- Klepikov, V. N.** Action functional for a family of diffusion fields in the plane. (Russian) *Theory of random processes*, No. 15 (Russian), 40-47, 118, "Naukova Dumka", Kiev, 1987. (Constantin Tudor) **89a:60150** 60H20 (60G60, 60J60)
- Klepp, Francis C.** (with Atanasiu, Gheorghe) About the generalized Lagrange-Weyl-Otsuki spaces. (Romanian summary) *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces (Braşov, 1986)*, 177-183, *Soc. Ştiinţe Mat. R.S. România, Bucharest*, 1986. (H. Rund) **89d:53037** 53B15 (53B40)
- (with Stavre, P.) Applications of fixed points in the theory of Finsler connection transformations. (Romanian summary) *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces (Braşov, 1986)*, 251-263, *Soc. Ştiinţe Mat. R.S. România, Bucharest*, 1986. (Sándor Bácsó) **89c:53043** 53B40
- (with Stavre, P.) On the sets of conformal Finsler connection transformations  $\mathcal{F}_{NL}(\xi)$  and  $\mathcal{F}_{NL}(\xi)$ . (Romanian summary) *Inst. Politehn. "Traian Vuia" Timişoara. Lucr. Sem. Mat. Fiz.* **1986**, November, 81-84. (Hiroshi Yasuda) **89d:53055** 53B40
- (with Stavre, P.) Invariants of special semisymmetric Finsler connection transformations. *Publ. Math. Debrecen* **34** (1987), no. 3-4, 259-271. (S. Watanabe) **89b:53047** 53B40
- (with Stavre, P.) On semiconcircular and semicoharmonic invariants of the Finsler geometry. *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 687-708, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (L. Tamásy) **89c:53035** 53B40
- (with Miron, Radu) Almost complex Finsler structures on the tangent bundle. *Topics in differential geometry, Vol. I, II (Debrecen, 1984)*, 853-881, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (H. Rund) **89c:53055** 53C60
- (with Stavre, P.) Finsler connection transformations associated to a general Finsler metrical structure of Miron type. *I. Publ. Math. Debrecen* **35** (1988), no. 1-2, 103-113. (S. Watanabe) **89k:53030** 53B40
- Kleppe, Gary** (with Ramond, P.; Viswanathan, R. Raju) A reparametrization-invariant approach to string field theory. *Phys. Lett. B* **206** (1988), no. 3, 466-472. (Raiko Zaikov) **89k:81152** 81E99 (81E30)
- Kleppe, Jan O.** Nonreduced components of the Hilbert scheme of smooth space curves. *Space curves (Rocca di Papa, 1985)*, 181-207, *Lecture Notes in Math.*, 1266, Springer, Berlin-New York, 1987. (A. Hirschowitz) **89a:14010** 14C05 (14H45, 14H50)
- Klepper, Steven** (with Stapleton, David C.) Consistent sets of estimates for restricted regressions with errors in all variables. *Internat. Econom. Rev.* **28** (1987), no. 2, 445-457. (Kimio Morimune) **89a:62226** 62P20 (62J05)
- Regressor diagnostics for the classical errors-in-variables model. *J. Econometrics* **37** (1988), no. 2, 225-250. (Kajal Lahiri) **89b:62224** 62P20 (62J05)
- Bounding the effects of measurement error in regressions involving dichotomous variables. *J. Econometrics* **37** (1988), no. 3, 343-359. (Baldev Raj) **89g:62166** 62P20 (62J05)
- Kleppner, Adam** Measurable homomorphisms of locally compact groups. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 391-395. (Eshen T. Kehlet) **89k:22005** 22D05 (28C10)
- de Klerk, J. H.** see **De Klerk, J. H.**
- Klesov, O. I.** A limit theorem for multiple sums of independent identically distributed random variables. (Russian) *Probability distributions and mathematical statistics (Russian) (Fergana, 1983)*, 265-277, 494-495, "Fan", Tashkent, 1986. (Dominik Szyal) **89g:60107** 60F15
- Rate of convergence of the sums of a random number of random variables. (Russian) *Teor. Veroyatnost. i Mat. Statist.* **30** (1988), 65-71, 127. (V. J. Paulauskas) **89k:60029** 60F05
- Kletzing, Dennis** Rational representations of finite groups: the story of  $\gamma$ . *Amer. Math. Monthly* **94** (1987), no. 9, 846-854. (Lee Klingler) **89c:20019** 20C15
- Klevtsur, S. V.** (with Latyshev, K. S.; Chetverushkin, B. N.) A cyclic variant of the  $\alpha$ - $\beta$ -iterative algorithm. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1213-1218, 1286; translation in *Differential Equations* **24** (1988), no. 7, 789-792. (Summary) **89b:65166** 65N20 (76-08, 76X05, 86A35)
- Kleyte, R.** (with de Korvin, A.) Martingale properties of an information-feedback loop. *Math. Comput. Modelling* **10** (1988), no. 1, 1-11. (Summary) **89g:94012** 94A15
- Klibanov, M. V.** (with Goncharshii, A. V.; Stepanov, V. V.) Inverse problems of coherent optics. The use of the stationary phase method in problems of focusing radiation on a curve. (Russian) *Zh. Vychisl. i Mat. Fiz.* **28** (1988), no. 10, 1540-1550, 1599. (Summary) **89j:78024** 78A40 (58C27)
- Kliemann, W.** Analysis of nonlinear stochastic systems. *Analysis and estimation of stochastic mechanical systems (Udine, 1987)*, 43-102, *CISM Courses and Lectures*, 303, Springer, Vienna, 1988. (Ludwig Arnold) **89j:60075** 60H10 (34F05, 58G32, 70L05, 93E15)
- (with Athreya, K. B.; Koch, Giorgio) On sequential construction of solutions of stochastic differential equations with jump terms. *Systems Control Lett.* **10** (1988), no. 2, 141-146. (Philip Protter) **89g:60197** 60H20 (60J25, 60J75)
- Klimčák, Ctirad** Quantum field theory in a gravitational shock wave background. *Phys. Lett. B* **208** (1988), no. 3-4, 373-380. (Tevian Dray) **89b:81145** 81E20 (83C47)
- Klimek, Jacek** A resolution of the square of a determinantal ideal associated to a symmetric matrix. *Fund. Math.* **130** (1988), no. 2, 101-111. (Gianfranco Niesi) **89j:13014** 13D25 (14M12)
- Klimek, Maciej** (with Dineen, S.; Timoney, R. M.) Biholomorphic mappings and Banach function modules. *J. Reine Angew. Math.* **387** (1988), 122-147. (Richard M. Aron) **89j:46049** 46G20 (32H05, 46B20, 46E99, 46H25, 46M20)
- Infinitesimal pseudometrics and the Schwarz lemma. *Proc. Amer. Math. Soc.* **105** (1989), no. 1, 134-140. (Summary) **89k:32050** 32H15 (32F05)
- Klimek, S.** (with Kondracki, W.) A construction of two-dimensional quantum chromodynamics. *Comm. Math. Phys.* **113** (1987), no. 3, 389-402. (Alfred Actor) **89g:81046** 81E13 (81E25)
- (with Kondracki, W.; Olędzki, W.; Sadowski, P.) The density problem for infinite-dimensional group actions. *Compositio Math.* **68** (1988), no. 1, 3-10. (M. P. Heble) **89k:58047** 58D17 (53C15, 58B20)
- Klimenko, E. V.** A discrete group search problem. (Russian) *Methods for the investigation of extremal problems (Russian)*, 41-46, iii-iv, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. (Summary) **89b:90133** 90B40
- Klimenko, N. S.** Asymptotic integration of a differential equation with slowly changing and oscillating coefficients in a Banach space. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 4, 524-526, 544. (From the text) **89f:34088** 34G20 (34C10)
- Klimenko, S. S.** (with Vityuk, A. N.) A theorem of N. N. Bogolyubov for hyperbolic differential inclusions. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 5, 641-645, 680. (A. Haimovici) **89b:35098** 35L70 (35R99)
- Klimenkov, S. B.** A priori estimates for the derivatives of the radius-vector of a surface of positive curvature. (Russian) Translated in *J. Soviet Math.* **44** (1989), no. 2, 215-235. *Problems of geometry, Vol. 19 (Russian)*, 187-213, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (Z. Nádénik) **89c:53094** 53C45 (35J99)
- Klimiashvili, M. A.** (with Dadashyan, A. S.) A form of representation of data files. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzin. SSR* **129** (1988), no. 1, 37-40. (Summary) **89f:60012** 68P05
- Klinka, Libertas** (with Žuklus, Vladas) Astronomical interpretation of the studies at Birute Hill in Palanga. (Russian) *Istor.-Astronom. Issled.* **20** (1988), 126-136. (Title) **89m:01007** 01A10
- Klimontovich, Yu. L.** The evolution of entropy in self-organization processes. The  $H$ -theorem and the  $S$ -theorem. (Russian) *Mathematical mechanisms of turbulence (Russian)*, 46-60, i, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1986. (Summary) **89b:82045** 82A35 (76F99, 92A05)
- (with Bonitz, M.) Definition of the degree of order in selforganization processes. (German summary) *Ann. Physik* (7) **45** (1988), no. 5, 340-352. (Vadim Komkov) **89j:93002** 93A10 (34C10, 80A99, 92A40)
- (with Zagorodnii, A. G.; Yakimenko, I. P.) Large-scale fluctuations in bounded plasma-molecular systems. (Russian. English summary) *Teoret. Mat. Fiz.* **75** (1988), no. 1, 70-85; translation in *Theoret. and Math. Phys.* **75** (1988), no. 1, 377-388. (D. ter Haar) **89b:82029** 82A45
- (with Bonitz, M.) Evolution of the entropy of stationary states in self-organization processes in the control parameter space. *Z. Phys. B* **70** (1988), no. 2, 241-249. (Summary) **89g:82034** 82A35 (70L05, 92A05, 93C30, 94A17)
- Klimov, A. I.** The divisibility of Dirichlet characters. (Russian) *Investigations in number theory (Russian)*, 53-61, *Saratov. Gos. Univ., Saratov*, 1982. (see **89c:11006**) 11R42 (20C20)
- Klimov, D. M.** Computer algebra methods for problems in mechanics. (Russian) *Mechanics and scientific technological progress, Vol. 1 (Russian)*, 170-186, 295, "Nauka", Moscow, 1987. (Summary) **89j:70001** 70-08
- Klimov, G. P.** (with Matveev, V. F.) Random time replacement used for the coupling of random fields. *Moscow Univ. Comput. Math. Cybernet.* **1988**, no. 1, 60-64; translated from *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1988**, no. 1, 52-55, 77 (Russian). (Hermann Thorisson) **89d:60096** 60G60 (60K15)
- Klimov, V. S.** Complementary systems generated by anisotropic Orlicz-Sobolev spaces. (Russian) *Qualitative and approximate methods for investigating operator equations (Russian)*, 26-34, 141, *Yaroslav. Gos. Univ., Yaroslavl*, 1986. (J. Musielak) **89b:46047** 46E35
- (with Onufrieva, E. Yu.) Some properties of multivalued mappings. (Russian) *Qualitative and approximate methods for investigating operator equations (Russian)*, 34-40, 141, *Yaroslav. Gos. Univ., Yaroslavl*, 1986. (Andrzej Fryszkowski) **89c:34017** 34A60 (28B20)
- (with Semko, E. R.) Solvability of boundary value problems in the mechanics of viscoplastic media. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 8, 1386-1393, 1470; translation in *Differential Equations* **24** (1988), no. 8, 903-908. (Summary) **89j:35118** 35Q20 (47H15, 73F30, 76A10)
- (with Semko, E. R.) The denseness of the compactly supported functions in Orlicz-Sobolev spaces. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 1, 50-57, 222; translation in *Siberian Math. J.* **29** (1988), no. 1, 39-45. (S. D. Riemenschneider) **89b:46047** 46E35
- (with Semko, E. R.) On the well-posedness of nonstationary boundary value problems of the mechanics of viscoplastic media. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 2, 314-316; translation in *Soviet Phys. Dokl.* **33** (1988), no. 1, 57-58. (Summary) **89c:73018** 73F15 (73F30)
- Klimyk, A. U.** Upper bounds for the multiplicities of representations of a compact group in the tensor product and in the restriction of representations of the group to a subgroup. (Russian) *Group-theoretic methods in physics, Vol. 2 (Russian) (Jarmala, 1985)*, 64-68, "Nauka", Moscow, 1986. (see **89d:81002**) 22E45
- Klin, M. Kh.** (with Gol'fand, Ya. Yu.) Amorphous cell rings. I. (Russian) *Investigations in the algebraic theory of combinatorial objects (Russian)*, 32-38, *Vsesoyuz. Nauch.-Issled. Inst. Sistem. Issled., Moscow*, 1985. (Jozsef Širáň) **89c:05029a** 05B99
- (with Pöschel, Reinhard; Rosenbaum, K.) ★ *Angewandte Algebra für Mathematiker und Informatiker.* (German) [Applied algebra for mathematicians and information scientists] Einführung in gruppentheoretisch-kombinatorische Methoden. [Introduction to group-theoretical combinatorial methods] *VEB Deutscher Verlag der Wissenschaften, Berlin*, 1988. 208 pp. ISBN 3-326-00190-8 (A. Schliepmacher) **89d:00001a** 00A05 (05-01, 20-01)
- (with Pöschel, Reinhard; Rosenbaum, K.) ★ *Angewandte Algebra für Mathematiker und Informatiker.* (German) [Applied algebra for mathematicians and information scientists] Einführung in gruppentheoretisch-kombinatorische Methoden. [Introduction to group-theoretical combinatorial methods] *Friedr. Vieweg & Sohn, Braunschweig*, 1988. 208 pp. ISBN 3-528-08985-7 (A. Schliepmacher) **89d:00001b** 00A05 (05-01, 20-01)
- Klinciewicz, John G.** Implementing an "exact" Newton method for separable convex transportation problems. *Networks* **19** (1989), no. 1, 95-105. (Summary) **89j:90178** 90C08 (65K05)



- Klingen, Helmut** Metrisierungstheorie und Jacobiformen. [Metzization theory and Jacobi forms] *Algebra-Tagung Halle 1986*, 141-146, *Wissensch. Beir.*, 33, Martin-Luther-Univ. Halle-Wittenberg, Halle (Saale), 1987. (Marvin I. Knopp) **89c:11076** 11F46 (11F30)
- Metrisierungstheorie und Jacobiformen. [Metzization theory and Jacobi forms] *Abh. Math. Sem. Univ. Hamburg* 57 (1987), 165-178. (K.-B. Gundlach) **89c:11075** 11F46
- Klingenberg, Christian** (with Osher, Stanley) Nonconvex scalar conservation laws in one and two space dimensions. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 289-299, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 35L65 (65M99)
- Klinger, David J.** Shape of the binodal curves at a critical endpoint. *Chem. Phys. Lett.* 145 (1988), no. 3, 219-222. (Summary) **89k:80008** 80A10 (82A25)
- Klingler, Lee** (with Brewer, James W.) Pole shifting for families of systems: the dimension one case. *Math. Control Signals Systems* 1 (1988), no. 3, 285-292. (Mikołaj Busłowicz) **89k:93047** 93B25 (93B55, 93C05)
- Klingler, M.** (with Meinhardt, Hans) Pattern formation by coupled oscillations: the pigmentation patterns on the shells of molluscs. *From chemical to biological organization*, 193-202, *Springer Ser. Synergetics*, 39, Springer, Berlin-New York, 1988. (see **89c:92002**) 92A05 (92A09)
- Klingman, D.** (with Glover, Fred; Phillips, Nancy V.; Ross, G. T.) Integrating modeling, algorithm design, and computational implementation to solve a large-scale nonlinear mixed integer programming problem. *Ann. Oper. Res.* 5 (1986), no. 1-4, 395-411. (Summary) **89d:90151** 90C11
- Klink, W. H.** Dual pairs and representations of scattering amplitudes. *Czechoslovak J. Phys.* B 37 (1987), no. 3, 329-337. (Summary) **89c:81184** 81F20
- Scattering operators on Fock space. II. Representations of the scattering operator generated by  $SL(2, \mathbb{R})$ . *J. Phys. A* 20 (1987), no. 12, 3565-3576. (A. O. Barut) **89c:81179a** 81F20 (22E70)
- Scattering operators on Fock space. III. Euclidean invariant scattering amplitudes and  $SL(2, \mathbb{R})$ . *J. Phys. A* 20 (1987), no. 12, 3577-3585. (A. O. Barut) **89c:81179b** 81F20 (22E70)
- (with Jørgensen, Palle E. T.) Spectral transform for the sub-Laplacian on the Heisenberg group. *J. Analyse Math.* 50 (1988), 101-121. (Hans Plesner Jakobsen) **89k:58276** 58G11 (22E25, 58G35, 81C40)
- Klinkhamer, F. R.** (with Greensite, J.) Superstring amplitudes and contact interactions. *Nuclear Phys. B* 304 (1988), no. 1, 108-128. (Summary) **89c:81106** 81E15 (81E30)
- Klinkhamer, P. G. L.** (with Geritz, S. A. H.; Metz, J. A. J.; de Jong, T. J.) Competition in safe-sites. *Theoret. Population Biol.* 33 (1988), no. 2, 161-180. (Summary) **89k:92061** 92A17
- Klokys, Edvardas** Optimal filtering in systems with random structure and discrete time. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 11, 61-70. (Wolfgang J. Runggaldier) **89c:93197** 93E11 (93C55, 93E12, 93E25)
- Klop, Dorothea A.** An analytic approach to the solution of nonlinear equations. Proceedings of the 2nd international conference on computational and applied mathematics (Leuven, 1986). *J. Comput. Appl. Math.* 20 (1987), Special Issue, 299-306. (Michel Cosnard) **89c:65082** 65H05 (65E05)
- Klippenstein, John** Brown-Gitter spectra at  $BP(2)$ . *Topology Appl.* 29 (1988), no. 1, 79-91. (W. Stephen Wilson) **89k:55012** 55P42 (55N20, 55S25)
- Klir, G. J.** Where do we stand on measures of uncertainty, ambiguity, fuzziness, and the like? Measures of uncertainty. *Fuzzy Sets and Systems* 24 (1987), no. 2, 141-160. (Siegfried Gottwald) **89b:00037** 00A25 (03E72, 28E10, 60A99, 68T99, 94A17, 94D05)
- (with Folger, Tina A.) ★ Fuzzy sets, uncertainty, and information. *Prentice-Hall, Inc., Englewood Cliffs, NJ*, 1988. xii+355 pp. ISBN 0-13-345984-5 (Witold Pedrycz) **89c:94028** 94D05 (00A69, 03E72, 90A05, 92A25, 94A15)
- Methodological principles of uncertainty in inductive modelling: a new perspective. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 1 (Laramie, WY, 1985 and Seattle, WA, 1986/1987), 295-304, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89j:60049** 00A71 (03E72, 62A05, 90B50, 94A17)
- The future of information, computer, and systems sciences. Special issue on emerging paradigms in applied mathematical modelling. *J. Comput. Appl. Math.* 22 (1988), no. 2-3, 183-195. (F. J. van der Linden) **89m:68004** 68M05 (00A69, 01A80, 68P99, 68Q99)
- The role of uncertainty principles in inductive systems modelling. *Kybernetes* 17 (1988), no. 2, 24-34. (Not in MR) 94A17 (00A71, 03E72, 93A10)
- Klishchich, A. M.** (with Belokopytov, S. V.; Dmitriev, M. G.; Gerasimov, V. A.; Gornov, A. Yu.; Tyatyskin, A. I.; Pasyukov, V. N.) Interior and outer boundary layers in the optimal control problems. Asymptotic and numerical methods. *BAIL IV* (Novosibirsk, 1986), 216-221, *Boole Press Conf. Ser.*, 8, Boole, Dún Laoghaire, 1986. (Viorel Arnautu) **89d:49017** 49B10 (34E15, 35B25, 49B22)
- (with Dmitriev, M. G.) Iterative methods for solving singularly perturbed boundary value problems of conditionally stable type. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 12, 1812-1823, 1918-1919. (Summary) **89b:65128** 65L10
- Klok, Fopke** (with Kotus, Janina) A sufficient condition for  $\Omega$ -stability of vector fields on open manifolds. *Compositio Math.* 65 (1988), no. 2, 171-176. (Bahman K. Honary) **89m:58114** 58F10
- Klovov, Yu. A.** (with Demidov, M. A.; Mikhailov, A. P.) Localization of the processes of compression and heating in anisotropic media. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 215, 28 pp. (Summary) **89c:76081** 76N15 (35L99)
- (with Demidov, M. A.; Mikhailov, A. P.) On some singular problems for second-order ordinary differential equations. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 7, 1278-1282. (Stefan Mirica) **89b:34004** 34A10 (34A34, 34B15)
- (with Demidov, M. A.; Mikhailov, A. P.) Shockless compression of media with arbitrary distribution of entropy. Localization, structures, spectra of the solutions. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 4, 816-819; translation in *Soviet Phys. Dokl.* 32 (1987), no. 12, 973-975. (From the text) **89f:76059** 76N15
- (with Bespalova, S. A.) Some remarks on solutions of autonomous equations that approach finite limits at infinity. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 2, 336-338, 366. (Not in MR) 34C11 (34A34)
- On a boundary value problem for ordinary differential equations. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 4, 690-692, 734. (Not in MR) 34B10 (34B15)
- (with Bespalova, S. A.) Solution of the Cauchy problem for a system of ordinary differential equations using Chebyshev polynomials. (Russian) *Latv. Mat. Ezhegodnik* No. 31 (1988), 3-12, 250. (A. D. Ziebur) **89c:34002** 34A10 (34A45, 34A50, 65L05)
- see also **Current topics in boundary value problems. Theory and applications**, **89j:00009**
- Klonecki, W.** (with Zontek, S.) On the structure of admissible linear estimators. *J. Multivariate Anal.* 24 (1988), no. 1, 11-30. (James Berger) **89b:62107** 62J05 (62C15)
- Klonowski, Włodzimierz** Probabilistic-topological theory of systems with discrete interactions. I. System representation by a hypergraph. (French summary) *Canad. J. Phys.* 66 (1988), no. 12, 1051-1060. (Summary) **89k:82073** 82A57 (92A40)
- Probabilistic-topological theory of systems with discrete interactions. II. Calculation of the hypergraph probabilistic representation; the difference a posteriori algorithm. (French summary) *Canad. J. Phys.* 66 (1988), no. 12, 1061-1068. (Summary) **89k:82074** 82A57 (92A40)
- Kloock, J.** (with Dörner, E.) Kostenkontrolle bei mehrstufigen Produktionsprozessen. (English summary) [Cost controls in multistage production processes] *OR Spektrum* 10 (1988), no. 3, 129-143. (Summary) **89h:90120** 90B30
- Klop, Jan Willem** (with Kranakis, Evangelos) Lower bounds for a class of Kostka numbers. *Ars Combin.* 23 (1987), 121-129. (P. E. O'Neill) **89c:05015** 05A15
- (with Bergstra, J. A.) A universal axiom system for process specification. *CWI Newslett.* No. 15 (1987), 3-23. (T. Müldner) **89j:68044** 68Q10 (68Q55)
- (with Barendregt, H. P.; Kennaway, J. Richard; Sleep, M. R.) Needed reduction and spine strategies for the lambda calculus. *Inform. and Comput.* 75 (1987), no. 3, 191-231. (J. P. Seldin) **89b:03020** 03B40 (68N15, 68Q55)
- (with Baeten, J. C. M.; Bergstra, J. A.) On the consistency of Koomen's fair abstraction rule. *Theoret. Comput. Sci.* 51 (1987), no. 1-2, 129-176. (From the introduction) **89m:68031** 68Q10
- (with Bergstra, J. A.) A complete inference system for regular processes with silent moves. *Logic colloquium '86* (Hull, 1986), 21-81, *Stud. Logic Found. Math.*, 124, North-Holland, Amsterdam-New York, 1988. (Summary) **89k:68040** 68Q10 (03B70)
- (with Middeldorp, Aart) An introduction to Knuth-Bendix completion. *CWI Quarterly* 1 (1988), no. 3, 31-52. (Summary) **89m:68081** 68Q50
- Klopman, Gilles** (with Raychaudhury, Chandan) A novel approach to the use of graph theory in structure-activity relationship studies. Application to the qualitative evaluation of mutagenicity in a series of nonfused ring aromatic compounds. *J. Comput. Chem.* 9 (1988), no. 3, 232-243. (Summary) **89c:92035** 92A40 (05C99)
- (with Raychaudhury, Chandan; Henderson, R. V.) A new approach to structure-activity using distance information content of graph vertices: a study with phenylalkylamines. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 635-640. (see **89d:00007**) 92A40
- Kloesk-Dygas, M. M.** (with Matkowsky, B. J.; Schuss, Z.) A first passage time approach to stochastic stability of nonlinear oscillators. *Phys. Lett. A* 130 (1988), no. 1, 11-18. (V. Kolmanovskii) **89i:93120** 93E15 (34C15, 34F05, 60H10)
- (with Matkowsky, B. J.; Schuss, Z.) Colored noise in dynamical systems. *SIAM J. Appl. Math.* 48 (1988), no. 2, 425-441. (Summary) **89b:82040** 82A31 (60J99, 60K99)
- Kloss, B. B.** On minimal autonomous partitions of directed graphs and some applications to automata theory. (Russian summary) *Acta Cybernet.* 8 (1988), no. 4, 325-339. (A. Ádám) **89m:05054** 05C20 (68Q70)
- Some properties of fault-tolerant automata. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 1, 10-15, 133; translation in *Cybernetics* 24 (1988), no. 1, 12-18. (Summary) **89b:68048** 68Q70
- Automata that are stable with respect to distortions in an input sequence of signals. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 6, 71-72; translation in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 6, 98-100. (R. Skhirladze) **89m:68097** 68Q70
- Klötzler, R.** (with Pickenhain, S.) Universale Rettungskurven. II. (English and Russian summaries) [Universal rescue curves. II] *Z. Anal. Anwendungen* 6 (1987), no. 4, 363-369. (T. R. Gichev) **89a:49018** 49A55 (49F25)
- Zur Anwendung des Pontryagin'schen Maximumprinzips bei distributiver Steuerung auf eine geometrische Aufgabenklasse. (English and Russian summaries) [On the application of the Pontryagin maximum principle at distributive control to a class of geometric problems] *Z. Anal. Anwendungen* 7 (1988), no. 3, 263-276. (Russell D. Rupp) **89j:49028** 49B10
- Klov, Torleiv** Bounds on the size of optimal difference triangle sets. *IEEE Trans. Inform. Theory* 34 (1988), no. 2, 355-361. (Melvin M. Sweet) **89k:94003** 94A05 (05B10, 94B10)
- Kluchkovsky, Yu. B.** see **Klyuchkovskii, Yu. B.**
- Klug, Anthony** On conjunctive queries containing inequalities. *J. Assoc. Comput. Mach.* 35 (1988), no. 1, 146-160. (J. Paredaens) **89c:68021** 68P15 (68P20)
- Kluge, R.** (with Bruckner, G.) On a coupled system of partial differential equations. (German and Russian summaries) *Z. Anal. Anwendungen* 6 (1987), no. 2, 133-141. (G. P. Bava) **89c:35156** 35Q99
- Kluitmann, Paul** ★ Ausgezeichnete Basen erweiterter affiner Wurzelgitter. (German) [Distinguished bases of extended affine root lattices] Dissertation, Rheinische Friedrich-Wilhelms-Universität, Bonn, 1986. *Bonner Mathematische Schriften* [Bonn Mathematical Publications], 185. Universität Bonn, Mathematisches Institut, Bonn, 1987. vi+142 pp. (Louis Solomon) **89c:32015** 32C40 (17B20, 32G11)
- Kluivring, R.** (with van der Weele, J. P.; Capel, H. W.) Period doubling in maps with a maximum of order  $z$ . *Phys. A* 145 (1987), no. 3, 425-460. (Summary) **89f:58109** 58F14 (58F08)
- Klümpfer, A.** (with Zittartz, J.) Eigenvalues of the eight-vertex model transfer matrix and the spectrum of the XYZ Hamiltonian. *Z. Phys. B* 71 (1988), no. 4, 495-507. (Roland Koberle) **89m:82078** 82A68 (81E40, 82A15, 82A69)
- Klippelberg, Claudia** Subexponential distributions and integrated tails. *J. Appl. Probab.* 25 (1988), no. 1, 132-141. (N. H. Bingham) **89c:60016** 60E05 (60J15, 60K25)
- Klváněk, Igor** Additive set functions of bounded  $\Phi$ -variation. *Miniconference on harmonic analysis and operator algebras* (Canberra, 1987), 89-100, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 15, Austral. Nat. Univ., Canberra, 1987. (J. Musielak) **89f:28026** 28B05 (26A45, 46E27, 46G10)
- Integration and the Feynman-Kac formula. *Studia Math.* 86 (1987), no. 1, 35-57. (L. L. Lee) **89i:28005** 28C20 (46G12, 47D05, 81C35)
- Scalar operators and integration. *J. Austral. Math. Soc. Ser. A* 45 (1988), no. 3, 401-420. (W. Ricker) **89j:47023** 47B40 (43A15, 46G10, 47B38, 47D30)

- Klyachko, A. A.** *K-theory of Demazure models.* (Russian) *Investigations in number theory* (Russian), 61–72, *Saratov. Gos. Univ., Saratov*, 1982. (see **89a:11006**) 14L32 (14E07, 19E15)
- (with Iskovskikh, V. A.; Kostrikin, Aleksei Ivanovich; Manin, Yu. I.; Tyurin, A. N.; Shafarevich, I. R.) Valentin Evgen'evich Voskresenskii (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 2(260), 169–170; translation in *Russian Math. Surveys* **43** (1988), no. 2, 201–203. (Editors) **89i:01084** 01A70
- Klyaus, P. S.** (with Kapitonova, Yu. V.; Kovalenko, N. S.) A mathematical model of the pipeline organization of competing processes. (Russian) *Dokl. Akad. Nauk SSSR* **293** (1987), no. 6, 1320–1324. (N. N. Mirenkov) **89a:68024** 68M25 (68M10, 90B35)
- Klychev, F.** (with Tishabava, M. Kh.; Tashov, A. A.; Mirzaev, N.) Generalization of recognition algorithms of potential function type for objects with features of various types. (Russian) *Dokl. Akad. Nauk UzSSR* **1988**, no. 4, 13–15. (Not in MR) **68T10**
- Klyuchantsev, M. I.** A method of integral transformations for solving some classes of differential equations. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 10, 1668–1679, 1834. (Summary) **89h:34008** 34A25 (34C20)
- Klyuchkovskii, Yu. B.** (with Gaida, R. P.; Tretyak, V. I.) Three-dimensional Lagrangian approach to the classical relativistic dynamics of directly interacting particles. *Constraint's theory and relativistic dynamics* (Florence/Arctri, 1986), 210–241, *World Sci. Publishing, Singapore*, 1987. (Mayer Humi) **89c:70037** 70H40
- Kmenta, Jan** (with Balestra, Pietro) Missing measurements in a regression problem with no auxiliary relations. *Innovations in quantitative economics: essays in honor of Robert L. Basmann*, 289–300, *Adv. Econometrics*, 5, *JAI, Greenwich, CT*, 1986. (Summary) **89a:62162** 62J05 (62P20)
- Kmeř, František** Radicals and their left ideal analogues in a semigroup. (Russian summary) *Math. Slovaca* **38** (1988), no. 2, 139–145. (Mohan S. Putcha) **89c:20109** 20M11 (20M10)
- Kmeř, T.** (with Brunovský, Pavol) The nitrogen transformation cycle in water. *Dynamical systems and environmental models* (Eisenach, 1986), 132–138, *Math. Ecol., Akademie-Verlag, Berlin*, 1987. (From the introduction) **89b:92011** 92A08 (92A17)
- Kmieciak, M.** (with Bohm, Arno; Kielanowski, P.; Loewe, M.) Relativistic spectrum generating groups: spectrum and radiative transitions in a collective model of hadrons. *Group theoretical methods in physics* (Varna, 1987), 208–222, *Lecture Notes in Phys.*, 313, *Springer, Berlin-New York*, 1988. (Summary) **89j:81254** 81G20
- (with Bohm, Arno; Boya, L. J.; Kielanowski, P.; Loewe, M.; Magnollay, P.) Theory of relativistic extended objects. *Internat. J. Modern Phys. A* **3** (1988), no. 5, 1103–1121. (Summary) **89c:81199** 81G25
- (with Bohm, Arno; Boya, L. J.) Representation theory of superconformal quantum mechanics. *J. Math. Phys.* **29** (1988), no. 5, 1163–1170. (Véronique Hussin) **89d:81038** 81C40 (81G20)
- (with Boya, L. J.; Bohm, Arno) Hydrogen atom in one dimension. *Phys. Rev. A* (3) **37** (1988), no. 9, 3567–3569. (P. G. L. Leach) **89d:81018** 81C05 (70F05, 70G05, 81G45)
- Knabe, Stefan** Generalization of the Faddeev equations to long-range potentials. *Ann. Physics* **181** (1988), no. 1, 54–78. (Lawrence E. Thomas) **89g:81096** 81F10
- Knabner, Peter** (with Vessella, Sergio) Stabilization of ill-posed Cauchy problems for parabolic equations. (Italian summary) *Ann. Mat. Pura Appl.* (4) **149** (1987), 393–409. (I. Łojczyk-Królikiewicz) **89c:35064** 35K15 (35B35, 35R25)
- (with Vessella, Sergio) The optimal stability estimate for some ill-posed Cauchy problems for a parabolic equation. *Math. Methods Appl. Sci.* **10** (1988), no. 5, 575–583. (Summary) **89h:35330** 35R25 (35K10)
- majorowska-Knap, K.** see **Majorowska-Knap, K.**
- Knapp, Anthony W.** (with Baldoni Silva, M. W.) Indefinite intertwining operators. II. *Symposia Mathematica*, Vol. XXIX (Cortona, 1984), 1–46, *Sympos. Math.*, 29, *Academic Press, New York-London*, 1987. (D. Miličević) **89i:22023** 22E46
- Lie groups, Lie algebras, and cohomology. *Mathematical Notes*, 34, *Princeton University Press, Princeton, NJ*, 1988. xii+510 pp. ISBN 0-691-08498-X (Roger Zierau) **89j:22034** 22E46 (17B10, 22E45, 22E47)
- Knapp, Charles H.** (with Ghosh, Dipankar) Measurement selection for linear multivariable control systems. *Automatica—J. IFAC* **25** (1989), no. 1, 55–63. (Summary) **89h:93089** 93B50 (93E20)
- Knapp, D.** Dynamical systems. *ECM/87. Educational computing in mathematics* (Rome, 1987), 69–73, *North-Holland, Amsterdam-New York*, 1988. (Editors) **89j:58002** 58-04 (58F14)
- Knapp, E. W.** (with Köhler, Günther Horst; Blumen, A.) Continuous-time random walks on a long-range hierarchical model. *Phys. Rev. B* (3) **38** (1988), no. 10, 6774–6778. (Summary) **89i:82041** 82A41 (82A57)
- Relaxation in self-similar hierarchical spaces. *Phys. Rev. Lett.* **60** (1988), no. 23, 2386–2389. (Summary) **89d:82099** 82A57
- Knapp, Hans Georg** Zahl als Zeichen—zur "Technisierung" der Arithmetik im Mittelalter. (English and French summaries) [Number as sign—on the "technicization" of arithmetic in the Middle Ages] *Historia Math.* **15** (1988), no. 2, 114–134. (A. G. Molland) **89h:01017** 01A35
- Knapp, Karlheinz** (with Crabb, Michael C.) On the codegree of negative multiples of the Hopf bundle. *Proc. Roy. Soc. Edinburgh Sect. A* **107** (1987), no. 1–2, 87–107. (Lionel Schwartz) **89d:55042** 55R25 (55R50)
- (with Crabb, Michael C.) Central Adams operators. *Manuscripta Math.* **60** (1988), no. 2, 131–137. (Haynes R. Miller) **89g:55015** 55P42 (55N15)
- Knarr, Norbert** (with Betten, Dieter) Rotationsflächen-Ebenen. [Planes generated by rotational surfaces] *Abh. Math. Sem. Univ. Hamburg* **57** (1987), 227–234. (H. Salzmann) **89b:51025** 51H10
- 4-dimensionale projektive Ebenen vom Lenz-Barlotti-Typ II.2. (English summary) [4-dimensional projective planes of Lenz-Barlotti type II.2] *Resultate Math.* **12** (1987), no. 1–2, 134–147. (Rainer Löwen) **89d:51020** 51H10
- Group preserving extensions of skew parabolas. *Combinatorics '86* (Trento, 1986), 225–229, *Ann. Discrete Math.*, 37, *North-Holland, Amsterdam-New York*, 1988. (H. Groh) **89h:51027** 51H20
- Projectivities of generalized polygons. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), B, 265–275. (Theo Grundhöfer) **89c:20008** 20B25 (05B25, 51E30)
- 4-dimensionale projektive Ebenen mit großer abelscher Kollineationsgruppe. (English summary) [4-dimensional projective planes with large abelian collineation group] *J. Geom.* **31** (1988), no. 1–2, 114–124. (H. Salzmann) **89c:51018** 51H10 (20B27)
- Knauer, Ulrich** (with Fleischer, V.) Endomorphism monoids of acts are wreath products of monoids with small categories. *Semigroups, theory and applications* (Oberwolfach, 1986), 84–96, *Lecture Notes in Math.*, 1320, *Springer, Berlin-New York*, 1988. (P. G. Trotter) **89j:20074** 20M30 (20M20, 20M50)
- (with Mikhailév, A. V.) Wreath products of acts over monoids. I. Regular and inverse acts. *J. Pure Appl. Algebra* **51** (1988), no. 3, 251–260. (Heinrich Seidel) **89g:20104** 20M50
- Kneip, Alois** (with Gasser, Theo) Convergence and consistency results for self-modeling nonlinear regression. *Ann. Statist.* **16** (1988), no. 1, 82–112. (Andrej Pázman) **89h:62133** 62J02 (62F10)
- Kneis, Gert** Completion functors for categories of convergence spaces. II. Embedding of separated acceptable spaces into their completion. *Math. Nachr.* **135** (1988), 181–211. (Temple H. Fay) **89g:54007** 54A20 (18B30, 46M15)
- Kneser, Martin** Komposition quadratischer Formen. [Composition of quadratic forms] *Algebra-Tagung Halle 1986*, 161–173, *Wissensch. Beitr.*, 33, *Martin-Luther-Univ. Halle-Wittenberg, Halle (Saale)*, 1987. (A. G. Earnest) **89c:11060** 11E88 (11E16, 11E20, 11E81)
- Knessl, C.** (with Matkowsky, B. J.; Schuss, Z.; Tier, C.) Busy period distribution in state-dependent queues. *Queueing Systems Theory Appl.* **2** (1987), no. 3, 285–305. (J. A. Morrison) **89d:60178** 60K25 (90B22)
- (with Matkowsky, B. J.; Schuss, Z.; Tier, C.) A state dependent M/M/1 queue: a production-inventory model. *Appl. Math. Lett.* **1** (1988), no. 3, 235–239. (Not in MR) **90B30** (90B05, 90B22)
- Knežević, Jalka** A note on bounded, periodic and stable solutions of differential equations. (Serbo-Croatian summary) *Mat. Vesnik* **39** (1987), no. 2, 159–161. (T. A. Burton) **89b:34095** 34C25 (34C11)
- Knight, B. W.** (with Sirovich, L.) Two-scale eigenfunction methods with an application to the visual system. *Quart. Appl. Math.* **45** (1987), no. 4, 749–768. (T. W. Barrett) **89h:92019** 92A09 (92A27)
- (with Gutowitz, Howard A.; Victor, Jonathan D.) Erratum: "Local structure theory for cellular automata" [Phys. D **28** (1987), no. 1–2, 18–48; MR **88i:68078**]. *Phys. D* **29** (1988), no. 3, 428. (Editors) **89d:68063** 68Q80 (92A05)
- Knight, F. B.** Poisson representation of strict regular step filtrations. *Séminaire de Probabilités, XX*, 1984/85, 1–27, *Lecture Notes in Math.*, 1204, *Springer, Berlin-New York*, 1986. (Dominique Lépine) **89g:60169** 60G55
- Inverse local times, positive sojourns, and maxima for Brownian motion. *Colloque Paul Lévy sur les Processus Stochastiques* (Palaiseau, 1987). *Astérisque* **NO** 157–158 (1988), 233–247. (P. Sundar) **89m:60194** 60J65 (60J55)
- Knight, J. H.** (with Philip, J. R.) Table errata: *Tables of integral transforms. Vol. 1* [McGraw-Hill, New York, 1954; MR **15**, 868] by A. Erdélyi, W. Magnus, F. Oberhettinger and F. G. Tricomi. *Math. Comp.* **50** (1988), no. 182, 653. (Editors) **89a:44001** 44-00 (00A20)
- Table errata: *Tables of Laplace transforms* [Springer, New York, 1973; MR **50** #5375] by F. Oberhettinger and L. Badii. *Math. Comp.* **50** (1988), no. 182, 653–654. (Editors) **89a:44002** 44-00 (44A15)
- Knight, P. L.** (with Loudon, R.) Squeezed light. Special issue on squeezed light. *J. Modern Opt.* **34** (1987), no. 6–7, 709–759. (see **89m:81213a**) **81K05** (81-02)
- (with Barnett, S. M.) Squeezing in correlated quantum systems. Special issue on squeezed light. *J. Modern Opt.* **34** (1987), no. 6–7, 841–853. (see **89m:81213a**) **81K05** (81D30)
- see also **Squeezed light**, **89m:81213a**
- Knight, William J.** Search in an ordered array having variable probe cost. *SIAM J. Comput.* **17** (1988), no. 6, 1203–1214. (Itsuo Takanami) **89m:68017** 68P10
- Knightly, George H.** (with Cannon, John R.) Some remarks on a quasi-steady-state approximation of the Navier-Stokes equation. *J. Austral. Math. Soc. Ser. B* **29** (1988), no. 4, 440–447. (F. Milinazzo) **89e:76037** 76D05 (65N99)
- Knil, R. J.** (with Whitman, A. P.) The well-posedness of Rosen's field equations. *Mathematics and general relativity* (Santa Cruz, CA, 1986), 157–166, *Contemp. Math.*, 71, *Amer. Math. Soc., Providence, RI*, 1988. (Paul Baird) **89h:83032** 83D05 (58E20)
- (with Stoeger, William R.; Whitman, A. P.) Axially symmetric solution to Rosen's field equations with angular momentum. *Loyola Conference on Mathematical and Interpretational Problems in Relativistic Quantum Theory* (New Orleans, 1987). *Internat. J. Theoret. Phys.* **27** (1988), no. 2, 283–288. (W. M. Baker) **89h:83033** 83D05
- Knizhnerman, L. A.** (with Druskin, V. L.) A method for solving direct problems of electrical logging and prospecting with direct current. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1987**, no. 4, 63–71. (Summary) **89m:86016** 86A20 (86-08)
- Knizhnik, V. G.** (with Belavin, A. A.; Morozov, A. Yu.; Perelomov, A. M.) Two- and three-loop amplitudes in bosonic string theory. *JETP Lett.* **43** (1986), no. 7, 411–415; translated from *Pis'ma Zh. Éksp. Teoret. Fiz.* **43** (1986), no. 7, 319–321 (Russian). (Werner Kleinert) **89h:81165** 81E99 (14H15, 14K25, 32G15, 32L05, 81E30)
- Analytic fields on Riemannian surfaces. *Phys. Lett. B* **180** (1986), no. 3, 247–254. (K. Schoutens) **89h:81198** 81E99 (32G15, 58G25, 81E30, 81E40)
- Analytic fields on Riemann surfaces. II. *Comm. Math. Phys.* **112** (1987), no. 4, 567–590. (K. Schoutens) **89h:81199** 81E99 (32G20, 81E30, 81E40)
- An explicit equation for a two-loop measure in a heterotic string model. *JETP Lett.* **46** (1987), no. 1, 7–10; translated from *Pis'ma Zh. Éksp. Teoret. Fiz.* **46** (1987), no. 1, 8–10 (Russian). (Robert Marnelius) **89f:81190** 81E99 (81E30)
- Explicit expression for the two-loop measure in the heterotic string theory. *Phys. Lett. B* **196** (1987), no. 4, 473–476. (Werner Kleinert) **89f:81191** 81E99 (14K25, 32G15, 81E30)
- (with Polyakov, A. M.; Zamolodchikov, Aleksandr B.) Fractal structure of 2D-quantum gravity. *Modern Phys. Lett. A* **3** (1988), no. 8, 819–826. (Markku Lehto) **89i:83039** 83C45 (81E13, 81E15, 81G25)
- Knizhnikova, L. A.** (with Vedenov, A. A.; Ezhov, A. A.; Levchenko, E. B.; Chernov, Yu. G.) Nonlinear systems with memory and the modeling of the functions of neural nets. (Russian) *Intellectual processes and their modeling* (Russian), 229–248, 395, "Nauka", Moscow, 1987. (Summary) **89j:92040** 92A09 (58F40)
- (with Ezhov, A. A.; Levchenko, E. B.) Regular and chaotic oscillations in a system of autogenerators. (Russian) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* **30** (1987), no. 9, 1167–1169. (From the text) **89c:58075** 58F13



- Knobler, Charles M.** (with Scott, Robert L.) Multicritical points in fluid mixtures: experimental studies. *Phase transitions and critical phenomena*, Vol. 9, 163-231, Academic Press, London-New York, 1984. (see **89g:82024** 82-05 (80-05, 82A50))
- Knobloch, Eberhard** Émile Borel as a probabilist. *The probabilistic revolution*, Vol. 1, 215-233, Bradford Book, MIT Press, Cambridge, MA-London, 1987. (Pierre Crépel) **89d:01048** 01A60 (01A70)
- Musiktheorie in Eulers Notizbüchern. [Music theory in Euler's notebooks] *NTM Schr. Geschichte Natur. Tech. Medizin* **24** (1987), no. 2, 63-76. (Edwin Hewitt) **89e:01022** 01A50 (00A69)
- Knobloch, Edgar** (with Deane, A. E.; Toomre, J.) Oscillatory doubly diffusive convection: theory and experiment. *The physics of structure formation* (Tübingen, 1986), 117-129, Springer Ser. Synergetics, 37, Springer, Berlin-New York, 1987. (see **89b:58064** 76V05 (76E30))
- (with Dangelmayr, G.) On the Hopf bifurcation with broken  $O(2)$  symmetry. *The physics of structure formation* (Tübingen, 1986), 387-393, Springer Ser. Synergetics, 37, Springer, Berlin-New York, 1987. (Introduction) **89m:58152** 58F14 (58F35, 76E30)
- (with Lerner, J.) The long-wave instability of a defect in a uniform parallel shear. *J. Fluid Mech.* **189** (1988), 117-134. (Summary) **89c:76057** 76E05
- (with Silber, Mary) Pattern selection in ferrofluids. *Phys. D* **30** (1988), no. 1-2, 83-98. (Summary) **89c:76064** 76E25 (58F14, 82A68)
- (with Crawford, John David) Classification and unfolding of degenerate Hopf bifurcations with  $O(2)$  symmetry: no distinguished parameter. *Phys. D* **31** (1988), no. 1, 1-48. (Mark Roberts) **89j:58091** 58F14 (58C27, 58E07, 76E30)
- (with Crawford, John David) Symmetry-breaking bifurcations in  $O(2)$  maps. *Phys. Lett. A* **128** (1988), no. 6-7, 327-331. (B. V. Loginov) **89h:58041** 58E07 (58C27, 58F14)
- (with Silber, Mary) Pattern selection in steady binary-fluid convection. *Phys. Rev. A* (3) **38** (1988), no. 3, 1468-1477. (Summary) **89i:76052** 76E15 (58F14, 76T05)
- (with Riecke, Hermann; Crawford, John David) Time-modulated oscillatory convection. *Phys. Rev. Lett.* **61** (1988), no. 17, 1942-1945. (Summary) **89h:76017** 76E15 (58F14)
- (with Proctor, M. R. E.) The double Hopf bifurcation with 2:1 resonance. *Proc. Roy. Soc. London Ser. A* **415** (1988), no. 1848, 61-90. (Summary) **89k:58215** 58F14 (34C15, 70K30, 70K99)
- Knobloch, H.-W.** Invariant manifolds and singular perturbation. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations* (Budapest, 1987), 109-118, János Bolyai Math. Soc., Budapest, 1987. (Hildebrando Munhoz Rodrigues) **89c:58106** 58F30 (34C45, 34E10)
- Stabilization of control systems by means of high-gain feedback. *Optimal control theory and economic analysis*, 3 (Vienna, 1987), 153-173, North-Holland, Amsterdam-New York, 1988. (Dumitru Motreanu) **89c:93168** 93D15 (58F12, 58F35, 93B27)
- Dichotomy and integral manifolds. I. General principles. *Resulante Math.* **14** (1988), no. 1-2, 93-124. (Jair Koiller) **89h:34039** 34C30 (34B10, 34C45)
- Knoblock, T. B.** (with Constable, R. L.; Bates, J. L.) Writing programs that construct proofs. *J. Automat. Reason.* **1** (1985), no. 3, 285-326. (Summary) **89i:68113** 68T15 (03B35, 68Q55, 68T20)
- Knoche, Norbert** Hans-Georg Steiner 60 Jahre. [Hans-Georg Steiner is 60 years old] *Math. Semesterber.* **35** (1988), no. 2, 147-161. (Editors) **89m:01097** 01A70
- Knoflitzek, Frantisek** On translation planes and quasifields of order 16. *Zeszyty Nauk. Geom.* **16** (1987), 49-66. (T. G. Ostrom) **89a:51021** 51E15 (05B25, 20H30, 51A40)
- Knoke, James D.** (with Snappin, Steven M.) Bootstrapped and smoothed classification error rate estimators. *Comm. Statist. Simulation Comput.* **17** (1988), no. 4, 1135-1153. (Summary) **89i:62098** 62H30
- Knoll, F. W.** Die Fundamentalgruppen der Siegelischen Modulvarietäten. (English summary) [The fundamental groups of Siegel modular varieties] *Abh. Math. Sem. Univ. Hamburg* **57** (1987), 203-213. (J. Spilker) **89b:32043** 32N05 (11F46, 14E20, 32J05)
- Knop, Friedrich** (with Menzel, Gisela) Duale Varietäten von Fahnenvarietäten. [Dual varieties of flag varieties] *Comment. Math. Helv.* **62** (1987), no. 1, 38-61. (Audun Holme) **89a:14051** 14J40 (14M17, 14N99)
- Ein neuer Zusammenhang zwischen einfachen Gruppen und einfachen Singularitäten. (English summary) [A new connection between simple groups and simple singularities] *Invent. Math.* **90** (1987), no. 3, 579-604. (I. Dolgachev) **89b:14005** 14B05 (14B07, 14L40, 32C40)
- Knop, J. V.** (with Balaban, Alexandru T.; Brunvöl, J.; Cioslowski, Jerzy; Cyvin, B. N.; Cyvin, S. J.; Gutman, I.; He, Wen Chen; He, Wen Jie; Kovačević, M.; Müller, W. R.; Szymanski, K.; Tóšić, Ratko; Trinajstić, N.) Enumeration of benzenoid and coronoid hydrocarbons. *Z. Naturforsch. A* **42** (1987), no. 8, 863-870. (Summary) **89d:92090** 92A40 (05A15)
- Knopf, Arnold** (with Lubinsky, D. S.) Analogues of Freud's conjecture for Erdős type weights and related polynomial approximation problems. *Approximation theory*, Tampa (Tampa, Fla., 1985-1986), 21-69, Lecture Notes in Math., 1287, Springer, Berlin-New York, 1987. (A. Magnus) **89d:41012** 41A10 (42A10)
- (with Lubinsky, D. S.; Nevai, P.) Freud's conjecture and approximation of reciprocals of weights by polynomials. *Const. Approx.* **4** (1988), no. 1, 9-20. (Guillermo López Lagomasino) **89e:42016** 42C05 (41A10)
- (with Lubinsky, D. S.) Asymptotic behaviour of the ratio of Christoffel functions for weights  $W^2$  and  $W^2 g$ . *J. Approx. Theory* **52** (1988), no. 3, 293-314. (H. N. Mhaskar) **89b:41010** 41A10 (41A60)
- (with Knopf, John) A product expansion in  $p$ -adic and other non-Archimedean fields. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1031-1035. (S. V. Kotov) **89f:11094** 11J61 (11S80)
- Knopf, John** (with Knopf, Arnold) A product expansion in  $p$ -adic and other non-Archimedean fields. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1031-1035. (S. V. Kotov) **89f:11094** 11J61 (11S80)
- Knopov, P. S.** (with Ermoševa, T. Yu.) Asymptotic properties of the estimator of the mean of a stationary process in the presence of constraints. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 9, 72-74, 89. (J. M. Stoyanov) **89k:93194** 93E10 (62M10)
- An approach to solving problems of stochastic optimization. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 4, 126-127, 136. (Jin De Wang) **89m:90122** 90C15
- Knops, H. J. F.** (with Thijssen, J. M.) Low temperature renormalisation study of the chiral clock model. *Phys. A* **143** (1987), no. 1-2, 147-163. (Summary) **89d:82009** 82A25 (82A68)
- Knops, R. J.** (with Payne, L. E.) Improved estimates for continuous data dependence in linear elastodynamics. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 3, 535-559. (Gustavo Perla Menzala) **89d:73008** 73C35 (35B30, 73C40)
- Koor, Wilbur R.** Archimedes and the pseudo-Euclidean Catoptrics: early stages in the ancient geometric theory of mirrors. *Arch. Internat. Hist. Sci.* **35** (1985), no. 114-115, 28-105 (1986). (H. L. L. Busard) **89g:01005** 01A20
- Archimedes' *Dimension of the circle*: a view of the genesis of the extant text. *Arch. Hist. Exact Sci.* **35** (1986), no. 4, 281-324. (A. G. Molland) **89a:01009** 01A20
- The medieval tradition of a Greek mathematical lemma. (Arabic summary) *Z. Gesch. Arab.-Islam. Wiss.* **3** (1986), 230-264, iv, Arabic paging 50. (Jan P. Hogendijk) **89d:01006** 01A20 (01A30, 01A35)
- The medieval tradition of Archimedes' *Sphere and cylinder*. *Mathematics and its applications to science and natural philosophy in the Middle Ages*, 3-42, Cambridge Univ. Press, Cambridge-New York, 1987. (H. L. L. Busard) **89g:01017** 01A35
- Körner, Horst** Torsionsfreie Moduln bei Deformation von Kurvensingularitäten. [Torsion-free modules in the deformation of curve singularities] *Singularities, representation of algebras, and vector bundles* (Lambrecht, 1985), 150-155, Lecture Notes in Math., 1273, Springer, Berlin-New York, 1987. (Summary) **89f:14005** 14B07 (14H20)
- Knott, Gary D.** Linear open addressing and Peterson's theorem reshaped. *BIT* **28** (1988), no. 2, 364-371. (Introduction) **89c:68024** 68P10
- Knowles, Gareth J.** On the structure of certain nest algebra modules. *Canad. J. Math.* **39** (1987), no. 6, 1405-1412. (Stephen Power) **89h:47063** 47D25
- Knowles, Greg** Asymptotic limits in multiphase systems. *Miniconference on operator theory and partial differential equations* (North Ryde, 1986), 201-209, Proc. Centre Math. Anal. Austral. Nat. Univ., 14, Austral. Nat. Univ., Canberra, 1986. (S. S. Titov) **89c:35023** 35B40 (76T05)
- Knowles, James K.** (with Abeyaratne, Rohan) Nonelliptic elastic materials and the modeling of dissipative mechanical behavior: an example. *J. Elasticity* **18** (1987), no. 3, 227-278. (Summary) **89g:73022** 73G05 (73G99)
- Knudsen, Daniel C.** (with Fotheringham, A. Stewart) Modeling discontinuous change in the spatial pattern of retail outlets: a methodology. *Transformations through space and time* (Hansholm, 1985), 273-292, NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci., 29, Nijhoff, Dordrecht, 1986. (see **89c:90072** 90B50 (58C28, 90B10))
- Knudsen, Ole** The influence of Gibbs's European studies on his later work. *From ancient omens to statistical mechanics*, 271-280, Acta Hist. Sci. Nat. Med., 39, Univ. Lib. Copenhagen, Copenhagen, 1987. (D. ter Haar) **89h:01070** 01A70 (01A55)
- Knuiman, M. W.** (with Speed, T. P.) Incorporating prior information into the analysis of contingency tables. (French summary) *Biometrics* **44** (1988), no. 4, 1061-1071. (Not in MR) 62H17
- Knüppel, Frieder** Projective planes over rings. *Resulante Math.* **12** (1987), no. 3-4, 348-356. (Günter Törner) **89a:51015** 51C05
- Products of involutions in orthogonal groups. *Combinatorics '86* (Trento, 1986), 231-247, Ann. Discrete Math., 37, North-Holland, Amsterdam-New York, 1988. (E. W. Ellers) **89a:51033** 51F25 (20H20)
- Knuth, Donald E.** (with Greene, Daniel H.) ★ МАТЕМАТИЧЕСКИЕ МЕТОДЫ АНАЛИЗА АЛГОРИТМОВ. (Russian) [Mathematical methods for the analysis of algorithms] Translated from the second English edition and with an appendix by B. B. Pokhodzei. Translation edited by Yu. V. Matiyasevich. With a preface and comments by Pokhodzei and Matiyasevich. "Mir", Moscow, 1987. 120 pp. (Editors) **89a:68101** 68Q25 (68-02)
- Fibonacci multiplication. *Appl. Math. Lett.* **1** (1988), no. 1, 57-60. (W. Herget) **89f:11031** 11B39
- (with Papadimitriou, Christos H.; Tsitsiklis, John N.) A note on strategy elimination in bimatrix games. *Oper. Res. Lett.* **7** (1988), no. 3, 103-107. (C. B. Millham) **89k:90187** 90D05 (68Q15, 68Q25)
- (with Pittel, B.) A recurrence related to trees. *Proc. Amer. Math. Soc.* **105** (1989), no. 2, 335-349. (Volker Strehl) **89i:05024** 05A15 (05C30, 11B37, 68R05)
- Knuth, Eild** (with Dang Van Hung) A noninterleaving semantics for communicating sequential processes: a fixed-point approach. *Acta Cybernet.* **8** (1988), no. 3, 293-311. (Ryszard Janicki) **89h:68099** 68Q55 (68Q10, 68Q90)
- Knutsen, Henning** A comment on: "An analytical stellar model" [Classical Quantum Gravity **4** (1987), no. 6, 1691-1696; MR 88h:83022] by H. L. Duorah and R. Ray. *Astrophys. and Space Sci.* **150** (1988), no. 1, 201. (Summary) **89i:83020** 83C15
- On the stability and physical properties of an exact relativistic model for a superdense star. *Monthly Notices Roy. Astronom. Soc.* **232** (1988), no. 1, 163-174. (Summary) **89d:83031** 83C35 (85A15)
- Knutsen, H.** (with Wilson, Roland G.) Uncertainty and inference in the visual system. *IEEE Trans. Systems Man Cybernet.* **18** (1988), no. 2, 305-312. (Summary) **89c:92092** 92A27 (92A09)
- Knuutila, Simo** Being qua being in Thomas Aquinas and John Duns Scotus. *The logic of being*, 201-222, Synthese Hist. Lib., 28, Reidel, Dordrecht-Boston, MA, 1986. (see **89a:03004** 01A35 (03-03, 03A05))
- see also **Logic of being**, **89a:03004**
- Knyazev, Andrei Vladimirovich** (with Lebedev, V. I.) Estimates for convergence and analysis of the optimality of iterative methods for the simultaneous computation of several eigenvectors. (Russian) *Computational methods in linear algebra* (Russian) (Moscow, 1982), 94-114, Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow, 1983. (Zdeněk Dostál) **89b:65094** 65F15
- An error estimate for the approximation by the Rayleigh-Ritz method to the invariant subspace that corresponds to nearby eigenvalues. (Russian) *Computer architecture and numerical methods* (Russian), 16-18, Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow, 1985. (see **89m:65005** 65J10 (65F15))
- Methods for the derivation of some estimates in a symmetric eigenvalue problem. (Russian) *Computational processes and systems*, No. 5 (Russian), 164-173, "Nauka", Moscow, 1987. (K. Veselić) **89d:65040** 65F15 (49G10)
- see also **Gregory, R. T.**, **89j:65030**
- Knyazev, O. V.** Finitely attainable varieties of Clifford semigroups. (Russian) *Ural. Gos. Univ. Mat. Zap.* **14** (1987), no. 2 Issled. Algebr. Sist. po Svoist. ikh Podst., 54-62, ii. (Mária B. Szendrei) **89f:20068** 20M07

- Knyazev, V. V.** (with Talanov, V. A.) The asymptotic truth value of infinite formulas. (Russian) *Proceedings of the All-Union seminar on discrete mathematics and its applications* (Russian) (Moscow, 1984), 56–61, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (Wiktor Daňko) **89g:03054** 03C75
- Knyazishche, L. B.** On the problem of the use of a scalar and a vector Lyapunov function. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 36–45, 322, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (A. Pelczar) **89i:34075** 34D20
- (with Gaishun, I. V.; Raptunovich, N. A.) On the theory of the stability of nonautonomous differential equations. (Russian) *Problems in the qualitative theory of differential equations* (Russian) (Irkutsk, 1986), 163–168, 284, "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (see **89j:34002**) 34D20
- Knyazikhin, Yu.** (with Marshak, A.) ★ Метод дискретных ординат решения уравнения переноса. (Russian) [The discrete ordinate method for solving the transport equation] Алгебраическая модель, скорость сходимости. [Algebraic model, convergence rate] With a preface by T. A. Germogenova. "Valgus", Tallinn, 1987. 160 pp. (Janusz Mika) **89c:85001** 85–02 (45K05, 82A70, 85A25)
- Convergence of the Seidel method for solving operator equations. (Russian. English and Estonian summaries) *Eesti NSV Tead. Akad. Toimetised Füüs.-Mat.* **36** (1987), no. 3, 246–250, 349. (B. T. Polyak) **89b:65138** 65J10 (47A50)
- Knyazuk, A. V.** A problem of the theory of extensions of positive definite operators. (Russian) *Application of methods of functional analysis in problems of mathematical physics* (Russian), 101–104, iii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) **89e:47036** 47B25 (47A20)
- Knyr, V. A.** (with Smirnov, Yu. F.; Tolstol, V. N.; Stotland, L. Ya.) Structure of the representations of the algebra  $u(2, 1)$  with an extremal vector. (Russian) *Group-theoretic methods in physics, Vol. 2* (Russian) (Jämsä, 1985), 77–82, "Nauka", Moscow, 1986. (see **89d:81002**) 17B10 (22E45, 81C40)
- (with Smirnov, Yu. F.; Tolstol, V. N.; Stotland, L. Ya.) On structure of the representations of  $U(2, 1)$  with extremal vector. *Group theoretical methods in physics, Vol. II* (Yurmala, 1985), 223–231, *VNU Sci. Press, Utrecht*, 1986. (M. K. F. Wong) **89a:22029** 22E46 (17B10)
- Ko, C. W.** (with Ruskey, Frank) Solution of some multidimensional lattice parity difference recurrence relations. *Discrete Math.* **71** (1988), no. 1, 47–56. (Dennis White) **89k:05063** 05C45
- Ko, Daijin** (with Guttorp, Peter) Robustness of estimators for directional data. *Ann. Statist.* **16** (1988), no. 2, 609–618. (Helmut Rieder) **89g:62050** 62F35
- Ko, Jae Ha** Existence, uniqueness and correctness of the solutions of initial value problem and boundary value problem of ordinary integro-differential equation and partial integro-differential equation. (Korean. English summary) *Su-hak* **1987**, no. 3, 12–15. (Not in MR) 45K05
- Ko, Ker-I** Continuous optimization problems and a polynomial hierarchy of real functions. Complexity of approximately solved problems (Morningside Heights, N.Y., 1985). *J. Complexity* **1** (1985), no. 2, 210–231. (Summary) **89k:68049** 68Q15 (03D15, 03F60)
- On the computational complexity of best Chebyshev approximations. *J. Complexity* **2** (1986), no. 2, 95–120. (Avraham A. Melkman) **89g:68027** 68Q25 (03D15, 41A10, 65D15)
- (with Long, Timothy J.; Du, Ding Zhu) On one-way functions and polynomial-time isomorphisms. *Theoret. Comput. Sci.* **47** (1986), no. 3, 263–276. (Summary) **89c:68036** 68Q15 (03D15)
- On the notion of infinite pseudorandom sequences. *Theoret. Comput. Sci.* **48** (1986), no. 1, 9–33. (Claus-Peter Schnorr) **89a:68074** 68Q15 (03D15, 65C10, 68Q30)
- (with Marron, Assaf) Identification of pattern languages from examples and queries. *Inform. and Comput.* **74** (1987), no. 2, 91–112. (Reinhard Klette) **89a:68054** 68Q05 (03D05, 03D10, 68Q45)
- (with Du, Ding Zhu) Some completeness results on decision trees and group testing. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 4, 762–777. (Frank K. Hwang) **89a:68069** 68Q15 (90B40)
- On helping by robust oracle machines. *Theoret. Comput. Sci.* **52** (1987), no. 1–2, 15–36. (Lane Hemachandra) **89a:68075** 68Q15 (03D10, 03D15)
- (with Friedman, Harvey) Computing power series in polynomial time. *Adv. in Appl. Math.* **9** (1988), no. 1, 40–50. (Rodney G. Downey) **89c:03038** 03F60 (03D15, 03D45, 68Q15)
- (with Book, Ronald V.) On sets truth-table reducible to sparse sets. *SIAM J. Comput.* **17** (1988), no. 5, 903–919. (Lane Hemachandra) **89i:68039** 68Q15 (03D15, 03D30, 68Q05)
- Searching for two objects by underweight feedback. *SIAM J. Discrete Math.* **1** (1988), no. 1, 65–70. (Summary) **89b:68021** 68P10
- Ko, Lee-Fen** Spin-spin correlation function in the two-dimensional Ising model with linear defects. I.  $T < T_c$ . *J. Statist. Phys.* **52** (1988), no. 3–4, 795–813. (Summaries) **89m:82079a** 82A68 (82A25, 82A67)
- Spin-spin correlation function in the two-dimensional Ising model with linear defects. II.  $T > T_c$ . *J. Statist. Phys.* **52** (1988), no. 3–4, 815–827. (Summary) **89m:82079b** 82A68 (82A25, 82A67)
- Perturbation calculation for the eight-vertex model around the Ising point for  $T \rightarrow T_c^-$ . *Nuclear Phys. B* **295** (1988), no. 4 FS21, 549–570. (Summary) **89e:82014** 82A68
- Perturbation calculation for the eight-vertex model around the Ising point for  $T \rightarrow T_c^+$ . II. *Nuclear Phys. B* **295** (1988), no. 4 FS21, 571–585. (Summary) **89e:82015** 82A68
- Spin-spin correlation in the two-dimensional Ising model with linear defects and Fredholm equations. *Phys. Lett. A* **131** (1988), no. 4–5, 285–288. (M. Lawrence Glasser) **89g:82072** 82A68
- Ko, Young So** (with Myung, Hyo Chul) Restricted flexible algebras. *J. Korean Math. Soc.* **25** (1988), no. 1, 109–113. (T. S. Ravitsankar) **89i:17002** 17A20 (17A05)
- Kobayashi, Hisato** (with Kawasaki, Naoya; Shimemura, E.) Relation between pole assignment and LQ regulator. *Internat. J. Control* **47** (1988), no. 4, 947–951. (Pramod Kumar Sharma) **89e:93115** 93B55 (93B50)
- Kobayashi, Kazuhito** (with Sengoku, Masakazu; Shinoda, Shoji) Radius and diameter with respect to edges in a nondirected graph, and upper and lower bounds for the diameter. *Electron. Comm. Japan. Part I Comm.* **70** (1987), no. 7, 9–19. (Ioan Tomescu) **89m:05073** 05C38
- Kobayashi, Kazuya** (with Inoue, Tadashi) Diffraction of a plane wave by an inclined parallel plate grating. *IEEE Trans. Antennas and Propagation* **36** (1988), no. 10, 1424–1434. (Summary) **89j:78029** 78A45
- Kobayashi, Ken-ichiro** (with Odake, S.) Fermionic construction of  $N = 0, 1, 2$  (super) conformal algebras. *Modern Phys. Lett. A* **3** (1988), no. 8, 773–781. (Raiko Zaikov) **89b:81081** 81D15 (17A70, 22E65, 81E40)
- (with Kitazawa, Y.; Ishibashi, N.; Kato, Akishi; Matsuo, Yutaka; Odake, S.) Operator product expansion coefficients in  $N = 1$  superconformal theory and slightly relevant perturbation. *Nuclear Phys. B* **306** (1988), no. 2, 425–444. (Olaf Lechtenfeld) **89m:81149** 81E99 (81E40)
- (with Lee, Kyung-Hwa; Uematsu, Tsuneo) Effective Lagrangian for spontaneously broken  $N = 2$  superconformal symmetry. *Nuclear Phys. B* **309** (1988), no. 4, 669–679. (Allan M. Din) **89k:81192** 81G20 (81D20)
- (with Sakamoto, Makoto) Orbifold-compactified models in torus-compactified string theories. *Z. Phys. C* **41** (1988), no. 1, 55–63. (C. Gauthier) **89k:81153** 81E99 (53C80, 81E30, 83E30)
- Kobayashi, Kingo** Combinatorial structure and capacity of the permuting relay channel. *IEEE Trans. Inform. Theory* **33** (1987), no. 6, 813–826. (Inder Jeet Taneja) **89d:94034** 94A40
- Kobayashi, Kunikatsu** (with Suzuki, Nobuaki; Nemoto, Yoshiaki; Sato, Richard) A consideration for measure of information based on the Dempster-Shafer theory. *Electron. Comm. Japan. Part I Comm.* **69** (1986), no. 9, 30–38. (Summary) **89j:94021** 94A17 (92A25)
- Kobayashi, Masako** Fixed point sets of orientation reversing involutions on 3-manifolds. *Osaka J. Math.* **25** (1988), no. 4, 877–879. (Allan Edmonds) **89m:57042** 57S17 (57N10)
- Kobayashi, Masanori** (with Capri, A. Z.) The first-rank tensor field coupled to an electromagnetic field. *J. Phys. A* **20** (1987), no. 17, 6101–6112. (Summary) **89b:81089** 81D25 (81G10)
- (with Takahashi, Yasushi) The Rarita-Schwinger paradoxes. *J. Phys. A* **20** (1987), no. 18, 6581–6589. (Summary) **89b:81200** 81E99
- Kobayashi, Minoru** Symmetric twofold CR submanifolds in a Euclidean space  $\mathbb{R}^{4m}$ . *Colloq. Math.* **54** (1987), no. 2, 231–240. (Paolo Piccinini) **89f:53083** 53C40 (53C15)
- Kobayashi, Osamu** Scalar curvature of a metric with unit volume. *Math. Ann.* **279** (1987), no. 2, 253–265. (John M. Lee) **89a:53048** 53C20 (58G30)
- Kobayashi, Reido** (with Chadan, Khosrow) Le problème inverse en constante de couplage. III. (English summary) [The inverse problem in the coupling constant. III] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **303** (1986), no. 5, 329–332. (Pierre C. Sabatier) **89m:81173** 81F05 (34A55, 34B15)
- Kobayashi, Ryoichi** (with Todorov, A. N.) Polarized period map for generalized  $K3$  surfaces and the moduli of Einstein metrics. *Tôhoku Math. J. (2)* **39** (1987), no. 3, 341–363. (Akito Futaki) **89g:32029** 32G07 (14D22, 32G13, 32G20, 53C55, 58E11)
- (with Bando, Shigetoshi) Ricci-flat Kähler metrics on affine algebraic manifolds. *Geometry and analysis on manifolds (Katata/Kyoto, 1987)*, 20–31, *Lecture Notes in Math.*, 1339, Springer, Berlin-New York, 1988. (K. T. Hahn) **89k:32055** 32J99 (14C20, 32C05, 53C55)
- (with Naruki, Isao) Holomorphic conformal structures and uniformization of complex surfaces. *Math. Ann.* **279** (1988), no. 3, 485–500. (Autoreferat (Zbl 611:32023)) **89j:32035** 32J15 (11F41, 14H15, 32G99, 32L05)
- Kobayashi, S. I.** (with Lee, Chahn) Exact dynamical behavior near the critical point in the transverse Ising model. *Phys. Rev. Lett.* **62** (1989), no. 9, 1061–1064. (Summary) **89m:82082** 82A68 (82A25)
- Kobayashi, Shoichi** (with Nishimura, N.) On the behaviour of elastic potentials. *Mem. Fac. Engrg. Kyoto Univ.* **49** (1987), no. 4, 294–307. (A. C. Srivastava) **89k:73012** 73C30
- (with Nishimura, N.) On the behaviour of potentials in consolidation and coupled thermoelectricity. *Mem. Fac. Engrg. Kyoto Univ.* **49** (1987), no. 4, 308–325. (Stan Chirijă) **89c:73095** 73U05
- Kobayashi, Shoshichi** Projectively invariant distances for affine and projective structures. *Differential geometry (Warsaw, 1979)*, 127–152, *Banach Center Publ.*, 12, PWN, Warsaw, 1984. (N. N. Teodorescu (Zbl 558:53019)) **89k:53043** 53C20 (32H15, 53B10, 53C05, 53C25)
- ★ Differential geometry of complex vector bundles. Publications of the Mathematical Society of Japan, 15. Kanô Memorial Lectures, 5. Princeton University Press, Princeton, NJ; Iwanami Shoten, Tokyo, 1987. xii+305 pp. ISBN 0-691-08467-X (Daniel M. Burns, Jr.) **89e:53100** 53C55 (32–02, 32L05, 32L10, 32L20)
- How to write a mathematical paper (in English). (Japanese) *Sûgaku* **39** (1987), no. 4, 348–354. (S. Sakai) **89j:00002** 00A05
- Kobayashi, Takayuki** Branching processes in the presence of random immigration and representations for time series. *J. Phys. A* **21** (1988), no. 19, 3723–3737. (Dean H. Fearn) **89j:60119** 60J80 (62M10, 82A99)
- Kobayashi, Teiichi** Note on stable homotopy types of stunted quaternionic spherical space forms. *Homotopy theory and related topics (Kyoto, 1984)*, 311–317, *Adv. Stud. Pure Math.*, 9, North-Holland, Amsterdam-New York, 1987. (A. J. Berrick) **89a:55027** 55Q45 (19L64, 55S25)
- K $\mathcal{O}$ -cohomology of low-dimensional lens spaces mod  $2^n$ . *Mem. Fac. Sci. Kôchi Univ. Ser. A Math.* **9** (1988), 1–20. (Norredine Mahammed) **89e:55011** 55N15 (19L64, 55R50)
- Kobayashi, Toshihiro** Model reference adaptive control for spectral systems. *Internat. J. Control* **46** (1987), no. 5, 1511–1523. (From the introduction) **89i:93074** 93C40 (93B28, 93B60, 93C20)
- Finite-dimensional adaptive control for infinite-dimensional systems. *Internat. J. Control* **48** (1988), no. 1, 289–302. (Norman P. Coleman, Jr.) **89j:93070** 93C40 (93B50, 93C20, 93C25)
- Input-output representations of spectral systems and adaptive controls. *Internat. J. Systems Sci.* **19** (1988), no. 5, 713–732. (Summary) **89d:93060** 93C40 (93B15, 93B50, 93C25)
- (with Luo, Zheng Hua) Dynamic shape control for a flexible beam. *Internat. J. Systems Sci.* **19** (1988), no. 6, 985–997. (Summary) **89e:93094** 93B50 (73K05, 93B35, 93C20)
- Remarks on discrete-time servomechanism design for parabolic distributed parameter systems. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1323–1333. (Summary) **89e:93095** 93B50 (93C20, 93C55)
- Kobayashi, Toshiyuki** (with Ono, Kaoru; Sunada, Toshikazu) Periodic Schrödinger operators on a manifold. *Forum Math.* **1** (1989), no. 1, 69–79. (Harold Donnelly) **89k:58288** 58G25 (35J10, 47F05)



- Kobayashi, Tsuyoshi** (with Kawauchi, Akio; Sakuma, Makoto) On 3-manifolds with no periodic maps. *Japan. J. Math. (N.S.)* 10 (1984), no. 2, 185–193. (From the introduction) **89b:57020** 57S17 (57M25, 57N10, 57S25)
- Pseudo-Anosov homeomorphisms which extend to orientation reversing homeomorphisms of  $S^3$ . *Osaka J. Math.* 24 (1987), no. 4, 739–743. (John Hempel) **89b:57009** 57N10
- Heights of simple loops and pseudo-Anosov homeomorphisms. *Braids (Santa Cruz, CA, 1986)*, 327–338, *Contemp. Math.*, 78, Amer. Math. Soc., Providence, RI, 1988. (N. V. Ivanov) **89m:57015** 57N10 (57M99)
- Casson-Gordon's rectangle condition of Heegaard diagrams and incompressible tori in 3-manifolds. *Osaka J. Math.* 25 (1988), no. 3, 553–573. (John Hempel) **89m:57016** 57N10
- Kobayashi, Yoshikazu** Product formula for nonlinear contraction semigroups in Banach spaces. *Hiroshima Math. J.* 17 (1987), no. 1, 129–140. (From the introduction) **89d:47143** 47H20 (47H06)
- Kobayashi, Yoji** Enumeration of irreducible binary words. *Discrete Appl. Math.* 20 (1988), no. 3, 221–232. (Dominique Gouyou-Beauchamps) **89f:68036** 68Q45 (05A15, 68R05)
- (with Nagamachi, Shigeaki) Superdistributions. *Lett. Math. Phys.* 15 (1988), no. 1, 17–26. (Anargyros Fellouris) **89d:58011** 58A50 (46F99, 58A30)
- (with Nagamachi, Shigeaki) Eigenvalues and eigenvectors of supermatrices. *Proc. Japan Acad. Ser. A Math. Sci.* 64 (1988), no. 7, 249–252. (Mitchell Rothstein) **89m:58030** 58C50 (15A18)
- Kobayasi, Kazuo** Uniqueness of solutions of degenerate diffusion equations with measures as initial conditions. *Nonlinear Anal.* 12 (1988), no. 10, 1053–1060. (Guang Chang Dong) **89j:35065** 35K55
- Kobe, Donald H.** (with Yang, Kuo-Ho) Energy of a classical charged particle in an external electromagnetic field. (German summary) *European J. Phys.* 8 (1987), no. 4, 236–244. (Summary) **89h:78005** 78A25
- Kobeissi, Hafez** (with Kobeissi, Majida) A new variable step method for the numerical integration of the one-dimensional Schrödinger equation. *J. Comput. Phys.* 77 (1988), no. 2, 501–512. (Ernest R. Davidson) **89j:81030** 81C05 (34B25, 65L10, 81–04, 81G55)
- (with Kobeissi, Majida; El-Hajj, Ali) On computing eigenvalues of the Schrödinger equation for symmetrical potentials. *J. Phys. A* 22 (1989), no. 3, 287–295. (Not in MR) **81C05** (81–08)
- Kobeissi, Majida** (with Kobeissi, Hafez) A new variable step method for the numerical integration of the one-dimensional Schrödinger equation. *J. Comput. Phys.* 77 (1988), no. 2, 501–512. (Ernest R. Davidson) **89j:81030** 81C05 (34B25, 65L10, 81–04, 81G55)
- (with Kobeissi, Hafez; El-Hajj, Ali) On computing eigenvalues of the Schrödinger equation for symmetrical potentials. *J. Phys. A* 22 (1989), no. 3, 287–295. (Not in MR) **81C05** (81–08)
- Kobele, V. V.** (with Banichuk, N. V.) On optimal plastic anisotropy. *J. Appl. Math. Mech.* 51 (1987), no. 3, 381–385 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 3, 489–495 (Russian). (Summary) **89f:73054** 73K40 (73E20)
- Kobelt'ov, G. M.** ★ О решении эллиптических уравнений с сильно меняющимися коэффициентами. (Russian) [Solution of elliptic equations with strongly varying coefficients] Preprint [Preprint], 145. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1987. 26 pp. (M. Zlámal) **89a:65187** 65N99
- (with Bakhtvalov, N. S.; Noskov, Yu. V.) ★ О практическом вычислении значений ортогональных многочленов непрерывного и дискретного аргумента. (Russian) [Practical calculation of the values of orthogonal polynomials of a continuous or discrete argument] Preprint [Preprint], 158. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1987. 28 pp. (Walter Gautschi) **89b:65052** 65D20 (33A65, 42C05)
- (with Bakhtvalov, N. S.; Zhidkov, N. P.) ★ Численные методы. (Russian) [Numerical methods] "Nauka", Moscow, 1987. 599 pp. (A. Haimovici) **89d:65001** 65–01
- (with Bakhtvalov, N. S.) Efficient numerical methods for solving problems in hydrodynamics. (Russian) *Current problems in applied mathematics and in mathematical physics (Russian)*, 200–208, "Nauka", Moscow, 1988. (see **89j:00008**) 76–08 (65P05)
- Kobefskii, V. L.** Realization of the homology modules of higher-dimensional links. (Russian) *Investigations in the theory of surfaces in manifolds with curvature of constant sign (Russian)*, 64–67, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Dončo Dimovski) **89k:57046** 57Q45 (57N15, 57N65, 57R19)
- Köberle, R.** (with Fontanari, J. F.) Enhancing the learning of a finite number of patterns in neural networks. *J. Phys. A* 21 (1988), no. 4, L253–L257. (Summary) **89c:92015** 92A09 (82A99)
- (with Fontanari, J. F.) Neural networks with transparent memory. *J. Phys. A* 21 (1988), no. 4, L259–L262. (Summary) **89c:92016** 92A09 (82A99)
- (with Fontanari, J. F.) Information processing in synchronous neural networks. (French summary) *J. Physique* 49 (1988), no. 1, 13–23. (Summary) **89c:92017** 92A09 (68P20, 82A57, 82A99)
- Koblov, A. Ya.** Nontriviality of Sobolev spaces of infinite order on the real line. (Russian) *Dokl. Akad. Nauk UzSSR* 1987, no. 10, 8–10. (Jiří Rákosník) **89h:46048** 46E35
- Koblov, V. V.** Monotone and convex quadratic splines with supplementary nodes. (Russian) *Some problems in differential equations and discrete mathematics (Russian)*, 94–104, *Novosibirsk. Gos. Univ., Novosibirsk*, 1986. (Gheorghe Coman) **89i:65012** 65D07 (41A15)
- Köbler, Johannes** (with Schöning, Uwe; Wagner, Klaus Werner) The difference and truth-table hierarchies for NP. (French summary) *RAIRO Inform. Theor. Appl.* 21 (1987), no. 4, 419–435. (Andreas Blass) **89g:03058** 03D15 (03D20, 68Q15, 68Q25)
- (with Schöning, Uwe; Torán, Jacobo) On counting and approximation. *CAAP '88 (Nancy, 1988)*, 40–51, *Lecture Notes in Comput. Sci.*, 299, Springer, Berlin-New York, 1988. (Bernard Graw) **89h:68052** 68Q15 (03D15)
- Kobliashvili, N. I.** (with Zakradze, M. V.) An algorithm for the numerical solution of some direct dynamic problems in elasticity theory. (Russian) *Trudy Inst. Vychisl. Mat. Akad. Nauk Gruz. SSR* 28 (1988), no. 1, 101–107. (Not in MR) 73–08
- Koblitz, N.** see Koblitz, Neal I.
- Koblitz, Ann Hibner** Sofia Vasilevna Kovalevskaja (1850–1891). *Women of mathematics*, 103–113, *Greenwood, Westport, CT*, 1987. (see **89b:01071**) 01A70
- Elizaveta Fedorovna Litvinova (1845–1919). *Women of mathematics*, 129–134, *Greenwood, Westport, CT*, 1987. (see **89b:01071**) 01A70
- (with Koblitz, Neal I.) Mathematics and the external world: an interview with Prof. A. T. Fomenko. (Czech) Translated from the English by Oldřich Kowalski. *Pokroky Mat. Fyz. Astronom.* 32 (1987), no. 5, 267–272. (Editors) **89d:00002** 00A05 (00A25)
- ★ Введение в эллиптические кривые и модулярные формы. (Russian) [Introduction to elliptic curves and modular forms] Translated from the English by O. V. Ogievetskii. Translation edited and with a preface by Yu. I. Manin. "Mir", Moscow, 1988. 320 pp. (Editors) **89d:11047** 11G05 (11G40, 14G25, 14K07)
- Primality of the number of points on an elliptic curve over a finite field. *Pacific J. Math.* 131 (1988), no. 1, 157–165. (Fumiyuki Momose) **89h:11023** 11G05 (11Y40, 14G15)
- see also Manin, Yu. I., **89d:32001**
- Kobranov, A. I.** On a theory of the interpretation of gravimetric data for layered media (uniform optimization). (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* 1988, no. 8, 33–44. (Summary) **89j:86005** 86A20 (86–08)
- Kobuchi, Youichi** (with Nishida, Taishin) Repeatable words for substitution. *Theoret. Comput. Sci.* 53 (1987), no. 2–3, 319–333. (H. Jürgen) **89g:68041** 68Q50 (68Q45)
- (with Ito, Tadanao; Ogiwara, Atsushi) A model for rouleaux pattern formation of red blood cells. Enumeration of absolutely stable patterns. *Biomathematics and related computational problems (Naples, 1987)*, 371–379, *Kluwer Acad. Publ., Dordrecht*, 1988. (see **89f:92002**) 92A09
- Kobus, Z.** (with Bittner, R.) About eigensolutions of abstract differential equations with mixed conditions. *Publ. Math. Debrecen* 34 (1987), no. 3–4, 215–229. (Not in MR) 34A25 (34G10)
- Kobylinskii, N. A.** (with Akkelin, S. V.; Martynov, E. S.; Shelest, V. P.) Dual dynamics of constituent interchange in soft and hard hadronic processes. *Soviet J. Nuclear Phys.* 46 (1987), no. 5, 917–920 (1988); translated from *Yadernaya Fiz.* 46 (1987), no. 5, 1545–1551 (Russian). (Summary) **89f:81236** 81F20
- Kobylinskii, Yu. V.** (with Popkova, T. L.; Slepyan, G. Ya.) On the method of nonorthogonal series for the numerical solution of problems of mathematical physics. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 2, 237–246, 303. (Summary) **89c:65140** 65N99
- Kobzarev, I. Yu.** see Einstein collection, **89m:01002**
- Kobzev, A. G.** (with Kobzev, V. G.; Dubrovskii, O. V.; Manukyan, L. A.) Solution of a problem of the choice of a set of testing regimes by methods of graph theory. (Russian. Armenian summary) *Izv. Akad. Nauk Armyan. SSR Ser. Tekhn. Nauk* 40 (1987), no. 4, 16–20, 49. (Larry Basenispiler) **89d:05089** 05C20 (94C15)
- Kobzev, V. G.** (with Dubrovskii, O. V.; Kobzev, A. G.; Manukyan, L. A.) Solution of a problem of the choice of a set of testing regimes by methods of graph theory. (Russian. Armenian summary) *Izv. Akad. Nauk Armyan. SSR Ser. Tekhn. Nauk* 40 (1987), no. 4, 16–20, 49. (Larry Basenispiler) **89d:05089** 05C20 (94C15)
- Koçak, Cevdet** An extremum problem in conformal mapping and the use of Plemelj formula for solution. (Turkish summary) *Istanbul Tek. Üniv. Bul.* 40 (1987), no. 1, 197–205. (Duane W. DeTemple) **89f:30043** 30C70
- Koçak, H.** (with Laidlaw, David) Computer graphics and the geometry of  $S^3$ . *Math. Intelligencer* 9 (1987), no. 1, 8–10. (Louis H. Kauffman) **89d:58001** 58–04 (57–04)
- ★ Differential and difference equations through computer experiments. With diskettes containing PHASER: an animator/simulator for dynamical systems for IBM personal computers. Second edition. *Springer-Verlag, New York-Berlin*, 1989. xviii+224 pp. ISBN 0-387-96918-7 (Editors) **89k:58003** 58–04 (58Fxx, 65C20)
- see also ECM/87. Educational computing in mathematics, **89f:00024**
- Koçarev, I. J.** Quasifractal metamorphoses of 1-D maps. *Phys. Lett. A* 125 (1987), no. 8, 389–393. (From the text) **89b:58136** 58F13 (26A18, 58F08)
- On a class of symmetrical chaotic attractors. *Phys. Lett. A* 130 (1988), no. 1, 7–10. (Summary) **89g:58133** 58F13 (26A18)
- Kocatope, Meharet** An isomorphism theorem for Dragilev spaces. *Arch. Math. (Basel)* 50 (1988), no. 3, 281–286. (D. Vogt) **89f:46018** 46A45 (46M99)
- Kocay, W. L.** Abstract data types and graph isomorphism. *J. Combin. Inform. System Sci.* 9 (1984), no. 4, 247–259. (Julian Padgett) **89b:68018** 68N99 (05C99, 68P05, 68R10)
- Groups & Graphs, a Macintosh application for graph theory. *J. Combin. Math. Combin. Comput.* 3 (1988), 195–206. (Mukkai S. Krishnamoorthy) **89f:05095** 05C25 (05–04, 68U20)
- Hypomorphisms, orbits, and reconstruction. *J. Combin. Theory Ser. B* 44 (1988), no. 2, 187–200. (R. L. Hemminger) **89c:05056** 05C60
- Koch, B. P.** (with Leven, R. W.; Markman, G. S.) Periodic, quasiperiodic and chaotic motion in a forced predator-prey ecosystem. *Dynamical systems and environmental models (Eisenach, 1986)*, 95–104, *Math. Ecol., Akademie-Verlag, Berlin*, 1987. (Reinhard Bürger) **89f:92047** 92A15 (34C25, 34C27, 58F21, 92A17)
- (with Bruhn, B.) Transient chaos in weakly coupled Josephson junctions. (French summary) *J. Physique* 49 (1988), no. 1, 35–40. (Summary) **89b:70011** 70K50 (34C15, 58F13, 94C05)
- Koch, Donald L.** (with Cox, Raymond G.; Brenner, Howard; Brady, John F.) The effect of order on dispersion in porous media. *J. Fluid Mech.* 200 (1989), 173–188. (Summary) **89m:76063** 76S05 (76R50, 82A42, 82A57)
- Koch, Giorgio** Comparison of some statistical methods for counting process observations. *Probability and Bayesian statistics (Jmsbruck, 1986)*, 321–334, *Plenum, New York-London*, 1987. (A. De Hoyos) **89a:62188** 62M09 (60G55)
- (with Ferrante, L.) Identifiability of DNA distribution from flow cytometric data with cell debris. *Bull. Math. Biol.* 50 (1988), no. 3, 209–225. (Summary) **89j:92008** 92A08 (92A12)
- (with Athreya, K. B.; Kliemann, W.) On sequential construction of solutions of stochastic differential equations with jump terms. *Systems Control Lett.* 10 (1988), no. 2, 141–146. (Philip Protter) **89g:60197** 60H20 (60J25, 60J75)
- Koch, Hans** (with Wittwer, Peter) The unstable manifold of a nontrivial RG fixed point. *Mathematical quantum field theory and related topics (Montreal, PQ, 1987)*, 99–105, *CMS Conf. Proc.*, 9, Amer. Math. Soc., Providence, RI, 1988. (see **89g:81002**) 82A25
- Koch, Helmut V.** Unimodular lattices and self-dual codes. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 457–465, *Amer. Math. Soc., Providence, RI*, 1987. (N. J. A. Sloane) **89e:11036** 11H06 (11F27, 11T71, 94B05)
- Koch, I.** (with Tarlowski, C. Z.) An analysis of solution techniques for the magnetic relief equation and the equation of downward continuation. *Computational techniques and*

- applications: CTAC-87 (Sydney, 1987), 357-369, North-Holland, Amsterdam-New York, 1988. (Summary) **89e:65151** 65R20 (86A25)
- Koch, Karl-Rudolf** \* Parameter estimation and hypothesis testing in linear models. Translated from the second German edition. Springer-Verlag, Berlin-New York, 1988. xvi+378 pp. ISBN 3-540-18840-1 (Editors) **89e:62141** 62J05
- Koch, Lisa K.** Chains on CR manifolds and Lorentz geometry. *Trans. Amer. Math. Soc.* **307** (1988), no. 2, 827-841. (Paul E. Ehrlich) **89k:32038** 32F25 (53C50)
- Koch, Martin** Physikalische Evolutionskonzeption und philosophische Entwicklungstheorie. [Physical conception of evolution and philosophical growth theory] *Humboldt Univ. Ber.* **8** (1988), no. 3, 40-46. (Not in MR) **92A05** (92A12)
- Koch, P. E.** Jackson-type theorems for trigonometric polynomials and splines. *A. Haar memorial conference, Vol. I, II* (Budapest, 1985), 485-493, *Colloq. Math. Soc. János Bolyai*, 49, North-Holland, Amsterdam-New York, 1987. (Introduction) **89e:42004** 42A10 (41A15)
- Koch, Richard** Kennzeichnung spezieller Flächenstreifen  $\Gamma_c$  mittels ausgezeichneter Paare von  $c$ -Regelflächen. [Characterization of special surface strips  $\Gamma_c$  by means of distinguished pairs of  $c$ -ruled surfaces] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsb. II* **196** (1987), no. 1-3, 13-20. (H. Brauner) **89f:53003** 53A05 (53A25)
- Spur- und Querlinien in einer regulären, nichtorthogonalen Leitfläche einer Geradenkongruenz des  $E^3$ . [Trace and cross lines in a regular, nonorthogonal director surface of a rectilinear congruence of  $E^3$ ] *Proceedings of the Congress of Geometry (Thessaloniki, 1987)*, 82-98, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1988. (J. Hoschek) **89d:53030** 53A25
- Koch, Werner** Nonlinear limit-cycle solutions—a rational method for transition prediction in shear flows? *Propagation in systems far from equilibrium* (Les Houches, 1987), 360-368, *Springer Ser. Synergetics*, 41, Springer, Berlin-New York, 1988. (Summary) **89j:76049** 76E30 (58F40, 76F10)
- Kocher, Bipin S.** (with Chandru, Vijaya) Analytic techniques for geometric intersection problems. *Geometric modeling*, 305-318, *SIAM, Philadelphia, PA*, 1987. (see **89b:65010**) 65D10
- Kocherli, A. F.** Embedding theorems of class  $B_{p,q}^f(\Omega)$ . (Russian) *Applied problems in functional analysis* (Russian), 50-56, 116, *Azerbaidzhan. Gos. Univ., Baku*, 1986. (Summary) **89c:46049** 46E35
- Kocherovskii, V. G.** (with Mumladze, M. O.) A spatial model in biology and medicine. (Ukrainian. Russian summary) *Ytsnik Kiiv. Univ. Ser. Mat. Mekh.* **29** (1987), 34-39, 118. (Summary) **89d:92002** 92A05 (92A07)
- Kocharyan, A. A.** (with Gurzadyan, V. G.; Matinyan, S. G.) Catastrophes in stellar systems. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 1, 54-58. (From the introduction) **89a:85004** 85A15 (58C28, 58F11)
- (with Gurzadyan, V. G.) Instability in Wheeler-DeWitt superspace. *Modern Phys. Lett. A* **2** (1987), no. 12, 921-927. (Gheorghe Zet) **89b:83075** 83E05 (58F17, 83C45, 83F05)
- (with Gurzadyan, V. G.) The Arnowitt-Deser-Misner principle and geodesic flows in Wheeler-DeWitt superspace. *Soviet Phys. JETP* **66** (1987), no. 4, 651-653 (1988); translated from *Zh. Éksper. Teoret. Fiz.* **93** (1987), no. 4, 1153-1158 (Russian). (C. Gauthier) **89f:83072** 83C99 (58F05, 83F05)
- (with Gurzadyan, V. G.) Dynamic chaos and a regular field. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 2, 323-325; translation in *Soviet Phys. Dokl.* **33** (1988), no. 7, 494-495. (Introduction) **89m:85006** 85A05 (58F13)
- Köcher, P.** Optimal adaptive inventory control for a multi-location model with redistribution. *Optimization* **19** (1988), no. 4, 525-537. (S. Kalpakam) **89j:90084** 90B05 (90C40, 93C40)
- Kocherga, Yu. L.** Minimax control optimization in hydrological processes. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 6, 67-72 (1988); translated from *Avtomatika* **1987**, no. 6, 63-68, 97 (Russian. English summary). (Summary) **89j:93079** 93C75 (93C30, 93E10)
- Kochergin, A. N.** see Interaction of the sciences as a factor in their development, **89j:00014**
- Kocherlakota, K.** (with Balakrishnan, N.; Kocherlakota, S.) Robustness of the double discriminant function in nonnormal situations. *South African Statist. J.* **22** (1988), no. 1, 15-43. (Not in MR) **62H30**
- Kocherlakota, S.** (with Balakrishnan, N.; Kocherlakota, K.) Robustness of the double discriminant function in nonnormal situations. *South African Statist. J.* **22** (1988), no. 1, 15-43. (Not in MR) **62H30**
- Kocheshkov, G. V.** Correctness of a mathematical model for a magnetohydrodynamic thermophysical process. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 2, 16-19, 88. (Summary) **89d:80014** 80A20 (35Q99, 76W05)
- Kochetkov, D. V.** (with Goetze, B.; Nehrlisch, W.) Construction of maximal partial intervals. (German and Russian summaries) *J. Inform. Process. Cybernet.* **24** (1988), no. 3, 111-129. (Summary) **89j:94045** 94C10 (03B50, 68R10, 68U05)
- Kochetkov, V. K.** (with Menkeeva, N. S.) Sufficient conditions for the univalence of analytic functions. (Russian) *Differential and integral equations and complex analysis* (Russian), 120-124, iv, *Kalmytsk. Gos. Univ., Elista*, 1986. (Summary) **89c:30044** 30C55
- A method for constructing solutions of differential equations. (Russian) *Differential and integral equations and complex analysis* (Russian), 124-136, iv, *Kalmytsk. Gos. Univ., Elista*, 1986. (Alexander I. Bobenko) **89f:34018** 34A45 (34A20, 34A25)
- Kochetova, N. G.** The Cauchy problem and a modified Cauchy problem for a degenerate equation of hyperbolic type. (Russian) *Differential equations and mathematical physics* (Russian), 126-130, *Kuibyshev. Gos. Ped. Inst., Kuibyshev*, 1985. (see **89f:35006**) **35L80**
- Kochler, A. A.** Toward the solution of the problem of the motion of a particle in the gravitational field of a rigid body. *Soviet Astronom.* **31** (1987), no. 5, 588-590 (1988); translated from *Astronom. Zh.* **64** (1987), no. 5, 1124-1128 (Russian). (Summary) **89c:70064** 70E05
- Kochlin, V. N.** (with Litvinenko, L. N.; Prosvirnin, S. L.) Scattering of an electromagnetic wave by an ideally conducting cylinder of arbitrary cross section on the plane boundary dividing two media. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 11, 73-78. (Summary) **89k:78020** 78A45
- polubarinova-Kochina, P. Ya.** see Polubarinova-Kochina, P. Ya.
- Kochkin, V. I.** (with Belyaev, V. B.; Kartavtsev, O. I.) \* Конечномерная аппроксимация дифференциального оператора в уравнениях Якубовского. (Russian) [Finite-dimensional approximation of a differential operator in the Yakubovskii equations] With an English summary. *Сообщения Объединенного Института Ядерных Исследований.*
- Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R4-88-574. *Joint Inst. Nuclear Res., Dubna*, 1988. 8 pp. (Summary) **89m:81178** 81F10
- Kochmal, I. V.** Asymptotic estimation in the statistics of processes with a discrete component. (Russian. English and Georgian summaries) *Thiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **20** (1987), 77-86, 122. (Summary) **89a:62189** 62M09 (60F17, 62E20)
- Kochner, A. A.** (with Kirillov, A. A.) Cellular structure of space near a singularity in time in Einstein's equations. *JETP Lett.* **46** (1987), no. 9, 435-438 (1988); translated from *Pisma Zh. Éksper. Teoret. Fiz.* **46** (1987), no. 9, 345-348 (Russian). (Mark D. Roberts) **89k:83047** 83C75 (83F05)
- Kochubei, A. N.** Stabilization of solutions of dissipative hyperbolic equations with almost periodic coefficients. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 12, 2087-2094, 2204-2205. (K. A. Yagdzhyan) **89g:35012** 35B15 (35B35, 35L15)
- Parabolic pseudodifferential equations with homogeneous symbols. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 3, 534-538; translation in *Soviet Math. Dokl.* **36** (1988), no. 3, 493-497. (V. S. Rabinovich) **89f:35224** 35S05 (35K99)
- Kocić, Ljubisa M.** (with Lacković, I. B.) Approximation in discrete cones of  $p$ -convexity. *A. Haar memorial conference, Vol. I, II* (Budapest, 1985), 495-503, *Colloq. Math. Soc. János Bolyai*, 49, North-Holland, Amsterdam-New York, 1987. (L. E. Faibusovich) **89c:41023** 41A45 (41A65, 46A55)
- (with Milovanović, Igor Ž.; Stanković, Ljubomir R.) Invariant transformation of generalized convex sequences. (Serbo-Croatian summary) *Punime Mat. No. 2* (1987), 17-21. (Ralph Henstock) **89j:26017** 26D15 (26A39, 26A51, 39A70)
- (with Danković, B.) Process identification using  $B$ -splines. *Numerical methods and approximation theory, III* (Niš, 1987), 257-264, *Univ. Niš, Niš*, 1988. (Summary) **89g:93033** 93B30 (41A15, 44A10, 93B40)
- Kocić, Vlatko Lj.** On the generalized Riccati equation. (Serbo-Croatian summary) *Zb. Rad. No. 1* (1987), 41-49. (Summary) **89j:39008** 39A70 (35R10, 39A12, 47A50)
- Liouville's formula for certain classes of linear equations and its applications. (Serbo-Croatian summary) *Zb. Rad. No. 2* (1988), 33-40. (Józef Kalinowski) **89m:39017** 39B70 (47A50)
- Kociński, M.** (with Banaszk, A.; Przyłuski, K. M.) Remarks on controllability of implicit linear discrete-time systems. *Systems Control Lett.* **10** (1988), no. 1, 67-70. (Joseph D. Cole) **89c:93008** 93B05 (93C05, 93C55)
- Kočina, Ljubisa** (with Dimitrijević, R. S.) On connectedness of proximity spaces. (Serbo-Croatian summary) *Mat. Vesnik* **39** (1987), no. 1, 27-35. (Ramesh Ori) **89c:54055** 54E05 (54D05)
- (with Dimitrijević, R. S.) On treelike neighbourhood spaces. (Serbo-Croatian summary) *Mat. Vesnik* **39** (1987), no. 2, 129-135. (J. M. Aarts) **89c:54003** 54A05 (54D05, 54F99)
- (with Dimitrijević, R. S.) On treelike proximity spaces. (Serbo-Croatian summary) *Mat. Vesnik* **39** (1987), no. 3, 257-261. (Ramesh Ori) **89g:54060** 54E05
- On radiality of function spaces. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 337-344, *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (M. Hušek) **89m:54020** 54C35 (54A20, 54D55)
- (with Žiković, M. R.) Some remarks on  $n$ -groups. (Serbo-Croatian summary) *Zb. Rad. No. 2* (1988), 69-71. (Smile Markovski) **89i:20113** 20N15 (22A99)
- Kociński, A.** (with Jaworski, W.) Master equation—the information gain minimum approximation. *Z. Phys. B* **67** (1987), no. 2, 249-256. (Masanori Ohya) **89d:82062** 82A35
- Kock, Anders** Synthetic reasoning in differential geometry. Seminar and workshop on category theory and applications (Bogotá, 1983). *Rev. Colombiana Mat.* **20** (1986), no. 3-4, 129-146. (Marta C. Bunge) **89b:58004** 58A05 (18F15, 57R99)
- (with Reyes, Gonzalo E.) Corrigendum and addenda to the paper: "Convenient vector spaces embed into the Cahiers topos" [Cahiers Topologie Géom. Différentielle Catégories **27** (1986), no. 1, 3-17, MR 87m:58009a] by Kock. (French summary) *Cahiers Topologie Géom. Différentielle Catégories* **28** (1987), no. 2, 99-110. (Marta C. Bunge) **89d:58002** 58A05 (18B25, 18D15, 18F15, 58C20)
- Kočvara, Michal** (with Mandel, Jan) A multigrid method for three-dimensional elasticity and algebraic convergence estimates. *Appl. Math. Comput.* **23** (1987), no. 2, 121-135. (Summary) **89b:65268** 65N30 (65N10, 73-08)
- Koda, Masato** Sensitivity analysis of a descriptor distributed parameter system and its application to shape optimization. *System modelling and optimization* (Tokyo, 1987), 241-250, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (Jan Sokolowski) **89m:93025** 93B35 (49B22, 76-08, 76D99, 93C20)
- Sensitivity analysis of descriptor distributed parameter systems. *Internat. J. Systems Sci.* **19** (1988), no. 10, 2103-2114. (J. P. Babary) **89i:93038** 93B35 (35B37, 76D05, 93C20, 93C30)
- Koda, Takashi** Self-dual and anti-self-dual Hermitian surfaces. *Kodai Math. J.* **10** (1987), no. 3, 335-342. (Mitsuhiko Itoh) **89a:53053** 53C25 (53C55)
- Kodama, Akio** On the structure of a bounded domain with a special boundary point. *Osaka J. Math.* **23** (1986), no. 2, 271-298. (David E. Barrett) **89c:32042a** 32M05 (32H20)
- On the structure of a bounded domain with a special boundary point. II. *Osaka J. Math.* **24** (1987), no. 3, 499-519. (David E. Barrett) **89c:32042b** 32M05 (32H20)
- Characterizations of certain weakly pseudoconvex domains  $E(k, \alpha)$  in  $C^n$ . *Tôhoku Math. J. (2)* **40** (1988), no. 3, 343-365. (Mihnea Coltoiu) **89i:32038** 32F15 (32F30, 32H20, 32M05)
- Kodama, Shinzo** (with Ohta, Yoshito; Maeda, Hajime; Itoh, Takafumi) Fault diagnosis of compartmental systems. *Electron. Comm. Japan. Part I Comm.* **68** (1985), no. 8, 11-19. (From the introduction) **89i:90040** 90B25 (92A09, 93B30, 94C05)
- Kodama, Tetsuo** (with Washio, Tadashi) Hasse-Witt matrices of Fermat curves. *Manuscripta Math.* **60** (1988), no. 2, 185-195. (José Felipe Voloch) **89b:14042** 14H25 (11D41, 11G30, 11R58, 14H05)
- Kodama, Toshio** (with Kawahara, M.; Kinoshita, Masataka) Finite element method for tsunami wave propagation analysis considering the open boundary condition. *Comput. Math. Appl.* **16** (1988), no. 1-2, 139-152. (Summary) **89e:76011** 76-08 (76B15, 86A05)
- Kodama, Yuji** A method for solving the dispersionless KP equation and its exact solutions. *Phys. Lett. A* **129** (1988), no. 4, 223-226. (Summary) **89i:35186** 35Q20 (58C37)
- A solution method for the dispersionless KP equation. Recent developments in soliton theory. *Progr. Theoret. Phys. Suppl. No. 94* (1988), 184-194. (Summary) **89k:35217** 35Q20



- Kodani, Shigeru** On two-dimensional isosystolic inequalities. *Kodai Math. J.* **10** (1987), no. 3, 314–327. (Joseph H. G. Fu) **89d:53089** 53C22 (52A40, 53C99)
- An estimate on the volume of metric balls. *Kodai Math. J.* **11** (1988), no. 2, 300–305. (Lieven Vanhecke) **89f:53063** 53C20 (53C65)
- Kodde, D. A.** (with Palm, F. C.) Computing Wald criteria for nested hypotheses. *Statist. Hefte* **29** (1988), no. 3, 169–190. (Summary) **89k:62030** 62F03 (65U05)
- Kodell, Ralph L.** The use of mathematical models in carcinogenesis risk assessment. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 146–151. (see **89d:90007**) 92A07 (62P10)
- Kodnár, Rudolf** On one method of a posteriori estimation. (Russian and Slovak summaries) *Acta Math. Univ. Comenianae* **48/49** (1986), 185–190 (1987). (Jean-Michel Rakotoson) **89c:35069** 35B85
- Koebe, Manfred** (with Dupont, Peter) Single-layer channel routing. (German and Russian summaries) *J. Inform. Process. Cybernet.* **24** (1988), no. 7–8, 339–354. (Summary) **89m:68108** 68R05 (68Q25, 90B10)
- Koecher, M.** Über ganzzahlige Darstellungen quadratischer Formen. [On integral representations of quadratic forms] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **195** (1986), no. 1–3, 95–104. (O. H. Körner) **89n:11047** 11E92 (11E32, 11E45)
- Koehe, Jürgen** ★ Algebraische Zyklen auf Hilbertschen Modulflächen. (German) [Algebraic cycles on Hilbert modular surfaces] Dissertation, Rheinische Friedrich-Wilhelms-Universität, Bonn, 1987. Bonner Mathematische Schriften [Bonn Mathematical Publications], **184**. Universität Bonn, Mathematisches Institut, Bonn, 1987. viii+104 pp. (G. van der Geer) **89a:11062** 11G18 (11F41, 14C30, 14C99, 14J20)
- Koehler, Anne B.** (with Murphree, E. S.) A comparison of the Akaike and Schwarz criteria for selecting model order. *J. Roy. Statist. Soc. Ser. C* **37** (1988), no. 2, 187–195. (Summary) **89h:62153** 62M10
- Lieftinck-Koelers, C. A. J.** see Lieftinck-Koelers, C. A. J.
- Koenderink, J. J.** The structure of the visual field. *The physics of structure formation* (Tübingen, 1986), 68–77, *Springer Ser. Synergetics*, **37**, Springer, Berlin-New York, 1987. (see **89b:58064**) 92A27
- Scale-time. *Biol. Cybernet.* **58** (1988), no. 3, 159–162. (Summary) **89a:92075** 92A27
- Operational significance of receptive field assemblies. *Biol. Cybernet.* **58** (1988), no. 3, 163–171. (Summary) **89a:92076** 92A27
- (with Toet, A.; Blom, J. G.) The construction of a simultaneous functional order in nervous systems. IV. The influence of physical constraints on the resulting functional order. *Biol. Cybernet.* **58** (1988), no. 4, 275–286. (Summary) **89c:92034** 92A09
- (with Richards, Whitman) Two-dimensional curvature operators. *J. Opt. Soc. Amer. A* **5** (1988), no. 7, 1136–1141. (T. W. Barrett) **89f:92070** 92A27
- Koenker, Roger** A comparison of asymptotic testing methods for  $l_1$ -regression. *Statistical data analysis based on the  $L_1$ -norm and related methods* (Neuchâtel, 1987), 287–295, North-Holland, Amsterdam-New York, 1987. (see **89b:62009**) 62J05 (62F03)
- (with Portnoy, Stephen)  $L_1$ -estimation for linear models. *J. Amer. Statist. Assoc.* **82** (1987), no. 399, 851–857. (M. Riedel) **89b:62142** 62J05 (62F12, 62F35)
- Koepl, W.** Close-to-convex functions, univalence criteria and quasiconformal extension. (Russian and Polish summaries) Proceedings of the 9th Conference on Analytic Functions (Lublin, 1986). *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **40** (1986), 97–103 (1987). (J. G. Krzyż) **89c:30017** 30C45
- On the Fekete-Szegő problem for close-to-convex functions. II. *Arch. Math. (Basel)* **49** (1987), no. 5, 420–433. (F. Holland) **89a:30095** 30C45
- Coefficients of symmetric functions of bounded boundary rotation. *Proc. Amer. Math. Soc.* **105** (1989), no. 2, 324–329. (D. A. Brannan) **89f:30030** 30C50
- Koepeke, Peter** Some applications of short core models. *Ann. Pure Appl. Logic* **37** (1988), no. 2, 179–204. (Summary) **89a:03092** 03E35 (03E55)
- (with Donder, Hans-Dieter; Levinski, Jean-Pierre) Some stationary subsets of  $\mathcal{P}(\lambda)$ . *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 1000–1004. (Christopher C. Leary) **89d:03048** 03E35 (03E05, 03E35)
- On the free subset property at singular cardinals. *Arch. Math. Logic* **28** (1989), no. 1, 43–55. (Patrick Dehornoy) **89m:03043** 03E35 (03E55)
- Koepeke, G.** (with Roos, H.-G.; Tobiska, L.) An enclosure generating modification of the method of discretization in time. *Comment. Math. Univ. Carolin.* **28** (1987), no. 3, 441–447. (J. W. Neuberger) **89c:65113** 65N10
- Koetsier, T.** Cauchy's rigorous calculus: a revolution in Kuhn's sense? *Nieuw Arch. Wisk.* **4** (1987), no. 3, 335–354. (R. L. Cooke) **89a:01035** 01A55
- Kofanov, V. A.** (with Babenko, V. F.) Sign-constant polynomials that deviate least from zero in the spaces  $L_{p,\Omega}$ . (Russian) *Theory of functions and approximations, Part 2* (Russian) (Sarator, 1984), 34–36, *Sarator. Gos. Univ., Sarator*, 1986. (see **89j:00036**) 41A50
- Kofman, A. G.** (with Zabel, R.; Levine, A. M.; Prior, Yehiam) Non-Markovian stochastic jump processes in nonlinear optics. *Phys. Rev. Lett.* **61** (1988), no. 3, 251–254. (Summary) **89d:78040** 78A55
- Kofman, L. A.** (with Mukhanov, V. F.; Pogosyan, D. Yu.) Evolution of inhomogeneities in inflationary models in a theory of gravitation with higher derivatives. *Soviet Phys. JETP* **66** (1987), no. 3, 433–440 (1988); translated from *Zh. Eksp. Teoret. Fiz.* **93** (1987), no. 3, 769–783 (Russian). (Summary) **89d:83054** 83D05 (83F05)
- Kofróněk, Jiří** (with Valášek, Michael; Bek, Roman; Pokorný, Zdeněk) The theory of a nonsubjective expert system based on causal analysis, new interpretation of fuzzy description and pattern recognition. (Russian summary) *Comput. Artificial Intelligence* **7** (1988), no. 5, 413–428. (Not in MR) **88T01** (92A25)
- Koga, Keiichiro** (with Yamasaki, Norikazu; Muratani, Takuro) An efficient decoding method for multiple error correcting binary BCH code. *Electron. Comm. Japan. Part I* **Comm. 70** (1987), no. 1, 21–30. (From the summary) **89j:94034** 94B05 (94B05)
- Koga, Shinji** (with Akiyama, Shinji) Instability of quasi-linear hyperbolic systems: the Hamiltonian dynamical system approach. *Progr. Theoret. Phys.* **79** (1988), no. 5, 991–996. (Alan Jeffrey) **89m:35148** 35L99 (35B35, 58F05, 58F27)
- Phase description method to invariant densities in 1-D difference systems. *Progr. Theoret. Phys.* **80** (1988), no. 2, 216–231. (Summary) **89j:58056** 58F08 (26A18, 39A10, 58F11, 58F13)
- Koga, Tatsuzo** (with Saito, Akihumi) Inextensional free vibrations of circular cylindrical shells. *AIAA J.* **26** (1988), no. 12, 1499–1505. (Summary) **89j:73085** 73L20
- Kogan, A. Yu.** Minimization of binary functions with a small number of zeros. (Russian) *Mathematical methods in pattern recognition and discrete optimization* (Russian), 60–76, Akad. Nauk SSSR, Vychisl. Tsentr, Moscow, 1987. (Juraj Hromkovič) **89j:94046** 94C10 (68R05, 90C10)
- On the disjunctive normal forms of Boolean functions with a small number of zeros. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 6, 924–931, 959. (Summary) **89c:94025** 94C10 (03G05, 06E30)
- Lower bounds for the complexity of the disjunctive normal forms of Boolean functions with a small number of zeros. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 12, 1868–1877, 1920. (A. Ádám) **89g:94048** 94C10 (03G05, 06E30, 68Q25, 90C09)
- Kogan, Boris** (with García-Molina, Hector) Achieving high availability in distributed databases. *IEEE Trans. Software Engrg.* **14** (1988), no. 7, 886–896. (Summary) **89c:68019** 68P15
- Kogan, E. A.** see Hahn, Hans Georg. **89f:73001**
- Kogan, I. A.** Optimal segmentation of structural experimental curves on the basis of the dynamic programming method. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 7, 146–156; translation in *Automat. Remote Control* **49** (1988), no. 7, part 2, 934–942. (Summary) **89i:93128** 93E25 (60J10, 62M10, 90C39)
- Kogan, J.** Intersections of extremals in linear-quadratic control problems. *J. Optim. Theory Appl.* **56** (1988), no. 3, 407–432. (Zhaolin Cheng) **89e:49027** 49D40 (49B36, 49C05)
- Kogan, L. A.** (with Tashpulatov, B. T.) On the scalar product of Dirichlet series generated by elliptic curves with complex multiplication. (Russian) *Investigations in degenerate differential equations and limit theorems of probability theory* (Russian), 102–104, Tashkent. Gos. Ped. Inst., Tashkent, 1985. (see **89g:60002**) 14G10
- (with Abdullaev, I.) Finiteness of quadratic forms of Weil type. (Russian) *Dokl. Akad. Nauk UzSSR* **1986**, no. 3, 12–13. (Reinhard Bölling) **89j:11031** 11E20 (11E45)
- Kogan, M. M.** (with Nelmark, Yu. I.) Adaptive locally optimal control. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 8, 126–136. (Vladimir Katkovnik) **89c:93141** 93C40 (93C55)
- Kogan, V. I.** see Kogan, Vladimir Iosef
- Kogan, V. R.** (with Brailovskaya, V. A.) A method for calculating periodic vortex flows of an incompressible fluid. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 8, 1226–1233, 1278–1279. (Summary) **89k:76025** 76C05 (65M99, 76-08)
- Kogan, Vladimir Iosef** Polynomial models of generalized bathtub curves and related moments of the order statistics. *SIAM J. Appl. Math.* **48** (1988), no. 2, 416–424. (Summary) **89a:60202** 60K10 (62G30)
- On monotonicity of distributions of certain functions of order statistics. *SIAM J. Appl. Math.* **48** (1988), no. 4, 936–947. (Jagdish Saran) **89k:62063** 62G30 (26A48, 60E99)
- Kogan, Ya. A.** (with Lyakhov, A. I.) Asymptotic analysis of the capacity of multiprocessor systems with common buses. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 4, 148–163; translation in *Automat. Remote Control* **49** (1988), no. 4, part 2, 516–528. (Not in MR) **68M20** (60K25, 90B22)
- (with Pukhalskii, A. A.) Tandem queue with finite intermediate waiting room and blocking in heavy traffic. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **17** (1988), no. 1, 3–13. (R. Bergmann) **89d:60179** 60K25 (68M20, 90B15, 90B22)
- Kogan, Ya. I.** (with Morozov, A. Yu.; O'fshanskii, M. A.; Shifman, M. A.) The construction of valleys in a supersymmetric model with gauge group  $E_6$  and a matter 27-plet. *Soviet J. Nuclear Phys.* **43** (1986), no. 6, 1022–1027; translated from *Yadernaya Fiz.* **43** (1986), no. 6, 1587–1595 (Russian). (Nigel B. Backhouse) **89a:81171** 81G20 (17B25, 81E13, 81E30)
- Vortices on the world sheet of a string: critical dynamics. *JETP Lett.* **45** (1987), no. 12, 709–712; translated from *Pis'ma Zh. Eksp. Teoret. Fiz.* **45** (1987), no. 12, 556–559 (Russian). (Summary) **89a:81095** 81E20 (81E30)
- (with Khlopov, M. Yu.) Homotopically stable particles in the theory of superstrings. *Soviet J. Nuclear Phys.* **46** (1987), no. 1, 193–194; translated from *Yadernaya Fiz.* **46** (1987), no. 1, 314–316 (Russian). (Gheorghe Zet) **89c:81135** 81E99 (81E30, 83E30)
- (with Morozov, A. Yu.; Perelomov, A. M.) Finiteness of  $N = 4$  supersymmetric sigma models. *Phys. Lett. B* **202** (1988), no. 2, 243–245. (Joan Soto) **89f:81120** 81E15 (81E20)
- Koganov, G. A.** (with Khazanov, A. M.; Gordov, E. P.) Time-dependent projection operator used for separating subsystem variables and its application in laser theory. *Phys. Lett. A* **133** (1988), no. 1–2, 7–10. (Robert Alicki) **89k:82045** 82A35 (81K05)
- Koganov, L. M.** Möbius functions and Frobenius constants of semigroups generated by linear forms of special type. (Russian) *Semigroups and partial groupoids* (Russian), 15–25, Leningrad. Gos. Ped. Inst., Leningrad, 1987. (D. C. Trueman) **89e:20105** 20M10
- Kogelschatz, Hartmut** Zur Preisentwicklung erschöpfbarer Ressourcen. [On the price development of exhaustible resources] *Ökonomie und Mathematik*, 558–565, Springer, Berlin-New York, 1987. (see **89j:90002**) 90A30
- Koh, E. L.** The Cauchy functional equations in distributions. *Proc. Amer. Math. Soc.* **106** (1989), no. 3, 641–646. (A. Smajdor) **89k:39015** 39B20 (46F10)
- Koh, Eumnee** (with Cox, Dennis D.; Wahba, Grace; Vandell, Brian S.) Testing the (parametric) null model hypothesis in (semiparametric) partial and generalized spline models. *Ann. Statist.* **16** (1988), no. 1, 113–119. (Wilfried Grossmann) **89f:62037** 62G05 (62P03)
- Koh, I. G.** (with Yu, Ming) Nonabelian bosonization in higher genus Riemann surfaces. *Phys. Lett. B* **203** (1988), no. 3, 263–268. (K. Schoutens) **89h:81201** 81E99 (17B10, 58G10, 81E40)
- (with Chung, Ki Soo; Han, Chang Woo; Kim, Jae Kwan) Becchi-Rouet-Stora structure and gauge-invariant actions for higher-spin fields. *Phys. Rev. D* **37** (1988), no. 4, 1079–1082. (Richard H. Capps) **89j:81096** 81E13 (81E30, 83E15)
- Koh, Jee** (with Eisenbud, David; Stillman, Michael) Determinantal equations for curves of high degree. *Amer. J. Math.* **110** (1988), no. 3, 513–539. (Ciro Ciliberto) **89g:14023** 14H45
- Super height of an ideal in a Noetherian ring. *J. Algebra* **116** (1988), no. 1, 1–6. (J. W. Brewer) **89c:13021** 13E05 (13C15, 13H10)
- Koh, K. M.** (with Poh, K. S.) Products of graphs with their closed-set lattices. *Discrete Math.* **69** (1988), no. 3, 241–251. (Pavol Hell) **89g:05100** 05C99
- Koh, Kwangil** (with Cohen, Jo-Ann) The group of units in a compact ring. *J. Pure Appl. Algebra* **54** (1988), no. 2–3, 167–179. (Frank Röhl) **89j:16057** 16A80 (16A25)





- Kojima, Yasufumi** Gravitational radiation induced by a particle moving in Kerr geometry. *Dynamical spacetimes and numerical relativity* (Philadelphia, PA, 1985), 379-388, Cambridge Univ. Press, Cambridge-New York, 1986. (see **89b:83064**) 83C30 (83-08)
- (with Nakamura, Takashi; Oohara, Ken-ichi) General relativistic collapse to black holes and gravitational waves from black holes. *Progr. Theoret. Phys. Suppl.* No. 90 (1987), 218 pp. (Piotr Bizoń) **89b:83001** 83-08 (83C30, 83C35)
- Kok, Matthijs** (with Bogtoft, Peter; Hallefjord, Åsa) On the convergence of reference point methods in multiobjective programming. *European J. Oper. Res.* **34** (1988), no. 1, 56-68. (Summary) **89i:90078** 90C31 (90B50)
- Kok, W. C.** (with Tang, S. M.) Efficiency of a modified globally convergent algorithm for solving systems of nonlinear equations. *J. Phys. A* **20** (1987), no. 11, 3219-3224. (Xiaojun Chen) **89f:65061** 65H10 (90C30)
- On the solution of nonlinear Fredholm integral equations by reduction to algebraic systems of equations. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 383-389, North-Holland, Amsterdam-New York, 1988. (M. Tvrđý) **89f:45005** 45B05 (45G10, 65R20)
- Kokame, Hideki** (with Mori, Takehiro) Some classes of convergent interval matrices. *Mem. Fac. Engrg. Kyoto Univ.* **49** (1987), no. 4, 273-279. (H. Ratschek) **89b:65116** 65G10
- (with Mori, Takehiro) Stabilization of perturbed systems via linear optimal regulator. *Internat. J. Control* **47** (1988), no. 1, 363-372. (Andrzej W. Olbrot) **89f:93034** 93D15 (93B50)
- Kokharov, V. N.** Estimation of the principal radii of curvature of a closed convex hypersurface from functions of its conditional radii of curvature. (Russian) *Ukrain. Geom. Sb.* No. 31 (1988), 62-73. (Fulga Pop) **89m:53115** 53C45
- Kokhanenko, I. K.** Interval estimation by the method of substitution. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 3, 168-169; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 4, 214-215, 224 (Russian). (Editors) **89i:62050** 62F25 (90B25)
- Kokholm, Niels Jürgen** The deficiency indices of formally selfadjoint differential operators with polynomial coefficients. *Comm. Partial Differential Equations* **12** (1987), no. 4, 415-470. (From the introduction) **89b:35123** 35P05 (35A27, 47F05)
- On Smoluchowski's coagulation equation. *J. Phys. A* **21** (1988), no. 3, 839-842. (Summary) **89d:82161** 82A99
- Kokhova, S. V.** (with Kosorukov, O. A.) A class of dynamic problems on the optimal allocation of resources on network graphs. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1988**, no. 3, 31-38, 71; translation in *Moscow Univ. Comput. Math. Cybernet.* **1988**, no. 3, 36-44. (Summary) **89j:90085** 90B05 (90B10)
- Kokilashvili, V. M.** Weighted inequalities for maximal functions and fractional integrals in Lorentz spaces. *Math. Nachr.* **133** (1987), 33-42. (Aleksandr Mekler) **89a:46067** 46E30 (26A33)
- Weighted estimates for maximal functions and fractional integrals in Lorentz spaces. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruz. SSR* **86** (1987), 74-85. (A. A. Martynyuk) **89e:26014** 26A33 (46E35, 47B38)
- Kokk, A.** Description of the homomorphisms of topological module-algebras. (Russian. English and Estonian summaries) *Eesti NSV Tead. Akad. Toimetised Füüs.-Mat.* **36** (1987), no. 1, 1-7, 110. (Dikran Dikranjan) **89a:16058** 16A80 (16A99)
- The decomposability of homomorphisms of topological algebras. (Russian. English summary) *Tartu Riikl. Ül. Toimetised* No. 770 (1987), 12-25. (Maria Fragouloupoulou) **89g:46085** 46H25 (46H05)
- Kokkotas, K. D.** The geometry of the Kerr-Newman ergosurface. *Gen. Relativity Gravitation* **20** (1988), no. 8, 829-839. (Piotr Bizoń) **89i:83021** 83C15
- Kokorev, M. A.** One-step optimal approximation of doubly differentiable functions. *Moscow Univ. Comput. Math. Cybernet.* **1988**, no. 1, 82-86; translated from *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1988**, no. 1, 69-73, 78 (Russian). (Summary) **89d:90194** 90C30
- Kokoska, Stephen M.** The analysis of cancer chemoprevention experiments in which there is heterogeneous Poisson sampling. *Appl. Math. Lett.* **1** (1988), no. 4, 351-355. (Not in MR) **92A07**
- Kokotov, A. Yu.** Representations, spectral topology and solvability of algebras of pseudodifferential operators in a half-space. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 2, 73-75, 83; translation in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 2, 107-110. (A. S. Dynin) **89f:47078** 47G05 (35S05, 46L99)
- Kokotović, P. V.** (with Khalil, Hassan K.; O'Reilly, John) ★ Singular perturbation methods in control: analysis and design. *Academic Press, Inc. [Harcourt Brace Jovanovich, Publishers], London-New York, 1986. xii+371 pp. ISBN 0-12-417635-6* (V. G. Gaitsgori) **89b:93022** 93B50 (34E15, 93E20)
- (with Marino, Riccardo) A geometric approach to nonlinear singularly perturbed control systems. *Automatica—J. IFAC* **24** (1988), no. 1, 31-41. (V. S. Zajačkovski) **89d:93033** 93B27 (34E15, 93C10, 93C15)
- (with Grizzle, Jessy W.) Feedback linearization of sampled-data systems. *IEEE Trans. Automat. Control* **33** (1988), no. 9, 857-859. (Summary) **89e:93040** 93B17 (93C57)
- (with Hung, S. T.; Winkelman, J. R.) Self tuning of conflicting oscillatory modes: a case study. *IEEE Trans. Automat. Control* **34** (1989), no. 2, 250-253. (Summary) **89k:93120** 93C30 (93C40)
- see also *Singular perturbations in systems and control*, **89e:93002**
- Koks, D. R.** see Cox, David Roxbee
- Köksal, Muhammed** Exhaustive study on the commutativity of time-varying systems. *Internat. J. Control* **47** (1988), no. 5, 1521-1537. (Summary) **89b:93073** 93C50
- Köksalan, Murat** (with Karwan, Mark H.; Zions, Stanley) An approach for solving discrete alternative multiple criteria problems involving ordinal criteria. Multiple criteria decision making. *Naval Res. Logist.* **35** (1988), no. 6, 625-641. (Summary) **89k:90093** 90B50 (90C31, 92A25)
- Köksalov, K. K.** On the estimation of errors connected with the passage from differential-difference equations to partial differential equations, and their application. (Russian) *Some problems in functional analysis, differential equations and their applications* (Russian), 45-50, 110, Kazakh. Gos. Univ., Alma-Ata, 1985. (see **89a:00016**) 65N10 (34K05)
- (with Stepanov, V. V.) On the solution of Navier-Stokes equations with boundary conditions that depend on the parameter, and their application. (Russian) *Some problems in functional analysis, differential equations and their applications* (Russian), 51-57, 110, Kazakh. Gos. Univ., Alma-Ata, 1985. (see **89a:00016**) 35Q10 (76D05)
- Koksich, N.** (with Leonov, G. A.; Bunin, A. I.) Attraktorlokalisierung des Lorenz-Systems. (English and Russian summaries) [Attractor localization of the Lorenz system] *Z. Angew. Math. Mech.* **67** (1987), no. 12, 649-656. (Hans G. Bothe) **89d:58073** 58F12 (34C05, 58F13)
- Kokubu, Hiroshi** (with Oka, Hiroe) Versal unfolding of constrained systems. *Dynamical systems and applications* (Kyoto, 1987), 159-167, *World Sci. Adv. Ser. Dyn. Syst.*, 5, World Sci. Publishing, Singapore, 1987. (Robert Roussarie) **89m:58181** 58F30 (58C27, 58F10)
- Kolacz, H.** On inclusion algorithms and their optimality. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics* (Poznań, 1986), 93-109, Wydawn. Politech. Poznań, Poznań, 1987. (E. R. Hansen) **89b:65068** 65G10
- Kolář, Ivan** Higher order absolute differentiation with respect to generalized connections. *Differential geometry* (Warsaw, 1979), 153-161, Banach Center Publ., 12, PWN, Warsaw, 1984. (George Vrsik) **89b:53074** 53C05 (58A20)
- Some natural operators in differential geometry. *Differential geometry and its applications* (Brno, 1986), 91-110, *Math. Appl. (East European Ser.)*, 27, Reidel, Dordrecht-Boston, MA, 1987. (C. T. J. Dodson) **89e:58008** 58A20 (53C10)
- (with Vosmanšká, Gabriela) Natural operations with second order jets. *Proceedings of the 14th winter school on abstract analysis* (Srni, 1986). *Rend. Circ. Mat. Palermo* (2) Suppl. No. 14 (1987), 179-186. (Summary) **89g:58009** 58A20
- (with Michor, Peter W.) All natural concomitants of vector valued differential forms. *Proceedings of the Winter School on Geometry and Physics* (Srni, 1987). *Rend. Circ. Mat. Palermo* (2) Suppl. No. 16 (1987), 101-108. (A. P. Stone) **89g:58006** 58A10
- Natural operations with connections on second order frame bundles. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 715-732, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (R. H. Bowman) **89d:53061** 53C05 (58A20)
- Lie derivatives of sectorform fields. *Colloq. Math.* **55** (1988), no. 1, 71-78. (Josef Janyška) **89k:58009** 58A10 (53A55, 58A20)
- (with Radziszewski, Zbigniew) Natural transformations of second tangent and cotangent functors. *Czechoslovak Math. J.* **38** (113) (1988), no. 2, 274-279. (J. J. Etayo) **89b:58013** 58A30 (53C15)
- Kolarov, Krasimir N.** Coloring of a plane. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian)* (Sunny Beach (Sl'nevch Bryag), 1987), 678-680, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89e:05068** 05B99
- Kolaski, Clinton J.** Surjective isometries of weighted Bergman spaces. *Proc. Amer. Math. Soc.* **105** (1989), no. 3, 652-657. (Daniel H. Luecking) **89m:46042** 46E15 (30H05, 32F05, 32H10, 46G15)
- Kolassik, A. C.** (with Santos, N. O.; Tsoubelis, D.) Friedmann-like collapsing model of a radiating sphere with heat flow. *Astrophys. J.* **327** (1988), no. 2, part 1, 755-759. (Summary) **89a:83017** 83C15 (83C55)
- (with Santos, N. O.; Tsoubelis, D.) Energy conditions for an imperfect fluid. *Classical Quantum Gravity* **5** (1988), no. 10, 1329-1338. (C. B. Collins) **89j:83050** 83C55
- Kolbin, V. V.** Optimization problems in semi-ordered spaces. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidžan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **7** (1986), no. 6, 118-123 (1987). (Jürgen Synnatschke) **89f:46015** EA **89m** 46A40 (26A21, 90C48)
- Kolchinskii, V. I.** Operators of type  $p$  and metric entropy. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 38 (1988), 69-76, 135. (Z. G. Gorgadze) **89j:60007** 60B11 (47B10, 47B38, 94A17)
- Limit theorems for empirical characteristic functionals in Banach spaces. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 39 (1988), 71-78, 127. (Rastislav Potocký) **89g:60013** 60B12
- Koldanov, A. P.** (with Anisimova, L. N.; Gorev, P. V.) The construction of consistent estimates. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 4, 84-89; translated from *Radiotekhn. i Elektron.* **31** (1986), no. 12, 2421-2425 (Russian). (L. L. Campbell) **89a:94009** 94A15 (62F10)
- Koldoba, A. V.** (with Denisov, A. A.; Kuznetsov, O. A.; Povshchenko, Yu. A.) Convergence of difference schemes of the method of support operators for the Poisson equation on generalized solutions. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 46, 16 pp. (Summary) **89b:65160** 65N10
- Koldunov, A. V.** Some order properties of the  $o$ -completion of an Archimedean  $l$ -group. (Russian) *Ordered sets and lattices*, No. 6 (Russian), 27-33, 78, *Saratov. Gos. Univ., Saratov*, 1980. (see **89a:06002**) 06F15
- Images of Stone spaces. (Russian) *Operators and their applications* (Russian), 35-40, *Leningrad. Gos. Ped. Inst., Leningrad*, 1985. (see **89f:00013**) 06A99 (04A05)
- Cantor-type completions of vector lattices. (Russian) *Ordered sets and lattices*, No. 9 (Russian), 37-44, 110, *Saratov. Gos. Univ., Saratov*, 1986. (Klaus Keimel) **89g:06036** 06F20 (46A40)
- $\Pi$ -Dedekind extensions of vector lattices. (Russian) *Optimizatsiya* No. 37(54) (1986), 51-57, 158. (Roselind Reichard) **89e:46011** 46A40
- ( $\prec$ )-Dedekind extensions of ordered semigroups and groups. (Russian) *Semigroups and partial groupoids* (Russian), 26-36, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (F. Sik) **89d:06028** 06F05 (06F15)
- ( $M, I$ )-absolutes and their characterization. (Russian) *Topological structures and their mappings* (Russian), 66-75, iii, *Lav. Gos. Univ., Riga*, 1987. (Michael M. Zarichnyi) **89e:54024** 54C10 (54G05)
- Continuous functions on ( $M, I$ )-absolutes. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 10, 63-66, 75. (Aleksander Błaszczyk) **89c:54032** 54C40
- The  $\alpha$ -absolute and functions that are integrable in the sense of Riemann. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 5, 70-77. (V. K. Zakharov) **89b:26009** 26A42 (26A99)
- Kolenov, G. V.** (with Mikhalevich, V. S.; Volkovich, V. L.) An algorithm for matching solutions in a distributed system of interrelated problems with linear models. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 3, 1-8, 22, 131; translation in *Cybernetics* **24** (1988), no. 3, 271-280. (Knut Richter) **89j:90237** 90C31 (90C08)
- Kolesnichenko, A. V.** Equations of the mixed convection of a multicomponent reacting gas medium in the Oberbeck-Boussinesq approximation. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 221, 15 pp. (Summary) **89c:80022** 80A32
- Kolesnik, A. D.** Statistical simulation of a closed queueing system with variable intensity of call generation. (Russian) *Mat. Issled.* No. 100 *Sistemy Optim. Obrab. Danykh* (1988), 55-60, 150. (Summary) **89d:90103** 90B22 (60K25, 90B15)

- Kolesnik, T. V.** (with Dzhruev, I. N.) Accuracy of a scheme of the method of lines for a second-order singularly perturbed equation of hyperbolic type with an elliptic operator containing mixed derivatives. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 4, 3-5, 86. (Rong Hua Li) **89b:65142** 65M10 (65M20)
- Kolesnik, V. D.** (with Osipov, S. S.) Calculation of  $P(m, n)$  and of analogous characteristics for channels described by functions of Markov chains. (Russian) *Noise-resistant coding and computer reliability* (Russian), 80-90, 190, "Nauka", Moscow, 1987. (Summary) **89c:94007** 94A40 (94B70)
- (with Vasil'ev, P. I.) Codes with bounded lengths of series. (Russian) *Noise-resistant coding and computer reliability* (Russian), 95-109, 191, "Nauka", Moscow, 1987. (Summary) **89f:94011** 94A24
- Kolesnikov, E. V.** The components of a positive operator. (Russian) *Optimizatsiya* No. 40(57) (1987), 141-146, 161. (Yu. A. Abramovich) **89i:47067** 47B55
- (with Akilov, G. P.; Kusraev, A. G.) On the order-continuous extension of a positive operator. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 5, 24-35, 237; translation in *Siberian Math. J.* 29 (1988), no. 5, 707-716. (Yu. A. Abramovich) **89m:47033** 47B55 (28B15, 46G10)
- (with Akilov, G. P.; Kusraev, A. G.) Lebesgue extension of a positive operator. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 3, 521-524; translation in *Soviet Math. Dokl.* 37 (1988), no. 1, 88-91. (Constantin Niculescu) **89c:47054** 47B55
- Kolesnikov, O. V.** Polyadic semigroups. (Russian) *Theory of semigroups and its applications* (Russian), 19-36, 114, Saratov. Gos. Univ., Saratov, 1983. (K. Drbholav) **89a:20070b** 20N15
- Kolesnikov, S. V.** A Keldysh problem concerning pointwise convergence of a sequence of polynomials. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 130-132, Saratov. Gos. Univ., Saratov, 1986. (see **89j:00036**) 30D10
- Kolesnikova, N. S.** (with Glushankova, L. Ya.) Solution of systems of differential equations by the inversion method. (Russian) *Partial differential equations* (Russian), 69-72, Leningrad. Gos. Ped. Inst., Leningrad, 1987. (see **89c:00023**) 35A25
- Kolesov, A. Yu.** (with Kolesov, Yu. S.) Biological and physical parabolic systems. (Russian. English and Lithuanian summaries) *Mathematical models in biology and medicine*, No. 2 (Russian), 5-23, 187, *Akad. Nauk Litovsk. SSR, Inst. Mat. i Kibernet.*, Vilnius, 1987. (V. N. Razzhevaikin) **89c:92065** 92A15 (35K57, 92A09)
- Stability of relaxation auto-oscillations in systems with diffusion. (Russian) *Dokl. Akad. Nauk SSSR* 294 (1987), no. 3, 575-578. (From the introduction) **89g:35100** 35Q20 (35B35, 35K55, 70K20, 92A17)
- (with Kolesov, Yu. S.) Construction of the normal form in a neighborhood of a cycle by means of the Krylov-Bogolyubov-Mitropolskii asymptotic method. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 5, 891-894, 919. (S. D. Milusheva) **89i:34047** 34C20 (34C29, 34D30)
- (with Mishchenko, E. F.) Asymptotics of relaxation oscillations. (Russian) *Mat. Sb. (N.S.)* 137(179) (1988), no. 1, 3-18, 143. (Josef Diblík) **89j:34076** 34E05 (34C30, 34C40)
- (with Kolesov, Yu. S.; Mishchenko, E. F.; Rozov, N. Kh.) A relaxation system in a neighborhood of a point of discontinuity: reduction to the regular case. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 2(260), 141-142; translation in *Russian Math. Surveys* 43 (1988), no. 2, 173-174. (D. Bainov) **89f:34067** 34C45 (34D05, 34E05)
- Properties of a linear system that is connected with the stability of a relaxed cycle in media with diffusion. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 3(261), 185-186; translation in *Russian Math. Surveys* 43 (1988), no. 3, 209-210. (Si Ning Zheng) **89i:35081** 35K57 (92A08)
- (with Kolesov, Yu. S.; Mishchenko, E. F.; Rozov, N. Kh.) Multidimensional relaxation oscillations in media with diffusion. (Russian) *Dokl. Akad. Nauk SSSR* 302 (1988), no. 6, 1312-1315; translation in *Soviet Math. Dokl.* 38 (1989), no. 2, 431-434. (Introduction) **89j:34050** 34C15 (34E05, 35B35, 92A09)
- Kolesov, N. V.** The diagnosis of linear discrete time-dependent systems. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 7, 157-163; translation in *Automat. Remote Control* 49 (1988), no. 7, part 2, 943-948. (Not in MR) **90B25** (49D50, 93C05, 93C55)
- Kolesov, V. S.** (with Kambulov, V. F.; Kolesov, Yu. S.; Ukolov, V. V.) Formulas for self-induced oscillations in a two-level model of a chemical laser with an unstable telescopic resonator. (Russian) *Qualitative and approximate methods for investigating operator equations* (Russian), 11-16, 140, Yaroslavl. Gos. Univ., Yaroslavl', 1986. (Summary) **89c:78016** 78A60
- Kolesov, Yu. S.** (with Kambulov, V. F.; Kolesov, V. S.; Ukolov, V. V.) Formulas for self-induced oscillations in a two-level model of a chemical laser with an unstable telescopic resonator. (Russian) *Qualitative and approximate methods for investigating operator equations* (Russian), 11-16, 140, Yaroslavl. Gos. Univ., Yaroslavl', 1986. (Summary) **89c:78016** 78A60
- (with Kolesov, A. Yu.) Biological and physical parabolic systems. (Russian. English and Lithuanian summaries) *Mathematical models in biology and medicine*, No. 2 (Russian), 5-23, 187, *Akad. Nauk Litovsk. SSR, Inst. Mat. i Kibernet.*, Vilnius, 1987. (V. N. Razzhevaikin) **89c:92065** 92A15 (35K57, 92A09)
- (with Kolesov, A. Yu.) Construction of the normal form in a neighborhood of a cycle by means of the Krylov-Bogolyubov-Mitropolskii asymptotic method. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 5, 891-894, 919. (S. D. Milusheva) **89i:34047** 34C20 (34C29, 34D30)
- (with Kolesov, A. Yu.; Mishchenko, E. F.; Rozov, N. Kh.) A relaxation system in a neighborhood of a point of discontinuity: reduction to the regular case. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 2(260), 141-142; translation in *Russian Math. Surveys* 43 (1988), no. 2, 173-174. (D. Bainov) **89f:34067** 34C45 (34D05, 34E05)
- (with Kolesov, A. Yu.; Mishchenko, E. F.; Rozov, N. Kh.) Multidimensional relaxation oscillations in media with diffusion. (Russian) *Dokl. Akad. Nauk SSSR* 302 (1988), no. 6, 1312-1315; translation in *Soviet Math. Dokl.* 38 (1989), no. 2, 431-434. (Introduction) **89j:34050** 34C15 (34E05, 35B35, 92A09)
- Kolev, L. V.** A quasi-Newton algorithm for following solution curves. *Internat. J. Circuit Theory Appl.* 15 (1987), no. 2, 181-188. (M. A. Wolfe) **89a:65087** 65H10 (58C15, 65L05, 65V05)
- Kolev, Nikolai V.** An optimization problem with an unreliable server with implicit breakdowns. (Bulgarian. English summary) *Mathematics and mathematical education* (Bulgarian) (Sunny Beach (Sl'nev Bryag), 1987), 474-481, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89g:60289** 60K25
- An optimal control problem with implicit breakdowns and relation with distributions of order  $K$ . *C. R. Acad. Bulgare Sci.* 40 (1987), no. 12, 15-17. (Andrew D. Barbour) **89g:90116** 90B25 (49B60, 90B30, 93E20)
- Kolev, P. K.** (with B'chvarov, S. N.) Investigation of the dynamics of the regional motions of a certain type of manipulating robot. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 2, 221-235 (1987). (Title) **89c:70005** 70B15
- Koleva, M. K.** (with Nechaev, S. K.; Semenov, A. N.) Dynamics of a polymer chain in an array of obstacles. *Phys. A* 140 (1987), no. 3, 506-520. (Summary) **89b:82079** 82A51
- Kolikov, K.** Artinian crossed products. (Bulgarian. English and Russian summaries) *Plovdiv. Univ. Nauchn. Trud.* 22 (1984), no. 2, 13-26 (1986). (Summary) **89c:16023** 16A26
- Crossed products which are rings of principal ideals. (Russian) *C. R. Acad. Bulgare Sci.* 40 (1987), no. 1, 17-18. (Jan Okniński) **89b:16010** 16A27 (16A04, 20C07)
- Kolk, E.** Summation of stretchings of sequences in locally convex spaces. (Russian. English summary) *Tartu Riikl. Ül. Toimetised* No. 770 (1987), 88-96. (A. Alexiewicz) **89c:40006** 40C05 (46A35)
- (with Ahun, T.) Summability by scalar matrices in abstract spaces. (Russian. English summary) *Tartu Riikl. Ül. Toimetised* No. 770 (1987), 97-104. (A. Alexiewicz) **89c:40007** 40C05 (46A35)
- Kolker, Yuri A.** Piecewise-linear growth model: comparison with competing forms in batch culture. *J. Math. Biol.* 25 (1987), no. 5, 543-551. (M. E. Wise) **89g:92026** 92A15 (92A09)
- Kolla, S. R.** (with Farison, J. B.) Counter-examples to: "Sufficient and necessary condition for the asymptotic stability of discrete linear interval systems" [Internat. J. Control 47 (1988), no. 5, 1563-1565] by C. L. Jiang. *Internat. J. Control* 48 (1988), no. 4, 1751-1752. (Not in MR) **93D20** (93C05, 93C40, 93C55)
- (with Yedavalli, Rama K.) Stability analysis of linear time-varying systems. *Internat. J. Systems Sci.* 19 (1988), no. 9, 1853-1858. (Not in MR) **93D05** (93C05)
- Kollar, János** Vanishing theorems for cohomology groups. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 233-243, *Proc. Sympos. Pure Math.*, 46, Part 1, *Amer. Math. Soc., Providence, RI*, 1987. (Hélène Esnault) **89j:32039** 32L20 (14C30, 14F05, 32J25)
- Subadditivity of the Kodaira dimension: fibers of general type. *Algebraic geometry, Sendai, 1985*, 361-398, *Adv. Stud. Pure Math.*, 10, North-Holland, Amsterdam-New York, 1987. (Yujiro Kawamata) **89i:14029** 14J10 (14C30, 14D20)
- Sharp effective Nullstellensatz. *J. Amer. Math. Soc.* 1 (1988), no. 4, 963-975. (D. W. Masser) **89b:12008** 12E99 (11C08, 11J99, 13B25)
- Koller, Jeffrey** (with van Baal, P.) QCD on a torus, and electric flux energies from tunneling. *Ann. Physics* 174 (1987), no. 2, 299-371. (Summary) **89b:81239** 81G05 (81-04, 81G10)
- Koller, Theodor** (with Stasiak, Andrzej) Analysis of DNA knots and catenanes allows to deduce the mechanism of action of enzymes which cut and join DNA strands. *Fractals, quasicrystals, chaos, knots and algebraic quantum mechanics* (Maratea, 1987), 207-219, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 235, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89m:92035** 92A10 (57M25, 92A09, 92A40)
- Kolley, E.** (with Kolley, W.) Path integral scheme on a flexible time contour for random electron models. *J. Phys. A* 21 (1988), no. 6, L333-L337. (Summary) **89c:81216** 81H20 (81C35)
- (with Kolley, W.) Stochastic quantization of thermal fermions on the real-time Keldysh contour. *Phys. Lett. A* 129 (1988), no. 4, 208-213. (Helmut Rumpf) **89j:81047** 81C20 (82A15)
- Kolley, W.** (with Kolley, E.) Path integral scheme on a flexible time contour for random electron models. *J. Phys. A* 21 (1988), no. 6, L333-L337. (Summary) **89c:81216** 81H20 (81C35)
- (with Kolley, E.) Stochastic quantization of thermal fermions on the real-time Keldysh contour. *Phys. Lett. A* 129 (1988), no. 4, 208-213. (Helmut Rumpf) **89j:81047** 81C20 (82A15)
- Kollia, Georgia** (with Freimer, Marshall; Mudholkar, Govind S.; Lin, C. Thomas) A study of the generalized Tukey lambda family. *Comm. Statist. Theory Methods* 17 (1988), no. 10, 3547-3567. (Not in MR) **62E15**
- Kollintzas, Tryphon** see Rational expectations equilibrium inventory model, **89k:90004**
- Kollinaz, Dzh.** see Collins, John C.
- Kollo, T.** (with Traat, I.; Vilismäe, J.) Distribution approximation by normal mixtures and Edgeworth expansions. (Russian summary) *Tartu Riikl. Ül. Toimetised* No. 798 (1988), 51-56. (Not in MR) **62E20**
- Kolmanovskii, V. B.** (with Myshkis, A. D.; Nosov, V. R.) The current theory of equations with aftereffect from positions of its application. (Russian) *Current problems in mathematical physics, Vol. I* (Russian) (Tbilisi, 1987), 280-290, 487, *Tbilis. Gos. Univ., Tbilisi*, 1987. (see **89j:00030**) **34Kxx** (93C15)
- (with Arutyunyan, N. Kh.; Drozdov, A. D.) Stability of viscoelastic bodies and of elements of constructions. (Russian. English summary) *Mechanics of a solid deformable body*, Vol. 19 (Russian), 3-77, 187, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (Summary) **89a:73034** 73F20 (73H99)
- On the stabilization of certain nonlinear systems. *J. Appl. Math. Mech.* 51 (1987), no. 3, 307-313 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 3, 395-402 (Russian). (Zdzisław Wyderka) **89i:93089** 93D15 (70B15, 70Q05, 93D20)
- (with Shaikhet, L. E.) Optimal control of stochastic systems with aftereffect and unknown parameters. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 2, 90-93, 101, 135; translation in *Cybernetics* 24 (1988), no. 2, 255-260. (Bohdan Masłowski) **89k:93225** 93E20 (34K35, 49D40)
- Periodic solutions of stochastic equations with aftereffect. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 6, 965-972, 1099; translation in *Differential Equations* 24 (1988), no. 6, 628-634. (Binggen Zhang) **89g:60186** 60H10 (34C25, 34F05, 34K05)
- (with Nosov, V. R.) Application of degenerate Lyapunov functions in stability theory. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 5, 1051-1055; translation in *Soviet Math. Dokl.* 37 (1988), no. 1, 195-198. (Zhicheng Wang) **89g:34071** 34D20
- Kolmogorov, A. N.** ★ Теория информации и теория алгоритмов. (Russian) [Information theory and the theory of algorithms] With a biography by N. N. Bogolyubov, B. V. Gnedenko and S. L. Sobolev. With commentaries by R. L. Dobrushin, A. Kh. Shen', V. M. Tikhomirov, Ya. M. Barzdin', Ya. G. Sinai, V. A. Uspenskii and A. L. Semenov. Compiled



- by A. N. Shiryaev. Edited by Yu. V. Prokhorov. "Nauka", Moscow, 1987. 304 pp. (R. P. Boas, Jr.) **89a:01104** 01A75 (04A20, 28D20, 68Q30, 94A15)
- (with Uspenskii, V. A.) Algorithms and randomness. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 3, 425–455. (P. Gács) **89d:68035** 68Q30 (04A99, 68Q15)
- ★ *Математика—наука и профессия*. (Russian) [Mathematics—science and profession] Edited and with a preface by G. A. Gal'perin. Библиотека "Квант" [Library "Kvant"], 64. "Nauka", Moscow, 1988. 288 pp. (Roman Murawski) **89d:01078** 01A75 (00A05)
- see also Parthasarathy, Kalyanapuram Rangachari. **89a:01078**; Gorbachev, M. S. et al. **89b:01046**; Golse, François. **89c:01061**; Obituary: Kolmogorov, A. N. **89c:01093**; **89c:01094**; Berger, Toby et al. **89f:01057**; Tikhomirov, V. M. **89f:01078**; von Neumann, John. **89f:01093**; Shields, Allen. **89h:01112**; Tikhomirov, V. M. **89i:01106**; Vitányi, Paul M. B. **89i:01107**; Obituary: Kolmogorov, A. N. **89i:01132**; Stewart, Ian, (Not in MR) and Gorbachev, M. S. et al. (Not in MR)
- Kolmychevskaya, N. V.** A class of algorithms of coordinate-wise descent type for an integer polymatroid. (Russian) *Discrete optimization and numerical methods for solving applied problems* (Russian), 28–34, *Akad. Nauk SSSR Sibirsk. Otdel. Vychisl. Tsentr, Novosibirsk*, 1986. (From the text) **89f:90124** 90C27
- Kolmychevskii, A. V.** Asymptotic behavior and acceleration of convergence of a stationary gradient method. (Russian) *Discrete optimization and numerical methods for solving applied problems* (Russian), 35–49, *Akad. Nauk SSSR Sibirsk. Otdel. Vychisl. Tsentr, Novosibirsk*, 1986. (Detlef Melzer) **89g:90195** 90C30 (65K05)
- Kolobov, N. A.** see Maslov, V. P. et al. **89k:80018**
- Kolodil, A. M.** A limit theorem for a class of stochastic integral equations. (Russian) *Theory of random processes*, No. 15 (Russian), 47–53, 118, "Naukova Dumka", Kiev, 1987. (Stanislaw Wędrzychowiec) **89b:60151** 60H20
- Continuous solutions of Volterra integral equations with curvilinear stochastic integrals. (Russian) *Theory of random processes*, No. 16 (Russian), 38–48, 109, "Naukova Dumka", Kiev, 1988. (M. Tvrdý) **89m:60141** 60H20 (45D05)
- On the existence of regular solutions of stochastic Itô-Volterra equations. (Russian) *Teor. Veroyatnost. i Mat. Statist.* **38** (1988), 59–69, 135. (Stanislaw Wędrzychowiec) **89j:60082** 60H20
- Kolodziej, Wojciech J.** (with Mohler, Ronald R.) On structurally decomposing processes. *IEEE Trans. Circuits and Systems* **35** (1988), no. 11, 1417–1424. (J. M. Dion) **89m:93091** 93E25 (93C05, 93E03, 93E10)
- Kolodziejczyk, K.** On starshapedness of the union of closed sets in  $\mathbb{R}^n$ . *Colloq. Math.* **53** (1987), no. 2, 193–197. (Marilyn Breen) **89b:52017** 52A35 (52A30)
- Two constructional problems in aligned spaces. Proceedings of the International Conference on Combinatorial Analysis and its Applications (Pokrzywna, 1985). *Zastos. Mat.* **19** (1987), no. 3–4, 479–484 (1988). (John R. Reay) **89f:52019** 52A35 (52A01)
- (with Ding, Ren; Reay, John) A new Pick-type theorem on the hexagonal lattice. *Discrete Math.* **68** (1988), no. 2–3, 171–177. (R. Blind) **89a:52033** 52A43
- (with Romanowicz, Z.) On an application of Hall's representatives theorem to a finite geometry problem. *Period. Math. Hungar.* **19** (1988), no. 2, 135–141. (Luc Teirlinck) **89f:05047** 05B25 (05B30, 05B35, 51E30)
- Kolodziejczyk, Waldemar** On equivalence of two optimization methods for fuzzy discrete programming problems. *European J. Oper. Res.* **36** (1988), no. 1, 85–91. (Summary) **89e:90217** 90C99
- Convergence of powers of  $s$ -transitive fuzzy matrices. *Fuzzy Sets and Systems* **26** (1988), no. 1, 127–130. (Summary) **89b:15046** 15A99 (03E72)
- Kolokachikov, V. V.** Anisotropy reduced to fictitious isotropy by transformations of tensors in the solution of problems. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 3, 567–570; translation in *Soviet Phys. Dokl.* **33** (1988), no. 5, 350–351. (M. O. Bashedshvili) **89j:73010** 73B05 (73B99, 73C30)
- Kolokolnikova, G. A.** (with Gurman, V. I.; Baturin, V. A.; Moskalenko, A. I.; Baginov, I. P.; Bobryshev, A. G.; Butin, A. A.; Danilina, E. V.; Derenko, N. V.; Dushin, K. B.; Dykhia, V. A.; Konstantinov, G. N.; Mel'nik, V. V.; Nikiforova, L. N.; Ovsyannikova, N. A.; Rasina, I. V.; Rozenaukh, D. M.; Urbanovich, D. E.; Fedorova, E. Yu.) ★ Методы улучшения в вычислительном эксперименте. (Russian) [Methods of improving [control] in numerical experiments] "Nauka" Sibirsk. Otdel. Novosibirsk, 1988. 184 pp. ISBN 5-02-028573-0 (Asen L. Dontchev) **89b:65099** 65Kxx (49Dxx, 93B40)
- Kolokolov, A. A.** Truncation algorithms and some set partitions. (Russian) *Discrete optimization and numerical methods for solving applied problems* (Russian), 50–67, *Akad. Nauk SSSR Sibirsk. Otdel. Vychisl. Tsentr, Novosibirsk*, 1986. (From the text) **89f:90099** 90C10
- see also Discrete optimization and numerical methods for solving applied problems. **89c:90062**
- Kolokotsov, V. N.** (with Maslov, V. P.) General form of endomorphisms in the space of continuous functions with values in a numerical commutative semiring (with the operation  $\oplus = \max$ ). (Russian) *Dokl. Akad. Nauk SSSR* **295** (1987), no. 2, 283–287; translation in *Soviet Math. Dokl.* **36** (1988), no. 1, 55–59. (Introduction) **89b:47044** 47B38 (46N05, 58C20, 90C27)
- (with Maslov, V. P.) The Cauchy problem for the homogeneous Bellman equation. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 4, 796–800; translation in *Soviet Math. Dokl.* **36** (1988), no. 2, 326–330. (Min You Qi) **89g:35106** 35Q99 (49C20)
- Kolomeitser, S. V.** Solution of some boundary value problems for holomorphic functions of two complex variables. (Russian) *Application of functional analysis in approximation theory* (Russian), 54–56, *Kalinin. Gos. Univ., Kalinin*, 1987. (Editors) **89c:32010** 32A25
- Kolomiets, É. I.** The asymptotic behavior of probabilities of type II errors in the Neyman-Pearson test (the case of completely asymptotically distinguishable hypotheses). (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 3, 503–522. (T. Bednarski) **89c:2050** 62F05
- Kolomiets, M. D.** (with Boguslavskaya, É. I.) An approach to the modeling of complex dynamical systems. (Russian) *Adapt. Sistemy Avtomat. Upravleniya* No. 15 (1987), 107–113, v. (Summary) **89c:93035** 93B30 (00A71, 93A10)
- Kolomiets, V. G.** (with Smereka, I. P.; Tsikailo, T.-N. M.) On the integration of differential equations by means of periodic Ateb-functions. (Russian) *Some problems in the theory of asymptotic methods in nonlinear mechanics* (Russian), 102–110, vi, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1986. (József Banás) **89a:34006** 34A10 (33A70, 34A34)
- Averaging of stochastic partial differential equations. (Russian) *Application of asymptotic methods in the theory of nonlinear differential equations* (Russian), 44–49, ii, *Akad. Nauk Ukrain. SSR, Kiev*, 1987. (D. Bobrowski) **89d:60109**; **EA 89m** 60H15 (35R60)
- (with Mitropol'skii, Yu. A.; Smereka, I. P.) Periodic Ateb-functions in problems of the theory of the nonlinear oscillations of systems with several degrees of freedom. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 4, 58 pp. (Summary) **89c:34068** 34C15 (70K40)
- (with Mitropol'skii, Yu. A.; Bondarev, P. A.) Application of asymptotic methods of nonlinear mechanics for the investigation of the oscillations of systems with distributed parameters. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 15, 44 pp. (Summary) **89g:34062** 34C29 (35C20, 73K12, 73K35)
- (with Tsikailo, T.-N. M.) Asymptotic methods and periodic Ateb functions in some nonlinear problems of the theory of random oscillations. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 57, 64 pp. (Summary) **89c:70060** 70L05 (34C15, 34F05)
- (with Gaeva, E. A.) Asymptotic solutions of nonlinear integro-partial differential equations. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1988**, no. 41, 67 pp. (Summary) **89j:45008** 45K05 (35C20, 73F15, 78A25)
- (with Rybachok, A. V.) Integration of the Kolmogorov-Fokker-Planck equation by the generalized separation of arguments. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 5, 635–639, 678; translation in *Ukrainian Math. J.* **40** (1988), no. 5, 542–545. (Summary) **89k:70049** 70L05 (34F05)
- Kolomý, Josef** On mapping and invariance of domain theorem and accretive operators. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 1, 235–246. (Ricardo Torrejón) **89f:47082** 47H06
- Set-valued mappings and structure of Banach spaces. Proceedings of the 14th winter school on abstract analysis (Srní, 1986). *Rend. Circ. Mat. Palermo* (2) *Suppl.* No. 14 (1987), 345–351. (Introduction) **89g:47072** 47H05 (46B20, 47H06)
- Kolomo, M.** (with Benzing, H.) On monotone optimal decision rules and the stay-on-a-winner rule for the two-armed bandit. *Metrika* **32** (1985), no. 6, 395–407. (Peter Watts Jones) **89b:62178** 62L15 (62L10)
- (with Benzing, H.) Structured policies for a sequential design problem with general distributions. *Math. Oper. Res.* **12** (1987), no. 1, 60–71. (D. Kalin) **89f:90177** 90C39
- Kolosov, A. I.** (with Vasil'ev, A. V.; Ermakov, A. E.; Kolosova, S. V.) A problem of the theory of chemical reactions. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 8(42) (1987), 35–39, 93. (Summary) **89d:80025** 80A32
- Kolosov, L. V.** (with Sulimenbaev, B. T.) Application of the Kalman filter to a problem of the identification of parameters of linear nonstationary systems. (Russian) *Voprosy Kibernet. (Moscow)* No. 139 (1988), 152–160. (Roman Swiniarski) **89j:93130** 93E12 (93E11)
- Kolosova, S. V.** (with Vasil'ev, A. V.; Ermakov, A. E.; Kolosov, A. I.) A problem of the theory of chemical reactions. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 8(42) (1987), 35–39, 93. (Summary) **89d:80025** 80A32
- Kolostenko, G. A.** (with Akhmedov, T. I.) Modeling of dominant systems of space-time connections of the brain by Erlang's law. (Russian) *Problems of bionics*, No. 40 (Russian), 89–97, iv, "Vishcha Shkola", Kharkov, 1988. (Summary) **89h:92023** 92A09 (00A71, 90B22)
- Kolotilina, L. Yu.** (with Erëmin, A. Yu.) ★ Об одном подходе к построению неполных блочных факторизаций для разреженных матриц сложной структуры. (Russian) [An approach to the construction of incomplete block factorizations for sparse matrices of complex structure] Препринт [Preprint], 135. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1986. 32 pp. (Imar Arro) **89j:65032** 65F05 (65F50)
- (with Erëmin, A. Yu.) ★ Разложение Бруа и решение систем линейных алгебраических уравнений с разреженными матрицами. (Russian) [The Bruhat decomposition and the solution of systems of linear algebraic equations with sparse matrices] Препринт [Preprint], 139. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1987. 28 pp. (Zahari Zlatev) **89a:65045** 65F05 (15A06, 65F50)
- (with Erëmin, A. Yu.) The Bruhat decomposition and the solution of systems of linear algebraic equations. (Russian) *Computational processes and systems*, No. 5 (Russian), 180–194, "Nauka", Moscow, 1987. (Gh. Adam) **89g:65025** 65F05 (65F50)
- A family of explicit preconditionings. (Russian) *Computational processes and systems*, No. 5 (Russian), 195–212, "Nauka", Moscow, 1987. (Hans-Jürgen Albrand) **89c:65059** 65F35
- (with Erëmin, A. Yu.) Bruhat decomposition and solution of sparse linear algebraic systems. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* **2** (1987), no. 6, 421–436. (David R. Hill) **89b:65070** 65F05 (15A06)
- (with Borevich, Z. I.) Normalizers of the intermediate subgroups in the general linear group over a ring. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1988**, vyp. 1, 6–8, 116; translation in *Vestnik Leningrad Univ. Math.* **21** (1988), no. 1, 1–4. (Sen Qiu) **89d:20039** 20G35 (20H25)
- Kolpakov, A. G.** (with Rakin, S. I.) A problem of the synthesis of a composite material of one-dimensional structure in a given class of materials. (Russian) *Dinamika Splushn. Sredy* No. 78 (1986), 74–85, 157. (Summary) **89c:73057** 73K20 (80A20)
- Averaging in problems of the bending and oscillation of stressed inhomogeneous plates. *J. Appl. Math. Mech.* **51** (1987), no. 1, 44–49 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 1, 60–67 (Russian). (D. Durban) **89k:73048** 73K12
- G-convergence of a class of evolution operators. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 2, 90–104, 217; translation in *Siberian Math. J.* **29** (1988), no. 2, 233–244. (Tie Hu Qin) **89g:47073** 47H05 (34G20, 47H15)
- Kolpakov, A. V.** (with Gol'din, V. Ya.) Combined methods for solving a multidimensional stationary system of quasidiffusion equations. (Russian) *Computational methods in linear algebra* (Russian) (Moscow, 1982), 60–71, *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1983. (Stanislaw Burys) **89b:65248** 65N20
- Kolpakov, V. I.** Regularizers of synchronous reconstruction of a function and its derivatives. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 132–135, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) 41A65
- Kolpakova, É. V.** A method that is optimal with respect to order for the reconstruction of a continuous derivative of a function. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 135–136, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) 26A24
- Kolsrud, Marius** The external field approximation of quantum electrodynamics. *Phys. Scripta* **39** (1989), no. 1, 13–29. (Summary) **89k:81215** 81L05

- Kolster, Manfred** The structure of the 2-Sylow subgroup of  $K_2(e)$ . II. *K-Theory* 1 (1987), no. 5, 467–479. (Alan Candiotti) **89h:11077** 11R70 (11R18, 19C99, 19F99)
- Kolton, G. A.** (with Bogatko, V. I.) On a problem of nonlinear diffraction of strong shock waves. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1988, vyp. 3, 45–49, 124–125. (Summary) **89k:76069** 76L05
- Koltracht, I.** (with Gohberg, I.) Efficient algorithm for Toeplitz plus Hankel matrices. *Integral Equations Operator Theory* 12 (1989), no. 1, 136–142. (H. R. Shen) **89k:65029** 65F05 (15A06, 47A15, 47B35)
- Koltsakis, E. K.** (with Panagiotopoulos, P. D.) Hemivariational inequalities for linear and nonlinear elastic materials. (Italian summary) *Meccanica—J. Ital. Assoc. Theoret. Appl. Mech.* 22 (1987), no. 2, 65–75. (Petr Procházka) **89b:73015** 73C50 (49A29, 73C60, 73T05)
- Koltunovskii, O. A.** A nonlocal problem for a third-order partial differential equation. (Russian) *Some problems in differential equations and discrete mathematics* (Russian), 147–153, Novosibirsk. Gos. Univ., Novosibirsk, 1986. (Editors) **89m:35048** 35G15 (35M05)
- Koltyzhenkov, V. M.** Irregular variational equations along quasiperiodic solutions of Hamiltonian systems. (Russian) *Mat. Zametki* 43 (1988), no. 1, 62–70, 154; translation in *Math. Notes* 43 (1988), no. 1–2, 37–42. (G. P. Los') **89i:58039** 58F05 (34C27, 70H05)
- Kolushov, A. V.** Differential properties of the operator of best approximation of continuous functions by rational fractions. (Russian) *Mat. Zametki* 41 (1987), no. 5, 654–672, 764. (Summary) **89h:41037** 41A20 (41A50)
- Kolyada, A. A.** (with Selyaninov, M. Yu.) Normalization of numbers in a modular number system. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* 1988, no. 1, 50–52, 78. (Summary) **89e:65049** 65G10
- Interval-modular codes with error correction. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* 1988, no. 2, 33–36, 80. (Summary) **89e:94016** 94B40
- Kolyada, K. V.** Undecidability of the completeness problem for some functional systems of Kleene type. (Russian) *Logical-algebraic constructions* (Russian), 48–55, Kalinin. Gos. Univ., Kalinin, 1987. (A. Astromoff) **89e:03064** 03D05 (03D03, 03D35)
- Kolyada, S. F.** Discrete dynamical systems with a Schwartzian derivative of constant sign. (Russian) *Functional-differential equations and their application to nonlinear boundary value problems* (Russian), 18–23, i, Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev, 1987. (I. N. Baker) **89j:58057** 58F08
- Kolyada, V. I.** Estimates for rearrangements and embedding theorems. (Russian) *Mat. Sb. (N.S.)* 136(178) (1988), no. 1, 3–23, 160. (Dinh Dung) **89h:46049** 46E35 (42B30, 46E30)
- Kolyadin, V. L.** (with Kravchenko, V. F.) The choice of subspaces in projection methods for solving operator equations. (Russian) *Dokl. Akad. Nauk SSSR* 296 (1987), no. 5, 1050–1052; translation in *Soviet Math. Dokl.* 36 (1988), no. 2, 353–355. (A. B. Bakushinskii) **89h:47018** 47A50 (65J10)
- Kolyadov, S. M.** Closed convex regular surfaces with a given combination of elementary symmetric functions in  $E^3$ . (Russian) *Investigations in the theory of surfaces in manifolds with curvature of constant sign* (Russian), 38–50, Leningrad. Gos. Ped. Inst., Leningrad, 1987. (Fuiga Pop) **89j:53051** 53C45
- Kolyan, V. V.** Some special surfaces of the space of autocompositions  $Q_3 \subset S_4$ . (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* 1985, no. 2(159), 28–34. (Not in MR) **53A40**
- (with Norden, A. P.) Autocomposition of a hyperquadric and Neifel'd normalization of a manifold of lines. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 8, 27–29, 88. (Josef Vala) **89b:53030** 53B05 (53A25)
- Kolyano, Yu. M.** (with Verba, I. I.) State of thermal stress and strain of a plate weakened by a rectangular hole. *J. Appl. Math. Mech.* 51 (1987), no. 3, 365–370 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 3, 468–474 (Russian). (Summary) **89f:73011** 73C25 (73U05, 80A20)
- Kolyshkin, I. N.** (with Ender, A. Ya.; Ender, I. A.) Numerical solution of isotropic relaxation problems by the Maxwellian expansion method. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 6, 901–916, 959. (Nina B. Maslova) **89m:82035** 82A40 (65R20)
- Kolyagin, V. A.** Finiteness of  $E(Q)$  and  $III(E, Q)$  for a subclass of Weil curves. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 52 (1988), no. 3, 522–540, 670–671; translation in *Math. USSR-Izv.* 32 (1989), no. 3, 523–541. (Reinhard Bölling) **89m:11056** 11G05 (11G40, 14G25, 14K07)
- Kölzow, Dietrich** Addendum to: "The Radon transform—some recent results" [Rend. Circ. Mat. Palermo (2) Suppl. No. 8 (1985), 107–117; MR 88:44005]. *Rend. Circ. Mat. Palermo (2)* 36 (1987), no. 1, i. (Editors) **89f:44010** 44A15 (22E30, 92A07)
- see also Blaschke, Wilhelm, **89a:01101**
- Koma, Tohru** (with Ezawa, Hiroshi) Completeness of the two-down-spin Bethe states in the one-dimensional Heisenberg model. *Progr. Theoret. Phys.* 78 (1987), no. 5, 1009–1021. (Summary) **89i:82089** 82A68
- Thermal Bethe-ansatz method for the one-dimensional Heisenberg model. *Progr. Theoret. Phys.* 78 (1987), no. 6, 1213–1218. (C. A. Hurst) **89c:82071** 82A68 (82A67)
- Komarenko, A. N.** (with Lukovskii, I. A.) Variational formulation of some nonlinear boundary value problems in mathematical physics in domains with free boundaries. (Russian) *Asymptotic methods in mathematical physics* (Russian), 144–150, 301, "Naukova Dumka", Kiev, 1988. (see **89g:00006**) **49B21** (76B15)
- Komaroff, N.** Matrix inequalities applicable to estimating solution sizes of Riccati and Lyapunov equations. *IEEE Trans. Automat. Control* 34 (1989), no. 1, 97–98. (Not in MR) **15A39** (93B25)
- Simultaneous eigenvalue lower bounds for the Riccati matrix equation. *IEEE Trans. Automat. Control* 34 (1989), no. 2, 175–177. (Not in MR) **93B25** (34A34)
- Komáromi, É.** On properties of the probabilistic constrained linear programming problem and its dual. *J. Optim. Theory Appl.* 55 (1987), no. 3, 377–390. (Riho Lepp) **89b:90156** 90C15
- Komarov, A. S.** (with Galitskii, V. V.) Numerical modeling of the dynamics of plant populations. (Russian) *Mathematical modeling* (Russian), 103–154, 280, "Nauka", Moscow, 1987. (Summary) **89d:92080** 92A17
- Komarov, I. V.** (with Kuznetsov, V. B.) Quasiclassical quantization of the Kovalevskaya top. (Russian. English summary) *Teoret. Mat. Fiz.* 73 (1987), no. 3, 335–347. (Summary) **89f:81076** 81D07 (58F07, 58F40, 81C25)
- (with Kuznetsov, V. B.) The generalized Goryachev-Chaplygin gyrost in quantum mechanics. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst.* 164 (1987), *Differentsial'naya Geom. Gruppy Li i Mekh.* IX, 133–141, 198. (Summary) **89e:81053** 81C99 (58F07)
- Integrable system connected with the Coulomb three-body problem near two-particle thresholds. *J. Phys. A* 21 (1988), no. 5, 1191–1197. (A. Ventura) **89e:81184** 81G40 (58F05)
- (with Tsyganov, A. V.) A two-particle quantum periodic Toda chain. (Russian. English summary) *Vestnik Leningrad. Univ. Fiz. Khim.* 1988, vyp. 2, 69–71. (Summary) **89g:81028** 81C99
- Komarov, S. V.** (with Krasulina, T. P.) Investigation of a multidimensional Robbins-Monro process. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1988, vyp. 1, 113–114, 120; translation in *Vestnik Leningrad Univ. Math.* 21 (1988), no. 1, 83–85. (P. Révész) **89j:62115** 62L20
- Komarov, V. A.** On an equation of attainable sets of differential inclusions. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 4, 692–694, 734. (Witold Rzymowski) **89e:49034** 49E15 (49E10)
- A dynamic programming equation for a time-optimality problem with phase constraints. (Russian) *Mat. Sb. (N.S.)* 135(177) (1988), no. 1, 46–58, 142–143; translation in *Math. USSR-Sb.* 63 (1989), no. 1, 47–58. (Stefan Mirica) **89g:49037** 49C20 (90C39)
- Komarov, V. V.** (with Popova, A. M.; Shablov, V. L.) On a connection between stationary and nonstationary scattering theories for systems of particles with Coulomb interaction. (Russian. English summary) *Ukrain. Fiz. Zh.* 33 (1988), no. 9, 1297–1304, 1435. (Summary) **89k:81187** 81F10
- Komatsu, Hikosaburo** Irregularity of hyperbolic operators. *Hyperbolic equations and related topics* (Katata/Kyoto, 1984), 155–179, Academic Press, Boston, MA, 1986. (Luisa Zanghirati) **89f:35123** 35L25
- Irregularity of linear differential equations and solutions of Gevrey classes. (Chinese summary) *Adv. in Math. (Beijing)* 16 (1987), no. 3, 259–267. (Jesper Lützen) **89h:35002** 35-03 (01A65, 34A30, 46F15)
- Laplace transforms of hyperfunctions. A new foundation of the Heaviside calculus. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* 34 (1987), no. 3, 805–820. (P. Schapira) **89a:46091** 46F15 (44A10)
- Award of the 15th Mathematical Society of Japan Prize to Toshikazu Sunada. (Japanese) *Sūgaku* 39 (1987), no. 3, 236. (Editors) **89a:01048** 01A65
- Komatsu, Hiroaki** (with Hongan, M.)  $(\sigma, \tau)$ -derivations with invertible values. *Bull. Inst. Math. Acad. Sinica* 15 (1987), no. 4, 411–415. (Jeanne Wald Kerr) **89m:16067** 16A72
- (with Tominaga, H.) On periodicity of rings. *Math. Japon.* 32 (1987), no. 6, 909–913. (Howard E. Bell) **89a:16033** 16A48 (16A45)
- Komatsu, Takao** (with Nishiyama, Seiya) Integrability conditions for a determination of collective submanifolds. II. On the validity of the "maximally decoupled" theory. (Italian and Russian summaries) *Nuovo Cimento A* (11) 93 (1986), no. 3, 255–267. (G. Vanden Bergh) **89f:81264** 81G30 (53C80, 81G40)
- (with Nishiyama, Seiya) Integrability conditions for a determination of collective submanifolds. III. An investigation of the nonlinear time evolution equation arising from the zero-curvature equation. (Italian and Russian summaries) *Nuovo Cimento A* (11) 97 (1987), no. 4, 513–522. (G. Vanden Bergh) **89f:81265** 81G30 (53C80, 81G40)
- Komatsu, Takashi** Continuity estimates for solutions of parabolic equations associated with jump type Dirichlet forms. *Osaka J. Math.* 25 (1988), no. 3, 697–728. (Kazuaki Taira) **89m:60182** 60J45 (35B45, 35K99)
- Komatu, Yōsaku** On oscillation in a class of analytic functions related to fractional integration. *Complex analysis and applications '85* (Varna, 1985), 327–334, *Bulgar. Acad. Sci., Sofia*, 1986. (Walter Hengartner) **89e:30018** 30C45 (26A33, 30A10)
- On the range of values of analytic functions relating to a family of integral operators. (Serbo-Croatian summary) *Mat. Vesnik* 39 (1987), no. 4, 399–404. (Paul Eenigenburg) **89g:30076** 30E20 (30C45)
- Kombarov, A. P.** The hereditary paracompleteness of  $X^2$  and the metrizability of  $X$ . (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 2, 79–81; translation in *Moscow Univ. Math. Bull.* 43 (1988), no. 2, 52–54. (Vesko Valov) **89f:54046** 54D18 (54D20, 54E18, 54E35)
- Komech, A. I.** (with Ilyasov, Ya. Sh.) Girsanov's theorem and ergodic properties of statistical solutions of nonlinear parabolic equations. (Russian. English summary) *Trudy Sem. Petrovsk.* No. 12 (1987), 88–117, 243–244. (G. A. Sokhadze) **89g:60193** 60H15 (35K55, 60G30)
- (with Imaitkin, V. M.) Large deviations of solutions of nonlinear stochastic equations. (Russian. English summary) *Trudy Sem. Petrovsk.* No. 13 (1988), 177–196, 258. (Ralf Manthey) **89m:60062** 60F10 (34F05, 60H15)
- see also Hörmander, Lars, **89k:35002**
- Kominato, Tomomi** (with Saito, Kichi-Suke) Certain invariant subspace structure of analytic crossed products. II. *Sci. Rep. Niigata Univ. Ser. A No.* 23 (1987), 25–33. (Steve Wright) **89b:46079** 46L55 (46L50)
- Kominek, Z.** On additive and convex functionals. (Serbo-Croatian summary) *Rad. Mat.* 3 (1987), no. 2, 267–279. (Kazimierz Nikodem) **89e:26029** 26B25 (39B70, 39C05, 46A99)
- On a problem of K. Nikodem. *Arch. Math. (Basel)* 50 (1988), no. 3, 287–288. (From the text) **89c:39018** 39B70 (26A51)
- Komiya, Hidetoshi** Elementary proof for Sion's minimax theorem. *Kodai Math. J.* 11 (1988), no. 1, 5–7. (Ivan Ginchev) **89f:49017** 49A50 (46G99, 49B40, 54H25)
- Komiya, Katsuhiko** The Lefschetz number for equivariant maps. *Osaka J. Math.* 24 (1987), no. 2, 299–305. (A. Dold) **89e:55004** 55M20 (57S05)
- Fixed point indices of equivariant maps and Möbius inversion. *Invent. Math.* 91 (1988), no. 1, 129–135. (A. Dold) **89e:55005** 55M20 (57S05)
- Komjáth, Péter** Consistency results on infinite graphs. *Israel J. Math.* 61 (1988), no. 3, 285–294. (Thomas Andreae) **89d:05074** 05C15 (03E35)
- A simplified construction of nonlinear Davenport-Schinzel sequences. *J. Combin. Theory Ser. A* 49 (1988), no. 2, 262–267. (D. P. Roselle) **89m:11019** 11B83 (05A99, 11N37)
- (with Milner, E. C.; Polat, N.) A compactness theorem for perfect matchings in matroids. *J. Combin. Theory Ser. B* 44 (1988), no. 3, 253–262. (Daniel Turzik) **89e:05062** 05B35 (05C70)
- (with Shelah, Saharon) Forcing constructions for uncountably chromatic graphs. *J. Symbolic Logic* 53 (1988), no. 3, 696–707. (Jan Tryba) **89m:03044** 03E35 (03E05, 03C15)
- (with Hajnal, A.) Embedding graphs into colored graphs. *Trans. Amer. Math. Soc.* 307 (1988), no. 1, 395–409. (N. Hindman) **89e:05145** 05C55 (03E35, 04A20, 05A17)



- Komkov, N. I.** (with Pleshchinskii, A. S.) The decomposition method of allocating resources in a multiobjective program. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 3, 126-132; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 6, 26-31, 203 (Russian). (Summary) **89i:90080** 90C31 (90B30)
- Komkov, V.** The critical points theory and the variational principles in continuous mechanics of solids. (Russian and Polish summaries) *Prace Nauk. Inst. Inż. Łądowej Politech. Wrocław. Ser. Monograf.* 1985, no. 9, 188 pp. (J. N. Flavin) **89k:49031** 49F05 (47H99, 58E05, 70H05, 70H35, 73C60)
- (with Haug, Edward J.; Choi, Kyung K.) ★ Design sensitivity analysis of structural systems. Mathematics in Science and Engineering, 177. Academic Press, Inc., Orlando, FL, 1986. xvi+381 pp. ISBN 0-12-332920-5; 0-12-332921-3 (Z. Mróz) **89i:73061** 73K40 (73-02, 73-08, 90C50)
- Sensitivity techniques for systems with distributed parameters. *J. Math. Anal. Appl.* 128 (1987), no. 2, 443-455. (B. I. Anan'ev) **89b:93052** 93B35 (93C20)
- Variational principles for nonlinear buckling of elastic columns (a revival of Euler's theory). (German and Russian summaries) *Z. Angew. Math. Mech.* 67 (1987), no. 9, 419-433. (Cesare Davini) **89i:73038** 73H05 (73K05)
- ★ Variational principles of continuum mechanics with engineering applications. Vol. 2. Introduction to optimal design theory. Mathematics and its Applications, 40. D. Reidel Publishing Co., Dordrecht-Boston, MA, 1988. viii+276 pp. ISBN 90-277-2639-6 (J. A. König) **89b:73002** 73-02 (49A29, 73K40)
- (with Haug, Edward J.; Choi, Kyung K.) ★ Анализ чувствительности при проектировании конструкций. (Russian) [Sensitivity analysis in the design of structures] Translated from the English by S. Yu. Ivanova and A. D. Larichev. Translation edited and with a preface by N. V. Banichuk. "Mir", Moscow, 1988. 430 pp. (Editors) **89i:73062** 73K40 (73-02, 73-08, 90C50)
- Komlós, János** (with Remmel, J. B.) The spread of a partial order. *Order* 4 (1987), no. 3, 285-291. (Summary) **89i:06004** 06A10
- (with Csáki, Endre; Földes, Antónia) Limit theorems for Erdős-Rényi type problems. *Studia Sci. Math. Hungar.* 22 (1987), no. 1-4, 321-332. (Paul Deheuvels) **89b:60052** 60F05
- Komori, Yuichi** Set theory based on lambda calculus and BCK logic. *Proceedings of the 11th Symposium on Semigroups (Kyoto, 1987)*, 72-73, Reikichi Yoshida, Matsubara, 1987. (see **89a:20001**) 03E70
- Komorńik, Józef** Conditions for asymptotic periodicity of the iterates of Markov operators. *Proceedings of the conference on ergodic theory and related topics, II (Georgenthal, 1986)*, 91-95, Teubner-Texte Math., 94, Teubner, Leipzig, 1987. (Anzeim Iwanik) **89d:47015** 47A35 (47B38, 58F11)
- Komorńik, V.** On the control of strongly nonlinear systems. I. *Studia Sci. Math. Hungar.* 22 (1987), no. 1-4, 333-340. (Y. Chervauit) **89d:49028** 49B60 (35J85, 93C20)
- (with Haraux, A.) Oscillations in the wave equation. *Nonlinear partial differential equations and their applications. Collège de France seminar, Vol. VIII (Paris, 1984-1985)*, 110-119, Pitman Res. Notes Math. Ser., 166, Longman Sci. Tech., Harlow, 1988. (E. C. Young) **89b:35175** 35L05 (35B05)
- Komorowski, Ryszard** Semistable and self-decomposable measures on separable Banach spaces. *Probab. Math. Statist.* 8 (1987), 169-176. (S. A. Chobanyan) **89a:60010** 60B11 (46G12, 60B05)
- On the best possible constants in the Khintchine inequality for  $p \geq 3$ . *Bull. London Math. Soc.* 20 (1988), no. 1, 73-75. (Yung L. Tong) **89e:60037** 60E15 (26E15)
- Operator semistable probability measures on Banach spaces. *Probab. Math. Statist.* 9 (1988), no. 1, 139-146. (S. A. Chobanyan) **89i:60011** 60B11 (60B10, 60B12)
- Kompel, V. G.** Sufficient conditions for the center for a two-dimensional autonomous system whose right-hand sides are polynomials of the third degree. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 9, 1636-1637, 1655. (Nicolae Lungu) **89i:34029** 34C05
- Komrakov, B. P.** Reductive subalgebras of reductive real Lie algebras. (Russian) *Group-theoretic methods in physics, Vol. 2 (Järnala, 1985)*, 205-212, "Nauka", Moscow, 1986. (see **89d:81002**) 17B10
- Komraz, L. A.** (with Ukrainik, B. S.) Stationary density of the distribution of the coordinates of a discontinuous two-dimensional mapping with randomly varying parameter. (Russian) *Methods of qualitative theory of differential equations (Russian)*, 67-81, 212, Gorkov. Gos. Univ., Gorki, 1986. (Jörg-Uwe Löbus) **89b:60034** 60E99 (70K99, 70L05)
- Komura, Masao** (with Hild, Michael) A trip in Julia space: morphological change of complex boundaries. *Science on form (Sakura, 1985)*, 601-606, Reidel, Dordrecht-Boston, MA, 1987. (see **89g:82013**) 58F11 (30D05, 58F08)
- Komuro, Motomasa** Normal forms of continuous piecewise linear vector fields and chaotic attractors. I. Linear vector fields with a section. *Japan J. Appl. Math.* 5 (1988), no. 2, 257-304. (R. Dillão) **89m:58131a** 58F12 (58F19)
- Normal forms of continuous piecewise linear vector fields and chaotic attractors. II. Chaotic attractors. *Japan J. Appl. Math.* 5 (1988), no. 3, 503-549. (R. Dillão) **89m:58131b** 58F12 (58F19)
- (with Tokunaga, R.; Matsumoto, Takashi; Chua, Leon O.) "Lorenz attractor" from an electrical circuit with uncoupled continuous piecewise-linear resistor. *Internat. J. Circuit Theory Appl.* 17 (1989), no. 1, 71-85. (Summary) **89j:58085** 58F13 (94C05)
- Kon, M. A.** (with Raphael, Louise; Young, J. E.) On relating generalized expansions to Fourier integrals. *Differential equations and mathematical physics (Birmingham, Ala., 1986)*, 248-255, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (I. Joo) **89g:35083** 35P10 (42C15)
- Semigroup smoothing by highly singular operators. *Oscillations, bifurcation and chaos (Toronto, Ont., 1986)*, 213-219, *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (Rainer Hempel) **89a:35061** 35J10 (35P05, 47F05)
- Konakov, V. D.** Local limit theorems on the convergence of Markov chains to diffusion processes. (Russian) *Probability distributions and mathematical statistics (Russian) (Fergana, 1983)*, 277-292, 495, "Fan", Tashkent, 1986. (I. Cuculescu) **89g:60077** 60F05 (60J05, 60J60)
- Konczak, Zenon** Equations of thermomechanics of fluid-saturated porous media with viscoelastic micropolar skeleton. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* 35 (1987), no. 9-10, 505-515. (Summary) **89c:73094** 73U05 (76S05)
- Kondakov, V. M.** (with Sapozhnikov, P. N.) Sufficient statistics in problems of extrapolation of stationary sequences. *Statistical methods. J. Soviet Math.* 40 (1988), no. 2, 174-178. (J. B. Robertson) **89b:60065** 60G25 (62M20)
- Kondakov, V. P.** Discrete locally convex lattices and unconditional bases. (Russian) *Mathematical analysis and its applications (Russian)*, 65-72, 164, Rostov. Gos. Univ., Rostov-on-Don, 1985. (N. Popa) **89k:46009** 46A40
- Kondanurov, V. I.** (with Nikitin, L. V.) Finite strains of viscoelastic muscle tissue. *J. Appl. Math. Mech.* 51 (1987), no. 3, 346-353 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 3, 443-452 (Russian). (Summary) **89c:92004** 92A06 (73P10, 92A09)
- Kondepuđi, D. K.** Microscopic aspects implied by the second law. *Found. Phys.* 17 (1987), no. 7, 713-722. (M. Carrassi) **89b:82037** 82A30 (80A05, 82A05)
- Konderak, J.** On homogeneity and transitivity of fields of geometric objects. *Publ. Sec. Mat. Univ. Autònoma Barcelona* 30 (1986), no. 1, 5-15. (Niky Kamran) **89c:58150** 58H05
- Some corollaries of Gromov's theorems. *Univ. Iagel. Acta Math.* No. 26 (1987), 241-259. (Claude Lamoureux) **89f:58146** 58H05 (57R30)
- Structure tensor of a field of geometric objects. *Geom. Dedicata* 27 (1988), no. 2, 171-177. (David J. Eck) **89g:53018** 53A45 (53C10, 58A99)
- Kondo, Anne E.** (with Truax, D. Rodney) On a time-dependent extension of the Morse potential. *J. Math. Phys.* 29 (1988), no. 6, 1396-1404. (A. O. Barut) **89f:81033** 81C05 (81C40)
- Kondo, Elji** (with Mazeed, Mohammed Abdul; Sunaga, Teruo) Optimization of nonlinear programming problems using penalty functions and complex method. (Japanese summary) *J. Oper. Res. Soc. Japan* 30 (1987), no. 4, 434-448. (Summary) **89a:90131** 90C30
- (with Sunaga, Teruo; Mazeed, Mohammed Abdul) A penalty function formulation for interactive multiobjective programming problems. *System modelling and optimization (Tokyo, 1987)*, 221-230, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (From the text) **89i:90244** 90C31
- Kondo, Kazuo** see *Obituary: Kawaguchi, Akitsugu*, **89h:01095**
- Kondo, Kei-ichi** (with Hara, Takashi; Hattori, Tetsuya; Tasaki, Hal) Scalar field theory from statistical mechanics. *Progr. Theoret. Phys. Suppl.* No. 92 (1987), 1-13. (Claus Montonen) **89e:81082** 81E08 (81-02, 82-02)
- Rigorous analyses on order parameters and charged states in the lattice abelian-Higgs model. *Progr. Theoret. Phys. Suppl.* No. 92 (1987), 72-107. (Charles Nash) **89b:81153** 81E25 (81-02)
- (with Sugiyama, Yuki) Correlation inequalities for multicomponent ferromagnets. *J. Math. Phys.* 29 (1988), no. 2, 451-459. (James L. Monroe) **89d:82014** 82A05 (81E25)
- The phase transition generated by the radial model of the scalar field in the lattice Z(2) gauge-Higgs model. *Nuclear Phys. B* 295 (1988), no. 1, 93-104. (Summary) **89b:81166** 81E25
- Rigorous upper and lower bounds on the nonlinear susceptibility of the Mattis model. *Phys. Lett. A* 129 (1988), no. 2, 79-82. (James L. Monroe) **89d:82015** 82A05 (82A68)
- Inconsistency of the  $\lambda\Phi^4$  field theory in high dimensions constructed from the broken-symmetry phase. *Progr. Theoret. Phys.* 79 (1988), no. 5, 1217-1248. (Kornél Szlachányi) **89m:81087** 81E08 (81E25)
- Kondo, Michiro** Solutions for Pólya's conjectures. *Publ. Res. Inst. Math. Sci.* 23 (1987), no. 4, 575-582. (W. J. Blok) **89h:03027** 03B45
- Extensions of  $S^0$ . *Comment. Math. Univ. St. Paul.* 37 (1988), no. 1, 81-94. (Bernd Dahn) **89j:03014** 03B45
- Kondó, R.** (with Hara, Shinji; Katori, H.) Properties of zeros in digital control systems with computational time delay. *Internat. J. Control* 49 (1989), no. 2, 493-511. (Summary) **89k:93105** 93B55 (93C60, 93D15)
- Kondó, Shigeyuki** Enriques surfaces with finite automorphism groups. *Japan. J. Math.* (N.S.) 12 (1986), no. 2, 191-282. (I. Dolgachev) **89e:14058** 14J28 (14J50)
- On the Albanese variety of the moduli space of polarized K3 surfaces. *Invent. Math.* 91 (1988), no. 3, 587-593. (Marcus Wright) **89d:32052** 32G13 (14J15, 14J28, 32J05, 32J25, 32M15)
- Kondo, Shunsuke** (with Koshizuka, Seiichi; Oka, Yoshiaki; Togo, Yasumasa) Interpolating matrix method: a finite difference method for arbitrary arrangement of mesh points. *J. Comput. Phys.* 75 (1988), no. 2, 444-468. (Summary) **89c:76015** 76-08 (76F99)
- Kondo, Takeshi** (with Tasaka, Takashi) The theta functions of sublattices of the Leech lattice. II. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* 34 (1987), no. 3, 545-572. (N. J. A. Sloane) **89h:11030** 11H06 (11E45, 11F27, 20D08)
- Kondorskaya, E. E.** (with Bogomolova, I. A.; Glasko, V. B.; Kal'ner, V. D.; Kulik, N. I.; Tikhonov, A. N.; Yurasov, S. A.) Inverse problems associated with the control of diffusional and thermal processes. *J. Engng. Phys.* 53 (1987), no. 5, 1329-1335 (1988); translated from *Inzh.-Fiz. Zh.* 53 (1987), no. 5, 835-842 (Russian). (Summary) **89d:80007** 80A20 (93C20)
- Kondracki, W.** (with Klimek, S.) A construction of two-dimensional quantum chromodynamics. *Comm. Math. Phys.* 113 (1987), no. 3, 389-402. (Alfred Actor) **89g:81046** 81E13 (81E25)
- (with Chruściel, Piotr T.) Some global charges in classical Yang-Mills theory. *Phys. Rev. D* (3) 36 (1987), no. 6, 1874-1881. (C. Cronström) **89b:81119** 81E13 (58F40)
- (with Klimek, S.; Olećki, W.; Sadowski, P.) The density problem for infinite-dimensional group actions. *Compositio Math.* 68 (1988), no. 1, 3-10. (M. P. Heble) **89k:58047** 58D17 (53C15, 58B20)
- Kondratenko, E. P.** (with Voloshchenko, A. M.) A  $KP_1$ -scheme for the acceleration of inner iterations that is consistent with a family of WLM-WLD-schemes for the transport equation in one-dimensional geometries. (Russian. English summary) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 197, 20 pp. (Not in MR) **82A70** (82-08)
- Kondrat'ev, A. B.** (with Lesik, N. I.; Kondrat'ev, B. V.) On the problem of the realization of a conformal mapping with symmetrization of six points on the boundary of the domain. (Russian) *Vestnik Khar'kov. Gos. Univ. No. 298 Mat. Mekh. i Voprosy Upravl.* (1987), 101-104. (L. A. Aksent'ev) **89f:30012** 30C20 (30C85)
- Kondrat'ev, A. I.** Relational models for information-recognizing problems, algorithms and systems. (Russian) *Dynamical systems, No. 7 (Russian)*, 132-140, 161, "Vishcha Shkola", Kiev, 1988. (Summary) **89m:68023** 68P15 (68T10)
- Algorithms with memory for solving problems of the computation of properties. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 1, 99-106, 135; translation in *Cybernetics* 24 (1988), no. 1, 125-135. (Summary) **89d:68077** 68T15 (68Q20)

- Continual strategic models. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 3, 89–96, 133; translation in *Cybernetics* 24 (1988), no. 3, 380–389. (Milan Mareš) 89f:90100 90D12 (90A16)
- Kondrat'ev, B. P. (with Malkov, E. A.) A model of a collisionless ellipsoid with oblique rotation: stability with respect to ellipsoidal perturbations. (Russian) *Akad. Nauk Kazakh. SSR Trudy Astrofiz. Inst.* 47 (1987), 91–103, 124–125. (Summary) 89f:85001 85A05 (76E20)
- Kondrat'ev, B. V. (with Lesik, N. I.; Kondrat'ev, A. B.) On the problem of the realization of a conformal mapping with symmetrization of six points on the boundary of the domain. (Russian) *Vestnik Kharkov. Gos. Univ. No. 298 Mat. Mekh. i Voprosy Upravl.* (1987), 101–104. (L. A. Aksent'ev) 89f:30012 30C20 (30C85)
- Kondrat'ev, V. A. (with Oleinik, O. A.) Asymptotic properties of solutions of the elasticity system. *Applications of multiple scaling in mechanics* (Paris, 1986), 188–205, *Rech. Math. Appl.*, 4, Masson, Paris, 1987. (I. Aganović) 89a:35033 35B40 (73C02)
- (with Oleinik, O. A.) Asymptotic behavior in a neighborhood of infinity of solutions with a finite Dirichlet integral of second-order elliptic equations. (Russian. English summary) *Trudy Sem. Petrovsk. No. 12* (1987), 149–163, 245. (Ya. A. Roitberg) 89e:35024 35B40 (35J25)
- (with Egorov, Yuri Vladimirovich) Estimates for the eigenfunctions of elliptic operators with constant coefficients. (Russian. English summary) *Trudy Sem. Petrovsk. No. 12* (1987), 229–237, 246. (B. Hellwig) 89e:35116 35P05 (35J40)
- (with Oleinik, O. A.) Uniqueness of the solutions of boundary value problems in unbounded domains and isolated singular points of the solutions of a system of elasticity theory and of second-order elliptic equations. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 4(256), 189–190. (Jiri Rákosník) 89b:35040 35J55 (35J25, 73C02, 73C35)
- (with Egorov, Yuri Vladimirovich) Estimates for the negative spectrum for the Schrödinger operator. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1(259), 195–196; translation in *Russian Math. Surveys* 43 (1988), no. 1, 239–240. (David Gurarie) 89i:35104 35P20 (35J10, 81F05)
- (with John, Oldrich; Lekveishvili, D. M.; Nečas, Jindřich; Oleinik, O. A.) Solvability of the system of von Kármán equations with nonhomogeneous boundary conditions in nonsmooth domains. (Russian. English summary) *Trudy Sem. Petrovsk. No. 13* (1988), 197–205, 258. (R. Kodnár) 89m:35071 35J60
- (with Oleinik, O. A.) Boundary value problems for a system in elasticity theory in unbounded domains. Korn inequalities. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 5(263), 55–58, 239. (R. Kodnár) 89m:35061 35J25 (73C02)
- (with Egorov, Yuri Vladimirovich) On the estimation of the number of points of the negative spectrum of the Schrödinger operator. (Russian) *Mat. Sb. (N.S.)* 134(176) (1987), no. 4, 556–570, 576; translation in *Math. USSR-Sb.* 62 (1989), no. 2, 551–566. (David Gurarie) 89i:35105 35P20 (35J10, 81F05)
- (with Landis, E. M.) Qualitative properties of the solutions of a second-order nonlinear equation. (Russian) *Mat. Sb. (N.S.)* 135(177) (1988), no. 3, 346–360, 415; translation in *Math. USSR-Sb.* 63 (1989), no. 2, 337–350. (Russell C. Thompson) 89j:35054 35J65 (35J60)
- Kondrat'ev, V. N. (with Artyukhov, V. L.; Shalyto, A. A.) Realization of Boolean functions by arithmetic polynomials. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 4, 138–147; translation in *Automat. Remote Control* 49 (1988), no. 4, part 2, 508–515. (Korolov Gilezan) 89i:94055 94C10 (03G05, 06E30)
- Kondrat'ev, V. V. Compatibility, coordination and optimization problems in active systems. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 5, 3–28. (Summary) 89a:90007 90A05 (90A17, 90C31)
- Kondrat'ev, Yu. G. (with Globa, S. A.) Construction of the Gibbs states of quantum lattice systems. (Russian) *Application of methods of functional analysis in problems of mathematical physics* (Russian), 4–16, i, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Kai Long Ren) 89b:60168 60K35 (82A15)
- Kondrat'eva, A. I. (with Kozlov, N. I.; Krutikova, I. G.; Rusetskii, S. V.) An algorithm for calculating the coefficients of difference schemes for a system of partial differential equations with a small parameter multiplying the derivative. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 177, 16 pp. (Summary) 89a:65132 65M05
- Kondrat'eva, M. V. Description of a set of minimal differential-dimensional polynomials. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 1, 35–39, 103; translation in *Moscow Univ. Math. Bull.* 43 (1988), no. 1, 46–50. (G. Eisenreich) 89d:12006 12H05 (13A15)
- Kondrat'ev, V. A. see Kondrat'ev, V. A.
- Kondratovich, M. V. (with Ermakov, S. M.; Zhiglavskii, A. A.) Comparison of certain procedures for random search for a global extremum. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 29 (1989), no. 2, 163–170, 317. (Summary) 89m:90148 90C31 (65K05)
- Kondyurin, Yu. N. A method for direct statistical modeling of equations in hydrodynamics. (Russian) *Analytic and numerical methods for studying problems in continuum mechanics* (Russian), 75–89, 142, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1987. (Summary) 89j:82040 82A40 (76-08, 76P05, 82-08)
- rao Koneru, S. see Rao Koneru, S.
- Koner, V. V. (with Pergamenschikov, S. M.) Guaranteed estimation of the parameters of unstable dynamical systems. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 11, 130–141; translation in *Automat. Remote Control* 49 (1988), no. 11, part 2, 1495–1504. (Beniamin Goldys) 89h:93195 93E10 (62L12, 62M10)
- Koneva, E. S. Choice of models for real time series. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 6, 3–18; translation in *Automat. Remote Control* 49 (1988), no. 6, part 1, 691–701. (Cy. Terdik) 89j:62126 62M10
- Konforovich, A. G. (with Andrievskaya, A. M.) ★ История развития математики. (Russian) [History of the development of mathematics] Translated from the Ukrainian. "Vishcha Shkola", Kiev, 1988, 95 pp. (J. S. Joel) 89e:01001 01-01
- Kong, De Yong (with Song, Jian; Yu, Jing Yuan) Population system control. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 11–16. (see 89d:00007) 92A15 (92A20, 93C75)
- Kong, Jin Au ★ Electromagnetic wave theory. A Wiley-Interscience Publication. John Wiley & Sons, Inc., New York, 1986, xiv+696 pp. ISBN 0-471-82823-8 (From the preface) 89h:78001 78-02
- Kong, Qing Kai Asymptotic behavior of a class of nonlinear differential equations of  $n$ th order. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 831–838. (Jiaqi Mo) 89c:34091 34E05 (34A34)
- nguen Kong Khoun see Nguen Kong Khoun
- Kongsakorn, Kamika (with Laohakosol, Vichian) Power series solutions of linear differential equations with polynomial coefficients. *Southeast Asian Bull. Math.* 11 (1987), no. 1, 13–17. (James M. D'Archangelo) 89b:34017 34A25 (34A10, 34A30)
- (with Laohakosol, Vichian; Arunbanjerdkul, Rujia) Newton's series, factorial series and partial sums as solutions of linear difference equations. *Bull. Inst. Math. Acad. Sinica* 16 (1988), no. 1, 83–91. (Stanislaw Kus) 89b:39004 39A10 (34A25)
- Konguetsof, L. (with Vougiouklis, Th.; Kessoglidis, M.; Spartalis, St.) On cyclic hypergroups with period. (Russian and Czech summaries) *Acta Univ. Carolin.—Math. Phys.* 28 (1987), no. 1, 3–7. (P. Corsini) 89c:20107 20N99
- (with Vougiouklis, Th.) Constructions d'hyperanneaux à partir d'anneaux. (English, Russian and Czech summaries) [Constructions of hyperringes from rings] *Acta Univ. Carolin.—Math. Phys.* 28 (1987), no. 1, 9–13. (P. Corsini) 89f:16058 16A78 (20N99)
- (with Vougiouklis, Th.)  $P$ -hypergroupes. (Russian and Czech summaries) [ $P$ -hypergroups] *Acta Univ. Carolin.—Math. Phys.* 28 (1987), no. 1, 15–20. (P. Corsini) 89e:20132 20N99
- Konheim, Alan G. (with Hofri, Micha) Padded lists revisited. *SIAM J. Comput.* 16 (1987), no. 6, 1073–1114. (Eberhard Lütde) 89m:68016 68P10 (68Q25)
- Koniczna, Urszula (with Weber, Karl F. E.) Graph theoretic parameters of random subgraphs of the  $n$ -cube. *Graphentheorie und ihre Anwendungen (Stadt Wehlen, 1988)*, 25–28, *Dresdner Reihe Forsch.*, 9, Pädagogische Hochschule Dresden, Dresden, 1988. (Zbigniew Palka) 89b:05099 05C80
- König, Dieter Probabilistic characterization of the inner order of random structures. *Science on form (Sakura, 1985)*, 167–174, *Reidel, Dordrecht-Boston, MA*, 1987. (see 89g:62013) 60D05 (82A42)
- (with Miyazawa, Masakiyo) Relationships and decomposition in the delayed Bernoulli feedback queueing system. *J. Appl. Probab.* 25 (1988), no. 1, 169–183. (Peter Kieseler) 89d:60180 60K25 (90B22)
- König, Fritz see Klein, F., 89b:01022
- König, Heinz On the abstract Hahn-Banach theorem due to Rodé. *Aequationes Math.* 34 (1987), no. 1, 89–95. (Introduction) 89f:46010 46A22 (26B25)
- König, Hermann Spaces with large projection constants. *Séminaire d'Analyse Fonctionnelle* 1984/1985, 31–36, *Publ. Math. Univ. Paris VII*, 26, Univ. Paris VII, Paris, 1986. (C. Franchetti) 89f:46033 46B20
- (with Schütt, C.; Gordon, Yehoram) Dualité des nombres d'entropie. [Duality of entropy numbers] *Séminaire d'Analyse Fonctionnelle* 1984/1985, 95–97, *Publ. Math. Univ. Paris VII*, 26, Univ. Paris VII, Paris, 1986. (K. K. Oberai) 89b:47033 47B10 (47A99)
- Vector-valued multiplier theorems. *Séminaire d'Analyse Fonctionnelle* 1985/1986/1987, 131–140, *Publ. Math. Univ. Paris VII*, 28, Univ. Paris VII, Paris, 1988. (Douglas Kurtz) 89i:42031 42B25 (42B15)
- Konig, Jean-Claude (with Robert, Yves; Trystram, Denis) Optimalité d'une classe d'algorithmes d'ordonnement pour la méthode de Gauss en parallèle. (English summary) [Optimality of a class of scheduling algorithms for parallel Gaussian elimination] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 5, 295–298. (Summary) 89a:65048 65F05 (65W05, 90B35)
- meyer-König, W. see Meyer-König, W.
- König, Wolfgang Spezialisierung und Bildungsanspruch. Zur Geschichte der Technischen Hochschulen im 19. und 20. Jahrhundert. (English summary) [Specialization and claims for education. On the history of technical colleges in the 19th and 20th century] *Ber. Wiss.-Gesch.* 11 (1988), no. 4, 219–225. (Manfred Stern) 89b:01019 01A55 (01A60, 01A73)
- Konik, Dieter (with Engell, Sebastian) Decoupling techniques for decentralized control systems design. *Frequency domain and state space methods for linear systems* (Stockholm, 1985), 461–476, *North-Holland, Amsterdam-New York*, 1986. (Fu En Zhang) 89e:93088 93B50 (93A15)
- de Koninck, J.-M. see De Koninck, J.-M.
- de Koning, W. L. (with Wagenaar, T. J. A.) Stability and stabilizability of chemical reactors modelled with stochastic parameters. *Internat. J. Control* 49 (1989), no. 1, 33–44. (Not in MR) 93C75 (93E15)
- Konishi, Katsunobu (with Maegawa, Kouji; Yoshimura, Toshio; Ishihara, Hirokazu) Multivariable discrete-time model reference adaptive control with input-smoothing property and its application. *Internat. J. Systems Sci.* 19 (1988), no. 5, 761–778. (Not in MR) 93B50 (93C40, 93C55)
- Konishi, Kenichi Dynamical breaking of symmetries in supersymmetric gauge theories. *International Workshop on Superstrings, Cosmology, Composite Structures (College Park, MD, 1987)*, 564–581, *World Sci. Publishing, Singapore*, 1987. (see 89a:81005) 81D20 (81E30)
- (with Magnoli, N.; Panagopoulos, H.) Spontaneous breaking of local supersymmetry by gravitational instantons. *Nuclear Phys. B* 309 (1988), no. 1, 201–219. (C. Gauthier) 89j:83088 83E50 (81G20)
- (with Amati, D.; Meurice, Y.; Rossi, G. C.; Veneziano, G.) Nonperturbative aspects in supersymmetric gauge theories. *Phys. Rep.* 162 (1988), no. 4, 169–248. (Hans D. Dahmen) 89j:81094 81E13 (81E15, 81G20)
- Konisi, Gaku (with Saito, Takeshi; Shigemoto, Kazuyasu; Takahashi, Wataru) Covariant Lagrangian formulation of interacting heterotic strings. *Group theoretical methods in physics (Varna, 1987)*, 537–543, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (Summary) 89j:81193 81E99 (81E30)
- Konkowski, D. A. (with Helliwell, T. M.) Electromagnetic fields in a Taub-NUT-type cosmology. *Phys. Lett. A* 129 (1988), no. 5–6, 305–309. (Jorge A. Pullin) 89k:83043 83C50 (83C25, 83C75)
- Konnik, S. I. (with Danilov, L. V.; Kriger, L. L.) On the design of nonlinear transformers with linear input. (Russian. English summary) *Teoret. Elektrotekh. No. 39* (1985), 47–51, 137. (Not in MR) 94C05
- Konno, Hiroshi Minimum concave cost production system: a further generalization of multi-echelon model. *Math. Programming* 41 (1988), no. 2 (Ser. A), 185–193. (Summary) 89e:90120 90B30
- (with Kuno, Takahito) Best piecewise constant approximation of a function of single variable. *Oper. Res. Lett.* 7 (1988), no. 4, 205–210. (A. M. Galperin) 89b:90158 90C10 (65D15)



- Konno, Hiteshi** A covariant multiloop planar operator in bosonic string theory. *Phys. Lett. B* 212 (1988), no. 2, 165-170. (C. Gauthier) **89i:81117** 81E99 (81E30)
- Konno, Kazuhito** Homogeneous hypersurfaces in Kähler C-spaces with  $b_2 = 1$ . *J. Math. Soc. Japan* 40 (1988), no. 4, 687-703. (Yusuke Sakane) **89j:32041** 32M10 (53C30)
- Konno, Kimiaki** Complex dynamical system for Toda lattice. *J. Phys. Soc. Japan* 57 (1988), no. 11, 3707-3713. (Summary) **89k:58142** 58F08 (35Q20, 58F07, 58F13)
- Konno, N.** (with Shiga, Tokuzo) Stochastic partial differential equations for some measure-valued diffusions. *Probab. Theory Related Fields* 79 (1988), no. 2, 201-225. (Ali Süleyman Üstünel) **89i:60130** 60H15 (60J60)
- Konno, Reiji** Remarks on positive eigenvalues of the Schrödinger-type operator on spherically symmetric Riemannian manifolds. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* 35 (1988), no. 3, 547-573. (Xue-Ping Wang) **89i:35102** 35P05 (35J10, 58G25)
- Konno, Yoshihiko** (with Sugiura, Nariaki) Risk of improved estimators for generalized variance and precision. *Advances in multivariate statistical analysis*, 353-371. *Theory Decis. Lib. Ser. B: Math. Statist. Methods, Reidel, Dordrecht-Boston, MA, 1987.* (Dipak K. Dey) **89b:62110** 62H12
- (with Sugiura, Nariaki) Entropy loss and risk of improved estimators for the generalized variance and precision. *Ann. Inst. Statist. Math.* 40 (1988), no. 2, 329-341. (Ram Shanmugam) **89g:62081** 62H12 (62B10)
- Kono, Akira** (with Ishitoya, Kiminori) Squaring operations in mod 2 cohomology of quotients of compact Lie groups by maximal tori. *Algebraic topology, Barcelona, 1986, 192-206. Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (M. Mimura) **89c:57054** 57T15
- (with Harada, Masanao) Cohomology mod  $p$  of the 4-connected cover of the classifying space of simple Lie groups. *Homotopy theory and related topics (Kyoto, 1984)*, 109-122. *Adv. Stud. Pure Math.*, 9, North-Holland, Amsterdam-New York, 1987. (A. Dold) **89c:55013** 55R35 (55R40)
- Kono, Susumu** (with Tamamura, Akie) On the  $KO$ -cohomologies of the stunted lens spaces. *Math. J. Okayama Univ.* 29 (1987), 233-244 (1988). (Norredine Mohammed) **89g:55067** 55N15
- (with Tamamura, Akie)  $J$ -groups of the suspensions of the stunted lens spaces mod  $p$ . *Osaka J. Math.* 24 (1987), no. 3, 481-498. (Lionel Schwartz) **89d:55046** 55S25 (19L20, 19L64)
- Konolige, Kurt** ★ A deduction model of belief. *Research Notes in Artificial Intelligence. Pitman Publishing, Ltd., London-Boston, MA; Morgan Kaufmann, Palo Alto, CA, 1986.* vi+165 pp. ISBN 0-273-08764-9 (Anita Wasilewska) **89i:03050** 03B60 (68T15)
- (with Geissler, Christophe) A resolution method for quantified modal logics of knowledge and belief. *Theoretical aspects of reasoning about knowledge (Monterey, Calif., 1986)*, 309-324. *Morgan Kaufmann, Palo Alto, CA, 1986.* (Summary) **89a:03033** 03B45 (03B35)
- On the relation between default and autopoietic logic. *Artificial Intelligence* 35 (1988), no. 3, 343-382. (Guang Kun Hou) **89b:03045** 03B60 (68T01)
- Konoonenko, A. F.** (with Bunakov, A. E.; Chistyakov, Yu. E.) Hierarchical differential (dynamic) games and their applications. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 140-153, "Nauka", Moscow, 1987. (Boleslaw Totwinski) **89i:90214** 90D20 (90D25, 90D45, 93A13)
- (with Chumakov, V. V.) Decision making in a two-level hierarchical control system in the presence of exogenous noncontrollable factors. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 1, 92-101; translation in *Avtomat. Remote Control* 49 (1988), no. 1, part 2, 73-80. (B. L. Ovsievich) **89j:90159** 90B50 (90D35, 93A13)
- Konoonenko, G. N.** (with Fomicheva, T. G.) A numerical algorithm for solving problems of geochemical hydrodynamics. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 9(43) (1988), 16-19, 85. (Summary) **89h:76037** 76S05 (76-08, 76T05, 86A05)
- Konoonenko, N. I.** Numerical integration of a system of differential equations of the bending of a toroidal shell. (Russian) *Methods for solving nonlinear problems, and data processing (Russian)*, 49-51, 107, Dnepropetrovsk Gos. Univ., Dnepropetrovsk, 1986. (See **89f:00011**) 73L15 (73-08)
- Kononykhin, G. A.** (with Gorr, G. V.) On the dynamic impossibility of Grioli regular precession in the motion of a rigid body suspended by a rod. *J. Appl. Math. Mech.* 51 (1987), no. 3, 289-291 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 3, 371-374 (Russian). (Summary) **89j:70008** 70E15 (70E05)
- Konopelchenko, B. G.** Group-theoretical and Hamiltonian structures of the integrable nonlinear equations in  $1+1$  and  $2+1$  dimensions. *Group theoretical methods in physics, Vol. 1-3 (Zvenigorod, 1982)*, 415-428. *Harwood Academic Publ., Chur, 1985.* (Introduction) **89m:58095** 58F07 (35Q20, 58F19, 58G37)
- A nonnormal recursion operator and nonlinear integrable equations. (Russian) *Group-theoretic methods in physics, Vol. 1 (Russian) (Järnala, 1985)*, 360-363, "Nauka", Moscow, 1986. (See **89d:81001**) 58F07 (35Q20, 58G35)
- Nonlocal formulation of the inverse scattering method. (Russian) *Group-theoretic methods in physics, Vol. 1 (Russian) (Järnala, 1985)*, 363-368, "Nauka", Moscow, 1986. (See **89d:81001**) 58G35 (35R30, 58F07)
- On spectral problems and compatibility conditions in multidimensions. *J. Phys. A* 20 (1987), no. 16, L1057-L1062. (C. Tomei) **89a:35224** 35R30 (35Q20, 58F07, 58F19)
- The two-dimensional second-order differential spectral problem: compatibility conditions, general BTs and integrable equations. *Inverse Problems* 4 (1988), no. 1, 151-163. (P. M. Santini) **89d:58055** 58F07 (35Q20, 58G37)
- Recursion and group structures of the integrable equations in  $1+1$  and  $1+2$  dimensions. Biloccal approach. *Inverse Problems* 4 (1988), no. 3, 785-814. (C. Rogers) **89i:58050** 58F07 (35Q20, 58G35)
- On generalisation of the Bäcklund-Calogero transformations for integrable equations. *J. Phys. A* 21 (1988), no. 15, L743-L747. (From the text) **89k:58124** 58F07 (35Q20, 58F37, 58G37)
- Konoplich, R. V.** Calculation of quantum corrections to nontrivial classical solutions by means of the zeta function. (Russian. English summary) *Theoret. Mat. Fiz.* 73 (1987), no. 3, 379-392. (Andreas Nestke) **89i:81080** 81E15 (58G25, 81C35)
- Konotop, V. V.** (with Bass, F. G.; Kivshar, Yu. S.; Sinitsyn, Yu. A.) Dynamics of solitons under random perturbations. *Phys. Rep.* 157 (1988), no. 2, 63-181. (F. Pempinelli) **89a:35231** 35R60 (00A69, 35Q20, 76B25)
- Konovalov, A. P.** Nonlinear differential games of evasion with delay. (Russian. English summary) *Kibernetika (Kiev)* 1987, no. 3, 109-113, 134. (N. N. Petrov) **89c:90239** 90D26 (34K05, 49A45)
- Kor'shin, O. V.** (with Rudak, E. A.) Solution of the Schrödinger equation for a potential with a fuzzy boundary for  $f \neq 0$ . (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1987, no. 5, 56-60, 126. (Not in MR) 81G45 (81C05)
- Kor'shin, V. N.** (with Shapiro, G. I.) Evolution of two-dimensional Rossby solitons, taking into account the effects of finite amplitude. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 6, 1461-1465. (Not in MR) 86A05 (35Q20)
- Konshtein, S. E.** (with Vasil'ev, M. A.) Massless representations and admissibility condition for higher spin superalgebras. *Nuclear Phys. B* 312 (1989), no. 2, 402-418. (Summary) **89m:17013** 17B10 (17A70, 81D25)
- Konsowa, Mokhtar** (with Berman, Kenneth A.) A counterexample to the conjecture of Woess on simple random walks on trees. *Proc. Amer. Math. Soc.* 105 (1989), no. 2, 443-449. (Wolfgang Woess) **89g:60211** 60J15 (05C05)
- Konstantinov, A. Yu.** Classes of smooth operators in scattering theory. (Russian) *Application of methods of functional analysis in problems of mathematical physics (Russian)*, 37-46, i. *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev, 1987.* (M. Demuth) **89k:47028** 47A99 (47A40, 81C99)
- Konstantinov, G. N.** Sufficient conditions for optimality involving the Krotov vector function. I. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 8, 63-72. (M. A. Yagubov) **89a:49020** 49B10 (93B40)
- Sufficient conditions for optimality with the Krotov vector function. II. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 9, 37-43. (M. A. Yagubov) **89c:49036** 49B40 (90D25)
- (with Gurman, V. I.; Baturin, V. A.; Moskalenko, A. I.; Baginov, I. P.; Bobryshev, A. G.; Butin, A. A.; Danilina, E. V.; Derenko, N. V.; Dushin, K. B.; Dykhta, V. A.; Kolokol'nikova, G. A.; Mel'nik, V. V.; Nikiforova, L. N.; Ovsyannikova, N. A.; Rasina, I. V.; Rozenkaukh, D. M.; Urbanovich, D. E.; Fedorova, E. Yu.) ★ Методы улучшения в вычислительном эксперименте. (Russian) [Methods of improving [control] in numerical experiments] "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. 184 pp. ISBN 5-02-028573-0 (Asen L. Dontchev) **89b:65099** 65Kxx (49Dxx, 93B40)
- Estimates for the solutions of controllable systems, and the realization of the extension principle for problems with terminal constraints. (Russian) *Problems in the qualitative theory of differential equations (Russian) (Jrkutsk, 1986)*, 228-234, 286, "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (See **89j:34002**) 90C10 (49B10)
- Sufficient conditions for optimality of a minimax control problem of an ensemble of trajectories. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 2, 287-290; translation in *Soviet Math. Dokl.* 36 (1988), no. 3, 460-463. (From the text) **89m:49041** 49B40 (49E10)
- Konstantinov, M. Yu.** (with Gurchil, A. A.; Meleshko, V. V.) Interaction of coaxial vortex rings in an ideal fluid. *Fluid Dynamics* 23 (1988), no. 2, 224-229; translated from *Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* 1988, no. 2, 78-84 (Russian). (Touvia Miloh) **89k:76026** 76C05
- Konstantinov, Mikhail M.** (with Petkov, Petko Khr.; Khristov, Nikolai D.) On the numerical properties of the Schur approach to solving the matrix Riccati equation. (Bulgarian summary) *Mathematics and mathematical education (Bulgarian) (Sunny Beach (Slivnitsa) Bryag, 1987)*, 522-525, *Bulgar. Acad. Sci., Sofia, 1987.* (Summary) **89c:65048** 65F99 (15A06, 93B25)
- (with Petkov, Petko Khr.; Khristov, Nikolai D.) The interactive system SYSLAB for the analysis and design of linear multidimensional systems. (Bulgarian. English and Russian summaries) *Avtomat. Izhisl. Tekhn. Avtomat. Sistemi* 1988, no. 11, 2, 3, 4, 25-31. (Not in MR) 93C35 (93C05)
- Konstantinova, A. F.** (with Grechushnikov, B. N.) Crystal optics of absorbing and gyrotropic media. Crystal symmetries. *Comput. Math. Appl.* 16 (1988), no. 5-8, 637-655. (See **89j:00029**) 82A60 (78A99)
- Konstantinopoulos, Panagiotis** (with Walrand, Jean) On the weak convergence of stochastic processes with embedded point processes. *Adv. in Appl. Probab.* 20 (1988), no. 2, 473-475. (Masakiyo Miyazawa) **89g:60133** 60G10 (60G55, 60K25)
- Konstein, S. E.** see **Konshtein, S. E.**
- Kontor, K. N.** (with Maksimov, L. A.; Polishchuk, I. Ya.) A group-theoretic approach in the method of static concentration waves. (Russian) *Group-theoretic methods in physics, Vol. 1 (Russian) (Järnala, 1985)*, 598-603, "Nauka", Moscow, 1986. (See **89d:81001**) 35A30
- Kontsevich, M. L.** The Virasoro algebra and Teichmüller spaces. (Russian) *Funktsional. Anal. i Prilozhen.* 21 (1987), no. 2, 78-79. (Zi-Xin Hou) **89a:17022** 17B65 (32G15, 81E13, 81G20)
- (with Kelbert, M. Ya.; Rybko, A. N.) Jackson networks on countable graphs. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 2, 379-382; translation in *Theory Probab. Appl.* 33 (1988), no. 2, 358-361. (Walter Warmuth) **89m:60235** 60K25 (90B15)
- Kónya, I.** (with Rózsa, P.; Szabados, T.) Applications of orthogonal polynomials for improving the accuracy of the finite element method. *Numerical methods (Miskolc, 1986)*, 395-406, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (A. O. Garder) **89c:65121** 65N30 (73K10, 73K25)
- Konyav, S. I.** (with Lebedev, V. I.) ★ Численное исследование эффективности комбинированных итерационных методов. (Russian) [Numerical investigation of the efficiency of combined iterative methods] Препринт [Preprint], 136. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow, 1986.* 40 pp. (J. Segethová) **89b:65082** 65F10
- Konyav, Yu. A.** (with Martynenko, Yu. G.) On the stability of the stationary rotations of a symmetric rigid body in an alternating magnetic field. *J. Appl. Math. Mech.* 51 (1987), no. 3, 292-297 (1988); translated from *Prikl. Mat. Mekh.* 51 (1987), no. 3, 375-381 (Russian). (E. Leimanis) **89m:70008** 70E15 (70K20)
- Konyagin, S. V.** Sets of existence of elements of best approximation. (Russian) *Theory of functions and approximations, Part 2 (Russian) (Saratov, 1984)*, 136-139, *Saratov. Gos. Univ., Saratov, 1986.* (See **89j:00036**) 41A65
- (with Gulevich, N. M.; Rakhmankulov, R. V.) Fixed points and the differentiability of the norm. (Russian) *Mat. Sb. (N.S.)* 136(178) (1988), no. 4, 468-477, 590. (George Isaac) **89k:47090** 47H10 (46B20, 47H09)
- A remark on renormings of nonreflexive spaces and the existence of a Chebyshev center. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 2, 81-82; translation in *Moscow Univ. Math. Bull.* 43 (1988), no. 2, 55-56. (Joan Serb) **89g:46033** 46B20 (41A65)
- Konyayev, Yu. A.** see **Konyav, Yu. A.**
- Konyshayev, Zh. E.** On the well-posedness of an initial-boundary value problem of magnetohydrodynamics with degenerating density. (Russian. Kazakh summary) *Izv. Akad. Nauk*

- Kazakh. SSR Ser. Fiz.-Mat. 1988, no. 1, 63-67. (Summary) **89d:76036** 76W05
- Well-posedness of an initial-boundary value problem for a model system of equations of a multicomponent mixture with nonnegative density. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* 1988, no. 3, 28-32. (Summary) **89j:35125** 35Q99 (76T05)
- Konyshcheva, V. M. (with Shil'man, S. V.) Estimates for the rate of convergence of random descent algorithms. (Russian) *Dynamics of systems* (Russian), 40-52, 196-197, Gorkov. Gos. Univ., Gorki, 1986. (Jin De Wang) **89g:90196** 90C30 (65K05)
- Konyukh, V. S. On the solvable subgroups of the group  $GL(q, P)$ . (Russian. English summary) *Vestis Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1987, no. 3, 108-110, 127. (E. I. Khukhro) **89a:20056** 20H20
- Konyukhova, N. B. (with Badalyan, A. M.; Pariiskii, B. S.) The spectrum of states in Yang-Mills quantum mechanics. *Soviet J. Nuclear Phys.* 45 (1987), no. 6, 1094-1101; translated from *Yadernaya Fiz.* 46 (1987), no. 7, 1768-1779 (Russian). (Summary) **89e:81048** 81C99
- Konyukhova, T. A. (with Rotar', V. I.) Solutions that are optimal in probability of a problem on a linear stochastic controller. (Russian) *Probabilistic problems in discrete mathematics* (Russian), 131-135, Mosk. Inst. Elektron. Mashinostroeniya, Moscow, 1987. (see **89j:60003**) 49A60 (93E20)
- Konyukov, M. V. Dynamic models of relaxed rich clusters of galaxies. (Russian) *Trudy Fiz. Inst. Lebedev.* 189 (1988), 64-112, 245. (Summary) **89i:85001** 85A05
- Galactic wind and the emission of gas from clusters of galaxies. (Russian) *Trudy Fiz. Inst. Lebedev.* 189 (1988), 113-142, 245. (Summary) **89j:85001** 85A05
- Koo, An-na see Gu, An Na
- ley Koo, E. see Ley Koo, E.
- Koo, Hyung Keun (with Armendariz, Efraim P.; Park, Jae Keol) Isomorphic Ore extensions. *Comm. Algebra* 15 (1987), no. 12, 2633-2652. (P. Wauters) **89c:16005** 16A05
- (with Armendariz, Efraim P.; Park, Jae Keol) Jacobson rings with a polynomial identity. *Comm. Algebra* 16 (1988), no. 4, 651-665. (Søren Jøndrup) **89a:16023** 16A38 (16A20, 16A27)
- Koo, Ja Kyung Arithmetic of integral even unimodular quadratic forms of 24 variables. *J. Korean Math. Soc.* 25 (1988), no. 1, 25-35. (J. S. Hsia) **89f:11055** 11E12 (11D09, 11E36, 11P21)
- see also *Algebra and topology* 1986, **89c:00030**
- Koo, Ki-Shik Uniformly almost recurrence in dynamical systems. *J. Korean Math. Soc.* 25 (1988), no. 2, 325-332. (Run Sheng Yang) **89k:54097** 54H20 (34C35, 58F20)
- Koo, Richard (with Toug, Sam) Effects of message loss on the termination of distributed protocols. *Inform. Process. Lett.* 27 (1988), no. 4, 181-188. (Not in MR) **68M10**
- Koohara, Akira Function-theoretic properties of solutions of semilinear  $\bar{\partial}$ -equations: similarity principle. *Osaka J. Math.* 24 (1987), no. 4, 817-852. (Giuseppe Tomassini) **89d:32043** 32F20 (35F20, 35N15)
- Kooli, Bert Jan (with Quak, Dirk) Three-dimensional scattering of impulsive acoustic waves by a semi-infinite crack in the plane interface of a half-space and a layer. *J. Math. Phys.* 29 (1988), no. 7, 1712-1721. (D. G. Natroshvili) **89f:73023** 73D25
- Koonin, S. E. (with Piekarewicz, J.; Zirnbauer, M. R.) SU(2) lattice gauge theory in the electric-field representation. *Internat. J. Modern Phys. A* 3 (1988), no. 2, 409-433. (Summary) **89b:81168** 81E25 (81G05)
- Koop, Gerald J. Multiple shift workforce lower bounds. *Management Sci.* 34 (1988), no. 10, 1221-1230. (Not in MR) **90B35**
- Koopman, James (with Jacques, John A.; Simon, Carl P.; Sattenspiel, Lisa; Perry, Timothy) Modeling and analyzing HIV transmission: the effect of contact patterns. *Math. Biosci.* 92 (1988), no. 2, 119-199. (Summary) **89j:92054** 92A15 (58F40)
- Koornwinder, T. H. A group theoretic interpretation of Wilson polynomials. *Complex analysis and applications '85* (Varna, 1985), 335-355, Bulg. Acad. Sci., Sofia, 1986. (Introduction) **89h:33019** 33A75 (22E30)
- Kopacek, P. (with Peschel, M.; Mende, W.; Breiteneker, F.) Adaptive control and growth processes. *Modelling and adaptive control* (Sopron, 1986), 281-296, *Lecture Notes in Control and Inform. Sci.*, 105, Springer, Berlin-New York, 1988. (see **89c:93002**) 93C40 (92A17, 93A10)
- Kopal, Zdeněk The effects of mutual irradiation on the observed radial velocity of the components of close binary systems. *Astrophys. and Space Sci.* 144 (1988), no. 1-2, 557-586. (Summary) **89f:85004** 85A30
- Kopanskii, A. Ya. Representation of dispersion dynamical and semidynamical systems on a line by means of S-solutions of differential inclusions. (Russian) *Mat. Issled.* No. 99 *Dinam. Sistemy Uravn. Mat. Fiz.* (1988), 99-110, 172. (L. Janos) **89e:54084** 54H20
- (with Bronshtein, I. U.) Chain recurrence in dynamical systems without uniqueness. *Nonlinear Anal.* 12 (1988), no. 2, 147-154. (From the text) **89j:58054** 58F08 (54H20, 58F09)
- Kopczyński, Wojciech A fluid of multidimensional objects. *Phys. Rev. D* (3) 36 (1987), no. 12, 3582-3588. (Ian M. Anderson) **89e:83043** 83C55 (49H05, 58E30)
- (with McCrea, J. Dermott; Hehl, Friedrich W.) The Weyl group and its currents. *Phys. Lett. A* 128 (1988), no. 6-7, 313-317. (H. S. Green) **89f:81081** 81D15 (58E30, 81C40)
- Kopeć, Sławomir Some properties of the method of continued fractions. *Phys. Scripta* 38 (1988), no. 6, 777-781. (Summary) **89j:81236** 81F05
- Kopeček, N. (with Larcher, G.; Tichy, Robert F.; Turnwald, G.) On the discrepancy of sequences associated with the sum-of-digits function. (French summary) *Ann. Inst. Fourier (Grenoble)* 37 (1987), no. 3, 1-17. (H. G. Meijer) **89c:11119** 11K38
- Kopeikin, S. M. Celestial coordinate reference systems in curved space-time. *Celestial Mech.* 44 (1988/89), no. 1-2, 87-115. (A. H. Taub) **89m:83029** 83C25 (83C10)
- (with Brumberg, V. A.) Relativistic equations of motion of the Earth's satellite in a geocentric frame of reference. (Russian. English summary) *Kinemat. Fiz. Nebesn. Tel* 5 (1989), no. 1, 3-8. (Not in MR) **70M05** (70F15)
- Kopeikin, S. V. (with Kurochkin, E. P.; Muminov, N. A.) ★ Адаптивные методы обработки измерительной информации. (Russian) [Adaptive methods for processing of measuring information] "Fan", Tashkent, 1986. 204 pp. (From the introduction) **89c:94018** 94A15 (93C40, 93E12, 93E35)
- Kopelko, V. I. Unitary and orthogonal groups over rings with involution. (Russian) *Algebra and discrete mathematics* (Russian), 3-14, i, Kalmytsk. Gos. Univ., Elista, 1985. (Zhi Jie Chen) **89k:20063** 20G35 (11E57, 19B14)
- Kopejkin, S. M. see Kopeikin, S. M.
- Kopell, N. (with Ermentrout, G. B.) Coupled oscillators and the design of central pattern generators. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* 90 (1988), no. 1-2, 87-109. (Summary) **89m:92024** 92A09 (58F40)
- Kopernikus, Nikolaus see Copernicus, Nicolaus
- Kopets, M. M. Optimal control of a linear system with delay in the control in a Hilbert space. (Russian) *Ukrain. Mat. Zh.* 39 (1987), no. 5, 652-655, 680. (Józef Kalinowski) **89a:34087** 34K35 (34K30, 49B27)
- Synthesis of a terminal control in the case of a linear infinite-dimensional system with constant delay in the control. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 3, 32-36, 86; translation in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 3, 44-48. (Summary) **89d:93044** 93B50 (34K35, 93C05, 93C25)
- Kopetzky, H. G. (with Schnitzer, F. J.) A geometrical approach to approximations by continued fractions. *J. Austral. Math. Soc. Ser. A* 43 (1987), no. 2, 176-186. (Summary) **89b:11060** 11J70
- Kopf, Roland (with Ruhe, G.) A computational study of the weighted independent set problem for general graphs. *Found. Control Engrg.* 12 (1987), no. 4, 167-180 (1988). (Dieter Kratsch) **89f:05102** 05C35 (68R10)
- Koplovich, L. E. On signals with a minimum indeterminacy function for simultaneous determination of the range and velocity of an object. *Soviet J. Comm. Tech. Electron.* 32 (1987), no. 12, 120-122 (1988); translated from *Radiotekhn. i Elektron.* 32 (1987), no. 7, 1545-1547 (Russian). (Not in MR) **94A12**
- Koplatadze, R. G. Integral conditions for the oscillation of the solutions of  $n$ th order differential inequalities and equations with delay. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* 22 (1987), 110-134, 235. (Pavel Drábek) **89c:34113** 34K10 (34A40)
- Koplik, J. (with Redner, S.; Wilkinson, David John) Transport and dispersion in random networks with percolation disorder. *Phys. Rev. A* (3) 37 (1988), no. 7, 2619-2636. (Summary) **89b:82131** 82A70 (82A43, 90B15, 92A09)
- Kopp, Clemens Die Fallaciae breves (ad modum Oxoniae)—ein Werk Walter Burleys? [The Fallaciae breves (ad modum Oxoniae)—a work of Walter Burley?] *Aristotelisches Erbe im arabisch-lateinischen Mittelalter*, 119-124, *Miscellanea Mediaevalia*, 18, de Gruyter, Berlin-New York, 1986. (see **89i:01015**) 01A35
- Kopp, P. Ekkehard (with Cutland, Nigel J.; Kessler, Christoph; Ross, David Andrew) On Cauchy's notion of infinitesimal. *British J. Philos. Sci.* 39 (1988), no. 3, 375-378. (Andreas Blass) **89k:03085** 03H05 (01A55, 01A60, 26E35)
- Koppar, S. S. (with Patel, L. K.) On Kerr-Schild Einstein-Maxwell fields. *Acta Phys. Polon. B* 19 (1988), no. 8, 639-648. (R. N. Tiwari) **89m:83019** 83C15
- (with Patel, L. K.) On the Kerr-Newman metric in cosmological background. *J. Math. Phys.* 29 (1988), no. 1, 182-185. (Niky Kamran) **89a:83018** 83C15
- (with Patel, L. K.) Rotating Bianchi type II, VIII and IX universes with an electromagnetic field. *J. Math. Phys. Sci.* 22 (1988), no. 5, 629-639. (Ilija Lukačević) **89j:83024** 83C20 (83C50, 83C55)
- Koppel, Moshe Complexity, depth, and sophistication. *Complex Systems* 1 (1987), no. 6, 1087-1091. (Summary) **89c:68037** 68Q15
- Koppen, M. G. M. (with Verhelst, N. D.) The exact runs test and some large sample approximations. *British J. Math. Statist. Psych.* 39 (1986), no. 2, 168-182. (Title) **89h:62081** 62G10 (62P15)
- Kopper, Christoph On the Borel summability of planar perturbation series: transition to Minkowski space. *Comm. Math. Phys.* 116 (1988), no. 1, 57-72. (B. Geyer) **89d:81056** 81E08 (40G10)
- Kopperman, Ralph All topologies come from generalized metrics. *Amer. Math. Monthly* 95 (1988), no. 2, 89-97. (R. M. Stephenson, Jr.) **89d:54017** 54E35 (54D10)
- (with Dow, A.; Henriksen, M.; Vermeer, J.) The space of minimal prime ideals of  $C(X)$  need not be basically disconnected. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 317-320. (W. A. Feldman) **89i:54024** 54C40 (06F25)
- Koppinen, Markku (with Katajainen, Jyrki) Constructing Delaunay triangulations by merging buckets in quadtree order. *Fund. Inform.* 11 (1988), no. 3, 275-288. (Ivan Stojmenović) **89d:68067** 68Q25 (52-04, 68U05)
- Kopliwa, Jiří Drawing conclusions from fuzzy data and its applications to scientific-engineering calculations. (Czech) *Knižnice Odborn. Věd. Spisů Vysoké. Učeni. Tech. v Brně A* No. 35 (1987), 39-51. (Not in MR) **03E72**
- Kopsky, V. The use of subdirect and multiple subdirect products or sums in crystallography. *Czechoslovak J. Phys. B* 38 (1988), no. 9, 945-967. (Sheila Oates-Williams) **89h:20070** 20H15 (20E34, 82A60)
- Koptsil, V. A. (with Fedoseeva, I. L.; Kuzhukeev, Zh. N. M.) Eight-color space  $P$ -symmetry groups (programmed derivation). *Group theoretical methods in physics*, Vol. 1-3 (Zvenigorod, 1982), 715-723, *Harwood Academic Publ., Chur*, 1985. (R. L. E. Schwarzenberger) **89m:20056** 20H15 (82A60)
- (with Talis, A. L.) Super-Fedorov symmetry of molecular-modulated crystals. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (*Jurmala*, 1985), 527-548, "Nauka", Moscow, 1986. (see **89d:81001**) 82A60 (20H15)
- (with Ryabchikov, S. A.) An expanded elementary nucleus-contracted Brillouin zone model in an oscillation problem of crystal physics in an approximation of continuum mechanics. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (*Jurmala*, 1985), 630-642, "Nauka", Moscow, 1986. (see **89d:81001**) 82A60
- (with Chechin, G. M.) Color symmetry and representations of space groups in the theory of phase transitions. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (*Jurmala*, 1985), 695-710, "Nauka", Moscow, 1986. (see **89d:81001**) 82A25 (20C35, 20H15)
- Phase transitions and the symmetry of spatially modulated crystal media. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (*Jurmala*, 1985), 710-714, "Nauka", Moscow, 1986. (see **89d:81001**) 82A60
- (with Tyukhtin, V. S.; Urmantsev, Yu. A.; Larin, Yu. S.; Dalin, V. Ya.; Sharapov, I. P.; Maikov, A. V.; Zamorzaev, A. M.; Didyk, Yu. K.; Petukhov, S. V.; Artem'ev, Yu. I.) ★ Система. Симметрия. Гармония. [System. Symmetry. Harmony] "Mysl'", Moscow, 1988. 318 pp. ISBN 5-244-00190-6 (V. Ya. Kreinovich) **89f:00045** 00A69 (00A25, 20H15, 92A05, 93A05)
- Kopvillem, U. Kh. The set-theoretic structure of synergetics. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jurmala*, 1985), 371-375, "Nauka", Moscow, 1986. (see **89d:81002**) 92A05 (03A05, 81K05, 92A40)



- Dynamical Lie algebras and their physical realizations. (Russian) *Group-theoretic methods in fundamental and applied physics* (Russian) (Vladivostok, 1986), 5–25, "Nauka", Moscow, 1988. (see 89b:81005) 22E70 (81C40)
- see also *Group-theoretic methods in fundamental and applied physics*, 89b:81005
- Kopytskii, T. I.** (with Mekhtiev, A. A.; Pashaev, R. T.) A method for the correction of remainders. (Russian) *Discrete mathematics and computer software* (Russian), 22–27, *Azerbaidzhan Gos. Univ., Baku*, 1986. (see 89b:00011) 93E12
- (with Mustafin, A. I.; Sergeenkov, E. V.) Choice of parameter for a type of ridge estimate. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 8, 74–82; translation in *Avtomat. Remote Control* 49 (1988), no. 8, part 1, 1017–1023. (Not in MR) 93B30
- Kopytya, N. P.** (with Makarov, Vladimir Leonidovich; Burkovskaya, V. L.) An estimate for the accuracy of the method of nets for a problem of the optimal control of elliptic systems. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 61 (1987), 12–19, 129. (Summary) 89b:65298 65N99 (65K10)
- (with Sakhtaganova, A. T.) Convergence of the method of lines for a quasilinear parabolic equation with delay. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 62 (1987), 20–26, 130. (Summary) 89b:65219 65M20
- Kopytin, S. F.** (with Dobris, G. V.) Mutually correlated properties of sequences that can be obtained in multichannel pseudorandom number generators. (Russian) *Probabilistic methods and cybernetics*, No. 22 (Russian), 51–60, *Kazan. Gos. Univ., Kazan'*, 1987. (P. Neumann) 89b:65017 65C10 (11K45, 94A40)
- Korach, E.** (with Moran, Shlomo; Zaks, S.) The optimality of distributive constructions of minimum weight and degree restricted spanning trees in a complete network of processors. *SIAM J. Comput.* 16 (1987), no. 2, 231–236. (Summary) 89b:68012 68M10 (05C05, 68Q20, 68R10, 90B10)
- Koranne, P. S.** (with Tiwari, A. K.) The delta distribution and the change of variable. *Math. Student* 47 (1979), no. 2–4, 193–196 (1985). (W. Kees) 89b:46058 46F10
- Koranyi, A.** (with Picardello, Massimo A.; Taibleson, Mitchell H.) Hardy spaces on nonhomogeneous trees. With an appendix by Picardello and Wolfgang Woess. *Symposia Mathematica, Vol. XXIX (Cortona, 1984)*, 205–265, *Sympos. Math.*, 29, Academic Press, New York-London, 1987. (J. A. Chao) 89b:60162 60C46 (22E35, 42B30)
- (with Reimann, H. M.) The complex cross ratio on the Heisenberg group. *Enseign. Math.* (2) 33 (1987), no. 3–4, 291–300. (Dragomir Ž. Djoković) 89d:57057 57S25 (22E15, 22E25)
- Korbak, József** Note on Stiefel-Whitney classes of flag manifolds. Proceedings of the Winter School on Geometry and Physics (Srní, 1987). *Rend. Circ. Mat. Palermo (2) Suppl.* No. 16 (1987), 109–111. (Samuel A. Iori) 89b:57053 57R20 (55R10, 55R40)
- (with Koschorke, Ulrich) The rank of vector fields on Grassmannian manifolds. Proceedings of the Winter School on Geometry and Physics (Srní, 1987). *Rend. Circ. Mat. Palermo (2) Suppl.* No. 16 (1987), 113–117. (R. E. Stong) 89d:57037 57R25
- Korbicz, József** (with Zgurovskii, M. Z.; Novikov, A. N.) Identification of parameters of stochastic filtering processes. (Russian) *Adapt. Sistemy Avtomat. Upravleniya* No. 16 (1988), 3–12, i. (Not in MR) 93E12 (93E11)
- (with Zgurovskii, M. Z.; Novikov, A. N.) Suboptimal sensors location in the state estimation problem for stochastic nonlinear distributed parameter systems. *Internat. J. Systems Sci.* 19 (1988), no. 9, 1871–1882. (Not in MR) 93E10 (93C20)
- Korchagin, A. B.** Isotopy classification of plane seventh degree curves with the only singular point  $Z_{15}$ . *Topology and geometry—Rohlin Seminar*, 407–426, *Lecture Notes in Math.*, 1346, Springer, Berlin-New York, 1988. (Robert Silhol) 89b:14041 14G30 (14H99, 57R52, 58C27)
- Korchanov, S. V.** Algorithms, optimal in classes of grid products, for reconstruction of a repeated functional. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* 1986, no. 4, 25–30, 57. (Summary) 89b:65029 65D15
- Korchanov, V. M.** (with Veremeli, E. I.) Multi-objective stabilization of dynamical systems of a certain class. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 9, 126–138; translation in *Avtomat. Remote Control* 49 (1988), no. 9, part 2, 1210–1219. (Mihail Voicu) 89b:93070 93D15 (93E15)
- Korchmaros, Gabor** (with Biliotti, Mauro) Hyperovals with a transitive collineation group. *Geom. Dedicata* 24 (1987), no. 3, 269–281. (T. G. Ostrom) 89a:51024 51E20 (20B25)
- (with Saeli, Donato) Commutative loops of exponent two and involutorial 3-nets with identity. *Geom. Dedicata* 28 (1988), no. 3, 259–276. (Péter T. Nagy) 89j:20075 20N05 (51A10, 51A25)
- Korducki, Wojciech** Convex sets in digraphs. *Discuss. Math.* 8 (1986), 13–16 (1987). (Daniel Turzik) 89b:05092 05C20
- Koren, Barry** (with Spekrijse, Stefan) Solution of the steady Euler equations by a multigrid method. *Multigrid methods* (Copper Mountain, CO, 1987), 323–336, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (Shijun Luo) 89b:76019 76-08 (76G15, 76H05, 76N15)
- (with Hemker, P. W.) Multigrid, defect correction and upwind schemes for the steady Navier-Stokes equations. *Numerical methods for fluid dynamics, III* (Oxford, 1988), 153–170, *Inst. Math. Appl. Conf. Ser. New Ser.*, 17, Oxford Univ. Press, New York, 1988. (see 89j:76004) 76-08 (65N99, 76D05)
- Upwind schemes for the Navier-Stokes equations. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 300–309, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see 89j:35007) 76-08 (76D05)
- Koren, I.** (with Wimer, Shmuel; Cederbaum, Israel) Floorplans, planar graphs, and layouts. *IEEE Trans. Circuits and Systems* 35 (1988), no. 3, 267–278. (Summary) 89b:68180 68R10 (05C35)
- (with Erdős, Paul; Moran, Shlomo; Silberman, G. M.; Zaks, S.) Minimum-diameter cyclic arrangements in mapping data-flow graphs onto VLSI arrays. *Math. Systems Theory* 21 (1988), no. 2, 85–98. (Ondrej Šikora) 89b:68077 68Q35 (68R10)
- Korenberg, M. J.** (with Billings, S. A.; Liu, Yan Ping; McIlroy, P. J.) Orthogonal parameter estimation algorithm for nonlinear stochastic systems. *Internat. J. Control* 48 (1988), no. 1, 193–210. (Summary) 89b:93184 93E10 (93C10, 93E12)
- (with Billings, S. A.; Chen, Sheng?) Identification of nonlinear output-affine systems using an orthogonal least-squares algorithm. *Internat. J. Systems Sci.* 19 (1988), no. 8, 1559–1568. (Not in MR) 93B30 (93C55)
- Korenblit, I. Ya.** (with Shender, E. F.) Magnetic properties of frustrated antiferromagnets. Phase transition into spin glass. *Soviet Phys. JETP* 66 (1987), no. 3, 597–604 (1988); translated from *Zh. Eksper. Teoret. Fiz.* 93 (1987), no. 3, 1060–1073 (Russian). (Muthiah Daniel) 89f:82020 82A25 (82A57, 82A68)
- Korenblum, Boris** Une forme plus précise d'un théorème de Kolmogorov. (English summary) [A sharper form of a theorem of Kolmogorov] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 5, 235–238. (Charles Horowitz) 89f:30046 30C99 (46E99)
- (with Bruna, Joaquim) On Kolmogorov's theorem, the Hardy-Littlewood maximal function and the radial maximal function. *J. Analysis Math.* 50 (1988), 225–239. (Roger L. Jones) 89k:42020 42B25 (42A50)
- (with Brown, Leon) Cyclic vectors in  $A^\infty$ . *Proc. Amer. Math. Soc.* 102 (1988), no. 1, 137–138. (Per Hag) 89e:46025 46E10 (30H05, 46J15, 47B38)
- Korenevskii, D. G.** Algebraic criteria for asymptotic stability with probability 1 of the solutions of a singularly degenerate system of linear integro-differential stochastic stationary Itô equations. (Russian) *Application of asymptotic methods in the theory of nonlinear differential equations* (Russian), 50–60, iii, *Akad. Nauk Ukrain. SSR, Kiev*, 1987. (Binggen Zhang) 89c:60072 60H20
- A coefficient criterion for the absolute (with respect to nonlinearity) mean-square stability of stochastic automatic control systems with nonlinear feedback. (Russian) *Applied problems in the dynamics and stability of multidimensional systems* (Russian), 126–135, vi, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Binggen Zhang) 89j:93134 93E15 (60H10)
- Algebraic coefficient criteria for absolute (not depending on delay) asymptotic stability of the solutions of systems of linear differential equations with aftereffect. (Russian) *Math. Fiz. Nelinein. Mekh.* No. 7(41) (1987), 5–9, 79. (V. Šeda) 89c:34127 34K20
- (with Mitropol'skii, Yu. A.) Matrix algebraic criteria and sufficient conditions for the asymptotic stability and boundedness with probability one of the solutions of linear singularly perturbed stochastic Itô equations. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 6, 1302–1306; translation in *Soviet Math. Dokl.* 36 (1988), no. 3, 603–607. (Jerzy Luczka) 89b:34138 34F05 (34C11, 34D05, 60H10, 93E15)
- Korepin, V. E.** Dual field formulation of quantum integrable models. *Comm. Math. Phys.* 113 (1987), no. 2, 177–190. (Tuncay Aktosun) 89d:82032 82A15 (58F40, 81E99)
- (with Izergin, A. G.; Reshetikhin, N. Yu.) Correlation functions in a one-dimensional Bose gas. *J. Phys. A* 20 (1987), no. 14, 4799–4822. (M. Lawrence Glasser) 89b:82021 82A15
- Exactly solvable spin models in quasicrystals. *Soviet Phys. JETP* 65 (1987), no. 3, 614–618; translated from *Zh. Eksper. Teoret. Fiz.* 92 (1987), no. 3, 1082–1089 (Russian). (M. Lawrence Glasser) 89b:82045 82A68 (52A45, 82A25, 82A69)
- (with Izergin, A. G.; Slavnov, N. A.) Temperature correlation functions of the Heisenberg antiferromagnet. (Russian. English summary) *Theoret. Mat. Fiz.* 72 (1987), no. 2, 277–285. (Nicolae Angelescu) 89b:82022 82A15 (81H99, 82A68)
- Low-temperature asymptotics of correlation functions in a one-dimensional Bose gas. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 169 (1988), *Voprosy Kvant. Teor. Polya i Statist. Fiz.* 8, 91–94, 188. (Summary) 89b:82024 82A15 (82A69)
- Korevaar, J.** Polynomial approximation numbers, capacities and extended Green functions for  $C$  and  $C^k$ . *Approximation theory, V* (College Station, Tex., 1986), 97–127, *Academic Press, Boston, MA*, 1986. (Jan Wiegner) 89b:32022 32E30 (30E10, 31C10, 31C15)
- Some  $C^k$  capacities and applications—the lemma on mixed derivatives revisited. (Serbo-Croatian summary) Second international symposium on complex analysis and applications (Budva, 1986). *Mat. Vesnik* 38 (1986), no. 4, 495–506. (Steven George Krantz) 89a:32003 32A10 (26B05, 26B35, 31B15)
- Some  $C^k$  capacities and applications. *Complex analysis, II* (College Park, Md., 1985–86), 208–228, *Lecture Notes in Math.*, 1276, Springer, Berlin-New York, 1987. (M. Hervé) 89d:32035 32E20 (31B15)
- Korevaar, Nicholas J.** Capillary surface regularity in corner subdomains of  $\mathbb{R}^n$ . *Miniconference on geometry and partial differential equations, 2* (Canberra, 1986), 67–71, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 12, Austral. Nat. Univ., Canberra, 1987. (Friedrich Sauvigny) 89d:35060 35J65 (49F10, 53A10)
- A priori interior gradient bounds for solutions to elliptic Weingarten equations. (French summary) *Ann. Inst. H. Poincaré Anal. Non Linéaire* 4 (1987), no. 5, 405–421. (Friedrich Sauvigny) 89c:35043 35J60 (53A07, 53A10)
- Maximum principle gradient estimates for the capillary problem. *Comm. Partial Differential Equations* 13 (1988), no. 1, 1–31. (Friedrich Sauvigny) 89d:35061 35J65 (49F10, 53A10)
- (with Simon, Leon M.) Continuity estimates for solutions to the prescribed-curvature Dirichlet problem. *Math. Z.* 197 (1988), no. 4, 457–464. (Dennis M. DeTurck) 89f:35082 35J65 (53A10, 58G30)
- see also *Ros, Antonio*, 89b:53096
- Körzoglou, Hayri** (with Loubaton, Ph.) Prediction and spectral decomposition of wide sense stationary processes on  $Z^2$ . (French summary) *Spatial processes and spatial time series analysis* (Brussels, 1985), 127–164, *Travaux Rech.*, 11, Publ. Fac. Univ. Saint-Louis, Brussels, 1987. (H. Salehi) 89i:60087 60G25 (60G10, 60G60)
- Approximate filtering of random fields. *Analysis and optimization of systems* (Antibes, 1988), 740–751, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see 89c:00031) 93E14 (93E11)
- (with Üstünel, Ali Süleyman) An Itô formula for processes with values in an abstract Wiener space. *Stochastic analysis and related topics* (Silivri, 1986), 234–246, *Lecture Notes in Math.*, 1316, Springer, Berlin-New York, 1988. (Rajeeva L. Karandikar) 89b:60113 60H05 (46G12, 47H99, 60B11)
- see also *Stochastic analysis and related topics*, 89b:60010
- Korhage, Robert R.** A note on quadratic  $\sigma$ -polynomials. *Discrete Math.* 69 (1988), no. 2, 195–196. (E. J. Farrell) 89f:05084 05C15
- Korkhin, A. S.** Estimation of the parameters of a multivariate linear regression with inequality constraints that are defined fuzzily. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 2, 52–57, 134; translation in *Cybernetics* 24 (1988), no. 2, 203–211. (A. Ya. Dorogovtsev) 89i:62111 62J05
- Körte, Hans-Heinrich** On the Nörlund means generated by real powers of  $n$ . *Analysis* 7 (1987), no. 3–4, 391–404. (S. Baron) 89c:40010 40G05 (40D25)
- Korman, Philip** (with Leung, Anthony W.) On the existence and uniqueness of positive steady states in the Volterra-Lotka ecological models with diffusion. *Appl. Anal.* 26 (1987), no. 2, 145–160. (R. Shonkwiler) 89e:92045 92A17 (35K55)

- On blow up of solutions of nonlinear evolution equations. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 189–197. (Tie Hu Qin) **89e:35100** 35L70 (35B05, 35B40)
- Kornilitsyna, T. V.** Second-order nonlinear differential equations connected with the solution of an inverse discrete-group problem. (Russian) *Partial differential equations* (Russian), 138–142, Leningrad. Gos. Ped. Inst., Leningrad, 1987. (From the text) **89f:34033** 34B25 (34A55)
- Korneev, V. A.** Optimal synthesis in a problem of the impulse correction of motion. (Russian) *Prikl. Mat. Mekh.* **52** (1988), no. 6, 1038–1041. (Not in MR) **93C57** (49A40, 93B50)
- Korneichuk, L. G.** see **Brebbia, Carlos Alberto et al.**, **89i:65002**
- Korneichuk, N. P.** ★ Точные константы в теории приближения. (Russian) [Exact constants in approximation theory] "Nauka", Moscow, 1987. 424 pp. (Yuly Makovoz) **89d:41038** 41A25 (41A10, 41A65, 42A10)
- S. M. Nikol'skii and the Soviet school of approximation theory. (Russian) Theory of functions and related problems of analysis (Russian) (Dnepropetrovsk, 1985). *Trudy Mat. Inst. Steklov.* **180** (1987), 3–12. (J. Albrecht) **89d:01075** 01A72 (01A65, 41–03)
- Optimal coding of vector functions. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 6, 737–743, 813. (Summary) **89k:94053** 94A99
- see also **Some problems in analysis and differential topology**, **89e:00007**; **Nikol'skii, S. M.**, **89f:41033** and **Investigations in theoretical and applied problems of mathematics**, **89g:00009**
- Körner, B.** (with Weyer, J.) Mathematical models for some types of chemical information systems. *J. Math. Biol.* **25** (1987), no. 3, 275–288. (Summary) **89f:92061** 92A18
- Körner, F.** A tight bound for the Boolean quadratic optimization problem and its use in a branch and bound algorithm. (German summary) *Optimization* **19** (1988), no. 5, 711–721. (R. N. Kaul) **89j:90183** 90C09 (65K05)
- (with Jeromin, Bernd) Some remarks on two degrees of asymmetry in the traveling salesman problem. (French summary) *RAIRO Rech. Opér.* **22** (1988), no. 3, 301–308. (Summary) **89j:90094** 90B10
- (with Luderer, Bernd) A simultaneous method for checking second-order Kuhn-Tucker conditions for equality constrained nonlinear programming problems. *Systems Anal. Modelling Simulation* **5** (1988), no. 1, 51–57. (Jiye Han) **89j:90224** 90C30 (65K05, 90C20)
- Körner, J.** (with Sgarro, Andrea) A new approach to rate-distortion theory. (Italian summary) *Rend. Istit. Mat. Univ. Trieste* **18** (1986), no. 2, 177–187. (Shunsuke Ihara) **89c:94023** 94A24 (94A29, 94A34)
- (with Marton, K.) Graphs that split entropies. *SIAM J. Discrete Math.* **1** (1988), no. 1, 71–79. (Summary) **89k:05083** 05C70 (68R10, 90B15, 94A17)
- (with Simonyi, Gábor) Separating partition systems and locally different sequences. *SIAM J. Discrete Math.* **1** (1988), no. 3, 355–359. (Vera Pless) **89i:05091** 05B40 (68P20, 68Q25, 94A99)
- Körner, Stephan** see **Brentano, Franz**, **89e:01051**
- Körner, T. W.** Recurrence without uniform recurrence. *Ergodic Theory Dynamical Systems* **7** (1987), no. 4, 559–566. (F. Schweiger) **89b:54046** 54H20 (11K55, 58F08)
- ★ Fourier analysis. *Cambridge University Press, Cambridge-New York*, 1988. xii+591 pp. ISBN 0-521-25120-6 (Colin C. Graham) **89d:42001** 42-01 (60-01)
- Körner, K. G.** (with Chugunov, V. A.) Determination of the equilibrium form of bodies that are formed during the solidification of a filtration flow. (Russian) *Prikl. Mat. Mekh.* **52** (1988), no. 6, 991–996. (Summary) **89k:76088** 76S05 (35R35, 76T05, 80A20)
- Kornev, V. M.** (with Stepanenko, S. V.) Multipoint singularly perturbed problem for an ordinary differential equation. *BAIL IV* (Novosibirsk, 1986), 326–331, *Boole Press Conf. Ser.*, 8, *Boole, Dun Laoghaire*, 1986. (Jiaqi Mo) **89b:34039** 34B10 (34E15)
- Kornfeld, I. P.** (with Fomin, S. V.; Sinai, Ya. G.) ★ Teoria ergodyczna. [Polish] [Ergodic theory] Translated from the Russian by Jacek Jakubowski. *Państwowe Wydawnictwo Naukowe (PWN)*, Warsaw, 1987. 403 pp. ISBN 83-01-07118-4 (Editors) **89e:28023** 28Dxx (54C70, 54H20, 58F11)
- Kornhuber, Ralf** (with Hoppe, Ronald H. W.) Multigrid methods for the two-phase Stefan problem. *Multigrid methods* (Copper Mountain, CO, 1987), 267–297, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (S. F. McCormick) **89d:65165** 65N20
- Kornienko, V. S.** On the cohomology classification of distributive structures. (Russian) *Ordered sets and lattices*, No. 6 (Russian), 33–52, 78, *Saratov. Gos. Univ., Saratov*, 1980. (see **89a:06002**) **06D05** (18G25)
- Kornienko, V. V.** Strongly irregular equations. (Russian) *Dokl. Akad. Nauk UzSSR* **1987**, no. 6, 16–17. (A. I. Bastis) **89e:35117** 35P05 (35G05)
- Kornievskii, V. I.** (with Ipatov, V. P.; Platonov, V. D.) Minimum-power jamming of discrete periodic signals. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 11, 40–46; translated from *Radiotekhn. i Elektron.* **32** (1987), no. 6, 1256–1264 (Russian). (Not in MR) **94A05** (49B40)
- Kornilov, E. I.** (with Priezhev, V. B.) Solution of the Kasteleyn model on a half plane. (Russian, English summary) *Teoret. Mat. Fiz.* **75** (1988), no. 1, 114–123; translation in *Theoret. and Math. Phys.* **75** (1988), no. 1, 408–416. (E. E. Tareeva) **89j:82006** 82A05 (82A25, 82A60)
- Kornilov, I. E.** (with Kul'chitskii, V. L.; Noga, Yu. V.) ★ Численные методы исследования волновых полей в задачах дифракции и излучения. (Russian) [Numerical methods for the investigation of wave fields in problems of diffraction and radiation] "Naukova Dumka", Kiev, 1988. 76 pp. ISBN 5-12-009337-X (G. W. Hedstrom) **89m:65109** 65P05 (65R20, 78A45)
- Kornilov, Mikhail Yu.** (with Dyadyusha, Georgii G.; Dekhtyar, M. L.) Inverse adjacency matrix and spectral properties of chemical graphs. *Match* No. 23 (1988), 51–63. (Summary) **89k:92089** 92A40 (05C50)
- Kornilov, P. A.** The Nikishin condition for the linearity of a set of sums of a series. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 139–142, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) **40A05**
- On conditionally convergent series of sequences and functions. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 3, 140–148, 223. (S. Aljančić) **89a:40001** 40A30 (46A45, 46E30)
- The set of sums of a conditionally converging function series. (Russian) *Mat. Sb. (N.S.)* **137** (1979) (1988), no. 1, 114–127, 144. (F. Móricz) **89k:40002** 40A05
- The structure of the set of sums of a function series. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 4, 9–13, 105; translation in *Moscow Univ. Math. Bull.* **43** (1988), no. 4, 6–11. (Summary) **89m:40001** 40A05 (46B15)
- Kornilova, G. F.** (with Popov, L. D.; Korotaeva, L. T.; Glezer, N. N.; Kostina, M. A.; Khripun, M. S.) A system of DELTA-PLAN software for the numerical analysis of improper problems in linear programming for the BESM-6 computer. (Russian) *Models and methods in operations research* (Russian), 31–38, 212, "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (see **89j:00018**) **90C05**
- Korniyevskiy, V. I.** see **Kornievskii, V. I.**
- Kornoshenko, E. K.** (with Pylaev, N. K.) Transfer numbers and diagnosis of linear systems. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 3, 559–561; translation in *Soviet Phys. Dokl.* **33** (1988), no. 5, 330–331. (Not in MR) **93B30**
- Környei, I.** On a theorem of Pisot. *Publ. Math. Debrecen* **34** (1987), no. 3–4, 169–179. (Marthe Grandet) **89e:11046** 11K26 (11K06)
- Korobelnik, Yu. F.** Some problems in the theory of representative systems. (Russian) *Theory of functions and approximations, Part 1* (Russian) (Saratov, 1984), 25–31, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00035**) **46E99**
- Absolutely representative families. (Russian) *Mat. Zametki* **42** (1987), no. 5, 670–680, 762. (Fritz Haslinger) **89c:46007** 46A35 (46E10)
- (with Epifanov, O. V.) The preservation of completely regular growth by a differential operator of infinite order. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 47 (1987), 85–89. (I. M. Spitkovskii) **89f:47046** 47B38 (30D15, 47E05)
- A problem of analytic continuation in  $\mathbb{C}^p$ . (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 4, 80–98, 223; translation in *Siberian Math. J.* **29** (1988), no. 4, 578–592. (Marek Jarnicki) **89k:32029** 32D15 (32A15)
- Korobelnikov, V. P.** Mathematical problems of mechanics at the V. A. Steklov Institute of Mathematics. (Russian) Probability theory, function theory, mechanics (Russian). *Trudy Mat. Inst. Steklov.* **182** (1988), 255–260. (Editors) **89i:01135** 01A74 (01A60)
- Korobkin, A. A.** Linear approximation in a problem of internal waves on the flow of a two-layer fluid. (Russian) *Dinamika Sploshn. Sredy* No. 81 (1987), 78–89, 153. (Summary) **89c:76111** 76V05 (76B99)
- Asymptotic analysis of the unsteady problem of waves in a two-layer flow. *Fluid Dynamics* **22** (1987), no. 6, 893–901 (1988); translated from *Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* **1987**, no. 6, 82–90 (Russian). (Summary) **89f:76082** 76V05 (76D33)
- Korobko, O. V.** (with Tauroginskii, B. I.) Analysis of the spatial spectrum of the field of coherent radiation sources from the algebraic properties of the correlation matrix of the signals of an antenna array. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 11, 47–52; translated from *Radiotekhn. i Elektron.* **32** (1987), no. 7, 1403–1408 (Russian). (Summary) **89e:78016** 78A50
- Korobkov, S. S.** Associative rings with a dense lattice of subrings. (Russian) *Ural. Gos. Univ. Mat. Zap.* **14** (1987), no. 2, *Issled. Algebr. Sist. po Svoist. ikh Podsl.*, 63–71, iii. (L. Bican) **89d:16031** 16A48
- Korobkova, M. B.** On a problem of the existence of a basis of a Chebyshev system. (Russian) *Operators and their applications* (Russian), 40–46, Leningrad. Gos. Ped. Inst., Leningrad, 1985. (see **89f:00013**) **41A50**
- Korobochkin, Yu. B.** (with Kurkin, O. M.) Linear minimax interpolation under conditions of incomplete information on the spectral measures of the useful signal and the noise. (Russian, English summary) *Avtomat. i Telemekh.* **1987**, no. 12, 80–92; translation in *Automat. Remote Control* **48** (1987), no. 12, part 1, 1627–1637. (Summary) **89d:94003** 94A05
- Korobov, A. A.** Decomposition of a simple transformation into a product of simple transformations with given parameters. (Russian) *Some problems in differential equations and discrete mathematics* (Russian), 28–33, Novosibirsk. Gos. Univ., Novosibirsk, 1986. (K. Burian) **89f:15003** 15A04
- Korobov, N. M.** A criterion for the grid quality of quadrature formulas. (Russian) *Diophantine approximations, Part II* (Russian), 42–49, *Moskov. Gos. Univ., Moscow*, 1986. (J. Albrecht) **89d:65025** 65D32 (41A55)
- see also **Bykovskii, V. A. et al.**, **89c:01049**
- Korobov, V. I.** (with Sklyar, G. M.) A constructive method for solving the problem of synthesis. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 291–301, 328, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Krystof Kuźmiński) **89j:93046** 93B50 (93B05, 93C05)
- (with Sklyar, G. M.) Solution of a time-optimality problem for an oscillatory system. (Russian, English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 10, 6–9, 84. (M. A. Yagubov) **89b:49025** EA **89m** 49B10 (34C10)
- (with Sklyar, G. M.; Krut' V. I.) Solution of an optimal design problem by means of a controllability function. (Russian) *Vestnik Kharkov. Gos. Univ. No. 298 Mat. Mekh. i Voprosy Upravl.* (1987), 26–40. (V. Popescu) **89b:49063** 49E30 (93B50, 93C15)
- (with Bessonov, G. A.; Sklyar, G. M.) The problem of the stable synthesis of bounded controls for a class of nonstationary systems. (Russian) *Prikl. Mat. Mekh.* **52** (1988), no. 1, 9–15; translation in *J. Appl. Math. Mech.* **52** (1988), no. 1, 5–11. (Wei Bing Gao) **89k:93085** 93B50 (93D15)
- (with Sklyar, G. M.) Exact solution of an  $n$ -dimensional time-optimality problem. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 6, 1304–1308; translation in *Soviet Math. Dokl.* **37** (1988), no. 1, 247–250. (Stefan Mirica) **89j:93044** 93B50 (49B10, 49C05, 49E15)
- (with Sklyar, G. M.) Time-optimality and the power moment problem. (Russian) *Mat. Sb. (N.S.)* **134** (1976) (1987), no. 2, 186–206, 287; translation in *Math. USSR-Sb.* **62** (1989), no. 1, 185–206. (Valeriu Prepeliță) **89b:93056** 93B50 (44A60, 49A36, 93B17, 93C05)
- Korolev, A. A.** (with Smirnov, V. P.) Application of permutation-inversion symmetry for the study of orientation disorder in crystals. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (*Jūrmala*, 1985), 556–563, "Nauka", Moscow, 1986. (see **89d:81001**) **82A60** (20H15)
- Korolev, Aleksei Gennad'evich** The boundedness of generalized solutions of elliptic equations with nonpower nonlinearities. (Russian) *Mat. Zametki* **42** (1987), no. 2, 244–255, 344. (Guang Chang Dong) **89k:35080** 35J60 (35D99)
- Korolev, Anatolii Georgievich** An algorithm for the determination of the isomorphism of graphs on the basis of their transformation with regard to connectivity components. (Russian, English summary) *Kibernetika* (Kiev) **1987**, no. 1, 27–31, 46, 133. (Summary) **89j:68123** 68R10 (05C40, 05C99)
- Korolev, L. N.** Problems in system programming in nondigital processing. (Russian) *Current problems in applied mathematics and in mathematical physics* (Russian), 142–150,



- "Nauka", Moscow, 1988. (see 89j:00008) 68N99
- Korolev, V. Ya.** Estimates for the rate of convergence in local limit theorems for sums of a random number of independent random variables. (Russian) *Stability problems for stochastic models* (Russian) (Varna, 1985), 48–54, *Vsesoyuz. Nauch.-Issled. Inst. Sistem. Issled.*, Moscow, 1986. (Zdzislaw Rychlik) **89b:60058** 60F05
- Koroleva, Z. E.** Some estimates for the complexity of realization of Boolean functions by schemes of functional elements. (Russian) *Mathematical methods in pattern recognition and discrete optimization* (Russian), 77–89, *Akad. Nauk SSSR, Vychisl. Tsentr*, Moscow, 1987. (Andreas Albrecht) **89j:94047** 94C10 (03G05, 68Q70)
- Korolevich, V. V.** (with Prusov, I. A.) Stresses in an orthotropic elliptic plate that is rotating around the axis of symmetry, situated in its midplane. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* 1988, no. 3, 50–53, 78. (Summary) **89j:73063** 73K10 (73C30)
- Korolyuk, V. S.** The central limit theorem for additive functionals of Markov and semi-Markov processes. (Russian) *Probability distributions and mathematical statistics* (Russian) (Fergana, 1983), 229–246, 494, "Fan", Tashkent, 1986. (M. Iosifescu) **89i:60050** 60F05 (60J05, 60K15)
- (with Borovskikh, Yu. V.) A functional limit theorem for the mean square deviation of a density estimate. (Russian) *Asymptotic methods in the investigation of stochastic models* (Russian), 81–84, 145, *Acad. Sci. Ukrain. SSR Inst. Math.*, Kiev, 1987. (Paul Deheuvels) **89g:62035** 62F05
- Evolution of systems in a semi-Markov random environment. (Russian. English summary) *Kibernetika* (Kiev) 1987, no. 5, 107–110, 136. (Gh. Oprisan) **89f:60104** 60K15
- (with Svishchuk, A. V.; Korolyuk, V. V.) The central limit theorem in a scheme of phase extension for semi-Markov random evolutions. (Russian) *Ukrain. Mat. Zh.* 39 (1987), no. 3, 316–321, 405. (B. P. Harlamov (Zbl 632:60091)) **89g:60270** 60K15 (60F05)
- (with Borovskikh, Yu. V.) ★ Мартингальная аппроксимация. (Russian) [Martingale approximation] "Naukova Dumka", Kiev, 1988, 247 pp. ISBN 5-12-009301-9 (R. J. Tomkins) **89b:60071** 60G42 (60F05, 60G46, 60G48)
- (with Plotkin, Ya. D.; Turbin, A. F.) An evolution operator of a nonautonomous singularly perturbed differential equation in a Banach space. (Russian) *Asymptotic methods in mathematical physics* (Russian), 118–126, 301, "Naukova Dumka", Kiev, 1988. (Summary) **89j:34089** 34G10 (34E15, 47A50)
- (with Vavrikovich, L. V.) Diffusion approximation of a restorable stand-by Markov system. (Russian. English summary) *Kibernetika* (Kiev) 1988, no. 5, 97–100, 135; translation in *Cybernetics* 24 (1988), no. 5, 655–659. (R. Petrović) **89k:90074** 90B25 (60K20)
- (with Borovskikh, Yu. V.) A multidimensional U-statistic empirical process. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 2, 12–15, 88. (Paul Deheuvels) **89i:60051** 60F05
- (with Pletnev, A. I.; Eidel'man, S. D.) Automata. Random walks. Games. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1(259), 87–122, 247; translation in *Russian Math. Surveys* 43 (1988), no. 1, 103–147. (R. Skhirladze) **89k:68108** 68Q75 (60J20, 68Q05, 90D40)
- (with Borovskikh, Yu. V.) Asymptotic theory of U-statistics. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 2, 169–182, 271; translation in *Ukrainian Math. J.* 40 (1988), no. 2, 142–154. (Gábor J. Székely) **89c:60026** 60F05 (62E20)
- see also *Asymptotic methods in the investigation of stochastic models*, **89b:60003** and *Asymptotic methods in mathematical physics*, **89g:00006**
- Korolyuk, V. V.** (with Korolyuk, V. S.; Svishchuk, A. V.) The central limit theorem in a scheme of phase extension for semi-Markov random evolutions. (Russian) *Ukrain. Mat. Zh.* 39 (1987), no. 3, 316–321, 405. (B. P. Harlamov (Zbl 632:60091)) **89g:60270** 60K15 (60F05)
- Koronacki, Jack** (with Wertz, Wolfgang) A global stopping rule for recursive density estimators. *J. Statist. Plann. Inference* 20 (1988), no. 1, 23–39. (S. Sridhar) **89j:62055** 62G05 (62L10)
- Korop, V. F.** (with Sharapova, G. V.) A method for the strategic adaptation of step-type optimization algorithms. (Russian) *Random search problems*, 11 (Russian), 63–69, 212, "Zinatne", Riga, 1988. (see 89a:00023) 90C30
- Korostelev, A. P.** Asymptotically efficient recurrent estimation of a nonparametric signal. (Russian) *Problemy Peredachi Informatsii* 24 (1988), no. 1, 33–42; translation in *Problems Inform. Transmission* 24 (1988), no. 1, 25–32. (J. A. Melamed) **89b:62063** 62G05 (62G20, 94A12)
- Recurrent nonparametric estimation based on the observation of the path of a process with independent increments. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 3, 581–585; translation in *Theory Probab. Appl.* 33 (1988), no. 3, 544–547. (Sándor Csörgő) **89m:62038** 62G05 (60J30, 62M05)
- Korotaeva, L. N.** (with Batukhtin, V. D.; Maiboroda, L. A.) On an approach to a search for the roots of a nondifferentiable function. (Russian) *Methods for nonsmooth optimization and control problems* (Russian), 17–26, 150, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1986. (Andrzej M. J. Skulimowski) **89a:65079** 65H05 (90C30)
- Korotaeva, L. T.** (with Popov, L. D.; Kornilova, G. F.; Glezer, N. N.; Kostina, M. A.; Khripun, M. S.) A system of DELTA-PLAN software for the numerical analysis of improper problems in linear programming for the BESM-6 computer. (Russian) *Models and methods in operations research* (Russian), 31–38, 212, "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (see 89j:00018) 90C05
- Korotkii, A. I.** Coefficient stability of the solutions of hyperbolic systems and the well-posedness of optimal control problems. (Russian) *Some methods for positional and programmed control* (Russian), 22–33, 149, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1987. (Julian Revalski) **89c:49019** 49B50 (35B20, 35B35, 35L99, 49A22, 49D15)
- see also *Some methods for positional and programmed control*, **89c:49001**
- Korotkiy, V. A.** (with Obukhov, Yu. N.) The Weissenhoff fluid in Einstein-Cartan theory. *Classical Quantum Gravity* 4 (1987), no. 6, 1633–1657. (R. J. McKellar) **89a:83050** 83D05 (83E10)
- (with Obukhov, Yu. N.) Cosmology in Einstein-Cartan theory. I. Spin dynamics. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* 28 (1987), no. 6, 3–8, 86. (A. V. Aminova) **89k:83066** 83E10
- (with Obukhov, Yu. N.) Cosmology in Einstein-Cartan theory. II. Some exact solutions. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* 29 (1988), no. 1, 12–17, 106; translation in *Moscow Univ. Phys. Bull.* 43 (1988), no. 1, 10–15. (A. V. Aminova) **89k:83067** 83E10
- Korotkin, A. A.** The accuracy of a "greedy" algorithm in a problem of the choice of an optimal acyclic subgraph. (Russian) *Algorithmic constructions and their efficiency* (Russian), 77–82, 141, *Yaroslav. Gos. Univ., Yaroslavl*, 1983. (I. A. Klypker) **89b:05035** 05C38 (68Q25)
- Korotkov, A. N.** (with Tokarev, V. F.) Instanton effects in two-dimensional scalar electrodynamics. (Russian. English summary) *Teoret. Mat. Fiz.* 73 (1987), no. 1, 61–73. (Summary) **89c:81076** 81E13 (81L05)
- Korotkov, V. B.** On the reduction of families of operators to integral form. (Russian) *Sibirsk. Mat. Zh.* 28 (1987), no. 3, 149–151, 223. (Yu. A. Abramovich) **89d:47065** 47B38 (47G05)
- On ideals generated by integral operators. (Russian) *Sibirsk. Mat. Zh.* 28 (1987), no. 4, 102–104, 225. (Yu. A. Abramovich) **89d:47064** 47B38 (47D25, 47G05)
- Algebraic properties of convolutions in  $L_2(R_N)$ . (Russian) *Sibirsk. Mat. Zh.* 28 (1987), no. 5, 78–81. (M. B. Gorodetskii) **89f:47079** 47G05 (47B38, 47D99)
- Korotkova, T. I.** (with Volkova, T. B.) A decomposition algorithm for constructing the boundary of a Pareto domain with a minimal level of data on the controllable system. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 10, 104–112. (Summary) **89d:90018** 90A07 (90C31)
- Korotky, V. A.** see **Korotkii, V. A.**
- Korotyaev, E. L.** On resonance scattering in a pair of spaces. (Russian. English summary) *Teoret. Mat. Fiz.* 70 (1987), no. 3, 432–442. (V. E. Kuzmichev) **89b:81233** 81F05
- Korovaichuk, I. M.** (with Pelek, B. L.; Maksimuk, A. V.) ★ Контактные задачи для слоистых элементов конструкций и тел с покрытиями. (Russian) [Contact problems for layered elements of constructions and bodies with coatings] "Naukova Dumka", Kiev, 1988, 280 pp. (M. O. Basheleishvili) **89j:73001** 73-02 (73C40, 73K20, 73T05)
- Korovin, S. K.** (with Emel'yanov, S. V.; Nikitin, Sergei Vyacheslavovich) Controllability of nonlinear systems. Two-dimensional systems. (Russian) *Engineering cybernetics*, Vol. 21 (Russian), 3–67, 167, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform.*, Moscow, 1987. (Jerzy Klamka) **89c:93009** 93B05 (49E15, 93C10, 93C60)
- (with Emel'yanov, S. V.; Nikitin, Sergei Vyacheslavovich) Two-dimensional bilinear systems: classification of singularities and criteria for controllability. (Russian) *Information science, control, computer technology*, No. 1 (Russian), 59–83, "Mashinostroenie", Moscow, 1987. (V. Popescu) **89f:93006** 93B05 (49E15, 93C15)
- (with Mamedov, I. G.) Estimates of a small parameter ensuring asymptotic stability of singularly perturbed systems. (Russian summary) With the Russian original. *Problems Control. Theory/Problemy Upravlen. Teor. Inform.* 16 (1987), no. 4, 243–257, P1–P16. (Eitelbert N. Chukwu) **89b:34131** 34E15 (34A30, 34D05)
- (with Emel'yanov, S. V.; Mamedov, I. G.; Nikitin, Sergei Vyacheslavovich) Criterion of controllability of nonlinear dynamic systems on the plane under phase restrictions. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 4, 41–47; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 6, 108–114, 206 (Russian). (Krishnan Balachandran) **89k:49030** 49E25 (93B05)
- (with Emel'yanov, S. V.; Nikitin, Sergei Vyacheslavovich) Controllability of nonlinear systems and systems on a foliation. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 3, 573–576; translation in *Soviet Phys. Dokl.* 33 (1988), no. 3, 167–169. (Jerzy Klamka) **89g:93003** 93B05 (49E15, 57R27, 58F40, 93C10, 93C15)
- (with Emel'yanov, S. V.; Nikitin, Sergei Vyacheslavovich) Investigation of controllability by methods of the theory of approximation groups and systems on a foliation. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 4, 821–823; translation in *Soviet Phys. Dokl.* 33 (1988), no. 6, 400–401. (Jerzy Klamka) **89i:93009** 93B05 (49E10, 49E15, 58F40)
- Korovinikaya, I. G.** (with Bykov, Ya. V.) Distribution of zeros of the solutions of some classes of elliptic and hyperbolic equations. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 194–203, 342, "Ilim", Frunze, 1987. (L. M. Kuks) **89k:35019** 35B05 (35L10)
- Korovkina, V. I.** Asymptotic properties of positive methods for the summation of Fourier series. (Russian) *Application of functional analysis, in approximation theory* (Russian), 70–74, 145, *Kalinin. Gos. Univ., Kalinin*, 1984. (see 89c:00006) 42A24
- Korovyakov, A. N.** (with Grigorev, V. V.) A study of the quality of multiply connected discrete systems based on the comparison method. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 9, 58–66; translation in *Avtomat. Remote Control* 49 (1988), no. 9, part 1, 1154–1160. (From the text) **89m:93004** 93A15 (93B99, 93C55, 93D05)
- Korozhneva, M. Yu.** (with Mosyagin, V. V.) A boundary value problem for a first-order nonlinear functional-differential equation with a parameter. (Russian) *Problems in functional analysis* (Russian), 40–46, 117–118, *Petrozavodsk. Gos. Univ., Petrozavodsk*, 1985. (From the summary) **89c:34074** 34K10
- Korrea, Kh.** see **Correa Rodriguez, Jaime**
- Korsch, H. J.** (with Steffen, H.) Dissipative quantum dynamics, entropy production and irreversible evolution towards equilibrium. *J. Phys. A* 20 (1987), no. 12, 3787–3803. (Gian-Paolo Beretta) **89a:81037** 81C99 (82A35)
- (with Wolf, Fritz) Time-evolution operators for (coupled) time-dependent oscillators and Lie algebraic structure theory. *Phys. Rev. A* (3) 37 (1988), no. 6, 1934–1941. (A. O. Barut) **89i:81061a** 81C40 (22E60, 58F35)
- Korshiya, T. K.** (with Gordeziani, D. G.; Lobzhanidze, G. B.) Averaged schemes of summary approximation for nonlinear parabolic equations. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* 18 (1986), 68–94, 274. (A. I. Perov) **89f:65068** 65J99 (34G20, 35K55, 65L05)
- (with Lyubimov, B. Ya.) On the construction and convergence of additive models for a class of two-dimensional problems of magnetohydrodynamics. (Russian) *Current problems in mathematical physics*, Vol. II (Russian) (Tbilisi, 1987), 240–247, 391, *Tbilis. Gos. Univ., Tbilisi*, 1987. (see 89j:00031) 76W05 (76-08)
- Korshunov, A. B.** (with Glasko, V. B.; Gubar, A. Yu.) Asymptotic methods for constructing a numerical algorithm for a problem of the heating of thin plates by radiation. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* 29 (1988), no. 4, 17–22, 102. (Summary) **89j:80011** 80A20 (80-08)
- Korshunov, A. D.** On the number of  $r$ -element subsets in  $E^n$  with boundaries of equal cardinality. II. (Russian) *Metody Diskret. Analiz.* No. 44 (1986), 24–53, 69. (Konrad Engel) **89j:05014** 05A15 (05A20)

- The power and structure of closed Post classes (families of subsets of a finite set). (Russian) *Trudy Inst. Mat. (Novosibirsk)* **10** (1988), *Modeli i Metody Optim.*, 159–204, 265. (János Demetrovics) **89f:03058** 03G05 (06E30)
- Korshunov, S. E.** Quantum diffusion of vortices in 2D lattice systems. *JETP Lett.* **46** (1987), no. 10, 485–489 (1988); translated from *Pis'ma Zh. Eksp. Teoret. Fiz.* **46** (1987), no. 10, 385–388 (Russian). (Summary) **89h:81154** 81E25 (82A67, 82A99)
- (with Ulmin, G. V.) Exact solutions in the two-dimensional wetting problem. *Soviet Phys. JETP* **67** (1988), no. 6, 1242–1251; translated from *Zh. Eksp. Teoret. Fiz.* **94** (1988), no. 6, 270–288 (Russian). (Summary) **89k:82034** 82A25 (82A68)
- Korsnikov, A. D.** Planar three-index transportation problems with dominating index. (German summary) *Z. Oper. Res.* **32** (1988), no. 1, 29–33. (Summary) **89h:90134** 90C08
- Korst, Jan H. M.** (with Aarts, E.; van Laarhoven, P. J. M.) A quantitative analysis of the simulated annealing algorithm: a case study for the traveling salesman problem. *J. Statist. Phys.* **50** (1988), no. 1–2, 187–206. (Summary) **89d:90086** 90B10 (82–08, 82A99, 90C27)
- Kort, Peter M.** The influence of a stochastic environment on the firm's optimal dynamic investment policy. *Optimal control theory and economic analysis*, 3 (Vienna, 1987), 245–263, North-Holland, Amsterdam-New York, 1988. (Summary) **89j:90066** 90A16
- Kortanek, K. O.** (with Zhu, Jishan) New purification algorithms for linear programming. *Naval Res. Logist.* **35** (1988), no. 4, 571–583. (Summary) **89e:90132** 90C05
- Korte, B.** Combinatorial optimization. I. (Chinese) Translated from the English by Che Gao. *Chinese J. Oper. Res.* **4** (1985), no. 1, 1–3. (Editors) **89i:90064a** 90C27 (90–02)
- Combinatorial optimization. II. (Chinese) Translated from the English by Che Gao. *Chinese J. Oper. Res.* **4** (1985), no. 2, 29–38. (Editors) **89i:90064b** 90C27 (90–02)
- Korte, Herbert** (with Coleman, Robert Alan) Any physical, monopole equation of motion structure uniquely determines a projective inertial structure and an  $(n-1)$ -force. *J. Math. Phys.* **28** (1987), no. 7, 1492–1498. (Summary) **89f:83081** 83E10 (83D05)
- Korth, Henry F.** (with Kim, Won; Bancilhon, François) On long-duration CAD transactions. *Inform. Sci.* **46** (1988), no. 1–2, 73–107. (Summary) **89h:68156** 68U99 (68P15)
- Kortmann, M.** (with Janiszowski, K.; Unbehauen, H.) Application and comparison of different identification schemes under industrial conditions. *Internat. J. Control* **48** (1988), no. 6, 2275–2296. (Not in MR) **93C75** (93B30, 93E12)
- (with Unbehauen, H.) Structure detection in the identification of nonlinear systems. (French summary) *RAIRO Automat.-Prod. Inform. Ind.* **22** (1988), no. 1, 5–25. (Not in MR) **93B30** (93B40)
- Koruga, Djuro** (with Masnikosa, Vukasin P.) Biological control systems and intelligence. 11<sup>e</sup> congrès international de cybernétique (Namur, 1986), 1055–1071, Assoc. Internat. Cybernét., Namur, 1986. (see **89a:94001**) **92A09** (93C75)
- Korukoglu, Serdar** (with Öztürk, Aydın) A new test for the extreme value distribution. *Comm. Statist. Simulation Comput.* **17** (1988), no. 4, 1375–1393. (Not in MR) **62F03**
- de Korvin, A.** (with Kleyre, R.) Martingale properties of an information-feedback loop. *Math. Comput. Modelling* **10** (1988), no. 1, 1–11. (Summary) **89g:94012** 94A15
- Koryakov, I. O.** Linear periodic semigroups with central idempotents. (Russian) *Ural. Gos. Univ. Mat. Zap.* **14** (1987), no. 2 Issled. Algebr. Sist. po Svoist. ikh Podst., 72–80, iii. (B. Pondělíček) **89d:20051** 20M20
- Korytov, S. G.** On the optimal control of systems described by linear functional-differential equations. (Russian) *Boundary value problems* (Russian), 36–40, iv, Perm. Politekh. Inst., Perm, 1986. (see **89c:00009**) **34K35**
- Koryukin, V. M.** Gravitational fields and the extended gauge formalism. (Russian) *Gravitatsiya i Teor. Otnositel'nosti* No. 24 (1987), 45–53. (N. V. Mitskevich) **89h:83023** 83C45 (81D20)
- Korzhik, V. I.** (with Lopato, Yu. P.) Optimal decoding of convolutional codes in channels with additive Markov noise. (Russian) *Problemy Peredachi Informatsii* **23** (1987), no. 4, 35–40. (M. Răduică) **89g:94031** 94B10 (94A40, 94B35)
- Korzun, A. I.** (with Filaretov, V. F.) Identification of the changing load mass of a manipulated object. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 4, 112–117; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 6, 182–187, 208 (Russian). (Not in MR) **93B30** (93C40)
- Korzyuk, A. F.** (with Yablonskii, A. I.) A method for constructing systems of nonlinear differential equations of arbitrary order with moving polar singular points. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 12, 2074–2079, 2204. (Alois Klíč) **89f:34008** 34A20 (34A30)
- Kósa, András** On the manifold of controllable processes in a nonlinear Lagrange problem. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 4, 566–570, 730; translation in *Differential Equations* **24** (1988), no. 4, 387–390. (J. Kučera) **89e:93059** 93B27 (49F15, 58E25, 58F09)
- Kosachevskaya, L. L.** (with Kosachevskii, L. Ya.) Approximate solution of a boundary value problem with an unknown boundary for nonisothermal filtration of a non-Newtonian fluid. (Russian) *Current problems in mathematical physics, Vol. II* (Russian) (Tbilisi, 1987), 248–255, 391–392, Tbilis. Gos. Univ., Tbilisi, 1987. (see **89j:00031**) **76S05** (76–08, 76A05)
- Kosachevskii, L. Ya.** (with Kosachevskaya, L. L.) Approximate solution of a boundary value problem with an unknown boundary for nonisothermal filtration of a non-Newtonian fluid. (Russian) *Current problems in mathematical physics, Vol. II* (Russian) (Tbilisi, 1987), 248–255, 391–392, Tbilis. Gos. Univ., Tbilisi, 1987. (see **89j:00031**) **76S05** (76–08, 76A05)
- Kosaraju, S. Rao** (with Ja'Ja', Joseph) Parallel algorithms for planar graph isomorphism and related problems. *IEEE Trans. Circuits and Systems* **35** (1988), no. 3, 304–311. (Narsingh Deo) **89g:68026** 68Q25 (05C10, 68R10)
- (with Atallah, Mikhail J.) Efficient solutions to some transportation problems with applications to minimizing robot arm travel. *SIAM J. Comput.* **17** (1988), no. 5, 849–869. (Summary) **89i:68054** 68Q25 (68U05)
- Kosarev, Yu. G.** A generalized model for harmonic systems. (Russian) *Vychisl. Sistemy* No. 118 *Mashin. Anal. Slozhn. Struktur* (1986), 37–46, 151. (Summary) **89e:90062** 90A16
- Kosarew, Siegmund** On some new results on the formal principle for embeddings. *Proceedings of the conference on algebraic geometry* (Berlin, 1985), 217–227, Teubner-Texte Math., 92, Teubner, Leipzig, 1986. (Sandra Hayes) **89e:32028** 32G10 (32C15)
- Modulräume holomorpher Abbildungen auf konvexen komplexen Räumen. [Moduli spaces of holomorphic mappings onto concave complex spaces] *Ann. Sci. École Norm. Sup.* (4) **20** (1987), no. 3, 285–310. (H. Kerner) **89e:32063** 32G13 (32F10)
- (with Flenner, Hubert) On locally trivial deformations. *Publ. Res. Inst. Math. Sci.* **23** (1987), no. 4, 627–665. (Ciprian Borcea) **89e:32055** 32G05
- Ein allgemeines Kriterium für das formale Prinzip. [A general criterion for the formal principle] *J. Reine Angew. Math.* **388** (1988), 18–39. (K. Wolffhardt) **89m:32022** 32C25 (32G99, 32J99)
- see also Bingener, Jürgen, **89h:32040** and **89h:32041**
- Kosoblov, S. B.** (with Dzholdasbekov, U. A.; Drakunov, Yu. M.; Moldabekov, M. M.) Synthesis of the original kinematic chains of mechanisms of higher classes. (Russian. Kazakh summary) *Izv. Akad. Nauk Kazakh. SSR Ser. Fiz.-Mat.* **1987**, no. 3, 65–70. (Summary) **89f:70003** 70B15
- Koschorke, Ulrich** (with Korbaš, Július) The rank of vector fields on Grassmannian manifolds. Proceedings of the Winter School on Geometry and Physics (Srní, 1987). *Rend. Circ. Mat. Palermo* (2) *Suppl. No. 16* (1987), 113–117. (R. E. Stong) **89d:57037** 57R25
- Link maps and the geometry of their invariants. *Manuscripta Math.* **61** (1988), no. 4, 383–415. (Elmer G. Rees) **89i:57011** 57Q45
- see also Differential topology, **89g:57002**
- Koseki, Harutaka** On the common kernel of certain symmetric tensor representations. *Comment. Math. Univ. St. Paul.* **37** (1988), no. 1, 73–80. (V. P. Snaith) **89j:11060** 11G20 (11S23, 14E20, 14H30)
- Kosenko, I. I.** On the stability of points of libration of an inhomogeneous triaxial ellipsoid. *J. Appl. Math. Mech.* **51** (1987), no. 1, 1–5 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 1, 3–8 (Russian). (Summary) **89b:85003** 85A05
- Kosfeld, R.** Efficient iteration procedures for maximum likelihood factor analysis. *Statist. Hefte* **28** (1987), no. 4, 301–315. (Summary) **89k:65168** 65U05
- Kosha, A.** see Kósa, András
- Koshchev, V. A.** Compact sets that admit a system of vector functions with a given approximation property. (Russian) *Approximation in concrete and abstract Banach spaces* (Russian), 71–81, 124, Akad. Nauk SSSR, Ul'na Nauchn. Tsentr, Sverdlovsk, 1987. (L. G. Labsker) **89k:41033** 41A50 (41A52, 41A65)
- Koshlev, A. I.** Smoothness of solutions of some problems with hysteresis. (Russian) *Current problems in mathematical physics, Vol. II* (Russian) (Tbilisi, 1987), 256–262, 392, Tbilis. Gos. Univ., Tbilisi, 1987. (see **89j:00031**) **35B65** (35J15)
- (with Dem'yanovich, Yu. K.; Il'in, V. P.; Oleinik, O. A.; Sobolev, S. L.) Solomon Grigor'evich Mikhlin (on the occasion of his eightieth birthday). (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 4(262), 239–240; translation in *Russian Math. Surveys* **43** (1988), no. 4, 249–251. (Editors) **89m:01084** 01A70
- Smoothness of the solutions of some nonlinear boundary value problems for equations with nondifferentiable coefficients. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 1, 26–28; translation in *Soviet Math. Dokl.* **37** (1988), no. 1, 18–20. (Rudolf Švarc) **89f:35068** 35J45 (35R05)
- Smoothness of the solutions of quasilinear elliptic systems with nondifferentiable coefficients. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 2, 32–35, 83–84; translation in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 2, 45–50. (Yu. V. Kostarchuk) **89k:35081** 35J60 (35B65)
- (with Dem'yanovich, Yu. K.; Il'in, V. P.; Solomyak, M. Z.; Ural'tseva, N. N.) Solomon Grigor'evich Mikhlin (on the occasion of his eightieth birthday). (Russian) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1988**, vyp. 2, 128–129. (Editors) **89h:01059** 01A70
- see also Vishik, M. I. et al., **89b:01064**
- Koshlev, I. M.** (with Gulín, A. V.; Drozdova, O. M.; Kartyshev, S. V.) Numerical investigation of the stability of higher-order differential-algebraic systems with delay. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 141, 23 pp. (Summary) **89h:65121** 65L07
- Koshlev, V. N.** (with Danilevich, A. B.) A method for introducing a correction to the solution of a system of differential equations in order to improve its accuracy. (Russian) *Voprosy Kibernet.* (Moscow) No. 139 (1988), 126–134. (Zeng Fu Qin) **89k:65106** 65L99 (93B27, 93B50)
- Koshernik, Yu. A.** Asymptotic distribution of nonparametric estimates of distribution functions under a symmetry condition. Statistical methods. *J. Soviet Math.* **40** (1988), no. 2, 179–189. (Rashid Ahmad) **89m:62039** 62G05 (62E20)
- see also Efron, Bradley, **89d:62003**
- Koshi, Shozo** Generalizations of F. and M. Riesz theorems. *Complex analysis and applications '85* (Varna, 1985), 356–366, *Bulgar. Acad. Sci., Sofia*, 1986. (K. Yale) **89c:43005** 43A17
- Koshiba, Toshihiko** Differences in meaning between a mathematical term and the same word used in daily conversation. (Japanese. English summary) *Res. Rep. Anan College Tech.* No. 24 (1988), 137–140. (Kazumi Inoue) **89d:00018** 00A25
- Koshigoe, Hideyuki** (with Nakada, Hiromitsu; Kitahara, Kiyoshi; Koike, Minoru; Takato, Setsuo) On the existence of solutions for an abstract functional equation. (Japanese. English summary) *Gen. Ed. Rev. Toho Univ.* **19** (1987), 1–9 (1988). (Summary) **89k:45011** 45N05 (39B20, 45J05, 47H15)
- Koshitani, Shigeo** A remark on modular representation theory. *Proceedings of the 21st Symposium on Ring Theory* (Hirosaki, 1988), 70–71, Okayama Univ., Okayama, 1989. (see **89k:16001**) **16A64**
- Koshizuka, Seichi** (with Oka, Yoshiaki; Kondo, Shunsuke; Togo, Yasumasa) Interpolating matrix method: a finite difference method for arbitrary arrangement of mesh points. *J. Comput. Phys.* **75** (1988), no. 2, 444–468. (Summary) **89c:76015** 76–08 (76F99)
- Koshkin, G. M.** (with Dmitriev, Yu. G.) The use of additional information for the nonparametric estimation of density functionals. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 10, 47–59. (Summary) **89a:62094** 62G05 (93E10)
- Koshkin, M. A.** (with Lozhkin, S. A.) Complexity of the realization of some systems of Boolean functions by multiterminal switching circuits. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 4, 807–811; translation in *Soviet Math. Dokl.* **37** (1988), no. 1, 162–166. (A. N. Melikhov) **89g:94050** 94C10
- Koshlan, A. I.** (with Devyaterikov, I. P.) Stochastic optimization methods with constraints. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 4, 3–21; translation in *Automat. Remote Control* **49** (1988), no. 4, part 1, 397–412. (Werner Römisch) **89h:90164** 90C15



- (with Devyaterikov, I. P.) A method for solving stochastic optimization problems with constraints. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 5, 99–105; translation in *Automat. Remote Control* 49 (1988), no. 5, part 2, 628–632. (Summary) 89c:90148 90C15
- Koshlukov, Plamen E.** (with Drenski, Veselin S.) Weak polynomial identities for a vector space with a symmetric bilinear form. (Bulgarian summary) *Mathematics and mathematical education (Bulgarian) (Sunny Beach (Slivnitsa) Bryag)*, 1987, 213–219, *Bulg. Acad. Sci., Sofia*, 1987. (B. Reichstein) 89f:15043 15A66 (16A38)
- (with Drenski, Veselin S.) Polynomial identities for quadratic Jordan algebras. *C. R. Acad. Bulgare Sci.* 40 (1987), no. 9, 5–8. (Armin Thedy) 89e:17023 17C05
- Polynomial identities for a family of simple Jordan algebras. *Comm. Algebra* 16 (1988), no. 7, 1325–1371. (Yuri Medvedev) 89h:17043 17C05
- Koshlyakov, V. N.** Rodrigues-Hamilton parameters in problems of the dynamics of a rigid body. (Russian) *Mechanics and scientific technological progress, Vol. 1 (Russian)*, 117–127, 294, "Nauka", Moscow, 1987. (Summary) 89k:70010 70E15 (70E20)
- Equations of motion of a heavy rigid body in Rodrigues-Hamilton parameters. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 2, 182–192, 271; translation in *Ukrainian Math. J.* 40 (1988), no. 2, 154–164. (Summary) 89d:70005 70E15 (70K20)
- Koshmanenko, V. D.** Uniqueness of a singularly perturbed operator. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 4, 786–789; translation in *Soviet Math. Dokl.* 37 (1988), no. 3, 718–721. (K. Veselic) 89f:47085 47F05 (35B25, 47A25, 47A55, 81C10)
- Koshmarova, V. A.** (with Melnikov, Yu. A.) On the problem of the regularization of integral equations of the first kind with logarithmic kernels. (Russian) *Methods for solving nonlinear problems, and data processing (Russian)*, 55–60, 108, Dnepropetrovsk. Gos. Univ., Dnepropetrovsk, 1986. (see 89f:00011) 45B05
- Koshy, K. I.** Cone absolutely  $(p, q)$ -summing operators from Banach lattices to Banach spaces and their adjoints. *Mathematical analysis and its applications (Kuwait, 1985)*, 167–174, *KFAS Proc. Ser.*, 3, Pergamon, Oxford-Elmsford, NY, 1988. (Constantin Niclescu) 89h:47055 47B55 (47B10)
- Kosiek, M.** see *Lejasiewicz, Stanislaw*, 89e:26001
- Kosik, P.** (with Sarkadi, K.) A new goodness-of-fit test. *Probability theory and mathematical statistics with applications (Visegrad, 1985)*, 267–272, Reidel, Dordrecht-Boston, MA, 1988. (K. M. Lal Saxena) 89m:62053 62H12 (62F03)
- Kosiński, P.** (with Giler, S.; Rembieliński, J.; Małanka, P.) On  $SO(p, q)$  pure spinors. *Acta Phys. Polon. B* 18 (1987), no. 8, 713–727. (Horia Scutaru) 89c:53013 53A50 (22E70, 53C30, 81D27)
- (with Szymanowski, Lech) Comment on: "Massive, unitary, renormalizable Yang-Mills theory without Higgs bosons" [Phys. Rev. Lett. 57 (1986), no. 21, 2610–2612; MR 87k:81156] by R. Delbourgo and G. Thompson. *Phys. Rev. Lett.* 58 (1987), no. 19, 2001. (From the text) 89e:81181 81G20 (81E15, 81G15)
- (with Brihaye, Y.) Some results for Grassmannian models on a lattice. *Phys. A* 151 (1988), no. 2–3, 385–396. (Kornél Szlachányi) 89j:81150 81E25 (82A68)
- Kosiński, S.** Normal reflection transmission of shocks waves on a plane interface between two rubber-like media. *Nonlinear hyperbolic equations—theory, computation methods, and applications (Aachen, 1988)*, 310–319, *Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see 89j:35007) 73D25 (73D40)
- de Kosinsky, V.** see *Computer methods and water resources*, 89g:76003c
- Kosir, Tomaz** Common Jordan chains of matrices. *Linear Algebra Appl.* 99 (1988), 253–258. (L. Rodman) 89b:15011 15A18
- Kositsyna, L. K.** (with Il'in, V. P.) ★ О скорости сходимости итераций явного метода Булея. (Russian) [The rate of convergence of iterations of the explicit Buleev method] Preprint [Preprint], 755, *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1987, 17 pp. (Jiří Nedoma) 89f:65112 65N20
- (with Il'in, V. P.) Iterative methods of incomplete factorization for solving block-tridiagonal systems. (Russian) *Computational processes and systems*, No. 5 (Russian), 218–231, "Nauka", Moscow, 1987. (O. Pokorný) 89b:65080 65F10
- Koski, Juhani** Multicriteria truss optimization. *Multicriteria optimization in engineering and in the sciences*, 263–307, *Math. Concepts Methods Sci. Engrg.*, 37, Plenum, New York-London, 1988. (see 89f:90171) 73K40 (90C31)
- Koski, T.** An asymptotic localization by perturbing operators for partial observation of a stochastic evolution equation. *Stochastic processes in physics and engineering (Bielefeld, 1986)*, 205–222, *Math. Appl.*, 42, Reidel, Dordrecht-Boston, MA, 1988. (Robert Kertz) 89f:60126 60H10 (60F99, 60G35, 93E03)
- Kosler, R.** On the Galerkin approximation for small solutions of noncoercive quasilinear boundary value problems. (German and Russian summaries) *Z. Angew. Math. Mech.* 67 (1987), no. 9, 445–451. (Reinhard Scholz) 89b:65269 65N30
- Fehlerabschätzungen für die Methode der finiten Elemente bei nichtmonotonen elliptischen Problemen mit starken Nichtlinearitäten. [Error estimates for the finite element method in nonmonotone elliptic problems with strong nonlinearities] *Z. Angew. Math. Mech.* 68 (1988), no. 5, T391–T392. (Johannes Elschner) 89k:65123 65N15 (35I65, 65N30)
- Kosiński, A.** On the normal disconnection of a tree. *Proceedings of the International Conference on Combinatorial Analysis and its Applications (Pokrzywna, 1985)*. *Zastos. Mat.* 19 (1987), no. 3–4, 485–495 (1988). (B. Zelinka) 89f:05062 05C05 (05C20)
- Kosloff, D.** (with Carcione, J. M.; Kosloff, R.) Wave-propagation simulation in an elastic anisotropic (transversely isotropic) solid. *Quart. J. Mech. Appl. Math.* 41 (1988), no. 3, 319–345. (Summary) 89h:73018 73D15 (73–04, 73–08, 73C30, 86A15)
- Kosloff, R.** (with Bisseling, R. H.) Optimal choice of grid points in multidimensional pseudospectral Fourier methods. *J. Comput. Phys.* 76 (1988), no. 2, 243–262. (Summary) 89b:81005 81–08 (81G55)
- (with Carcione, J. M.; Kosloff, D.) Wave-propagation simulation in an elastic anisotropic (transversely isotropic) solid. *Quart. J. Mech. Appl. Math.* 41 (1988), no. 3, 319–345. (Summary) 89h:73018 73D15 (73–04, 73–08, 73C30, 86A15)
- Koslowski, Jürgen** Closure operators with prescribed properties. *Categorical algebra and its applications (Lousain-La-Neuve, 1987)*, 208–220, *Lecture Notes in Math.*, 1348, Springer, Berlin-New York, 1988. (Kimmo I. Rosenthal) 89j:18003 18A99
- Koslowski, Peter** Maximierung von Existenz. Leibniz' Theorie der besten aller möglichen Welten und die Wirtschaftstheorie. (French summary) [Maximization of existence. Leibniz' theory of the best of all possible worlds and the theory of economics] *Studia Leibnitiana* 19 (1987), no. 1, 54–67. (Summary) 89m:01037 01A45 (90–03)
- Kosman, E. G.** Transformation of  $(0, 1)$ -matrices. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 8, 9–11, 85. (Béla Uhrin) 89m:05029 05B20 (05C45)
- Geometric characterization of the Sylow  $p$ -subgroups of the restricted linear group. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 3, 391–397, 408; translation in *Ukrainian Math. J.* 40 (1988), no. 3, 337–343. (E. M. Pal'chik) 89k:20040 20D20
- Kosmodamianskii, A. S.** (with Zhitnyaya, V. G.) Forced vibrations of a multiply connected isotropic plate. (Russian) *Teoret. i Prikl. Mekh. (Kiev/Dniet'sk) No. 18 (1987)*, 105–111, vi. (Summary) 89g:73032 73K12
- Kosmolevskii, A. A., Jr.** Sufficient conditions for the concavity of the solution of the Dirichlet problem for the equation  $\Delta u = -1$ . (Russian) *Mat. Zametki* 42 (1987), no. 4, 537–542, 622. (Ognian Kounchev) 89b:35027 35J05 (31A35)
- Kosolapov, V. I.** (with Borisenko, S. D.; Obolenskii, A. Yu.) ★ Устойчивость процессов при непрерывных и дискретных возмущениях. (Russian) [Stability of processes under continuous and discrete perturbations] With a foreword by A. A. Martynuk. "Naukova Dumka", Kiev, 1988. 199 pp. (P. Brunovsky) 89h:34042 34D10 (34–02, 34D20, 34D99, 93D99)
- Kosorukov, O. A.** (with Kokhova, S. V.) A class of dynamic problems on the optimal allocation of resources on network graphs. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* 1988, no. 3, 31–38, 71; translation in *Moscow Univ. Comput. Math. Cybernet.* 1988, no. 3, 36–44. (Summary) 89j:90085 90B05 (90B10)
- Application of methods of decomposition to problems of synthesizing communication networks when there are undetermined factors. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 2, 63–66; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 4, 55–59, 220 (Russian). (Summary) 89h:90088 90B10
- Kosov, V. V.** (with Urupov, A. K.; Sharifullin, R. G.) Continuation of seismic fields. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* 1988, no. 2, 31–45. (Summary) 89m:86014 86A15 (73D25)
- Kosovskii, N. K.** A lower bound on circuit complexity in the reduction of exponential enumeration. (Russian) *Voprosy Kibernet.* (Moscow) No. 131 (1987), 167–180. (Summary) 89c:03109 03G05 (03D15, 06E30, 68Q35, 94C10)
- Kospanov, E. Sh.** Covering by balls of unit radius whose centers are incomparable. (Russian) *Metody Diskret. Analiz.* No. 44 (1986), 54–57, 69. (Marek Lassak) 89b:52026 52A45
- Kossak, R.** (with Kotlarski, H.) Results on automorphisms of recursively saturated models of PA. *Fund. Math.* 129 (1988), no. 1, 9–15. (Peter Clote) 89h:03064 03C62 (03C50, 03C57)
- Kossakowski, Andrzej** (with Ingarden, R. S.) The principle of maximum entropy and Boltzmann type kinetic equations. *Rep. Math. Phys.* 24 (1986), no. 2, 177–186. (Carlo Cercignani) 89h:82003 82A05 (82A40, 94A17)
- (with Maćkowiak, J.) Minimization of the free energy of large continuous quantum systems over product states. *Rep. Math. Phys.* 24 (1986), no. 3, 365–376. (Mary Lunn) 89d:82033 82A15
- Kossioris, George T.** (with Athanassoulis, Gerassimos A.) Series expansions of solutions of plane elliptic partial differential equations in domains of arbitrary shape. *Appl. Anal.* 27 (1988), no. 4, 253–269. (E. Kresyzig) 89c:35031 35C10 (35C15, 35J99)
- Kosso, Peter** Spacetime horizons and unobservability. *Stud. Hist. Philos. Sci.* 19 (1988), no. 2, 161–173. (Laszlo B. Szabados) 89e:83047 83C75
- Kossowski, Marek** Special points on first order partial differential equations and the deformations of solutions. *Trans. Amer. Math. Soc.* 302 (1987), no. 1, 171–184. (D. R. J. Chillingworth) 89a:35014 35A30 (35B32, 35F20, 58A20, 58C27, 58F14)
- Metric singularity phenomena in pseudo-Riemannian geometry. *Mathematics and general relativity (Santa Cruz, CA, 1986)*, 277–284, *Contemp. Math.*, 71, Amer. Math. Soc., Providence, RI, 1988. (László Szabó) 89f:53048 53C05 (53C80, 83C75)
- Kossyi, I. A.** (with Barkhudarov, E. M.; Mdivnishvili, M. O.; Sokolov, I. V.; Taktakishvili, M. I.) Non-one-dimensional convergent shock waves. *Fluid Dynamics* 23 (1988), no. 2, 296–302; translated from *Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* 1988, no. 2, 164–170 (Russian). (Not in MR) 76L05
- Kost, Betina** (with Martini, Horst) Isophotische Elementarscharen im  $E^4$ . [Isophotic linear systems of elements in  $E^4$ ] *Wiss. Z. Pädagog. Hochschule "Karl Friedrich Wilhelm Wander" Dresden* 21 (1987), 21–24. (H. Brauner) 89k:51027 51M20
- mrsmor-Kosta, Neza** see *Mrsmor-Kosta, Neza*
- Kostadinov, I. Z.** Disorder and hierarchical organization. *Localization in disordered systems (Bad Schandau, 1986)*, 155–166, *Teubner-Texte Phys.*, 16, Teubner, Leipzig, 1988. (Summary) 89j:82063 82A57
- Kostadinov, St. I.** On the existence of fixed points of a given type of mappings in Banach spaces. (Russian. German summary) *Plovdiv Univ. Nauchn. Trud.* 22 (1984), no. 1, 113–124 (1985). (Summary) 89c:47069 47H10
- (with Zabreiko, P. P.; Bainov, D. D.) Stability of linear equations with impulse effect. *An. Stiint. Univ. "Al. I. Cuza" Iași Sect. I a Mat. (N.S.)* 33 (1987), no. 2, 113–118. (Snezhana Khristova) 89b:34120 34D20 (34G10, 93C57)
- (with Bainov, D. D.) Exponential stability of the solutions of linear homogeneous differential equations with impulse effect in a Banach space. *C. R. Acad. Bulgare Sci.* 40 (1987), no. 2, 29–30. (A. Corduneanu) 89b:34142 34G10 (34D20, 93C57)
- (with Bainov, D. D.; Zakhariyev, Andrei) On an application of Fredholm's alternative for nonlinear abstract integral equations. *An. Stiint. Univ. "Al. I. Cuza" Iași Sect. I a Mat. (N.S.)* 34 (1988), no. 1, 25–30. (Donald Kershaw) 89c:45017 45N05 (45D05, 47H15)
- (with Bainov, D. D.; Zakhariyev, Andrei) Abstract Volterra type integral equations. *Bull. Inst. Math. Acad. Sinica* 16 (1988), no. 1, 93–104. (A. Corduneanu) 89c:45011 45N05 (45D05, 47H99)
- (with Bainov, D. D.; Myshkis, A. D.) Bounded and periodic solutions of differential equations with impulse effect in a Banach space. *Differential Integral Equations* 1 (1988), no. 2, 223–230. (V. Popescu) 89b:34147 34G20 (34C11, 34C25, 93C57)
- (with Bainov, D. D.; Zabreiko, P. P.) Stability of the general exponent of nonlinear impulsive differential equations in a Banach space. *Internat. J. Theoret. Phys.* 27 (1988), no. 3, 373–380. (Curtis C. Travis) 89c:34067 34G20 (34D05, 34D10, 93C57)
- (with Zabreiko, P. P.; Bainov, D. D.) Characteristic exponents of impulsive differential equations in a Banach space. *Internat. J. Theoret. Phys.* 27 (1988), no. 6, 731–743. (Mihail Voicu) 89f:34087 34G10 (34D05, 93C57)
- (with Bainov, D. D.; Zabreiko, P. P.)  $L_p$ -equivalence of impulsive equations. *Internat. J. Theoret. Phys.* 27 (1988), no. 11, 1411–1424. (Wan Zhuang) 89m:34083 34G20 (47H15, 93C57)

- Kostant, B. see Gelfand, I. M., 89c:01042b
- Kostelevky, V. Alan (with Truax, D. Rodney) Baker-Campbell-Hausdorff relations for the super-Poincaré group. *J. Math. Phys.* **28** (1987), no. 10, 2480-2487. (Summary) 89c:22033 22E65 (17B70, 81C40)
- (with Lechtenfeld, Olaf; Lerche, W.; Samuel, Stuart; Watamura, Satoshi) Conformal techniques, bosonization and tree-level string amplitudes. *Nuclear Phys. B* **288** (1987), no. 1, 173-232. (Summary) 89b:81201 81E99 (81E30, 81F20)
- (with Lechtenfeld, Olaf; Samuel, Stuart) Covariant string amplitudes on exotic topologies to one loop. *Nuclear Phys. B* **298** (1988), no. 1, 133-177. (Andrew A. Bysenko) 89c:81136 81E99 (81E30)
- (with Samuel, Stuart) The static tachyon potential in the open bosonic string theory. *Phys. Lett. B* **207** (1988), no. 2, 169-173. (Summary) 89d:81103 81E99 (81E30)
- (with Fatyga, B. W.; Truax, D. Rodney) Baker-Campbell-Hausdorff relations for the orthosymplectic group OSP(1/2). *J. Math. Phys.* **30** (1989), no. 2, 291-294. (Summary) 89j:22040 22E65 (81D30)
- Kostelich, Eric J. (with Yorke, James A.) Noise reduction in dynamical systems. *Phys. Rev. A* (3) **38** (1988), no. 3, 1649-1652. (Summary) 89i:50091 58F13 (76F99, 94A05)
- Kostenko, Yu. T. (with Mazmanishvili, A. S.) Compact representation of the Hadamard function in a multidimensional space that is based on an integral correlation matrix operator. (Russian) *Vychisl. Prikl. Mat. (Kiev)* **66** (1988), 104-106, 127. (Summary) 89k:93226 93E20 (93B28)
- Kostenko, Yu. V. (with Stepashko, V. S.) A GMDH algorithm for two-level modeling of multidimensional cyclic processes. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 4, 49-57 (1988); translated from *Avtomatika* **1987**, no. 4, 51-59, 96 (Russian. English summary). (Summary) 89f:90037 90A20 (00A71, 39A10, 62M10)
- (with Krotov, G. I.) An algorithm for self-organization of additive-multiplicative models of complex systems. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 6, 73-78 (1988); translated from *Avtomatika* **1987**, no. 6, 69-73, 97 (Russian. English summary). (Summary) 89m:92002 92A05
- de Koster, M. B. M. Approximate analysis of production systems. *European J. Oper. Res.* **37** (1988), no. 2, 214-226. (Summary) 89g:90122 90B30 (90B22)
- Kostetskaya, G. S. (with Samko, S. G.) A condition for the absolute integrability of Fourier integrals. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 3, 72-75, 86; translation in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 3, 103-108. (Tatjana Ostrogorski) 89g:42027 42B10
- Kostina, M. A. (with Popov, L. D.; Kornilova, G. F.; Korotava, L. T.; Glezer, N. N.; Khripun, M. S.) A system of DELTA-PLAN software for the numerical analysis of improper problems in linear programming for the BESM-6 computer. (Russian) *Models and methods in operations research (Russian)*, 31-38, 212, "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (see 89j:00018) 90C05
- Kostlan, Eric Complexity theory of numerical linear algebra. Special issue on emerging paradigms in applied mathematical modelling. *J. Comput. Appl. Math.* **22** (1988), no. 2-3, 219-230. (Zeng Rong Chen) 89i:65048 65F99 (65F35)
- Kostochka, A. (with Asratyan, A. S.; Mirumyan, A. N.) A criterion for the unique colorability of edges of bipartite multigraphs. (Russian) *Metody Diskret. Analiz.* **45** (1987), 3-20, 95. (O. V. Borodin) 89f:05072 05C15
- (with Pyber, L.) Small topological complete subgraphs of "dense" graphs. *Combinatorica* **8** (1988), no. 1, 83-86. (J. Spencer) 89e:05079 05C10 (05C80)
- Upper bounds on the chromatic number of graphs. (Russian) *Trudy Inst. Mat. (Novosibirsk)* **10** (1988), *Modeli i Metody Optim.*, 204-226, 265. (Ioan Tomescu) 89d:05075 05C15 (05C35, 90B10)
- Kostochko, N. A. Representation of analytic functions of several complex variables by some function series. (Russian) *Dokl. Akad. Nauk UzSSR* **1987**, no. 11, 7-10. (Editors) 89b:32006 32A10
- Kostogryzov, A. I. A class of priority disciplines with a combination of service principles in order of priority and packet processing of calls. Analysis of their properties and of the probabilities of application in automatic control systems. (Russian) *Analysis of stochastic systems by methods in operations research and reliability theory (Russian)*, 52-55, v. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (see 89b:90004) 60K25
- Kostomarov, D. P. (with Dnestrovskii, Yu. N.) Mathematical problems on plasma diagnostics. *Ill-posed problems in the natural sciences*, 130-170, *Adv. Sci. Tech. USSR: Math. Mech. Ser.*, "Mir", Moscow, 1987. (M. Drăganu) 89f:82048 82A45
- (with Vasil'ev, F. P.; Kaganov, B. G.; Kukulin, V. I.) Application of the penalty function method for solving multiparticle quantum mechanics problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 10, 1520-1529, 1598. (Summary) 89j:81035 81C05 (49D30)
- Kostopoulos, Vassilis (with Dassios, George) The scattering amplitudes and cross sections in the theory of thermoelasticity. *SIAM J. Appl. Math.* **48** (1988), no. 1, 79-98. (Summary) 89c:73090 73U05 (73D25)
- Kostov, Ivan (with Krzywicki, A.) On the entropy of random surfaces with arbitrary genus. *Phys. Lett. B* **187** (1987), no. 1-2, 149-152. (Berginnur Durhuus) 89a:81104 81E25 (58F07, 58F11, 82A25, 82A41, 82A68)
- Two-point correlator for the  $D=1$  closed bosonic string. *Phys. Lett. B* **215** (1988), no. 3, 499-504. (Summary) 89m:81122 81E25 (81E30)
- (with Duplantier, Bertrand) Conformal spectra of polymers on a random surface. *Phys. Rev. Lett.* **61** (1988), no. 13, 1433-1437. (Philippe Christe) 89k:82067 82A51 (82A25, 82A41, 82A69)
- Kostova, T. V. Numerical solutions of a hyperbolic differential-integral equation. Hyperbolic partial differential equations. *V. Comput. Math. Appl.* **15** (1988), no. 6-8, 427-436. (G. W. Hedstrom) 89m:65115 65R20
- Kostrikin, Aleksei Ivanovich ★ Бокыр Бепукална. (Russian) [Around Burnside] "Nauka", Moscow, 1986. 232 pp. (J. Wiegold) 89d:20032 20F50 (17B30, 20F40, 20F45)
- (with Vitushkin, A. G.; Gonchar, A. A.; Kashin, B. S.; Nikolskii, S. M.; Novikov, S. P.; Uflyanov, P. L.; Faddeev, L. D.) Evgenii Mikhailovich Nikishin. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 5(257), 183-188. (Editors) 89b:01066 01A70
- (with Arnautov, V. I.; Platonov, V. P.; Ryabukhin, Yu. M.; Skorniyakov, L. A.) Vladimir Aleksandrovich Andrunakievich (on the occasion of his seventieth birthday). (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 1(259), 219-220; translation in *Russian Math. Surveys* **43** (1988), no. 1, 261-263. (Editors) 89b:01033 01A70
- (with Ershov, Yu. L.; Zaitsev, D. I.; Krasovskii, N. N.; Mitropol'skii, Yu. A.; Platonov, V. P.; Faddeev, D. K.; Shemetkov, L. A.) Sergei Nikolaevich Chernikov. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 2(260), 125-126; translation in *Russian Math. Surveys* **43** (1988), no. 2, 153-155. (Editors) 89i:01074 01A70
- (with Iskovskikh, V. A.; Klyachko, A. A.; Manin, Yu. I.; Tyurin, A. N.; Shafarevich, I. R.) Valentin Evgen'evich Voskresenskii (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 2(260), 169-170; translation in *Russian Math. Surveys* **43** (1988), no. 2, 201-203. (Editors) 89i:01004 01A70
- see also *Algebra and number theory (with applications)*, 89f:11005
- Kostromin, G. Ya. An algorithm for a random walk on parallelepipeds for solving a boundary value problem for a differential equation of elliptic type. (Russian) *Probabilistic methods and cybernetics*, No. 22 (Russian), 80-90, *Kazan. Gos. Univ., Kazan'*, 1987. (Hans-Eberhard Scholz) 89j:65081 65N99 (35J25)
- Kostrov, A. V. (with Gukov, V. V.) A method for the nonlinear identification of the motion of an aircraft. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 7, 38-50; translation in *Avtomat. Remote Control* **49** (1988), no. 7, part 1, 848-857. (Not in MR) 93B30 (93C75)
- Kostykin, V. V. (with Kvitsinskii, A. A.) Potential scattering in a homogeneous external electrostatic field. (Russian. English summary) *Teoret. Mat. Fiz.* **75** (1988), no. 3, 416-430; translation in *Theoret. and Math. Phys.* **75** (1988), no. 3, 619-629. (Summary) 89f:81228 81F05
- Kostyrev, G. E. Bundles of connections with holonomy group  $\mathbb{R}^1$ . (Russian) *Webs and quasigroups (Russian)*, 87-91, *Kalinin. Gos. Univ., Kalinin*, 1988. (V. Cruceanu) 89f:53049 53C05
- Kostyrko, Pavel The symmetric derivative and the Darboux property. *Real Anal. Exchange* **13** (1987/88), no. 1, 305-309. (Jack B. Brown) 89c:26008 26A24 (26A21, 26A27, 54C30)
- On a local form of Lobachevskii's functional equation. (Russian and Slovak summaries) *Časopis Pěst. Mat.* **113** (1988), no. 2, 179-183. (Shigeru Haruki) 89c:39013 39B40
- Kostyuchenko, A. G. (with Boimatov, K. Kh.) The distribution of the eigenvalues of an elliptic operator in a bounded domain. (Russian. English summary) *Trudy Sem. Petrovsk.* **10** (1988), 3-18, 256. (S. Z. Levendorskii) 89k:35170 35P20 (35J40)
- Kostyuk, G. Ya. (with Zhuchenko, S. P.; Zhuchenko, A. P.; Baltaitis, Yu. V.; Nesterenko, B. B.) Principles for constructing a mathematical model for the peristalsis of the small intestine. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 64, 52 pp. (Summary) 89c:92020 92A09 (92A06)
- (with Zhuchenko, S. P.; Zhuchenko, A. P.; Baltaitis, Yu. V.; Nesterenko, B. B.) Investigation of peristaltic processes using a mathematical model. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 67, 28 pp. (Summary) 89c:92021 92A09 (92A06)
- Kostyuk, V. N. Inductive methods and inductive investigations. The concept of scientific hypothesis and analogy. (Russian) *The logic of scientific knowledge (Russian)*, 93-118, "Nauka", Moscow, 1987. (Tomáš Havránek) 89c:03039 03B48
- Kostyukevich, A. S. (with Starostenko, V. I.; Kozlenko, V. G.) Complex interpretation of gravimetric and seismometric data. I. Principles and methods. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1988**, no. 4, 33-49. (Not in MR) 86A15
- Kostyukevich, P. P. (with Kirichenko, V. V.) Biserical rings. (Russian) *Ukrain. Mat. Zh.* **38** (1986), no. 6, 718-723, 814. (J. Jirásko) 89b:16037 16A64 (16A51)
- Kostyukova, O. I. (with Gabasov, R.; Kirillova, F. M.; Raketskii, V. M.) ★ Конструктивные методы оптимизации. Часть 4. (Russian) [Constructive methods of optimization. Part 4] Выпуклые задачи. [Convex problems] "Universitet'skoe", Minsk, 1987. 224 pp. (W. W. Breckner) 89i:49023 49D40 (49D30, 49D45, 90C25)
- (with Gabasov, R.; Kruchenok, Yu. L.) Optimization of a linear dynamical system with nonlinear input. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **31** (1987), no. 12, 1069-1072, 1149. (Nguyen Dong Yen) 89f:49002 49A10 (49B10, 93B40)
- Kostyukovich, N. N. (with Bazański, S. L.) Dynamics of relative motion of charged test particles in general relativity. *Acta Phys. Polon. B* **18** (1987), no. 10, 891-912. (K. L. Duggal) 89b:83013 83C10 (83C50)
- (with Bazański, S. L.) On first integrals of the electromagnetic deviation equations. *Acta Phys. Polon. B* **18** (1987), no. 11, 983-996. (Geoffrey Prince) 89c:83019 83C40 (83C50)
- Koszul, Jean-Louis (with Zou, Yi Ming) ★ Xin jihe yinlun. (Chinese) [Introduction to symplectic geometry] Xiandai Shuxue Jichu Gongshu. [Foundations of Modern Mathematics Series] Kexue Chubanshe (Science Press), Beijing, 1986. iv+143 pp. (Chuan Yu Ma) 89a:58043 58F05
- see also Cartan, Henri, 89c:01050
- Kota, V. K. B. (with Bijker, Roelof) Interacting boson-fermion model of collective states. IV. The SU(3) ⊗ U(2) limit. *Ann. Physics* **187** (1988), no. 1, 148-197. (G. Vanden Bergh) 89j:81259 81G30
- Kotani, Shinichi Link between periodic potentials and random potentials in one-dimensional Schrödinger operators. *Differential equations and mathematical physics (Birmingham, Ala., 1986)*, 256-269, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Eugen Belokolos) 89b:81044 81C10 (34B25, 34F05, 82A05)
- One-dimensional random Schrödinger operators and Herglotz functions. *Probabilistic methods in mathematical physics (Katata/Kyoto, 1985)*, 219-250, Academic Press, Boston, MA, 1987. (Helge Holden) 89b:60100 60H25 (34B99, 47E05, 82A42)
- Problems of one-dimensional random Schrödinger operators. *Random media (Minneapolis, Minn., 1985)*, 211-214, *IMA Vol. Math. Appl.*, 7, Springer, New York-Berlin, 1987. (W. O. Amrein) 89d:34096 34F05 (34B25, 60H10, 82A42)
- (with Simon, Barry) Localization in general one-dimensional random systems. II. Continuum Schrödinger operators. *Comm. Math. Phys.* **112** (1987), no. 1, 103-119. (Werner Kohler) 89d:81034 81C20 (82A42)
- Absolutely continuous spectrum of one-dimensional random Schrödinger operators and Hamiltonian systems. *Probability theory and mathematical statistics (Kyoto, 1986)*, 195-205, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (M. Fukushima) 89g:60202 60H25 (81C10)
- (with Ushiroya, N.) One-dimensional Schrödinger operators with random decaying potentials. *Comm. Math. Phys.* **115** (1988), no. 2, 247-266. (Anton Bovier) 89f:60069 60H25 (34F05, 47E05)
- (with Krishna, M.) Almost periodicity of some random potentials. *J. Funct. Anal.* **78** (1988), no. 2, 390-405. (Helge Holden) 89i:60133 60H25 (47E05, 82A42)
- (with Ito, H. M.; Yokota, T.) Size distribution of fractured areas in one-dimensional systems. *J. Statist. Phys.* **51** (1988), no. 3-4, 569-584. (Summary) 89h:73037 73M05



- (86A15)
- Kotarski, Wiesław** Further generalization of the Dubovicki-Milutin theorem. *J. Optim. Theory Appl.* **54** (1987), no. 3, 565–573. (W. F. Tyndall) **89b:49040** 49B27 (90C48)
- A remark on the Hahn-Banach theorem. (Serbo-Croatian summary) *Rad. Mat.* **3** (1987), no. 1, 1065–109. (I. Namioka) **89a:46017** 46A22
- Characterization of Pareto optimal points in problems with multi-equality constraints. *Optimization* **20** (1989), no. 1, 93–106. (A. Göpfert) **89m:90151** 90C31 (49B27)
- Kotchey, A. C. W.** (with Shore, G. M.) Complex symmetries, the SQCD vacuum and supersymmetric vacuum alignment. *Nuclear Phys. B* **301** (1988), no. 2, 267–284. (Summary) **89c:81189** 81G05 (81G20)
- Kotchenko, V. F.** (with Bodunov, N. A.) Dependence of the stability of linear periodic systems on the period. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 2, 338–341, 366–367. (Not in MR) **34C25** (34D20)
- Kotěcký, R.** (with Miracle-Sole, S.) Roughening transition for the Ising model on a BCC lattice. A case in the theory of ground states. Proceedings of the symposium on statistical mechanics of phase transitions—mathematical and physical aspects (Trebon, 1986). *J. Statist. Phys.* **47** (1987), no. 5–6, 773–799. (C. A. Hurst) **89b:82045** 82A68 (82A25)
- (with Holický, P.; Zahradník, M.) Rigid interfaces for lattice models at low temperatures. *J. Statist. Phys.* **50** (1988), no. 3–4, 755–812. (Mary Lunn) **89j:82072** 82A68 (82A05, 82A25)
- see also Berezin, F. A., **89b:58006**
- Kotelenetz, Peter** (with Curtin, R. F.) Stochastic bilinear spectral systems. *Stochastics* **20** (1987), no. 1, 3–15. (Editors) **89b:60145** 60H15 (73K05)
- A maximal inequality for stochastic convolution integrals on Hilbert spaces and space-time regularity of linear stochastic partial differential equations. *Stochastics* **21** (1987), no. 4, 345–358. (Ya. I. Bilopol'ska) **89b:60087** 60H05 (35R60, 46G99, 47D05, 60H15)
- High density limit theorems for nonlinear chemical reactions with diffusion. *Probab. Theory Related Fields* **78** (1988), no. 1, 11–37. (Ralf Manthey) **89g:60122** 60F17 (60G15, 60H15, 60J75)
- Kotelnikov, G. A.** Definition of group symmetry of differential equations. *Group theoretical methods in physics*, Vol. 1–3 (Zvenigorod, 1982), 507–516, Harwood Academic Publ., Chur, 1985. (Editors) **89m:58214** 58G35 (35A30)
- Invariance of the Schrödinger homogeneous equation relative to the Lie algebra of the conformal group  $C_{1,3}$ . *Group theoretical methods in physics*, Vol. 1–3 (Zvenigorod, 1982), 517–520, Harwood Academic Publ., Chur, 1985. (Editors) **89m:58215** 58G35 (35A30, 35J10, 35K10)
- The Galilei group in investigations of the symmetry properties of the Maxwell equations. I. General relations. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jurmala, 1985), 466–479, "Nauka", Moscow, 1986. (see **89d:81001**) **58G35** (78A25)
- The Galilei group in investigations of the symmetry properties of the Maxwell equations. II. Concrete examples. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jurmala, 1985), 479–490, "Nauka", Moscow, 1986. (see **89d:81001**) **58G35** (78A25)
- The Galilei group in investigations of the symmetry properties of the Maxwell equations. III. Space-time transformations consistent with the invariant speed of light and Newtonian unique time. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jurmala, 1985), 490–494, "Nauka", Moscow, 1986. (see **89d:81001**) **58G35** (78A25)
- Kotlyar, V. V.** (with Karanikolov, A. F.) Universal relations in a relational model. (Russian) *Mat. Issled.* No. 100 *Sistemy Optim. Obrab. Danykh* (1988), 48–54, 150. (Not in MR) **58P15**
- Reduced functional dependences and normal forms of schemes of relations. (Russian) *Mat. Issled.* No. 100 *Sistemy Optim. Obrab. Danykh* (1988), 61–70, 150. (Yuri Breitbart) **89i:68020** 68P15
- Koter, Malgorzata** Fixed points of Lipschitzian 2-rotative mappings. *Boll. Un. Mat. Ital. C* (6) **5** (1986), no. 1, 321–339 (1987). (Christian Fenske) **89d:47126** 47H10 (47H09)
- Koth, Maria** (with Sigmund, K.) Gradients for the evolution of bimatrix games. *J. Math. Biol.* **25** (1987), no. 6, 623–635. (W. Gordon S. Hines) **89a:92045** 92A15 (90D45)
- Kothari, S.** (with Miller, Leslie L.; Gadia, S. K.; Liu, Ken Chih) Completeness issues for join dependencies derived from the universal relation join dependency. *Inform. Process. Lett.* **28** (1988), no. 5, 269–274. (Summary) **89j:68029** 68P15
- Kötthe, Gottfried** Duality of tensor products of convergent-free spaces. *Collect. Math.* **37** (1986), no. 2, 125–133. (K. Floret) **89c:46094** 46M05 (46A45)
- Kothwala, N. H.** (with Gupta, Pratap Chandra) A study of second order approximation of some ratio type strategies. *Biometrical J.* **30** (1988), no. 3, 369–377. (Not in MR) **62D05**
- Kotli, O. A.** (with Savina, K. V.) Classification of two-dimensional quartics on the Grassmannian  $G(1,3)$ . (Russian) *The birational geometry of algebraic varieties* (Russian), 36–38, 100, *Yarosl. Gos. Ped. Inst., Yaroslavl*, 1983. (Sebastià Xambó Descamps) **89f:14059** 14N05 (14M15)
- Kotkowski, Bogdan** (with Waszak, Aleksander) Some remarks on linear varieties. *Fasc. Math.* No. 17 (1987), 5–10. (R. H. Lohman) **89b:46011** 46A99 (46B99)
- Kotlarski, H.** (with Kossak, R.) Results on automorphisms of recursively saturated models of PA. *Fund. Math.* **129** (1988), no. 1, 9–15. (Peter Clote) **89b:03064** 03C62 (03C50, 03C57)
- Kotlikoff, Laurence J.** (with Summers, Lawrence H.) Tax incidence. *Handbook of public economics*, Vol. II, 1043–1092, *Handbooks in Econ.*, 4, North-Holland, Amsterdam-New York, 1987. (see **89m:90020b**) **90A10**
- (with Pakes, Ariel) Looking for the news in the noise. Additional stochastic implications of optimal consumption choice. (French summary) *Ann. Econom. Statist.* **1988**, no. 9, 29–46. (Summary) **89h:90062** 90A20
- Kotlyar, B. D.** Packing densities of bounded sets. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* **126** (1987), no. 3, 469–472. (Bela Uhrin) **89b:52023** 52A40 (52A45)
- Kotlyar, V. Ya.** The optimal period of time for the maintenance of a system. (Russian) *Analysis of stochastic systems by methods in operations research and reliability theory* (Russian), 55–61, v. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (see **89b:90004**) **90B25**
- (with Moroz, G. B.) Analysis of a system of "reserve parts" by an analytic-statistical method. (Russian) *Mathematical methods for the analysis of complex stochastic systems* (Russian), 44–51, iv, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. (Summary) **89m:60211** 60K20 (90B25)
- Kotlyarov, E. L.** The size of the first overshoot across the upper level by a random walk on a Markov chain. (Russian) *Asymptotic problems in the theory of random processes* (Russian), 87–89, 117, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (N. H. Bingham) **89g:60218** 60J15
- Kotob, S.** (with Salman, Mutasin A.; Juraidan, M.) Optimal control of solar cooling systems. *Optimal Control Appl. Methods* **9** (1988), no. 2, 187–199. (Not in MR) **93C75**
- Kotomtseva, L. A.** (with Grigoryeva, E. V.; Samson, A. M.) Regular and chaotic dynamics in a laser with a saturable absorber. *Phys. Lett. A* **130** (1988), no. 6–7, 344–349. (Summary) **89d:78042** 78A60
- Kotov, S. V.** S-integral solutions of a class of normed Diophantine equations. (Russian) *Mat. Zametki* **42** (1987), no. 6, 769–775, 909. (A. Pethő) **89c:11050** 11D57 (11J87)
- S-integral solutions of a class of Diophantine equations of norm form with a polynomial right-hand side. (Russian) *Acta Arith.* **49** (1988), no. 5, 449–458. (A. Pethő) **89k:11015** 11D57 (11J87)
- Kotor, V. E.** (with Cherkasova, L. A.) On properties of nets for modelling of systems and generalized processes. *Ann. Univ. Sci. Budapest. Sect. Comput.* **6** (1985), 91–101 (1987). (Summary) **89c:68028** 68Q10 (93A10, 93C55)
- Kotov, V. N.** (with Boiko, R. V.) Stochastic models for microbiological processes. (Russian) *Asymptotic problems in the theory of random processes* (Russian), 23–33, 114, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (N. L. Vulchanov) **89g:92034** 92A15 (60J85)
- Kotrutsa, V. P.** On an application of the coupling method. (Russian) *Mat. Issled.* No. 97 *Stokhasticheskiy Analiz* (1987), 63–68, 89. (L. Podkaminer (Zbl 628:60045)) **89f:60112** 60K25 (90B22)
- Kotsev, I. N.** see Kotzev, J. N.
- Kotsiolis, A. A.** see Cotsiolis, Athanasios
- Kott, L.** see Colloquium: Automata, Languages and Programming. **89f:68002**
- Kotta, Ülle** A group-theoretic approach to the observability of nonlinear dynamical systems with discrete time. (Russian) *Kibernet. i Ychisl. Tekhn.* No. 73 (1987), 26–30, 101. (Valeriu Prepelitã) **89b:93025** 93B07 (58F40, 93B25, 93C55)
- Kotta, Yu. R.** The ensuring of autonomy of a nonlinear dynamical system with discrete time. *Soviet J. Comput. Systems Sci.* **25** (1987), no. 6, 161–166 (1988); translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 3, 175–179, 223 (Russian). (Not in MR) **49D27** (93B50, 93C10, 93C55)
- Kotulski, Zbigniew** On the Markovian model of turbulent diffusion. *Rep. Math. Phys.* **24** (1986), no. 1, 129–140. (Summary) **89b:76023** 76R50 (60J60, 76F99)
- Kotus, Janina** (with Klok, Fopke) A sufficient condition for  $\Omega$ -stability of vector fields on open manifolds. *Compositio Math.* **65** (1988), no. 2, 171–176. (Bahman K. Honary) **89m:58114** 58F10
- Kotz, S.** (with Johnson, Norman Lloyd<sup>2</sup>; Gunther, Nina) Inspection errors in Graff-Roeloffs' modification of hierarchical Dorfman screening procedures. *Comm. Statist. Theory Methods* **17** (1988), no. 1, 139–168. (Not in MR) **62N10**
- (with Johnson, Norman Lloyd<sup>2</sup>) Estimation from binomial data with classifiers of known and unknown imperfections. *Naval Res. Logist.* **35** (1988), no. 1, 147–156. (D. S. Tracy) **89b:62070** 62F10 (62H30, 62N99)
- (with Steutel, F. W.) Note on a characterization of exponential distributions. *Statist. Probab. Lett.* **6** (1988), no. 3, 201–203. (D. N. Shanbhag) **89b:60028** 60E05 (62E10)
- see also Krasovskii, N. N., **89b:90248**
- Kotze, L.** (with Steeb, W.-H.) Conservation laws in cellular automata. *Finite-dimensional integrable nonlinear dynamical systems* (Johannesburg, 1988), 333–346, *World Sci. Publishing, Singapore*, 1988. (Summary) **89k:58092** 58F05 (58F08, 68Q80)
- Kotzev, J. N.** (with Dirl, R.; Kasperkovitz, P.; Aroyo, M. I.; Angelova, M. N.) The symmetry of the group representations and the reduction of the multiplicity problem. *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jurmala, 1985), 583–590, "Nauka", Moscow, 1986. (see **89d:81001**) **22E70** (20C35, 22E40)
- (with Angelova, M. N.; Aroyo, M. I.) On the Wigner-Eckart theorem and coupled tensor operators for corepresentations of Shubnikov groups. *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jurmala, 1985), 603–608, "Nauka", Moscow, 1986. (see **89d:81001**) **81C40** (20C35, 82A60)
- (with Aleksandrova, D. A.) Space color groups with a one-color lattice and their application in the analysis of phase transitions. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jurmala, 1985), 689–695, "Nauka", Moscow, 1986. (see **89d:81001**) **82A25** (20H15)
- (with Dirl, R.; Kasperkovitz, P.; Aroyo, M. I.; Angelova, M. N.) The symmetry of group representations and the reduction of the multiplicity problem. *Group theoretical methods in physics*, Vol. II (Jurmala, 1985), 409–417, *VNU Sci. Press, Utrecht*, 1986. (Nigel B. Backhouse) **89c:20014** 20C15 (81C40)
- (with Dirl, R.; Kasperkovitz, P.; Aroyo, M. I.; Davies, B. L.) Generating relations for reducing matrices. III. Kronecker products. *J. Math. Phys.* **28** (1987), no. 9, 1947–1971. (John J. Sullivan) **89c:20028** 20C35 (81C40)
- (with Aleksandrova, D. A.) Full tables of colour space groups with colour-preserving translations. *Acta Cryst. Sect. A* **44** (1988), no. 6, 1082–1096. (Vojtěch Kopský) **89k:20070** 20H15 (82A25, 82A60)
- (with Peev, M. K.; Aroyo, M. I.; Dirl, R.; Kasperkovitz, P.) Generating relations for reducing matrices. IV. Subduced representations. *J. Math. Phys.* **30** (1989), no. 1, 9–17. (John J. Sullivan) **89m:20014** 20C35 (22E65, 81C40)
- Kotzig, Anton** (with Berman, Abraham) Cross-cloning and antipodal graphs. *Discrete Math.* **69** (1988), no. 2, 107–114. (J. Sheehan) **89g:05088** 05C75 (05C35)
- Kou, Chun Hai** Oscillation and asymptotic behavior of solutions to first-order functional-differential equations. (Chinese. English summary) *J. Shanxi Univ. Natur. Sci. Ed.* **1986**, no. 1, 4–10. (Yuan Tong Xu) **89m:34093** 34K15 (34K25)
- Kou, L. T.** (with Makki, K.) An even faster approximation algorithm for the Steiner tree problem in graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 147–154. (Ding Zhu Du) **89f:05063** 05C05 (90B99)
- Koubou, Omran** L'application canonique  $J: H^2(X) \otimes H^2(X) \rightarrow H^1(X \otimes X)$  n'est pas surjective en général. (English summary) [The natural map  $J: H^2(X) \otimes H^2(X) \rightarrow H^1(X \otimes X)$  is not onto in general] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 19, 949–953. (Guy Noel) **89m:46112** 46M05 (46B20, 46E40)
- Koubek, Václav** (with Demlová, Marie) Minimal congruences and coextensions in semigroups. *Semigroups, theory and applications* (Oberwolfach, 1986), 28–83, *Lecture*

- Notes in Math.*, 1320, Springer, Berlin-New York, 1988. (Katherine Johnston) **89i:20091** 20M10 (08A30)
- (with Goralčik, P.) On universality of extensions. *Semigroups, theory and applications (Oberwolfach, 1986)*, 150–153, *Lecture Notes in Math.*, 1320, Springer, Berlin-New York, 1988. (P. G. Trotter) **89b:20095** 20M50 (18B15, 18B40)
- (with Hromkovič, Juraj; Janiga, Ladislav) On automata with variable number of heads. *Proceedings of the Fifth International Meeting of Young Computer Scientists (Smolenice Castle, 1988)*. *Tanulmányok—MTA Számítástech. Automat. Kutató Int. Budapest No.* 208 (1988), 145–152. (see **89g:68002**) 68Q05
- (with Demlová, Marie) Endomorphism monoids of bands. *Semigroup Forum* **38** (1989), no. 3, 305–329. (K. D. Magill, Jr.) **89m:20067** 20M07 (20M20, 20M50)
- Koufogiorgos, Th.** (with Baikoussis, Ch.) Pairs of metrics on manifolds. *An. Ştiinţ. Univ. "Al. I. Cuza" Iaşi Secţ. I a Mat. (N.S.)* **33** (1987), no. 1, 59–62. (Udai Pratap Singh) **89h:53104** 53C25
- (with Baikoussis, Ch.) Integral inequalities for ovaloids in Euclidean space. *Mathematika* **34** (1987), no. 1, 77–81. (Joseph H. G. Fu) **89b:53097** 53C45 (53C65)
- Kouider, M.** (with Bondy, J. A.) Hamilton cycles in regular 2-connected graphs. *J. Combin. Theory Ser. B* **44** (1988), no. 2, 177–186. (Arthur M. Hobbs) **89b:05037** 05C45 (05C38)
- (with Favaron, Odile) Path partitions and cycle partitions of Eulerian graphs of maximum degree 4. *Studia Sci. Math. Hungar.* **23** (1988), no. 1–2, 237–244. (H. Joseph Straight) **89i:05213** 05C70 (05C38)
- Kouklou, F.** (with Petritis, D.; Zahradník, M.) Extension of the Pirogov-Sinai theory to a class of quasiperiodic interactions. *Comm. Math. Phys.* **118** (1988), no. 3, 365–383. (Jacek Miękisz) **89b:82047** 82A68 (82A05, 82A25)
- (with Petritis, D.; Zahradník, M.) Low-temperature phase diagram for models with small quasiperiodic interactions. *J. Phys. A* **21** (1988), no. 1, L37–L41. (Jacek Miękisz) **89b:82046** 82A68 (82A05, 82A25)
- Koukouvinos, Christos** (with Kouinias, S.) Hadamard matrices of the Williamson type of order  $4 \cdot m$ ,  $m = p \cdot q$  an exhaustive search for  $m = 33$ . *Discrete Math.* **68** (1988), no. 1, 45–57. (Jennifer Seberry) **89a:05040** 05B20
- Koul, C. L.** (with Arora, Arun Kumar) Applications of fractional calculus. *Ganita Sandesh* **1** (1987), no. 1–2, 11–14. (M. E. Muldoon) **89i:33007** 33A35 (26A33)
- Koul, Hira L.** (with Sievers, Gerald L.; McKean, Joseph) An estimator of the scale parameter for the rank analysis of linear models under general score functions. *Scand. J. Statist.* **14** (1987), no. 2, 131–141. (Yves Lepage) **89a:62099** 62G05 (62J05)
- Kounalis, Emmanuel** (with Rusinowitch, Michael) On word problems in Horn theories. *9th International Conference on Automated Deduction (Argonne, IL, 1988)*, 527–537, *Lecture Notes in Comput. Sci.*, 310, Springer, Berlin-New York, 1988. (see **89c:68004**) 68T15 (03B35, 03B70)
- Kounias, S.** (with Koukouvinos, Christos) Hadamard matrices of the Williamson type of order  $4 \cdot m$ ,  $m = p \cdot q$  an exhaustive search for  $m = 33$ . *Discrete Math.* **68** (1988), no. 1, 45–57. (Jennifer Seberry) **89a:05040** 05B20
- (with Farmakis, Nikos) On the excess of Hadamard matrices. *Discrete Math.* **68** (1988), no. 1, 59–69. (Jennifer Seberry) **89a:05041** 05B20
- (with Mathai, A. M.) Maximizing the sum of integers when their sum of squares is fixed. *Optimization* **19** (1988), no. 1, 123–131. (Rainer Burkard) **89h:90146** 90C10
- Kounnas, Costas** Strings and superstrings in less than ten dimensions. *International Workshop on Superstrings, Cosmology, Composite Structures (College Park, MD, 1987)*, 102–118, *World Sci. Publishing, Singapore*, 1987. (Sorin Marculescu) **89c:81155** 81E99 (81E30, 83E30)
- (with Quirós, M.; Zwiner, Fabio) A custodial symmetry for the cosmological constant in the effective theories of four-dimensional superstrings. *Nuclear Phys. B* **302** (1988), no. 3, 403–422. (Kei Ito) **89f:81192** 81E99 (81D20, 81E30, 83E30)
- (with Ferrara, S.; Porrati, Massimo) Superstring solutions with spontaneously broken four-dimensional symmetries. *Nuclear Phys. B* **304** (1988), no. 3, 500–512. (Aleksandar R. Bogoević) **89h:81183** 81E99 (81D20, 81E30, 81E40)
- (with Porrati, Massimo) Spontaneous supersymmetry breaking in string theory. *Nuclear Phys. B* **310** (1988), no. 2, 355–370. (Summary) **89j:81194** 81E99 (81D20, 81E30)
- (with Ferrara, S.; Porrati, Massimo)  $N = 1$  superstrings with spontaneously broken symmetries. *Phys. Lett. B* **206** (1988), no. 1, 25–31. (Paul Howe) **89h:81184** 81E99 (53C80, 81D20, 81E30)
- (with Kalara, S.; Olive, K. A.) Gravitational equations of motion at the string scale. *Phys. Lett. B* **215** (1988), no. 2, 265–272. (Summary) **89j:83078** 83E15 (81E30, 83E30, 83F05)
- (with Axenides, Minos; Ellis, Stephen D.) Universal behavior of  $D$ -dimensional superstring models. *Phys. Rev. D* **37** (1988), no. 10, 2964–2976. (Summary) **89c:81101** 81E99 (81E30, 83E30)
- Kouphos, Th. K.** (with Papadopoulos, Basil K.) Exponential laws for function spaces equipped with the quasi-uniformity of the quasi-uniform convergence. *Ann. Soc. Sci. Bruxelles Sér. I* **101** (1987), no. 3, 89–97 (1988). (P. Fletcher) **89m:54021** 54C35 (54E15)
- Koura, Antti** An approach to why-questions. *Synthese* **74** (1988), no. 2, 191–206. (Summary) **89k:03029** 03B65
- Kouri, Donald J.** (with Sun, Yan; Mowrey, Richard C.; Zhang, John Z. H.; Truhlar, Donald G.; Haug, Kenneth; Schwenke, David W.) New time-dependent and time-independent computational methods for molecular collisions. *Mathematical frontiers in computational chemical physics (Minneapolis, MN, 1987)*, 207–243, *IMA Vol. Math. Appl.*, 15, Springer, New York-Berlin, 1988. (see **89f:81004**) 81F99 (81G55)
- (with Zhang, John Z. H.; Haug, Kenneth; Schwenke, David W.; Shima, Yaakov; Truhlar, Donald G.)  $\mathcal{L}^2$  amplitude density method for multichannel inelastic and rearrangement collisions. *J. Chem. Phys.* **88** (1988), no. 4, 2492–2512. (Summary) **89a:81180** 81G55 (81–08)
- Kouřil, F.** (with Vrba, K.) ★ Nonlinear and parametric circuits. Principles, theory and applications. Ellis Horwood Series in Electrical and Electronic Engineering. *Ellis Horwood Ltd., Chichester; SNTL—Nákladatelství Technické Literatury, Prague*, 1988. 413 pp. ISBN 0-85312-606-2 (D. Stanomir) **89k:94002** 94Axx
- Kouris, C. B.** (with Ifantis, E. K.; Siafarikas, P. D.) The imaginary zeros of a mixed Bessel function. (German summary) *Z. Angew. Math. Phys.* **39** (1988), no. 2, 157–165. (M. E. Muldoon) **89d:33012** 33A40
- Kourouklis, Stavros** Asymptotic optimality of likelihood ratio tests for exponential distributions under type II censoring. *Austral. J. Statist.* **30** (1988), no. 1, 111–114. (Jan Amos Vittek) **89k:62033** 62F05
- Hodges-Lehmann efficacies of certain tests in multivariate analysis and regression analysis. (French summary) *Canad. J. Statist.* **16** (1988), no. 1, 87–95. (J. Steinbach) **89m:62022** 62F05 (60F10)
- Kourouniotis, Christos** Deformations of hyperbolic manifolds obtained by bending. *Proceedings of the Congress of Geometry (Thessaloniki, 1987)*, 99, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1988. (see **89b:53003**) 57N15 (53C20, 57N05)
- Koutník, V.** (with Frič, Roman) Completions of convergence groups. *General topology and its relations to modern analysis and algebra, VI (Prague, 1986)*, 187–201, *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (C. V. Riecke) **89f:54007** 54A20 (22A30, 54D55)
- Koutououlos, C. G.** General necessary conditions for the derivation of the secondary constraints of a first-order relativistic wave equation. *Internat. J. Theoret. Phys.* **27** (1988), no. 6, 703–710. (A. O. Barut) **89j:81079** 81D25
- Kouwenhoven, Frank M.** The  $\lambda$ -structure of the Green rings of cyclic  $p$ -groups. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 451–466, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Karin Erdmann) **89c:20022** 20C20 (20C30)
- Kovačević, Branko D.** (with Filipović, Vojislav Ž.) Robust real-time identification of linear systems with correlated noise. *Internat. J. Control* **48** (1988), no. 3, 993–1010. (Not in MR) 93E12 (93C05, 93C30)
- Kovačević, Ilija** A note on mappings and paracompactness. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **16** (1986), no. 2, 75–88. (C. E. Aull) **89g:54053** 54D18 (54C05)
- A note on  $\alpha$ -nearly paracompact ( $\alpha$ -almost paracompact) sets and almost closed mappings. (Serbo-Croatian summary) *Glas. Mat. Ser. III* **22(42)** (1987), no. 1, 163–169. (C. E. Aull) **89j:54022** 54D18 (54C10, 54C60)
- A note on subsets and almost closed mappings. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **17** (1987), no. 1, 137–141. (Janina Ewert) **89f:54031** 54C10
- Kovačević, K.** (with Graovac, Ante; Babić, D.) Simple estimates of the total and the reference pi-electron energy of conjugated hydrocarbons. *Graph theory and topology in chemistry (Athens, Ga., 1987)*, 448–457, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (Summary) **89c:81212** 81G55
- Kovačević, M.** (with Balaban, Alexandru T.; Brunvoll, J.; Cioslowski, Jerzy; Cyvin, B. N.; Cyvin, S. J.; Gutman, I.; He, Wen Chen; He, Wen Jie; Knop, J. V.; Müller, W. R.; Szymanski, K.; Tošić, Ratko; Trinajstić, N.) Enumeration of benzenoid and coronoid hydrocarbons. *Z. Naturforsch.* **42** (1987), no. 8, 863–870. (Summary) **89d:92090** 92A40 (05A15)
- Kovačević-Vujčić, V. V.** (with Asić, M. D.) An implementation of a semi-definite programming method to Chebyshev approximation problems. *Numerical methods and approximation theory, III (Niš, 1987)*, 111–119, *Univ. Niš, Niš*, 1988. (G. Di Pillo) **89m:49060** 49D39 (41A50, 65K05, 90C05)
- (with Asić, M. D.) An interior semi-infinite programming method. *J. Optim. Theory Appl.* **59** (1988), no. 3, 353–367. (R. Tichatschke) **89k:90095** 90C05 (49D39, 65K05)
- Kovach, Yu. I.** (with Gal', M. M.) ★ О двухстороннем аналитическом методе академика С. А. Чаплыгина для дифференциальных уравнений. (Russian) [Academician S. A. Chaplygin's two-sided analytic method for differential equations] *Печать [Preprint]*, 86–35, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1986. 14 pp. (E. S. Chichkin) **89b:34157** 34K10 (65L10)
- (with Gal', M. M.) On the theory of linear difference equations. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1988**, no. 7, 60 pp. (Summary) **89k:39003** 39A10
- Kovacher, V. Khr.** Smoothness of the billiard ball map for strictly convex domains near the boundary. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 856–860. (Edward Slaminka) **89m:58121** 58F11 (58F10)
- Kováčič-Beck, L.** (with Adler, Nevenka) The correlation between physical properties and topological indices of  $n$ -alkanes. *Graph theory and topology in chemistry (Athens, Ga., 1987)*, 194–200, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (Summary) **89c:92093** 92A40 (81G55)
- Kovács, A.** Über die Varianten der approximativen hodographischen Methode mit Anwendung in der Netztheorie der Profile. II. (Romanian summary) [On the variants of the approximative hodographic method with application in the net theory of profiles. II] *Inst. Politehn. "Traian Vuia" Timişoara. Lucr. Sem. Mat. Fiz.* **1986, November**, 33–37. (Not in MR) 76G05
- Über die Varianten der approximativen hodographischen Methode mit Anwendung in der Netztheorie der Profile. I. (Romanian summary) [On the variants of the approximative hodographic method with application in the net theory of profiles. I] *Inst. Politehn. "Traian Vuia" Timişoara. Lucr. Sem. Mat. Fiz.* **1986, May**, 47–52. (Not in MR) 76G05
- Kovács, Amos** Products of matrices over a finite field. *Illinois J. Math.* **32** (1988), no. 2, 211–221. (Philip A. Leonard) **89j:15028** 15A33 (11T35)
- Kovács, Ervő V.** (with Bodwin, Geoffrey T.) Equivalence of Dirac-Kähler and staggered lattice fermions in two dimensions. *Phys. Rev. D* **38** (1988), no. 4, 1206–1219. (Summary) **89h:81151** 81E25
- Kovács, Katalin** A note on a theorem of P. Erdős. *Studia Sci. Math. Hungar.* **22** (1987), no. 1–4, 203–206. (S. W. Graham) **89c:11010** 11A25
- The characterization of complex-valued additive functions. II. *Studia Sci. Math. Hungar.* **22** (1987), no. 1–4, 207–211. (Guti J. Babu) **89f:11016** 11A25
- Kovács, L. G.** Some representations of special linear groups. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 207–218, *Proc. Sympos. Pure Math.*, 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Leonid Krop) **89k:20017** 20C20 (20G40)
- Primitive permutation groups of simple diagonal type. *Israel J. Math.* **63** (1988), no. 1, 119–127. (Ulrich Dempwolff) **89i:20010** 20B15
- Some theorems on wreath products. *Publ. Math. Debrecen* **35** (1988), no. 1–2, 155–160. (John D. P. Meldrum) **89k:20045** 20E22 (20B30, 20E36)
- (with Newman, M. F.) Generating transitive permutation groups. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 155, 361–372. (Cheryl E. Praeger) **89i:20008** 20B05 (20B20, 20D15)
- (with Praeger, Cheryl E.) Finite permutation groups with large abelian quotients. *Pacific J. Math.* **136** (1989), no. 2, 283–292. (Norman Blackburn) **89m:20001** 20B05
- Kovács, Margit** (with Vasičev, F. P.) On the convergence rate of the continuous version of the regularized gradient method (convergence rate of regularization). *Optimization* **18**



- (1987), no. 5, 689–696. (Summary) **89h:65103** 65K05 (90C25)
- Fuzzification of ill-posed linear systems. *Numerical methods* (Miskolc, 1986), 521–532, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (Introduction) **89e:15041** 15A99 (03E72, 65F99)
- Kovács, Z. (with Szepfalussy, P.; Tél, T.; Csordás, A.) Phase transitions associated with dynamical properties of chaotic systems. *Phys. Rev. A* (3) **36** (1987), no. 7, 3525–3528. (Summary) **89i:58098** 58F13 (82A25)
- On the different definitions of Finsler-connection. *Publ. Math. Debrecen* **34** (1987), no. 1–2, 69–73. (S. Watanabe) **89e:53108** 53C60
- (with Szilasi, J.) Pseudoconnections and Finsler-type connections. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 1165–1184, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Monica Radivoioci-Tatou) **89c:53056** 53C60 (53C05)
- Kovács, Leslie R. (with Ramakrishnan, Jayant V.; Rao, S. Vittal) Reduced-order modeling of flexible structures. *J. Guidance Control Dynamics* **11** (1988), no. 5, 459–464. (Andrew P. Sage) **89m:93016** 93B17 (73K05)
- Kováč, V. A. (with Vagapov, A. M.; Kravets, L. G.) Optimum Bayesian projection-energy receivers for the detection in white noise of a quasi-deterministic signal with a uniform direction probability density in Hilbert space. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 12, 156–158 (1988); translated from *Radiotekhn. i Elektron.* **32** (1987), no. 8, 1771–1773 (Russian). (Not in MR) **94A13**
- Kováč, Veronika (with Garlauskas, Algis; Vygonkaya, R.) Investigation and optimization of reliability of transport networks. *System modelling and optimization* (Tokyo, 1987), 672–680, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (see **89f:00029**) **90B10**
- Kováčik, I. M. A nonlinear transformation of Gaussian measures. (Russian) *Mat. Metody i Fiz.-Mekh. Polya* **25** (1987), 13–16, 101. (G. A. Sokhadze) **89f:60043** 60G30 (28C20, 46G12, 58D20)
- Kováčik, Yu. I. Determination of and special cases of the calculation of the Feynman integral in a space of continuous vector functions of several variables. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 3, 32–37, 124. (Summary) **89h:65035** 65D30 (28C20)
- Kováčuk, E. O.  $V$ -rings of semigroups of transformations of finite sets. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* **28** (1986), 59–64, 133. (Summary) **89c:20097** 20M20 (05A05)
- Kováčuk, I. R. (with Kuschpel, A. K.) An estimate for the rate of convergence of the derivative of an interpolation polynomial on classes of differentiable functions. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 2, 231–234, 272; translation in *Ukrainian Math. J.* **40** (1988), no. 2, 199–201. (D. L. Berman) **89g:42006** 42A10 (41A05)
- Kováčuk, L. V. Vladimir Ivanovich Smirnov (on the 100th anniversary of his birth). (Russian) *Ocherki Istor. Estestvozn. Tekhn.* **33** (1987), 96–100, 113. (Editors) **89a:01067** 01A70
- Kovalenko, A. N. (with Azar'eva, S. V.) Choice of nodes for multidimensional interpolation in problems of the optimal design of mechanical systems. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1988**, vyp. 2, 109–111, 134; translation in *Vestnik Leningrad Univ. Math.* **21** (1988), no. 2, 87–89. (Summary) **89i:41009** 41A05 (65D05, 73C40, 73K30)
- Kovalenko, E. V. (with Aleksandrov, Viktor Mikhailovich; Bronovets, M. A.) Planar contact problems for a linearly deformable foundation with a thin reinforcing covering. (Russian) *Prikl. Mekh.* **24** (1988), no. 8, 60–67, 133; translation in *Soviet Appl. Mech.* **24** (1988), no. 8, 781–787. (Not in MR) **73T05**
- Kovalenko, I. I. (with Kraskevich, V. E.; Makarovskii, A. P.; Ivakhnenko, G. A.) Analysis of random spatial images. *Soviet J. Autom. Inform. Sci.* **20** (1987), no. 5, 56–61; translated from *Automatika* **1987**, no. 5, 65–70, 96 (Russian. English summary). (Not in MR) **68T10** (94A12)
- Kovalenko, M. D. Biorthogonal expansions in eigenfunctions. I. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 10, 1764–1772, 1836. (Jan Bochenek) **89c:35124a** 35P10
- Biorthogonal expansions in eigenfunctions. II. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 11, 1948–1956, 2021. (Jan Bochenek) **89c:35124b** 35P10
- Kovalenko, N. S. (with Kapitonova, Yu. V.; Klyaus, P. S.) A mathematical model of the pipeline organization of competing processes. (Russian) *Dokl. Akad. Nauk SSSR* **293** (1987), no. 6, 1320–1324. (N. N. Mirenkov) **89a:68024** 68N25 (68M10, 90B35)
- Kovalenko, S. P. Some properties of permanents. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 1, 16–18, 86. (G. P. Egorchev) **89j:15010** 15A15
- Kovalev, A. M. (with Gubin, S. V.) Gauge theory of the domain of attainability of a linear control system and its application in estimation problems. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 10, 21–25, 85. (Igor N. Litvin) **89a:49037** 49E15 (93B05, 93C05)
- (with Gubin, S. V.) On constructing the attainability sets of linear nonautonomous systems with resource constraints. *Soviet J. Comput. Systems Sci.* **25** (1987), no. 2, 175–181; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1986**, no. 6, 155–160, 223 (Russian). (Jerzy Sztajnic) **89b:49059** 49E15 (93C05)
- Kovalev, M. D. A property of convex sets and its application. (Russian) *Mat. Zametki* **44** (1988), no. 1, 89–99, 156; translation in *Math. Notes* **44** (1988), no. 1–2, 537–543. (Yu. A. Shashkin) **89j:52001** 52A20
- Kovalev, M. M. ★ Матроиды в дискретной оптимизации. (Russian) [Matroids in discrete optimization] With an English summary. "Universitet'skoe", Minsk, 1987. 224 pp. (Svatopluk Poljak) **89c:90090** 90C27 (05B35)
- Kovalev, M. Ya. Interval  $\epsilon$ -approximation algorithms for problems of the determination of the optimal path in a graph. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 2, 15–20, 123. (M. M. Syalo) **89i:05178** 05C38 (05C20, 90C35)
- An exact algorithm for the design of an optimal schedule, taking the injury factor into account. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 3, 110–111, 128. (Summary) **89h:90127** 90B35
- Kovalev, O. V. On the theory of induced representations of Fedorov groups. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (Jurmala, 1985), 574–582, "Nauka", Moscow, 1986. (see **89d:81001**) **82A60**
- Kovalev, S. I. (with Katsman, G. L.; Litsyn, S. N.) New codes obtained by lengthening methods. (Russian) *Noise-resistant coding and computer reliability* (Russian), 7–10, 189, "Nauka", Moscow, 1987. (A. Pethő) **89b:94011** 94B05
- Kovalev, V. F. The Riemann boundary value problem for analytic functions of a biharmonic variable. (Russian) *Approximation theory and related problems in analysis and topology* (Russian), 47–52, iii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (P. Yu. Alekna) **89h:30055** 30E25 (30G35)
- (with Mel'nikchenko, I. P.) Biharmonic potentials and plane isotropic displacement fields. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 2, 229–231, 272; translation in *Ukrainian Math. J.* **40** (1988), no. 2, 197–199. (Summary) **89h:73009** 73C03 (31A30)
- Kovalev, V. M. (with Gorr, G. V.) Asymptotically uniform motions around an inclined axis in a generalized problem of the motion of a rigid body with a fixed point. (Russian) *Mekh. Tverd. Tela* **20** (1988), 13–18, 111. (Summary) **89g:70004** 70E15
- Kovalev, V. P. (with Burmistrov, A. N.) Asymptotic solution of the Whipple equation of gas lubrication for large compressibility numbers. (Russian) *Zh. Prikl. Mekh. i Tekhn. Fiz.* **1988**, no. 4, 86–92, 165; translation in *J. Appl. Mech. Tech. Phys.* **29** (1988), no. 4, 535–540. (Summary) **89i:76075** 76N15 (76D08)
- Kovalerskaia, Sofia Vasilevna see Kovalerskaya, S. V.
- Kovalerskaya, E. I. Strongly jointly extremal manifolds. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 6, 16–19, 123–124. (Gerold S. Wagner) **89i:11123** 11K60
- Kovalerskaya, S. V. see Kharlamova, E. I., **89j:01042** and Kobitz, Ann Hibner, (**89b:01071**)
- Kovalevskii, A. A. Averaging of variable variational problems. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 8, 6–9, 85. (Summary) **89m:49023** 49A50 (93C25)
- Kovalevskii, M. Yu. (with Peletinskii, S. V.; Slyusarenko, Yu. V.) Thermodynamics and kinetics of spiral magnetic structures and the method of quasiverages. (Russian. English summary) *Teoret. Mat. Fiz.* **74** (1988), no. 2, 281–295; translation in *Theoret. and Math. Phys.* **74** (1988), no. 2, 186–196. (M. Drăganu) **89i:82019** 82A15 (82A40)
- Kovalishina, J. see Poincaré, Henri, **89c:01054a**
- Kovalishina, I. V. see American Mathematical Society Translations, Series 2, **89f:00030**
- Kovalkov, A. V. (with Ataev, A. E.) ★ Эрмитовы сплайны при ограничении типа пераств. (Russian) [Hermitian splines with constraints of inequality type] Preprint [Preprint], 720. *Akad. Nauk SSSR Sibsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1987. 13 pp. (Introduction) **89d:65010** 65D07
- The structure and characteristic properties of variational splines that satisfy constraints of inequality type. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 4, 792–796; translation in *Soviet Math. Dokl.* **36** (1988), no. 2, 321–325. (B. Boyanov) **89b:41020** 41A15 (41A20, 65D07)
- Koval'skaya, I. B. Approximation of periodic functions by analogues of Zygmund sums in a metric of the space  $L_p$ . (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 47, 33–41. (From the summary) **89i:42005** 42A10 (42A16)
- Estimates for the upper bounds of deviations in a metric of the space  $L_p$ . (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 5, 668–670, 681. (Summary) **89h:42005** 42A10
- Koval'skaya, L. V. (with Volkov, E. A.; Govorukhin, D. N.; Yakovlenko, V. V.) An algorithm for the analysis of the steady-state mode of an electrical circuit with complex nonlinearities under polyharmonic action. (Russian. English summary) *Teoret. Elektrotekhn.* **40** (1986), 126–134, 152. (Adrian Adăscăliței) **89i:94053** 94C05 (68U20, 94A12, 94C15)
- Koval'ski, M. P. (with Zhuikov, V. Ya.) Extremal properties of electrical circuits (nonlinear circuits). (Russian. English summary) *Teoret. Elektrotekhn.* **39** (1985), 73–79, 138. (Not in MR) **94C05**
- Koval'ski, T. see Kowalski, T.
- Koval'skii, I. P. Stabilization of the motion of a solid body of variable structure with a fixed point. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* **5** (1986), 27–30, 95. (Summary) **89k:70007** 70E05 (70Q05)
- Kovalyov, Mikhail Huygens' principle on nonempty space-times. *Comm. Pure Appl. Math.* **41** (1988), no. 6, 833–840. (V. Wunsch) **89i:58143** 58G16 (35L15, 83C10)
- Kovantsov, N. I. Structure of a surface of negative curvature in a neighborhood of a singular point. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* **29** (1987), 39–46, 118. (Summary) **89d:53006** 53A05
- Kovarik, Zdeněk (with Sherif, Nagwa) Geodesics and near-geodesics in the manifolds of projector frames. *Linear Algebra Appl.* **99** (1988), 259–277. (V. Hansen (Zbl 642:80008)) **89k:58030** 58B20 (47D99)
- Kovarskaya, Sofiya (with Garlauskas, Algis; Limanaukas, Valdas) A mathematical model of trophic interaction of biopopulations of biological systems. *System modelling and optimization* (Tokyo, 1987), 632–642, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (Summary) **89i:92052** 92A17
- Kovats, A. On bivariate geometric compounding. *Probability theory and mathematical statistics with applications* (Visegrád, 1985), 123–129, Reidel, Dordrecht-Boston, MA, 1988. (Mir Maswood Ali) **89j:62027** 62E10 (60F05)
- Kovbasa, G. T. Exact solution of a decentralization problem and design of a system for the automatic control of nonstationary multidimensional systems with given stability characteristics. (Russian) *Complex control systems* (Russian), 57–64, iv, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (Summary) **89c:93031** 93B10 (93B50)
- Kovchin, S. A. Analysis of component errors in discrete automatic control systems. (Russian) *Algorithms, software and hardware for flexible production systems* (Russian), 93–102, 212, *Automat. Proizvod., 7, Leningrad. Univ., Leningrad*, 1988. (I. Meznik) **89i:93077** 93C55 (93B40, 93C57)
- Kovenski, S. Yu. (with Tikhonravov, A. V.) Synthesis of absorbing layered media. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 6, 887–900, 959. (Summary) **89f:76071** 76Q05 (34A20, 73D99, 78A45)
- Kövesi-Domokos, S. (with Domokos, G.; Zoltani, Csaba K.) Boltzmann equation approach to two phase flow turbulence. *Phys. A* **155** (1989), no. 1, 105–115. (Summary) **89m:76067** 76T05 (76F99, 82A40)
- see also Proceedings: Johns Hopkins Workshop on Current Problems in Particle Theory, **89b:81006**
- Kovner, Israel (with Blandford, Roger D.) Formation of arcs by nearly circular gravitational lenses. *Phys. Rev. A* (3) **38** (1988), no. 8, 4028–4035. (Summary) **89i:85008** 85A40 (83F05)
- Kovnir, V. N. (with Danilin, Yu. M.) A method of exact penalties with total account of the constraints. (Russian. English summary) *Kibernetika (Kiev)* **1987**, no. 6, 42–48, 57, 134.

- (Summary) **89d:90185** 90C30 (65K99)
- Kovrigo, Yu. M.** (with Zaichenko, Yu. P.; Izgorev, M. Yu.) Features of the application of the modal control principle to the synthesis of automatic control systems for a technological process. *Soviet J. Automat. Inform. Sci.* **21** (1988), no. 2, 49–54; translated from *Avtomatika* **1988**, no. 2, 49–53, 95 (Russian. English summary). (Not in MR) **93B55** (93B50)
- Kovtun, V. E.** (with Getmanov, B. S.) ★ Классификация интегрируемых двумерных моделей релятивистской теории поля с помощью компьютера. (Russian) [Classification of integrable two-dimensional models of relativistic field theory by means of a computer] With an English summary. Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna], R5-88-138. *Joint Inst. Nuclear Res., Dubna*, 1988. 9 pp. (Not in MR) **81E15** (58F05)
- (with Barashenkov, I. V.; Getmanov, B. S.) Integrable model with nontrivial interaction between sub- and superluminal solitons. *Phys. Lett. A* **128** (1988), no. 3–4, 182–186. (Mark R. Temple-Raston) **89f:81158** 81A99 (35Q20, 58F07, 81E13)
- Kortunets, V. V.** An algorithm for constructing a polynomial of best approximation of complex-valued functions. (Russian) *Investigations in the theory of the approximation of functions* (Russian), 35–42, 121, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (Summary) **89f:41009** 41A10 (30E10, 41A50)
- The Lipschitz condition for an operator of best uniform approximation at the points of uniqueness. (Russian) *Mat. Metody i Fiz.-Mekh. Polya* No. 25 (1987), 17–19, 101. (A. Krođ) **89b:41035** 41A52
- Differential properties of the operator of best approximation of complex-valued functions. II. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 6, 721–727, 814. (Weixing Zheng) **89c:41024** 41A50 (41A45, 41A65)
- Kowalczyk, Adam** The Riemannian curvature tensor and differentiable spaces. *Differential geometry* (Warsaw, 1979), 163–184, *Banach Center Publ.*, 12, PWN, Warsaw, 1984. (V. Cruceanu) **89h:58015** 58A40 (53C42)
- The preparation theorem for composite functions. *Proc. Amer. Math. Soc.* **101** (1987), no. 3, 582–584. (Toshizumi Fukui) **89a:58017** 58C27 (57R45, 57S15)
- (with Janeczko, Stanisław) Isotropic varieties in the singular symplectic geometry. *Bull. Austral. Math. Soc.* **38** (1988), no. 2, 161–169. (I. Vaisman) **89m:58025** 58C27 (57R45, 58F05)
- Łędziewicz-Kowalewska, Urszula** see **Łędziewicz-Kowalewska, Urszula**
- Łędziewicz, Adam** Optimal control with initial state not a priori given and boundary condition involving a delay. *Optimal control* (Oberwolfach, 1986), 94–108, *Lecture Notes in Control and Inform. Sci.*, 95, Springer, Berlin-New York, 1987. (Richard M. Lewis) **89b:34172** 34K35 (49A22, 49B22, 49D07)
- Boundary control of hyperbolic system with boundary condition involving a time delay. *Analysis and optimization of systems* (Antibes, 1988), 507–518, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (see **89c:00031**) **49B22** (93C20)
- Kowalik, Zbigniew J.** (with Franaszek, Marek; Pierański, Piotr) Self-reanimating chaos in the bouncing-ball system. *Phys. Rev. A* (3) **37** (1988), no. 10, 4016–4022. (Summary) **89b:70012** 70K50 (58F13)
- Kowalska, E.** On locally tree-like graphs. Proceedings of the International Conference on Combinatorial Analysis and its Applications (Pokrzywna, 1985). *Zastos. Mat.* **19** (1987), no. 3–4, 497–503 (1988). (R. E. Pippert) **89i:05233** 05C75 (05C05)
- Kowalski, Aleksander** (with Szyndal, D.) On state estimation and control in discrete-time systems of linear type. *Automatica—J. IFAC* **24** (1988), no. 6, 841–843. (Summary) **89k:93196** 93E10 (93C55, 93E11)
- (with Szyndal, D.) On linear predictors for nonstationary ARMA models. *Scand. J. Statist.* **15** (1988), no. 2, 111–116. (Jiří Anděl) **89k:62116** 62M10
- Kowalski, Eugeniusz** On some application of the matrices to the solving of the equations. *Discuss. Math.* **8** (1986), 53–56 (1987). (N. Popescu) **89e:12008** 12E12 (15A99)
- Kowalski, Jacek M.** (with Fry, John L.) Tunneling in one-dimensional ideal barriers. *J. Math. Phys.* **28** (1987), no. 10, 2407–2415. (G. Papanicolaou) **89b:81037** 81C05 (78A45, 81F99)
- On a family of bivariate distributions with exponential marginal distributions (a note on J. Tyrcha's paper). (Polish. English summary) *Mat. Stos.* **30** (1987), 63–64, 128 (1988). (Summary) **89d:62014** 62E10 (62H05)
- (with Ansari, Ali; Prueitt, Paul S.; Dawes, Robert L.; Gross, Gunther) On synchronization and phase locking in strongly coupled systems of planar rotators. *Complex Systems* **2** (1988), no. 4, 441–462. (Summary) **89j:70038** 70K99 (58F40, 70K20, 82A99, 92A05)
- Kowalski, Krzysztof** Hilbert space description of classical dynamical systems. I. *Phys. A* **145** (1987), no. 3, 408–424. (Mayer Humi) **89d:58056** 58F07 (70G99)
- Dynamics of the Scatchard model for ligand-receptor binding. *Math. Biosci.* **89** (1988), no. 2, 225–230. (Yuzo Hosono) **89h:92024** 92A09 (34D20)
- Kowalski, Marek A.** Optimal complexity recovery of band- and energy-limited signals. *J. Complexity* **2** (1986), no. 3, 239–254. (Summary) **89i:94009** 94A12 (41A05, 94A13)
- Kowalski, O.** (with Sekizawa, Masami) Natural transformations of Riemannian metrics on manifolds to metrics on linear frame bundles—a classification. *Differential geometry and its applications* (Brno, 1986), 149–178, *Math. Appl. (East European Ser.)*, 27, Reidel, Dordrecht-Boston, MA, 1987. (Luis A. Cordero) **89f:53064** 53C20 (53A55)
- (with Tricerri, F.) Riemannian manifolds of dimension  $n \leq 4$  admitting a homogeneous structure of class  $T_3$ . *Confer. Sem. Mat. Univ. Bari* No. 222 (1987), 24 pp. (1988). (Wolfgang Ziller) **89f:53070** 53C30 (53C25)
- (with Kulich, I.) Generalized symmetric submanifolds of Euclidean spaces. *Math. Ann.* **277** (1987), no. 1, 67–78. (Y. Tashiro) **89c:53034** 53C35 (53C42)
- (with Vanhecke, Lieven) Geodesic spheres and a new recursion formula on Riemannian manifolds. *Rend. Sem. Mat. Univ. Politec. Torino* **45** (1987), no. 1, 119–132 (1988). (Bang-yen Chen) **89m:53066** 53C20
- (with Sekizawa, Masami) Natural transformations of Riemannian metrics on manifolds to metrics on tangent bundles. A classification. *Bull. Tokyo Gakugei Univ.* (4) **40** (1988), 1–29. (R. H. Bowman) **89m:53067** 53C20 (53C25)
- (with Vanhecke, Lieven) The Gelfand theorem and its converse in Sasakian geometry. *Kodai Math. J.* **11** (1988), no. 1, 70–77. (David Blair) **89d:53094** 53C25 (53C30, 53C35)
- (with Vanhecke, Lieven) The Gelfand theorem and its converse for Kähler manifolds. *Proc. Amer. Math. Soc.* **102** (1988), no. 1, 150–152. (Kouei Sekigawa) **89d:53096** 53C30 (32M05, 53C55)
- see also **Lax, Peter D.**, **89b:00038** and **Koblitz, Neal I.**, **89d:00002**
- Kowalski, T.** Some properties of partial sums of Fourier-Walsh-Paley series. (Russian. English summary) *Anal. Math.* **14** (1988), no. 1, 49–63. (W. R. Wade) **89f:42039** 42C10
- Kowalski, Tadeusz** (with Sadkowiak, Wawrzyniec) Existence and stability of global classical solutions for a first Fourier problem. *Demonstratio Math.* **20** (1987), no. 3–4, 589–601 (1988). (Neil A. Watson) **89h:35148** 35K35 (35B35)
- Kowalski, Zbigniew S.** (with Iwanik, A.; Janos, L.) Periods in equicontinuous topological dynamical systems. *Nonlinear analysis*, 355–365, *World Sci. Publishing, Singapore*, 1987. (Katarina Jankova) **89c:54079** 54H20
- The generalized skew product and its applications. *Proceedings of the conference on ergodic theory and related topics, II* (Georgenthal, 1986), 96–98, *Teubner-Texte Math.*, 94, Teubner, Leipzig, 1987. (G. R. Goodson) **89c:28021** 28D05
- Koyama, A.** (with Kato, Hisao) The role of refinable maps—a survey. Proceedings of the 1986 Topology Conference (Lafayette, LA, 1986). *Topology Proc.* **11** (1986), no. 2, 317–348. (Zvonko Čerin) **89f:54030** 54C10 (54F15, 54F43, 54F45)
- Weakly arc-smooth continua. I. (Serbo-Croatian summary) *Glas. Mat. Ser. III* **22** (42) (1987), no. 1, 171–185. (Lewis Lum) **89c:54067** 54F20 (54F15)
- (with Mardešić, S.; Watanabe, Tadashi) Spaces which admit AR-resolutions. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 749–752. (J. Segal) **89c:54023** 54B25 (54C55, 54C56)
- Koyama, Hideoyuki** Factorization of probability density for a certain diffusion processes and the applications to stochastic control. *Math. Japon.* **33** (1988), no. 1, 65–79. (Summary) **89k:93227** 93E20 (49D40, 60J60)
- Kozachenko, Yu. V.** see **Kozachenko, Yu. V.**
- Kozachenko, M. Yu.** (with Butsan, G. P.) A limit theorem for parametric stochastic operator systems. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 2, 153–162, 270; translation in *Ukrainian Math. J.* **40** (1988), no. 2, 127–135. (Shi Sheng Zhang) **89c:60013** 60B12 (60H99)
- Kozachenko, Yu. V.** (with Buldygin, V. V.) Lévy-Baxter type theorems and strong sub-Gaussian random processes. *Probability theory and mathematical statistics, Vol. II* (Vilnius, 1985), 87–102, *VNU Sci. Press, Utrecht*, 1987. (Balram S. Rajput) **89a:60109** 60G15
- (with Zelepugina, I. N.) Estimates for the accuracy of the modeling of random fields in the spaces  $L_p$ ,  $p > 1$ . (Russian) *Issled. Operatsii i ASU* No. 32 (1988), 10–14, 116. (Ralf Manthey) **89f:60083** 60G15 (60F05, 60G60, 65C20)
- (with Zelepugina, I. N.) Rate of convergence of Karhunen-Loève expansions of Gaussian random processes. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 38 (1988), 41–51, 134. (Sándor Csörgő) **89d:60073** 60G15
- (with Buldygin, V. V.) Sub-Gaussian random vectors and processes. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 36 (1987), 10–22, 138; translation in *Theory Probab. Math. Statist.* No. 36 (1988), 9–20. (A. Weron) **89c:60056** 60G15 (60E05)
- Kozar, A. M.** (with Abd El-Monsef, M. E.)  $\beta$ -open sets and  $S$ -closed spaces. (Arabic summary) Third topological symposium (Assiut, 1985). *Bull. Fac. Sci. Assiut Univ.* **14** (1985), no. 2, 129–140 (1986). (Jack R. Porter) **89a:54028** 54D25
- Kozák, Josef** Application of Demidenko's approach to the solution of the prediction problem. (Czech summary) *Ekonom.-Mat. Obzor* **24** (1988), no. 1, 68–81. (E. J. Hannan) **89g:62089** 62H25 (90A20)
- Kozak, P. P.** Wiener measures in the  $A$ -product of spaces. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 4, 5–9, 86. (A. Badrikian) **89c:28022** 28C20 (46G12, 58C35, 60B05)
- Kozaki, Masanori** (with Ogura, Yukio) On geometric and stochastic mean values for small geodesic spheres in Riemannian manifolds. *Tsukuba J. Math.* **11** (1987), no. 1, 131–145. (Vicente Miquel) **89b:53085** 53C25 (58G32)
- (with Ogura, Yukio) On the independence of exit time and exit position from small geodesic balls for Brownian motions on Riemannian manifolds. *Math. Z.* **197** (1988), no. 4, 561–581. (Jacques Vauthier) **89g:58218** 58G32 (60J65)
- Kozameh, C.** (with Cahen, Michel; Gutt, S.; Newman, E. T.) Yang-Mills equations and solvable groups. II. *J. Math. Phys.* **29** (1988), no. 4, 1022–1025. (David McMullan) **89b:81094** 81E13 (53C80, 58E30)
- (with Ivancovich, J.; Newman, E. T.) Green's functions of the edh operators. *J. Math. Phys.* **30** (1989), no. 1, 45–52. (Tevian Dray) **89j:30027** 83C30 (83C60)
- Kozek, Andrzej S.** (with Trzmielak-Stanisławska, Anna) On dependence of MR- and MM-algorithms upon the value of switching control variable CTR. *J. Comput. Appl. Math.* **23** (1988), no. 1, 109–115. (Not in MR) **65H05**
- Kozel, K.** (with Vavřincová, M.; Nguyen Van Nhac) Numerical solution of the Euler equations used for simulation of 2D and 3D steady transonic flows. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 329–341, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) **76-08** (76H05)
- (with Huněk, M.; Vavřincová, M.) Numerical solution of transonic potential flow in 2D compressor cascades using multi-grid techniques. *Robust multi-grid methods* (Kiel, 1988), 145–154, *Notes Numer. Fluid Mech.*, 23, Vieweg, Braunschweig, 1989. (see **89m:65007**) **76-08** (76H05)
- Kozerskaya, L. N.** (with Lebedeva, T. T.; Sergienko, T. I.) Problems of the parametric analysis and investigation of the stability of multicriterial problems of integer linear programming. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 3, 41–44, 132; translation in *Cybernetics* **24** (1988), no. 3, 320–324. (Summary) **89h:90226** 90C31 (90C10)
- (with Lebedeva, T. T.; Sergienko, T. I.) Necessary and sufficient conditions for the stability of multicriterial problems of integer linear programming. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 10, 76–78, 88. (Summary) **89k:90116** 90C10 (90C31)
- Kozerenko, K. V.** On the number of readings. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 5, 1069–1071. (K. Maciej Przyłuski) **89d:93014** 93B07 (58F40, 93C15)
- A complete list of invariants of the algebra  $sl(2)$  in the case of a field of finite characteristic. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 3, 73–74; translation in *Functional Anal. Appl.* **22** (1988), no. 3, 230–232. (Gheorghe Ionesci) **89j:15048** 15A72 (17B20)
- Invariants of the algebras  $gl(2)$  and  $sl(2)$  in the case of a field of finite characteristic. (Russian) *Mat. Zametki* **43** (1988), no. 4, 439–451, 573; translation in *Math. Notes* **43** (1988), no. 3–4, 252–259. (H. de Vries) **89d:17008** 17B20 (17B10, 17B50)



- Kozhabeok, Zh. T. (with Zhubaev, N. Zh.; Kal'is, A. L.; Karymsakov, K. U.; Kim, V. T.; Nurzhanova, Sh. Zh.; Sarsenov, B. Sh.; Sinyayev, A. Ya.; Turekulova, A. N.) ★ Численные методы исследования двумерных волн напряжений в упругих и упругопластических средах. [Russian] [Numerical methods for the study of two-dimensional stress waves (in elastic and elastoplastic media)] "Nauka" Kazakh SSR, Alma-Ata, 1988. 216 pp. ISBN 5-628-00065-5 (Summary) **89j:73015** 73Dxx (65Mxx, 73-08, 73F15, 73F30)
- Kozhakhmetova, M. T. (with Golovin, A. M.) Fundamental solution of a nonstationary problem of MHD flow around a body for small Reynolds numbers. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 1, 43-47, 103. (Summary) **89c:76114** 76W05 (35Q10)
- Kozhanov, A. I. Correct boundary problems for linear and nonlinear third-order equations. *Mixed type equations*, 142-156, *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) **89c:35116** 35M05
- Kozhanova, E. V. (with Kaipov, V. Kh.) Application of the theory of fuzzy sets in control problems (a survey). (Russian) *Izv. Akad. Nauk Kirgiz. SSR* **1988**, no. 1, 52-61, 106. (Marian B. Goralczany) **89k:94113** 94D05 (03E72, 93-02)
- Kozheko, L. G. (with Loshkareva, I. V.) A problem of the correction of a guided process described by a nonstationary differential equation. (Russian) *Multistage, hierarchical, differential and noncooperative games* (Russian), 82-87, Kalinin. Gos. Univ., Kalinin, 1987. (E. G. A/brekh) **89j:49017** 49A40 (49A36, 90D25, 93C15)
- Kozhevnikov, I. R. (with Rybakov, Yu. P.; Fomin, M. B.) The structure of topological solitons in the Skyrme model. (Russian. English summary) *Teoret. Mat. Fiz.* **75** (1988), no. 3, 353-360; translation in *Theoret. and Math. Phys.* **75** (1988), no. 3, 575-580. (Summary) **89f:81100** 81E13
- Kozhukharova, Rumyana T. Basic equations of the differential geometry of a class of surfaces in the generalized biaxial space  $p_1^{1,2}$ . (Russian) *Serdica* **12** (1986), no. 4, 399-403 (1987). (A. Kh. Khakimov) **89i:53015** 53A40
- Kozhukhov, I. B. (with Finkel'shtein, M. Ya.) Perfect and semiprimitive subgroup rings. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 12, 45-48, 81. (Edmund R. Puczyrowski) **89c:16031** 16A51 (20M25)
- Kozhukhov, S. F. Torsion-free abelian groups of finite rank without nilpotent endomorphisms. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 1, 58-69, 223; translation in *Siberian Math. J.* **29** (1988), no. 1, 45-53. (L. Procházka) **89h:20077** 20K15
- Finite automorphism groups of abelian torsion-free groups of finite rank. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **52** (1988), no. 3, 501-521, 670; translation in *Math. USSR-Izv.* **32** (1989), no. 3, 501-521. (Peter Pusemp) **89h:20078** 20K15
- Kozhushko, E. I. (with Sakhanenko, A. I.) On conditions for the asymptotic efficiency of recursive estimates for the location parameter. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 3, 133-139, 223. (Frantisek Rublik) **89a:62075** 62F12
- Kozlik, Benjamin (with Schwarz, Ines) Die exakte Lösung des Strahlungsproblems in der klassischen Elektrodynamik. [The exact solution of the radiation problem in classical electrodynamics] *Wiss. Z. Tech. Univ. Karl-Marx-Stadt* **30** (1988), no. 1, 115-120. (Summary) **89f:78020** 78A40
- Kozima, Kazumoto On some stable maps and compact Lie groups. *Homotopy theory and related topics* (Kyoto, 1984), 293-309, *Adv. Stud. Pure Math.*, 9, North-Holland, Amsterdam-New York, 1987. (Introduction) **89e:55032** 55R12 (57T99)
- Kozimirov, N. G. (with Kuz'min, V. A.; Tkachev, I. I.) On symmetry breaking at coset space dimensional reduction. *Phys. Lett. B* **215** (1988), no. 1, 84-86. (Thomas Schücker) **89i:53056** 53C80 (81E13, 83E15)
- Kozin, A. B. (with Kozina, G. O.) Bending of a plate with a fine inclusion having zero rigidity under torsion. (Russian) *Boundary value problems* (Russian), 154-156, 202, *Perm. Politekh. Inst., Perm.*, 1983. (see **89c:00008**) 73K10
- (with Kozina, G. O.) Solution of a boundary value problem for a harmonic equation with jumps on two intersecting segments. (Russian) *Boundary value problems* (Russian), 113-116, 161, *Perm. Politekh. Inst., Perm.*, 1984. (see **89b:00008**) 73K15
- Kozin, F. Structural parameter identification techniques. *Analysis and estimation of stochastic mechanical systems* (Udine, 1987), 137-200, *CISM Courses and Lectures*, 303, Springer, Vienna, 1988. (A. P. Roberts) **89j:93102** 93E12 (93-02, 93C60, 93E10)
- (with Voltz, P.) Almost-sure convergence of adaptive algorithms by projections. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 325-327. (Not in MR) 93E25
- Kozina, G. O. (with Kozin, A. B.) Bending of a plate with a fine inclusion having zero rigidity under torsion. (Russian) *Boundary value problems* (Russian), 154-156, 202, *Perm. Politekh. Inst., Perm.*, 1983. (see **89c:00008**) 73K10
- (with Kozin, A. B.) Solution of a boundary value problem for a harmonic equation with jumps on two intersecting segments. (Russian) *Boundary value problems* (Russian), 113-116, 161, *Perm. Politekh. Inst., Perm.*, 1984. (see **89b:00008**) 73K15
- Kozlov, James A. (with Tuckwell, Henry C.) Logistic population growth under random dispersal. *Bull. Math. Biol.* **49** (1987), no. 4, 495-506. (Summary) **89f:92051** 92A15
- (with Tsai, Kao-Tai) Score and Wald tests for the multivariate growth curve model with missing data. *Ann. Inst. Statist. Math.* **40** (1988), no. 1, 179-186. (S. John) **89j:62074** 62H13
- Kozlov, Krzysztof Quasi-Pythagorean algebraic extensions of rational numbers. *Algebra-Tagung Halle 1986*, 175-182, *Wissenschaft. Beitr.*, 33, Martin-Luther-Univ. Halle-Wittenberg, Halle (Saale), 1987. (Daniel B. Shapiro) **89a:11043** 11E81
- Quadratic form schemes determined by Hermitian forms. *Colloq. Math.* **53** (1987), no. 1, 27-33. (Sergey Yuzvinsky) **89d:11027** 11E39 (11E04)
- Kozitskii, Yu. V. (with Mel'nik, N. O.) Eigenfunctions of differential operators of infinite order in a class of Laguerre entire functions. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 2, 9-12, 88. (A. A. Shkhalikov) **89g:34028** 34B25 (30D20, 33A65, 47E05)
- Kozlenko, V. G. (with Starostenko, V. I.; Kostyukevich, A. S.) Complex interpretation of gravimetric and seismometric data. I. Principles and methods. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1988**, no. 4, 33-49. (Not in MR) 86A15
- Kozlov, N. I. (with Kondrat'eva, A. L.; Krutikova, I. G.; Rusetskii, S. V.) An algorithm for calculating the coefficients of difference schemes for a system of partial differential equations with a small parameter multiplying the derivative. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 177, 16 pp. (Summary) **89a:65132** 65M05
- (with Markov, M. B.; Semenov, S. B.) An example of the solution of a simplified system of A. A. Vlasov equations. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1269-1270, 1287. (Yu. S. Sayasov) **89k:82062** 82A45
- Kozlov, R. I. (with Burnosov, S. V.) Asymptotic behavior of and estimates for the solutions of monotone difference equations. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 16-29, 322, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Summary) **89h:39002** 39A10 (39A05, 39A11)
- Kozlov, S. M. Spectral asymptotics of random operators. (Russian) *Mat. Zametki* **43** (1988), no. 3, 407-423, 430; translation in *Math. Notes* **43** (1988), no. 3-4, 234-243. (G. V. Rozenblyum) **89h:35248** 35P20 (35R60, 60H25)
- Kozlov, V. A. see Kozlov, Vladimir Arkad'evich
- Kozlov, V. N. (with Krushinskii, L. V.; Kudryavtsev, V. B.) Some results of the application of mathematics to modeling in biology. (Russian) *Mathematical problems in cybernetics*, No. 1 (Russian), 52-88, "Nauka", Moscow, 1988. (Yu. I. Petunin) **89j:92003** 92-02 (00A71, 92-04, 92A05, 92A09, 92A25)
- Kozlov, V. V. Some aspects of the theory of dynamical systems. (Russian) *Geometry, differential equations and mechanics* (Russian) (Moscow, 1985), 4-18, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (Introduction) **89h:58077** 58F07 (58F05)
- Asymptotic motions and the inversion of the Lagrange-Dirichlet theorem. *J. Appl. Math. Mech.* **50** (1986), no. 6, 719-725 (1987); translated from *Prikl. Mat. Mekh.* **50** (1986), no. 6, 928-937 (Russian). (Vimal Singh) **89c:70046** 70K20
- Phenomena of nonintegrability in Hamiltonian systems. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1161-1170, *Amer. Math. Soc., Providence, RI*, 1987. (Yi-Sui Sun) **89h:58061** 58F05 (34C35, 70F15, 70H05)
- (with Aptekarev, A. I.; Olevskii, A. M.; Potapov, M. K.; Uflyanov, P. L.; Shidlovskii, A. B.) In memory of Evgenii Mikhailovich Nikishin. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 6, 88-91. (Editors) **89b:01032** 01A70
- Invariant measures of the Euler-Poincaré equations on Lie algebras. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 1, 69-70; translation in *Functional Anal. Appl.* **22** (1988), no. 1, 58-59. (S. D. Grigoryan) **89m:58064** 58F05 (70F25)
- On the theory of perturbations of Hamiltonian systems with noncompact invariant surfaces. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 2, 55-61, 103. (Ivailo M. Mladenov) **89i:58051** 58F07 (58F30, 70H05)
- (with Treshchëv, D. V.) The integrability of Hamiltonian systems with configuration space a torus. (Russian) *Mat. Sb. (N.S.)* **135** (177) (1988), no. 1, 119-138, 144; translation in *Math. USSR-Sb.* **63** (1989), no. 1, 121-139. (Pawel Urbanski) **89f:58069** 58F07 (58F30, 70H05)
- Kozlov, Vladimir Arkad'evich Coefficients in the asymptotics of the solutions of initial-boundary value parabolic problems in domains with a conic point. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 2, 75-89, 217; translation in *Siberian Math. J.* **29** (1988), no. 2, 222-233. (Michael Lorenz) **89m:35100** 35K35 (35B40)
- Kozlovskii, M. P. The domain of applicability of renormalization group relations in the description of second-order phase transition. (Russian. English summary) *Conference "Renormalization Group-86"* (Russian) (Dubna, 1986), 300-314, 399-400, 409, *Joint Inst. Nuclear Res., Dubna*, 1987. (M. Lawrence Glasser) **89f:82021** 82A25 (82A68)
- Kozlovskii, N. Ya. An estimate for the remainder term of an interpolation quadrature formula. (Russian. English summary) *Vestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 2, 111-115, 128. (Gheorghe Cona) **89d:65039** 65D32 (41A55)
- Kozlovskii, Andzej Delooping the total Stiefel-Whitney class. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 1, 83-87. (Frederick Cohen) **89a:55008** 55N99 (55R99)
- Kozlovski, George (with Dydak, Jerzy) A generalization of the Vietoris-Begle theorem. *Proc. Amer. Math. Soc.* **102** (1988), no. 1, 209-212. (Timothy Porter) **89a:55003** 55N05 (55N20, 55P20)
- Kozlovski, Michael Affine maximal surfaces. *Anz. Österreich. Akad. Wiss. Math.-Natur. Kl.* **124** (1987), 137-139 (1988). (Chuan Yu Ma) **89m:53006** 53A05
- Kozma, László<sup>1</sup> The role of the  $C_1$  and  $C_2$  conditions in the theory of Finsler-type connections. *The Proceedings of the Fourth National Seminar on Finsler and Lagrange Spaces* (Braşov, 1986), 185-200, *Soc. Ştiinţe Mat. R.S. România, Bucharest*, 1986. (Masao Hashiguchi) **89e:53036** 53B40
- On reduction of bivector connections. *Publ. Math. Debrecen* **34** (1987), no. 3-4, 337-342. (J. J. Etayo) **89b:53051** 53C05
- Remarks on Whitney-invariant connections. *Topics in differential geometry*, Vol. I, II (Debrecen, 1984), 733-742, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (Raymond Couty) **89e:53046** 53C05 (53C60)
- Kozmiski, Krzysztof A. (with Kinnen, Edwin) Rectangular dualization and rectangular dissections. *IEEE Trans. Circuits and Systems* **35** (1988), no. 11, 1401-1416. (A. T. Amin) **89i:94108** 94C15 (68R10)
- Kozono, Hideo On a decay property of weak solutions of the M.H.D. equations in a 3-dimensional exterior domain. *Mathematical analysis of fluid and plasma dynamics*, I (Kyoto, 1986). *Sūrikaiseikenkyōsho Kōkyūroku* No. 656 (1988), 67-80. (see **89g:76004**) 76W05 (35Q20)
- Kozorez, V. V. (with Verbitskaya, L. V.; Cheborin, O. G.) Analysis of a dynamical system of free physical pendulums. (Russian) *Kibernet. i Vychisl. Tekhn.* No. 77 (1988), 90-97, 111. (Summary) **89i:70017** 70E99 (70K20, 78A99)
- Kozyrev, A. N. (with Makarov, Valerii Leonidovich; Vasil'ev, V. A.; Marakulin, V. M.) Equilibrium, rationing and stability (based on results of the work of the second Novosibirsk school on mathematical economics). (Russian) *Optimizatsiya* No. 38 (55) (1986), 5-120, 155. (M. Kaganovich (Zbl 615:90018)) **89d:90052** 90A14 (90-02, 90C31, 90D12)
- Kozyrev, V. P. Finding spanning trees that are optimal with respect to several ranked criteria. (Russian) *Combinatorial analysis*, No. 7 (Russian), 66-73, 163-164, *Moskov. Gos. Univ., Moscow*, 1986. (O. Pokorná) **89m:05044** 05C05 (05C35, 08B10)
- (with Maiskii, S. V.) Enumeration and generation of plane rooted trees with given parameters. (Russian) *Proceedings of the All-Union seminar on discrete mathematics and its applications* (Russian) (Moscow, 1984), 92-99, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (Jozef Širáň) **89d:05102** 05C30
- Kra, Irwin Families of univalent functions and Kleinian groups. *Israel J. Math.* **60** (1987), no. 1, 89-127. (William Abikoff) **89d:30008** 30C20 (30C55, 30C60, 30F40)
- (with Earle, Clifford J.) Positive divisors and Poincaré series on variable Riemann surfaces. *Tōhoku Math. J. (2)* **39** (1987), no. 3, 429-436. (Jane Gilman) **89d:32053** 32G15
- Accessory parameters for punctured spheres. *Trans. Amer. Math. Soc.* **313** (1989), no. 2, 589-617. (L. Keen) **89j:30062** 30F10 (14H15, 30F35, 32G15)

- see also **Holomorphic functions and moduli**, 89c:30001 and 89c:30002
- Kraaijevanger, J. F. B. M.** (with Lenferink, H. W. J.; Spijker, M. N.) Stepsize restrictions for stability in the numerical solution of ordinary and partial differential equations. Proceedings of the 2nd international conference on computational and applied mathematics (Leuven, 1986), *J. Comput. Appl. Math.* **20** (1987), Special Issue, 67–81. (Randall J. LeVeque) **89a:65128** 65L20 (65L05, 65M10)
- Krabs, W.** (with Jahn, Johannes) Applications of multicriteria optimization in approximation theory. *Multicriteria optimization in engineering and in the sciences*, 49–75, *Math. Concepts Methods Sci. Engrg.*, 37, Plenum, New York-London, 1988. (see **89f:90171**) 41A50 (41A63, 90C31)
- On time-minimal distributed control of vibrations. *Appl. Math. Optim.* **19** (1989), no. 1, 65–73. (Ovidiu Cârja) **89j:49039** 49E15 (49A22, 49B22, 93B05, 93C25)
- Kraskovskii, A. P.** (with Emelichev, V. A.; Kravtsov, M. K.) New results in the combinatorial theory of transportation polytopes. (Russian) *Proceedings of the All-Union seminar on discrete mathematics and its applications* (Moscow, 1984), 16–19, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (From the text) **89c:90138** 90C08
- Kraskovskii, V. Ya.** (with Kruk, E. A.) A method for adaptive transmission by cascade codes on channels with memory. (Russian) *Noise-resistant coding and computer reliability* (Russian), 63–69, 190, "Nauka", Moscow, 1987. (From the text) **89d:94041** 94B05
- Kratcholova, Lilyana** (with Todorov, K.) Rectangular bands of groups of the  $D$ -classes of the symmetric semigroup and some of their subsemigroups. (Bulgarian. English summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **72** (1978), 205–214 (1986). (D. V. Dekov) **89d:20050** 20M10
- Kracht, Manfred** (with Kreyszig, Erwin) The Tricomi equation and transition problems. *Mixed type equations*, 157–165, *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) **89b:35114** 35M05
- (with Kreyszig, Erwin) The integral operator approach to the Tricomi equation. *Mixed type equations*, 166–179, *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) **89b:35115** 35M05
- (with Kreyszig, Erwin) ★ Methods of complex analysis in partial differential equations with applications. Canadian Mathematical Society Series of Monographs and Advanced Texts. A Wiley-Interscience Publication. John Wiley & Sons, Inc., New York, 1988. xvi+394 pp. ISBN 0-471-83091-7 (Wolfgang Rüchpich) **89f:35002** 35-02 (35Cxx)
- Krackhardt, David** Predicting with networks: nonparametric multiple regression analysis of dyadic data. *Social Networks* **10** (1988), no. 4, 359–381. (Summary) **89m:92051** 92A20
- Kraemer, Helena Chmura** Assessment of  $2 \times 2$  associations: generalization of signal-detection methodology. *Amer. Statist.* **42** (1988), no. 1, 37–49. (Summary) **89c:62175** 62N05
- Kraemer, Julius** ★ Characterizations of the existence of (quasi-) self-duality for complete tensor rings. *Algebra Berichte [Algebra Reports]*, 56, Verlag Reinhard Fischer, München, 1987. iv+74 pp. ISBN 3-88927-037-9 (Claudia Menini) **89c:16039** 16A49
- Kraemer, Ulrike** (with Rebhan, Anton) On the harmonic gauge in the quantization of strings. *Phys. Lett. B* **196** (1987), no. 4, 477–480. (Enore Guadagnini) **89b:81141** 81E13 (81E20, 81E30)
- Kraenkel, R. A.** (with Aldrovandi, R.) On exterior variational calculus. *J. Phys. A* **21** (1988), no. 6, 1329–1339. (Constantin Udriste) **89c:49056** 49F05 (58A10, 58E30, 81E99)
- Kraft, H.** (with Procesi, C.) Graded morphisms of  $G$ -modules. (French summary) *Ann. Inst. Fourier (Grenoble)* **37** (1987), no. 4, 161–166. (P. E. Newstead) **89c:20078** 20G05 (13F20)
- Krahn, Gary** (with Fredricksen, Harold) A randomness property of  $m$ -sequences. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 643–647, *ARO Rep.*, 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Zhao Zhi Zhang) **89c:94003** 94A05
- Kraichnan, Robert H.** Reduced descriptions of hydrodynamic turbulence. New directions in statistical mechanics (Santa Barbara, CA, 1987). *J. Statist. Phys.* **51** (1988), no. 5-6, 949–963. (Summary) **89f:76059** 76F05 (76F99)
- Kraichuk, A. V.** A class of groups with normal subgroups of infinite index. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 4, 440–445, 543; translation in *Ukrainian Math. J.* **40** (1988), no. 4, 377–381. (H. Heineken) **89d:20046** 20E07 (20E34)
- Kraiko, A. N.** The integration of numerical methods and analytic approaches in gas dynamics. (Russian) *Mechanics and scientific-technological progress* (Russian), 107–127, 286, "Nauka", Moscow, 1987. (Summary) **89f:76009** 76-08 (76N15)
- (with Polyanitskii, A. R.; Tillyaeva, N. I.) On a "forward" calculation of flows with shock waves. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **29** (1989), no. 1, 137–142, 160. (Not in MR) 76-08 (76L05)
- Kraivna, V. K.** (with Matviishin, Ya. A.) ★ Юрий Алексеевич Митропольский. (Russian) [Yuri Alekseevich Mitropol'skii] With an introduction by A. N. Bogolyubov, O. B. Lykova and A. M. Samoilenko. Биобиблиография Ученых Украинской ССР. [Biobibliography of Scientists of the Ukrainian SSR] "Naukova Dumka", Kiev, 1987. 92 pp. (Editors) **89a:01068** 01A70
- Kraizman, I. L.** (with Sakhenko, V. P.; Chechin, G. M.) Symmetry classification of multicomponent order parameters taking into account the incommensurable phases. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jurmala, 1985), 590–598, "Nauka", Moscow, 1986. (see **89d:81001**) 82A25
- Krajčič, Marian** (with Fujiwara, Takeo) Strictly localized eigenstates on a three-dimensional Penrose lattice. *Phys. Rev. B* (3) **38** (1988), no. 18, 903–907. (Summary) **89k:82078** 82A60 (82-04, 82A57)
- Krajewski, Stanisław** Philosophical consequences of Gödel's theorem. Foundations of statements in mathematics and in philosophy. Types of logical systems and problems of truth (Jablonna, 1983). *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* **12** (1983), no. 4, 157–164. (see **89c:03001**) 03A05
- Krajewski, Władysław** Were there scientific revolutions in physics between Newton and Einstein? *Isaac Newton's Philosophiae naturalis principia mathematica* (Lublin, 1987), 143–148, *World Sci. Publishing, Singapore*, 1988. (see **89m:01042**) 01A05 (00A69)
- Krajčák, Jan** (with Pudlák, Pavel) The number of proof lines and the size of proofs in first order logic. *Arch. Math. Logic* **27** (1988), no. 1, 69–84. (M. Yasuhara) **89g:03086** 03F20
- Some results and problems in the modal set theory MST. *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 2, 123–134. (Introduction) **89b:03090** 03E70 (03B45)
- Krajka, A.** On the limit behaviour of  $H$ -valued martingales with random indices. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 11-12, 813–820. (Yutaka Kato)
- 89j:60010** 60B12 (60F25, 60G42)
- (with Rychlik, Z.) On the difference between the distribution functions of two random sums of independent random variables. *Math. Nachr.* **134** (1987), 317–322. (Slobodanka Janković) **89a:60064** 60F05 (60G50)
- (with Rychlik, Z.) The order of approximation in the central limit theorem for random summation. *Acta Math. Hungar.* **51** (1988), no. 1-2, 109–115. (Gutti J. Babu) **89c:60027** 60F05
- Krakhotko, V. V.** (with Ignatenko, V. V.) On the controllability of systems that are not solved with respect to the derivative. (Russian) *Boundary value problems* (Russian), 82–85, vii–viii, *Perm. Politekh. Inst., Perm*, 1986. (see **89c:00009**) 93B05 (93C30)
- (with Razmyslovich, G. P.) Linear singular systems with delay. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1988**, no. 2, 76–77, 82. (Vi. Răsvan) **89i:34090** 34K05 (15A09, 34A08)
- Krakovski, Anna** On the existence of solution of homogeneous boundary value problem for ordinary differential equations. *Univ. Jagel. Acta Math. No.* **26** (1987), 179–181. (Johnny Henderson) **89d:34037** 34B15
- Krakovski, Wiesław** (with Szulga, Jerzy) A multiple stochastic integral with respect to a strictly  $p$ -stable random measure. *Ann. Probab.* **16** (1988), no. 2, 764–777. (Terry R. McConnell) **89b:60088** 60H05 (60G57)
- (with Szulga, Jerzy) On a  $p$ -stable multiple integral. I, II. *Probab. Theory Related Fields* **78** (1988), no. 3, 437–448, 449–453. (Terry R. McConnell) **89k:60071** 60H05 (60B11, 60G57)
- Král, Josef** (with Lukeš, Jaroslav; Netuka, Ivan; Veselý, J.) In memory of Professor Marcel Brelot. (Czech) *Pokroky Mat. Fyz. Astronom.* **33** (1988), no. 3, 170–173. (Editors) **89b:01071** 01A70 (31-03)
- see also **Potential theory**, 89j:31001 and **Potential theory—surveys and problems**, 89m:31001
- Kraljević, Hrvoje** (with Butković, Davor) Some notes on almost convergence. *V. Mathematikertreffen Zagreb-Graz (Mariatrost/Graz, 1986)*, Ber. No. 275, 28 pp., *Ber. Math.-Statist. Sect. Forschungsgesellschaft, Joanneum, 274-282, Forschungszentrum Graz, Graz*, 1987. (Gokulnanda Das) **89d:40002** 40A05
- Krall, A. M.** (with Kanwal, R. P.; Littlejohn, L. L.) Distributional solutions of ordinary differential equations. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 227–246, *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (N. Hayek Calil) **89a:34040** 34B30 (33A30, 46F10)
- (with Littlejohn, L. L.) Sturm-Liouville operators and orthogonal polynomials. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 247–260, *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (R. C. Varma) **89a:34035** 34B25 (33A65, 34B30)
- (with Littlejohn, L. L.) On the classification of differential equations having orthogonal polynomial solutions. II. *Ann. Mat. Pura Appl.* (4) **149** (1987), 77–102. (H. Hochstadt) **89b:34017** 34A30 (33A65, 34B25, 42C05)
- A review of orthogonal polynomials satisfying boundary value problems. *Orthogonal polynomials and their applications* (Segovia, 1986), 73–97, *Lecture Notes in Math.*, 1329, Springer, Berlin-New York, 1988. (From the introduction) **89j:33012** 33A65 (42C05)
- Semibounded extensions of singular ordinary differential operators. *Canad. Math. Bull.* **31** (1988), no. 4, 432–438. (Man Kam Kwong) **89d:47072** 47E05 (34B25, 47A20)
- Singular solutions of Bessel's equation. *Differential Integral Equations* **1** (1988), no. 2, 251–252. (Jean Lavoine) **89c:33010** 33A40 (33A65, 34A08, 34B30)
- (with Zettl, A.) Singular selfadjoint Sturm-Liouville problems. *Differential Integral Equations* **1** (1988), no. 4, 423–432. (H.-W. Rohde) **89i:34024** 34B25 (34B20, 47E05)
- (with Zettl, A.) Singular selfadjoint Sturm-Liouville problems. II. Interior singular points. *SIAM J. Math. Anal.* **19** (1988), no. 5, 1135–1141. (H.-W. Rohde) **89k:34032** 34B25 (34B20, 34C05, 47E05)
- Kramer, Edvard** On orthogonality and on adjoint operator in  $H$ -locally convex spaces. *An. Stiint. Univ. "Al. I. Cuza" Iași Sect. I a Mat. (N.S.)* **34** (1988), no. 1, 13–18. (Fritz Haslinger) **89m:46005** 46A12 (47A05)
- Kramarovskii, D. B.** (with Bykovtsev, A. S.) The propagation of a complex fracture area. The exact three-dimensional solution. *J. Appl. Math. Mech.* **51** (1987), no. 1, 89–98 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 1, 117–129 (Russian). (Summary) **89c:73070** 73M05
- Krämer, Berthold** (with Delfosse, Heinrich P.; Reinardt, Elfriede) ★ Wolff-index. (German) Stellenindex und Konkordanz zu Christian Wolffs "Deutscher Logik". [Place index and concordance for Christian Wolff's "Deutsche Logik" Forschungen und Materialien zur Deutschen Aufklärung. Abteilung III: Indices [Research and Materials on the German Enlightenment. Division III: Indices], 19. Friedrich Frommann Verlag Günther Holzboog GmbH & Co., Stuttgart, 1987. xlii+630 pp. ISBN 3-7728-0933-2 (Perry Smith) **89c:01066** 01A75 (01A50)
- Kramer, Dietrich** Perfect fluids as minimal surfaces. (German summary) *Astronom. Nachr.* **309** (1988), no. 4, 267–272. (Niky Kamran) **89m:83020** 83C15 (53C42, 53C80)
- Cylindrically symmetric static perfect fluids. *Classical Quantum Gravity* **5** (1988), no. 2, 393–398. (G. P. Pokhariyal) **89a:83019** 83C15 (83C55)
- Two charged masses in equilibrium. *Classical Quantum Gravity* **5** (1988), no. 11, 1435–1442. (Jorge A. Pullin) **89m:83021** 83C15 (83C10, 83C50)
- Kramer, Earl S.** (with Magliveras, Spyros S.; Tonchev, Vladimir D.) On the Steiner systems  $S(2, 4, 25)$  invariant under a group of order 9. *Combinatorial design theory*, 307–314, *North-Holland Math. Stud.*, 149, North-Holland, Amsterdam-New York, 1987. (Rudolf Mathon) **89d:05028** 05B05
- Kramer, Edna E.** see **Lipsey, Sally Irene**, (89b:01071)
- Kramer, Erika** (with Horvatic-Baldasar, K.; Matulić-Bedenić, I.) Projective planes of order 12 do not have an abelian group of order 6 as a collineation group. (Serbo-Croatian summary) *Punime Mat.* No. 1 (1986), 75–81. (T. G. Ostrom) **89a:51019** 51E15 (20B25)
- (with Horvatic-Baldasar, K.; Matulić-Bedenić, I.) On the full collineation group of projective planes of order 12. (Serbo-Croatian summary) *Punime Mat.* No. 2 (1987), 9–11. (Norman L. Johnson) **89f:51040** 51E15 (20B25)
- (with Horvatic-Baldasar, K.; Matulić-Bedenić, I.) A contribution to the classification of biplanes of order 9. (Serbo-Croatian summary) *Rad Jugoslav. Akad. Znan. Umjet.* No. 428 (1987), 25–29. (Albrecht Beutelspacher) **89j:05018** 05B05
- Kramer, Friedrich S.** (with Calise, Anthony J.) Fixed-order dynamic compensation for multivariable linear systems. *J. Guidance Control Dynamics* **11** (1988), no. 1, 80–85. (Summary) **89i:93049** 93B50 (93B10)



- Kramer, G. L. Equivalence of some linear operations in analytic spaces. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1987, no. 11, 8–11, 83. (A. G. Baskakov) **89d:47066** 47B38 (35P99, 35R30)
- Krimer, Helmut Idempotents in the Burnside ring modulo prime powers: remarks on a paper by E. Jacobson: "The Burnside ring modulo a prime" (*J. Algebra* 99 (1986), no. 1, 58–71; MR 87d:20010). (German) *Arch. Math. (Basel)* 51 (1988), no. 3, 217–222. (David Gluck) **89d:20015** 20B99 (16A54)
- Kramer, I. (with Yorke, James A.; Yorke, E. D.) The AIDS epidemic's influence on the gay contact rate from analysis of gonorrhea incidence. *Math. Comput. Modelling* 12 (1989), no. 2, 129–137. (Not in MR) **92A15**
- Kramer, Jörg On the linear independence of certain theta-series. *Math. Ann.* 281 (1988), no. 2, 219–228. (Thomas R. Shemanske) **89i:11056** 11F27 (11E45, 11F37)
- Kramer, L. (with Haase, R. W.; Kramer, Peter; Lalvani, H.) Polyhedra of three quasilattices associated with the icosahedral group. *Acta Cryst. Sect. A* 43 (1987), no. 4, 574–587. (Summary) **89b:52024** 52A43 (20H15, 82A60)
- Kramer, Lorenz (with Zimmermann, Walter Josef; Bodenschatz, E.; Pesch, W.) Pattern selection in convective instabilities with axial anisotropy. *Propagation in systems far from equilibrium (Les Houches, 1987)*, 240–249, *Springer Ser. Synergetics*, 41, Springer, Berlin-New York, 1988. (see **89f:76003**) 76E15 (76E25, 76E30, 82A57)
- Krimer, Manfred Computational analysis of a finite capacity queueing system with vacations and nonexhaustive service. *Comm. Statist. Stochastic Models* 4 (1988), no. 1, 151–159. (Summary) **89b:60222** 60K25 (90B22)
- Kramer, Mark A. (with Leis, Jorge R.) The simultaneous solution and sensitivity analysis of systems described by ordinary differential equations. *ACM Trans. Math. Software* 14 (1988), no. 1, 45–60. (Summary) **89b:65176** 65L05 (65V05)
- Krimer, Ottmar (with Mühlenbein, H.) Mapping strategies in message-based multiprocessor systems. *PARLE: Conference on Parallel Architectures and Languages—Europe (Eindhoven, 1987)*. *Parallel Comput.* 9 (1988/89), no. 2, 213–225. (see **89j:68053**) 68N25 (68Q10)
- Kramer, Peter (with Haase, R. W.; Kramer, L.; Lalvani, H.) Polyhedra of three quasilattices associated with the icosahedral group. *Acta Cryst. Sect. A* 43 (1987), no. 4, 574–587. (Summary) **89b:52024** 52A43 (20H15, 82A60)
- Quasicrystals: from periodic to nonperiodic order in solids. *Fractals, quasicrystals, chaos, knots and algebraic quantum mechanics (Maratea, 1987)*, 73–91, *NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci.*, 235, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89f:82068** 82A60 (51F15)
- A new approach to nonperiodic order in solids. *Group theoretical methods in physics (Varna, 1987)*, 370–376, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (Summary) **89j:82066** 82A60 (82A55)
- Space-group theory for a nonperiodic icosahedral quasilattice. *J. Math. Phys.* 29 (1988), no. 2, 516–524. (Daniel B. Litvin) **89b:20103** 20H15 (52A45, 82A57)
- Kramer, Thomas Automated analysis of operators on state tables: a technique for intelligent search. *J. Automat. Reason.* 2 (1986), no. 2, 127–153. (Summary) **89j:68142** 68T20 (68P10, 68U30)
- Krimer, Walter (with Sonnberger, Harald) ★ The linear regression model under test. *Physica-Verlag, Heidelberg*, 1986. x+189 pp. ISBN 3-7908-0356-1 (Peter Schmidt) **89b:62143** 62J05 (62P20)
- (with Ploberger, Werner) Mean adjustment and the CUSUM test for structural change. *Econom. Lett.* 25 (1987), no. 3, 255–258. (Summary) **89b:62150** 62J05 (62E20)
- (with Donninger, Christian) Spatial autocorrelation among errors and the relative efficiency of OLS in the linear regression model. *J. Amer. Statist. Assoc.* 82 (1987), no. 398, 577–579. (A. L. Nagar) **89b:62144** 62J05
- Kramer Lassar, Edna Ernestine see Kramer, Edna E.
- Krámlí, A. (with Lukács, P.; Szász, Domokos) A non-Wiener random walk in a two-dimensional Bernoulli environment. *J. Statist. Phys.* 50 (1988), no. 3–4, 599–609. (W. Th. F. den Hollander) **89b:60094** 60J15 (82A41, 82A42)
- Kramosil, Ivan General pseudorandom sequences of high algorithmic complexity. (Russian summary) *Comput. Artificial Intelligence* 6 (1987), no. 4, 345–358. (Cristian Calude) **89b:03033** 03B48 (03D05, 68Q30)
- (with Sindelář, Jan) A note on the law of iterated logarithm from the viewpoint of Kolmogorov program complexity. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* 16 (1987), no. 6, 399–409. (Summary) **89b:60076** 60F15 (68Q30)
- Extremum-searching hierarchical parallel probabilistic algorithms. *Kybernetika (Prague)* 24 (1988), no. 2, 110–121. (Jürgen Köhler) **89b:90189** 90C27 (65W05, 68Q25)
- A note on nonaxiomatizability of independence relations generated by certain probabilistic structures. *Kybernetika (Prague)* 24 (1988), no. 6, 439–446. (Zeno G. Swijtink) **89i:03043** 03B48 (60A05)
- Evaluation of propositional formulas from the viewpoint of computational complexity. *Polish Acad. Sci. Inst. Philos. Sociol. Bull. Sect. Logic* 17 (1988), no. 2, 62–66. (Summary) **89j:03007** 03B05 (03D15)
- Expert systems with nonnumerical belief functions. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* 17 (1988), no. 5, 285–295. (John Rager) **89m:68131** 68T99
- Kramakis, Eda F. Navier's theory of suspension bridges. *From ancient omens to statistical mechanics*, 247–258, *Acta Hist. Sci. Nat. Med.*, 39, Univ. Lib. Copenhagen, Copenhagen, 1987. (I. M. Longman) **89i:01039** 01A55 (73–03, 73K05)
- Early computers in The Netherlands. *CWI Quarterly* 1 (1988), no. 4, 61–84. (Not in MR) 68–03 (01A60)
- Kramakis, Evangelos ★ Primality and cryptography. *Wiley-Teubner Series in Computer Science*. John Wiley & Sons, Ltd., Chichester; B. G. Teubner, Stuttgart, 1986. xvi+235 pp. ISBN 0-471-90934-3 (Eric Bach) **89b:11124** 11Yxx (11T71, 11Y11, 68P25, 94A60)
- (with Klop, Jan Willem) Lower bounds for a class of Kostka numbers. *Ars Combin.* 23 (1987), 121–129. (P. E. O'Neill) **89b:05015** 05A15
- Fixed point equations with parameters in the projective model. *Inform. and Comput.* 75 (1987), no. 3, 264–288. (Summary) **89b:68046** 68Q10 (68Q55)
- Kranjc, Marko Embedding 2-complexes in  $\mathbb{R}^n$ . *Pacific J. Math.* 133 (1988), no. 2, 301–313. (David G. Wright) **89f:57023** 57N13 (57N35, 57Q35)
- Krantz, Steven G. (with Greene, Robert E.) Biholomorphic self-maps of domains. *Complex analysis, II (College Park, Md., 1985–86)*, 136–207, *Lecture Notes in Math.*, 1276, Springer, Berlin-New York, 1987. (Y. Zelinskij (Zbl 625:32024)) **89i:32063** 32M05 (32F15, 32H99, 32M10)
- (with Greene, Robert E.) Characterizations of certain weakly pseudoconvex domains with noncompact automorphism groups. *Complex analysis (University Park, Pa., 1986)*, 121–157, *Lecture Notes in Math.*, 1268, Springer, Berlin-New York, 1987. (Giorgio Patrizio) **89c:32044** 32F15
- (with Chen, Goong; Ma, D. W.; Wayne, C. Eugene; West, Harry H.) The Euler-Bernoulli beam equation with boundary energy dissipation. *Operator methods for optimal control problems (New Orleans, La., 1986)*, 67–96, *Lecture Notes in Pure and Appl. Math.*, 108, Dekker, New York, 1987. (Introduction) **89d:35148** 35Q20 (35B35, 73K05)
- (with Erdős, Paul; Godsil, C. D.; Parsons, Torrence) Intersection graphs for families of balls in  $\mathbb{R}^n$ . *European J. Combin.* 9 (1988), no. 5, 501–505. (C. Peyrat) **89i:05225** 05C75 (05C15, 05C99)
- (with Ma, D. W.) Bloch functions on strongly pseudoconvex domains. *Indiana Univ. Math. J.* 37 (1988), no. 1, 145–163. (Wade Ramey) **89h:32003** 32A10 (32F15, 32H15)
- (with Chen, Goong; Russell, David L.; Wayne, C. Eugene; West, Harry H.; Zhou, Jian-Xin) Modelling, analysis and testing of dissipative beam joints—experiments and data smoothing. *Mathematical modelling in science and technology (St. Louis, MO, 1987)*. *Math. Comput. Modelling* 11 (1988), 1011–1016. (see **89d:00007**) 73K12 (73K30)
- Compactness of the  $\bar{\partial}$ -Neumann operator. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1136–1138. (Peter Pflug) **89f:32032** 32F20 (32A07, 35N15)
- Kranichel, Rolf ★ Kooperation auf homogenen und heterogenen Oligopolmärkten. (German) [Cooperation on homogeneous and heterogeneous oligopoly markets] Eine spieltheoretische Analyse. [A game-theoretic analysis] Verlag Josef Eul, Bergisch Gladbach, 1986. 228 pp. ISBN 3-89012-042-3 (Hans Peters) **89c:90031** 90A14 (90A15, 90D45)
- Krapavickaitė, D. Discrete semistable probability distributions. (Russian) *Probability distributions and mathematical statistics (Russian) (Fergana, 1983)*, 247–264, 494, "Fan", Tashkent, 1986. (Summary) **89k:60019** 60E07
- Krapež, A. Functional equations on groupoids and related structures. *Functional equations: history, applications and theory*, 57–64, *Math. Appl., Reidel, Dordrecht-Boston, MA*, 1984. (Hiroshi Haruki) **89g:39015** 39B70 (39B50)
- Groupoids with  $\Delta$ -kernels. *Functional equations: history, applications and theory*, 93–97, *Math. Appl., Reidel, Dordrecht-Boston, MA*, 1984. (Shigeru Haruki) **89h:39013** 39B50
- (with Taylor, Mark Adrian) Belousov equations on quasigroups. *Aequationes Math.* 34 (1987), no. 2–3, 174–185. (F. W. Carroll) **89a:39012** 39B50 (20N05)
- Krapivin, V. F. (with Aleksandrov, G. A.; Armand, A. D.; Belotelov, N. V.; Vedyushkin, M. A.; Vilko, L. P.; Voinov, A. A.; Denisenko, E. A.; Logofet, D. O.; Ovsyannikov, L. L.; Pak, S. B.; Pasekov, V. P.; Pisarenko, N. F.; Razzhevaikin, V. N.; Sarancha, D. A.; Svirezhev, Yu. M.; Semenov, M. A.; Tarko, A. M.; Fesenko, S. V.; Shmidt, D. A.) ★ Математические модели экосистем. (Russian) [Mathematical models of ecosystems] Экологические и демографические последствия ядерной войны. [Ecological and demographic consequences of a nuclear war] Edited and with a foreword by A. A. Dorodnitsyn. "Nauka", Moscow, 1986. 176 pp. (Summary) **89a:92054** 92A17
- Krapivnyi, Yu. N. (with Martynuk, A. A.) Application of Lyapunov matrix-functions in the theory of the stability of discrete large-scale systems. (Russian. English summary) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1988, no. 25, 26 pp. (Summary) **89j:39005** 39A11 (93D05)
- (with Martynuk, A. A.) A method for the decomposition of large-scale systems in the study of stability of motion. (Russian) *Prikl. Mekh.* 24 (1988), no. 8, 91–98, 134; translation in *Soviet Appl. Mech.* 24 (1988), no. 8, 810–816. (Zhicheng Wang) **89k:34077** 34D20 (34C20, 70K15)
- Krarrup, Jakob (with Clausen, Jens) Arranging apples in an array. *BIT* 28 (1988), no. 3, 552–568. (Dominique Gouyou-Beauchamps) **89b:68120** 68R10 (05C20, 68Q25, 68R05, 94C15)
- Krasa, Stefan The action of a solvable group on an infinite set never has a unique invariant mean. *Trans. Amer. Math. Soc.* 305 (1988), no. 1, 369–376. (Joseph Max Rosenblatt) **89d:43003** 43A07
- Krasauskas, R. (with Solov'ev, Yu. P.) Rational Hermitian  $K$ -theory and dihedral homology. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 52 (1988), no. 5, 935–969, 1118. (L. N. Vaserstein and E. Wheland) **89j:18008** 18F25 (19D10, 57R67, 58E10)
- Krasichkov-Ternovskii, I. F. Absolute completeness of systems of exponents on an interval. (Russian) *Mat. Sb. (N.S.)* 131(173) (1986), no. 3, 309–322, 414; translation in *Math. USSR-Sb.* 59 (1988), no. 2, 303–315. (H. J. Landau) **89b:41011** 41A10 (42A10)
- Krasikov, I. (with Godsil, C. D.; Roditty, Y.) Reconstructing graphs from their  $k$ -edge deleted subgraphs. *J. Combin. Theory Ser. B* 43 (1987), no. 3, 360–363. (B. Manvel) **89a:05106** 05C60
- (with Roditty, Y.) Counting technique for reconstruction problems. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), B, 133–140. (R. L. Hemminger) **89b:05040** 05C60
- (with Roditty, Y.) Geometrical reconstructions. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), B, 211–219. (R. L. Hemminger) **89c:05148** 05C60
- A note on the vertex-switching reconstruction. *Internat. J. Math. Math. Sci.* 11 (1988), no. 4, 825–827. (R. L. Hemminger) **89i:05054** 05C60
- Krasil'nikov, A. N. (with Shmel'kin, A. L.) Finiteness of the basis of identities of finite-dimensional representations of solvable Lie algebras. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 3, 78–86, 220; translation in *Siberian Math. J.* 29 (1988), no. 3, 395–402. (Vesselin Drensky) **89m:17022** 17B30 (16A38, 17B05)
- Krasilovets, L. V. An algorithm for topological synthesis of communication networks. *Soviet J. Automat. Inform. Sci.* 21 (1988), no. 2, 67–71; translated from *Avtomatika* 1988, no. 2, 63–67, 95 (Russian). (Summary) **89m:90065** 90B10 (94C15)
- Krasil'schikov, M. N. (with Karlov, V. I.) Optimization of the measurement process in dynamic systems for different optimality criteria. *Soviet J. Comput. Systems Sci.* 26 (1988), no. 1, 167–174; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 3, 191–197, 224 (Russian). (Summary) **89c:93222** 93E20 (93C55, 93E10)
- Krasinkiewicz, J. Essential mappings onto products of manifolds. *Geometric and algebraic topology*, 377–406, *Banach Center Publ.*, 18, PWN, Warsaw, 1986. (John J. Walsh) **89e:54071** 54F45 (55M10)

- Krasinski, Andrzej** Shear-free normal cosmological models. *J. Math. Phys.* **30** (1989), no. 2, 433–441. (C. B. Collins) **89k:83027** 83C20 (83C40)
- Krasinski, A. Ya.** (with Ronzhin, V. V.) On stabilization of steady motions of mechanical systems with cyclic coordinates. (Russian) *Prikl. Mat. Mekh.* **52** (1988), no. 4, 542–548. (From the summary) **89k:70025** 70F20 (70E05, 70K20, 70Q05, 93D15)
- Kraskevich, V. E.** (with Kovalenko, I. I.; Makarovskii, A. P.; Ivakhnenko, G. A.) Analysis of random spatial images. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 5, 56–61; translated from *Avtomatika* **1987**, no. 5, 65–70, 96 (Russian. English summary). (Not in MR) **68T10** (94A12)
- Kratkiewicz, Witold** Some remarks on the hook formula. (Italian summary) *Ann. Univ. Ferrara Sez. VII (N.S.)* **32** (1986), 67–69 (1987). (From the text) **89g:14039** 14M15 (05A17, 14C15, 20C30)
- (with Pragacz, Piotr) Foncteurs de Schubert. (English summary) [Schubert functors] *C. R. Acad. Sci. Paris Sér. I Math.* **304** (1987), no. 9, 209–211. (Summary) **89b:14068** 14M17 (05A17)
- Krasner, Marc** (with Vuković, Mirjana) ★ Structures paragrades (groupes, anneaux, modules). (French) [Paragrads structures (groups, rings, modules)] *Queen's Papers in Pure and Applied Mathematics*, **77**. Queen's University, Kingston, ON, 1987. viii+163 pp. (R. S. Pierce) **89c:13001** 13-02 (16A03, 20E15)
- Local differentials of algebraic and finite extensions of valued fields. *J. Number Theory* **28** (1988), no. 1, 17–61. (Bertin Diarra) **89d:12004** 12F99 (11S15, 12J25)
- Krasnicka, Barbara** On some properties of solutions to the first Fourier problem for infinite system of parabolic differential-functional equations in an arbitrary domain. *Univ. Iagel. Acta Math.* **26** (1987), 67–74. (Reinhard Redlinger) **89j:35126** 35R10 (35K60)
- Krasniewski, Andrzej** (with Pilarski, Sławomir) Circular self-test path: a low-cost BIST technique. *24th ACM/IEEE Design Automation Conference (Miami Beach, FL, 1987)*, 407–415. *ACM, New York*, 1987. (Miro Křivánek) **89k:94109** 94C15 (94C99)
- Krasnikov, N. V.** Breaking of supersymmetry in superstring theories. *Soviet J. Nuclear Phys.* **46** (1987), no. 6, 1083–1084 (1988); translated from *Yadernaya Fiz.* **46** (1987), no. 6, 1807–1810 (Russian). (Summary) **89c:81092** 81E13 (81D20)
- Infinite component field theory as a key to the solution of the gauge hierarchy problem. *Phys. Lett. B* **214** (1988), no. 3, 363–366. (Summary) **89j:81129** 81E15 (81G25)
- (with Rozhnanski, L. V.) Structure of the low-energy superpotential in superstring theories. *Soviet J. Nuclear Phys.* **47** (1988), no. 2, 339–340 (1988); translated from *Yadernaya Fiz.* **47** (1988), no. 2, 534–536 (Russian). (Summary) **89c:81156** 81E99 (81E30, 81G20)
- Krasnikova, L. I.** (with Yastremskii, A. I.) Application of methods for solving minimax problems to problems of resource allocation. (Russian) *Adapt. Sistemy Avtomat. Upravleniya* **16** (1988), 133–136, v. (Not in MR) **90A16** (90B30)
- Krasnobaev, L. A.** (with Krasnobaev, V. A.) Application of Petri nets for modeling in order to find and search for alternating failures in a computer. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 9, 111–118; translation in *Avtomat. Remote Control* **49** (1988), no. 9, part 2, 1198–1204. (Krassimir Atanasov) **89m:68104** 68Q90
- Krasnobaev, V. A.** (with Krasnobaev, L. A.) Application of Petri nets for modeling in order to find and search for alternating failures in a computer. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 9, 111–118; translation in *Avtomat. Remote Control* **49** (1988), no. 9, part 2, 1198–1204. (Krassimir Atanasov) **89m:68104** 68Q90
- Krasnobe'skaya, T. S.** Vibrations of an infinite plate, in contact with a fluid, that is line-driven by a motor of limited power. (Russian) *Prikl. Mekh.* **24** (1988), no. 9, 96–103, 135. (Summary) **89g:73025** 73J06 (73K12, 76Q05)
- (with Lavrov, K. A.) Nonlinear oscillations of a cylindrical shell with a fluid under limited excitation. (Russian) *Prikl. Mekh.* **24** (1988), no. 11, 50–58, 134; translation in *Soviet Appl. Mech.* **24** (1988), no. 11, 1079–1086. (Summary) **89k:73038** 73J06 (73L20)
- Krasnosel'skii, A. M.** Boundary value problems for equations that are asymptotically degenerate. (Russian) *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 207–210, *Angel Kanchev' Tech. Univ., Ruse*, 1987. (Jan Andres) **89k:47103** 47H15 (34B15, 35J65)
- Conditions for the applicability of Fredholm theorems in the analysis of forced oscillations in nonlinear systems. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 12, 162–164. (Summary) **89m:93037** 93C10 (34C15, 34C25, 70K40)
- Krasnov, S. A.** Mapping of computational algorithms on systolic arrays. (Russian) *Computational processes and systems, No. 5* (Russian), 82–92, "Nauka", Moscow, 1987. (Kaicheng Lu) **89c:65170** 65W05 (65V05)
- Krasnov, Yu. K.** The evolution of "whirlwinds". (Russian) *Nonlinear waves* (Russian), 174–189, 395, "Nauka", Moscow, 1987. (Summary) **89c:76052** 76D99 (86A35)
- Krasovskii, A. A.** Cyclic estimation in the primary processing of sensor signals. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 6, 52–60; translation in *Avtomat. Remote Control* **49** (1988), no. 6, part 1, 729–735. (Věra Lánská) **89j:93120** 93E11 (62M20, 93E10)
- Optimal prediction time in automatic control systems. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 1, 120–128; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 4, 136–144, 222 (Russian). (Hong Xing Zhou) **89g:49009** 49A27 (93A10, 93C20, 93C25)
- Krasovskii, A. N.** Construction of mixed strategies on the basis of stochastic programs. *J. Appl. Math. Mech.* **51** (1987), no. 2, 144–149 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 2, 186–192 (Russian). (Tamer Başar) **89j:93142** 93E20 (49D20, 90D15, 90D25, 93E05)
- Krasovskii, N. N.** On synthesis in a differential game. *J. Appl. Math. Mech.* **50** (1986), no. 6, 696–700 (1987); translated from *Prikl. Mat. Mekh.* **50** (1986), no. 6, 898–902 (Russian). (Dimitrii Serkov) **89f:90220** 90D25 (90D42)
- (with Subbotin, A. I.) ★ Game-theoretical control problems. Translated from the Russian by Samuel Kotz. Springer Series in Soviet Mathematics. Springer-Verlag, New York-Berlin, 1988. xii+517 pp. ISBN 0-387-96389-8 (Vera Winitzky de Spinadel) **89b:90248** 90D25 (49A50)
- (with Andreev, A. F.; Bitsadze, A. V.; Erugin, N. P.; Zubov, V. I.; Izobov, N. A.; Il'in, V. A.; Kiguradze, I. T.; Kudryavtsev, L. D.; Millionshchikov, V. M.; Pliss, V. A.; Samarskii, A. A.; Sibirskii, K. S.; Tikhonov, A. N.) Yurii Stanislavovich Bogdanov. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 6, 1091–1097; translation in *Differential Equations* **24** (1988), no. 6, 692–699. (Editors) **89i:01055** 01A70
- (with Ershov, Yu. L.; Zaitsev, D. I.; Kostrikin, Aleksei Ivanovich; Mitropol'skii, Yu. A.; Platonov, V. P.; Faddeev, D. K.; Shemetkov, L. A.) Sergei Nikolaevich Chernikov. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 2(260), 125–126; translation in *Russian Math. Surveys* **43** (1988), no. 2, 153–155. (Editors) **89i:01074** 01A70
- see also *Mechanics and scientific technological progress*, **89f:70601**
- Krasovskii, A. A.** see **Krasovskii, A. A.**
- Krasovskii, A. A.** (with Cusick, T. W.) Formulas for some Diophantine approximation constants. *J. Austral. Math. Soc. Ser. A* **44** (1988), no. 3, 311–323. (F. Beukers) **89c:11105** 11J13
- Krassa, Michael A.** Social groups, selective perception, and behavioral contagion in public opinion. *Social Networks* **10** (1988), no. 2, 109–136. (Summary) **89f:92063** 92A20
- Krastanov, M. I.** A necessary condition for local controllability. *C. R. Acad. Bulgare Sci.* **41** (1988), no. 7, 13–15. (Not in MR) **93B05** (49E15)
- Krăstev, R. S.** One more theorem of the stable function. *C. R. Acad. Bulgare Sci.* **41** (1988), no. 3, 17–20. (B. G. Pachpatte) **89k:34078** 34D20
- Krasucki, F.** (with Geymonat, G.; Marigo, J.-J.) Stress distribution in anisotropic elastic composite beams. *Applications of multiple scaling in mechanics* (Paris, 1986), 118–133, *Rech. Math. Appl.*, **4**, Masson, Paris, 1987. (V. Gheorghijă) **89c:73056** 73K20
- Krasulina, E. G.** Complexity of the realization of monotone symmetric Boolean functions by switching circuits. (Russian) *Mathematical problems in cybernetics*, No. 1 (Russian), 140–167, "Nauka", Moscow, 1988. (Jürgen Dassow) **89i:94058** 94C10 (03G05, 68Q15)
- Krasulina, T. P.** (with Komarov, S. V.) Investigation of a multidimensional Robbins-Monro process. (Russian. English summary) *Vestnik Leningrad Univ. Mat. Mekh. Astronom.* **1988**, vyp. 1, 113–114, 120; translation in *Vestnik Leningrad Univ. Math.* **21** (1988), no. 1, 83–85. (P. Révész) **89j:62115** 62L20
- One-sided convergence of a modified Robbins-Monro process. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **166** (1988), Issled. po Mat. Statist. **8**, 63–66, 188. (Zdzisław Rychlik) **89c:62138** 62L20
- Krat, S. P.** An estimate for the efficiency of dynamic parallelization of sequential programs on a class of queueing models. (Russian) *Methods and means for designing discrete systems* (Russian), 42–49, iii, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. (see **89f:68009**) **68Q10**
- Kratko, M. I.** On characteristic sets of a system of equivalence relations. *Colloq. Math.* **55** (1988), no. 1, 5–9. (Arnold W. Miller) **89j:04002** 04A20 (04A05)
- (with Mitropol'skii, Yu. A.) Vernadskii and mathematics. (Russian) *Ocherki Istor. Estestvozn. Tekhn.* **35** (1988), 1–8, 109. (Summary) **89m:01103** 01A70
- Kratky, Karl W.** Is the percolation transition of hard spheres a thermodynamic phase transition? *J. Statist. Phys.* **52** (1988), no. 5–6, 1413–1421. (Summary) **89i:82052** 82A43 (82A25, 82A55)
- Kratochvíl, Jan** (with Zeps, Dainis A.) On Hamiltonian cycles in two-triangle graphs. (Russian and Czech summaries) 15th winter school in abstract analysis (Srni, 1987). *Acta Univ. Carolin.—Math. Phys.* **28** (1987), no. 2, 73–78. (Barry Piazza) **89b:05117** 05C45
- (with Zeps, Dainis A.) On the number of Hamiltonian cycles in triangulations. *J. Graph Theory* **12** (1988), no. 2, 191–194. (A. G. Thomason) **89g:05074** 05C45 (05C10)
- (with Hell, Pavol; Kirkpatrick, David; Kříž, Igor) On restricted two-factors. *SIAM J. Discrete Math.* **1** (1988), no. 4, 472–484. (H. Joseph Straight) **89m:05092** 05C70
- Kratochvíl, Jiří** (with Růžicková, Helena) Solutions of the transport-diffusion equation and the Navier-Stokes equations by the method of characteristics and the finite element method. (Czech) *Knižnice Odborn. Věd. Spisů Vysoké. Učení Tech. v Brně A No. 35* (1987), 53–81. (Summary) **89i:65119** 65N30
- Kratsch, Dieter** (with Brandstädt, Andreas) On domination problems for permutation and other graphs. *Theoret. Comput. Sci.* **54** (1987), no. 2–3, 181–198. (Charles J. Colbourn) **89a:68172** 68R10 (05C35)
- Krautenthaler, Ch.** Operator methods and Lagrange inversion: a unified approach to Lagrange formulas. *Trans. Amer. Math. Soc.* **305** (1988), no. 2, 431–465. (David M. Bressoud) **89d:05017** 05A30 (05A17, 11P57)
- Kratz, Johannes** Über Eigenschaften von Ceva-Dreiecken. [On properties of Ceva triangles] *Praxis Math.* **30** (1988), no. 4, 209–241. (J. Strommer) **89h:51029** 51M05
- Kratz, W.** Asymptotic behaviour of Riccati's differential equation associated with selfadjoint scalar equations of even order. *Czechoslovak Math. J.* **38** (1988), no. 2, 351–365. (Anthony N. Michel) **89k:34092** 34E05
- Krätzl, Ekkehard** Jenaer Beiträge zur Gitterpunkttheorie. (English and Russian summaries) [Jena's contributions to lattice point theory] *Wiss. Z. Friedrich-Schiller-Univ. Jena Natur. Reihe* **36** (1987), no. 1, 55–59. (Werner Georg Nowak) **89f:01086** 01A72 (11P21)
- On the average number of direct factors of a finite abelian group. *Acta Arith.* **51** (1988), no. 4, 369–379. (W. Narkiewicz) **89m:11091** 11N45 (11N37, 20K01)
- Kratzke, Thomas** (with Reznick, B.; West, Douglas B.) Eigensharp graphs: decomposition into complete bipartite subgraphs. *Trans. Amer. Math. Soc.* **308** (1988), no. 2, 637–653. (G. W. Peck) **89a:05104** 05C50
- Kratzsch, K. A.** (with Rebhan, E.) Nonlinear evolution of the  $m = n = 1$  kink-mode in a periodic  $z$ -pinch. *Z. Naturforsch. A* **42** (1987), no. 10, 1225–1236. (Summary) **89c:76118** 76W05 (76E25)
- Krauklis, L. A.** (with Krauklis, P. V.) On a type of wave in media that contain surfaces of weakened mechanical contact. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **173** (1988), *Mat. Vopr. Teor. Rasprostran.* **Voln.** **18**, 113–122, 182. (Not in MR) **73D25** (73D15)
- Krauklis, P. V.** (with Krauklis, L. A.) On a type of wave in media that contain surfaces of weakened mechanical contact. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **173** (1988), *Mat. Vopr. Teor. Rasprostran.* **Voln.** **18**, 113–122, 182. (Not in MR) **73D25** (73D15)
- Kraus, F.** (with Anderson, B. D. O.; Jury, E. I.; Mansour, M.) On the robustness of low-order Schur polynomials. *IEEE Trans. Circuits and Systems* **35** (1988), no. 5, 570–577. (Ye-Hwa Chen) **89g:93085** 93D99 (26C05, 93B35)
- (with Anderson, B. D. O.; Mansour, M.) Robust Schur polynomial stability and Kharitonov's theorem. *Internat. J. Control* **47** (1988), no. 5, 1213–1225. (Anthony Uyi Afiwape) **89i:93099** 93D99 (30C15)
- Krause, Bernd** see **Vishik, M. I.** **89h:35271**
- Krause, Günter** Chaînes d'idéaux annulateurs d'un anneau noethérien. [Chains of annihilator ideals of a Noetherian ring] *Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliavin*



- (Paris, 1986), 261–275. *Lecture Notes in Math.*, 1296, Springer, Berlin-New York, 1987. (Birge Zimmermann-Huisgen) **89g:16003** 16A08 (16A33)
- Krause, James M.** *see* Ortega, Romeo. (Not in MR)
- Krause, Jorge** (with Michel, L.) Équations différentielles linéaires d'ordre  $n > 2$  ayant une algèbre de Lie de symétrie de dimension  $n + 4$ . (English summary) [Linear differential equations of order  $n > 2$  with a symmetry algebra of dimension  $n + 4$ ] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 18, 905–910. (Summary) **89m:58183** 58F35 (58H05)
- (with Aguirre, M.)  $SL(3, \mathbb{R})$  as the group of symmetry transformations for all one-dimensional linear systems. *J. Math. Phys.* **29** (1988), no. 1, 9–15. (M. I. Monastyrskii) **89g:58184** 58F35 (22E05, 34A30)
- Galilean quantum kinematics. *J. Math. Phys.* **29** (1988), no. 2, 393–397. (Matej Pavšič) **89b:81082** 81D07 (81C40)
- (with Aguirre, M.) Finite point transformations and linearisation of  $\tilde{x} = f(t, x)$ . *J. Phys. A* **21** (1988), no. 13, 2841–2845. (János Karsai) **89i:34043** 34C20 (58F37)
- Krause, Matthias** Exponential lower bounds on the complexity of local and real-time branching programs. (German and Russian summaries) *J. Inform. Process. Cybernet.* **24** (1988), no. 3, 99–110. (Summary) **89i:68044** 68Q15 (68Q05)
- Krause, Ulrich** (with Fujimoto, Takao) More theorems on joint production. *Z. Nationalökonom.* **48** (1988), no. 2, 189–196. (conclusion) **89g:90048** 90A11
- On monoids of finite real character. *Proc. Amer. Math. Soc.* **105** (1989), no. 3, 546–554. (Jan Okniński) **89i:20102** 20M14 (13A18)
- Kraut, Andre** (with Bandemer, Hans) On a fuzzy-theory-based computer-aided particle shape description. *Fuzzy Sets and Systems* **27** (1988), no. 2, 105–113. (Not in MR) **68U10** (03E72)
- Krauth, Werner** (with Nadal, J.-P.; Mézard, Marc) The roles of stability and symmetry in the dynamics of neural networks. *J. Phys. A* **21** (1988), no. 13, 2995–3011. (Summary) **89g:92018** 92A09 (68Q80, 82A57, 82A99)
- Krautkraemer, Jeffrey A.** The rate of discount and the preservation of natural environments. *Natur. Resource Modeling* **2** (1988), no. 3, 421–437. (Summary) **89d:90073** 90A30
- Kravaris, Costas** (with Palanki, Srinivas) Robust nonlinear state feedback under structured uncertainty. *AICHE J.* **34** (1988), no. 7, 1119–1127. (Hsi-han Yeh) **89j:93036** 93B35 (93B27, 93B50, 93C75)
- Kravchenko, I. V.** Determination of the minimal base for Fibonacci  $p$ -sequences. (Russian) *Models and systems of information processing*. No. 5 (Russian), 69–75, 111, "Vishcha Shkola", Kiev, 1986. (Summary) **89a:11133** 11Y55 (11B13, 11B39)
- Kravchenko, L. V.** (with Moldavanskii, D. I.; Frolova, E. N.) Conjugacy separability of some groups with one defining relation. (Russian) *Algorithmic problems in the theory of groups and semigroups* (Russian), 81–91, 127, *Tul'sk. Gos. Ped. Inst.*, Tula, 1986. (Ya. G. Berkovich) **89f:20040** 20F05
- Kravchenko, V. F.** (with Goncharenko, A. A.; Ponomarev, V. I.) On an inverse problem of the theory of the propagation of electromagnetic waves. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 4, 622–627, 731; translation in *Differential Equations* **24** (1988), no. 4, 432–436. (Gottfried Anger) **89h:35337** 35R30 (35J10, 35P25)
- (with Kolyadin, V. L.) The choice of subspaces in projection methods for solving operator equations. (Russian) *Dokl. Akad. Nauk SSSR* **296** (1987), no. 5, 1050–1052; translation in *Soviet Math. Dokl.* **36** (1988), no. 2, 353–355. (A. B. Bakushinskii) **89b:47018** 47A50 (65J10)
- Kravchenok, N. N.** (with Beloded, N. I.; Bondarenko, L. V.) Investigation of the dynamics of stabilization systems with pulse-width modulation on the basis of digital modeling methods. (Russian) *Avtomat. i Ychisl. Tekhn. (Minsk)* No. 16 (1987), 43–50, ii. (Not in MR) **93D10** (94C05)
- Kravchuk, A. S.** Solution by variational methods of nonlinear contact problems taking friction into account. (Russian) *Mechanics and scientific-technological progress*, Vol. 3 (Russian), 154–169, 271, "Nauka", Moscow, 1988. (see **89j:73002**) **73T05** (73C50, 73C60, 73F30, 73G05)
- Kravchuk, E. V.** (with Gutlyanskii, V. Ya.) Boundary functions of a system of functionals that depend on the value of a univalent function and its derivative. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 13, 30 pp. (Summary) **89d:30018** 30C55
- Kravchuk, N. V.** The distinguishability of quantum states. (Russian. English summary) *Ukrain. Fiz. Zh.* **32** (1987), no. 11, 1741–1748, 1761. (Summary) **89b:81019** 81B05
- Different descriptions of microscopic systems. (Russian) *Mathematical problems in the theory of systems of charged particles in inhomogeneous media* (Russian), 86–95, iii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1988. (see **89j:82003**) **81B05** (82A05)
- Kravets, L. G.** (with Vagapov, A. M.; Koval', V. A.) Optimum Bayesian projection-energy receivers for the detection in white noise of a quasi-deterministic signal with a uniform direction probability density in Hilbert space. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 12, 156–158 (1988); translated from *Radiotekhn. i Elektron.* **32** (1987), no. 8, 1771–1773 (Russian). (Not in MR) **94A13**
- Kravets, T. F.** A method for studying the stability of periodic solutions of systems with a small parameter. (Russian) *Partial differential equations* (Russian), 108–113, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (P. Talpalaru) **89i:34055** 34C25 (34A25, 34D10, 34D20)
- Kravets, T. N.** On the connection between the solution of a stochastic differential inclusion and the solution of an ordinary differential equation. (Russian) *Theory of random processes*. No. 16 (Russian), 48–55, 109, "Naukova Dumka", Kiev, 1988. (Constantin Tudor) **89k:60077** 60H10 (34A60, 34F05)
- Kravitsky, Naftali** (with Dym, Harry; Gohberg, I.) Biography of M. S. Livsic. *Topics in operator theory and interpolation*, 6–15, *Oper. Theory: Adv. Appl.*, 29, Birkhäuser, Basel-Boston, MA, 1988. (Editors) **89g:01049** 01A70
- Kravtsev, S. V.** Some properties of automorphic functions of rotation that are connected with the rate of growth of their spherical Ahlfors-Shimizu characteristic. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 5, 87–90. (W. H. J. Fuchs) **89a:30037** 30F35 (11F03)
- Kravtsov, M. K.** (with Emelichev, V. A.; Krachkovskii, A. P.) New results in the combinatorial theory of transportation polytopes. (Russian) *Proceedings of the All-Union seminar on discrete mathematics and its applications* (Russian) (Moscow, 1984), 16–19, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (From the text) **89e:90138** 90C08
- (with Emelichev, V. A.) Some problems of polyhedral combinatorics in generalized transportation problems. (Russian) *Ékonom. i Mat. Metody* **24** (1988), no. 2, 319–326. (Joachim Pehle) **89f:90088** 90C08
- A proof of the Dubois conjecture on the maximum number of vertices of a symmetric transportation polytope. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **33** (1989), no. 1, 9–12, 92. (Summary) **89m:90109** 90C08
- Kravtsov, V. E.** (with Afshuler, B. L.; Lerner, I. V.) Statistics of mesoscopic fluctuations and scaling theory. *Localization in disordered systems* (Bad Schandau, 1986), 7–17, *Teubner-Texte Phys.*, 16, Teubner, Leipzig, 1988. (see **89f:82003**) **82A57**
- Kravtsov, Yu. A.** Answer to the critique contained in the paper: "The inaccuracy of 'universal and sufficient' conditions for estimating the boundaries of applicability of geometric optics and geometric diffraction theory" [Izv. Vyssh. Uchebn. Zaved. Radiofiz. **30** (1987), no. 10, 1226–1237; MR **89g:78019**] by V. A. Borovikov and B. E. Kinber. (Russian) With notes by Borovikov and Kinber. *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* **30** (1987), no. 10, 1237–1242. (A. S. Silbergleit) **89g:78020** 78A45
- (with Rytov, S. M.; Tatarskii, V. I.) ★ Principles of statistical radiophysics. 2. Correlation theory of random processes. Translated from the second Russian edition by Alexander P. Rep'yev [A. P. Rep'ev]. *Springer-Verlag, Berlin-New York*, 1988. x+234 pp. ISBN 3-540-16186-4 (I. G. Zhurbenko) **89m:85002** 85-02 (60G99, 78A40, 85A45)
- (with Asatryan, A. A.) Localization of complex rays using Gaussian windows, and the limits of the applicability of complex geometric optics. (Russian. English summary) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* **31** (1988), no. 9, 1053–1058; translation in *Radiophys. and Quantum Electronics* **31** (1988), no. 9, 746–750. (Summary) **89j:78010** 78A05 (58C27)
- Kravvaritis, D.** (with Ladopoulos, E. G.; Zisis, V. A.) Singular integral equations in Hilbert space applied to crack problems. *Theoret. Appl. Fracture Mech.* **9** (1988), no. 3, 271–281. (K. S. Parihar) **89f:73066** 73M05 (45E05, 45N05)
- Krawczewicz, W.** (with Kaczynski, T.) Solvability of boundary value problems for the inclusion  $u_{tt} - u_{xx} \in g(t, x, u)$  via the theory of multi-valued  $A$ -proper maps. (German and Russian summaries) *Z. Anal. Anwendungen* **7** (1988), no. 4, 337–346. (Sergiu Aizicovici) **89j:35078** 35L20 (35R99, 47H09, 47H15)
- Krawczyk, Michael** Algorithms for the restriction-site mapping of DNA molecules. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 19, 7298–7301. (Not in MR) **92A12**
- Krawczyk, Jarosław** The translation invariant uniform approximation property for compact groups. *Studia Math.* **90** (1988), no. 1, 27–35. (Giancarlo Travaglini) **89m:43006** 43A15 (22C03)
- Krawczyk, Jerzy** On some Riemannian manifolds admitting a metric semi-symmetric connection. *Colloq. Math.* **55** (1988), no. 1, 55–59. (Andrzej Bucki) **89k:53024** 53B15 (53B20)
- Simple conformally symmetric manifolds with metric semi-symmetric connection. *Colloq. Math.* **55** (1988), no. 1, 61–66. (Andrzej Bucki) **89j:53016** 53B15 (53B20)
- Krawzyk, R.** Conditionally isotone interval operators. (German summary) *Computing* **39** (1987), no. 3, 261–270. (Miodrag Petković) **89a:65076** 65G10 (65H10)
- Krbec, M.** Two weights weak type inequality for the maximal function in the Zygmund class. *Function spaces and applications* (Lund, 1986), 317–320, *Lecture Notes in Math.*, 1302, Springer, Berlin-New York, 1988. (Ron Kerman) **89d:42017** 42B25
- Krebs, Anna** On a generalization of Baire's method. *Numerical methods* (Miskolc, 1986), 533–538, *Colloq. Math. Soc. János Bolyai*, 50, North-Holland, Amsterdam-New York, 1988. (Introduction) **89m:65051** 65H05
- Krechetov, G. S.** Conditions for the asymptotic stability of a linear system of special form. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 5, 899–902, 919. (Zhao-Pan Zeng) **89h:34040** 34D05 (34D20)
- Lyapunov functions for a class of second-order autonomous systems. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 2, 207–211, 363; translation in *Differential Equations* **24** (1988), no. 2, 155–158. (P. Brunovsky) **89g:34072** 34D20
- An integral inequality. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 5, 894–896, 919. (I. Gavrea) **89j:26015** 26D15 (34A40)
- Krechetov, S. G.** Estimates for the solutions of a second-order differential equation. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 10, 1679–1684, 1834. (E. S. Chichkin) **89c:34021** 34A45 (34A34)
- Kreck, Matthias** (with Stolz, S.) A diffeomorphism classification of 7-dimensional homogeneous Einstein manifolds with  $SU(3) \times SU(2) \times U(1)$ -symmetry. *Ann. of Math.* (2) **127** (1988), no. 2, 373–388. (Italo José DeJter) **89c:57042** 57R55 (53C25)
- (with Hambleton, I.) Smooth structures on algebraic surfaces with cyclic fundamental group. *Invent. Math.* **91** (1988), no. 1, 53–59. (Ronald J. Stern) **89a:57043** 57R55 (14J27, 57N13, 57R19)
- (with Hambleton, I.) On the classification of topological 4-manifolds with finite fundamental group. *Math. Ann.* **280** (1988), no. 1, 85–104. (Laurence R. Taylor) **89g:57029** 57N13
- Kredentser, B. P.** (with Sidorov, L. A.) A model for systems reliability with a combined slack time and a random utilization mode. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 10, 168–177; translation in *Avtomat. Remote Control* **49** (1988), no. 10, part 2, 1386–1392. (Summary) **89j:90132** 90B25 (68M15)
- Krêe, Paul** (with Dermoune, A.; Wu, Li Ming) Calcul stochastique non adapté par rapport à la mesure aléatoire de Poisson. [Nonadapted stochastic calculus with respect to the Poisson random measure] *Séminaire de Probabilités, XXII*, 477–484, *Lecture Notes in Math.*, 1321, Springer, Berlin-New York, 1988. (Daniel Ocone) **89i:60112** 60H05 (60G55, 60H07)
- La théorie des distributions en dimension quelconque et l'intégration stochastique. [The theory of distributions in any dimension, and stochastic integration] *Stochastic analysis and related topics* (Silvri, 1986), 170–233, *Lecture Notes in Math.*, 1316, Springer, Berlin-New York, 1988. (Ali Süleyman Üstünel) **89i:60114** 60H05 (35R15, 46F25, 81C20)
- Kreher, Donald L.** (with Radziszowski, Stanisław P.) Simple  $S_{-}(28, 6, 2)$  designs from  $PSL_2(27)$ . *Combinatorial design theory*, 315–318, *North-Holland Math. Stud.*, 149, North-Holland, Amsterdam-New York, 1987. (M. J. Grannell) **89b:05035** 05B05
- (with Radziszowski, Stanisław P.) New  $t$ -designs found by basis reduction. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 155–164. (A. E. Brouwer) **89d:05029** 05B05
- (with Radziszowski, Stanisław P.) Solving subset sum problems with the  $L^3$  algorithm. *J. Combin. Math. Combin. Comput.* **3** (1988), 49–63. (Claus-Peter Schnorr) **89i:11142** 11Y16 (05A05, 11H55, 68Q25, 90C10)

- (with Radziszowski, Stanislaw P.) Search algorithm for Ramsey graphs by union of group orbits. *J. Graph Theory* 12 (1988), no. 1, 59–72. (Summary) **89h:05039** 05C35 (05C25)
- Kreimer, Joseph** (with Rubinstein, Reuven Y.) A batch acceptance complement method for generating random variables. *European J. Oper. Res.* 35 (1988), no. 2, 278–285. (Luc P. Devroye) **89h:65020** 65C10 (68U20)
- (with Rubinstein, Reuven Y.) Smoothed functionals and constrained stochastic approximation. *SIAM J. Numer. Anal.* 25 (1988), no. 2, 470–487. (Klaus Tammer) **89e:90180** 90C30 (65C05, 90C15)
- Krein, M. G.** see **Kailath, Thomas**, **89c:01070**
- Krein, S. G.** (with L'vin, S. Ya.) Overdetermined and underdetermined equations in Hilbert spaces. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 9, 59–66, 83. (D. Przeworska-Rolewicz) **89d:47019** 47A50
- see also **Berezanskii, Yu. M. et al.**, **89b:01038**
- wexler-Kreindler, Elena** see **Wexler-Kreindler, Elena**
- Kreinin, A. Ya.** (with Berenshtein, A. D.; Vainshtein, A. D.) The convexity property of the Poisson distribution and its applications in queueing theory. (Russian) *Stability problems for stochastic models* (Russian) (Varna, 1985), 17–22, *Vsesoyuz. Nauch.-Issled. Inst. Sistem. Issled., Moscow*, 1986. (M. Grishin (translated from RZhMat 1987:10 V90)) **89h:60027** 60E05 (60K25)
- (with Vainshtein, A. D.) Transformations of the Poisson flow and their application to communication systems. (Russian) *Problemy Peredachi Informatsii* 22 (1986), no. 4, 95–103. (Summary) **89g:60312** 60K99 (90B22, 94A05)
- Kreinin, M. I.** (with Zabotin, I. Ya.) A relaxation subgradient method for minimizing strongly convex functions. (Russian) *Issled. Prikl. Mat. No. 14* (1987), 34–42. (From the text) **89d:90169** 90C25
- Kreinovich, V. Ya.** The semantics of S. Yu. Maslov's iterative method. (Russian) *Voprosy Kibernet. (Moscow)* No. 131 (1987), 30–62. (M. I. Dekhtyar) **89i:03019** 03B35 (68Q25, 68Q55)
- Kreisel, Georg** Gödel's excursions into intuitionistic logic. *Gödel remembered* (Salzburg, 1983), 65–186, *Hist. Logic, IV, Bibliopolis, Naples*, 1987. (see **89f:01083**) **03B20** (01A70, 03-03, 03F55)
- see also **Takeuti, Gaisi**, **89a:03115**
- Kreiser, Lothar** see **Nonclassical logic**, **89c:03005**
- Kreiss, Gunilla** Convergence to steady state of solutions of the Euler equations. I. *BIT* 28 (1988), no. 1, 144–162. (I. Christie) **89b:65296** 65N99 (76-08, 76N10)
- Kreiss, Heinz-Otto** (with Browning, G.) Numerical problems connected with weather prediction. *Progress and supercomputing in computational fluid dynamics* (Jerusalem, 1984), 377–394, *Progr. Sci. Comput.*, 6, Birkhäuser Boston, Boston, MA, 1985. (Introduction) **89a:86004** 86A10 (65P05)
- Fourier expansions of the solutions of the Navier-Stokes equations and their exponential decay rate. *Analyse mathématique et applications*, 245–262, *Gauthier-Villars, Paris*, 1988. (Michael Wiegner) **89k:35184** 35Q10 (35C10, 35Q20, 76D05)
- Kreiss, Jens-Peter** On adaptive estimation in stationary ARMA processes. *Ann. Statist.* 15 (1987), no. 1, 112–133. (Harry H. Tigelaar) **89a:62061** 62F35 (62E20, 62F15, 62M09)
- Kreith, Kurt** Symmetric Green's function for a class of CIV boundary value problems. *Canad. Math. Bull.* 31 (1988), no. 3, 272–279. (Maria Cinquini-Cibrario) **89k:35128** 35L20 (35P05)
- Conjugate points of fourth order differential equations with impulses. *Differential Integral Equations* 1 (1988), no. 4, 391–398. (M. Tvrdý) **89g:34044** 34C10 (34A30, 93C57)
- Krejčí, Pavel** On Ishlinskii's model for non-perfectly elastic bodies. (Russian and Czech summaries) *Apl. Mat.* 33 (1988), no. 2, 133–144. (Andrzej Hajnosz) **89i:34088** 34G20 (34A10, 46E35, 47H99, 73C50)
- Kreknin, V. A.** (with Spivakovskii, A. V.) A class of groups having C-separable subgroups. (Russian) *Ukrain. Mat. Zh.* 38 (1986), no. 6, 729–733, 815. (A. S. Kondrat'ev (Zbl 616:20008)) **89a:20016** 20D10
- Kreile, Wilhelm** Structural change induced by foreign trade. What are the advantages for the country? *Ökonomie und Mathematik*, 566–598, *Springer, Berlin-New York*, 1987. (see **89j:90002**) **90A30** (90A11, 90A17)
- Operations Research—Rückblick und einige Gedanken zur Weiterentwicklung. [Operations research—a backwards glance and some thoughts for further development] *Operations research proceedings 1986* (Ulm, 1986), 1–21, *Springer, Berlin-New York*, 1987. (Editors) **89h:90069** 90Bxx (01A65)
- see also **Kirchen, Alfons**, **89f:62091**
- Kremer, H.** ★ Numerical analysis of linear networks and systems. Translated from the German. Translation edited by C. C. Bissell and J. K. Fidler. With a preface by Bissell. *Artech House, Inc., Boston, MA*, 1987. viii+196 pp. ISBN 0-89006-232-3 (Külmiz Çevik) **89f:65033** 65Fax (15-04, 93C05, 94C05)
- Kremer, Kurt** (with Batoulis, Jannis) Statistical properties of biased sampling methods for long polymer chains. *J. Phys. A* 21 (1988), no. 1, 127–146. (Summary) **89c:82048** 82A51 (82A41)
- Kremer, Manfred** (with Bernreuther, W.; Göckeler, M.) A finite size scaling analysis of the O(4)-invariant lattice  $\phi^4$  theory. *Nuclear Phys. B* 295 (1988), no. 2 FS21, 211–228. (Summary) **89c:81091** 81E25 (81-04)
- Kremer, Michael** Kripke and the logic of truth. *J. Philos. Logic* 17 (1988), no. 3, 225–278. (Charles F. Kielkopf) **89i:03005** 03A05 (03B50)
- Logic and meaning: the philosophical significance of the sequent calculus. *Mind* 97 (1988), no. 385, 50–72. (Bienvenido F. Nebres) **89j:03051** 03F05 (03A05)
- Kremer, N. Sh.** (with Karasev, A. I.; Savel'eva, T. I.) ★ Математические методы и модели в планировании. (Russian) [Mathematical methods and models in planning] “*Ekonomika*”, Moscow, 1987. 241 pp. (From the introduction) **89e:90002** 90Axx (90A11)
- Krempa, Jan** (with Kishimoto, Kazuo; Nowicki, Andrzej Władysław) On rings whose number of centralizers of ideals is finite. *Rend. Circ. Mat. Palermo* (2) 35 (1986), no. 3, 349–363 (1987). (J. C. Robson) **89e:16011** 16A15 (16A12)
- Unit groups and commutative ring extensions. *Comm. Algebra* 16 (1988), no. 11, 2349–2361. (G. Karpilovsky) **89j:13004** 13B02 (13B99, 18F25, 19A15)
- Kremer, Arthur J.** Reciprocal processes and the stochastic realization problem for causal systems. *Modelling, identification and robust control* (Stockholm, 1985), 197–209, *North-Holland, Amsterdam-New York*, 1986. (Summary) **89c:93065** 93E03 (60G99, 93B15)
- The asymptotic approximation of nonlinear filters by linear filters. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 359–378, *North-Holland, Amsterdam-New York*, 1986. (M. Sambandham) **89d:93101** 93E11 (93B17)
- Normal forms for linear and nonlinear systems. *Differential geometry: the interface between pure and applied mathematics* (San Antonio, Tex., 1986), 157–189, *Contemp. Math.*, 68, *Amer. Math. Soc., Providence, RI*, 1987. (Yoshimasa Nakamura) **89h:93036** 93B17 (93B05, 93B07, 93B27)
- Acausal realization theory. I. Linear deterministic systems. *SIAM J. Control Optim.* 25 (1987), no. 3, 499–525. (K. B. Datta) **89d:93025** 93B20 (34B05, 47A50, 93B15)
- Realizations of reciprocal processes. *Modelling and adaptive control* (Sopron, 1986), 159–174, *Lecture Notes in Control and Inform. Sci.*, 105, *Springer, Berlin-New York*, 1988. (P. Laurie Davies) **89i:60081** 60G15 (93B15, 93E03)
- Krener, V. A.** (with Skimel, V. N.) The stiffness of a system with an  $l$ -estimate for the transient process. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 237–246, 326, “*Nauka*” Sibirsk. Otdel., Novosibirsk, 1987. (Pavel Krbec) **89g:34073** 34D20 (34D10, 34E10)
- Krengel, Ulrich** Nonlinear ergodic theorems. *Proceedings of the conference on ergodic theory and related topics, II* (Geirgental, 1986), 99–107, *Teubner-Texte Math.*, 94, *Teubner, Leipzig*, 1987. (From the introduction) **89h:47105** 47H99 (28D05, 60J10)
- (with Sucheston, Louis) Prophet compared to gambler: an inequality for transforms of processes. *Ann. Probab.* 15 (1987), no. 4, 1593–1599. (Robert Kertz) **89d:60081** 60G40 (90C99)
- (with Akcoglu, M. A.) Nonlinear models of diffusion on a finite space. *Probab. Theory Related Fields* 76 (1987), no. 4, 411–420. (Ray C. Shifflett) **89b:60167** 60J25 (47H09)
- (with Pyke, R.) Uniform pointwise ergodic theorems for classes of averaging sets and multiparameter subadditive processes. *Stochastic Process. Appl.* 26 (1987), no. 2, 289–296. (Yves Derriennic) **89h:60048** 60F15 (28D10, 60F17, 60G10)
- (with Lin, Michael) An integral representation of disjointly additive order preserving operators in  $L_1$ . *Stochastic Anal. Appl.* 6 (1988), no. 3, 289–304. (M. A. Akcoglu) **89j:47038** 47H99 (47B38, 47B55, 82A70)
- Kreowski, Hans-Jörg** (with Habel, Annegret) May we introduce to you: hyperedge replacement. *Graph-grammars and their application to computer science* (Warrenton, VA, 1986), 15–26, *Lecture Notes in Comput. Sci.*, 291, *Springer, Berlin-New York*, 1987. (see **89b:68009**) **68Q50**
- Is parallelism already concurrency? I. Derivations in graph grammars. *Graph-grammars and their application to computer science* (Warrenton, VA, 1986), 343–360, *Lecture Notes in Comput. Sci.*, 291, *Springer, Berlin-New York*, 1987. (see **89b:68009**) **68Q50** (68Q10)
- (with Wilharm, Anne) Is parallelism already concurrency? II. Nonsequential processes in graph grammars. *Graph-grammars and their application to computer science* (Warrenton, VA, 1986), 361–377, *Lecture Notes in Comput. Sci.*, 291, *Springer, Berlin-New York*, 1987. (see **89b:68009**) **68Q50** (68Q10)
- (with Habel, Annegret) Characteristics of graph languages generated by edge replacement. *Theoret. Comput. Sci.* 51 (1987), no. 1-2, 81–115. (Curtis R. Cook) **89a:68135** 68Q50 (05C99, 68Q45)
- Kreps, David M.** (with Ramey, Garey) Structural consistency, consistency, and sequential rationality. *Econometrica* 55 (1987), no. 6, 1331–1348. (Summary) **89b:90047** 90A14
- (with Fudenberg, Drew; Levine, David K.) On the robustness of equilibrium refinements. *J. Econom. Theory* 44 (1988), no. 2, 354–380. (O. A. Malafeev) **89d:90248** 90D10
- Kreso, S.** (with Peruničić, B.; Kezunovic, M.) Bilinear form approach to synthesis of a class of electric circuit digital signal processing algorithms. *IEEE Trans. Circuits and Systems* 35 (1988), no. 9, 1197–1200. (Michitaka Kameyama) **89i:94052** 94C05 (94C30)
- mayer-Kress, Gottfried** see **Mayer-Kress, Gottfried**
- Kress, Michael E.** Back-averaging: an accelerated iterative method for simulating plasma diffusion. *J. Comput. Phys.* 76 (1988), no. 1, 201–230. (Summary) **89c:76119** 76W05 (76-08)
- Kress, Moshe** (with Cook, Wade D.) Tournament ranking and score difference. *Cahiers Centre Études Rech. Opér.* 29 (1987), no. 3-4, 215–222. (Kunwarjit Bagga) **89d:05084** 05C20 (90D99)
- (with Cook, Wade D.; Golan, Igal) Heuristics for ranking players in a round robin tournament. *Comput. Oper. Res.* 15 (1988), no. 2, 135–144. (Summary) **89d:90270** 90D35 (05C20)
- (with Cook, Wade D.) Deriving weights from pairwise comparison ratio matrices: an axiomatic approach. *European J. Oper. Res.* 37 (1988), no. 3, 355–362. (Summary) **89i:92065** 92A25
- (with Cook, Wade D.) Partial and multiple match tournaments. *Math. Social Sci.* 15 (1988), no. 3, 303–306. (J. W. Moon) **89c:05097** 05C20 (90D99)
- Kress, Rainer** (with Kirsch, Andreas) An optimization method in inverse acoustic scattering (invited contribution). *Boundary elements IX, Vol. 3* (Stuttgart, 1987), 3–18, *Comput. Mech., Southampton*, 1987. (Introduction) **89h:76033** 76Q05 (35J05, 35R30, 49D15, 49D37)
- On the low wave number asymptotics for the two-dimensional exterior Dirichlet problem for the reduced wave equation. *Math. Methods Appl. Sci.* 9 (1987), no. 3, 335–341. (Hideo Soga) **89a:35056** 35J05
- (with Kirsch, Andreas; Monk, P. B.; Zinn, A.) Two methods for solving the inverse acoustic scattering problem. *Inverse Problems* 4 (1988), no. 3, 749–770. (Fadil Santosa) **89k:73024** 73D50 (35J05, 35R30, 76Q05)
- (with Colton, David) Karp's theorem in electromagnetic scattering theory. *Proc. Amer. Math. Soc.* 104 (1988), no. 3, 764–769. (Piero Bassanini) **89k:78019** 78A45
- Kretschmar, H.** (with Kreul, R.) On mathematical modelling of non-Newtonian flow by perturbation methods. *Potential theory* (Prague, 1987), 197–200, *Plenum, New York-London*, 1988. (see **89j:31001**) **76A05** (76-08)
- Kreul, R.** (with Kretschmar, H.) On mathematical modelling of non-Newtonian flow by perturbation methods. *Potential theory* (Prague, 1987), 197–200, *Plenum, New York-London*, 1988. (see **89j:31001**) **76A05** (76-08)
- Kreuzer, Alexander** Zur Abhängigkeit von Anordnungsaxiomen. (English summary) [On the dependence of axioms of order] *J. Geom.* 31 (1988), no. 1-2, 125–130. (H. Salzmann) **89g:51015** 51G05
- Klassifizierung von Halbordnungen. (English summary) [Classification of half orders] *J. Geom.* 33 (1988), no. 1-2, 73–82. (J. André) **89k:51020** 51G05



- Kreuzer, E. (with Kleczka, M.) Ljapunov-Exponenten zur Analyse nichtlinearer dynamischer Systeme. [Lyapunov exponents for the analysis of nonlinear dynamical systems] *Z. Angew. Math. Mech.* **67** (1987), no. 4, T94-T95. (Silvio Nocilla) **89c:58182** 58F30 (34D05, 70K99)
- Stabilität nichtlinearer dynamischer Systeme. [Stability of nonlinear dynamical systems] *Z. Angew. Math. Mech.* **68** (1988), no. 4, T71-T73. (Editors) **89c:58112** 58F10
- Kreuzer, Martin (with Kunz, E.) Traces in strict Frobenius algebras and strict complete intersections. *J. Reine Angew. Math.* **381** (1987), 181-204. (N. Mohan Kumar) **89c:14022** 14F10 (13E99, 14N99)
- Kreuzer, Maximilian (with Gaigg, P.) Symmetries of axial gauge pole prescriptions. *Phys. Lett. B* **205** (1988), no. 4, 530-534. (George Leibbrandt) **89c:81121** 81E99 (81C30)
- Kreweras, Germain (with Moszkowski, Paul) Signatures des permutations et des mots extraits. (English summary) [Signatures of permutations and of extracted words] *Discrete Math.* **68** (1988), no. 1, 71-76. (Konrad Engel) **89a:05008** 05A05 (05A15, 06A10)
- (with Dumont, Dominique) Sur le développement d'une fraction continue liée à la série hypergéométrique et son interprétation en termes de records et anti-records dans les permutations. (English summary) [Expansion of a continued fraction associated with the hypergeometric series, and its interpretation in terms of records and antirecords in permutations] *European J. Combin.* **9** (1988), no. 1, 27-32. (W. J. Thron) **89c:30007** 30B70 (05A05, 33A30, 40A15)
- Kreysberg, Johann Periodic solutions of nonlinear differential equations involving the method of scalar nonlinearities. *Z. Angew. Math. Phys.* **39** (1988), no. 1, 105-117. (Narahari Parhi) **89b:34096** 34C25 (34A10)
- Kreyszig, Erwin (with Kracht, Manfred) The Tricomi equation and transition problems. *Mixed type equations*, 157-165. *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) **89b:35114** 35M05
- (with Kracht, Manfred) The integral operator approach to the Tricomi equation. *Mixed type equations*, 166-179. *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) **89b:35115** 35M05
- (with Kracht, Manfred) ★ Methods of complex analysis in partial differential equations with applications. Canadian Mathematical Society Series of Monographs and Advanced Texts. A Wiley-Interscience Publication. John Wiley & Sons, Inc., New York, 1988. xvi+394 pp. ISBN 0-471-83091-7 (Wolfgang Rüprich) **89f:35002** 35-02 (35Cxx)
- Krezhevskikh, L. T. (with Pasyukov, B. A.) An analogue for a mapping of a Banach algebra of continuous functions onto a space. (Russian) *The geometry of imbedded manifolds* (Russian), 47-52, *Moskov. Gos. Ped. Inst., Moscow*, 1986. (D. Preiss) **89f:54026** 54C05 (46J10)
- Krgović, Dragica N. (with Alimpić, Branka P.) On lattices of some congruences on regular semigroups. *Proceedings of the Conference "Algebra and Logic", Cetinje 1986*, 1-6, *Univ. Novi Sad, Novi Sad*, 1987. (Francis Pastijn) **89c:20087** 20M10 (06B10, 20M17)
- Krichagina, E. V. (with Butov, A. A.) A functional limit theorem for a symmetric walk in a random environment. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 2(260), 133-134; translation in *Russian Math. Surveys* **43** (1988), no. 2, 163-164. (Not in MR) 60J15 (60F17)
- (with Liptser, R. Sh.; Pukhal'skii, A. A.) Diffusion approximation for a system with an arrival stream that depends on the queue and with arbitrary service. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 1, 124-135; translation in *Theory Probab. Appl.* **33** (1988), no. 1, 114-124. (W. Szczotka) **89f:60113** 60K25 (60J60, 90B22)
- Krichever, I. M. (with Novikov, S. P.) Algebras of Virasoro type, Riemann surfaces and strings in Minkowski space. (Russian) *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 4, 47-61, 96. (Nick Yu. Reshetikhin) **89f:17020** 17B65 (14H15, 17B10, 32G15, 58F07, 81E40)
- A periodic problem for the Kadomtsev-Petviashvili equation. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 4, 802-807; translation in *Soviet Math. Dokl.* **37** (1988), no. 1, 157-161. (Alexander A. Pankov) **89b:35299** 35Q20 (58F07)
- Krichevskii, R. E. Retrieval and data compression complexity. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1461-1468, *Amer. Math. Soc., Providence, RI*, 1987. (Summary) **89f:68029** 68Q25 (68P20, 68P99)
- (with Khasin, L. S.) Construction of universal numerators and formulas for threshold functions. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 5, 143-152, 239; translation in *Siberian Math. J.* **29** (1988), no. 5, 801-808. (Juraj Hromkovič) **89m:94023** 94C05 (03G05, 06E30)
- Krick, Teresa Examples of rings of integers of cyclotomic fields that are not unique factorization domains. (Spanish) V Latin American colloquium on algebra (Spanish) (Santiago, 1985). *Notas Soc. Mat. Chile* **5** (1986), no. 1, 179-180. (Duncan A. Buell) **89a:11108** 11R18 (11R29)
- Krieg, Aloys Eisenstein-series on real, complex, and quaternionic half-spaces. *Pacific J. Math.* **133** (1988), no. 2, 315-354. (K.-B. Gundlach) **89f:11074** 11F35 (11F06)
- Kriegel, Klaus (with Hoffmann, Frank) Embedding rectilinear graphs in linear time. *Inform. Process. Lett.* **29** (1988), no. 2, 75-79. (Summary) **89k:68056** 68Q20 (05C10, 68Q25, 68R10)
- Krieger, Holger Herbert (with Metzler, Wolfgang<sup>2</sup>) Qualitative behaviour of ordinary differential equation models describing forest growth under air pollution. *Systems analysis and simulation 1988, I* (Berlin, 1988), 48-52, *Math. Res.*, 46, Akademie-Verlag, Berlin, 1988. (Summary) **89k:92070** 92A17
- Krieger, Wolfgang On sofic systems. II. *Israel J. Math.* **60** (1987), no. 2, 167-176. (Summary) **89k:54098** 54H20 (94A15)
- (with Boyle, Mike) Almost Markov and shift equivalent sofic systems. *Dynamical systems (College Park, MD, 1986-87)*, 33-93, *Lecture Notes in Math.*, 1342, Springer, Berlin-New York, 1988. (Fred W. Roush) **89i:28007** 28D05 (54H20)
- Kriegsmann, Gregory A. A mathematical theory of full-wave rectification. *IMA J. Appl. Math.* **36** (1986), no. 1, 29-41. (Summary) **89f:94039** 94C05 (34E05)
- (with Olmstead, W. E.) Source identification for the heat equation. *Appl. Math. Lett.* **1** (1988), no. 3, 241-245. (Not in MR) 35K05 (80A20)
- (with Kath, William L.) Optical tunnelling: radiation losses in bent fibre-optic waveguides. *IMA J. Appl. Math.* **41** (1988), no. 2, 85-103. (Summary) **89k:78027** 78A50
- von Kries, Johannes see Kamlah, Andreas, **89g:01037**
- Krige, J. D. (with Maharaj, S. D.; McKenzie, J. F.) The gravitational field of a static infinite sheet of matter. *Astrophys. and Space Sci.* **145** (1988), no. 1, 177-180. (Carl Brans) **89f:83025** 83C15
- (with McKenzie, J. F.) Wave and stability properties of black holes. *Astrophys. and Space Sci.* **150** (1988), no. 1, 189-199. (Piotr Bizoń) **89m:83034** 83C30 (83C75)
- Kruger, L. L. (with Danilov, L. V.; Konnik, S. I.) On the design of nonlinear transformers with linear input. (Russian. English summary) *Teoret. Elektrotekh. No. 39* (1985), 47-51, 137. (Not in MR) 94C05
- Kruikeis, N. J. (with Mantas, G. P.) LQ optimal control for discrete descriptor systems with a complete set of boundary information. *Internat. J. Control* **47** (1988), no. 5, 1467-1477. (Not in MR) 93C30 (93C55)
- ter-Krikorov, A. M. see Ter-Krikorov, A. M.
- Krikos, C. (with Papatriantafyllou, C.; Paraskevaidis, C. E.; Panagopoulos, P.) Exact thermodynamic behavior of a generalized spin-isospin Ising system on the Bethe lattice. *J. Statist. Phys.* **54** (1989), no. 1-2, 191-200. (Summary) **89m:82084** 82A68
- Kriska, Yu. A. (with Arsenin, V. Ya.; Timonov, A. A.) Some methods for the local regularization of linear ill-posed problems. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 109, 24 pp. (Summary) **89a:65089** 65J10 (45L10, 47A50)
- (with Tikhonov, A. N.; Rubashov, I. B.; Arsenin, V. Ya.; Glasko, V. B.; Stepanov, V. V.; Timonov, A. A.) Mathematical design of an NMR-tomograph. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 134, 24 pp. (Summary) **89a:92012** 92A07
- (with Kislov, V. V.) Numerical modeling of the effect of a brief external action on a solution. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 162, 20 pp. (Summary) **89a:65011** 65C20 (35Q20)
- (with Timonov, A. A.) A mathematical model for acoustic tomography in the Kirchhoff approximation. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 47, 20 pp. (Summary) **89j:92015** 92A07 (44A15, 76Q05)
- (with Timonov, A. A.) A mathematical model of electromagnetic tomography. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 104, 16 pp. (Summary) **89j:78002** 78A05
- Kriska, V. S. (with Azarenok, A. S.) A clique in an  $n$ -partite graph and optimal orientations of functional blocks of integral schemes. (Russian. English summary) *Vestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 2, 8-15, 123. (Miro Křivánek) **89f:68059** 68Q25 (03C35, 68Q15, 68Q35)
- Krisonov, Yu. M. (with Shagidullin, N. M.) A nonlocal problem for an equation of mixed type of the second kind. (Russian) *Trudy Sem. Kraev. Zadacham* **No. 23** (1987), 138-145. (Min You Qi) **89m:35154** 35M05
- Krif, S. A. (with Luchka, A. Yu.) Construction of approximate solutions of linear integro-difference equations. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 14, 36 pp. (Summary) **89e:65153** 65R20 (65Q05)
- Solution of integro-difference equations with a small nonlinearity by a projection-iterative method. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 17, 34 pp. (Summary) **89e:65106** 65Q05
- Krimmer, Wolfgang (with Mennicken, Reinhard) ★ Entwicklungen analytischer Funktionen nach Eigenlösungen im Parameter nichtlinearer Differentialgleichungen. (German) [Expansions of analytic functions in eigensolutions in the parameter of nonlinear differential equations] With an English summary. Regensburger Mathematische Schriften [Regensburg Mathematical Publications], 13. Universität Regensburg, Fachbereich Mathematik, Regensburg, 1987. vii+187 pp. ISBN 3-88246-119-5 (Reinhard Schäfer) **89c:34008** 34A20 (30B50, 33A99, 34B25, 42C15)
- Kripfganz, J. (with Perlt, H.) Higher-dimensional cosmology and the Gauss-Bonnet term. *Acta Phys. Polon. B* **18** (1987), no. 11, 997-1005. (Dieter Lorenz-Petzold) **89d:83065** 83E15 (83F05)
- (with Perlt, H.) Cosmological impact of winding strings. *Classical Quantum Gravity* **5** (1988), no. 3, 453-461. (Roger Brooks) **89d:83071** 83E15 (81E30, 83E30, 83F05)
- Kripke, Saul see Kremer, Michael, **89i:03005**
- Krips, Henry Realism and the collapse of the wave-packet. *British J. Philos. Sci.* **39** (1988), no. 2, 225-232. (Dennis Dieks) **89h:81012** 81B05
- Krisch, J. P. On the classification of vacuum zero Simon tensor solutions in relativity. *J. Math. Phys.* **29** (1988), no. 2, 446-448. (J. R. Vanstone) **89f:83041** 83C20 (83C15)
- (with Smalley, Larry L.) Cartan and relativistic spin fluids in a rotating cylinder. *J. Math. Phys.* **29** (1988), no. 7, 1640-1644. (B. K. Datta) **89f:83031** 83C55
- Krischer, Tilman Mathematische Unendlichkeit und Induktion bei Platon und Aristoteles. [Mathematical infinity and induction in Plato and Aristotle] *Aristoteles. Werk und Wirkung*, Band 1, 518-542, de Gruyter, Berlin-New York, 1985. (Robin Smith) **89h:01006** 01A20
- Krishnan, Ram (with Deo, Satya; Jamwal, Dalip Singh) Cohomology with exotic supports and the generalized excision. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 3, 326-340. (Donald M. Davis) **89b:55010** 55N30 (55N40)
- Krishna, Bal (with Krishna, Hari; Wang, Yunbiao) Algorithms for  $z$ -domain continued fraction expansion by Davis. *IEEE Trans. Circuits and Systems* **35** (1988), no. 10, 1338-1339. (Summary) **89j:65027** 65E05 (30B70, 40A15)
- Krishna, G. (with Shekar, B.; Narasimha Murthy, M.) Structural aspects of semantic-directed clusters. *Pattern Recognition* **22** (1989), no. 1, 65-74. (Allen Klinger) **89m:68127** 68T30 (62C99, 94D05)
- Krishna, Hari Computational aspects of the bilinear transformation based algorithm for S-plane to Z-plane mapping. *IEEE Trans. Automat. Control* **33** (1988), no. 11, 1086-1087. (Summary) **89k:93043** 93B17
- (with Krishna, Bal; Wang, Yunbiao) Algorithms for  $z$ -domain continued fraction expansion by Davis. *IEEE Trans. Circuits and Systems* **35** (1988), no. 10, 1338-1339. (Summary) **89j:65027** 65E05 (30B70, 40A15)
- gopala Krishna, J. see Gopala Krishna, J.
- Krishna, Lala B. (with Martins, M. Madalena) Some new results on the convergence of the SSOR and USSOR methods. *Linear Algebra Appl.* **106** (1988), 185-193. (G. F. Raggett) **89e:65038** 65F10
- Krishna, M. (with Kotani, Shinichi) Almost periodicity of some random potentials. *J. Funct. Anal.* **78** (1988), no. 2, 390-405. (Helge Holden) **89i:60133** 60H25 (47E05, 82A42)
- Krishna, S. V. (with Agase, S. B.) Ordinary and measure differential equations using fixed point theorems in lattice normed spaces. *J. Math. Phys. Sci.* **19** (1985), no. 3, 255-265. (A. S. Potapov) **89a:34072** 34G20 (47H07, 47H15)
- Krishna, V. (with Benoit, J.-P.) Nash equilibria of finitely repeated games. *Internat. J. Game Theory* **16** (1987), no. 3, 197-204. (S. H. Tijds) **89g:90246** 90D10

- Krishnaiah, P. R.** (with Fujikoshi, Y.; Schmidhammer, J.) Effect of additional variables in principal component analysis, discriminant analysis and canonical correlation analysis. *Advances in multivariate statistical analysis*, 45-61, *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (Masashi Okamoto) **89a:62125** 62H10 (62H20, 62H25, 62H30)
- (with Yin, Yong Quan; Bai, Zhi Dong) On the limit of the largest eigenvalue of the large-dimensional sample covariance matrix. *Probab. Theory Related Fields* **78** (1988), no. 4, 509-521. (Sándor Csörgő) **89g:60117** 60F15 (62H99)
- Krishnaiah, P. V.** Two counterexamples in general topology. *Amer. Math. Monthly* **95** (1988), no. 4, 342-343. (Not in MR) **54G20**
- (with Chidambaramswamy, J.) An identity for a class of arithmetical functions of two variables. *Internat. J. Math. Math. Sci.* **11** (1988), no. 2, 351-354. (S. Audinarayana Moorthy) **89g:11006** 11A25
- anantha Krishnaiah, U.** see **Anantha Krishnaiah, U.**
- Krishnaiah, U. A.** see **Anantha Krishnaiah, U.**
- Krishnakumar, Bhaskaran** (with Malmberg, Charles J.; Simons, Gene R.) A mathematical overview of warehousing systems with single/dual order-picking cycles. *Appl. Math. Modelling* **12** (1988), no. 1, 2-8. (Summary) **89b:90064** 90B05 (90B10)
- varadharajan-Krishnakumar, Jayalakshmi** see **Varadharajan-Krishnakumar, Jayalakshmi**
- Krishna Kumar, V.** (with Padmanabhan, A.) On the deficiency indices of third-order differential operators. *Bull. London Math. Soc.* **20** (1988), no. 4, 333-336. (Basudeb Ray Paladhi) **89e:34046** 34B25 (47E05)
- Krishnamani, Vatsala** (with Yucas, Joseph) Quadratic forms and linkage of quaternion algebras. *Canad. Math. Bull.* **31** (1988), no. 3, 301-307. (Robert Fitzgerald) **89f:11053** 11E04 (11E81, 16A16)
- Krishnamoorthy, A.** (with Manoharan, M.; Madhusoodanan, T. P.) On the  $(s, S)$  inventory policy with non-identically distributed interarrival demand times and random lead time. *Cahiers Centre Études Rech. Opér.* **29** (1987), no. 3-4, 239-248. (Summary) **89b:90065** 90B05
- Krishnamoorthy, K.** (with Mitra, Sujit Kumar) Cost robustness of an algorithm for optimal integration of surveys. *Sankhya Ser. B* **48** (1986), no. 2, 233-245. (Kenneth R. W. Brewer) **89a:62034** 62D05
- (with Rohatgi, Vijay K.) Minimum variance unbiased estimation in some nonregular families. *Comm. Statist. Theory Methods* **17** (1988), no. 11, 3757-3765. (Summary) **89j:62040** 62F10 (62N05)
- Krishnamoorthy, M. S.** (with Kalfoten, Erich; Saunders, B. David) Fast parallel computation of Hermite and Smith forms of polynomial matrices. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 4, 683-690. (R. E. Funderlic) **89g:15004** 15A06 (15A18, 65F99, 65W05)
- (with Zhang, Hantao; Kapur, Deepak) A mechanizable induction principle for equational specifications. *9th International Conference on Automated Deduction (Argonne, IL, 1988)*, 162-181, *Lecture Notes in Comput. Sci.*, 310, Springer, Berlin-New York, 1988. (see **89c:68004**) **68T15** (03B35)
- (with Chung, Moon Jung) Algorithms of placing recovery points. *Inform. Process. Lett.* **28** (1988), no. 4, 177-181. (Summary) **89f:68010** 68N05 (68Q25)
- Krishnamurthy, Balakrishnan** (with Akers, Sheldon B.) A group-theoretic model for symmetric interconnection networks. *IEEE Trans. Comput.* **38** (1989), no. 4, 555-566. (Summary) **89k:68115** 68R10 (20F32, 68M10, 68Q35)
- Krishnamurthy, E. V.** (with Gregory, R. T.) \* Безошибочные вычисления. (Russian) [Error-free calculations] Методы и приложения. [Methods and applications] Translated from the English by Kh. D. Ikramov and A. V. Knyazev. Translation edited and with a foreword by Ikramov. "Mir", Moscow, 1988. 208 pp. ISBN 5-03-001145-5 (Editors) **89j:65030** 65Fxx (65-04, 65G05, 68U99)
- see also **Gorgui-Naguib, R. N.**, **89f:68024**
- Krishnamurthy, V.** Schur functions in combinatorics—a survey. *Math. Student* **49** (1981), no. 2-4, 207-235 (1985). (Not in MR) **05A17**
- Srinivasa Ramanujan: a biographical sketch and a glimpse of his work. *Srinivasa Ramanujan centenary 1987. J. Indian Inst. Sci.* **1987**, Special Issue, 11-24. (Donald Cook) **89a:01069** 01A70 (01A60, 11-03)
- Krishnamurti, E.** see **Krishnamurthy, E. V.**
- Krishnaprasad, P. S.** (with Possergh, Thomas A.; Marsden, Jerrold E.) Stability analysis of a rigid body with a flexible attachment using the energy-Casimir method. *Differential geometry: the interface between pure and applied mathematics* (San Antonio, Tex., 1986), 253-273, *Contemp. Math.*, 68, Amer. Math. Soc., Providence, RI, 1987. (Ya. V. Tatarinov) **89g:58113** 58F10 (70E15)
- (with Grossman, Robert; Marsden, Jerrold E.) The dynamics of two coupled rigid bodies. *Dynamical systems approaches to nonlinear problems in systems and circuits* (Henniker, NH, 1986), 373-378, *SIAM, Philadelphia, PA*, 1988. (Manfred Andrie) **89k:70009** 70E15 (58F05, 58F14)
- Krishnaprasad, T.** On the computability of circumscription. *Inform. Process. Lett.* **27** (1988), no. 5, 237-243. (Giovanni Crisculo) **89h:68136** 68T20 (03B60, 03D35)
- Krishnaswamy, N.** Evaluation of elliptic integral: a new technique. *Math. Student* **47** (1979), no. 2-4, 289-297 (1985). (Not in MR) **65D20**
- Krist, S. E.** (with Nosenchuck, D. M.; Zang, T. A.) On multigrid methods for the Navier-Stokes computer. *Multigrid methods* (Copper Mountain, CO, 1987), 491-516, *Lecture Notes in Pure and Appl. Math.*, 110, Dekker, New York, 1988. (C. Wayne Mastin) **89k:76007** 76-08 (65N50, 65W05, 68Q10, 76-04, 76D05)
- Kristensen, Anders R.** Hierarchic Markov processes and their applications in replacement models. *European J. Oper. Res.* **35** (1988), no. 2, 207-215. (L. R. Goel) **89g:90233** 90C40
- Kristensson, Gerhard** (with Cheney, Margaret) Three-dimensional inverse scattering: layer-stripping formulae and ill-posedness results. *Inverse Problems* **4** (1988), no. 3, 625-642. (Fouad A. Mohamed) **89i:35128** 35R30 (35J05, 73D50)
- Kristiansen, G. K.** Further properties of Kuhn's ratio. *Arch. Math. (Basel)* **49** (1987), no. 6, 513-520. (S. Łojasiewicz) **89f:26018** 26C05
- Kristiyan, Kurt** see **Christian, Curt C.**
- Kristóf, János** On the projection lattice of  $GW^*$ -algebras. *Studia Sci. Math. Hungar.* **22** (1987), no. 1-4, 247-255. (Gottfried T. Rüttimann) **89g:46096** 46L05 (06C15, 46K05, 46L50)
- Krizin, T.** (with Becker, L. C.; Burton, T. A.) Floquet theory for a Volterra equation. *J. London Math. Soc.* (2) **37** (1988), no. 1, 141-147. (Andrzej Hajnosz) **89f:45002** 45D05 (45J05, 45M99)
- Kritskii, A. P.** (with Ivakhnenko, A. G.) Regularization of solutions in the problem of signal recognition using the locus of the minima of the maximum likelihood criterion. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 6, 63-66 (1988); translated from *Avtomatika* **1987**, no. 6, 60-63, 97 (Russian. English summary). (Not in MR) **94A12**
- Kritsuk, A. G.** Thermal instability of nonequilibrium systems. (Russian. English summary) *Astrofizika* **29** (1988), no. 1, 199-207; translation in *Astrophysics* **29** (1989), no. 1, 524-529. (Summary) **89k:85007** 85A30 (76N15)
- Krivánek, Mirko** A note on the computational complexity of computing the edge rotation distance between graphs. (Russian and Czech summaries) *Časopis Pěst. Mat.* **113** (1988), no. 1, 52-55. (Narsingh Deo) **89b:68120** 68R10 (05C05, 68Q25)
- The complexity of ultrametric partitions on graphs. *Inform. Process. Lett.* **27** (1988), no. 5, 265-270. (D. M. Campbell) **89b:68064** 68Q25 (05C99, 68R10)
- A note on the computational complexity of bracketing and related problems (extended abstract). Proceedings of the Fifth International Meeting of Young Computer Scientists (Smolenice Castle, 1988). *Tanulmányok—MTA Számítástechn. Automat. Kutató Int. Budapest No. 208* (1988), 171-177. (see **89g:68002**) **68Q25**
- Krive, I. V.** (with Pastur, L. A.; Rozhavskii, A. S.) Restoration of chiral symmetry in a stochastic external field. *Soviet J. Nuclear Phys.* **46** (1987), no. 4, 759-763 (1988); translated from *Yadernaya Fiz.* **46** (1987), no. 4, 1297-1304 (Russian). (Summary) **89c:81137** 81E99 (81E40)
- (with Latinskii, S. M.) Vacuum polarization by a nonuniform external field in a medium. *Soviet J. Nuclear Phys.* **47** (1988), no. 1, 179-183 (1988); translated from *Yadernaya Fiz.* **47** (1988), no. 1, 283-291 (Russian). (M. Martinis) **89k:81154** 81E99 (81G10, 81L05)
- Krivenko, V. M.** Semigroups with normal idempotents. (Russian) *Semigroups and partial groupoids* (Russian), 37-44, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (B. Pondělíček) **89b:20130** EA 89m 20M10
- Krivodub, Yu. G.** (with Marushin, M. N.) Convergence to moments of the Poisson law for sums of a random number of independent random variables. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 9, 27-29, 87. (Zdzisław Rychlik) **89d:60047** 60F05
- Krivoi, A. F.** (with Popov, G. Ya.; Radioli, M. V.) Certain problems of an arbitrarily oriented stringer in a composite anisotropic plane. *J. Appl. Math. Mech.* **50** (1986), no. 4, 475-483 (1987); translated from *Prikl. Mat. Mekh.* **50** (1986), no. 4, 622-632 (Russian). (K. S. Parihar) **89f:73025** 73K20 (45E05, 73C30)
- Krivonos, S. O.** (with Ivanov, Evgenii Alekseevich; Leviant, V. M.) A new class of superconformal sigma models with the Wess-Zumino action. *Nuclear Phys. B* **304** (1988), no. 3, 601-627. (Enore Guadagnini) **89b:81196** 81E99 (58E20, 81E40)
- Krivonos, Yu. M.** (with Galanov, B. A.) The method of nonlinear boundary equations and its numerical realization in three-dimensional contact problems in elasticity theory with a free boundary. (Russian) *Prikl. Problemy Proch. i Plast.* **1987**, 10-17, 119. (Summary) **89j:73096** 73T05 (73-08, 73C50)
- Krivoruchko, A. I.** Figures with nondiscrete families of hyperplanes of oblique symmetry. (Russian) *Ukrain. Geom. Sb. No. 31* (1988), 73-76. (E. J. F. Primrose) **89i:51016** 51F15
- Krivoruchko, G. V.** A Euclidean space over a second-order matrix algebra. (Russian) *The geometry of imbedded manifolds* (Russian), 52-55, 125, *Moskov. Gos. Ped. Inst., Moscow*, 1986. (D. B. Persits) **89b:53026** 53A40 (51C05)
- Krivoshchev, O. V.** (with Teteruk, S. I.) Procedures for the optimization of decision making algorithms for recognition in multichannel man-machine complexes. (Russian) *Models for and realization of prospective devices for automatic control systems* (Russian), 62-67, v-vi, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. (Summary) **89j:90010** 90-06 (90B50)
- Statistical procedures for the recognition of objects in groups. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1988**, no. 11, 15-50. (Summary) **89f:68109** 68T10
- Krivoshlykov, S. G.** (with Sisakyan, I. N.) Spherical Gauss-Hermite and Gauss-Laguerre modes as generalized Fock states of occupation numbers and generalized states of the angular momentum. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jurmala*, 1985), 416-422, "Nauka", Moscow, 1986. (see **89d:81002**) **81C40**
- (with Petrov, N. I.; Sisakyan, I. N.) Correlated coherent states in problems of wave propagation in quadratic media with absorption or amplification. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jurmala*, 1985), 422-432, "Nauka", Moscow, 1986. (see **89d:81002**) **81K05** (81D30)
- Krivozubova, O. V.** (with Shevchenko, G. N.) Solution of boundary value problems for the wave equation in a noncharacteristic domain. (Russian) *Differential equations and mathematical physics* (Russian), 67-74, *Kuibyshev. Gos. Ped. Inst., Kuibyshev*, 1985. (see **89f:35006**) **35L10**
- Krivskii, I. Yu.** (with Fushchich, V. I.; Simulik, V. M.) Vector Lagrangians for an electromagnetic and a spinor field. (Russian. English summary) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 54, 39 pp. (Summary) **89f:78008** 78A25
- Křiz, Ferdinand** Application of unbounded first hyperbolic phases of the differential equation  $(py')' - gy = 0$  for studying the asymptotic properties of solutions of the differential equation  $(py')' - (g + q)y = 0$ . (Slovak. English, German and Russian summaries) *Práce Štúd. Vysoké Školy Doprav. Spojov Zilne Ser. Mat.-Fyz.* **5** (1985), 65-70 (1986). (Josef Diblík) **89m:34077** 34E05
- A remark on the determination of inverse differential equations of the nonoscillatory differential equations  $y'' = q(t)y$ . (Slovak. English, German and Russian summaries) *Práce Štúd. Vysoké Školy Doprav. Spojov Zilne Ser. Mat.-Fyz.* **5** (1985), 71-74 (1986). (Not in MR) **34A55** (34C10)
- Křiz, Igor** Large independent sets in shift-invariant graphs: solution of Bergelson's problem. *Graphs Combin.* **3** (1987), no. 2, 145-158. (Ralph Faudree) **89f:05124** 05C55 (05C35)
- (with Helle, Pavol; Kirkpatrick, David; Kratochvíl, Jan) On restricted two-factors. *SIAM J. Discrete Math.* **1** (1988), no. 4, 472-484. (H. Joseph Straight) **89m:05092** 05C70
- Křiz, O.** (with Jiroušek, R.) An expert system accepting knowledge in a form of statistical data. *COMPSTAT 1988* (Copenhagen, 1988), 123-128, *Physica, Heidelberg*, 1988. (see **89i:62004**) **65U05**
- Krizza, F.** (with Eller, J.; Györi, I.; Zöllei, M.) Modelling thrombopoiesis regulation. I. Model description and simulation results. *Comput. Math. Appl.* **14** (1987), no. 9-12, 841-848. (Summary) **89a:92019** 92A09
- Krjažimskii, A. V.** see **Kryazhimskii, A. V.**



- Krob, D. Centralisateurs d'opérateurs pseudodifférentiels formels à coefficients constants. [Centralizers of formal pseudodifferential operators with constant coefficients] *Comm. Algebra* 15 (1987), no. 11, 2263-2302. (K. R. Goodearl) **89a:12015** 12H05 (16A05, 16A39, 35E20, 35S05, 47G05)
- Codes limites et factorisations finies du monoïde libre. (English summary) [Limit codes and finite factorizations of the free monoid] *RAIRO Inform. Théor. Appl.* 21 (1987), no. 4, 437-467. (H. Jørgensen) **89j:68081** 68Q45 (20M05, 20M35, 94B60)
- Monoïdes et semi-anneaux complets. (English summary) [Complete semirings and monoids] *Semigroup Forum* 36 (1987), no. 3, 323-339. (William R. Nico) **89e:20111** 20M14 (16A78, 22A15)
- Monoïdes et semi-anneaux continus. [Continuous monoids and semirings] *Semigroup Forum* 37 (1988), no. 1, 59-78. (H. J. Weinert) **89h:20096** 20M99 (06F05, 16A78, 22A15)
- Kroghdahl, Stein (with Beck, István) A select and insert sorting algorithm. *BIT* 28 (1988), no. 4, 726-735. (A. D. Booth) **89m:68014** 68P10 (68Q25)
- Kröger, Fred ★ Temporal logic of programs. EATCS Monographs on Theoretical Computer Science, 8. Springer-Verlag, Berlin-New York, 1987. viii+148 pp. ISBN 3-540-17030-8 (From the preface) **89i:68084** 68Q55 (03B45, 03B70, 68-02, 68N05)
- Krogh, A. (with Hertz, J. A.) Mean-field analysis of hierarchical associative networks with "magnetisation". *J. Phys. A* 21 (1988), no. 9, 2211-2224. (Summary) **89g:92019** 92A09 (68Q90, 82A57, 92A25)
- Krogh, A. R. see Hoegh-Krohn, R.
- Kroft, V. M. (with Tanenbaum, L. I.) A logical calculus for solving problems with strongly structured subject areas. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 2, 127-136; translation in *Automat. Remote Control* 49 (1988), no. 2, part 2, 224-231. (Summary) **89d:68079** 68T20 (03B10)
- Królak, Andrzej Strong cosmic censorship and the strong curvature singularities. *J. Math. Phys.* 28 (1987), no. 11, 2685-2687. (Summary) **89g:83032** 83C75
- The existence of regular partially future asymptotically predictable space-times. *J. Math. Phys.* 29 (1988), no. 8, 1786-1788. (László Szabó) **89i:83046** 83C75
- Królowski, Wiesław Seminorms and topologies on relative homology groups. *Complex analysis and applications '85 (Varna, 1985)*, 387-395, *Bulgar. Acad. Sci., Sofia*, 1986. (Jürgen Leiterer) **89f:32049** 32H35
- Kroll, Hans-Joachim Zur Klassifikation der Möbius-Räume. [On the classification of Möbius spaces] *Resulante Math.* 12 (1987), no. 3-4, 357-365. (Norman L. Johnson) **89g:51005** 51B10
- Examples of ovoidal Möbius planes of Hering class III. *Combinatorics '86 (Trento, 1986)*, 249-250, *Ann. Discrete Math.*, 37, North-Holland, Amsterdam-New York, 1988. (J. Yaquib) **89b:51006** 51B10
- Zum Begriff des Euklidischen Raumes. (English summary) [On the concept of Euclidean space] *Proceedings of the Congress of Geometry (Thessaloniki, 1987)*, 100-103, *Aristotle Univ. Thessaloniki, Thessaloniki*, 1988. (B. Klotz) **89f:51062** 51F20
- Höherdimensionale Prismenkonfigurationen in Doppelpunkten mit Austauschaxiom. (English summary) [Higher-dimensional prism configurations in double spaces with exchange axiom] *J. Geom.* 31 (1988), no. 1-2, 131-133. (Dov Avishalom) **89c:51006** 51D10
- Krohn, N. G. D. (with Aitchison, P. W.) A new tearing method for finite element analysis. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 62 (1988), 109-116. (Summary) **89g:65054** 65F30 (65N30)
- Kron, Aleksandar (with Giambone, Steve) Four relevant Gentzen systems. *Studia Logica* 46 (1987), no. 1, 55-71. (Stephen Read) **89d:03014a** 03B45
- Krone, Jörg Bases in the range of operators between Köthe spaces. (Turkish summary) *Proceedings of the functional analysis conference (Silivri/Istanbul, 1985)*. *Doga Mat.* 10 (1986), no. 1 Special Issue, 162-166. (M. S. Ramanujan) **89a:46022** 46A45
- On projections in power series spaces and the existence of bases. *Proc. Amer. Math. Soc.* 105 (1989), no. 2, 350-355. (E. Dubinsky) **89f:46019** 46A45 (46A35)
- Kronecker, Leopold see Edwards, Harold M., **89i:01032**
- Krüger, Dietmar Numerical schemes for the Euler equations in two space dimensions without dimensional splitting. *Nonlinear hyperbolic equations—theory, computation methods, and applications (Aachen, 1988)*, 342-352, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 76-08 (76N15)
- Kronfeld, A. (with Davies, C. T. H.; Batrouni, G.; Katz, G. R.; Lepage, G. P.; Wilson, K.; Rossi, Pietro; Svetitsky, B.) Fourier acceleration in lattice gauge theories. I. Landau gauge fixing. *Phys. Rev. D* (3) 37 (1988), no. 6, 1581-1588. (Summary) **89g:81004a** 81-08 (81E25)
- (with Katz, G. R.; Batrouni, G.; Davies, C. T. H.; Lepage, G. P.; Rossi, Pietro; Svetitsky, B.; Wilson, K.) Fourier acceleration in lattice gauge theories. II. Matrix inversion and the quark propagator. *Phys. Rev. D* (3) 37 (1988), no. 6, 1589-1596. (Summary) **89g:81004b** 81-08 (81E25, 81G05)
- Kronka, Sérgio do Nascimento Covariance analysis for balanced extra-period change-over designs. (Portuguese. English summary) *Rev. Mat. Estatist.* 3 (1985), 63-74. (Summary) **89b:62137** 62K99 (62J10)
- Kronz, Frederick M. Discussion: EPR: the correlations are still a mystery. *Philos. Sci.* 55 (1988), no. 4, 631-639. (Not in MR) **03B30** (81)
- Króš, András A general approach to the study of Chebyshev subspaces in  $L_1$ -approximation of continuous functions. *J. Approx. Theory* 51 (1987), no. 2, 98-111. (Khalil Ahmad) **89b:41036** 41A52 (41A65)
- (with Peherstorfer, Franz) Interpolatory properties of best rational  $L_1$ -approximations. *Constr. Approx.* 4 (1988), no. 1, 97-106. (Lee L. Keener) **89c:41013** 41A20 (41A05)
- (with Saff, E. B.) On polynomials of minimal  $L_q$ -deviation,  $0 < q < 1$ . *J. London Math. Soc.* (2) 37 (1988), no. 1, 182-192. (S. Aljancić) **89j:41041** 41A52
- (with Saff, E. B.) The density of extreme points in complex polynomial approximation. *Proc. Amer. Math. Soc.* 103 (1988), no. 1, 203-209. (W. H. J. Fuchs) **89c:30097** 30E10 (41A10, 41A50)
- (with Borwein, P. B.; Grothmann, R.; Saff, E. B.) The density of alternation points in rational approximation. *Proc. Amer. Math. Soc.* 105 (1989), no. 4, 881-888. (G. Meinardus) **89h:41035** 41A20 (41A50)
- (with Sommer, Manfred; Strauss, Hans) On strong uniqueness in one-sided  $L^1$ -approximation of differentiable functions. *Proc. Amer. Math. Soc.* 106 (1989), no. 4, 1011-1016. (Günther Nürnberger) **89m:41019** 41A50 (41A52)
- ten Kroode, A. P. E. Geometrical description of the Toda lattice. *Proceedings seminar 1983-1985, Mathematical structures in field theories*, Vol. 2 (Amsterdam, 1983-1985), 143-206, *CWI Syllabi*, 13, Math. Centrum, Centrum Wisk. Inform., Amsterdam, 1987. (Editors) **89h:58062** 58F05 (58F07, 70H05, 70K99)
- Kropf, S. Application of multiple test procedures to the combination of multivariate and univariate tests with varying variable sets. (German summary) *Biometrical J.* 30 (1988), no. 4, 461-470. (Title) **89j:62033** 62F03
- Kropholler, P. H. (with Crawley-Boevey, W. W.; Linnell, P. A.) Torsion-free soluble groups, completions, and the zero divisor conjecture. *J. Pure Appl. Algebra* 54 (1988), no. 2-3, 181-196. (Donald S. Passman) **89j:16015** 16A27 (20C07)
- (with Roller, M. A.) Splittings of Poincaré duality groups. *Math. Z.* 197 (1988), no. 3, 421-438. (M. J. Dunwoody) **89c:20074** 20J05 (57P10)
- (with Linnell, P. A.; Moody, J. A.) Applications of a new  $K$ -theoretic theorem to soluble group rings. *Proc. Amer. Math. Soc.* 104 (1988), no. 3, 675-684. (L. N. Vaserstein and E. Whelan) **89j:16016** 16A27 (16A08, 16A34)
- Krull, K. D. (with Borgohain, P.; Das, Kanika; Sarma, Arunima) Exact interior solutions in Einstein-Cartan-Yukawa theory. *Canad. J. Phys.* 66 (1988), no. 2, 126-131. (Carl Brans) **89a:83047** 83D05
- (with Goswami, D.) Higher-dimensional Einstein-Cartan cosmology. (French summary) *Canad. J. Phys.* 66 (1988), no. 5, 396-398. (Dieter Lorenz-Petzold) **89j:83080** 83E15
- (with Borgohain, P.; Kar, P. K.; Das, Dipali) Exact scalar and spinor solutions in some rotating universes. *J. Math. Phys.* 29 (1988), no. 7, 1645-1649. (Reinhard Illge) **89i:83010** 83C10 (83C15)
- (with Borgohain, P.; Das, Kanika) Interior Schwarzschild-like solution in higher dimensions. *Phys. Lett. A* 132 (1988), no. 6-7, 321-323. (Dieter Lorenz-Petzold) **89j:83081** 83E15
- Kroshilin, A. E. (with Kroshilin, V. E.) Analysis of a system of differential equations of the two-velocity flow of a mixture with phase transitions. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 1, 47-51, 103. (Summary) **89c:76107** 76T05
- Kroshilin, V. E. (with Kroshilin, A. E.) Analysis of a system of differential equations of the two-velocity flow of a mixture with phase transitions. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 1, 47-51, 103. (Summary) **89c:76107** 76T05
- Krot, A. M. (with Minervina, E. B.) Synthesis of digital Fourier transformation algorithms for real sequences on the basis of polynomial algebra. *Soviet J. Comm. Tech. Electron.* 32 (1987), no. 11, 9-19; translated from *Radiotekhn. i Elektron.* 32 (1987), no. 6, 1217-1229 (Russian). (Wiktor Kulesza) **89i:68059** 68Q25 (94A11, 94A12)
- Krüthenheerd, O. (with Böhm, Johannes; Börner, W.; Hertel, E.; Mögling, Werner; Stammler, L.) ★ Geometrie. I. (German) [Geometry. I] Axiomatischer Aufbau der euklidischen Geometrie. [Axiomatic construction of Euclidean geometry] With historical comments by H. Wussing. Fifth edition. Studienbücherei. [Textbook Library] Mathematik für Lehrer [Mathematics for Teachers], 6. VEB Deutscher Verlag der Wissenschaften, Berlin, 1988. 146 pp. ISBN 3-326-00370-6 (Editors) **89b:51001** 51-02 (51M05)
- Krotov, G. I. (with Kostenko, Yu. V.) An algorithm for self-organization of additive-multiplicative models of complex systems. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 6, 73-78 (1988); translated from *Avtomatika* 1987, no. 6, 69-73, 97 (Russian. English summary). (Summary) **89m:92002** 92A05
- Krotov, V. F. A technique of global bounds in optimal control theory. (Russian and Polish summaries) *Control Cybernet.* 17 (1988), no. 2-3, 115-144. (Summary) **89k:93004** 93-02 (93B40, 93C55)
- Krotov, V. G. Boundary behavior of fractional integrals of holomorphic functions in the unit ball in  $C^n$ . (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 4, 73-75; translation in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 4, 104-108. (Harold P. Boas) **89i:32011** 32A40 (26A33, 32A35)
- Smoothness of N. N. Luzin primitives, and theorems of D. E. Men'shov and N. K. Bari. (Russian) *Math. Sb. (N.S.)* 134(176) (1987), no. 3, 404-420, 448; translation in *Math. USSR-Sb.* 62 (1989), no. 2, 403-419. (I. Szalay) **89c:42007** 42A20
- Krotov, Vadim F. see Krotov, V. F.
- Krouse, Clement G. ★ Capital markets and prices. Valuing uncertain income streams. Advanced Textbooks in Economics, 25. North-Holland Publishing Co., Amsterdam-New York, 1986. xxii+359 pp. ISBN 0-444-87931-5 (Lorenzo Peccati) **89a:90022** 90A09 (90A14)
- Krougill, C. M. (with Zadoks, R. I.) Periodic and chaotic motions of a buckled beam experiencing parametric and external excitation. *Dynamical systems approaches to nonlinear problems in systems and circuits (Henniker, NH, 1986)*, 352-369, *SIAM, Philadelphia, PA*, 1988. (Summary) **89i:73050** 73K12 (58F13, 58F14, 73H05, 73H10)
- (with Streit, D. A.; Bajaj, A. K.) Combination parametric resonance leading to periodic and chaotic response in two-degree-of-freedom systems with quadratic nonlinearities. *J. Sound Vibration* 124 (1988), no. 2, 297-314. (Summary) **89d:70024** 70K30 (58F13, 70B15, 70K50)
- Kr'šev, A. I. On the fundamental duality theorem in linear optimization. (Bulgarian. English and Russian summaries) *Godishnik Vyssh. Uchebn. Zaved. Prilozhna Mat.* 22 (1986), no. 2, 179-186 (1987). (Summary) **89c:90133** 90C05
- Kr'šev, R. Yet another theorem on the stability function. (Bulgarian. English and Russian summaries) *Teoret. Prilozhna Mekh.* 19 (1988), no. 1, 3, 5, 8, 21-25. (Josef Diblík) **89c:34084** 34D20
- Krout, Zdeněk (with Jelinek, Jiří) Les distributions intégrables sur un ouvert de  $R^N$ . [Integrable distributions on an open set in  $R^N$ ] *Czechoslovak Math. J.* 38(113) (1988), no. 1, 49-70. (Hans-Joachim Petzsche) **89f:46087** 46F05
- Kruchenok, Yu. L. (with Gabasov, R.; Kostyukova, O. I.) Optimization of a linear dynamical system with nonlinear input. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 31 (1987), no. 12, 1069-1072, 1149. (Nguyen Dong Yen) **89h:49002** 49A10 (49B10, 93B40)
- Krückeberg, F. see Pascoletti, Karl-Heinz, **89j:11123**
- Krug, J. (with Spohn, Herbert) Universality classes for deterministic surface growth. *Phys. Rev. A* (3) 38 (1988), no. 8, 4271-4283. (Summary) **89i:82117** 82A99
- Kruger, A. Ya. A covering theorem for set-valued mappings. *Optimization* 19 (1988), no. 6, 763-780. (Pham Huy Di'en) **89m:49030** 49A52 (47H99, 49D29, 58C06, 90C48)
- Krüger, Lorenz The slow rise of probabilism: philosophical arguments in the nineteenth century. *The probabilistic revolution*, Vol. 1, 59-89, *Bradford Book, MIT Press, Cambridge*,

- MA-London, 1987. (Zeno G. Swijntik) **89f:01036** 01A55 (00A25)
- Kruglikov, V. I.** Annular determination of mean deviations and mappings that are quasiconformal in the mean. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1987**, no. 9, 21–24, 86. (M. Yu. Vasil'chik) **89a:30016** 30C60
- Prime ends of three-dimensional domains with variable boundaries. (Russian) *Dokl. Akad. Nauk SSSR* **297** (1987), no. 5, 1047–1050; translation in *Soviet Math. Dokl.* **36** (1988), no. 3, 565–568. (P. Caraman) **89d:30036** 30D40 (30C60, 31B15, 31B25)
- Kruglov, S. I.** (with Radyuk, A. F.) The matrix form and some solutions of equations of Feynman-Gell-Mann type for a particle with spin  $\frac{1}{2}$ . (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **30** (1987), no. 10, 3–8. (Summary) **89a:81045** 81D25
- Kruglov, V. I.** Measurements in quantum mechanics. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **32** (1988), no. 4, 306–309, 380. (Anatolij Dvurečenskij) **89f:81013** 81B05 (81C20)
- On the theory of the interaction of a two-level system with a resonance field. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **32** (1988), no. 10, 879–882, 956. (Summary) **89j:81299** 81K05
- Kruglov, V. M.** Weak convergence of step-processes to a homogeneous Poisson process with independent increments. (Russian) *Probability distributions and mathematical statistics* (Russian) (Fergana, 1983), 293–314, 495, "Fan", Tashkent, 1986. (Adam Jakubowski) **89h:60051** 60F17 (60F05, 60G50, 60J30)
- (with Ulanovskii, A. M.) Mixtures of probability distribution, which are determined uniquely by their behavior on a half-line. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 4, 670–678. (H.-J. Roßberg) **89d:60025** 60E07 (60E05)
- (with Sushko, V. G.) New directions in education in the Department of Computational Mathematics and Cybernetics at Moscow State University. (Russian) *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1987**, no. 4, 3–5, 72. (Summary) **89b:01073** 01A73
- Convergence of the moments of random sums. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 2, 360–363; translation in *Theory Probab. Appl.* **33** (1988), no. 2, 339–342. (Slobodanka Janković) **89h:60039** 60F05 (60G50)
- Kruglyakov, E. P.** (with Arnold, V. I.; Barkov, L. M.; Belyaev, S. T.; Dimov, G. I.; Kadomtsev, B. B.; Meshkov, I. N.; Rytov, D. D.; Sidorov, V. A.; Skriniskii, A. N.) Boris Valerianovich Chirikov (on his sixtieth birthday). *Soviet Phys. Uspekhi* **31** (1988), no. 7, 682–683 (1989); translated from *Uspekhi Fiz. Nauk* **155** (1988), no. 3, 543–544 (Russian). (Not in MR) 01A70
- Kruh, Louis** see **Cryptology**, **89m:01143**
- Kruk, E. A.** (with Krachkovskii, V. Yu.) A method for adaptive transmission by cascade codes on channels with memory. (Russian) *Noise-resistant coding and computer reliability* (Russian), 63–69, 190, "Nauka", Moscow, 1987. (From the text) **89d:94041** 94B05
- Krupka, Demeter** Natural Lagrangian structures. *Differential geometry* (Warsaw, 1979), 185–210, *Banach Center Publ.*, 12, PWN, Warsaw, 1984. (Agostino Prastaro) **89j:58022** 58E30 (58F05)
- Geometry of Lagrangean structures. I. *Arch. Math. (Brno)* **22** (1986), no. 3, 159–173. (George Virsik) **89j:58017a** 58E15 (49F05, 58A15, 58A20, 70H99)
- Geometry of Lagrangean structures. II. *Arch. Math. (Brno)* **22** (1986), no. 4, 211–228. (George Virsik) **89j:58017b** 58E15 (49F05, 58A15, 58A20, 70H99)
- Regular Lagrangians and Lepagean forms. *Differential geometry and its applications* (Brno, 1986), 111–148, *Math. Appl. (East European Ser.)*, 27, Reidel, Dordrecht-Boston, MA, 1987. (Jaime Muñoz Masqué) **89h:58048** 58E30 (49F05, 58A20, 58F05)
- Geometry of Lagrangean structures. III. Proceedings of the 14th winter school on abstract analysis (Srní, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* No. 14 (1987), 187–224. (George Virsik) **89j:58017c** 58E15 (49F05, 58A15, 58A20, 70H99)
- Krupkin, P. L.** Localization of the solutions of an equation of stimulated diffusion. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 8, 1459–1462, 1472. (Guang Chang Dong) **89m:35110** 35K55 (82A70)
- Krupková, Olga** A note on the Helmholtz conditions. *Differential geometry and its applications, communications* (Brno, 1986), 181–188, *Univ. J. E. Purkyně, Brno*, 1987. (Ian M. Anderson) **89c:58050** 58F05 (49H05, 70H35)
- Lepagean 2-forms in higher order Hamiltonian mechanics. II. Inverse problem. *Arch. Math. (Brno)* **23** (1987), no. 3, 155–170. (Jaime Muñoz Masqué) **89m:58065** 58F05 (58E30, 70H05)
- Krupnik, I. N.** (with Barkar, M. A.) The set of Cesàro limits of subsequences and permutations. (Russian) *Investigations in differential equations and mathematical analysis* (Russian), 14–18, 170, "Shtiintsa", Kishinev, 1988. (Jozef Antoni) **89k:40010** 40D20
- Krupnik, N. Ya.** (with Markus, M. A.) Inverse-closedness of some Banach subalgebras. (Russian) *Investigations in differential equations and mathematical analysis* (Russian), 93–99, 174, "Shtiintsa", Kishinev, 1988. (Wacław Szymański) **89m:46087** 46H10 (47C05)
- (with Avenden'o, R. È.) A local principle for calculating quotient norms of singular integral operators. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 2, 57–58; translation in *Functional Anal. Appl.* **22** (1988), no. 2, 130–131. (L. Jentsch) **89h:47073** 47G05 (45E05, 47A30)
- Krupovnickas, Algirdas** (with Paulauskas, Celestinas) Deterministic and statistical estimates for the solutions of systems of linear algebraic equations. (Russian. English and Lithuanian summaries) *Statist. Problemy Upravleniya* No. 79 (1987), 102–112. (Anna Lee) **89h:65064** 65F99 (15-04)
- Kruppa, Erwin** see **Blaschke, Wilhelm**, **89a:01097**
- Krüppel, Manfred** (with Górnicki, Jarosław) Ein maßtheoretischer Fixpunktsatz für nichtlineare Operatoren im Hilbert-Raum. (English and Russian summaries) [A measure-theoretic fixed-point theorem for nonlinear operators in Hilbert space] *Wiss. Z. Pädagog. Hochschule "Liselotte Herrmann" Güstrow Math.-Natur. Fak.* **24** (1986), no. 1, 59–66. (R. G. Bartle) **89b:47079** 47H10
- Krupski, Paweł** On homogeneous tree-like continua. Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* No. 18 (1988), 327–336. (Wayne Lewis) **89g:54077** 54F20 (54F50)
- On tree-like continua which are homogeneous with respect to confluent light mappings. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 531–536. (Edward D. Tymchatyn) **89k:54032** 54C10 (54F20, 54F50)
- Krus, Lech** (with Bronisz, Piotr) Application of generalized Raiffa solution to multicriteria bargaining support. *System modelling and optimization* (Tokyo, 1987), 207–211. Lecture Notes in Control and Inform. Sci., 113, Springer, Berlin-New York, 1988. (see **89f:00029**) 90A05 (90C31)
- (with Bronisz, Piotr) Interactive procedures for multicriteria decision support in bargaining problem. *Systems analysis and simulation 1988, I* (Berlin, 1988), 59–62, *Math. Res.*, 46, Akademie-Verlag, Berlin, 1988. (Summary) **89j:90311** 90D35 (90C31)
- Kruscha, K. J. G.** (with Pompe, B.) Information flow in 1D maps. *Z. Naturforsch. A* **43** (1988), no. 2, 93–104. (Arkady S. Pikovsky) **89f:58083** 58F11 (28D20)
- Kruse, Hermann** (with Natterer, Frank) A direct algebraic algorithm in computerized tomography. *Large scale scientific computing* (Oberwolfach, 1985), 245–256, *Progr. Sci. Comput.*, 7, Birkhäuser Boston, Boston, MA, 1987. (Bernd Droste) **89b:65308** 65R10 (92A07)
- Kruse, Hermann-Josef** (with Gal, Tomas; Zörnig, Peter) Survey of solved and open problems in the degeneracy phenomenon. *Math. Programming* **42** (1988), no. 1 (Ser. B), 123–133. (H. C. Bakhshi) **89j:90169** 90C05
- Kruse, Rudolf** (with Meyer, Klaus Dieter) Confidence intervals for the parameter of the normal distribution in the presence of vague data. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics* (Poznań, 1986), 111–116, Wydawn. Politech. Poznań, Poznań, 1987. (see **89b:03006**) 62F25 (03E72, 65U05)
- Krushevskii, E. A.** Solution of linear functional equations with several shifts to the domain. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1988**, no. 1, 64–65, 79. (Zbigniew Binderman) **89d:39007** 39B20 (30E25)
- Krushinskii, L. V.** (with Kozlov, V. N.; Kudryavtsev, V. B.) Some results of the application of mathematics to modeling in biology. (Russian) *Mathematical problems in cybernetics*, No. 1 (Russian), 52–88, "Nauka", Moscow, 1988. (Yu. I. Petunin) **89j:92003** 92-02 (00A71, 92-04, 92A05, 92A09, 92A25)
- see also **Yablokov, A. V.**, (**89c:00020**)
- Krushkal, S. L.** Extension of conformal mappings and hyperbolic metrics. *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 10, 901–908. (Tadashi Kuroda) **89f:30039** 30C60 (32G99, 32H15)
- The interpolating family of a univalent analytic function. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 5, 88–94. (Matti Lehtinen) **89b:30031** 30C60
- The coefficient problem for univalent functions with quasiconformal extension. *Holomorphic functions and moduli*, Vol. I (Berkeley, CA, 1986), 155–161, *Math. Sci. Res. Inst. Publ.*, 10, Springer, New York-Berlin, 1988. (J. G. Krzyż) **89j:30027** 30C60 (30C70)
- A new method for solving variational problems in the theory of quasiconformal mappings. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 2, 105–114, 218; translation in *Siberian Math. J.* **29** (1988), no. 2, 245–252. (Matti Vuorinen) **89d:30022** 30C60
- The Kobayashi metric of Teichmüller spaces, quasiconformal continuation of univalent functions, and reflection with respect to analytic curves. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 4, 790–792; translation in *Soviet Math. Dokl.* **37** (1988), no. 3, 722–725. (Frederick P. Gardiner) **89c:32031** 32G15 (30C60)
- Krusinska, Ewa** Generalized Walker-Duncan procedure for obtaining maximum likelihood estimates of parameters of logistic discriminant function. *Biometrical J.* **30** (1988), no. 3, 259–274. (Not in MR) 62H30
- Kruskal, Clyde P.** (with Snir, Marc; Weiss, Alan) The distribution of waiting times in clocked multistage interconnection networks. *Proceedings of the 1986 International Conference on Parallel Processing*, 12–19, IEEE Comput. Soc. Press, Washington, DC, 1986. (see **89b:68010**) 90B22
- (with Snir, Marc; Weiss, Alan) The distribution of waiting times in clocked multistage interconnection networks. *IEEE Trans. Comput.* **37** (1988), no. 11, 1337–1352. (Summary) **89k:68008** 68M10 (68M20, 90B15, 90B22, 90B35)
- Krüskenper, Martin** (with Scharlau, Winfried) On trace forms of Hilbertian fields. *Comment. Math. Helv.* **63** (1988), no. 2, 296–304. (Dennis Estes) **89k:11020** 11E12
- Krutikova, I. G.** (with Kozlov, N. I.; Kondrat'eva, A. I.; Rusetskii, S. V.) An algorithm for calculating the coefficients of difference schemes for a system of partial differential equations with a small parameter multiplying the derivative. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 177, 16 pp. (Summary) **89a:65132** 65M05
- Krutin, P. I.** (with Korobov, V. I.; Sklyar, G. M.) Solution of an optimal design problem by means of a controllability function. (Russian) *Vestnik Khar'kov. Gos. Univ. No. 298 Mat. Mekh. i Voprosy Uprav.* (1987), 26–40. (V. Popescu) **89b:49063** 49E30 (93B50, 93C15)
- Stabilization of output signals in linear controllable systems within a finite time. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 10, 63–67; translation in *Automat. Remote Control* **49** (1988), no. 10, part 1, 1300–1303. (Summary) **89j:93090** 93D15 (93C05, 93D25)
- Krutin, V. N.** (with Myasnikov, V. P.; Topalé, V. I.) Propagation of Rayleigh waves in a lithosphere model with different moduli. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1988**, no. 1, 59–65. (Summary) **89k:86003** 86A15
- Krutins, Miroslav** On the decomposition of continuous flows on the Polish space. *Comment. Math. Univ. Carolin.* **29** (1988), no. 1, 49–61. (J. C. Oxtoby) **89c:28027** 28D15 (60B05)
- Krutitskii, P. A.** Nonstationary planetary waves in semibounded channels. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 12, 1824–1833, 1919. (Summary) **89c:86005** 86A35 (35Q20, 76C20)
- Kruti'ko, P. D.** (with Lakota, N. A.) Algorithms for the trajectory control of the movement of manipulator robots. (Russian) *Dokl. Akad. Nauk SSSR* **294** (1987), no. 4, 808–811. (Gh. Silas) **89h:70011** 70Q05 (70B15, 93B40, 93C75)
- (with Lakota, N. A.) The inverse dynamics problems method in the theory of constructing algorithms for the control of manipulator robots. The stabilization problem. *Soviet J. Comput. Systems Sci.* **25** (1987), no. 6, 73–81 (1988); translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 3, 82–91, 220 (Russian). (Not in MR) 93D15
- Krutov, B. P.** (with Novikova, N. M.) Specifics of game-theoretic problems with related constraints. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 122–139, "Nauka", Moscow, 1987. (Milan Mareš) **89c:90229** 90D10
- Krutovskikh, L. V.** (with Proshkin, S. D.; Serov, S. S.) A method for constructing the logical structure of the database of an information system. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 11, 154–161. (Summary) **89a:68040** 68P15
- Kruzhakov, O. A.** An example of a quasiconvex but not polyconvex function. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 6, 3–6, 97. (Dariusz Zagrodny) **89b:49004** 49A21 (26B25, 26B35, 49B21)
- Kruzhilin, N. G.** (with Vitushkin, A. G.) Description of the automorphism groups of real hypersurfaces of complex space. (Russian) *Investigations in the theory of the*



- approximation of functions (Russian), 26-69, *Akad. Nauk SSSR Bashkir. Filial, Otdel Fiz. Mat., Ufa*, 1987. (Harold P. Boas) **89k:32039** 32F25 (32H99)
- Description of the local automorphism groups of real hypersurfaces. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 749-758, *Amer. Math. Soc., Providence, RI*, 1987. (Andrei Iordan) **89h:32037** 32F25 (32-02, 32F15)
- Holomorphic automorphisms of hyperbolic Reinhardt domains. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **52** (1988), no. 1, 16-40, 240; translation in *Math. USSR-Izv.* **32** (1989), no. 1, 15-38. (Harold P. Boas) **89d:32002** 32A07 (32H20, 32M05)
- Kruzhkov, S. N. (with Petrosyan, N. S.) Asymptotic behavior of the solutions of the Cauchy problem for first-order nonlinear equations. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 5(257), 3-40. (Song Mu Zheng) **89d:35023** 35B40 (35F25, 35L60)
- Kryachko, E. S. (with Peikov, I. Zh.; Stoitsov, M. V.) The energy density functional in the theory of many-electron systems. I. (Russian. English summary) *Ukrain. Fiz. Zh.* **32** (1987), no. 11, 1748-1754, 1761. (L. Trifaj) **89b:81259** 81H99 (81G45)
- Kryachkov, Yu. G. Two-dimensional spherically one-sheeted surfaces in  $E^n$ . (Russian) *Investigations in the theory of surfaces in manifolds with curvature of constant sign* (Russian), 51-55, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (E. Pavlov) **89f:53006** 53A07
- Kryakin, Yu. V. Best local approximations. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Sarátov, 1984), 142-145, *Sarátov. Gos. Univ., Sarátov*, 1986. (see **89j:00036**) 41A10 (41A50)
- Kryakovskii, B. S. (with Zhelezov, V. S.; Maslov, E. P.) The simplest differential game with a choice of time in mixed strategies. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 8, 46-55. (Quan Zheng) **89a:90186** 90D26 (49A45)
- Kryazhinskii, A. V. On the positional regularizing algorithms for control dynamical systems. *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 767-770, 'Angel Kanchev' Tech. Univ., Ruse, 1987. (Ye-Hwa Chen) **89b:49043** 49B36 (90D25, 93C40)
- (with Osipov, Yu. S.) Inverse problems in dynamics and control models. (Russian) *Mechanics and scientific technological progress*, Vol. 1 (Russian), 196-211, 295, 'Nauka', Moscow, 1987. (Zbigniew Emirsajlow) **89m:93010** 93B07 (93B40, 93C10)
- Optimization of the ensured result for the dynamical systems. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1171-1179, *Amer. Math. Soc., Providence, RI*, 1987. (Zvi Arstein) **89d:49025** 49B40 (90D25, 93E10)
- (with Osipov, Yu. S.) On the regularization of a convex extremal problem with inexactly given constraints. Application to an optimal control problem with phase constraints. (Russian) *Some methods for positional and programmed control* (Russian), 34-54, 149-150, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1987. (Gerhard Tselchov) **89f:49032** 49D45 (49D30, 65K05, 93C05, 93C25)
- Krylov, N. M. see Matvilishin, Ya. A., **89f:01050**
- Krylov, N. S. see Kuznetsova, O. V., **89k:01025**
- Krylov, N. V. On the Alexandrov estimates for parabolic equations and semimartingales. *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 771-776, 'Angel Kanchev' Tech. Univ., Ruse, 1987. (J. A. Goldstein) **89a:35104** 35K10 (60G44)
- Some general results in control theory. *Probability theory and mathematical statistics, Vol. II* (Vilnius, 1985), 129-138, *VNU Sci. Press, Utrecht*, 1987. (Summary) **89c:49025** 49D40 (49C20, 93E20)
- Some new results in the theory of nonlinear elliptic and parabolic equations. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1101-1109, *Amer. Math. Soc., Providence, RI*, 1987. (Guang Chang Dong) **89i:35078** 35K35 (35J60, 53C45, 58G99)
- (with Nosovskii, G. V.; Safonov, M. V.) The domain of degeneration of nonlinearity in the Hamilton-Jacobi-Bellman equation with constant coefficients. (Russian) *Mat. Zametki* **42** (1987), no. 5, 685-690, 762. (Stavros A. Belbas) **89c:35044** 35J60 (49C20)
- Moment estimates for the quasilinearizations, with respect to the initial data, of solutions of stochastic equations and their applications. (Russian) *Mat. Sb. (N.S.)* **136**(178) (1988), no. 4, 510-529, 591. (Ralf Manthey) **89k:60078** 60H10 (35J99, 35R60)
- (with Alyushina, L. A.) Passage to the limit in Itô stochastic equations. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 1, 3-13; translation in *Theory Probab. Appl.* **33** (1988), no. 1, 1-10. (Yu. S. Mishura) **89b:60095** 60H10
- Unconditional solvability of the Bellman equation with constant coefficients in convex domains. (Russian) *Mat. Sb. (N.S.)* **135**(177) (1988), no. 3, 297-311, 414; translation in *Math. USSR-Sb.* **63** (1989), no. 2, 289-303. (Guang Chang Dong) **89h:35093** 35J25 (35R99)
- Krylov, P. A. Endogenerating abelian groups. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 12, 52-55, 81. (L. Bican) **89b:20120** 20K30
- A class of abelian groups with hereditary endomorphism rings. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 6, 60-65, 218. (A. I. Moskalenko) **89b:20116** 20K15 (20K30)
- Krylov, S. F. (with Gasilov, V. A.; Sorokovikova, O. S.; Tkachenko, S. I.) Application of completely conservative difference schemes to the calculation of two-dimensional magnetohydrodynamic flows. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 5, 717-729, 783. (Summary) **89f:65093** 65M05 (76-08, 76W05)
- Krylov, Vasilii Vilenovich (with Elenin, G. G.; Sosnin, N. V.) Exact solutions of a problem of crystallization of filterable solutions. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 4, 635-644, 732; translation in *Differential Equations* **24** (1988), no. 4, 443-450. (Summary) **89i:35116** 35Q20 (82A99)
- (with Elenin, G. G.; Sosnin, N. V.) The problem of dissolution of a dense homogeneous crystal layer. *Moscow Univ. Comput. Math. Cybernet.* **1988**, no. 1, 29-36; translated from *Vestnik Moskov. Univ. Ser. XV Vychisl. Mat. Kibernet.* **1988**, no. 1, 28-34, 76 (Russian). (Summary) **89d:80026** 80A99 (82A99)
- (with Elenin, G. G.; Sosnin, N. V.) A problem on the dissolving of a dense filtering layer of crystals. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 1, 101-111, 157; translation in *U.S.S.R. Comput. Math. and Math. Phys.* **28** (1988), no. 1, 66-73. (Summary) **89d:80011** 80A20 (80-08)
- Krynicky, Michal (with Gajda, Adam; Szeczerba, L. W.) A note on syntactical and semantical functions. *Studia Logica* **46** (1987), no. 2, 177-185. (Bienvenido F. Nebres) **89k:03033** 03C07
- Krynska, Grazyna The numerically stable algorithm for quadratic programs with simple upper bounds. (Russian and Polish summaries) *Control Cybernet.* **16** (1987), no. 2, 129-151. (Summary) **89b:90162** 90C20
- Krynicky, Włodzimierz Sur l'ensemble des paires de variables aléatoires indépendantes dont le quotient suit une distribution donnée. (Russian and Polish summaries) [On the set of pairs of independent random variables whose quotient follows a given distribution] *Zeszyty Nauk. Politech. Łódź. Mat. No.* **20** (1988), 21-27. (Włodzimierz Bryc) **89b:60035** 60E99
- Krysov, Yu. A. Simultaneous aggregation in some classes of parametric optimization problems in a Banach space. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 12, 147-157. (Summary) **89c:90197** 90C31
- Krystock, Robert L. On  $H$ -sets and open filter adherences. *Canad. Math. Bull.* **31** (1988), no. 1, 37-44. (R. M. Stephenson, Jr.) **89c:54041** 54D25
- Kryszeń, A. (with Karpio, A.; Odziejewicz, A.) Two-twistor conformal Hamiltonian spaces. *Rep. Math. Phys.* **24** (1986), no. 1, 65-80. (Michael G. Eastwood) **89g:58068** 58F05 (32L25, 53C80, 81D27)
- (with Horowski, M.; Odziejewicz, A.) Classical and quantum mechanics on the unit ball in  $C^n$ . *Rep. Math. Phys.* **24** (1986), no. 3, 351-363. (Nicholas M. J. Woodhouse) **89c:58055** 58F06 (81D07, 81D30)
- Krysiewicz, W. The Lefschetz type theorem for a class of noncompact mappings. *Proceedings of the 14th winter school on abstract analysis* (Sri, 1986). *Rend. Circ. Mat. Palermo* (2) **Suppl. No. 14** (1987), 365-384. (Christian Fenske) **89a:55002** 55M25 (47H10)
- Kryukov, N. N. (with Grigorenko, Ya. M.) ★ Численное решение задач статки гибких слоистых оболочек с переменными параметрами. (Russian) [Numerical solution of problems of the statics of flexible layered shells with variable parameters] "Naukova Dumka", Kiev, 1988. 262 pp. ISBN 5-12-009298-5 (L. P. Lebedev) **89j:73086** 73L99 (65P05, 73-04, 73-08, 73K30)
- Kryzhanovskii, D. A. see Klein, F., **89b:01078** and **89b:01079**
- Krzyszowski, W. J. ★ Principles of multivariate analysis. A user's perspective. Oxford Statistical Science Series, 3. Oxford Science Publications. The Clarendon Press, Oxford University Press, New York, 1988. xxii+563 pp. ISBN 0-19-852211-8 (From the preface) **89i:62101** 62H99 (62-01)
- Krzowski, Pano Some characterizations of  $n$ -bands. *Proceedings of the Conference "Algebra and Logic", Cetinje* 1986, 107-114, *Univ. Novi Sad, Novi Sad*, 1987. (B. Pondělčák) **89d:20057** 20N15
- Krzywicki, A. (with Kostov, Ivan) On the entropy of random surfaces with arbitrary genus. *Phys. Lett. B* **187** (1987), no. 1-2, 149-152. (Bergfinnur Durhuus) **89a:81104** 81E25 (58F07, 58F11, 82A25, 82A41, 82A68)
- Krzyż, J. G. Boundary correspondence under quasiconformal mappings revisited. (Russian and Polish summaries) *Proceedings of the 9th Conference on Analytic Functions* (Lublin, 1986). *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **40** (1986), 105-113 (1987). (V. Micic) **89f:30040** 30C60
- Ktitarov, D. V. The Feynman formula in a phase space for a class of systems of pseudodifferential equations. (Russian) *Mat. Zametki* **42** (1987), no. 1, 40-49, 167. (A. V. Uglanov) **89a:35023** 35S05 (28C20, 35R15)
- A formula of Feynman for systems of pseudodifferential equations in infinite-dimensional spaces. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 2, 76-78; translation in *Moscow Univ. Math. Bull.* **43** (1988), no. 2, 48-51. (A. V. Uglanov) **89i:35124** 35R15 (35S99, 81C35)
- Klorides, C. N. (with Papaloucas, L. C.) A special construction of Berezin's  $L$ -kernel. *Found. Phys.* **17** (1987), no. 2, 201-207. (From the text) **89f:81077** 81D07 (81C25)
- (with Karanikas, A. I.) Nonlocal bosonization in two dimensions and an effective string field theory with phase transition. *Phys. Lett. B* **201** (1988), no. 2, 228-232. (Summary) **89a:81136** 81E99 (81E30)
- (with Karanikas, A. I.) An exact solution of a regularized Makeenko-Migdal equation in two dimensions for small Wilson loops. *Phys. Lett. B* **213** (1988), no. 2, 181-185. (Summary) **89i:81070** 81E13
- Ku, Hsiung (with Ku, Mei Chin; Mann, L. N.) Isoperimetric inequalities, isometric actions and the higher Newman numbers. *Geom. Dedicata* **26** (1988), no. 3, 341-359. (Wolfgang Kühnel) **89k:53051** 53C40 (53C30, 57S15)
- Ku, Hwar-C. (with Hirsh, Richard S.; Taylor, Thomas D.; Rosenberg, Allan P.) A domain decomposition approach for the computation of incompressible flow by the pseudospectral matrix element method and its parallel implementation. *Domain decomposition methods* (Los Angeles, CA, 1988), 351-360, *SIAM, Philadelphia, PA*, 1989. (see **89j:65010**) 76-08
- Ku, Jong Min On the uniqueness of embeddings of Verma modules defined by the Shapovalov elements. *J. Algebra* **118** (1988), no. 1, 85-101. (Chang Kun Liu) **89j:17008** 17B10 (17B67)
- Ku, Mei Chin (with Ku, Hsiung; Mann, L. N.) Isoperimetric inequalities, isometric actions and the higher Newman numbers. *Geom. Dedicata* **26** (1988), no. 3, 341-359. (Wolfgang Kühnel) **89k:53051** 53C40 (53C30, 57S15)
- Ku, Y. H. (with Sun, Xiaoguang) On nonlinear systems—CHAOS. *J. Franklin Inst.* **326** (1989), no. 1, 93-107. (Zdeněk Ertinger) **89j:58079** 58F13
- Kuang, Ji Chang The Nörlund-Voronoi means of Fourier-Legendre operators. (Chinese. English summary) *Hunan Ann. Math.* **7** (1987), no. 2, 32-38. (Summary) **89k:42005** 42A24 (33A45)
- Kuang, Jiao Xun On the minimum property of the pseudo  $\kappa$ -condition number for a linear operator. *J. Comput. Math.* **5** (1987), no. 4, 316-324. (N. K. Thakare) **89k:47021** 47A55 (65J10)
- (with Xiang, Jia Xiang) A class of modified BDF methods. (Chinese. English summary) *Math. Numer. Sinica* **9** (1987), no. 4, 411-418. (Xu Hai Xu) **89g:65085** 65L05
- (with Xiang, Jia Xiang) A class of DBDF methods with the derivative modifying term. *J. Comput. Math.* **6** (1988), no. 1, 7-13. (Siegfried Filippi) **89i:65073** 65L05 (65L20)
- Kuang, Yang Nonuniqueness of limit cycles of Gause-type predator-prey systems. *Appl. Anal.* **29** (1988), no. 3-4, 269-287. (Hal Leslie Smith) **89h:92047** 92A15 (34C05)
- (with Freedman, H. I.) Uniqueness of limit cycles in Gause-type models of predator-prey systems. *Math. Biosci.* **88** (1988), no. 1, 67-84. (K. E. Swick) **89g:92045** 92A15 (34C05)
- Kuang, Zhi Quan (with Liang, Can Bin) On the GKP and BS constructions of the  $c$ -boundary. *J. Math. Phys.* **29** (1988), no. 2, 433-435. (Summary) **89g:53097** 53C50 (83C99)
- dang Kuang A. see Dang Kuang A.

din/ Kuang Tkhai see Din/ Kuang Tkhai

**Kubáček, Zbyněk** A generalization of N. Aronszajn's theorem on connectedness of the fixed point set of a compact mapping. *Czechoslovak Math. J.* 37(112) (1987), no. 3, 415–423. (Introduction) **89g:54093** 54H25 (47H10)

**Kubacki, K. S.** (with Szynd, D.) On the rate of convergence in a random version of the central limit theorem. (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 9–10, 607–616. (R. Vasudeva (Zbl 645:60031)) **89k:60030** 60F05

— Weak convergence of random sums to infinitely divisible distributions. *Studia Sci. Math. Hungar.* 22 (1987), no. 1–4, 275–285. (Adhir K. Basu) **89e:60051** 60F05 (60E07, 62E20)

— (with Szynd, D.) The convergence of moments in a random limit theorem of H. Robbins type. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 1, 83–93; translation in *Theory Probab. Appl.* 33 (1988), no. 1, 75–85. (Slobodanka Janković) **89g:60078** 60F05

**Kubale, Marek** The complexity of scheduling independent two-processor tasks on dedicated processors. *Inform. Process. Lett.* 24 (1987), no. 3, 141–147. (From the introduction) **89d:90119** 90B35 (68N25, 68Q15)

— Interval edge-coloring of caterpillars with hairs of arbitrary length. Proceedings of the International Conference on Combinatorial Analysis and its Applications (Pokrzywna, 1985). *Zastos. Mat.* 19 (1987), no. 3–4, 505–517 (1988). (Miro Krivánek) **89f:05080** 05C15 (68Q25)

— see also Wilson, Robin J. **89f:05060**

**Kubarski, Jan** Characteristic classes of some Pradines-type groupoids and a generalization of the Bott vanishing theorem. *Differential geometry and its applications, communications (Brno, 1986)*, 189–198. *Univ. J. E. Purkyně, Brno*, 1987. (H. Suzuki) **89e:57024** 57R30 (53C12, 57R20, 58H05)

— Exponential mapping for Lie groupoids. Applications. *Colloq. Math.* 54 (1987), no. 1, 39–48. (I. Kolář) **89c:58151** 58H05 (22A25)

— Some generalization of Godement's theorem on division. Proceedings of the Winter School on Geometry and Physics (Srní, 1987). *Rend. Circ. Mat. Palermo (2) Suppl.* No. 16 (1987), 119–124. (Ion Mihai) **89m:58002** 58A05

— Pradines-type groupoids. Proceedings of the Winter School on Geometry and Physics (Srní, 1987). *Rend. Circ. Mat. Palermo (2) Suppl.* No. 16 (1987), 125–143. (Jan Slovák) **89k:58020** 58A40

**Kubat, Peter** Assessing reliability of modular software. *Oper. Res. Lett.* 8 (1989), no. 1, 35–41. (Summary) **89m:90076** 90B25 (68M15)

**Kubenko, V. D.** (with Gavrilenko, V. V.) An axisymmetric problem of the penetration of thin elastic spherical shells into a compressible fluid. (Russian) *Prikl. Mekh.* 24 (1988), no. 4, 63–74, 134; translation in *Soviet Appl. Mech.* 24 (1988), no. 4, 374–384. (From the text) **89f:73040** 73J06 (73L15)

**Kubenskii, D. A.** (with Bobenko, A. I.) Qualitative analysis and calculations of finite-gap solutions of the Korteweg-de Vries equation. An automorphic approach. (Russian. English summary) *Theoret. Mat. Fiz.* 72 (1987), no. 3, 352–360. (Piotr Biler) **89e:58057** 58F07 (30F10, 35Q20)

**Kubenskii, M. N.** Formulas for the number of representations of numbers by norm forms of quadratic orders. (Russian) *Analytic number theory (Russian)*, 34–38, 91. *Petrozavodsk. Gos. Univ., Petrozavodsk*, 1986. (Boris Datskovsky) **89k:11114** 11R52 (11D85)

**Kubiś, I.** (with Dawidowski, M.; Rzepecki, Bogdan) An existence theorem for the hyperbolic equation  $z_{xy} = f(x, y, z)$  in Banach spaces. *Demonstratio Math.* 20 (1987), no. 3–4, 489–493 (1988). (Manfred W. Kracht) **89k:35245** 35R20 (35L15, 35L70)

— Fixed points for contractive correspondences. *Demonstratio Math.* 20 (1987), no. 3–4, 495–500 (1988). (I. A. Rus) **89f:54084** 54H25

— Existence theorem for hyperbolic equation in Banach space. *Funct. Approx. Comment. Math.* 16 (1988), 207–215. (J. A. Donaldson) **89m:35211** 35R20 (34G20, 35L70, 47H15)

— Existence theorem for multivalued hyperbolic equation in Banach spaces. *Funct. Approx. Comment. Math.* 16 (1988), 217–223. (J. A. Donaldson) **89m:35212** 35R20 (34G20, 35L70, 47H15)

— (with Khan, Mohd. Saeed) Fixed point theorems for point to set maps. *Math. Japon.* 33 (1988), no. 3, 409–415. (I. Matkowski) **89m:54099** 54H25 (54C60)

**Kubiś, Ryszard** (with Borzyszkowski, Andrzej; Sokolowski, Stefan Andrzej) A set-theoretic model for a typed polymorphic lambda calculus. A contribution to MetaSoft. *VDM '88. VDM—the way ahead (Dublin, 1988)*, 267–298. *Lecture Notes in Comput. Sci.*, 328. Springer, Berlin-New York, 1988. (see **89m:68093**) 68Q65 (03B40, 03B70, 68Q55)

**Kubiś, T.** Fixed points and coincidences in sequentially compact spaces. *Libertas Math.* 8 (1988), 97–100. (Livia D'Apuzzo) **89k:54108** 54H25 (47H10)

— The fuzzy unit interval and the Helly space. *Math. Japon.* 33 (1988), no. 2, 253–259. (Zike Deng) **89f:54011** 54A40 (03E72)

**Kubiś, W.** (with Błażewicz, J.; Röck, H.; Szwarcfiter, J.) Minimizing mean flow-time with parallel processors and resource constraints. *Acta Inform.* 24 (1987), no. 5, 513–524. (Summary) **89a:68023** 68N25 (68Q25, 90B35)

**Kubic, William L., Jr.** (with Stein, Fred P.) A theory of design reliability using probability and fuzzy sets. *AIChE J.* 34 (1988), no. 4, 583–601. (Marian B. Gorzalczyński) **89d:93045** 93B50 (03E72, 90B25, 94D05)

**Kubicki, Grzegorz** On a game of Sierpiński. *Colloq. Math.* 54 (1987), no. 2, 179–192. (A. Pultr) **89h:90286** 90D99 (54H05)

**Kubilius, Jonas** On some inequalities in the probabilistic number theory. *Probability theory and mathematical statistics (Kyoto, 1986)*, 214–220. *Lecture Notes in Math.*, 1299. Springer, Berlin-New York, 1988. (E. J. Scourfield) **89e:11125** 11K65

**Kubilius, K.** On necessary and sufficient conditions for the convergence to quasicontinuous semimartingales. *Stochastic differential systems (Bad Honnef, 1985)*, 227–238. *Lecture Notes in Control and Inform. Sci.*, 78. Springer, Berlin-New York, 1986. (Adam Jakubowski) **89a:60091** 60F17 (60B10, 60C48)

**Kubilyus, I. P.** (with Bernik, V. A.; Karatsuba, A. A.; Platonov, V. P.; Suprunenko, D. A.) Vladimir Gennadiyevich Sprindzhuk. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 4(262), 161–162; translation in *Russian Math. Surveys* 43 (1988), no. 4, 195–197. (Editors) **89m:01076** 01A70

**Kublanovskaya, V. N.** Construction of the vector spectral characteristics of a polynomial matrix pencil. (Russian) *Computational processes and systems*, No. 5 (Russian), 126–137. "Nauka", Moscow, 1987. (Florica Luban) **89c:65058** 65F30 (15A22)

— (with Khazanov, V. B.) Deflation in spectral problems for matrix pencils. (Russian) *Computational processes and systems*, No. 5 (Russian), 138–147. "Nauka", Moscow, 1987. (J. Segethová) **89c:65048** 65F15 (65H99)

**Kubo, Fujio** Enveloping algebras. *Proceedings of the 20th symposium on ring theory (Okayama, 1987)*, 83–88. Okayama Univ., Okayama, 1987. (Philippe Revoy) **89g:17011** 17B35 (16A68)

— Notes on invariant radicals of locally finite derivations. *Bull. Kyushu Inst. Tech. Math. Natur. Sci.* No. 34 (1987), 5–8. (F. A. M. Aldosray (Zbl 631:17008)) **89d:17022** 17B65

— Lie structures on  $\{x_1, \dots, x_n, y\}/(y^3 - 3py - q)$ . *Bull. Kyushu Inst. Tech. Math. Natur. Sci.* No. 35 (1988), 6 pp. (Joachim Hilgert) **89g:17013** 17B60

**Kubo, Fumio** (with Fujii, Junichi; Kubo, Kyoko) A parametrization between operator means. *Math. Japon.* 33 (1988), no. 2, 201–208. (J. W. Bunce) **89f:47027** 47A60 (15A45, 47B99)

**Kubo, Izumi** (with Murata, Hiroshi; Totoki, Haruo) Heices and isomorphism problems in ergodic theory. *Probability theory and mathematical statistics (Kyoto, 1986)*, 221–227. *Lecture Notes in Math.*, 1299. Springer, Berlin-New York, 1988. (Nathaniel F. G. Martin) **89e:28035** 28D20 (60G10)

**Kubo, Jisuke** (with Fujikawa, Kazuo) On the quantization of membrane theories. *Phys. Lett. B* 199 (1987), no. 1, 75–81. (Summary) **89g:81073** 81E99 (81E30)

— Comment on: "Massive, unitary, renormalizable Yang-Mills theory without Higgs bosons" [Phys. Rev. Lett. 57 (1986), no. 21, 2610–2612; MR 87k:81156] by R. Delbourgo and G. Thompson. *Phys. Rev. Lett.* 58 (1987), no. 19, 2000. (From the text) **89e:81180** 81G20 (81E15, 81G15)

— Nonabelian gauge bosons in the compactified bosonic membrane theory. *Phys. Lett. B* 202 (1988), no. 3, 315–319. (Summary) **89f:81071** 81E13 (81E30)

**Kubo, Keno** Existence of long-range order in the XY model. *Phys. Rev. Lett.* 61 (1988), no. 1, 110–112. (Summary) **89d:82130** 82A68 (82A15)

**Kubo, Kyoko** (with Fujii, Junichi; Kubo, Fumio) A parametrization between operator means. *Math. Japon.* 33 (1988), no. 2, 201–208. (J. W. Bunce) **89f:47027** 47A60 (15A45, 47B99)

**Kubo, Masahiro** (with Kenmochi, Nobuyuki) Periodic solutions to a class of nonlinear variational inequalities with time-dependent constraints. *Funkcial. Ekvac.* 30 (1987), no. 2–3, 333–349. (Gianfranco Bottaro) **89k:34113** 34G20 (34C11, 34C25, 47H15, 49A29)

— Subdifferential operator approach to nonlinear age-dependent population dynamics. *Japan J. Appl. Math.* 5 (1988), no. 2, 225–256. (Henk J. A. M. Heijmans) **89e:92037** 92A15 (35K99)

**Kubo, Reijiro** Path integration on the upper half-plane. *Progr. Theoret. Phys.* 78 (1987), no. 4, 755–759. (Summary) **89h:81053** 81C35 (58D30)

— Geometry, heat equation and path integrals on the Poincaré upper half-plane. *Progr. Theoret. Phys.* 79 (1988), no. 1, 217–226. (Summary) **89m:81057** 81C35 (11F99, 58D30, 58G11, 81E30)

**Kubo, T.** (with Uchida, Kenko; Shimemura, E.; Abe, Naoto) Optimal regulator for linear systems with delays in state and control. Spectrum decomposition and prediction approach. *Analysis and optimization of systems (Antibes, 1988)*, 32–43. *Lecture Notes in Control and Inform. Sci.*, 111. Springer, Berlin-New York, 1988. (Ivan Ginchev) **89f:34111** 34K35 (49D40, 93B50, 93B55)

— (with Shimemura, E.; Uchida, Kenko) LQ regulator design method for system with delay based on spectral decomposition of the Hamiltonian. *Internat. J. Control* 47 (1988), no. 4, 953–965. (Krishnan Balachandran) **89d:34129** 34K35 (49D40, 93B50, 93B55)

**Kuboi, Fujio** A simple method of generating spline curves under tension. *Tech. Rep. Kansai Univ.* No. 29 (1987), 141–149. (Not in MR) **68U05** (65D07)

**Kubokawa, Tatsuya** (with Sugita, Nariaki) Estimating common parameters of growth curve models. *Ann. Inst. Statist. Math.* 40 (1988), no. 1, 119–135. (Yasunori Fujikoshi) **89m:62056** 62H12

— Monotonicity of risk for a shrinkage estimator of a multivariate normal mean. *Comm. Statist. Theory Methods* 17 (1988), no. 2, 499–506. (M. S. Srivastava) **89d:62045** 62H12 (62C15)

— Inadmissibility of truncated estimators in balanced incomplete block designs. *J. Japan Statist. Soc.* 18 (1988), no. 1, 71–75. (S. Mejza) **89k:62099** 62K10 (62C10)

**Kubota, Hiroshi** (with Abe, Mitsuko; Sakai, Norisuke) Loop corrections to the  $E_8 \times E_8$  heterotic string effective Lagrangian. *Nuclear Phys. B* 306 (1988), no. 2, 405–424. (C. Gauthier) **89f:81149** 81E99 (81E30, 83E30)

— (with Abe, Mitsuko; Sakai, Norisuke) Loop corrections to the heterotic string effective Lagrangian. *Phys. Lett. B* 200 (1988), no. 4, 461–465. (Summary) **89h:81157a** 81E99 (81E30)

— (with Itoi, Chigaku) BRST quantization of the string model with extrinsic curvature. *Phys. Lett. B* 202 (1988), no. 3, 381–384. (Gheorghe Zet) **89e:81152** 81E99 (81E30)

— (with Abe, Mitsuko; Sakai, Norisuke) Addendum: "Loop corrections to the heterotic string effective Lagrangian". *Phys. Lett. B* 203 (1988), no. 4, 474. (Summary) **89h:81157b** 81E99 (81E30)

— (with Wada, Y.; Ishiguro, Tomiko; Ogawa, Satoru) A fully implicit high-resolution scheme for chemically reacting compressible flows. *Nonlinear hyperbolic equations—theory, computation methods, and applications (Aachen, 1988)*, 648–659. *Notes Numer. Fluid Mech.*, 24. Vieweg, Braunschweig, 1989. (see **89j:35007**) 76–08 (80–08, 80A32)

**Kubota, Takahiro** (with Inami, T.; Kanno, Hiroaki) Hexagon gauge anomaly of the type-1 superstring in the path integral method. *Phys. Lett. B* 199 (1987), no. 3, 389–394. (Summary) **89a:81133** 81E99 (81C35, 81E30)

— (with Veneziano, G.) Off-shell effective actions in string theory. *Phys. Lett. B* 207 (1988), no. 4, 419–425. (Summary) **89e:81157** 81E99 (81E30)

**Kubota, Tomio** Geometry of numbers and class field theory. *Japan. J. Math. (N.S.)* 13 (1987), no. 2, 235–275. (Joe P. Buhler) **89f:11157** 11R37

— see also *Investigations in number theory*, **89f:11008**

**Kubrusly, C. S.** On the existence, evolution, and stability of infinite-dimensional stochastic discrete bilinear models. *Control Theory Adv. Tech.* 3 (1987), no. 3, 271–287. (Summary) **89a:93030** 93C25 (93C55, 93D25, 93E15)

**Kubyskin, Yu. A.** (with Volobuev, I. P.) Higgs models generated by symmetric spaces. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Jarmala, 1985), 301–308. "Nauka", Moscow, 1986. (see **89d:81001**) 81E13 (53C80, 81G20)

— (with Volobuev, I. P.) Physical interpretation of solutions of the theory of spontaneous compactification. *JETP Lett.* 45 (1987), no. 10, 581–584; translated from *Pis'ma Zh. Éksp. Teoret. Fiz.* 45 (1987), no. 10, 455–457 (Russian). (Alexander W. Smith) **89h:83090** 83E15 (81E13)



- (with Mourão, J. M.; Volobuev, I. P.) Spontaneous compactification and dimensional reduction. *Phys. Lett. B* 203 (1988), no. 4, 349–352. (Thomas Schücker) **89i:83056** 83E15 (81E13)
- (with Volobuev, I. P.) Spontaneous compactification from the point of view of dimensional reduction of gauge fields. (Russian. English summary) *Teoret. Mat. Fiz.* 75 (1988), no. 2, 255–266; translation in *Theoret. and Math. Phys.* 75 (1988), no. 2, 509–517. (Summary) **89h:81149** 81E20 (53C80, 83E15)
- Kubyskhina, N. N. (with Sharadkin, A. M.; Molchanov, A. A.) The influence of the error of discrete reading sampling on the representation of signals by means of a Kotelnikov series. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 4, 7–11 (1988); translated from *Avtomatika* 1987, no. 4, 9–13, 95 (Russian. English summary). (Not in MR) 94A12
- Kucaba-Pietel, A. Stokes flow past a torus in the presence of a wall. *Z. Angew. Math. Mech.* 68 (1988), no. 5, T309–T311. (William H. H. Banks) **89e:76039** 76D07
- Kučar, J. (with Meyer, Hans-Dieter; Cederbaum, L.) Time-dependent rotated Hartree: formal development. *J. Math. Phys.* 29 (1988), no. 6, 1417–1430. (Summary) **89i:81020** 81C05 (81G55)
- Kučera, A. see Kučera, Antonín
- Kučera, Adam (with Blake, John) Computational modelling of cavitation bubbles near boundaries. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 391–400, North-Holland, Amsterdam-New York, 1988. (Simona Popp) **89j:76029** 76B10 (76-08)
- Kučera, Antonín (with Demuth, Oswald) Remarks on 1-genericity, semigenericity and related concepts. *Comment. Math. Univ. Carolin.* 28 (1987), no. 1, 85–94. (Marat M. Arslanov) **89c:03072b** 03D30
- On the role of  $\theta$  in recursion theory. *Logic colloquium '86* (Hull, 1986), 133–141, *Stud. Logic Found. Math.*, 124, North-Holland, Amsterdam-New York, 1988. (C. G. Jockusch, Jr.) **89c:03070** 03D25 (03D30, 03D35)
- Kučera, Jan Regular inductive limits. *Generalized functions, convergence structures, and their applications* (Dubrovnik, 1987), 415–418, Plenum, New York-London, 1988. (José Bonet) **89i:46002** 46A12 (46M40)
- (with Bosch, Carlos) A note on the spaces  $\mathcal{D}_M$  and  $\mathcal{D}'_M$ . *Internat. J. Math. Math. Sci.* 11 (1988), no. 4, 823–824. (Hans-Joachim Pitzsche) **89g:46076** 46F05
- Kučera, Jaromír (with Horáský, Jan; Novotný, Jan) On the plane symmetry in general relativity. *Differential geometry and its applications, communications* (Brno, 1986), 137–141, *Univ. J. E. Purkyně, Brno*, 1987. (P. C. Vaidya) **89a:83015a** 83C15
- (with Novotný, Jan; Horáský, Jan) On the gravitational field of a plane plane in general relativity. *Gen. Relativity Gravitation* 19 (1987), no. 12, 1195–1201. (P. C. Vaidya) **89a:83015b** 83C15
- Kučera, Luděk (with Trnková, Věra) Isomorphism testing of unary algebras. *SIAM J. Comput.* 17 (1988), no. 4, 673–686. (Václav Koubek) **89h:68065** 68Q25 (08A60)
- Kučera, Milan (with Drábek, Pavel) Bifurcations of second order problems with jumping nonlinearities. *Bull. Austral. Math. Soc.* 37 (1988), no. 2, 179–187. (R. Guenther) **89a:34023** 34B15 (58F14)
- A global continuation theorem for obtaining eigenvalues and bifurcation points. *Czechoslovak Math. J.* 38(113) (1988), no. 1, 120–137. (Jean Mawhin) **89e:47091** 47H15 (58C40, 58E07)
- (with Drábek, Pavel) Reaction-diffusion systems: destabilizing effect of unilateral conditions. *Nonlinear Anal.* 12 (1988), no. 11, 1173–1192. (Reinhard Redlinger) **89m:35115** 35K57 (35B35, 35A15)
- Kučera, T. G. Generalizations of Deissler's minimality rank. *J. Symbolic Logic* 53 (1988), no. 1, 269–283. (Anand Pillay) **89i:03065** 03C45 (03C60)
- Positive Deissler rank and the complexity of injective modules. *J. Symbolic Logic* 53 (1988), no. 1, 284–293. (Anand Pillay) **89i:03066** 03C60 (13C11)
- Kučhal, Karel V. Covariant quantization of dynamical systems with constraints. *Mathematics and general relativity* (Santa Cruz, CA, 1986), 285–300, *Contemp. Math.*, 71, Amer. Math. Soc., Providence, RI, 1988. (Lionel J. Mason) **89j:83043** 83C45 (58F06, 81D07)
- Kucharski, Krzysztof (with Cartwright, Donald I.) Jackson's theorem for compact connected Lie groups. *424. Miniconference on harmonic analysis and operator algebras* (Canberra, 1987), groups. *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 15, Austral. Nat. Univ., Canberra, 1987. (see **89m:00009**) 41A10 (22C05, 22E30, 41A65, 42A10)
- (with Cartwright, Donald I.) Jackson's theorem for compact connected Lie groups. *J. Approx. Theory* 55 (1988), no. 3, 352–359. (Paolo M. Suardi) **89j:43008** 43A50 (41A10)
- Kucharski, Zygfryd On a class of strongly acyclic maps. *Serdica* 14 (1988), no. 2, 195–197. (Götz Brunner) **89m:54027** 54C60 (54C65, 55Q05)
- Kucharz, W. (with Buchner, Michael A.) Algebraic vector bundles over real algebraic varieties. *Bull. Amer. Math. Soc. (N.S.)* 17 (1987), no. 2, 279–282. (Selman Akbulut) **89a:14025** 14G30 (55R15)
- A remark on projective modules. *Bull. Austral. Math. Soc.* 36 (1987), no. 3, 515–520. (Jesús M. Ruiz) **89b:14034** 14G30 (13C10, 14M10)
- (with Bochnak, J.) Sur les classes d'homologie représentables par des hypersurfaces algébriques réelles. (English summary) [On homology classes represented by real algebraic hypersurfaces] *C. R. Acad. Sci. Paris Sér. I Math.* 305 (1987), no. 13, 609–611. (A. Tognoli) **89b:14032** 14G30 (57R95)
- (with Bochnak, J.) Nonisomorphic algebraic structures on smooth manifolds. *Proc. Amer. Math. Soc.* 101 (1987), no. 3, 424–426. (Selman Akbulut) **89d:32019** 32B99 (14G30)
- (with Bochnak, J.) On real algebraic morphisms into even-dimensional spheres. *Ann. of Math. (2)* 128 (1988), no. 2, 415–433. (Robert Silhol) **89f:57060** 57R35 (14G30)
- Complex vector bundles on real algebraic varieties of small dimension. *Bull. Austral. Math. Soc.* 38 (1988), no. 3, 345–349. (Robert Silhol) **89k:14042** 14G30 (14F05, 55R10, 57R20)
- Real algebraic curves and complete intersections. *Illinois J. Math.* 32 (1988), no. 4, 696–702. (Robert Silhol) **89g:14013** 14G30 (14M10, 57R15, 58C25)
- Algebraic cycles and vector bundles on real affine threefolds. *Manuscripta Math.* 60 (1988), no. 2, 211–216. (N. Mohan Kumar) **89c:14020** 14F05 (14G30, 57R22)
- Analytic and differentiable functions vanishing on an algebraic set. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 514–516. (Wiesław Pawłucki) **89b:32014** 32B15 (26B99, 32B05)
- (with Buchner, Michael A.) Topological triviality of a family of zero-sets. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 699–705. (Toshiyuki Fukui) **89b:58029** 58C25
- Kucherenko, E. I. Justification of the finite element method for a boundary value problem of a system of nonlinear ordinary differential equations. (Russian) *Dokl. Akad. Nauk SSSR* 295 (1987), no. 6, 1302–1306; translation in *Soviet Math. Dokl.* 36 (1988), no. 1, 185–188. (From the text) **89h:65136** 65L60 (34B15)
- Convergence of the Bogolyubov-Galerkin method for a boundary value problem of a nonlinear polyharmonic equation. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 5, 1060–1063; translation in *Soviet Math. Dokl.* 37 (1988), no. 1, 204–206. (H. Marcinkowska) **89h:65180** 65N30
- Kucherenko, V. V. (with Berkun, V. B.) Investigation of the convergence of the multigrid method for stiff problems in domains of complex configuration. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 6, 1307–1310; translation in *Soviet Math. Dokl.* 36 (1988), no. 3, 608–611. (A. V. Dzishkariani) **89b:65291** 65N50
- Kucherov, A. B. (with Nikolaev, E. S.) Direct methods with partial elimination of unknowns for solving difference elliptic equations. (Russian) *Computational processes and systems*, No. 5 (Russian), 232–247, "Nauka", Moscow, 1987. (Hans-Eberhard Scholz) **89b:65250** 65N20 (65F99)
- Kucherov, G. A. A new quasi-reducibility testing algorithm and its application to proofs by induction. *Algebraic and logic programming* (Gaussig, 1988), 204–213, *Math. Res.*, 49, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) 68Q50
- Kuchko, L. P. Functional equations with a degenerate transformation of the argument. (Russian) *Vestnik Khar'kov. Gos. Univ. No. 298 Mat. Mekh. i Voprosy Upravl.* (1987), 98–101. (P. Javor) **89g:39010** 39B20 (58C25)
- Multidimensional functional equations and the normalization of local matrix functions. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 1, 70–83, 223; translation in *Siberian Math. J.* 29 (1988), no. 1, 54–64. (Dorin Andrica) **89f:58021** 58C27 (39B60)
- Existence and uniqueness of the solutions of multidimensional functional equations. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 4, 788–790; translation in *Soviet Math. Dokl.* 36 (1988), no. 3, 532–534. (B. V. Loginov) **89d:58020** 58C27 (39B20)
- Küchler, U. (with Amosova, N. N.; Giller, H.; Maksimov, Yu. D.) ★ Bedienungs- und Wartungstheorie. (German) [Queueing theory] Eine Einführung. [An introduction] Mathematisch-Naturwissenschaftliche Bibliothek [Mathematical-Scientific Library], 71. *BSB B. G. Teubner Verlagsgesellschaft, Leipzig*, 1986. 254 pp. ISBN 3-322-00309-4. (Lennart Råde) **89a:60207** 60K25 (90B22)
- (with Burkhardt, G.) The semimartingale decomposition of one-dimensional quasidiffusions with natural scale. *Stochastic Process. Appl.* 25 (1987), no. 2, 237–244. (F. B. Knight) **89g:60242** 60J60 (60G48)
- Kuchma, L. V. An analogue of a problem of Minkowski for a two-dimensional surface in the four-dimensional Euclidean space  $E^4$ . (Russian) *Riemannian spaces and methods of the theory of elliptic differential equations* (Russian), 96–106, Leningrad. Gos. Ped. Inst., Leningrad, 1986. (Valentin Boju) **89e:53004** 53A07
- An analogue of the Christoffel problem for a certain class of two-dimensional noncompact surfaces in  $E^4$ . (Russian) *Investigations in the theory of surfaces in manifolds with curvature of constant sign* (Russian), 56–63, Leningrad. Gos. Ped. Inst., Leningrad, 1987. (E. Pavlov) **89f:53007** 53A07
- Kuchment, P. A. (with Berezanskii, Yu. M.; Bogolyubov, N. N.; Daletskii, Yu. L.; Levin, B. Ya.; Maslov, V. P.; Novikov, S. P.; Semenov, E. M.) Selim Grigorievich Krein (on the occasion of his seventieth birthday). (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 5(257), 223–224. (Editors) **89b:01038** 01A70
- see also Function spaces and equations of mathematical physics, **89c:00013** and Helgason, Sigurdur, **89g:22014**
- Kucinski, M. Y. (with Caldas, I. L.) Toroidal helical fields. *Z. Naturforsch. A* 42 (1987), no. 10, 1124–1132. (Summary) **89f:78013** 78A30 (76W05)
- Kuczma, Marek On some properties of solutions of a functional equation. (Russian and Polish summaries) *Opuscula Math.* No. 3 (1987), 37–41 (1988). (Abraham Boyarsky) **89i:39012** 39B20
- On a result of Z. Kominek. (Serbo-Croatian summary) *Rad. Mat.* 3 (1987), no. 2, 307–315. (Kazimierz Nikodem) **89d:26012** 26B25 (39B70, 39C05, 46G99)
- Kuczamow, Tadeusz (with Stachura, Adam) Extensions of nonexpansive mappings in the Hilbert ball with the hyperbolic metric. I. II. *Comment. Math. Univ. Carolin.* 29 (1988), no. 3, 399–402, 403–410. (K. Goebel) **89k:32051** 32H15 (47H99)
- Kuczynski, Jacek On the optimal solution of large eigenpair problems. *J. Complexity* 2 (1986), no. 2, 131–162. (Colette Lebaud) **89a:65062** 65F15
- Kudaibergenov, K. Zh. On finitely generated models. (Russian) *Sibirsk. Mat. Zh.* 27 (1986), no. 2, 208–209, 224. (Summary) **89a:03067** 03C50
- Kudin, G. I. (with Adzhubei, L. T.) Solution of a problem of estimating the state of a rod by the averaging method. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 5 (1986), 36–39, 96. (Summary) **89k:73046** 73K12 (34C29, 93B30)
- (with Adzhubei, L. T.; Danilov, V. Ya.) Some problems in the control and estimation of oscillatory distributed systems with a small parameter. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 6 (1987), 85–89, 117. (Not in MR) 93C20
- Kudin, V. I. (with Volkovich, V. L.; Voinalovich, V. M.) A relaxation scheme of the row simplex method. *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 4, 84–90 (1988); translated from *Avtomatika* 1987, no. 4, 79–86, 97 (Russian. English summary). (Summary) **89f:90086** 90C05
- (with Volkovich, V. L.; Voinalovich, V. M.) Relaxation scheme of dual row simplex method. *Soviet J. Automat. Inform. Sci.* 21 (1988), no. 1, 37–43; translated from *Avtomatika* 1988, no. 1, 39–46, 96 (Russian. English summary). (Summary) **89m:90107** 90C05 (65K05)
- Kudinov, E. V. (with Beregov, A. S.) Application of the decomposition principle to the construction of mathematical models of spin-wave devices. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 31 (1988), no. 11, 106–124; translation in *Soviet Phys. J.* 31 (1988), no. 11, 939–954. (Not in MR) 78-08
- Kudish, I. L. The contact problem of elasticity theory for bodies with cracks. *J. Appl. Math. Mech.* 50 (1986), no. 6, 789–799 (1987); translated from *Prikl. Mat. Mekh.* 50 (1986), no. 6, 1020–1033 (Russian). (Summary) **89b:73034** 73M05 (73T05)
- Kudla, Stephen S. (with Millson, John J.) The theta correspondence and harmonic forms. II. *Math. Ann.* 277 (1987), no. 2, 267–314. (Yue Lin L. Tong) **89b:11041** 11F27 (11F75, 22E40, 22E45, 32N10)
- Kudlaev, E. M. On conditions for the weak convergence of distributions of separable statistics. (Russian) *Mat. Zametki* 40 (1986), no. 6, 762–769, 830. (Jana Jurečková) **89a:60092** 60F17 (62E20)

- Estimation of the parameters of a Weibull-Gnedenko distribution (a survey). *Soviet J. Comput. Systems Sci.* **25** (1987), no. 4, 44–57; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1986**, no. 6, 5–18 (Russian). (Summary) **89a:62209** 62N05 (62F10)
- Distribution of Whitworth statistics under convergent alternatives. *Statistical methods. J. Soviet Math.* **40** (1988), no. 2, 190–193. (Endre Csáki) **89k:62064** 62G30 (62E20)
- Kudlek, M.** Homomorphic images of sentential form languages defined by regular systems. (German summary) *Papers on automata and languages, IX*, 47–90, *DM*, 87-2, *Karl Marx Univ. Econom., Budapest*, 1987. (D. M. Campbell) **89d:68044** 68Q45
- Kudo, Mineichi** (with Shimbo, Masaru) Efficient regular grammatical inference techniques by the use of partial similarities and their logical relationships. *Pattern Recognition* **21** (1988), no. 4, 401–409. (Summary) **89e:68106** 68T10 (68Q50)
- Kudra, Matthias** (with Bandemer, Hans) Some methods of evaluating functional relationships from fuzzy observations. (German and Russian summaries) *Some applications of fuzzy set theory in data analysis*, 46–61, *Freiberger Forschungshefte D*, 187, *Deutscher Verlag für Grundstoffindustrie, Leipzig*, 1988. (Summary) **89e:62003** 62-07 (03E72, 62A99, 62B10)
- Kudrik, P. I.** Application of  $p$ -hyperbolic systems of differential equations in the theory of the deformation of surfaces. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* **28** (1986), 47–53, 132. (Summary) **89d:53007** 53A05 (35L99)
- Kudrya, Yu. N.** Geometric observables and the classification of electrovacuum gravitational fields of type D. (Russian) *Gravitatsiya i Teor. Otnositel'nosti* **24** (1987), 54–76. (Vitaly N. Mel'nikov) **89i:83026** 83C20
- Kudryashov, B. D.** (with Zakharova, T. G.) Rapid decoding of the Golay code (24, 12) using a computer. (Russian) *Noise-resistant coding and computer reliability* (Russian), 24–29, 189, "Nauka", Moscow, 1987. (From the text) **89g:94037** 94B35 (94B25)
- Kudryashov, V. V.** Spectral projectors of angular momentum in the representation of a phase space. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 1, 74–78, 127. (V. B. Serebrennikov) **89h:81089**; **EA** **89m** 81D99 (22D99, 81C25)
- Kudryashova, L. V.** (with Stepanova, L. A.) The Donetsk school of rigid body dynamics. (Russian) *Studies in the history of physics and mechanics*, 1987 (Russian), 45–64, 244, "Nauka", Moscow, 1987. (Summary) **89c:01096** 01A72 (58-03, 70-03)
- Kudryashova, N. F.** Zero-divergence transformations and analytic functions. (Russian) *Application of functional analysis, in approximation theory* (Russian), 74–82, 145–146, *Kalinin. Gos. Univ., Kalinin*, 1984. (see **89c:00066**) 30C99
- Kudryashova, T. G.** (with Vilenkin, N. Ya.; Denisova, G. V.; Rudnev, A. A.) Irreducible representations of the groups  $SO(n)$ ,  $SO(p, q)$ ,  $SU(n)$  and  $S_4$  and their matrix elements. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jūrmala*, 1985), 213–217, "Nauka", Moscow, 1986. (see **89d:81002**) 22E45 (81C40)
- Kudryavtsev, A. E.** (with Belova, T. I.) Quasi-periodic orbits in the scalar classical  $\lambda\phi^4$  field theory. *Phys. D* **32** (1988), no. 1, 18–26. (Not in MR) **81E99** (81-04)
- Kudryavtsev, B. A.** (with Kalamkarov, A. L.; Parton, V. Z.) The asymptotic homogenization method in the mechanics of composite materials of regular structure. (Russian. English summary) *Mechanics of a solid deformable body*, Vol. 19 (Russian), 78–147, 187–188, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (Summary) **89a:73049** 73K20
- (with Zobnin, A. I.; Parton, V. Z.) Linearized equations of motion of a viscous fluid in a porous medium of periodic structure. *Fluid Dynamics* **23** (1988), no. 2, 260–266; translated from *Izv. Akad. Nauk SSSR Mekh. Zhidk. Gaza* **1988**, no. 2, 123–130 (Russian). (Lalit M. Srivastava) **89m:76064** 76S05 (76N10)
- Kudryavtsev, D. L.** Asymptotic behavior of the solutions of second-order differential equations in a complex domain. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 8, 1462–1464, 1472. (M. Švec) **89m:34006** 34A20 (34E05, 45Fxx)
- Kudryavtsev, L. D.** The papers of S. M. Nikol'skii on the theory of differentiable functions of several variables. (Russian) *Theory of functions and related problems of analysis* (Russian) (Dnepropetrovsk, 1985). *Trudy Mat. Inst. Steklov.* **180** (1987), 12–22. (J. Albrycht) **89d:01076** 01A72 (01A70, 26-03, 46-03)
- (with Andreev, A. F.; Bitsadze, A. V.; Erugin, N. P.; Zubov, V. I.; Izobov, N. A.; Il'in, V. A.; Kiguradze, I. T.; Krasovskii, N. N.; Millionshchikov, V. M.; Pliss, V. A.; Samarskii, A. A.; Sibirskii, K. S.; Tikhonov, A. N.) Yurii Stanislovovich Bogdanov. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 6, 1091–1097; translation in *Differential Equations* **24** (1988), no. 6, 692–699. (Editors) **89i:01055** 01A70
- (with Nikol'skii, S. M.; Usmanov, E. D.; Mukhamadiyev, E. M.) Leonid Grigor'evich Mikhailov (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 2(260), 171–172; translation in *Russian Math. Surveys* **43** (1988), no. 2, 205–207. (Editors) **89i:01096** 01A70
- Existence and uniqueness of solutions of variational problems. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 5, 1055–1060; translation in *Soviet Math. Dokl.* **37** (1988), no. 1, 199–203. (Neculai Vornicescu) **89f:49002** 49A05
- Variational problems with free ends on bounded and unbounded intervals. (Russian) *Studies in the theory of differentiable functions of several variables and its applications, XII* (Russian). *Trudy Mat. Inst. Steklov.* **181** (1988), 137–146, 270. (L. G. Chambers) **89g:49002** 49A05 (49B05)
- (with Besov, O. V.; Lizorkin, P. I.; Nikol'skii, S. M.) Investigations in the theory of spaces of differentiable functions of several variables. (Russian) *Probability theory, function theory, mechanics* (Russian). *Trudy Mat. Inst. Steklov.* **182** (1988), 68–127. (H. Triebel) **89m:46062** 46E35 (01A60, 46-03)
- see also *Investigations in the theory of the approximation of functions*, **89a:00007**
- Kudryavtsev, S. N.** On approximations of functional compacta by piecewise polynomial surfaces. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **51** (1987), no. 6, 1142–1169, 1358; translation in *Math. USSR-Izv.* **31** (1988), no. 3, 455–480. (J. Reif) **89d:41045** 41A46 (30E10, 41A65)
- Kudryavtsev, V. B.** (with Krushinskii, L. V.; Kozlov, V. N.) Some results of the application of mathematics to modeling in biology. (Russian) *Mathematical problems in cybernetics*, No. 1 (Russian), 52–88, "Nauka", Moscow, 1988. (Yu. I. Petunin) **89j:92003** 92-02 (00A71, 92-04, 92A05, 92A09, 92A25)
- Kudryavtseva, N. A.** (with Reshetnyuk, Yu. G.) Necessary conditions for an extremum for general functionals of the calculus of variations with nonsmooth integrand. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 5, 191–197, 240; translation in *Siberian Math. J.* **29** (1988), no. 5, 841–845. (Dariusz Zagrodny) **89k:49014** 49B21 (49A52)
- Kud'yavin, V. S.** (with Sychev, A. V.) Membership of some  $n$ -dimensional homeomorphisms in the Carathéodory class. (Russian) *Some problems in differential equations and discrete mathematics* (Russian), 19–28, *Novosibirsk. Gos. Univ., Novosibirsk*, 1986. (P. Caraman) **89h:30034** 30C60
- Kueh, Ka-Lam** The moments of infinite series. *J. Reine Angew. Math.* **385** (1988), 1–9. (D. R. Heath-Brown) **89c:11131** 11M06 (42A70)
- Kueker, David W.** Vaught sentences and the covering theorem. *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 3, 221–228. (Wiktor Dańko) **89i:03075** 03C75 (03C40)
- Kuelbs, J.** (with Goodman, Victor) Rates of convergence for increments of Brownian motion. *J. Theoret. Probab.* **1** (1988), no. 1, 27–63. (P. Révész) **89a:60080** 60F15 (60B12, 60F17, 60J65)
- Kuene, R. E.** (with Andersson, A. E.) Regional economic dynamics. *Handbook of regional and urban economics*, Vol. 1, 201–253, *Handbooks in Econom.*, 7, North-Holland, Amsterdam-New York, 1986. (see **89m:90047**) 90A14 (90A11, 90A17)
- Kufarev, B. P.**  $K$ -continuity and the limits of functions of the class  $S_p^1$  at boundary points. (Russian) *Dokl. Akad. Nauk SSSR* **295** (1987), no. 4, 802–805; translation in *Soviet Math. Dokl.* **36** (1988), no. 1, 130–133. (J. Lukeš) **89f:46073** 46E35 (26B35, 31B25)
- Kufner, A.** (with Sändig, Anna-Margarete) ★ Some applications of weighted Sobolev spaces. With German, French and Russian summaries. *Teubner-Texte zur Mathematik* [Teubner Texts in Mathematics], 100. *BSB B. G. Teubner Verlagsgesellschaft, Leipzig*, 1987. 268 pp. ISBN 3-322-00426-0 (Robert D. Brown) **89h:35096** 35J40 (35K65, 35R05, 46E35, 65N30)
- (with Fučík, Svatopluk) ★ Нелинейные дифференциальные уравнения. (Russian) [Nonlinear differential equations] Translated from the English by A. F. Zhukov. Translation edited and with a foreword by S. I. Pokhozhaev. "Nauka", Moscow, 1988. 304 pp. ISBN 5-02-013750-2 (Editors) **89c:35003** 35-02 (34-02, 47-02, 58-02, 90C25)
- (with Opic, Bohumir; Skrzypnik, I. V.; Stetsyuk, V. P.) Sharp embedding theorems for a class of S. I. Sobolev weighted spaces. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 1, 22–26, 86. (H. Triebel) **89e:46038** 46E35
- Kuga, Ken'ichi** On immersed 2-spheres in  $S^2 \times S^2$ . *A fete of topology*, 525–541, *Academic Press, Boston, MA*, 1988. (Terry Lawson) **89c:57047** 57R95 (57R40, 57R42)
- A note on Dehn surgery on links and divisors of varieties of group representations. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **35** (1988), no. 2, 363–369. (Cameron McA. Gordon) **89k:57012** 57M25
- Küger, G.** (with Schürer, F.)  $p_{KLM}$  expansion of the scattering kernel of the nonlinear Boltzmann equation and its convergence rate. *Phys. Rev. A* (3) **39** (1989), no. 3, 1429–1440. (Carlo Cercignani) **89m:82036** 82A40 (76P05)
- Kugler, L. D.** (with Althoen, S. C.; Hansen, Kristina)  $C$ -associative algebras of dimension 4 over  $\mathbb{R}$ . *Algebras Groups Geom.* **3** (1986), no. 3, 329–360. (Irvin Roy Hentzel) **89c:17011** 17A99 (17D99)
- (with Althoen, S. C.; Hansen, Kristina) Four-dimensional real algebras satisfying two  $C$ -associative conditions. *Algebras Groups Geom.* **4** (1987), no. 4, 395–419. (Arie H. Boers) **89f:17001** 17A30 (17A35)
- Kugler, M.** (with Shtrikman, S.) Berry's phase, locally inertial frames, and classical analogues. *Phys. Rev. D* (3) **37** (1988), no. 4, 934–937. (Summary) **89c:81055** 81C99 (78A50)
- Kugo, Taiichiro** (with Hata, Hiroyuki; Itoh, Katsumi; Kunitomo, Hiroshi; Ogawa, Kaku) BRS invariant vertex of Neveu-Schwarz-Ramond superstring. *Progr. Theoret. Phys.* **78** (1987), no. 2, 453–486. (Robert Marnelius) **89c:81128** 81E99 (81E30)
- Lorentz transformation in the light-cone gauge string field theory. *Progr. Theoret. Phys.* **78** (1987), no. 3, 690–703. (V. P. Akulov) **89h:81202** 81E99 (81E30)
- (with Kunitomo, Hiroshi; Suehiro, Kazuhiko) BRS invariance of string vertex on general ghost vacuum. *Progr. Theoret. Phys.* **78** (1987), no. 4, 923–931. (Danny Birmingham) **89c:81138** 81E99 (81E30, 83E30)
- Gauge string field theory. *Conformal field theory, anomalies and superstrings* (Singapore, 1987), 253–277, *World Sci. Publishing, Singapore*, 1988. (George Siopsis) **89m:81150** 81E99 (81-02, 81E30)
- (with Bando, Masako; Yamawaki, Koichi) Nonlinear realization and hidden local symmetries. *Phys. Rep.* **164** (1988), no. 4-5, 217–314. (Summary) **89d:81121** 81G20 (81E13, 83E50)
- Kuguradze, I. T.** Two-point singular boundary value problems for nonlinear ordinary differential equations. (Russian) *Current problems in mathematical physics, Vol. I* (Russian) (Tbilisi, 1987), 276–279, 487, *Tbilis. Gos. Univ., Tbilisi*, 1987. (see **89j:00030**) 35B15
- Kugushev, E. I.** Affine moment features for pattern recognition. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1987**, no. 132, 32 pp. (Summary) **89c:92053** 92A25 (68T10)
- (with Zueva, E. Yu.) An equation of optical flow in the visual analysis of motion. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 64, 28 pp. (Summary) **89i:92072** 92A27
- (with Zueva, E. Yu.) Uniqueness of the reconstruction of spatial motion and of the form of a rigid body from optical flow. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 114, 32 pp. (Summary) **89j:92093** 92A27
- Kuh, Ernest S.** (with Xiong, Xiao-Ming) A unified approach to the via minimization problem. *IEEE Trans. Circuits and Systems* **36** (1989), no. 2, 190–204. (Summary) **89m:90066** 90B10 (68Q25, 90B20, 90C35, 94C15)
- al-Kuhi, Abu Sahl Wajjan ibn Rustam** see *Hogendijk, Jan P.* **89g:01011**
- Kühli, Michael** (with Herzog, Jürgen) Maximal Cohen-Macaulay models over Gorenstein rings and Bourbaki-sequences. *Commutative algebra and combinatorics* (Kyoto, 1985), 65–92, *Adv. Stud. Pure Math.*, 11, North-Holland, Amsterdam-New York, 1987. (Bernd Ulrich) **89h:13029** 13H10 (13C05)
- Kuhlmann, Federico** (with Bucklew, James A.) Piecewise uniform vector quantizers. Coding techniques and coding theory. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part II, 1259–1263. (see **89j:94002**) 94A34 (94A14)
- Kuhn, Dieter** (with Löwen, Rainer) Piecewise affine bijections of  $\mathbb{R}^n$ , and the equation  $Sx^* - Tx^* = y$ . *Linear Algebra Appl.* **96** (1987), 109–129. (Summary) **89k:90161** 90C33 (15A06)
- Kuhn, Gabriella** Some more examples of Plancherel measures on discrete groups. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 3, 675–687. (M. Bożejko) **89g:22007** 22D25 (22D10, 43A05)
- Kuhn, Günther** see *Boundary elements*, **89c:00008**; **89c:00009** and **89c:00010**



- Kühn, Heidmarie** Karl Heinrich Schellbachs Wirken für die Förderung des Mathematikunterrichts an den Berliner Gymnasien im 19. Jahrhundert. [Karl Heinrich Schellbach's efforts at promoting the teaching of mathematics at Berlin's classical secondary schools in the 19th century] *Wiss. Z. Humboldt-Univ. Berlin Math.-Natur. Reihe* 37 (1988), no. 2, 199–207. (Albert C. Lewis) **89m:01055** 01A55 (01A70)
- Kühn, Heinrich** A dihedral calculus for groups. *Arch. Math. (Basel)* 51 (1988), no. 2, 111–117. (James Howie) **89j:20041** 20F99
- Kuhn, Nicholas J.** The rigidity of  $L(n)$ . *Algebraic topology* (Seattle, Wash., 1985), 286–292, *Lecture Notes in Math.*, 1286, Springer, Berlin-New York, 1987. (J. F. Adams) **89a:55015** 55P42 (55R35, 55S10)
- The transfer and James-Hopf invariants. *Math. Z.* 196 (1987), no. 3, 391–405. (Frederick Cohen) **89d:55033** 55Q25 (55P35)
- The Morava  $K$ -theories of some classifying spaces. *Trans. Amer. Math. Soc.* 304 (1987), no. 1, 193–205. (W. Stephen Wilson) **89d:55013** 55N22 (19L99)
- (with Harris, John C.) Stable decompositions of classifying spaces of finite abelian  $p$ -groups. *Math. Proc. Cambridge Philos. Soc.* 103 (1988), no. 3, 427–449. (J. F. Adams) **89d:55021** 55P42
- Kühn, Reimer** (with van Hemmen, J. L.; Grensing, D.; Huber, A.) Nonlinear neural networks. I. General theory. *J. Statist. Phys.* 50 (1988), no. 1–2, 231–257. (E. Pessa) **89i:92018** 92A09 (68Q75, 82A57)
- (with van Hemmen, J. L.; Grensing, D.; Huber, A.) Nonlinear neural networks. II. Information processing. *J. Statist. Phys.* 50 (1988), no. 1–2, 259–293. (E. Pessa) **89m:92020** 92A09 (68Q80, 82A57, 82A99, 92A25)
- (with Riedel, U.; van Hemmen, J. L.) Temporal sequences and chaos in neural nets. *Phys. Rev. A* (3) 38 (1988), no. 2, 1105–1108. (Summary) **89f:92023** 92A09 (58F13, 82A57)
- (with Böa, S.; van Hemmen, J. L.) Martingale approach to neural networks with hierarchically structured information. *Z. Phys. B* 71 (1988), no. 2, 261–271. (Summary) **89j:92023** 92A09 (82A57, 82A99)
- Kuhn, Robert M.** Curves of genus 2 with split Jacobian. *Trans. Amer. Math. Soc.* 307 (1988), no. 1, 41–49. (H.-G. Rück) **89f:14027** 14H40 (11G10)
- Kühn, Thomas** Eigenvalues of integral operators with smooth positive definite kernels. *Arch. Math. (Basel)* 49 (1987), no. 6, 525–534. (Minoru Yanagawa) **89a:47046** 47B38 (45C05, 46E35, 47G05, 58G25)
- (with Cobos, Fernando) Entropy and eigenvalues of weakly singular integral operators. *Integral Equations Operator Theory* 11 (1988), no. 1, 64–86. (Hermann König) **89a:47073** 47G05 (45C05, 47B10)
- (with Carl, Bernd; Heinrich, Stefan)  $s$ -numbers of integral operators with Hölder continuous kernels over metric compacta. *J. Funct. Anal.* 81 (1988), no. 1, 54–73. (Hermann König) **89i:47036** 47B10 (47B38, 47G05)
- Kuhn, Thomas S.** What are scientific revolutions? *The probabilistic revolution*, Vol. 1, 7–22, *Bradford Book*, MIT Press, Cambridge, MA-London, 1987. (Richard L. Francis) **89d:01082** 01A99
- Kuhn, Udo** (with Schmidt, Günther) Fresh look into the design and computation of optimal output feedback controls for linear multivariable systems. *Internat. J. Control* 46 (1987), no. 1, 75–95. (Krzysztof Kuźmiński) **89c:93096** 93B50 (49A10, 93C05, 93E20)
- Kukla, Wilfried** Analysis of the development of wave mechanics: aspects from the history of physics and the philosophy of science. *Found. Phys.* 18 (1988), no. 3, 379–399. (H. Treder) **89f:81002** 81–03 (01A60, 81B05)
- Kühnau, R.** Ein Algorithmus für quasikonforme Spiegelung an einem Polygonzug bei möglichst kleiner Dilatation. [An algorithm for quasiconformal reflection in a polygon with dilatation as small as possible] *Mitt. Math. Sem. Giessen No.* 180 (1987), 1–34. (G. Opfer) **89c:30041** 30C60
- Möglichst konforme Spiegelung an einer Jordankurve. [Extremal conformal reflection in a Jordan curve] *Jahresber. Deutsch. Math.-Verein.* 90 (1988), no. 2, 90–109. (D. Gaier) **89d:30023** 30C60 (30C70)
- Kühne, Andreas** (with Folkerts, Menso; Segre, Michael) Der Aufbau einer Datenbank für die Geschichte der europäischen Mathematik im Mittelalter und der Renaissance. [The setup of a databank for the history of European mathematics in the Middle Ages and Renaissance] *Ber. Wiss.-Gesch.* 11 (1988), no. 4, 256–260. (Editors) **89m:01003** 01A05 (01A35, 01A40)
- Kühne, Rolf** Weak mixing for representations of semigroups on a Banach space. *Proceedings of the conference on ergodic theory and related topics, II* (Geirgental, 1986), 108–112, *Teubner-Texte Math.*, 94, Teubner, Leipzig, 1987. (Nathaniel F. G. Martin) **89b:47060** 47D05 (47A35)
- Kühnel, A.** (with Teubel, A.; Behn, U.) Stratonovich model driven by dichotomous noise: analytical results. *Z. Phys. B* 71 (1988), no. 3, 393–402. (Summary) **89f:60055** 60G99 (60H99, 70L05)
- see also Landau, L. D., **89i:00007**
- Kühnel, Wolfgang** Minimal triangulations of Kummer varieties. *Abh. Math. Sem. Univ. Hamburg* 57 (1987), 7–20. (A. Altshuler) **89a:57028** 57Q15 (32B30, 52A37)
- (with Brehm, Ulrich) Combinatorial manifolds with few vertices. *Topology* 26 (1987), no. 4, 465–473. (T. Banchoff) **89c:57022** 57Q15
- (with Lassmann, G.) Combinatorial  $d$ -tori with a large symmetry group. *Discrete Comput. Geom.* 3 (1988), no. 2, 169–176. (A. Altshuler) **89c:57023** 57Q15 (05B45, 52A45)
- Kuhnert, Lothar** see Self-organization of chemical structures, **89b:01110**
- Kulch, Werner** Hauptkegel algebraischer Potenzreihen. (English and Russian summaries) [Principal cones of algebraic power series] *J. Inform. Process. Cybernet.* 23 (1987), no. 4–5, 147–170. (Heinrich Seidel) **89c:68059** 68Q45 (16A05)
- Matrix systems and principal cones of algebraic power series. *International Symposium on Mathematical Foundations of Computer Science* (Bratislava, 1986). *Theoret. Comput. Sci.* 57 (1988), no. 1, 147–152. (From the introduction) **89b:68083** 68Q45
- Kulk, R.** On a noncommutative approach to equilibrium states in the  $q$ -state Potts model. *Mark Kac Seminar on Probability and Physics. Syllabus* 1985–1987 (Amsterdam, 1985–1987), 32–34, *CWI Syllabi*, 17, Math. Centrum, Centrum Wisk. Inform., Amsterdam, 1988. (see **89c:60005**) **82A68**
- The global Markov property for equilibrium states which are determined by correlations in a strip. *Comm. Math. Phys.* 115 (1988), no. 2, 177–189. (B. S. Nakshatryan) **89g:60173** 60G60 (82A31)
- Markov and stability properties of equilibrium states for nearest-neighbor interactions. *Comm. Math. Phys.* 115 (1988), no. 4, 529–552. (Summary) **89j:82007** 82A05 (46L60, 82A68)
- Kulken, H. K.** A note on the wall singularity of a solid-liquid interface caused by a difference between the thermal conductivities of the solid and the liquid phases. *SIAM J. Appl. Math.* 48 (1988), no. 4, 921–924. (Summary) **89d:80015** 80A20
- Kuindzi, V. V.** (with Begovatov, E. A.; Saamova, T. S.; Strezhev, S. A.) Structure of a spectral representation formed by a diffraction lattice of echelette type. (Russian) *Issled. Prikl. Mat. No.* 14 (1987), 66–80. (M. Martinis) **89f:78021** 78A45
- Kuiper, Hendrik J.** On spurious numerical solutions for nonlinear eigenvalue problems. *Nonlinear Partial Differential Equations Conference* (Salt Lake City, UT, 1986). *Rocky Mountain J. Math.* 18 (1988), no. 2, 357–385. (Alan L. Andrew) **89k:65103** 65L15 (34B15, 34B25, 49D25, 58F14)
- Kuiper, Nicolaas H.** (with Meeks, W. H., III) The total curvature of a knotted torus. *J. Differential Geom.* 26 (1987), no. 3, 371–384. (T. Banchoff) **89c:53003** 53A04 (53C42, 57M25)
- Kuipers, L.** (with Shiue, Jau Shyong) On the  $L^p$ -discrepancy of certain sequences. *Fibonacci Quart.* 26 (1988), no. 2, 157–162. (Henri Faure) **89g:11067** 11K38
- Kuipers, M.** (with van den Horn, B. A.) Strength and stiffness of a reinforced flexible hose. *Appl. Sci. Res.* 45 (1988), no. 3, 251–281. (Not in MR) **73K15** (73K20)
- Kuipers, Theo A. F.** The logic of intentional explanation. *Comm. Cognition* 18 (1985), no. 1–2, 177–198. (Not in MR) **03B60**
- Kuk, Anthony Y. C.** Estimation of distribution functions and medians under sampling with unequal probabilities. *Biometrika* 75 (1988), no. 1, 97–103. (Not in MR) **62D05**
- Kukhaleishvili, R. E.** Some asymptotic properties of nonparametric estimates for a regression curve. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* 127 (1987), no. 2, 241–244. (Summary) **89b:62084** 62G05 (62E20)
- Kukharuk, N. M.** A priori estimates for the generalized derivatives of the solutions of second-order quasilinear elliptic equations. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 36, 59 pp. (Summary) **89c:35025** 35B45 (35Jxx)
- Kukhta, G. P.** Asymptotic behavior of the solution of the generalized heat equation. (Russian) *Dynamical systems*, No. 7 (Russian), 103–109, 160, "Vishcha Shkola", Kiev, 1988. (From the introduction) **89j:35127** 35R10 (35B40, 35K05)
- Kukhtenko, A. I.** Fragments from the history of the development of cybernetics. (Russian) *Ocherki Ist. Estestvozn. Tekhn. No.* 33 (1987), 15–30, 112. (Not in MR) **01A60**
- see also Complex control systems, **89a:93001**
- Kukin, G. P.** (with Bokut', L. A.) Undecidable algorithmic problems for semigroups, groups and rings. (Russian) *Algebra. Topology. Geometry*, Vol. 25 (Russian), 3–66, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1987. (O. V. Belegradek) **89a:20036** 20F10 (03D35, 16A99, 17B99, 20M05)
- Letter to the editors: "Algorithmic problems for solvable Lie algebras" [Algebra i Logika 17 (1978), no. 4, 402–415; MR 80h:17017]. (Russian) *Algebra i Logika* 26 (1987), no. 4, 522. (Editors) **89i:17009** 17B30
- Kuklewski, Julian** (with Garnarek, Zbigniew; Rudnicki, Konrad) Investigation of population distribution. II. (Polish. English summary) *Zeszyty Nauk. Wyz. Szkoły Ped. w Opolu Mat.* 25 (1987), 25–37. (Summary) **89g:85003** 85A35
- Kuklina, G. Ya.** ★ О равномерной сходимости схемы Шэффеттера для одномерного уравнения переноса носителей заряда в полупроводниковых приборах. (Russian) [Uniform convergence of a Scharfetter scheme for a one-dimensional equation of the transport of charge carriers in semiconductors] *Preprint*, 745, *Akad. Nauk SSSR Sibsk. Otdel. Vychisl. Tsentr, Novosibirsk*, 1987, 21 pp. (V. R. Ibragimov) **89b:65131** 65L10 (39A12, 78A55, 94C05)
- Kuksin, S. B.** Hamiltonian perturbations of infinite-dimensional linear systems with imaginary spectrum. (Russian) *Funktsional. Anal. i Prilozhen.* 21 (1987), no. 3, 22–37, 95. (E. Barvinke) **89a:34073** 34G20 (34C27, 34G10)
- Perturbation theory of conditionally periodic solutions of infinite-dimensional Hamiltonian systems and its applications to the Korteweg-de Vries equation. (Russian) *Mat. Sb. (N.S.)* 136(178) (1988), no. 3, 396–412, 431. (I. S. Krasil'shchik) **89m:58096** 58F07 (35B99, 35Q20)
- Kuku, I. V.** (with Ratsa, M. F.) Completeness with respect to implicit reducibility in the logic of the first Jaskowski matrix. (Russian) *Izv. Akad. Nauk Moldav. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 1988, no. 1, 23–28, 78. (Petr Jirků) **89k:03022** 03B50 (03B60)
- Kukudzhinov, V. N.** Numerical modeling of wave propagation in elastoplastic bodies taking into account finite deformations and fracture. (Russian) *Mechanics and scientific-technological progress*, Vol. 3 (Russian), 197–214, 271, "Nauka", Moscow, 1988. (see **89j:73002**) **73–08** (73D99, 73E50, 73G99, 73M15)
- Kukulev, G. Ya.** Some problems of controlling the inventory of a perishable product. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 12, 48–54; translation in *Avtomat. Remote Control* 48 (1987), no. 12, part 1, 1599–1604. (Summary) **89c:90125** 90B35
- (with Andrushevich, V. V.; Kveselava, A. D.) Collective behavior processes in problems of the distribution of a multidimensional resource. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 3, 62–70; translation in *Avtomat. Remote Control* 49 (1988), no. 3, part 1, 314–319. (Summary) **89f:90031** 90A16
- Kukulin, V. I.** (with Pomerantsev, V. N.) Description of many-particle scattering on the basis of the projection method. (Russian. English summary) *Teoret. Mat. Fiz.* 73 (1987), no. 3, 443–453. (H. Baumgärtel) **89b:81247** 81F10
- (with Vasil'ev, F. P.; Kaganov, B. G.; Kostomarov, D. P.) Application of the penalty function method for solving multiparticle quantum mechanics problems. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 10, 1520–1529, 1598. (Summary) **89j:81035** 81C05 (49D30)
- Kukush, A. G.** (with Dorogovtsev, A. Ya.; Ivasishen, S. D.) On the asymptotic behaviour of the linear stochastic heat equation solutions. *Probability theory and mathematical statistics*, Vol. I (Vilnius, 1985), 419–431, *VNU Sci. Press, Utrecht*, 1987. (From the text) **89g:60192** 60H15 (35K05, 35R60)
- (with Dorogovtsev, A. Ya.; Zerek, N.) Weak convergence to the normal distribution of an estimator for an infinite-dimensional parameter. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 37 (1987), 39–46, 135. (Summary) **89b:62095** 62J02 (62F12)
- Convergence with respect to a distribution of a normalized estimate for an infinite-dimensional regression parameter. (Russian. English summary) *Dokl. Akad. Nauk Ukrain.*

- SSR Ser. A 1988, no. 5, 12-15, 86. (Frantisek Rublik) **89i:62104** 62J02 (62F12)
- Rate of convergence of an estimate for nonlinear regression in an infinite-dimensional space in a model with dependent errors. (Russian) *Teor. Veroyatnost. i Mat. Statist.* No. 38 (1988), 76-81, 135. (A. Ya. Dorogovtsev) **89b:62096** 62J02 (62F12)
- (with Dorogovtsev, A. Ya.) Asymptotic behavior of the solution of the Cauchy problem for a stochastic equation of parabolic type. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 2, 162-169, 270; translation in *Ukrainian Math. J.* **40** (1988), no. 2, 136-142. (Wilfried Grecksch) **89e:60117** 60H15 (35R60)
- Kukushkin, N. S. see Aubin, Jean-Pierre, **89i:90001**
- Kukutsu, Naoya (with Yoshida, Norinobu; Kashiwa, Tatsuya; Fukai, Ichiro) Three-dimensional formulation of time-dependent wave propagation in a gyroanisotropic medium by Bergeron's method. *Wave Motion* **10** (1988), no. 6, 611-626. (Summary) **89j:78007** 78-08 (78A40)
- Kula, M. (with Szczepanik, L.; Szymiczek, K.) Quadratic form schemes and quaternionic schemes. *Fund. Math.* **130** (1988), no. 3, 181-190. (Bessie H. Kirkwood) **89i:11054** 11E81
- Kulacki, F. A. (with Rajen, G.) A boundary element analysis of natural convection in fluids and porous media. *Advanced boundary element methods* (San Antonio, Tex., 1987), 325-332, Springer, Berlin-New York, 1988. (Summary) **89c:76019** 76-08 (76S05)
- Kulagina, N. E. (with Akhmediev, N. N.; Eleonskii, V. M.) An example of a dynamical system connected with the nonlinear Schrödinger equation. (Russian) *Methods of qualitative theory of differential equations* (Russian), 30-35, 210-211, *Gor'kov. Gos. Univ., Gorki*, 1986. (From the text) **89g:58083** 58F07 (35Q20)
- (with Akhmediev, N. N.; Eleonskii, V. M.) First-order exact solutions of the nonlinear Schrödinger equation. (Russian. English summary) *Teor. Mat. Fiz.* **72** (1987), no. 2, 183-196. (V. G. Samoilenko) **89h:35275** 35Q20 (38F07)
- (with Eleonskii, V. M.; Silin, V. P.) Solitons: phase portrait, bifurcations. *Plasma theory and nonlinear and turbulent processes in physics*, Vol. 1, 2 (Kiev, 1987), 377-397, *World Sci. Publishing, Singapore*, 1988. (D. ter Haar) **89h:35286** 35Q20 (58G20)
- Kulagin, V. A. Algebraic independence of the values of a subclass of E-functions. (Russian) *Diophantine approximations, Part II* (Russian), 50-63, *Moskov. Gos. Univ., Moscow*, 1986. (John H. Loxton) **89c:11109** 11J85
- Kulagina, N. A. Modeling of phase transitions in the case of nonisothermal filtration of a compressible fluid. (Russian) *Dinamika Sploshn. Sredy* No. 81 (1987), 90-102, 153. (Summary) **89f:76080** 76T05 (35R35, 80A20)
- Kulakov, Yu. I. The theory of the dimension of physical quantities. I. (Russian) *Vychisl. Sistemy* No. 110 (1985), 52-88, 96. (Summary) **89j:00051** 00A73
- The theory of the dimension of physical quantities. II. (Russian) *Vychisl. Sistemy* No. 118 *Mashin. Anal. Slozhn. Struktur* (1986), 5-27, 151. (Summary) **89j:00052** 00A73
- Kulas, Jack (with Hintikka, Jaakko) Different uses of the definite article. *Comm. Cognition* **18** (1985), no. 1-2, 69-80. (Not in MR) 03B65
- Kulaš, Marija (with Stojmenović, I.) Parallel computation of Voronoi diagrams. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **16** (1986), no. 2, 163-172. (Not in MR) 68U05
- Kul'ba, A. V. (with Makarov, I. M.; Nazaretov, V. M.; Shvetsov, A. R.) Petri nets with multicolor markers. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 4, 34-40; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 6, 101-107, 205 (Russian). (Rüdiger Valk) **89k:68112** 68Q90 (68R10)
- Kulbacka, Elżbieta Sur l'ensemble des points où la fonction de deux variables est de classe  $C^\infty$ . (Russian and Polish summaries) [The set of points at which a bivariate function is of class  $C^\infty$ ] *Zeszyty Nauk. Politech. Łódź. Mat.* No. 20 (1988), 81-84. (Vazgan Avanian) **89j:26020** 26E10
- Kul'chitskaya, I. A. (with Gerasimov, B. P.; Mingaleev, G. S.; Pestryakova, G. A.) On construction of linear multistep methods for stiff and nonstiff ODE. *BAIL IV* (Novosibirsk, 1986), 299-304, *Boole Press Conf. Ser.*, 8, Boole, Dún Laoghaire, 1986. (Peter Alföld) **89b:65171** 65L05
- see also Dekker, K., **89c:65001**
- Kul'chitskii, V. L. (with Kornilov, I. E.; Noga, Yu. V.) ★ Численные методы исследования волновых полей в задачах дифракции и излучения. (Russian) [Numerical methods for the investigation of wave fields in problems of diffraction and radiation] "Naukova Dumka", Kiev, 1988. 76 pp. ISBN 5-12-009337-X (G. W. Hedstrom) **89m:65109** 65P05 (65R20, 78A45)
- Kulenović, M. R. (with Ladas, G.) Linearized oscillations in population dynamics. *Bull. Math. Biol.* **49** (1987), no. 5, 615-627. (Lan-Sun Chen) **89c:92066** 92A15
- (with Ladas, G.; Sficas, Y. G.) Oscillations of second order linear delay differential equations. *Appl. Anal.* **27** (1988), no. 1-3, 109-123. (D. Izyumova) **89g:34107** 34K15 (34C10)
- (with Grammatikopoulos, M. K.) Some comparison and oscillation results for first-order differential equations and inequalities with a deviating argument. *J. Math. Anal. Appl.* **131** (1988), no. 1, 67-84. (Józef Kalinowski) **89c:34118** 34K15 (34A40, 34K25)
- (with Ladas, G.) Oscillations of the sunflower equation. *Quart. Appl. Math.* **46** (1988), no. 1, 23-28. (J. Jarník) **89c:34078** 34K15 (34C15)
- Kuleshov, A. A. (with Buzar, Sh.) Local solvability of pseudodifferential equations of constant strength. I. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 5, 831-837, 917-918; translation in *Differential Equations* **24** (1988), no. 5, 548-553. (Xue Bo Luo) **89h:35361a** 35S05 (35A07)
- (with Buzar, Sh.) Local solvability of pseudodifferential equations of constant strength. II. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 6, 1005-1011, 1100; translation in *Differential Equations* **24** (1988), no. 6, 663-668. (Xue Bo Luo) **89h:35361b** 35S05 (35A07)
- Kuleshov, S. A. Algebraic generators of the group of automorphisms of a polynomial ring over a finitely generated algebra. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 6, 62-64. (Cornelius Greither) **89c:13026** 13F20 (14L25)
- Kuleshova, I. F. (with Monastyrnyi, P. I.) Numerical solution of problems with a boundary layer. (Russian) *Vestsi Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* **1988**, no. 5, 115. (Not in MR) 65L10
- Kuliev, G. K. (with Bainov, D. D.) Strong stability of impulsive systems. *Internat. J. Theoret. Phys.* **27** (1988), no. 6, 745-755. (O. S. Chernikova) **89i:93080** 93C57 (34A40, 34D20)
- (with Bainov, D. D.) Second method of Lyapunov and comparison principle for systems with impulse effect. *J. Comput. Appl. Math.* **23** (1988), no. 3, 305-321. (O. S. Chernikova) **89k:93144** 93C57 (34A40, 34C11, 34D20)
- Kulich, I. (with Kowalski, O.) Generalized symmetric submanifolds of Euclidean spaces. *Math. Ann.* **277** (1987), no. 1, 67-78. (Y. Tashiro) **89c:53034** 53C35 (53C42)
- Kulich, James The action of the Dickson invariants on length  $n$  Steenrod operations. *Canad. Math. Bull.* **30** (1987), no. 4, 450-454. (David Handel) **89b:55019** 55S10
- Kuliev, N. G. (with Gadzhiev, G. A.) Approximation of functions of several variables by eigenfunctions of multiparameter spectral problems. (Russian) *Approximation by generalized analytic and spherical functions* (Russian), 93-100, *Azerbaijdzhan. Gos. Univ., Baku*, 1983. (see **89b:41001**) 41A30 (34B25)
- Kuliev, T. Yu. Numerical range of a weighted shift operator with periodic coefficients in the space  $l^p$ . (Russian) *Spectral theory of operators and its applications*, No. 8 (Russian), 135-149, "Elm", Baku, 1987. (S. Suljagić) **89b:47040** 47B37 (47A12)
- Kulieva, G. Z. (with Dovlatova, L. I.) The use of historical-mathematical material in the teaching of a course in analytic geometry. (Russian) *Studies in geometry* (Russian), 61-75, *Azerbaijdzhan. Gos. Univ., Baku*, 1987. (B. Rosenfeld) **89m:01005** 01A05 (00A25, 51-03)
- Kulik, A. N. An estimate for the remainder term of the deviation of Fourier sums on classes of continuously differentiable functions. (Russian) *Investigations in the theory of the approximation of functions* (Russian), 43-49, 122, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (S. Aljančić) **89e:42005** 42A10
- Kulik, A. S. (with Salyga, V. I.; Sirodzh, I. B.; Obruchev, V. L.) Synthesis of fault-tolerant dynamic control systems with fault identification. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **18** (1989), no. 1, 43-54. (Summary) **89m:90078** 90B25 (93E12)
- Kulik, N. A. (with Zrazhevskaya, G. M.) Special continuous bendings of closed surfaces of revolution of sign-variable curvature. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 29 (1987), 17-22, 117. (Summary) **89d:53012** 53A05
- Kulik, N. I. (with Bogomolova, I. A.; Glasko, V. B.; Kal'ner, V. D.; Kondorskaya, E. E.; Tikhonov, A. N.; Yurasov, S. A.) Inverse problems associated with the control of diffusional and thermal processes. *J. Engrg. Phys.* **53** (1987), no. 5, 1329-1335 (1988); translated from *Inzh.-Fiz. Zh.* **53** (1987), no. 5, 835-842 (Russian). (Summary) **89d:80007** 80A20 (93C20)
- Kulik, V. L. Three-block splittability of linear extensions of dynamical systems on a torus. (Russian) *Some problems in the theory of asymptotic methods in nonlinear mechanics* (Russian), 124-130, viii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1986. (Summary) **89b:58172** 58F19 (34C40)
- Lyapunov sign-variable functions and the preservation of invariant tori under perturbations. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 1, 45-52, 134. (Summary) **89c:34109** 34C40 (34C15, 34C27, 58F10, 58F30)
- Bounded solutions of systems of linear differential equations. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 6, 727-732, 814. (O. A. Kastritsa) **89b:34081** 34C11 (34A30)
- Kulikov, A. A. Fundamental solutions of differential equations containing a Bessel operator. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 2, 299-305, 365-366; translation in *Differential Equations* **24** (1988), no. 2, 228-232. (Yu. V. Egorov) **89c:35003** 35A08 (35G05)
- Kulikov, S. V. (with Solov'eva, M. E.) Efficiency of statistical modeling of a shock wave in a gas mixture. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 12, 1867-1873, 1919. (Summary) **89j:76065** 76L05 (76-04)
- Kulikovskii, A. G. Strong discontinuities in flows of continua and their structure. (Russian) Probability theory, function theory, mechanics (Russian). *Trudy Mat. Inst. Steklov.* **182** (1988), 261-291. (From the text) **89k:76001** 76-02 (73-02, 73D05, 73D40, 76L05, 76W05, 80A25)
- Kulinich, A. V. An iterative method for solving systems of inequalities. (Russian) *Some problems in differential equations and discrete mathematics* (Russian), 125-130, *Novosibirsk. Gos. Univ., Novosibirsk*, 1986. (R. Tichatschke) **89h:65104** EA 89m 65K05 (49D10)
- Kulinich, G. L. (with Almazov, M.) On the asymptotic behavior of the unstable solution of an inhomogeneous stochastic diffusion equation. (Russian) *Theory of random processes*, No. 15 (Russian), 3-10, 117, "Naukova Dumka", Kiev, 1987. (G. A. Sokhadze) **89c:60066** 60H10
- Kulisch, U. (with Kirchner, R.) Schaltungsanordnung und Verfahren zur schnellen Berechnung von Summen und Skalarprodukten von Gleitkommazahlen mit maximaler Genauigkeit mittels Pipelinetechnik. [Circuit diagrams and methods for fast computation of sums and scalar products of floating point numbers with maximal accuracy via pipeline technique] *Beiträge zur angewandten Mathematik und Statistik*, 139-177, *Hanser, Munich*, 1987. (see **89i:00018**) 68Q25 (68Q10)
- The development of computer arithmetic. *Discretization in differential equations and enclosures* (Weissig, 1986), 251-255, *Math. Res.*, 36, *Akademie-Verlag, Berlin*, 1987. (see **89a:65005**) 01A60 (65G10)
- (with Kirchner, R.) Fast and accurate computation of sums and inner products. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 3-28, *North-Holland, Amsterdam-New York*, 1988. (Summary) **89b:65235** 65W05 (65G10)
- Kulish, P. P. Integrable models in field theory, and simple Lie algebras and Lie superalgebras. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Järjala, 1985), 412-417, "Nauka", Moscow, 1986. (see **89d:81001**) 58F07 (17B70, 81E99)
- (with Sokolov, M. A.) On scattering theory in the massless Lee model. (Russian. English summary) *Teor. Mat. Fiz.* **73** (1987), no. 1, 149-153. (Hagen Neidhardt) **89h:81094** 81E08 (81F20, 81G05)
- (with Lipovskii, V. D.) Hamiltonian interpretation of the inverse problem method for the Davey-Stewartson equation. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **161** (1987), *Vopr. Kvant. Teor. Polya i Statist. Fiz.* **7**, 54-71, 176, 179. (Piotr Biler) **89c:35137** 35Q20 (35R30, 58F37)
- (with Lipovskii, V. D.; Shirokov, A. V.) Scattering data for the nonstationary Dirac equation. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **164** (1987), *Differentsial'naya Geom. Gruppy Li i Mekh.* **IX**, 169-175, 199. (Summary) **89d:35162** 35Q20 (35R30)
- (with Lipovskii, V. D.) Hamiltonian structure of the Davey-Stewartson equation and Poisson brackets of scattering data. *Phys. Lett. A* **127** (1988), no. 8-9, 413-417. (Summary) **89c:58038** 58F05 (35Q20)
- see also Gaudin, Michel, **89c:82001**



- Kulkarni, B. D. Exploiting the nature of numbers. An arithmetic-analytical approach to solutions of problems in basic and applied sciences. *Appl. Math. Lett.* 1 (1988), no. 3, 247-250. (Summary) **89h:01011** 01A32
- Kulkarni, Devadatta M. Analysis of straightening formula. *Internat. J. Math. Math. Sci.* 11 (1988), no. 2, 243-249. (J. Désarménien) **89i:05025** 05A15 (15A72)
- Kulkarni, P. M. Large sample estimation and prediction for explosive growth curve models. *Comm. Statist. Theory Methods* 16 (1987), no. 9, 2677-2696. (Summary) **89g:62151** 62M10
- (with Heyde, C. C.) Optimal robust estimation for discrete time stochastic processes. *Stochastic Process. Appl.* 26 (1987), no. 2, 267-276. (W. A. O'N. Waugh) **89h:62156** 62M99 (62F35)
- Kulkarni, R. V. see Laporte, Gilbert, (Not in MR)
- Kulkarni, Ravi (with Chellathurai, V.; Dadhich, Naresh) The effective mass of the Kerr spacetime. *Classical Quantum Gravity* 5 (1988), no. 11, 1443-1445. (Jorge A. Pullin) **89m:83039** 83C40 (83C15)
- see also Conformal geometry, **89g:53002**
- Kulkarni, Ravindra D. D'Alembert's functional equation on products of topological groups. *Indian J. Pure Appl. Math.* 19 (1988), no. 6, 539-548. (Branka P. Alimpić) **89g:39016** 39B70 (22A25)
- Kulkarni, S. H. (with Srinivasan, N.) An analogue of Hoffman-Wermer theorem for a real function algebra. *Indian J. Pure Appl. Math.* 19 (1988), no. 2, 154-166. (R. H. Cox) **89i:46059a** 46J10
- (with Srinivasan, N.) Restriction algebras of a real function algebra. *J. Math. Phys. Sci.* 22 (1988), no. 2, 209-223. (M. Abel) **89i:46067** 46J10
- (with Srinivasan, N.) Erratum: "An analogue of Hoffman-Wermer theorem for a real function algebra". *Indian J. Pure Appl. Math.* 20 (1989), no. 1, 98. (R. H. Cox) **89i:46059b** 46J10
- Kulkarni, V. G. (with Adlakha, V. G.) Markov and Markov-regenerative PERT networks. *Oper. Res.* 34 (1986), no. 5, 769-781 (1987). (J. Cerný) **89a:90060** 90B15 (60J27)
- (with Nicola, V. F.; Trivedi, K. S.) The completion time of a job on multimode systems. *Adv. in Appl. Probab.* 19 (1987), no. 4, 932-954. (M. Dal Cin) **89a:60223** 60K25 (68M20, 90B22)
- Some limit theorems for cumulative processes with applications to sojourn times. *Oper. Res. Lett.* 6 (1987), no. 2, 83-89. (Summary) **89e:60172** 60K05 (60F05)
- Minimal spanning trees in undirected networks with exponentially distributed arc weights. *Networks* 18 (1988), no. 2, 111-124. (Ding Zhu Du) **89e:05072** 05C05 (90B15)
- Kulkarni, V. N. (with Kumbi, V. K.) On the radius of univalence and starlikeness for certain analytic functions. *Math. Student* 47 (1979), no. 2-4, 325-328 (1985). (Introduction) **89h:30020** 30C45
- Kullback, J. H. (with Kullback, S.; Keegle, J. C.) ★ Topics in statistical information theory. Lecture Notes in Statistics, 42. Springer-Verlag, Berlin-New York, 1987. x+158 pp. ISBN 3-540-96512-2 (L. Vajda) **89h:62015** 62B10 (62F12, 62Mxx, 94A15)
- Kullback, S. (with Keegle, J. C.; Kullback, J. H.) ★ Topics in statistical information theory. Lecture Notes in Statistics, 42. Springer-Verlag, Berlin-New York, 1987. x+158 pp. ISBN 3-540-96512-2 (L. Vajda) **89h:62015** 62B10 (62F12, 62Mxx, 94A15)
- Kulmatov, A. K. On the finiteness of the number of classes of primitive quadratic forms of Liouville type with an odd number of variables. (Russian) *Dokl. Akad. Nauk UzSSR* 1988, no. 1, 13-14. (From the text) **89i:11051** 11E41 (11E45)
- Kulperger, R. J. Central limit theorem with three moment conditions: a truncation method example. *Appl. Math. Notes* 12 (1987), no. 3-4, 44-50. (Sujit K. Basu) **89g:60079** 60F05
- A Monte Carlo approximation of the distributions of the maximum of various Brownian bridges. *Comm. Statist. Theory Methods* 17 (1988), no. 12, 4389-4397. (Not in MR) **62M99**
- Külshammer, Burkhard see Carter, R. W., **89a:20046**
- Kultae, T. Ch. (with Bykov, Ya. V.) Asymptotic behavior of the solutions of a class of partial differential equations of second order with respect to the space variable and of higher order with respect to the time variable with retarded argument. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 204-211, 342, "Ilim", Frunze, 1987. (Summary) **89g:35069** 35B05 (35R10)
- Oscillability of the solutions of some systems of partial differential equations with retarded argument. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 225-231, 342-343, "Ilim", Frunze, 1987. (Summary) **89g:35010** 35B05 (35R10)
- Kultze, R. (with Würzler, U.) The algebra  $k(n), (k(n))$  for the prime 2. *Arch. Math. (Basel)* 51 (1988), no. 2, 141-146. (W. Stephen Wilson) **89i:55037** 55S25 (55N20, 57T05)
- Kulyabko, P. P. The hierarchy principle in the concept of control spaces. (Russian) *Models and systems of information processing*, No. 7 (Russian), 11-18, 107, "Vyscha Shkola", Kiev, 1988. (see **89i:60011**) **68Q10** (68Q50)
- Kulyuch, Ya. P. (with Gordienko, V. I.; Zayats, V. M.) An electromagnetic field of dipole radiator in a slowly moving conducting medium. (Russian) *Mat. Metody i Fiz. Mekh. Polya* No. 28 (1988), 31-35, 105. (Summary) **89j:78013** 78A25
- Kumagai, Sadatoshi Modelling and analysis of distributed systems: a net theoretic approach. Modelling and adaptive control (Sopron, 1986), 175-188, *Lecture Notes in Control and Inform. Sci.*, 105, Springer, Berlin-New York, 1988. (From the introduction) **89i:93005** 93A15 (00A71, 68Q90, 93C20, 94C15)
- Kumagai, Yuki Fundamental considerations about higher-order correlated associative memory. (Japanese. English summary) *Mem. Muroran Inst. Tech.* No. 37 (1987), 53-79. (Summary) **89a:92024** 92A09
- Kumamoto, Hiroimitsu (with Tanaka, Tsunehiko; Inoue, Koichi) A coverage Monte Carlo method for reliability quantification. System modelling and optimization (Tokyo, 1987), 406-415, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (see **89f:00029**) **90B25**
- Kumar, Ajay Beurling algebras and structure of locally compact groups. *Modern analysis and its applications* (New Delhi, 1983), 229-240, Prentice-Hall of India, New Delhi, 1986. (Y. Domar) **89d:22003** 22D25 (22D20, 43A45)
- Kumar, Ajit Soliton propagation in optical fibres. *Solitons (Tiruchirappalli, 1987)*, 328-342, Springer Ser. Nonlinear Dynamics, Springer, Berlin-New York, 1988. (see **89b:00027**) **78A60**
- Kumar, Alak<sup>2</sup> (with Chang, Darwin) Uniqueness of 10-dimensional superstring models in the fermionic construction. *Modern Phys. Lett. A* 3 (1988), no. 1, 81-90. (Helmut Rumpf) **89g:81070** 81E99 (81E30, 83E30)
- (with Chang, Darwin) Gauge symmetry breaking by Thirring interaction in fermionic construction of superstring models. *Phys. Lett. B* 211 (1988), no. 1-2, 76-80. (B. Spence) **89i:81105** 81E99 (81E30, 81E40)
- Kumar, Anil<sup>1</sup> (with Pandey, H. B.) Anti-invariant submanifold of almost paracontact manifold. *Progr. Math. (Varanasi)* 21 (1987), no. 1, 41-47. (Ion Mihai) **89g:53057** 53C15 (53C40)
- (with Parida, J.; Sen, Ashima) A linear complementarity problem involving a subgradient. *Bull. Austral. Math. Soc.* 37 (1988), no. 3, 345-351. (Klaus Tammer) **89g:90224** 90C33 (90C25)
- Kumar, Ashok<sup>3</sup> (with Hooda, D. S.) The mean and variance of an MLE of generalized "useful" information. *Math. Student* 49 (1981), no. 2-4, 263-269 (1985). (Not in MR) **62H99**
- (with Tuteja, R. K.; Singhal, L. C.) Characterization of  $\alpha$ -entropy with preference. *Kybernetika (Prague)* 24 (1988), no. 1, 54-60. (N. S. Kambo) **89d:94031** 94A17
- Kumar, Ashvini see Ashvinikumar
- Kumar, Awdhesh Projective affine motion in a  $PRF_n$ -space. V. (Turkish summary) *Istanbul Üniv. Fen Fak. Mecm. Ser. A* 43 (1978), 49-61 (1987). (H. Rund) **89d:53051** 53B40
- Projective curvature collineation and special projective motion in a Finsler space. (Turkish summary) *Istanbul Üniv. Fen Fak. Mecm. Ser. A* 43 (1978), 63-67 (1987). (Sándor Bácsó) **89f:53038** 53B40
- Projective affine motion in  $PRF_n$ -space. (Turkish summary) *Istanbul Üniv. Fen Fak. Mecm. Ser. A* 43 (1978), 131-138 (1987). (S. Watanabe) **89g:53032** 53B40
- Some theorems on projective recurrence vector in Finsler space. (Turkish summary) *Istanbul Üniv. Fen Fak. Mecm. Ser. A* 43 (1978), 143-150 (1987). (Y. Tashiro) **89g:53033** 53B40
- On special projective motion in an  $SPR F_n$ -space. (Turkish summary) *Istanbul Üniv. Fen Fak. Mecm. Ser. A* 43 (1978), 173-180 (1987). (S. Watanabe) **89f:53036** 53B40
- Some theorems on affine motion in a recurrent Finsler space. (Turkish summary) *Istanbul Üniv. Fen Fak. Mecm. Ser. A* 43 (1978), 181-188 (1987). (S. Watanabe) **89f:53037** 53B40
- On a special  $BPR F_n$ -space. (Turkish summary) *Istanbul Üniv. Fen Fak. Mecm. Ser. A* 43 (1978), 189-195 (1987). (Hiroshi Yasuda) **89h:53064** 53B40
- (with Pande, H. D.; Dubey, V. J.) Projective curvature collineation in symmetric Finsler space. (Turkish summary) *Istanbul Üniv. Fen Fak. Mecm. Ser. A* 43 (1978), 197-203 (1987). (T. N. Srivastava) **89h:53065** 53B40
- Kumar, B. V. K. Vijaya (with Montgomery, Bruce L.) On decoding rules to minimize the probability of information bit errors. *IEEE Trans. Inform. Theory* 34 (1988), no. 4, 880-881. (Summary) **89i:94044** 94B35 (94B05)
- (with Bahri, Z.) Generalized synthetic discriminant functions. *J. Opt. Soc. Amer. A* 5 (1988), no. 4, 562-571. (Summary) **89h:94008** 94A13
- Kumar, C. Nagaraj (with Khare, Avinash) Q-ball solutions in 1 + 1 dimensions for a class of SO(2)-invariant potentials. *J. Phys. A* 20 (1987), no. 18, L1219-L1222. (Yisong Yang) **89h:81132** 81E13 (35Q20)
- Kumar, Deepak (with Kamlesh) Mode condensation in a hierarchical system. *Phys. Rev. Lett.* 57 (1986), no. 24, 3101-3104. (Summary) **89a:82046** 82A68 (82A25)
- prasanna Kumar, K. N. see Prasanna Kumar, K. N.
- Kumar, K. Ravi (with Sudharshan, D.) Defensive marketing strategies: an equilibrium analysis based on decoupled response function models. *Management Sci.* 34 (1988), no. 7, 805-815. (Summary) **89f:90027** 90A14
- mohan Kumar, N. see Mohan Kumar, N.
- Kumar, Narendra<sup>1</sup> Quantum Hall effect. *Recent developments in theoretical physics (Kottayam, 1986)*, 21-32, World Sci. Publishing, Singapore, 1987. (see **89a:81004**) **81H20**
- (with Simon, Rajiah) A note on the Berry phase for systems having one degree of freedom. *J. Phys. A* 21 (1988), no. 7, 1725-1727. (Summary) **89g:81030** 81C99 (58F05)
- (with Mello, Pier A.; Pereyra, Pedro) A soluble random-matrix model for relaxation in quantum systems. *J. Statist. Phys.* 51 (1988), no. 1-2, 77-94. (Summary) **89d:82034** 82A15
- Kumar, Narendra<sup>2</sup> (with Mittal, M. L.; Prasad, Govind) On multipliers for the absolute matrix summability. *Indian J. Pure Appl. Math.* 19 (1988), no. 2, 183-193. (Prem Chandra) **89d:42016** 42A28 (40C05, 40F05, 42A45)
- Kumar, Naresh On the  $(p, q)$ -order and  $(p, q)$ -type of entire Dirichlet series. (Turkish summary) *Istanbul Tek. Üniv. Bil.* 38 (1985), no. 2, 295-302. (O. P. Juneja) **89a:30025** 30D15 (30B50)
- (with Srivastava, G. S.) On the generalized means of an entire Dirichlet series of index pair  $(p, q)$ . *J. Indian Math. Soc. (N.S.)* 49 (1985), no. 1-2, 95-101 (1987). (O. P. Juneja) **89i:30031** 30D15 (30B50)
- (with Srivastava, G. S.) On  $(p, q)$ -type and lower  $(p, q)$ -type of entire functions. *J. Orissa Math. Soc.* 4 (1985), no. 1, 53-60. (Not in MR) **30D20**
- (with Srivastava, G. S.) On the proximate order of an entire function with index pair  $(p, q)$ . *Demonstratio Math.* 21 (1988), no. 1, 1-10. (O. P. Juneja) **89h:30044** 30D15
- Kumar, P. R. Recent advances in the theory of stochastic adaptive control. *Stochastic differential systems, stochastic control theory and applications* (Minneapolis, Minn., 1986), 241-254, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (Krzysztof Malinowski) **89d:93119** 93E20 (93C40)
- (with Bielecki, T.) Optimality of zero-inventory policies for unreliable manufacturing systems. *Oper. Res.* 36 (1988), no. 4, 532-541. (Summary) **89f:90041** 90B05
- (with Perkins, James R.) Stable, distributed, real-time scheduling of flexible manufacturing/assembly/disassembly systems. *IEEE Trans. Automat. Control* 34 (1989), no. 2, 139-148. (Not in MR) **90B35**
- Kumar, P. Vijay Frequency-hopping code sequence designs having large linear span. *IEEE Trans. Inform. Theory* 34 (1988), no. 1, 146-151. (Not in MR) **94A15** (94A14)
- Kumar, Pranesh (with Ahuja, D. L.) On estimating regression coefficient unbiasedly. *Cahiers Centre Etudes Rech. Opér.* 30 (1988), no. 1, 69-72. (Not in MR) **62D05**
- Kumar, R. David (with Viswanath, K.) Local expression of Hessian structures and dissections on manifolds. *J. Ramanujan Math. Soc.* 2 (1987), no. 2, 173-184. (J. J. Etayo) **89g:53049** 53C05
- Kumar, Rajive<sup>1</sup> (with Singh, Bani) Brachistochrone problem in nonuniform gravity. *Indian J. Pure Appl. Math.* 19 (1988), no. 6, 575-585. (H. W. Guggenheimer) **89k:49001** 49A05 (01A45, 51N20)

- Kumar, Rajive<sup>2</sup>** (with Jain, Rajinder Kumar) A sixth-order modification of the Stiefel-Bettis method for nonlinearly damped oscillators. *Comput. Methods Appl. Mech. Engrg.* 72 (1989), no. 2, 187-193. (Summary) **89m:65068** 65L05 (70-08, 70K40)
- Kumar, Rajneesh** (with Chadha, T. K.) Lamb's plane problem in micropolar elastic half-space with stretch. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* 34 (1986), no. 1-2, 59-72. (Summary) **89d:73003** 73B25 (73D99)
- (with Chadha, T. K.; Debnath, Lokenath) Corrigendum: "Lamb's plane problem in a thermoelastic micropolar medium with stretch" [*Internat. J. Math. Math. Sci.* 10 (1987), no. 1, 187-198; MR 87m:73070]. *Internat. J. Math. Math. Sci.* 11 (1988), no. 4, 768. (Editors) **89f:73074** 73U05
- Kumar, Rohtash** Completion of the locally convex space and differentiable. *Math. Student* 49 (1981), no. 2-4, 276-280 (1985). (Not in MR) **46Axx**
- Kumar, S. Kiran** (with Pandu Rangan, C.) A linear space algorithm for the LCS problem. *Acta Inform.* 24 (1987), no. 3, 353-362. (Jean-Claude Spehner) **89c:68044** 68Q20 (68Q25)
- Kumar, Sampath** (with Padmanabhan, K. S.) On a subclass of Loewner chains. *J. Math. Phys. Sci.* 21 (1987), no. 6, 653-664. (D. A. Brannan) **89g:30025** 30C45
- Kumar, Shrawan** Extension of the category  $\mathcal{P}^{\#}$  and a vanishing theorem for the Ext functor for Kac-Moody algebras. *J. Algebra* 108 (1987), no. 2, 472-491. (L. Santharoubane [Zbl 625:17009]) **89h:17038** 17B67 (17B10, 17B56)
- Proof of the Parthasarathy-Ranga Rao-Varadarajan conjecture. *Invent. Math.* 93 (1988), no. 1, 117-130. (Brian Boe) **89j:17009** 17B10 (22E46)
- Kumar, Sunil** (with Benjwal, M. P.; Joshi, D. C.) Hamiltonian formulation for the Yang-Mills fields associated with electric and magnetic charges in the Coulomb gauge. *Acta Phys. Polon. B* 18 (1987), no. 12, 1077-1086. (Yisong Yang) **89b:81117** 81E13 (53C80)
- (with Prasad, Rakesh; Benjwal, M. P.; Joshi, D. C.) Classical Yang-Mills theory in presence of extended electric and magnetic sources. *Acta Phys. Polon. B* 18 (1987), no. 12, 1087-1097. (Yisong Yang) **89b:81133** 81E13
- Superconvergence of a collocation-type method for simple turning points of Hammerstein equations. *Math. Comp.* 50 (1988), no. 182, 385-398. (P. M. Anselone) **89c:65139** 65R20 (45G10)
- A discrete collocation-type method for Hammerstein equations. *SIAM J. Numer. Anal.* 25 (1988), no. 2, 328-341. (T. Sasakawa) **89e:65152** 65R20
- Kumar, T. K.** (with Kadekodi, G. K.; Sengupta, Jati K.) The scientific work of Gerhard Tintner. *Econometrics of planning and efficiency*, 3-22, *Adv. Stud. Theoret. Appl. Econometrics*, 11, Kluwer Acad. Publ., Dordrecht, 1988. (Editors) **89d:01061** 01A70
- Kumar, Uma** (with Kapur, J. N.; Kumar, Vinod<sup>2</sup>) A measure of mutual divergence among a number of probability distributions. *Internat. J. Math. Math. Sci.* 10 (1987), no. 3, 597-607. (J. Aczél) **89d:94030** 94A17 (26D15, 90C39, 90C50)
- (with Kumar, Vinod<sup>2</sup>) Queue length distributions of the M/G/1 queueing system: some information theoretic approximations. *Internat. J. Management Systems* 4 (1988), no. 2, 99-111. (Summary) **89k:90068** 90B22 (60K25)
- Krishna Kumar, V.** see Krishna Kumar, V.
- Kumar, V. Abhai** (with Thangaraj, D.; Dattatreya, C.) Dual extremum principles for a class of electrostatic field interface problems. *Internat. J. Electron.* 66 (1989), no. 1, 139-158. (Summary) **89k:78009** 78A30
- prasanna Kumar, V. K.** see Prasanna Kumar, V. K.
- Kumar, Vinod<sup>2</sup>** (with Kapur, J. N.; Kumar, Uma) A measure of mutual divergence among a number of probability distributions. *Internat. J. Math. Math. Sci.* 10 (1987), no. 3, 597-607. (J. Aczél) **89d:94030** 94A17 (26D15, 90C39, 90C50)
- (with Kumar, Uma) Queue length distributions of the M/G/1 queueing system: some information theoretic approximations. *Internat. J. Management Systems* 4 (1988), no. 2, 99-111. (Summary) **89k:90068** 90B22 (60K25)
- Kumari, K.** (with Vasudeva, H. L.) On the functional equation  $S(x+y) + S(x-y) = 2S(x)[1 - 2S^2(y/2)]$ . *Bull. Calcutta Math. Soc.* 80 (1988), no. 3, 167-171. (József Kalinowski) **89i:39010** 39B10 (39B70)
- (with Singh, Harshinder; Vasudeva, H. L.) On the operator functional equation  $S(t+s) + S(t-s) = 2S(t)[1 - 2S^2(s/2)]$ . (Serbo-Croatian summary) *Glas. Mat. Ser. III* 23 (43) (1988), no. 1, 45-71. (S. Kurepa) **89i:39019** 39B70 (47A62, 47D05)
- Kumari, Savita** (with Singhal, J. P.) On inverse series relations. *Bull. Inst. Math. Acad. Sinica* 15 (1987), no. 1, 81-87. (Rekha Srivastava) **89c:33023** 33A65 (33A30)
- Kumari, Suresh** (with Ram, Babu) On the integral modulus of continuity of Fourier series. *J. Austral. Math. Soc. Ser. A* 44 (1988), no. 2, 151-158. (Summary) **89k:42008** 42A32
- sunanda Kumari, V. M.** see Sunanda Kumari, V. M.
- Kumar Tamuli, Binoy** (with Chowdhury, Khanindra Chandra) Goldie near rings. *Bull. Calcutta Math. Soc.* 80 (1988), no. 4, 261-269. (J. R. Clay) **89m:16076** 16A76
- Kumazawa, Yoshiki** A note on an estimator of life expectancy with random censorship. *Biometrika* 74 (1987), no. 3, 655-658. (B. L. S. Prakasa Rao) **89a:62100** 62G05
- Kumbi, V. K.** (with Kulkarni, V. N.) On the radius of univalence and starlikeness for certain analytic functions. *Math. Student* 47 (1979), no. 2-4, 325-328 (1985). (Introduction) **89h:30020** 30C45
- Kumel, Sukeyuki** (with Bluman, G. W.) Exact solutions for wave equations of two-layered media with smooth transition. *J. Math. Phys.* 29 (1988), no. 1, 86-96. (A. S. Alekseev) **89g:35061** 35L05 (35C05, 35R30)
- (with Bluman, G. W.; Reid, Gregory J.) New classes of symmetries for partial differential equations. *J. Math. Phys.* 29 (1988), no. 4, 806-811. (Pierre-Louis Lions) **89i:35003a** 35A30 (35L65, 35Q20, 58G35)
- (with Bluman, G. W.; Reid, Gregory J.) Erratum: "New classes of symmetries for partial differential equations". *J. Math. Phys.* 29 (1988), no. 10, 2320. (Pierre-Louis Lions) **89i:35003b** 35A30 (35L65, 35Q20, 58G35)
- Kumičková, Galina** Chomsky hierarchy and communication complexity hierarchy. Proceedings of the Fifth International Meeting of Young Computer Scientists (Smolenice Castle, 1988). *Tanulmányok—MTA Széchenyi. Automat. Kutató Int. Budapest* No. 208 (1988), 179-186. (see **89g:68002**) 68Q35 (68Q45)
- Kumjian, A.** An involutive automorphism of the Bunce-Deddens algebra. *C. R. Math. Rep. Acad. Sci. Canada* 10 (1988), no. 5, 217-218. (J. W. Bunce) **89j:46064** 46L05 (46L80)
- Kumlin, P.** A note on existence of global classical solutions to nonlinear wave equations. *Ark. Mat.* 26 (1988), no. 1, 145-153. (Paul L. Davis) **89h:35214** 35L70
- A note on maximal rate of decay for solutions to some semilinear wave equations. *Math. Z.* 197 (1988), no. 4, 465-481. (Takashi Narazaki) **89d:35024** 35B40 (35L70)
- Kummer, Bernd** Linearly and nonlinearly perturbed optimization problems in finite dimension. *Parametric optimization and related topics* (Plauze, 1985), 249-267, *Math. Res.*, 35, Akademie-Verlag, Berlin, 1987. (D. Klatte) **89d:90214** 90C31 (46N05, 90C30)
- Newton's method for nondifferentiable functions. *Advances in mathematical optimization*, 114-125, *Math. Res.*, 45, Akademie-Verlag, Berlin, 1988. (Robert W. Owens) **89h:90201** 90C30 (49D15, 65H05, 90C48)
- Ein Zugang zur quantitativen Stabilität in der nichtlinearen Optimierung: Variation von Kakutani-Abbildungen. [An approach to quantitative stability in nonlinear optimization: variation of Kakutani mappings] *Arbeiten zur mathematischen Optimierung und zu verwandten Gebieten*, 104-112, *Seminarberichte*, 94, Humboldt Univ., Berlin, 1988. (C. P. Orthlieb) **89f:90166** 90C31 (65K05)
- see also *Advances in mathematical optimization*, **89b:90117**
- Kummer, E. E.** see Pieper, Herbert, **89j:01063**
- Kummer, H.** (with McLean, R. G.) Representations of the Banach algebra  $l^1(S)$ . *Semigroup Forum* 37 (1988), no. 1, 119-122. (John Duncan) **89e:46062** 46K10
- Kummer, Martin P.** (with Gomp, Raguramaiah) Nonlinearly coupled oscillators in quantum mechanics: a normal form approach. *J. Math. Phys.* 29 (1988), no. 6, 1405-1416. (Edward R. Vrsay) **89k:81033** 81C12 (58F05, 58F30)
- Kummer, Martin Walter** Negative results about the length problem. *Computation theory and logic*, 237-248, *Lecture Notes in Comput. Sci.*, 270, Springer, Berlin-New York, 1987. (A. M. Dawes) **89a:03079** 03D25
- The length problem for co-r.e. sets. *Z. Math. Logik Grundlag. Math.* 34 (1988), no. 3, 277-282. (Thomas McLaughlin) **89f:03033** 03D20 (03D25)
- Kummer, Monika** Über spezielle Klassen nichtkonvexer Optimierungsaufgaben, die auf konvexe überführt werden können. [On special classes of nonconvex optimization problems that can be transformed into convex ones] *Arbeiten zur mathematischen Optimierung und zu verwandten Gebieten*, 113-126, *Seminarberichte*, 94, Humboldt Univ., Berlin, 1988. (Peter Gritzmann) **89i:90074** 90C30 (90C25)
- Kummer, W.** (with Mistelberger, H.; Schaller, P.; Schweda, M.) Renormalization of Yang-Mills superfields in noncovariant supergauge. *Z. Phys. C* 40 (1988), no. 1, 91-101. (Claude Itzykson) **89i:81081** 81E15
- Kümmerling, P.** (with Imhof, J.-P.) Operational derivation of some Brownian motion results. (French summary) *Internat. Statist. Rev.* 54 (1986), no. 3, 327-341. (L. C. G. Rogers) **89c:60138** 60J65
- Kumon, Masayuki** (with Amari, Shun-ichi) Estimation in the presence of infinitely many nuisance parameters—geometry of estimating functions. *Ann. Statist.* 16 (1988), no. 3, 1044-1068. (M. Huškova) **89f:62037** 62F10
- luczak-Kumorek, Elżbieta** see Luczak-Kumorek, Elżbieta
- Kumera, A.** Remarks on a paper: "Global controllability of nonlinear systems" [*SIAM J. Control Optimization* 14 (1976), no. 4, 700-711; MR 58 #15374] by R. M. Hirschorn. *SIAM J. Control Optim.* 26 (1988), no. 2, 465-467. (Introduction) **89c:49029** 49E15 (93B05, 93C10)
- Kumera, Rodrigo** Sur la géométrie de contact d'ordre supérieur. [On higher-order contact geometry] *Portugal. Math.* 44 (1987), no. 2, 199-212. (Cefeirino Ruiz) **89c:58149** 58G99 (58C27, 58F05)
- Kumschvilik, D. Ya.** Deformation of a prismatic beam with a concave face. (Russian) *Trudy Inst. Vychisl. Mat. Akad. Nauk Gruz. SSR* 28 (1988), no. 1, 135-144. (Not in MR) 73K05
- Kumskov, A. I.** (with Popov, S. B.; Popov, Yu. P.) A modification of the Gauss method for the solution of five-point two-dimensional difference schemes of "cross" type. (Russian) *Adad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1988, no. 93, 26 pp. (Summary) **89h:65044** 65F05
- Kunchev, R. K.** (with Iliev, P. I.; Nikolov, V. N.) Recognition of texture images using probability-structural analysis. (Bulgarian. English and Russian summaries) *Avtomat. Izchisl. Tekhn. Avtomat. Sistemi* 1988, no. 2, 3, 4, 9-14. (Not in MR) 68T10
- (with Mironov, R. P.) Coding two-tone images on the basis of a quadro-tree-like structure representation. (Bulgarian. English and Russian summaries) *Avtomat. Izchisl. Tekhn. Avtomat. Sistemi* 1988, no. 5, 2, 3, 4, 20-26. (Not in MR) 68U10 (94A99)
- Kunde, Manfred** (with Langston, Michael A.; Liu, Jin-Ming<sup>2</sup>) On a special case of uniform processor scheduling. *J. Algorithms* 9 (1988), no. 2, 287-296. (Summary) **89c:68016** 68N25 (68Q20, 90B35)
- (with Lang, Hans-Werner; Schimmler, Manfred; Schmeck, Hartmut; Schröder, Heiko) The instruction systolic array and its relation to other models of parallel computers. *Parallel Comput.* 7 (1988), no. 1, 25-39. (Not in MR) 68Q35
- Kundu, A.** Gauge unification of integrable nonlinear systems. *Solitons* (Tiruchirappalli, 1987), 86-104, *Springer Ser. Nonlinear Dynamics*, Springer, Berlin-New York, 1988. (Peter L. Christiansen) **89e:58122** 58G37 (35Q20, 81E99)
- Comments on: "The Eckhaus PDE  $i\psi_t + \psi_{xx} + 2(|\psi|^2)_x \psi + |\psi|^4 \psi = 0$ " [Inverse Problems 3 (1987), no. 4, 633-681; MR 89g:35093a] by F. Calogero and S. De Lillo. *Inverse Problems* 4 (1988), no. 4, 1143-1144. (M. Victor Wickerhauser) **89g:35093e** 35Q20 (35B25)
- Integrability of classical and semiclassical derivative nonlinear Schrödinger equation with nonlocal canonical structure. *J. Phys. A* 21 (1988), no. 4, 945-953. (Tuncay Aktosun) **89g:81029** 81C99 (35Q20, 58F07)
- Kundu, Krishna** (with Mandal, B. N.) Ring source potentials in two superposed fluids separated by an inertial surface. *Internat. J. Math. Math. Sci.* 11 (1988), no. 3, 535-541. (L. Debnath) **89d:76009** 76B15
- Kundu, P. K.** (with Mandal, B. N.) A note on an integral equation in the theory of water waves. *Bull. Calcutta Math. Soc.* 79 (1987), no. 3, 139-141. (Summary) **89c:76034** 76B15 (86A05)
- Kundu, Prasun K.** Finite-temperature effects in the  $\phi^4$ -model in a Robertson-Walker universe. (Italian and Russian summaries) *Nuovo Cimento B* (11) 100 (1987), no. 5, 665-684. (Summary) **89c:81085** 81E20
- Multipole structure of stationary gravitational fields at null infinity. *J. Math. Phys.* 29 (1988), no. 8, 1866-1878. (Richard Hansen) **89e:83047** 83C30 (83C25)
- Kuné, J. B.** On optimal financing of pension programs and Aaron's rule. (French and German summaries) *Mitt. Verein. Schweiz. Versicherungsmath.* 1988, no. 1, 93-101. (Summary) **89g:90028** 90A09



- Künemund, T.** (with Castell, L.; Heidenreich, W.) All unitary irreducible representations of  $osp(N, 4)$  with positive energy. *Quantum theory and the structures of time and space*, Vol. 6 (Tutzing, 1984), 138–175, *Hanser, Munich*, 1986. (Bani Mitra) **89k:17047** 17B70 (22E70, 81G20)
- Kunes, Kenneth** (with Frankiewicz, Ryszard) Solution of Kuratowski's problem on function having the Baire property. I. *Fund. Math.* **128** (1987), no. 3, 171–180. (Eva Hartová) **89a:30990** 03E35 (03E55, 26A21, 54H05)
- Negation in logic programming. *J. Logic Programming* **4** (1987), no. 4, 289–308. (P. Štěpánek) **89c:68109** 68T25 (03B35, 03B50, 03B70, 68Q55)
- (with Frankiewicz, Ryszard; Zbierski, Paweł) On inhomogeneity of products of compact  $F$ -spaces. *Fund. Math.* **129** (1988), no. 1, 35–38. (C. W. Patty) **89i:54006** 54B10
- Where MA first fails. *J. Symbolic Logic* **53** (1988), no. 2, 429–433. (James Baumgartner) **89m:03045** 03E35 (03E50)
- Kunert, Joachim** Neighbour balanced block designs for correlated errors. *Biometrika* **74** (1987), no. 4, 717–724. (Kishan Lal Sharma) **89b:62162** 62K10
- Kunets, Ya. I.** Axisymmetric torsion of an elastic space with a thin elastic inclusion. *J. Appl. Math. Mech.* **51** (1987), no. 4, 497–503 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 4, 638–645 (Russian). (Summary) **89j:73017** 73C40
- Kung, Joseph P. S.** Canonical forms for binary forms of even degree. *Invariant theory*, 52–61, *Lecture Notes in Math.*, 1278, *Springer, Berlin-New York*, 1987. (Introduction) **89h:15037** 15A72 (15A63)
- (with Sutherland, David C.) The automorphism group of the strong order of the symmetric group. *J. London Math. Soc.* (2) **37** (1988), no. 2, 193–202. (Marston Conder) **89b:20016** 20B25 (20B30)
- The long-line graph of a combinatorial geometry. I. Excluding  $M(K_4)$  and the  $(q+2)$ -point line as minors. *Quart. J. Math. Oxford Ser.* (2) **39** (1988), no. 154, 223–234. (J. André) **89f:51034** 51D20 (05C35)
- Kuni, F. M.** (with Novozhilova, T. Yu.; Terent'ev, I. A.) Kinetic equations of heterogeneous condensation. *Lett. Math. Phys.* **14** (1987), no. 2, 161–167. (Summary) **89c:82014** 82A25
- (with Melikhov, A. A.) A method of complete separation of variables in the kinetics of multidimensional phase transitions. (Russian) *Dokl. Akad. Nauk SSSR* **302** (1988), no. 2, 373–376. (Marek Napiórkowski) **89m:82018** 82A25
- Kuniba, A.** (with Date, E.; Jimbo, Michio; Miwa, Tetsuji; Okado, Masato) Exactly solvable SOS models: local height probabilities and theta function identities. *Nuclear Phys. B* **290** (1987), no. 2, 231–273. (George E. Andrews) **89d:82114** 82A67 (05A19, 11P57, 81E25, 81E40, 82A69)
- (with Yajima, Tetsu) Local state probabilities for an infinite sequence of solvable lattice models. *J. Phys. A* **21** (1988), no. 2, 519–527. (Philippe Christe) **89f:82083** 82A68 (82A69)
- (with Yajima, Tetsu) Local state probabilities for solvable restricted solid-on-solid models:  $A_n$ ,  $D_n$ ,  $D_n^{(1)}$ , and  $A_1^{(1)}$ . *J. Statist. Phys.* **52** (1988), no. 3–4, 829–883. (Peter J. Forrester) **89m:82080** 82A68 (82A69)
- Kunick, A.** (with Steeb, W.-H.) Chaos in limit cycle systems with external periodic excitations. *Internat. J. Non-Linear Mech.* **22** (1987), no. 5, 349–361. (Summary) **89h:58132** 58F13 (34C05, 58F21, 70K10, 70K50)
- Kunitatsu, Noboru** (with Ito, Kazuo) Stabilization of a nonlinear distributed parameter vibratory system. *Internat. J. Control* **48** (1988), no. 6, 2389–2415. (Michel Cotsafitis) **89j:93169** 93D15 (93C10, 93C20)
- Kunisch, K.** (with Kappel, F.) Invariance results for delay and Volterra equations in fractional order Sobolev spaces. *Trans. Amer. Math. Soc.* **304** (1987), no. 1, 1–51. (R. F. Datko) **89a:45006** 45D05 (34K15, 45J05, 46E35)
- (with Peichl, G.) On the shape of the solutions of second order parabolic partial differential equations. *J. Differential Equations* **75** (1988), no. 2, 329–353. (Joan I. Vrabie) **89k:35103** 35K10 (35B60)
- (with Capasso, V.) A reaction-diffusion system arising in modelling man-environment diseases. *Quart. Appl. Math.* **46** (1988), no. 3, 431–450. (Si Ning Zheng) **89k:92049** 92A15 (35K57)
- (with Colonius, F.) Output least squares stability in elliptic systems. *Appl. Math. Optim.* **19** (1989), no. 1, 33–63. (Jan Sokolowski) **89c:49019** 49B50 (35B35, 35J99, 93B30)
- (with White, L. W.) Regularity properties and strict complementarity of the output-least-squares approach to parameter estimation in parabolic equations. *Inverse Problems* **5** (1989), no. 1, 13–33. (Hong Xing Zhou) **89m:93022** 93B30 (35K10, 35R30)
- Kunita, Hiroshi** Stochastic flows and stochastic partial differential equations. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1021–1031, *Amer. Math. Soc., Providence, RI*, 1987. (Yves Le Jan) **89g:60194** 60H15 (35R60, 58D25, 58G32, 60H10)
- A limit theorem for stochastic partial differential equations. *Probability theory and mathematical statistics* (Kyoto, 1986), 228–238, *Lecture Notes in Math.*, 1299, *Springer, Berlin-New York*, 1988. (Hiroyuki Matsumoto) **89d:60110** 60H15 (58D25)
- Kunitomo, Hiroshi** (with Hata, Hiroyuki; Itoh, Katsumi; Kugo, Taichiro; Ogawa, Kaku) BRS invariant vertex of Neveu-Schwarz-Ramond superstring. *Progr. Theoret. Phys.* **78** (1987), no. 2, 453–486. (Robert Marnelius) **89c:81128** 81E99 (81E30)
- (with Kugo, Taichiro; Suehiro, Kazuhiko) BRS invariance of string vertex on general ghost vacuum. *Progr. Theoret. Phys.* **78** (1987), no. 4, 923–931. (Danny Birmingham) **89c:81138** 81E99 (81E30, 83E30)
- (with Itoh, Katsumi; Kato, Mitsuhiro; Sakamoto, Makoto) Vertex construction and zero modes of twisted strings on orbifolds. *Nuclear Phys. B* **306** (1988), no. 2, 362–386. (Marc Henneaux) **89h:81195** 81E99 (22E40, 53C80, 81E30, 83E30)
- (with Itoh, Katsumi) Covariant string field theory on  $Z_2$ -orbifold. *Progr. Theoret. Phys.* **79** (1988), no. 4, 953–990. (George Siopsis) **89i:81114** 81E99 (81E30)
- Kunitomo, Naoto** A third order optimum property of the ML estimator in a linear functional relationship model and simultaneous equation system in econometrics. *Ann. Inst. Statist. Math.* **39** (1987), no. 3, 575–591. (Jan R. Magnus) **89c:62192** 62P20
- Approximate distributions and power of test statistics for overidentifying restrictions in a system of simultaneous equations. *Econometric Theory* **4** (1988), no. 2, 248–274. (Jacob Paroush) **89j:62149** 62P20
- Kunitzsch, Paul** The astronomer Abu 'l-Husayn al-Sufi and his book on the constellations. (Arabic summary) *Z. Gesch. Arab.-Islam. Wiss.* **3** (1986), 56–81, *Arabic paging* 47. (George Saliba) **89d:01012** 01A30
- see also Poulle, Emmanuel, **89c:01017**
- Kuno, Takahito** (with Konno, Hiroshi) Best piecewise constant approximation of a function of single variable. *Oper. Res. Lett.* **7** (1988), no. 4, 205–210. (A. M. Galperin) **89b:90158** 90C10 (65D15)
- Künzsch, H.** Intrinsic autoregressions and related models on the two-dimensional lattice. *Biometrika* **74** (1987), no. 3, 517–524. (Friedrich Liese) **89a:62203** 62M15 (62M20)
- (with Dahlhaus, Rainer) Edge effects and efficient parameter estimation for stationary random fields. *Biometrika* **74** (1987), no. 4, 877–882. (Summary) **89g:62146** 62M09
- Kunz, P. L.** (with Teghem, J., Jr.) An interactive DSS for multiobjective investment planning. *Mathematical models for decision support* (Val d'Isère, 1987), 123–133, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 48, *Springer, Berlin-New York*, 1988. (see **89g:90136**) 90A09
- Kunstatter, G.** (with Evens, Dan) Hamiltonian analysis of linearised topologically massive gravity. *Classical Quantum Gravity* **5** (1988), no. 12, 1627–1645. (Jörg Frauendiener) **89a:83051** 83C99 (58F40, 83D05)
- (with Huggins, S. R.; Leivo, H. P.; Toms, David J.) The Vilkovisky-DeWitt effective action for quantum gravity. *Nuclear Phys. B* **301** (1988), no. 4, 627–660. (A. D. Popova) **89j:83040** 83C45 (81E20, 83C47, 83E15)
- (with Evens, Dan) Hamiltonian analysis of topologically massive Yang-Mills theory. *Phys. Rev. D* (3) **37** (1988), no. 2, 435–440. (Summary) **89h:81102** 81E13 (58F05)
- see also Institute: Theoretical Physics, **89h:81005** and **89h:81006**
- Kunt, Murat** ★ Digital signal processing. Translated from the French. The Artech House Communication and Electronic Defense Library. *Artech House, Inc., Boston, MA*, 1986. xii+468 pp. ISBN 0-89006-187-4 (Editors) **89c:94002** 94A05 (94Axx)
- (with Boite, René) ★ Traitement de la parole. (French) [Speech processing] Complément au Traité d'Électricité. [Complement to the Treatise on Electricity] *Presses Polytechniques Romandes, Lausanne*, 1987. x+285 pp. ISBN 2-88074-140-1 (B. D. Donevski) **89j:94001** 94-01 (68T10, 92A25, 93C55, 94A12)
- Kuntman, Mehmet Ali** Is the physical reality criterion necessary for the Einstein-Podolsky-Rosen argument? *Phys. Lett. A* **127** (1988), no. 2, 57–59. (Giuseppe Nisticò) **89c:81012** 81B05
- Kuntsevich, A. V.** (with Zhurbenko, N. G.) Efficiency of a two-stage method for solving multicommunity transportation problems on the basis of an  $r$ -algorithm. (Russian) *Methods for the investigation of extremal problems* (Russian), 4–9, *i. Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. (Summary) **89j:90182** 90C08 (90C06)
- Kuntsevich, T. S.** (with Chuprunov, E. V.; Tarkhova, T. N.) On the symmetry of regular systems of points of  $n$ -dimensional space groups. (Russian) *Crystallography and crystal chemistry* (Russian), 71–78, 322, "Nauka", Moscow, 1986. (Vojtech Kopský) **89k:20068** 20H15 (51F15, 82A60)
- Kuntsevich, V. M.** (with Lychak, M. M.; Nikitenko, A. S.) Active identification of the parameters of a linear static object (a game-theoretic problem of the design of an experiment). (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 9, 68–76. (Jan Bialasiewicz) **89c:93208** 93E12 (93B50, 93C55, 93E20)
- Determination of guaranteed estimates for the state vectors and parameters of discrete dynamical systems. (Russian) *Kibernet. i Vychisl. Tekhn.* **75** (1987), 1–6, 95. (Andrzej Świąniak) **89c:93067** 93B30 (93B07, 93C05, 93C55, 93E10)
- (with Lychak, M. M.) Control under indeterminacy conditions (synthesis of adaptive control systems). *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 5, 10–20; translated from *Avtomatika* **1987**, no. 5, 16–26, 95 (Russian. English summary). (Jerzy Jaroń) **89j:93028** 93B30 (93B50, 93C40, 93C55)
- see also Discrete control systems, **89f:93002**
- Kunyavskii, B. È.** Tori that are split over a Galois extension with group  $S_3$ . (Russian) *Investigations in number theory* (Russian), 72–74, *Saratov. Gos. Univ., Saratov*, 1982. (see **89i:11006**) 11E72 (14C22, 20G05)
- Kunz, E.** (with Kreuzer, Martin) Traces in strict Frobenius algebras and strict complete intersections. *J. Reine Angew. Math.* **381** (1987), 181–204. (N. Mohan Kumar) **89c:14022** 14F10 (13E99, 14N99)
- (with Waldi, Rolf) Der Führer einer Gorensteinvariätät. [The conductor of a Gorenstein variety] *J. Reine Angew. Math.* **388** (1988), 106–115. (Jürgen Herzog) **89f:14004** 14B05 (13H10, 13M05)
- Kunz, Hervé** The quantum Hall effect for electrons in a random potential. *Comm. Math. Phys.* **112** (1987), no. 1, 121–145. (Summary) **89c:81186** 81H20
- (with Wu, F. Y.) Exact results for an  $O(n)$  model in two dimensions. *J. Phys. A* **21** (1988), no. 23, L1141–L1144. (Summary) **89m:82081** 82A68 (82A25)
- Kunze, Peter** see Burley, Walter, **89i:01009**
- Kunze, R. A.** On the Frobenius reciprocity theorem for square integrable representations of nonunimodular groups. *Miniconference on harmonic analysis and operator algebras* (Canberra, 1987), 101–117, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 15, *Austral. Nat. Univ., Canberra*, 1987. (Detlef Horst Müller) **89c:22011** 22D30
- (with Davis, K. M.; Gilbert, J. E.) Harmonic analysis and exceptional representations of semisimple groups. *Miniconferences on harmonic analysis and operator algebras* (Canberra, 1987), 58–78, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, *Austral. Nat. Univ., Canberra*, 1988. (Michael Cowling) **89j:22026** 22E45 (22E30)
- (with Davis, K. M.; Gilbert, J. E.) Invariant differential operators in harmonic analysis on real hyperbolic space. *Miniconferences on harmonic analysis and operator algebras* (Canberra, 1987), 79–91, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 16, *Austral. Nat. Univ., Canberra*, 1988. (A. Korányi) **89j:22027** 22E45 (43A85, 58G05)
- Kuo, C.-C. Jay** (with Levy, Bernard C.; Musicus, Bruce R.) A local relaxation method for solving elliptic PDEs on mesh-connected arrays. *SIAM J. Sci. Statist. Comput.* **8** (1987), no. 4, 550–573. (L. W. Ehrlich) **89b:65251** 65N20 (65F10)
- (with Levy, Bernard C.) Mode-dependent finite-difference discretization of linear homogeneous differential equations. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 6, 992–1015. (Summary) **89h:65158** 65N05 (65L99)
- (with Levy, Bernard C.) A two-level four-color SOR method. *SIAM J. Numer. Anal.* **26** (1989), no. 1, 129–151. (Summary) **89k:65126** 65N20 (65F10)
- Kuo, Chih Tsung** (with Ch'en, Po Hsien) Multivariable control design for stochastic systems with saturated driving: LQG optimal approach. *Internat. J. Control* **47** (1988), no. 3, 851–865. (Summary) **89a:93026** 93B50 (93C35, 93E03, 93E15)
- Kuo, Hui-Hsiung** (with Hsieh, Nan Jui) A generalized Itô's formula for multidimensional Brownian motions and its applications. *Chinese J. Math.* **15** (1987), no. 3, 163–174. (T. Hida) **89b:60156** 60J65 (60H99, 60J55)

- Brownian motion, diffusions and infinite-dimensional calculus. *Stochastic analysis and related topics* (Silivri, 1986), 130–169, *Lecture Notes in Math.*, 1316, Springer, Berlin-New York, 1988. (L. C. G. Rogers) **89h:60139** 60J65 (60H07, 60J60)
- (with Russek, Andrzej) White noise approach to stochastic integration. *J. Multivariate Anal.* **24** (1988), no. 2, 218–236. (Shigeo Takenaka) **89h:60134** 60H05
- Kuo, Kung Hwang** (with Wu, Pei Yuan) Factorization of matrices into partial isometries. *Proc. Amer. Math. Soc.* **105** (1989), no. 2, 263–272. (Lawrence Williams) **89m:15008** 15A23 (47A68)
- Kuo, Lynn** Linear Bayes estimators of the potency curve in bioassay. *Biometrika* **75** (1988), no. 1, 91–96. (Summary) **89h:62168** 62P10
- Kuo, M. T.** (with Ch'en, Chien Hui; Sheu, J. P.) An optimal time algorithm for finding a maximum weight independent set in a tree. *BIT* **28** (1988), no. 2, 353–356. (Jürgen Ebert) **89e:68100** 68R10 (05C70, 68Q25)
- Kuo, Tē Shēng** (with Wang, Shēng Tē; Lin, Yu-Hwan; Hsü, Chén Fa; Chuang, Yao T'ang) Robust control design for linear systems with uncertain parameters. *Internat. J. Control* **46** (1987), no. 5, 1557–1567. (Mikolaj Buslowicz) **89a:93028** 93B50 (49D37, 93C05, 93C40)
- (with Chuang, Yao T'ang; Hsü, Chén Fa; Wu, Chin Fu) Allowable perturbations for the stability robustness of systems with uncertain parameters. (Chinese summary) *J. Chinese Inst. Engrs.* **10** (1987), no. 6, 665–669. (Chao Shun Zhou) **89a:93040** 93D10 (49D37, 93C05, 93C35, 93C40, 93C50)
- (with Lin, Shui Hsiu) Comments on: "A simple sufficient condition for the stability of linear discrete time systems" [Internat. J. Control **35** (1982), no. 6, 1073–1080; MR **84a:93053a**] by C. S. Berger. *Internat. J. Control* **48** (1988), no. 2, 831. (Summary) **89e:93145** 93C55 (93C40)
- (with Lin, Shui Hsiu; Chuang, Yao T'ang; Fēng, I Kang) Dynamic interval systems analysis and design. *Internat. J. Control* **48** (1988), no. 5, 1807–1818. (Yun Qing Shi) **89m:93074** 93D99 (93B55, 93B60)
- (with Su, Te-Jen; Fēng, I Kang; Sun, Yü I.) Robust stability for linear time-delay systems with linear parameter perturbations. *Internat. J. Systems Sci.* **19** (1988), no. 10, 2123–2129. (M. M. Konstantinov) **89i:93100** 93D99 (34D10, 34K35, 93C05)
- (with Yu, Fu Chao; Wu, Yen P'ei) A fast recursive method for sensitivity analysis of nonlinear networks. (Chinese summary) *J. Chinese Inst. Engrs.* **11** (1988), no. 1, 53–64. (Summary) **89k:94097** 94C05 (93B35)
- Kuo, Tzee Char** (with Trotman, David) On  $(w)$  and  $(f)$ -regular stratifications. *Invent. Math.* **92** (1988), no. 3, 633–643. (A. Verona) **89h:58014** 58A35 (32C42)
- Kuo, Yü Shen** (with Wang, D. W.) A study on two geometric location problems. *Inform. Process. Lett.* **28** (1988), no. 6, 281–286. (Introduction) **89i:68121** 68U05 (68Q25)
- Kuo, Yueh-er** (with Yassa-Greiss, Fathy F.) Decomposition algorithm for slightly overlapping graphs. *Matrix Tensor Quart.* **34** (1987), no. 4, 96–100. (M. M. Syslo) **89e:05130** 05C38
- le ty Kuok Tkhang** see **Le Ty Kuok Tkhang**
- Kupeli, Ayse H.** Generalised Kerr-Schild transformation from vacuum backgrounds to Einstein-Maxwell spacetimes. *Classical Quantum Gravity* **5** (1988), no. 3, 401–408. (Garry Ludwig) **89d:83028** 83C20
- Vacuum solutions admitting a geodesic null congruence with shear proportional to expansion. *J. Math. Phys.* **29** (1988), no. 2, 440–442. (Enric Verdaguer) **89e:83016** 83C15 (83C20, 83C40)
- Kupeli, Demir N.** Curvature and compact spacelike surfaces in 4-dimensional spacetimes. *Mathematics and general relativity* (Santa Cruz, CA, 1986), 263–274, *Contemp. Math.*, 71, Amer. Math. Soc., Providence, RI, 1988. (J. K. Beem) **89g:53098** 53C50 (83C75)
- Null cut loci of spacelike surfaces. *Gen. Relativity Gravitation* **20** (1988), no. 5, 415–425. (László Szabó) **89k:83048** 83C75 (53C50)
- On conjugate and focal points in semi-Riemannian geometry. *Math. Z.* **198** (1988), no. 4, 569–589. (J. K. Beem) **89g:53099** 53C50
- Kuperberg, W.** Covering the plane with congruent copies of a convex body. *Bull. London Math. Soc.* **21** (1989), no. 1, 82–86. (A. Florian) **89m:52024** 52A45 (52A40)
- Kuperin, Yu. A.** (with Makarov, K. A.; Pavlov, B. S.) Model of resonance scattering of compound particles. (Russian. English summary) *Teoret. Mat. Fiz.* **69** (1986), no. 1, 100–114. (V. M. Krasnopolsky) **89m:81182** 81F15 (81F20, 81G25, 81G35)
- (with Makarov, K. A.; Merkur'ev, S. P.; Motovilov, A. K.; Pavlov, B. S.) The quantum problem of several particles with internal structure. I. The two-body problem. (Russian. English summary) *Teoret. Mat. Fiz.* **75** (1988), no. 3, 431–444; translation in *Theoret. and Math. Phys.* **75** (1988), no. 3, 630–639. (Summary) **89i:81136** 81F20
- Kuperman, W. A.** (with Baggeroer, A. B.; Schmidt, Henrik) Performance bounds on array processing for source localization using full wave modeling of signal and noise fields. *Computational acoustics, Vol. 2* (New Haven, Conn., 1986), 299–319, North-Holland, Amsterdam-New York, 1988. (Summary) **89h:76018** 76Q05
- Kupershmidt, B. A.** Undressing of odd pseudodifferential operators. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 270–275, *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (Summary) **89h:58078** 58F07 (12H05, 35S05, 47G05, 58G15)
- Cylindrically invariant flows in relativistic fluid dynamics. *Comput. Math. Appl.* **13** (1987), no. 9–11, 881–887. (From the introduction) **89f:76086** 76Y05 (58F07)
- Lie algebras and Korteweg-de Vries equations. *Phys. D* **27** (1987), no. 3, 294–310. (Manfred Andrie) **89a:58051** 58F07 (35Q20)
- (with Holm, Darryl D.) The analogy between spin glasses and Yang-Mills fluids. *J. Math. Phys.* **29** (1988), no. 1, 21–30. (Summary) **89g:82050** 82A57 (58F05, 58F40, 81E13)
- On the kinetic equations of a system of one-dimensional hard rods. *Lett. Math. Phys.* **15** (1988), no. 4, 281–287. (M. Lawrence Glasser) **89k:82013** 82A05 (58F07)
- (with Holm, Darryl D.) Hamiltonian formulation of ferromagnetic hydrodynamics. *Phys. Lett. A* **129** (1988), no. 2, 93–100. (Summary) **89c:58036** 58F05 (35Q20, 76W05)
- Kupferoth, Achim** Valuated division algebras and crossed products. *J. Algebra* **108** (1987), no. 1, 139–150. (David J. Saltman) **89h:16015** 16A39 (12E15, 12J10)
- Kupferschmid, Michael** (with Ecker, J. G.) A note on solution of nonlinear programming problems with imprecise function and gradient values. *Math. Programming Stud.* **31** (1987), 129–138. (From the introduction) **89c:90096** 90C30
- Kupiainen, A.** Quantum field theory without cutoffs: renormalizable and nonrenormalizable. *Statistical mechanics and field theory: mathematical aspects* (Groningen, 1985), 157–170, *Lecture Notes in Phys.*, 257, Springer, Berlin-New York, 1986. (Introduction) **89h:81106** 81E08 (81E15)
- (with Bricmont, J.) The renormalization group and the random field Ising model. *Mathematical quantum field theory and related topics* (Montreal, PQ, 1987), 15–27, *CMS Conf. Proc.*, 9, Amer. Math. Soc., Providence, RI, 1988. (Summary) **89i:82083** 82A68 (82A25)
- (with Bricmont, J.) Phase transition in the 3d random field Ising model. *Math. Phys.* **116** (1988), no. 4, 539–572. (Tony C. Dorlas) **89h:82087** 82A25 (82A68)
- (with Felder, G.; Gawędziński, K.) Spectra of Wess-Zumino-Witten models with arbitrary simple groups. *Comm. Math. Phys.* **117** (1988), no. 1, 127–158. (Andrew Pressley) **89k:81077** 81E13 (22E65, 58B20, 58D15, 81E40)
- (with Felder, G.; Gawędziński, K.) The spectrum of Wess-Zumino-Witten models. *Nuclear Phys. B* **299** (1988), no. 2, 355–366. (Jouko Mickelsson) **89c:22031** 22E65 (58D15, 58G40, 81E08, 81G20)
- Kupka, I. A. K.** ★ Introduction to the theory of systems. 16<sup>o</sup> Colóquio Brasileiro de Matemática. [16th Brazilian Mathematics Colloquium] Instituto de Matemática Pura e Aplicada, Rio de Janeiro, 1987. iv+124 pp. ISBN 85-244-0031-5 (Editors) **89e:93001** 93-01 (49B10, 58E17, 93B05, 93B07)
- (with Jurdjevic, V.) Linear systems with degenerate quadratic costs. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 2, 101–106. (T. R. Gichev) **89d:49018** 49B10 (58F05, 93C05, 93C15)
- Kupper, Lawrence L.** (with Kleinbaum, David G.; Muller, Keith E.) ★ Applied regression analysis and other multivariable methods. Second edition. The Duxbury Series in Statistics and Decision Sciences. PWS-KENT Publishing Co., Boston, MA, 1988. xvii+718 pp. ISBN 0-87150-123-6 (D. V. Chopra) **89i:62001** 62-01 (62J05)
- Küpper, T.** (with Jones, Christopher K. R. T.; Plakies, H.) A shooting argument with oscillation for semilinear elliptic radially symmetric equations. *Proc. Roy. Soc. Edinburgh Sect. A* **108** (1988), no. 1–2, 165–180. (From the text) **89d:35053** 35J60 (35A35, 65N99)
- Kupper-Viaud, Mireille** Estimation et modélisation du lien entre deux processus à indices dans  $Z^2$  et applications à l'épidémiologie. (English summary) [Estimation and modelization of the relation between two processes indexed in  $Z^2$ , and applications to epidemiology] *Spatial processes and spatial time series analysis* (Brussels, 1985), 165–192, *Travaux Rech.*, 11, Publ. Fac. Univ. Saint-Louis, Brussels, 1987. (Summary) **89e:62114** 62M09 (62P10, 92A15)
- Kuppuswamy Rao, K.** (with Narayana Rao, M. L.; Joshi, Vinod) A translation plane of order 25 with small translation complement. *J. Indian Inst. Sci.* **66** (1986), no. 8, 533–541. (T. G. Ostrom) **89a:51023** 51E15 (20B25, 51A40)
- (with Narayana Rao, M. L.; Joshi, Vinod) A translation plane of order 49 with orbit structure 2, 16 and 32. *J. Combin. Inform. System Sci.* **12** (1987), no. 1–2, 41–50. (T. G. Ostrom) **89j:51003** 51A40 (20B25, 51A35, 51E15)
- (with Narayana Rao, M. L.; Subba Rao, G. V.) Translation complements of C-planes. IV. *Manuscripta Math.* **59** (1987), no. 1, 1–12. (T. G. Ostrom) **89e:51002b** 51A40 (20B25, 51E15)
- (with Narayana Rao, M. L.; Subba Rao, G. V.) Translation complements of C-planes. II. (Serbo-Croatian summary) *Rad. Mat.* **3** (1987), no. 2, 241–253. (T. G. Ostrom) **89e:51002a** 51A40 (51E15)
- (with Narayana Rao, M. L.; Durgaprasad, K. V.) Flag transitive planes of dimension four over GF(3). *J. Geom.* **33** (1988), no. 1–2, 89–98. (Gary L. Ebert) **89k:51005** 51A40 (51E15)
- (with Narayana Rao, M. L.; Subba Rao, G. V.) Translations complements of C-planes. III. *Simon Stevin* **62** (1988), no. 1, 3–11. (T. G. Ostrom) **89k:51006** 51A40 (51A35, 51E15)
- Kuprava, T. K.** (with Markozashvili, N. I.) A periodic optimal control problem for hereditary systems. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **27** (1988), 89–106, 183. (Krystyn Styczeń) **89a:49063** 49D50 (49B34)
- Kuprin, V. A.** Faber series and the Dirichlet problem. (Russian) *Application of functional analysis, in approximation theory* (Russian), 86–93, 146, Kalinin. Gos. Univ., Kalinin, 1984. (see **89c:00006**) **31A25** (30B50)
- Kupsch, J.** Measures for fermionic integration. *Fortschr. Phys.* **35** (1987), no. 5, 415–436. (Gerhard C. Hegerfeldt) **89h:81202** 81E99 (46G12, 46L50, 46L60, 58C50, 58D05, 58F06, 81C99)
- Kurabayashi, Yoshio** (with Sugawara, Yoshio; Murata, Koichi) Analysis of probabilistic behavior of the system with nonregeneration points interpreted as Petri net by Markov renewal processes. *Electron. Comm. Japan. Part I Comm.* **68** (1985), no. 6, 62–68. (Summary) **89i:68099** 68Q90 (94C15)
- Kuraev, G. N.** A locally one-dimensional scheme for a non-steady-state problem of heat conduction with radiation on the boundary. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1218–1226, 1286; translation in *Differential Equations* **24** (1988), no. 7, 793–799. (Ervin Schechter) **89k:65120** 65N05 (35K60, 65N10, 80A20)
- Kurak, V.** Remarks on degenerate theories of the conformal invariant quantum field theory. *Phys. Lett. B* **199** (1987), no. 3, 412–416. (Belal E. Baqaic) **89c:81061** 81D15 (17B65, 81E40)
- (with Gomes, Marcelo O. C.; Da Silva, A. J.) Weyl fields, quantum integrability and conformal invariant field theories. *Nuclear Phys. B* **295** (1988), no. 2 FS21, 139–152. (Raiko Zaikov) **89h:81080** 81D15 (81E40)
- (with Gomes, Marcelo O. C.; Da Silva, A. J.) Superconformal invariant nonlinear  $\sigma$ -models from the bosonic ones. *Phys. Lett. B* **202** (1988), no. 4, 538–540. (Enore Guadagnini) **89c:81196** 81G20 (81E13, 81E40)
- (with Onody, R. N.) Equivalences between a dimer, a vertex, and a spin model. *Phys. Rev. B* **38** (1988), no. 7, 5061–5062. (Roland Koberle) **89h:82100** 82A68
- Kurakin, L. G.** (with Yudovich, V. I.) Semi-invariant form of equilibrium stability criteria in critical cases. *J. Appl. Math. Mech.* **50** (1986), no. 5, 543–546 (1987); translated from *Prikl. Mat. Mekh.* **50** (1986), no. 5, 707–711 (Russian). (P. C. Parks) **89h:70006** 70K20 (34D20)
- Kuramoto, Tetsuji** (with Hayashi, Masahito; Kawamoto, Noboru; Shigemoto, Kazuyasu) Gravitational anomaly cancellation in type I superstring theory. *Nuclear Phys. B* **296** (1988), no. 2, 373–401. (Roger Brooks) **89h:81193** 81E99 (81E20, 81E30, 83E30)
- (with Hayashi, Masahito; Kawamoto, Noboru; Shigemoto, Kazuyasu) Modular invariance and the gravitational anomaly in type II superstring theory. *Nuclear Phys. B* **294** (1987), no. 2, 459–497. (Roger Brooks) **89h:81131** 81E99 (81E30, 83E30)
- Kuramoto, Yoshiki** (with Nishikawa, Ikuko) Statistical macrodynamics of large dynamical systems. Case of a phase transition in oscillator communities. *J. Statist. Phys.* **49** (1987),



- no. 3-4, 569-605. (R. M. Kadobyan'skii) **89c:82078** 82A99 (34C35, 70K99, 82A25)
- (with Sakaguchi, Hidetada; Shinomoto, Shigeru) Phase transitions and their bifurcation analysis in a large population of active rotators with mean-field coupling. *Progr. Theoret. Phys.* **79** (1988), no. 3, 600-607. (Summary) **89d:82043** 82A25 (58F14)
- Kuran, Ō. (with Goldstein, Myron) A sharper inequality involving means of subharmonic functions. *J. London Math. Soc.* (2) **36** (1987), no. 3, 469-489. (D. H. Armitage) **89c:31002** 31B05
- (with Goldstein, Myron) On Harnack-type inequalities and the extremality of the Poisson kernel. *Complex Variables Theory Appl.* **9** (1988), no. 4, 327-342. (D. H. Armitage) **89d:31009** 31B05
- Kuranchie, Pasmore (with Rao, Poduri S. R. S.) Variance components of the linear regression model with a random intercept. *Comm. Statist. Theory Methods* **17** (1988), no. 4, 1011-1026. (Summary) **89c:62119** 62J10
- Kurano, Masami Markov decision processes with a minimum-variance criterion. *J. Math. Anal. Appl.* **123** (1987), no. 2, 572-583. (Aleksandr A. Yushkevich) **89b:90222** 90C40
- Kurata, Yoshiki (with Chen, Ming Ting) On the double centralizer of the injective hull relative to a torsion theory. *Math. J. Okayama Univ.* **29** (1987), 159-165 (1988). (M. Teplya) **89c:16007** 16A08 (16A63, 16A65)
- Kuratsuki, Hiroshi (with Iida, Shinji) Phase holonomy, zero-point energy cancellation and supersymmetric quantum mechanics. *Phys. Lett. B* **198** (1987), no. 2, 221-225. (Summary) **89j:81066** 81C99
- Topological phase effect on a superconductivity model: generalized Jahn-Teller problems and fractional charge. *Phys. Lett. A* **128** (1988), no. 5, 286-288. (Peter L. Christiansen) **89b:81555** 81J05
- (with Iida, Shinji) Deformation of symplectic structure and anomalous commutators in field theories. *Phys. Rev. D* (3) **37** (1988), no. 2, 441-447. (Yisong Yang) **89b:81134** 81E13 (58F06)
- Kurbakuliyev, G. Solvability of a boundary value problem for a system of hyperbolic equations. (Russian) *Izv. Akad. Nauk Turkmen. SSR Ser. Fiz.-Tekhn. Khim. Geol. Nauk* **1988**, no. 3, 15-20. (A. O. Oganessyan) **89m:35131** 35L55
- Kurbanmamedov, N. (with Ashirov, S.) Investigation of the solution of a class of integral equations of Volterra type. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 9, 3-8, 81. (S. Schwabik) **89c:45002** 45D05 (45G10)
- Kurbanov, Kh. K. A duality relation in queueing systems. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 3, 18-21, 88. (R. Salia) **89m:60237** 60K25 (90B22)
- Kurbanov, S. G. Some integral representations for the exponentials of divided difference operators. (Russian) *Voprosy Ychisl. i Prikl. Mat. (Tashkent)* No. 80 (1986), 105-111, 139. (Summary) **89h:39006** 39A70 (39A12, 44A55, 47B39)
- Kurbanov, V. M. Necessary and sufficient conditions for equiconvergence with trigonometric series of spectral expansions in a system of eigen- and associated functions of the Schrödinger operator. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 4, 574-583, 730; translation in *Differential Equations* **24** (1988), no. 4, 394-402. (S. T. Kuroda) **89c:34033** 34B25 (40A05, 47E05)
- Kurbanova, R. D. (with Baimanogly, M.) Asymptotic formulas for the sum of powers of negative eigenvalues of an abstract Sturm-Liouville operator with a singularity at zero. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **8** (1987), no. 3, 16-21 (1988). (Jörg-Uwe Löbus) **89h:34018** 34B25 (34G10, 47E05)
- Kurbanshoev, S. Z. (with Valeev, K. G.) Inversion of ill-conditioned matrices. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadjik. SSR* **30** (1987), no. 12, 770-772 (1988). (C. Illo) **89f:65036** 65F05 (15A09)
- Design of optimal control for systems of differential equations with holomorphic right-hand side. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadjik. SSR* **31** (1988), no. 1, 9-11. (Not in MR) **93B50**
- Kurbatov, A. M. (with Bogolyubov, N. N., Jr.; Kazaryan, A. R.; Neskoromnyi, V. N.) The nonequilibrium description of superradiant state on the basis of exact evolution equation. *Internat. J. Modern Phys. B* **1** (1987), no. 1, 69-88. (Summary) **89a:81183** 81K05
- (with Bakaez, A. V.; Ermilov, A. N.) A frozen Potts model on a Cayley tree. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 3, 603-606; translation in *Soviet Phys. Dokl.* **33** (1988), no. 3, 190-191. (Feodor Smirnov) **89c:82063** 82A68
- Kurbatov, V. G. The Green function of a differential-difference equation. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 3, 525-527, 550. (I. Kiguradze) **89c:34103** 34K10 (34A08, 34B27)
- (with Akhmerov, R. R.) Exponential dichotomy and stability of neutral type equations. *J. Differential Equations* **76** (1988), no. 1, 1-25. (Pedro Martínez-Amores) **89i:34102** 34K20
- Kurbatov, V. S. (with Chernov, N. I.; Ioseliani, Ts. I.; Ososkov, G. A.) ★ Efficiency of the estimators of multivariate distribution parameters from the one-dimensional observed frequencies. With a Russian summary. *Сообщения Объединенного Института Ядерных Исследований. Дубна* [Communications of the Joint Institute for Nuclear Research. Dubna], E5-88-98. *Joint Inst. Nuclear Res., Dubna*, 1988, 9 pp. (Summary) **89c:62065** 62H12
- Kurbatova, N. M. Boundary value problems for two first-order systems. (Russian. English and Lithuanian summaries) *Differentsial'nye Uravneniya i Primenen.* No. 40 (1987), 47-52. (A. M. Nagornij) **89b:35069** 35F05 (35M05)
- Kure, Wiesław (with Hudzik, Henryk; Kamińska, Anna) Uniformly non- $\beta^{(1)}$  Musielak-Orlicz spaces. (Russian summary) *Bull. Polish Acad. Sci. Math.* **35** (1987), no. 7-8, 441-448. (Barry Turett) **89f:46060** 46E30
- Properly exposed points in Orlicz spaces of vector-valued functions. I. *Comment. Math. Prace Mat.* **27** (1987), no. 1, 120-133. (K. Sundaresan) **89b:46053** 46E40 (46B20, 46E30)
- Kurdachenko, L. A. (with Karbe, M. J.) Just infinite modules over locally soluble groups. *Arch. Math. (Basel)* **51** (1988), no. 5, 401-411. (John S. Wilson) **89m:20009** 20C07 (20F19)
- (with Pylaev, V. V.; Goretiskii, V. E.) Groups with a system of minimax quotient groups. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 3, 17-20, 84. (E. I. Khukhro) **89h:20049** 20F19
- (with Pylaev, V. V.) Groups that are rich in almost normal subgroups. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 3, 326-330, 406; translation in *Ukrainian Math. J.* **40** (1988), no. 3, 278-281. (M. J. Tomkinson) **89h:20052** 20F24 (20F22)
- Kurdgeladze, D. F. ★ Специфика решений нелинейных уравнений теории поля. (Russian) [Specifics of the solutions of nonlinear equations in field theory] *Tbilis. Gos. Univ., Tbilisi*, 1985, 131 pp. (Editors) **89f:81034** 81C05 (34C10, 35Q20, 81-02, 81G25)
- ★ Специфика решений нелинейных уравнений теории поля и вопросы их приложения. (Russian) [Specifics of the solutions of nonlinear equations in field theory and problems of their application] "Metsnereba", Tbilisi, 1985, 122 pp. (Summary) **89f:81035** 81C05 (34C10, 35Q20, 81-02, 81G25, 81H20)
- Kurdyka, Krzysztof Des applications du théorème de Puiseux dans la théorie des ensembles semi-analytiques dans  $\mathbb{R}^2$ . [Applications of the Puiseux theorem in the theory of semi-analytic sets in  $\mathbb{R}^2$ ] *Univ. Iagel. Acta Math.* No. 26 (1987), 105-113. (Jean-Jacques Risler) **89h:32017** 32B20
- Points réguliers d'un sous-analytique. (English summary) [Regular points of a subanalytic set] *Ann. Inst. Fourier (Grenoble)* **38** (1988), no. 1, 133-156. (L. Andrew Campbell) **89c:32010** 32B20 (32C42)
- (with Raby, Gilles) Densité et cône tangent à un sous-analytique. (English summary) [Density and tangent cone of a subanalytic set] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 1, 23-25. (Jesús M. Ruiz) **89j:32010** 32B20 (32C42)
- Ensembles semi-algébriques symétriques par arcs. [Arcwise symmetric semi-algebraic sets] *Math. Ann.* **282** (1988), no. 3, 445-462. (Jesús M. Ruiz) **89j:14015** 14G30 (58A07)
- (with Rusek, Kamil) Surjectivity of certain injective semialgebraic transformations of  $\mathbb{R}^n$ . *Math. Z.* **200** (1988), no. 1, 141-148. (L. Andrew Campbell) **89m:32018** 32C05 (14G30, 32B20)
- (with Rusek, Kamil) Polynomial-rational bijections of  $\mathbb{R}^n$ . *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 804-808. (Gary H. Meisters) **89d:14016** 14E05 (12D05, 14E07)
- Kurdyumov, S. P. (with Samarskii, A. A.; Galaktionov, V. A.; Mikhailov, A. P.) ★ Режимы с обострением в задачах для квазилинейных параболических уравнений. (Russian) [Peaking modes in problems for quasilinear parabolic equations] "Nauka", Moscow, 1987, 478 pp. (P. Szeptycki) **89a:35002** 35-02 (35A25, 35Axx, 35K55, 92A08, 92A17)
- Dissipative processes, structures and chaos in nonlinear media. *Plasma theory and nonlinear and turbulent processes in physics*, Vol. 1, 2 (Kiev, 1987), 431-459, *World Sci. Publishing, Singapore*, 1988. (Editors) **89h:58123** 58F13
- (with Bakirova, M. I.; Dimova-Borshukova, Stefka; Dorodnitsyn, V. A.; Samarskii, A. A.; Svirshchevskii, S. R.) Invariant solutions of the heat equation that describe the directed propagation of combustion and spiral waves in a nonlinear medium. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 2, 346-350; translation in *Soviet Phys. Dokl.* **33** (1988), no. 3, 187-189. (Ya Zhe Chen) **89i:35076** 35K55 (35A25, 35B40, 80A20)
- (with Bunkin, F. V.; Galaktionov, V. A.; Kirichenko, N. A.; Samarskii, A. A.) A nonlinear boundary value problem of ignition by radiation. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 4, 549-559, 623. (Summary) **89d:80008** 80A20 (35K20)
- (with Galaktionov, V. A.; Samarskii, A. A.) The structure of limit distributions of unbounded solutions of quasilinear parabolic equations. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 4, 781-785; translation in *Soviet Math. Dokl.* **38** (1989), no. 1, 138-142. (Song Mu Zheng) **89m:35028** 35B40 (35K55)
- Kurek, J. E. Observability and reconstructibility of the 2-D Fornasini-Marchesini model. *IEEE Trans. Circuits and Systems* **35** (1988), no. 8, 1011-1014. (Summary) **89c:93027** 93B07 (93C55)
- Kurek, Jan On a horizontal lift of a linear connection into linearized tangent bundle of second order. *An. Stiint. Univ. "Al. I. Cuza" Iași Sec. I a Mat. (N.S.)* **33** (1987), no. 3, 259-266. (I. Kolář) **89j:53027** 53C05
- Kurenkov, B. E. (with Basharin, G. P.) The analysis of redundant flows in channel switching networks. (Russian) *Problemy Peredachi Informatsii* **23** (1987), no. 3, 54-63. (Summary) **89c:90094** 90B15 (90B22, 94A05)
- Kurepa, Alexandra (with Castro, Alfonso) Energy analysis of a nonlinear singular differential equation and applications. (Spanish summary) *Rev. Colombiana Mat.* **21** (1987), no. 1, 155-166. (Snezana Khristova) **89j:34083** 34E15
- Kurepa, Djuro R. Free power or width of some kinds of mathematical structures. *Publ. Inst. Math. (Beograd) (N.S.)* **42**(56) (1987), 3-12. (B. Zelinka) **89a:06007** 06A10 (04A10, 05C38)
- see also Stipančić, Ernest, **89m:01110**
- Kurepa, Svetozar Quadratic and sesquilinear forms. Contributions to characterizations of inner product spaces. *Functional analysis, II (Dubrovnik, 1985)*, 43-76, *Lecture Notes in Math.*, 1242, Springer, Berlin-New York, 1987. (John R. Giles) **89a:46048** 46C05 (39B50, 47A05)
- On quadratic forms. *Aequationes Math.* **34** (1987), no. 2-3, 125-138. (Enzo R. Gentile) **89c:15032** 15A63 (46C99)
- On the definition of a quadratic form. *Publ. Inst. Math. (Beograd) (N.S.)* **42**(56) (1987), 35-41. (E. Hornix) **89c:15034** 15A63 (46C10)
- Kurganskii, A. V. (with Samolovich, L. A.; Trush, V. D.) The mechanism of frequency analysis in hearing. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 5, 1275-1277. (Not in MR) **92A27**
- Kurihaya, Akikazu (with Kimura, Hideyuki) On automorphism groups of compact Riemann surfaces of genus 5. (Japanese. English summary) *Bull. Fac. Sci. Engrg. Chuo Univ. Ser. I Math.* **29** (1986), 1-80 (1987). (Takao Kato) **89c:30081a** 30F10 (14H99, 32M05)
- (with Kimura, Hideyuki) Remarks on the existence theorem. *Bull. Fac. Sci. Engrg. Chuo Univ. Ser. I Math.* **30** (1987), 1-6 (1988). (E. Bujalance) **89b:30058** 30F30 (14H99)
- (with Kimura, Hideyuki) On automorphism groups of compact Riemann surfaces of genus 5. II. (Japanese. English summary) *Bull. Fac. Sci. Engrg. Chuo Univ. Ser. I Math.* **30** (1987), 7-42 (1988). (Takao Kato) **89c:30081b** 30F10 (14H99, 32M05)
- Kurihaya, Hiroshi (with Akimaru, Haruo; Inoue, Takeshi) Approximate evaluation for mixed delay and loss systems with renewal and Poisson inputs. *IEEE Trans. Comm.* **36** (1988), no. 7, 850-854. (Summary) **89d:90099** 90B22
- Kurihaya, Izumi (with Momose, F.) On the action of automorphisms of a curve on the first  $\ell$ -adic cohomology. *Tsukuba J. Math.* **11** (1987), no. 2, 287-301. (H. Lange) **89j:11050** 11G30 (14F20, 14H25)
- Kurihaya, Yukio (with Fisher, Brian) Neutrices and the beta function. *Rostock. Math. Kolloq.* No. 32 (1987), 56-66. (Endre Pap) **89c:46045** 46F10 (44A15)
- Kurihara, Koji Statistical inference processes and their properties based on knowledge functions in NISAN system. *Bull. Inform. Cybernet.* **23** (1988), no. 1-2, 41-54. (Summary) **89b:62210** 62N10 (62L10)

- Kurihara, Masato** A note on  $p$ -adic étale cohomology. *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 7, 275–278. (Gerd Faltings) **89b:14026** 14F30
- Abelian extensions of an absolutely unramified local field with general residue field. *Invent. Math.* **93** (1988), no. 2, 451–480. (Boulahia Nejib) **89k:11118** 11S25 (14F30, 19D45, 19F99)
- Kurihara, Mitsuobu** (with Shinohara, Yoshitane; Kohda, Atsuhito) Numerical analysis of quasiperiodic solutions to nonlinear differential equations. *Japan J. Appl. Math.* **3** (1986), no. 2, 315–330. (Summary) **89f:65090** 65L99 (34A34, 34C27)
- Kurik, M. V.** (with Lavrentovich, O. D.) Defects in liquid crystals: homotopy theory and experimental studies. *Soviet Phys. Uspekhi* **31** (1988), no. 3, 196–224 (1988); translated from *Uspekhi Fiz. Nauk* **154** (1988), no. 3, 381–431 (Russian). (Summary) **89i:82071** 82A57 (58E99, 82-02, 82-05)
- Kuriki, Shinji** (with Jimbo, Masakazu) A product theorem for cyclic graph designs. *Combinatorial design theory*, 287–295, *North-Holland Math. Stud.*, 149, North-Holland, Amsterdam-New York, 1987. (Jean-Claude Bermond) **89c:05023** 05B30 (05C25)
- Kurik, V. V.** (with Permittin, G. V.) Solitons and chaos in the presence of resonance interaction of waves. (Russian) *Nonlinear waves* (Russian), 227–237, 396, “Nauka”, Moscow, 1987. (Summary) **89b:35300** 35Q20 (58F13, 58G37)
- Kurina, G. A.** Sufficient conditions for the optimality of a control for linear periodic systems that are not solved with respect to the derivative. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 6, 783–786, 816. (Krystyn Styczeń) **89d:49038** 49D50 (49B10, 49D40)
- On the theory of linear-quadratic control problems that are not solved with respect to the derivative. (Russian) *Function spaces and equations of mathematical physics* (Russian), 25–32, 86, *Voronezh. Gos. Univ., Voronezh*, 1988. (Summary) **89h:93031** 93C30 (49D40)
- Asymptotic behavior of the solution of the matrix-singularly perturbed Riccati equation. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 1, 26–30; translation in *Soviet Math. Dokl.* **38** (1989), no. 1, 18–22. (V. G. Kolomiets) **89h:34052** 34E15 (34E05)
- Kurisu, Tadashi** On a certain secretary problem with two stops. *Math. Japon.* **32** (1987), no. 5, 757–768. (Krystof Szajowski) **89d:90232** 90C40 (60G40, 62L12, 90C39)
- Kuritz, Stephen J.** (with Landis, J. Richard) Attributable risk estimation from matched case-control data. (French summary) *Biometrics* **44** (1988), no. 2, 355–367. (From the summary) **89c:62186** 62P10
- Kuriyama, Atsushi** (with Yamamura, Masatoshi) Time-dependent Hartree-Fock method and its extension. *Progr. Theoret. Phys. Suppl.* No. 93 (1987), vi+176 pp. (A. Ventura) **89k:81203** 81H10 (81G35)
- Kurkin, O. M.** (with Korobochkin, Yu. B.) Linear minimax interpolation under conditions of incomplete information on the spectral measures of the useful signal and the noise. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 12, 80–92; translation in *Automat. Remote Control* **48** (1987), no. 12, part 1, 1627–1637. (Summary) **89d:94003** 94A05
- Kurkina, E. S.** (with Elenin, G. G.) Multiplicity of steady states in a nonideal model for a heterogeneous-catalytic reaction. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 5, 695–704, 782–783. (Summary) **89d:80022** 80A30
- Kurki-Suonio, R.** (with Kankaanpää, T.) On the design of reactive systems. *BIT* **28** (1988), no. 3, 581–604. (Summary) **89h:68128** 68T05 (68Q50)
- Kurmyshev, E. V.** (with Dodonov, V. V.; Man'ko, V. I.) Correlated coherent states of a charged particle in a homogeneous magnetic field. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Järjala*, 1985), 288–297, “Nauka”, Moscow, 1986. (see **89d:81002**) **81D30** (81K05)
- Kurochkin, E. P.** (with Muminov, N. A.; Kopelkin, S. V.) ★ Адаптивные методы обработки измерительной информации. (Russian) [Adaptive methods for processing of measuring information] “Fan”, Tashkent, 1986. 204 pp. (From the introduction) **89c:94018** 94A15 (93C40, 93E12, 93E45)
- Kurochkin, S. V.** Some estimates for the eigenvalues of a perturbed operator. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 11, 1736–1739, 1760. (Jan Bochenek) **89c:47018** 47A55 (49G20)
- Kurochkin, Yu. A.** The possibility of formulating some problems of classical electrodynamics in spaces with different geometries. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **32** (1988), no. 6, 496–499, 572. (Summary) **89c:78006** 78A25
- Kuroda, S.-Y.** A topological approach to structural equivalence of formal languages. *Mathematics of language*, 173–189, *Benjamins, Amsterdam*, 1987. (see **89a:68006**) **68Q45**
- Kurokawa, Nobushige** String theories and prime number theories. *Proc. Japan Acad. Ser. A Math. Sci.* **62** (1986), no. 8, 314–317. (M. Hazewinkel (Zbl 633:58029)) **89j:58110** 58F20 (11M41, 14H25, 81E30)
- Parabolic components of zeta functions. *Proc. Japan Acad. Ser. A Math. Sci.* **64** (1988), no. 1, 21–24. (David J. Wright) **89m:11052** 11F72 (11M41, 22E40, 58G25)
- Kuroki, Shoichi** (with Okamoto, Hisao; Mori, Hazime) Global spectral structures of type III intermittent chaos. *Progr. Theoret. Phys.* **79** (1988), no. 3, 581–599. (Summary) **89c:58136** 58F13 (58F14, 82A99)
- Kurosawa, Kaoru** (with Hasebe, Takayuki) Consideration on a nonlinear multicommodity flow problem in a packet switching network. *Electron. Comm. Japan. Part I Comm.* **69** (1986), no. 12, 29–35. (Summary) **89j:90097** 90B10 (49D10, 94C99)
- (with Ito, Toshiya; Takeuchi, Masashi) Public key cryptosystem using a reciprocal number with the same intractability as factoring a large number. *Cryptologia* **12** (1988), no. 4, 225–233. (Zhen Fu Cao) **89k:94049** 94A60 (11T71, 11Y16)
- (with Tsujii, Shigeo; Itoh, Toshiya; Fujioka, Atsushi; Matsumoto, Tsutomu) A public-key cryptosystem based on the difficulty of solving a system of nonlinear equations. *Systems Comput. Japan* **19** (1988), no. 2, 10–18. (Zhen Fu Cao) **89g:94026** 94A60 (11T71)
- Kurose, Hideki** A note on  $C^*$ -algebras with transitive abelian actions. *Bull. Central Res. Inst. Fukuoka Univ.* No. 104 (1988), 71–73. (Tsuyoshi Kajiura) **89g:46106** 46L55 (46L05)
- Kurosh, A.** ★ Higher algebra. Translated from the Russian by George Yankovsky. Reprint of the 1972 translation. “Mir”, Moscow, 1988. 428 pp. ISBN 5-03-000131-X (Editors) **89i:00005** 00A05
- Kurosu, Takashi** A method using a trial function with unknowns to solve approximately Fredholm integral equations of the first kind. *Electron. Comm. Japan. Part I Comm.* **70** (1987), no. 5, 36–46. (Summary) **89i:65141** 65R20
- Kurotschka, Victor G.** Illustration of the optimal design of general location experiments. (Italian) *Survey of statistical methods and applications*, 5 (Italian) (Cagliari, 1985), 33–70, *Coll. Atti Congr., Pitagora, Bologna*, 1987. (Franco Eugeni) **89k:62092** 62K05
- Kurozawa, Toshiro** (with Mori, Kenichi) A method of the variable transformation for the time series analysis. *Bull. Univ. Osaka Prefect. Ser. A* **34** (1985), no. 1, 119–127. (Not in MR) **62M10**
- Kurpiel, Andrzej** (with Jarzembki, Grzegorz) One more concept of multiajointness. *Demonstratio Math.* **20** (1987), no. 1–2, 141–157 (1988). (Walter Tholen) **89e:18004** 18A40 (18A32, 18A35, 18C20)
- A monadic approach to the modal theory. *Demonstratio Math.* **20** (1987), no. 1–2, 247–258 (1988). (F. E. J. Linton) **89g:08003** 08A30 (06F99, 08C05, 18C20)
- Kurshan, R. P.** Complementing deterministic Büchi automata in polynomial time. *J. Comput. System Sci.* **35** (1987), no. 1, 59–71. (Aravinda Prasad Sistla) **89g:68052** 68Q70 (03D05, 03D15, 68Q25, 68Q45)
- Kurosov, V. V.** (with Yanchevskii, V. I.) Crossed products of simple algebras and their groups of automorphisms. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **32** (1988), no. 9, 777–780, 859. (Daniel Simson) **89m:16017** 16A26 (12E15, 16A40)
- Kürsten, Klaus-Detlef** Duality for maximal  $\text{Op}^*$ -algebras on Fréchet domains. *Publ. Res. Inst. Math. Sci.* **24** (1988), no. 4, 585–620. (Camillo Trapani) **89k:47070** 47D40 (46L10)
- Kürten, K. E.** “Training” quasirandom neural networks. *Chaos and complexity* (Torino, 1987), 224–229, *World Sci. Publishing, Singapore*, 1988. (Summary) **89h:92025** 92A09 (82A57)
- Correspondence between neural threshold networks and Kauffman Boolean cellular automata. *J. Phys. A* **21** (1988), no. 11, L615–L619. (From the summary) **89g:92020** 68Q09 (68Q80, 82A57, 82A99)
- An immune system model in discrete time based on the analogy with the central nervous system. *J. Statist. Phys.* **52** (1988), no. 1–2, 489–495. (Summary) **89i:92019** 92A09
- (with Chen, J. W.; Clark, John W.) Modelling of neural systems in continuous time. *Math. Comput. Modelling* **10** (1988), no. 7, 503–513. (Summary) **89d:92021** 92A09 (92A25)
- Critical phenomena in model neural networks. *Phys. Lett. A* **129** (1988), no. 3, 157–160. (Summary) **89d:92031** 92A09 (82-04, 82A57)
- Kurteva, Sylva** (with Fiala, Petr) Multicriterial outranking method with ordinal information on criteria and variants. (Czech. English summary) *Ekonom.-Mat. Obzor* **24** (1988), no. 2, 176–182. (Not in MR) **90C31**
- (with Fiala, Petr; Vopálková, Eliška) Solution approaches to multicriterial one-machine scheduling problems. (Czech. English summary) *Ekonom.-Mat. Obzor* **24** (1988), no. 3, 320–333. (Not in MR) **90B35**
- Kurth, Petra** (with Zschiesche, Hans-Ulrich) Numerische Approximation von Markovprozessen. [Numerical approximation of Markov processes] *Wiss. Z. Tech. Univ. Magdeburg* **31** (1987), no. 5, 26–29. (Martin Jacobsen) **89j:60076** 60H10 (65U05)
- Kurtser, G. M.** (with Grunin, V. K.; Kiselev, N. V.; Yakubovskii, E. G.) An algorithm for estimating the parameters of the regular and irregular components of an echo signal in a classification problem. (Russian) *Algorithms, software and hardware for flexible production systems* (Russian), 13–25, 209, *Avtomat. Proizvod.*, 7, Leningrad. Univ., Leningrad, 1988. (D. Stanomir) **89g:94008** 94A12
- Kurtz, David** (with Gimbel, John; Lesniak, Linda; Scheinerman, Edward R.; Wierman, John C.) Hamiltonian closure in random graphs. *Random graphs '85* (Poznań, 1985), 59–67, *North-Holland Math. Stud.*, 144, North-Holland, Amsterdam-New York, 1987. (Summary) **89h:05051** 05C80
- Kurtz, Douglas S.** Better good  $\lambda$  inequalities. *Miniconference on harmonic analysis and operator algebras* (Canberra, 1987), 118–130, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 15, Austral. Nat. Univ., Canberra, 1987. (Kenneth F. Andersen) **89d:42026** 42B20 (42B25, 47G05)
- Rearrangement inequalities for Littlewood-Paley operators. *Math. Nachr.* **133** (1987), 71–90. (P. G. Rooney) **89c:42016** 42A50 (46E30)
- Kurtz, Stuart A.** A note on randomized polynomial time. *SIAM J. Comput.* **16** (1987), no. 5, 852–853. (Alexander Leitsch) **89c:03066** 03D15 (03D10, 68Q15, 68Q45)
- Kurtz, T. G.** (with Ethier, S. N.) The infinitely-many-alleles model with selection as a measure-valued diffusion. *Stochastic methods in biology* (Nagoya, 1985), 72–86, *Lecture Notes in Biomath.*, 70, Springer, Berlin-New York, 1987. (S. Tavaré) **89c:92037** 92A10 (60J70)
- (with Manber, Udi) A probabilistic distributed algorithm for set intersection and its analysis. Twelfth international colloquium on automata, languages and programming (Napfion, 1985). *Theoret. Comput. Sci.* **49** (1987), no. 2–3, 267–282. (Karl Weber) **89h:68066** 68Q25 (68R05)
- Kurylev, Ya. V.** (with Belishev, M. I.) A nonstationary inverse problem for the multidimensional wave equation “in the large”. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **165** (1987), *Mat. Vopr. Teor. Rasprostran.* Voln 17, 21–30, 189. (Alexander Doktor) **89c:35143** 35R30 (35L05)
- Kuryshekin, V. V.** (with Zorin, A. V.; En'ral'go, E. E.) ★ К построению матрицы рассеяния для локально-некоммутирующих взаимодействий релятивистских полей. (Russian) [On the construction of the scattering matrix for locally noncommutative interactions of relativistic fields] With an English summary. *Сообщения Объединенного Института Ядерных Исследований. Дубна* [Communications of the Joint Institute for Nuclear Research. Dubna], R4-88-587. *Joint Inst. Nuclear Res., Dubna*, 1988. 17 pp. (Summary) **89i:81061** 81E05 (81F15)
- Kurz, Thomas** (with Mayer-Kress, Gottfried) Dimension densities for turbulent systems with spatially decaying correlation functions. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems I* (1987), no. 4, 821–829. (Dieter H. Mayer) **89c:76054** 76F99 (82A99)
- Kurzhanski, A. B.** (with Gusev, M. I.) Inverse problems in the dynamics of control systems. (Russian) *Mechanics and scientific technological progress*, Vol. 1 (Russian), 187–195, 295, “Nauka”, Moscow, 1987. (Zbigniew Emirsajlow) **89m:93009** 93B07 (49D15, 93C10)
- Set-valued calculus in problems of adaptive control. *Modelling and adaptive control* (Sopron, 1986), 189–200, *Lecture Notes in Control and Inform. Sci.*, 105, Springer, Berlin-New York, 1988. (Jan Bialasiewicz) **89m:93049** 93C40 (49E10, 93C05)
- (with Filippova, T. F.) Dynamics of the set of viable trajectories to a differential inclusion: the evolution equation. (Russian summary) With the Russian original. *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **17** (1988), no. 3, 137–144, P1–P8. (Leszek Zaremba) **89g:49051** 49E15 (34A60, 49E10)



- On stochastic filtering approximations of estimation problems for systems with uncertainty. *Stochastics* 23 (1988), no. 2, 109–130. (L. Stettner) **89a:93047** 93E10 (49A50, 93C40, 93C55, 93E11)
- see also Discrete event systems: models and applications, **89a:00019**; Modelling and adaptive control, **89c:93002**; Lohmander, P., **89d:90074** and Evolution and control in biological systems, **89j:92009**
- Kurzweil, Jaroslav** Convergence effects in ordinary differential equations. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations (Budapest, 1987)*, 119–125, *János Bolyai Math. Soc., Budapest, 1987*. (Josef Diblík) **89c:34014** 34A45
- (with Jarník, Jiri) A general form of the product integral and linear ordinary differential equations. *Czechoslovak Math. J.* 37(112) (1987), no. 4, 642–659. (From the introduction) **89c:34009** 34A30
- (with Jarník, Jiri) A convergence effect in ordinary differential equations. (Russian summary) *Asymptotic methods in mathematical physics (Russian)*, 134–144, 301, "Naukova Dumka", Kiev, 1988. (Summary) **89m:34014** 34A34 (40A05)
- (with Jarník, Jiri) A new and more powerful concept of the PU-integral. *Czechoslovak Math. J.* 38(113) (1988), no. 1, 8–48. (Anna Salvadori) **89c:26022** 26B20 (26A39)
- (with Papachinopoulos, Garyfalos) Structural stability of linear discrete systems via the exponential dichotomy. *Czechoslovak Math. J.* 38(113) (1988), no. 2, 280–284. (Helmut Länger) **89h:39003** 39A10 (39A11)
- Kurzyński, Marek W.** On the separability of multistage Bayes classifier. (Russian and Polish summaries) *Systems Sci.* 12 (1986), no. 4, 31–41 (1987). (Not in MR) **68T10** (62H30)
- Kussalova, L. K.** Embedding theorems for anisotropic [weighted] spaces of Sobolev type. I. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 11, 20–31, 88. (Josef Voldich) **89b:46050** 46E35
- Embedding theorems for anisotropic weighted spaces of Sobolev type. II. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 2, 36–45, 84; translation in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 2, 51–62. (Josef Voldich) **89g:46065** 46E35
- Kusano, Takasi** (with Naito, Manabu) Oscillation theory of entire solutions of second order superlinear elliptic equations. *Funkcial. Ekvac.* 30 (1987), no. 2–3, 269–282. (C. A. Swanson) **89c:35019** 35B05 (35J60)
- (with Trench, William F.) Global existence of nonoscillatory solutions of perturbed general disconjugate equations. *Hiroshima Math. J.* 17 (1987), no. 2, 415–431. (Antonio Granata) **89a:34007** 34A10 (34C10)
- (with Ivanov, Anatolii Fiodorovich) Oscillation of solutions of a class of functional-differential equations. (Russian) *Ukrain. Mat. Zh.* 39 (1987), no. 6, 717–721, 814. (D. N. Cheban) **89a:34078** 34K15
- (with Naito, Manabu; Swanson, Charles A.) On the asymptotic behavior of solutions of nonlinear ordinary differential equations. *Czechoslovak Math. J.* 38(113) (1988), no. 3, 498–519. (Virginia W. Noonburg) **89c:34093** 34E05 (34A34)
- (with Naito, Manabu) Unbounded nonoscillatory solutions of nonlinear ordinary differential equations of arbitrary order. *Hiroshima Math. J.* 18 (1988), no. 2, 361–372. (Jan Andres) **89c:34037** 34C10 (34C11)
- (with Naito, Manabu) Positive solutions of a class of nonlinear ordinary differential equations. *Nonlinear Anal.* 12 (1988), no. 9, 935–942. (Ramajayam Sahadevan) **89c:34015** 34A34
- (with Trench, William F.) Systems of functional-differential equations with asymptotically constant solutions. *Proc. Amer. Math. Soc.* 104 (1988), no. 4, 1091–1097. (Josef Diblík) **89f:34111** 34K25 (34K15)
- (with Noussair, Ezzat S.; Swanson, Charles A.) Existence of decaying entire solutions of a class of semilinear elliptic equations. *Proc. Amer. Math. Soc.* 104 (1988), no. 4, 1141–1147. (Yong Geng Gu) **89d:35054** 35J60 (35B40)
- Kushnir, Dzhilil, Abu'l-Khasan** see **Kushnir al-Jilil, Abu'l-Khasan**
- Kushnir'ski, Yu. S.** (with Eidel'man, S. D.) Stabilization of the solutions of boundary value problems for a higher-order model parabolic equation. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 1, 19–22, 86. (V. N. Razzevaikin) **89f:35099** 35K35 (35B40)
- Kushkulei, A. Kh.** Identities of the irreducible sets of linear operators. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 12, 55–58, 81. (P. M. Cohn) **89f:16040** 16A65
- shabanov-Kushnarenko, S. Yu.** see **Shabanov-Kushnarenko, S. Yu.**
- shabanov-Kushnarenko, Yu. P.** see **Shabanov-Kushnarenko, Yu. P.**
- Kushner, B. A.** The principle of bar-induction in Brouwer's theory of the continuum. (Russian) *Patterns in the development of modern mathematics (Russian)*, 230–250, "Nauka", Moscow, 1987. (Siegfried Gottwald) **89c:03097** 03F55 (01A65, 03-01)
- Kushner, Harold J.** (with Huang, Hai) Weak convergence and approximations for partial differential equations with stochastic coefficients. *Stochastics* 15 (1985), no. 3, 209–245. (G. Papanicolaou) **89a:60183** 60J60 (60F05, 60H15)
- (with Yin, Gang George) Asymptotic properties of distributed and communicating stochastic approximation algorithms. *SIAM J. Control Optim.* 25 (1987), no. 5, 1266–1290. (G. Pflug) **89c:60028** 60F05 (60F17, 62L20, 93E25)
- (with Runggaldier, Wolfgang J.) Filtering and control for wide bandwidth noise and "nearly" linear systems. *Modelling and adaptive control (Sopron, 1986)*, 201–213, *Lecture Notes in Control and Inform. Sci.*, 105, Springer, Berlin-New York, 1988. (Summary) **89j:93121** 93E11 (93C05, 93E10)
- Almost optimal controls for wideband noise driven systems. *Stochastic differential systems, stochastic control theory and applications (Minneapolis, Minn., 1986)*, 255–273, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (N. U. Ahmed) **89g:93112** 93E20 (49D20)
- (with Ramachandran, K. M.) Nearly optimal singular controls for wideband noise driven systems. *SIAM J. Control Optim.* 26 (1988), no. 3, 569–591. (Jose Luis Menaldi) **89c:93082** 93E20 (60F17, 93E25)
- Kushner, Harvey** (with Lipschitz, Seymour) A generalization of Stallings' pregroup. *J. Algebra* 119 (1988), no. 1, 170–184. (A. H. M. Hoare) **89m:20035** 20F05 (20E06)
- Kushner, Howard B.** The linearization of the product of two zonal polynomials. *SIAM J. Math. Anal.* 19 (1988), no. 3, 687–717. (W. A. Al-Salam) **89c:33026** 33A75 (22E30, 62H99)
- Kushnir, R. M.** (with Prikrpat'skii, A. K.) Conditions for the existence of fundamental solutions of ordinary differential equations in a class of generalized functions. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1987, no. 9, 24–26, 87. (A. N. Seseikin) **89a:34008** 34A10 (34A30, 46F10)
- Kushpel', A. K.** The rate of convergence of interpolation SK-splines on convolution classes. (Russian) *Investigations in the theory of the approximation of functions (Russian)*, 50–58, 122, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev, 1987*. (S. D. Riemenschneider) **89i:42006** 42A10 (41A15, 42A15)
- Widths of classes of smooth functions in the space  $L_p$ . (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 44, 56 pp. (Summary) **89c:41033** 41A46 (46E35)
- (with Stepanets, A. I.) Rate of convergence of Fourier series and best approximations in the space  $L_p$ . (Russian) *Ukrain. Mat. Zh.* 39 (1987), no. 4, 483–492, 543. (S. Aljančić) **89a:42008** 42A10 (42A20)
- On a family of extremal subspaces. (Russian) *Ukrain. Mat. Zh.* 39 (1987), no. 6, 786–788, 816. (Yuly Makovoz) **89a:42009** 42A15 (41A05, 46B25)
- (with Koval'chuk, I. R.) An estimate for the rate of convergence of the derivative of an interpolation polynomial on classes of differentiable functions. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 2, 231–234, 272; translation in *Ukrainian Math. J.* 40 (1988), no. 2, 199–201. (D. L. Berman) **89g:42006** 42A10 (41A05)
- Kushunina, N. A.** (with Lizarev, A. D.) Equations of hypergeometric type that are integrable in elementary functions. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 6, 1070–1073, 1103–1104. (J. F. Heyda) **89g:34011** 34A34 (33A35, 34C15, 73D30)
- Kushwaha, K. S.** (with Singh, Housila Prasad) A class of unbiased estimators alternative to ratio-type estimators. *Pure Appl. Math. Sci.* 26 (1987), no. 1–2, 119–128. (Summary) **89c:62027** 62D05
- Kushyār al-Jilil, Abu'l-Khasan** see **Abdulla-Zade, Kh. F.**, **89g:01009**
- Kuslik, Andrew** (with Chen, Mingyuan) Expert systems for planning and scheduling manufacturing systems. *European J. Oper. Res.* 34 (1988), no. 2, 113–130. (Not in MR) **90B30**
- see also Analysis, modelling and design of modern production systems, **89g:90126**
- Kusov, I. F.** (with Tumanov, M. P.; Izhanov, Yu. L.) An algebraic approach to the analysis of nonstationary dynamical systems. (Russian) *Voprosy Kibernet. (Moscow)* No. 139 (1988), 105–116. (Valeriu Prepelija) **89i:93019** 93B15 (93B25, 93C05)
- Kuznetsov, A. G.** (with Kutateladze, S. S.) The contribution of L. V. Kantorovich to the theory of ordered vector spaces. (Russian) *Optimizatsiya* No. 40 (57) (1987), 26–39, 159. (Editors) **89h:01044** 01A60 (01A70, 46-03)
- Theorems of M. G. Krein and G. Jameson. (Russian) *Optimizatsiya* No. 41 (58) (1987), 134–143. (R. Cristescu) **89m:47035** 47B55 (46A40, 47D99)
- Linear operators in lattice-normed spaces. (Russian) *Trudy Inst. Mat. (Novosibirsk)* 9 (1987), Issled. Geom. "v tselom" i Mat. Anal., 84–123, 207. (Constantin Niculescu) **89d:47078** 47B55
- (with Aleksandrov, A. D.; Vershik, A. M.; Ivanov, Vladimir Veniaminovich; Kutateladze, S. S.; Makarov, B. M.; Reshetnyak, Yu. G.; Khavin, V. P.) Gleb Pavlovich Akilov. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1(259), 181–182; translation in *Russian Math. Surveys* 43 (1988), no. 1, 221–223. (Editors) **89b:01031** 01A70
- (with Akilov, G. P.; Kolesnikov, E. V.) On the order-continuous extension of a positive operator. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 5, 24–35, 237; translation in *Siberian Math. J.* 29 (1988), no. 5, 707–716. (Yu. A. Abramovich) **89m:47033** 47B55 (28B15, 46G10)
- (with Akilov, G. P.; Kolesnikov, E. V.) Lebesgue extension of a positive operator. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 3, 521–524; translation in *Soviet Math. Dokl.* 37 (1988), no. 1, 88–91. (Constantin Niculescu) **89c:47054** 47B55
- On the geometry of Banach spaces with mixed norms. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 5, 1049–1052; translation in *Soviet Math. Dokl.* 37 (1988), no. 3, 774–776. (Yu. A. Abramovich) **89m:46029** 46B30 (46E30, 47B10)
- Küssner, Martha** Johann Friedrich Posselt—Friedrich Ludwig Wachter—Johann Carl Eduard Schmidt—drei hoffnungsvolle Gaußschüler, die jung starben. [Johann Friedrich Posselt—Friedrich Ludwig Wachter—Johann Carl Eduard Schmidt—three promising students of Gauss who died young] *Gauss-Ges. Göttingen Mitt.* No. 17 (1980), 48–67. (P. Müürsepp (translated from Zbl 452:01004)) **89f:01071** 01A70
- Carl Wolfgang Benjamin Goldschmidt und Moritz Abraham Stern, zwei Gaußschüler jüdischer Herkunft. [Carl Wolfgang Benjamin Goldschmidt und Moritz Abraham Stern, two students of Gauss of Jewish descent] *Gauss-Ges. Göttingen Mitt.* No. 19 (1982), 37–62. (D. J. Struik) **89b:01028** 01A55 (01A70, 86-03)
- Kussul', E. M.** Modeling of stochastic neural networks. (Russian) *Problems of bionics*, No. 41 (Russian), 63–69, iii, "Vishcha Shkola", Kharkov, 1988. (Summary) **89h:92026** 92A09 (68Q75, 68T99)
- Küstner, Ulrich** ★ Hierarchische Mittelwert- und Kovarianzstrukturmodelle mit nicht-metrischen endogenen Variablen. (German) [Hierarchical mean value and covariance structure models with nonmetric endogenous variables] *Arbeiten zur Angewandten Statistik (Papers on Applied Statistics)*, 31. *Physica-Verlag, Heidelberg*, 1987. xii+112 pp. *ISBN* 3-7908-0388-X (Hilmar Drygas) **89g:62102** 62J05 (62P20)
- Kustin, Andrew R.** (with Griggs, Jerrold R.; Ross, Jeffrey A.; Stahl, Jürgen) The lexicographic sum of Cohen-Macaulay and shellable ordered sets. *Graphs Combin.* 1 (1985), no. 2, 145–163. (Andrew Vince) **89g:06004** 06A10 (13H10, 52A25, 57Q05)
- (with Avramov, Leuchezar L.; Miller, Matthew) Poincaré series of modules over local rings of small embedding codimension or small linking number. *J. Algebra* 118 (1988), no. 1, 162–204. (Jürgen Herzog) **89k:13013** 13C99 (13D99, 13H15)
- Kustov, E. F.** (with Kuzhukev, U. M.) Four-dimensional point groups and their application. (Russian) *Group-theoretic methods in physics. Vol. 1 (Russian) (Jarmala, 1985)*, 608–615, "Nauka", Moscow, 1986. (see **89d:81001**) 20H15
- Reduction tensor symmetry of the interaction of elementary particles. (Russian) *Group-theoretic methods in physics. Vol. 2 (Russian) (Jarmala, 1985)*, 622–630, "Nauka", Moscow, 1986. (see **89d:81002**) 81G20
- Kustorskii, V. D.** (with Shikhvatov, A. M.) A coordinate system for cupola-shaped shells. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 6, 1045–1049, 1101. (Summary) **89g:73040** 73L20 (65N30, 73-08)
- Kusuda, Masaharu** G-primitive spectrum of a  $C^*$ -algebra. *Math. Japon.* 32 (1987), no. 5, 769–780. (Klaus Thomsen) **89d:46068** 46L55 (46L45)
- Hereditary  $C^*$ -subalgebras of  $C^*$ -crossed products. *Proc. Amer. Math. Soc.* 102 (1988), no. 1, 90–94. (Trond Digernes) **89f:46128** 46L55
- Kusum, Kalpana** (with Bagai, Isha) A new class of distribution free procedures for testing homogeneity of scale parameters against ordered alternatives. *Comm. Statist. Theory Methods* 17 (1988), no. 5, 1365–1376. (Subhash C. Kochhar) **89j:62066** 62G10

- Kusunoki, Yukio** Integrable holomorphic quadratic differentials with simple zeros. *Holomorphic functions and moduli*, Vol. 1 (Berkeley, CA, 1986), 209–213, *Math. Sci. Res. Inst. Publ.*, 10, Springer, New York-Berlin, 1988. (Tadashi Kuroda) **89m:30091** 30F30
- Kusosaka, Shigeo** A diffusion process on a fractal. *Probabilistic methods in mathematical physics* (Katata/Kyoto, 1985), 251–274, *Academic Press, Boston, MA*, 1987. (M. Fukushima) **89c:60149** 60J60
- (with Stroock, Daniel W.) Applications of the Malliavin calculus. III. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **34** (1987), no. 2, 391–442. (Michael Cranston) **89c:60093** 60J60 (58G32, 60H10)
- Some remarks on Getzler's degree theorem. *Probability theory and mathematical statistics* (Kyoto, 1986), 239–249, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (Ana Bela Cruzeiro) **89c:58120** 58G10 (28C20, 58C99, 60H10)
- (with Ikeda, Nobuyuki) Short time asymptotics for fundamental solutions of diffusion equations. *Stochastic analysis* (Paris, 1987), 37–49, *Lecture Notes in Math.*, 1322, Springer, Berlin-New York, 1988. (Kazuaki Taira) **89j:35023** 35B40 (35K05, 58G32)
- (with Stroock, Daniel W.) Long time estimates for the heat kernel associated with a uniformly subelliptic symmetric second order operator. *Ann. of Math.* (2) **127** (1988), no. 1, 165–189. (Makhlouf Derridj) **89b:35022** 35H05 (35K05, 60H15)
- (with Chiyonobu, T.) The large deviation principle for hypermixing processes. *Probab. Theory Related Fields* **78** (1988), no. 4, 627–649. (Esa Nummelin) **89c:60061** 60F10 (60G10)
- Kutami, Mamoru** (with Oshiro, Kiyochi) On projective modules over directly finite regular rings satisfying the comparability axiom. II. *Osaka J. Math.* **24** (1987), no. 3, 465–473. (Birge Zimmermann-Huisgen) **89f:16016** 16A30 (16A48, 16A50)
- Kutasov, David** Modular invariance, chiral anomalies and contact terms. *Nuclear Phys. B* **307** (1988), no. 2, 417–444. (Da-Xi Li) **89j:81195** 81E99 (81E20, 81E30)
- Kutateladze, S. S.** Nonstandard remarks on limits of supergraphs. (Russian) *Optimizatsiya* No. 37(54) (1986), 28–32, 158. (From the text) **89a:90128** 90C30 (03H05)
- (with Kusraev, A. G.) The contribution of L. V. Kantorovich to the theory of ordered vector spaces. (Russian) *Optimizatsiya* No. 40(57) (1987), 26–39, 159. (Editors) **89b:01044** 01A60 (01A70, 46–03)
- (with Bulavskii, V. A.; Vasil'ev, V. A.; Marshak, V. D.) V. L. Makarov's contribution to mathematical economics. (Russian) *Optimizatsiya* No. 41(58) (1987), 5–14. (Editors) **89b:01058** 01A70
- On topological concepts close to continuity. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 1, 149–156. (H. H. Wicke) **89c:54005** 54A20 (54C05, 54J05)
- Epiderivatives defined by a collection of infinitesimals. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 4, 140–144. (M. S. Rangachari) **89a:26034** 26E35 (03H05)
- Infinitesimals and the calculus of tangents. (Russian) *Trudy Inst. Mat. (Novosibirsk)* **9** (1987), *Issled. Geom. "v tselom" i Mat. Anal.*, 123–135, 207. (Stefan Heinrich) **89g:03099** 03H05 (26E35, 46Q05, 49A52, 90C30, 90C48)
- (with Aleksandrov, A. D.; Vershik, A. M.; Ivanov, Vladimir Veniaminovich; Kusraev, A. G.; Makarov, B. M.; Reshetnyak, Yu. G.; Khavin, V. P.) Gleb Pavlovich Akllov. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 1(259), 181–182; translation in *Russian Math. Surveys* **43** (1988), no. 1, 221–223. (Editors) **89b:01031** 01A70
- Kutep, N.** Nontrivial solutions for the equations of Monge-Ampère type. *J. Math. Anal. Appl.* **132** (1988), no. 2, 424–433. (Patricio Aviles) **89b:35111** 35J60
- (with Popivanov, P.) On the solvability of equations with prescribed Gauss curvature changing its sign. *Math. Nachr.* **137** (1988), 159–165. (Dennis M. DeTurck) **89i:53005** 53A05 (35J60, 58G30)
- (with Popivanov, P.) Solvability of the degenerate complex Monge-Ampère equation. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 6, 1317–1320; translation in *Soviet Math. Dokl.* **38** (1989), no. 1, 220–223. (Guo Chun Wen) **89m:35074** 35J60 (32F99)
- Kutish, G. W.** (with Janovsky, J., Jr.) A model of encounters between host and parasite populations. *J. Theoret. Biol.* **134** (1988), no. 3, 391–401. (Not in MR) **92A15**
- Kutkhashvili, K. V.** (with Saradzhishvili, Ts. I.; Gabisoniya, G. V.) A schedule planning problem with vector quality indicators. (Russian. English summary) *Trudy Inst. Sistem Upravleniya Akad. Nauk Gruz. SSR* **25** (1987), no. 1, 156–162. (Not in MR) **90B35**
- (with Dzhabashvili, A. G.) A method for the optimization of a net diagram. (Russian. English summary) *Trudy Inst. Sistem Upravleniya Akad. Nauk Gruz. SSR* **25** (1987), no. 1, 163–166. (Not in MR) **90B10**
- Kutuk, Mahmud M.** Weak closure of the unitary orbits of operators having a convex spectral set. *J. Pure Appl. Sci.* **18** (1985), no. 2, 271–281 (1986). (J. M. Patel) **89b:47011** 47A25 (47A12, 47B20)
- Kutovoi, V. A.** (with Burim, V. M.) Conditions for the absence of condensation points of the discrete spectrum for the Sturm-Liouville equation with unbounded operator potential. (Ukrainian. Russian summary) *Vysnik Kiy. Univ. Ser. Mat. Mekh.* No. 28 (1986), 124–127, 136. (Summary) **89f:47071** 47E05 (34B25, 34G10)
- Kutoyants, Yu. A.** (with Apoyan, G. T.) On compensator estimation of inhomogeneous Poisson process. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **16** (1987), no. 2, 135–142. (Summary) **89g:62144** 62M07 (62C20)
- A problem of the identification of dynamical systems with small noise. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **23** (1988), no. 3, 270–285, 303; translation in *Soviet J. Contemporary Math. Anal.* **23** (1988), no. 3, 79–95. (Boženna Pasik-Duncan) **89m:93085** 93E12
- An example of an estimate for the parameter of a nondifferentiable drift coefficient. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 1, 188–192; translation in *Theory Probab. Appl.* **33** (1988), no. 1, 175–179. (Ryszard Magiera) **89c:62112** 62M05
- Kutsche, Ralf-Detlef** (with Hofbauer, Dieter) Proving inductive theorems based on term rewriting systems. *Algebraic and logic programming* (Gaussig, 1988), 180–190, *Math. Res.*, 49, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) **68Q55** (68Q55)
- Kutsenko, G. V.** (with Turchaninova, L. I.) Solution of a special system of differential equations. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 64 (1988), 107–111, 150. (O. A. Kastritsa) **89k:34013** 34A30
- Kutsenko, I. A.** (with Garashchenko, F. G.) A second-order method in problems of the structural-parametric optimization of the dynamics of beams. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 6 (1987), 23–26, 114. (Summary) **89k:78032** 78A99 (49D15)
- Kuttler, Kenneth** Regularity of weak solutions of some nonlinear conservation laws. *Appl. Anal.* **26** (1987), no. 1, 23–32. (Si Ning Zheng) **89i:35095** 35L65 (35D10, 35L75)
- (with Hicks, D.) Weak solutions of initial-boundary value problems for a class of nonlinear viscoelastic equations. *Appl. Anal.* **26** (1987), no. 1, 33–43. (Renuka Ravindran) **89f:35147** 35Q10 (35D10)
- (with Hicks, D.) Some progress on the hydrocode convergence problem. *Appl. Math. Comput.* **23** (1987), no. 3, 211–233. (Robert Stephen Cantrell) **89c:35157** 35Q99 (35K99, 65N10, 76N99)
- (with Aifantis, Elias) Existence and uniqueness in nonclassical diffusion. *Quart. Appl. Math.* **45** (1987), no. 3, 549–560. (Mariosaria Padula) **89m:73006** 73B30 (80A20)
- (with Hicks, D.) Continuum and discrete hydrodynamical models and globally well-posed problems. *Appl. Math. Comput.* **25** (1988), no. 4, 299–320. (C. Fetecău) **89c:76012** 76A99
- (with Hicks, D.) Initial-boundary value problems for the equation  $u_t = (\sigma(u_x))_x + (\alpha(u_x)u_x)_x + f$ . *Quart. Appl. Math.* **46** (1988), no. 3, 393–407. (Michael Renardy) **89k:35147** 35L70 (35Q20, 73F15)
- (with Aifantis, Elias) Quasilinear evolution equations in nonclassical diffusion. *SIAM J. Math. Anal.* **19** (1988), no. 1, 110–120. (Sadakazu Aizawa) **89i:35118** 35Q20 (35K60, 73B05, 76R50)
- Kutuzov, V. F.** On the Darboux problem for hyperbolic systems. (Russian) *Studies in multidimensional elliptic systems of partial differential equations* (Russian), 20–24, 154, *Akad. Nauk SSSR Sibirsk. Otdel. Inst. Mat., Novosibirsk*, 1986. (R. G. Airapetian) **89c:35094** 35L55
- golenishcheva-Kutuzova, M. I.** see Golenishcheva-Kutuzova, M. I.
- Kutykowski, Mirosław** Small Grzegorzczak classes. *J. London Math. Soc.* (2) **36** (1987), no. 2, 193–210. (Rodney G. Downey) **89a:03077** 03D20
- Kutsko, P. C.** On the supersingular representations of  $GL_N$  and other  $p$ -adic groups. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 853–861, *Amer. Math. Soc., Providence, RI*, 1987. (David Manderscheid) **89b:22038** 22E50 (11S37)
- Towards a classification of the supersingular representations of  $GL_N$ . *J. London Math. Soc.* (2) **37** (1988), no. 2, 265–274. (Marko Tadić) **89c:22028** 22E50
- Kutler, Bernhard** Introduction to Buchberger's Gröbner bases method. *Computer aided geometric reasoning*, Vol. 1, II (Sophia-Antipolis, 1987), 5–25, *INRIA, Rocquencourt*, 1987. (David C. Lantz) **89c:68055** 68Q40 (03B35, 13-04, 68S10, 68T15, 68U05)
- Kussalo, Tapani** A Green formula with multiplicities. *Complex analysis*, Joensuu 1987, 219–222, *Lecture Notes in Math.*, 1351, Springer, Berlin-New York, 1988. (Steven George Krantz) **89m:30083** 30E20 (26B20, 30A99, 31B10)
- Kusk, Piret** The heterotic superstring and curved, scale-invariant superspace. *Soviet J. Nuclear Phys.* **47** (1988), no. 6, 1127–1128; translated from *Yadernaya Fiz.* **47** (1988), no. 6, 1779–1781 (Russian). (Summary) **89k:81105** 81E20 (81E30)
- Kuvshinov, A. P.** (with Vorontsov, V. I.) Solution of the Helmholtz equation for a wave beam. (Russian. English summary) *Ukrain. Fiz. Zh.* **33** (1988), no. 11, 1658–1661, 1758. (Summary) **89j:78014** 78A25
- Kuvshinov, V. I.** (with Fedorov, F. I.) Use of Noether identities for the construction of supergravity models. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Järvala, 1985), 82–87, "Nauka", Moscow, 1986. (see **89d:81001**) **83E50** (81E99)
- Kuwabara, Raishi** Spectrum of the Laplacian on vector bundles over  $C_2$ -manifolds. *J. Differential Geom.* **27** (1988), no. 2, 241–258. (Andreas Nestke) **89j:58027** 58G25 (53C22, 58G16)
- Spectrum of the Schrödinger operator on a line bundle over complex projective spaces. *Tôhoku Math. J.* (2) **40** (1988), no. 2, 199–211. (Gérard Besson) **89h:58200** 58G25 (35P20)
- Kuwabara, Yoshihiro** (with Yajima, Kenji) The limiting absorption principle for Schrödinger operators with long-range time-periodic potentials. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **34** (1987), no. 3, 833–851. (Todor V. Gramchev) **89g:35032** 35J10 (35B40, 35P20)
- Kuwada, Masahide** Note on some upper bounds on the constraints for some partially balanced arrays with two symbols. *J. Combin. Inform. System Sci.* **11** (1986), no. 2-4, 138–146. (Shinji Kuriki) **89h:05021** 05B30 (62K15)
- On the robustness of balanced fractional  $2^m$  factorial designs of resolution  $2l+1$  in the presence of outliers. *Ann. Inst. Statist. Math.* **39** (1987), no. 3, 649–659. (K. G. Russell) **89d:62067** 62K05 (62K15)
- On some partially balanced fractional  $2^{m_1+m_2}$  factorial designs of resolution VII. *J. Statist. Plann. Inference* **17** (1987), no. 1, 93–102. (A. Hedayat) **89c:62130** 62K15 (05B05)
- On the characteristic polynomials of the information matrices of partially balanced fractional  $2^{m_1+m_2}$  factorial designs of resolution VII. *J. Japan Statist. Soc.* **18** (1988), no. 1, 77–86. (Rahul Mukerjee) **89b:62136** 62K15
- (with Nishii, Ryuei) On the characteristic polynomial of the information matrix of balanced fractional  $s^m$  factorial designs of resolution  $V_{p,q}$ . *J. Statist. Plann. Inference* **18** (1988), no. 1, 101–114. (Bhagwandas) **89b:62165** 62K15 (05B05)
- Kuwahara, Fumiko** Relativistic accretion tori around Schwarzschild black holes. *Progr. Theoret. Phys.* **80** (1988), no. 3, 449–467. (Summary) **89j:83013** 83C15 (85A40)
- Kuwata, Masato** Intersection homology of weighted projective spaces and pseudo-lens spaces. *Pacific J. Math.* **133** (1988), no. 2, 355–362. (K. Lamotte) **89k:57042** 57N80 (32C42, 55N35)
- Kuzenko, S. M.** (with Bukhbinder, I. L.) Superfields of matter in an external field of  $N=1$  supergravity. Green functions, effective action, superconformal anomalies. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (Järvala, 1985), 67–74, "Nauka", Moscow, 1986. (see **89d:81001**) **83E50** (81E20, 81E99)
- (with Bukhbinder, I. L.) Quantization of classically equivalent theories in superspace of simple supergravity, and quantum equivalence. *Soviet J. Nuclear Phys.* **45** (1987), no. 3, 539–544; translated from *Yadernaya Fiz.* **45** (1987), no. 3, 868–877 (Russian). (Summary) **89a:83066** 83E50 (83C45)
- (with Bukhbinder, I. L.) Nonlocal action for supertrace anomalies in superspace of  $N=1$  supergravity. *Phys. Lett. B* **202** (1988), no. 2, 233–237. (Mark D. Roberts) **89e:83079** 83E50
- Kuzennyi, N. F.** (with Subbotin, I. Ya.) Solvable groups with a quasicentralizer condition for nonabelian normal subgroups. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 10,



- 68–70, 75. (D. I. Zaitsev) **89i:20032** 20D10 (20E34)
- (with Semko, N. N.) The structure of periodic metabelian meta-Hamiltonian groups with an elementary commutator subgroup of rank two. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 6, 743–750, 814. (J. Wiegold) **89m:20037** 20F16 (20F50)
- (with Levishchenko, S. S.; Semko, N. N.) Groups with normal infinite nonabelian subgroups. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 3, 314–321, 406; translation in *Ukrainian Math. J.* **40** (1988), no. 3, 267–273. (Yu. I. Merzlyakov) **89g:20049** 20E15 (20F26)
- (with Subbotin, I. Ya.) New characterizations of locally nilpotent IH-groups. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 3, 322–326, 406; translation in *Ukrainian Math. J.* **40** (1988), no. 3, 274–277. (E. I. Khukhro) **89h:20050** 20F19 (20E15, 20F22)
- Kuzhen'kin, S. N.** Sublinear semiprojectors and semigroups of linear operators. (Russian) *Application of functional analysis, in approximation theory* (Russian), 82–85, 146, Kalinin. Gos. Univ., Kalinin, 1984. (see **89c:90006**) 47D05 (47B55, 47H99)
- Kuzhir, P. G.** (with Agibayev, A. V.) Time evolution of a non-steady-state quantum system on a finite interval of time. (Russian. English summary) *Dokl. Akad. Nauk BSSR* **32** (1988), no. 5, 409–412, 476. (Summary) **89f:81062** 81C99
- Kuzhmuratov, A.** Regularization of integro-operator equations of Volterra type of the first kind. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **30** (1987), no. 7, 405–409. (A. Corduneanu) **89j:45004** 45D05 (47A50, 47G05)
- Kuzhukev, U. M.** (with Kustov, E. F.) Four-dimensional point groups and their application. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (*Järnala*, 1985), 608–615, "Nauka", Moscow, 1986. (see **89d:81001**) 20H15
- (with Kuzhukev, Zh. N. M.) Molino functions for representations of four-dimensional point groups. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (*Järnala*, 1985), 616–622, "Nauka", Moscow, 1986. (see **89d:81001**) 20H15 (20C35)
- Kuzhukev, Zh. N. M.** (with Koptsik, V. A.; Fedoseeva, I. L.) Eight-color space P-symmetry groups (programmed derivation). *Group theoretical methods in physics, Vol. 1–3* (Zvenigorod, 1982), 715–723, Harwood Academic Publ., Chur, 1985. (R. L. E. Schwarzenberger) **89m:20056** 20H15 (82A60)
- (with Kuzhukev, U. M.) Molino functions for representations of four-dimensional point groups. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (*Järnala*, 1985), 616–622, "Nauka", Moscow, 1986. (see **89d:81001**) 20H15 (20C35)
- Kuzicheva, V. A.** Inverse isomorphisms of rings of recursive endomorphisms. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1986**, no. 3, 91–93, 121. (Summary) **89a:03085** 03D45
- Kuzina, T. S.** A class of extremal problems related to the problem of moments. (Russian. Armenian summary) *Erevan. Gos. Univ. Uchen. Zap. Estestv. Nauki* **1984**, no. 2 (156), 3–10. (Not in MR) 30E05
- Extremal problems for analytic functions of Hardy-Solomentsev classes in multiply connected domains. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 8, 30–39, 88. (A. E. Djrbashian) **89a:30006** 30C45 (30D55)
- Kuzmenko, N.** (with Eryomin, V.) Differential equations for matrix elements in a class of models of bound-continuum transitions. *Chem. Phys. Lett.* **141** (1987), no. 5, 397–400. (Summary) **89k:81197** 81G45
- (with Eryomin, V.) An example of the inverse problem for bound-continuum electronic transitions in diatomic molecules. *Inverse Problems* **5** (1989), no. 1, 7–11. (Summary) **89k:81200** 81G55
- Kuzmenko, V. N.** Application of a method of sequential analysis of variants for solving a nonlinear programming problem. (Russian) *Methods for the investigation of extremal problems* (Russian), 24–29, ii, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. (Summary) **89k:90143** 90C30
- Kuz'min, A. B.** (with Kalugin, P. A.; Shramko, V. I.) The principle of absolute invariance in the functional control of information systems. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 11, 177–184. (Not in MR) 94A12
- Kuz'min, A. G.** Equations of mixed type with nonclassical behaviour of characteristics. *Mixed type equations*, 180–194, *Teubner-Texte Math.*, 90, Teubner, Leipzig, 1986. (Megumi Saigo) **89b:35116** 35M05 (76H05)
- Kuz'min, A. T.** Proof of the uniqueness of the solution of the Tricomi problem for an equation of mixed type in an unbounded domain. (Russian) *Analytic methods for solving differential equations* (Russian), 56–58, 146–147, *Kuibyshev. Gos. Univ., Kuibyshev*, 1986. (Summary) **89j:35146** 35M05
- Kuz'min, M. K.** Geometry of a class of R-nets in a projective [Euclidean] space. (Russian) *Differentsial'naya Geom. Mnogobraz. Figur* No. 18 (1987), 42–46, 138. (M. A. Aktivis) **89k:53051** 53A40
- Kuz'min, R. N.** (with Ovchinnikova, E. N.) Use of the tensor representation of space groups in problems of nuclear physics. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (*Järnala*, 1985), 670–675, "Nauka", Moscow, 1986. (see **89d:81001**) 81H99
- (with Ovchinnikova, E. N.) Symmetry in the nuclear solid state physics. Crystal symmetries. *Comput. Math. Appl.* **16** (1988), no. 5–8, 657–661. (see **89j:00029**) 81G30
- Kuz'min, V. A.** (with Berezin, V. A.; Tkachev, I. I.) Global geometry of a spherically symmetric universe. *Soviet Phys. JETP* **66** (1987), no. 4, 654–658 (1988); translated from *Zh. Eksp. Teoret. Fiz.* **93** (1987), no. 4, 1159–1167 (Russian). (M. A. H. MacCallum) **89k:83038** 83C40
- (with Berezin, V. A.) A new possibility of cosmological model construction in Kaluza-Klein theories. *Modern Phys. Lett. A* **3** (1988), no. 15, 1421–1424. (Summary) **89j:83069** 83E15 (83C75)
- (with Berezin, V. A.; Tkachev, I. I.) O(3)-invariant tunneling in general relativity. *Phys. Lett. B* **207** (1988), no. 4, 397–403. (Summary) **89d:83080** 83F05 (83C45)
- (with Berezin, V. A.; Tkachev, I. I.) Wormhole creation via classical fluctuations and inflating worlds. *Phys. Lett. B* **210** (1988), no. 1–2, 64–67. (Markku Lehto) **89j:83092** 83F05 (83E05)
- (with Kozimirov, N. G.; Tkachev, I. I.) On symmetry breaking at coset space dimensional reduction. *Phys. Lett. B* **215** (1988), no. 1, 84–86. (Thomas Schücker) **89i:53056** 53C80 (81E13, 83E15)
- Kuz'min, V. N.** Expansion of elements of the scattering matrix in generalized spherical functions in a problem of polarized radiation transfer in media consisting of perfectly oriented axisymmetric particles. (Russian. English summary) *Kinemat. Fiz. Nebesn. Tel* **4** (1988), no. 6, 15–22. (Summary) **89i:85003** 85A25
- Kuz'min, Yu. V.** (with Shapiro, M. Z.) The connection between varieties of groups and varieties of Lie rings. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 5, 100–101. (Robert G. Burns) **89g:20048** 20E10 (17B60, 20F14, 20F40)
- Homology theory of free abelianized extensions. *Comm. Algebra* **16** (1988), no. 12, 2447–2533. (R. Stöhr) **89k:20074** 20J05 (18G99, 20J10)
- On the differentials of a spectral sequence of a group extension. (Russian) *Mat. Sb. (N.S.)* **133(175)** (1987), no. 1, 49–63, 143; translation in *Math. USSR-Sb.* **61** (1988), no. 1, 49–63. (Ross Staffeldt) **89e:20093** 20J05 (16A27, 18G40)
- Kuz'mina, G. M.** Conditions for the compatibility of a certain system of singular integral equations. (Russian) *Function-theoretic methods in problems of mathematical physics* (Russian), 58–61, *Énergoatomizdat, Moscow*, 1986. (A. P. Soldatov) **89j:45005** 45E05
- Kuz'mina, G. V.** The method of modules of curve families in the extremal problems of the theory of univalent mappings. *Complex analysis and applications '85* (Varna, 1985), 404–413, *Bulgar. Acad. Sci., Sofia*, 1986. (D. H. Hamilton) **89d:30019** 30C55
- Extremal properties of quadratic differentials with trajectories that are asymptotically similar to logarithmic spirals. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **160** (1987), *Anal. Teor. Chisl. i Teor. Funkts.* **8**, 121–137, 299. (V. M. Gol'dshein) **89e:30081** EA 89m 30F30
- Kuz'mina, L. K.** On the problem of stability for singularly perturbed systems. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 124–129, 324, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (see **89c:00040**) 34D20 (34E15)
- Kuz'minov, V. I.** (with Gol'dshein, V. M.; Shvedov, I. A.)  $L_p$ -cohomology of Riemannian manifolds. (Russian) *Trudy Inst. Mat. (Novosibirsk)* **7** (1987), *Issled. Geom. Mat. Anal.*, 101–116, 199. (Andreas Nestke) **89d:58117** 58G05 (58A12, 58A14, 58A25)
- (with Gol'dshein, V. M.; Shvedov, I. A.) The de Rham isomorphism of the  $L_p$ -cohomology of noncompact Riemannian manifolds. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 2, 34–44, 216; translation in *Siberian Math. J.* **29** (1988), no. 2, 190–197. (Jürgen Eichhorn) **89h:58007** 58A12 (58A14, 58G25)
- Kuz'mnykh, A. V.** Isometricity of mappings that almost preserve certain distances. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 3, 87–91, 220; translation in *Siberian Math. J.* **29** (1988), no. 3, 403–407. (Maria Moszyńska) **89i:51017** 51K05
- Mappings that almost preserve angles. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 4, 99–105, 223; translation in *Siberian Math. J.* **29** (1988), no. 4, 593–598. (B. Klotzek) **89k:51019** 51F99
- Mappings that almost preserve convexity. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 4, 106–110, 224; translation in *Siberian Math. J.* **29** (1988), no. 4, 598–602. (B. Klotzek) **89m:51022** 51F99 (26A51, 52A05)
- Kuz'mnykh, V. A.** An integrable case of perturbed Kepler motion. (Russian) *Prikl. Mat. Mekh.* **52** (1988), no. 6, 1033–1036. (Summary) **89m:70013** 70F05
- Kuznetsov, A. V.** (with Negru, I. S.) Examples of nontrivial quasi-identities that are true in lattices of congruences of semigroups. (Russian) *Izv. Akad. Nauk Moldav. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **1988**, no. 1, 20–23, 78. (B. Pondělíček) **89i:20093** 20M10 (06B20)
- Kuznetsov, Aleksandr Vasil'evich** Coding in a memory in the presence of information on defects. (Russian) *Noise-resistant coding and computer reliability* (Russian), 110–125, 191, "Nauka", Moscow, 1987. (Summary) **89e:94006** 94A24 (94A40)
- Kuznetsov, Aleksandr Vladimirovich** (with Danilchenko, A. F.; Negru, I. S.; Pavlova, E. A.) Some combinatorial questions concerning functional constructions in  $k$ -valued logic. (Russian) *Mat. Issled.* No. 95 Kvazigruppy (1987), 66–70, 131. (I. Strazdiņš) **89a:03054** 03B50 (03G20, 05B25, 05C15, 06B05, 20N05)
- (with Muravitskii, A. Yu.) Superintuitionistic logics as fragments of extensions of provability logic. (Russian) *Mat. Issled.* No. 98 Neklass. Logiki (1987), 15–39, 152–153. (V. V. Rybakov) **89c:03031** 03B45 (03B55, 03F40)
- Kuznetsov, G. I.** (with Danilov, Yu. A.) Nonlinear equations and differential invariants. *Group theoretical methods in physics, Vol. 1–3* (Zvenigorod, 1982), 537–540, Harwood Academic Publ., Chur, 1985. (From the text) **89m:58213** 58G35 (35A30, 58A15)
- A group approach to the three-body problem. (Russian) *Group-theoretic methods in physics, Vol. 2* (Russian) (*Järnala*, 1985), 582–591, "Nauka", Moscow, 1986. (see **89d:81002**) 81F10
- Kuznetsov, I. B.** (with Kuznetsov, S. B.) ★ Распараллеливание методов типа ПБП для решения эллиптических уравнений. (Russian) [Subdivision into parallel parts of methods of SOR type for solving elliptic equations] Препринт [Preprint], 633. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1986. 16 pp. (Stavros A. Belbas) **89b:65332** 65W05 (65N05)
- ★ Параллельные формы алгоритма для решения рекурсивных задач. (Russian) [Parallel forms of an algorithm for solving recursive problems] Препринт [Preprint], 712. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1987. 20 pp. (Ilmar Arro) **89j:65086** 65Q05 (65W05)
- Kuznetsov, N. G.** (with Maz'ya, V. G.) Asymptotic expansions for surface waves that can be induced by rapidly oscillating or accelerating perturbations. (Russian) *Asymptotic methods* (Russian), 136–175, 384, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Summary) **89d:76008** 76B15 (35C20)
- (with Maz'ya, V. G.) Unique solvability of the plane Neumann-Kelvin problem. (Russian) *Mat. Sb. (N.S.)* **135(177)** (1988), no. 4, 440–462, 559; translation in *Math. USSR-Sb.* **63** (1989), no. 2, 425–446. (M. Yu. Vasil'chik) **89i:35048** 35J25 (31A25, 76B99)
- Kuznetsov, N. Yu.** An analytic-statistical method for constructing quantitative estimates for the continuity of the characteristics of queueing systems and stand-by systems. (Russian) *Stability problems for stochastic models* (Russian) (Varna, 1985), 54–62, *Vsesoyuz. Nauch.-Issled. Inst. Sistem. Issled., Moscow*, 1986. (From the introduction) **89j:60128** 60K25 (90B22)
- Kuznetsov, O. A.** (with Denisov, A. A.; Koldoba, A. V.; Poveshchenko, Yu. A.) Convergence of difference schemes of the method of support operators for the Poisson equation on generalized solutions. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 46, 16 pp. (Summary) **89h:65160** 65N10
- Kuznetsov, O. P.** (with Adel'son-Vel'skii, G. M.) ★ Дискретная математика для инженера. (Russian) [Discrete mathematics for the engineer] Second edition. *Énergoatomizdat, Moscow*, 1988. 480 pp. ISBN 5-283-01563-7 (Roman Swiniarski) **89k:00002** 00A05 (00-01, 05-01, 68-01, 90-01)
- Kuznetsov, S. B.** (with Kuznetsov, I. B.) ★ Распараллеливание методов типа ПБП для решения эллиптических уравнений. (Russian) [Subdivision into parallel parts for

- methods of SOR type for solving elliptic equations] *Priprint* [Preprint], 633. *Akad. Nauk SSSR Sibsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1986. 16 pp. (Stavros A. Belbas) **89b:65332** 65W05 (65N05)
- Kuznetsov, S. P.** (with Pikovskii, A. S.) Interaction of systems with stochastic behavior. (Russian) *Nonlinear waves* (Russian), 237–251, 396, "Nauka", Moscow, 1987. (Ji Bin Li) **89b:58185** 58F13
- Kuznetsov, S. V.** Calculation of the stationary front of a chemical reaction. (Russian) *Trudy Inst. Mat. (Novosibirsk)* **11** (1988), *Vychisl. Problemy v Zadachakh Mat. Fiz.*, 93–100, 120. (Summary) **89f:92081** 92A40
- Kuznetsov, V. B.** (with Komarov, I. V.) Quasiclassical quantization of the Kovalevskaya top. (Russian. English summary) *Teoret. Mat. Fiz.* **73** (1987), no. 3, 335–347. (Summary) **89f:81076** 81D07 (58F07, 58F40, 81C25)
- (with Komarov, I. V.) The generalized Goryachev-Chaplygin gyrost at in quantum mechanics. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **164** (1987), *Differentsial'naya Geom. Gruppy Li i Mekh.* **IX**, 133–141, 198. (Summary) **89e:81053** 81C99 (58F07)
- (with Bobenko, A. I.) Lax representation and new formulae for the Goryachev-Chaplygin top. *J. Phys. A* **21** (1988), no. 9, 1999–2006. (Tudor S. Ratiu) **89g:58086** 58F07 (70E15)
- Kuznetsov, V. I.** (with Burgin, M. S.) Types of symmetries in physical theory. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Jūrmala*, 1985), 362–371, "Nauka", Moscow, 1986. (see **89d:81002**) **81C40**
- (with Burgin, M. S.) Problems as components of a problem-heuristic subsystem of a scientific theory. (Russian) *Scientific knowledge: logic, concepts, structure* (Russian), 52–83, "Nauka" *Sibsk. Otdel., Novosibirsk*, 1987. (V. Ya. Kreinovich) **89b:00035** 00A25 (03E72)
- Kuznetsov, V. N.** see **Kuznetsov, Valerii Nikolaevich**
- Kuznetsov, V. V.** (with Badratinova, L. G.; Petrova, A. G.; Pukhnachev, V. V.) Free-boundary problems that model the process of fluid-phase epitaxy in triple solutions. (Russian) *Dinamika Sploshn. Sredy* No. 78 (1986), 137–141, 159. (Summary) **89g:35119** 35R35 (76R50)
- Kuznetsov, Valerii Nikolaevich** (with Galitskaya, I. E.) Approximate calculation of the stationary reliability indices of a class of semi-Markov systems. (Russian) *Analysis of stochastic systems by methods in operations research and reliability theory* (Russian), 64–68, vi, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987. (see **89b:90004**) **60K20**
- Kuznetsov, Yu. A.** see **Kuznetsov, Yuri Alekseevich**
- Kuznetsov, Yu. I.** A matrix analysis of orthogonal polynomials and of the least squares method. (Russian) *Computational methods in linear algebra* (Russian) (Moscow, 1982), 175–186, *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1983. (O. Pokorná) **89a:65070** 65F30
- ★ Восстановление колебательной системы по вектору наблюдения. (Russian) [Reconstruction of an oscillatory system from the observation vector] *Препринт* [Preprint], 739. *Akad. Nauk SSSR Sibsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1987. 17 pp. (Jan Andres) **89e:93012** 93B07 (34A55, 34C15)
- ★ Дополнительные якобиевы матрицы. (Russian) [Complementary Jacobi matrices] *Препринт* [Preprint], 758. *Akad. Nauk SSSR Sibsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1987. 14 pp. (Ilmar Arro) **89k:93052** 93B25 (15A57)
- A triple algebraic structure. (Russian) *Computational processes and systems*, No. 5 (Russian), 275–282, "Nauka", Moscow, 1987. (F. Szidarovszky) **89c:65037** 65F05
- (with Afanas'ev, S. A.; Gribkov, D. A.) Investigation of processes in a nonautonomous autostochastic system. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* **29** (1988), no. 6, 16–20, 113. (Summary) **89f:58166** 58F13 (94C05)
- Kuznetsov, Yuri Alekseevich** (with Trufanov, O. D.) ★ Двухступенчатый метод фиктивных компонент для решения волнового уравнения Гельмгольца. (Russian) [The two-step method of fictitious components for solving the Helmholtz wave equation] Translated in *Soviet J. Numer. Anal. Math. Modelling* **3** (1988), no. 5, 373–391. *Препринт* [Preprint], 149. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1987. 28 pp. (Summary) **89a:65157** 65N20
- ★ Новые алгоритмы приближенной реализации неявных разностных схем. (Russian) [New algorithms for the approximate realization of implicit difference schemes] Translated in *Soviet J. Numer. Anal. Math. Modelling* **3** (1988), no. 2, 99–114. *Препринт* [Preprint], 142. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1987. 24 pp. (Lydia Kronsjo) **89f:65114** 65N20
- (with Bespalov, A. N.) RF cavity computations by the domain decomposition and fictitious components methods. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* **2** (1987), no. 4, 259–278. (Lubor Malina) **89a:78010** 78A50 (65N25, 65N30, 78–08)
- (with Agapov, V. K.) On some versions of the domain decomposition method. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* **3** (1988), no. 4, 245–265. (Włodzimierz Proskurowski) **89b:65170** 65N30 (65F99)
- (with Finogenov, S. A.) Two-stage fictitious components method for solving the Dirichlet boundary value problem. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* **3** (1988), no. 4, 301–323. (Włodzimierz Proskurowski) **89k:65119** 65N05 (65N10, 65N50)
- Kuznetsova, O. F.** (with Enikeev, I. Kh.; Polyanski, V. A.; Shurgalskii, É. F.) Mathematical modeling of two-phase swirling flows by the modified method of coarse particles. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 1, 90–100, 157; translation in *U.S.S.R. Comput. Math. and Math. Phys.* **28** (1988), no. 1, 58–65. (Summary) **89c:76104** 76T05 (65M99, 76–08)
- Kuznetsova, O. V.** N. S. Krylov's investigations on the justifications of statistical mechanics. (Russian) *Studies in the history of physics and mechanics*, 1987 (Russian), 80–96, 244–245, "Nauka", Moscow, 1987. (L. A. Bunimovich) **89k:01025** 01A60 (01A70, 82–03)
- ★ История обоснования статистической механики. (Russian) [History of the justification of statistical mechanics] With appendixes by Georg D. Birkhoff [Georg David Birkhoff]. "Nauka", Moscow, 1988. 184 pp. ISBN 5-02-000072-8 (D. ter Haar) **89f:01048** 01A60 (01A55, 82–03)
- Kuzlyk, A. D.** (with Sheremeta, M. N.) Entire functions of bounded  $l$ -index. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 6, 16–17, 86. (Summary) **89b:30046** 30D20
- Kvart, Igal** Beliefs and believing. *Theoria* **52** (1986), no. 3, 129–145. (Charles F. Kielkopf) **89m:03013** 03B45
- Kvatadze, Z. A.** (with Bokuchava, I. V.; Shervashidze, T. L.) On limit theorems for random vectors controlled by a Markov chain. *Probability theory and mathematical statistics*, Vol. 1 (Vilnius, 1985), 231–250, *VNU Sci. Press, Utrecht*, 1987. (Introduction) **89c:60040** 60F05 (60J10)
- (with Shervashidze, T. L.) On limit theorems for conditionally independent random variables controlled by a finite Markov chain. *Probability theory and mathematical statistics* (Kyoto, 1986), 250–258, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (Serban Grigorescu) **89d:60043** 60F05 (60J10)
- Kvedaras, Bronius** The solvability of an integro-differential equation with holomorphic coefficients. (Russian. English and Lithuanian summaries) *Differentsial'nye Uravneniya i Primenen.* No. 40 (1987), 34–40. (M. Švec) **89c:45020** 45K05 (35J99)
- Kvernadze, G. A.** Uniform convergence of Fourier-Legendre series. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzin. SSR* **127** (1987), no. 2, 257–259. (Weixing Zheng) **89f:42025** 42C10
- Absolute convergence of Fourier-Legendre series. (Russian. English and Georgian summaries) *Soobshch. Akad. Nauk Gruzin. SSR* **130** (1988), no. 1, 33–35. (Summary) **89k:42027** 42C10
- Kveselava, A. D.** (with Andrushevich, V. V.; Kukuliev, G. Yu.) Collective behavior processes in problems of the distribution of a multidimensional resource. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 3, 62–70; translation in *Avtomat. Remote Control* **49** (1988), no. 3, part 1, 314–319. (Summary) **89f:90031** 90A16
- Kvetnyi, R. N.** (with Malikov, V. T.) ★ Информационная теория измерений: от модели к изданию. (Russian) [Informational theory of measurements: from the model to the product] Новое в Жизни, Науке, Технике: Серия "Математика, Кибернетика" [Current Life, Science and Technology: Series "Mathematics and Cybernetics"], 88-7. "Znanie", Moscow, 1988. 32 pp. (Yu. I. Petunin) **89k:94028** 94A17 (92A07, 93E03, 94–01)
- Kvinikadze, M. G.** Some boundary contact oscillation problems of the theory of elasticity for unbounded isotropic inhomogeneous media. (Russian. English and Georgian summaries) *Trudy Tbiliss. Univ. Mat. Mekh. Astronom.* No. 22-23 (1987), 62–85. (Summary) **89a:73059** 73T05
- Asymptotic behavior, as  $t \rightarrow \infty$ , of solutions of initial-boundary-contact problems for hyperbolic systems. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruzin. SSR* **90** (1988), 115–126. (V. Ivrii) **89k:35135** 35L55 (35B40)
- Kvitko, A. N.** A boundary value problem with shift for a Carleman system on a Riemann surface with boundary. (Russian) *Physical-engineering applications of nonlinear boundary value problems* (Russian), 102–105, 142, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (Zbigniew Binderman) **89b:30056** 30E25 (30F15, 30G20, 45E05)
- The discontinuous Hilbert problem for an elliptic system of first-order differential equations on a Riemann surface. (Russian) *Mat. Metody i Fiz.-Mekh. Polya* No. 26 (1987), 7–10, 106. (Jian Ke Lu) **89b:30034** 30E25 (30F99, 30G20, 35J55)
- Kvitsinskii, A. A.** A trace formula for the Schrödinger operator with Coulomb potential in a three-dimensional space. (Russian. English summary) *Teoret. Mat. Fiz.* **70** (1987), no. 1, 104–114. (Summary) **89f:81041** 81C10 (81F05)
- (with Merkur'ev, S. P.) Effective potential in low-energy elastic ( $2 \rightarrow 2$ ) scattering of three charged particles. (Russian. English summary) *Vestnik Leningrad. Univ. Fiz. Khim.* **1987**, vyp. 2, 40–47, 134–135. (Summary) **89a:81159** 81F10
- (with Kostykin, V. V.) Potential scattering in a homogeneous external electrostatic field. (Russian. English summary) *Teoret. Mat. Fiz.* **75** (1988), no. 3, 416–430; translation in *Theoret. and Math. Phys.* **75** (1988), no. 3, 619–629. (Summary) **89f:81228** 81F05
- Kvyadaras, Bronius** see **Kvedaras, Bronius**
- Kwa, James B. H.** BS\*: an admissible bidirectional staged heuristic search algorithm. *Artificial Intelligence* **38** (1989), no. 1, 95–109. (Summary) **89m:68122** 68T20
- Kwak, Byung Man** (with Choi, Joo Ho) Boundary integral equation method for shape optimization of elastic structures. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 7, 1579–1595. (Summary) **89d:73039** 73K40
- Kwak, Jin Ho**  $n$ -manifold which is not productive. *Bull. Korean Math. Soc.* **25** (1988), no. 1, 123–125. (R. E. Stong) **89f:57037** 57R15
- The stable parallelizability of a smooth homotopy lens space. *J. Pure Appl. Algebra* **50** (1988), no. 2, 155–169. (R. E. Stong) **89c:57027** 57R15
- Kwakernaak, Huibert** A polynomial approach to minimax frequency domain optimization. *Modelling, identification and robust control* (Stockholm, 1985), 147–161, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:93028** 93B25 (93C05, 93C35)
- Kwan, Andy C. C.** (with Sim, Ah-Boon) Generalised portmanteau statistics and tests of randomness: a note on their applications to residuals from a fitted ARMA model. *Econ. Lett.* **26** (1988), no. 4, 341–347. (Summary) **89c:62121** 62M10
- Kwan, Clarence C. Y.** (with Cheung, C. Sherman) A note on simple criteria for optimal portfolio selection. *J. Finance* **43** (1988), no. 1, 241–245. (Not in MR) **90A09**
- Kwan, Hon Keung** (with Lui, Ying Chun) Lattice implementation of two-dimensional recursive digital filters. *IEEE Trans. Circuits and Systems* **36** (1989), no. 3, 383–386. (Not in MR) **94A12**
- Kwan, Stephen K.** (with Davis, Mark M.; Greenwood, Allen G.) A simulation model for determining variable worker requirements in a service operation with time-dependent customer demand. *Queueing Systems Theory Appl.* **3** (1988), no. 3, 265–275. (Summary) **89g:90101** 90B22
- Kwapień, S.** (with Schütt, C.) Quelques inégalités combinatoires et probabilistes. [Some combinatorial and probabilistic inequalities] *Séminaire d'Analyse Fonctionnelle* 1984/1985, 9–10, *Publ. Math. Univ. Paris VII*, 26, Univ. Paris VII, Paris, 1986. (see **89b:46005**) **05A20** (60E15)
- (with Da Prato, G.; Zabczyk, J.) Regularity of solutions of linear stochastic equations in Hilbert spaces. *Stochastics* **23** (1987), no. 1, 1–23. (Constantin Tudor) **89b:60148** 60H20 (47D05)
- Kwasik, Sławomir** (with Lee, Kyung Bai) Locally linear actions on 3-manifolds. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 2, 253–260. (Allan Edmonds) **89j:57034** 57S17 (57N10)
- (with Schultz, Reinhard) Desuspension of group actions and the ribbon theorem. *Topology* **27** (1988), no. 4, 443–457. (Allan Edmonds) **89m:57043** 57S17 (57S25)
- Kwaśniewski, A. K.** Clifford and Grassmann like algebras. Proceedings of the 13th winter school on abstract analysis (Srní, 1985). *Rend. Circ. Mat. Palermo (2) Suppl. No. 9* (1985), 141–155 (1986). (From the introduction) **89c:15034** 15A66 (15A90, 82A68)



- Algebraic structure of Potts models. *Acta Phys. Polon. A* 72 (1987), no. 5, 615–617. (Summary) **89c:82072** 82A68
- Calculation of the free energy for a chain in an arbitrary magnetic field. *Acta Phys. Polon. A* 72 (1987), no. 6, 729–731. (H. N. V. Temperley) **89c:82073** 82A68 (82A69)
- Algebraic properties of the 3-state vector Potts model. Proceedings of the 14th winter school on abstract analysis (Srní, 1986). *Rend. Circ. Mat. Palermo (2) Suppl. No. 14* (1987), 225–229. (H. N. V. Temperley) **89b:82111** 82A68
- Remarks on canonical commutation relations. Proceedings of the Winter School on Geometry and Physics (Srní, 1987). *Rend. Circ. Mat. Palermo (2) Suppl. No. 16* (1987), 145–150. (see **89a:00021**) 81B05
- On the meaning of Bell's inequalities violation. Proceedings of the Winter School on Geometry and Physics (Srní, 1987). *Rend. Circ. Mat. Palermo (2) Suppl. No. 16* (1987), 151–155. (see **89a:00021**) 81B05
- Kwasnik, Maria** (with Michalak, Danuta) On the binding number of line graphs and of product graphs. *Discuss. Math. 8* (1986), 17–29 (1987). (Shreedhara Prasada Mohanty) **89a:05089** 05C35
- On primitive and Hall relations. *Graphs, hypergraphs and matroids, II* (Zagreb, 1986), 29–35. *Higher College Engrg., Zielona Góra*, 1987. (Larry Basenšpiller) **89c:05136** 05C70
- Index of primitivity of the disjunction and the composition of two directed graphs. *Math. Nachr.* 134 (1987), 231–235. (Introduction) **89g:05051** 05C20
- Kwatny, Harry G.** (with Bahar, Leon Y.) Some qualitative aspects of power system dynamics. *Dynamical systems approaches to nonlinear problems in systems and circuits* (Henniker, NH, 1986), 175–196. *SIAM, Philadelphia, PA*, 1988. (Henryk Żoładek) **89c:34074** 34D99 (58C27, 58F14, 94C05)
- Kwee, B.** On a conjecture on Riemann summability  $(R, k)$ . *Math. Proc. Cambridge Philos. Soc.* 104 (1988), no. 2, 277–281. (Włodzimierz Lencki) **89i:40004** 40G99
- Kwiatkowski, J.** (with Filipowicz, I.; Lemańczyk, M.) Approximation of  $Z_2$ -cocycles and shift dynamical systems. *Publ. Mat.* 32 (1988), no. 1, 91–110. (Adam Fieldsteel) **89f:28038** 28D05
- (with Rojek, Tadeusz) The centralizer of Morse shifts induced by arbitrary blocks. *Studia Math.* 88 (1988), no. 2, 165–181. (D. Newton) **89g:28024** 28D05 (54H20, 58F11)
- Kwiecińska, Grażyna** On the sup-measurability of functions. (Serbo-Croatian summary) *Rad. Mat.* 4 (1988), no. 1, 73–80. (Zbigniew Grande) **89f:28012** 28A20 (26B40, 28A10, 28A35, 49A50)
- Kwak, Ben** (with Veall, Michael R.) The jackknife and regression with AR(1) errors. *Econom. Lett.* 26 (1988), no. 3, 247–252. (Summary) **89j:62087** 62J05
- Kwon, Bong-Hwan** (with Youn, Myung-Joong) Optimal discrete systems using time-weighted performance index with prespecified closed-loop eigenvalues. *IEEE Trans. Automat. Control* 33 (1988), no. 11, 1078–1080. (Not in MR) **93B60** (93C55)
- Kwon, Jung-Hwan** (with Aiyama, Reiko; Nakagawa, Hisao) Indefinite complex submanifolds of an indefinite complex space form. *J. Ramanujan Math. Soc.* 2 (1987), no. 1, 43–67. (Alfonso Romero) **89i:53111** 53C40 (53C25, 53C50)
- (with Aiyama, Reiko; Ikawa, Toshihiko; Nakagawa, Hisao) Complex hypersurfaces in an indefinite complex space form. *Tokyo J. Math.* 10 (1987), no. 2, 349–361. (Alfonso Romero) **89c:53035** 53C40 (53C50)
- (with Pak, Jin Suk) On normality of  $f$ -three-structure. *Bull. Korean Math. Soc.* 25 (1988), no. 1, 5–16. (Paolo Piccinini) **89f:53084** 53C40 (53C15)
- Semi-invariant submanifolds of codimension 3 with harmonic curvature. *Tsukuba J. Math.* 12 (1988), no. 1, 249–258. (Jin Suk Pak) **89f:53085** 53C40 (53C15)
- Kwon, Ohsang** (with Lee, Sangbae; Kim, Yong Chan) Convolution of univalent functions with negative coefficients. *Math. Japon.* 33 (1988), no. 2, 261–268. (Herb Silverman) **89c:30019** 30C45
- Kwon, P.** (with Villasante, M.) Casimir operators for massless representations of the super-Poincaré algebra and the reduction of the ten-dimensional massless scalar superfield. *J. Math. Phys.* 29 (1988), no. 3, 560–571. (From the introduction) **89j:17005** 17A70 (81E99, 81G20)
- Kwon, W. H.** (with Lee, Sang Jeong) LQG/LTR methods for linear systems with delay in state. *IEEE Trans. Automat. Control* 33 (1988), no. 7, 681–687. (Summary) **89d:34125** 34K35 (49D40, 93D10, 93E11)
- (with Lee, Sang Jeong; Kim, Sang Woo) LQG/LTR methods for linear input-delayed systems. *Internat. J. Control* 47 (1988), no. 5, 1179–1194. (Summary) **89c:34088** 34K35 (49D40, 93B50, 93C05, 93D05)
- Kwon, Yonghoon** (with Milner, Fabio A.)  $L^\infty$ -error estimates for mixed methods for semilinear second-order elliptic equations. *SIAM J. Numer. Anal.* 25 (1988), no. 1, 46–53. (Manfred Dobrowski) **89c:65122** 65N30
- Kwong, C. P.** Frequency-domain stability analysis of population control. *Math. Comput. Modelling* 10 (1988), no. 5, 367–376. (Summary) **89d:92069** 92A15 (93D10)
- Kwong, Man Kam** (with Kaper, Hans G.) Asymptotics of the Titchmarsh-Weyl  $m$ -coefficient for integrable potentials. II. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 222–229. *Lecture Notes in Math.*, 1285, Springer, Berlin-New York, 1987. (J. S. Bradley) **89b:34125** 34E05 (34E20)
- (with Kaper, Hans G.) Oscillation theory for linear second-order differential systems. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 187–197. *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (Anthony Uyi Afuwape) **89a:34045** 34C10 (34A30)
- (with Patula, William T.) Comparison theorems for first order linear delay equations. *J. Differential Equations* 70 (1987), no. 2, 275–292. (B. P. Tkach) **89f:34097** 34K05 (34C10)
- (with Zeitl, A.) Extremals in Landau's inequality for the difference operator. *Proc. Roy. Soc. Edinburgh Sect. A* 107 (1987), no. 3–4, 299–311. (R. C. S. Chandel) **89m:47027** 47B39 (39A70, 46A45)
- (with Kaper, Hans G.) Uniqueness results for some nonlinear initial and boundary value problems. *Arch. Rational Mech. Anal.* 102 (1988), no. 1, 45–56. (Pavel Drábek) **89d:35059** 35J65 (34A10)
- (with Wong, James S. W.) Oscillation of Emden-Fowler systems. *Differential Integral Equations* 1 (1988), no. 2, 133–141. (Jan Andres) **89b:34075** 34C10
- (with Kaper, Hans G.) Concavity and monotonicity properties of solutions of Emden-Fowler equations. *Differential Integral Equations* 1 (1988), no. 3, 327–340. (R. Guenther) **89b:34027** 34A34 (34C10)
- (with Kaper, Hans G.) Uniqueness for a class of nonlinear initial value problems. *J. Math. Anal. Appl.* 130 (1988), no. 2, 467–473. (Ioan I. Vrabie) **89c:34005** 34A10 (34A34)
- On the definiteness of the solutions of certain matrix equations. *Linear Algebra Appl.* 108 (1988), 177–197. (Bryan E. Cain) **89k:15022** 15A24 (15A04, 15A48, 15A57)
- (with Zeitl, A.) Landau's inequality for the difference operator. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 201–206. (Anton Hut'a) **89k:39012** 39A70
- Kwon, Gea Hwa** An estimation procedure in a nonstationary autoregressive model. *J. Japan Statist. Soc.* 18 (1988), no. 1, 1–10. (Summary) **89g:62152** 62M10
- Nguyễn Xuân Kỳ** see **Nguyễn Xuân Kỳ**
- Kyan, Seiki** (with Kawaguchi, Tsuyoshi) Deterministic scheduling in computer systems: a survey. (Japanese summary) *J. Oper. Res. Soc. Japan* 31 (1988), no. 2, 190–217. (M. M. Syslo) **89j:90150** 90B35 (68M20, 68N25)
- Phạm Kỳ Anh** see **Phạm Kỳ Anh**
- Kyazimov, Dz. K.** Approximate solution of the Tricomi problem for nonlinear equations of mixed type. (Russian) *Applied problems in functional analysis* (Russian), 43–49, 116, *Azerbaidzhan. Gos. Univ., Baku*, 1986. (Summary) **89b:35117** 35M05 (35A35, 65N99)
- Stability of computational processes by the use of a mathematical programming method. (Russian) *Discrete mathematics and computer software* (Russian), 37–41, *Azerbaidzhan. Gos. Univ., Baku*, 1986. (Hans-Eberhard Scholz) **89g:65131** 65N10
- Kyburg, Henry E., Jr.** Addendum: "Bayesian and non-Bayesian evidential updating" [Artificial Intelligence 31 (1987), no. 3, 271–293; MR 88h:60002]. *Artificial Intelligence* 36 (1988), no. 2, 265–266. (Editors) **89g:60003** 60A05 (62A15, 68T30, 90D12)
- Higher order probabilities and intervals. *Internat. J. Approx. Reason.* 2 (1988), no. 3, 195–209. (Lawrence Sklar) **89h:03034** 03B48 (03E72, 60A99, 90A05, 92A25)
- Kydland, Finn E.** (with Hotz, V. Joseph; Sedláček, Guilhermo L.) Intertemporal preferences and labor supply. *Econometrica* 56 (1988), no. 2, 335–360. (Not in MR) **90A14** (90A06)
- Kye, Seung-Hyeok** (with Cho, Sung Je; Lee, Sa Ge) Intersection properties for the tensor products of  $C^*$ -algebras. *Bull. Korean Math. Soc.* 24 (1987), no. 2, 103–108. (A. J. Lazar) **89a:46121** 46L05 (46M05)
- Kyma, Kern O.** (with Kim, Jin Bai) Rational choice function derived from a fuzzy preference. *Internat. J. Math. Math. Sci.* 11 (1988), no. 1, 43–45. (Jiri Šístal) **89j:90010** 90A06 (03E72)
- Kyparisis, Jerzy** (with Zanakis, Stelios H.) A review of maximum likelihood estimation methods for the three-parameter Weibull distribution. *J. Statist. Comput. Simulation* 25 (1986), no. 1–2, 53–73. (Javad Behboodani) **89m:62028** 62F10
- (with Fiocco, Anthony V.) Generalized convexity and concavity of the optimal value function in nonlinear programming. *Math. Programming* 39 (1987), no. 3, 285–304. (Thomas W. Reiland) **89f:90168** 90C31
- Sensitivity analysis for nonlinear programs with linear constraints. *Oper. Res. Lett.* 6 (1987), no. 6, 275–280. (Summary) **89a:90129** 90C30
- Sensitivity analysis in posynomial geometric programming. *J. Optim. Theory Appl.* 57 (1988), no. 1, 85–121. (J. R. Rajasekera) **89h:90227** 90C31 (90C30)
- Perturbed solutions of variational inequality problems over polyhedral sets. *J. Optim. Theory Appl.* 57 (1988), no. 2, 295–305. (Klaus Tammer) **89f:90167** 90C31 (49A29)
- (with Fiocco, Anthony V.) Computable bounds on parametric solutions of convex problems. *Math. Programming* 40 (1988), no. 2 (Ser. A), 213–221. (Jacques A. Ferland) **89c:90084** 90C25 (90C30)
- Kyprianidis, A.** (with Vigier, J.-P.; Dewdney, C.; Holland, P. R.) Causal particle trajectories and the interpretation of quantum mechanics. *Quantum implications*, 169–204, *Routledge & Kegan Paul, London*, 1987. (see **89m:81006**) 81B05
- Scalar time parametrization of relativistic quantum mechanics: the covariant Schrödinger formalism. *Phys. Rep.* 155 (1987), no. 1, 1–27. (A. Crumeyrolle) **89b:81273** 81M05 (81C20)
- Hamilton-Jacobi theory and quantum mechanics. I. The free particle case. *Phys. Lett. A* 131 (1988), no. 7–8, 411–418. (Summary) **89j:81052** 81C25 (70H20)
- Kyrcher, G.** (with Faessler, Amand; Nojarov, R.) Boson quasipin in the generalised Bohr-Mottelson model. *Nuclear Phys. A* 487 (1988), no. 1, 37–61. (R. Mirman) **89k:81194** 81G30 (20C35, 22E70)
- Kyriakopoulos, E.** A class of solutions of Einstein's equations for the interior of a rigidly rotating perfect fluid. *Gen. Relativity Gravitation* 20 (1988), no. 5, 427–436. (G. Mohanty) **89m:83025** 83C20 (83C55)
- New series of asymptotically flat axisymmetric and stationary gravitational solutions. *Gen. Relativity Gravitation* 20 (1988), no. 10, 1067–1081. (Nora Bretón Báez) **89k:83028** 83C20 (83C30, 83C40)
- On generating new solutions of the Ernst equation from old solutions. *Classical Quantum Gravity* 6 (1989), no. 1, 35–39. (Niky Kamran) **89m:83026** 83C20 (83C40)
- Kyriazis, Athanasios** Tensor products of function algebras. *Bull. Austral. Math. Soc.* 36 (1987), no. 3, 417–423. (Klaus-Dieter Bierstedt) **89h:46100** 46M05 (32E25, 46J10)
- Kythe, P. K.** (with Abbott, J. H.) Propagation and interference of waves in oscillatory heat conduction in composite media. *Riv. Mat. Univ. Parma (4)* 12 (1986), 227–236 (1987). (S. N. Murthy) **89c:80008** 80A20
- (with Puri, Pratap) Unsteady MHD free-convection flows on a porous plate with time-dependent heating in a rotating medium. *Astrophys. and Space Sci.* 143 (1988), no. 1, 51–62. (L. Debnath) **89h:76046** 76W05 (76D10, 76R10, 76U05, 86A99)
- (with Puri, Pratap) Some inverse Laplace transforms of exponential form. *Z. Angew. Math. Phys.* 39 (1988), no. 2, 150–156. (R. S. Dahiya) **89d:44003** 44A10
- (with Puri, Pratap) Errata: "Some inverse Laplace transforms of exponential form" [Z. Angew. Math. Phys. 39 (1988), no. 2, 150–156; MR 89d:44003]. *Z. Angew. Math. Phys.* 39 (1988), no. 6, 954. (Editors) **89k:44004** 44A10
- Kytmanov, A. M.** (with Egorychev, G. P.) ★ Полиномиальные тождества и представление перманента через сумму локальных вычетов. (Russian) [Polynomial identities and representation of the permanent by a sum of local residues] Препринт [Preprint], 37M. *Akad. Nauk SSSR Sibirsk. Otdel. Inst. Fiz., Krasnoyarsk*, 1987. 19 pp. (Anna Lee) **89f:15008** 15A15
- Elimination of singularities of CR-functions. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 6(258), 197–198. (Marek Jarnicki) **89c:32031** 32D20
- On removable singularities of integrable CR-functions. (Russian) *Mat. Sb. (N.S.)* 136(178) (1988), no. 2, 178–186, 301. (Marek Jarnicki) **89c:32031** 32D20
- A formula for the transformation of the Grothendieck residue and some of its applications. (Russian) *Sibirsk. Mat. Zh.* 29 (1988), no. 3, 198–202, 223; translation in *Siberian Math. J.* 29 (1988), no. 3, 495–499. (J. S. Joel) **89j:32005** 32A27

- (with Nikitina, T. N.) Boundary sets of uniqueness for pluriharmonic functions. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 1, 25–28, 86; translation in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 1, 30–33. (P. Agranovich) **89h:32014** 32A40
- Kyuchukov, Aleksand'r N.** (with Trendafilov, Ivan D.) Equations and identities for some quadrilaterals. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian)* (Sunny Beach (Sl'ncev Bryag), 1987), 681–688, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89h:51030** 51M05
- Kyuno, Shoji** Gamma rings and radicals. *Contributions to general algebra*, 4 (Krems, 1985), 63–77, *Hölder-Pichler-Tempsky, Vienna*, 1987. (From the introduction) **89j:16055** 16A78 (16A21)
- (with Smith, Mi-Soo B.; Nobusawa, Nobuo) Closed ideals in nonunitary matrix rings. *Math. J. Okayama Univ.* **29** (1987), 147–152 (1988). (H. H. Brungs) **89f:16060** 16A89 (46L05)
- (with Nobusawa, Nobuo) Socles of gamma rings. *Math. Japon.* **32** (1987), no. 2, 261–266. (R. Gorton) **89c:16055** 16A78
- (with Nobusawa, Nobuo; Smith, Mi-Soo B.) Regular gamma rings. *Tsukuba J. Math.* **11** (1987), no. 2, 371–382. (R. Gorton) **89h:16049** 16A78
- Kyuregyan, M. K.** An application of a theorem of Varshamov. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* **85** (1987), no. 2, 64–68. (Stefan Dodunekov) **89i:11162** 11T06
- On the theory of the reducibility of polynomials over finite fields. (Russian. Armenian summary) *Akad. Nauk Armyan. SSR Dokl.* **86** (1988), no. 1, 17–22. (N. L. Manev) **89i:11132** 11T06 (94B05)
- Kyurkchiev, Nikolai V.** Some iterative schemes of Dochev type with an increased rate of convergence. (Russian. English summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **76** (1982), no. 1, 3–10 (1987). (I. P. Mysovskikh) **89a:65083** 65H05
- Computational aspects and areas of applicability of methods for the simultaneous determination of all roots of algebraic equations. (Russian. English summary) *Annuaire Univ. Sofia Fac. Math. Méc.* **77** (1983), no. 1, 11–16 (1988). (Hans-Jürgen Albrand) **89k:65064** 65H05
- An analogue of the Dochev-Byrnev method for the two-sided sharpening of all roots of algebraic equations. (Russian) *Serdica* **12** (1986), no. 4, 305–308 (1987). (Gradimir V. Milovanović) **89c:65065** 65H05
- (with Dyukanova, Teodora A.; Atanasova, L.) Two methods for solving polynomial equations with higher rate of convergence. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian)* (Sunny Beach (Sl'ncev Bryag), 1987), 482–486, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89c:65050** 65H05
- (with Andreev, Andrei St.) Two-sided methods for solving a polynomial equation. *Math. Balkanica (N.S.)* **1** (1987), no. 1, 72–82. (W. C. Rheinboldt) **89a:65078** 65H05
- (with Andreev, Andrei St.) Two-sided analog of the Chebyshev's method. *C. R. Acad. Bulgare Sci.* **41** (1988), no. 4, 17–19. (Moody T. Chu) **89c:65064** 65H05
- (with Atanasova, L.; Andreev, Andrei St.) Recurrently generated iterative functions for the approximate solution of algebraic equations. (Russian) *Serdica* **14** (1988), no. 3, 271–277. (Summary) **89h:65073** 65H05
- **L** —
- van der Laan, G.** (with Talman, A. J. J.) Adjustment processes for finding economic equilibria. *The computation and modelling of economic equilibria* (Tilburg, 1985), 85–123, *Contrib. Econom. Anal.*, 167, North-Holland, Amsterdam-New York, 1987. (Carmen Pagliari) **89d:90049** 90A14
- (with Doup, T. M.; Talman, A. J. J.) The  $(2^{n+1} - 2)$ -ray algorithm: a new simplicial algorithm to compute economic equilibria. *Math. Programming* **39** (1987), no. 3, 241–252. (Summary) **89h:90042** 90A14
- Laanait, L.** Discontinuity of surface tensions in the  $q$ -state Potts model. *Phys. Lett. A* **124** (1987), no. 9, 480–484. (Summary) **89d:82131** 82A68
- van Laarhoven, P. J. M.** ★ Theoretical and computational aspects of simulated annealing. CWI Tract, 51. *Stichting Mathematisch Centrum, Centrum voor Wiskunde en Informatica, Amsterdam*, 1988. viii+168 pp. ISBN 90-6196-352-4. (Gábor Hegedüs) **89m:90136** 90C27 (90-02, 90B10, 90B35, 90C40)
- (with Kalker, Ton A. C. M.) On the computation of Lauricella functions of the fourth kind. *J. Comput. Appl. Math.* **21** (1988), no. 3, 369–375. (Sang Lung Chan) **89f:33002** 33A30 (65D20)
- (with Aarts, E.; Korst, Jan H. M.) A quantitative analysis of the simulated annealing algorithm: a case study for the traveling salesman problem. *J. Statist. Phys.* **50** (1988), no. 1–2, 187–206. (Summary) **89d:90086** 90B10 (82-08, 82A99, 90C27)
- Laas, Andreas** (with Hörz, Herbert) ★ Ludwig Boltzmanns Wege nach Berlin. (German) [Ludwig Boltzmann's paths to Berlin] Ein Kapitel österreichisch-deutscher Wissenschaftsbeziehungen. [A chapter in the Austrian-German scientific relationship] Studien zur Geschichte der Akademie der Wissenschaften der DDR [Studies in the History of the Academy of Sciences of the GDR], 13. *Akademie-Verlag, Berlin*, 1989. 120 pp. ISBN 3-05-500416-7. (D. ter Haar) **89m:01054** 01A55
- Laba, Izabella** Unique continuation for Schrödinger operators and for higher powers of the Laplacian. *Math. Methods Appl. Sci.* **10** (1988), no. 5, 531–542. (Jean Leray) **89k:35063** 35J10 (35B60, 35J30)
- Laback, Otto** On the continuity of bijections of  $\mathbb{R}^n$ . Third National Conference on Topology (Italian) (Trieste, 1986). *Rend. Circ. Mat. Palermo (2) Suppl.* **10** (1988), 337–341. (Leonard R. Rubin) **89k:54049** 54C99 (54D99, 57Q99, 57S25)
- Labadie, Pamela** see Salyer, Kevin D., **89h:90039**
- Labahn, Roger** More on a relation between binomial coefficients. *Rostock. Math. Kolloq.* **34** (1988), 21–27. (D. P. Roselle) **89k:05004** 05A10
- el-Labany, S.** see El-Labany, S.
- Labarca, R.** Stability of parametrized families of vector fields. *Dynamical systems and bifurcation theory (Rio de Janeiro, 1985)*, 121–213, *Pitman Res. Notes Math. Ser.*, 160, *Longman Sci. Tech.*, Harlow, 1987. (Summary) **89k:58150** 58F10
- (with Pacifico, M. J.) Morse-Smale vector fields on 4-manifolds with boundary. *Dynamical systems and bifurcation theory (Rio de Janeiro, 1985)*, 215–275, *Pitman Res. Notes Math. Ser.*, 160, *Longman Sci. Tech.*, Harlow, 1987. (S. Yu. Pilyugin) **89c:58066** 58F09 (57R30, 58F10)
- see also **Dynamical systems**, **89c:58002**
- Labarta, Amílcar** (with Garrido, P. L.; Marro Borau, Joaquín) Stationary nonequilibrium states in the Ising model with locally competing temperatures. *J. Statist. Phys.* **49** (1987), no. 3–4, 551–568. (Summary) **89a:82041** 82A68 (82-04, 82A25)
- Labarta, Ana** (with Barceló, Carmen) ★ Números y cifras en los documentos arabigohispanos. (Spanish) [Numerical symbols in Arabic-Spanish documents] With English and French summaries. *Universidad de Córdoba, Facultad de Filosofía y Letras, Departamento de Lengua y Literatura Árabe, Córdoba*, 1988. 63 pp. ISBN 84-600-5322-9. (H. W. Guggenheimer) **89i:01012** 01A35 (01A30)
- Labarthe, J.-J.** Quadratic zeros of Racah  $6j$  coefficients: a geometrical approach. *J. Math. Phys.* **28** (1987), no. 12, 2909–2913. (Summary) **89j:81062** 81C40 (22E70)
- Labastida, J. M. F.** (with Pernici, M.)  $N = 4$  supersymmetric Lagrangian for self-dual fields. *Classical Quantum Gravity* **4** (1987), no. 5, L197–L200. (Elicio Abdalla) **89g:81105** 81G20 (81E30, 81E99, 83E30, 83E50)
- (with Pernici, M.) Heterotic-string Lagrangian in the bosonic formulation. *Phys. Rev. Lett.* **59** (1987), no. 22, 2511–2514. **89h:81203** 81E99 (81E30, 83E30)
- (with Pernici, M.) Kähler-Dirac ghosts for self-dual fields. *Phys. Lett. B* **200** (1988), no. 4, 501–506. (Robert Marnelius) **89c:81093** 81E13 (83E15)
- Labbas, Rabah** (with Terreni, Brunello) Somme d'opérateurs linéaires de type parabolique. I. (Italian summary) [Sums of linear operators of parabolic type. I.] *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 2, 545–569. (Angelo Favini) **89g:47016** 47A50 (34G10, 35R20)
- Équation elliptique abstraite du second ordre et équation parabolique pour le problème de Cauchy abstrait. (English summary) [Abstract elliptic equation of the second order and abstract Cauchy problem of parabolic type] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 18, 785–788. (Marco Degiovanni) **89a:34069** 34G10 (34A10, 35J99, 35K99)
- (with Terreni, Brunello) Sommes d'opérateurs de type elliptique et parabolique. II. Applications. (Italian summary) [Sums of operators of elliptic and parabolic type. II. Applications] *Boll. Un. Mat. Ital. B* (7) **2** (1988), no. 1, 141–162. (Summary) **89g:47017** 47A50 (34G10, 35J99, 35K99)
- Labbé, Martine** (with Hansen, Pierre) Algorithms for voting and competitive location on a network. *Transportation Sci.* **22** (1988), no. 4, 278–288. (Summary) **89m:90061** 90B10 (90A08)
- Labey, V. I.** The connection between compact approximation and regular and stable convergence. (Russian) *Topological structures and their mappings* (Russian), 76–83, *iv*, *Lav. Gos. Univ., Riga*, 1987. (Hans-Jürgen Albrand) **89c:65069** 65J10 (47A50)
- La Bella, Agostino** (with Campisi, Domenico) Transportation investment and dynamic equilibrium in a multiregional input-output system. *System modelling and optimization* (Tokyo, 1987), 416–425, *Lecture Notes in Control and Inform. Sci.*, 113, *Springer, Berlin-New York*, 1988. (see **89f:00029**) 90A17
- Labela, Anna** (with Kasangian, Stefano; Pettorossi, Alberto) Enriched categories for local and interaction calculi. *Category theory and computer science* (Edinburgh, 1987), 57–70, *Lecture Notes in Comput. Sci.*, 283, *Springer, Berlin-New York*, 1987. (David B. Benson) **89f:68017** 68Q05 (18D20, 68Q55)
- (with Pettorossi, Alberto) Universal models in categories for process synchronization. *Mathematical models for the semantics of parallelism* (Rome, 1986), 183–198, *Lecture Notes in Comput. Sci.*, 280, *Springer, Berlin-New York*, 1987. (Summary) **89a:68066** 68Q10 (18B20, 68Q55)
- Labelle, Gilbert** Some new computational methods in the theory of species. *Combinatoire énumérative* (Montreal, Que., 1985/Quebec, Que., 1985), 192–209, *Lecture Notes in Math.*, 1234, *Springer, Berlin-New York*, 1986. (Marilena Barnabei) **89f:05023** 05A99 (26B10)
- (with Govil, N. K.) On Bernstein's inequality. *J. Math. Anal. Appl.* **126** (1987), no. 2, 494–500. (Summary) **89d:41033** 41A17 (26D10)
- (with Bergeron, François; Leroux, Pierre) Functional equations for data structures. *STACS 88* (Bordeaux, 1988), 73–80, *Lecture Notes in Comput. Sci.*, 294, *Springer, Berlin-New York*, 1988. (see **89b:68011**) 68P05
- Labelle, Jacques** (with Yeh, Yeong Nan) Some combinatorics of the hypergeometric series. *European J. Combin.* **9** (1988), no. 6, 593–605. (Gloria Olive) **89c:05026** 05A15 (33A30)
- Labege, C.-A.** (with Mathieu, Pierre)  $N = 2$  superconformal algebra and integrable  $O(2)$  fermionic extensions of the Korteweg-de Vries equation. *Phys. Lett. B* **215** (1988), no. 4, 718–722. (Summary) **89m:58097** 58F07 (17B65, 35Q20, 58G35, 81E40)
- Labege, Jean** Quine, Dummett et la querelle du réalisme-nominalisme. [Quine, Dummett and the realism-nominalism quarrel] *Dialogue* **27** (1988), no. 1, 3–14. (Not in MR) 03A05 (00A25)
- Labib, S. W.** (with Mokaddis, G. S.; Elias, S. S.) On a two-unit standby redundant system subject to repair and preventive maintenance. *Tamkang J. Management Sci.* **8** (1987), no. 1, 1–14. (Summary) **89d:90106** 90B25
- Labonté, Gilles** On the solution of matrix equations, example: application to invariant equations. *J. Comput. Phys.* **69** (1987), no. 2, 420–433. (Michel Cosnard) **89b:65104** 65F30 (15A24, 65H10)
- Laborde, Jean-Marie** (with Burosos, Gustav) Some intersection theorems for structures. *European J. Combin.* **9** (1988), no. 3, 207–214. (D. J. Kleitman) **89i:05153** 05C35 (05A05)
- Laborde, P.** (with Charrier, P.; Dacorogna, Bernard; Hanouzet, B.) An existence theorem for slightly compressible materials in nonlinear elasticity. *SIAM J. Math. Anal.* **19** (1988), no. 1, 70–85. (From the introduction) **89m:73013** 73C50 (73C60)
- Labos, E.** Convergence, cycling or strange motion in the adaptive synthesis of neurons. *Modelling and adaptive control* (Sopron, 1986), 214–225, *Lecture Notes in Control and Inform. Sci.*, 105, *Springer, Berlin-New York*, 1988. (Costică Cazacu) **89j:68130** 68T05 (92A09, 94C15)
- Labourie, François** Une relation entre diamètre extrinsèque, intégrale de la courbure de Gauss et inradius pour les hypersurfaces localement convexes d'un espace euclidien. [A relation connecting extrinsic diameter, Gauss curvature integral and inradius for locally convex hypersurfaces of a Euclidean space] *Math. Z.* **197** (1988), no. 4, 551–559. (Joseph H. G. Fu) **89d:53016** 53A07 (53C65)



- Labovskii, S. M.** Positive solutions of a two-point boundary value problem for a linear singular functional-differential equation. (Russian) *Functional-differential equations* (Russian), 39–45, iv, Perm. Politekh. Inst., Perm, 1985. (Ivan Ginchev) **89c:34075** 34K10 (45B05)
- Positive solutions of a two-point boundary value problem for a linear singular functional-differential equation. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 10, 1695–1704, 1836; translation in *Differential Equations* **24** (1988), no. 10, 1116–1123. (D. Bainov) **89m:34087** 34K10 (45J05)
- Labster, L. G.** An example of a noncontinuable Chebyshev system of algebraic polynomials in which there are polynomials with arbitrary distribution of zeros. (Russian) *Application of functional analysis, in approximation theory* (Russian), 102–106, 147, Kalinin. Gos. Univ., Kalinin, 1984. (see **89c:00006**) 41A10 (41A50)
- Labuda, Iwo** (with Szeptycki, Paweł) Extensions of integral operators. *Math. Ann.* **281** (1988), no. 2, 341–353. (Yu. A. Abramovich) **89a:47080** 47G05 (45P05, 46E27, 47B38)
- Labunov, V. A.** Problems and perspectives in the development of the branches of physics, mathematics and information science of the Academy of Sciences of the BSSR. (Russian) *Vestsi Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* **1987**, no. 5, 3–6. (Editors) **89c:01097** 01A74
- The Department of Physics, Mathematics and Information Science of the Academy of Sciences of the Byelorussian SSR on the path of "perestroika". (Russian) *Vestsi Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* **1988**, no. 6, 3–13. (Not in MR) 01A74
- Labuschagne, C. C. A.** (with Grobler, J. J.) The tensor product of Archimedean ordered vector spaces. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 2, 331–345. (W. A. J. Luxemburg) **89f:46014** 46A40 (46M05)
- Labuschagne, L. E.** On the instability of non-semi-Fredholm closed operators under compact perturbations with applications to ordinary differential operators. *Proc. Roy. Soc. Edinburgh Sect. A* **109** (1988), no. 1–2, 97–108. (Richard Bouldin) **89g:47019** 47A55 (34A10, 47A53)
- Labutin, S. A.** (with Efimov, A. B.) Movement of a phase boundary in the Earth with a slow and smooth change in the deep heat flow. (Russian) *Izv. Akad. Nauk SSSR Ser. Fiz. Zemli* **1988**, no. 5, 76–79. **80A20** (86A60)
- Laby, W. C.** (with Takayama, T.) Spatial equilibrium analysis. *Handbook of regional and urban economics*, Vol. 1, 171–199, *Handbooks in Economics*, 7, North-Holland, Amsterdam-New York, 1986. (see **89m:90047**) 90A14 (90B10)
- López Lacasta, Carlos** see López Lacasta, Carlos
- Lacava, Francesco** On classes of algebraically closed L-algebras and abelian  $I$ -groups. (Italian. English summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 3, 703–712. (R. S. Pierce) **89a:06041** 06F20 (03G20)
- Lacaze, Jacqueline** (with Bénéteau, L.) Symplectic trilinear forms and related designs and quasigroups. *Comm. Algebra* **16** (1988), no. 5, 1035–1051. (Petr Némec) **89f:20078** 20N05 (05B05, 05B07)
- Lacaze, R.** (with Jolicoeur, T.; Napoly, O.) Anomalies for compact symmetries and the nonabelian anomaly on the lattice. *Nuclear Phys. B* **293** (1987), no. 1, 215–228. (Andrea Pelissetto) **89a:81103** 81E25 (81E13)
- Lacey, A.** (with Bebernes, J.; Bressan, Aldo) Total blow-up versus single point blow-up. *J. Differential Equations* **73** (1988), no. 1, 30–44. (Victor A. Galaktionov) **89g:35019** 35B40 (35K55)
- (with Friedman, Avner) Blowup of solutions of semilinear parabolic equations. *J. Math. Anal. Appl.* **132** (1988), no. 1, 171–186. (Song Mu Zheng) **89f:35018** 35B05 (35B40, 35K55)
- (with Howison, S. D.; Ockendon, J. R.) Hele-Shaw free-boundary problems with suction. *Quart. J. Mech. Appl. Math.* **41** (1988), no. 2, 183–193. (Summary) **89e:76049** 76E99
- Lach, Jan** Application of the direct operational method to an analysis of steady heat flow between a fluid and a solid body generating heat. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* **35** (1987), no. 9–10, 543–558. (Summary) **89d:80016** 80A20 (33A40)
- (with Pieczka, Wincenty) Application of some special functions related to the Bessel functions in transient thermal problems and operator calculus. (Russian summary) *Bull. Polish Acad. Sci. Tech. Sci.* **35** (1987), no. 9–10, 559–576. (Summary) **89d:80017** 80A20 (33A40)
- Lachaud, Gilles** Sur les corps quadratiques réels principaux. [On principal real quadratic fields] *Séminaire de théorie des nombres, Paris 1984–85*, 165–175, *Progr. Math.*, 63, Birkhäuser Boston, Boston, MA, 1986. (Harvey Cohn) **89c:11161** 11R29 (11R11)
- On real quadratic fields. *Bull. Amer. Math. Soc. (N.S.)* **17** (1987), no. 2, 307–311. (J. S. Hsia) **89d:11028** 11E45 (11M41, 11R29, 11R42)
- (with Wolfmann, Jacques) Sommes de Kloosterman, courbes elliptiques et codes cycliques en caractéristique 2. (English summary) [Kloosterman sums, elliptic curves and cyclic codes in characteristic 2] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 20, 881–883. (H.-G. Rück) **89c:14031** 14G15 (11L05, 11T71, 94B15)
- Projective Reed-Muller codes. (French summary) *Coding theory and applications* (Cachan, 1986), 125–129, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (Vera Pless) **89i:94038** 94B05 (11T71, 94B25)
- Lachlan, A. H.** Homogeneous structures. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 314–321, *Amer. Math. Soc., Providence, RI*, 1987. (Milan Grulović) **89d:03030** 03C50
- Lachout, Petr** Degeneration in Wolfe's algorithm for quadratic programming. (Czech summary) *Ekonom.-Mat. Obzor* **24** (1988), no. 4, 463–468. (Summary) **89m:90125** 90C20
- Billingsley-type tightness criteria for multiparameter stochastic processes. *Kybernetika* (Prague) **24** (1988), no. 5, 363–371. (Jia Gang Wang) **89m:60015** 60B10 (60F17, 60G99)
- Lachowicz, M.** (with Bellomo, N.) Kinetic equations for dense gases—a review of physical and mathematical results. *Internat. J. Modern Phys. B* **1** (1987), no. 5–6, 1193–1205. (V. Protopenescu) **89b:82047** 82A40 (82–02)
- On the initial layer and the existence theorem for the nonlinear Boltzmann equation. *Math. Methods Appl. Sci.* **9** (1987), no. 3, 342–366. (Nina B. Maslova) **89d:82071** 82A40 (76P05)
- On the limit of the nonlinear Enskog equation corresponding with fluid dynamics. *Arch. Rational Mech. Anal.* **101** (1988), no. 2, 179–194. (V. Protopenescu) **89f:76065** 76P05 (82A40)
- (with Bellomo, N.) On the asymptotic equivalence between the Enskog and the Boltzmann equations. *J. Statist. Phys.* **51** (1988), no. 1–2, 233–247. (Carlo Cercignani) **89b:82016** 82A40 (76P05)
- Laciana, Carlos** (with Castagnino, Mario) On a parametrization method for the semiclassical vacuum problem. *I. J. Math. Phys.* **29** (1988), no. 2, 460–475. (Gary T. Horowitz) **89a:81087** 81E20
- Lacker, H. Michael** (with Akin, Ethan) How do the ovaries count? Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1–2, 305–332. (Raphael Zahler) **89j:92016** 92A07 (58F99)
- Lacki, J.** (with Altschüler, D.; Zaugg, Ph.) The affine Weyl group and modular invariant partition functions. *Phys. Lett. B* **205** (1988), no. 2–3, 281–284. (Summary) **89c:17014** 17B10 (17B67, 81E30, 81E40)
- Lacković, I. B.** (with Kocić, Ljubika M.) Approximation in discrete cones of  $p$ -convexity. *A. Haar memorial conference, Vol. I, II* (Budapest, 1985), 495–503, *Colloq. Math. Soc. János Bolyai*, 49, North-Holland, Amsterdam-New York, 1987. (L. E. Faibusovich) **89c:41023** 41A45 (41A65, 46A55)
- Lacomba, Ernesto A.** Infinity manifolds for positive energy in celestial mechanics. *The Lefschetz centennial conference, Part III* (Mexico City, 1984), 193–201, *Contemp. Math.*, 58, III, *Amer. Math. Soc., Providence, RI*, 1987. (K. Horneffer (Zbl 622:70006)) **89f:58111** 58F15 (70F15)
- (with Cariñena, José F.; Iborr, Luis A.) Time scaling as an infinitesimal canonical transformation. *Celestial Mech.* **42** (1987/88), no. 1–4, 201–213. (Mark J. Gotay) **89m:70031** 70H15 (53C57, 58F05, 70F15, 70H05)
- (with Simó, Carles) Topology of Jacobi levels with no zero velocity curves in the restricted three-body problem. (German summary) *Z. Angew. Math. Phys.* **38** (1987), no. 1, 10–20. (Y. Kozai (Zbl 623:70009)) **89b:58188** 58F40 (58F15, 70F15)
- (with Llibre, Jaume) Transversal ejection-collision orbits for the restricted problem and the Hill's problem with applications. *J. Differential Equations* **74** (1988), no. 1, 69–85. (F. Nahon) **89g:70008** 70F07 (58F05, 70F15)
- Lacroix, M.-Th.** Application normale et interpolation. [Normal mapping and interpolation] *Séminaire d'Analyse Fonctionnelle 1984/1985*, 99–106, *Publ. Math. Univ. Paris VII*, 26, *Surv. Paris VII*, Paris, 1986. (J. Peetre) **89f:46061** 46E30 (46M35)
- Sur les normes normales au sens de Bénélian, Crandall et Pazy. (English summary) [On normal norms in the sense of Bénélian, Crandall and Pazy] *Israel J. Math.* **59** (1987), no. 2, 213–224. (Hans G. Feichtinger) **89a:46031** 46E30 (46M35)
- Blasco de La Cruz, Oscar** see Blasco de La Cruz, Oscar
- Laczovich, M.** (with Pokorný, I.) Selective and bi-selective derivatives. *Acta Math. Hungar.* **49** (1987), no. 3–4, 433–439. (Richard J. O'Malley) **89c:26009** 26A24
- A Baire two function with non-Borel upper symmetric derivative. *Real Anal. Exchange* **13** (1987/88), no. 1, 258–264. (F. Mirosław Filipczak) **89a:26005** 26A24 (26A21)
- von Neumann's paradox with translations. *Fund. Math.* **131** (1988), no. 1, 1–12. (J. C. Oxtoby) **89m:26004** 26A16
- (with Brown, J. B.; Humke, P.) Measurable Darboux functions. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 603–610. (Pavel Kostyrko) **89b:26003** 26A21
- Closed sets without measurable matching. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 894–896. (Włodzimierz Bzyl) **89f:28018** 28A75 (28B20)
- Lad, Frank** The calibration question. *British J. Philos. Sci.* **35** (1984), no. 3, 213–221. (F. J. Giron) **89a:62004** 62A05 (92A25)
- Lada, Andrzej** Global analyticity of solutions of the Cauchy problem for harmonic maps on two-dimensional Minkowski space. (Russian summary) *Bull. Polish Acad. Sci. Math.* **34** (1986), no. 11–12, 669–673 (1987). (Y. L. Xin) **89c:58030** 58E20
- Ladas, G.** (with Grammatikopoulos, M. K.; Meimaridou, A.) Oscillation and asymptotic behavior of second order neutral differential equations. *Ann. Mat. Pura Appl.* (4) **148** (1987), 29–40. (V. M. Popov) **89c:34077** 34K15 (34C10, 34K25)
- (with Kulenović, M. R.) Linearized oscillations in population dynamics. *Bull. Math. Biol.* **49** (1987), no. 5, 615–627. (Lan-Sun Chen) **89c:92066** 92A15
- (with Grove, E. A.; Schultz, S. W.) Oscillations and asymptotic behavior of first-order neutral delay differential equations. *Appl. Anal.* **27** (1988), no. 1–3, 67–78. (József Kalinowski) **89a:34077** 34K15 (34K25)
- (with Kulenović, M. R.; Sficas, Y. G.) Oscillations of second order linear delay differential equations. *Appl. Anal.* **27** (1988), no. 1–3, 109–123. (D. Izumova) **89g:34107** 34K15 (34C10)
- (with Farrell, K.; Grove, E. A.) Neutral delay differential equations with positive and negative coefficients. *Appl. Anal.* **27** (1988), no. 1–3, 181–197. (T. Chanturiya) **89a:34076** 34K15 (34C05)
- (with Grove, E. A.; Schinas, J.) Sufficient conditions for the oscillation of delay and neutral delay equations. *Canad. Math. Bull.* **31** (1988), no. 4, 459–466. (B. S. Lalli) **89m:34092** 34K15 (34K25)
- (with Grammatikopoulos, M. K.; Meimaridou, A.) Oscillation and asymptotic behavior of higher order neutral equations with variable coefficients. A Chinese summary appears in Chinese Ann. Math. Ser. A **9** (1988), no. 4, 507. *Chinese Ann. Math. Ser. B* **9** (1988), no. 3, 322–338. (József Terjéki) **89k:34121** 34K15 (34K25)
- (with Györi, I.) Oscillations of systems of neutral differential equations. *Differential Integral Equations* **1** (1988), no. 3, 281–286. (T. L. Herdman) **89d:34112** 34K15 (34C15)
- (with Sficas, Y. G.) Asymptotic behavior of oscillatory solutions. *Hiroshima Math. J.* **18** (1988), no. 2, 351–359. (R. R. Akhmerov) **89i:34097** 34K15 (34K20, 34K25)
- (with Kulenović, M. R.) Oscillations of the sunflower equation. *Quart. Appl. Math.* **46** (1988), no. 1, 23–28. (J. Jarmik) **89c:34078** 34K15 (34C15)
- Ladde, G. S.** (with Seikkala, Seppo) On sample solutions of random initial value and Nicoletti boundary value problems. *Math. Comput. Simulation* **29** (1987), no. 3–4, 223–231. (Seppo Heikkilä) **89a:34065** 34F05 (34A10, 60H10)
- (with Chandra, Jagdish; Sirisaengtaksin, O.) Multi-time method for large-scale filtering. *Internat. J. Systems Sci.* **19** (1988), no. 8, 1579–1604. (M. Sambandham) **89g:93096** 93E11 (34E15, 49D27)
- (with Rajalakshmi, S. G.) Singular perturbations of linear systems with multiparameters and multiple time scales. *J. Math. Anal. Appl.* **129** (1988), no. 2, 457–481. (Frederick A. Howes) **89a:34062** 34E15 (34C20)
- (with Kathiramanayagan, M.) Diagonalization and stability of large-scale singularly perturbed linear system. *J. Math. Anal. Appl.* **135** (1988), no. 1, 38–60. (Ji Bin Li) **89i:34082** 34E15 (34A30, 34C20, 34D20, 94C05)
- (with Sambandham, M.) Variation of constants formula and error estimates to stochastic difference equations. *J. Math. Phys. Sci.* **22** (1988), no. 5, 557–584. (Shi Sheng Zhang)

- 89j:60086** 60H25 (39A10)  
— (with Sirisanehtaksin, O.) Near-optimum regulators for stochastic singularly perturbed systems. *Stochastic Anal. Appl.* **6** (1988), no. 1, 11–79. (Michael Kohlmann) **89b:93117** 93E20 (34E15, 93B50, 93E11)
- Ladd-Franklin, Christine** see **Green, Judy**, (89b:01071)
- Ladeira, Luiz A.** (with Táboas, Plácido Z.) Periodic solutions of the equation  $\ddot{x} + g(x) = E \cos t + ah(t)x$ . *Quart. Appl. Math.* **45** (1987), no. 3, 429–440. (Keren Liao) **89b:58154** 58F14 (34C25)
- Ladera, Celso L.** (with Martín, Pablo) Transmittance of a circular aperture by an integrable fractional-like approximation to  $J_0(x)$  function. *J. Comput. Phys.* **73** (1987), no. 2, 481–489. (Marietta J. Tretter) **89c:65025** 65D20 (33A40, 41A21, 78–08, 78A25)
- Lades, V. I.** Synthesis of minimal Mealy automata that calculate remainders from division. (Russian. English summary) *Yestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 5, 11–15, 125. (Summary) **89a:68162** 68Q70
- Ladevèze, Pierre** Une nouvelle version de la théorie de Reissner-Mindlin pour les plaques homogènes orthotropes. (English summary) [A new version of the Reissner-Mindlin theory for orthotropic homogeneous plates] *C. R. Acad. Sci. Paris Ser. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **305** (1987), no. 12, 1033–1036. (Summary) **89m:73024** 73K10 (73C30)
- (with Pelle, J.-P.) Optimisation des maillages pour les calculs de fréquences propres. (English summary) [Optimal meshes for the calculation of the natural frequencies] *J. Méc. Théor. Appl.* **7** (1988), no. 3, 245–268. (Claude Surry) **89f:73051** 73K25 (73K12)
- Ladikov, Yu. P.** (with Samolenko, L. I.) Methods and means of control of rapidly flowing electromagnetic processes. (Russian) *Kibernet. i Vychisl. Tekhn.* **77** (1988), 62–68, 110. (Not in MR) **93C75** (78A60)
- Ladin, Rivka** (with Liskov, Barbara; Shrira, Liuba) A technique for constructing highly available services. *Algorithmica* **3** (1988), no. 3, 393–420. (Summary) **89m:68006** 68M10 (68M20, 68Q25)
- Ladopoulos, E. G.** On the numerical solution of the finite-part singular integral equations of the first and the second kind used in fracture mechanics. *Comput. Methods Appl. Mech. Engrg.* **65** (1987), no. 3, 253–266. (G. Paria) **89c:73071** 73M05 (45E05, 65R20, 73–08)
- On the numerical solution of the multi-dimensional singular integrals and integral equations, used in the theory of linear viscoelasticity. *Internat. J. Math. Math. Sci.* **11** (1988), no. 3, 561–574. (Summary) **89f:65142** 65R20 (73F99)
- (with Zisis, V. A.; Kravvartits, D.) Singular integral equations in Hilbert space applied to crack problems. *Theoret. Appl. Fracture Mech.* **9** (1988), no. 3, 271–281. (K. S. Parihar) **89f:73066** 73M05 (45E05, 45N05)
- Ladra González, Manuel** (with Blanco Ferro, Antonio A.) A description of the cohomology of small categories. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish)* (Badajoz, 1986), 43–47. *Publ. Dep. Mat. Univ. Extremadura*, **18**, Univ. Extremadura, Badajoz, 1987. (Summary) **89j:18014** 18G99
- (with R-Grandjean L-Valcárcel, A.) An eight term exact sequence relative to a variety. *J. Pure Appl. Algebra* **49** (1987), no. 3, 259–271. (John G. Ratcliffe) **89a:20029** 20E10 (20J10)
- LaDuke, Jeanne** (with Green, Judy) Women in the American mathematical community: the pre-1940 Ph.D.s. *Math. Intelligencer* **9** (1987), no. 1, 11–23. (Michael Otte) **89f:01096** 01A80 (01A60)
- Lady, E. L.** The integral closure of  $\mathbb{Z}$  in the Grothendieck ring for quasi-isomorphism classes of finite rank torsion free modules over a Dedekind domain. *J. Algebra* **112** (1988), no. 2, 265–270. (David M. Arnold) **89b:20117** 20K15 (13C13, 13D15, 19A99)
- Ladyzhenskaya, O. A.** (with Ural'tseva, N. N.) A Lipschitz estimate at the boundary points for the solutions of quasilinear equations of divergence form. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 4, 145–153. (Guang Chang Dong) **89k:35082** 35J60 (35B45, 35K55)
- (with Zalgaller, V. A.; Reshetnyak, Yu. G.) On the 75th birthday of Academician A. D. Aleksandrov. (Russian) *Trudy Inst. Mat. (Novosibirsk)* **9** (1987), Issled. Geom. "v tselom" i Mat. Anal., 3–15. (Editors) **89c:01087** 01A70
- The life and scientific work of Vladimir Ivanovich Smirnov. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 6(258), 3–23. (Editors) **89b:01051** 01A70
- Finding minimal global attractors for the Navier-Stokes equations and other partial differential equations. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 6(258), 25–60, 246. (L. A. Bunimovich) **89m:58031** 58D25 (35B65, 35Q10, 58F12)
- (with Buslaev, V. S.; Merkur'ev, S. P.; Faddeev, L. D.) Vladimir Ivanovich Smirnov. (Russian) *Vestnik Leningrad. Univ. Fiz. Khim.* **1987**, vyp. 2, 3–8. (Editors) **89c:01046** 01A70
- Estimates for the fractal dimension and number of deterministic modes for invariant sets of dynamical systems. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **163** (1987), Kraev. Zadachi Mat. Fiz. i Smezhn. Vopr. Teor. Funktsii **19**, 105–129, 188. (Athanasios Cotsiolis) **89c:35132** 35Q10 (47D05)
- Attractors of nonlinear evolution problems with dissipation. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **152** (1986), Kraev. Zadachi Mat. Fiz. i Smezhnye Vopr. Teor. Funktsii **18**, 72–85, 182; translation in *J. Soviet Math.* **40** (1988), no. 5, 632–640. (Dan Socolescu) **89a:58062** 58F12 (34G20)
- (with Buslaev, V. S.; Gelfand, I. M.; Pavlov, B. S.; Solomyak, M. Z.; Faddeev, L. D.; Yafaev, D. R.) Mikhail Shlémovich Birman (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 3(261), 201–202; translation in *Russian Math. Surveys* **43** (1988), no. 3, 233–235. (Editors) **89i:01066** 01A70
- (with Ural'tseva, N. N.) Estimates on the boundary of the domain of first derivatives of functions satisfying an elliptic or a parabolic inequality. (Russian) Boundary value problems of mathematical physics, **13** (Russian). *Trudy Mat. Inst. Steklov.* **179** (1988), 102–125, 243. (Ya Zhe Chen) **89k:35083** 35J60 (35K55)
- see also **Boundary value problems of mathematical physics**, **89f:35005**
- stuhlmann-Laeisz, Rainer** see **Stuhlmann-Laeisz, Rainer**
- Laevskii, Yu. M.** ★ Пространственно-неоднородные проекционно-сеточные схемы решения параболических уравнений. (Russian) [Spatially inhomogeneous projection-difference schemes for solving parabolic equations] Препринт [Preprint], 708. *Akad. Nauk SSSR Sibirsk. Otdel. Vychisl. Tsentr, Novosibirsk*, 1987, 21 pp. (V. D. Glushenkov) **89g:65127** 65M99
- Alternating direction Galerkin method of solving the third boundary value problem for two-dimensional parabolic equations. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* **2** (1987), no. 6, 437–448. (Summary) **89a:65147** 65M60
- LaFave, Norman Joseph** (with Kheyfets, Arkady; Miller, Warner A.) Quantum insights from null-strut geometrodynamics. *Loyola Conference on Mathematical and Interpretational Problems in Relativistic Quantum Theory* (New Orleans, 1987). *Internat. J. Theoret. Phys.* **27** (1988), no. 2, 133–158. (Ruth M. Williams) **89j:83042** 83C45 (83C27, 83C60)
- Laflay, J. F.** (with Commault, C.; Descus, J.; Dion, J. M.; Malabre, M.) Influence de la structure à l'infini des systèmes linéaires sur la solution des problèmes de commande. (English summary) [Influence of the structure at infinity of linear systems on the solution of control problems] *RAIRO Automat.-Prod. Inform. Ind.* **20** (1986), no. 3, 207–252. (Summary) **89k:93087** 93B50 (93B10, 93B27, 93C05, 93C35)
- (with Descus, J.; Malabre, M.) Solution to Morgan's problem. *IEEE Trans. Automat. Control* **33** (1988), no. 8, 732–739. (Not in MR) **49D27** (93B50)
- (with Icart, S.) Design of a minimal precompensator for the decoupling problem. *Systems Control Lett.* **10** (1988), no. 5, 325–332. (Summary) **89c:93042** 93B50 (49D27, 93B40)
- Laffargue, Jean-Pierre** see **Feroldi, Mathieu**, (89d:90065)
- Laffey, T. J.** On a conjecture of MacHale on the commutativity of certain rings. *Proc. Roy. Irish Acad. Sect. A* **87** (1987), no. 1, 63–65. (Howard E. Bell) **89b:16043** 16A70
- Laffont, Jean-Jacques** (with Green, Jerry R.) Incentive theory with data compression. *Uncertainty, information, and communication*, 239–253, *Cambridge Univ. Press, Cambridge-New York*, 1986. (Ki Hang Kim) **89b:90050** 90A15
- (with Green, Jerry R.) Alternative limited communication systems: centralization versus interchange of information. *Uncertainty, information, and communication*, 255–270, *Cambridge Univ. Press, Cambridge-New York*, 1986. (Ki Hang Kim) **89b:90051** 90A15
- Incentives and the allocation of public goods. *Handbook of public economics*, Vol. II, 537–569, *Handbooks in Economics*, **4**, North-Holland, Amsterdam-New York, 1987. (see **89m:90020b**) **90A14**
- (with Tirole, Jean) The dynamics of incentive contracts. *Econometrica* **56** (1988), no. 5, 1153–1175. (Summary) **89f:90020** 90A14 (90A05)
- Laflamme, R.** Entropy of a Rindler wedge. *Phys. Lett. B* **196** (1987), no. 4, 449–450. (Markku Lehto) **89b:83053** 83C47
- The Euclidean vacuum: justification from quantum cosmology. *Phys. Lett. B* **198** (1987), no. 2, 156–160. (Asghar Qadir) **89a:83037** 83C45 (81E20, 81G25, 83C47, 83F05)
- (with Hawking, S. W.) Baby universes and the nonrenormalizability of gravity. *Phys. Lett. B* **209** (1988), no. 1, 39–41. (Yu. N. Obukhov) **89b:83021** 83C45 (81E20, 81E30, 83F05)
- (with Gregory, Ruth) Hypercylindrical black holes. *Phys. Rev. D* **37** (1988), no. 2, 305–308. (L. M. Sokolowski) **89c:83069** 83E15 (83C25)
- Lafon, André** Attracteurs pour les équations de Navier-Stokes bidimensionnelles. [Attractors for two-dimensional Navier-Stokes equations] *Équations aux dérivées partielles non linéaires dissipatives et systèmes dynamiques*, 171–186, *Travaux en Cours*, **28**, Hermann, Paris, 1988. (Piotr Biler) **89b:35263** 35Q10 (58F12, 65P05)
- Laforgia, Andrea** Asymptotic inequalities for the zeros of the functions  $B_i(x)$ ,  $A_i'(x)$ ,  $B_i'$ . (Italian. English and Turkish summaries) *Istanbul Univ. Fen Fak. Mecm. Ser. A* **43** (1978), 113–119 (1987). (Joaquín Bustoz) **89k:33015** 33A70
- (with Ahmed, Shafique; Giordano, Carla) Approximations for the zeros of the derivative of Bessel functions. *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **118** (1984), no. 5–6, 217–225. (M. E. Muldoon) **89c:33012** 33A40
- (with Elbert, Á.) On the power of the zeros of Bessel functions. *Rend. Circ. Mat. Palermo* **2** (36) (1987), no. 3, 507–517 (1988). (Boro Döring) **89m:33011** 33A40 (65D20)
- (with Sismondi, Silvana) Monotonicity results and inequalities for the gamma and error functions. *J. Comput. Appl. Math.* **23** (1988), no. 1, 25–33. (M. E. Cohen) **89c:33001** 33A15 (33A20)
- (with Muldoon, Martin E.) Monotonicity properties of zeros of generalized  $A_i$  functions. (Italian summary) *Z. Angew. Math. Phys.* **39** (1988), no. 2, 267–271. (Evangelos Ifantis) **89c:33019** 33A70
- garcía Lafuente, José M.** see **García Lafuente, José M.**
- Lafuente, Julio** Chief factors of finite groups with order a multiple of  $p$ . *Comm. Algebra* **16** (1988), no. 8, 1563–1580. (U. Stambach) **89g:20024** 20C20 (20J05)
- Lagakos, S. W.** The loss in efficiency from misspecifying covariates in proportional hazards regression models. *Biometrika* **75** (1988), no. 1, 156–160. (Jerome Senturia) **89c:62130** 62N05 (62A10)
- (with Barraj, L. M.; De Gruttola, V.) Nonparametric analysis of truncated survival data, with applications to AIDS. *Biometrika* **75** (1988), no. 3, 515–523. (Summary) **89i:62175** 62P10 (62G05)
- Lagarías, J. C.** (with Kahn, J.; Witsenhausen, H. S.) Single-suit two-person card play. II. Dominance. *Order* **5** (1988), no. 1, 45–60. (G. A. Heuer) **89j:90279** 90D05 (68Q25, 68R99, 90D42)
- (with Frieze, A. M.; Håstad, Johan; Kannan, Ravindran; Shamir, Adi) Reconstructing truncated integer variables satisfying linear congruences. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 262–280. (Harald Niederreiter) **89d:11115** 11Y16 (11T71, 94A60)
- (with Reeds, James A.) Unique extrapolation of polynomial recurrences. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 342–362. (Harald Niederreiter) **89c:11025** 11B37 (11T71, 11Y16, 94A60)
- see also **IEEE Conference: Foundations of Computer Science**, **89f:68005**
- lammabhi-Lagarigue, F.** see **Lammabhi-Lagarigue, F.**
- Lage, E. J. S.** Critical dynamics of the one-dimensional BEG model. *Phys. Lett. A* **127** (1988), no. 1, 9–13. (Summary) **89a:82013** 82A25 (82A68)
- Lagerstrom, P. A.** ★ Matched asymptotic expansions. Ideas and techniques. *Applied Mathematical Sciences*, **76**. Springer-Verlag, New York-Berlin, 1988. xii+250 pp. ISBN 0-387-96811-3 (Jiaqi Mo) **89g:34081** 34E05 (34E15, 35C20)
- Laget, B.** (with Jourlin, M.; Matheron, G.; Meyer, Fernand Romain; Preteux, F.; Schmitt, Michel; Serra, J.) ★ Image analysis and mathematical morphology. Vol. 2. Theoretical advances. Edited with a preface and introduction by Jean Serra. *Academic Press, Inc. [Harcourt Brace Jovanovich, Publishers]*, London-New York, 1988. xvi+411 pp. ISBN 0-12-637241-1 (Răzvan Andonie) **89m:68139** 68U10 (00A69, 06A23, 52A22, 60D05, 92A05, 92A25)
- Lagler, Wilfried** (with Betsch, Gerhard) Carl Friedrich Gauß und die Göttinger Professoren-Witwen-und-Waisenkasse. Ein bisher unbekannter Briefwechsel zwischen Gauß und Georg Ernst Friedrich Hoppenstedt (1779–1858). [Carl Friedrich Gauss



- and the Göttingen insurance fund for the widows and orphans of professors. A previously unknown correspondence between Gauss and Georg Ernst Friedrich Hopenstedt (1779-1858) *Gauss-Ges. Göttingen Mitt.* No. 25 (1988), 17-26. (D. J. Struik) **89j:01038** 01A55
- Lagnese, J.** (with Lions, J.-L.) ★ Modelling analysis and control of thin plates. *Recherches en Mathématiques Appliquées* [Research in Applied Mathematics], 6. Masson, Paris, 1988. vi+177 pp. ISBN 2-225-81429-5 (Guenter Leugering) **89k:73001** 73-02 (49E15, 70Q05, 73K10, 73K12, 93D05)
- Note on boundary stabilization of wave equations. *SIAM J. Control Optim.* **26** (1988), no. 5, 1250-1256. (Enrique Zuazua) **89k:93170** 93D15 (35B40, 35L05, 93C20)
- Lagno, V. I.** Continuous subgroups of the generalized Poincaré group  $P(2, 3)$  and their invariants. (Russian) *Symmetry and solutions of nonlinear equations of mathematical physics* (Russian), 84-89, v. *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Summary) **89c:22037** 22E70 (81C40)
- (with Barannik, L. F.; Fushchich, V. I.) Subalgebras of the Poincaré algebra  $AP(2, 3)$  and the symmetry reduction of the nonlinear ultrahyperbolic d'Alembert equation. I. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 4, 411-416, 542; translation in *Ukrainian Math. J.* **40** (1988), no. 4, 351-356. (A. J. Coleman) **89k:58300** 58G35 (35A30, 35C99, 35L25)
- Lagodowski, Zbigniew A.** Probabilities of moderate deviations for randomly indexed sums of random variables with multidimensional indices. *Probab. Math. Statist.* **9** (1988), no. 1, 115-123. (Allan Gut) **89c:60101** 60G50 (60F15)
- López Lagomasino, Guillermo** see López Lagomasino, Guillermo
- Lagrange, Joseph Louis** see Gindikin, S. G.; Dupont, Pascal; Šikić, Zvonimir; Shields, Allen; Taton, René; Tyulina, I. A.; 89j:01035; Rashed, Roshdi; (89m:01050) and Barroso Filho, Wilton; (89m:01050)
- Laha, U.** (with Sett, G. C.; Talukdar, B.) Phase-function method for Coulomb-distorted nuclear scattering. *J. Phys. A* **21** (1988), no. 18, 3643-4657. (Summary) **89j:81241** 81F20 (81G35)
- Lahajje, P. D. M.** (with Wester, R. H. H.) Efficient road-map management for a car navigation system. *Philips J. Res.* **43** (1988), no. 5-6, 477-491 (1989). (Summary) **89m:90113** 90C10 (90B10, 90C27)
- piet-Lahanier, Hélène** see Piet-Lahanier, Hélène
- Lahiri, Amitabha** (with Bowick, M. J.) The Ricci curvature of  $Diff^1(S^1/SL(2, \mathbb{R}))$ . *J. Math. Phys.* **29** (1988), no. 9, 1979-1981. (Roberto Cianci) **89j:58007** 58B20 (22E65, 58B25, 58D05)
- Lahiri, Anuradha** (with Roy, Prodyot Kumar; Bagchi, Bijan) Supersymmetry in atomic physics and the radial problem. *J. Phys. A* **20** (1987), no. 12, 3825-3832. (Adriaan Tip) **89c:81207** 81G40 (81D20)
- Lahiri, Arjit** (with Ghosal, S. S.) Spatial patterns in a simple reaction-diffusion system. *Phys. Lett. A* **124** (1987), no. 1-2, 47-52. (Summary) **89a:58001** 58F14 (35K57, 39A10)
- Lahiri, B. K.** Density topology. *Modern analysis and its applications* (New Delhi, 1983), 1-6, Prentice-Hall of India, New Delhi, 1986. (Luděk Zajíček) **89c:28008** 28A15
- (with Chakrabarti, Sadasis) Local measurability in topological groups. (Serbo-Croatian summary) *Glas. Mat. Ser. III* **22**(42) (1987), no. 1, 15-23. (W. W. Comfort) **89c:28014** 28C10 (22A10, 28A12, 54A10)
- (with Das, A. G.) Bessel type functions involving Dirichlet series. *Indian J. Pure Appl. Math.* **19** (1988), no. 5, 448-463. (S. M. Shah) **89d:30031** 30D15 (30B50, 33A40)
- (with Tiwary, Kalishankar) Fixed and periodic points under set-valued mappings. *Indian J. Pure Appl. Math.* **19** (1988), no. 8, 717-727. (M. Edelstein) **89k:54112** 54H25 (54C60)
- Lahiri, J.** (with Menon, V. J.) Quantum conformal fluctuations revisited. *Gen. Relativity Gravitation* **20** (1988), no. 7, 623-634. (Summary) **89f:83063** 83C47 (83F05)
- Lahiri, Parthasarathi** (with Ghosh, Malay) Robust empirical Bayes estimation of variances from stratified samples. *Sankhyā Ser. B* **49** (1987), no. 1, 78-89. (Summary) **89b:62011** 62D05
- (with Ghosh, Malay) Bayes and empirical Bayes analysis in multistage sampling. *Statistical decision theory and related topics, IV*, Vol. 1 (West Lafayette, Ind., 1986), 195-212, Springer, New York-Berlin, 1988. (S. Gähler) **89b:62024** 62D05 (62C12, 62F15)
- (with Peddada, Shyamal Das) The exact mean squared error of Stein-rule estimator in linear models. *J. Statist. Plann. Inference* **18** (1988), no. 3, 345-353. (Girdhar G. Agarwal) **89g:62116** 62J07
- Lahiri, Somdeb** Optimal maintenance policy and life of machines subject to time varying rate of depreciation. *Internat. J. Management Systems* **4** (1988), no. 2, 89-98. (Summary) **89j:90133** 90B25
- Lahrman, Andreas** (with Haberland, Christoph) A comparative investigation on recurrence formulae in finite difference methods. Numerical methods in thermal problems (Montreal, PQ, 1987). *Internat. J. Numer. Methods Engrg.* **25** (1988), no. 2, 593-609. (Summary) **89d:80001** 80-08 (80A20)
- Lahli, Pekka J.** Uncertainty, complementarity, and commutativity. *Recent developments in quantum logic* (Cologne, 1984), 61-80, *Grundlagen Exakt. Naturwiss.*, 6, Bibliographisches Inst., Mannheim, 1985. (see **89b:81008**) **81B05** (47Bxx, 81B10)
- States of minimal uncertainty and maximal information for position and momentum observables in quantum theory. *Rep. Math. Phys.* **23** (1986), no. 3, 289-297. (Thomas O. Philips) **89d:81010** 81B10
- (with Ylänen, Kari) On total noncommutativity in quantum mechanics. *J. Math. Phys.* **28** (1987), no. 11, 2614-2617. (P. R. Chernoff) **89c:81013** 81B05 (81C10)
- pham the Lai** see Pham The Lai
- Lai, C. H.** see Lai, Choy-Heng
- Lai, C. W.** (with Avis, David) The probabilistic analysis of a heuristic for the assignment problem. *SIAM J. Comput.* **17** (1988), no. 4, 732-741. (Karl Weber) **89j:68066** 68Q25 (90C10)
- Lai, Choy-Heng** (with Oh, C. H.; Soo, C. P.) Conserved gauge invariant charges in Yang-Mills gauge field theories. *Conformal field theory, anomalies and superstrings* (Singapore, 1987), 540-550, *World Sci. Publishing, Singapore*, 1988. (Yisong Yang) **89c:53108** 53C80 (81E13)
- (with Oh, C. H.; Singh, Kuldeep) Consistency in the Kaluza-Klein scheme. *Conformal field theory, anomalies and superstrings* (Singapore, 1987), 551-560, *World Sci. Publishing, Singapore*, 1988. (L. M. Sokolowski) **89j:83083** 83E15 (53C80)
- Lai, Han Ch'ing** (with Chang, Tsu Kung) Translation invariant operators and multipliers of Banach-valued function spaces. *Proceedings of the analysis conference, Singapore* 1986, 151-162, *North-Holland Math. Stud.*, 150, North-Holland, Amsterdam-New York, 1988. (G. P. Johnson) **89b:43002** 43A22 (47B38)
- (with Lin, Lai Chū) Moreau-Rockafellar type theorem for convex set functions. *J. Math. Anal. Appl.* **132** (1988), no. 2, 558-571. (S. Zlobec) **89g:90239** 90C48 (28B20)
- Lai, Hong-Jian** On the Hamiltonian index. *Discrete Math.* **69** (1988), no. 1, 43-53. (Arthur M. Hobbs) **89f:05113** 05C45 (05C75)
- Contractions and Hamiltonian line graphs. *J. Graph Theory* **12** (1988), no. 1, 11-15. (Arthur M. Hobbs) **89f:05114** 05C45 (05C75)
- Lai, K'un Ts'ai** (with Ts'ao, Heng Wei; Li, Lin Shan) A decision-aided algorithm for adaptive equalizers in digital transmissions. (Chinese summary) *J. Chinese Inst. Engrs.* **11** (1988), no. 5, 555-562. (Not in MR) **94A05** (94A34)
- Lai, Mingjun** (with Chui, C. K.) On multivariate vertex splines and applications. *Topics in multivariate approximation* (Santiago, 1986), 19-36, *Academic Press, Boston, MA*, 1987. (Summary) **89h:41024** 41A15 (41A63, 65D07)
- (with Chui, C. K.) Computation of box splines and B-splines on triangulations of nonuniform rectangular partitions. *Proceedings of China-U.S. Joint Conference on Approximation Theory* (Hangzhou, 1985). *Approx. Theory Appl.* **3** (1987), no. 4, 37-62. (Stephen Demko) **89c:65012** 65D07
- Lai, P'ik-Yin** (with Goldschmidt, Yadin Y.) Application of statistical mechanics to combinatorial optimization problems: the chromatic number problem and q-partitioning of a graph. *J. Statist. Phys.* **48** (1987), no. 3-4, 513-529. (Yixun Lin) **89a:05120** 05C80 (05C15, 68Q15, 82A57, 90C27)
- Lai, Qin Sheng** The weighted #-operator and maximal operator on spaces of homogeneous type. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B **8** (1987), no. 4, 490. *Chinese Ann. Math. Ser. A* **8** (1987), no. 5, 600-610. (Weixing Zheng) **89b:42013** 42B20 (42B25, 43A85, 47B38)
- Lai, T. L.** Asymptotic solutions of bandit problems. *Stochastic differential systems, stochastic control theory and applications* (Minneapolis, Minn., 1986), 275-292, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (M. B. Woodroofe) **89c:62139** 62L15 (62L10, 90B22, 90B35, 90C40)
- (with Ying, Zhiang) Open bandit processes and optimal scheduling of queueing networks. *Adv. in Appl. Probab.* **20** (1988), no. 2, 447-472. (John C. Gittins) **89f:90187** 90C40 (60K20, 62L99, 90B35, 93E20)
- Boundary crossing problems for sample means. *Ann. Probab.* **16** (1988), no. 1, 375-396. (Summary) **89f:60056** 60F99 (60G40, 62L05, 62L15)
- Nearly optimal sequential tests of composite hypotheses. *Ann. Statist.* **16** (1988), no. 2, 856-886. (Albrecht Irlle) **89i:62130** 62L10
- Lai, Ten Hwang** (with Sprague, Alan) On the routability of a convex grid. *J. Algorithms* **8** (1987), no. 3, 372-384. (Rolf H. Möhring) **89c:90086** 90B10 (68Q35, 68R10, 90B35)
- (with Chen, Guan-Ing) Preemptive scheduling of independent jobs on a hypercube. *Inform. Process. Lett.* **28** (1988), no. 4, 201-206. (Summary) **89h:68038** 68Q10 (68M20, 68Q25, 90B35)
- Lai, Wan Cai** Almost quasiconformal mappings with given boundary values and a complex dilatation bound. A Chinese summary appears in Chinese Ann. Math. Ser. A **9** (1988), no. 2, 243. *Chinese Ann. Math. Ser. B* **9** (1988), no. 2, 239-249. (Matti Lehtinen) **89m:30043** 30C60
- Lai, Wu Yih** (with Tseng, Hsen-Che; Hu, Chin Kun; Chen, Wen Den) Renormalization-group method for transitions to chaos via period doubling and intermittency in the chaotic region. *Phys. Lett. A* **134** (1989), no. 7, 417-420. (Summary) **89k:58201** 58F13 (26A18, 58F08)
- Laidlaw, David** (with Koçak, H.) Computer graphics and the geometry of  $S^3$ . *Math. Intelligencer* **9** (1987), no. 1, 8-10. (Louis H. Kauffman) **89d:58001** 58-04 (57-04)
- Laidlaw, W. G.** (with Otwinowski, M.; Paul, Reginald) Exact travelling wave solutions of a class of nonlinear diffusion equations by reduction to a quadrature. *Phys. Lett. A* **128** (1988), no. 9, 483-487. (Summary) **89f:35106** 35K55 (35Q20)
- Laine, I.** Complex differential equations and Nevanlinna theory. II. Nonlinear differential equations. (Finnish. English summary) *Arkiv för Matematik* **39** (1987), no. 4, 256-267. (Summary) **89c:30074** 30D30 (34A20, 34A34)
- Axiomatic nonlinear potential theories. *Potential theory—surveys and problems* (Prague, 1987), 118-132, *Lecture Notes in Math.*, 1344, Springer, Berlin-New York, 1988. (see **89m:31001**) 31D05
- Remarks on meromorphic solutions of the Riccati differential equation. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 1-2, 83-87. (Anand Prakash Singh) **89h:34005** 34A20 (30D20, 30D30)
- see also *Complex analysis*, Joensuu 1987, **89j:30002**
- Lainig, D. G.** (with Cameron, M. A.; Eagleson, G. K.; Willcox, M. E.; Panhuber, H.) Testing for correlated errors in the analysis of variance. (French summary) *Biometrics* **44** (1988), no. 3, 695-704. (Summary) **89g:62117** 62J10
- Laios, B.** (with Karcianias, N.; Giannakopoulos, C.) Decentralized determinantal assignment problem: fixed and almost fixed modes and zeros. *Internat. J. Control* **48** (1988), no. 1, 129-147. (Not in MR) **93B55** (93B27, 93B50)
- Lair, C.** Catégories qualifiables et catégories esquissables. [Qualifiable categories and sketchable categories] *Diagrammes* **17** (1987), 153 pp. (Saunders Mac Lane) **89m:18009** 18C10
- Laird, Nan M.** (with Baker, Stuart G.) Regression analysis for categorical variables with outcome subject to nonignorable nonresponse. *J. Amer. Statist. Assoc.* **83** (1988), no. 401, 62-69. (Not in MR) **62J05**
- Lais, P.** (with Reik, H. G.; Stützel, M. E.; Doucha, M.) Exact solution of the  $E \otimes e$  Jahn-Teller and Rabi Hamiltonian by generalised spheroidal wavefunctions? *J. Phys. A* **20** (1987), no. 18, 6327-6340. (Summary) **89b:81078** 81C99 (81K05)
- Laita, Luis M.** (with Margarit, Alejandro Fernández) Abraham Robinson's meta-algebra revisited. *Z. Math. Logik Grundlag. Math.* **33** (1987), no. 6, 497-505. (Bienvenido F. Nebres) **89g:03043** 03C07 (03C60)
- Laitinen, Erkki Juhani** (with Neittaanmäki, Pekka) On numerical solution of the problem connected with the control of the secondary cooling in the continuous casting process. *Control Theory Adv. Tech.* **4** (1988), no. 3, 285-305. (Not in MR) **93C75**
- (with Neittaanmäki, Pekka) On numerical simulation of the continuous casting process. *J. Engrg. Math.* **22** (1988), no. 4, 335-354. (Summary) **89j:80003** 80-08 (80A20)
- Laitner, John** Dynamic determinacy and the existence of sunspot equilibria. *J. Econom. Theory* **47** (1989), no. 1, 39-50. (Summary) **89m:90032** 90A14

- Laitochová, Jitka** On transformations of two homogeneous linear second order differential equations of a general and of Sturm forms. (Russian and Czech summaries) *Acta Univ. Palack. Olomuc. Fac. Rerum Natur. Math.* 25 (1986), 77-95 (1987). (F. Neuman) 89k:34054 34C20 (34A30)
- Lakav, A. S.** Justification of the linear complexity of calculations of the reliability characteristics of networks with ordinary structure. (Russian. English summary) *Kibernetika (Kiev)* 1987, no. 6, 87-90, 135. (Not in MR) 90B25
- Lakatos, E.** Correction to: "Sample sizes based on the log-rank statistic in complex clinical trials" [Biometrics 44 (1988), no. 1, 229-241]. *Biometrics* 44 (1988), no. 3, 923. (Not in MR) 62P10
- Lakatos, László** On systems with bulk arrival and group service. I. *Ann. Univ. Sci. Budapest. Sect. Comput.* 7 (1987), 11-17 (1988). (C. E. M. Pearce) 89m:60238 60K25 (90B22)
- The state probabilities of a discrete Markov chain with bounded positive jumps. (Russian) *Teor. Veroyatnost. i Mat. Statist. No. 37* (1987), 92-94, 136. (É. I. Kistauri) 89e:60132 60J10
- On inhomogeneous Markov chain with bounded positive jumps and homogeneous second component. *Probability theory and mathematical statistics with applications* (Visegrad, 1985), 131-141, Reidel, Dordrecht-Boston, MA, 1988. (Kyle Siegrist) 89g:60231 60J27 (60J35)
- Lakeev, A. V.** (with Chagina, O. M.) The method of Lyapunov functions in control synthesis problems. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Irkutsk, 1985) (Russian), 272-280, 327, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (Ivan Ginchev) 89i:33010 93B05 (34D20, 93B50)
- Lakemeyer, Gerhard** Steps towards a first-order logic of explicit and implicit belief. *Theoretical aspects of reasoning about knowledge* (Monterey, Calif., 1986), 325-340, Morgan Kaufmann, Palo Alto, CA, 1986. (Summary) 89a:03038 03B45
- Lakhin, V. P.** (with Mikhailovskii, A. B.; Onishchenko, O. G.) Drift solutions. *Plasma Phys. Control. Fusion* 30 (1988), no. 4, 457-470. (Summary) 89e:76084 76W05
- Lakhtakia, Akhlesh** (with Varadan, Vasundara V.; Messier, Russell; Varadan, Vijay K.) On the symmetries of the Julia sets for the process  $z \rightarrow z^2 + c$ . *J. Phys. A* 20 (1987), no. 11, 3533-3535. (J. S. Joel) 89e:58062 58F08 (30D05)
- (with Varadan, Vijay K.; Messier, Russell; Varadan, Vasundara V.) Generalisations and randomisation of the plane Koch curve. *J. Phys. A* 20 (1987), no. 11, 3537-3541. (George K. Francis) 89b:51028 51M20 (28A75, 58F40)
- (with Varadan, Vasundara V.; Varadan, Vijay K.) Field equations, Huygens's principle, integral equations, and theorems for radiation and scattering of electromagnetic waves in isotropic chiral media. *J. Opt. Soc. Amer. A* 5 (1988), no. 2, 175-184. (G. S. Agarwal) 89j:78015 78A25
- (with Raup, David J.) Self-referential decomposition of a class of quadratic irrationals. *J. Phys. A* 21 (1988), no. 1, 285-287. (M. Mendès France) 89d:82105 82A57 (11A55, 11J70)
- (with Messier, Russell; Varadan, Vijay K.; Varadan, Vasundara V.) Fractal sequences derived from the self-similar extensions of the Sierpiński gasket. *J. Phys. A* 21 (1988), no. 8, 1925-1928. (Summary) 89e:11005 11A99 (28A75, 82A99)
- Lakin, W. D.** (with Hall, Philip) Instability driven boundary layers on curved walls. *Applied mathematics, fluid mechanics, astrophysics* (Cambridge, MA, 1987), 134-143, World Sci. Publishing, Singapore, 1988. (see 89f:76002) 76E30
- Lakota, N. A.** (with Krut'ko, P. D.) Algorithms for the trajectory control of the movement of manipulation robots. (Russian) *Dokl. Akad. Nauk SSSR* 294 (1987), no. 4, 808-811. (Gh. Silas) 89b:70011 70Q05 (70B15, 93B40, 93C75)
- (with Krut'ko, P. D.) The inverse dynamics problems method in the theory of constructing algorithms for the control of manipulator robots. The stabilization problem. *Soviet J. Comput. Systems Sci.* 25 (1987), no. 6, 73-81 (1988); translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 3, 82-91, 220 (Russian). (Not in MR) 93D15
- Laković, Bosa** Traces of functions of a certain class. (Russian. Serbo-Croatian summary) *Mat. Vesnik* 39 (1987), no. 3, 315-323. (Vladimir D. Stepanov) 89h:46051 46E35
- On a class of functions. (Russian. Serbo-Croatian summary) *Mat. Vesnik* 39 (1987), no. 4, 405-415. (J. Albricht) 89h:41062 41A65 (46E35)
- Lakrori, M.** (with Cheruy, A.) Une commande nonlinéaire de bioprocédés fedbatch. (English summary) [A nonlinear control for fedbatch bioprocesses] *Analysis and optimization of systems* (Antibes, 1988), 1164-1175, *Lecture Notes in Control and Inform. Sci.* 111, Springer, Berlin-New York, 1988. (see 89c:00031) 92A09 (93C40, 93C75, 93D15)
- Lakser, H.** (with Mendelsohn, N. S.; Moon, J. W.) Amalgamation of team tournaments. *J. Combin. Theory Ser. B* 45 (1988), no. 1, 115-119. (Derek Smith) 89f:05090 05C20
- Lakshmanan, M.** (with Ganesan, S.) Singularity-structure analysis and Hirota's bilinearisation of the Davey-Stewartson equation. *J. Phys. A* 20 (1987), no. 17, L1143-L1147. (Summary) 89e:35131 35Q20 (58G37)
- (with Tamizhmani, K. M.) Painlevé analysis and integrability aspects of nonlinear evolution equations. *Solitons* (Tiruchirappalli, 1987), 145-161, *Springer Ser. Nonlinear Dynamics*, Springer, Berlin-New York, 1988. (Peter A. Clarkson) 89d:35163 35Q20 (58F07)
- (with Rajasekar, S.) Period doubling route to chaos for a BVP oscillator with periodic external force. *J. Theoret. Biol.* 133 (1988), no. 4, 473-477. (Summary) 89h:58149 58F14 (70K40, 70K50)
- (with Rajasekar, S.) Period-doubling bifurcations, chaos, phase-locking and devil's staircase in a Bonhoeffer-van der Pol oscillator. *Phys. D* 32 (1988), no. 1, 146-152. (Not in MR) 92A09 (58F13, 58F14)
- see also *Solitons*, 89b:00027
- Lakshmanan, T. R.** (with Bolton, Roger) Regional energy and environmental analysis. *Handbook of regional and urban economics*, Vol. 1, 581-628, *Handbooks in Economics*, 7, North-Holland, Amsterdam-New York, 1986. (see 89m:90047) 90A30
- Lakshmanan, V. S.** Lattices: what can they do for relational databases? *Workshop on Mathematics of Computer Algorithms* (Madras, 1986), E.51-E.59, *I.M.S. Rep.*, 111, Inst. Math. Sci., Madras, 1986. (From the introduction) 89k:68033 68P15 (06B99)
- (with Thathachar, Mandayam A. L.) Dynamic arrival routing—a generalized problem and an optimal routing algorithm. *J. Indian Inst. Sci.* 66 (1986), no. 11-12, 655-667. (Summary) 89a:90061 90B22
- (with Veni Madhavan, C. E.) An algebraic theory of functional and multivalued dependencies in relational databases. *Theoret. Comput. Sci.* 54 (1987), no. 1, 103-128. (K. Marguerite Hafen) 89d:68007 68P15
- (with D'Atri, Alessandro; Di Felice, P.; Moscarini, Marina) On global context dependencies and their properties (extended abstract). *MFDBS 87* (Dresden, 1987), 71-79, *Lecture Notes in Comput. Sci.*, 305, Springer, Berlin-New York, 1988. (see 89a:68004) 68P15
- Lakshmanasamy, S.** (with Jordan, A. K.; Mitra, S. S.) Soliton propagation in optical waveguides: a review. *Some topics on inverse problems* (Montpellier, 1987), 391-403, *World Sci. Publishing*, Singapore, 1988. (see 89f:35007) 78A50
- (with Jordan, A. K.) An inverse scattering theory applied to the design of single-mode planar optical waveguides: study of discrete and continuous spectra. *Some topics on inverse problems* (Montpellier, 1987), 404-415, *World Sci. Publishing*, Singapore, 1988. (see 89f:35007) 78A50
- Lakshmikantham, V.** Quasisolations and the method of mixed monotony. *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 781-789, "Angel Kanchev" Tech. Univ., Ruse, 1987. (A. S. Vatsala) 89f:34001 34A10 (34A45, 34B99)
- (with Khavanin, Mohammad) The method of mixed monotony and second order boundary value problems. *Nonlinear analysis and applications* (Arlington, Tex., 1986), 273-278, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (C. N. Kaul) 89f:34027 34B15 (34A45, 65L10)
- Some problems in integro-differential equations. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations* (Budapest, 1987), 126-133, *János Bolyai Math. Soc.*, Budapest, 1987. (M. Rama Mohana Rao) 89g:45021 45J05 (45D05, 47G05)
- (with Triganté, D.) ★ Theory of difference equations. Numerical methods and applications. *Mathematics in Science and Engineering*, 181, Academic Press, Inc., Boston, MA, 1988. x+242 pp. ISBN 0-12-434100-4 (R. M. M. Mattheij) 89g:39003 39A10 (39-02, 39A11, 65Q05, 92A15)
- (with Guo, Da Jun) ★ Nonlinear problems in abstract cones. *Notes and Reports in Mathematics in Science and Engineering*, 5, Academic Press, Inc., Boston, MA, 1988. viii+275 pp. ISBN 0-12-293475-X (D. Pascali) 89g:47084 47H07 (34A34, 45G10, 47-02, 47H10, 47H15)
- (with Hu, Shou Chuan) Monotone iterative technique for integrodifferential equations. (Russian summary) *Asymptotic methods in mathematical physics* (Russian), 263-270, 304, "Naukova Dumka", Kiev, 1988. (S. G. Deo) 89m:45010 45J05
- (with Heikkilä, Seppo; Leela, S.) Applications of monotone techniques to differential equations with discontinuous right-hand side. *Differential Integral Equations* 1 (1988), no. 3, 287-297. (C. P. Gupta) 89g:34002 34A10 (34B15, 47H17)
- (with Hu, Shou Chuan; Rama Mohana Rao, M.) Nonlinear variation of parameters formula for integro-differential equations of Volterra type. *J. Math. Anal. Appl.* 129 (1988), no. 1, 223-230. (S. G. Deo) 89b:45007 45J05
- (with Liu, Xinzhi) Stability for impulsive differential systems in terms of two measures. *Appl. Math. Comput.* 29 (1989), no. 1, part I, 89-98. (A. Corduneanu) 89m:34067 34D20 (34D10, 93C57)
- (with Bainov, D. D.; Khristova, S. G.; Hu, Shou Chuan) Periodic boundary value problems for systems of first order impulsive differential equations. *Differential Integral Equations* 2 (1989), no. 1, 37-43. (M. K. Grammatikopoulos) 89h:93038 93C57 (34A40, 34B15, 34C25)
- (with Hu, Shou Chuan; Leela, S.) Impulsive differential systems and the pulse phenomena. *J. Math. Anal. Appl.* 137 (1989), no. 2, 605-612. (Sheldon P. Gordon) 89h:93143 93C57 (34A99, 34C99)
- Laksov, Dan** Generalized radicals of ideals in algebras. *Conference on algebraic varieties of small dimension* (Turin, 1985). *Rend. Sem. Mat. Univ. Politec. Torino* 1986, Special Issue, 77-89 (1987). (Michel van den Bergh) 89b:13002 13A10 (13A15)
- Completed quadrics and linear maps. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 371-387, *Proc. Sympos. Pure Math.*, 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Susan J. Colley) 89c:14077 14N10 (14C17, 14M17)
- Lal, K. B.** (with Ansari, Amir Ali) On wave solutions of coupled electromagnetic and zero-rest-mass scalar fields in a generalized Peres space-time. (Turkish summary) *Istanbul Univ. Fen Fak. Mecm. Ser. A* 43 (1978), 69-75 (1987). (Norbert Noutchegueme) 89b:83012 83C15
- (with Mustaqem) On wave solutions of gauge invariant generalization of field theories with asymmetric fundamental tensor. (Turkish summary) *Istanbul Univ. Fen Fak. Mecm. Ser. A* 43 (1978), 159-171 (1987). (S. Kichenassamy) 89i:83054 83E10 (83D05)
- Lal, Mange** (with Narain, Kuldeep) On a class of triple integral equations involving  $G(X_n)$ . *Acta Cienc. Indica Math.* 13 (1987), no. 1, 21-27. (C. L. Koul) 89f:45011 45F10 (33A35)
- (with Mathur, P. K.) A certain class of simultaneous dual equations involving series of Jacobi and Laguerre polynomials. *Acta Cienc. Indica Math.* 13 (1987), no. 4, 219-225. (K. C. Gupta) 89i:33018 33A65 (45F10)
- (with Narain, Kuldeep) Thermoelastic Boussinesq problem of an elastic half space. *J. Math. Phys. Sci.* 22 (1988), no. 4, 497-507. (Summary) 89f:73016 73C25 (73U05)
- Lal, Manohar** (with Sharma, Bhu Dev) Algebra of Sharma and Kaushik's metric inducing partitions of  $Z_p$ . *J. Combin. Inform. System Sci.* 11 (1986), no. 1, 19-32. (H. F. Mattson, Jr.) 89k:94077 94B50 (05A17, 06B99)
- Lal, R. N.** On fuzzy mechanical structures. I, II. *Bull. Calcutta Math. Soc.* 80 (1988), no. 1, 13-19, 36-43. (Summary) 89f:03051 03E72 (70A05, 73A05)
- Lal, R. S.** Shankarācāryaswāmī and his novel methods of solving simple equations. *Math. Ed. (Siwan)* 21 (1987), no. 1, 3-10. (Nikos Tzanakis) 89i:01007 01A32
- Lal, Ram** (with Bhat, U. Narayan) Number of successes in Markov trials. *Adv. in Appl. Probab.* 20 (1988), no. 3, 677-680. (Alan F. Karr) 89b:60107 60J10
- (with Bhat, U. Narayan) Correction: "Reduced systems in Markov chains and their applications in queueing theory" [Queueing Systems Theory Appl. 2 (1987), no. 2, 147-172; MR 88k:60123]. *Queueing Systems Theory Appl.* 4 (1989), no. 1, 93. (Editors) 89k:60091 60J10 (60K25)
- Lal, S. N.** see Lal, Shiva Narain
- Lal, Shankar** (with Dass, Bal Kishan) UEC codes correcting random and low-density burst errors. *Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications*, Vol. 2 (Catania, 1986). *Ars Combin.* 24 (1987), B. 103-134. (Bal Kishan Dass) 89c:94014 94B20
- Lal, Shiva Narain** (with Srivastava, Rekha; Srivastava, Arun Kumar) Connected fuzzy topological spaces. *Modern analysis and its applications* (New Delhi, 1983), 27-35, Prentice-Hall of India, New Delhi, 1986. (Zike Deng) 89b:54010 54A40 (03E72)
- Lal, Sunder** (with Singal, Asha Rani) Proximities on regular spaces. *J. Bihar Math. Soc.* 10 (1986), 40-49. (Ramesh Ori) 89a:54033 54E05



- Lala, P. K.** (with Tao, D. L.; Hartmann, Carlos R. P.) An efficient class of unidirectional error detecting/correcting codes. *IEEE Trans. Comput.* **37** (1988), no. 7, 879–882. (Summary) **89d:94051** 94B60
- Lalanne, Jean-Christophe** Caractérisation de la charge des arêtes du graphe support d'un réseau nodal de commutation temporelle asynchrone. (English summary) [Characterization of the load of the vertices of the support graph of a nodal network for asynchronous time division switching] *RAIRO Rech. Opér.* **22** (1988), no. 2, 177–203. (Summary) **89e:90087** 90B10 (55C10, 90B22)
- Lalayan, A. S.** (with Nersisyan, A. B.) Conditions for the solvability of a conjugation problem for a pair of piecewise analytic functions. (Russian. English and Armenian summaries) *Izv. Akad. Nauk Armyan. SSR Ser. Mat.* **22** (1987), no. 5, 439–450, 514. (Zbigniew Binderman) **89c:30072** 30E25 (45E10)
- Lall, R. Samuel** (with Denis, Remy Y.) Smallest binary sum of a graph. *Progr. Math.* (Varanasi) **21** (1987), no. 1, 1–8. (Ernie S. Solheid) **89e:05141** 05C50
- Lallemant, Marie-Hélène** (with Dervieux, Alain) A multigrid finite element method for solving the two-dimensional Euler equations. *Multigrid methods (Copper Mountain, CO, 1987)*, 337–363, *Lecture Notes in Pure and Appl. Math.*, **110**, Dekker, New York, 1988. (A. Jami) **89f:76013** 76-08 (65N30, 76H05, 76N15)
- Lallemant, P.** (with Clavin, Paul; d'Humières, D.; Pomeau, Y.) Automates cellulaires pour les problèmes à frontières libres en hydrodynamique à deux et trois dimensions. (English summary) [Cellular automata for hydrodynamics with free boundaries in two and three dimensions] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **303** (1986), no. 13, 1169–1174. (Iuliana Oprea) **89k:76094** 76-08 (68Q80, 76D25, 76E05, 82-04)
- (with d'Humières, D.) Numerical simulations of hydrodynamics with lattice gas automata in two dimensions. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems* **1** (1987), no. 4, 599–632. (Summary) **89a:82002** 82-04 (82A40)
- (with Frisch, Uriel; d'Humières, D.; Hasslacher, Brod; Pomeau, Y.; Rivet, Jean-Pierre) Lattice gas hydrodynamics in two and three dimensions. Large nonlinear systems (Santa Fe, NM, 1986). *Complex Systems* **1** (1987), no. 4, 649–707. (Tony C. Dorlas) **89h:82031** 82A50 (76D05, 82A69)
- (with d'Humières, D.; Boon, J.-P.; Dab, D.; Noullez, A.) Fluid dynamics with lattice gases. *Chaos and complexity (Torino, 1987)*, 278–301, *World Sci. Publishing, Singapore*, 1988. (Summary) **89f:76016** 76-08 (65C20, 76R50, 82A40, 82A99)
- (with d'Humières, D.) Errata: "Numerical simulations of hydrodynamics with lattice gas automata in two dimensions" [Complex Systems **1** (1987), no. 4, 599–632; MR **89a:82002**]. *Complex Systems* **2** (1988), no. 6, 725–726. (Editors) **89k:82002** 82-04 (82A40)
- Lallemant, Gerard** (with Zhang, Qiang) Estimation of the generalized damping matrix from identified complex eigenvalues. *Mech. Structures Mach.* **15** (1987/88), no. 4, 543–557. (D. W. Nicholson) **89f:70028** 70J20 (70J05, 93B30)
- Lallemant, Gérard J.** Some algorithms for semigroups and monoids presented by a single relation. *Semigroups, theory and applications (Oberwolfach, 1986)*, 176–182, *Lecture Notes in Math.*, **1320**, Springer, Berlin-New York, 1988. (John M. Howie) **89i:20083** 20M05
- see also *Semigroups, theory and applications*, **89c:20005**
- Lalley, S.** Distribution of periodic orbits of symbolic and Axiom A flows. *Adv. in Appl. Math.* **8** (1987), no. 2, 154–193. (Peter Walters) **89e:58088** 58F15 (58F11)
- (with Robbins, Herbert) Stochastic search in a square and on a torus. *Statistical decision theory and related topics, IV, Vol. 2 (West Lafayette, Ind., 1986)*, 145–161, *Springer, New York-Berlin*, 1988. (Lawrence D. Stone) **89c:90064** 90B40 (90D40)
- The "prime number theorem" for the periodic orbits of a Bernoulli flow. *Amer. Math. Monthly* **95** (1988), no. 5, 385–398. (H. R. Gluck) **89e:58094** 58F17
- (with Selke, Thomas) Traveling waves in inhomogeneous branching Brownian motions. *I. Ann. Probab.* **16** (1988), no. 3, 1051–1062. (J. D. Biggins) **89g:60259** 60B80 (60J65)
- The packing and covering functions of some self-similar fractals. *Indiana Univ. Math. J.* **37** (1988), no. 3, 699–710. (K. J. Falconer) **89h:28013** 28A75 (52A45)
- A one-dimensional infiltration game. *Naval Res. Logist.* **35** (1988), no. 5, 441–446. (From the text) **89j:90280** 90D05 (90D42)
- (with Robbins, Herbert) Stochastic search in a convex region. *Probab. Theory Related Fields* **77** (1988), no. 1, 99–116. (Lawrence D. Stone) **89f:90078** 90B40 (90D05)
- Lalli, B. S.** (with Grace, S. R.) Oscillation of higher order functional differential equations with deviating arguments of mixed type. *Ann. Differential Equations* **2** (1986), no. 4, 399–414. (Mirko Budinčević) **89j:34099** 34K15
- (with Grace, S. R.) A criterion for the oscillatory and asymptotic behaviour of differential equations with forcing term. *An. Stiint. Univ. "Al. I. Cuza" Iasi Sect. I a Mat. (N.S.)* **33** (1987), no. 1, 29–32. (V. B. Headley) **89h:34074** 34C10 (34A34, 34C15, 34K15)
- (with Grace, S. R.) Oscillatory behaviour of nonlinear differential equations with deviating arguments. *Arch. Math. (Brno)* **23** (1987), no. 1, 15–22. (Ivan Ginchev) **89e:34119** 34K15 (34A34, 34C10)
- (with Grace, S. R.) On the second order nonlinear oscillations. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 3, 297–309. (Man Kam Kwong) **89g:34046** 34C15
- (with Grace, S. R.) Integral averaging and the oscillation of second order nonlinear differential equations. *Ann. Mat. Pura Appl. (4)* **151** (1988), 149–159. (T. G. Proctor) **89m:34041** 34C10
- (with Grace, S. R.) Oscillation and asymptotic behavior of solutions of nonlinear differential inequalities with deviating argument. *Math. Nachr.* **136** (1988), 157–162. (From the introduction) **89f:34100** 34K15 (34A40, 34C10)
- (with Grace, S. R.) Oscillations in second order differential equations with alternating coefficients. *Period. Math. Hungar.* **19** (1988), no. 1, 69–78. (Preben Alstrom) **89d:34068** 34C15 (34C10)
- (with Grace, S. R.; Yeh, Cheh Chih) Addendum: "Oscillation theorems for nonlinear second-order differential equations with a nonlinear damping term" [SIAM J. Math. Anal. **15** (1984), no. 6, 1082–1093; MR **85j:34071**]. *SIAM J. Math. Anal.* **19** (1988), no. 5, 1252–1253. (Curtis C. Travis) **89i:34034** 34C10 (34A34)
- (with Grace, S. R.) Oscillations of functional-differential equations generated by advanced arguments. *Differential Integral Equations* **2** (1989), no. 1, 21–36. (Jian Hong Wu) **89g:34105** 34K15 (34C10)
- Lalman, David** (with Bueno de Mesquita, Bruce) Arms races and the opportunity for peace. Formal analysis in international relations. *Synthese* **76** (1988), no. 2, 263–283. (see **89e:90218**) **92A90** (90D45, 92A25)
- Lalonde, François** Homologies de Shih: définition et propriétés. [Shih homologies: definition and properties] *Canad. J. Math.* **39** (1987), no. 3, 748–768. (J. M. Boardman) **89a:57039** 57R45 (55N35, 58G99)
- Lalouel, J. M.** (with Lathrop, G. M.; Chotai, J.; Ott, Jane J.) Tests of gene order from three-locus linkage data. *Ann. Human Genetics* **51** (1987), no. 3, 235–249. (Summary) **89k:92031** 92A10
- Lalvani, H.** Metamorphosis and cycle in curved space structures. *M. C. Escher: art and science (Rome, 1985)*, 187–193, *North-Holland, Amsterdam-New York*, 1986. (see **89m:00011**) **52A45**
- (with Haase, R. W.; Kramer, L.; Kramer, Peter) Polyhedra of three quasilattices associated with the icosahedral group. *Acta Cryst. Sect. A* **43** (1987), no. 4, 574–587. (Summary) **89b:52024** 52A43 (20H15, 82A60)
- Lam, C. S.** GSO projections for aperiodic strings. *International Workshop on Superstrings, Cosmology, Composite Structures (College Park, MD, 1987)*, 119–127, *World Sci. Publishing, Singapore*, 1987. (Sorin Marculescu) **89e:81158** 81E99 (81E30, 83E30)
- (with Li, Da-Xi) Direct compactification of heterotic strings from 26 to 4 dimensions via  $T^2/\mathbb{G}$ . *Comm. Math. Theoret. Phys.* **7** (1987), no. 3, 235–243. (Summary) **89i:81118** 81E99 (81E30, 83E30)
- Lam, Gabriel K. Y.** The combined effects of mixtures of ionizing radiations. *J. Theoret. Biol.* **134** (1988), no. 4, 531–546. (Summary) **89g:92010** 92A07
- Lam, Kee Yuen** (with Ranicki, Andrew; Smith, Larry) Jordan normal form projections. *Arch. Math. (Basel)* **50** (1988), no. 2, 113–117. (William H. Gustafson) **89h:15014** 15A21 (15A33)
- Lam, Lay Yong** Linkages: exploring the similarities between the Chinese rod numeral system and our numeral system. *Arch. Hist. Exact Sci.* **37** (1987), no. 4, 365–392. (Wolfgang Ruppert) **89k:01004a** 01A25
- A Chinese genesis: rewriting the history of our numeral system. *Arch. Hist. Exact Sci.* **38** (1988), no. 2, 101–108. (Wolfgang Ruppert) **89k:01004b** 01A25
- Correction for the article: "A Chinese genesis: rewriting the history of our numeral system". *Arch. Hist. Exact Sci.* **39** (1989), no. 4, i. (Wolfgang Ruppert) **89k:01004c** 01A25
- Lam, Lai** Waves in anisotropic media. *Wave phenomena (San Jose, CA, 1988)*, 197–229, *Springer, New York-Berlin*, 1989. (see **89g:00020**) **82A57**
- see also *Wave phenomena*, **89g:00020**
- Lam, T. Y.** On the number of solutions of  $x^p = a$  in a  $p$ -group. *Illinois J. Math.* **32** (1988), no. 3, 575–583. (Leo J. Alex) **89h:20031** 20D15 (11D61)
- Lam, Yeh** Optimal control of a finite dam—discounted cost case. *Kexue Tongbao (English Ed.)* **32** (1987), no. 4, 217–221. (Howard Taylor) **89g:90087** 90B05 (60K30, 93E20)
- A note on the optimal replacement problem. *Adv. in Appl. Probab.* **20** (1988), no. 2, 479–482. (Carl M. Harris) **89d:90105** 90B25 (60K99, 62N05)
- Bayesian approach to single variable sampling plans. *Biometrika* **75** (1988), no. 2, 387–391. (Summary) **89c:62182** 62N10 (62F15)
- Lamarche, François** On the stack completion of a category object in a pretopos. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 1, 47–49. (Kimmo I. Rosenthal) **89b:18007** 18B25
- A model for Coquand's theory of constructions. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 2, 89–94. (Summary) **89f:68100** 68Q55 (18A99)
- A generalization of the notion of free triple. *C. R. Math. Rep. Acad. Sci. Canada* **10** (1988), no. 3, 133–137. (D. H. Van Osdol) **89f:18001** 18A40 (18A15)
- Lamata, M. T.** (with Bolaños, M. J.; Moral, S.) Decision making problems in a general environment. *Fuzzy Sets and Systems* **25** (1988), no. 2, 135–144. (Summary) **89a:90002** 90A05 (03E72)
- Lamb, Charles W.** A comparison of methods for constructing probability measures on infinite product spaces. *Canad. Math. Bull.* **30** (1987), no. 3, 282–285. (Introduction) **89f:60004** 60A10 (28A35, 60G05)
- Lamb, Wilson** On the solution of certain distributional boundary value problems. *Appl. Anal.* **26** (1987), no. 2, 87–103. (V. S. Rabinovich) **89f:35045** 35D05 (35J05, 35K05)
- (with Mika, Janusz Roman; Roach, G. F.) Approximate solutions of problems involving normal operators. *J. Math. Anal. Appl.* **126** (1987), no. 1, 209–222. (Balmohan V. Limaye) **89a:65091** 65J10 (47A50, 47A55)
- (with McBride, A. C.) On relating two approaches to fractional calculus. *J. Math. Anal. Appl.* **132** (1988), no. 2, 590–610. (E. R. Love) **89j:26011** 26A33 (34B25, 34B30, 47A60, 47E05)
- Lamba, S. S.** (with Gorez, R.; Bandyopadhyay, B.) New reduction technique by step error minimization for multivariable systems. *Internat. J. Systems Sci.* **19** (1988), no. 6, 999–1009. (Vimal Singh) **89e:93042** 93B17 (93C05, 93C35, 93C60)
- van Lambaigen, Michiel** (with Cooke, Roger Marvin) Lattice-valued commutativity measures. *Recent developments in quantum logic (Cologne, 1984)*, 147–159, *Grundlagen Exakt. Naturwiss.*, **6**, Bibliographisches Inst., Mannheim, 1985. (see **89h:81008**) **06C15** (03G12)
- Lambe, Larry** (with Stasheff, James) Applications of perturbation theory to iterated fibrations. *Manuscripta Math.* **58** (1987), no. 3, 363–376. (C.-F. Bödigheimer) **89d:55041** 55R20 (55P45, 57T30)
- Lambek, J.** (with Scott, Philip J.) ★ Introduction to higher order categorical logic. Reprint of the 1986 original. *Cambridge Studies in Advanced Mathematics*, **7**, *Cambridge University Press, Cambridge-New York*, 1988. x+293 pp. ISBN 0-521-35653-9 (Editors) **89a:03024** 03B40 (03-02, 03B15, 03G30, 18-02, 18B25, 18D15)
- On the unity of algebra and logic. *Categorical algebra and its applications (Louvain-La-Neuve, 1987)*, 221–229, *Lecture Notes in Math.*, **1348**, Springer, Berlin-New York, 1988. (Andreas Blass) **89m:18010** 18C10 (03F07, 03G30, 08B05, 18A15)
- Lambert, Alan** (with Burnap, Charles) Proximity and similarity of operators. *Proc. Roy. Irish Acad. Sect. A* **87** (1987), no. 1, 95–102. (Lawrence Fialkow) **89b:47031** 47A65
- Subnormal composition operators. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 750–754. (Raj Kishor Singh) **89k:47033** 47B20 (47B38)
- Lambert, D. M.** (with Hughes, A. J.) Keywords and concepts in structuralist and functionalist biology. *J. Theoret. Biol.* **133** (1988), no. 2, 133–145. (Not in MR) **92A05**
- Lambert, Dominique** (with Tombal, Ph.) Hyperbolic complex numbers and nonlinear sigma models. *Internat. J. Theoret. Phys.* **26** (1987), no. 10, 943–950. (Paul Baird) **89c:81077** 81E13 (58E20)

- (with Ronveaux, A.) Elliptic and ultrahyperbolic differential operators connected by Hurwitz transformations. *Bull. Soc. Math. Belg. Sér. B* **40** (1988), no. 1, 11–23. (Bernad Goldschmidt) **89g:30088** 30G35 (35A22)
- (with Piette, B.) Solutions of Minkowskian  $\sigma$  models on hyperbolic complex Grassmann manifolds. *Classical Quantum Gravity* **5** (1988), no. 2, 307–319. (Allan M. Din) **89h:81109** 81E13 (58E20)
- (with Rembieliński, J.) From Gödel quaternions to nonlinear sigma models. *J. Phys. A* **21** (1988), no. 12, 2677–2691. (Allan M. Din) **89j:81103** 81E13 (58E20)
- (with Antoine, J.-P.; Sepulchre, J.-A.) Classical Yang-Mills fields with conformal invariance: from exact solutions to qualitative analysis. *Classical Quantum Gravity* **6** (1989), no. 3, 295–310. (Edward Malec) **89m:53129** 53C80 (34E15, 58G35, 81E13)
- Lambert, F.** (with Musette, M.; Decuyper, J. C.) Soliton and antisoliton resonant interactions. *J. Phys. A* **20** (1987), no. 18, 6223–6235. (Summary) **89c:35140** 35Q20
- (with Musette, M.) Two-soliton resonances for KdV-like solitary waves. *J. Phys. Soc. Japan* **57** (1988), no. 6, 2207–2208. (C. Rogers) **89j:35119** 35Q20
- Lambert, J. H.** see Garibaldi, Ubaldo, **89g:01029**
- Lambert, J.-L.** Une borne pour une solution optimale entière particulière d'un problème linéaire à matrice de contraintes strictement positive. (English summary) [A bound for a particular optimal integer solution of a linear problem with a strictly positive constraint matrix] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 5, 193–195. (Th. M. Liebling) **89i:90053** 90C10
- Finding a partial solution to a linear system of equations in positive integers. *Comput. Math. Appl.* **15** (1988), no. 3, 209–212. (S. Lajos) **89e:15006** 15A06
- Lambert, J. P.** A sequence well dispersed in the unit square. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 383–388. (Harald Niederreiter) **89i:11090** 11K38 (65C10)
- Lambert, Karel** On the philosophical foundations of free description theory. *Hist. Philos. Logic* **8** (1987), no. 1, 57–66. (Summary) **89g:03004** 03A05 (03B10)
- Lamberti, L.** (with Ardito, A.; De Gregorio, S.; Ricciardi, P.) Dynamics of a lake ecosystem. *Biomathematics and related computational problems* (Naples, 1987), 111–119, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89j:92051** 92A17
- Lamberti, P. W.** (with Briozzo, C. B.; Budde, Carlos E.; Cáceres, Manuel O.) Stability of a Robertson-Walker universe against stochastic perturbations. *Phys. Lett. A* **129** (1988), no. 7, 363–366. (Summary) **89c:83086** 83F05 (83C99)
- Lamberton, D.** (with Coulhon, Thierry) Régularité  $L^p$  pour les équations d'évolution. [ $L^p$ -regularity for evolution equations] *Séminaire d'Analyse Fonctionnelle* 1984/1985, 155–165, *Publ. Math. Univ. Paris VII, 26*, Univ. Paris VII, Paris, 1986. (E. Barvinek) **89c:34100** 34G10
- (with Bouleau, N.) Théorie de Littlewood-Paley-Stein et processus stables. [Littlewood-Paley-Stein theory and stable processes] *Séminaire de Probabilités, XX*, 1984/85, 162–185, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (A. Fuchs) **89h:60119** 60J30 (42B25)
- Lamdan, Yehzekel** (with Wolfson, Haim; Schonberg, Edith; Kalvin, Alan) Solving jigsaw puzzles by computer. *Ann. Oper. Res.* **12** (1988), no. 1–4, 51–64. (Not in MR) **90C27** (90B30)
- Lamé, Gabriel** see Veronina, M. M., **89i:01109**
- Lami Dozo, E.** Nonexpansive maps in Orlicz spaces. (Italian summary) *Rend. Sem. Mat. Fis. Milano* **55** (1985), 175–179 (1988). (Ljubomir Čirić) **89c:47070** 47H10 (46E30)
- Lamken, E. R.** (with Vanstone, S. A.) Skew transversals in frames. *J. Combin. Math. Combin. Comput.* **2** (1987), 37–50. (Jeffrey H. Dinitz) **89d:05041** 05B15 (05B30)
- (with Vanstone, S. A.) The existence of a class of Kirkman squares of index 2. *J. Austral. Math. Soc. Ser. A* **44** (1988), no. 1, 33–41. (Rudolf Mathon) **89c:05049** 05B15
- (with Vanstone, S. A.) On the existence of  $(2, 4, 3, m, h)$ -frames for  $h = 1, 3$  and  $6$ . *J. Combin. Math. Combin. Comput.* **3** (1988), 135–151. (Laura Bertani) **89f:05049** 05B30
- Lamm, Patricia K.** (with Murphy, K. A.) Estimation of discontinuous coefficients and boundary parameters for hyperbolic systems. *Quart. Appl. Math.* **46** (1988), no. 1, 1–22. (Summary) **89d:35110** 35L55 (35R05, 65P05, 86A15)
- Lamnabhi-Lagarigue, F.** Singular optimal control problems: on the order of a singular arc. *Systems Control Lett.* **9** (1987), no. 2, 173–182. (Richard M. Lewis) **89b:49044** 49B36 (93B25, 93C15)
- (with Crouch, P. E.) State space realizations of nonlinear systems defined by input-output differential equations. *Analysis and optimization of systems* (Antibes, 1988), 138–149, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (K. B. Datta) **89i:93018** 93B15
- (with Crouch, P. E.) A formula for iterated derivatives along trajectories of nonlinear systems. *Systems Control Lett.* **11** (1988), no. 1, 1–7. (J. M. Dion) **89m:93038** 93C10 (05A19, 58F40)
- Lamond, Bernard F.** An efficient factorization for the group inverse. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 4, 797–808. (David R. Hill) **89b:65071** 65F05 (65F20)
- (with van Dijk, Nico M.) Simple bounds for finite single-server exponential tandem queues. *Oper. Res.* **36** (1988), no. 3, 470–477. (Summary) **89c:90100** 90B22
- LaMotte, Lynn Roy** (with McWhorter, Archer, Jr.; Prasad, Ram A.) Confidence intervals and tests on the variance ratio in random models with two variance components. *Comm. Statist. Theory Methods* **17** (1988), no. 4, 1135–1164. (Not in MR) **62J10**
- Lamoureux-Brousse, L.** Conjugaisons finies et milieux continus en relativité générale. (English summary) [Finite conjugacy and continua in general relativity] *J. Geom. Phys.* **4** (1987), no. 1, 51–69. (Gérard A. Maugin) **89c:83049** 83C99 (53B50, 83C10)
- Lamp, Jüri** (with Tali, A.) The summability with rapidity of generalized sequences in Banach spaces. (Russian. English summary) *Tartu Riikl. Üli. Toimetised No. 770* (1987), 149–157. (Summary) **89d:40007** 40H05 (46A45, 46B15)
- Lampariello, F.** (with Grippo, L.; Lucidi, S.) Newton-type algorithms with nonmonotone line search for large-scale unconstrained optimization. *System modelling and optimization* (Tokyo, 1987), 187–196, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (Summary) **89j:90219** 90C30
- (with Grippo, L.; Lucidi, S.) Global convergence and stabilization of unconstrained minimization methods without derivatives. *J. Optim. Theory Appl.* **56** (1988), no. 3, 385–406. (Jürgen Gudenat) **89f:90165** 90C31
- Lamprecht, Karl** see Wise, M. Norton, **89g:01041**
- Lampraia, J. P.** (with Rica da Silva, A.; Sousa Ramos, J.) Subtrees of the unimodal maps tree. (Italian summary) *Boll. Un. Mat. Ital. C* (6) **5** (1986), no. 1, 159–167 (1987). (William A. Beyer) **89f:58109** 58F08 (28D99)
- Lampson, B.** (with Burstall, R.) Pebble, a kernel language for modules and abstract data types. *Inform. and Comput.* **76** (1988), no. 2–3, 278–346. (Summary) **89b:68045** 68Q55 (68N15, 68Q65)
- Lan, De Hual** see Lan, De Hual
- Lan, Ginguo** see Lan, Jing Guo
- Lan, Hui Bin** (with Wang, Ke Lin) Elliptic solution for two nonlinear interacting oscillators. *Phys. Lett. A* **134** (1988), no. 1, 39–41. (Summary) **89j:70021** 70F99
- Lan, I Jén** (with Ch'en, Ming Po) On  $\alpha$ -convex function of order  $\beta$ . *Tamkang J. Math.* **18** (1987), no. 3, 109–112. (Albert E. Livingston) **89c:30024** 30C45
- Lan, Kun Quan** (with Ding, Xie Ping) Positive solution of a class of equations involving noncompact mappings. *Appl. Math. Mech. (English Ed.)* **9** (1988), no. 8, 727–736; translated from *Appl. Math. Mech.* **9** (1988), no. 8, 675–684 (Chinese. English summary). (P. P. Zabrejko) **89i:47102** 47H09 (47H10, 47H15)
- Lan, Yi Zhong** On cubic cyclic extensions of number fields. I. (Chinese) *Acta Math. Sinica* **31** (1988), no. 2, 248–257. (Xianke Zhang) **89i:11117** 11R16 (11R09, 11R20)
- Lancaster, David** The Weyl anomaly for singular surfaces. *Phys. Lett. B* **203** (1988), no. 3, 224–228. (Sergey Merkulov) **89j:81047** 81E13 (81E20, 81E30)
- (with Mansfield, P.) Relations between disc diagrams. *Phys. Lett. B* **217** (1989), no. 4, 416–420. (Summary) **89k:81155** 81E99 (81E30)
- Lancaster, H. O.** A bibliography of statistical bibliographies: a sixteenth list. *Internat. Statist. Rev.* **52** (1984), no. 1, 101–108. (Not in MR) **62-00**
- A bibliography of statistical bibliographies: an eighteenth list. (French summary) *Internat. Statist. Rev.* **54** (1986), no. 1, 109–114. (From the text) **89j:01042** 01A65 (00A15)
- A bibliography of statistical bibliographies: a nineteenth list. *Internat. Statist. Rev.* **55** (1987), no. 2, 221–227. (Editors) **89j:01055** 01A65 (01A70)
- A bibliography of statistical bibliographies: a twentieth list. *Math. Sci.* **13** (1988), no. 1, 66–74. (Title) **89g:62001** 62-00 (00A15)
- Lancaster, Kirk E.** Nonparametric minimal surfaces in  $\mathbb{R}^3$  whose boundaries have a jump discontinuity. *Internat. J. Math. Math. Sci.* **11** (1988), no. 4, 651–656. (Friedrich Sauvigny) **89m:35072** 35J60 (49F10, 53A10)
- Lancaster, Peter** (with Ye, Qiang) Inverse spectral problems for linear and quadratic matrix pencils. Proceedings of the Victoria Conference on Combinatorial Matrix Analysis (Victoria, BC, 1987). *Linear Algebra Appl.* **107** (1988), 293–309. (Ludwig Elsner) **89i:15016** 15A21
- Lance, Timothy** Local  $H$ -maps of BU and applications to smoothing theory. *Trans. Amer. Math. Soc.* **309** (1988), no. 1, 391–424. (Donald W. Kahn) **89k:55014** 55P47 (55N15, 57R10)
- Lancellotti, P.** (with Pellegrino, C.) A construction of pairs and triples of  $k$ -incomplete orthogonal arrays. *Combinatorics '86* (Trento, 1986), 251–255, *Ann. Discrete Math.*, **37**, North-Holland, Amsterdam-New York, 1988. (Douglas R. Stinson) **89b:05052** 05B15
- Langdon, Hélène** see Dautray, Robert, **89m:00001**
- Langkan, Eberhard** A generalization of a method of I. N. Vekua for solving some linear three-dimensional differential equations. (Russian. English and Georgian summaries) *Sem. Inst. Prikl. Mat. Dokl. No. 20* (1986), 29–40, 95–96. (Guo Chun Wen) **89d:35072** 35J99 (30G20, 35C05)
- Langon, F.** (with Billard, Luc) Two-dimensional system with a quasicrystalline ground state. (French summary) *J. Physique* **49** (1988), no. 2, 249–256. (Hanna Nencka) **89m:32057** 82A57 (51M20, 52A45)
- Langonelli, Ermanno** (with Franchi, Bruno; Serrin, J.) Existence and uniqueness of ground states for quasilinear elliptic equations. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **79** (1985), no. 5, 121–126 (1986). (Jana D. Madjarova) **89c:35052** 35J60
- (with Garofalo, Nicola) Wiener's criterion for parabolic equations with variable coefficients and its consequences. *Trans. Amer. Math. Soc.* **308** (1988), no. 2, 811–836. (Neil A. Watson) **89k:35104** 35K20 (31B10, 31B20)
- Landau, Gad M.** (with Galil, Zvi; Yung, Mordechai M.) Distributed algorithms in synchronous broadcasting networks. Twelfth international colloquium on automata, languages and programming (Nafplion, 1985). *Theoret. Comput. Sci.* **49** (1987), no. 2–3, 171–184. (Summary) **89a:68006** 68Q20 (68M10, 90B10)
- (with Apostolico, Alberto; Liopoulos, Costas S.; Schieber, Baruch; Vishkin, Uzi) Parallel construction of a suffix tree with applications. *Algorithmica* **3** (1988), no. 3, 347–365. (Do Long Van) **89i:68053** 68Q25
- (with Vishkin, Uzi) Fast string matching with  $k$  differences. 26th IEEE Conference on Foundations of Computer Science (Portland, OR, 1985). *J. Comput. System Sci.* **37** (1988), no. 1, 63–78. (Summary) **89b:68067** 68Q25
- Landau, H. J.** Classical background of the moment problem. *Moments in mathematics* (San Antonio, Tex., 1987), 1–15, *Proc. Sympos. Appl. Math.*, **37**, Amer. Math. Soc., Providence, RI, 1987. (From the introduction) **89g:44001** 44-02 (01A60, 44A60)
- Landau, L. D.** (with Lifshits, E. M.; Pitaevskii, L. P.) ★ *Fisica teorica. 5. Fisica statistica. Parte prima.* (Italian) [Theoretical physics. 5. Statistical physics. Part I] Translated from the Russian by A. Machov. Reprint of the 1977 translation. "Mir", Moscow, 1986. 593 pp. (Not in MR) 00-01 (82-01)
- (with Lifshits, E. M.) ★ Course of theoretical physics. Vol. 6. Fluid mechanics. Second edition. Translated from the third Russian edition by J. B. Sykes and W. H. Reid. Pergamon Press, Oxford-Elmsford, NY, 1987. xiv+539 pp. ISBN 0-08-033933-6; 0-08-033932-8 (Editors) **89i:00006** 00A05 (00-01, 76-01)
- (with Lifshits, E. M.) ★ *Lehrbuch der theoretischen Physik* ("Landau-Lifschitz"). Band III. (German) [Textbook of theoretical physics ("Landau-Lifschitz"). Volume III] *Quantenmechanik*. [Quantum mechanics] With the collaboration of L. P. Pitaevskii [L. P. Pitaevskii]. Eighth edition. Translated from the third Russian edition by A. Kühnel. Translation edited and with a foreword by Paul Ziesche. *Akademie-Verlag, Berlin*, 1988. xiv+644 pp. ISBN 3-05-500067-6 (Editors) **89i:00007** 00A05 (81-01)
- (with Lifshits, E. M.) ★ Теоретическая физика. Том I. (Russian) [Theoretical physics. Vol. I] Механика. [Mechanics] Fourth edition. Edited and with a foreword by L. P. Pitaevskii. "Nauka", Moscow, 1988. 216 pp. ISBN 5-02-013850-9 (Editors) **89i:00008** 00A05 (70-01)
- see also Grigor'yan, A. T., **89g:01052** and **89j:01002**
- Landau, Lawrence J.** Gaussian quantum fields and stochastic electrodynamics. *Phys. Rev. A* (3) **37** (1988), no. 11, 4449–4460. (David Applebaum) **89f:81051** 81C20 (81C25, 81D07)
- Landau, Lev Davidovich** see Landau, L. D.



- Landau, Mayer** (with Henry, Jacques; Kaufman, François; Pierret, C.) Utilisation de la méthode de continuation-bifurcation en électrophysiologie cardiaque. [Use of the bifurcation-continuation method in cardiac electrophysiology] 11<sup>e</sup> congrès international de cybernétique (Namur, 1986), 1313-1327, *Assoc. Internat. Cybernétique*, Namur, 1986. (see 89a:94001) 92A09
- Landau, Susan** Some remarks on computing the square parts of integers. *Inform. and Comput.* 78 (1988), no. 3, 246-253. (H. J. Godwin) 89c:11003 11A25 (11Y70, 68Q25)
- Landauer, Rolf W.** see Basic concepts in quantum and stochastic transport, 89a:00017
- Landau, Russell** (with Kirkpatrick, Mark) Ecological speciation by sexual selection. *J. Theoret. Biol.* 133 (1988), no. 1, 85-98. (Summary) 89f:92057 92A17 (92A10)
- (with Orzack, Steven Hecht) Extinction dynamics of age-structured populations in a fluctuating environment. *Proc. Nat. Acad. Sci. U.S.A.* 85 (1988), no. 19, 7418-7421. (Summary) 89g:92046 92A15
- Becker-Landeck, Paul-Georg** see Becker-Landeck, Paul-Georg
- Landen, J.** see Almkvist, Gert, 89j:01028
- Lander, Eric S.** Restrictions upon multipliers of an abelian difference set. *Arch. Math. (Basel)* 50 (1988), no. 3, 241-242. (A. P. Street) 89e:05043 05B10 (11B13, 20D60, 20K01)
- Characterizing symmetric designs by their symmetries. *J. Algebra* 113 (1988), no. 1, 1-18. (W. M. Kantor) 89b:05036 05B05 (20B25)
- Lander, Julian C.** Area-minimizing integral currents with boundaries invariant under polar actions. *Trans. Amer. Math. Soc.* 307 (1988), no. 1, 419-429. (Martin Fuchs) 89f:49035 49F20 (53A10, 58E15)
- Lander, Leslie** (with Ramer, Arthur) Classification of possibilistic uncertainty and information functions. Measures of uncertainty. *Fuzzy Sets and Systems* 24 (1987), no. 2, 221-230. (Constantin Drossos) 89c:03089 03E72 (60E99, 94A17)
- Landers, Dieter** (with Rogge, Lothar) Laws of large numbers for pairwise independent uniformly integrable random variables. *Math. Nachr.* 130 (1987), 189-192. (Zdzisław Rychlik) 89d:60057 60F15
- (with Rogge, Lothar) Universal Loeb-measurability of sets and of the standard part map with applications. *Trans. Amer. Math. Soc.* 304 (1987), no. 1, 229-243. (Nigel J. Cutland) 89d:28015 28E05 (03H05)
- (with Rogge, Lothar) Sharp orders of convergence in the random central limit theorem. *J. Approx. Theory* 53 (1988), no. 1, 86-111. (Zdzisław Rychlik) 89d:60044 60F05
- (with Rogge, Lothar) Nonstandard methods for families of  $t$ -smooth probability measures. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1151-1156. (Peter W. Day) 89j:28007 28E05 (28A33, 60B10)
- Landes, Rüdiger** (with Mustonen, Vesa) A strongly nonlinear parabolic initial-boundary value problem. *Ark. Mat.* 25 (1987), no. 1, 29-40. (Maurice Gauthier) 89d:35096 35K60
- Landesman, B. Teban** (with Barrett, H. H.) Gaussian amplitude functions that are exact solutions to the scalar Helmholtz equation. *J. Opt. Soc. Amer. A* 5 (1988), no. 10, 1610-1619. (Summary) 89f:78009 78A40
- Geometrical representation of the fundamental mode of a Gaussian beam in oblate spheroidal coordinates. *J. Opt. Soc. Amer. A* 6 (1989), no. 1, 5-17. (Summary) 89j:78011 78A05
- Landge, Ivan N.** (with Kapralov, Stoyan N.; Tonchev, Vladimir D.) 2-(25, 10, 6) designs invariant under the dihedral group of order ten. *Combinatorial design theory*, 301-306, *North-Holland Math. Stud.*, 149, North-Holland, Amsterdam-New York, 1987. (Rudolf Mathon) 89e:05031 05B05
- (with Kapralov, Stoyan N.; Tonchev, Vladimir D.) Quasiresidual 2-(25, 10, 6) designs, invariant under the dihedral group of order 10. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian)* (Sunny Beach (S'p'nev Bryag), 1987), 447-452, *Bulg. Acad. Sci., Sofia*, 1987. (see 89c:00038) 05B05 (20B25)
- Balanced incomplete 2-(11, 3, 3) designs with repeating blocks. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian)* (Sunny Beach (S'p'nev Bryag), 1987), 487-492, *Bulg. Acad. Sci., Sofia*, 1987. (Summary) 89d:05030 05B05
- Landi, G.** Spinor and gauge connections over oriented spheres. *7th Italian conference on general relativity and gravitational physics (Rapallo, 1986)*, 287-291, *World Sci. Publishing, Singapore*, 1987. (Guido Karrer) 89b:53113 53C80 (53A50, 53C05)
- (with Marmo, G.) Algebraic reduction of the 't Hooft-Polyakov monopole to the Dirac monopole. *Phys. Lett. B* 201 (1988), no. 1, 101-104. (R. S. Ward) 89b:81110 81E13 (17B70)
- (with Marmo, G.) Einstein algebras and the algebraic Kaluza-Klein monopole. *Phys. Lett. B* 210 (1988), no. 1-2, 68-72. (Thomas Schücker) 89f:53106 53C80 (81E13, 83C45, 83E15)
- Landini, Gregory** Russell's substitutional theory of classes and relations. *Hist. Philos. Logic* 8 (1987), no. 2, 171-200. (Roman Murawski) 89b:03010 03A05 (01A60, 03-03, 03B15)
- Landis, E. M.** (with Vishik, M. I.; Mikhailin, S. G.; Oleinik, O. A.; Skrypnik, I. V.) Aleksandr Ivanovich Koshchev (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 5(257), 225-226. (Editors) 89b:01064 01A70
- Application of the potential theory to the study of qualitative properties of solutions of the elliptic and parabolic equations. *Potential theory—surveys and problems (Prague, 1987)*, 133-153, *Lecture Notes in Math.*, 1344, Springer, Berlin-New York, 1988. (see 89m:31001) 35Bxx (35J99, 35K99)
- (with Kondrat'ev, V. A.) Qualitative properties of the solutions of a second-order nonlinear equation. (Russian) *Mat. Sb. (N.S.)* 135(177) (1988), no. 3, 346-360, 415; *translation in Math. USSR-Sb.* 63 (1989), no. 2, 337-350. (Russell C. Thompson) 89j:35054 35J65 (35J60)
- Landis, J. Richard** (with Kuritz, Stephen J.) Attributable risk estimation from matched case-control data. (French summary) *Biometrics* 44 (1988), no. 2, 355-367. (From the summary) 89c:62106 62P10
- Landiya, A. N.** The Brauer group of some affine cones. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruz. SSR* 126 (1987), no. 3, 485-488. (T. Józefiak) 89f:14024 14F20 (13A20)
- Landman, Bruce M.** (with Greenwell, Raymond N.) Values and bounds for Ramsey numbers associated with polynomial iteration. *Discrete Math.* 68 (1988), no. 1, 77-83. (D. J. Kleitman) 89d:05021 05A99 (11B83)
- Landman, M. J.** (with Papanicolaou, George C.; Sulem, C.; Sulem, P.-L.) Rate of blowup for solutions of the nonlinear Schrödinger equation at critical dimension. *Phys. Rev. A* (3) 38 (1988), no. 8, 3837-3843. (Summary) 89k:35218 35Q20
- Lando, Barbara** (with Head, Tom) Regularity of sets of initial strings of periodic DOL-systems. *Theoret. Comput. Sci.* 48 (1986), no. 1, 101-108. (Juhani Karhumäki) 89a:68118 68Q45
- (with Head, Tom) Bounded DOL languages. *Theoret. Comput. Sci.* 51 (1987), no. 3, 255-264. (H. Jürgensen) 89g:68038 68Q45 (68Q50)
- Lando, Clifton A.** Forced oscillations of two-dimensional, nonlinear systems. *Appl. Anal.* 28 (1988), no. 4, 285-295. (Jan Andres) 89j:34051 34C15 (34C25)
- Lando, S. K.** see Griffiths, Phillip A., 89b:58016
- sacchi Landriani, G.** see Sacchi Landriani, G.
- Landry, Stephen G.** (with Robertson, Lewis C.; Shortt, Rae Michael) Dice with fair sums. *Amer. Math. Monthly* 95 (1988), no. 4, 316-328. (E. Rodney Canfield) 89b:60019 60C05 (05-04, 33A65, 90D05)
- Landsberg, P. T.** (with Home, D.) Wave function collapse in the ensemble interpretation. *Microphysical reality and quantum formalism*, Vol. 1, 2 (Urbino, 1985), 65-69, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) 89m:81019 81B05
- Why quantum mechanics? *Found. Phys.* 18 (1988), no. 10, 969-982. (Summary) 89j:81020 81B99 (70F99)
- (with Pavón, Diego) Heat capacity of a self-gravitating radiation sphere. *Gen. Relativity Gravitation* 20 (1988), no. 5, 457-461. (From the text) 89j:83054 83C99
- (with Bishop, N. T.) The thermodynamics of a system containing  $n$  identical black holes and black-body radiation. *Gen. Relativity Gravitation* 20 (1988), no. 7, 723-728. (Summary) 89e:83039 83C47
- (with Wise, J.) Components of probabilistic support: the two-proposition case. *Philos. Sci.* 55 (1988), no. 3, 402-414. (D. J. Foulis) 89i:03044 03B48 (68T05, 81B05)
- Landsburg, Steven E.** Algebraic cycles relative to a smooth principal divisor. *Comm. Algebra* 16 (1988), no. 4, 859-868. (Charles Weibel) 89d:14011 14C35 (19E15)
- (with Eden, Benjamin) On the competitive resolution of trading uncertainty. *J. Econom. Theory* 47 (1989), no. 1, 66-75. (Summary) 89m:90033 90A14 (90A12)
- Landsman, N. P.** Universal quantum field theory. *CAP-NSERC Summer Institute in Theoretical Physics*, Vol. 1 (Edmonton, AB, 1987), 204-226, *World Sci. Publishing, Singapore*, 1988. (see 89b:81005) 81E99
- Hilbert space and propagator in thermal field theory. *Phys. Rev. Lett.* 60 (1988), no. 19, 1909-1912. (Julio Alcántara-Bode) 89k:81091 81E15 (81C12)
- Landzhev, Ivan N.** see Landge, Ivan N.
- Lane, David A.** Causality assessment for adverse drug reactions: an application of subjective probability to medical decision making. *Statistical decision theory and related topics, IV*, Vol. 1 (West Lafayette, Ind., 1986), 235-250, *Springer, New York-Berlin*, 1988. (Title) 89a:62022 62C05 (62P10)
- Lane, J. A.** (with Ceuppens, P. R.; Peel, D. A.) Critical bounds for MA(2) and MA(3) processes. *Econom. Lett.* 27 (1988), no. 2, 133-140. (Title) 89f:62148 62M10
- Lane, Mark** (with Megibben, Charles) Balanced projectives and axiom 3. *J. Algebra* 111 (1987), no. 2, 457-474. (Summary) 89f:20060 20K21
- Lane, N. D.** (with Baker, C. A.; Lorimer, J. W.) A construction for topological non-Desarguesian affine Hjelmslev planes. *Arch. Math. (Basel)* 50 (1988), no. 1, 83-92. (Günter Törner) 89a:51013 51C05 (51H10)
- mac Lane, Saunders** see Mac Lane, Saunders
- Lane, Stephen H.** (with Stengel, Robert F.) Flight control design using nonlinear inverse dynamics. *Automatica—J. IFAC* 24 (1988), no. 4, 471-483. (Not in MR) 93C75 (93C10)
- Lanery, E.** Solutions bayésiennes sans désintégration. [Bayes solutions without disintegration] *Teor. Veroyatnost. i Primenen.* 32 (1987), no. 1, 181-188. (H.-J. Engelbert) 89a:60124 60G40 (62L05, 62L10, 62L15)
- Lanford, Oscar E., III** Computer-assisted proofs in analysis. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1385-1394, *Amer. Math. Soc., Providence, RI*, 1987. (Michael Hurley) 89d:58095 58F14 (00A69, 65G10)
- lê ngọc Lãng** see Lê Ngọc Lãng
- Lang, C. B.** (with Baier, R.; Reusch, H.-J.) The renormalization flow in the adjoint SU(2) lattice Higgs model. *Nuclear Phys. B* 305 (1988), no. 3 FS23, 396-416. (Not in MR) 81E25 (81-04)
- Lang, D.** (with Güttinger, W.; Haug, P.) Geometrical principles of pattern formation and pattern recognition. *Computational systems—natural and artificial (Schloss Elmau, 1987)*, 97-116, *Springer Ser. Synergetics*, 38, Springer, Berlin-New York, 1987. (conclusion) 89c:92006 92A05 (58F14, 58F40)
- (with Neveling, M.; Haug, P.; Güttinger, W.; Dangelmayr, G.) Interactions of stationary modes in systems with two and three spatial degrees of freedom. *The physics of structure formation (Tübingen, 1986)*, 153-165, *Springer Ser. Synergetics*, 37, Springer, Berlin-New York, 1987. (see 89b:58064) 80A20 (58F14, 76R99)
- Lang, Hans-Werner** (with Kunde, Manfred; Schimmler, Manfred; Schneck, Hartmut; Schröder, Heiko) The instruction systolic array and its relation to other models of parallel computers. *Parallel Comput.* 7 (1988), no. 1, 25-39. (Not in MR) 68Q35
- Lang, Heinrich** Über die Restklasse modulo  $2^{n+2}$  des Wertes  $2^n \zeta(1 - 2^n n, \lambda)$  der Zetafunktion einer Idealklasse aus dem reell-quadratischen Zahlkörper  $\mathbb{Q}(\sqrt{D})$  mit  $D \equiv 3 \pmod{4}$ . [On the residue class modulo  $2^{n+2}$  of the value  $2^n \zeta(1 - 2^n n, \lambda)$  of the zeta function of an ideal class belonging to the real-quadratic number field  $\mathbb{Q}(\sqrt{D})$  with  $D \equiv 3 \pmod{4}$ ] *Acta Arith.* 51 (1988), no. 3, 277-292. (H. Yokoi) 89i:11125 11R42 (11R11)
- Lang, J. M.** (with Collins, C. B.) Observationally homogeneous shear-free perfect fluids. *Gen. Relativity Gravitation* 20 (1988), no. 7, 683-710. (S. Kichenassamy) 89j:83020 83C20 (83C15, 83C55)
- Lang, Jeffrey** The factoriality of Zariski rings. *Compositio Math.* 63 (1987), no. 3, 273-290. (Toshiyuki Katsura) 89d:14047 14J05 (13F20, 14J25, 14M05)
- (with Blass, Piotr) Locally factorial generic Zariski surfaces are factorial. *J. Algebra* 111 (1987), no. 2, 347-353. (Toshiyuki Katsura) 89d:14048 14J05 (13F20, 14J25, 14M05)
- (with Blass, Piotr) Surfaces de Zariski factorielles. (English summary) [Factorial Zariski surfaces] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 15, 671-674. (Noriko Yui) 89f:14032 14J05 (14J25)
- (with Blass, Piotr) A method for computing the kernel of a map of divisor classes of local rings in characteristic  $p \neq 0$ . *Michigan Math. J.* 35 (1988), no. 1, 67-81. (F. DeMeyer) 89f:14036 14J17 (13F99)
- Lang, Serge** Diophantine problems in complex hyperbolic analysis. *Current trends in arithmetical algebraic geometry (Arcata, Calif., 1985)*, 229-246, *Contemp. Math.*, 67, *Amer. Math. Soc., Providence, RI*, 1987. (Junjuro Noguchi) 89c:32069 32H30

- ★ Introduction to Arakelov theory. *Springer-Verlag, New York-Berlin*, 1988. x+187 pp. ISBN 0-387-96793-1 (Joseph H. Silverman) **89m:11059** 11G30 (14C17, 14H25)
- The error term in Nevanlinna theory. *Duke Math. J.* **56** (1988), no. 1, 193–218. (Junjiro Noguchi) **89g:32037** 32H30 (11J68)
- Lang, W. Christopher** The structure of hypergroup measure algebras. *J. Austral. Math. Soc. Ser. A* **46** (1989), no. 2, 319–342. (K. A. Ross) **89m:43003** 43A10 (22A99)
- Lang, William E.** (with Harbourne, Brian) Multiple fibers on rational elliptic surfaces. *Trans. Amer. Math. Soc.* **307** (1988), no. 1, 205–223. (Allen B. Altman) **89j:14024** 14J27 (14J26)
- Lang, Wolfdieter** The minimal superconformal  $(p, 0)$  supercurrents in two dimensions. *Z. Phys. C* **37** (1988), no. 4, 577–585. (K. Schoutens) **89c:81139** 81E99 (81E40)
- Langberg, Naftali A.** Comparisons of replacement policies. *J. Appl. Probab.* **25** (1988), no. 4, 780–788. (Howard Taylor) **89k:60129** 60K20 (90B25)
- Lange, Bruno** Conormal asymptotics and Lagrangian distributions. *Wiss. Z. Tech. Univ. Karl-Marx-Stadt* **30** (1988), no. 1, 46–49. (Pascal Laubin) **89h:35366** 35S10 (35L30, 58G16)
- Lange, E. G.** (with Batykanov, M. Sh.) Solution of a system of linear algebraic equations of special type. (Russian) *Izv. Akad. Nauk Kirgiz. SSR* **1987**, no. 4, 10–20, 83 (1988). (C. Ilioi) **89h:65058** 65F30 (90A16)
- (with Batykanov, M. Sh.) Investigation of the consistency of a system of parametric equations. (Russian) *Izv. Akad. Nauk Kirgiz. SSR* **1988**, no. 2, 16–27, 91. (Anna Lee) **89i:15004** 15A06
- Lange, Herbert** Jacobian surfaces in  $P_4$ . *J. Reine Angew. Math.* **372** (1986), 71–86. (C.-G. Schmidt (Zbl 601:14037)) **89a:14061** 14K30 (14F05, 14H40, 14J25)
- Equations for endomorphisms of abelian varieties. *Math. Ann.* **280** (1988), no. 4, 613–623. (Wenchen Chi) **89c:14068** 14K05
- (with Hulek, K.) The Hilbert modular surface for the ideal  $(\sqrt{5})$  and the Horrocks-Mumford bundle. *Math. Z.* **198** (1988), no. 1, 95–116. (P. E. Newstead) **89d:14057** 14K22 (11F41, 14F05, 14J25)
- Lange, Horst R.** Asymptotical behaviour of solutions to quasi-linear Schrödinger equations. *Trends in applications of mathematics to mechanics (Wassenaar, 1987)*, 98–107, Springer, Berlin-New York, 1988. (Nakao Hayashi) **89j:35120** 35Q20 (35B40)
- Lange, Klaus-Jörn** Complexity theory and formal languages. Proceedings of the Fifth International Meeting of Young Computer Scientists (Smolenice Castle, 1988). *Tanulmányok—MTA Számítástech. Automat. Kutató Int. Budapest No. 208* (1988), 37–53. (see **89g:68002**) 68Q45 (68Q15)
- Decompositions of nondeterministic reductions. Thirteenth International Colloquium on Automata, Languages and Programming (Rennes, 1986). *Theoret. Comput. Sci.* **58** (1988), no. 1–3, 175–181. (Summary) **89i:68045** 68Q15 (03D05, 03D15, 68Q45)
- Lange, Lester H.** (with Alexanderson, Gerald L.) Obituary: George Pólya. With comments. *Bull. London Math. Soc.* **19** (1987), no. 6, 559–608. (D. J. Struik) **89d:01054** EA **89m** 01A70
- de Lange, O. L.** Factorizations of vector operators for the isotropic harmonic oscillator in an angular momentum basis. *J. Math. Phys.* **28** (1987), no. 11, 2650–2654. (Summary) **89b:81064** 81C40
- (with Raab, R. E.) Coulomb problem in an angular-momentum basis: an algebraic formulation. *Phys. Rev. A* (3) **37** (1988), no. 6, 1858–1868. (John J. Sullivan) **89f:81248** 81G10 (81G40)
- Lange, Ridgley** (with Wang, Sheng Wang) Strongly analytic spaces in spectral decomposition. *Glasgow Math. J.* **30** (1988), no. 3, 249–257. (Mehdi Radjabalipour) **89j:47024** 47B40
- Langenbruch, Michael** Bases in spaces of ultradifferentiable functions with compact support. *Math. Ann.* **281** (1988), no. 1, 31–42. (Carlos A. Berenstein) **89g:46066** 46E35 (46A22, 46A45, 46F05)
- Langenhop, Carl E.** (with Wright, William E.) Certain occupancy numbers via an algorithm for computing their ratios. *SIAM J. Discrete Math.* **1** (1988), no. 3, 360–371. (Bernd Graw) **89i:05027** 05A15 (68R05)
- Länger, H.** see **Länger, Helmut**
- Länger, Heinz** (with Dijkstra, Aalt; de Snoo, Henk) Characteristic functions of unitary operator colligations in  $\pi_*$ -spaces. *Operator theory and systems (Amsterdam, 1985)*, 125–194, *Oper. Theory. Adv. Appl.*, 19, Birkhäuser, Basel-Boston, MA, 1986. (T. Ya. Azizov) **89a:47053** 47B50 (47A45)
- (with Dijkstra, Aalt; de Snoo, Henk) Unitary colligations in Krein spaces and their role in the extension theory of isometries and symmetric linear relations in Hilbert spaces. *Functional analysis, II (Dubrovnik, 1985)*, 1–42, *Lecture Notes in Math.*, 1242, Springer, Berlin-New York, 1987. (E. R. Tsekanovskii) **89a:47055** 47B50 (47A20)
- (with Dijkstra, Aalt; de Snoo, Henk) Representations of holomorphic operator functions by means of resolvents of unitary or selfadjoint operators in Krein spaces. *Operators in indefinite metric spaces, scattering theory and other topics (Bucharest, 1985)*, 123–143, *Oper. Theory. Adv. Appl.*, 24, Birkhäuser, Basel-Boston, MA, 1987. (T. Ya. Azizov) **89a:47054** 47B50 (47A56)
- Länger, Helmut** (with Hasibeder, Günther) Simple criteria for asymptotic stability, neutral stability, and instability. *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* **195** (1986), no. 4–7, 267–279. (Summary) **89a:26023** 26C10 (34C35, 34D05, 34D20, 92A17)
- (with Castoral, Ralf) A formula for the solution of a system of difference equations over a commutative ring. II. *Contributions to general algebra, 5 (Salzburg, 1986)*, 91–93, *Hölder-Pichler-Tempsky, Vienna*, 1987. (André Hautot) **89d:39001** 39A10 (12H10)
- A characterization of full function algebras. *J. Algebra* **119** (1988), no. 2, 261–264. (I. Gy. Maurer) **89m:08004** 08A99
- (with Dorninger, Dietmar) On a set of relations arising from the triangulation problem. *Studia Sci. Math. Hungar.* **23** (1988), no. 1–2, 289–294. (E. T. Schmidt) **89k:11010** 11C20 (04A05, 06C10, 15A57)
- Langer, Ines** (with Prehn, Uwe) The expected source time of a subcritical multipole Galton-Watson process. *Math. Nachr.* **138** (1988), 83–92. (Dean H. Fearn) **89i:60165** 60J80
- Langer, J. S.** Lectures in the theory of pattern formation. *Le hasard et la matière (Les Houches, 1986)*, 629–711, North-Holland, Amsterdam-New York, 1987. (see **89j:82001**) **82A25** (80–02, 82A99, 92A09)
- Langer, Joel** (with Singer, David A.) Curve-straightening in Riemannian manifolds. *Ann. Global Anal. Geom.* **5** (1987), no. 2, 133–150. (Dennis M. DeTurck) **89i:58025** 58E10 (53C22)
- Langer, Ulrich** A fast iterative method for solving the first boundary value problem for the biharmonic equation. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 2, 209–223, 302. (Stavros A. Belbas) **89d:65092** 65N05
- Langerholc, John** Volumes of diced hyperspheres: resummings the Tam-Zardecki formula. *Appl. Math. Comput.* **30** (1989), no. 1, part I, 1–18. (Summary) **89m:65026** 65D30
- Langeveld, W. G. J.** (with Horn, David; Quinn, H. R.; Weinstein, Marvin) Operator renormalization group. *Phys. Rev. D* (3) **38** (1988), no. 10, 3238–3247. (Summary) **89j:81005** 81–08 (81E15, 81E25, 82A68)
- Langevin, Michel** Calculs explicites de constantes de Lehmer. [Explicit computations of Lehmer constants] *Groupe de travail en théorie analytique et élémentaire des nombres, 1986–1987*, 52–68, *Publ. Math. Orsay*, 88-01, Univ. Paris XI, Orsay, 1988. (D. H. Lehmer) **89j:11025** 11C08 (11J99)
- Langevin, R.** (with Levitt, Gilbert; Rosenberg, Harold) Complete minimal surfaces with long line boundaries. *Duke Math. J.* **55** (1987), no. 4, 985–995. (Michael Beeson) **89h:53022** 53A10 (49F10)
- (with Ghys, É.; Walczak, P. G.) Entropie géométrique des feuilletages. [Geometric entropy of foliations] *Acta Math.* **160** (1988), no. 1–2, 105–142. (Shigenori Matsumoto) **89a:57034** 57R30 (58F11, 58F18)
- Langholz, G.** (with Ailon, A.) A study of controllability and time-optimal control of a robot model with drive train compliances and actuator dynamics. *IEEE Trans. Automat. Control* **33** (1988), no. 9, 852–856. (Not in MR) **93C75** (93B05)
- Langins, Jānis** Sur l'enseignement et les examens à l'École polytechnique sous le Directoire: à propos d'une lettre inédite de Laplace. (English summary) [Instruction and examinations at the École Polytechnique under the Directoire: an unpublished letter of Laplace] *Rev. Histoire Sci.* **40** (1987), no. 2, 145–177. (J. Dieudonné) **89k:01016** 01A50 (01A73)
- Langlais, Michel** Large time behavior in a nonlinear age-dependent population dynamics problem with spatial diffusion. *J. Math. Biol.* **26** (1988), no. 3, 319–346. (J. M. Cushing) **89f:92046** 92A15 (45K05)
- Langlands, R. P.** (with Shelstad, D.) On the definition of transfer factors. *Math. Ann.* **278** (1987), no. 1–4, 219–271. (Ernst-Wilhelm Zink) **89c:11172** 11S37 (11F70, 11F72, 22E35, 22E45, 22E50)
- see also **Robert P. Langlands receives first NAS Award in Mathematics, 89h:01070**
- Langley, J. K.** On the zeros of linear differential polynomials with small rational coefficients. *J. London Math. Soc.* (2) **36** (1987), no. 3, 445–457. (Günter Frank) **89c:30079** 30D35
- On the zeros of  $(f' + \alpha)f$  and a result of Steinmetz. *Proc. Roy. Soc. Edinburgh Sect. A* **108** (1988), no. 3–4, 241–247. (Günter Frank) **89c:30051** 30D35 (30C15, 34A20)
- Langley, R. S.** A first passage approximation for normal stationary random processes. *J. Sound Vibration* **122** (1988), no. 2, 261–275. (Summary) **89a:60110** 60G15
- A variational formulation of the FPK equations with application to the first passage problem in random vibration. *J. Sound Vibration* **123** (1988), no. 2, 213–227. (Summary) **89c:70061** 70L05
- Application of the principle of detailed balance to the random vibration of nonlinear oscillators. *J. Sound Vibration* **125** (1988), no. 1, 85–92. (Andrzej Tylikowski) **89m:70061** 70L05
- An investigation of multiple solutions yielded by the equivalent linearization method. *J. Sound Vibration* **127** (1988), no. 2, 271–281. (Summary) **89j:70039** 70L05 (70–08)
- Langmann, Klaus** Endlichkeits- und Picard-Sätze für quasiprojektive Räume. [Finiteness theorems and Picard theorems for quasiprojective spaces] *Math. Z.* **197** (1988), no. 4, 483–504. (Marcus Wright) **89d:32055** 32H25 (32H35)
- Langouche, F.** (with Babelon, O.) Supersymmetric sinh-Gordon and Liouville theories on the lattice. *Nuclear Phys. B* **290** (1987), no. 4, 603–623. (Claus Montonen) **89a:81100** 81E25 (58F07, 81E08)
- (with Leutwyler, H.) Two-dimensional fermion determinants as Wess-Zumino actions. *Phys. Lett. B* **195** (1987), no. 1, 56–59. (A. K. Raina) **89c:81086** 81E20 (83C47)
- (with Leutwyler, H.) Anomalies generated by extrinsic curvature. *Phys. C* **36** (1987), no. 3, 479–486. (Markku Lehto) **89b:81135** 81E13 (58G40, 81E30)
- Langov, Anani** (with Stanilova, Lidiya) A group of Cremona cubic transformations in a three-dimensional projective space. (Bulgarian. English and Russian summaries) *Annuaire Univ. Sofia Fac. Math. Méc.* **77** (1983), no. 1, 223–230 (1988). (J. Čizmar) **89i:14007** 14E07 (14E05, 14N05)
- Langs, David A.** (with Han, Fuson) Direct methods: the identification of conditions which simplify the generation of inconsistent quadrupoles. *Acta Cryst. Sect. A* **44** (1988), no. 5, 657–661. (Summary) **89h:82037** 82A60
- Langston, Michael A.** (with Fellows, Michael R.) Nonconstructive advances in polynomial-time complexity. *Inform. Process. Lett.* **26** (1987), no. 3, 157–162. (Narsingh Deo) **89c:68035** 68Q15 (03D15, 05C99, 68Q25, 68Q35)
- (with Fellows, Michael R.; Friesen, Donald K.) On finding optimal and near-optimal lineal spanning trees. *Algorithmica* **3** (1988), no. 4, 549–560. (Antal Iványi) **89m:68040** 68Q15 (68Q25, 68R10, 90B10)
- (with Kinnarsley, Nancy G.) Online variable-sized bin packing. *Discrete Appl. Math.* **22** (1988/89), no. 2, 143–148. (Summary) **89j:90083** 90B05 (68Q25, 90C10, 90C27)
- (with Kunde, Manfred; Liu, Jin-Ming) On a special case of uniform processor scheduling. *J. Algorithms* **9** (1988), no. 2, 287–296. (Summary) **89c:68016** 68N25 (68Q20, 90B35)
- Langtangen, Hans Petter** (with Tveito, Aslak) A numerical comparison of conjugate gradient-like methods. *Comm. Appl. Numer. Methods* **4** (1988), no. 6, 793–798. (Summary) **89h:65181** 65N30 (65F99)
- Langthaler, Thomas** (with Engl, Heinz W.; Manselli, Paolo) On an inverse problem for a nonlinear heat equation connected with continuous casting of steel. *Optimal control of partial differential equations, II (Oberwolfach, 1986)*, 67–89, *Internat. Schriftenreihe Numer. Math.*, 78, Birkhäuser, Basel-Boston, MA, 1987. (Summary) **89j:35114** 35R30 (80A20)
- Lankau, E.** see **Langkan, Eberhard**
- Lannes, Jean** (with Zarati, S.) Sur les  $\mathcal{A}$ -injectifs. (English summary) [ $\mathcal{A}$ -injectives] *Ann. Sci. École Norm. Sup.* (4) **19** (1986), no. 2, 303–333. (Lionel Schwartz) **89a:55032** 55S10 (18G05)
- (with Schwartz, Lionel) On the structure of the  $\mathcal{A}$ -injectives. *Algebraic topology, Barcelona, 1986*, 207–214, *Lecture Notes in Math.*, 1298, Springer, Berlin-New York, 1987. (N. J. Kuhn) **89h:55029** 55S10



- Sur la cohomologie modulo  $p$  des  $p$ -groupes abéliens élémentaires. [The cohomology modulo  $p$  of elementary abelian  $p$ -groups] *Homotopy theory* (Durham, 1985), 97–116, *London Math. Soc. Lecture Note Ser.* 117, Cambridge Univ. Press, Cambridge-New York, 1987. (J. F. Adams) **89e:55037** 55S10 (20J05, 55R35, 55T15, 55U99)
- Sur le  $n$ -dual du  $n$ -ème spectre de Brown-Gitler. [On the  $n$ -dual of the Brown-Gitler  $n$ th spectrum] *Math. Z.* **199** (1988), no. 1, 29–42. (J. F. Adams) **89e:55020** 55P42 (55N20)
- Lánská, Vera** Statistical inference for stochastic neuronal models. *Biomathematics and related computational problems* (Naples, 1987), 47–53, *Kluwer Acad. Publ., Dordrecht, 1988*. (see **89f:92002**) 92A09
- Lanski, Charles** Invariant additive subgroups of a certain kind. *Israel J. Math.* **61** (1988), no. 2, 192–198. (Miguel Ferrero) **89f:16007** 16A12 (16A48)
- Differential identities, Lie ideals, and Posner's theorems. *Pacific J. Math.* **134** (1988), no. 2, 275–297. (Efim Zelmanov) **89f:16051** 16A72 (16A68)
- Correction to: "Differential identities in prime rings with involution" [Trans. Amer. Math. Soc. **291** (1985), no. 2, 765–787; MR **87f:16013**]. *Trans. Amer. Math. Soc.* **309** (1988), no. 2, 857–859. (S. A. Amitsur) **89f:16005** 16A12 (16A28, 16A38, 16A48, 16A72)
- Lánský, Miloš** On generalized information theory as a basis of theory of supersigns. *10<sup>e</sup> Congrès International de Cybernétique* (Namur, 1983), 762–778, *Assoc. Internat. Cybernét., Namur, 1984*. (see **89a:93003**) 94A15
- Lánský, P.** (with Giorno, V.; Nobile, A. G.; Ricciardi, Luigi M.) A diffusion neuronal model and its parameters. *Biomathematics and related computational problems* (Naples, 1987), 55–63, *Kluwer Acad. Publ., Dordrecht, 1988*. (Summary) **89f:92020** 92A09
- (with Radil, T.; Indra, M.; Mates, J.; Bohdaneč, Z.; Radilová, J.; Yakimoff, N.) Perception quantitatively analyzed. *Biomathematics and related computational problems* (Naples, 1987), 83–97, *Kluwer Acad. Publ., Dordrecht, 1988*. (see **89f:92002**) 92A27
- (with Giorno, V.; Nobile, A. G.; Ricciardi, Luigi M.) Diffusion approximation and first-passage-time problem for a model neuron. III. A birth-and-death process approach. *Biol. Cybernet.* **58** (1988), no. 6, 387–404. (Summary) **89d:92024** 92A09
- Lanteri, Antonio** (with Palleschi, Marino) Remarks on recent work by Sommes. *Proceedings of the conference on algebraic geometry* (Berlin, 1985), 228–235, *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (L. Bădescu) **89a:14052** 14J40 (14J25)
- (with Turrini, Cristina) Projective threefolds of small class. *Abh. Math. Sem. Univ. Hamburg* **57** (1987), 103–117. (Luciana Picco Botta) **89a:14047** 14J30
- (with Beltrametti, Mauro; Palleschi, Marino) Algebraic surfaces containing an ample divisor of arithmetic genus two. *Ark. Mat.* **25** (1987), no. 2, 189–210. (Paltin Ionescu) **89e:14037** 14J10 (14J25)
- (with Palleschi, Marino) Projective manifolds containing many rational curves. *Indiana Univ. Math. J.* **36** (1987), no. 4, 857–865. (Paltin Ionescu) **89c:14067** 14J40
- Complex projective surfaces with hyperelliptic hyperplane sections. *Seminar in Complex Analysis and Geometry 1987* (Rende, 1987), 1–28, *Sem. Conf., I, Edit. E. Rende, 1988*. (Paltin Ionescu) **89m:14020** 14J25 (14C20, 14E25)
- Lantz, David** (with Martin, Mary B.) Strongly two-generated ideals. *Comm. Algebra* **16** (1988), no. 9, 1759–1777. (Sarah Glaz) **89f:13002** 13A15
- (with Heinzer, William) Jónsson extensions of one-dimensional semilocal domains. *J. Algebra* **117** (1988), no. 1, 179–197. (W. V. Vasconcelos) **89e:13017** 13F03 (13B20)
- Lanza, Antonio** (with Brandt, Achi) Multigrad in general relativity. I. Schwarzschild spacetime. *Classical Quantum Gravity* **5** (1988), no. 5, 713–732. (Summary) **89f:83004** 83-08 (83C15)
- collini Lanza, Tiziana** see Collini Lanza, Tiziana
- Laohakosol, Wichian** (with Ubolsoi, Patchara)  $p$ -adic continued fractions of Liouville type. *Proc. Amer. Math. Soc.* **101** (1987), no. 3, 403–410. (F. Gramain (translated from Zbl 636:10027)) **89f:11095** 11J70 (11J61, 11J85)
- (with Kongsakorn, Kannika) Power series solutions of linear differential equations with polynomial coefficients. *Southeast Asian Bull. Math.* **11** (1987), no. 1, 13–17. (James M. D'Archangelo) **89b:34017** 34A25 (34A10, 34A30)
- (with Ubolsoi, Patchara) Inequalities related to generalized means. *Tamkang J. Math.* **18** (1987), no. 2, 53–58. (L. Losonczi) **89d:26020** 26D20
- (with Kongsakorn, Kannika; Arunbanjerdikul, Rujia) Newton's series, factorial series and partial sums as solutions of linear difference equations. *Bull. Inst. Math. Acad. Sinica* **16** (1988), no. 1, 83–91. (Stanislaw Kus) **89b:39004** 39A10 (34A25)
- Lapa, V. G.** Prediction of nonstationary random processes by adaptive combined methods. *Soviet J. Automat. Inform. Sci.* **21** (1988), no. 1, 57–62; translated from *Avtomatika* **1988**, no. 1, 58–64, 96 (Russian, English summary). (Summary) **89m:90050** 90A30 (93C40)
- Lapan, Harvey E.** (with Sandler, Todd) The calculus of dissent: an analysis of terrorists' choice of targets. Formal analysis in international relations. *Synthese* **76** (1988), no. 2, 245–261. (see **89e:90218**) 90D40 (92A25, 92A90)
- Lapenko, Yu. P.** Meromorphic functions with asymptotically close zeros and poles. (Russian) *Izv. Severo-Kavkaz. Nauchn. Tsentra Vyssh. Shkoly Estestv. Nauk.* **1987**, no. 4, 70–76 (1988). (D. Mitrović) **89f:30040** 30D35 (30D15, 30D30)
- (with Zhuravleva, M. I.) Distribution of the zeros of entire functions of completely regular growth. (Russian) *Izv. Severo-Kavkaz. Nauchn. Tsentra Vyssh. Shkoly Estestv. Nauk.* **1988**, no. 3, 55–59, 142. (Summary) **89m:30060** 30D20 (30C15)
- Lapeyre, B.** Majoration a priori des solutions d'équations différentielles stochastiques stables. [A priori upper bounds of solutions of stable stochastic differential equations] *Stochastic analysis and related topics* (Silivri, 1986), 340–351, *Lecture Notes in Math.*, 1316, Springer, Berlin-New York, 1988. (V. Mackevičius) **89f:60127** 60H10 (34F05, 93E15)
- Lapides, Michel L.** (with Johnson, Gerald W.) Une multiplication non commutative des fonctionnelles de Wiener et le calcul opérationnel de Feynman. (English summary) [A noncommutative multiplication of Wiener functionals and Feynman's operational calculus] *C. R. Acad. Sci. Paris Sér. I Math.* **304** (1987), no. 17, 523–526. (L. L. Lee) **89f:28004** 28C20 (46G12, 81C35)
- The Feynman-Kac formula with a Lebesgue-Stieltjes measure and Feynman's operational calculus. *Stud. Appl. Math.* **76** (1987), no. 2, 93–132. (K. Gustafson) **89f:81057** 81C35 (47D05, 58C30)
- The Feynman integral, the Feynman-Kac formula with a Lebesgue-Stieltjes measure and Feynman's operational calculus. *Path summation: achievements and goals* (Trieste, 1987), 327–335, *World Sci. Publishing, Singapore, 1988*. (see **89f:81034**) 81C35
- (with Fleckinger, Jacqueline Pellé) Tambour fractal: vers une résolution de la conjecture de Weyl-Berry pour les valeurs propres du laplacien. (English summary) [Fractal drum: towards a resolution of the Weyl-Berry conjecture for the eigenvalues of the Laplacian] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 4, 171–175. (Xue-Ping Wang) **89d:35133** 35P20 (11P21, 35J25, 58G25)
- Lapikova, O. I.** (with Uvarov, S. I.) Sufficient conditions for guaranteeing the informational correctness of nonstructured programs. (Russian) *Programirovanie* **1988**, no. 1, 89–91, 96. (Not in MR) 68N05
- Lapin, A. V.** (with Solov'ev, D. O.) ★ Решение сеточных задач с препятствием внутри области. (Russian) [Solution of difference problems with a barrier inside the domain] *Preprint* [Preprint], 140, *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow, 1986*. 22 pp. (Florica Luban) **89b:65158** 65K10
- Solution of variational inequalities with nonlinear semicoercive operators. (Russian) *Computational processes and systems*, No. 4 (Russian), 219–264, "Nauka", Moscow, 1986. (R. Schumann) **89m:47062** 47H15 (35J85, 47H05, 49A29, 65N30)
- (with Solov'ev, D. O.) Solution of mesh obstacle problems. Translated from the Russian. *Soviet J. Numer. Anal. Math. Modelling* **2** (1987), no. 6, 449–461. (R. N. Mukherjee) **89c:65074** 65K05 (90C20)
- Lapin, S. V.** Dihedral homology of a tensor algebra and of skew polynomial rings. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 6, 65–67. (Luciezar L. Avramov) **89f:18022** 18G99 (16A28)
- Lapinskas, R.** A law of the iterated logarithm for  $m$ -dependent random variables. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 2, 279–284. (Zheng Yan Lin) **89b:60077** 60F15
- Laplace, P.-S.** see Bourguet, Marie-Noëlle, **89b:01018**; Krüger, Lorenz, **89f:01036**; Schneider, Ivo, **89f:01042**; Garibaldi, Ubaldo, **89g:01029**; Kamlah, Andreas, **89g:01037**; Langins, Jānis, **89k:01016** and Zabell, S. L., **89k:01017**
- Laporte, Gilbert** (with Mercure, Hélène; Nobert, Yves) Cutting planes based on bin packing solutions for the capacitated vehicle routing problem. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 165–178. (Edward Minieka) **89e:90143** 90C10 (90B10, 90B35, 90C35)
- (with Nobert, Yves; Taillefer, Serge) A branch-and-bound algorithm for the asymmetrical distance-constrained vehicle routing problem. (French summary) *Math. Modelling* **9** (1987), no. 12, 857–868. (Summary) **89a:90055** 90B10 (90B35)
- (with Eiselt, H. A.) Trading areas of facilities with different sizes. (French summary) *RAIRO Rech. Opér.* **22** (1988), no. 1, 33–44. (Summary) **89d:90126** 90B99
- (with Nobert, Yves; Taillefer, Serge) Solving a family of multi-depot vehicle routing and location-routing problems. *Transportation Sci.* **22** (1988), no. 3, 161–172. (Summary) **89e:90088** 90B10 (90B35)
- Integer programming formulations for the multi-depot vehicle routing problem. Comments on a paper by R. V. Kulkarni and P. R. Bhaye: "Integer programming formulations of vehicle routing problems" [European J. Oper. Res. **20** (1985), no. 1, 58–67]. *European J. Oper. Res.* **38** (1989), no. 2, 227. (Not in MR) 90B35
- (with Louveaux, François; Mercure, Hélène) Models and exact solutions for a class of stochastic location-routing problems. *European J. Oper. Res.* **39** (1989), no. 1, 71–78. (Summary) **89m:90068** 90B15
- (with Eiselt, H. A.; Pederzoli, G.) Optimal sizes of facilities on a linear market. *Math. Comput. Modelling* **12** (1989), no. 1, 97–103. (Not in MR) 90B10
- Laporte, Otto** see Dolph, C. L., **89c:01055**
- Lappan, Peter** (with Aulaskari, Rauno) The uniform continuity of the modulus of rotation automorphic functions. *Ann. Acad. Sci. Fenn. Ser. A I Math.* **12** (1987), no. 2, 279–285. (Ch. Pommerenke) **89f:30069** 30F35 (30D45)
- (with Aulaskari, Rauno) A criterion for a rotation automorphic function to be normal. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 1, 73–79. (Carlos A. Berenstein) **89g:30083** 30F35
- (with Aulaskari, Rauno) An integral criterion for normal functions. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 438–440. (George L. Csordas) **89b:30050** 30D45
- de La Pradelle, A.** (with Feyel, Denis) Perturbations complexes de diffusions. (English summary) [Complex perturbations of diffusions] *Stochastics* **22** (1987), no. 3–4, 325–335. (Ross Pinsky) **89a:35062** 35J15 (47D07, 60J60)
- (with Feyel, Denis) Sur certaines perturbations non linéaires du laplacien. (English summary) [On some linear perturbations of the Laplacian] *J. Math. Pures Appl.* (9) **67** (1988), no. 4, 397–404. (Maurice Gauthier) **89f:35091** 35J65 (35J05)
- Laprise, R.** (with Peltier, W. R.) The linear stability of nonlinear mountain waves: implications for the understanding of severe downslope windstorms. *J. Atmospheric Sci.* **46** (1989), no. 4, 545–564. (Summary) **89m:86007** 86A10 (76E20)
- (with Peltier, W. R.) The structure and energetics of transient eddies in a numerical simulation of breaking mountain waves. *J. Atmospheric Sci.* **46** (1989), no. 4, 565–585. (Summary) **89m:86008** 86A10 (76E20)
- (with Peltier, W. R.) On the structural characteristics of steady finite-amplitude mountain waves over bell-shaped topography. *J. Atmospheric Sci.* **46** (1989), no. 4, 586–595. (Summary) **89m:86009** 86A10 (76E20)
- Lapsa, P. M.** Proof of stability condition. (French and German summaries) *Signal Process.* **15** (1988), no. 1, 91–97. (Jian Hong Wu) **89g:93082** 93D25
- Lapshov, S. A.** Automorphism groups, preserving the partitioning of the set  $E_k$ , of an algebra of finite-valued functions. (Russian) *Mat. Zametki* **42** (1987), no. 6, 873–885, 911. (A. N. Melikhov) **89f:94048** 94C10 (03B50, 05A99, 06E30)
- Laptev, G. I.** A third-order quasilinear partial differential equation. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1270–1272, 1287–1288. (Summary) **89b:35072** 35G05
- The first boundary value problem for a second-order nonlinear parabolic equation with one space variable. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1988**, no. 5, 84–86; translation in *Soviet Math. (Iz. VUZ)* **32** (1988), no. 5, 109–112. (Ya Zhe Chen) **89f:35073** 35K60
- Mathematical singularities of a problem on the penetration of a magnetic field into a substance. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 9, 1332–1345, 1437. (Summary) **89f:78007** 78A30
- Laptev, S. A.** A variational problem for a dynamic potential. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 9, 1509–1520, 1652; translation in *Differential Equations* **24** (1988), no. 9, 987–996. (Dariusz Zagrodni) **89f:49016** 49B21

- Solution of a variational problem for dynamic potential. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 11, 1880–1890, 2020–2021; translation in *Differential Equations* 24 (1988), no. 11, 1251–1259. (P. Lindqvist) **89m:49002** 49A05 (76N15)
- Laptev, N. A.** Mapping of spectra in the construction of matrix functions of positive operators. (Russian) *Differential equations and applied problems* (Russian), 11–16, ii, *Tul'sk. Politekh. Inst., Tula*, 1985. (see **89g:00006**) 47A60 (47A10)
- Laptsinskiĭ, V. N.** (with Zhestkov, S. V.) On the construction of periodic solutions of systems of linear partial differential equations. (Russian) *Differential equations and applied problems* (Russian), 31–34, iv, *Tul'sk. Politekh. Inst., Tula*, 1985. (see **89g:00008**) 35B10 (35C15)
- Stabilization of controllable nonlinear oscillations. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 31 (1987), no. 11, 975–977, 1052. (Zdzisław Wyderka) **89b:93088** 93D15 (34C15, 34C25)
- A projection method for solving a problem of stabilizing periodic control systems. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 32 (1988), no. 8, 681–684, 764. (Françoise Berquier) **89i:93091** 93D15 (49D50)
- (with Zhestkov, S. V.) Some estimates for the solution of the Cauchy problem for general normal partial differential systems. (Russian. English summary) *Vestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1988, no. 2, 107–110, 128. (Michael Lorenz) **89k:35052** 35F20 (35B99, 35F25)
- A method for stabilizing linear periodic control systems. (Russian. English summary) *Vestst Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* 1988, no. 5, 14–18, 123. (Andrzej Świerniak) **89m:93068** 93D15 (49D50, 93C05)
- Lapushkin, I. T.** Finite integral transformations in problems for biharmonic equations. (Ukrainian. Russian summary) *Visnik Kiiv. Univ. Ser. Mat. Mekh.* No. 27 (1985), 53–58, 125. (Summary) **89g:73030** 73K10 (31A25, 31A30, 35J40, 73C02)
- Leumann, V.** see **Neumann, V.**
- Larato, B.** A characterization of the parabolic unitals of Buekenhout-Metz. (Italian. English summary) *Matematiche (Catania)* 38 (1983), no. 1–2, 95–98 (1987). (Giorgio Faenza) **89c:51012** 51E20 (05B25, 51A40)
- Larchenko, V. V.** An adapting variational method under conditions of nonuniqueness of the solution and the singular perturbation. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 2, 318–322; translation in *Soviet Phys. Dokl.* 33 (1988), no. 3, 232–234. (Dietrich Göhde) **89i:35013** 35B25 (35B32, 65N30, 73K15)
- Larcher, G.** (with Kopeček, N.; Tichý, Robert F.; Turnwald, G.) On the discrepancy of sequences associated with the sum-of-digits function. (French summary) *Ann. Inst. Fourier (Grenoble)* 37 (1987), no. 3, 1–17. (H. G. Meijer) **89c:11119** 11K38
- (with Tichý, Robert F.) A note on Gray code and odd-even merge. *Discrete Appl. Math.* 18 (1987), no. 3, 309–313. (Linda Pagli) **89g:68028** 68Q25 (68P10)
- A best lower bound for good lattice points. *Monatsh. Math.* 104 (1987), no. 1, 45–51. (Summary) **89f:11103** 11K06
- A new extremal property of the Fibonacci ratio. *Fibonacci Quart.* 26 (1988), no. 3, 247–255. (C. G. Lekkerkerker) **89i:11053** 11H50 (11B39)
- On the distribution of sequences connected with digit-representation. *Manuscripta Math.* 61 (1988), no. 1, 33–42. (V. Drobot) **89f:11104** 11K06 (11K16)
- A convergence problem connected with continued fractions. *Proc. Amer. Math. Soc.* 103 (1988), no. 3, 718–722. (G. Ramharter) **89i:11077** 11J70
- Larcombe, P. J.** (with Poots, G.; Skelton, P. L. I.; Shillor, M.) Mathematical models for ice accretion on conductors using free streamline theory. I. Single conductor. *IMA J. Appl. Math.* 41 (1988), no. 3, 217–236. (Fouad A. Mohamed) **89m:76020** 76B99 (73J05, 76G99)
- Larecki, W.** Bleustein-Gulyaev surface waves of arbitrary form. *Recent developments in surface acoustic waves* (Nottingham, 1987), 185–192, *Springer Ser. Wave Phenomena*, 7, Springer, Berlin-New York, 1988. (Summary) **89j:73029** 73D20 (73R05)
- Larhissi, Naima** Quelques résultats d'existence de sélection des multifonctions séparément mesurables et séparément semi-continues inférieurement. [Some results on the existence of a selection for multifunctions that are separately measurable and separately lower semicontinuous] *Atti Sem. Mat. Fis. Univ. Modena* 35 (1987), no. 1, 47–62. (Françoise Berquier) **89a:49015** 49A50 (28B20)
- LaRiccia, Vincent N.** (with Eastham, Jerome F.; Schuenemeyer, John H.) Small sample properties of the maximum likelihood estimators for an alternative parameterization of the three-parameter lognormal distribution. *Comm. Statist. Simulation Comput.* 16 (1987), no. 3, 871–884. (H. K. Hsieh) **89b:62067** 62F10 (62F11)
- Parametric testing procedures for type II censored data sets based on the quantile function. *Comm. Statist. Theory Methods* 17 (1988), no. 2, 519–542. (Ram Shanmugam) **89g:62031** 62F03
- Larichev, A. D.** see **Haug, Edward J. et al.** **89i:73062**
- Larichev, O. I.** (with Mechtov, A. I.; Moshkovich, E. M.; Furems, E. M.) A method of expert classification for the formation of knowledge bases of diagnostic systems. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 5, 1086–1089; translation in *Soviet Phys. Dokl.* 33 (1988), no. 2, 98–100. (From the text) **89c:68111** 68T30 (90C31)
- Larin, V. B.** (with Avramenko, L. G.; Borydug, B. A.) On weakly nonlinear measurable systems. (Russian) *Application of asymptotic methods in the theory of nonlinear differential equations* (Russian), 5–10, i, *Akad. Nauk Ukrain. SSR, Kiev*, 1987. (Summary) **89c:35023** 93B07 (70E99, 93C10)
- (with Borydug, B. A.) Control of the motion of a quadrupedal walking apparatus. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 22, 60 pp. (Summary) **89f:70041** 70Q05
- (with Avramenko, L. G.; Borydug, B. A.) Problems on the determination of the orientation of a rigid body. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 59, 48 pp. (Summary) **89c:70027** 70Q05 (70–04, 70E15)
- (with Apostolyuk, A. S.; Bobrov, B. F.; Borydug, B. A.; Gradedskii, A. V.; Safronov, Yu. G.; Solov'ev, V. S.) Optimization of the de Prony method for the identification of linear dynamical systems. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 66, 64 pp. (Not in MR) **93B30** (93B40)
- (with Aliev, Fikret Akhmadali oglu; Borydug, B. A.) Frequency methods for solving matrix algebraic Riccati equations. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 8 (42) (1987), 1–5, 92. (K. Seitz) **89h:93018** 93B25
- (with Aliev, Fikret Akhmadali oglu; Borydug, B. A.) Frequency methods of solving matrix algebraic Riccati equations. *Soviet J. Comput. Systems Sci.* 25 (1987), no. 6, 154–161 (1988); translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* 1987, no. 3, 169–175, 222 (Russian). (O. A. Sebakhy) **89d:93026** 93B25
- Larin, Yu. S.** (with Tyukhtin, V. S.; Urmantsev, Yu. A.; Dalin, V. Ya.; Sharapov, I. P.; Malikov, A. V.; Kopsik, V. A.; Zamorzaev, A. M.; Didyk, Yu. K.; Petukhov, S. V.; Artem'ev, Yu. I.) Система. Симметрия. Гармония. (Russian) [System. Symmetry. Harmony] "Mysl", Moscow, 1988. 318 pp. ISBN 5-244-00190-6 (V. Ya. Kreinovich) **89f:00045** 00A69 (00A25, 20H15, 92A05, 93A05)
- Larin, Yu. V.** (with Mukhin, A. B.) Local limit theorems for arbitrary distributions. (Russian) *Asymptotic methods in mathematical statistics* (Russian), 47–62, 159, "Fan", Tashkent, 1987. (Zheng Yan Lin) **89a:60065** 60F05
- Local limit theorems with matrix normalization. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1987, no. 5, 27–33, 109. (Summary) **89j:60039** 60F05
- Local limit theorems under matrix normalization. (Russian) *Dokl. Akad. Nauk UzSSR* 1988, no. 2, 4–6. (Gerd Christoph) **89i:60052** 60F05 (60G50)
- Local limit theorems for  $m$ -lattice random vectors. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1988, no. 3, 22–27, 89. (Werner Wolf) **89m:60054** 60F05
- Larionov, A. S.** On the solvability of a nonlinear boundary value problem for an equation of neutral type. (Russian) *Boundary value problems* (Russian), 96–97, ix, *Perm. Politekh. Inst., Perm*, 1986. (see **89c:00009**) 34B15
- Larionov, N. B.** Embedding of semigroup amalgams in varieties. (Russian) *Semigroups and partial groupoids* (Russian), 45–58, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (B. Pondělíček) **89b:20127** 20M07 (20M05)
- Larionova, O. G.** (with Logunov, A. I.) Linear selfadjoint equations that contain a product of operators. (Russian) *Boundary value problems* (Russian), 90–92, viii, *Perm. Politekh. Inst., Perm*, 1986. (see **89c:00009**) 47A50
- Larkin, A. I.** (with Vinokur, V. M.; Ioffe, L. B.; Feigel'man, M. V.) System of Josephson junctions as a model of a spin glass. *Soviet Phys. JETP* 66 (1987), no. 1, 198–210 (1988); translated from *Zh. Éksper. Teoret. Fiz.* 93 (1987), no. 1, 343–365 (Russian). (Summary) **89k:82076** 82A57 (82A25)
- Larmore, L. L.** Height restricted optimal binary trees. *SIAM J. Comput.* 16 (1987), no. 6, 1115–1123. (Summary) **89a:68027** 68P05
- (with Hester, J. H.; Hirschberg, D. S.) Construction of optimal binary split trees in the presence of bounded access probabilities. *J. Algorithms* 9 (1988), no. 2, 245–253. (Summary) **89c:68018** 68P05 (68P10)
- Larntz, Kinley** (with Perlman, Michael D.) A simple test for the equality of correlation matrices. *Statistical decision theory and related topics, IV, Vol. 2* (West Lafayette, Ind., 1986), 289–298, *Springer, New York-Berlin*, 1988. (Title) **89a:62133** 62H15
- Larocque, David** (with Glass, L.; Beuter, Anne) Time delays, oscillations, and chaos in physiological control systems. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* 90 (1988), no. 1–2, 111–125. (Summary) **89h:92014** 92A09 (58F13)
- Gómez-Larrañaga, José Carlos** see **Gómez-Larrañaga, José Carlos**
- Larrañaga, J.** (with Onieva, L.; Lozano, S.; Ruiz Usano, R.) Primal-dual approach to the capacitated production planning problem with concave costs. (Spanish. English summary) *Quiestid* 11 (1987), no. 2, 117–133, 153. (Summary) **89d:90110** 90B30
- Larrieu, Michel** Existence des solutions différentielles de Carathéodory sur des ensembles fermés. [Existence of Carathéodory differential solutions on closed sets] *Rev. Roumaine Math. Pures Appl.* 32 (1987), no. 3, 253–263. (Halina Frankowska) **89f:34019** 34A60
- Larrourou, B.** (with Benkhaldoun, F.) Numerical analysis of the two-dimensional thermofluid model for flame propagation. (French summary) *RAIRO Modél. Math. Anal. Numér.* 22 (1988), no. 4, 535–560. (Fouad A. Mohamed) **89m:80009** 80A25 (65P05, 80–08)
- The equations of one-dimensional unsteady flame propagation: existence and uniqueness. *SIAM J. Math. Anal.* 19 (1988), no. 1, 32–59. (Mario Skrinjar) **89i:80002** 80A25 (35Q20)
- (with Fernandez, Gilles) Hyperbolic schemes for multi-component Euler equations. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 128–138, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 76–08 (65P05)
- Larsen, Edward W.** (with Morel, Jim Emanuel; Miller, Warren F., Jr.) Asymptotic solutions of numerical transport problems in optically thick, diffusive regimes. *J. Comput. Phys.* 69 (1987), no. 2, 283–324. (Marvin L. Adams) **89b:65191** 65L10 (82A70, 85A25)
- Solution of three-dimensional inverse transport problems. *Transport Theory Statist. Phys.* 17 (1988), no. 2–3, 147–167. (B. Kellogg) **89i:82108** 82A70
- Larsen, Kim G.** (with Jensen, Finn V.) Recursively defined domains and their induction principles. *Theoret. Comput. Sci.* 54 (1987), no. 1, 29–51. (Ana Pasztor) **89c:68079** 68Q55 (03B70, 03D80, 18C10)
- Proof systems for Hennessy-Milner logic with recursion. *CAAP '88* (Nancy, 1988), 215–230, *Lecture Notes in Comput. Sci.*, 299, Springer, Berlin-New York, 1988. (Summary) **89c:68081** 68Q55 (03B70, 68T15)
- Larsen, P. Martin** (with Evans, F. J.) Structural design of decentralized control systems. *Advanced computing concepts and techniques in control engineering* (Il Ciocco, 1987), 257–286, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 47, Springer, Berlin-New York, 1988. (see **89g:93002**) 93A15 (93B05, 93B07)
- Larsen, Ronald** A theorem concerning the multipliers for functions with Fourier transforms in  $L_p$ . *Portugal. Math.* 45 (1988), no. 1, 1–4. (C. McGehee) **89i:42021** 42A45
- Larson, David** see **Larson, David T.**
- Larson, David R.** Reflexivity, algebraic reflexivity and linear interpolation. *Amer. J. Math.* 110 (1988), no. 2, 283–299. (Robert L. Moore) **89d:47096** 47D15 (47A99)
- Larson, David T.** Tarski, Davidson, and theories of truth. (French and German summaries) *Dialectica* 42 (1988), no. 1, 15–16. (Not in MR) 03A05
- Larson, J. W.** (with Tracy, E. R.; Osborne, A. R.; Bergamasco, L.) On the nonlinear Schrödinger limit of the Korteweg-de Vries equation. *Phys. D* 32 (1988), no. 1, 83–106. (Jürgen Burzlaff) **89k:35231** 35Q20 (58F07)
- Larson, Lee** (with Foran, James) The symmetric derivation basis, approximate symmetric derivatives and monotonicity. *Real Anal. Exchange* 13 (1987/88), no. 1, 278–284. (S. N. Mukhopadhyay) **89c:26006** 26A24 (26A48)
- Larson, Per-Åke** (with Gonnet, Gaston H.) External hashing with limited internal storage. *J. Assoc. Comput. Mach.* 35 (1988), no. 1, 161–184. (Summary) **89a:68032** 68P10
- Larson, Richard C.** Perspectives on queues: social justice and the psychology of queueing. *Oper. Res.* 35 (1987), no. 6, 895–905. (Summary) **89b:90050** 90B22 (92A25)



- Larson, Richard G.** (with Grossman, Robert) The symbolic computation of higher-order derivations: symmetries of expressions and actions of group algebras. *Differential geometry: the interface between pure and applied mathematics* (San Antonio, Tex., 1986), 121-131, *Contemp. Math.*, 68, Amer. Math. Soc., Providence, RI, 1987. (From the introduction) **89c:13031** 13N05 (12-04, 58F99)
- (with Radford, David E.) Semisimple cosemisimple Hopf algebras. *Amer. J. Math.* **110** (1988), no. 1, 187-195. (E. J. Taft) **89a:16011** 16A24
- (with Radford, David E.) Finite-dimensional cosemisimple Hopf algebras in characteristic 0 are semisimple. *J. Algebra* **117** (1988), no. 2, 267-289. (E. J. Taft) **89c:16016** 16A24
- Larson, Robert E.** (with Donaldson, Thomas; Doty, Karl; Engle, Steven W.; O'Reilly, John G.; Tandjung, Susanto) Innovative architectures for dense multi-microprocessor computers. *Comput. & Structures* **30** (1988), no. 1-2, 347-355. (Not in MR) **68M99** (68N99)
- Larsson, Ashley** (with Clements, D. L.) On some boundary integral equations for systems of second-order elliptic equations. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 149-154, North-Holland, Amsterdam-New York, 1988. (see **89b:00021**) **65N99**
- Lasagni, F. M.** Canonical Runge-Kutta methods. *Z. Angew. Math. Phys.* **39** (1988), no. 6, 952-953. (Not in MR) **65L05**
- de La Salle, S.** see **De La Salle, S.**
- La Scala, Massimo** (with Brucoli, Michele; Torelli, Francesco; Trovato, Michele) Overlapping decomposition for small disturbance stability analysis of interconnected power networks. *Large Scale Systems* **13** (1987), no. 2, 115-129. (Not in MR) **93C75** (49D27, 49D30, 93A15, 93D99)
- Lascar, B.** Propagation des singularités Gevrey pour des opérateurs hyperboliques. [Propagation of Gevrey singularities for hyperbolic operators] *Hyperbolic equations* (Padua, 1985), 95-101, *Pitman Res. Notes Math. Ser.*, 158, Longman Sci. Tech., Harlow, 1987. (V. Ivrii) **89a:35010** 35A20 (35L99, 35S05, 58G16, 58G17)
- Propagation des singularités Gevrey pour des problèmes aux limites hyperboliques. [Propagation of Gevrey singularities for hyperbolic boundary limit problems] *Comm. Partial Differential Equations* **13** (1988), no. 5, 551-571. (Albert J. Milani) **89c:35101** 35L67 (35A20, 35A27, 35L99, 35S15)
- Lascar, Daniel** Théorie de la classification. [Classification theory] *Séminaire Bourbaki*, Vol. 1986/87, *Astérisque* No. 152-153 (1987), 5, 253-261 (1988). (Gabriel Srouf) **89c:03057** 03C45
- Lascoux, Alain** La résultante de deux polynômes. [The resultant of two polynomials] *Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliavin, 37ème année* (Paris, 1985), 56-72, *Lecture Notes in Math.*, 1220, Springer, Berlin-New York, 1986. (Piotr Pragacz) **89c:13012** 13B25 (05A99, 12D10, 15A15)
- Forme canonique d'une forme binaire. (English summary) [The canonical form of a binary form] *Invariant theory*, 44-51, *Lecture Notes in Math.*, 1278, Springer, Berlin-New York, 1987. (Joseph Kung) **89a:12005** 12E05 (11E76, 15A72)
- (with Schützenberger, Marcel-Paul) Symmetrization operators in polynomial rings. (Russian) Translated from the English by A. V. Zelevinskii. *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 4, 77-78. (Arkadijus Ploski) **89d:16046** 16A72
- (with Pragacz, Piotr) Ribbon Schur functions. *European J. Combin.* **9** (1988), no. 6, 561-574. (John R. Stembridge) **89c:05013** 05A19 (05A15)
- Lasdon, L. S.** (with Warren, A. D.; Sarkar, Swapan Kumar) Interfacing optimizers with planning languages and process simulators. *Mathematical models for decision support* (Val d'Isère, 1987), 239-262, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 48, Springer, Berlin-New York, 1988. (see **89g:90136**) **90C50** (68T05)
- (with Plummer, J.; Ahmed, Mohamed Hassan) Solving a large nonlinear programming problem on a vector processing computer. *Ann. Oper. Res.* **14** (1988), no. 1-4, 291-304. (Summary) **89b:90212** 90C30 (90-04)
- (with Fan, Y.; Sarkar, Swapan Kumar) Experiments with successive quadratic programming algorithms. *J. Optim. Theory Appl.* **56** (1988), no. 3, 359-383. (Summary) **89b:90161** 90C20
- Laserna, M.** Kantian epistemology: a Copernican or a Thalesian revolution? (German summary) *Philos. Natur.* **24** (1987), no. 2, 157-184. (Michael Otte) **89f:00035** 00A25
- Laserra, Ettore** (with Matarazzo, Giovanni) The energy criterion and the Maxwell-Cattaneo equation in the thermodynamics of nonlinear electromagnetic systems. (Italian. English summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **79** (1985), no. 1-4, 31-36 (1986). (Summary) **89c:73077** 73R05
- Lashchenov, K. V.** A particular class of Bernstein-Szegő orthogonal polynomials. (Russian) *Operators and their applications* (Russian), 46-52, *Leningrad. Gos. Ped. Inst., Leningrad*, 1985. (see **89f:00013**) **42C05**
- Lashchenov, V. K.** A method for solving contact problems of elasticity theory with several contact sections. (Russian) *Partial differential equations* (Russian), 41-46, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (From the introduction) **89b:73041** 73T05
- Lasheras, J. C.** (with Meiburg, E.) Experimental and numerical investigation of the three-dimensional transition in plane wakes. *J. Fluid Mech.* **190** (1988), 1-37. (Not in MR) **76-05** (76-04)
- Lashien, E. F.** (with Abd El-Monsef, M. E.; Geaisa, A. N.) Some weaker forms of regularity. (Arabic summary) *Delta J. Sci.* **10** (1986), no. 2, 465-475. (J. E. Vaughan) **89g:54001** 54A05 (54D99)
- Lashof, R. K.** (with May, J. P.) Generalized equivariant bundles. *Bull. Soc. Math. Belg. Sér. A* **38** (1986), 265-271 (1987). (From the text) **89e:55036** 55R91
- Lasiecka, Irena** Exponential stabilization of the wave equations with Dirichlet boundary conditions. *Operator methods for optimal control problems* (New Orleans, La., 1986), 201-213, *Lecture Notes in Pure and Appl. Math.*, 108, Dekker, New York, 1987. (Summary) **89a:93044** 93D20 (35B35, 35L70, 93C20, 93D15)
- Asymptotic behaviour of the solutions to wave equation with nonlinear damping on the boundary. *Analysis and optimization of systems* (Antibes, 1988), 472-483, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Alain Bachelot) **89m:35030** 35B40 (35B35, 35L99)
- Exponential local stability of first order strictly hyperbolic systems with nonlinear perturbations on the boundary. *Boundary control and boundary variations* (Nice, 1986), 212-234, *Lecture Notes in Comput. Sci.*, 100, Springer, Berlin-New York, 1988. (Enrique Zuazua) **89d:49046** 49E20 (35L60, 47H20, 93C20, 93D20)
- (with Manitius, A.) Differentiability and convergence rates of approximating semigroups for retarded functional-differential equations. *SIAM J. Numer. Anal.* **25** (1988), no. 4, 883-907. (Summary) **89i:65062** 65J10 (34K05, 47D05, 47H20)
- Laska, Eugene M.** (with Meisner, Morris; Siegel, Carole) Estimating the size of a population from a single sample. (French summary) *Biometrics* **44** (1988), no. 2, 461-472. (Fred L. Bookstein) **89h:62169** 62P10
- Laskar, R.** (with Chandrasekharan, N.; Veni Madhavan, C. E.) Chromatic polynomials of chordal graphs. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **61** (1988), 133-142. (Larry Basenpiller) **89h:05028** 05C15 (05C70)
- (with Turner, Craig M.; Rowley, Ray; Jamison, Robert E.) The edge achromatic number of small complete graphs. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **62** (1988), 21-36. (H. Joseph Straight) **89i:05122** 05C15
- (with Domke, Gayla S.; Hedetniemi, S. T.; Allan, Robert) Generalized packings and coverings of graphs. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **62** (1988), 259-270. (J. W. Moon) **89i:05212** 05C70
- Lasken, R. A.** (with Zenios, Stavros A.) Nonlinear network optimization on a massively parallel connection machine. *Ann. Oper. Res.* **14** (1988), no. 1-4, 147-165. (Summary) **89h:90247** 90C35 (65W05, 68M99, 90C30)
- Lasku, A.** see **Lascoux, Alain**
- Laslett, G. M.** (with Cressie, Noel) Random set theory and problems of modeling. *SIAM Rev.* **29** (1987), no. 4, 557-574. (Dietrich Stoyan) **89c:62169** 62M99 (00A71, 60D05)
- Lasota, Andrzej** (with Mackey, Michael C.) Noise and statistical periodicity. *Phys. D* **28** (1987), no. 1-2, 143-154. (Summary) **89f:58122** 58F30 (47B38, 58F11)
- Lasota, J. P.** (with Abramowicz, M. A.; Carter, Brandon) Optical reference geometry for stationary and static dynamics. *Gen. Relativity Gravitation* **20** (1988), no. 11, 1173-1183. (Carl Brans) **89m:83009** 83C10 (83C20)
- Lasry, David** (with Belytschko, Ted) A fractal patch test. *Internat. J. Numer. Methods Engng.* **26** (1988), no. 10, 2199-2210. (Summary) **89f:73050** 73K25 (73K10)
- Lasry, Jean-Michel** EDP et anticipations rationnelles (à partir du modèle de J. Scheinkman et L. Weiss). [PDE and rational expectations (based on the model of J. Scheinkman and L. Weiss)] *Contributions to nonlinear partial differential equations, Vol. II* (Paris, 1985), 148-157, *Pitman Res. Notes Math. Ser.*, 155, Longman Sci. Tech., Harlow, 1987. (Marwan Simaan) **89e:90063** 90A16 (35R99, 49B22, 90A11, 93C20)
- (with Berestycki, Henri) Remarks on Seifert's problem and nonlinear complex eigenvalues. *Proceedings of the international conference on recent advances in Hamiltonian systems* (L'Aquila, 1986), 119-134, *World Sci. Publishing, Singapore*, 1987. (Wei Yue Ding) **89i:58124** 58F22 (58F05, 58F30)
- Lassak, Marek** (with Prószyński, Andrzej) Algebraic and geometric approach to the classification of semisimples. *Math. Scand.* **61** (1987), no. 2, 204-212. (K. J. Falconer) **89f:52001** 52A01 (06F20)
- Covering the boundary of a convex set by tiles. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 269-272. (G. D. Chakerian) **89f:52038** 52A45 (52A20)
- Lasseigne, D. Glenn** (with Olmstead, W. E.) Ignition of a combustible solid with reactant consumption. *SIAM J. Appl. Math.* **47** (1987), no. 2, 332-342. (Summary) **89a:80004** 80A25
- Asymptotic analysis of a Volterra integral equation. *Appl. Math. Lett.* **1** (1988), no. 3, 251-254. (Not in MR) **45D05** (45M10)
- Lasser, R.** (with Tritschler, J.) How to compute the  $n$ -fold convolution power of elementary functions without numerical integration. (German summary) *Computing* **40** (1988), no. 4, 347-351. (Summary) **89m:26003** 26A09 (26A06)
- Lasserre, François** see **From Leodamas of Thasos to Philippos of Opus**, **89i:01145**
- Lasserre, J. B.** (with Hernández-Lerma, O.) A forecast horizon and a stopping rule for general Markov decision processes. *J. Math. Anal. Appl.* **132** (1988), no. 2, 388-400. (L. C. Thomas) **89f:90186** 90C40
- Existence of closed-loop policies for constrained discrete-time linear systems with bounded disturbances. *J. Optim. Theory Appl.* **58** (1988), no. 2, 351-358. (Mikolaj Buslowicz) **89f:93021** 93C05 (93B50, 93C35, 93C55)
- (with Cavazos-Cadena, Rolando) Strong  $l$ -optimal stationary policies in denumerable Markov decision processes. *Systems Control Lett.* **11** (1988), no. 1, 65-71. (Aleksandr A. Yushkevich) **89j:90263** 90C40
- Lasserre, Pierre** (with Ouellette, Pierre) Rate-of-return regulated cost function: Shepherd's lemma and curvature properties. *Econom. Lett.* **25** (1987), no. 4, 307-310. (Not in MR) **90A11**
- (with Ouellette, Pierre) Errata: "Rate-of-return regulated cost function: Shepherd's lemma and curvature properties" [Econ. Lett. **25** (1987), no. 4, 307-310]. *Econom. Lett.* **26** (1988), no. 3, 297. (Not in MR) **90A11**
- Dynamic duality in resource economics: theory and empirical usefulness. *Mathematical modelling in science and technology* (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 889-893. (Summary) **89f:90038** 90A30
- Lassez, Jean-Louis** (with Marriott, K.) Explicit representation of terms defined by counterexamples. *J. Automat. Reason.* **3** (1987), no. 3, 301-317. (Luis Fariñas del Cerro) **89b:03022** 03B35
- (with Jaffar, Joxan) From unification to constraints. *Logic programming '87* (Tokyo, 1987), 1-18, *Lecture Notes in Comput. Sci.*, 315, Springer, Berlin-New York, 1988. (Summary) **89k:68132** 68T15 (03B70, 68T25)
- Lassiter, Ray R.** (with Hallam, Thomas G.; Li, Jia<sup>2</sup>; McKinney, William) Physiologically structured population models in risk assessment. *Biomathematics and related computational problems* (Naples, 1987), 197-211, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89i:92042** 92A15
- Lassmann, G.** (with Kühnel, Wolfgang) Combinatorial  $d$ -tori with a large symmetry group. *Discrete Comput. Geom.* **3** (1988), no. 2, 169-176. (A. Althuler) **89c:57023** 57Q15 (05B45, 52A45)
- Lassner, Gerd** (with Berezanskii, Yu. M.; Yakovlev, V. S.) Decomposition of positive functionals on commutative nuclear  $\ast$ -algebras. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 5, 638-641, 680. (Josef Wichmann) **89d:46058** 46K10 (46L30, 47D40)
- Mathematik und Physik. [Mathematics and physics] *NTM Schr. Geschichte Natur. Tech. Medizin* **25** (1988), no. 1, 1-19. (Editors) **89i:01052** 01A65

- Lassoued, L.** (with Ekeland, Ivar) Multiplicité des trajectoires fermées de systèmes hamiltoniens convexes. (English summary) [Multiplicity of the closed trajectories of convex Hamiltonian systems] *Ann. Inst. H. Poincaré Anal. Non Linéaire* **4** (1987), no. 4, 307–335. (Michele Matzeu) **89b:58073** 58F05 (34C25, 58E05, 58F22)
- Lastman, G. J.** (with Sinha, N. K.) Worst-case error analysis of the aggregation method, with application to the selection of reduced-order models. *Internat. J. Systems Sci.* **19** (1988), no. 10, 2057–2065. (Summary) **89g:93009** 93B10 (41A30, 93B60)
- Lasunskii, A. V.** Diagonalizability of a linear system. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 2, 105–106, 134. (E. Barvinek) **89b:34020** 34A30
- Las Vergnas, Michel** (with Hamidoune, Yahya Ould) A solution to the Box Game. *Discrete Math.* **65** (1987), no. 2, 157–171. (A. C. Liu) **89b:90236** 90D05
- (with Hamidoune, Yahya Ould) A solution to the misère Shannon switching game. Proceedings of the First Japan Conference on Graph Theory and Applications (Hakone, 1986). *Discrete Math.* **72** (1988), no. 1–3, 163–166. (Harold Reiter) **89k:90206** 90D42 (05B35, 05C38)
- (with Hamidoune, Yahya Ould) Local edge-connectivity in regular bipartite graphs. *J. Combin. Theory Ser. B* **44** (1988), no. 3, 370–371. (Summary) **89k:05059** 05C40
- On the evaluation at (3, 3) of the Tutte polynomial of a graph. *J. Combin. Theory Ser. B* **45** (1988), no. 3, 367–372. (E. J. Farrell) **89i:05105** 05C10 (05C15)
- Lasyi, P. G.** (with Grudo, E. I.) Determination of the characteristic vectors of functions of several variables and of stability in the first approximation. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 3, 389–393, 546; translation in *Differential Equations* **24** (1988), no. 3, 269–273. (A. Precupanu) **89e:26031** 26B35
- boldur-Lătescu, G.** see **Boldur-Lătescu, G.**
- Lathrop, G. M.** (with Chotai, J.; Ott, Jane J.; Lalouel, J. M.) Tests of gene order from three-locus linkage data. *Ann. Human Genetics* **51** (1987), no. 3, 235–249. (Summary) **89k:92031** 92A10
- Latif, Abdul** (with Husain, Taqdir) Fixed points of multivalued nonexpansive maps. *Math. Japon.* **33** (1988), no. 3, 385–391. (J. Matkowski) **89i:47107** 47H10 (54H25)
- Latif, Md. Abdul** (with Shahabuddin, M.) Characterization of medial near lattices. (Bengali summary) *Chittagong Univ. Stud. Part II Sci.* **10** (1986), no. 1–2, 63–64. (J. Karásek) **89g:06015** 06A12
- Latinskii, S. M.** (with Krive, I. V.) Vacuum polarization by a nonuniform external field in a medium. *Soviet J. Nuclear Phys.* **47** (1988), no. 1, 179–183 (1988); translated from *Yadernaya Fiz.* **47** (1988), no. 1, 283–291 (Russian). (M. Martinis) **89k:81154** 81E99 (81G10, 81L05)
- Latisher, V. M.** (with Mikhal'ov, O. V.; Pankrat'ev, E. V.) Construction of canonical simplifiers in modules over rings of polynomials. (Ukrainian. Russian summary) *Visnik Kiv. Univ. Ser. Mat. Mekh.* **27** (1985), 65–67, 126. (Summary) **89c:13002** 13–04 (68Q20)
- An algorithm for equality in Lie nilpotent associative algebras. (Ukrainian. Russian summary) *Visnik Kiv. Univ. Ser. Mat. Mekh.* **27** (1985), 67–69, 126. (Summary) **89f:17010** 17B30 (08A50, 16A22)
- Latko, M.** On a construction of all de Bruijn cycles defined by Lempel's homomorphism. *Demonstratio Math.* **20** (1987), no. 3–4, 441–455 (1988). (Mirko Krivánek) **89i:05133** 05C20
- (with Grodzki, Z.) The nets of conjugated shift registers. (Russian summary) *Problems Control Inform. Theory/Problemy Upravlen. Teor. Inform.* **17** (1988), no. 3, 159–170. (Bernard J. M. Smets) **89f:94016** 94A60
- Latorre, José I.** Sp(2) BRST invariant quantization of strings: the harmonic gauge. *Nuclear Phys. B* **297** (1988), no. 1, 171–182. (Danny Birmingham) **89g:81081** 81E99 (17B65, 53C80, 58D05, 81E30, 83E30)
- Latouche, Guy** A note on two matrices occurring in the solution of quasi-birth-and-death processes. *Comm. Statist. Stochastic Models* **3** (1987), no. 2, 251–257. (Summary) **89d:60151** 60J80 (90B25)
- Perturbation analysis of a phase-type queue with weakly correlated arrivals. *Adv. in Appl. Probab.* **20** (1988), no. 4, 896–912. (Martin J. Fischer) **89i:60184** 60K25 (90B22)
- Latour, Alain** (with Roy, Roch) Some exact results on the sample autocorrelations of a seasonal ARIMA model. (French summary) *Canad. J. Statist.* **15** (1987), no. 3, 283–291. (Summary) **89a:62193** 62M10
- Latta, R. A.** (with Rapp, P. E.; Mees, A. I.) Parameter-dependent transitions and the optimal control of dynamical diseases. *Bull. Math. Biol.* **50** (1988), no. 3, 227–253. (Andris Abakus) **89j:92061** 92A15 (58F13)
- Latteux, M.** (with Beauquier, J.; Blattner, M.) On commutative context-free languages. *J. Comput. System Sci.* **35** (1987), no. 3, 311–320. (Howard Straubing) **89b:68036** 68Q45
- (with Turakainen, Paavo) A new normal form for the compositions of morphisms and inverse morphisms. *Math. Systems Theory* **20** (1987), no. 4, 261–271. (Joffroy Beauquier) **89b:68085** 68Q45 (03D05)
- (with Timmerman, E.) Bifidirectional stary transductions. *Inform. Process. Lett.* **28** (1988), no. 1, 1–4. (Christine Charretton) **89b:68084** 68Q45
- Computations and language families. Proceedings of the Fifth International Meeting of Young Computer Scientists (Smolenice Castle, 1988). *Tanulmányok—MTA Számítéstechn. Automat. Kutató Int. Budapest* **20** (1988), 55–65. (see **89g:68002** 68Q45)
- (with Cori, Robert; Sopena, Eric; Roos, Yves) 2-asynchronous automata. *Theoret. Comput. Sci.* **61** (1988), no. 1, 93–102. (Ernst-Erich Doberkat) **89m:68095** 68Q70
- Latushkin, Yu. D.** (with Mamatov, Sh. K.) Operators with a noninvertible expanding shift in Hölder spaces. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 10, 1807–1809, 1838. (N. K. Karapetyants) **89e:47047** 47B38 (45E99, 47G05)
- (with Mamatov, Sh. K.) Singular integral operators with a multivalent shift and with no wandering arcs in Hölder spaces. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 6, 79–82, 92. (M. B. Gorodetskii) **89g:45011** 45E05 (47G05)
- Latsyher, K. S.** (with Klevtur, S. V.; Chetverushkin, B. N.) A cyclic variant of the  $\alpha$ - $\beta$ -iterative algorithm. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1213–1218, 1286; translation in *Differential Equations* **24** (1988), no. 7, 789–792. (Summary) **89h:65166** 65N20 (76–08, 76X05, 86A35)
- Latsyher, V. N.** ★ Комбинаторная теория колец. (Russian) [Combinatorial ring theory] Сложность алгебраических алгоритмов. [Complexity of algebraic algorithms] *Moskov. Gos. Univ., Moscow*, 1987. 105 pp. (Lydia Kronsjö) **89k:68068** 68Q25 (11Y16, 15A63, 68–01)
- Lau, A. K. C.** (with Gaskell, P. H.) Curvature-compensated convective transport: SMART, a new boundedness-preserving transport algorithm. *Internat. J. Numer. Methods Fluids* **8** (1988), no. 6, 617–641. (Summary) **89e:76010** 76–08 (76R99)
- Lau, A. T.** (with Wong, James C. S.) Finite-dimensional invariant subspaces for measurable semigroups of linear operators. *J. Math. Anal. Appl.* **127** (1987), no. 2, 548–558. (P. R. Chernoff) **89c:43006** 43A07 (47D05, 47H10)
- (with Ghahramani, F.) Isometric isomorphisms between the second conjugate algebras of group algebras. *Bull. London Math. Soc.* **20** (1988), no. 4, 342–344. (Kelly McKennon) **89e:43008** 43A20 (46H99)
- (with Graham, Colin C.; Leinert, Michael) Separable translation-invariant subspaces of  $M(G)$  and other dual spaces on locally compact groups. *Colloq. Math.* **55** (1988), no. 1, 131–145. (Paul Milnes) **89j:43004** 43A40
- (with Losert, Viktor) On the second conjugate algebra of  $L_1(G)$  of a locally compact group. *J. London Math. Soc.* (2) **37** (1988), no. 3, 464–470. (Kelly McKennon) **89e:43007** 43A20 (46H99)
- (with Wong, James C. S.) Invariant subspaces for algebras of linear operators and amenable locally compact groups. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 581–586. (L. N. Argabright) **89c:43007** 43A20 (47D05)
- (with Paterson, Alan L. T.) Operator theoretic characterizations of  $[I/N]$ -groups and inner amenability. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 893–897. (Harald Rindler) **89f:43003** 43A15 (22D25, 43A07, 47B38)
- (with Mah, Peter F.) Normal structure in dual Banach spaces associated with a locally compact group. *Trans. Amer. Math. Soc.* **310** (1988), no. 1, 341–353. (Paul Milnes) **89e:43004** 43A10 (43A15, 46B20)
- Lau, Chi Ping** On removable isolated singularities of solutions to a class of quasilinear elliptic equations. *Miniconference on geometry and partial differential equations*, 2 (Canberra, 1986), 72–85. *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 12, Austral. Nat. Univ., Canberra, 1987. (Bernhard Kawohl) **89c:35045** 35J60
- The exterior Dirichlet problem for quasilinear elliptic equations with small boundary data. *Manuscripta Math.* **59** (1987), no. 1, 53–62. (Robert Stephen Cantrell) **89b:35051** 35J65
- Removable singularities of solutions to a class of quasilinear nonuniformly elliptic equations. *J. Differential Equations* **71** (1988), no. 2, 234–245. (Michael Wiegner) **89c:35046** 35J60 (35B60)
- Lau, Dietlind** Über abgeschlossene Mengen linearer Funktionen in mehrwertigen Logiken. (Russian summary) [On closed sets of linear functions in many-valued logics] *J. Inform. Process. Cybernet.* **24** (1988), no. 7–8, 367–381. (Klaus Denecke) **89k:03021** 03B50 (68Q55)
- Maximale Klassen von  $P_k(I)$ . [Maximal classes of  $P_k(I)$ ] *Rostock. Math. Kolloq.* **34** (1988), 71–77. (Piotr Wojtylak) **89k:08002** 08A40 (03B50)
- Lau, H. T.** On solving systems of nonlinear equations by simulation. *Math. Comput. Simulation* **30** (1988), no. 3, 253–256. (Summary) **89d:65056** 65H10 (65C05)
- Lau, K. H.** Conditions for avoiding loss of geometric continuity on spline curves. *Comput. Aided Geom. Design* **5** (1988), no. 3, 209–214. (Stephen Demko) **89j:65015** 65D07 (65D10, 68U05)
- Lau, Ka-Sing** (with Alzaid, A.; Rao, Calyampudi Radhakrishna; Shanbhag, D. N.) Solution of Deny convolution equation restricted to a half line via a random walk approach. *J. Multivariate Anal.* **24** (1988), no. 2, 309–329. (P. Laurie Davies) **89b:60161** 60J15 (62E10)
- Lau, Lawrence J.** (with Ma, Barry K.) Certainty equivalence in expected profit maximization implies impossibility of loss. *Econom. Lett.* **25** (1987), no. 2, 127–130. (Summary) **89a:90039** 90A12
- Lau, S. L.** (with Chen, Shu Hui; Zhang, You Qi) On the internal resonance of multi-degree-of-freedom systems with cubic nonlinearity. *J. Sound Vibration* **128** (1989), no. 1, 13–24. (Summary) **89m:70045** 70K30 (70K40)
- Lau, Tai-Shing** (with Studden, W. J.) On an extremal problem of Fejér. *J. Approx. Theory* **53** (1988), no. 2, 184–194. (Manfred v. Golitschek) **89h:41007** 41A05
- D-optimal designs on the unit  $q$ -ball. *J. Statist. Plann. Inference* **19** (1988), no. 3, 299–315. (Gregory M. Constantine) **89k:62093** 62K05
- Laub, Alan J.** (with Gardiner, Judith D.) Hypercube implementation of some parallel algorithms in control. *Advanced computing concepts and techniques in control engineering (Il Ciocco, 1987)*, 361–390, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 47, Springer, Berlin-New York, 1988. (see **89g:93002** 68U20 (68Q25, 93B40))
- (with Kenney, Charles) Controllability and stability radii for companion form systems. *Math. Control Signals Systems* **1** (1988), no. 3, 239–256. (Hong Xing Zhou) **89j:93006** 93B05 (93B10, 93D15)
- see also **Advanced computing concepts and techniques in control engineering**, **89g:93002**
- Laubenbacher, Reinhard C.** On the  $K$ -theory of  $ZG$ ,  $G$  a nonabelian group of order  $pq$ . *K-Theory* **1** (1987), no. 5, 499–506. (Charles Weibel) **89f:18006** 18F25 (16A54, 19D99)
- Generalized Mayer-Vietoris sequences in algebraic  $K$ -theory. *J. Pure Appl. Algebra* **51** (1988), no. 1–2, 175–192. (L. N. Vaserstein) **89e:18022** 18F25 (19D25)
- de Laubenfels, Ralph** A holomorphic functional calculus for unbounded operators. *Houston J. Math.* **13** (1987), no. 4, 545–548. (László Kérchy) **89c:47020** 47A60
- The operator  $id/dx$ , on  $C[0, 1]$ , is  $C^1$ -scalar. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 215–221. (Henry R. Dowson) **89e:47051** 47B40 (47E05)
- Totally accretive operators. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 551–556. (G. F. Webb) **89b:47044** 47B44 (47D05)
- Vectors of uniqueness for  $id/dx$ . *Studia Math.* **88** (1988), no. 3, 269–274. (Henry R. Dowson) **89d:47040** 47B25 (47E05)
- Functional calculus for generators of uniformly bounded holomorphic semigroups. *Semigroup Forum* **38** (1989), no. 1, 91–103. (Alberto Guzman) **89e:47074** 47D05 (47A60, 47B38)
- Laubin, P.** Étude 2-microlocale de la diffraction. (English summary) [2-microlocal study of diffraction] *Bull. Soc. Roy. Sci. Liège* **56** (1987), no. 4, 295–416. (P. Schapira) **89b:58208** 58G17 (35A20, 35A27)
- Propagation du second front analytique pour les opérateurs hyperboliques à coefficients constants. [Propagation of the second analytic wave front for hyperbolic operators with



- constant coefficients) *Calcul d'opérateurs et fronts d'ondes*, 98–107. *Travaux en Cours*, 29, Hermann, Paris, 1988. (Peter R. Popivanov) **89k:35008** 35A20 (35L25, 58G17)
- (with Esser, P.) Second microlocalization on involutive manifolds with regular projection property. *Resuliate Math.* **14** (1988), no. 3–4, 288–308. (V. Ivrii) **89j:58136** 58G15
- Laudal, Olav Arnfinn** (with Martin, Bernd; Pfister, Gerhard) Moduli of irreducible plane curve singularities with the semigroup  $(a, b)$ . *Proceedings of the conference on algebraic geometry (Berlin, 1985)*, 236–258. *Teubner-Texte Math.*, 92, Teubner, Leipzig, 1986. (Sherwood Washburn) **89a:14033** 14H20 (14B05)
- (with Pfister, Gerhard) ★ Local moduli and singularities. With an appendix by B. Martin and Pfister. *Lecture Notes in Mathematics*, 1310. Springer-Verlag, Berlin-New York, 1988. vi+117 pp. ISBN 3-540-19233-2 (Jonathan M. Wahl) **89h:14008** 14D20 (14B05, 14H20, 32G11)
- Laue, G.** Tauberian and abelian theorems for characteristic functions. (Russian) *Teor. Veroyatnost. i Mat. Statist.* **37** (1987), 78–92, 136. (N. H. Bingham) **89a:60044** 60E10
- Laue, Hartmut** On automorphism groups which normalize an abelian normal subgroup. *Group theory (Bressanone, 1986)*, 73–84. *Lecture Notes in Math.*, 1281, Springer, Berlin-New York, 1987. (Thomas A. Fournelle) **89d:20028** 20F28 (20E36)
- Direct decompositions of ideals and normal subgroups. *Adv. in Math.* **68** (1988), no. 1, 1–22. (John D. P. Meldrum) **89f:20038** 20E99 (16A48, 16A76, 20F99)
- A graph theoretic proof of the fundamental trace identity. *Discrete Math.* **69** (1988), no. 2, 197–198. (J. Sheehan) **89f:05119** 05C50 (15A33)
- Laue, Jürgen** (with Lüst, Dieter; Theisen, Stefan) Four-dimensional supergravity from four-dimensional strings. *Nuclear Phys. B* **304** (1988), no. 2, 236–268. (Pierre Gravel) **89k:83077** 83E50 (81E30, 83E15, 83E30)
- Laue, Michael R.** Holomorphic vacuum bundles over  $\text{Super-Diff}(S^1)/S^1$ . *Classical Quantum Gravity* **5** (1988), no. 4, L73–L75. (From the text) **89f:58023** 58D05 (17B65, 22E65, 58B20, 81E99)
- Lauffenburger, D. A.** (with Linderman, Jennifer J.) Analysis of intracellular receptor/ligand sorting in endosomes. *J. Theoret. Biol.* **132** (1988), no. 2, 203–245. (Summary) **89c:92024** 92A09
- (with Tranquillo, R. T.; Fisher, E. S.; Farrell, B. E.) A stochastic model for chemosensory cell movement: application to neutrophil and macrophage persistence and orientation. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1–2, 287–303. (see **89c:92002**) 92A09 (76Z10)
- Laugvaly, Regimantas** (with Svitra, Donatas) The dynamics of blood formation processes. (Russian. English and Lithuanian summaries) *Mathematical models in biology and medicine*, No. 2 (Russian), 98–131, 190. *Akad. Nauk Litovsk. SSR, Inst. Mat. i Kibernet., Vilnius*, 1987. (Summary) **89a:92025** 92A09 (92A07)
- Laugwitz, Detlef** ★ Zahlen und Kontinuum. (German) [Numbers and continuum] Eine Einführung in die Infinitesimalmathematik. [An introduction to infinitesimal mathematics] Lehrbücher und Monographien zur Didaktik der Mathematik [Textbooks and Monographs on the Didactics of Mathematics], 5. Bibliographisches Institut, Mannheim, 1986. 269 pp. ISBN 3-411-03128-X (Manfred Wolff) **89c:03103** 03H05 (00A05, 01A05, 01A60, 26E35)
- Hidden lemmas in the early history of infinite series. *Aequationes Math.* **34** (1987), no. 2–3, 264–276. (M. E. Muldoon) **89g:01031** 01A50 (01A55, 03H05, 26E35, 40–03)
- (with Rodewald, Bernd) A simple characterization of the gamma function. *Amer. Math. Monthly* **94** (1987), no. 6, 534–536. (P. Anandani) **89h:33003** 33A15
- Infinitely small quantities in Cauchy's textbooks. (French and German summaries) *Historia Math.* **14** (1987), no. 3, 258–274. (Burnett Meyer) **89a:01036** 01A55 (03H05, 26–03, 26E35, 40–03)
- Laumond, Jean-Paul** Obstacle growing in a nonpolygonal world. *Inform. Process. Lett.* **25** (1987), no. 1, 41–50. (Summary) **89c:68208** 68U05 (52–04)
- Launay, Geneviève** Identifiability of a model of compartmentation of serotonin in human platelets. *Analysis and optimization of systems (Antibes, 1988)*, 1039–1050. *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89c:92007** 92A07 (93B30)
- Laure, P.** (with Demay, Y.) Symbolic computation and equation on the center manifold: application to the Couette-Taylor problem. *Comput. & Fluids* **16** (1988), no. 3, 229–238. (M. Yousuff Hussaini) **89f:76002** 76–04 (58F14, 76E15)
- Laurence, Peter** (with Stredulinsky, Edward) A higher-order regularity result for Grad generalized differential equations. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 11, 473–475. (Summary) **89a:35187** 35Q20 (35R99, 76X05)
- Une nouvelle formule pour dériver par rapport aux lignes de niveau et applications. (English summary) [A new formula for differentiating with respect to level curves and applications] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 11, 455–460. (J. S. Lipiński) **89h:26015** 26B05 (31C15, 34A40, 49F20, 58C35)
- Laurent, Monique** (with Deza, M.) Bouquets of matroids,  $d$ -injection geometries and diagrams. *J. Geom.* **29** (1987), no. 1, 12–35. (Summary) **89d:51006** 51D20 (05B35, 51B25)
- (with Conforti, Michele) A characterization of matroidal systems of inequalities. *Discrete Math.* **69** (1988), no. 2, 165–171. (Ulrich Faigle) **89d:05053** 05B35
- Laurent, P. J.** Quadratic convex analysis and splines. *Methods of functional analysis in approximation theory (Bombay, 1985)*, 17–43. *Internat. Schriftenreihe Numer. Math.*, 76, Birkhäuser, Basel-Boston, MA, 1986. (D. Zwick) **89f:41015** 41A15 (41A65, 49A50, 49A55, 90C25)
- Laurent, Yves** Polygone de Newton et  $b$ -fonctions pour les modules microdifférentiels. [The Newton polygon and  $b$ -functions for microdifferential modules] *Ann. Sci. École Norm. Sup.* (4) **20** (1987), no. 3, 391–441. (Introduction) **89h:58282** 58G15 (32C38, 32C40, 35A27, 58G07)
- Laurent-Thiébaud, Christine** (with Demailly, Jean-Pierre) Formules intégrales pour les formes différentielles de type  $(p, q)$  dans les variétés de Stein. (English summary) [Integral formulas for differential forms of type  $(p, q)$  in Stein manifolds] *Ann. Sci. École Norm. Sup.* (4) **20** (1987), no. 4, 579–598. (Jürgen Leiterer) **89g:32023** 32E10 (32A25)
- Sur l'extension des fonctions CR dans une variété de Stein. (English summary) [Extension of CR functions in a Stein manifold] *Ann. Mat. Pura Appl.* (4) **150** (1988), 141–151. (Marek Jarnicki) **89j:32020** 32D15 (32A25)
- Extension de formes différentielles CR. (English summary) [Extension of CR differential forms] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 13, 539–542. (Giuseppe Tomassini) **89c:32039** 32L10 (32F25, 32H99)
- Lauri, Josef** Graph reconstruction—some techniques and new problems. *Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications*, Vol. 2 (Catania, 1986). *Ars Combin.* **24** (1987), B, 35–61. (William L. Kocay) **89f:05128** 05C60
- (with Harary, Frank) The class reconstruction number of maximal planar graphs. *Graphs Combin.* **3** (1987), no. 1, 45–53. (William L. Kocay) **89f:05127** 05C60 (05C75)
- (with Harary, Frank) On the class-reconstruction number of trees. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 153, 47–60. (R. L. Hemminger) **89h:05074** 05C05 (05C60)
- Lauria, Francesco E.** On a learning neural network. *Biomathematics and related computational problems (Naples, 1987)*, 483–496. *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89j:92081** 92A25 (68T05, 92A09)
- Laurie, C.** (with Choi, Man Duen; Radjavi, H.; Rosenthal, Peter M.) On the congruence numerical range and related functions of matrices. *Linear and Multilinear Algebra* **22** (1987), no. 1, 1–5. (Yik-Hoi Au-Yeung) **89c:15030** 15A60 (15A15)
- Laurien, E.** (with Fasel, H.) Numerical investigation of the onset of chaos in the flow between rotating cylinders. *Z. Angew. Math. Mech.* **68** (1988), no. 5, T311–T313. (Introduction) **89k:76059** 76E30 (58F13)
- Laurinćikas, Antanas** A limit theorem for the Riemann zeta-function on the critical line. II. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 3, 489–500. (Krystyna Bartz) **89d:11071** 11M06
- A limit theorem for Dirichlet  $L$ -functions on the critical line. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* **27** (1987), no. 4, 699–710. (Aleksandar Ivić) **89f:11119** 11M06
- A limit theorem for the Riemann zeta function near the critical line. (Russian) *Mat. Sb. (N.S.)* **135** (177) (1988), no. 1, 3–11, 142; translation in *Math. USSR-Sb.* **63** (1989), no. 1, 1–9. (Staffi Jutila) **89c:11132** 11M06
- Lauritzen, Steffen L.** Conjugate connections in statistical theory. *Geometrization of statistical theory (Lancaster, 1987)*, 33–51. *ULDM Publ., Lancaster*, 1987. (Summary) **89j:62009** 62A99 (53B15)
- Laursen, K. B.** Algebraic spectral subspaces and automatic continuity. *Czechoslovak Math. J.* **38** (113) (1988), no. 1, 157–172. (Jörg Eschmeier) **89c:47048** 47B40 (46J35, 47A15)
- Lausch, Huberta** (with Ellers, Erich W.) Length theorems for the general linear group of a module over a local ring. *J. Austral. Math. Soc. Ser. A* **46** (1989), no. 1, 122–131. (Alex Hahn) **89m:15007** 15A23 (20G35)
- Laumann, Clemens** Decomposition trees: structured graph representation and efficient algorithms. *CAAP'88 (Nancy, 1988)*, 28–39. *Lecture Notes in Comput. Sci.*, 299, Springer, Berlin-New York, 1988. (William Gasarch) **89m:68062** 68Q25 (05C05, 68Q15, 68R10)
- Lautenbach, K.** see Pascoletti, Karl-Heinz, 89j:11123
- Lauterbach, Reiner** (with Chow, S.-N.) On bifurcation for variational problems. *Dynamics of infinite-dimensional systems (Lisbon, 1986)*, 57–60. *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 37, Springer, Berlin-New York, 1987. (Editors) **89c:58024** 58E07 (47H15)
- (with Chow, S.-N.) A bifurcation theorem for critical points of variational problems. *Nonlinear Anal.* **12** (1988), no. 1, 51–61. (A. Vanderbauwhede) **89d:58026** 58E07 (58E05)
- (with Chossat, P.) The instability of axisymmetric solutions in problems with spherical symmetry. *SIAM J. Math. Anal.* **20** (1989), no. 1, 31–38. (D. H. Sattinger) **89k:58208** 58F14 (34D20, 35B32)
- Lauterborn, W.** (with Parlitz, U.) Methods of chaos physics and their application to acoustics. *J. Acoust. Soc. Amer.* **84** (1988), no. 6, 1975–1993. (Summary) **89k:58186** 58F13 (76Q05)
- (with Geist, Karlheinz) The nonlinear dynamics of the damped and driven Toda chain. I. Energy bifurcation diagrams. *Phys. D* **31** (1988), no. 1, 103–116. (Summary) **89d:70023** 70K30 (58F14)
- Lautman, Albert** see Mathematics and philosophy: Jean Cavailles, Albert Lautman, 89j:00016
- Laval, H.** (with Donéa, J.) Nodal partition of explicit finite element methods for unsteady diffusion problems. *Comput. Methods Appl. Mech. Engrg.* **68** (1988), no. 2, 189–204. (Summary) **89c:80001** 80–08 (65M60, 80A20)
- Lavall, Irving H.** On the "Bayesability" of chance-constrained programming problems. *Oper. Res. Lett.* **4** (1986), no. 6, 281–283. (Summary) **89a:90101** 90C15
- On the Bayesability of chance-constrained programs: a clarification. *Oper. Res. Lett.* **5** (1986), no. 5, 261. (Editors) **89a:90102** 90C15
- (with Fishburn, Peter C.) State-dependent SSB utility. *Econom. Lett.* **25** (1987), no. 1, 21–25. (Summary) **89h:90012** 90A06
- (with Fishburn, Peter C.) Decision analysis under states-additive SSB preferences. *Oper. Res.* **35** (1987), no. 5, 722–735. (Summary) **89i:90005** 90A05
- (with Fishburn, Peter C.) Context-dependent choice with nonlinear and nontransitive preferences. *Econometrica* **56** (1988), no. 5, 1221–1239. (Marco Scarsini) **89k:90007** 90A06 (90A05, 90A10)
- (with Fishburn, Peter C.) Transitivity is equivalent to independence for states-additive SSB utilities. *J. Econom. Theory* **44** (1988), no. 1, 202–208. (Marco Scarsini) **89f:90018** 90A10 (90A06)
- (with Fishburn, Peter C.) The structure of SSB utilities for decision under uncertainty. *Math. Social Sci.* **15** (1988), no. 3, 217–230. (Janusz Kacprzyk) **89f:90005** 90A05 (90A10, 90D35)
- Lavell, M. J.** (with Tuite, M. P.) Stochastic quantisation and gauge fixing for nonabelian lattice gauge theories. *Nuclear Phys. B* **290** (1987), no. 2, 205–217. (J. A. Brooke) **89c:81096** 81E25 (81–04, 81C20)
- Lavenberg, S. S.** A perspective on queueing models of computer performance. *Queueing theory and its applications*, 59–94. *CWI Monographs*, 7, North-Holland, Amsterdam-New York, 1988. (James W. Snively, Jr.) **89j:68017** 68M20 (60K25, 90B22)
- (with Conway, Adrian E.; de Souza e Silva, Edmundo) Mean value analysis by chain of product form queueing networks. *IEEE Trans. Comput.* **38** (1989), no. 3, 432–442. (Summary) **89k:90080** 90B30 (68M20, 90B22)
- Lavenda, B. H.** (with Scherer, Claudio) The statistical-inference approach to generalized thermodynamics. I. Statistics. (Italian summary) *Nuovo Cimento B* (11) **100** (1987), no. 2, 199–213. (Summary) **89k:82037a** 82A30
- (with Scherer, Claudio) The statistical-inference approach to generalized thermodynamics. II. Thermodynamics. (Italian summary) *Nuovo Cimento B* (11) **100** (1987), no. 2, 215–227. (Summary) **89k:82037b** 82A30

- Bayesian approach to thermostatics. *Internat. J. Theoret. Phys.* **27** (1988), no. 4, 451–472. (Marek Napiórkowski) **89k:80005** 80A05 (80A10)
- Lavendhomme, R.** (with Lucas, Thierry Eugène) Complétude de certaines logiques bimodales. [Completeness of certain bimodal logics] Conference on philosophical logic (Gent, 1985). *Logique et Anal. (N.S.)* **29** (1986), no. 116, 391–407. (W. J. Blok) **89b:03028** 03B45
- **★** Leçons de géométrie différentielle synthétique naïve. (French) [Lessons in elementary synthetic differential geometry] Monographies de Mathématique [Mathematical Monographs], 3. Université Catholique de Louvain, Institut de Mathématique Pure et Appliquée, Louvain-la-Neuve, Centrale d'Achats et Service d'Impression (CIACO), Louvain-la-Neuve, 1987. 205 pp. ISBN 2-87085-112-X (Marta C. Bunge) **89c:58002** 58A05 (18F15, 53-01, 58-01)
- Laver, Richard** (with Foreman, Matthew) Some downwards transfer properties for  $\mathbb{R}_2$ . *Adv. in Math.* **67** (1988), no. 2, 230–238. (J. M. Plotkin) **89b:03090** 03E35
- Lavergne, Christian** (with Mathieu, Jean-René) The jackknife method and the Gauss-Markov estimation. *Probab. Math. Statist.* **8** (1987), 111–116. (Lubomir Kubáček) **89b:62145** 62J05 (62F10)
- Lavers, Peter** Relevance and disjunctive syllogism. *Notre Dame J. Formal Logic* **29** (1988), no. 1, 34–44. (Miroslaw Szatkowski) **89a:03039** 03B45 (03A05)
- Lavery, John E.** Nonoscillatory solution of the steady-state inviscid Burgers' equation by mathematical programming. *J. Comput. Phys.* **79** (1988), no. 2, 436–448. (Summary) **89j:76020** 76-08 (65L10)
- LaVigna, A.** (with Blankenship, Gilmer L.; MacEnany, D. C.; Quadrat, J.-P.; Yan, I.) A MACSYMA/expert system for nonlinear filtering. *Stochastic processes in physics and engineering* (Bielefeld, 1986), 17–61, *Math. Appl.*, 42, Reidel, Dordrecht-Boston, MA, 1988. (Faris A. Badawi) **89j:93114** 93E11 (68Q40, 68T05, 93-04)
- Lavit, Christine** (with Weil, Juergen W.; Hocquemiller, J.; Allouch, D.; Mézard, A.; Vaillant, J.-C.; Delorme, C.; Raoult, J.-C.) **★** Rozpracovaná řešení úloh z vyškli algebr. (Czech) [Worked-out solutions for exercises in higher algebra] Translated from the French and with a preface by Ladislav Beran. *Academia [Publishing House of the Czechoslovak Academy of Sciences]*, Prague, 1987. 653 pp. (Editors) **89i:00014** 00A07 (00A05)
- Laviole, J. L.** Notes on a paper by J. B. Miller: "The foliate density equation revisited" [J. Austral. Math. Soc. Ser. B **27** (1986), no. 4, 387–401; MR **87i:45003**]. *J. Austral. Math. Soc. Ser. B* **29** (1987), no. 2, 216–220. (Š. Schwabik) **89a:45001** 45B05
- Lavrenchenko, S. A.** Irreducible triangulations of a torus. (Russian) *Ukrain. Geom. Sb.* **30** (1987), 52–62, ii. (Dusan Repovš) **89c:57002** 57M15 (05C10, 57Q15)
- Lavrenko, N. I.** (with Borodin, A. L.) Mathematical calendar for the 1987/88 academic year (September–October). (Russian) *Mat. v shkole* **1987**, no. 4, 71. (Editors) **89c:01044** 01A70
- Lavrent'ev, M. M.** (with Alekseev, A. S.; Romanov, V. G.; Romanov, M. E.) Theoretical and numerical questions in seismic tomography. (Russian) *Mathematical modeling in geophysics* (Russian), 35–50, 131, "Nauka" Sibirsk. Otdel., Novosibirsk, 1988. (see **89b:86005**) **86A15** (73D50)
- **see also** Questions of well-posedness and methods for the investigation of inverse problems, **89b:00015**; Some problems in differential equations and discrete mathematics, **89b:00016**; Mathematical modeling in geophysics, **89b:86005** and Mathematical analysis and differential equations, **89i:00015**
- Lavrent'ev, M. M., Jr.** On the solvability of boundary value problems for some parabolic equations with degeneracies. (Russian) *Sibirsk. Mat. Zh.* **28** (1987), no. 2, 79–95, 224. (Summary) **89a:35120** 35K65
- Lavrentovich, O. D.** (with Kurik, M. V.) Defects in liquid crystals: homotopy theory and experimental studies. *Soviet Phys. Uspekhi* **31** (1988), no. 3, 196–224 (1988); translated from *Uspekhi Fiz. Nauk* **154** (1988), no. 3, 381–431 (Russian). (Summary) **89i:82071** 82A57 (58E99, 82-02, 82-05)
- Lavrič, Boris** A note on order complete  $f$ -algebras. *Proc. Amer. Math. Soc.* **100** (1987), no. 3, 414–418. (Melvin Henriksen) **89d:06036** 06F25 (54C10)
- Lavrik, A. F.** (with Berdikhin, B. M.; Voskresenskii, V. E.; Karatsuba, A. A.; Malyshev, A. V.; Postnikov, A. G.; Sprindzhuk, V. G.) Nikolai Grigor'evich Chudakov. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 5(257), 189–190. (Editors) **89b:01037** 01A70
- **see also** Berdikhin, B. M. et al., **89m:01079**
- Lavrik, V. N.** (with Rodrigues Rabago, V. A.) **★** Способ формализации математических структур. (Russian) [A method for the formalization of mathematical structures] Препринт [Preprint], 88-37. *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. 17 pp. (Summary) **89k:08003** 08A99 (68Q99)
- Lavrov, K. A.** (with Krasnopol'skaya, T. S.) Nonlinear oscillations of a cylindrical shell with a fluid under limited excitation. (Russian) *Prikl. Mekh.* **24** (1988), no. 11, 50–58, 134; translation in *Soviet Appl. Mech.* **24** (1988), no. 11, 1079–1086. (Summary) **89k:73038** 73J06 (73L20)
- Lavrov, P. M.** Regularization by means of the generalized zeta-function. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* **30** (1987), no. 5, 3–6. (Henryk Arodz) **89a:81137** 81E99 (11F66, 11F72, 35P99, 58G25)
- (with Odintsov, S. D.; Tyutin, I. V.) Effective actions in theories of quantum gravity. *Soviet J. Nuclear Phys.* **46** (1987), no. 5, 932–936 (1988); translated from *Yadernaya Fiz.* **46** (1987), no. 5, 1570–1577 (Russian). (Summary) **89d:83037** 83C45 (81E99, 83E15)
- (with Bukhbinder, I. L.; Odintsov, S. D.) Unique effective action in Kaluza-Klein quantum theories and spontaneous compactification. *Nuclear Phys. B* **308** (1988), no. 1, 191–202. (Georghe Zet) **89j:83036** 83C45 (81E20, 83E15)
- Law, C. K.** (with Ng, Kung Fu) Monotonic norms in ordered Banach spaces. *J. Austral. Math. Soc. Ser. A* **45** (1988), no. 2, 217–219. (G. J. O. Jameson) **89g:46012** 46A40 (46B30)
- Law, R.** (with Cannings, C.) Conditions for the initial increase of new alleles with frequency dependent selection. *J. Math. Biol.* **25** (1987), no. 5, 465–476. (Edward Pollak) **89c:92036** 92A10
- Lawande, S. V.** (with Jagatap, B. N.) Violation of the Cauchy-Schwarz inequality in cooperative optical double resonance. *Phys. Lett. A* **126** (1988), no. 5-6, 329–335. (Summary) **89a:81184** 81K05 (81-05)
- (with Bhagwat, K. V.) Feynman propagator for the  $\delta$ -function potential. *Phys. Lett. A* **131** (1988), no. 1, 8–10. (Introduction) **89j:81058** 81C35
- Lawden, G. H.** **see** Lejasiewicz, Stanislaw, **89c:26001**
- Lawitzky, Gisbert** (with Böttcher, Axel; Simon, Hans-Ulrich) Worst-case analysis of heuristics for the local microcode optimization problem. *Oper. Res. Lett.* **7** (1988), no. 3, 127–130. (Summary) **89g:90127** 90B35 (05C99, 68N25, 68Q25)
- Lawler, Gregory F.** Loop-erased self-avoiding random walk and the Laplacian random walk. *J. Phys. A* **20** (1987), no. 13, 4565–4568. (Ronald F. Fox) **89a:82007** 82A05 (60J15, 82A41)
- Loop-erased self-avoiding random walk in two and three dimensions. *J. Statist. Phys.* **50** (1988), no. 1-2, 91–108. (Cheng Xun Wu) **89f:82053** 82A51 (60J15, 60K35, 82A41)
- (with Sokal, Alan D.) Bounds on the  $L^2$  spectrum for Markov chains and Markov processes: a generalization of Cheeger's inequality. *Trans. Amer. Math. Soc.* **309** (1988), no. 2, 557–580. (Józef Dodziuk) **89b:60105** 60J05 (58G25, 60J25, 60J27, 82A31)
- Low-density expansion for a two-state random walk in a random environment. *J. Math. Phys.* **30** (1989), no. 1, 145–157. (S. J. Taylor) **89m:60160** 60J15 (60J45)
- Lawless, J. F.** Negative binomial and mixed Poisson regression. (French summary) *Canad. J. Statist.* **15** (1987), no. 3, 209–225. (Girdhar G. Agarwal) **89f:62056** 62J02
- (with Gould, Ann) Consistency and efficiency of regression coefficient estimates in location-scale models. *Biometrika* **75** (1988), no. 3, 535–540. (Summary) **89i:62107** 62J05 (62F12)
- Lawlor, Gary** The angle criterion. *Invent. Math.* **95** (1989), no. 2, 437–446. (Themistocles M. Rassias) **89m:49077** 49F10 (53A10)
- Lawnczak, Anna T.** Large deviations for Gaussian stochastic processes with sample paths in Orlicz spaces. *Canad. J. Math.* **40** (1988), no. 2, 487–501. (Naresh C. Jain) **89i:60064** 60F10 (60G15)
- Lawphongpanich, Siriphong** (with Barton, Russell R.; Hearn, Donald W.) The equivalence of transfer and generalized benders decomposition methods for traffic assignment. *Transportation Res. Part B* **23** (1989), no. 1, 61–73. (Not in MR) **90C08**
- Lawrance, A. J.** (with Lewis, P. A. W.) Higher-order residual analysis for nonlinear time series with autoregressive correlation structures. (French summary) *Internat. Statist. Rev.* **55** (1987), no. 1, 21–35. (Ye Ji Xu) **89f:62149** 62M10
- Lawrence, A. M.** (with Jack, I.; Jones, D. R. T.) Ghost freedom and string actions. *Phys. Lett. B* **203** (1988), no. 4, 378–380. (B. Spence) **89f:81184** 81E99 (53C80, 81E30, 83C45, 83E30)
- Stability of cosmological solutions to string theory effective actions. *Phys. Lett. B* **217** (1989), no. 3, 243–246. (Miao Li) **89m:83043** 83C45 (81E30, 83E30)
- Lawrence, Charles E.** (with Auger, Ivan E.) Algorithms for the optimal identification of segment neighborhoods. *Bull. Math. Biol.* **51** (1989), no. 1, 39–54. (Summary) **89m:92011** 92A09 (92A12)
- Lawrence, Jim** (with Spingarn, Jonathan E.) On fixed points of nonexpansive piecewise isometric mappings. *Proc. London Math. Soc.* (3) **55** (1987), no. 3, 605–624. (Summary) **89d:58063** 58F08 (39B10)
- (with Morris, Walter D., Jr.) Geometric properties of hidden Minkowski matrices. *SIAM J. Matrix Anal. Appl.* **10** (1989), no. 2, 229–232. (S.-C. Fang) **89m:90158** 90C33 (15A39)
- Lawrence, L. Brian** Convergence in the box product of countably many metric spaces. Proceedings of the 1987 Topology Conference (Birmingham, AL, 1987). *Topology Proc.* **12** (1987), no. 1, 85–92. (J. van Mill) **89f:54024** 54B35 (54E35)
- The box product of countably many copies of the rationals is consistently paracompact. *Trans. Amer. Math. Soc.* **309** (1988), no. 2, 787–796. (Judith Roitman) **89i:54053** 54D18 (54A35, 54B10, 54B20)
- Lawrence, Peter D.** (with Marchand, Pauline A.; Cherkas, Dale B.) A discrete-time optimal adaptive control law for a robot arm. *Optimal Control Appl. Methods* **10** (1989), no. 1, 1–20. (Not in MR) **93C75** (70B15, 70Q05, 93C40, 93C55)
- Lawrie, J. B.** Scattering of sound by a heavily loaded finite cylindrical elastic shell. *Quart. J. Mech. Appl. Math.* **41** (1988), no. 3, 445–467. (William C. Meacham) **89j:76077** 76Q05 (73J06)
- Lawrynowicz, Julian** (with Rembicki, J.) Pseudo-Euclidean Hurwitz pairs and the Kaluza-Klein theories. *J. Phys. A* **20** (1987), no. 17, 5831–5848. (Robert Coquereaux) **89b:53131** 53C80 (83E15)
- (with Wojtczak, Leszek) A complex-analytic method of solving the generalized Dirac-Maxwell system for complex-Riemannian metric. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 1-2, 89–95. (Bo-Wei Xu) **89f:81134** 81E20 (58G40)
- **see also** Deformations of mathematical structures, **89i:00010**
- Lawson, H. Blaine, Jr.** (with Yau, Stephen S.-T.) Holomorphic symmetries. *Ann. Sci. École Norm. Sup.* (4) **20** (1987), no. 4, 557–577. (M. Kalka) **89c:32046** 32F15 (32J99, 32M05, 57S15)
- (with Bourguignon, Jean-Pierre) Formules de variations de l'aire et applications. (English summary) [Variational formulas for the area functional and applications] Théorie des variétés minimales et applications (Palaiseau, 1983–1984). *Astérisque* **No. 154-155** (1987), 8, 51–71, 349 (1988). (see **89g:58052**) **58E15**
- La classification des 2-sphères minimales dans l'espace projectif complexe. (English summary) [The classification of minimal 2-spheres in complex projective space] Théorie des variétés minimales et applications (Palaiseau, 1983–1984). *Astérisque* **No. 154-155** (1987), 9, 131–149, 350–351 (1988). (see **89g:58052**) **58E20** (53C42, 58E12)
- Sous-variétés associatives et courbes holomorphes dans  $S^6$ . (English summary) [Associative submanifolds and holomorphic curves in  $S^6$ ] Théorie des variétés minimales et applications (Palaiseau, 1983–1984). *Astérisque* **No. 154-155** (1987), 10, 209–220, 351 (1988). (see **89g:58052**) **58E15** (17D05, 53C40)
- (with Galicki, K.) Quaternionic reduction and quaternionic orbifolds. *Math. Ann.* **282** (1988), no. 1, 1–21. (S. M. Salamon) **89m:53075** 53C25 (22E40, 53C15, 58F05)
- Lawson, Jimmie D.** Maximal subgroups of Lie groups that are total. *Edinburgh Math. Soc. (2)* **30** (1987), no. 3, 479–501. (K. Strambach) **89c:22042** 22E99 (22A15)
- The versatile continuous order. *Mathematical foundations of programming language semantics* (New Orleans, LA, 1987), 134–160, *Lecture Notes in Comput. Sci.*, 298, Springer, Berlin-New York, 1988. (James W. Lea, Jr.) **89g:06023** 06B35 (54F05, 68R05)
- Lawson, Mark V.** Rees matrix covers for a class of abundant semigroups. *Proc. Roy. Soc. Edinburgh Sect. A* **107** (1987), no. 1-2, 109–120. (T. E. Hall) **89b:20131** 20M10
- Lawson, Terry**  $h$ -cobordisms between simply connected 4-manifolds. *Topology Appl.* **28** (1988), no. 1, 75–82. (Ian Hambleton) **89f:57007** 57N13
- Lawton, Gregory** Two-sided cells in the affine Weyl group of type  $\tilde{A}_{n-1}$ . *J. Algebra* **120** (1989), no. 1, 74–89. (Sen Qiu) **89m:20047** 20G05



- Lawvere, F. W.** Taking categories seriously. Seminar and workshop on category theory and applications (Bogotá, 1983). *Rev. Colombiana Mat.* **20** (1986), no. 3-4, 147-178. (Saunders Mac Lane) **89b:18016** 18D15 (00A25, 34C35, 54E35)
- Categories of spaces may not be generalized spaces as exemplified by directed graphs. Seminar and workshop on category theory and applications (Bogotá, 1983). *Rev. Colombiana Mat.* **20** (1986), no. 3-4, 179-185. (Saunders Mac Lane) **89b:18005** 18B25 (05C99, 18F05)
- Lax, Melvin D.** Approximating the solutions of random Fredholm integral equations. *J. Math. Anal. Appl.* **132** (1988), no. 2, 530-538. (Jürgen vom Scheidt) **89g:60198** 60H20 (45B05, 60H25)
- Lax, Peter D.** Mathematics and its applications. (Czech) Translated from the English by O. Kowalski. *Pokroky Mat. Fyz. Astronom.* **32** (1987), no. 6, 309-314. (Editors) **89b:00038** 00A25
- Mathematics and computing. *ICTAM '87: Proceedings of the First International Conference on Industrial and Applied Mathematics (Paris, 1987)*, 137-143. SIAM, Philadelphia, PA, 1988. (see **89c:00015**) 00A25 (00A69)
- Oscillatory solutions of partial differential and difference equations. *Mathematics applied to science (New Orleans, La., 1986)*, 155-170. Academic Press, Boston, MA, 1988. (Pavel Krejčí) **89f:35006** 35B05 (35Q20, 39A10)
- (with Goodman, Jonathan) On dispersive difference schemes. I. *Comm. Pure Appl. Math.* **41** (1988), no. 5, 591-613. (Randall J. LeVeque) **89f:65094** 65M10 (35Q20)
- (with LeVeque, Randall J.; Peskin, Charles S.) Solution of a two-dimensional cochlea model with fluid viscosity. *SIAM J. Appl. Math.* **48** (1988), no. 1, 191-213. (T. W. Barrett) **89b:92007** 92A06 (92A09)
- Lax, R. F.** (with Widland, Carl) Weierstrass points on rational cuspidal curves. (Italian summary) *Boll. Un. Mat. Ital. A (7)* **2** (1988), no. 1, 65-71. (Joseph Harris) **89b:14050** 14H45 (14F07)
- Laxton, R. R.** Some mathematical problems in seriation. *Acta Appl. Math.* **10** (1987), no. 3, 213-235. (Summary) **89c:92110** 92A90
- Lay, David C.** (with Ellis, Robert L.; Gohberg, I.) On two theorems of M. G. Krein concerning polynomials orthogonal on the unit circle. *Integral Equations Operator Theory* **11** (1988), no. 1, 87-104. (J. V. Baxley) **89d:42030** 42C05 (46N05)
- Lay, Kuen-Tsair** see Lai, K'un Ts'ai
- Layek, A. K.** Directional qualitative cluster sets. *Ann. Polon. Math.* **48** (1988), no. 2, 167-173. (Paul D. Humke) **89j:30042** 30D40
- Directional cluster sets and directional essential cluster sets. *Bull. London Math. Soc.* **20** (1988), no. 1, 45-50. (George L. Csordas) **89c:30086** 30D40 (30G15)
- Layton, W.** (with Du, Qiang; Gunzburger, Max D.) A low dispersion, high accuracy finite element method for first order hyperbolic systems in several space variables. Hyperbolic partial differential equations. *V. Comput. Math. Appl.* **15** (1988), no. 6-8, 447-457. (Summary) **89j:65070** 65N30
- Laywine, C. F.** (with Mayberry, John Patterson) A simple construction giving the two nonisomorphic triangle-free 3-colored  $K_{16}$ 's. *J. Combin. Theory Ser. B* **45** (1988), no. 1, 120-124. (Edward R. Scheinerman) **89f:05081** 05C15 (05C55)
- (with Bell, Howard E.; Klein, Abraham A.; Jenkyns, T. A.) Rings with permutable products. *Resultate Math.* **13** (1988), no. 1-2, 12-22. (M. M. Parmenter) **89a:16043** 16A70
- Lazar, Aldo** (with Tsui, S.-K.; Wright, Stephen James) Pure state extensions of the trace on the Choi algebra. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 957-964. (C. J. K. Batty) **89c:46076** 46L30
- Lazard, Daniel** Quantifier elimination: optimal solution for two classical examples. *J. Symbolic Comput.* **5** (1988), no. 1-2, 261-266. (Maurice Mignotte) **89k:12017** 12L05 (03B35, 03C10, 11U05, 51-04, 68T15)
- Lazarenko, L. A.** On a generalization of the Goursat problem for a hyperbolic equation with two lines of degeneracy. (Russian) *Differential equations and mathematical physics (Russian)*, 130-133. *Kuibyshev. Gos. Ped. Inst., Kuibyshev*, 1985. (see **89f:35006**) 35L80
- The Cauchy problem for a hyperbolic equation with two lines of degeneracy. (Russian) *Analytic methods for solving differential equations (Russian)*, 59-62, 147. *Kuibyshev. Gos. Univ., Kuibyshev*, 1986. (Summary) **89b:35221** 35L80
- (with Volkodavov, V. F.) Three problems in boundary layers for an equation of hyperbolic type in [higher-dimensional] space. (Russian) *Mathematical physics (Russian)*, 23-27. *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (A. Dzhrnuev) **89b:35182** 35L20
- Lazarev, A. V.** Convergence of the  $i$ -method for solving the discrete Chebyshev approximation problem. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 2, 22-26, 132. (Zhen Xiang Xiong) **89b:65048** 65D15 (41A50)
- Convergence of the  $i$ -method for solving nonlinear minimax problems. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* **1987**, vyp. 3, 106-108, 130. (Summary) **89d:90195** 90C30 (65K05)
- Lazarev, K. P.** (with Pokorniy, Yu. V.) Some oscillation theorems for multipoint problems. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 4, 658-670, 733. (Russell C. Thompson) **89b:34060** 34B25 (34B10, 34C10)
- Lazarev, M. P.** (with Grinfeld, M. A.) Sufficient conditions for the instability of coherent interfaces. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 4, 836-840; translation in *Soviet Phys. Dokl.* **33** (1988), no. 6, 423-425. (From the introduction) **89k:73004** 73B30
- Lazareva, B. V.** (with Vaninskii, K. L.) Conditions for the ergodicity and irreversibility of a homogeneous Markov chain in the positive quadrant. (Russian) *Problemy Peredachi Informatsii* **24** (1988), no. 1, 105-110; translation in *Problems Inform. Transmission* **24** (1988), no. 1, 82-86. (M. Iosifescu) **89d:60129** 60J15 (94A40)
- Lazareva, V. B.** Parallelizable three-webs formed by pencils of circles. (Russian) *Webs and quasigroups (Russian)*, 74-77. *Kalinin. Gos. Univ., Kalinin*, 1988. (Vladislav Goldberg) **89g:53020** 53A60
- Lazarides, G.** (with Shafi, Q.) Matter parities in three-generation superstring models. *Nuclear Phys. B* **308** (1988), no. 2-3, 451-461. (Summary) **89j:81196** 81E99 (81E30, 81G20, 83E30)
- (with Shafi, Q.) Freely acting  $Z_3$  symmetries of a Yau manifold and three-generation superstring models. *Phys. Lett. B* **206** (1988), no. 1, 32-40. (Andrew A. Bytsenko) **89m:83087** 83E15 (53C80, 81E30, 83E30)
- (with Ganoulis, N.) Generalized index theorem for string superconductivity in realistic models. *Phys. Rev. D* **38** (1988), no. 2, 547-551. (Yi-Gao Liang) **89k:81141** 81E99 (58G10, 58G40, 81E30)
- (with Shafi, Q.; Tomaras, T. N.) Nonexistence of spherically symmetric monopole solutions in the three-generation superstring model. *Phys. Rev. D* **39** (1989), no. 4, 1239-1241. (Summary) **89m:81151** 81E99 (81E30)
- Lazaridis, P. P.** (with Panagiotopoulos, P. D.) Boundary minimum principles for the unilateral contact problems. *Internat. J. Solids and Structures* **23** (1987), no. 11, 1465-1484. (C. Dierieck) **89c:73086** 73T05
- Lazarov, Connor** A relation between index and exotic classes. *Index theory of elliptic operators, foliations, and operator algebras (New Orleans, LA/Indianapolis, IN, 1986)*, 125-143. *Contemp. Math.*, 70. Amer. Math. Soc., Providence, RI, 1988. (Christopher W. Stark) **89m:58190** 58G10 (19K56, 46L99, 57R20, 57R30)
- Lazarov, R. D.** (with Vassilevski, P. S.; Margenov, S. D.) Solving elliptic problems by the domain decomposition method using preconditioning matrices derived by multilevel splittings of the finite element matrix. *Supercomputing (Athens, 1987)*, 826-835. *Lecture Notes in Comput. Sci.*, 297. Springer, Berlin-New York, 1988. (Summary) **89b:65270** 65N30 (65W05)
- Lazarsfeld, Robert** (with Green, Mark) A deformation theory for cohomology of analytic vector bundles on Kähler manifolds, with applications. *Mathematical aspects of string theory (San Diego, Calif., 1986)*, 416-440. *Adv. Ser. Math. Phys.*, 1. World Sci. Publishing, Singapore, 1987. (see **89m:81001**) 32L10 (32G10, 58G05)
- A sharp Castelnuovo bound for smooth surfaces. *Duke Math. J.* **55** (1987), no. 2, 423-429. (Werner Kleinert) **89d:14007** 14C20 (14E25, 14F05, 14J25)
- (with Green, Mark) Deformation theory, generic vanishing theorems, and some conjectures of Enriques, Catanese and Beauville. *Invent. Math.* **90** (1987), no. 2, 389-407. (Sheldon H. Katz) **89b:32025** 32G10 (14C22, 14H15)
- Lazdina, G. K.** A lower bound on reversal complexity for Turing machines. (Russian) *Probabilistic methods and cybernetics*, No. 22 (Russian), 3-13. *Kazan. Gos. Univ., Kazan'*, 1987. (Juraj Hromkovič) **89f:68031** 68Q05 (03D15, 68Q45)
- Lazer, A. C.** (with McKenna, P. J.) A symmetry theorem and applications to nonlinear partial differential equations. *J. Differential Equations* **72** (1988), no. 1, 95-106. (Milan Kučera) **89b:47087** 47H15 (34G20, 35B99)
- (with Solimini, S.) Nontrivial solutions of operator equations and Morse indices of critical points of min-max type. *Nonlinear Anal.* **12** (1988), no. 8, 761-775. (Filomena Pacella) **89i:58018** 58E05
- (with McKenna, P. J.) A semi-Fredholm principle for periodically forced systems with homogeneous nonlinearities. *Proc. Amer. Math. Soc.* **106** (1989), no. 1, 119-125. (Noel G. Lloyd) **89i:34056** 34C25 (58E05, 58F22)
- Laziev, M. E.** (with Savvidi, G. K.) Transversity of a massless relativistic membrane. *Phys. Lett. B* **198** (1987), no. 4, 451-454. (David E. Betounes) **89c:81140** 81E99 (53C80, 81E30)
- Lazim, Rafael** An exact penalty function and relaxation approach for solving decomposable nonlinear programs. *SIAM J. Control Optim.* **26** (1988), no. 1, 127-137. (Vladimir I. Venets) **89b:90188** 90C30
- Lazo Cortés, Manuel** (with Morgado Morales, Eberto R.) The Sylow  $p$ -groups of the automorphism group of a finite homocyclic  $p$ -group of rank 2. (Spanish. English summary) *Cienc. Mat. (Havana)* **8** (1987), no. 2, 81-87. (F. Pérez Monasor) **89g:20040** 20D20 (20D45, 20K01)
- Lazaropoulos, C.** (with Markakis, S.) Intrinsic differentials in buckling theory—cuspidals. *Bull. Soc. Math. Grèce (N.S.)* **27** (1986), 85-94. (R. Kodnár) **89d:73027** 73H05
- Lazrak, O.** (with Le Yaouanc, A.; Oliver, L.; Pène, O.; Raynal, J.-C.; Jarfi, M.) Critical line of symmetry restoration in lattice SU(2) QCD. *Phys. Lett. B* **201** (1988), no. 3, 345-352. (Summary) **89b:81167** 81E25 (81G05)
- Lazrieva, N. L.** (with Torondzhadze, T. A.) Joint asymptotic distribution of the maximum likelihood estimator and  $M$ -estimator. *Probability theory and mathematical statistics (Kyoto, 1986)*, 259-266. *Lecture Notes in Math.*, 1299. Springer, Berlin-New York, 1988. (Tapas K. Chandra) **89c:62023** 62E20
- Lazutkin, V. F.** Splitting of separatrices for a standard family of area-preserving transformations. (Russian) *Wave propagation. Scattering theory (Russian)*, 32-41, 256-257. *Probl. Mat. Fiz.*, 12. *Leningrad. Univ., Leningrad*, 1987. (Li Li) **89b:58146** 58F14 (34C20, 58F05, 58F30, 70H05)
- The signature of invertible symmetric matrices. (Russian) *Mat. Zametki* **44** (1988), no. 2, 202-207, 287; translation in *Math. Notes* **44** (1988), no. 1-2, 592-595. (Anna Lee) **89i:15032** 15A57 (15A99)
- Lazzari, B.** (with Vuk, Elena) An existence and uniqueness theorem for a dynamical problem in linear viscoelasticity. (Italian. English summary) *Atti Sem. Mat. Fis. Univ. Modena* **35** (1987), no. 2, 309-317 (1988). (From the text) **89m:73020** 73F15 (35Q20)
- Asymptotic behavior of electromagnetic energy inside a bounded domain with dissipative boundary. (Italian. English summary) *Rend. Circ. Mat. Palermo (2)* **36** (1987), no. 1, 63-77. (Piero Bassanini) **89j:35028** 35B40 (35Q20, 78A25)
- Lazzari, Claudio** (with Battelli, Flaviano) On the existence of periodic solutions for perturbed systems. (Italian summary) *Boll. Un. Mat. Ital. B (7)* **2** (1988), no. 3, 485-495. (Zengrong Liu) **89k:34097** 34E10 (34C25, 58F20, 70K99)
- Lazzizzera, I.** (with Teocchioli, G.; Zerbini, S.) Stochastic quantization of linearized gravitational theories. *Phys. Lett. B* **200** (1988), no. 3, 327-330. (Summary) **89d:83038** 83C45 (81E99)
- A Hamiltonian formulation of Yang-Mills theories in the pure temporal gauge. *Phys. Lett. B* **210** (1988), no. 1-2, 188-192. (Summary) **89b:81111** 81E13
- Lbekkouri, Aboubakar** Separable ring extensions and cohomological dimension. *J. Algebra* **117** (1988), no. 2, 363-373. (Wolfgang Grötz) **89j:16041** 16A60
- chan tkhi Le** see Chan Tkhi Le
- Le, Chap T.** A new rank test against ordered alternatives in  $K$ -sample problems. *Biometrical J.* **30** (1988), no. 1, 87-92. (Not in MR) 62G10
- Le, Hui Ling** (with Kendall, David G.) The structure and explicit determination of convex-polygonally generated shape-densities. *Adv. in Appl. Probab.* **19** (1987), no. 4, 896-916. (Summary) **89g:60032** 60D05
- Strong laws of large numbers for random nonnegative closed convex sets in  $\mathbb{R}^d$ . (Chinese. English summary) *Adv. in Math. (Beijing)* **17** (1988), no. 2, 196-200. (Lin-Cheng Zhao) **89i:60025** 60D05 (60F15)
- The structure and explicit determination of shape densities generated by convex polygons. (Chinese. English summary) *Xi'an Jiaotong Daxue Xuebao* **22** (1988), no. 2, 13-18. (Summary) **89i:52006** 52A22

- Le, V. X. (with Safonov, M. G.) An alternative solution to the  $H_\infty$ -optimal control problem. *Systems Control Lett.* **10** (1988), no. 3, 155-158. (Andrzej W. Olbrot) **89e:93062** 93B28 (93B50)
- Le, Xiao Yang Two function classes defined by subordination. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* **21** (1987), no. 4, 510-516. (De Lin Tan) **89i:30010** 30C45 (30C50)
- Lea, Cheun-Der (with Puri, Madan L.) Asymptotic properties of perturbed empirical distribution functions evaluated at a random point. *J. Statist. Plann. Inference* **19** (1988), no. 2, 201-215. (Zuzana Prášková) **89g:60108** 60F15 (60F17, 62G30)
- Leach, John Underemployment with liquidity-constrained multiperiod firms. *J. Econom. Theory* **44** (1988), no. 1, 81-98. (Summary) **89c:90019** 90A10 (90A16)
- Leach, P. G. L. (with Gorrington, V. M.) Hamilton-like vectors for a class of Kepler problems with a force proportional to the velocity. *Celestial Mech.* **41** (1987/88), no. 1-4, 125-130. (Fu Tong) **89g:70006** 70F05 (70D05)
- (with Blecher, M. H.) The Schrödinger equation for the  $x^2 + \lambda x^2/(1 + gx^2)$  interaction. *J. Phys. A* **20** (1987), no. 17, 5923-5927. (Summary) **89b:81030** 81C05 (34B25)
- (with Gorrington, V. M.) Conserved vectors for the autonomous system  $\dot{r} + g(r, \theta)\dot{\theta} + h(r, \theta)\dot{\theta} = 0$ . *Phys. D* **27** (1987), no. 1-2, 243-248. (Eduardo Piña) **89d:70003** 70D05 (58F99)
- (with Euler, N.; Mahomed, F. M.; Steeb, W.-H.) Symmetry vector fields and similarity solutions of a nonlinear field equation describing the relaxation to a Maxwell distribution. *Internat. J. Theoret. Phys.* **27** (1988), no. 6, 717-723. (C. Rogers) **89h:58212** 58G35 (35Q20)
- (with Feix, M. R.; Bouquet, S.) Analysis and solution of a nonlinear second-order differential equation through rescaling and through a dynamical point of view. *J. Math. Phys.* **29** (1988), no. 12, 2563-2569. (Manfred Andrie) **89m:34015** 34A34 (34C20, 58F35, 70K99)
- (with Gorrington, V. M.) A conserved Laplace-Runge-Lenz-like vector for a class of three-dimensional motions. *Phys. Lett. A* **133** (1988), no. 6, 289-294. (Summary) **89i:70012** 70D99 (70F05)
- (with Flessas, George P.; Gorrington, V. M.) A Rodrigues formula approach to determining closed-form solutions to the Schrödinger equation for symmetric anharmonic oscillators. *J. Math. Phys.* **30** (1989), no. 2, 406-412. (Ernest R. Davidson) **89k:81025** 81C05 (33A65)
- see also Finite-dimensional integrable nonlinear dynamical systems, **89f:58075**
- Leachman, Robert C. (with Gascon, André) A heuristic scheduling policy for multi-item, single-machine production systems with time-varying, stochastic demands. Focused issue on heuristics. *Management Sci.* **34** (1988), no. 3, 377-390. (Summary) **89b:90106** 90B35
- (with Gascon, André) A dynamic programming solution to the dynamic, multi-item, single-machine scheduling problem. *Oper. Res.* **36** (1988), no. 1, 50-56. (Summary) **89b:90104** 90B35
- Leaci, A. (with Carriero, M.; Pascali, E.) On the semicontinuity and the relaxation for integrals with respect to the Lebesgue measure added to integrals with respect to a Radon measure. *Ann. Mat. Pura Appl.* (4) **149** (1987), 1-21. (Carlo Bardaro) **89d:49011** 49A50 (49D20)
- (with Carriero, M.; Pascali, E.) On the lower semicontinuity of a class of integral functionals. Proceedings of the International Workshop on Integral Functionals in the Calculus of Variations (Trieste, 1985). *Rend. Circ. Mat. Palermo* (2) Suppl. No. 15 (1987), 155-161. (Han Ch'ing Lai) **89f:49016** 49A50 (28C05, 46N05)
- Leacock, Robert A. The physical properties of linear and action-angle coordinates in classical and quantum mechanics. *Found. Phys.* **17** (1987), no. 8, 799-807. (P. G. L. Leach) **89a:81029** 81C25 (70H15)
- Leadbetter, M. R. (with Rootzén, Holger) Extremal theory for stochastic processes. *Ann. Probab.* **16** (1988), no. 2, 431-478. (Michael R. Chernick) **89b:60098** 60G10 (60F05, 60G15, 60G17)
- Leaf, G. K. (with Kaper, Hans G.; Matkowsky, B. J.; Olmstead, W. E.) Dynamics of nonadiabatic premixed flames in a gravitational field. *SIAM J. Appl. Math.* **47** (1987), no. 3, 544-555. (V. L. Roytburd) **89b:80087** 80A25 (35K99)
- (with Thompson, C. P.; Vanka, S.) Application of a multigrid method to a buoyancy-induced flow problem. *Multigrid methods* (Copper Mountain, CO, 1987), 605-629. *Lecture Notes in Pure and Appl. Math.*, **110**, Dekker, New York, 1988. (Summary) **89f:76013** 76-08 (65P05, 76D05)
- Leahy, R. M. (with Goutis, C. E.) Optimal feasible solutions for signal restoration and reconstruction. *Mathematics in signal processing* (Bath, 1985), 281-298. *Inst. Math. Appl. Conf. Ser. New Ser.*, **12**, Oxford Univ. Press, New York, 1987. (see **89b:94004**) **94A12**
- Lezándiz Leal, José Manuel see Ferrándiz Leal, José Manuel
- Leal, L. G. (with Ascoli, E. P.; Dandy, D. S.) On distortion functions for the strong constraint method of numerically generating orthogonal coordinate grids. *J. Comput. Phys.* **72** (1987), no. 2, 513-519. (Stanly L. Steinberg) **89h:65147** 65M50 (65N50)
- Lozano Leal, Rogelio see Lozano Leal, Rogelio
- Leal Ferreira, P. (with Amorim, A. E. A.) Perihelium shifts in central potentials. *An. Acad. Brasil. Ciênc.* **60** (1988), no. 1, 13-18. (Summary) **89j:70010** 70F05
- Leamer, Edward E. Bid-ask spreads for subjective probabilities. *Bayesian inference and decision techniques*, 217-232. *Stud. Bayesian Econometrics Statist.*, **6**, North-Holland, Amsterdam-New York, 1986. (James M. Dickey) **89c:62007** 62A15 (62P20)
- Léandre, Rémi Densité en temps petit d'un processus de sauts. [Density of a jump process for small times] *Séminaire de Probabilités, XXI*, 81-99. *Lecture Notes in Math.*, **1247**, Springer, Berlin-New York, 1987. (Sheng Wu He) **89f:60179** 60H07 (60J75)
- Intégration dans la fibre associée à une diffusion dégénérée. [Integration in the fiber associated with a degenerate diffusion] *Probab. Theory Related Fields* **76** (1987), no. 3, 341-358. (R. W. R. Darling) **89g:60247** 60B60 (58G32, 60H20)
- Quantitative and geometric applications of the Malliavin calculus. *Geometry of random motion* (Ithaca, N.Y., 1987), 173-196. *Contemp. Math.*, **73**, Amer. Math. Soc., Providence, RI, 1988. (Steven Rosenberg) **89k:58295** 58G32 (58G10, 60J65)
- Calcul des variations sur un brownien subordonné. [Calculus of variations on a subordinate Brownian motion] *Séminaire de Probabilités, XXII*, 414-433. *Lecture Notes in Math.*, **1321**, Springer, Berlin-New York, 1988. (Daniel Ocone) **89m:60201** 60J75 (60H07, 60H10)
- Applications quantitatives et géométriques du calcul de Malliavin. [Quantitative and geometric applications of the Malliavin calculus] *Stochastic analysis* (Paris, 1987), 109-133. *Lecture Notes in Math.*, **1322**, Springer, Berlin-New York, 1988. (D. W. Stroock) **89m:60133** 60H07 (58G32)
- Régularité de processus de sauts dégénérés. II. (English summary) [Regularity for degenerate pure jump processes. II] *Ann. Inst. H. Poincaré Probab. Statist.* **24** (1988), no. 2, 209-236. (Ali Süleyman Üstünel) **89j:60103** 60J30 (60J75)
- hà Lê Anh see Hà Lê Anh
- Leaver, Edward W. Erratum: "Spectral decomposition of the perturbation response of the Schwarzschild geometry" [Phys. Rev. D (3) **34** (1986), no. 2, 384-408; MR **87g:83057**]. *Phys. Rev. D* (3) **38** (1988), no. 2, 725. (Editors) **89b:83016** 83C25 (83C15, 83C30)
- Leavitt, W. G. (with van Leeuwen, L. C. A.) Hereditariness of upper radicals. *Contributions to general algebra*, 4 (Krems, 1985), 79-84. *Hölder-Pichler-Tempsky, Vienna*, 1987. (Terry L. Jenkins) **89d:16009** 16A21
- Cogenerators of radicals. *Acta Math. Hungar.* **51** (1988), no. 1-2, 79-83. (R. L. Tange-man) **89d:16010** 16A21 (17A65)
- A note on minimal generators of hereditary radicals. *Period. Math. Hungar.* **19** (1988), no. 1, 41-47. (Terry L. Jenkins) **89d:16011** 16A21
- Le Harz, P. (with Elencwajg, G.) Explicit computations in Hilb<sup>2</sup>. *Algebraic geometry* (Sundance, UT, 1986), 76-100. *Lecture Notes in Math.*, **1311**, Springer, Berlin-New York, 1988. (A. A. Iarrobino, Jr.) **89m:14030** 14N10 (14C05, 14C25)
- Lebeau, G. Problème de Cauchy semi-linéaire en 3 dimensions d'espace. Un résultat de finitude. [A finiteness result for a three-dimensional semilinear Cauchy problem] *Séminaire sur les équations aux dérivées partielles 1986-1987*, Exp. No. 1, 5 pp., *École Polytech., Palaiseau*, 1987. (Peter R. Popivanov) **89b:35215** 35L70 (58G16)
- (with Bardos, Claude; Rauch, J.) Scattering frequencies and Gevrey 3 singularities. *Invent. Math.* **90** (1987), no. 1, 77-114. (David Guriar) **89b:35252** 35P25 (58G17, 58G25)
- (with Lochak, P.) On the second Painlevé equation: the connection formula via a Riemann-Hilbert problem and other results. *J. Differential Equations* **68** (1987), no. 3, 344-372. (B. P. Belinskii and A. R. Its) **89c:34054** 34E05 (35Q15, 58F07)
- Problème de Cauchy semi-linéaire en 3 dimensions d'espace. Un résultat de finitude. [The semilinear Cauchy problem in three space dimensions. A finiteness result] *J. Funct. Anal.* **78** (1988), no. 1, 185-196. (Pascal Laubin) **89c:35101** 35L70 (35A20, 58G16)
- Lebedenko, V. M. \* О системах образующих прямых сумм линейных алгебр и прямых произведений групп. (Russian) [Systems for generating direct sums of linear algebras and direct products of groups] With an English summary. *Сообщения Объединенного Института Ядерных Исследований, Дубна* [Communications of the Joint Institute for Nuclear Research, Dubna], R5-88-187. *Joint Inst. Nuclear Res., Dubna*, 1988. 5 pp. (Summary) **89f:17003** 17B05 (20E34)
- Lebedev, A. A. A mathematical model for description of random and indefinite factors from unified positions. *Systems analysis and simulation 1988*, 1 (Berlin, 1988), 130-132. *Math. Res.*, **46**, Akademie-Verlag, Berlin, 1988. (Detlef Plachky) **89m:60008** 60A10 (28A12, 28C05)
- Lebedev, A. L. Ideal observability of discrete systems with delay. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 11, 1998-2001, 2023. (B. Sh. Mordukhovich) **89b:93026** 93B07 (34K05, 93B25, 93C55)
- Convergence with respect to a functional of discrete approximations in controllable systems with delay. (Russian. English summary) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1987**, no. 6, 35-39, 125. (Erwin Kozakiewicz) **89c:34134** 34K35 (39A12, 93B40)
- Duality of control problems, and filtering in linear time-dependent systems with delay. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1988**, no. 3, 41-45, 78. (Summary) **89f:49008** 49A55 (34K35, 93E11)
- Lebedev, A. V. Some  $C^*$  methods that are applicable in the study of algebras associated with automorphisms and endomorphisms. (Russian) *Vestsi Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 5, 118. (Not in MR) **46L40**
- Lebedev, D. R. (with Radul, A.) A periodic equation of a two-layer fluid: the dressing-down method. (Russian. English summary) *Teoret. Mat. Fiz.* **70** (1987), no. 2, 202-210. (Summary) **89f:58070** 58F07 (35Q20, 76V05)
- (with Morozov, A. Yu.) Statistical sums of strings on hyperelliptic surfaces. *Nuclear Phys. B* **302** (1988), no. 1, 163-188. (Werner Kleinert) **89j:81197** 81E99 (14H15, 14K25, 32G15, 58A50, 81E30)
- Lebedev, S. A. The principal lines of development of classical induction. (Russian) *Inductive logic and the shaping of scientific knowledge* (Russian), 107-120. "Nauka", Moscow, 1987. (Siegfried Gottwald) **89c:03012** 03A05 (03B48)
- Construction of  $t$ -schemes with given parameters. (Russian) *Mathematical methods for optimization and control in systems* (Russian), 150-154. *Kalinin. Gos. Univ., Kalinin*, 1987. (S. Mejza) **89h:05017** 05B05 (62K10)
- Lebedev, S. S. (with Zhargal, D.) Integer programming problems with imprecisely specified right-hand sides. (Russian) *Ekonom. i Mat. Metody* **24** (1988), no. 3, 518-527. (Janusz Kacprzyk) **89k:90112** 90C09 (90C10, 90C11, 90C15)
- Lebedev, V. A. (with Bogomolov, S. V.) Convergence of the Euler difference scheme for the solution of a system of stochastic differential equations in the particle method for the Boltzmann equation. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 8, 1264-1267, 1280. (Summary) **89f:82031** 82A40 (82-08)
- Lebedev, V. I. (with Knyazev, Andrei Vladimirovich) Estimates for convergence and analysis of the optimality of iterative methods for the simultaneous computation of several eigenvectors. (Russian) *Computational methods in linear algebra* (Russian) (Moscow, 1982), 94-114. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1983. (Zdeněk Dostál) **89b:65094** 65F15
- (with Konyuev, S. I.) \* Численное исследование эффективности комбинированных итерационных методов. (Russian) [Numerical investigation of the efficiency of combined iterative methods] Печать [Preprint], 136. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1986. 40 pp. (J. Segethová) **89b:65082** 65F10
- \* Метод композиции. (Russian) [The composition method] With an appendix by Lebedev and A. L. Skorokhodov. *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1986. 192 pp. (Florica Luban) **89b:65159** 65K10
- On a method for obtaining continuous spectral functions for orthogonal polynomials. (Russian) *Computational processes and systems*, No. 4 (Russian), 265-270, "Nauka", Moscow, 1986. (Muharrem Berisha) **89b:42017** 42C05



- Lebedev, T. T.** (with Kozerskaya, L. N.; Sergienko, T. I.) Problems of the parametric analysis and investigation of the stability of multicriterial problems of integer linear programming. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 3, 41–44, 132; translation in *Cybernetics* 24 (1988), no. 3, 320–324. (Summary) **89h:90226** 90C31 (90C10)
- (with Kozerskaya, L. N.; Sergienko, T. I.) Necessary and sufficient conditions for the stability of multicriterial problems of integer linear programming. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 10, 76–78, 88. (Summary) **89h:90116** 90C10 (90C31)
- Le Bellac, Michel** ★ Des phénomènes critiques aux champs de jauge. (French) [From critical phenomena to gauge fields] Une introduction aux méthodes et aux applications de la théorie quantique des champs. [An introduction to the methods and applications of quantum field theory] Savoirs Actuels. [Current Scholarship] InterEditions, Paris; Éditions du Centre National de la Recherche Scientifique (CNRS), Paris, 1988. 639 pp. ISBN 2-7296-0197-X (Claude Itzykson) **89h:81003** 81-02 (81E13, 82A25)
- Le Bihan, Jean** (with Calvez, Léon-Claude) A new class of functions for transient analysis of coaxial cables terminated with parallel resistor and capacitor. *IEEE Trans. Circuits and Systems* 35 (1988), no. 5, 512–518. (Summary) **89h:94033** 94C05 (44A10)
- Le Blanc, Larry J.** (with Boyce, David E.) The network design problem. A comment on the paper by LeBlanc and Boyce: "A bilevel programming algorithm for exact solution of the network design problem with user-optimal flows" [Transportation Res. Part B 20 (1986), no. 3, 259–265]. *Transportation Res. Part B* 22 (1988), no. 3, 236–237. (Not in MR) **90C35**
- Le Blanc, Richard** (with Rowe, D. J.) Decomposition of the  $SO^*(8)$  enveloping algebra under  $U(4) \supset U(3)$ . *J. Math. Phys.* 28 (1987), no. 6, 1231–1236. (Summary) **89i:17012** 17B35 (22E70, 81C40)
- (with Hecht, K. T.) New perspective on the  $U(n)$  Wigner-Racah calculus. II. Elementary reduced Wigner coefficients for  $U(n)$ . *J. Phys. A* 20 (1987), no. 14, 4613–4635. (R. Mirman) **89g:81025a** 81C40 (20C35, 22E70, 81G30)
- New perspective on the  $U(n)$  Wigner-Racah calculus. III. Applications to  $U(2)$  and  $U(3)$ . *J. Phys. A* 20 (1987), no. 14, 5015–5021. (R. Mirman) **89g:81025b** 81C40 (20C35, 22E70, 81G30)
- (with Rowe, D. J.; Hecht, K. T.) Vector coherent state theory and its application to the orthogonal groups. *J. Math. Phys.* 29 (1988), no. 2, 287–304. (Summary) **89i:22028** 22E46 (81D30)
- (with Rowe, D. J.) The matrix representations of  $g_2$ . I. Representations in an  $so(4)$  basis. *J. Math. Phys.* 29 (1988), no. 4, 758–766. (Henrik Bohr) **89m:17018** 17B15
- (with Rowe, D. J.) The matrix representations of  $g_2$ . II. Representations in an  $su(3)$  basis. *J. Math. Phys.* 29 (1988), no. 4, 767–776. (Henrik Bohr) **89m:17019** 17B15
- Le Blanc, Thomas J.** Problem decomposition and communication tradeoffs in a shared-memory multiprocessor. *Numerical algorithms for modern parallel computer architectures* (Minneapolis, MN, 1986–87), 145–162, IMA Vol. Math. Appl., 13, Springer, New York-Berlin, 1988. (see **89j:65093**) 65W05
- Leblanc, Yvan** Bosonic string theory at finite temperature. *CAP-NSERC Summer Institute in Theoretical Physics, Vol. II* (Edmonton, AB, 1987), 346–365, World Sci. Publishing, Singapore, 1988. (see **89h:81006**) 81E99 (81E30)
- Improved integral representation for the finite-temperature propagator in string theory. *Phys. Rev. D* (3) 39 (1989), no. 4, 1139–1151. (Summary) **89k:81092** 81E15 (81E30)
- Leboeuf, F.** (with El Marjani, A.) Boundary element method in the 3-D parabolized Navier-Stokes computation for internal flows. *Computer methods and water resources*, Vol. 5 (Rabat, 1988), 149–160, Comput. Mech., Southampton, 1988. (see **89g:76003d**) 76-08 (76D05)
- Lebon, G.** (with Pérez-García, Carlos; Casas-Vázquez, J.) On the thermodynamic foundations of viscoelasticity. *J. Chem. Phys.* 88 (1988), no. 8, 5068–5075. (Summary) **89d:73025** 73F99 (73B30)
- (with Jou, D.; Casas-Vázquez, J.) Extended irreversible thermodynamics. *Rep. Progr. Phys.* 51 (1988), no. 8, 1105–1179. (B. H. Lavenda) **89k:82044** 82A35
- Le Boudec, Jean-Yves** Steady-state probabilities of the  $PH/PH/1$  queue. *Queueing Systems Theory Appl.* 3 (1988), no. 1, 73–87. (Masao Mori) **89d:60181** 60K25 (90B22)
- Lebowitz, Joel L.** (with Dürr, Dettlef; Goldstein, Sheldon) Asymptotic motion of a classical particle in a random potential in two dimensions: Landau model. *Comm. Math. Phys.* 113 (1987), no. 2, 209–230. (G. F. Dell'Antonio) **89k:82009** 82A05 (60K35, 82A42)
- (with Collet, Pierre; Porzio, Anna) The dimension spectrum of some dynamical systems. Proceedings of the symposium on statistical mechanics of phase transitions—mathematical and physical aspects (Trebon, 1986). *J. Statist. Phys.* 47 (1987), no. 5–6, 609–644. (M. Thaler) **89d:80061** 58F08 (28A75, 58F11, 82A99)
- (with Bricmont, J.; Maes, Christian) Percolation in strongly correlated systems: the massless Gaussian field. *J. Statist. Phys.* 48 (1987), no. 5–6, 1249–1268. (H. Kesten) **89c:82040** 82A43 (60K35)
- (with Percus, J. K.; Talbot, J.) On the orientational properties of some one-dimensional model systems. *J. Statist. Phys.* 49 (1987), no. 5–6, 1221–1234. (Summary) **89h:82069** 82A50
- (with Dürr, Dettlef; Goldstein, Sheldon) Self-diffusion in a nonuniform one-dimensional system of point particles with collisions. *Probab. Theory Related Fields* 75 (1987), no. 2, 279–290. (Summary) **89b:60235** 60K35
- (with Golden, Kenneth M.; Goldstein, Sheldon) Nash estimates and the asymptotic behavior of diffusions. *Ann. Probab.* 16 (1988), no. 3, 1127–1146. (Xiang Qun Yang) **89f:60093** 60J60 (35K99, 60J45, 82A05)
- (with de Smedt, Ph.; Dürr, Dettlef; Liverani, C.) Quantum system in contact with a thermal environment: rigorous treatment of a simple model. *Comm. Math. Phys.* 120 (1988), no. 2, 195–231. (M. Lawrence Glasser) **89i:82030** 82A35 (82A69)
- (with Rose, Harvey A.; Speer, Eugene R.) Statistical mechanics of the nonlinear Schrödinger equation. *J. Statist. Phys.* 50 (1988), no. 3–4, 657–687. (Gerhard C. Hegerfeldt) **89f:82006** 82A05 (35Q20, 82A45)
- (with Wang, Jian-Sheng) Phase transitions and universality in nonequilibrium steady states of stochastic Ising models. New directions in statistical mechanics (Santa Barbara, CA, 1987). *J. Statist. Phys.* 51 (1988), no. 5–6, 893–906. (Marek Napiórkowski) **89m:82022** 82A25 (60K35, 82-04, 82A68)
- (with van Beijeren, H.; Ernst, M. H.) Editors' preface. *J. Statist. Phys.* 53 (1988), no. 1–2, 1. (Not in MR) 01A70
- (with Schonmann, R. H.) Pseudo-free energies and large deviations for non-Gibbsian FK measures. *Probab. Theory Related Fields* 77 (1988), no. 1, 49–64. (G. R. Grimmett) **89g:60306** 60K35 (60F10)
- see also *Phase transitions and critical phenomena*, **89g:82024**
- Le Breton, Alain** (with Musiela, M.) Strong consistency of least squares estimates in linear regression models driven by semimartingales. *J. Multivariate Anal.* 23 (1987), no. 1, 77–92. (R. A. Maller) **89a:62163** 62J05 (60F05, 60G44, 62M10)
- (with Essebar, B.) Sur un modèle de série chronologique vectorielle à composantes binaires en vue d'applications en climatologie. (English summary) [A vector time series model with binary components with a view to applications in climatology] *Computer methods and water resources*, Vol. 3 (Rabat, 1988), 199–217, Comput. Mech., Southampton, 1988. (Summary) **89m:86006** 86A10 (62M10)
- Représentation ARMA d'un processus gaussien à temps continu stationnaire de densité spectrale rationnelle. (English summary) [ARMA representation of a continuous-time stationary Gaussian process with rational spectral density] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 6, 267–270. (J. Hübler) **89j:60057** 60G15 (60G10, 62M10)
- (with Musiela, M.) Laws of large numbers for semimartingales with applications to stochastic regression. *Probab. Theory Related Fields* 81 (1989), no. 2, 275–290. (Dominique Lépine) **89m:60071** 60F15 (60G44, 62J05)
- Le Breton, M.** On the generic nonexistence of pure strategy Nash equilibria in continuous games. *J. Econom. Theory* 43 (1987), no. 2, 374–382. (Milan Mareš) **89a:90174** 90D13 (90A14)
- (with Salles, M.) On the generic emptiness of the local core of voting games. *Soc. Choice Welf.* 4 (1987), no. 4, 287–294. (J. J. Buckley) **89a:90167** 90D12 (90A06)
- On the core of voting games. *Soc. Choice Welf.* 4 (1987), no. 4, 295–305. (J. J. Buckley) **89a:90168** 90D12 (90A06)
- Le Brigand, D.** A [32, 17, 14]-geometric code coming from a singular curve. (French summary) *Coding theory and applications* (Cachan, 1986), 106–115, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (A. Pethő) **89k:94076** 94B40 (11T71, 14G15)
- (with Risler, Jean-Jacques) Algorithme de Brill-Noether et codes de Goppa. (English summary) [The Brill-Noether algorithm and Goppa codes] *Bull. Soc. Math. France* 116 (1988), no. 2, 231–253. (René Schoof) **89k:14040** 14G15 (11T71, 14H20, 14H25, 94B05)
- Lebrun, E.** (with Gasca, M.) On Aitken-Neville formulae for multivariate interpolation. *Numerical approximation of partial differential equations* (Madrid, 1985), 133–140, *North-Holland Math. Stud.*, 133, North-Holland, Amsterdam-New York, 1987. (G. Baszenski) **89b:41005** 41A05 (41A63)
- carton-Lebrun, C.** see Carton-Lebrun, C.
- Le Brun, Claude** (with Rothstein, Mitchell) Moduli of super Riemann surfaces. *Comm. Math. Phys.* 117 (1988), no. 1, 159–176. (V. S. Retakh) **89k:32043** 32G15 (14H15, 81E30)
- Counter-examples to the generalized positive action conjecture. *Comm. Math. Phys.* 118 (1988), no. 4, 591–596. (Nicholas Buchdahl) **89f:53107** 53C80 (32L25, 53C55, 58E15, 83C45, 83C99)
- Poon's self-dual metrics and Kähler geometry. *J. Differential Geom.* 28 (1988), no. 2, 341–343. (Mitsuhiko Itoh) **89j:53056** 53C55 (32L25, 53C25)
- A rigidity theorem for quaternionic-Kähler manifolds. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1205–1208. (Nicholas Buchdahl) **89h:53105** 53C25 (32L25, 53C55)
- Le Bruyn, L.** Cohomology of  $P_{(2)}^n$ . *Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliavin, 37ème année* (Paris, 1985), 130–156, *Lecture Notes in Math.*, 1220, Springer, Berlin-New York, 1986. (Freddy M. J. Van Oystaeen) **89b:16021** 16A38 (14F99)
- (with Procesi, C.) Étale local structure of matrix invariants and concomitants. *Algebraic groups Utrecht 1986*, 143–175, *Lecture Notes in Math.*, 1271, Springer, Berlin-New York, 1987. (Michel van den Bergh) **89b:16042** 16A65 (14L30, 15A72, 16A64)
- (with Van Oystaeen, F.) A note on Clifford representations. *Bull. Soc. Math. Belg. Sér. B* 39 (1987), no. 2, 195–202. (John F. Humphreys) **89a:20009** 20C25 (15A66)
- Some remarks on rational matrix invariants. *J. Algebra* 118 (1988), no. 2, 487–493. (Jean-Marc Drezet) **89k:14025** 14F05 (14D25)
- Quiver concomitants are often reflexive. *Azumaya. Proc. Amer. Math. Soc.* 105 (1989), no. 1, 10–16. (Zygmunt Pogorzały) **89j:16030** 16A46 (13A20, 14M20, 16A64, 20G15)
- Leca, P.** (with Sacchi Landriani, G.) Parallelization of a spectral influence matrix method for the numerical solution of the Navier-Stokes equations. *Rech. Aérospat. (English Edition)* 1987, no. 6, 35–42 (1988); translated from *Rech. Aérospat.* 1987, no. 6, 35–42 (English summary). (A. Pozzi) **89i:76014** 76-08 (76D05)
- Le Calvez, Patrice** Propriétés dynamiques des régions d'instabilité. (English summary) [Dynamical properties of regions of instability] *Ann. Sci. École Norm. Sup. (4)* 20 (1987), no. 3, 443–464. (R. Dilaó) **89m:58115** 58F10
- Les ensembles d'Aubry-Mather d'un difféomorphisme conservatif de l'anneau déviant la verticale sont en général hyperboliques. (English summary) [The Aubry-Mather sets of a conservative diffeomorphism of the annulus twisting the vertical are hyperbolic in general] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 1, 51–54. (Hans G. Bothe) **89g:58165** 58F15
- Le Cam, L.** (with Beran, Rudolf; Millar, P. W.) Convergence of stochastic empirical measures. *J. Multivariate Anal.* 23 (1987), no. 1, 159–168. (M. D. Burke) **89a:62045** 62E20 (60F17, 60G57, 62G05)
- (with Yang, Grace L.) Distinguished statistics, loss of information and a theorem of Robert B. Davies. *Statistical decision theory and related topics, IV*, Vol. 2 (West Lafayette, Ind., 1986), 163–175, Springer, New York-Berlin, 1988. (J. A. Melamed) **89f:62013** 62E20
- (with Yang, Grace L.) On the preservation of local asymptotic normality under information loss. *Ann. Statist.* 16 (1988), no. 2, 483–520. (Tapas K. Chandra) **89j:62032** 62E20
- Lechicki, A.** (with Ziemińska, Jolanta) On uniform convergence structures. *Math. Nachr.* 134 (1987), 169–187. (D. C. Kent) **89a:54035** 54E15 (06B99, 54A20)
- The Vietoris hyperspace for convergence spaces. (Italian summary) *Boll. Un. Mat. Ital. B* (7) 2 (1988), no. 1, 41–52. (Ray Gazik) **89b:54005** 54A20 (54B20)
- Lechner, K.** (with Bonora, L.; Bregola, M.; Pasti, P.; Tonin, M.) Anomaly-free supergravity and super-Yang-Mills theories in ten dimensions. *Nuclear Phys. B* 296 (1988), no. 4, 877–901. (Paul Howe) **89c:83050** 83E50 (81E30, 81G20, 83E30)
- Lechowski, Jerzy** Biography of Professor Marian Mazur (1909–1983). (Polish. English and Russian summaries) *Postępy Cybernet.* 10 (1987), no. 2, 7–20. (Editors) **89i:01090**

- 01A70 (92A25)
- Introduction of M. Mazur's theory of the modeling of human characters. (Polish. English and Russian summaries) *Postępy Cybernet.* **10** (1987), no. 2, 31–40. (Summary) **89h:2069** 92A25 (00A71, 92A20)
  - Lechtenfeld, Olaf** (with Kosteček, V. Alan; Lerche, W.; Samuel, Stuart; Watamura, Satoshi) Conformal techniques, bosonization and tree-level string amplitudes. *Nuclear Phys. B* **288** (1987), no. 1, 173–232. (Summary) **89b:81201** 81E99 (81E30, 81F20)
  - (with Kosteček, V. Alan; Samuel, Stuart) Covariant string amplitudes on exotic topologies to one loop. *Nuclear Phys. B* **298** (1988), no. 1, 133–177. (Andrew A. Bytsenko) **89c:81136** 81E99 (81E30)
  - (with Samuel, Stuart) Covariant off-shell string amplitudes with auxiliary fields. *Nuclear Phys. B* **308** (1988), no. 2-3, 361–378. (Aleksandar R. Bogojević) **89k:81156** 81E99 (81E30)
  - (with Samuel, Stuart) Off-shell conformal methods for the superstring. *Nuclear Phys. B* **310** (1988), no. 2, 254–290. (Summary) **89j:81198** 81E99 (81E30)
  - (with Parkes, Andrew) On the vanishing of the genus two superstring vacuum amplitude. *Phys. Lett. B* **202** (1988), no. 1, 75–80. (Summary) **89h:81204** 81E99 (14K25, 81E30)
  - Leckband, Mark** Two-weight mixed norm inequalities for maximal operators and extrapolation results for the fractional maximal operator. *Studia Math.* **87** (1987), no. 2, 167–180. (Douglas Kurtz) **89b:42014** 42B25 (47B38)
  - On the local boundedness of singular integral operators. *Trans. Amer. Math. Soc.* **308** (1988), no. 1, 39–56. (Douglas Kurtz) **89g:42034** 42B25 (47G05)
  - LeClair, André** An operator formulation of the superstring. *Nuclear Phys. B* **303** (1988), no. 2, 189–225. (Marc Henneaux) **89h:81203** 81E99 (81E30)
  - Leclerc, Bruno** Caractérisation, construction et dénombrement des ultramétriques supérieures minimales. (English summary) [Characterization, construction and enumeration of minimal dominating ultrametrics] *Statist. Anal. Données* **11** (1986), no. 2, 26–50. (Summary) **89a:92005** 92A05 (05A15, 62H30)
  - (with Cucumel, Guy) Consensus en classification: une revue bibliographique. (English summary) [Consensus in classification: a bibliographic review] *Math. Sci. Humaines* **100** (1987), 109–128, 131 (1988). (Summary) **89d:92003** 92A05 (00A15, 92A25)
  - Leclerc, M.** Ein Simplex-Algorithmus für das partitionsbeschränkte Zuordnungsproblem. [A simplex algorithm for the partition-constrained assignment problem] *Siemens Forsch. Entwickl.* **17** (1988), no. 4, 199–203, iii. (Summary) **89g:90178** 90C27 (90C10)
  - Lecomte, P. B. A.** (with Roger, Claude) Rigidity of current Lie algebras of complex simple type. *J. London Math. Soc.* (2) **37** (1988), no. 2, 232–240. (Janusz Grabowski) **89c:17024** 17B65 (17B65, 58A25, 58D05, 58D15)
  - (with Roger, Claude) Formal deformations of the associative algebra of smooth matrices. *Lett. Math. Phys.* **15** (1988), no. 1, 55–63. (J. Vanžura) **89f:58013** 58C05 (16A58, 58F06, 81D15)
  - Le Conte de Poly-Barbut, C.** Sur les graphes admettant le nombre maximum de sous-graphes à trois sommets et deux arêtes, et les paires d'ordres totaux qui maximisent  $[Rho - Tau]$ . (English summary) [On graphs with the maximum number of three-vertex two-edge subgraphs, and pairs of total orderings maximizing  $[Rho - Tau]$ ] *European J. Combin.* **9** (1988), no. 6, 575–579. (C. Peyrat) **89j:05046** 05C35 (06A10)
  - Lecoutre, Jean-Pierre** The histogram with random partition. *New perspectives in theoretical and applied statistics* (Bilbao, 1986), 265–276, Wiley Ser. Probab. Math. Statist.: Probab. Math. Statist., Wiley, New York, 1987. (Summary) **89c:62074** 62G05
  - Lécuyer, Bernard-Pierre** Probability in vital and social statistics: Quetelet, Farr, and the Bertillons. *The probabilistic revolution*, Vol. 1, 317–335, Bradford Book, MIT Press, Cambridge, MA-London, 1987. (Summary) **89c:01032** 01A55
  - L'Ecuyer, Pierre** Efficient and portable combined random number generators. *Comm. ACM* **31** (1988), no. 6, 742–749, 774. (Summary) **89d:65005** 65C10
  - (with Haurie, A.) Discrete event dynamic programming with simultaneous events. *Math. Oper. Res.* **13** (1988), no. 1, 152–163. (Santosh Kumar) **89c:90106** 90C39
  - Ledak, L. P.** (with Sushkov, B. G.) Optimal aggregation in a single-server problem. (Russian) Some algorithms for the planning of computations in deterministic real-time systems (Russian), 4–9, Akad. Nauk SSSR, Vychisl. Tsentr, Moscow, 1987. (see **89c:68058**) 68M10 (90B22)
  - Priority-admissible schedules in a problem with discrete time periods. (Russian) Some algorithms for the planning of computations in deterministic real-time systems (Russian), 10–17, Akad. Nauk SSSR, Vychisl. Tsentr, Moscow, 1987. (see **89c:68058**) 90B35 (68M10, 68N25)
  - vullierne-Ledard, M.** see **Vullierne-Ledard, M.**
  - Ledent, Jacques** (with Rogers, Andrei) Stable growth in native-dependent multistate population dynamics. *Math. Population Stud.* **1** (1988), no. 2, 157–171. (Summary) **89c:92038** 92A15
  - Ledger, Arthur J.** (with Vanhecke, Lieven) Symmetries and locally  $s$ -regular manifolds. *Ann. Global Anal. Geom.* **5** (1987), no. 2, 151–160. (Megerdich Toomanian) **89m:53086** 53C35
  - (with Vanhecke, Lieven) On a theorem of Kirichenko relating to 3-symmetric spaces. (French summary) *Riv. Mat. Univ. Parma* (4) **13** (1987), 367–372 (1988). (Megerdich Toomanian) **89m:53081** 53C30 (53C35)
  - (with Vanhecke, Lieven) Locally homogeneous  $S$ -structures. *Bull. Austral. Math. Soc.* **37** (1988), no. 2, 241–246. (Franco Tricerri) **89f:53071** 53C30
  - Naturally reductive locally 4-symmetric spaces. *Israel J. Math.* **63** (1988), no. 2, 223–236. (Megerdich Toomanian) **89m:53087** 53C35
  - (with Vanhecke, Lieven) Symmetries on Riemannian manifolds. *Math. Nachr.* **136** (1988), 81–90. (O. Kowalski) **89f:53065** 53C20 (53C55)
  - Le Dimet, François-Xavier** Quelques problèmes mathématiques en météorologie. [Some mathematical problems in meteorology] *Gaz. Math. No.* **32** (1987), 68–74. (Editors) **89b:36001** 86A10
  - Ledoux, M.** Inégalités isopérimétriques et calcul stochastique. [Isoperimetric inequalities and stochastic calculus] *Séminaire de Probabilités, XXII*, 249–259, Lecture Notes in Math., 1321, Springer, Berlin-New York, 1988. (Sheng Wu He) **89j:60071** 60H05 (60G15)
  - (with Talagrand, Michel) Characterization of the law of the iterated logarithm in Banach spaces. *Ann. Probab.* **16** (1988), no. 3, 1242–1264. (Evarist Giné) **89i:60016** 60B12 (46B20, 60B11, 60G15)
  - (with Talagrand, Michel) Un critère sur les petites boules dans le théorème limite central. (English summary) [A criterion on small balls in the central limit theorem] *Probab. Theory Related Fields* **77** (1988), no. 1, 29–47. (Naresh C. Jain) **89e:60015** 60B12 (60F05)
  - Ledrappier, François** Dimension of invariant measures. *Proceedings of the conference on ergodic theory and related topics, II* (Geirgental, 1986), 116–124, Teubner-Texte Math., 94, Teubner, Leipzig, 1987. (Zuo Ling Zhou) **89b:58120** 58F11 (28C15, 28D05)
  - Le Dret, Hervé** Structure of the set of equilibrated loads in nonlinear elasticity and applications to existence and nonexistence. (French summary) *J. Elasticity* **17** (1987), no. 2, 123–141. (Joseph J. Roseman) **89a:73014** 73C50
  - (with Ciarlet, Philippe G.) Justification de la condition aux limites d'encastrement d'une plaque par une méthode asymptotique. (English summary) [Justification of the boundary conditions for a clamped plate by an asymptotic analysis] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 20, 1015–1018. (Claude Surry) **89k:73045** 73K10 (73C40)
  - (with Cimetti, A.; Geymonat, G.; Raoult, A.; Tutek, Z.) Asymptotic theory and analysis for displacements and stress distribution in nonlinear elastic straight slender rods. *J. Elasticity* **19** (1988), no. 2, 111–161. (D. Içsan) **89f:73042** 73K05 (34E05, 73C10, 73C50)
  - Lê Đình Tráng** Courbes polaires et résolution des courbes planes. [Polar curves and resolution of plane curves] *Géométrie algébrique et applications, II* (La Rabida, 1984), 155–175, Travaux en Cours, 23, Hermann, Paris, 1987. (Introduction) **89f:32013** 32B30
  - Polyèdres évanescents et effondrements. [Vanishing polyhedra and collapsings] *A fête de topology*, 293–329, Academic Press, Boston, MA, 1988. (Richard Randell) **89h:32019** 32B30 (57R19)
  - (with Teissier, Bernard) Limites d'espaces tangents en géométrie analytique. [Limits of tangent spaces in analytic geometry] *Comment. Math. Helv.* **63** (1988), no. 4, 540–578. (Jón Magnússon) **89m:32025** 32C40 (32B30, 32C42)
  - Ledwina, Teresa** (with Bajorski, Piotr) Large deviations and Bahadur efficiency of some rank tests of independence. *Mathematical statistics and probability theory*, Vol. B (Bad Tatzmannsdorf, 1986), 11–23, Reidel, Dordrecht-Boston, MA-London, 1987. (Summary) **89h:62078** 62G10 (60F10)
  - An expansion of the index of large deviations for linear rank statistics. *Statist. Probab. Lett.* **5** (1987), no. 4, 247–248. (Summary) **89b:62092** 62G10 (60F10, 62E20)
  - Ledyae, Yu. S.** see **Clarke, Frank H.** **89m:49028**
  - Ledzewicz-Kowalewska, Urszula** The extremum principle for problems of optimal control with mixed constraints. (Polish summary) *Acta Univ. Lodz. Folia Math.* **2** (1987), 37–60. (Zhaolin Cheng) **89a:49021** 49B10 (49A50, 49D05)
  - Application of the method of contractor directions to the Dubovitskii-Milyutin formalism. *J. Math. Anal. Appl.* **125** (1987), no. 1, 174–184. (Bruce D. Craven) **89b:90226** 90C48 (47H17, 49A51, 49B27, 58C20, 90C25)
  - Optimal control problems of hyperbolic systems with operator and nonoperator equality constraints. *Appl. Anal.* **27** (1988), no. 1-3, 199–215. (Martin Brokate) **89a:49023** 49B22 (35L20, 49B27)
  - On the optimal control problems with Gâteaux differentiable operator constraints. *J. Math. Anal. Appl.* **130** (1988), no. 2, 301–315. (Dariusz Zagrodny) **89b:49026** 49B10 (49A51, 49A52, 49B21, 90C48)
  - Application of some specification of the Dubovitskii-Milyutin method to problems of optimal control. *Nonlinear Anal.* **12** (1988), no. 2, 101–108. (Constantin Vărsan) **89k:49012** 49B10 (49D29)
  - Lee, A. H.** (with Silvapulle, M. J.) Ridge estimation in logistic regression. *Comm. Statist. Simulation Comput.* **17** (1988), no. 4, 1231–1257. (Not in MR) 62J07
  - Lee, Allan Yeow-Nam** Neighboring extremals of dynamic optimization problems with path equality constraints. *J. Optim. Theory Appl.* **57** (1988), no. 3, 519–536. (Pham Huy Diên) **89b:49021** 49B50 (49B10, 49D10, 65K10, 93B40)
  - (with Bryson, Arthur E., Jr.) Neighbouring extremals of dynamic optimization problems with parameter variations. *Optimal Control Appl. Methods* **10** (1989), no. 1, 39–52. (Summary) **89k:49013** 49B10 (49B50, 65L10, 93B35)
  - Lee, C.-H.** (with Clark, T. E.; Love, S. T.) Anti-symmetric tensor gauge theories. *Nuclear Phys. B* **308** (1988), no. 2-3, 379–396. (S. Deser) **89i:81067** 81E13 (81D20)
  - Lee, C. M.** see **Lee, Cheng Ming**
  - Lee, C. S. G.** see **Lee, Cho Seng**
  - Lee, C. S. G.** (with Chang, P. R.) Efficient parallel algorithms for robot forward dynamics computation. *IEEE Trans. Systems Man Cybernet.* **18** (1988), no. 2, 238–251. (Not in MR) 93C75 (49D07)
  - Lee, C. T.** see **Lee, Ching Tsung**
  - Lee, Carl M.-S.** On the computation of  $F$ -cumulative probabilities. *Comm. Statist. Simulation Comput.* **17** (1988), no. 4, 1191–1201. (Not in MR) 62-04
  - Constrained optimal designs. *J. Statist. Plann. Inference* **18** (1988), no. 3, 377–389. (Girdhar G. Agarwal) **89f:62062** 62K05 (90C50)
  - Lee, Chahn** (with Kobayashi, S. I.) Exact dynamical behavior near the critical point in the transverse Ising model. *Phys. Rev. Lett.* **62** (1989), no. 9, 1061–1064. (Summary) **89m:82082** 82A68 (82A25)
  - Lee, Cheng F.** (with Wei, K. C. John) The generalized Stein/Rubinstein covariance formula and its application to estimate real systematic risk. *Management Sci.* **34** (1988), no. 10, 1266–1270. (Wolf-Rüdiger Heilmann) **89m:90019** 90A09
  - Lee, Cheng Ming** Some Hausdorff variants of absolute continuity, Banach's condition (S) and Lusin's condition (N). *Real Anal. Exchange* **13** (1987/88), no. 2, 404–419. (James Foran) **89c:26022** 26A46 (26A45, 28A75)
  - Lee, Cheng Shyong** see **Li, Chéng Shyung**
  - Lee, Ching Tsung** General solution to the spherical Raman-Nath equation. *J. Phys. A* **20** (1987), no. 16, 5473–5479. (Summary) **89a:81038** 81C99 (34K05, 81D30)
  - Classical entropy of a coherent spin state: a local minimum. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 2 (Laramie, WY, 1985 and Seattle, WA, 1986/1987), 111–119, Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89i:81060** 81D30
  - Wehrl's entropy of spin states and Lieb's conjecture. *J. Phys. A* **21** (1988), no. 19, 3749–3761. (K. Wódkiewicz) **89k:81062** 81D30 (82A15)
  - Lee, Cho Seng** (with Leitmann, G.) Continuous feedback guaranteeing uniform ultimate boundedness for uncertain linear delay systems: an application to river pollution control. *The mathematics of systems and computations* (Atlanta, GA, 1986). *Comput. Math. Appl.* **16** (1988), no. 10-11, 929–938. (Summary) **89m:65079** 65L99 (90A30, 92A17)
  - Lee, Chong-Won** (with Byun, Seung-Wan) Optimal complex modal-space control of rotating disc vibrations. *Optimal Control Appl. Methods* **9** (1988), no. 4, 357–370. (Not



- in MR) 93C20 (93B50, 93B60)
- Lee, Chu-In Charles Chi-squared tests for and against an order restriction on multinomial parameters. *J. Amer. Statist. Assoc.* **82** (1987), no. 398, 611-618. (T. Robertson) **89c:62046** 62F03 (62F05)
- Lee, Chul H. (with Lee, Hyun Kyu) Kasner-type solution in a higher-derivative gravity theory. *Modern Phys. Lett. A* **3** (1988), no. 11, 1035-1039. (W. M. Baker) **89k:83062** 83D05 (83E15, 83F05)
- Lee, Chung-Yee (with Massey, J. David) Multiprocessor scheduling: combining LPT and MULTIFIT. *Discrete Appl. Math.* **20** (1988), no. 3, 233-242. (Emile Aarts) **89c:90126** 90B35 (68N25)
- (with Hwang, Jing Jang; Chow, Yuan-Chieh; Anger, Frank D.) Multiprocessor scheduling with interprocessor communication delays. *Oper. Res. Lett.* **7** (1988), no. 3, 141-147. (Summary) **89g:90130** 90B35
- Lee, D. K. K. (with Chen, Yang) Functional bosonisation of the Tomonaga-Luttinger model. *J. Phys. A* **21** (1988), no. 22, 4155-4171. (Summary) **89k:81205** 81H20 (82A15)
- Lee, D. T. see Lee, Der Tsai
- Lee, David<sup>2</sup> Fast multiplication of a recursive block Toeplitz matrix by a vector and its application. *J. Complexity* **2** (1986), no. 4, 295-305. (Lars Eldén) **89a:65071** 65F30 (65D07, 65D10, 65F10)
- Lee, Der Tsai (with de Rezende, P. J.; Wu, Y. F.) Rectilinear shortest paths in the presence of rectangular barriers. *Discrete Comput. Geom.* **4** (1989), no. 1, 41-53. (Summary) **89k:90055** 90B10 (52-04)
- Lee, Ding (with Ames, William F.) Current development in the numerical treatment of ocean acoustic propagation. *Appl. Numer. Math.* **3** (1987), no. 1-2, 25-47. (Summary) **89c:76005** 76-08 (76Q05)
- (with McDaniel, S. T.) Ocean acoustic propagation by finite difference methods. With a foreword by E. Y. Rodin. *Comput. Math. Appl.* **14** (1987), no. 5, pp. i-x and 305-423. (Darrell L. Hicks) **89b:65204** 65M05 (76-08, 76Q05, 86A05)
- (with Saad, Y.) A new algorithm for solving the wide angle wave equation. *Computational acoustics, Vol. 2* (New Haven, Conn., 1986), 119-132, North-Holland, Amsterdam-New York, 1988. (V. H. Weston) **89d:76028** 76Q05 (65P05)
- (with Saint Mary, Donald F.) Accurate computation of the wide-angle wave equation. *Computational acoustics, Vol. 1* (New Haven, Conn., 1986), 409-422, North-Holland, Amsterdam-New York, 1988. (Summary) **89c:76093** 76Q05
- Lee, E. B. (with Brierty, S. D.) Coefficient assignment for generalized linear systems. (Russian and Polish summaries) *Systems Sci.* **11** (1985), no. 2, 5-18 (1987). (Andrzej W. Olbrot) **89b:93040** 93B25 (34K35, 93B55)
- (with Lu, W. S.; Zak, S. H.) Structural invariants of infinite-dimensional systems—systems with delays. *Frequency domain and state space methods for linear systems* (Stockholm, 1985), 381-395, North-Holland, Amsterdam-New York, 1986. (M. M. Konstantinov) **89a:93014** 93B10 (34K35, 93B17, 93B25)
- (with Lu, W. S.; Zhang, Q.-T.) Balanced approximation of two-dimensional and delay-differential systems. *Internat. J. Control* **46** (1987), no. 6, 2199-2218. (M. G. Frost) **89b:93030** 93B15 (34K35, 93B17, 93B20)
- (with You, Yun Cheng) Optimal syntheses for infinite-dimensional linear delayed state-output systems: a semicausal approach. *Appl. Math. Optim.* **19** (1989), no. 2, 113-136. (Jingbo Wu) **89i:93050** 93B50 (34K35, 45B05, 49B27, 49D40, 93C25)
- Lee, E. S. (with Natarajan, T.; Naadimuthu, G.; Pierre, Donald A.) Advantageous strategies in differential games for a class of suboptimal control laws. *J. Math. Anal. Appl.* **128** (1987), no. 1, 156-175. (Moustafa El-Araby) **89a:90179** 90D25
- (with Li, R.-J.) Comparison of fuzzy numbers based on the probability measure of fuzzy events. *Comput. Math. Appl.* **15** (1988), no. 10, 887-896. (Summary) **89d:03057** 03E72
- (with Sugiyama, H.) Stochastic approximation—a powerful method for solving deterministic numerical problems. *Comput. Math. Appl.* **15** (1988), no. 11, 963-967. (Summary) **89d:65120** 65U05
- Lee, Edward T. Relationship hierarchy for picture representation using entity-relationship diagrams. *Kybernetes* **17** (1988), no. 3, 45-51. (Not in MR) **88P20** (68U10, 68U10)
- Lee, Eugene T. Y. The rational Bézier representation for conics. *Geometric modeling*, 3-19, SIAM, Philadelphia, PA, 1987. (see **89b:65010**) 65D10
- Lee, H. C. see Lee, Hoong Chien
- Lee, Haiyoung (with Bien, Zengnam) Method of computing the inverse of a matrix whose elements are a linear combination of Walsh functions. *Internat. J. Control* **47** (1988), no. 5, 1235-1242. (Mihail Voicu) **89i:15009** 15A09 (15A99, 49D40, 93B25)
- Lee, Hsu L. (with Yano, Candace A.) Production control in multistage systems with variable yield losses. *Oper. Res.* **36** (1988), no. 2, 269-278. (Not in MR) **90B30**
- (with Pierskalla, William P.) Mass screening models for contagious diseases with no latent period. *Oper. Res.* **36** (1988), no. 6, 917-928. (Summary) **89m:92007** 92A07 (92A15)
- Lee, He. J. (with Lee, K. A.; Lee, Hong Jae; Chun, D. S.; Jeon, W.-K.; Kim, Yong-Woon; Kim, I. S.) A note on the Chern classes. *Homom Math. J.* **9** (1987), no. 1, 135-147. (Elmer G. Rees) **89a:57030** 57R20
- Lee, Heakyung Strongly right FBN rings. *Bull. Austral. Math. Soc.* **38** (1988), no. 3, 457-464. (G. Krause) **89b:16013** 16A33 (16A38, 16A55, 16A66)
- Right FBN rings and bounded modules. *Comm. Algebra* **16** (1988), no. 5, 977-987. (G. Krause) **89a:16020** 16A33 (16A34)
- Lee, Ho. J. see Lee, Hong Jae
- Lee, Ho Woo  $M/G/1$  queue with exceptional first vacation. *Comput. Oper. Res.* **15** (1988), no. 5, 441-445. (Summary) **89b:90102** 90B22
- Lee, Hong Jae (with Lee, K. A.; Lee, He. J.; Chun, D. S.; Jeon, W.-K.; Kim, Yong-Woon; Kim, I. S.) A note on the Chern classes. *Homom Math. J.* **9** (1987), no. 1, 135-147. (Elmer G. Rees) **89a:57030** 57R20
- Lee, Hoong Chien (with Zhu, Zhong Yuan) Scalar field and the Polyakov string. *CAP-NSERC Summer Institute in Theoretical Physics, Vol. II* (Edmonton, AB, 1987), 200-212, World Sci. Publishing, Singapore, 1988. (see **89b:81006**) 81E99 (81E30)
- see also Institute: Theoretical Physics, **89b:81005** and **89b:81006**
- Lee, Hsuan-Pei see Li, Hsuan-Pei
- Lee, Hwa Young (with Rajulton, Fernando) A semi-Markovian approach to using event history data in multiregional demography. *Math. Population Stud.* **1** (1988), no. 3, 289-315, 318. (Summary) **89b:92054** 92A15
- Lee, Hyun Kyu (with Lee, Chul H.) Kasner-type solution in a higher-derivative gravity theory. *Modern Phys. Lett. A* **3** (1988), no. 11, 1035-1039. (W. M. Baker) **89k:83062** 83D05 (83E15, 83F05)
- Lee, I-Hsiu (with Shrock, Robert E.) High-temperature series analysis of an  $O(2)$ -symmetric spin model with discretely valued interaction on 2D lattices. *J. Phys. A* **21** (1988), no. 9, 2111-2120. (Summary) **89d:82132** 82A68 (82A25)
- (with Shrock, Robert E.) Chiral symmetry properties of  $U(1)$  lattice gauge theory with scalar and fermion fields. *Nuclear Phys. B* **305** (1988), no. 2 FS23, 286-304. (Summary) **89m:81123** 81E25 (81E13)
- (with Shrock, Robert E.) The chiral transition in an  $SU(2)$  gauge-Higgs-fermion theory with Yukawa couplings. *Nuclear Phys. B* **305** (1988), no. 2 FS23, 305-323. (Summary) **89m:81124** 81E25 (81E13, 81G15)
- Lee, J. P. see Lee, Jong Pil
- Lee, J. Y. see Li, Chao Yen
- Lee, Jae Chon (with Un, Chong Kwan) Performance analysis of frequency-domain block LMS adaptive digital filters. *IEEE Trans. Circuits and Systems* **36** (1989), no. 2, 173-189. (Not in MR) **94A12**
- Lee, Jae Sik (with Guignard, Monique) An approximate algorithm for multidimensional zero-one knapsack problems—a parametric approach. Focused issue on heuristics. *Management Sci.* **34** (1988), no. 3, 402-410. (Summary) **89b:90139** 90C09
- Lee, Je-Yoon (with Park, Young Sik) On the numerical range for linear operators in Hilbert space. (Korean summary) *Univ. Ulsan Rep.* **17** (1986), no. 1, 147-151. (Summary) **89k:47009** 47A12 (47A10)
- Lee, Jeh Gwon The dimension of certain partially ordered sets. *Bull. Korean Math. Soc.* **25** (1988), no. 1, 133-137. (V. Novák) **89f:06001** 06A10
- Lee, Jia Sheng see Li, Chia Sheng
- Lee, Jin Zai (with Li, Chia Sheng) Some properties of the sequence  $\{W_n(a, b; p, q)\}$ . *Fibonacci Quart.* **25** (1987), no. 3, 268-278. (Lawrence Somer) **89a:11023** 11B37
- (with Li, Chia Sheng) A note on the generalized Fibonacci numbers. *Fibonacci Quart.* **26** (1988), no. 1, 14-19. (Shiro Ando) **89c:11026** 11B37
- Lee, John M. Pseudo-Einstein structures on CR manifolds. *Amer. J. Math.* **110** (1988), no. 1, 157-178. (Roman Dwilewicz) **89f:32034** 32F25 (53C25)
- (with Jerison, David) Extremals for the Sobolev inequality on the Heisenberg group and the CR Yamabe problem. *J. Amer. Math. Soc.* **1** (1988), no. 1, 1-13. (H. Jacobowitz) **89b:53063** 53C15 (32F25, 53C40, 58G30)
- Lee, John W. (with Guenther, Ronald B.) Topological transversality and differential equations. *Fixed point theory and its applications* (Berkeley, CA, 1986), 121-130, *Contemp. Math.*, 72, Amer. Math. Soc., Providence, RI, 1988. (Olusola Akinyele) **89k:34014** 34A34 (34A50, 47H15, 58C27, 58E99)
- (with Granas, Andrzej; Guenther, Ronald B.) Some existence results for the differential inclusions  $y^{(k)} \in F(x, y, \dots, y^{(k-1)})$ ,  $y \in \mathcal{B}$ . (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 8, 391-396. (Stefan Mirica) **89i:34012** 34A60 (34B10)
- Lee, Jong (with Bohn, S. Elwood) Errata: "Semitopological groups" [*Amer. Math. Monthly* **72** (1965), 996-998; MR **32** #7672]. *Amer. Math. Monthly* **94** (1987), no. 10, 994. (Editors) **89d:22001** 22A05
- Lee, Jong Pil (with Piotrowski, Z.) Another note on Kempisty's generalized continuity. *Internat. J. Math. Math. Sci.* **11** (1988), no. 4, 657-663. (Janina Ewert) **89i:54018** 54C10 (54C30)
- Lee, Joehsan The standard Hamiltonian formulation. *New perspectives in canonical gravity*, 37-55, *Monographs Textbooks Phys. Sci. Lecture Notes*, 5, Bibliopolis, Naples, 1988. (see **89m:83003**) 83C05 (58F05)
- Spinors. *New perspectives in canonical gravity*, 63-76, *Monographs Textbooks Phys. Sci. Lecture Notes*, 5, Bibliopolis, Naples, 1988. (see **89m:83003**) 53A50 (15A66, 81D27)
- Geometric quantization. *New perspectives in canonical gravity*, 149-159, *Monographs Textbooks Phys. Sci. Lecture Notes*, 5, Bibliopolis, Naples, 1988. (see **89m:83003**) 58F06 (81D07)
- (with Sorkin, Rafael D.) Derivation of a Bogomol'ny inequality in five-dimensional Kaluza-Klein theory. *Comm. Math. Phys.* **116** (1988), no. 3, 353-364. (Robert Coquereaux) **89c:83072** 83E15 (53C80)
- see also Moore, Christopher, **89b:83066**
- Lee, Ju-Hong Two-dimensional block implementation of symmetric half-plane recursive digital filters. *IEEE Trans. Circuits and Systems* **35** (1988), no. 6, 736-742. (Not in MR) **94A12**
- Lee, Jyh-Hao see Li, Chih Hao
- Lee, K. A. (with Lee, Hong Jae; Lee, He. J.; Chun, D. S.; Jeon, W.-K.; Kim, Yong-Woon; Kim, I. S.) A note on the Chern classes. *Homom Math. J.* **9** (1987), no. 1, 135-147. (Elmer G. Rees) **89a:57030** 57R20
- Lee, K. R. (with Kapadia, C. H.) Maximum likelihood estimators of the variance components based on the  $Q$ -reduced model. *Metrika* **35** (1988), no. 3-4, 177-189. (Not in MR) **62J10**
- Lee, K. S. see Lee, Kwang Soon
- Lee, K. Y. (with Jacroux, M.) Some sufficient conditions for the  $E$ - and  $MV$ -optimality of block designs having blocks of unequal size. *Ann. Inst. Statist. Math.* **39** (1987), no. 2, 385-397. (N. Gaffke) **89a:62175** 62K05 (62K10)
- (with Jacroux, M.) On the construction of  $E$ - and  $MV$ -optimal group divisible designs with unequal block sizes. *J. Statist. Plann. Inference* **16** (1987), no. 2, 193-201. (Summary) **89d:62068** 62K05 (62K10)
- Lee, Kee Young (with Woo, Moo Ha) On the relative evaluation subgroups of a CW-pair. *J. Korean Math. Soc.* **25** (1988), no. 1, 149-160. (Hans-Werner Henn) **89f:55011** 55Q05
- (with Woo, Moo Ha) Homology and generalized evaluation subgroups of homotopy groups. *J. Korean Math. Soc.* **25** (1988), no. 2, 333-342. (C. S. Hoo) **89k:55026** 55Q05 (55N99, 55P99)
- Lee, Kin-Chun see Li, Chin Chun
- Lee, King Tak A horse betting problem. (Malay summary) *Menemui Mat.* **10** (1988), no. 2, 67-82. (John G. Wilson) **89m:90167** 90C50 (90C30, 90D10)
- Lee, Koo-Chul Long-time tails in a chaotic system. *Phys. Rev. Lett.* **60** (1988), no. 20, 1991-1994. (Summary) **89d:58085** 58F13 (00A69, 70K50)
- Lee, Kwang Soon (with Chang, Kun Soo) Discrete-time modelling of distributed parameter systems for state estimator design. *Internat. J. Control* **48** (1988), no. 3, 929-948. (Not in MR) **93C55** (93C20, 93D, 93E10)

- Lee, Kyung Bai** (with Kwak, Slawomir) Locally linear actions on 3-manifolds. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 2, 253–260. (Allan Edmonds) **89j:57034** 57S17 (57N10)
- There are only finitely many infra-nilmanifolds under each nilmanifold. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 153, 61–66. (William Harvey) **89f:22018** 22E40 (20H15, 22E25, 57S30)
- Lee, Kyung-Hwa** (with Kobayashi, Ken-ichiro; Uematsu, Tsuneo) Effective Lagrangian for spontaneously broken  $N = 2$  superconformal symmetry. *Nuclear Phys. B* **309** (1988), no. 4, 669–679. (Allan M. Din) **89k:81192** 81G20 (81D20)
- Lee, Lin-Shan** see **Li, Lin Shan**
- van der Lee, M. A. M.** (with van Est, W. T.) Enlargeability of local groups according to Mal'cev and Cartan-Smith. *Action hamiltoniennes de groupes. Troisième théorème de Lie* (Lyon, 1986), 97–127, *Travaux en Cours*, 27, Hermann, Paris, 1988. (K. H. Hofmann) **89i:22012** 22E05 (20F99, 58H05)
- Lee, M. Howard** Thermodynamics of phase transitions in metal cluster systems. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 344–348, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (Summary) **89c:82021** 82A30 (82A25)
- A note on certain integrals of Bessel functions. *J. Phys. A* **21** (1988), no. 23, 4341–4345. (H. M. Srivastava) **89m:33014** 33A40
- Lee, Min Ho** Mixed cusp forms and holomorphic forms on elliptic varieties. *Pacific J. Math.* **132** (1988), no. 2, 363–370. (Rolf Berndt) **89d:11035** 11F12 (14D20, 14J27)
- Lee, Oesook** (with Bhattacharya, Rabi N.) Asymptotics of a class of Markov processes which are not in general irreducible. *Ann. Probab.* **16** (1988), no. 3, 1333–1347. (George L. O'Brien) **89m:60148** 60J05 (60F05, 60F17)
- (with Bhattacharya, Rabi N.) Ergodicity and central limit theorems for a class of Markov processes. *J. Multivariate Anal.* **27** (1988), no. 1, 80–90. (A. Fuchs) **89i:60043** 60F05 (60J05)
- Lee, Peizong** (with Kedem, Zvi Meir) Synthesizing linear array algorithms from nested for loop algorithms. *IEEE Trans. Comput.* **37** (1988), no. 12, 1578–1598. (Not in MR) **89j:68020** 68Q90
- Lee, Peng Yee** Prof. Hua Loo-Keng (1910–1985). Mathematician, teacher, and practitioner. *Graphs Combin.* **1** (1985), no. 4, 301. (Editors) **89g:01057** 01A70
- (with Liu, Yu Qiang) Infinite matrices of operators in nonabsolute sequence spaces. *Bull. Malaysian Math. Soc. (2)* **10** (1987), no. 1, 1–8. (K. Chandrasekhara Rao) **89j:47018** 47B37 (46A45)
- (with Sy, Polly Wee; Zhang, Wen Yao) The dual of Cesàro function spaces. (Serbo-Croatian summary) *Glas. Mat. Ser. III* **22(42)** (1987), no. 1, 103–112. (Giovanni Emmanuele) **89g:46059** 46E30 (46A45)
- (with Darmawijaya, Soeparna) The controlled convergence theorem for the approximately continuous integral of Burkil. *Proceedings of the analysis conference, Singapore 1986*, 63–68, *North-Holland Math. Stud.*, 150, North-Holland, Amsterdam-New York, 1988. (H. Burkil) **89c:26013** 26A39 (26A45, 26A46, 26A20)
- A proof of the generalized dominated convergence theorem for Denjoy integrals. *Proceedings of the analysis conference, Singapore 1986*, 163–165, *North-Holland Math. Stud.*, 150, North-Holland, Amsterdam-New York, 1988. (D. K. Dutta) **89b:26009** 26A39 (26A20)
- (with Wu, Bo Er; Liu, Yu Qiang) The second duals of the nonabsolute Cesàro sequence spaces. *Proceedings of the analysis conference, Singapore 1986*, 285–290, *North-Holland Math. Stud.*, 150, North-Holland, Amsterdam-New York, 1988. (W. H. Ruckl) **89b:46009** 46A45
- (with Ding, Chuan Song; Zhao, Qiang) A Riemann-type definition of Kunugi's integral. *Bull. Fac. Sci. Ibaraki Univ. Ser. A No. 20* (1988), 1–4. (D. K. Dutta) **89b:26007** 26A42
- Lee, Pjck-Hwee** see **Li, Paj Fei**
- Lee, R.** see **Lee, Ronnie**
- Lee, Richard C. T.** (with Chang, Chin Liang) ★ Symbolic logic and mechanical theorem proving. Reprint of the 1973 original. Computer Science Classics. *Academic Press, Inc., Boston, MA*, 1987. xvi+331 pp. ISBN 0-12-170350-9 (Editors) **89i:68112** 68T15 (03B35, 68-02)
- (with Chang, Jui Hsiung) On a scheduling problem where a job can be executed only by a limited number of processors. *Comput. Oper. Res.* **15** (1988), no. 5, 471–478. (Summary) **89b:90123** 90B35
- (with Ho, Chin Wen) Efficient parallel algorithms for finding maximal cliques, clique trees, and minimum coloring on chordal graphs. *Inform. Process. Lett.* **28** (1988), no. 6, 301–309. (G. Berman) **89k:68055** 68Q20 (05C35, 68R10)
- Lee, Ronnie** (with Weintraub, Steven H.) Topology of the Siegel spaces of degree two and their compactifications. *Proceedings of the 1986 topology conference* (Lafayette, La., 1986). *Topology Proc.* **11** (1986), no. 1, 115–175. (Yukihiko Namikawa) **89c:32071** 32J05 (11F46, 14C30, 14J30, 32M15, 32N15)
- (with Miller, Edward Y.; Weintraub, Steven H.) Rochlin invariants, theta multipliers and holonomy. *Bull. Amer. Math. Soc. (N.S.)* **17** (1987), no. 2, 275–278. (From the introduction) **89d:57034** 57R15 (14K25, 58G10)
- (with Weintraub, Steven H.) On the transformation law for theta-constants. *Proceedings of the Northwestern conference on cohomology of groups* (Evanston, Ill., 1985). *J. Pure Appl. Algebra* **44** (1987), no. 1–3, 273–285. (V. Z. Enol'skii) **89a:32038** 32N10 (11F27, 14K25)
- (with Charney, Ruth) Characteristic classes for the classifying spaces of Hodge structures. *K-Theory* **1** (1987), no. 3, 237–270. (Summary) **89b:32046** 32G20 (14C30, 18F25, 19M05)
- (with Kirwan, F. C.; Weintraub, Steven H.) Quotients of the complex ball by discrete groups. *Pacific J. Math.* **130** (1987), no. 1, 115–141. (Summary) **89j:32034** 32J05 (11F25, 14J15, 22E40, 32C40, 32M10)
- (with Hambleton, I.) Finite group actions on  $P^2(\mathbb{C})$ . *J. Algebra* **116** (1988), no. 1, 227–242. (Dennis Snow) **89e:14044** 14L30 (57S17)
- (with Miller, Edward Y.; Weintraub, Steven H.) Rochlin invariants, theta functions and the holonomy of some determinant line bundles. *J. Reine Angew. Math.* **392** (1988), 187–218. (P. S. Landweber) **89m:57022** 57R15 (14K25, 32L10, 32L99, 57R20, 58G99)
- (with Weintraub, Steven H.) Moduli spaces of Riemann surfaces of genus two with level structures. I. *Trans. Amer. Math. Soc.* **310** (1988), no. 1, 217–237. (Avner Ash) **89i:32054** 32J05 (11F46, 11F75, 11G18, 14H15)
- Lee, S.-C.** see **Lee, Shih Chang**
- Lee, S. J.** see **Lee, Sung J.**
- Lee, S. L.** see **Lee, Seng Luan**
- Lee, S.-Y.** see **Lee, Sik Yum**
- Lee, Sa Ge** (with Cho, Sung Je; Kye, Seung-Hyeok) Intersection properties for the tensor products of  $C^*$ -algebras. *Bull. Korean Math. Soc.* **24** (1987), no. 2, 103–108. (A. J. Lazar) **89a:46121** 46L05 (46M05)
- (with Cho, Sung Je; Kim, Sang Og) On linear maps preserving projections. *Bull. Korean Math. Soc.* **25** (1988), no. 1, 83–85. (Steve Wright) **89j:46062** 46L05 (46K05, 46L70)
- Lee, Sanboh** (with Li, J. C. M.) Summation of infinite series related to roots of certain functions. *Internat. J. Math. Ed. Sci. Tech.* **19** (1988), no. 1, 89–93. (H. P. Dikshit) **89c:40002** 40A05
- Lee, Sang Goe** (with Kim, Hae Kyung) Asymptotic efficiency of a nonparametric test in nonlinear regression parameters. *Honam Math. J.* **9** (1987), no. 1, 121–134. (Z. Sidák) **89a:62151** 62J02 (62G10, 62G20)
- Lee, Sang Hun** (with Cho, Nak Eun; Owa, Shigeyoshi) A class of meromorphic univalent functions with positive coefficients. *Kobe J. Math.* **4** (1987), no. 1, 43–50. (Stephen M. Zemyan) **89b:30008** 30C45
- Lee, Sang Jeong** (with Kwon, W. H.) LQG/LTR methods for linear systems with delay in state. *IEEE Trans. Automat. Control* **33** (1988), no. 7, 681–687. (Summary) **89d:34125** 34K35 (49D40, 93D10, 93E11)
- (with Kwon, W. H.; Kim, Sang Woo) LQG/LTR methods for linear input-delayed systems. *Internat. J. Control* **47** (1988), no. 5, 1179–1194. (Summary) **89c:34088** 34K35 (49D40, 93B50, 93C05, 93D05)
- Lee, Sang Keun** (with Owa, Shigeyoshi; Srivastava, Hari M.) A note on a certain subclass of analytic functions with real part greater than  $\alpha$ . *Bull. Soc. Roy. Sci. Liège* **57** (1988), no. 3, 131–136. (Carl P. McCarthy) **89m:30022** 30C45
- Lee, Sangbae** (with Kim, Yong Chan) Multipliers of  $G^p$  and Bloch functions. *Math. Japon.* **32** (1987), no. 3, 421–426. (P. L. Duren) **89c:30090** 30D55 (46E15, 46J15)
- (with Kim, Yong Chan; Kwon, Ohsang) Convolution of univalent functions with negative coefficients. *Math. Japon.* **33** (1988), no. 2, 261–268. (Herb Silverman) **89c:30019** 30C45
- Lee, Seng Luan** (with Phillips, G. M.) Polynomial interpolation at points of a geometric mesh on a triangle. *Proc. Roy. Soc. Edinburgh Sect. A* **108** (1988), no. 1–2, 75–87. (D. D. Stancu) **89c:41002** 41A05 (41A10, 41A63, 65D05)
- Lee, Seung-Hoon** (with Yum, Bong-Jin) Large-sample comparisons of statistical calibration procedures when the standard measurement is also subject to error: the replicated case. *J. Korean Statist. Soc.* **17** (1988), no. 1, 9–23. (Summary) **89j:62041** 62J05
- Lee, Seung Joo** (with Hara, Hiroaki; Obata, Tsunehiro) Fluctuation and bifurcation of the path described by generalized random walks. *Phys. Rev. B* **37** (1988), no. 1, 476–486. (Summary) **89a:82059** 82A70 (60J15, 82A41)
- Lee, Seung-On** On countably approximating lattices. *J. Korean Math. Soc.* **25** (1988), no. 1, 11–23. (Jimmie D. Lawson) **89f:06009** 06B35
- Lee, Shih Chang** Soliton transformations for axially symmetric higher-dimensional gravity. I. Generalized Neugebauer-Kramer transformations. *J. Math. Phys.* **28** (1987), no. 4, 893–900. (Basilis C. Xanthopoulos) **89b:83079** 83E15 (58G37)
- Soliton transformations for axially symmetric higher-dimensional gravity. II. Belinskii-Zakharov  $N$ -soliton transformations. *J. Math. Phys.* **28** (1987), no. 4, 901–904. (Basilis C. Xanthopoulos) **89b:83080** 83E15 (58G37)
- Lee, Shih Harn** (with Li, Tsu T'ien) Synthesis of control laws with specified gain and phase margin and poles region. *Proc. IEEE-D* **135** (1988), no. 6, 474–478. (Summary) **89i:93051** 93B50 (93B35, 93B55, 93C55)
- Lee, Shong-Leih** A new numerical formulation for parabolic differential equations under the consideration of large time steps. *Internat. J. Numer. Methods Engrg.* **26** (1988), no. 7, 1541–1549. (Summary) **89e:65141** 65N99
- Lee, Sik Yum** (with Bentler, P. M.; Weng, Li-Jen) Multiple population covariance structure analysis under arbitrary distribution theory. *Comm. Statist. Theory Methods* **16** (1987), no. 7, 1951–1964. (Naganori Mori) **89b:62136** 62J05 (62E20)
- (with Poon, Wai-Yin) Errata: "Maximum likelihood estimation of multivariate polyserial and polychoric correlation coefficients" [*Psychometrika* **52** (1987), no. 3, 409–430; MR **88i:62097**, *Psychometrika* **53** (1988), no. 2, 301. (Editors) **89g:62080** 62H12]
- Lee, Sin-Min** On automorphism groups of nonassociative Boolean rings. *Publ. Inst. Math. (Beograd) (N.S.)* **41(55)** (1987), 49–52. (J. L. Zimmer) **89d:06024** 06E20 (17A10, 17A30)
- A class of Sheffer functions obtained by  $A$ -composition of functions. *Southeast Asian Bull. Math.* **11** (1988), no. 2, 115–121. (Michitaka Kameyama) **89i:03047** 03B50 (03G25, 08A40)
- Lee, Sing-Ling** (with Gonzalez, Teofilo F.) A 1.6 approximation algorithm for routing multiterminal nets. *SIAM J. Comput.* **16** (1987), no. 4, 669–704. (Summary) **89a:68088** 68Q20 (68Q35, 68R05, 90B10)
- Lee, Sing Y.** (with Rao, A. N. V.) Stochastic optimal control problem with nonstandard boundary conditions. *Operator methods for optimal control problems* (New Orleans, La., 1986), 215–237, *Lecture Notes in Pure and Appl. Math.*, 108, Dekker, New York, 1987. (H. J. Kushner) **89b:93118** 93E20 (93C05)
- Lee, Sangyun** (with Hong, Seung Pyo) Tube formulas from Chern's kinematic formula. *Bull. Korean Math. Soc.* **25** (1988), no. 2, 261–266. (Lieven Vanhecke) **89i:53040** 53C40
- Product tube formulas. *Illinois J. Math.* **33** (1989), no. 1, 153–161. (Lieven Vanhecke) **89j:53048** 53C40
- Lee, T. D.** Difference equations and conservation laws. *J. Statist. Phys.* **46** (1987), no. 5–6, 843–860. (Lawrence P. Horwitz) **89e:81127** 81E25 (39A10, 81C99)
- Soliton stars. *Applied mathematics, fluid mechanics, astrophysics* (Cambridge, MA, 1987), 387–398, *World Sci. Publishing, Singapore*, 1988. (See **89f:76002**) **85A15**
- Lee, T. N.** (with Radovic, U. L.) Decentralized stabilization of linear continuous and discrete-time systems with delays in interconnections. *IEEE Trans. Automat. Control* **33** (1988), no. 8, 757–761. (Khashayar Khorasani) **89k:93171** 93D15 (34K35, 93A15, 93C05, 93C35)
- (with Radovic, U. L.) Decentralized stabilization of nonlinear continuous time delay systems. *J. Franklin Inst.* **325** (1988), no. 3, 359–368. (Anthony Uyi Afuwape) **89k:34131** 34K20 (93A15, 93C10)
- Lee, T. Paul** (with Barkley, Ronald E.) Point representation and hashing of an interval. *Inform. Process. Lett.* **30** (1989), no. 4, 201–203. (Summary) **89k:68023** 68P10
- Lee, T. Sen** Theory and application of adaptive fading memory Kalman filters. *IEEE Trans. Circuits and Systems* **35** (1988), no. 4, 474–477. (Summary) **89b:93069** 93C40 (93E11)
- Lee, T. T.** see **Li, Tsu T'ien**



- Lee, T. Y. see Lee, Tan Yu
- Lee, Tak C. (with Ho, James K.; Sundarraj, R. P.) Decomposition of linear programs using parallel computation. *Math. Programming* 42 (1988), no. 2 (Ser. B), 391–405. (Summary) 89k:9009h 90C05 (68Q10)
- Lee, Tan Yu (with Hsia, W.-S.) Lagrangian function and duality theory in multiobjective programming with set functions. *J. Optim. Theory Appl.* 57 (1988), no. 2, 239–251. (Madhusudan Mishra) 89g:90213 90C31
- Lee, Tsun-Huei see Li, Ch'eng Hui
- Lee, Tsu-Tian see Li, Tsu-T'ien
- Lee, Wayne Y. (with Rao, Ramesh K. S.) Mean lower partial moment valuation and lognormally distributed returns. *Management Sci.* 34 (1988), no. 4, 446–453. (Thomas W. Epps) 89d:90026 90A09 (90A05)
- Lee, Wonwoo A new deletion criterion of principal components regression with orientations of the parameters. *J. Korean Statist. Soc.* 16 (1987), no. 2, 55–70. (Summary) 89d:62058 62J05 (62H25)
- (with Birch, Jeffrey B.) Fractional principal components regression: a general approach to biased estimators. *Comm. Statist. Simulation Comput.* 17 (1988), no. 3, 713–727. (Not in MR) 62J05
- Lee, Y. C. see Lee, Yee Chun
- Lee, Y. W. (with Ahmed, N. U.; Dabbous, T. E.) Dynamic routing for computer queueing networks. *Internat. J. Systems Sci.* 19 (1988), no. 6, 967–977. (Summary) 89g:90106 90B22 (90B15)
- Lee, Yann-Huang (with Shin, Kang G.) Optimal design and use of retry in fault-tolerant computer systems. *J. Assoc. Comput. Mach.* 35 (1988), no. 1, 45–69. (Summary) 89a:68015 68M15 (62F10, 62N05)
- Lee, Yee Chun (with Chen, Hudong; Chen, Shi Yi; Doolen, Gary D.) Simple lattice gas models for waves. *Complex Systems* 2 (1988), no. 3, 259–267. (From the text) 89g:82005 82-08
- (with Chen, James) A quadratic-form analysis of the collisionless tearing mode. *Phys. Fluids* 31 (1988), no. 10, 2944–2950. (Summary) 89h:76018 76E25 (76X05, 82A45)
- Lee, Yew Sing Some remarks on Cartan matrices. *Algebras Groups Geom.* 4 (1987), no. 4, 439–450. (B. N. Allison) 89i:17019 17B99 (17B67)
- Lee, Ying Chin (with Huang, Ch'i) Multifrequency Padé approximation via Jordan continued-fraction expansion. *IEEE Trans. Automat. Control* 34 (1989), no. 4, 444–446. (Not in MR) 41A21 (93B99)
- Lee, Yong Hoon (with Peterson, Steven R.; Kassam, Saleem A.) Spectral performance characterizations of some generalized median filters. *J. Franklin Inst.* 326 (1989), no. 2, 151–166. (Not in MR) 94A12
- Lee, Young Jin (with Sung, Chang Sup) Branch-and-bound approach for a stochastic production planning problem with capacity constraints. *J. Oper. Res. Soc. Japan* 31 (1988), no. 4, 532–550. (R. Subramanian) 89k:90081 90B30
- Lee, Young Seek (with Rinzel, John) Dissection of a model for neuronal parabolic bursting. *J. Math. Biol.* 25 (1987), no. 6, 653–675. (Summary) 89c:92029 92A09 (92A08)
- Lee, Youngjo The exact mean squared error risks of preliminary test type estimators for the multivariate normal mean. *Comm. Statist. Theory Methods* 16 (1987), no. 7, 1965–1975. (Glen Meeden) 89b:62115 62H15 (62C99)
- A modification of the combined estimator of inter- and intra-block estimators under an arbitrary convex loss function. *J. Korean Statist. Soc.* 16 (1987), no. 1, 21–25. (Summary) 89g:62131 62K10
- Lee, Yuh-Jia see Li, Yü Chia
- Lee-Bapt, I. P. (with Crighton, D. G.) Nonlinear wave motion governed by the modified Burgers equation. *Philos. Trans. Roy. Soc. London Ser. A* 323 (1987), no. 1570, 173–209. (S. K. Trehan) 89g:78018 78A40 (35Q20, 76B15)
- Leech, John see Conway, J. H., 89a:11067
- Leech, Jonathan Constructing inverse monoids from small categories. *Semigroup Forum* 36 (1987), no. 1, 89–116. (From the introduction) 89f:20075 20M50 (18B40)
- Leedham-Green, E. S. ★ Books in Cambridge inventories: book-lists from Vice-Chancellor's Court probate inventories in the Tudor and Stuart periods. Vol. I. The inventories. *Cambridge University Press, Cambridge-New York, 1986. xlii+649 pp. ISBN 0-521-30873-9* (M. Folkerts) 89k:01011a 01A40 (01A73)
- ★ Books in Cambridge inventories: book-lists from Vice-Chancellor's Court probate inventories in the Tudor and Stuart periods. Vol. II. Catalogue. *Cambridge University Press, Cambridge-New York, 1986. xii+861 pp. ISBN 0-521-30888-7* (M. Folkerts) 89k:01011b 01A40 (01A73)
- Leela, S. (with Hu, Shou Chuan) Periodic boundary value problem for integro-differential equations of Hammerstein type. *Appl. Math. Comput.* 25 (1988), no. 1, part I, 29–38. (O. Diekmann) 89d:45013 45J05 (34B15)
- (with Hu, Shou Chuan) Periodic boundary value problem for a second order integro-differential equation of Hammerstein type. *Appl. Math. Comput.* 25 (1988), no. 3, 219–226. (D. Bainov) 89d:45014 45J05
- (with Heikkilä, Seppo; Lakshmikantham, V.) Applications of monotone techniques to differential equations with discontinuous right-hand side. *Differential Integral Equations* 1 (1988), no. 3, 287–297. (C. P. Gupta) 89g:34002 34A10 (34B15, 47H17)
- (with Rama Mohana Rao, M.)  $(h_0, h, M_0)$ -stability for integro-differential equations. *J. Math. Anal. Appl.* 130 (1988), no. 2, 460–466. (S. D. Milusheva) 89d:45015 45J05 (43M10)
- (with Hu, Shou Chuan; Lakshmikantham, V.) Impulsive differential systems and the pulse phenomena. *J. Math. Anal. Appl.* 137 (1989), no. 2, 605–612. (Sheldon P. Gordon) 89k:93143 93C57 (34A99, 34C99)
- Leeming, David J. (with Kaufman, E. H., Jr.; Taylor, G. D.) Uniform rational approximation on subsets of  $[0, \infty]$ . *J. Approx. Theory* 51 (1987), no. 3, 218–230. (Franz Peherstorfer) 89c:41012 41A20
- Leep, David B. (with Marshall, Murray) Isomorphisms and automorphisms of Witt rings. *Canad. Math. Bull.* 31 (1988), no. 2, 250–256. (Bessie H. Kirkwood) 89c:11059 11E81
- (with Shapiro, Daniel B.) Multiplicative subgroups of index three in a field. *Proc. Amer. Math. Soc.* 105 (1989), no. 4, 802–807. (St. Schwarz) 89m:11127 11T99
- van Lee, B. (with Roe, P. L.) Nonexistence, nonuniqueness and slow convergence in discrete conservation laws. *Numerical methods for fluid dynamics, III* (Oxford, 1988), 519–529. *Inst. Math. Appl. Conf. Ser. New Ser.*, 17, Oxford Univ. Press, New York, 1988. (see 89j:76004) 65M99 (76-08, 76L05)
- de Leeuw, Jan (with Takane, Yoshio) On the relationship between item response theory and factor analysis of discretized variables. *Psychometrika* 52 (1987), no. 3, 393–408. (Summary) 89b:62124 62H25 (62J15)
- (with van Montfort, K.; Mooijaart, A.) Regression with errors in variables: estimators based on third order moments. *Statist. Neerlandica* 41 (1987), no. 4, 223–237. (Kajal Lahiri) 89d:62061 62J05 (62P20)
- (with van der Burg, Eeke) Use of the multinomial jack-knife and bootstrap in generalized nonlinear canonical correlation analysis. *Appl. Stochastic Models Data Anal.* 4 (1988), no. 3, 159–172. (Summary) 89i:62091 62H20
- (with van der Burg, Eeke; Verdegaa, Renée) Homogeneity analysis with  $k$  sets of variables: an alternating least squares method with optimal scaling features. *Psychometrika* 53 (1988), no. 2, 177–197. (Not in MR) 62P15
- (with van der Heijden, Peter G. M.) Correspondence analysis of incomplete contingency tables. *Psychometrika* 53 (1988), no. 2, 223–233. (Graham J. G. Upton) 89m:62058 62H17
- van Leeuwen, Jan (with Schoone, A. A.; Bodlaender, H. L.) Improved diameter bounds for altered graphs. *Graph-theoretic concepts in computer science* (Bernried, 1986), 227–236. *Lecture Notes in Comput. Sci.*, 246, Springer, Berlin-New York, 1987. (J. Bond) 89a:05092 05C35
- (with Bezem, Marc) On estimating the complexity of logarithmic decompositions. *Inform. Process. Lett.* 26 (1988), no. 6, 321–324. (Summary) 89a:68096 68Q25 (68P05)
- (with Tel, Gerard; Tan, Richard B.) The derivation of graph marking algorithms from distributed termination detection protocols. *Sci. Comput. Programming* 10 (1988), no. 2, 107–137. (Ranjan Chaudhuri) 89c:68008 68P05 (68Q20)
- (with Katajainen, Jyrki; Penttonen, Martti) Fast simulation of Turing machines by random access machines. *SIAM J. Comput.* 17 (1988), no. 1, 77–88. (John Michael Robson) 89c:68029 68Q05 (03D10, 03D15, 68Q30)
- see also Arora, Radha Krishnan, 89j:68043
- van Leeuwen, L. C. A. (with Leavitt, W. G.) Hereditariness of upper radicals. *Contributions to general algebra, 4* (Krems, 1985), 79–84. *Hölder-Pichler-Tempsky, Vienna*, 1987. (Terry L. Jenkins) 89d:16009 16A21
- (with Hebisch, U.) On additively or multiplicatively idempotent semirings and partial orders. *Semigroups, theory and applications* (Oberwolfach, 1986), 154–161. *Lecture Notes in Math.*, 1320, Springer, Berlin-New York, 1988. (H. J. Weinert) 89j:16046 16A78 (06F05, 06F25)
- van Leeuwen, W. A. (with Salvati, G. A. Q.; Schelling, E. E.) Homogeneous viscous universes with magnetic field. II. Bianchi type I spaces. *Ann. Physics* 179 (1987), no. 1, 52–75. (M. A. H. MacCallum) 89f:83045 83C20 (83F05)
- (with Hageman, T.) Viscous Bianchi type II universes with intergalactic magnetic field. *Phys. A* 146 (1987), no. 3, 506–524. (Summary) 89b:83035 83C20 (83F05)
- Lefebvre, Dominique (with Zienkiewicz, O. C.) Mixed methods for F.E.M. and the patch test: some recent developments. *Analyse mathématique et applications*, 473–500, Gauthier-Villars, Paris, 1988. (Summary) 89h:73003 73-08 (65N30, 76-08)
- Lefebvre, Mario Utilisation de densités de premier passage en commande optimale stochastique. (English summary) [Using first-passage densities in stochastic optimal control] *Adv. in Appl. Probab.* 20 (1988), no. 1, 231–234. (Kurt Marti) 89d:93120 93E20 (49D40)
- (with Whittle, Peter) Survival optimization for a dynamic system. (French summary) *Ann. Sci. Math. Québec* 12 (1988), no. 1, 101–119. (N. C. Mohanty) 89j:93123 93E20 (49C20)
- Lefebvre, O. (with Michelot, C.) A primal-dual algorithm for the Fermat-Weber problem involving mixed gauges. *Math. Programming* 39 (1987), no. 3, 319–335. (Alan Shuchat) 89f:90117 90C25 (90C50)
- Lefever, René (with Horsthemke, Werner) ★ Индуцированные шумом переходы. (Russian) [Noise-induced transitions] Теория и применение в физике, химии и биологии. [Theory and application in physics, chemistry and biology] Translated from the English by Yu. A. Danilov and V. I. Emel'yanov. Translation edited and with a preface by D. N. Zubarev and A. S. Mikhailov. "Mir", Moscow, 1987. 399 pp. (Editors) 89d:82002 82-01 (60-01, 82A31, 82A42, 92-01)
- Lefever, Anne-Marie (with Gagneux, Gérard; Madaune-Tort, Monique) Une approche analytique d'un modèle black oil des écoulements triphasiques compressibles en ingénierie pétrolière. (English summary) [An analytic approach to a black-oil model for three-phase compressible flows in petroleum engineering] *J. Méc. Théor. Appl.* 6 (1987), no. 4, 547–569. (Alberto Valli) 89c:76106 76T05 (76N10, 76S05)
- Lefevr, R. see Lefever, René
- Lefevre, C. (with Hallin, Marc; Puri, Madan L.) On time-reversibility and the uniqueness of moving average representations for non-Gaussian stationary time series. *Biometrika* 75 (1988), no. 1, 170–171. (Robert V. Foutz) 89f:62077 62M10 (60G10, 62E10)
- (with de Palma, André) Population systems with (non-)extensive interaction rates. *Math. Comput. Modelling* 10 (1988), no. 5, 359–365. (K. Gopalsamy) 89g:92049 92A15
- see also Spatial processes and spatial time series analysis, 89b:62007
- Löffel'khol'ts, Yu. see Löffelholz, Jürgen
- Mittag-Leffler, Magnus Gösta see Mittag-Leffler, Magnus Gösta
- Le Floch, Philippe (with Raviart, Pierre-Arnaud) Un développement asymptotique pour la solution du problème de Riemann généralisé. (English summary) [An asymptotic expansion for the solution of the generalized Riemann problem] *C. R. Acad. Sci. Paris Sér. I Math.* 304 (1987), no. 4, 119–122. (Summary) 89d:35113 35L65
- Solutions faibles entropiques des systèmes hyperboliques non linéaires sous forme non conservative. (English summary) [Entropy weak solutions to nonlinear hyperbolic systems in nonconservative form] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 4, 181–186. (Summary) 89m:35133 35L60
- Entropy weak solutions to nonlinear hyperbolic systems under nonconservative form. *Comm. Partial Differential Equations* 13 (1988), no. 6, 669–727. (Alexander Doktor) 89h:35194 35L60 (35D05, 35L65, 73C50, 73D40, 76L05)
- (with Dubois, François) Boundary conditions for nonlinear hyperbolic systems of conservation laws. *J. Differential Equations* 71 (1988), no. 1, 93–122. (A. O. Goganesyan) 89c:35099 35L65
- (with Dubois, François) Boundary conditions for nonlinear hyperbolic systems of conservation laws. *Nonlinear hyperbolic equations—theory, computation methods,*

- and applications (Aachen, 1988), 96–104, *Notes Numer. Fluid Mech.*, 24, Vieweg, Braunschweig, 1989. (see **89j:35007**) 35L65 (65N99, 76–08, 76N15)
- Lefmann, H.** A note on Ramsey numbers. *Studia Sci. Math. Hungar.* 22 (1987), no. 1–4, 445–446. (Michael Jacobson) **89d:05132** 03C55
- Léga, J.** (with Couillet, P.; Gil, L.) Transitions in systems far from equilibrium: a Ginzburg-Landau approach. *Chaos and complexity* (Torino, 1987), 99–112, *World Sci. Publishing, Singapore*, 1988. (Juliana Oprea) **89m:76036** 76E15 (58F13, 80A50)
- (with Gil, L.) Defects in waves. *Propagation in systems far from equilibrium* (Les Houches, 1987), 164–175, *Springer Ser. Synergetics*, 41, Springer, Berlin-New York, 1988. (see **89f:76003**) 76E15 (58F14, 80A32, 82A99)
- Le Gall, J.-F.** Sur le temps local d'intersection du mouvement brownien plan et la méthode de renormalisation de Varadhan. [On the local time of intersection of Brownian motion in the plane and Varadhan's renormalization method] *Séminaire de probabilités, XIX*, 1983/84, 314–331, *Lecture Notes in Math.*, 1123, Springer, Berlin-New York, 1985. (F. L. Spitzer) **89d:60137** 60J55 (60J65)
- Une approche élémentaire des théorèmes de décomposition de Williams. [An elementary approach to Williams' decomposition theorems] *Séminaire de probabilités, XX*, 1984/85, 447–464, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (L. C. G. Rogers) **89g:60219** 60J15 (60J65)
- (with Biane, Ph.; Yor, Marc) Un processus qui ressemble au pont brownien. [A process similar to the Brownian bridge] *Séminaire de Probabilités, XXI*, 270–275, *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (F. B. Knight) **89d:60145** 60J65 (60J55)
- Temps locaux d'intersection et points multiples des processus de Lévy. [Local intersection times and multiple points of Lévy processes] *Séminaire de Probabilités, XXI*, 341–374, *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (S. J. Taylor) **89g:60240** 60J55 (60J30)
- The exact Hausdorff measure of Brownian multiple points. *Seminar on stochastic processes*, 1986 (Charlottesville, Va., 1986), 107–137, *Progr. Probab. Statist.*, 13, Birkhäuser Boston, Boston, MA, 1987. (Bert Fristedt) **89a:60188** 60J65 (60J55)
- (with Taylor, Samuel James) The packing measure of planar Brownian motion. *Seminar on stochastic processes*, 1986 (Charlottesville, Va., 1986), 139–147, *Progr. Probab. Statist.*, 13, Birkhäuser Boston, Boston, MA, 1987. (Bert Fristedt) **89a:60189** 60J65
- Mouvement brownien, cônes et processus stables. (English summary) [Brownian motion, cones and stable processes] *Probab. Theory Related Fields* 76 (1987), no. 4, 587–627. (Krzysztof Burdzy) **89b:60193** 60J65 (60G17)
- Sur une conjecture de M. Kac. (English summary) [On a conjecture of M. Kac] *Probab. Theory Related Fields* 78 (1988), no. 3, 389–402. (Michael Cranston) **89m:60195** 60J65 (60J45)
- Le Gall, Pierre** Some comments on the work of J. W. Cohen and new results in the theory of queueing networks. *Queueing theory and its applications*, 307–324, *CWI Monographs*, 7, North-Holland, Amsterdam-New York, 1988. (C. E. M. Pearce) **89m:60239** 60K25 (60–03, 60K30, 90–03, 90B15, 90B22)
- Légaré, M.** (with Kamran, N.; McLennaghan, R. G.; Winternitz, P.) The classification of complete sets of operators commuting with the Dirac operator in Minkowski space-time. *J. Math. Phys.* 29 (1988), no. 2, 403–411. (Mayer Humi) **89e:81019** 81C05 (53C80, 83C40)
- martínez-Legaz, Juan-Enrique** see **Martínez-Legaz, Juan-Enrique**
- Legendre, Adrien Marie** see **Swijtink, Zeno G.**, **89c:01101**
- Léger, Alain** (with Potier-Ferry, Michel) Bifurcations plastiques à partir d'un état inhomogène. (English summary) [Elastoplastic bifurcations from an inhomogeneous state] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* 303 (1986), no. 2, 111–114. (Summary) **89j:73056** 73H99 (58E07, 73E99)
- Leger, G. F.** (with Manley, P. L.) Dimensionally nilpotent Lie algebras. *J. Algebra* 117 (1988), no. 1, 162–164. (José María Ancochea Bermudez) **89b:17012** 17B30 (17B20)
- Legg, David** (with Huotari, R.; Meyerowitz, Aaron D.; Townsend, D.) The natural best  $L_1$ -approximation by nondecreasing functions. *J. Approx. Theory* 52 (1988), no. 2, 132–140. (Gerald D. Taylor) **89b:41025** 41A29 (41A30)
- Leggett, A. J.** Quantum mechanics and realism at the macroscopic level: is an experimental discrimination feasible? *New techniques and ideas in quantum measurement theory* (New York, 1986), 21–24, *Ann. New York Acad. Sci.*, 480, New York Acad. Sci., New York, 1986. (see **89m:81005**) 81B05
- Quantum mechanics at the macroscopic level. *Le hasard et la matière* (Les Houches, 1986), 395–506, North-Holland, Amsterdam-New York, 1987. (see **89j:82001**) 81–01 (81B05, 82A15)
- Legisa, Peter** Skew-symmetric operators and isometries on a real Banach space with a hyperorthogonal basis. *Advances in invariant subspaces and other results of operator theory* (Timişoara and Herculane, 1984), 213–218, *Oper. Theory Adv. Appl.*, 17, Birkhäuser, Basel-Boston, MA, 1986. (Sandy Grabiner) **89b:46018** 46B15 (47B37, 47D10)
- Legowski, Z.** (with Włodarczyk, E.) A method for increasing the smoothness of functions as applied for the construction of generalized solutions to stationary plane flow problems in the class of simple waves. (Russian and Polish summaries) *J. Tech. Phys.* 28 (1987), no. 2, 125–132 (1988). (Marek Elżanowski) **89k:76040** 76D33 (35L67, 76L05)
- Legrand, A.** Caractérisation des opérations d'algèbres sur les modules différentiels. (English summary) [Characterization of actions of algebras on differential modules] *Compositio Math.* 66 (1988), no. 1, 23–36. (Edgar H. Brown, Jr.) **89f:55021** 55T25 (16A99, 55N91)
- Legrand, Remi** A basis result in combinatory logic. *J. Symbolic Logic* 53 (1988), no. 4, 1224–1226. (Martin W. Bunder) **89i:03029** 03B40
- Leguesdron, J. P.** Marche aléatoire sur le semi-groupe des contractions de  $\mathbb{R}^d$ . Cas de la marche aléatoire sur  $\mathbb{R}$ , avec choc élastique en zéro. [Random walk on the contraction semigroup in  $\mathbb{R}^d$ . Case of a random walk in  $\mathbb{R}$ , with elastic collision at zero] *Probabilités*, 99–145, *Publ. Inst. Rech. Math. Rennes*, 1986–1, Univ. Rennes I, Rennes, 1986. (Philippe Bougerol) **89g:60208** 60J05 (60J15)
- Leguillon, D.** (with Sánchez-Palencia, Enrique) Singularities in elliptic nonsmooth problems. Applications to elasticity. *Nonclassical continuum mechanics* (Durham, 1986), 260–271, *London Math. Soc. Lecture Note Ser.*, 122, Cambridge Univ. Press, Cambridge-New York, 1987. (Alexander Mielke) **89b:73014** 73C45 (35J99, 73C30, 73C40, 73M05)
- Legut, Jerzy** A game of fair division with continuum of players. *Colloq. Math.* 53 (1987), no. 2, 323–331. (Nicholas C. Yannelis) **89a:90169** 90D12 (90A05, 90D13)
- Lehel, J.** Peripheral graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 59 (1987), 179–184. (Alan Tucker) **89e:05471** 05C75 (05C15)
- (with Gyárfás, A.) On-line and first fit colorings of graphs. *J. Graph Theory* 12 (1988), no. 2, 217–227. (Felix Lazebnik) **89c:05037** 05C15 (68Q25)
- Lehman, Bradley** (with Bentsman, Joseph; Fakhfakh, Jamel; Hvoslov, Harry) Vibrational stabilization of linear systems with time delay. *Analysis and optimization of systems* (Antibes, 1988), 72–79, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89f:34105** 34K20
- Lehman, J. Larry** Rational points on elliptic curves with complex multiplication by the ring of integers in  $\mathbb{Q}(\sqrt{-7})$ . *J. Number Theory* 27 (1987), no. 3, 253–272. (M. A. Kenku) **89a:11059** 11G05 (11F37, 11G40, 14G25, 14K07)
- Lehmann, Arndt** (with Bandemer, Hans; Hulsch, Friedrich) A watershed algorithm adapted to functions on grids. (German and Russian summaries) *Elektron. Informationsverarb. Kybernet.* 22 (1986), no. 10–11, 553–564. (Răzvan Andonie) **89g:68066** 68U05 (68T10)
- Lehmann, Axel** (with Thiele, Burkhard; Tiedge, Jürgen) Transformierte des Wiener-Prozesses zur Modellierung von Verschleißprozessen. [Transforms of the Wiener process for the modelling of attrition processes] *Wiss. Z. Tech. Univ. Magdeburg* 31 (1987), no. 5, 36–42. (Paul Embrechts) **89k:60116** 60J60 (60J65)
- Lehmann, Daniel** ★ Initiation à la géométrie. (French) [Introduction to geometry] With an appendix by Rudolphe Bkouche. *Mathématiques*. [Mathematics] Presses Universitaires de France, Paris, 1988. 503 pp. ISBN 2-13-040160-0 (H. W. Guggenheimer) **89f:51002** 51–01
- Intégration sur les variétés stratifiées. (English summary) [Integration on stratified manifolds] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 11, 603–606. (A. Verona) **89k:58017** 58A35 (58A12)
- Lehmann, E. L.** Comparing location experiments. *Ann. Statist.* 16 (1988), no. 2, 521–533. (K. K. Ferentinos) **89i:62013** 62B15
- Lehmann, Jean-Philippe** A universal machine without change of state. *Theoret. Comput. Sci.* 55 (1987), no. 2–3, 291–348. (Summary) **89b:68025** 68Q05 (03D10)
- Lehmann, Reinhard** Computable error bounds in the finite-element method. *IMA J. Numer. Anal.* 6 (1986), no. 3, 265–271. (Summary) **89b:65182** 65N30
- A computable finite element interpolation error bound in the uniform metric. *Discretization in differential equations and enclosures* (Weissig, 1986), 137–143, *Math. Res.*, 36, Akademie-Verlag, Berlin, 1987. (I. N. Molchanov) **89k:65137** 65N30 (65G10)
- Lehmer, Emma** Connection between Gaussian periods and cyclic units. *Math. Comp.* 50 (1988), no. 182, 535–541. (Harvey Cohn) **89h:11067a** 11R11 (11R16, 11R21, 11R27)
- Lehn, Jürgen** (with Eichenauer, Jürgen; Grothe, Holger; Topuzoglu, Alev) A multiple recursive nonlinear congruential pseudo random number generator. *Manuscripta Math.* 59 (1987), no. 3, 331–346. (P. Neumann) **89f:65008** 65C10 (11B39)
- (with Eichenauer, Jürgen; Topuzoglu, Alev) A nonlinear congruential pseudorandom number generator with power of two modulus. *Math. Comp.* 51 (1988), no. 184, 757–759. (J. Spanier) **89i:65007** 65C10 (11K45, 65C05)
- (with Eichenauer, Jürgen; Grothe, Holger) On the period length of pseudorandom vector sequences generated by matrix generators. *Math. Comp.* 52 (1989), no. 185, 145–148. (H. J. Godwin) **89g:65010** 65C10 (11K45)
- Lehner, D.** (with Rank, K.; Unbehauen, R.) On limit cycles in one- and multi-dimensional digital filters. *IEEE Trans. Circuits and Systems* 35 (1988), no. 10, 1339–1342. (Summary) **89j:94009** 94A12
- Lehoczky, John P.** (with Sethi, Suresh P.; Shreve, Steven E.) A martingale formulation for optimal consumption/investment decision making. *Optimal control theory and economic analysis*, 2 (Vienna, 1984), 135–153, North-Holland, Amsterdam-New York, 1985. (Summary) **89b:90025** 90A09 (90A05, 90A10)
- (with Karatzas, Ioannis; Shreve, Steven E.) Optimal portfolio and consumption decisions for a "small investor" on a finite horizon. *SIAM J. Control Optim.* 25 (1987), no. 6, 1557–1586. (Lorenzo Peccati) **89d:90025** 90A09 (60G44, 93E20)
- (with Sha, Lui; Jensen, E. Douglas) Modular concurrency control and failure recovery. *IEEE Trans. Comput.* 37 (1988), no. 2, 146–159. (Summary) **89a:68041** 68P15 (68N25)
- Le Hong Van** New examples of T-M surfaces. (Russian) *Geometry, differential equations and mechanics* (Russian) (Moscow, 1985), 102–105, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (G. Tóth) **89d:58030** 58E20 (49F22, 53C65)
- Absolutely minimal surfaces and calibrations on orbits of the adjoint representation of classical Lie groups. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 6, 1308–1311; translation in *Soviet Math. Dokl.* 37 (1988), no. 1, 251–254. (O. Kowalski) **89k:58065** 58E15 (49F10, 53C30, 53C42)
- (with Fomenko, A. T.) Lagrangian manifolds and the Maslov index in the theory of minimal surfaces. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 1, 42–45; translation in *Soviet Math. Dokl.* 37 (1988), no. 2, 330–333. (John C. Wood) **89e:53086** 53C42 (49F10, 53A10, 58E15)
- (with Fomenko, A. T.) Volumes of minimal surfaces and the curvature tensor of Riemannian manifolds. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 6, 1308–1312; translation in *Soviet Math. Dokl.* 37 (1988), no. 3, 817–820. (Alan West) **89j:53041** 53C20 (53C42, 58E12)
- Minimal surfaces in homogeneous spaces. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 52 (1988), no. 2, 408–423, 447; translation in *Math. USSR-Izv.* 32 (1989), no. 2, 413–427. (D. I. Papuc) **89f:53092** 53C42 (53C40, 58F25)
- Lehrer, E.** An axiomatization of the Banzhaf value. *Internat. J. Game Theory* 17 (1988), no. 2, 89–99. (J. Rosenmüller) **89f:90209** 90D12
- Lehrer, G. I.** On hyperoctahedral hyperplane complements. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 219–234, *Proc. Sympos. Pure Math.*, 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Louis Solomon) **89g:20079** 20H15 (05A17, 20G05, 57S30)
- A survey of Hecke algebras and the Artin braid groups. *Braids* (Santa Cruz, CA, 1986), 365–385, *Contemp. Math.*, 78, Amer. Math. Soc., Providence, RI, 1988. (James E. Humphreys) **89m:20043** 20F36 (11F75, 14M15, 20G15, 57M25)
- Lehti, Raimo** The concept of velocity and problems of computing it in Aristotelian physics. (Finnish. English summary) *Arkhimedes* 39 (1987), no. 4, 279–307. (Peeter Müürsepp) **89c:01016** 01A35
- Lehtinen, M. S.** On statistical inversion theory. *Theory and applications of inverse problems* (Helsinki, 1985), 46–57, *Pitman Res. Notes Math. Ser.*, 167, Longman Sci. Tech., Harlow,



1988. (see **89c:00029**) 86A99 (62F99)
- Lehtinen, Matti** On extremal quasiconformal mappings in the presence of a dilatation bound. *Rev. Roumaine Math. Pures Appl.* **32** (1987), no. 10, 915–922. (K. Strebel) **89d:30024** 30C60 (30C70)
- (with Vuorinen, M.) On Teichmüller's modulus problem in the plane. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 1–2, 97–106. (Tuomas Sorvali) **89g:30035** 30C60 (30C75, 30C85, 31A15)
- Lehtonen, Ari** (with Nečas, Jindřich; Neittaanmäki, Pekka) On the construction of Lusternik-Schnirelmann critical values with application to bifurcation problems. *Appl. Anal.* **25** (1987), no. 4, 253–268. (Reiner Lauterbach) **89e:58026** 58E05 (47H15, 58E07, 65J15)
- Lehtonen, Tapani** Scheduling jobs with exponential processing times on parallel machines. *J. Appl. Probab.* **25** (1988), no. 4, 752–762. (James W. Snively, Jr.) **89j:68018** 68M20 (68Q10, 90B35)
- Lei, Chin-Liang** (with Emerson, E. Allen) Modalities for model checking: branching time logic strikes back. *Sci. Comput. Programming* **8** (1987), no. 3, 275–306. (Summary) **89h:68106** 68Q60 (03B45, 03B70, 68Q55, 68Q70)
- Lei, Guo** (with Chen, Han Fu; Gao, Ai Jun) Convergence and robustness of the Robbins-Monro algorithm truncated at randomly varying bounds. *Stochastic Process. Appl.* **27** (1988), no. 2, 217–231. (Kurt Marti) **89b:62180** 62L20
- Lei, Jin Gan** (with Anselone, P. M.) Nonlinear operator approximation theory based on demi-regular convergence. *Acta Math. Sci. (English Ed.)* **6** (1986), no. 2, 121–132. (Livia D'Apuzzo) **89d:47138** 47H17 (65J15)
- Finite-dimensional approximation of nonlinear variational inequalities. (Chinese. English summary) *J. Wuhan Univ. Natur. Sci. Ed.* **1987**, no. 3, 1–6. (Shuzi Zhou) **89a:49012** 49A29 (47H05, 49A27, 65J15)
- Lei, Jing Zhao** (with Zhou, Kong Rong) Global stability analysis of the Gilpin-Ayala competition model. (Chinese. English summary) *Sichuan Daxue Xuebao* **24** (1987), no. 4, 361–366. (Summary) **89c:92075** 92A15 (34D20)
- Lei, Yan Song** (with Xu, Chang Fa)  $L_2$  and  $L_\infty$  estimates for semidiscrete Galerkin approximation solutions to weakly nonlinear parabolic differential equations. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 5, 133–137. (Summary) **89c:65144** 65N30
- (with Xu, Chang Fa)  $L_2$  and  $L_\infty$  estimates for semidiscrete Galerkin approximations to solutions of a class of nonlinear hyperbolic equations. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 6, suppl., 115–118. (Chuan Miao Chen) **89j:65077** 65N30
- Lei, Ying Guo** A Lotka-Volterra diffusion systems with functionals. *Ann. Differential Equations* **3** (1987), no. 1, 39–49. (K. Smítalová) **89d:92070** 92A15 (34C10, 92A17)
- Leib, S. J.** (with Goldstein, M. E.) Nonlinear roll-up of externally excited free shear layers. *J. Fluid Mech.* **191** (1988), 481–515. (Summary) **89m:76043** 76E30 (76F10)
- Leibbrandt, George** A general prescription for three prominent noncovariant gauges. *Nuclear Phys. B* **310** (1988), no. 2, 405–427. (Henryk Arodz) **89m:81107** 81E15 (81E13)
- Leiber, T.** (with Risken, H.) Stability of parametrically excited dissipative systems. *Phys. Lett. A* **129** (1988), no. 4, 214–218. (Summary) **89c:65082** 65L07 (34D20)
- (with Scherrer, H.; Risken, H.) Eigenvalues of the Schrödinger equation with rational potentials. *Phys. Rev. A* (3) **38** (1988), no. 8, 3949–3959. (Summary) **89i:81022** 81C05 (81–04, 81–08)
- Leibner, Peter** (with Antreich, Kurt J.; Pörnbacher, Fritz) Nominal design of integrated circuits on circuit level by an interactive improvement method. *IEEE Trans. Circuits and Systems* **35** (1988), no. 12, 1501–1511. (D. Stanomir) **89k:94081** 94C05
- Leibniz, G. W.** ★ *Sämtliche Schriften und Briefe. Reihe III.* (German) [Collected works and letters. Series III] Mathematischer, naturwissenschaftlicher und technischer Briefwechsel. Zweiter Band. 1676–1679. [Mathematical, scientific and technological correspondence. Vol. 2. 1676–1679] Edited and with a foreword by Heinz-Jürgen Hess. *Akademie-Verlag, Berlin*, 1987. xxxii+1013 pp. ISBN 3-05-000235-2 (E. J. Barbeau) **89f:01091** 01A75 (01A45)
- see also Sainati, Vittorio, **89b:03003**; Fellmann, E. A., **89d:01020**; Three hundred years of *Nova methodus* by G. W. Leibniz (1684–1984), **89h:01025**; Sun, Xiao Li, **89h:01083**; Robinet, André, **89b:01030**; Alton, Eric J., **89m:01031**; Feigenbaum, Lenore, **89m:01035**; Ross, George Macdonald, **89m:01038**; Leibniz: questions of logic, **89m:01041**; Coyne, G. V., **89h:01044**; Robinet, André, **89m:01041**; Kachler, Klaus E., **89m:01041**; Dascal, Marcelo, **89m:01041**; Lenzen, Wolfgang, **89m:01041**; Rossi, Jean-Gérard, **89m:01041**; Treisfontaines, Claude, **89m:01041**; Hübener, Wolfgang, **89m:01041**; Di Bella, Stefano, **89m:01041**; Rutherford, Donald, **89m:01041**; Mugnai, Massimo, **89m:01041**; Schneider, Martin, **89m:01041**; Ishiguro, Hidé, **89m:01041**; Poser, Hans, **89m:01041** and Blachowicz, Krystyna, **89g:03001**
- Leibowitz, Elhanan** (with Nissani, Noah) Coordinate approach to the energy conservation problem in general relativity. *Phys. Lett. A* **126** (1988), no. 8–9, 447–449. (R. J. McKellar) **89c:83032** 83C40 (53B50)
- Leibowitz, Rochelle** (with Cozzens, Margaret B.) Multidimensional scaling and threshold graphs. *J. Math. Psych.* **31** (1987), no. 2, 179–191. (Fumiko Samejima) **89a:92069** 92A25 (06A99)
- Leichtnam, Éric** Construction de solutions singulières pour des équations aux dérivées partielles non linéaires. [Construction of singular solutions for nonlinear partial differential equations] *Ann. Sci. École Norm. Sup. (4)* **20** (1987), no. 2, 137–170. (Yūsaku Hamada) **89a:35011** 35A20 (35G20)
- Régularité microlocale pour des problèmes de Dirichlet non linéaires non caractéristiques d'ordre deux à bord peu régulier. (English summary) [Microlocal regularity for second-order noncharacteristic nonlinear Dirichlet problems with nonsmooth boundary] *Bull. Soc. Math. France* **115** (1987), no. 4, 457–489. (Teresa Monteiro-Fernandes) **89j:35006** 35A27 (35B65)
- Sur le problème de Cauchy ramifié. (English summary) [About the ramified Cauchy problem] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 12, 525–527. (Yūsaku Hamada) **89f:35010** 35A20 (35A30)
- Leichtweiß, K.** Über eine Formel Blaschkes zur Affinoberefläche. [On a formula of Blaschke on the affine surface area] *Studia Sci. Math. Hungar.* **21** (1986), no. 3–4, 453–474. (Victor Bangert) **89b:53016** 53A15 (53C40)
- E. B. Christoffels Einfluss auf die Geometrie. [E. B. Christoffel's influence on geometry] *Sitzungsberichte der Berliner Mathematischen Gesellschaft*, 93–103, *Freie Univ. Berlin*, Berlin, 1987. (D. J. Struik) **89h:01036** 01A55 (53–03, 53A05, 53A45)
- Über einige Eigenschaften der Affinoberefläche beliebiger konvexer Körper. [On some properties of the affine surface of arbitrary convex bodies] Reprinted in *Affine Differentialgeometrie* [(Oberwolfach, 1986), 255–282, Tech. Univ. Berlin, Berlin, 1988], *Resultate Math.* **13** (1988), no. 3–4, 255–282. (A. Florian) **89j:52002** 52A20 (52A40)
- see also Blaschke, Wilhelm, **89a:01097**; **89a:01098**; **89a:01099**; **89a:01100** and **89a:01101**
- Leiderman, A. G.** Adequate families of sets and function spaces. *Comment. Math. Univ. Carolin.* **29** (1988), no. 1, 31–39. (Mohan L. Tikoo) **89f:54035** 54C40
- (with Malykhin, V. I.) Nonpreservation of final compactness for the multiplication of spaces of type  $C_p(X)$ . (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 1, 84–93, 223; translation in *Siberian Math. J.* **29** (1988), no. 1, 65–72. (Aleksander Blaszczyk) **89h:54019** 54D30
- Leifer, Lloyd A.** (with Huff, James; Griffith, Daniel A.; Sonis, Michael; Straussfogel, Debra) Dynamic central place theory: an appraisal and future prospects. *Transformations through space and time (Hansholm, 1985)*, 121–151, *NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci.*, 29, *Nijhoff, Dordrecht*, 1986. (Introduction) **89j:92074** 92A20 (90A17, 90A30)
- (with Batta, Rajan) On the accuracy of demand point solutions to the planar, Manhattan metric,  $p$ -median problem, with and without barriers to travel. *Comput. Oper. Res.* **15** (1988), no. 3, 253–262. (Not in MR) 90B10
- Leiger, T.** (with Maasik, M.) The  $\lambda$ -inclusion of summation matrices. (Russian. German summary) *Tartu Riikl. Ül. Toimetised* No. 770 (1987), 61–68. (M. S. Rangachari) **89c:40004** 40D25 (40C05)
- Leih, George** (with Engelfriet, Joost; Rozenberg, Grzegorz) Apex graph grammars. *Graph grammars and their application to computer science (Warrenton, VA, 1986)*, 167–185, *Lecture Notes in Comput. Sci.*, 291, *Springer, Berlin-New York*, 1987. (see **89b:68009**) 68Q50
- (with Engelfriet, Joost) Nonterminal bounded NLC graph grammars. *Theoret. Comput. Sci.* **59** (1988), no. 3, 309–315. (D. M. Campbell) **89j:68090** 68Q50
- Leinaas, J. M.** (with Myrheim, J.) Intermediate statistics for vortices in superfluid films. *Phys. Rev. B* (3) **37** (1988), no. 16, 9286–9291. (Mario Škrinjar) **89k:81207** 81J05 (82A15)
- Leinen, Felix** (with Phillips, Richard E.) Algebraically closed groups in locally finite group classes. *Group theory (Bressanone, 1986)*, 85–102, *Lecture Notes in Math.*, 1281, *Springer, Berlin-New York*, 1987. (U. Felgner) **89e:20057** 20E25 (03C60)
- Leinert, Michael** (with Graham, Colin C.; Lau, A. T.) Separable translation-invariant subspaces of  $M(G)$  and other dual spaces on locally compact groups. *Colloq. Math.* **55** (1988), no. 1, 131–145. (Paul Milnes) **89j:43004** 43A40
- Leinfellner, Werner** The prisoner's dilemma and its evolutionary iteration. *Paradoxical effects of social behavior*, 135–148, *Physica, Heidelberg*, 1986. (see **89d:90019**) 90D05 (90D35, 92A20)
- Leininger, Gary G.** (with Chung, Jack C. H.; Litt, Maria; Scher, Harvey) Closed loop identification in diffusion-limited aggregation processes. *Complex Systems* **1** (1987), no. 3, 401–416. (Summary) **89b:82004** 82–08 (58F40)
- Leino, M.** (with Paatero, P.) Extremal solutions for regularizing ill-posed problems. *Theory and applications of inverse problems (Helsinki, 1985)*, 68–80, *Pitman Res. Notes Math. Ser.*, 167, *Longman Sci. Tech., Harlow*, 1988. (see **89c:00029**) 65D99
- Leipholz, H. H. E.** On the modal approach to the stability of certain nonselfadjoint problems in elastodynamics. *Dynamics Stability Systems* **1** (1986), no. 1, 43–58. (A. D. Wood) **89d:73017** 73D30 (34B25, 47E05, 73K05)
- On the application of the modal approach to plates with a nonselfadjoint control. *Dynamics Stability Systems* **1** (1986), no. 1, 59–72. (A. D. Wood) **89d:73018** 73D30 (35D10, 47F05, 73K12)
- ★ Stability theory. An introduction to the stability of dynamic systems and rigid bodies. Second edition. *B. G. Teubner, Stuttgart; John Wiley & Sons, Ltd., Chichester*, 1987. x+359 pp. ISBN 3-519-02105-6 (Silvio Nocilla) **89h:70001** 70–02 (70Kxx, 70Kxx)
- On Galerkin's method interpreted as a generalized integral transformation. *Comput. Methods Appl. Mech. Engrg.* **65** (1987), no. 2, 177–189. (A. Bleyer) **89c:65080** 65L10 (34B05)
- On direct methods and the calculus of variations. *Z. Angew. Math. Mech.* **67** (1987), no. 4, T13–T22. (E. S. Lee) **89f:49031** 49D15
- On the occurrence of nonselfadjointness in the control of elastic structures. *Acta Mech.* **73** (1988), no. 1–4, 95–119. (Summary) **89f:73062** 73K99 (49A10, 70Q05, 73H99, 93C75)
- see also Boley, Bruno A., **89i:01063**
- Leis, Jorge R.** (with Kramer, Mark A.) The simultaneous solution and sensitivity analysis of systems described by ordinary differential equations. *ACM Trans. Math. Software* **14** (1988), no. 1, 45–60. (Summary) **89b:65176** 65L05 (65V05)
- Leis, R.** (with Roach, G. F.) An initial-boundary value problem for the Schrödinger equation with long-range potential. *Proc. Roy. Soc. London Ser. A* **417** (1988), no. 1853, 353–362. (Charles I. Goldstein) **89h:35084** 35J10 (35P25, 81F05)
- Eine Außenraum Aufgabe zur Schrödingergleichung mit Coulomb-Potential. [An exterior domain problem for the Schrödinger equation with Coulomb potential] *Z. Angew. Math. Mech.* **68** (1988), no. 5, T460–T462. (Arne Jensen) **89m:35172** 35P25 (35J10)
- see also Partial differential equations and calculus of variations, **89g:00010**
- Leiserson, Charles E.** (with Maggs, Bruce M.) Communication-efficient parallel algorithms for distributed random-access machines. *Algorithmica* **3** (1988), no. 1, 53–77. (Summary) **89a:68090** 68Q20 (68Q05, 68Q25)
- (with Greenberg, Ronald I.) A compact layout for the three-dimensional tree of meshes. *Appl. Math. Lett.* **1** (1988), no. 2, 171–176. (Summary) **89g:68032a** 68Q35
- (with Greenberg, Ronald I.) Erratum to: "A compact layout for the three-dimensional tree of meshes". *Appl. Math. Lett.* **1** (1988), no. 3, 315. (Editors) **89g:68032b** 68Q35
- (with Saxe, James B.) A mixed-integer linear programming problem which is efficiently solvable. *J. Algorithms* **9** (1988), no. 1, 114–128. (Joachim Piehler) **89b:90153** 90C11
- Leiss, Ernst L.** On codes which are unchangeable under given subversions. *J. Combin. Inform. System Sci.* **10** (1985), no. 3–4, 91–109. (L. L. Campbell) **89h:94014** 94B45 (68P99, 94B60)
- On efficient embeddings of communication structures. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 185–194. (see **89a:05004a**) 68M10
- (with Bastani, Farokh B.) On maximal-immutable sets. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton,

- Fla., 1987). *Congr. Numer.* **59** (1987), 195–204. (see **89a:05004a**) 94B60
- On the degree of dominator trees. *Inform. Process. Lett.* **29** (1988), no. 4, 199–200. (Not in MR) 68N20 (68R10)
- Leitch, Roy** Qualitative modelling of physical systems for knowledge based control. *Advanced computing concepts and techniques in control engineering* (Il Ciocco, 1987), 31–51, NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci., 47, Springer, Berlin-New York, 1988. (see **89g:93002**) 68T05 (93C99, 94D05)
- silva Leite, F.** see **Silva Leite, F.**
- Leite, José Bezerra** A comparison of least-squares approximation and updated approximation in norm 1. (Portuguese. English summary) *Rev. Mat. Estatist.* **4/5** (1986/87), 21–30. (Not in MR) 62J05
- Leite, José Galvão** (with Bolfarine, Heleno; Rodrigues, Josemar) Exact expressions for the posterior mode of a finite population size: capture-recapture sequential sampling. *Rebrap* **1** (1987), no. 1, 91–100. (James M. Dickey) **89b:62026** 62D05 (62F15, 62L12)
- (with Oishi, Jorge; Pereira, C. A. de B.) A note on the exact maximum likelihood estimation of the size of a finite and closed population. *Biometrika* **75** (1988), no. 1, 178–180. (Jon Stone) **89d:62012** 62D05 (62F10, 62L12, 92A15)
- (with Rodrigues, Josemar; Bolfarine, Heleno) A Bayesian analysis in closed animal populations from capture recapture experiments with trap response. *Comm. Statist. Simulation Comput.* **17** (1988), no. 2, 407–430. (Not in MR) 62F15 (92A17, 92A18)
- Leite, Maria Luiza** Harmonic mappings of surfaces with respect to degenerate metrics. *Amer. J. Math.* **110** (1988), no. 3, 399–412. (Liane Valere Bouche) **89h:58046** 58E20 (30C60)
- Leites, D. A.** (with Save'ev, M. V.; Serganova, V. V.) Imbeddings of the Lie superalgebra  $osp(1|2)$  and the nonlinear supersymmetric equations associated with them. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (*Järnala*, 1985), 377–394, "Nauka", Moscow, 1986. (A. U. Klimyk) **89h:17042** 17B70 (58F07, 81E99)
- (with Save'ev, M. V.; Serganova, V. V.) Embeddings of  $osp(N/2)$  and the associated nonlinear supersymmetric equations. *Group theoretical methods in physics*, Vol. 1 (*Järnala*, 1985), 255–297, VNU Sci. Press, Utrecht, 1986. (A. K. Prikrat-skii and Yu. N. Sidorenko) **89a:58052** 58F07
- Selected problems of supermanifold theory. *Duke Math. J.* **54** (1987), no. 2, 649–656. (Mitchell Rothstein) **89c:58014** 58A50 (32C35, 58C50)
- see also **Fomenko, A. T.**; **89b:58003** and **Bezina, F. A.**; **89b:58006**
- Leith, John T.** (with Michelson, Seth) Unexpected equilibria resulting from differing growth rates of subpopulations within heterogeneous tumors. *Math. Biosci.* **91** (1988), no. 2, 119–129. (John Adam) **89g:92047** 92A15 (92A07)
- Leitmann, G.** (with Breinl, W.) State feedback for uncertain dynamical systems. *Appl. Math. Comput.* **22** (1987), no. 1, 65–87. (Chao Shun Zhou) **89a:93041** 93D15 (49D27, 93B07, 93B35, 93B50, 93C40)
- (with Corless, M. J.) Deterministic control of uncertain systems. *Modelling and adaptive control* (Sopron, 1986), 108–133, *Lecture Notes in Control and Inform. Sci.*, 105, Springer, Berlin-New York, 1988. (see **89c:93002**) 93D99
- (with Lee, Cho Seng) Continuous feedback guaranteeing uniform ultimate boundedness for uncertain linear delay systems: an application to river pollution control. The mathematics of systems and computations (Atlanta, GA, 1986). *Comput. Math. Appl.* **16** (1988), no. 10–11, 929–938. (Summary) **89m:65079** 65L99 (90A30, 92A17)
- (with Garofalo, F.) A composite controller ensuring ultimate boundedness for a class of singularly perturbed uncertain systems. *Dynamics Stability Systems* **3** (1988), no. 3–4, 135–145. (Pradeep Misra) **89k:93073** 93B35 (34E15, 93B50)
- Leiva, H. P.** (with Huggins, S. R.; Kunstatler, G.; Toms, David J.) The Vilkovisky-DeWitt effective action for quantum gravity. *Nuclear Phys. B* **301** (1988), no. 4, 627–660. (A. D. Popova) **89j:83040** 83C45 (81E20, 83C47, 83E15)
- Leizarowitz, Arie** Infinite horizon optimization for finite state Markov chain. *SIAM J. Control Optim.* **25** (1987), no. 6, 1601–1618. (Jaap Wessels) **89g:90234** 90C40 (93E20)
- On almost sure optimization for stochastic control systems. *Stochastics* **23** (1988), no. 2, 85–107. (Krzysztof Malinowski) **89a:93058** 93E20 (93C15)
- Estimates and exact expressions for Lyapunov exponents of stochastic linear differential equations. *Stochastics* **24** (1988), no. 4, 335–356. (D. Bobrowski) **89k:34104** 34F05 (34D05, 58F11, 60H10)
- Optimal trajectories of infinite-horizon deterministic control systems. *Appl. Math. Optim.* **19** (1989), no. 1, 11–32. (Moustafa El-Araby) **89m:49049** 49C20 (49A21)
- Le Jan, Y.** Temps local et superchamp. [Local times and superfields] *Séminaire de Probabilités, XXI*, 176–190, *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (Massimo Campanino) **89h:60125** 60J55 (60G60, 82A57)
- (with Darling, R. W. R.) The statistical equilibrium of an isotropic stochastic flow with negative Lyapunov exponents is trivial. *Séminaire de Probabilités, XXII*, 175–185, *Lecture Notes in Math.*, 1321, Springer, Berlin-New York, 1988. (Daniel Ocone) **89j:60073** 60H10 (58D25, 58F25, 60J65)
- On the Fock space representation of functionals of the occupation field and their renormalization. *J. Funct. Anal.* **80** (1988), no. 1, 88–108. (Michael Röckner) **89k:60100** 60J25 (46N05, 60G60, 60J45, 81E08)
- Lejeune, Michel G.** (with Sarda, Pascal) Quantile regression: a nonparametric approach. *Comput. Statist. Data Anal.* **6** (1988), no. 3, 229–239. (Vo-Khac Khoan) **89c:62078** 62J02 (62G99)
- Lé Khal Hôj** Representing subspaces and effective representative systems. (Russian) *Mathematical analysis and its applications* (Russian), 72–80, 164, Rostov. Gos. Univ., Rostov-on-Don, 1985. (Summary) **89h:46007** 46A35 (46E10)
- Le Khong Van** see **Le Hong Van**
- phan Le Kien** see **Pham Le Kien**
- Leko, T. D.** Comment on lattice-gas automata for the solution of partial differential equations. *Z. Angew. Math. Mech.* **68** (1988), no. 5, T462–T463. (Not in MR) 35–03 (01A55, 01A60)
- Le Quang Chung** see **Lê Quang Trung**
- Lekveishvili, D. M.** (with John, Oldrich; Kondrat'ev, V. A.; Nečas, Jindřich; Oleinik, O. A.) Solvability of the system of von Kármán equations with nonhomogeneous boundary conditions in nonsmooth domains. (Russian. English summary) *Trudy Sem. Petrosk.* **No. 13** (1988), 197–205, 258. (R. Kodnár) **89m:35071** 35J60
- Leland, R. W.** (with Rollett, J. S.) Evaluation of a parallel conjugate gradient algorithm. *Numerical methods for fluid dynamics, III* (Oxford, 1988), 478–483, *Inst. Math. Appl. Conf. Ser. New Ser.*, 17, Oxford Univ. Press, New York, 1988. (see **89j:76004**) 65F50 (76–08)
- Lelek, A.** A class of continua defined by means of cuttings. *Proceedings of the 1987 Topology Conference* (Birmingham, AL, 1987). *Topology Proc.* **12** (1987), no. 1, 189–192. (Wayne Lewis) **89g:54078** 54F20 (54F45, 54F50)
- Lelono, Joanna M.** (with Sherali, H. D.) A mathematical programming approach to a Nash-Cournot equilibrium analysis for a two-stage network of oligopolies. *Oper. Res.* **36** (1988), no. 5, 682–702. (S.-C. Fang) **89k:90006** 90A05 (90A14, 90C48)
- hassout-Leilich, Maarouf** see **Hassout-Leilich, Maarouf**
- Lelong, Pierre** Notions capacitaires et fonctions de Green pluricomplexes dans les espaces de Banach. (English summary) [Notions of capacity and pluricomplex Green functions in Banach spaces] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 3, 71–76. (Martin Schottenloher) **89g:46082** 46G20 (32F05)
- Leloup, Gérard** Équivalence élémentaire entre anneaux de monoïdes. [Elementary equivalence between rings of monoids] *Séminaire Général de Logique* 1983–1984 (Paris, 1983–1984), 149–157, *Publ. Math. Univ. Paris VII*, 27, Univ. Paris VII, Paris, 1986. (Françoise Point) **89e:03055** 03C60 (06F05, 20M25)
- Lemaire, Jean-Michel** (with Halperin, Stephen) Suites inertes dans les algèbres de Lie graduées ("Autopsie d'un meurtre. II"). [Inertial sequences in graded Lie algebras ("Anatomy of a murder. II")] *Math. Scand.* **61** (1987), no. 1, 39–67. (Yves Félix) **89e:55022** 55P62 (16A62, 17B55)
- (with Aubry, Marc) Homotopies d'algèbres de Lie et de leurs algèbres enveloppantes. [Homotopies of Lie algebras and their enveloping algebras] *Algebraic topology—rational homotopy* (Louvain-la-Neuve, 1986), 26–30, *Lecture Notes in Math.*, 1318, Springer, Berlin-New York, 1988. (Daniel Tanré) **89k:55018** 55P62 (17B35, 18D15, 55U40)
- (with Halperin, Stephen) Notions of category in differential algebra. *Algebraic topology—rational homotopy* (Louvain-la-Neuve, 1986), 138–154, *Lecture Notes in Math.*, 1318, Springer, Berlin-New York, 1988. (Yves Félix) **89h:55023** 55P62 (55P35, 55P40)
- (with Félix, Yves) Corrections to: "On the mapping theorem for Lusternik-Schnirelmann category" [Topology **24** (1985), no. 1, 41–43; MR 86m:55005] *Topology* **27** (1988), no. 2, 177. (Editors) **89d:55005** 55M30 (55P62)
- (with Félix, Yves; Halperin, Stephen; Thomas, Jean-Claude) Mod  $p$  loop space homology. *Invent. Math.* **95** (1989), no. 2, 247–262. (John F. Oprea) **89k:55010** 55P35 (55P62)
- Lemaire, L.** (with Cahen, Michel; Gutt, S.; Spindel, Ph.) Killing spinors. *Bull. Soc. Math. Belg. Sér. A* **38** (1986), 75–102 (1987). (Introduction) **89d:53122** 53C80 (53A50, 81D27, 83C60, 83E30)
- La géométrie des variétés de dimension quatre. [The geometry of four-dimensional manifolds] *Bull. Soc. Math. Belg. Sér. A* **39** (1987), 5–22. (Laurence R. Taylor) **89f:57024** 57N13 (32G99, 57R15)
- (with Eells, James) Another report on harmonic maps. *Bull. London Math. Soc.* **20** (1988), no. 5, 385–524. (James F. Glazebrook) **89i:58027** 58E20
- Lemaître, A.** (with Henrard, J.) The 3/2 resonance. Long term evolution of planetary systems (Ramsau, 1988). *Celestial Mech.* **43** (1987/88), no. 1–4, 91–98. (see **89j:76002**) 70F10 (58F13, 70K30)
- Lemańczyk, M.** Some ergodic properties of Morse sequences. *Proceedings of the conference on ergodic theory and related topics, II* (Georgenthal, 1986), 125–129, Teubner-Texte Math., 94, Teubner, Leipzig, 1987. (Andrés del Junco) **89c:28022** 28D05
- (with Sikorski, Andrzej) A class of not local rank one automorphisms arising from continuous substitutions. *Probab. Theory Related Fields* **76** (1987), no. 4, 421–428. (Andrés del Junco) **89e:28030** 28D05
- (with Mentzen, Mieczysław K.) On metric properties of substitutions. *Compositio Math.* **65** (1988), no. 3, 241–263. (Andrés del Junco) **89c:28023** 28D05
- Weakly isomorphic transformations that are not isomorphic. *Probab. Theory Related Fields* **78** (1988), no. 4, 491–507. (Nathaniel Friedman) **89h:28028** 28D05
- (with Filipowicz, I.; Kwiatkowski, J.) Approximation of  $Z_2$ -cocycles and shift dynamical systems. *Publ. Mat.* **32** (1988), no. 1, 91–110. (Adam Fieldsteel) **89f:28038** 28D05
- Lemarie, Pierre Gilles** Ondelettes à localisation exponentielle. (English summary) [Ondelettes with exponential localization] *J. Math. Pures Appl.* (9) **67** (1988), no. 3, 227–236. (J. J. Price) **89m:42024** 42C10
- Lembarki, Alami** Convergence acceleration of limit  $k$ -periodic continued fractions. *Appl. Numer. Math.* **4** (1988), no. 2–4, 337–349. (Thomas A. Atchison) **89j:65012** 65B05 (40A15)
- Le Méhaut, Alain J. Y.** see **le Méhaut, Alain J. Y.**
- Le Mesurier, B. J.** (with Papanicolaou, George C.; Sulem, C.; Sulem, P.-L.) Focusing and multi-focusing solutions of the nonlinear Schrödinger equation. *Phys. D* **31** (1988), no. 1, 78–102. (Jürgen Burzlaß) **89h:35301** 35Q20
- Lemin, A. Yu.** Preimages of metric spaces under nonexpanding open mappings. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 3(261), 187–188; translation in *Russian Math. Surveys* **43** (1988), no. 3, 214–215. (Stoyan Nedev) **89f:54060** 54E40 (54C10, 54E35)
- hoàng Lê Minh** see **Hoàng Lê Minh**
- Lemke, Jon H.** (with O'Gorman, Thomas W.; Woolson, Robert F.; Jones, Michael P.) A Monte Carlo study of three odds ratio estimators and four tests of association in several  $2 \times 2$  tables when the data are sparse. *Comm. Statist. Simulation Comput.* **17** (1988), no. 3, 813–835. (Not in MR) 62H17
- Lemke, M.** (with Brand, K.; Linden, Johannes) Multigrid bibliography. *Multigrid methods, 189–278*, *Frontiers Appl. Math.*, 3, SIAM, Philadelphia, PA, 1987. (see **89m:65004**) 65–00 (00A15)
- Lemmer, Roland** Zur Eindeutigkeitsbedingung von Nagumo. (English summary) [On the uniqueness condition of Nagumo] *Comment. Math. Univ. Carolin.* **29** (1988), no. 2, 293–294. (Summary) **89f:34089** 34G20 (34C20)
- A short proof of Weyl's lemma. *Math. Nachr.* **135** (1988), 237–238. (Zi Qian Yan) **89h:35064** 35D10 (35E99)
- Lemos, Jose P. S.** (with Anderson, Malcolm R.) Viscous shear in the Kerr metric. *Monthly Notices Roy. Astronom. Soc.* **233** (1988), no. 2, 489–502. (Piotr Bizoń) **89f:83065** 83C55
- Lemos, Manoel** An extension of Lindström's result about characteristic sets of matroids. *Discrete Math.* **68** (1988), no. 1, 85–101. (Neil L. White) **89a:05042** 05B20 (05B35)
- On 3-connected matroids. *Discrete Math.* **73** (1989), no. 3, 273–283. (András Recski) **89m:05035** 05B35
- Lemos, Nivaldo A.** (with Natividade, C. P.) Harmonic oscillator in expanding universes. (Italian and Russian summaries) *Nuovo Cimento B* (11) **99** (1987), no. 2, 211–225. (Jorge



- Zanelli) **89d:83041** 83C47 (81C99, 83F05)
- (with Galvão, Carlos A. P.) On the quantization of constrained generalized dynamics. *J. Math. Phys.* **29** (1988), no. 7, 1588–1592. (Claude Itzykson) **89f:81075** 81D07 (58F06, 70H35)
- Le Mouél, Jean-Louis** (with Jault, Dominique; Gire, Camille) Sur la forme des mouvements lents animant le fluide du noyau terrestre. (English summary) [On the form of the slow flow in the Earth's fluid core] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **305** (1987), no. 7, 619–624. (Summary) **89k:86015** 86A60 (35Q20, 76W05)
- Lempel, Abraham** (with Roth, Ron M.) Composition of Reed-Solomon codes and geometric designs. *IEEE Trans. Inform. Theory* **34** (1988), no. 4, 810–816. (Alexander M. Barg) **89k:94068** 94B15 (51E05)
- Characterization and synthesis of self-complementary normal bases in finite fields. *Linear Algebra Appl.* **98** (1988), 331–346. (Rex Matthews) **89k:11126** 11T30
- (with Weinberger, Marcelo J.) Self-complementary normal bases in finite fields. *SIAM J. Discrete Math.* **1** (1988), no. 2, 193–198. (St. Schwarz) **89i:11137** 11T30 (11T06)
- Lempert, László** Complex geometry in convex domains. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 759–765. *Amer. Math. Soc., Providence, RI*, 1987. (L. L. Stachó) **89f:32045** 32H15 (32E35, 32F15, 32H20)
- Holomorphic invariants, normal forms, and the moduli space of convex domains. *Ann. of Math.* (2) **128** (1988), no. 1, 43–78. (Giorgio Patrizio) **89i:32053** 32H99 (32F99, 32G13)
- Lempp, Steffen** Hyperarithmetical index sets in recursion theory. *Trans. Amer. Math. Soc.* **303** (1987), no. 2, 559–583. (C. G. Jockusch, Jr.) **89a:03080** 03D25 (03D55)
- A high strongly noncappable degree. *J. Symbolic Logic* **53** (1988), no. 1, 174–187. (Barry Cooper) **89c:03071** 03D25
- di Lena, G.** see **Di Lena, G.**
- Lenard, Christopher** Iterative methods for eigenproblems. *Computational techniques and applications: CTAC-87 (Sydney, 1987)*, 411–416. *North-Holland, Amsterdam-New York*, 1988. (H. R. Schwarz) **89c:65039** 65F15 (65J10)
- Lendi, K.** (with Alici, Robert) ★ Quantum dynamical semigroups and applications. *Lecture Notes in Physics*, 286. *Springer-Verlag, Berlin-New York*, 1987. viii+196 pp. ISBN 3-540-18276-4. (A. Barchielli) **89b:81002** 81-02 (46L55, 46L60, 47D05, 81K05, 82A15)
- Measure of irreversibility and entropy production in open quantum systems. *J. Statist. Phys.* **50** (1988), no. 5-6, 1103–1109. (Summary) **89d:82063** 82A35 (58D25)
- Lenferink, H. W. J.** (with Kraaijevanger, J. F. B. M.; Spijker, M. N.) Stepsize restrictions for stability in the numerical solution of ordinary and partial differential equations. *Proceedings of the 2nd international conference on computational and applied mathematics (Leuven, 1986)*. *J. Comput. Appl. Math.* **20** (1987), Special Issue, 67–81. (Randall J. LeVeque) **89a:65128** 65L20 (65L05, 65M10)
- Leung, Zhong Jian** (with Dai, Guo Ren) The separatrix cycles and integral straight lines of  $E_3$ -systems. (Chinese. English summary) *Sichuan Daxue Xuebao* **24** (1987), no. 4, 367–375. (Zai-Feng Song) **89d:34059** 34C05
- Leung, Christian** A view of automated proof checking and proving. Multi-attribute decision making via O.R.-based expert systems (Passau, 1986). *Ann. Oper. Res.* **16** (1988), no. 1-4, 61–79. (see **89i:90007**) 68T15
- Lengauer, Thomas** (with Wieners, Ch.) Efficient solutions of hierarchical systems of linear equations. (German summary) *Computing* **39** (1987), no. 2, 111–132. (David R. Kincaid) **89g:65026** 65F05
- (with Wanke, Egon) Efficient solution of connectivity problems on hierarchically defined graphs. *SIAM J. Comput.* **17** (1988), no. 6, 1063–1080. (Narsingh Deo) **89m:05077** 05C40 (68Q25, 68R10)
- (with Müller, Rolf) Linear arrangement problems on recursively partitioned graphs. (German summary) *Z. Oper. Res.* **32** (1988), no. 3-4, 213–230. (H. T. Lau) **89g:05046** 05C05 (68Q25, 90C27)
- Lengua, Erik** (with Fourati, Sonia) Tribus homogènes et commutation de projections. [Homogeneous tribes and commutation of projections] *Séminaire de Probabilités, XXI*, 276–288. *Lecture Notes in Math.*, 1247. *Springer, Berlin-New York*, 1987. (Michael Sharpe) **89i:60110** 60G99 (60J25)
- Lé Ngoc Láng** On the iterative projection method for solving a class of heat transmission and diffusion problems. (Vietnamese. English summary) *Tap chí Toán học* **13** (1985), no. 4, 1–9 (1986). (Summary) **89b:65297** 65N99
- Lenhart, Suzanne M.** (with Liao, Yu Chung) Integro-differential equations associated with piecewise deterministic processes. *Differential equations and mathematical physics (Birmingham, Ala., 1986)*, 282–289. *Lecture Notes in Math.*, 1285. *Springer, Berlin-New York*, 1987. (Kenneth B. Hannsgen) **89a:45022** 45K05 (45L05, 93E03)
- Viscosity solutions associated with switching control problems for piecewise-deterministic processes. *Houston J. Math.* **13** (1987), no. 3, 405–426. (Yuliy M. Baryshnikov) **89a:49030** 49C20 (93C57)
- Viscosity solutions for weakly coupled systems of first-order partial differential equations. *J. Math. Anal. Appl.* **131** (1988), no. 1, 180–193. (From the introduction) **89m:35025** 35B25 (35F05, 35R60)
- (with Cosner, Chris; Protopenescu, V.) Transport equations with second-order differential collision operators. *SIAM J. Math. Anal.* **19** (1988), no. 4, 797–813. (Janusz Mika) **89h:35283** 35Q20 (35K55, 35M05, 82A70)
- Lenhart, W.** (with Pollack, Richard; Sack, J.; Seidel, R.; Sharir, M.; Suri, Subhash; Toussaint, Godfried T.; Whitesides, S.; Yap, Chee-Keng) Computing the link center of a simple polygon. Third ACM Symposium on Computational Geometry (Waterloo, Ont., 1987). *Discrete Comput. Geom.* **3** (1988), no. 3, 281–293. (Summary) **89k:68145** 68U05 (52-04, 68Q25, 90B10)
- Lennartson, Bengt** Periodic solutions of Riccati equations applied to multirate sampling. *Internat. J. Control* **48** (1988), no. 3, 1025–1042. (Not in MR) **34C25**
- Lennie, T. B.** (with McKenzie, D. P.; Moore, D. R.; Weiss, N. O.) The breakdown of steady convection. *J. Fluid Mech.* **188** (1988), 47–85. (Summary) **89c:76062** 76E15
- Lenninghaus, Jürgen** (with Dierker, Egbert) Surplus maximization and Pareto optimality. *Contributions to mathematical economics*, 143–166. *North-Holland, Amsterdam-New York*, 1986. (Jacob Paroush) **89b:90044** 90A14
- Lennox, John** (with Stonehewer, S. E.) ★ Subnormal subgroups of groups. *Oxford Mathematical Monographs*. Oxford Science Publications. *The Clarendon Press, Oxford University Press, New York*, 1987. ix+253 pp. ISBN 0-19-853552-X. (T. O. Hawkes) **89b:20002** 20-02 (20D35, 20E15)
- (with Arad, Zvi) A note on a finite subset of a group closed under multiplication of distinct elements. *Arch. Math. (Basel)* **50** (1988), no. 4, 300–301. (S. Moran) **89g:20002** 20A99
- (with Menegazzo, Federico; Smith, Howard; Wiegold, James) Groups with finite automorphism classes of subgroups. *Rend. Sem. Mat. Univ. Padova* **79** (1988), 87–96. (D. J. S. Robinson) **89j:20039** 20F28
- Lenoir, Marc André** (with Vuilleme-Ledard, M.) Numerical computation of scattering frequencies. *Boundary elements IX, Vol. 3 (Stuttgart, 1987)*, 65–79. *Comput. Mech., Southampton*, 1987. (From the text) **89k:76084** 76Q05 (35J05, 35P25, 76-08)
- (with Tounsi, A.) The localized finite element method and its application to the two-dimensional sea-keeping problem. *SIAM J. Numer. Anal.* **25** (1988), no. 4, 729–752. (G. Maes) **89k:65138** 65N30 (76-08, 76B15)
- Lensberg, Terje** Stability and the Nash solution. *J. Econom. Theory* **45** (1988), no. 2, 330–341. (Summary) **89b:90046** 90A14 (90D10, 90D45)
- (with Thomson, William L.) Characterizing the Nash bargaining solution without Pareto-optimality. *Soc. Choice Welf.* **5** (1988), no. 2-3, 247–259. (Ki Hang Kim) **89j:90252** 90D12 (90A07)
- Leski, Wolfgang** see **Bibliography: Mathematical logic**, **89c:03001a**; **89c:03001b**; **89c:03001c**; **89c:03001d**; **89c:03001e** and **89c:03001f**
- Leskii, S. V.** (with Baidosov, V. A.) An optimization mathematical model for the maturation of the immune response of an organism taking into account the auto-immune component. (Russian) *Mathematical models in medicine and biology (Russian)*, 3–9, 68. *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk*, 1986. (Summary) **89a:92008** 92A07 (92A09)
- Lenstra, A. K.** (with Kannan, Ravindran; Lovász, L.) Polynomial factorization and nonrandomness of bits of algebraic and some transcendental numbers. *Math. Comp.* **50** (1988), no. 181, 235–250. (From the introduction) **89j:68061** 68Q20 (11A51, 11A63, 11J99, 11Y16, 68Q25)
- Lenstra, H. W. Jr.** Codes from algebraic number fields. *Mathematics and computer science, II (Amsterdam, 1986)*, 95–104. *CWI Monographs*, 4. *North-Holland, Amsterdam-New York*, 1986. (Autoreferat (Zbl 617:94010)) **89a:11132** 11Y16 (11T71, 94B05)
- Elliptic curves and number-theoretic algorithms. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, 99–120. *Amer. Math. Soc., Providence, RI*, 1987. (Samuel S. Wagstaff, Jr.) **89d:11114** 11Y11 (11G99, 11Y05)
- Factoring integers with elliptic curves. *Ann. of Math.* (2) **126** (1987), no. 3, 649–673. (Hale F. Trotter) **89j:11125** 11Y05 (11A51, 14K07)
- Lenstra, J. K.** (with Rinnooy Kan, A. H. G.; Guan, Mei Gu) On the travelling salesman problem. (Chinese) *Chinese J. Oper. Res.* **4** (1985), no. 1, 22–31, 21. (Yixun Lin) **89j:90098** 90B10 (05C45, 90C10, 90C35)
- Interfaces between operations research and computer science. *Proceedings of the First European Symposium on Mathematics in Industry (Amsterdam, 1985)*, 79–94. *European Consort. Math. Indust.*, 1. *Teubner, Stuttgart*, 1988. (Introduction) **89b:90070** 90Bxx (01A65)
- (with Kindervater, G. A. P.) Parallel computing in combinatorial optimization. *Ann. Oper. Res.* **14** (1988), no. 1-4, 245–289. (Summary) **89i:90063** 90C27 (68Q10, 68Q15, 68Q25, 68Rxx, 90-02)
- Lenz, Russell V.** (with Green, Peter J.) Consistency of deviance-based  $M$  estimators. *J. Roy. Statist. Soc. Ser. B* **49** (1987), no. 3, 326–330. (H. L. Harter) **89b:62072** 62F10 (62F35)
- Lenyuk, M. P.** (with Sucheivan, V. G.) Calculation of some improper integrals of Bessel functions. (Russian) *Analytical methods in the theory of differential and integral equations (Russian)*, 60–79. *Kuibyshev. Gos. Univ., Kuibyshev*, 1987. (A. Haimovici) **89k:33009** 33A40
- Hybrid Bessel integral transforms (the case of two conjugation points). (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 43, 12–33. (Summary) **89i:44006** 44A15 (33A40)
- Hybrid Weber integral transforms (the case of two conjugation points). (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 43, 34–59. (Summary) **89i:44007** 44A15
- (with Pilipuk, T. M.; Sucheivan, V. G.) Quasistatic and dynamic problems of thermoelasticity for a three-layer half space. (Russian) *Izv. Akad. Nauk Moldav. SSR Ser. Fiz.-Tekhn. Mat. Nauk* **1987**, no. 2, 3–10, 78. (Summary) **89b:73039** 73U05
- (with Bybliv, O. Ya.) Hybrid integral Weber transforms for a piecewise-homogeneous polar axis. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* **1987**, no. 8, 3–11, 87. (G. P. Los') **89f:44008** 44A15 (34B25, 34B30)
- Lenz, J.** (with Majorkowska-Knap, K.) Electromechanical surface waves in layered elastic dielectrics with polarization gradient. *Recent developments in surface acoustic waves (Nottingham, 1987)*, 201–210. *Springer Ser. Wave Phenomena*, 7. *Springer, Berlin-New York*, 1988. (see **89g:73001**) 73D20 (73R05)
- Lenz, Kathryn E.** (with Khargonekar, Pramod P.; Doyle, John C.) When is a controller  $H^\infty$ -optimal? *Math. Control Signals Systems* **1** (1988), no. 2, 107–122. (Summary) **89b:93053** 93B35 (93B50)
- Lenze, Burkhard** Note on the connection between two types of maximal functions. *Analysis* **8** (1988), no. 3-4, 391–395. (William T. Sledd) **89m:42017** 42B25
- Operators for one-sided approximation by algebraic polynomials. *J. Approx. Theory* **54** (1988), no. 2, 169–179. (Lee L. Keener) **89k:41026** 41A29
- On Lipschitz-type maximal functions and their smoothness spaces. *Nederl. Akad. Wetensch. Indag. Math.* **50** (1988), no. 1, 53–63. (J. Horváth) **89c:42035** 42B25 (46E35)
- Lenzen, Wolfgang** Zur Einbettung der Syllogistik in Leibnizens "Allgemeinen Kalkül". [On the embedding of syllogistics in Leibniz "General calculus"] *Leibniz: questions de logique (Bruxelles/Louvain-la-Neuve, 1985)*, 38–71. *Studia Leibnitiana Sonderheft*, 15. *Steiner, Wiesbaden*, 1988. (see **89m:01041**) 01A45 (01A55, 03-03, 03A05)
- Lenzing, Helmut** (with Geigle, Werner) A class of weighted projective curves arising in representation theory of finite-dimensional algebras. *Singularities, representation of algebras, and vector bundles (Lambrecht, 1985)*, 265–297. *Lecture Notes in Math.*, 1273. *Springer, Berlin-New York*, 1987. (Alfred G. Wiedemann) **89b:14049** 14H45 (14F05, 16A64)
- Leo, R. A.** (with Mancarella, G.; Soliani, G.; Solombrino, L.) On the role of the prolongation scheme in the singular-point analysis of nonlinear field equations. (Italian summary) *Nuovo Cimento B* (11) **100** (1987), no. 2, 139–159. (Summary) **89a:35188** 35Q20 (58A15, 58G37)

- (with Mancarella, G.; Soliani, G.) On the Broer-Kaup hydrodynamical system. *J. Phys. Soc. Japan* 57 (1988), no. 3, 753–756. (Introduction) **89c:58123** 58G37 (35Q20, 76B15)
- Leodamas of Thasos** see **From Leodamas of Thasos to Philippos of Oropos**
- Leodaris, A.** (with Jannussis, A. D.; Vavouglis, D.) Q-model in high energy physics. Proceedings of the third workshop on hadronic mechanics, Vol. I (Patras, 1986). *Hadronic J. Suppl.* 2 (1986), no. 3, 479–497. (Metin Arik) **89c:81059** 81D05 (81G25)
- Ponce de León, J.** see **Ponce de León, J.**
- Leon, J. Jp.** (with Boiti, M.; Martina, L.; Pempinelli, F.) On the recursion operator for the KP hierarchy in two and three spatial dimensions. *Phys. Lett. A* 123 (1987), no. 7, 340–344. (P. M. Santini) **89a:35171** 35Q20 (58F07, 58G37)
- Spectral transform and solitons for generalized coupled Bloch systems. *J. Math. Phys.* 29 (1988), no. 9, 2012–2019. (A. Ventura) **89j:78034** 78A99 (35Q20, 81F30)
- (with Boiti, M.; Martina, L.; Pempinelli, F.) Integrable nonlinear evolutions in 2 + 1 dimensions with nonanalytic dispersion relations. *J. Phys. A* 21 (1988), no. 18, 3611–3627. (J. Christina) **89m:35188** 35Q20 (58F07)
- (with Boiti, M.; Martina, L.; Pempinelli, F.) Scattering of localized solitons in the plane. *Phys. Lett. A* 132 (1988), no. 8–9, 432–439. (Summary) **89b:35278** 35Q20
- León, J. R.** see **León R., José Rafael**
- León, Jean-François** Existence et unicité de la solution positive de l'équation TFW sans répulsion électronique. (English summary) [Existence and uniqueness of the positive solution of the TFW equation without electron repulsion] *RAIRO Model. Math. Anal. Numér.* 21 (1987), no. 4, 641–654. (Summary) **89f:35074** 35J60 (81C05)
- Existence and uniqueness of positive solutions for a semi-linear elliptic equation on unbounded domains. *Comm. Partial Differential Equations* 13 (1988), no. 10, 1223–1234. (From the introduction) **89h:35022** 35B05 (35J60)
- Leon, Jeffrey S.** A probabilistic algorithm for computing minimum weights of large error-correcting codes. Coding techniques and coding theory. *IEEE Trans. Inform. Theory* 34 (1988), no. 5, part II, 1354–1359. (Summary) **89k:94072** 94B25 (94B40)
- León, Juan** (with Chang, Ngee-Pong; Pérez-Mercader, Juan) StrM<sup>2</sup> sum rule for a general class of Kähler potentials. *Modern Phys. Lett. A* 2 (1987), no. 12, 937–943. (Joan Soto) **89c:83068** 83E15 (81E30, 81G25, 83E50)
- de León, Manuel** (with Rodrigues, Paulo R.) Almost tangent geometry and higher order mechanical systems. *Differential geometry and its applications (Brno, 1986)*, 179–195. *Math. Appl. (East European Ser.)*, 27, Reidel, Dordrecht-Boston, MA, 1987. (Manfred Andrie) **89c:58051** 58F05 (53C80, 70H99)
- (with Méndez, Isabel; Salgado, Modesto) On the differential geometry of the coframe bundle. *Differential geometry and its applications, communications (Brno, 1986)*, 213–224. *Univ. J. E. Purkyně, Brno, 1987*. (Costache Apreutesei) **89b:53052** 53C05
- (with de Andrés, Luis C.) Almost complex structures of tangent bundles of odd order. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish) (Badajoz, 1986)*, 17–26. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Luis A. Cordero) **89k:53036** 53C15 (53C05)
- (with Salgado, Modesto) Complete and horizontal liftings of vector fields to natural fiber bundles. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 2 (Spanish) (Badajoz, 1986)*, 223–230. *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Andrzej Bucki) **89k:53032** 53C05 (58R10, 58A30)
- (with Méndez, Isabel; Salgado, Modesto) Connections of order  $k$  on  $M$  and associated polynomial structures on  $T^k M$ . *An. Ştiinţ. Univ. "Al. I. Cuza" Iaşi Sect. I a Mat. (N.S.)* 33 (1987), no. 3, 267–276. (I. Kolář) **89j:53028** 53C05 (58A20)
- (with Rodrigues, Paulo R.) Second-order differential equations and nonconservative Lagrangian mechanics. *J. Phys. A* 20 (1987), no. 15, 5393–5396. (From the text) **89b:58078** 58F05 (58F35, 70H35)
- (with Rodrigues, Paulo R.) A contribution to the global formulation of the higher-order Poincaré-Cartan form. *Lett. Math. Phys.* 14 (1987), no. 4, 353–362. (H. Rund) **89a:58029** 58E15 (49F05, 58E30, 58F05)
- (with Cordero, Luis A.; Fernández, Marisa) Examples of compact complex manifolds not Kähler structure. *Portugal. Math.* 44 (1987), no. 1, 49–62. (Elsa Abbena) **89b:53082** 53C15 (32C10, 32J99, 53C55)
- (with Rodrigues, Paulo R.) Higher order almost tangent geometry and nonautonomous Lagrangian dynamics. *Proceedings of the Winter School on Geometry and Physics (Srni, 1987)*. *Rend. Circ. Mat. Palermo (2) Suppl.* No. 16 (1987), 157–171. (Niky Kamran) **89k:58072** 58E30 (49F05, 58A15, 70H35)
- (with Méndez, Isabel; Salgado, Modesto) Regular  $p$ -almost cotangent structures. *J. Korean Math. Soc.* 25 (1988), no. 2, 273–287. (Patrick Iglesias) **89j:53036** 53C15 (53C10, 58A30)
- (with Salgado, Modesto) Tensor fields and connections on cross-sections in the frame bundle of second order of a parallelizable manifold. *Publ. Inst. Math. (Beograd) (N.S.)* 43(57) (1988), 143–154. (R. H. Bowman) **89i:53024** 53C05 (58A20)
- Leonard, A.** (with Reynolds, W. C.) Turbulence research by numerical simulation. *Perspectives in fluid mechanics (Pasadena, CA, 1985)*, 113–142. *Lecture Notes in Phys.*, 320, Springer, Berlin-New York, 1988. (see **89j:76005**) 76Fxx (76-04)
- Leonard, C.** Large deviations and law of large numbers for a mean field type interacting particle system. *Stochastic Process. Appl.* 25 (1987), no. 2, 215–235. (Summary) **89b:60169** 60K35 (60F10)
- Leonard, Douglas A.** A prefix problem. *Ars Combin.* 24 (1987), 51–55. (Volker Strehl) **89a:5024** 05A99 (68R05)
- Leonard, Henry S.** On the Brauer-Suzuki theorem. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 57–64. *Proc. Sympos. Pure Math.*, 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (David Gluck) **89c:20020** 20C15 (20D20)
- Leonard, I. E.** More on Fresnel integrals. *Amer. Math. Monthly* 95 (1988), no. 5, 431–433. (From the text) **89m:26002** 26A06
- Leonard, Martine** A property of biprefix codes. (French summary) *RAIRO Inform. Théor. Appl.* 22 (1988), no. 3, 311–318. (Summary) **89b:68086** 68C45
- Leonard, Tom** (with Atilgan, Taskin) On the application of AIC to bivariate density estimation, nonparametric regression and discrimination. *Multivariate statistical modeling and data analysis (Harrisonburg, Va., 1986)*, 1–16. *Theory Decis. Lib. Ser. B: Math. Statist. Methods*, Reidel, Dordrecht-Boston, MA, 1987. (Summary) **89a:62086** 62G05
- Leonardi, Giorgio** (with Johansson, Börje) Public facility location: a multiregional and multi-authority decision context. *Handbook of regional and urban economics*, Vol. 1, 133–170. *Handbooks in Economics*, 7, North-Holland, Amsterdam-New York, 1986. (see **89a:90047**) 90A17 (90B10)
- Leondes, Cornelius T.** (with Medlin, Gregory W.; Adams, John W.) Lagrange multiplier approach to the design of FIR filters for multirate applications. *IEEE Trans. Circuits and Systems* 35 (1988), no. 10, 1210–1219. (Summary) **89g:94009** 94A12 (49D29, 94A05)
- Leone, A.** Minimal non-KC finite  $p$ -groups. (Italian) *Matematiche (Catania)* 38 (1983), no. 1–2, 191–200 (1987). (Richard Davitt) **89b:20050** 20D15 (20D10, 20F14, 20F26)
- de Leone, R.** see **De Leone, R.**
- Leonenko, N. N.** (with Ivanov, Aleksandr Vladimirovich) ★ Статистический анализ случайных полей. (Russian) [Statistical analysis of random fields] With a preface by A. V. Skorokhod. "Vishcha Shkola", Kiev, 1986. 216 pp. (M. E. Thompson) **89c:62125** 62M30 (60G60)
- Limit distributions of some functionals of homogeneous isotropic Gaussian fields with strong dependence. (Russian) *Probability distributions and mathematical statistics (Russian) (Fergana, 1983)*, 350–372, 497, "Fan", Tashkent, 1986. (I. G. Zhurbenko) **89c:60106** 60G60 (60F05)
- On the accuracy of the normal approximation of functionals of strongly correlated Gaussian random fields. (Russian) *Mat. Zametki* 43 (1988), no. 2, 283–299, 303; translation in *Math. Notes* 43 (1988), no. 1–2, 161–171. (B. S. Nakhapetyan) **89c:60087** 60G15 (60F05, 60G60)
- Leong, Foek** On  $M$  loops. *Kyungpook Math. J.* 26 (1986), no. 2, 157–161. (V. Sathyahama) **89c:20103** 20N05
- Leong, K. Y.** (with Lim, Cheng-Chew; Hang, C. C.) Critical control weighting for non-minimum-phase stochastic control systems. *Optimal Control Appl. Methods* 8 (1987), no. 3, 243–252. (Summary) **89k:93228** 93E20
- Leong, Tuck Sang** A note on upper bounds on the maximum modulus of subdominant eigenvalues of nonnegative matrices. *Linear Algebra Appl.* 106 (1988), 1–4. (Shao Kuan Li) **89c:15030** 15A48 (15A18)
- Leong, Yu Kiang** see **Group theory, 89j:20001**
- Leonov, A. I.** Spline methods for solving a class of integro-differential equations. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 3, 527–530, 550. (R. Smarzewski) **89c:65143** 65R20
- Leonov, A. S.** The method of a minimal pseudoinverse matrix. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 8, 1123–1138, 1276. (Summary) **89g:65048** 65F20
- Numerical realization of algorithms for piecewise uniform regularization. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 27 (1987), no. 9, 1412–1416, 1439. (A. I. Schiopi) **89a:65101** 65K10
- Leonov, G. A.** (with Reitmann, Volker) ★ Attraktorengrenzung für nichtlineare Systeme. (German) [Bounding of attractors for nonlinear systems] With English, French and Russian summaries. Teubner-Texte zur Mathematik [Teubner Texts in Mathematics], 97. BSB B. G. Teubner Verlagsgesellschaft, Leipzig, 1987. 196 pp. ISBN 3-322-00427-9 (Dieter H. Mayer) **89h:58095** 58F10 (34D30, 58F12, 58F13, 58F21, 58F40)
- (with Smirnova, V. B.) The direct Lyapunov method and the problem of the existence of limit cycles of multidimensional dynamical systems. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems (Irkutsk, 1985)* (Russian), 150–156, 325, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (see **89c:00040**) 34C05 (34C35, 58F21)
- A frequency criterion for the existence of limit cycles of dynamical systems with a cylindrical phase space. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 12, 2047–2051, 2203. (Zhaojun Liang) **89c:34030** 34C05 (34C25, 34C35)
- Asymptotic behavior of the separatrices of the Lorenz system. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1987, vyp. 2, 26–30, 132. (Zhivko S. Athanassov) **89c:58065** 58F10 (34D20)
- (with Bunin, A. I.; Koks, N.) Attraktorlokalisierung des Lorenz-Systems. (English and Russian summaries) [Attractor localization of the Lorenz system] *Z. Angew. Math. Mech.* 67 (1987), no. 12, 649–656. (Hans G. Bothe) **89d:58073** 58F12 (34C05, 58F13)
- (with Smirnova, V. B.) Stability in the large of integro-differential equations of nondirect control systems. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 3, 500–508, 549; translation in *Differential Equations* 24 (1988), no. 3, 359–366. (Summary) **89c:45024** 45M10 (93C20, 93D10)
- An estimate for the bifurcation parameters of the saddle separatrix loop of the Lorenz system. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 6, 972–977, 1099; translation in *Differential Equations* 24 (1988), no. 6, 634–638. (Alois Klič) **89j:58094** 58F14 (34C05)
- On orbital stability of trajectories of autonomous systems. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 4, 694–695, 734. (Not in MR) 34D30
- A multidimensional analogue of a criterion for Poincaré orbital stability. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 9, 1637–1639, 1655. (L. Reizipil) **89j:34073** 34D30
- (with Morozov, A. V.) On the global stability of stationary oscillation in masers. *Soviet J. Comm. Tech. Electron.* 33 (1988), no. 1, 102–108; translated from *Radiotekhn. i Elektron.* 32 (1987), no. 9, 1915–1921 (Russian). (Summary) **89h:81277** 81K05 (58F13)
- (with Boichenko, V. A.) Lyapunov orbital exponents of autonomous systems. (Russian. English summary) *Vestnik Leningrad. Univ. Mat. Mekh. Astronom.* 1988, vyp. 3, 7–10, 123; translation in *Vestnik Leningrad Univ. Math.* 21 (1988), no. 3, 1–6. (L. Hatvani) **89m:34061** 34D05 (34C25)
- Leonov, I. V.** (with Tokarev, V. F.) Complex structure of the vacuum, and electromagnetic properties of the constituent quarks. (Russian. English summary) *Teoret. Mat. Fiz.* 74 (1988), no. 2, 192–202; translation in *Theoret. and Math. Phys.* 74 (1988), no. 2, 123–131. (Summary) **89c:81190** 81G05 (81G10)
- Leonov, K. Ya.** An initial-boundary value problem for a system of equations in magnetoelastostaticity. (Russian. English and Azerbaijani summaries) *Izv. Akad. Nauk Azerbaidzhan. SSR Ser. Fiz.-Tekhn. Mat. Nauk* 7 (1986), no. 5, 33–38 (1987). (M. Victor Wickerhauser) **89g:35101** 35Q20 (73C25, 73R05, 73U05)
- (with Maksudov, F. G.) An initial-boundary value problem for systems of equations of magnetoviscoelasticity and magnetoelasticity. (Russian) *Dokl. Akad. Nauk SSSR* 296 (1987), no. 1, 25–28; translation in *Soviet Math. Dokl.* 36 (1988), no. 2, 225–228. (Sergei M. Zverev) **89b:73036** 73R05
- Leonov, M. Ya.** see **Makovskii, E. E.** et al., **89a:01071**



- Leonov, V. Ya. (with Tsurkov, V. I.) Hierarchical systems with distributed parameters and cross-links. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 9, 75-82; translation in *Automat. Remote Control* 49 (1988), no. 9, part 1, 1169-1174. (Rolf Klötzler) 89m:9303 93A13 (49D05, 49D27)
- Leonovich, A. A. Conformally invariant equations in field theory and in the general theory of relativity. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (*Järnala*, 1985), 453-460, "Nauka", Moscow, 1986. (see 89d:81001) 81E99 (83C99)
- Leon R., José Rafael (with Olivares, M. M.) Correction: "Two parameter Brownian bridge and linear rank statistics for independence" [*Acta Cient. Venezolana* 36 (1985), no. 5-6, 295-302; MR 88c:62073]. (Spanish. English summary) *Acta Cient. Venezolana* 38 (1987), no. 4, 427 (1988). (Summary) 89g:62070 62G10 (60F05)
- Leontaritis, L. J. (with Billings, S. A.) Prediction error estimator for nonlinear stochastic systems. *Internat. J. Systems Sci.* 19 (1988), no. 4, 519-536. (Summary) 89h:93100 93E10 (93C10, 93C55)
- Leonte, Aristide On the convergence of the resolutions of the identity of a Hilbert space. *An. Univ. Craiova Mat. Fiz.-Chim.* 14 (1986), 33-36. (Henry R. Dowson) 89d:47072 47B40
- Leon'ev, A. F. (with Gonchar, A. A.; Dzhrbashyan, M. M.; Tumarkin, G. Ts.; Uflyanov, P. L.; Shabat, B. V.) Semen Yakovlevich Khavinson (on the occasion of his sixtieth birthday). (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 2(260), 173-174; translation in *Russian Math. Surveys* 43 (1988), no. 2, 209-211. (Editors) 89i:01078 01A70
- Representation of functions by series of generalized exponentials. (Russian) *Mat. Sb.* (N.S.) 134(176) (1987), no. 4, 496-510, 575-576; translation in *Math. USSR-Sb.* 62 (1989), no. 2, 491-505. (Pet'r Rusev) 89h:30003 30B50 (30D10)
- see also Vitushkin, A. G. et al., 89b:01065, 89d:01071 and Birthday: Leont'ev, A. F., 89h:01092
- Leon'ev, V. K. Stability of solutions in discrete optimization problems. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 241-259, "Nauka", Moscow, 1987. (Hoàng Tuy) 89c:90198 90C31 (90C30)
- (with Gordeev, E. N.) Use of an investigation of stability for the solution of choice problems. (Russian) *Mathematical methods in pattern recognition and discrete optimization* (Russian), 36-51, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1987. (Andrzej Wiecezorek) 89j:90235 90C31
- (with Burosch, Gustav; Markosyan, A. S.) On the possibility of propagating information on graphs. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 2, 265-268; translation in *Soviet Math. Dokl.* 37 (1988), no. 1, 52-55. (Karl Weber) 89d:05147 05C75 (94A15)
- (with Mamutov, K. Kh.) Stability of solutions in problems of Boolean linear programming. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 10, 1475-1481, 1597. (Summary) 89j:90184 90C09
- Leon'eva, N. V. (with Golovach'ev, Yu. P.) Numerical modeling of a supersonic flow around a sphere in a gas with changing density. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 29 (1989), no. 1, 148-151, 160. (Not in MR) 76-08 (76J99, 76L05)
- Leon'eva, T. A. Estimate of a polynomial in generalized exponential functions in the convex hull of two domains. (Russian summary) *Anal. Math.* 14 (1988), no. 1, 99-109. (Burgind Jörcke) 89k:30003 30B50
- Leontiadis, Th. Fortsetzung eines verallgemeinerten Daniell-Integrals auf einem  $\sigma$ -topologischen  $\sigma$ -Verband mit Werten in einer Verbandsgruppe. [Continuation of a generalized Daniell integral on an  $\sigma$ -topological  $\sigma$ -lattice with values in a lattice group] *Bull. Soc. Math. Grèce (N.S.)* 27 (1986), 61-71. (H. Günzler) 89h:28018 28C05 (28B10, 28B15)
- Leontovich, A. M. Estimates for the number of mappings of graphs and for the number of subgraphs. (Russian) *Problemy Peredachi Informatsii* 23 (1987), no. 4, 58-74. (Lyuben R. Mutafchiev) 89c:05103 05C30
- Leontovich, E. A. see Methods of qualitative theory of differential equations, 89b:58009 and Methods of the qualitative theory of differential equations, 89j:58024
- Leopold, H.-G. Boundedness of anisotropic pseudodifferential operators in function spaces of Besov-Hardy-Sobolev type. (German and Russian summaries) *Z. Anal. Anwendungen* 5 (1986), no. 5, 409-417. (Summary) 89d:47113 47G05 (35S05)
- Leopold, J. G. (with Richards, Derek) A study of quantum dynamics in the classically chaotic regime. *J. Phys. B* 21 (1988), no. 12, 2179-2204. (Summary) 89d:81043 81C99 (58F13)
- Leow, Soo Kar (with McAllister, David F.) Optimal assignments of versions to processors in fault-tolerant computer systems. *Asia-Pacific J. Oper. Res.* 5 (1988), no. 1, 67-78. (Summary) 89c:90114 90B25
- Lepage, G. P. (with Rossi, Pietro; Davies, C. T. H.) A comparison of a variety of matrix inversion algorithms for Wilson fermions on the lattice. *Nuclear Phys. B* 297 (1988), no. 2, 287-314. (Introduction) 89b:81169 81E25 (65F05, 65F10, 81-08)
- (with Davies, C. T. H.; Batrouni, G.; Katz, G. R.; Kronfeld, A.; Wilson, K.; Rossi, Pietro; Svetitsky, B.) Fourier acceleration in lattice gauge theories. I. Landau gauge fixing. *Phys. Rev. D* (3) 37 (1988), no. 6, 1581-1588. (Summary) 89g:81004a 81-08 (81E25)
- (with Katz, G. R.; Batrouni, G.; Davies, C. T. H.; Kronfeld, A.; Rossi, Pietro; Svetitsky, B.; Wilson, K.) Fourier acceleration in lattice gauge theories. II. Matrix inversion and the quark propagator. *Phys. Rev. D* (3) 37 (1988), no. 6, 1589-1596. (Summary) 89g:81004b 81-08 (81E25, 81G05)
- Lepikha, N. P. (with Beiko, I. V.; Zin'ko, P. N.) Problems of multiple identification of control systems with incomplete data. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 4 (1985), 42-44, 102. (Not in MR) 93B30 (93B40)
- Lepelletier, Dominique (with Mbihi, Boniface) The proportion of coationally unstable situations under the plurality rule. *Econom. Lett.* 24 (1987), no. 4, 311-315. (O. N. Bondareva) 89h:90020 90A08
- Lepeshinskiĭ, N. A. (with Baturina, L. N.) Representation of the simple paths of a nondirected graph. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* 1988, no. 2, 48-50, 81. (Kaicheng Lu) 89m:90058 90B10 (05C38, 90B99)
- Lepin, A. Ya. An embedding of a circle into the solution set of second-order ordinary differential equations. (Russian) *Lav. Mat. Ezhegodnik* No. 32 (1988), 9-12, 239. (Not in MR) 34B15
- (with Virzhbitskii, Ya. V.; Lepin, L. A.) Application of a computer to the investigation of the generalized solvability of two-point boundary value problems. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 1, 22-26; translation in *Soviet Math. Dokl.* 37 (1988), no. 2, 309-312. (E. S. Chichkin) 89e:34039 34B15 (34-04, 65L10)
- Lepin, L. A. Solvability of a fourth-order nonlinear boundary value problem. (Russian) *Boundary value problems for ordinary differential equations* (Russian), 69-72, iv, *Lav. Gos. Univ., Riga*, 1987. (Summary) 89d:34038 34B15
- Countable spectrum of the eigenfunctions of the nonlinear heat equation with distributed parameters. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 7, 1226-1234, 1286; translation in *Differential Equations* 24 (1988), no. 7, 799-805. (Summary) 89g:35021 35B99 (35K55, 65N99, 80A20)
- (with Virzhbitskii, Ya. V.; Lepin, A. Ya.) Application of a computer to the investigation of the generalized solvability of two-point boundary value problems. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 1, 22-26; translation in *Soviet Math. Dokl.* 37 (1988), no. 2, 309-312. (E. S. Chichkin) 89e:34039 34B15 (34-04, 65L10)
- (with Ad'yutov, M. M.) Self-similar solutions of the nonlinear heat equation with distributed parameters in the case of constant heat conduction. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 1, 14-24, 156; translation in *U.S.S.R. Comput. Math. and Math. Phys.* 28 (1988), no. 1, 8-15. (Summary) 89c:80007 80A20 (35K05)
- Lepina, E. Boundary value problems with linear constraints. (Russian) *Lav. Mat. Ezhegodnik* No. 32 (1988), 13-21, 239. (Not in MR) 34B15
- Lépinle, D. (with Hakim-Dowek, M.) L'exponentielle stochastique des groupes de Lie. [The stochastic exponential of Lie groups] *Séminaire de Probabilités, XX*, 1984/85, 352-374, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (R. W. R. Darling) 89h:58210 58G32 (60G48, 60H99)
- (with Marois, C.) Équations différentielles stochastiques multivoques unidimensionnelles. [One-dimensional multivalued stochastic differential equations] *Séminaire de Probabilités, XXI*, 520-533, *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (Jose Luis Menaldi) 89c:60125 60H99 (60J60)
- Lepora, Paolo (with Gabutti, B.) An algorithm for the summation of series. *Appl. Numer. Math.* 3 (1987), no. 6, 523-528. (John Todd) 89c:65011 65B10
- Le Potier, J. Variétés de modules de faisceaux semi-stables de rang élevé sur  $P_2$ . [Moduli varieties of semistable sheaves of high rank on  $P_2$ ] *Algebraic geometry, Bowdoin*, 1985 (Brunswick, Maine, 1985), 87-100, *Proc. Sympos. Pure Math.*, 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Alexey N. Rudakov) 89b:14019 14F05 (14D22)
- (with Bănică, C.) Sur l'existence des fibres vectoriels holomorphes sur les surfaces non-algébriques. [On the existence of holomorphic vector bundles on nonalgebraic surfaces] *J. Reine Angew. Math.* 378 (1987), 1-31. (K. Oeljeklaus (Zbl 624:32017)) 89h:32054 32J15 (32L05, 55R25)
- Lepowsky, J. (with Frenkel, Igor B.; Meurman, A.) Vertex operator calculus. *Mathematical aspects of string theory* (San Diego, Calif., 1986), 150-188, *Adv. Ser. Math. Phys.*, 1, World Sci. Publishing, Singapore, 1987. (see 89m:81001) 17B65 (17B10, 17B67)
- see also Tits, J., 89i:20030
- Lepp, Riho Approximation of the probability functional. (Russian) *Analysis of stochastic systems by methods in operations research and reliability theory* (Russian), 17-21, ii, *Akad. Nauk Ukrain. SSR, Inst. Kibernet.*, Kiev, 1987. (Alexei Gaivoronski) 89j:90193 90C15
- Approximate solution of stochastic programming problems with recourse. *Kybernetika (Prague)* 23 (1987), no. 6, 476-482. (I. M. Stancu-Minasian) 89g:90157 90C15
- Discrete approximation conditions for a space of essentially bounded functions. (Russian. English and Estonian summaries) *Eesti NSV Tead. Akad. Toimetised Füüs.-Mat.* 37 (1988), no. 2, 204-208, 254. (Gabriel Dimitriu) 89i:58017 65D15
- Leppington, F. G. The radiation of sound by a moving sphere. *Ordinary and partial differential equations* (Dundee, 1986), 113-130, *Pitman Res. Notes Math. Ser.*, 157, Longman Sci. Tech., Harlow, 1987. (H. R. Agarwal) 89c:76073 76Q05
- The transmission of sound through anisotropic rectangular plates. *Proc. Roy. Soc. London Ser. A* 416 (1988), no. 1850, 199-215. (Summary) 89c:76091 76Q05 (73J06)
- Lepuschi, Antonio (with Mian, Gian Antonio; Viano, Umberto) Computational aspects of rational interpolation. (Italian summary) *Istit. Veneto Sci. Lett. Atti Cl. Sci. Mat. Natur.* 143 (1984/85), 67-74. (Summary) 89c:41006 41A05 (65D05)
- Leptin, Horst The structure of primitive quotients of certain group algebras. *Symposia Mathematica, Vol. XXIX* (Cortona, 1984), 79-96, *Sympos. Math.*, 29, Academic Press, New York-London, 1987. (Keith Taylor) 89g:43002 43A20 (22D15, 22E27)
- Funktionalalgebren auf Bahnen nilpotenter Gruppen. [Function algebras on orbits of nilpotent groups] *Colloq. Math.* 51 (1987), 207-212. (Pierre Eymard) 89c:43012 43A80 (22D15, 22E25)
- Lê Quang Trung On a nonelliptic problem for singular integro-differential equations. (Vietnamese. Russian summary) *Tap chí Toán học* 13 (1985), no. 4, 26-31 (1986). (Summary) 89a:35036 35B45 (35J99)
- (with Nguyễn Minh Chu'ong) Limit equations for degenerate nonlinear elliptic equations in weighted Sobolev-Orlicz spaces. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 2(260), 149-150; translation in *Russian Math. Surveys* 43 (1988), no. 2, 181-182. (Josef Voldřich) 89i:35068 35J70 (35J65)
- Le Quere, Patrick (with Alziary de Roquefort, Thierry) Sur l'existence de solutions périodiques multiples aux équations de Boussinesq. (English summary) [On the existence of multiple periodic solutions of the Boussinesq equations] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* 306 (1988), no. 11, 681-687. (Summary) 89c:76061 76E15
- Lequoux, F. (with Kléman, M.) Helicoidal instability in cholesteric capillary tubes. (French summary) *J. Physique* 49 (1988), no. 5, 845-855. (Summary) 89d:82100 82A57
- S<sup>2</sup> analysis of cholesteric elasticity. (French summary) *J. Physique* 49 (1988), no. 6, 967-974. (Summary) 89d:82101 82A57
- Leranzo, Camino A remark on complex convexity. *Canad. Math. Bull.* 31 (1988), no. 3, 322-324. (W. J. Davis) 89k:46025 46B20
- Lerat, A. (with Sides, J.) Efficient solution of the steady Euler equations with a centered implicit method. *Numerical methods for fluid dynamics, III* (Oxford, 1988), 65-86, *Inst. Math. Appl. Conf. Ser. New Ser.*, 17, Oxford Univ. Press, New York, 1988. (see 89j:76004) 76-08 (65M99, 76H05)
- Leray, Jean Solutions positivement homogènes de l'équation des ondes planes. [Positively homogeneous solutions of the plane wave equation] *Physique quantique et géométrie* (Paris, 1986), 81-104, *Travaux en Cours*, 32, Hermann, Paris, 1988. (V. Ivrii) 89c:35089 35L05 (35B99)
- Lerche, Hans Rudolf Sequential analysis and the law of the iterated logarithm. *Adaptive statistical procedures and related topics* (Upton, N.Y., 1985), 40-53, *IMS Lecture Notes—Monograph Ser.*, 8, Inst. Math. Statist., Hayward, CA, 1986. (Summary) 89b:62172 62L10 (60F15)

- Lerche, I.** (with Bogdan, T. J.) A note on solitary wave solutions of the Leibovich-Roberts equation. *Quart. Appl. Math.* **46** (1988), no. 2, 365-374. (L. Debnath) **89k:76021** 76B25 (35Q20)
- Lerche, W.** (with Buchmüller, W.) Geometry and anomaly structure of supersymmetric  $\sigma$ -models. *Ann. Physics* **175** (1987), no. 1, 159-196. (Agostino Prastaro) **89a:81064** 81E13 (53C80)
- (with Kostecký, V. Alan; Lechtenfeld, Olaf; Samuel, Stuart; Watamura, Satoshi) Conformal techniques, bosonization and tree-level string amplitudes. *Nuclear Phys. B* **288** (1987), no. 1, 173-232. (Summary) **89b:81201** 81E99 (81E30, 81F20)
- (with Nilsson, B. E. W.; Schellekens, A. N.) Covariant lattices, superconformal invariance and strings. *Nuclear Phys. B* **294** (1987), no. 1, 136-156. (V. P. Akulov) **89e:81159** 81E99 (81E15, 81E30, 81G20)
- (with Nilsson, B. E. W.; Schellekens, A. N.; Warner, N. P.) Anomaly cancelling terms from the elliptic genus. *Nuclear Phys. B* **299** (1988), no. 1, 91-116. (Akira Asada) **89g:81082** 81E99 (11F99, 58G12, 81E20, 81E30)
- Elliptic index and superstring effective actions. *Nuclear Phys. B* **308** (1988), no. 1, 102-126. (Akira Asada) **89k:81157** 81E99 (58G10, 58G12, 81E30, 83E30)
- (with Warner, N. P.) Index theorems in  $N = 2$  superconformal theories. *Phys. Lett. B* **205** (1988), no. 4, 471-478. (Akira Asada) **89g:81083** 81E99 (11F11, 22E65, 58G12, 81E40)
- Lerda, A.** (with Di Vecchia, P.; Frau, M.; Sciuto, S.) A simple expression for the multipole amplitude in the bosonic string. *Phys. Lett. B* **199** (1987), no. 1, 49-56. (Tsou Sheung Tsun) **89f:81169** 81E99 (81E30)
- (with Di Vecchia, P.; Frau, M.; Sciuto, S.)  $N$ -string vertex and loop calculation in the bosonic string. *Nuclear Phys. B* **298** (1988), no. 3, 526-556. (Sorin Marculescu) **89f:81170** 81E99 (81E30, 83E30)
- (with Di Vecchia, P.; Hornfeck, K.; Frau, M.; Sciuto, S.) BRST invariant operator formalism for the superstring. *Phys. Lett. B* **205** (1988), no. 2-3, 250-256. (Summary) **89e:81142** 81E99 (81E30)
- Lerma, F. G.** Some considerations on the relationships between human and artificial intelligence. *Biomathematics and related computational problems* (Naples, 1987), 497-504, *Kluwer Acad. Publ., Dordrecht*, 1988. (see **89f:92002**) 92A25 (68T01)
- Lerer, L.** (with Gohberg, I.; Kaashoek, M. A.) Nodes and realization of rational matrix functions: minimality theory and applications. *Topics in operator theory and interpolation*, 181-232, *Oper. Theory: Adv. Appl.*, **29**, Birkhäuser, Basel-Boston, MA, 1988. (L. Rodman) **89e:93045** 93B20 (47A56, 93B15, 93B17)
- (with Tismenetsky, M.) Generalized Bezoutian and matrix equations. *Linear Algebra Appl.* **99** (1988), 123-160. (L. Rodman) **89b:15034** 15A54 (47A56, 47A62)
- hernández-Lerma, O.** see **Hernández-Lerma, O.**
- Lerman, Eugene** How fat is a fat bundle? *Lett. Math. Phys.* **15** (1988), no. 4, 335-339. (H. R. Gluck) **89k:53033** 53C05 (53C15, 58F05)
- Lerman, I. C.** Maximisation de l'association entre deux variables qualitatives ordinales. (English summary) [Maximal association between two ordinal qualitative variables] *Math. Sci. Humaines* No. 100 (1987), 49-56, 129 (1988). (Summary) **89b:90013** 90A06 (90A19, 92A25)
- (with Peter, Ph.) Structure maximale pour la somme des carrés d'une contingence aux marges fixes; une solution algorithmique programmée. (English summary) [Maximal structure for the sum of the squares of a fixed-margin contingency: a programmed algorithmic solution] *RAIRO Rech. Opér.* **22** (1988), no. 2, 83-136. (Summary) **89f:90125** 90C27 (62H17)
- Lerman, L. M.** (with Shil'nikov, L. P.) Homoclinic structures in infinite-dimensional systems. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 3, 92-103, 220; translation in *Siberian Math. J.* **29** (1988), no. 3, 408-417. (Eugen Belokolos) **89j:58103** 58F15
- Lerner, Bao Ting** On fuzzy (right-topological) semigroups. *J. Math. Anal. Appl.* **134** (1988), no. 2, 306-311. (Rangachari Venkataraman) **89m:22004** 22A99 (03E72, 20M99)
- Lerner, E. Ya.** (with Miskarov, M. D.) Fixed points of the Kadanoff renormalization group. (Russian) *Issled. Prikl. Mat.* No. 14 (1987), 91-101. (Mircea Crisan) **89g:82023** 82A25
- Lerner, I. V.** (with Altshuler, B. L.; Kravtsov, V. E.) Statistics of mesoscopic fluctuations and scaling theory. *Localization in disordered systems* (Bad Schandau, 1986), 7-17, *Teubner-Texte Phys.*, **16**, Teubner, Leipzig, 1988. (see **89f:82003**) 82A57
- Lerner, J.** (with Knobloch, Edgar) The long-wave instability of a defect in a uniform parallel shear. *J. Fluid Mech.* **189** (1988), 117-134. (Summary) **89c:76057** 76E05
- Lerner, M. E.** The maximum principles for hyperbolic systems of first-order differential equations. (Russian) *Analytic methods for solving differential equations* (Russian), 63-68, 147-148, *Kuibyshev. Gos. Univ., Kuibyshev*, 1986. (Peter R. Popivanov) **89j:35080** 35L50 (35B50)
- Solvability of a boundary value problem for hyperbolic equations in nonclassical domains. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 3, 546-550; translation in *Soviet Math. Dokl.* **37** (1988), no. 3, 696-699. (Peter R. Popivanov) **89k:35129** 35L20 (35B50)
- Lerner, Nicolas** Sufficiency of condition (P) for local solvability in two dimensions. *Journées "Équations aux dérivées partielles"* (Saint Jean de Monts, 1987), Exp. No. II, 23 pp., *École Polytech., Palaiseau*, 1987. (Vesselin M. Petkov) **89e:35150** 35S05 (35A07, 58G15)
- (with Bony, Jean-Michel) Quantification asymptotique et microlocalisations d'ordre supérieur. [Asymptotic quantization and higher-order microlocalizations] *Séminaire sur les équations aux dérivées partielles* 1986-1987, Exp. No. II-III, 29 pp., *École Polytech., Palaiseau*, 1987. (Rémi Vaillancourt) **89b:58204** 58G15 (35A27, 35B99)
- Principe d'incertitude et microlocalisation (d'après C. Fefferman et D. H. Phong). [Uncertainty principle and microlocalization (following C. Fefferman and D. H. Phong)] *Séminaire Bourbaki*, Vol. 1986/87, *Astérisque* No. 152-153 (1987), 3, 7-17 (1988). (Yu. V. Gorovov) **89b:35014** 35A27 (35S05, 58C15)
- Carleman's and subelliptic estimates. *Duke Math. J.* **56** (1988), no. 2, 385-394. (Makhlof Derridj) **89e:35036** 35H05 (35B45, 35S05)
- Uniqueness for an ill-posed problem. *J. Differential Equations* **71** (1988), no. 2, 255-260. (Hidetoshi Tahara) **89a:35126** 35L10 (35A05, 35R25)
- Lerner, P. B.** (with Andreev, V. A.) Supersymmetry in the Jaynes-Cummings model. *Phys. Lett. A* **134** (1989), no. 8-9, 507-511. (Summary) **89k:81209** 81K05
- Leros, A. P.** (with Groumpos, P. P.) A structural approach to the modelling and control problem of large scale systems. *Control Theory Adv. Tech.* **3** (1987), no. 3, 217-237. (Asen L. Dontchev) **89d:93006** 93A15 (49D40, 93B50)
- (with Siouris, G. M.) Minimum-time intercept guidance for tactical missiles. *Control Theory Adv. Tech.* **4** (1988), no. 2, 251-263. (Leszek Zaremba) **89b:90279** 90D26 (34B15, 49A45, 49B36)
- LeRoux, A. Y.** (with Colombeau, J.-F.) Multiplications of distributions in elasticity and hydrodynamics. *J. Math. Phys.* **29** (1988), no. 2, 315-319. (Gopi Ahuja) **89b:46056** 46F10 (35A99, 35L67, 35Q99)
- (with De Luca, P.) A velocity-pressure model for elastodynamics. *Nonlinear hyperbolic equations—theory, computation methods, and applications* (Aachen, 1988), 374-383, *Notes Numer. Fluid Mech.*, **24**, Vieweg, Braunschweig, 1989. (see **89j:35007**) 73D40 (73-08)
- Le Roux, H. J.** see **le Roux, H. J.**
- Le Roux, Marie-Noëlle** (with Ansel, Denis; Fresnel, Christophe) Résolution numérique d'un problème d'interdiffusion. (English summary) [Convergence of a numerical method to the solution of an interdiffusion problem] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 3, 143-146. (Summary) **89b:65302** 65P05
- (with Robert, Jacques) Modélisation de la diffusion d'un médicament dans une cellule sphérique. (English summary) [Numerical solution to the diffusion of a drug in a spherical cell] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 4, 165-168. (Summary) **89b:92027** 92A09 (92A07)
- Leroux, Pierre** (with Viennot, Gérard) Combinatorial resolution of systems of differential equations. I. Ordinary differential equations. *Combinatoire énumérative* (Montreal, Que., 1985/Quebec, Que., 1985), 210-245, *Lecture Notes in Math.*, **1234**, Springer, Berlin-New York, 1986. (Volker Strehl) **89c:05005** 05A15 (34A10, 34A25)
- (with Bergeron, François; Labelle, Gilbert) Functional equations for data structures. *STACS 88* (Bordeaux, 1988), 73-80, *Lecture Notes in Comput. Sci.*, **294**, Springer, Berlin-New York, 1988. (see **89b:68011**) 68P05
- Methoden der Anzahlbestimmung für einige Klassen von Graphen. (English and French summaries) [Methods of enumeration for some classes of graphs] *Bayreuth. Math. Schr.* No. 26 (1988), 1-36. (E. M. Palmer) **89i:05147** 05C30
- paysant-Le Roux, R.** see **Paysant-Le Roux, R.**
- Leroy, André** (with Mfundu, N'Kanza) Sur le centralisateur de l'indéterminée dans le corps des fractions des anneaux de polynômes gauches. [The centralizer of the indeterminate in the field of fractions of skew polynomial rings] *Acad. Roy. Belg. Bull. Cl. Sci. (5)* **73** (1987), no. 2, 84-86. (Jean-Pierre Tignol) **89b:16004** 16A05
- Leroy, Annick M.** (with Rousseau, Peter J.) ★ Robust regression and outlier detection. *Wiley Series in Probability and Mathematical Statistics: Applied Probability and Statistics*. *John Wiley & Sons, Inc., New York*, 1987. xvi+329 pp. ISBN 0-471-85233-3. (V. J. Yohai) **89c:62043** 62F35 (62J05)
- Leroy, Jules** A radiative, twisting, type II, aligned Einstein-Maxwell field. *Gravitation and geometry*, 293-302, *Monographs Textbooks Phys. Sci.*, **4**, Bibliopolis, Naples, 1987. (Dieter Lorenz-Petzold) **89e:83042** 83C50 (83C15)
- Le Roy, Pascal** (with Lesieur, Marcel; Staquet, Chantal; Comte, Pierre) The mixing layer and its coherence examined from the point of view of two-dimensional turbulence. *J. Fluid Mech.* **192** (1988), 511-534. (Not in MR) 76F10 (76-04)
- susperregui Lesaca, Julian** see **Susperregui Lesaca, Julian**
- Lesage, James P.** (with Simon, Stephen D.) The impact of collinearity involving the intercept term on the numerical accuracy of regression. *Comput. Sci. Econom. Management* **1** (1988), no. 2, 137-152. (Summary) **89b:62112** 62J05
- Lesama Serrano, Kh. O.** see **Lezama Serrano, J. O.**
- Lešanovský, Antonín** Thickness of a family of sets and uniform measures. (Russian and Czech summaries) *Časopis Pěst. Mat.* **113** (1988), no. 2, 197-212. (Richard Becker) **89m:28004** 28A10 (28A12)
- Lescanne, Pierre** see **Algebraic and logic programming**, **89j:68002**
- Lesch, Manfred** (with Baumann, Ulrike) Automorphisms of graphs with edge colourings and regular groups of colour preserving automorphisms. (German and Russian summaries) *J. Inform. Process. Cybernet.* **23** (1987), no. 12, 615-618. (Summary) **89m:05057** 05C25 (05C15, 20B25)
- (with Baumann, Ulrike; Schmeichel, Irmgard) Farb- und zerlegungstreue Automorphismen von Graphen. [Color- and decomposition-conformal automorphisms of graphs] *Math. Nachr.* **134** (1987), 161-167. (J. Sedláček) **89d:05096** 05C25 (05C15)
- Leschber, Yorck** The algebraic image of the asymmetric top. Dissertation, Louisiana State University, Baton Rouge, La., 1986. *Hadronic J. Suppl.* **3** (1987), no. 2, pp. i-x and 95-287. (Summary) **89a:81174** 81G30 (58F40)
- Leschke, Hajo** Some bounds on quantum partition functions by path-integral methods. *Path summation: achievements and goals* (Trieste, 1987), 399-409, *World Sci. Publishing, Singapore*, 1988. (see **89i:81034**) 82A15 (81C35, 82-02)
- Lescot, Jack** Séries de Poincaré des modules multi-gradués sur les anneaux mono-miaux. [Poincaré series of multigraded modules over monomial rings] *Algebraic topology—rational homotopy* (Louvain-la-Neuve, 1986), 155-161, *Lecture Notes in Math.*, **1318**, Springer, Berlin-New York, 1988. (Luciezar L. Avramov) **89m:13019** 13D03 (16A03, 16A61, 16A64)
- Lescrenier, M.** Partially separable optimization and parallel computing. *Ann. Oper. Res.* **14** (1988), no. 1-4, 213-224. (Summary) **89g:90198** 90C30
- Lescure, François** Résultats de type Hartogs. [Results of Hartogs type] *Représentations des groupes et analyse complexe* (Luminy, 1986), 119-125, *Journées SMF*, **24**, Univ. Poitiers, Poitiers, 1986. (Harald Upmeyer) **89f:32058** 32L05 (32M99)
- Lesebreg, Dieter** Syntopogene und topogene Konvergenzräume. [Syntopogenous and topogenous convergence spaces] *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* **30** (1987), 47-63. (A. Császár) **89e:54005** 54A15 (54A20)
- Lesfari, A.** Abelian surfaces and Kowalewski's top. *Ann. Sci. École Norm. Sup.* (4) **21** (1988), no. 2, 193-223. (Horst Knörrer) **89k:58125** 58F07 (14H30, 14H40, 70E15, 70H05)
- Lesieur, Marcel** ★ Turbulence in fluids. Stochastic and numerical modelling. *Mechanics of Fluids and Transport Processes*, **6**, *Martinus Nijhoff Publishers, Dordrecht*, 1987. xii+286 pp. ISBN 90-247-3470-3. (A. Pozzi) **89b:76013** 76Fxx
- (with Staquet, Chantal; Le Roy, Pascal; Comte, Pierre) The mixing layer and its coherence examined from the point of view of two-dimensional turbulence. *J. Fluid Mech.* **192** (1988), 511-534. (Not in MR) 76F10 (76-04)
- Lesigne, Emmanuel** Théorèmes ergodiques ponctuels pour des mesures diagonales. Cas des systèmes distaux. (English summary) [Pointwise ergodic theorems for diagonal measures.



- The case of distal systems. *Ann. Inst. H. Poincaré Probab. Statist.* **23** (1987), no. 4, 593–612. (Yves Derriennic) **89h:28032** 28D15
- (with Conze, Jean-Pierre) Sur un théorème ergodique pour des mesures diagonales. (English summary) [On an ergodic theorem for diagonal measures] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 12, 491–493. (Pierre Michel) **89e:22012** 22D40 (28D05)
- Lesik, N. I.** (with Kondrat'ev, B. V.; Kondrat'ev, A. B.) On the problem of the realization of a conformal mapping with symmetrization of six points on the boundary of the domain. (Russian) *Vestnik Khar'kov. Gos. Univ. No. 298 Mat. Mekh. i Voprosy Upravl.* (1987), 101–104. (L. A. Akse'tev) **89c:30012** 30C20 (30C85)
- Lesikova, T. I.** (with Kamyshyan, A. V.; Kamyshyan, V. V.) Construction of a correctness set for the discretization of an inverse problem. (Russian) *Vestnik Khar'kov. Gos. Univ. No. 298 Mat. Mekh. i Voprosy Upravl.* (1987), 108–111. (B. T. Polyak) **89c:65055** 65J10
- Leskow, Jacek** Estimation of the periodic function in the multiplicative intensity model. *Probab. Math. Statist.* **8** (1987), 103–110. (M. M. Rao) **89h:62184** 62M09 (60K10, 60K30, 62G05)
- Lesky, P., Jr.** Resonanzeffekte bei partiellen Differentialgleichungen höherer Ordnung in Wellenleitern. [Resonance effects for higher-order partial differential equations in waveguides] *Z. Angew. Math. Mech.* **68** (1988), no. 5, T463–T465. (Rainer Picard) **89h:35034** 35B40 (35G10, 41A27)
- Lesley, F. David** (with FitzGerald, Carl H.) Integrability of the derivative of the Riemann mapping function for wedge domains. *J. Analyse Math.* **49** (1987), 271–292. (G. Schober) **89c:30018** 30C35
- (with Anderson, James Milne; Hinkkanen, A.) On theorems of Jackson and Bernstein type in the complex plane. *Constr. Approx.* **4** (1988), no. 3, 307–319. (Z. Rubinstein) **89d:30044** 30E10 (41A10, 41A27)
- Leslie, D. C.** (with Gao, Shi An) The stability of spectral schemes for the large eddy simulation of channel flows. *Internat. J. Numer. Methods Fluids* **8** (1988), no. 9, 1107–1116. (P. C. Jain) **89j:76021** 76-08
- Leslie, John** The prerequisites for life in our universe. *Newton and the new direction in science* (Cracow, 1987), 229–258, *Specola Vaticana, Vatican City*, 1988. (see **89b:01014**) 01A60
- Lesniak, Linda** (with Gimbel, John; Kurtz, David; Scheinerman, Edward R.; Wierman, John C.) Hamiltonian closure in random graphs. *Random graphs '85* (Poznań, 1985), 59–67, *North-Holland Math. Stud.*, **144**, North-Holland, Amsterdam-New York, 1987. (Summary) **89h:05051** 05C80
- Lesniowski, Andrzej** (with Jaffe, Arthur; Weitsman, Jonathan) The loop space  $S^1 \rightarrow \mathbb{R}$  and supersymmetric quantum fields. *Ann. Physics* **183** (1988), no. 2, 337–351. (Yi-Gao Liang) **89i:58135** 58G10 (19K56, 47A53, 58B15, 81E08, 81E40)
- (with Jaffe, Arthur; Weitsman, Jonathan) The two-dimensional,  $N = 2$  Wess-Zumino model on a cylinder. *Comm. Math. Phys.* **114** (1988), no. 1, 147–165. (Summary) **89i:81062** 81E08 (47A55, 47F05, 58G10, 58G11)
- (with Jaffe, Arthur) A priori estimates for  $N = 2$  Wess-Zumino models on a cylinder. *Comm. Math. Phys.* **114** (1988), no. 4, 553–575. (Summary) **89i:81063** 81E08 (47F05, 58G11)
- (with Jaffe, Arthur; Osterwalder, Konrad) On convergence of inverse functions of operators. *J. Funct. Anal.* **81** (1988), no. 2, 320–324. (From the text) **89k:47036** 47B25 (47A60)
- (with Jaffe, Arthur; Wieczorkowski, Christian) Supersymmetry and the spectral condition on a cylinder. *Lett. Math. Phys.* **16** (1988), no. 4, 385–388. (B. Spence) **89m:81085** 81E05 (81E08)
- Lesniewski, Stanislaw** see **Miéville, Denis**, **89d:83023**
- Letajak, Gorazd** Complex convexity and finitely additive vector measures. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 867–873. (Barry Turett) **89g:46034** 46B20 (28B05, 46G10, 47D15)
- Lessert, Marc** How fractals were discovered? *Math. Ed.* **3** (1987), no. 4, 11–17. (Editors) **89c:01040** 01A65
- Lesourne, Jacques** L'auto-organisation et le marché. [Self-organization and the market] *Marchés, capital et incertitude*, 57–80, *Économica, Paris*, 1986. (see **89f:90002**) 90A14 (90A30)
- Lesselier, D.** (with Tabbara, W.; Duchêne, B.; Pichot, Ch.; Chommeloux, L.; Joachimowicz, N.) Diffraction tomography: contribution to the analysis of some applications in microwaves and ultrasonics. *Inverse Problems* **4** (1988), no. 2, 305–331. (Summary) **89f:76074** 76Q05 (78A55, 92-08, 92A07)
- Lester, J. A.** The octahedron theorem in Minkowski three-space: a metric vector space proof of Miquel's theorem in the Laguerre plane. *J. Geom.* **30** (1987), no. 2, 196–202. (Norman L. Johnson) **89b:51007** 51B15 (51B20)
- Relative infinity in projective de Sitter spacetime and its relation to proper time. *Combinatorics '86* (Trento, 1986), 257–264, *Ann. Discrete Math.*, **37**, North-Holland, Amsterdam-New York, 1988. (E. H. Kronheimer) **89f:53098** 53C50 (83C99)
- Letac, G.** (with Seshadri, Vanamamalai) On a conjecture concerning inverse Gaussian regression. (French summary) *Internat. Statist. Rev.* **54** (1986), no. 2, 187–190. (D. N. Shanbhag) **89k:62019** 62E15
- (with Seshadri, Vanamamalai) Haight's distributions as a natural exponential family. *Statist. Probab. Lett.* **6** (1988), no. 3, 165–169. (Bent Jørgensen) **89b:62036** 62E10 (60E07)
- Le Tallec, Patrick** Numerical solution of viscoplastic flow problems by augmented Lagrangians. *IMA J. Numer. Anal.* **6** (1986), no. 2, 185–219. (Igor Bock) **89k:73032** 73F30 (65N30, 73-08, 76E99)
- (with Bourgat, J.-F.; Glowinski, R.) Formulation variationnelle et algorithme de décomposition de domaines pour les problèmes elliptiques. (English summary) [Variational formulation and domain decomposition algorithm for elliptic problems] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 13, 569–572. (Summary) **89b:65290** 65N50
- (with Lotfi, A.) Decomposition methods for adherence problems in finite elasticity. *Comput. Methods Appl. Mech. Engrg.* **68** (1988), no. 1, 67–82. (C. Dierieck) **89j:73070** 73T05 (73-08, 73G05)
- (with Bourgat, J.-F.; Mani, S.) Modélisation et calcul des grands déplacements de tuyaux élastiques en flexion-torsion. (English summary) [Numerical simulation of the large displacements of elastic pipes in flexion and torsion] *J. Méc. Théor. Appl.* **7** (1988), no. 4, 379–408. (N. Gass) **89m:73021** 73G10 (49D29, 73-08, 73K25)
- Letavin, M. I.** Stability of homogeneous semigroups. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 3, 393–398, 546; translation in *Differential Equations* **24** (1988), no. 3, 273–277. (Tie Hu Qin) **89g:47090** 47H20 (35K60)
- Letchikov, A. V.** A limit theorem for a random walk in a random environment. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 2, 246–256; translation in *Theory Probab. Appl.* **33** (1988), no. 2, 228–238. (Kai Long Ren) **89m:60161** 60J15 (60F05)
- Letellier, P. S.** (with Verdaguer, E.) Anisotropic fluid with SU(2)-type structure in general relativity: a model of localized matter. *J. Math. Phys.* **28** (1987), no. 10, 2431–2436. (Alan Barnes) **89c:83017** 83C15 (83C20, 83C55)
- (with Oliveira, S. R.) Superposition of Weyl solutions to the Einstein equations: cosmic strings and domain walls. *Classical Quantum Gravity* **5** (1988), no. 2, L47–L51. (Jorge A. Pullin) **89c:83017** 83C15 (83C20)
- (with Verdaguer, E.) Cosmic strings in extra dimensions. *Phys. Rev. D* **37** (1988), no. 8, 2333–2336. (Summary) **89c:83045** 83E15 (83F05)
- Letessier, J.** (with Valent, G.) Some exact solutions of the Kolmogorov boundary value problem. *Approx. Theory Appl.* **4** (1988), no. 2, 97–117. (P. Jagers) **89i:60164** 60J80
- (with Ismail, Mourad E. H.; Valent, G.) Linear birth and death models and associated Laguerre and Meixner polynomials. *J. Approx. Theory* **55** (1988), no. 3, 337–348. (Erik A. van Doorn) **89m:60204** 60J80 (33A65)
- (with Valent, G.) Some integral relations involving hypergeometric functions. *SIAM J. Appl. Math.* **48** (1988), no. 1, 214–221. (Harold Exton) **89b:33005** 33A30 (60J80, 62E20)
- Leith, Steven C.** Applications of nonstandard models and Lebesgue measure to sequences of natural numbers. *Trans. Amer. Math. Soc.* **307** (1988), no. 2, 457–468. (Klaus Potthoff) **89j:11012** 11B05 (03H15, 11B75, 11U10)
- Le Thanh Hai** (with Nguyen Quang Minh) The classes of languages can be identified in the limit from text presentations. (Hungarian summary) *Közl. MTA Számítástech. Automat. Kutató Int. Budapest* **1987**, no. 37, 97–116. (Dominique Gouyou-Beauchamps) **89j:68082** 68Q45 (68Q50)
- Le Thanh Phong** Analyse non-standard et cohomologie de Spanier d'après J. P. Reveilles. [Nonstandard analysis and Spanier cohomology, after J. P. Reveilles] *Séminaire d'analyse 1985–1986* (Clermont-Ferrand, 1985–1986), Exp. No. 21 and 22, 6 pp., Univ. Clermont-Ferrand II, Aubière, 1986. (Summary) **89f:55006** 55N35 (03H05, 54J05)
- Letichnevskii, Aleksandr Adol'fovich** Algebras with approximation, and recursive data structures. (Russian. English summary) *Kibernetika (Kiev)* **1987**, no. 5, 32–37, 134. (Horst Reichel) **89c:68006** 68P05 (06B35)
- Letniowski, F. W.** (with McLenaghan, R. G.) An improved algorithm for quartic equation classification and Petrov classification. *Gen. Relativity Gravitation* **20** (1988), no. 5, 463–483. (A. H. Taub) **89f:83042** 83C20 (83-04, 83-08)
- LeTournoux, Jean** (with Vinet, Luc) Dipole-quadrupole interaction in spherical nuclei and Berry potentials. *Phys. Rev. Lett.* **61** (1988), no. 13, 1469–1472. (Summary) **89f:81270** 81G35
- Letta, Giorgio** An example of the application of the "general" theory of processes to a martingale representation problem. (Italian. English and French summaries) *Rend. Sem. Mat. Fis. Milano* **55** (1985), 123–138 (1988). (Michèle Mastrangelo-Dehen) **89d:60068** 60G07 (60G42)
- (with Fagnola, Franco) Sur la représentation intégrale des martingales du processus de Poisson. [On the integral representation of martingales of the Poisson process] *Séminaire de Probabilités, XX*, 1984/85, 28–29, *Lecture Notes in Math.*, **1204**, Springer, Berlin-New York, 1986. (I. Cuculescu) **89f:60056** 60H05 (60G44)
- Un exemple de processus mesurable adapté non progressif. [Example of a nonprogressive adapted measurable process] *Séminaire de Probabilités, XXII*, 449–453, *Lecture Notes in Math.*, **1321**, Springer, Berlin-New York, 1988. (Philip Protter) **89m:60128** 60H05
- Lettieri, Ada** (with Biacino, Loredana) Equations with fuzzy numbers. *Inform. Sci.* **47** (1989), no. 1, 63–76. (Summary) **89j:03042** 03E72
- Letli, Günter** Characterization of irreducible algebraic integers by their norms. *Colloq. Math.* **54** (1987), no. 2, 325–332. (Richard T. Bumby) **89k:11013** 11R27
- Subsemigroups of finitely generated groups with divisor-theory. *Monatsh. Math.* **106** (1988), no. 3, 205–210. (Franz Halter-Koch) **89m:20078** 20M14 (11A99, 20K05)
- Durch Normen definierte Idealklassengruppen. [Ideal class groups defined by norms] *Studia Sci. Math. Hungar.* **23** (1988), no. 3–4, 327–334. (K. Lakkis) **89k:11105** 11R29 (11R37)
- Lettmann, Theodor** (with Kleine Büning, Hans) First-order formulas in conjunctive quantification form. *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 1, 53–64. (Alexey P. Stolboushkin) **89c:03015** 03B25 (03D15, 68Q15)
- Letvin, Jerome** see **McCulloch, Warren S.**, **89f:01092**
- Lé Tuân Hoa** On Segre products of affine semigroup rings. *Nagoya Math. J.* **110** (1988), 113–128. (Șerban Bărcănescu) **89h:13030** 13H10
- Le Ty Kook Tkhang** Structure of level surfaces of the Morse form. (Russian) *Mat. Zametki* **44** (1988), no. 1, 124–133, 157; translation in *Math. Notes* **44** (1988), no. 1–2, 556–562. (M. Craioveanu) **89j:58014** 58E05
- Letzter, Gall** Integrality of  $I$ -adic completions. *Comm. Algebra* **16** (1988), no. 10, 2031–2041. (C. R. Hajarnavis) **89m:16022** 16A33 (16A08, 17B35)
- Leu, Lili-Yuh** (with Gupta, Shanti S.) An asymptotic distribution-free selection procedure for a two-way layout problem. *Comm. Statist. Theory Methods* **16** (1987), no. 8, 2313–2325. (Wen Tao Huang) **89c:62053** 62F07 (62J10)
- Selection of the best normal population better than a control: dependence case. *Statistical decision theory and related topics, IV*, Vol. 2 (West Lafayette, Ind., 1986), 65–77, Springer, New York-Berlin, 1988. (Thomas J. Santner) **89c:62028** 62F07
- Leu, Ming-Guang** On a conjecture of Ono on real quadratic fields. *Proc. Japan Acad. Ser. A Math. Sci.* **63** (1987), no. 8, 323–326. (K. S. Williams) **89f:11145** 11R11 (11R29)
- Leubner, C.** (with Torggler, P.) A note on the proper choice of scales in two-variable expansions. *Appl. Anal.* **26** (1987), no. 2, 161–176. (Josef Diblík) **89b:34126** 34E05 (34A45)
- (with Torggler, P.) Simplified second order two-timing approximations to small amplitude nonlinear conservative oscillations. *Appl. Anal.* **28** (1988), no. 2, 121–133. (Chieh-Chih Yeh) **89j:34003** 34A05 (34E15)
- Leuci, Margherita** (with Casciaro, Biagio) Extensions of nonlinear connections to the algebra of tensor fields along the canonical projection of the tangent bundle of a differentiable manifold. (Italian. English summary) *Matematiche (Catania)* **39** (1984), no. 1–2, 19–28 (1988). (V. Cruceanu) **89d:53057** 53C05

- Leugering, G.** Time optimal boundary controllability of a simple linear viscoelastic liquid. *Math. Methods Appl. Sci.* **9** (1987), no. 3, 413–430. (W. Langlois) **89a:76012** 76A10 (34E15)
- Leung, A. Y. T.** Inverse iteration for the quadratic eigenvalue problem. *J. Sound Vibration* **124** (1988), no. 2, 249–267. (Summary) **89f:65041** 65F15 (65F10, 70–08, 70J99, 73K99)
- Leung, Anthony W.** (with Korman, Philip) On the existence and uniqueness of positive steady states in the Volterra-Lotka ecological models with diffusion. *Appl. Anal.* **26** (1987), no. 2, 145–160. (R. Shonkwiler) **89e:92045** 92A15 (35K55)
- (with Zhou, Zhi Ming) Global stability for large systems of Volterra-Lotka type integro-differential population delay equations. *Nonlinear Anal.* **12** (1988), no. 5, 495–505. (K. Gopalsamy) **89h:92048** 92A15 (45J05, 45M10)
- Leung, Dennis L. M.** (with Bishop, Steve R.; Virgin, Lawrence N.) On the computation of domains of attraction during the dynamic modelling of oscillating systems. *Appl. Math. Modelling* **12** (1988), no. 5, 503–516. (Zhong-Hua Yang) **89h:65120** 65L07 (58F12, 58F13)
- Leung, Denny** Uniform convergence of operators and Grothendieck spaces with the Dunford-Pettis property. *Math. Z.* **197** (1988), no. 1, 21–32. (Pilar Cembranos) **89a:46039** 46B20 (47A35, 47D05)
- Weak\* convergence in higher duals of Orlicz spaces. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 797–800. (Yu. A. Abramovich) **89d:46032** 46E30 (46B20)
- Leung, Hing** On the topological structure of a finitely generated semigroup of matrices. *Semigroup Forum* **37** (1988), no. 3, 273–287. (Fred W. Roush) **89d:68058** 68Q70 (03D05, 20M20)
- Leung, Joseph Y.-T.** (with Du, Jianzhong) Scheduling tree-structured tasks with restricted execution times. *Inform. Process. Lett.* **28** (1988), no. 4, 183–188. (Summary) **89g:68023** 68Q25 (68N25, 68Q15, 90B35)
- Leung, Kam Wing** (with Patrizio, Giorgio; Wong, Pit-Mann) Isometries of intrinsic metrics on strictly convex domains. *Math. Z.* **196** (1987), no. 3, 343–353. (John Bland) **89c:32047** 32F15 (53C55)
- Leung, Kwan-tai** Interfacial properties of a driven diffusive system. *J. Statist. Phys.* **50** (1988), no. 1–2, 405–437. (Summary) **89b:82141** 82A99
- Leung, M. Y.** (with Balakrishnan, N.) Means, variances and covariances of order statistics, BLUEs for the type I generalized logistic distribution, and some applications. *Comm. Statist. Simulation Comput.* **17** (1988), no. 1, 51–84. (Not in MR) **62Q05**
- Leung, P. W.** (with Henley, Christopher L.; Chester, G. V.) Dodecahedral order in a two-dimensional Lennard-Jones system. *Phys. Rev. B* (3) **39** (1989), no. 1, 446–458. (Summary) **89j:82064** 82A57 (82–04, 82A60)
- Leung, Pui Lam** (with Muirhead, Robb J.) Estimation of parameter matrices and eigenvalues in MANOVA and canonical correlation analysis. *Ann. Statist.* **15** (1987), no. 4, 1651–1666. (W. E. Strawderman) **89e:62067** 62H12 (62H20)
- (with Muirhead, Robb J.) On estimating characteristic roots in a two-sample problem. *Statistical decision theory and related topics, IV*, Vol. 1 (West Lafayette, Ind., 1986), 397–402, Springer, New York-Berlin, 1988. (Title) **89a:62129** 62H12
- Leung, Tin-Chi** (with Zaborsky, John; Huang, Gang; Zheng, Baohua) On the phase portrait of a class of large nonlinear dynamic systems such as the power system. *IEEE Trans. Automat. Control* **33** (1988), no. 1, 4–15. (Mihail Voicu) **89a:93037** 93C75 (93B60, 93C10, 93C15, 93D99)
- Leung, Y. J.** On the Nth diameter problem in the class  $\Sigma$ . *Complex Variables Theory Appl.* **9** (1987), no. 2–3, 227–239. (J. Siciak) **89d:30011** 30C45 (30C70, 30C85)
- (with Schober, G.) The Nth diameter problem in the class  $\Sigma$ . *J. Analyse Math.* **48** (1987), 247–266. (J. Siciak) **89d:30012** 30C45 (30C70, 30C85)
- (with Schober, G.) The simple-zero conjecture for support points in  $\Sigma$ . *Bull. Amer. Math. Soc. (N.S.)* **19** (1988), no. 2, 439–440. (Editors) **89j:30030** 30C75
- (with Schober, G.) The simple-zero theorem for support points in  $\Sigma$ . *Proc. Amer. Math. Soc.* **105** (1989), no. 3, 603–608. (P. L. Duren) **89m:30049** 30C70 (30C50)
- van de Leur, J. W.** (with Kac, Victor G.) Super boson-fermion correspondence. (French summary) *Ann. Inst. Fourier (Grenoble)* **37** (1987), no. 4, 99–137. (Alex Jay Feingold) **89f:17006** 17A70 (17B65, 58F07, 81E99)
- Leurgans, Sue** Linear models, random censoring and synthetic data. *Biometrika* **74** (1987), no. 2, 301–309. (Summary) **89e:62082** 62J05
- Leutwiler, Heinz** (with Arsove, Maynard) Excessive elements in harmonic semigroups. *Funct. Approx. Comment. Math.* **17** (1987), 31–36. (Gunter Ritter) **89c:31007** 31D05 (06F05, 47B99, 47D05)
- Leutwyler, H.** (with Langouche, F.) Two-dimensional fermion determinants as Wess-Zumino actions. *Phys. Lett. B* **195** (1987), no. 1, 56–59. (A. K. Raina) **89c:81086** 81E20 (83C47)
- (with Langouche, F.) Anomalies generated by extrinsic curvature. *Z. Phys. C* **36** (1987), no. 3, 479–486. (Markku Lehto) **89b:81135** 81E13 (58G40, 81E30)
- van Leuven, P.** see Van Leuven, P.
- Lev, F. M.** Some group-theoretical aspects of the  $SO_0(1,4)$ -invariant theory. *J. Phys. A* **21** (1988), no. 3, 599–615. (Martine J. Perrin) **89c:81047** 81C40 (22E46, 22E70)
- Some representations of de Sitter algebras over a finite field and their possible physical interpretation. *Soviet J. Nuclear Phys.* **48** (1988), no. 3, 575–580 (1989); translated from *Yadernaya Fiz.* **48** (1988), no. 3 (Russian). (Summary) **89k:17017** 17B10 (81C40)
- Lev, G. Sh.** Generalized multiplication processes. (Russian) *Teor. Veroyatnost. i Primenen.* **32** (1987), no. 4, 751–760. (O. A. Voina) **89b:60086** 60G99
- bar-Lev, S. K.** see Bar-Lev, S. K.
- Lev, V. Kh.** Lie algebras in the theory of physical structures. (Russian) *Vychisl. Sistemy* **110** (1985), 89–94, 96. (Summary) **89i:00041** 00A69 (17B99)
- Two-dimensional and three-dimensional geometries in the theory of physical structures. (Russian) *Vychisl. Sistemy* **118** (1986), no. 118 Mashin. Anal. Slozhn. Struktur (1986), 28–36, 151. (Summary) **89g:58221** 58G35 (00A73, 22E05)
- Levada, F. Yu.** (with Emel'yanov, S. V.; Burov, I. A.) An estimate for the norm of the control vector in binary automatic systems. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 2, 288–291; translation in *Soviet Phys. Dokl.* **33** (1988), no. 3, 162–163. (Not in MR) **93B30**
- Le Van, Marijo** Integer-perfect numbers. *J. Natur. Sci. Math.* **27** (1987), no. 2, 33–50. (G. L. Cohen) **89f:11017a** 11A25
- On the order of  $v(n)$ . *J. Natur. Sci. Math.* **28** (1988), no. 1, 165–173. (G. L. Cohen) **89f:11017b** 11A25
- Le Van Bao** (with Hồ Thuận) Translations of relational schemas. *Acta Math. Vietnam.* **11** (1986), no. 2, 180–192. (From the introduction) **89c:68023** 68P15
- Le Van Dien** Minimizing a quasi-concave function subject to a reverse convex constraint. *Appl. Math. Optim.* **18** (1988), no. 3, 231–240. (Laura Martein) **89g:90197** 90C30
- Levanov, E. I.** (with Sot'skil, E. N.) Heat transfer taking into account relaxation of the thermal flow. (Russian) *Mathematical modeling (Russian)*, 155–190, 280, "Nauka", Moscow, 1987. (Summary) **89d:80018** 80A20 (76N15)
- Lev-Ari, H.** (with Chun, J.; Kailath, Thomas) Fast parallel algorithms for QR and triangular factorization. *SIAM J. Sci. Statist. Comput.* **8** (1987), no. 6, 899–913. (E. L. Yip) **89e:65035** 65F05 (15A06, 65F30)
- Levashov, V. A.** Subdifferential analogues of a theorem of Mil'man. (Russian) *Application of functional analysis, in approximation theory (Russian)*, 93–101, 146, Kalinin. Gos. Univ., Kalinin, 1984. (see **89c:00006**) **90C48** (47H15, 58C20)
- The best approximation by a factorizing seminorm. (Russian) *Application of functional analysis in approximation theory (Russian)*, 56–61, Kalinin. Gos. Univ., Kalinin, 1987. (V. Baskakov (translated from RZhMat 1987:12 B90)) **89d:41046** 41A50 (41A65)
- Levasseur, Kenneth M.** How to beat your kids at their own game. *Math. Mag.* **61** (1988), no. 5, 301–305. (Not in MR) **90D45**
- Levasseur, T.** (with Smith, S. P.) Primitive ideals and nilpotent orbits in type  $G_2$ . *J. Algebra* **114** (1988), no. 1, 81–105. (Anthony Joseph) **89f:17013** 17B35 (14L30)
- (with Smith, S. P.; Stafford, J. T.) The minimal nilpotent orbit, the Joseph ideal, and differential operators. *J. Algebra* **116** (1988), no. 2, 480–501. (Anthony Joseph) **89k:17028** 17B35
- (with Smith, S. P.) Corrigendum: "Primitive ideals and nilpotent orbits in type  $G_2$ " [*J. Algebra* **114** (1988), no. 1, 81–105; MR **89f:17013**]. *J. Algebra* **118** (1988), no. 1, 261. (Anthony Joseph) **89m:17026** 17B35
- (with Brown, K. A.) Cohomology of induced modules in rings of differential operators. *Proc. Edinburgh Math. Soc. (2)* **31** (1988), no. 1, 41–47. (K. R. Goodearl) **89e:16004** 16A05 (16A56, 16A61, 17B35, 32C38)
- Levchenko, E. B.** (with Vedenov, A. A.; Ezhov, A. A.; Knizhnikova, L. A.; Chernov, Yu. G.) Nonlinear systems with memory and the modeling of the functions of neural nets. (Russian) *Intellectual processes and their modeling (Russian)*, 229–248, 395, "Nauka", Moscow, 1987. (Summary) **89j:92040** 92A09 (58F40)
- (with Vedenov, A. A.; Ezhov, A. A.) Nonlinear dynamical systems with memory and functions of neuron ensembles. (Russian) *Nonlinear waves (Russian)*, 53–67, 394, "Nauka", Moscow, 1987. (Summary) **89h:92073** 92A25 (58F40, 82A57, 82A99, 92A09)
- (with Ezhov, A. A.; Knizhnikova, L. A.) Regular and chaotic oscillations in a system of autogenerators. (Russian) *Izv. Vyssh. Uchebn. Zaved. Radiofiz.* **30** (1987), no. 9, 1167–1169. (From the text) **89c:58075** 58F13
- Levchenkov, V. S.** The connection between sequentially compact approximation and uniform convergence. (Russian) *Topological structures and their mappings (Russian)*, 84–86, *ibid.*, Latv. Gos. Univ., Riga, 1987. (Ya. I. Al'ber) **89f:50066** 53J15 (41A65, 47H17)
- Dynamic justification of the entropy approach for a class of communications systems. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 10, 112–121. (Summary) **89f:90052** 90B10 (94A05)
- Levchuk, V. M.** Some locally nilpotent rings and their associated groups. (Russian) *Mat. Zametki* **42** (1987), no. 5, 631–641, 761. (P. M. Cohn) **89b:16006** 16A25
- Levcopoulos, Christos** (with Overmars, Mark H.) A balanced search tree with  $O(1)$  worst-case update time. *Acta Inform.* **26** (1988), no. 3, 269–277. (Summary) **89k:68025** 68P10 (05C05, 68Q25, 68R05)
- Leven, R. W.** (with Koch, B. P.; Markman, G. S.) Periodic, quasiperiodic and chaotic motion in a forced predator-prey ecosystem. *Dynamical systems and environmental models (Eisenach, 1986)*, 95–104, *Math. Ecol., Akademie-Verlag, Berlin*, 1987. (Reinhard Bürger) **89f:92047** 92A15 (34C25, 34C27, 58F21, 92A17)
- (with Pompe, B.) Behaviour of Lyapunov exponents near crisis points in the dissipative standard map. *Phys. Scripta* **38** (1988), no. 5, 651–656. (Summary) **89m:26006** 26A18 (58F11, 58F13)
- Levenberg, N.** On an example of Wermer. *Ark. Mat.* **26** (1988), no. 1, 155–163. (Clement Lutterodt) **89c:32033** 32E20 (32E10, 32F15)
- (with Molzon, R. E.) Convergence sets of a formal power series. *Math. Z.* **197** (1988), no. 3, 411–420. (J. Siciak) **89b:32002** 32A05
- (with Martin, Gaven J.; Shields, Allen; Zdravkovska, Smilka) Factorizations of Lebesgue measure via convolutions. *Proc. Amer. Math. Soc.* **104** (1988), no. 2, 419–430. (Pedro Jiménez Guerra) **89m:28010** 28A50 (28A35)
- Levendorskii, S. Z.** Nonclassical spectral asymptotics. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 1(259), 123–157, 247; translation in *Russian Math. Surveys* **43** (1988), no. 1, 149–192. (G. V. Rozenblyum) **89h:35249** 35P20 (47F05)
- Coercivity of degenerate elliptic operators. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 1, 29–31; translation in *Soviet Math. Dokl.* **37** (1988), no. 1, 21–24. (Jiri Rákosník) **89c:35065** 35J70 (35S05, 47F05)
- On the symbols of degenerate elliptic differential and hypoelliptic pseudodifferential operators. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* **52** (1988), no. 3, 541–558, 671; translation in *Math. USSR-Izv.* **32** (1989), no. 3, 543–561. (Jan Bochenek) **89h:35364** 35S05 (35H05, 47F05, 47G05)
- Levenshtam, V. B.** Application of the averaging principle to the Cauchy problem for quasilinear parabolic equations with rapidly oscillating principal part. (Russian) *Izv. Severo-Kavkaz. Nauchn. Tsentra Vyssh. Shkoly Estestv. Nauk* **1988**, no. 1, 40–45, 143. (Zuchi Chen) **89k:35035** 35B40 (35K30)
- Levental, Shlomo** Uniform limit theorems for Harris recurrent Markov chains. *Probab. Theory Related Fields* **80** (1988), no. 1, 101–118. (Esa Nummelin) **89m:60150** 60J05 (60F15, 60F17)
- LeVeque, Randall J.** On the interaction of nearly equal solitons in the KdV equation. *SIAM J. Appl. Math.* **47** (1987), no. 2, 254–262. (Summary) **89c:35138** 35Q20
- (with Trefethen, Lloyd N.) Fourier analysis of the SOR iteration. *IMA J. Numer. Anal.* **8** (1988), no. 3, 273–279. (Summary) **89i:65036** 65F10
- High resolution finite volume methods on arbitrary grids via wave propagation. *J. Comput. Phys.* **78** (1988), no. 1, 36–63. (Summary) **89g:65118** 65M10 (35L65)
- (with Peskin, Charles S.; Lax, Peter D.) Solution of a two-dimensional cochlea model with fluid viscosity. *SIAM J. Appl. Math.* **48** (1988), no. 1, 191–213. (T. W. Barrett) **89b:92007** 92A06 (92A09)



- Second order accuracy of Brenier's time-discrete method for nonlinear systems of conservation laws. *SIAM J. Numer. Anal.* **25** (1988), no. 1, 1–7. (J. M. Sanz-Serna) **89d:65085** 65M10
- (with Goodman, Jonathan) A geometric approach to high resolution TVD schemes. *SIAM J. Numer. Anal.* **25** (1988), no. 2, 268–284. (Mark Davidovich Kremetsky) **89c:65097** 65M05 (76–08)
- LeVeque, William J.** The AMS—then, now, and soon. *Notices Amer. Math. Soc.* **35** (1988), no. 6, 785–789. (Not in MR) 01A74
- see also **Biography: LeVeque, William J.**, **89b:01090**
- Levermore, C. David** (with Boghosian, Bruce M.) A cellular automaton for Burgers' equation. *Complex Systems* **1** (1987), no. 1, 17–29. (P. A. Kuchment) **89a:35170a** 35Q20 (58F40, 68Q75, 68Q80)
- (with Boghosian, Bruce M.) Errata: "A cellular automaton for Burgers' equation". *Complex Systems* **1** (1987), no. 6, 1125. (P. A. Kuchment) **89a:35170b** 35Q20 (58F40, 68Q75, 68Q80)
- The hyperbolic nature of the zero dispersion KdV limit. *Comm. Partial Differential Equations* **13** (1988), no. 4, 495–514. (Summary) **89h:35302** 35Q20 (35L99)
- (with Wong, Joe; Pomraning, G. C.) Renewal theory for transport processes in binary statistical mixtures. *J. Math. Phys.* **29** (1988), no. 4, 995–1004. (Gert Due Billing) **89d:82151** 82A70 (82A42)
- Lewers, Roy G.** Spinning the Helmholtz equation. *Computational acoustics, Vol. I* (New Haven, Conn., 1986), 287–293, North-Holland, Amsterdam-New York, 1988. (Kotik K. Lee) **89d:78013** 78A25
- Levesque, Claude** Continued fraction expansions and fundamental units. *J. Math. Phys. Sci.* **22** (1988), no. 1, 11–44. (Franz Halter-Koch) **89f:11021** 11A55 (11R11, 11R27)
- Levesque, Hector J.** (with des Rivieres, Jim) The consistency of syntactical treatments of knowledge. *Theoretical aspects of reasoning about knowledge* (Monterey, Calif., 1986), 115–130, Morgan Kaufmann, Palo Alto, CA, 1986. (Summary) **89a:03042** 03B45
- Logic and the complexity of reasoning. *J. Philos. Logic* **17** (1988), no. 4, 355–389. (Marius Zimand) **89k:68127** 68T01 (03A05, 03D10, 03D15, 68T30, 92A25)
- Levesque, Rejean** (with Boyarsky, A.) Spectral decomposition for combinations of Markov operators. *J. Math. Anal. Appl.* **132** (1988), no. 1, 251–263. (Anzelm Iwanik) **89f:47044** 47B38 (47A35)
- Levi, D.** (with David, D.; Winternitz, P.) Integrable nonlinear equations for water waves in straits of varying depth and width. *Stud. Appl. Math.* **76** (1987), no. 2, 133–168. (F. Ursell) **89f:76025** 76B15 (58F07, 76B25)
- On a new Darboux transformation for the construction of exact solutions of the Schrödinger equation. *Inverse Problems* **4** (1988), no. 1, 165–172. (David J. Kaup) **89f:58144** 58G37 (34B25, 35J10, 81C05)
- (with Ragnisco, O.) Nonisospectral deformations and Darboux transformations for the third-order spectral problem. *Inverse Problems* **4** (1988), no. 3, 815–828. (F. Oliveri) **89k:58306** 58G37 (35Q20, 58F07)
- (with David, D.; Winternitz, P.) Equations invariant under the symmetry group of the Kadomtsev-Petviashvili equation. *Phys. Lett. A* **129** (1988), no. 3, 161–164. (Summary) **89c:58144** 58G35 (35A30, 35Q20, 58G37)
- (with Winternitz, P.) The cylindrical Kadomtsev-Petviashvili equation: its Kac-Moody-Virasoro algebra and relation to KP equation. *Phys. Lett. A* **129** (1988), no. 3, 165–167. (Summary) **89c:58145** 58G35 (17B65, 35Q20)
- limchi-Levi, David** see **Simchi-Levi, David**
- Levi, G.** see **Foundations of logic and functional programming**, **89c:68005** and **Conference: Theory and Practice of Software Development**, **89f:68004**
- Levi, Inessa** Order-automorphisms of normal subsets of a power set. *Discrete Math.* **66** (1987), no. 1–2, 139–155. (Henry A. Kierstead) **89a:06017** 06A99 (04A05, 04A20, 20M20)
- Levi, Isaac** Iteration of conditionals and the Ramsey test. *Synthese* **76** (1988), no. 1, 49–81. (Stephen Read) **89m:03014** 03B45
- Levi, Mark** (with Baillieu, J.) Rotational elastic dynamics. *Phys. D* **27** (1987), no. 1–2, 43–62. (J. E. Marsden) **89a:70009** 70E15 (73K05)
- Nonchaotic behavior in the Josephson junction. *Phys. Rev. A* (3) **37** (1988), no. 3, 927–931. (Summary) **89m:81209** 81J05 (58F13, 70K10, 78A99)
- see also **Dynamical systems approaches to nonlinear problems in systems and circuits**, **89f:58049**
- Levi, Roni N.** The Riemann-Roch theorem for complex spaces. *Acta Math.* **158** (1987), no. 3–4, 149–188. (Yue Lin L. Tong) **89d:32065** 32L10 (14F12, 19L10, 32C10, 32C15, 32C35)
- Levi, Sandro** Measurability properties of the spectrum. (Italian. English summary) *Rend. Sem. Mat. Fis. Milano* **56** (1986), 85–88 (1988). (A. Revuz) **89k:46065** 46H05 (47A10)
- (with Frolik, Z.) Separability of Baire-measurable images of  $K$ -analytic spaces. (Italian summary) *Boll. Un. Mat. Ital. A* (7) **1** (1987), no. 3, 411–415. (H. Sarbadhikari) **89b:54042** 54H05 (28A05)
- Leviant, V. M.** (with Ivanov, Evgenii Alekseevich<sup>2</sup>; Krivosos, S. O.) A new class of superconformal sigma models with the Wess-Zumino action. *Nuclear Phys. B* **304** (1988), no. 3, 601–627. (Enore Guadagnini) **89h:81196** 81E99 (58E20, 81E40)
- Leviatan, Amiram** (with Kirson, Michael W.) Intrinsic and collective structure of an algebraic model of molecular rotation-vibration spectra. *Ann. Physics* **188** (1988), no. 1, 142–185. (Summary) **89j:81282** 81G50
- Leviatan, D.** Monotone and comonotone polynomial approximation revisited. *J. Approx. Theory* **53** (1988), no. 1, 1–16. (Z. Ditzian) **89h:41017** 41A10 (41A25, 41A29)
- Levichev, A. V.** Some symmetric spaces of the general theory of relativity as solutions of the Einstein-Yang-Mills equations. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (Järnala, 1985), 145–150, "Nauka", Moscow, 1986. (see **89d:81001**) **83C15** (53C35)
- Closed causal curves in homogeneous space-time. (Russian) *Group-theoretic methods in physics, Vol. 1* (Russian) (Järnala, 1985), 150–155, "Nauka", Moscow, 1986. (see **89d:81001**) **83C99** (53C50)
- Chronogeometry of an electromagnetic wave defined by a bi-invariant metric on the oscillator group. (Russian) *Sibirsk. Mat. Zh.* **27** (1986), no. 2, 117–126, 222. (R. I. Pimenov) **89a:83029** 83C20 (22E70, 83C99)
- Levin, A. G.** (with Melnikov, O. I.) The weakened Helly condition and the planarity of hypergraphs. (Russian. English summary) *Vestsi Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* **1988**, no. 3, 12–15, 123. (Ioan Tomescu) **89j:05054** 05C65
- Levin, A. L.** (with Saff, E. B.) Some examples in approximation on the unit disk by reciprocals of polynomials. *Approximation theory, Tampa (Tampa, Fla., 1985–1986)*, 70–82, *Lecture Notes in Math.*, 1287, Springer, Berlin-New York, 1987. (T. J. Rivlin) **89m:30078** 30E10 (41A20)
- (with Saff, E. B.) Degree of approximation of real functions by reciprocals of real and complex polynomials. *SIAM J. Math. Anal.* **19** (1988), no. 1, 233–245. (Gerald D. Taylor) **89c:41015** 41A25 (41A10, 41A30)
- Levin, A. M.** Isolation of singularities in the solution of two-dimensional problems of the theory of elasticity in irregular multiply connected domains. *J. Appl. Math. Mech.* **51** (1987), no. 1, 28–33 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 1, 39–46 (Russian). (V. Gheorghijă) **89g:73011** 73C02 (73K10)
- Supersymmetric elliptic and modular functions. (Russian) *Funktsional. Anal. i Prilozhen.* **22** (1988), no. 1, 71–72; translation in *Functional Anal. Appl.* **22** (1988), no. 1, 60–61. (Horia Scutaru) **89j:14026** 14K25 (11F03, 14H99, 17B70)
- Levin, A. Yu.** (with Encheva, T. I.) Localization of zeros of quasipolynomials that arise in a linear time-optimal control problem. (Russian) *C. R. Acad. Bulgare Sci.* **41** (1988), no. 2, 51–54. (Stanislaw Walczak) **89j:49019** 49B36 (93B50, 93C05)
- Levin, B. V.** (with Chariev, U.) Behavior of the solutions of some integro-difference equations. (Russian. Tajiki summary) *Dokl. Akad. Nauk Tadzhik. SSR* **30** (1987), no. 5, 267–272. (From the text) **89b:45008** 45J05 (11K65, 39A10)
- Levin, B. Ya.** (with Berezanskii, Yu. M.; Bogolyubov, N. N.; Daletskii, Yu. L.; Kuchment, P. A.; Maslov, V. P.; Novikov, S. P.; Semenov, E. M.) Selim Grigor'evich Krein (on the occasion of his seventieth birthday). (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 5(257), 223–224. (Editors) **89b:01038** 01A70
- Levin, Bruce** (with Zibert, Patricia) Selecting the highest of three binomial probabilities. *Proc. Nat. Acad. Sci. U.S.A.* **84** (1987), no. 23, 8180–8184. (Klaus-J. Miescke) **89a:62063** 62F07 (62L10)
- Levin, Bruce R.** Restriction-modification immunity and the maintenance of genetic diversity in bacterial populations. *Evolutionary processes and theory* (Israel, 1985), 669–688, Academic Press, Orlando, FL, 1986. (see **89b:92001**) **92A15**
- Levin, David** Multidimensional reconstruction by set-valued approximations. *IMA J. Numer. Anal.* **6** (1986), no. 2, 173–184. (Summary) **89h:65029** 65D15 (65D05)
- Multidimensional reconstruction by set-valued approximations. *Algorithms for approximation* (Shrivenham, 1985), 421–431, *Inst. Math. Appl. Conf. Ser. New Ser.*, 10, Oxford Univ. Press, New York, 1987. (Ding Yuan Liu) **89c:65019** 65D10
- (with Dyn, Nira; Gregory, John A.) A 4-point interpolatory subdivision scheme for curve design. *Comput. Aided Geom. Design* **4** (1987), no. 4, 257–268. (Antonio López-Carmona) **89c:65022** 65D10
- Levin, Frank** (with Fine, Benjamin; Rosenberger, Gerhard) Free subgroups and decompositions of one-relator products of cyclics. II. Normal torsion-free subgroups and FPA decompositions. *J. Indian Math. Soc. (N.S.)* **49** (1985), no. 3–4, 237–247 (1987). (Kathryn J. Horadam) **89h:20044** 20F05 (20E06)
- (with Gupta, Chander Kanta; Gupta, Narain) On dimension subgroups relative to certain product ideals. *Group theory* (Bressanone, 1986), 31–35, *Lecture Notes in Math.*, 1281, Springer, Berlin-New York, 1987. (I. B. S. Passi (Zbl 629:20004)) **89a:20005** 20C07 (20F12, 20F14)
- (with Fine, Benjamin; Rosenberger, Gerhard) Free subgroups and decompositions of one-relator products of cyclics. I. The Tits alternative. *Arch. Math. (Basel)* **50** (1988), no. 2, 97–109. (Kathryn J. Horadam) **89c:20050** 20F05 (20E07)
- Levin, Genadii Mironovich** Arithmetic properties of a sequence of polynomials. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 1(259), 203–204; translation in *Russian Math. Surveys* **43** (1988), no. 1, 245–246. (Fuyao Ren) **89g:58106** 58F08 (30C10)
- (with Verina, L. F.; Tanaev, V. S.) Parametric decomposition of extremal problems: a general approach and some applications. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 4, 137–148; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1988**, no. 1, 23–35, 218 (Russian). (Summary) **89k:90155** 90C31
- Levin, L. A.** One way functions and pseudorandom generators. *Combinatorica* **7** (1987), no. 4, 357–363. (Cristian Calude) **89c:68048** 68Q25 (03D15, 65C10)
- Levin, Simon A.** Recurrent themes in mathematical biology. *Mathematical topics in population biology, morphogenesis and neurosciences* (Kyoto, 1985), 10–29, *Lecture Notes in Biomath.*, 71, Springer, Berlin-New York, 1987. (Summary) **89g:92004** 92A05 (92–02)
- Levin, V. L.** Solution of a problem of convex analysis. (Russian) *Uspekhi Mat. Nauk* **42** (1987), no. 2(254), 235–236. (V. L. Levin (Zbl 633:49009)) **89g:90171** 90C25 (49A50, 90C48)
- Lévin, V. V.** (with Ivchenko, G. I.) Poisson convergence in a generalized distribution scheme. (Russian) *Mat. Zametki* **44** (1988), no. 3, 362–368, 411. (Gerd Christoph) **89m:60052** 60F05 (60K99)
- Levin, Zev** (with Feingold, Graham; Tzivion, Shalva) Evolution of raindrop spectra. I. Solution to the stochastic collection/breakup equation using the method of moments. *J. Atmospheric Sci.* **45** (1988), no. 22, 3387–3399. (Summary) **89k:86010** 86A35 (86–08)
- Levinas, M. L.** (with Domenech, G.; Umerez, N.) Low energy effects in supergravity. *SILARG, VI* (Rio de Janeiro, 1987), 349–355, *World Sci. Publishing, Singapore*, 1988. (Summary) **89c:83082** 83E50 (81G25, 83C10)
- (with Castagnino, Mario) Photon motion in the ECKS theory. *Gen. Relativity Gravitation* **20** (1988), no. 7, 715–721. (Summary) **89c:83064** 83E10 (81G10)
- (with Domenech, G.; Sánchez, Norma) Quantum field theory and the antipodal identification of space time. *Internat. J. Modern Phys. A* **3** (1988), no. 11, 2567–2588. (Yisong Yang) **89k:81099** 81E20 (83C47)
- (with Castagnino, Mario; Domenech, G.; Umerez, N.) Supersymmetric couplings and trajectories in  $N = 1$  supergravity. *Classical Quantum Gravity* **6** (1989), no. 1, L1–L5. (Summary) **89j:83086** 83E50
- Levine, A. M.** (with Kofman, A. G.; Zabel, R.; Prior, Yehiam) Non-Markovian stochastic jump processes in nonlinear optics. *Phys. Rev. Lett.* **61** (1988), no. 3, 251–254. (Summary) **89d:78040** 78A55
- Levine, David K.** Nash equilibria equal competitive equilibria. *Econom. Lett.* **25** (1987), no. 4, 301–302. (Introduction) **89d:90050** 90A14
- (with Fudenberg, Drew) Open-loop and closed-loop equilibria in dynamic games with many players. *J. Econom. Theory* **44** (1988), no. 1, 1–18. (Marwan Simaan) **89c:90115** 90D12 (90A16, 90D40)

- (with Fudenberg, Drew; Kreps, David M.) On the robustness of equilibrium refinements. *J. Econom. Theory* **44** (1988), no. 2, 354–380. (O. A. Malafayev) **89g:90248** 90D10
- Efficiency and the value of money. *Rev. Econom. Stud.* **56** (1989), no. 1, 77–88. (From the introduction) **89m:90034** 90A14
- Levine, G. (with Fournier, J.-D.; Tabor, M.) Singularity clustering in the Duffing oscillator. *J. Phys. A* **21** (1988), no. 1, 33–54. (G. V. Khmelevskaya-Plotnikova) **89e:58081** 58F14 (34A20)
- Levine, H. A. (with Smith, Richard A.) A potential well theory for the heat equation with a nonlinear boundary condition. *Math. Methods Appl. Sci.* **9** (1987), no. 2, 127–136. (From the introduction) **89f:35114** 35K60 (35K05)
- Some remarks on inequalities between Dirichlet and Neumann eigenvalues. *Maximum principles and eigenvalue problems in partial differential equations* (Knoxville, TN, 1987), 121–133, *Pitman Res. Notes Math. Ser.*, 175, Longman Sci. Tech., Harlow, 1988. (Fumioki Asakura) **89j:35099** 35P15 (35J05, 35P20)
- Stability and instability for solutions of Burgers' equation with a semilinear boundary condition. *SIAM J. Math. Anal.* **19** (1988), no. 2, 312–336. (Summary) **89i:35024** 35B40 (35K55, 35Q20)
- Levine, Harold Energy loss and storage in RC-transmission lines. *Appl. Sci. Res.* **45** (1988), no. 3, 195–210. (Summary) **89g:78025** 78A55
- Levine, J. P. Symmetric presentation of link modules. *Topology Appl.* **30** (1988), no. 2, 183–198. (Lorenzo Traldi) **89k:57013** 57M25
- Levine, Jean (with Charlet, B.; Marino, Riccardo) Two sufficient conditions for dynamic feedback linearization of nonlinear systems. *Analysis and optimization of systems* (Antibes, 1988), 181–192, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Guy Jumarie) **89e:93039** 93B17 (93C10)
- Levine, Marc Zero-cycles and K-theory on singular varieties. *Algebraic geometry, Bowdoin, 1985* (Brunswick, Maine, 1985), 451–462, *Proc. Sympos. Pure Math.*, 46, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Jan Stienstra) **89h:14005** 14C25 (14C35, 19E15)
- Localization on singular varieties. *Invent. Math.* **91** (1988), no. 3, 423–464. (Steven E. Landsburg) **89c:14015a** 14C35 (14M05, 18F25, 19E08)
- Erratum to: "Localization on singular varieties". *Invent. Math.* **93** (1988), no. 3, 715–716. (Steven E. Landsburg) **89c:14015b** 14C35 (14M05, 18F25, 19E08)
- Levine, Michael V. (with Dragow, Fritz) Optimal appropriateness measurement. *Psychometrika* **53** (1988), no. 2, 161–176. (Summary) **89e:62140** 62P15 (92A25)
- Levine, Paul (with Currie, David A.) The design of feedback rules in linear stochastic rational expectations models. *J. Econom. Dynamics Control* **11** (1987), no. 1, 1–28. (Summary) **89d:90051** 90A14
- Levine, R. D. Lie algebraic approach to molecular structure and dynamics. *Mathematical frontiers in computational chemical physics* (Minneapolis, MN, 1987), 245–261, *IMA Vol. Math. Appl.*, 15, Springer, New York-Berlin, 1988. (see **89f:81004**) **81G50** (81–02)
- (with Hofacker, G. L.) The evolution of complex systems. *Z. Naturforsch. A* **43** (1988), no. 1, 73–77. (Guy Jumarie) **89b:93011** 93A10 (92A12, 94A15, 94A17)
- Levine, William S. (with Yang, Jiann-Shiou) An  $H^\infty$  method for the design of linear time-invariant multivariable sampled-data control systems. *Analysis and optimization of systems* (Antibes, 1988), 89–100, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89e:93109** 93B50 (93B35, 93C57)
- Levinson, Mogens T. (with Alstrom, Preben; Christiansen, Bo) Nonchaotic transition from quasiperiodicity to complete phase locking. *Phys. Rev. Lett.* **61** (1988), no. 15, 1679–1682. (Summary) **89i:58073** 58F13 (58F27, 92A09)
- Levinski, Jean-Pierre (with Donder, Hans-Dieter; Koepke, Peter) Some stationary subsets of  $\mathcal{P}(\lambda)$ . *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 1000–1004. (Christopher C. Leary) **89d:03048** 03E55 (03E05, 03E35)
- Levinson, Stephen see Vysotsky, George. (Not in MR)
- Levishchenko, S. S. (with Kuzenyni, N. F.; Semko, N. N.) Groups with normal infinite nonabelian subgroups. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 3, 314–321, 406; translation in *Ukrainian Math. J.* **40** (1988), no. 3, 267–273. (Yu. I. Merzlyakov) **89g:20049** 20E15 (20F26)
- Levit, M. V. Analysis of the stability of linear systems with parametric random perturbation on the basis of estimates of second moments. (Russian) *Differential equations and applied problems* (Russian), 55–63, vi, *Tul'sk. Politekh. Inst., Tula*, 1985. (see **89g:00008**) **93E15** (34F05, 60H10)
- Levit, V. E. (with Pereverzev-Orlov, V. S.) On modeling. (Russian) *Intellectual processes and their modeling* (Russian), 294–299, 396, "Nauka", Moscow, 1987. (see **89e:92032**) **92A25** (00A71)
- Levitin, B. M. ★ Inverse Sturm-Liouville problems. Translated from the Russian by O. Efimov. *VSP, Zeist*, 1987. x+240 pp. ISBN 90-6764-055-7 (Editors) **89b:34001** 34-02 (34B25, 35Q20, 47E05, 81F05)
- (with Savin, A. V.) An inverse problem on the half line for finite-gap potentials. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 1, 21–28, 105–106; translation in *Moscow Univ. Math. Bull.* **43** (1988), no. 1, 27–34. (Jan Bochenek) **89e:34024** 34A55 (34B25, 47E05)
- (with Danielyan, A. A.) Asymptotics of the Weyl-Titchmarsh  $m$ -function. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 3, 9–14, 113; translation in *Moscow Univ. Math. Bull.* **43** (1988), no. 3, 10–15. (Zhaojun Liang) **89k:34026** 34B20
- Levitin, Jacob Small time behaviour of an unstable quantum system. *Phys. Lett. A* **129** (1988), no. 5–6, 267–272. (Summary) **89c:81056** 81C99
- Levitin, S. Yu. (with Bakushinskii, A. B.; Goncharskii, A. V.) Fast linear iterative algorithms for the restoration of images. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 6, 933–937, 959. (Gabriel Dimitriu) **89j:65087** 65R10 (65T05, 92A07)
- Levitin, Yu. L. (with Markovich, N. I.; Rozin, S. G.; Sobol', I. M.) Quasirandom sequences for numerical calculations. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 5, 755–759, 784. (P. Neumann) **89g:65009** 65C05 (65C10)
- Levitin, L. (with Freiman, G.; Lipkin, E.) A polynomial algorithm for constructing families of  $k$ -independent sets. *Discrete Math.* **70** (1988), no. 2, 137–147. (Mukkuai S. Krishnamoorthy) **89g:05005** 05A05 (68Q25, 68R05)
- Levitin, M. R. On the spectrum of natural oscillations of a shell filled with a viscous compressible fluid. (Russian) *Dokl. Akad. Nauk SSSR* **295** (1987), no. 6, 1355–1358. (I. Aganović) **89i:73043** 73J06 (35Q10)
- Leviton, P. R. A. (with Rubinstein, J. Hyam) Deforming Riemannian metrics on complex projective spaces. *Miniconference on geometry and partial differential equations*, 2 (Canberra, 1986), 86–95, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 12, Austral. Nat. Univ., Canberra, 1987. (Ketii Tenenblat) **89a:53077** 53C55 (53C25, 58D17)
- Levitor, L. S. Local rules for quasicrystals. *Soviet Phys. JETP* **66** (1987), no. 5, 1046–1054 (1988); translated from *Zh. Eksp. Teoret. Fiz.* **93** (1987), no. 5, 1832–1847 (Russian). (Summary) **89f:82060** 82A57 (82A60)
- (with Rhyner, J.) Crystallography of quasicrystals; application to icosahedral symmetry. (French summary) *J. Physique* **49** (1988), no. 11, 1835–1849. (Marjorie Senéchal) **89m:20057** 20H15 (82A60)
- mani-Levitska, Peter see Mani-Levitska, Peter
- Levitskii, N. I. see Artobolevskii, I. I. **89m:70002**
- Levitt, Gilbert (with Langevin, R.; Rosenberg, Harold) Complete minimal surfaces with long line boundaries. *Duke Math. J.* **55** (1987), no. 4, 985–995. (Michael Beeson) **89h:53022** 53A10 (49F10)
- (with Rosenberg, Harold) Differentiability and topology of labyrinths in the disc and annulus. *Topology* **26** (1987), no. 2, 173–186. (Introduction) **89e:57025** 57R30 (58F18)
- Levitt, Norman Bundles along the fiber in the PL category. *Proc. Amer. Math. Soc.* **102** (1988), no. 1, 213–217. (P. J. Kahn) **89e:55033** 55R25 (55R60)
- Levitt, Tod S. Choosing uncertainty representations in artificial intelligence. *Internat. J. Approx. Reason.* **2** (1988), no. 3, 217–232. (Costică Cazacu) **89h:68139** 68T30
- Levitz, Hilbert (with Nichols, Warren) Eine rekursive universelle Funktion für die primitiv-rekursiven Funktionen. [A recursive universal function for the primitive recursive functions] *Z. Math. Logik Grundlag. Math.* **33** (1987), no. 6, 527–535. (H. Schwichtenberg) **89d:03038** 03D20 (68Q25)
- (with Nichols, Warren) On extending endomorphisms to automorphisms. *Internat. J. Math. Math. Sci.* **11** (1988), no. 2, 231–238. (Jan Chvalina) **89e:08003** 08A35 (08A05)
- (with Nichols, Warren) A natural variant of Ackermann's function. *Z. Math. Logik Grundlag. Math.* **34** (1988), no. 5, 399–401. (Cristian Calude) **89k:03048** 03D20 (03D55, 03D60)
- Levizov, S. V. Lacunary series with respect to periodic multiplicative systems. (Russian) *Sibirsk. Mat. Zh.* **29** (1988), no. 4, 111–125, 224; translation in *Siberian Math. J.* **29** (1988), no. 4, 602–614. (A. Oleviskii) **89k:42028** 42C10
- Levko, John J. A note on almost Hermitian structure and the  $\partial_1$  operator. *Tensor (N.S.)* **43** (1986), no. 3, 231–232. (Guido Karrer) **89b:53064** 53C15 (53B35)
- (with Hsiung, Chuan-Chih) Conformal invariants of submanifolds. II. *Indiana Univ. Math. J.* **37** (1988), no. 1, 181–189. (Bang-yen Chen) **89f:53078** 53C40
- Levoschik, O. L. (with Nakonechny, A. G.) Optimal estimates for random vectors from informational criteria. (Russian) *Vychisl. Prikl. Mat. (Kiev)* **62** (1987), 105–113, 132. (O. A. Glonti) **89f:94010** 94A15 (60G35, 62B10, 93E10)
- Minimax estimation of the solutions of linear algebraic equations by the entropy criterion. (Russian) *Issled. Operatsii i ASU No. 32* (1988), 85–93, 119. (Wilfried Grecksch) **89k:93197** 93E10 (93E12)
- Levy, Azriel Alfred Tarski's work in set theory. *J. Symbolic Logic* **53** (1988), no. 1, 2–6. (Stanislaw J. Surma) **89f:01049** 01A60 (01A70, 03-03, 04-03)
- Levy, Bernard C. (with Kuo, C.-C. Jay; Musicus, Bruce R.) A local relaxation method for solving elliptic PDEs on mesh-connected arrays. *SIAM J. Sci. Statist. Comput.* **8** (1987), no. 4, 550–573. (L. W. Ehrlich) **89b:65251** 65N20 (65F10)
- (with Tewfik, Ahmed H.; Willsky, Alan S.) Sampling theorems for two-dimensional isotropic random fields. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part I, 1092–1096. (Summary) **89a:94014** 94A12
- (with Emersoy, Cengiz) Variable background Born inversion by wavefield backpropagation. *SIAM J. Appl. Math.* **48** (1988), no. 4, 952–972. (F. Ursell) **89j:73039** 73D50 (35R30, 73-08, 76Q05)
- (with Kuo, C.-C. Jay) Mode-dependent finite-difference discretization of linear homogeneous differential equations. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 6, 992–1015. (Summary) **89b:65158** 65N05 (65L99)
- (with Kuo, C.-C. Jay) A two-level four-color SOR method. *SIAM J. Numer. Anal.* **26** (1989), no. 1, 129–151. (Summary) **89k:65126** 65N20 (65F10)
- Levy, Dan The algebra of the Gauss law in  $d = 4$  massless axial QED with a WZ term. *Phys. Lett. B* **201** (1988), no. 1, 143–146. (G. Vitiello) **89h:81205** 81E99 (81L05)
- Lévy, Dominique (with Duménil, Gérard) La concurrence capitaliste: un processus dynamique. [Capitalist competition: a dynamical process] With comments by Alain Lipietz. *Macrodynamique et déséquilibres*, 127–161, *Economica*, Paris, 1987. (see **89d:90065**) **90A17**
- Levy, Hanoch (with Low, David W.) A contraction algorithm for finding small cycle cutsets. *J. Algorithms* **9** (1988), no. 4, 470–493. (Mukkuai S. Krishnamoorthy) **89i:05165** 05C35 (68Q25, 68R10, 90B99)
- (with Kleinerock, Leonard) The analysis of random polling systems. *Oper. Res.* **36** (1988), no. 5, 716–732. (Summary) **89h:90100** 90B22 (90A06)
- Lévy, Laurent P. (with Ogieski, Andrew T.) Dissipation in nonlinear response. *J. Math. Phys.* **30** (1989), no. 3, 683–688. (Summary) **89m:82023** 82A30
- Levy, Lawrence S. (with Haefner, Jeremy) Commutative orders whose lattices are direct sums of ideals. *J. Pure Appl. Algebra* **50** (1988), no. 1, 1–20. (Cornelius Greither) **89e:13005** 13C05 (13F05)
- Projectives of large uniform-rank, in Krull dimension 1. *Bull. London Math. Soc.* **21** (1989), no. 1, 57–64. (W. K. Nicholson) **89k:16048** 16A55 (16A33, 16A50)
- Levy, Martin S. (with Hsu, Chyi Hung; Neill, James W.) The distribution of the ratio of independent central Wishart determinants. *Comm. Statist. Theory Methods* **17** (1988), no. 9, 3177–3190. (Summary) **89g:62078** 62H10
- Levy, Mireille (with Haydon, Richard; Odell, Edward) On sequences without weak\* convergent convex block subsequences. *Proc. Amer. Math. Soc.* **100** (1987), no. 1, 94–98. (C. Ward Henson) **89d:46014** 46B15 (03E50)
- Lévy, Paul see Colloquium: Stochastic Processes, **89g:60001**
- Levy, Roni N. see Levi, Roni N.
- Levy, Ronnie (with Fleissner, William) Stone-Čech remainders which make continuous images normal. *Proc. Amer. Math. Soc.* **106** (1989), no. 3, 839–842. (W. Stephen Watson) **89k:54054** 54D40 (54C05, 54D15)
- Levy, Silvio see Samuel, Pierre, **89f:51003**
- Levy-Bruhl, Pierre Remarques sur la résolubilité d'équations différentielles, à propos de résultats de R. L. Lipsman. [Remarks on the solvability of differential equations, in light



- of results of R. L. Lipsman] *Comm. Partial Differential Equations* **13** (1988), no. 6, 769–773. (A. H. Dooley) **89g:22015** 22E30 (35A05)
- Levykin, A. I.** (with Novikov, E. A.) ★  $O(m, k)$ -метод второго порядка точности для решения нелинейных систем обыкновенных дифференциальных уравнений. (Russian) [An  $(m, k)$ -method of second order of accuracy for solving implicit systems of ordinary differential equations] *Препринт* [Preprint], 768. *Akad. Nauk SSSR Sibsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1987. 17 pp. (Ján Pekár) **89b:65113** 65L05
- Lewandowski, Grzegorz M.** (with Szczepała, L. W.) An axiom system for the theory of the one-dimensional betweenness relation. *Zeszyty Nauk. Geom.* **16** (1987), 13–24. (Janis Citulis) **89g:51016** 51G05 (03B30, 06A05)
- Lewandowski, Jerzy** Nonabelian path integrals and generalised quantum mechanics in the external field of the 't Hooft-Polyakov monopole. *Phys. Lett. A* **121** (1987), no. 7, 325–328. (Introduction) **89i:81101** 81E13 (81C35)
- Lewandowski, Maciej** (with Zak, Tomasz) On the density of the distribution of  $p$ -stable seminorms,  $0 < p < 1$ . *Proc. Amer. Math. Soc.* **100** (1987), no. 2, 345–351. (Summary) **89c:60010** 60B11 (60E07)
- Lewbel, Arthur** Fractional demand systems. *J. Econometrics* **36** (1987), no. 3, 311–337. (Peter Schmidt) **89b:62225** 62P20
- An exactly aggregable trigonometric Engel curve demand system. *Econometric Rev.* **7** (1988), no. 1, 97–102. (Not in MR) **62P20**
- Lewellen, D. C.** (with Kawai, Hikaru; Tye, S.-H. H.) Construction of four-dimensional fermionic strings: a brief review. *International Workshop on Superstrings, Cosmology, Composite Structures* (College Park, MD, 1987), 169–177. *World Sci. Publishing, Singapore*, 1987. (see **89a:81005**) 81–02 (81E13)
- (with Kawai, Hikaru; Schwartz, J. A.; Tye, S.-H. H.) The spin structure construction of string models and multipool modular invariance. *Nuclear Phys. B* **299** (1988), no. 3, 431–470. (Marc Henneaux) **89b:81199** 81E99 (81E30)
- Lewin, Jonathan** (with Lewin, Myrtle) A simple test for the  $n$ th term of a series to approach zero. *Amer. Math. Monthly* **95** (1988), no. 10, 942. (Not in MR) **40A05**
- Lewin, L.** (with Abouzahra, M.; Xiao, Hong Nian) Polylogarithms in the field of omega (a root of a given cubic): functional equations and ladders. *Aequationes Math.* **33** (1987), no. 1, 23–45. (Bruce C. Berndt) **89j:30033** 30D05 (11M41, 39B20)
- (with Abouzahra, M.; Xiao, Hong Nian) Addendum: "Polylogarithms in the field of omega (a root of a given cubic): functional equations and ladders" [Aequationes Math. **33** (1987), no. 1, 23–45; MR **89j:30033**]. *Aequationes Math.* **35** (1988), no. 2–3, 304. (Bruce C. Berndt) **89j:30034** 30D05 (11M41)
- Lewin, Marica** On the existence of a solution to an Itô-Volterra equation. *Nonlinear analysis and applications* (Arlington, Tex., 1986), 301–307. *Lecture Notes in Pure and Appl. Math.*, 109. Dekker, New York, 1987. (Halim Doss) **89a:60151** 60H20
- On the existence of a weak solution to an equation of Volterra-Skorohod type. *Libertas Math.* **7** (1987), 107–123. (Halim Doss) **89a:60152** 60H20
- Lewin, Mordechai** On the primitivity of a nonnegative matrix with many entries. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* **25** (1988), 4, 49–54. (Gong Ning Chen) **89c:15031** 15A48 (15A36)
- Lewin, Myrtle** (with Lewin, Jonathan) A simple test for the  $n$ th term of a series to approach zero. *Amer. Math. Monthly* **95** (1988), no. 10, 942. (Not in MR) **40A05**
- Lewin, Renato** Interpretations into Heyting algebras. *Algebra Universalis* **24** (1987), no. 1–2, 149–166. (Peter Köhler) **89g:06027** 06D20 (03G25, 08B99)
- Interpretations into monadic algebras. *Studia Logica* **46** (1987), no. 4, 329–342. (R. Sh. Grigolia) **89h:03115** 03G25 (08B99)
- Lewiński, Tomasz** (with Telega, Józef Joachim) Asymptotic method of homogenization of fissured elastic plates. *J. Elasticity* **19** (1988), no. 1, 37–62. (Summary) **89a:73041** 73K10
- Lewinter, Martin** (with Harary, Frank) Hypercubes and other recursively defined Hamilton laceable graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **60** (1987), 81–84. (Barry Piazza) **89d:05128** 05C45 (05C75)
- (with Harary, Frank) The starlike trees which span a hypercube. *Comput. Math. Appl.* **15** (1988), no. 4, 299–302. (H. Joseph Straight) **89c:05070** 05C05
- Lewis, Alain A.** (with Sundaram, Rangarajan) An alternate approach to axiomatizations of the von Neumann/Morgenstern characteristic function. *Math. Social Sci.* **15** (1988), no. 2, 145–156. (Hans Keiding) **89j:90310** 90D30 (90A10, 90D12)
- Lower bounds on degrees of game-theoretic structures. *Math. Social Sci.* **16** (1988), no. 1, 1–39. (Klaus Wehrhans) **89i:03083** 03D30 (03C57, 03D45, 03D80, 03E15, 90D40)
- Lewis, Alan L.** A simple algorithm for the portfolio selection problem. *J. Finance* **43** (1988), no. 1, 71–82. (Summary) **89b:90026** 90A09
- Lewis, D. J.** see **Lewis, Donald J.**
- Lewis, D. R.** An upper bound for the projection constant. *Proc. Amer. Math. Soc.* **103** (1988), no. 4, 1157–1160. (Hermann König) **89g:46042** 46B25 (47A30, 47B10)
- Lewis, D. W.** On the level. *Irish Math. Soc. Bull.* **19** (1987), 33–48. (Ron Brown) **89f:11063** 11E81 (12E15, 14G30)
- Levels and sublevels of division algebras. *Proc. Roy. Irish Acad. Sect. A* **87** (1987), no. 1, 103–106. (Jean-Pierre van Deuren) **89f:12003** 12E15 (16A39)
- Sums of Hermitian squares. *J. Algebra* **115** (1988), no. 2, 466–480. (Yoshio Mimura) **89f:11059** 11E39 (11E25)
- Lewis, David K.** Desire as belief. *Mind* **97** (1988), no. 387, 323–332. (Philip L. Quinn) **89i:03006** 03A05 (03B45, 90A05)
- see also **Yagisawa, Takashi**, (Not in MR)
- Lewis, Donald Cain** (with Marsden, Jerrold E.; Ratiu, T.) Stability and bifurcation of a rotating planar liquid drop. *J. Math. Phys.* **28** (1987), no. 10, 2508–2515. (Henk Broer) **89c:58009** 58F14 (34E15, 58F40, 76E99)
- Lewis, Donald J.** see **Heilbronn, Hans Arnold**, **89i:01140**
- Lewis, F. L.** (with Mertziou, B. G.) An algorithm for the computation of the transfer function matrix of generalized two-dimensional systems. *Circuits Systems Signal Process.* **7** (1988), no. 4, 459–466. (Summary) **89k:93124** 93C30 (93C55)
- (with Mertziou, B. G.; Christodoulou, M. A.; Symros, B. L.) Direct controllability and observability time domain conditions of singular systems. *IEEE Trans. Automat. Control* **33** (1988), no. 8, 788–791. (Summary) **89d:93011** 93B05 (93B07)
- (with Mertziou, B. G.; Vachtsevanos, G.) Analysis of singular systems using orthogonal functions. *Proc. IEEE-D* **135** (1988), no. 4, 323–325. (Not in MR) **93C30**
- Lewis, H. Ralph** (with Schwarzmeier, J. L.) Variational nature of dispersion equations revisited. *J. Math. Phys.* **29** (1988), no. 6, 1486–1497. (H. Tasso) **89g:76048** 76K05 (45K05, 47A55, 82A45)
- Lewis, Harold W. III** (with Goel, Narendra S.; Thompson, Richard L.) Simulation of cellular compartmental and internalization in mammalian embryo development. II. Models for spherical embryos. *Bull. Math. Biol.* **50** (1988), no. 2, 121–142. (Summary) **89h:92028** 92A09
- Lewis, J. T.** see **Lewis, John Trevor**
- Lewis, James D.** The cylinder correspondence for hypersurfaces of degree  $n$  in  $P^n$ . *Amer. J. Math.* **110** (1988), no. 1, 77–114. (Sheldon H. Katz) **89g:14005** 14E10 (14C15, 14C30)
- Lewis, John L.** Approximations of Sobolev functions and related topics. *Complex analysis, I* (College Park, Md., 1985–86), 223–234. *Lecture Notes in Math.*, 1275. Springer, Berlin-New York, 1987. (L. G. Lobsenz) **89e:41024** 41A30 (46E35)
- Approximation of Sobolev functions in Jordan domains. *Ark. Mat.* **25** (1987), no. 2, 255–264. (V. M. Gol'dshteyn) **89g:46067** 46E35
- Note on a theorem of Wolff. *Holomorphic functions and moduli, Vol. I* (Berkeley, CA, 1986), 93–100. *Math. Sci. Res. Inst. Publ.*, 10. Springer, New York-Berlin, 1988. (G. Wildenhain) **89j:31002** 31A20 (31A35)
- (with Wu, Jang-Mei) On conjectures of Arakelyan and Littlewood. *J. Analyse Math.* **50** (1988), 259–283. (W. K. Hayman) **89i:30038** 30D35 (30C85)
- Uniformly fat sets. *Trans. Amer. Math. Soc.* **308** (1988), no. 1, 177–196. (Takahide Kurokawa) **89c:31012** 31B99
- Lewis, John Trevor** Do bosons condense? *Schrödinger* (London, 1987), 136–145. Cambridge Univ. Press, Cambridge-New York, 1987. (see **89m:01069**) **82A05**
- (with van den Berg, Michiel) Limit theorems for stochastic processes associated with a boson gas. *Stochastic mechanics and stochastic processes* (Swansea, 1986), 16–23. *Lecture Notes in Math.*, 1325. Springer, Berlin-New York, 1988. (Tony C. Dorlas) **89m:60247** 60K35 (60F05, 82A31)
- (with van den Berg, Michiel; Pulé, J. V.) Large deviations and the boson gas. *Stochastic mechanics and stochastic processes* (Swansea, 1986), 24–39. *Lecture Notes in Math.*, 1325. Springer, Berlin-New York, 1988. (Tony C. Dorlas) **89m:60248** 60K35 (60F10, 82A31)
- (with van den Berg, Michiel; Pulé, J. V.) The large deviation principle and some models of an interacting boson gas. *Comm. Math. Phys.* **118** (1988), no. 1, 61–85. (Tony C. Dorlas) **89m:82013** 82A15 (60F10, 60K35, 82A31)
- (with Cegla, W.; Raggio, G. A.) The free energy of quantum spin systems and large deviations. *Comm. Math. Phys.* **118** (1988), no. 2, 337–354. (Mary Lunn) **89k:82019** 82A15
- (with Raggio, G. A.) The equilibrium thermodynamics of a spin-boson model. *J. Statist. Phys.* **50** (1988), no. 5–6, 1201–1220. (Mary Lunn) **89j:82013** 82A15
- (with Ford, G. W.; O'Connell, R. F.) Independent oscillator model of a heat bath: exact diagonalization of the Hamiltonian. *J. Statist. Phys.* **53** (1988), no. 1–2, 439–455. (Koichiro Matsuno) **89m:82014** 82A15
- (with Fannes, Mark; Verbeure, A.) Symmetric states of composite systems. *Lett. Math. Phys.* **15** (1988), no. 3, 255–260. (H. Araki) **89m:46102** 46L30 (46L60, 82A15)
- (with Ford, G. W.; O'Connell, R. F.) Dissipative quantum tunneling: quantum Langevin equation approach. *Phys. Lett. A* **128** (1988), no. 1–2, 29–34. (Summary) **89i:81053** 81C99 (81J05)
- (with Ford, G. W.; O'Connell, R. F.) Quantum Langevin equation. *Phys. Rev. A* (3) **37** (1988), no. 11, 4419–4428. (Summary) **89d:82029** 82A15
- Lewis, P. A. W.** (with Orav, E. J.; Drug, H. W.; Linnebur, D. G.; Uribe, L.) An implementation of graphical analysis in statistical simulations. (French summary) *Internat. Statist. Rev.* **53** (1985), no. 1, 69–90. (Summary) **89f:62017** 62E25
- (with Lawrence, A. J.) Higher-order residual analysis for nonlinear time series with autoregressive correlation structures. (French summary) *Internat. Statist. Rev.* **55** (1987), no. 1, 21–35. (Ye Ji Xu) **89f:62149** 62M10
- (with Orav, E. J.) ★ Simulation methodology for statisticians, operations analysts, and engineers. Vol. I. The Wadsworth & Brooks/Cole Statistics/Probability Series. Wadsworth & Brooks/Cole Advanced Books & Software, Pacific Grove, CA, 1989. xvi+416 pp. ISBN 0-534-09450-3 (From the preface) **89j:62002** 62-02 (65C05, 65C10, 90-02, 90B40)
- Lewis, Paul** (with Bator, Elizabeth M.; Race, David) Some connections between Pettis integration and operator theory. *Rocky Mountain J. Math.* **17** (1987), no. 4, 683–695. (J. Diestel) **89b:46060** 46G10 (47B38)
- Lewis, R. W.** see **Numerical methods in thermal problems**, **89b:80001**
- Lewis, Richard A.** (with Reinsel, Gregory C.) Prediction error of multivariate time series with mis-specified models. *J. Time Ser. Anal.* **9** (1988), no. 1, 43–57. (Jiri Anděl) **89c:62154** 62M10
- Lewis, Susan Margaret** (with Dean, Angela M.) Towards a general theory for the construction of designs with crossed blocking factors. *Utilitas Math.* **34** (1988), 33–44. (William I. Notz) **89m:62079** 62K10 (05B05, 62K15)
- Lewis, Toby** (with Fisher, N. I.; Emberton, B. J. J.) ★ Statistical analysis of spherical data. Cambridge University Press, Cambridge-New York, 1987. xiv+329 pp. ISBN 0-521-24273-8 (John Kent) **89b:62002** 62-02 (62H12, 62H15, 62H20)
- Lewis, W. Arthur** see **Lives of the laureates**, **89d:01074**
- Lewis, Wayne** Nonhomogeneity of intermediate universal continua. Proceedings of the 1987 Topology Conference (Birmingham, AL, 1987). *Topology Proc.* **12** (1987), no. 1, 193–196. (John J. Walsh) **89g:54071** 54E99 (54F45, 54F65)
- Lewkowicz, Izchak** Bounds for the singular values of a matrix with nonnegative eigenvalues. *Linear Algebra Appl.* **112** (1989), 29–37. (Lajos László) **89k:15016** 15A18 (15A60)
- Lewontin, R. C.** (with Feldman, Marcus W.) A general asymptotic property of two-locus selection models. *Theoret. Population Biol.* **34** (1988), no. 2, 177–193. (Summary) **89h:92037** 92A10
- Le Xuan Binh** Compacta which are quasihomomorphic with a disk. *Colloq. Math.* **52** (1987), no. 2, 175–184. (From the introduction) **89b:54037** 54E45
- Le Yauouanc, A.** (with Oliver, L.; Pène, O.; Raynal, J.-C.; Jarfi, M.; Lazrak, O.) Critical line of symmetry restoration in lattice SU(2) QCD. *Phys. Lett. B* **201** (1988), no. 3, 345–352. (Summary) **89h:81167** 81E25 (81G05)
- Leyk, Zbigniew**  $C^0$ -collocation-like methods at Radau points for two-point boundary value problems. *Numerical methods* (Miskolc, 1986), 287–305. *Colloq. Math. Soc. János Bolyai*, 50. North-Holland, Amsterdam-New York, 1988. (Henning Esser) **89c:65086** 65L10

- Ley Koo, E.** Stationary quantum states along a curve. (Spanish. English summary) *Rev. Mexicana Fis.* 33 (1987), no. 4, 670-682. (Summary) **89h:81024** 81C05
- Leyssen, J.** (with Verstraeten, L.) On warped products and a conjecture of H. Hopf. *Soochow J. Math.* 13 (1987), no. 2, 175-178. (Karsten Grove) **89g:53064** 53C20
- (with Pastijn, H.) Chaos, determinism and stochasticity. *Analysis and optimization of systems (Antibes, 1988)*, 646-653, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Dieter H. Mayer) **89h:58124** 58F13 (62H15)
- Leyton, Michael** A limitation theorem for the differentiable prototypification of shape. *J. Math. Psych.* 31 (1987), no. 4, 307-320. (E. Pessa) **89h:92033** 92A27
- Leyvraz, F.** Reaction kinetics for diffusion controlled aggregation. *Fractals, quasicrystals, chaos, knots and algebraic quantum mechanics (Maratea, 1987)*, 65-72, NATO Adv. Sci. Inst. Ser. C: Math. Phys. Sci., 235, Kluwer Acad. Publ., Dordrecht, 1988. (Summary) **89g:92084** 92A40 (82A57)
- Lezama Serrano, J. O.** (with Borevich, Z. I.) The multiplicative group of a semiperfect ring. (Ukrainian. Russian summary) *Vysnik Kiy. Univ. Ser. Mat. Mekh.* No. 27 (1985), 19-20, 123. (Summary) **89c:20043** 20E15 (16A99)
- Lezaun Iturralde, Mikel** A problem with mixed boundary conditions. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics, Vol. 1 (Spanish) (Badajoz, 1986)*, 305-314, *Publ. Dep. Mat. Univ. Extremadura*, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89h:35303** 35Q20 (80A20)
- Lezhenina, I. F.** Solvability of difference boundary value problems. (Russian) *Boundary value problems (Russian)*, 70-75, 196, *Perm. Politekh. Inst., Perm*, 1983. (See **89c:00008**) 34K10
- An existence theorem for solution of a boundary value problem. (Russian) *Qualitative and approximate methods for investigating operator equations (Russian)*, 62-66, 143, *Yaroslav. Gos. Univ., Yaroslavl*, 1986. (Nicolaie H. Pavel) **89a:34021** 34B10
- Lezina, Z. M.** Procedures for collective choice. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 8, 3-35. (Andrzej Wiecezorek) **89c:90011** 90A08
- Leznov, A. N.** (with Man'ko, V. I.; Chumakov, S. M.) Solitons as a purely algebraic construction. (Russian) *Group-theoretic methods in physics, Vol. 1 (Russian) (Jarmala, 1985)*, 394-412, "Nauka", Moscow, 1986. (See **89d:81001**) 58G37 (35Q20, 58F07)
- (with Mukhtarov, M. A.) The internal symmetry algebra of completely integrable dynamical systems in the quantum regime. (Russian. English summary) *Teoret. Mat. Fiz.* 71 (1987), no. 1, 46-53. (Anjan Kundu) **89h:81204** 81E99 (17B10, 58F07, 58G35, 81D07)
- The simplest soliton solutions for the equations of the periodic Toda lattice of the series  $A_n$  in the scalar  $L$ - $A$ -pair formalism. (Russian. English summary) *Teoret. Mat. Fiz.* 71 (1987), no. 3, 370-380. (Ziemowit Popowicz) **89g:58090** 58F07 (35Q20)
- On the equivalence of four-dimensional self-duality equations to a continuous analogue of the problem of a principal chiral field. (Russian. English summary) *Teoret. Mat. Fiz.* 73 (1987), no. 2, 302-307. (Ziemowit Popowicz) **89h:81112** 81E13 (35Q20)
- Lhallabi, T.** (with El Hassouni, A.; Oudrhiri-Safiani, E. G.; Saidi, E. H.)  $N = 2$  SQED model in harmonic superspace. *Classical Quantum Gravity* 5 (1988), no. 2, 287-298. (Paul Howe) **89c:81116** 81E99 (58A50, 81G20)
- (with Saidi, E. H.) The  $(4, 0)$  and  $(4, 4)$  supersymmetric nonlinear  $\sigma$ -models in the  $D = 2$  harmonic superspace. *Internat. J. Modern Phys. A* 3 (1988), no. 1, 187-201. (Roger Brooks) **89a:81096** 81E20 (58E20, 81G20, 83E50)
- (with Saidi, E. H.) Extended BRS and anti-BRS symmetries in  $N = 2$  harmonic superspace. *Internat. J. Modern Phys. A* 3 (1988), no. 3, 631-645. (Danny Birmingham) **89h:81113** 81E13 (58G40)
- Anomalies of BRS and anti-BRS Ward-identities in  $N = 1$  supersymmetric theory. *Internat. J. Modern Phys. A* 3 (1988), no. 3, 647-664. (Peter Basarab-Horwath) **89j:81104** 81E13 (81E15)
- $N = 2$  supersymmetric Ward identities on the harmonic superspace. *J. Math. Phys.* 29 (1988), no. 4, 1026-1031. (R. S. Ward) **89d:81061** 81E13 (81D07)
- (with Saidi, E. H.) Two-dimensional twisted  $(4, 4)$ , twisted  $(4, 4)$  and chiral supersymmetric nonlinear  $\sigma$ -models. *Modern Phys. Lett. A* 3 (1988), no. 4, 419-442. (Sergey Merkulov) **89h:81114** 81E13 (81G20)
- Lhuillier, C.** (with Bouchaud, Jean-Philippe; Georges, Antoine) Pair wave functions for strongly correlated fermions and their determinantal representation. (French summary) *J. Physique* 49 (1988), no. 4, 553-559. (Summary) **89d:81133** 81J05
- Lhuillier, Daniel** A simple model for polymeric fractals in a good solvent and an improved version of the Flory approximation. (French summary) *J. Physique* 49 (1988), no. 5, 705-710. (Summary) **89d:82094** 82A51
- L'Huilier, Hervé** Concerning the method employed by Nicolas Chuquet for the extraction of cube roots. *Mathematics from manuscript to print, 1300-1600 (Oxford, 1984)*, 89-95, *Oxford Sci. Publ., Oxford Univ. Press, New York*, 1988. (R. Rashed) **89m:01022** 01A35
- Li, Am Gil** О формализме Лиувилля в квантовой теории поля. (Russian) [The Liouville formalism in quantum field theory] With an English summary. *Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna]*, R2-87-687. *Joint Inst. Nuclear Res., Dubna*, 1987. 33 pp. (Summary) **89j:81199** 81E99
- (with Mal'tsev, V. M.) ★ Двухвременная матрица плотности и ее уравнения. Скалярное и фермионное поле. (Russian) [A two-time density matrix and its equations. The scalar and the fermionic field] With an English summary. *Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna]*, R2-88-297. *Joint Inst. Nuclear Res., Dubna*, 1988. 19 pp. (Summary) **89h:81206** 81E99 (81C25, 82A15)
- (with Mal'tsev, V. M.) ★ Уравнения для двухвременной матрицы плотности. Приближенные решения в окрестности классического решения. (Russian) [Equations for a two-time density matrix. Approximate solutions in a neighborhood of the classical solution] With an English summary. *Сообщения Объединенного Института Ядерных Исследований. Дубна [Communications of the Joint Institute for Nuclear Research. Dubna]*, R2-88-298. *Joint Inst. Nuclear Res., Dubna*, 1988. 9 pp. (Summary) **89h:81207** 81E99 (81C25)
- Li, An Min** Uniqueness theorems in affine differential geometry. I. Reprinted in *Affine Differential Geometry* [(Oberwolfach, 1986), 283-307, Tech. Univ. Berlin, Berlin, 1988]. *Resultate Math.* 13 (1988), no. 3-4, 283-307. (Udo Simon) **89h:53032** 53A15 (53C45)
- (with Penn, Gabi) Uniqueness theorems in affine differential geometry. II. Reprinted in *Affine Differential Geometry* [(Oberwolfach, 1986), 308-317, Tech. Univ. Berlin, Berlin, 1988]. *Resultate Math.* 13 (1988), no. 3-4, 308-317. (Udo Simon) **89h:53033** 53A15 (53C45)
- Variational formulas for higher affine mean curvatures. Reprinted in *Affine Differential Geometry* [(Oberwolfach, 1986), 318-326, Tech. Univ. Berlin, Berlin, 1988]. *Resultate Math.* 13 (1988), no. 3-4, 318-326. (Udo Simon) **89g:53012** 53A15 (49F25, 53C45)
- Li, Bang He** (with Seade, José A.) Framings on algebraic knots. *Quart. J. Math. Oxford Ser.* (2) 38 (1987), no. 151, 297-306. (Elmer G. Rees) **89d:57035** 57R15 (55Q50, 57R20)
- Immersions of manifolds and stable normal bundles. *Sci. Sinica Ser. A* 30 (1987), no. 2, 136-147. (Tsutomu Yasui) **89a:57038** 57R42 (55S40, 57R22)
- (with Kaiser, Uwe) Enumeration of immersions of  $m$ -manifolds in  $(2m - 2)$ -manifolds by the singularity method. *Differential topology (Siegen, 1987)*, 171-187, *Lecture Notes in Math.*, 1350, Springer, Berlin-New York, 1988. (J. P. E. Hodgson) **89h:57063** 57R42 (57R25, 57R45, 57R75)
- A simple proof of a theorem of Milnor. (Chinese. English summary) *Adv. in Math.* (Beijing) 17 (1988), no. 4, 413-414. (Summary) **89i:57015** 57R65
- Codimension 1 and 2 immersions of Dold manifolds in Euclidean spaces. *Kexue Tongbao (English Ed.)* 33 (1988), no. 3, 182-185. (Elmer G. Rees) **89i:57014** 57R42
- Normal vector fields of immersions of  $n$ -manifolds in  $(2n - 1)$ -manifolds. *Sci. Sinica Ser. A* 31 (1988), no. 1, 31-45. (Duane Randall) **89h:57024** 57R42 (55S35, 55S40)
- On reflection of codimension 2 immersions in Euclidean spaces. *Sci. Sinica Ser. A* 31 (1988), no. 7, 798-805. (Shigeki Kikuchi) **89i:57008** 57R35
- Li, Bao Qin** (with Wang, Yue Fei) An angular value distribution of entire functions. (Chinese. English summary) *J. East China Norm. Univ. Natur. Sci. Ed.* 1987, no. 3, 14-20. (Chung-Chun Yang) **89i:30039** 30D35 (30D20)
- On the quantity  $\delta_1(g(z), f)$  of gappy entire functions. *Kodai Math. J.* 11 (1988), no. 2, 287-294. (Heinrich Begehr) **89i:30050** 30D35
- Li, Bao Wen** (with Wang, Pei Zhuang; Liu, Xi Hui; Shi, Yong) Fuzzy bags and relations with set-valued statistics. *Comput. Math. Appl.* 15 (1988), no. 10, 811-818. (Summary) **89d:03058** 03E72
- Li, Bing** The strong law of large numbers for  $B$ -valued amarts. (Chinese. English summary) *J. Wuhan Univ. Natur. Sci. Ed.* 1988, no. 1, 19-25. (K. F. Yu) **89i:60098** 60G48 (60B12)
- Li, Bing Ren** (with Sun, Shun Hua) Synthetic techniques in operator theory. (Chinese. English summary) *Adv. in Math.* (Beijing) 17 (1988), no. 3, 225-237. (Shao Zhong Yan) **89h:47025** 47A65
- Li, Bing Yu** Fixed point of sum for concave and convex operators with applications. *Bull. Austral. Math. Soc.* 37 (1988), no. 1, 81-87. (Ramendra Krishna Bose) **89e:47082** 47H10
- Li, Bo Fu** (with Long, Xiang Yun; Sun, Jia Zhong) The irreducible tensor method and molecular structure. I. Operator algebras and the tensor decomposition of Hamilton operators. (Chinese) *Acta Math. Sci. (Chinese)* 7 (1987), no. 4, 453-465. (Summary) **89g:81109** 81G50 (92A40)
- Li, Bo Zang** (with Zhang, Zhao Qing; Pu, Fu Ke) A determinant for the transfer-matrix of the one-dimensional directed bond percolation with further neighbour bonds. *Acta Math. Sci. (English Ed.)* 6 (1986), no. 3, 305-319. (John C. Wierman) **89c:82048** 82A43 (82A67)
- (with Yan, Feng Li) The theory of homotopy groups with multiple base points. (Chinese. English summary) *Acta Phys. Sinica* 37 (1988), no. 1, 128-131. (Summary) **89e:55030** 55Q99
- (with Yan, Feng Li) Homotopy groups of mappings  $S^1 \times S^1 \rightarrow S^1$  and  $S^2$  and the topological classification of states of magnetization of cylindric toroidal iron magnets. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 5, 345-347. (Not in MR) 55Q70 (82A05)
- Li, C. H.** See **Li, Chin Hsien**
- Li, Chang Chun** (with Fan, Yun) On the orders of  $p$ -closed groups. (Chinese. English summary) *J. Math. (Wuhan)* 7 (1987), no. 4, 371-372. (Not in MR) 20D20
- Li, Chang Jun** (with Evans, David J.) Analysis of a symmetric extrapolated iterative method for solving linear systems. *Linear Algebra Appl.* 103 (1988), 149-173. (Cornelius Berbente) **89g:65029** 65F10
- (with Evans, David J.) Extrapolated Gauss-Seidel I and SOR methods for least-squares problems. *Numer. Math.* 53 (1988), no. 4, 485-498. (Zu Shen) **89g:65030** 65F10
- (with Evans, David J.) Numerical aspects of the generalized CG-method applied to least squares problems. (German summary) *Computing* 41 (1989), no. 1-2, 171-178. (Summary) **89m:65043** 65F30 (65K05, 90C20)
- Li, Chao Yen** (with Yang, C. S.; Wang, Ching Fa; Boesch, F. T.) Graph theoretic reliability analysis for the Boolean  $n$  cube networks. *IEEE Trans. Circuits and Systems* 35 (1988), no. 9, 1175-1179. (W.-K. Chen) **89g:94054** 94C15 (94C10)
- Li, Cheng Hsiung** On some generalized inequalities of Lebedev-Milin type. *Chinese J. Math.* 15 (1987), no. 1, 7-16. (D. R. Wilken) **89h:30016** 30C50 (30A10, 30C45)
- Li, Ch'eng Hui** Optimal memoryless strategies of a two-rate communication link. (Chinese summary) *J. Chinese Inst. Engrs.* 11 (1988), no. 5, 563-572. (Summary) **89h:94004** 94A05 (90D45)
- Li, Cheng Zhi** Quadratic systems possessing a center and a focus. (Chinese. English summary) *J. Math. Res. Exposition* 6 (1986), no. 3, 49-52. (Jian Ying Zhou) **89h:34069** 34C05 (58F21)
- (with Chow, S.-N.; Wang, Duo) A simple proof of the uniqueness of periodic orbits in the 1:3 resonance problem. *Proc. Amer. Math. Soc.* 105 (1989), no. 4, 1025-1032. (J. Angel Rodriguez) **89h:58140** 58F14 (58F21)
- Li, Chi-Kwong** The  $C$ -convex matrices. *Linear and Multilinear Algebra* 21 (1987), no. 3, 303-312. (Yik-Hoi Au-Yeung) **89h:15038** 15A60 (47A12)
- Matrices with some extremal properties. *Linear Algebra Appl.* 101 (1988), 255-267. (F. Szidarovszky) **89c:15025** 15A42 (15A24)
- (with T'ian, Pi Hsin; Tsing, Nam Kiu) Linear operators preserving the  $(p, q)$ -numerical range. *Linear Algebra Appl.* 110 (1988), 75-89. (Adolf Rhodius) **89j:15040** 15A60 (15A15)
- (with Tsing, Nam Kiu) Linear operators that preserve the  $c$ -numerical range or radius of matrices. *Linear and Multilinear Algebra* 23 (1988), no. 1, 27-46. (Yik-Hoi Au-Yeung) **89f:15020** 15A60 (15A57)
- (with Tsing, Nam Kiu) Some isometries of rectangular complex matrices. *Linear and Multilinear Algebra* 23 (1988), no. 1, 47-53. (Robert Grone) **89j:15031** 15A60
- (with Friedland, Shmuel; Schneider, Hans) Additive decomposition of nonnegative matrices with applications to permanents and scaling. *Linear and Multilinear Algebra* 23



- (1988), no. 1, 63–78. (Jacques Dubois) **89j:15034** 15A48 (15A15, 15A51)
- (with Johnson, Charles Royal) Inequalities relating unitarily invariant norms and the numerical radius. *Linear and Multilinear Algebra* **23** (1988), no. 2, 183–191. (Shao Kuan Li) **89i:15010** 15A15 (15A60)
- Polynomials and numerical ranges. *Proc. Amer. Math. Soc.* **104** (1988), no. 2, 369–373. (Yik-Hoi Au-Yeung) **89k:15044** 15A60 (15A69, 26C10)
- Li, Chia Sheng** (with Chang, Hung Chü) The general Tribonacci sequence. *Tamkang J. Management Sci.* **7** (1986), no. 2, 37–47. (Heiko Harborth) **89a:11025** 11B39
- (with Lee, Jin Zai) Some properties of the sequence  $\{W_n(a, b; p, q)\}$ . *Fibonacci Quart.* **25** (1987), no. 3, 268–278. (Lawrence Somer) **89a:11023** 11B37
- (with Lee, Jin Zai) A note on the generalized Fibonacci numbers. *Fibonacci Quart.* **26** (1988), no. 1, 14–19. (Shiro Ando) **89c:11026** 11B37
- (with Chang, Hung Chü) On a finite sum of products of the two general Fibonacci sequences. *Tamkang J. Management Sci.* **9** (1988), no. 1, 27–31. (A. N. Philippou) **89k:11007** 11B39
- Li, Chih Hao** Analytic properties of a Zakharov-Shabat inverse scattering problem. I. *Chinese J. Math.* **14** (1986), no. 4, 225–248. (David J. Kaup) **89b:58092** 58F07 (34B25, 35Q20)
- Global solvability of the derivative nonlinear Schrödinger equation. *Trans. Amer. Math. Soc.* **314** (1989), no. 1, 107–118. (Thierry Cazenave) **89k:35219** 35Q20 (34A55, 34B25)
- Li, Chin Chin** (with Yang, Kuo Sheng) Erratum: "On generalization of Hardy's inequality" [*Tamkang J. Math.* **17** (1986), no. 4, 109–119; MR **88i:26047**]. *Tamkang J. Math.* **18** (1987), no. 4, 105. (Editors) **89j:26016** 26D15
- Li, Chin Hsien** On error estimate of the boundary element method for parabolic equations in a time-dependent interval. *J. Comput. Math.* **4** (1986), no. 4, 329–340. (Introduction) **89i:65092** 65M15
- (with Dean, Edward J.; Glowinski, R.) Applications of operator splitting methods to the numerical solution of nonlinear problems in continuum mechanics and physics. *Mathematics applied to science* (New Orleans, La., 1986), 13–64, Academic Press, Boston, MA, 1988. (G. W. Hedstrom) **89c:65060** 65J99 (76D25, 81–08, 82A57)
- (with Dean, Edward J.; Glowinski, R.) Numerical solution of parabolic problems in high dimensions. *Transactions of the Fifth Army Conference on Applied Mathematics and Computing* (West Point, NY, 1987), 207–285, ARO Rep., 88-01, U.S. Army Res. Office, Research Triangle Park, NC, 1988. (Summary) **89c:65096** 65M05 (65W05, 76D05, 82A57)
- Li, Chong** (with Xu, Shi Ying) Characterization of the best simultaneous approximation. (Chinese) *Acta Math. Sinica* **30** (1987), no. 4, 528–535. (Han Lin Chen) **89b:41034** 41A50
- (with Xu, Shi Ying) Characterization of best simultaneous approximation. Proceedings of China-U.S. Joint Conference on Approximation Theory (Hangzhou, 1985). *Approx. Theory Appl.* **3** (1987), no. 4, 190–198. (Joseph M. Lambert) **89c:41019** 41A28 (65D15, 65J05)
- A note on subadditive functionals. (Chinese. English summary) *J. Math. Res. Exposition* **7** (1987), no. 1, 149–150. (Kung-fu Ng) **89b:46006** 46A06 (46E99)
- Li, Chong Li** (with Ryu, Hae Dong) On formulas for maximum genus of Hamilton graph. (Korean. English summary) *Cho-sŏn In-min Kong-hwa-kuk Kwa-hak-wŏn T'ong-bo* **1986**, no. 6, 10–12. (Summary) **89c:05052** 05C45 (05C10)
- Li, Chuan He** Module-theoretic characterizations of P-hereditary radicals and radical classes which are closed under finite subdirect products. (Chinese. English summary) *Hunan Shifan Daxue Ziran Kexue Xuebao* **11** (1988), no. 2, 95–98. (Yonghua Xu) **89m:16012** 16A21
- Li, Chuan Rong** Qualitative analysis of a class of predator-prey systems under constant rate stocking of prey. (Chinese. English summary) *Xifan Jiaotong Daxue Xuebao* **21** (1987), no. 6, 111–118. (Yang Kuang) **89k:92056** 92A15 (34C05, 34C11)
- Li, Da Fa** Simple proofs of soundness and completeness for ET-proofs. (Chinese summary) *J. Tsinghua Univ.* **27** (1987), no. 6, 49–56. (Mao Kang Wu) **89j:03009** 03B35 (03B15, 03B40, 68T15)
- Li, Da Hua** Bifurcation solutions for a class of population distribution problems in a bounded domain. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 6, suppl., 33–38. (Summary) **89j:92058** 92A15 (35B32)
- Li, Da Qian** Some free boundary problems for quasilinear hyperbolic systems. *Free boundary problems: application and theory*, Vol. IV (Mauhuissou, 1984), 582–592, Res. Notes in Math., 121, Pitman, Boston, MA-London, 1985. (From the introduction) **89m:35218** 35R35 (35L60, 76L05)
- (with Damlamian, Alain) Boundary homogenization for elliptic problems. *J. Math. Pures Appl.* (9) **66** (1987), no. 4, 351–361. (Dietrich Gohde) **89b:35026** 35J05 (35B25, 35B40)
- (with Chen, Yun Mei) Initial value problems for nonlinear wave equations. *Comm. Partial Differential Equations* **13** (1988), no. 4, 383–422. (Paul L. Davis) **89c:35102** 35L70
- Li, Da-Xi** One-loop finiteness of the string theory on the  $T^{2,2}/G$  manifold. (French summary) *Canad. J. Phys.* **65** (1987), no. 9, 1149–1153. (Marc Henneaux) **89i:81160** 81E99 (81E30, 83E30)
- (with Lam, C. S.) Direct compactification of heterotic strings from 26 to 4 dimensions via  $T^{2,2}/G$ . *Comm. Theoret. Phys.* **7** (1987), no. 3, 235–243. (Summary) **89i:81118** 81E99 (81E30, 83E30)
- String theory with three families of chiral fermions. *Comm. Theoret. Phys.* **7** (1987), no. 3, 245–252. (Summary) **89i:81208** 81E99 (81E30, 83E30)
- (with Chang, Ngee-Pong) Models of nonabelian orbifolds. *Phys. Lett. B* **206** (1988), no. 1, 51–56. (Marcos D. Maia) **89f:81250** 81G20 (22E40, 57S30, 81E30, 83E30)
- (with Chang, Ngee-Pong; Pérez-Mercader, Juan) Cosmological constant and asymmetric orbifolds. *Phys. Rev. Lett.* **60** (1988), no. 10, 882–884. (Daniel G. Caldi) **89i:83055** 83E15 (81E30, 81G20, 83E30, 83F05)
- Li, Daniel** Lifting properties for some quotients of  $L^1$ -spaces and other spaces  $L$ -summand in their bidual. *Math. Z.* **199** (1988), no. 3, 321–329. (Wolfgang Lusky) **89b:46027** 46B20 (46A22, 46B22, 46E30)
- Li, De Lang** Representation of numbers by binary quadratic forms. *Acta Math. Sinica* (N.S.) **3** (1987), no. 1, 58–65. (A. G. Earnest) **89d:11025** 11E16 (11D85, 11P05)
- Li, De Li** (with Wu, Zhi Quan; Wang, Xiang Chen) Some general results of the law of large numbers. *Dongbei Shixue* **3** (1987), no. 2, 228–238. (V. K. Rohatgi) **89g:60020** 60B12 (60F15)
- A remark on the symmetrization principle for sequences of  $B$ -valued random elements. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin* **1988**, no. 1, 17–20. (Zheng Yan Lin) **89i:60012** 60B11 (60B12, 60F15)
- Li, De Ning** The nonlinear initial-boundary value problem and the existence of multidimensional shock wave for quasilinear hyperbolic-parabolic coupled systems. A Chinese summary appears in Chinese Ann. Math. Ser. A **8** (1987), no. 2, 271. *Chinese Ann. Math. Ser. B* **8** (1987), no. 2, 252–280. (Summary) **89d:35114** 35L65 (35K55, 35L80, 76L05)
- Acceptable boundary value problems for systems of quasilinear symmetric hyperbolic equations in a wedge-shaped domain. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* **27** (1988), no. 2, 181–190. (Summary) **89k:35137** 35L60
- Li, De Yi** (with Liu, Dong Bo) Fuzzy reasoning based on  $f$ -Horn clause rules. *Algebraic and logic programming* (Gaussig, 1988), 214–222, Math. Res., 49, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) **68Q55** (03B70, 03E72)
- Li, De Ying** (with Mao, Jing Zhong; Liu, Bo Lian) On the Akiyama-Harary problem about complementary planar graphs. (Chinese summary) *J. Central China Normal Univ. Natur. Sci.* **22** (1988), no. 1, 1–8. (W.-K. Chen) **89i:05106** 05C10
- Li, De Yuan** (with Han, Zhen) A difference method for degenerate hyperbolic equations of second order. *Numerical methods for partial differential equations* (Shanghai, 1987), 76–97, Lecture Notes in Math., 1297, Springer, Berlin-New York, 1987. (V. D. Glushenkov) **89m:65082** 65M05
- Li, Dian Gao** (with Lü, Feng; Liu, Wei) The establishment of the membership functions of the same kind of problems. (Chinese summary) *Dongbei Shida Xuebao* **1988**, no. 1, 5–11. (Editors) **89j:03082** 03E72
- Li, Dong Hui** Two algorithms for undiscounted Markov decision programming—successive approximation and block-successive approximation. (Chinese. English summary) *Hunan Ann. Math.* **7** (1987), no. 2, 97–103. (Summary) **89i:90091** 90C40
- Li, Duan** (with Haimes, Yacov Y.) The envelope approach for multiobjective optimization problems. *IEEE Trans. Systems Man Cybernet.* **17** (1987), no. 6, 1026–1038. (Summary) **89c:90101** 90C31 (49D27)
- (with Haimes, Yacov Y.) Correction to: "The envelope approach for multiobjective optimization problems" [*IEEE Trans. Systems Man Cybernet.* **17** (1987), no. 6, 1026–1038; MR **89c:90101**]. *IEEE Trans. Systems Man Cybernet.* **18** (1988), no. 2, 332. (Summary) **89g:90216** 90C31
- Li, F. Z.** see **Li, Fang Zhong**
- Li, Fan<sup>2</sup>** (with Xu, Jian) Inexact reasoning in expert systems for image analysis. (Chinese. English summary) *Inform. and Control* (Shenyang) **17** (1988), no. 3, 30–36. (Summary) **89m:68123** 68T20 (03B52, 68U10, 92A25)
- Li, Fang** (with Saxton, Lawrence V.) Minimizing response time for two-way distributed joins in partitioned databases. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* **61** (1988), 39–48. (Marc Gyssens) **89m:68024** 68P15 (68P20)
- Li, Fang Zhong** (with Needleman, A.; Shih, C. F.) Creep crack growth by grain boundary cavitation: crack tip fields and crack growth rates under transient conditions. (French summary) *Internat. J. Fracture* **38** (1988), no. 4, 241–273. (Summary) **89j:73090** 73M05 (73–08, 73E25)
- Li, Feng** A topological method for producing symbolic sensitivity functions of active networks. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* **26** (1987), no. 3, 297–304. (W.-K. Chen) **89c:94027** 94C15 (05C05, 94C05)
- Li, Feng E** A synthetic solution method for the oblique intersection of two conicoids. (Chinese. English summary) *J. Changsha Railway Inst.* **5** (1987), no. 2, 105–112. (Lu Yang) **89k:51034** 51N05
- Li, Fa An** (with Li, Zun Xian) A criterion for the invertibility of polynomial mappings. (Chinese) *Kexue Tongbao* (Chinese) **33** (1988), no. 3, 168–171. (Not in MR) **14E05**
- (with Li, Zun Xian) Isomorphisms of  $GL_n$  over commutative rings. *Sci. Sinica Ser. A* **31** (1988), no. 1, 7–14. (Zong Zhu Lin) **89b:20065** 20G35
- Li, Fu Bin** Plane and spherical wave solutions of the field equation for a complex scalar field with a cubic nonlinear term in four-dimensional Minkowski space. (Chinese. English summary) *Acta Phys. Sinica* **37** (1988), no. 9, 1461–1470. (Title) **89k:81158** 81E99
- Li, Fu Zhong** On the conjecture of Golomb. II. (Chinese summary) *Dongbei Shida Xuebao* **1987**, no. 3, 9–13. (Ke Qin Feng) **89b:11103** 11T30 (11A07)
- Li, Gab Duk** (with Han, Ghang Ryong) Stochastic approximation methods based on observations with biases. (Korean. English summary) *Su-hak* **1988**, no. 1, 3–6. (Summary) **89k:62110** 62L20
- Li, Gao** (with Madsen, Kaj) Robust nonlinear data fitting. *Numerical analysis 1987* (Dundee, 1987), 176–191, Pitman Res. Notes Math. Ser., 170, Longman Sci. Tech., Harlow, 1988. (James E. Gentle) **89b:65232** 65U05 (62F35, 62J02)
- Li, Gi Song** (with Byon, Song Bu) A construction method for a  $D$ - $G$  optimal discrete design for a model of a polynomial expression in the  $k$ -dimensional ball. (Korean. English summary) *Su-hak* **1987**, no. 4, 15–19. (Summary) **89k:62094** 62K05
- Li, Gong Bao** Some results on calculus of variations in certain Orlicz-Sobolev spaces. *Acta Math. Sci. (English Ed.)* **6** (1986), no. 1, 45–65. (M. Vlach) **89b:49008** 49A27 (46E35, 49A21)
- Nonzero critical points of the functional  $I(u) = \int_{\Omega} F(x, u, Du, \dots, D^m u) dx$  in  $W_0^{m,p}(\Omega)$ . (Chinese) *Acta Math. Sci. (Chinese)* **7** (1987), no. 2, 207–219. (Xin Kang Guo) **89c:58025** 58E05 (35J60)
- Nontrivial solutions of quasilinear elliptic equations in  $W_0^{1,p}$  involving limiting nonlinearities. *Acta Math. Sci. (English Ed.)* **7** (1987), no. 3, 329–339. (Gary M. Lieberman) **89i:35064** 35J65 (35B30)
- Multiple critical points of perturbed symmetric functionals in  $W_0^{1,p}$ . *Acta Math. Sci. (English Ed.)* **7** (1987), no. 4, 431–445. (Kazunaga Tanaka) **89b:58039** 58E05 (35J65, 46E35)
- Li, Guang** (with Yang, Chao Chih; Ng, Peter Ann-Beng) An improved algorithm based on subset closures for synthesizing a relational database scheme. *IEEE Trans. Software Engrg.* **14** (1988), no. 11, 1731–1738. (Summary) **89j:68031** 68P15 (68Q20, 68R10)
- Li, Guang Hua<sup>2</sup>** Sufficient and necessary conditions for oscillation of neutral equations. (Chinese summary) *Huailua Shizhuan Xuebao* **7** (1988), no. 1, 8–15. (B. S. Lalli) **89k:34123** 34K15
- Li, Guang Mei** (with Wang, Yi Qun) A problem concerning a predator system. (Chinese. English summary) *Dongbei Shida Xuebao* **1987**, no. 4, 23–27. (Wei-Min Liu) **89d:92071** 92A15

- Li, Guang Ye** (with Coleman, Thomas F.) Local convergence of the multi-secant method for the parallel solution of systems of nonlinear equations. *Appl. Math. Lett.* **1** (1988), no. 2, 141–145. (Michał Tadeusiewicz) **89i:65056** 65H10 (65W05)
- The secant/finite difference algorithm for solving sparse nonlinear systems of equations. *SIAM J. Numer. Anal.* **25** (1988), no. 5, 1181–1196. (Gerd Pönisch) **89k:65068** 65H10 (90C30)
- (with Coleman, Thomas F.) A parallel triangular solver for a distributed-memory multiprocessor. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 3, 485–502. (Bruno Codenotti) **89h:65333** 65W05 (65F05)
- Li, Guang Yu** A primal hybrid finite element method for second-order parabolic problems. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **10** (1988), no. 1, 1–10. (Summary) **89k:65139** 65N30
- Li, Gui Lan** Circle formation by conic perspective transformations. (Chinese. English summary) *J. Harbin Inst. Tech.* **1987**, no. 4, 78–82, 70. (Lu Yang) **89k:51035** 51N05
- Li, Guo Ying** Some properties of PP-type estimators for multivariate locations and dispersions. (Chinese summary) *J. Systems Sci. Math. Sci.* **7** (1987), no. 3, 220–228. (Kumar Joag-Dev) **89c:62089** 62H12 (62F35)
- Li, Hai Sheng** The relationship between the highest weights and lowest weights of finite-dimensional irreducible modules over semisimple Lie algebras. (Chinese) *Natur. Sci. J. Harbin Normal Univ.* **3** (1987), no. 3, 8–12. (Sen Qiu) **89j:17010** 17B10
- Li, Hai Zhong** Stability of surfaces with constant mean curvature. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 992–997. (João Lucas Marques Barbosa) **89h:53023** 53A10 (53C42)
- Li, Hao Hao** A quasilinear singular integral equation with a class of positive non-Carleman shifts. (Chinese) *J. Math. Res. Exposition* **6** (1986), no. 3, 79–84. (Sheng Gong) **89d:45009** 45G10
- Li, Heng Long** (with Papalambros, Panos Y.) Monotonicity and constraint activity. (Chinese) *Chinese J. Oper. Res.* **4** (1985), no. 2, 15–23. (Not in MR) **90C30**
- Li, Heng Won** see Li, Hyung Won
- Li, Hon Su** (with Li, Mi Sun) Terminal control problem of the rotation of the heavy rigid body. (Korean. English summary) *Su-hak* **1988**, no. 3, 44–48. (Summary) **89m:70069** 70Q05 (70E15, 93C75)
- Li, Hong Fang** On the solution of the Fokker-Planck equation. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* **26** (1987), no. 3, 273–279. (Summary) **89d:82051** 82A31
- Li, Hong Zhen** (with Li, Zi Zhi; Wen, Guo Chun) Some boundary value problems with complex conjugate values for second-order nonlinear elliptic systems. (Chinese) *J. Math. Res. Exposition* **7** (1987), no. 3, 451–456. (Ya Zhe Chen) **89h:35052** 35J65
- Li, Hong<sup>2</sup>** (with Huang, Fa Lun) A note on the exponential stability of linear dynamic system in Banach spaces. *Ann. Differential Equations* **4** (1988), no. 1, 1–7. (Vi. Răsvan) **89k:47059** 47D05
- Li, Hsian Pei** (with Chang, Ch'ing Hui; Hu, Mên Cháng) Extremal analytic discs with prescribed boundary data. *Trans. Amer. Math. Soc.* **310** (1988), no. 1, 355–369. (John P. D'Angelo) **89f:32043** 32H15 (32D15, 32H20)
- Li, Hua Gui** (with Zhang, Wen Xiu) Convergence theorems for the sequence of random sets with respect to the topology. *Kexue Tongbao (English Ed.)* **33** (1988), no. 5, 360–363. (Wim Vervaeke) **89m:60012** 60B05
- Li, Hui** (with Wu, Ji Ke) A numerical method based on the mean value theorem. (Chinese. English summary) *Math. Numer. Sinica* **10** (1988), no. 1, 94–99. (Summary) **89j:65082** 65N99
- Optimal algorithms for determining the movability of convex polygons. *Sci. Sinica Ser. A* **31** (1988), no. 5, 611–620. (Rephael Wenger) **89k:68146** 68U05 (52A10, 68Q25)
- Li, Hui Qing** Necessary and sufficient conditions for complete stability of the zero solution of the Liénard equation. (Chinese) *Acta Math. Sinica* **31** (1988), no. 2, 209–214. (Zhaojun Liang) **89k:34079** 34D20 (34C15)
- Li, Hung** see Li, Hong<sup>2</sup>
- Li, Hung C.** The exact probability that the roots of quadratic, cubic, and quartic equations are all real if the equation coefficients are random. *Comm. Statist. Theory Methods* **17** (1988), no. 2, 395–409. (G. Samal) **89j:60069** 60G99 (26C10, 30C15)
- Li, Hyung Won** (with Kim, Jong In) Statistical optimization of the normal linear system under the action of non-Gaussian stochastic internal noise. (Korean. English summary) *Su-hak* **1988**, no. 3, 49–56. (Not in MR) **93E12** (45D05, 60H20)
- Li, J. C. M.** (with Lee, Sanboh) Summation of infinite series related to roots of certain functions. *Internat. J. Math. Ed. Sci. Tech.* **19** (1988), no. 1, 89–93. (H. P. Dixshit) **89c:40002** 40A05
- Li, Jae Gon** Soliton and dispersive wave of Hirota type equations. (Korean. English summary) *Su-hak* **1987**, no. 3, 1–3. (Not in MR) **35Q20**
- (with Sin, Dong Yel) Hirota type equations with solutions containing an arbitrary number of solitons. (Korean. English summary) *Cho-sŏn In-min Kong-hwa-kuk Kwa-hak-wŏn T'ong-bo* **1988**, no. 5, 6–9. (Not in MR) **35Q20** (58F07)
- Li, Ji Bin** (with Liu, Zeng Rong; Luo, Shi Yu) The dynamical behavior of systems with slowly varying periodic perturbations. (Chinese) *Acta Math. Sci. (Chinese)* **7** (1987), no. 3, 247–251. (J. S. W. Wong) **89d:34069** 34C15 (34C29, 58F30)
- (with Huang, Qi Ming) Bifurcations of limit cycles forming compound eyes in the cubic system. A Chinese summary appears in Chinese Ann. Math. Ser. A **8** (1987), no. 5, 643. *Chinese Ann. Math. Ser. B* **8** (1987), no. 4, 391–403. (Alan R. Hausrath) **89d:58100** 58F15 (34C05, 58F21, 70K10)
- (with Ou, Yue Hua) Global bifurcation and chaotic behavior in a perturbed quadratic system with two centers. (Chinese. English summary) *Acta Math. Appl. Sinica* **11** (1988), no. 3, 312–323. (Wei-Min Liu) **89k:58253** 58F30 (34C35, 58F14)
- (with Wan, Shi Dong) Fourier series of rational fractions of Jacobian elliptic functions. *Appl. Math. Mech. (English Ed.)* **9** (1988), no. 6, 541–556; translated from *Appl. Math. Mech.* **9** (1988), no. 6, 499–513 (Chinese. English summary). (J. S. Joel) **89k:42015** 42B05 (33A25, 58F14)
- Li, Ji Qing** A test for extreme values of quotients of certain functions. (Chinese) *Zhangzhou Shiyan Xuebao (Ziran Kexue Ban)* **1987**, no. 1, 113–115. (Not in MR) **26A03**
- Li, Ji Yue** (with Ling, Fu Hua) Shooting method in singular perturbation problem of ordinary differential equations with boundary layers. *Appl. Math. Mech. (English Ed.)* **9** (1988), no. 7, 659–665; translated from *Appl. Math. Mech.* **9** (1988), no. 7, 609–615 (Chinese. English summary). (Moody T. Chu) **89k:65097** 65L10 (65L05)
- Li, Jia<sup>1</sup>** (with Xu, Guo Liang) On the cardinalities of interpolating restricted ranges. *J. Comput. Math.* **5** (1987), no. 3, 210–214. (D. Zwick) **89h:65050** 65D15
- Li, Jia<sup>2</sup>** (with Hallam, Thomas G.; Lassiter, Ray R.; McKinney, William) Physiologically structured population models in risk assessment. *Biomathematics and related computational problems (Naples, 1987)*, 197–211, *Kluwer Acad. Publ., Dordrecht*, 1988. (Summary) **89i:92042** 92A15
- Persistence in discrete age-structured population models. *Bull. Math. Biol.* **50** (1988), no. 4, 351–366. (H. I. Freedman) **89h:92049** 92A15 (92A17)
- Persistence and extinction in continuous age-structured population models. Hyperbolic partial differential equations. V. *Comput. Math. Appl.* **15** (1988), no. 6–8, 511–523. (K. E. Swick) **89h:92050** 92A15 (35L99, 45D05)
- (with Hallam, Thomas G.) Survival in continuous structured populations models. *J. Math. Biol.* **26** (1988), no. 4, 421–433. (V. Sree Hari Rao) **89k:92057** 92A15
- Li, Jia Chun** A solitary group of two-dimensional deep-water waves due to a concentrated force-couple. *Acta Mech. Sinica (English Ed.)* **4** (1988), no. 3, 195–200. (Not in MR) **76B15** (76B10)
- Some theorems in asymptotic analysis. *Sci. Sinica Ser. A* **31** (1988), no. 6, 668–674. (John S. Lew) **89j:41046** 41A60 (30E15)
- Li, Jian Kui** A note on finite rank operators. (Chinese) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* **13** (1987), no. 3, 201–202. (Feng Xu) **89a:47031** 47B05
- Li, Jian Ling** (with Zhou, Rong Yu; Zhou, Xian Jian) Left-right symmetry model in Wess-Zumino-Witten effective action. *Comm. Theoret. Phys.* **7** (1987), no. 4, 351–359. (Summary) **89h:81262** 81G15 (81E13)
- Li, Jian-Shu** On the singular rank of a representation. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 567–571. (Stephen Slebarski) **89k:22029** 22E46 (22E45, 22E47)
- Li, Jian Wei** Characterizations of finite dimensionality for Banach-Jordan algebras. (Chinese. English summary) *J. Math. (Wuhan)* **7** (1987), no. 4, 416–426. (Summary) **89i:46063** 46J99 (17C65, 46H70)
- Li, Jiong Sheng** (with Huang, Guo Xun) The pairs of score lists of  $t$ -reducible bipartite tournaments. (Chinese. English summary) *Acta Math. Appl. Sinica* **10** (1987), no. 4, 418–427. (Tian Xing Yao) **89h:05093** 05C20
- (with Huang, Guo Xun) The pairs of initial vertex sets and terminal vertex sets of tournaments. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B **9** (1988), no. 1, 149. *Chinese Ann. Math. Ser. A* **8** (1987), no. 6, 703–712. (Tian Xing Yao) **89f:05089** 05C20
- (with Huang, Guo Xun) Kotzig's problem for multipartite tournaments. (Chinese. English summary) *Adv. in Math. (Beijing)* **17** (1988), no. 4, 398–402. (Hugo S. Sun) **89m:05055** 05C20
- (with Huang, Guo Xun) Score vectors of  $t$ -reducible tournaments. *J. Math. Res. Exposition* **8** (1988), no. 4, 521–525. (J. W. Moon) **89k:05043** 05C20
- Li, Jiong Du** Application of the moment project-iteration method to solution of the integro-differential equation of one form. (Korean. English summary) *Su-hak* **1987**, no. 4, 39–43. (Summary) **89c:65056** 65J10 (47A50, 65R20)
- Li, Jun** (with Yau, S.-T.) Hermitian-Yang-Mills connection on non-Kähler manifolds. *Mathematical aspects of string theory (San Diego, Calif., 1986)*, 560–573, *Adv. Ser. Math. Phys.*, **1**, World Sci. Publishing, Singapore, 1987. (see **89m:81001**) **32L05** (53C05, 58E15)
- Li, Jun Ru** (with Tu, Bo Xun) The distribution of the characteristic roots of matrices and its applications to stability theory. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B **9** (1988), no. 1, 147. *Chinese Ann. Math. Ser. A* **8** (1987), no. 6, 659–663. (Xiao Xin Liao) **89e:15016** 15A18 (34K20)
- Li, Kai Long** On the proof of Koebe's covering theorem. (Chinese) *Math. Practice Theory* **1988**, no. 1, 78–79. (Sheng Gong) **89j:30015** 30C25
- Li, Kai Tai** (with Mei, Zhen) Hopf bifurcation problems and their numerical analysis. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B **8** (1987), no. 4, 493. *Chinese Ann. Math. Ser. A* **8** (1987), no. 4, 483–491. (Yisong Yang) **89c:35015** 35B32 (35Q10, 58E07, 65H10, 65J99)
- (with Jiang, Song) The coupling of finite element method and boundary element method for two-dimensional Helmholtz equation in an exterior domain. *J. Comput. Math.* **5** (1987), no. 1, 21–37. (Jan Mandel) **89c:65120** 65N30
- Li, Ke** (with Zhu, Hong<sup>1</sup>) The complexity of transformation from cyclic to acyclic database schemes. (Russian summary) *Comput. Artificial Intelligence* **6** (1987), no. 5, 441–447. (Summary) **89j:68032** 68P15 (68Q25, 68R10)
- Li, Ke Nan** Study on the absolute stability of direct control system. *Ann. Differential Equations* **3** (1987), no. 3, 293–310. (Jiong Min Yong) **89j:93074** 93D15 (93B07)
- Asymptotic behavior of solutions to a third-order functional-differential equation with delay. (Chinese. English summary) *Hunan Daxue Xuebao* **14** (1987), no. 3, 115–120. (Yuan Tong Xu) **89j:34102** 34K15
- Absolute stability of a class of control systems with time lag. (Chinese. English summary) *Hunan Daxue Xuebao* **15** (1988), no. 1 *Special Issue of Math.*, 262–268. (Wei Bing Gao) **89i:93084** 93D05 (34K35, 93D20)
- Li, Ke Wu** (with Wang, Yong Le) On a new augmented Lagrangian method. (Chinese) *Chinese J. Oper. Res.* **3** (1984), no. 2, 65–66. (Not in MR) **90C30**
- Li, Ke Zheng** Classification of supersingular abelian varieties. *Math. Ann.* **283** (1989), no. 2, 333–351. (Gerd Faltings) **89k:14033** 14F30 (14K10)
- Li, Keke** Character-valued index theorems in supersymmetric string theories. *Classical Quantum Gravity* **5** (1988), no. 1, 95–109. (Summary) **89h:58179** 58G10 (81E99)
- Global symmetries in maximal supergravities from compactified superstrings. *Phys. Lett. B* **202** (1988), no. 3, 333–338. (Sorin Marčulescu) **89c:81141** 81E99 (81E30, 83E30, 83E50)
- (with Warner, N. P.) Bosonic realization of  $N = 2$  super-conformal algebras. *Phys. Lett. B* **211** (1988), no. 1–2, 101–106. (Raiko Zaikov) **89m:81073** 81D15 (17B65, 17B67, 81E40)
- Li, Ker-Chau** Asymptotic optimality for  $C_p$ ,  $C_L$ , cross-validation and generalized cross-validation: discrete index set. *Ann. Statist.* **15** (1987), no. 3, 958–975. (Summary) **89c:62112** 62J05 (62G05)
- Li, Kuo Wei** (with Chen, Bor Liang) Hamiltonian uniform subset graphs. *J. Combin. Theory Ser. B* **42** (1987), no. 3, 257–263. (Arthur M. Hobbs) **89a:05100** 05C45 (05C38)
- Li, L. A.** see Li, Lang An
- Li, Lei** (with You, Zhao Yong) The computational complexity of triangular Toeplitz systems. (Chinese. English summary) *Math. Numer. Sinica* **9** (1987), no. 3, 262–265. (Ching-Tsuan Pan) **89h:65046** 65F05
- (with You, Zhao Yong) Some applications of the fast generalized Fourier transform. (Chinese. English summary) *Xi'an Jiaotong Daxue Xuebao* **21** (1987), no. 6, 37–42.



- (Summary) **89c:65163** 65T05 (65F30)
- (with Hu, Jie) The complexity of sequential and parallel algorithms for the Vandermonde matrices. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **9** (1988), no. 2, 125–127. (Ding Zhu Du) **89i:68060** 68Q25 (65F05, 65W05)
  - (with You, Zhao Yong) Optimal algorithms for parallel matrix multiplication on a vector computer. (Chinese. English summary) *Math. Numer. Sinica* **10** (1988), no. 2, 215–219. (Zeng Rong Chen) **89i:65148** 65W05 (65F99)
  - A fast algorithm for the multiplication of Toeplitz matrices and Vandermonde matrices. (Chinese) *Math. Practice Theory* **1988**, no. 2, 29–31. (Ching-Tsuan Pan) **89m:65047** 65F99
  - Multitriangular  $T$ -matrices and fast division of polynomials in several variables. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **10** (1988), no. 3, 281–284. (Ding Zhu Du) **89k:68069** 68Q25
  - (with You, Zhao Yong) Fast algorithms for some multidimensional problems. (Chinese) *Xi'an Jiaotong Daxue Xuebao* **22** (1988), no. 1, 125–126, 116. (Not in MR) 65–04
  - Li, Li<sup>1</sup>** Self-excited vibrations of dynamical systems with gaps. (Chinese) *Kexue Tongbao (Chinese)* **32** (1987), no. 22, 1751–1754. (Not in MR) 34C35 (58F40)
  - Li, Li<sup>2</sup>** A very fast method for constructing totally symmetric magic squares of order  $4n$ . (Chinese. English summary) *Adv. in Math. (Beijing)* **17** (1988), no. 1, 85–90. (Siu Lun Ma) **89j:05024** 05B30
  - The fast construction methods of the first class for standard magic cubes of order  $8n$ . (Chinese. English summary) *Adv. in Math. (Beijing)* **17** (1988), no. 3, 319–322. (Man Keung Siu) **89m:05026** 05B15
  - The fast construction methods of the first class for optimal magic cubes of order  $16n$ . (Chinese. English summary) *Adv. in Math. (Beijing)* **17** (1988), no. 4, 385–390. (Hugo S. Sun) **89m:05027** 05B15
  - The fastest method of constructing best snowflake magic squares of order  $4n$ . (Chinese. English summary) *Neimenggu Daxue Xuebao* **19** (1988), no. 1, 1–8. (Ding Zhu Du) **89j:05021** 05B15
  - The fastest method of constructing all-symmetric magic squares of the fourth kind of order  $4n$ . (Chinese. English summary) *Neimenggu Daxue Xuebao* **19** (1988), no. 1, 9–18. (Ding Zhu Du) **89i:05059** 05B15
  - Fast constructions of optimal magic cubes of order  $8n$ . (Chinese. English summary) *Neimenggu Daxue Xuebao* **19** (1988), no. 2, 195–204. (Siu Lun Ma) **89m:05031** 05B30 (05B15)
  - Li, Li Kang** Isoparametric finite element methods for nonlinear Dirichlet problem. A Chinese summary appears in Chinese Ann. Math. Ser. A **8** (1987), no. 3, 533. *Chinese Ann. Math. Ser. B* **8** (1987), no. 3, 285–295. (Stephen W. Brady) **89c:65123** 65N30
  - Conforming, nonconforming and hybrid elements. (Chinese. English summary) *Math. Numer. Sinica* **10** (1988), no. 1, 27–34. (Summary) **89k:65140** 65N30
  - Li, Li Ming** Stability of linear neutral delay-differential systems. *Bull. Austral. Math. Soc.* **38** (1988), no. 3, 339–344. (Zhicheng Wang) **89m:34097** 34K20
  - Li, Lian** (with Wang, Shui Ting) On the closure property of recognizable families of languages with respect to weak concatenation. (Chinese) *Acta Math. Sinica* **31** (1988), no. 4, 475–482. (Editors) **89i:68085** 68Q45
  - (with Zhang, Shu Hua) Polynomial algorithms for some problems on cyclic automata. *Kexue Tongbao (English Ed.)* **33** (1988), no. 6, 518–521. (Loys Thimonier) **89m:68098** 68Q70 (68Q25)
  - Li, Lige** On the uniqueness and ordering of steady states of predator-prey systems. *Proc. Roy. Soc. Edinburgh Sect. A* **110** (1988), no. 3–4, 295–303. (Yasuhiro Takeuchi) **89j:92066** 92A17 (35Q99)
  - Coexistence theorems of steady states for predator-prey interacting systems. *Trans. Amer. Math. Soc.* **305** (1988), no. 1, 143–166. (Siegfried Carl) **89b:35042** 35J60 (92A15)
  - Li, Lin Shan** (with Lai, K'un Ts'ai; Ts'ao, Heng Wei) A decision-aided algorithm for adaptive equalizers in digital transmissions. (Chinese summary) *J. Chinese Inst. Engrs.* **11** (1988), no. 5, 555–562. (Not in MR) 94A05 (94A34)
  - Li, Ling-Fang** (with Cheng, T. P.) Resource letter: GI-1 gauge invariance. *Amer. J. Phys.* **56** (1988), no. 7, 586–600. (Summary) **89e:81088** 81E13 (81–00, 81G20)
  - Li, Ling Xiao** (with Wu, Zhong Quan) A most-uniform shape from contour method. *Sci. Sinica Ser. A* **31** (1988), no. 6, 748–758. (Summary) **89h:68154** 68U10
  - Li, Lode** A stochastic theory of the firm. *Math. Oper. Res.* **13** (1988), no. 3, 447–466. (I. Váduva) **89i:90015** 90A12 (90A16, 90B30)
  - Li, Lung An** (with Sedransk, N.) Mixtures of distributions: a topological approach. *Ann. Statist.* **16** (1988), no. 4, 1623–1634. (Truc Nguyen) **89m:62012** 62E10 (62F03, 62F15)
  - Li, M. S.** see **Li, Ming Sun**
  - Li, Mi Sun** The finite time rotation control of a rigid body. (Korean. English summary) *Su-hak* **1987**, no. 4, 44–48. (Not in MR) 93C75 (70E)
  - (with Li, Hon Su) Terminal control problem of the rotation of the heavy rigid body. (Korean. English summary) *Su-hak* **1988**, no. 3, 44–48. (Summary) **89m:70069** 70Q05 (70E15, 93C75)
  - Li, Milao** (with Feng, Long Long) Wave function of the universe with quantum correction of matter fields. *Comm. Theoret. Phys.* **7** (1987), no. 2, 175–185. (Summary) **89e:83040** 83C47 (83F05)
  - (with Gao, Yi Hong) Classification of world sheet instantons and the path integral measure in string theories. *Phys. Lett. B* **196** (1987), no. 3, 339–344. (Andrew A. Bytsenko) **89a:81129** 81E99 (57M99, 58G40, 81E30)
  - Equivalent determinant bundles and supersymmetric closed strings. *Phys. Lett. B* **203** (1988), no. 4, 360–366. (Summary) **89k:58279** 58G12 (58B25, 58D05, 81E30)
  - Breaking of U(1) groups in exactly solvable Calabi-Yau compactifications. *Classical Quantum Gravity* **6** (1989), no. 3, L57–L62. (C. Gauthier) **89m:53137** 53C80 (81E30, 83E30)
  - Li, Ming<sup>1</sup>** (with Yesha, Yaacov) The probabilistic and deterministic parallel complexity of symmetric functions. *Automata, languages and programming (Karlsruhe, 1987)*, 326–335. *Lecture Notes in Comput. Sci.*, 267, Springer, Berlin-New York, 1987. (Summary) **89a:68103** 68Q25
  - (with Yesha, Yaacov) Separation and lower bounds for ROM and nondeterministic models of parallel computation. *Inform. and Comput.* **73** (1987), no. 2, 102–128. (Faith E. Fich) **89e:68030** 68Q05 (68Q10)
  - A separator theorem for one-dimensional graphs under linear mapping. *Inform. Process. Lett.* **27** (1988), no. 1, 9–11. (Dieter Kratsch) **89d:05164** 05C99 (68Q05, 68R10)
  - (with Bajaj, Chanderjit) Geometric optimization and  $D^p$ -completeness. *Discrete Comput. Geom.* **4** (1989), no. 1, 3–13. (Ding Zhu Du) **89m:90131** 90C27 (03D15, 68Q15)
  - Li, Ming<sup>2</sup>** (with Jeffrey, A.) Singular perturbation of a linear hyperbolic system. *Appl. Anal.* **30** (1988), no. 4, 279–303. (Albert J. Milani) **89k:35133** 35L45 (35B25, 35C20)
  - Li, Ming Shi** (with Cai, Jing Qiu) Perturbation analysis for a class of common linear programming problems. (Chinese) *Chinese J. Oper. Res.* **3** (1984), no. 1, 55–56. (Not in MR) 90C05
  - Li, Ming Sun** (with Zelmanowitz, J. M.) On the generalizations of injectivity. *Comm. Algebra* **16** (1988), no. 3, 483–491. (S. A. Paramhans) **89b:16026** 16A52
  - Li, Ming Zhong** A Riemann-Hilbert problem for a system of first-order elliptic equations with two unknown functions in a bicylindrical domain. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B **8** (1987), no. 4, 489. *Chinese Ann. Math. Ser. A* **8** (1987), no. 5, 584–590. (Guo Chun Wen) **89c:35060** 35J65 (32A25, 35Q15)
  - Li, Nian Zu** (with Chao, Chong-Yun; Zhang, Mou Cheng) On digraphs with nilpotent adjacency matrices. *Bull. Malaysian Math. Soc.* (2) **10** (1987), no. 1, 29–37. (Martin W. Liebeck) **89k:05067** 05C50 (05C20)
  - Li, Pai Fei** Existence of nontrivial unitary-invariant subalgebras. *Chinese J. Math.* **15** (1987), no. 3, 175–180. (Charles Lanski) **89a:16016** 16A28 (16A40, 16A48)
  - Li, Peng** (with Ahmed, N. U.) On exponential stability of infinite-dimensional linear systems with bounded or unbounded perturbations. *Appl. Anal.* **30** (1988), no. 1–3, 175–187. (Cheng Zhi Li) **89k:93172** 93D15 (93B35, 93C25)
  - Li, Peter** (with Chung, Kai Lai; Williams, Ruth J.) Comparison of probability and classical methods for the Schrödinger equation. *Exposition. Math.* **4** (1986), no. 3, 271–278. (Michael Cranston) **89c:60095** 60J65 (81C20)
  - (with Tam, Luen-Fai) Symmetric Green's functions on complete manifolds. *Amer. J. Math.* **109** (1987), no. 6, 1129–1154. (Haruo Kitahara) **89f:58129** 58G11
  - Li, Pil Ju** On the structure of  $D$ -optimal designs with the value of the information determinant equal to 1. (Korean. English summary) *Su-hak* **1987**, no. 3, 18–21. (Summary) **89d:62069** 62K05
  - Li, Qi Yue** Discussion of a dimension formula. (Chinese. English summary) *Hunan Jiaoyu Xueyuan Ziran Kexue Xuebao* **6** (1988), no. 1, 89–90. (Not in MR) 15A03
  - Li, Qian** The finite element method for coupled second-order nonlinear problems. (Chinese) *Acta Math. Sci. (Chinese)* **8** (1988), no. 1, 115–122. (Qi Ding Zhu) **89k:65141** 65N30
  - Li, Qiao** (with Shao, Jia Yu) On the index of convergence of an irreducible Boolean matrix. *Linear Algebra Appl.* **97** (1987), 185–210. (Thomas L. Markham) **89j:15020** 15A45
  - (with Shao, Jia Yu) On the index of maximum density for irreducible Boolean matrices. *Discrete Appl. Math.* **21** (1988), no. 2, 147–156. (K. P. S. Bhaskara Rao) **89h:15030** 15A52
  - (with Broudi, Richard A.) On the combinatorial compound matrix. *J. Math. Res. Exposition* **8** (1988), no. 1, 153–162. (Peter M. Gibson) **89i:05063** 05B20 (15A15)
  - (with Shao, Jia Yu) The index set for the class of irreducible Boolean matrices with given period. *Linear and Multilinear Algebra* **22** (1988), no. 3, 285–303. (R. A. Brualdi) **89d:05092** 05C20 (15A48)
  - Li, Qing Lan** (with Wang, Shu Tang) Generalized numbers and infinities in modern physics. (Chinese. English summary) *J. Northwest Univ.* **18** (1988), no. 1, 62–65. (Not in MR) 04A99 (00A25, 00A69)
  - Li, Qing Ming** (with Zheng, You Ming) A new method for state minimization in incompletely specified sequential circuits. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **16** (1988), no. 4, 87–91. (Not in MR) 94C10
  - Li, Qing Yang** Two-sided interval secant methods for separable mappings. (Chinese. English summary) *Math. Numer. Sinica* **10** (1988), no. 1, 78–85. (Summary) **89i:65057** 65H10
  - Li, Qianlan** see **Li, Qing Lan**
  - Li, Quan** (with Yang, En De; Sun, Qing Gui; Wang, Yan<sup>1</sup>) A brief introduction to the solid mechanics of soft biological tissue—one branch of biomechanics. (Chinese. English summary) *J. Northeast Univ. Tech.* **9** (1988), no. 2, 245–251. (Summary) **89k:92005** 92A06 (73P05, 92A07)
  - Li, Quan Sheng** The Hodge  $\ast$  operator in global analysis. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* **1988**, no. 3, 139–142. (Editors) **89m:58007** 58A14 (53C15)
  - Li, R.-J.** (with Lee, E. S.) Comparison of fuzzy numbers based on the probability measure of fuzzy events. *Comput. Math. Appl.* **15** (1988), no. 10, 887–896. (Summary) **89d:03057** 03E72
  - Li, Ren Cang** A converse to the Bauer-Fike type theorem. *Linear Algebra Appl.* **109** (1988), 167–178. (Ludwig Elsner) **89i:15012** 15A18 (65F15)
  - Li, Ren Hou** (with Wu, Nai Qi; Hu, Bao Sheng) Decentralized stabilization using local state feedback. (Chinese. English summary) *Control Theory Appl.* **5** (1988), no. 1, 51–56. (Cheng Zhi Li) **89j:93095** 93D15 (93A15)
  - (with Chen, Zhi Xin) An algorithm for hierarchical control of large scale dynamic systems and its implementation. (Chinese. English summary) *Inform. and Control (Shenyang)* **17** (1988), no. 5, 21–25. (Not in MR) 93A13 (49D27)
  - Li, Ren Wei** Soundness and completeness of Kung's reasoning procedure. *J. Comput. Sci. Tech. (English Ed.)* **3** (1988), no. 1, 7–15. (Summary) **89h:68133** 68T15 (03B35)
  - The system  $\mathcal{N}$ : a natural time ordered deductive system. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 6, 401–403. (Not in MR) 68Q55 (03B70)
  - Li, Ru Sheng** Chemical oscillations and multistability phenomena in bimolecular isothermal reaction systems. (Chinese. English summary) *J. Tsinghua Univ.* **27** (1987), no. 6, 1–8. (Summary) **89h:92082** 92A40 (58F40)
  - Li, Shan Lan** see **Li, Zhao Hua, 89d:01010**
  - Li, Shao Kuan** The global Pincus function of a hyponormal operator. (Chinese. English summary) *Adv. in Math. (Beijing)* **16** (1987), no. 3, 321–324. (Peng Fan) **89c:47031** 47B20
  - Representation of a class of subnormal operators. (Chinese) *J. Math. Res. Exposition* **7** (1987), no. 1, 137–138. (Peng Fan) **89c:47033** 47B20
  - (with Gu, Cai Xing) On the spectral representation of the elementary operator and spectral mapping theorems. *Acta Math. Sinica (N.S.)* **4** (1988), no. 1, 39–44. (Robin Harte) **89h:47003** 47A10
  - On the spectrum of hyponormal operators. *Integral Equations Operator Theory* **11** (1988), no. 4, 536–556. (A. T. Dash) **89c:47040** 47B20
  - Li, Sheng Xun** (with Yang, Guang Wu) Generalized modified Dirichlet boundary value problems for nonlinear first-order elliptic systems with  $2m$  unknowns. (Chinese) *J. Math. Res. Exposition* **7** (1987), no. 2, 289–295. (Ya Zhe Chen) **89h:35057** 35J65

- Li, Shi Hai Some properties of continuous type  $2^{\infty}$  unimodal mapping on  $[0, 1]$ . (Chinese summary) *J. China Univ. Sci. Tech.* **16** (1986), no. 1, 8–19. (Introduction) **89a:58093** 58F20 (58F08, 58F12)
- Li, Shi Jie Spherical submanifolds with pointwise 3- or 4-planar normal sections. *Yokohama Math. J.* **35** (1987), no. 1-2, 21–31. (Johan Deprez) **89e:53081** 53C40
- Li, Shi Rong A class of finite nonsolvable groups. (Chinese. English summary) *Adv. in Math.* (Beijing) **16** (1987), no. 3, 289–293. (Pin Chao Wang) **89f:20021** 20D05
- Finite groups in which every supersolvable subgroup is either 2-closed or a Schmidt group. (Chinese) *Acta Math. Sinica* **31** (1988), no. 3, 341–347. (Ming-Yao Xu) **89j:20022** 20D05
- (with Zhao, Yao Qing) Some finite nonsolvable groups characterized by their solvable subgroups. *Acta Math. Sinica (N.S.)* **4** (1988), no. 1, 5–13. (V. D. Mazurov) **89e:20025** 20D05
- Li, Shi Xiong (with Gong, Sheng; Zheng, Xue An) Harmonic analysis on classical groups. *Proceedings of the analysis conference, Singapore 1986*, 69–113, North-Holland Math. Stud., 150, North-Holland, Amsterdam-New York, 1988. (Norman J. Weiss) **89e:43013** 43A50 (22E30)
- Li, Shi Zheng Necessary and sufficient conditions for convex programming in ordered vector spaces to satisfy the saddle point criterion. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **7** (1987), no. 4, 322–328. (Qi-Yue Bu) **89a:90144** 90C31
- The tensor product of cancellation semigroups. (Chinese. English summary) *Yangzhou Shiyan Xuebao Ziran Kexue Ban* **1987**, no. 4, 33–37. (Summary) **89g:20097** 20M14
- Saddlepoints for convex programming in order vector spaces. *Optimization* **19** (1988), no. 3, 307–314. (Jean-Pierre Crouzeix) **89i:90060** 90C25 (49D45)
- Li, Shipping (with Dickinson, Bradley W.) Application of the lattice filter to robust estimation of AR and ARMA models. *IEEE Trans. Acoust. Speech Signal Process.* **36** (1988), no. 4, 502–512. (N. C. Mohanty) **89d:94004** 94A05 (62M10, 93E10)
- Li, Shou Fu The nonlinear stability of explicit and diagonally implicit Runge-Kutta methods. (Chinese. English summary) *Math. Numer. Sinica* **9** (1987), no. 4, 419–430. (Summary) **89h:65114** 65L05 (65J05)
- Stability criteria for Runge-Kutta methods. (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* **1987**, no. 3, 11–17. (Summary) **89a:65108** 65L05 (65J05)
- Stability criteria for one-leg methods and linear multistep methods. (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* **1987**, no. 4, 21–27. (Summary) **89h:65087** 65L05 (65J05)
- Li, Shu (with Ho, Yu-Chi) Extensions of infinitesimal perturbation analysis. *IEEE Trans. Automat. Control* **33** (1988), no. 5, 427–438. (Summary) **89h:93116** 93E20 (49B50, 93B35)
- (with Ho, Yu-Chi; Vakili, Pirooz) On the efficient generation of discrete event sample paths under different system parameter values. *Math. Comput. Simulation* **30** (1988), no. 4, 347–370. (Brian Conolly) **89i:68153** 68U20 (65C10, 65U05, 90B35)
- Li, Shu Guang (with Sun, Qi) Primitive roots for the modulus  $p^l$ . (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 7, 489–490. (Not in MR) 11Axx
- Li, Shu Jie (with Wang, Hui Yan) Surjectivity of generalized expanding maps and some characterizations of monotone operators. *J. Math. Res. Exposition* **6** (1986), no. 4, 41–45. (M. Joshi) **89c:47079** 47H15 (47H05)
- (with Feng, De Xing) A class of nonlinear models of population growth. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **7** (1987), no. 4, 360–365. (Yang Kuang) **89c:92056** 92A15 (35K99)
- Li, Shu Sheng<sup>1</sup> (with Chen, Xue Bo) Stability analysis of multivariable systems. (Chinese. English summary) *Acta Automat. Sinica* **13** (1987), no. 5, 388–392. (Summary) **89d:93071** 93D05 (93C35)
- Li, Shuo-Yen Robert Reconstruction of polygons from projections. *Inform. Process. Lett.* **28** (1988), no. 5, 235–240. (Summary) **89h:68145** 68U05
- Li, Si Fan (with Rong, Ao Sheng) Analysis of shielded multiple dielectric planar transmission lines with the method of lines. *Sci. Sinica Ser. A* **31** (1988), no. 5, 540–550. (J. W. Jerome) **89h:65200** 65N40 (78A40)
- Li, Si Fu A state space form of model algorithmic control and algorithm improvement. (Chinese. English summary) *J. China Univ. Sci. Tech.* **17** (1987), no. 4, 485–494. (Summary) **89c:93069** 93E10 (93B15, 93C75, 93E11)
- An improvement of model algorithmic control. (Chinese. English summary) *Inform. and Control (Shenyang)* **17** (1988), no. 1, 15–20. (Summary) **89j:93064** 93C30 (93C05, 93C55)
- Li, Song Ying (with Xie, Hui Chun) Distribution of moduli and normal families. (Chinese. English summary) *Pure Appl. Math.* **1986**, no. 1, 57–67. (Chung-Chun Yang) **89f:30054** 30D45 (30D35)
- Hayman directions of meromorphic functions. *Acta Math. Sinica (N.S.)* **4** (1988), no. 2, 97–110. (J. Clunie) **89k:30028** 30D20 (30D35)
- (with Beatrous, Frank) A Plessner decomposition along transverse curves. *Canad. J. Math.* **40** (1988), no. 5, 1243–1255. (Steven George Krantz) **89i:32009** 32A40 (32F25)
- Li, Sun Gen Representations of Lie algebras of step matrices. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 6, 789–791, 816. (J. Löhmus) **89g:17012** 17B35 (16A42)
- Li, T.-Y. see Li, Tien-Yien
- Li, Ta Tsien see Li, Da Qian
- Li, Tao Sheng (with Biao, Sheng Yuan) On duality principles. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* **21** (1987), no. 4, 505–509. (Chat Yin Ho) **89m:10005** 51A05 (18B99)
- Li, Teng (with Zhang, Wen Xiu) A representation theorem for set-valued measures. (Chinese) *Acta Math. Sinica* **31** (1988), no. 2, 201–208. (Summary) **89e:28013** 28B20
- Li, Tie Cai Two applications of network theory. (Chinese. English summary) *J. Harbin Inst. Tech.* **1988**, no. 1, 90–95. (Not in MR) 94C05
- Li, Tien-Yien Solving polynomial systems. *Math. Intelligencer* **9** (1987), no. 3, 33–39. (Friedrich Sauvigny) **89d:12001** 12D10 (58F08, 65H10)
- (with Sauer, Tim; Yorke, James A.) Numerical solution of a class of deficient polynomial systems. *SIAM J. Numer. Anal.* **24** (1987), no. 2, 435–451. (B. Kearfott (Zbl 625:65039)) **89e:90181** 90C30
- Finding all isolated zeros of polynomial systems. (Chinese. English summary) *Adv. in Math.* (Beijing) **17** (1988), no. 3, 260–266. (Summary) **89j:65057** 65L10 (34C10)
- (with Sauer, Tim; Yorke, James A.) Numerically determining solutions of systems of polynomial equations. *Bull. Amer. Math. Soc. (N.S.)* **18** (1988), no. 2, 173–177. (L. Berg)
- 89d:65057** 65H10 (26C10, 58C15, 58F19)
- (with Chu, Moody T.; Sauer, Tim) Homotopy method for general  $\lambda$ -matrix problems. *SIAM J. Matrix Anal. Appl.* **9** (1988), no. 4, 528–536. (Zhong Wu Chu) **89m:65052** 65H10 (15A15, 55M25, 58C30, 90C30)
- Li, Ting Chih (with Shih, Wei; Ts'ui, Yung Mao) Local and global methods in adaptive grid for highly convective flow computation. *Computational techniques and applications: CTAC-87* (Sydney, 1987), 401–410, North-Holland, Amsterdam-New York, 1988. (Summary) **89e:65130** 65N50
- Li, Ting Xiang (with Zhang, Han Bo) Operator substitutions and G-type coordinate systems. (Chinese. English summary) *Natur. Sci. J. Xiangtan Univ.* **10** (1988), no. 2, 23–29. (Summary) **89j:81074** 81D07
- Li, Tsu T'ien (with Tsay, Shuh Chuan) Approximate solutions for linear time-delay systems via the Padé approximation and orthogonal polynomials expansions. *Control Theory Adv. Tech.* **3** (1987), no. 2, 111–128. (Jozef Komornik) **89h:34071** 34K35 (41A21, 93B25, 93C05)
- (with Ch'en, Miao Sheng) Performance improvement of optimal regulators incorporating Kalman filters. *Control Theory Adv. Tech.* **4** (1988), no. 2, 171–188. (Summary) **89e:93086** 93B50 (93E11)
- (with Tsay, Shuh Chuan; Wu, I. Long) Optimal control of linear time-delay systems via general orthogonal polynomials. *Internat. J. Systems Sci.* **19** (1988), no. 2, 365–376. (V. M. Marchenko) **89d:93024** 93B17 (34K35, 93B25, 93B40, 93C05)
- (with Wang, Wen June) Robust stability criteria for single- and large-scale perturbed systems. *Internat. J. Systems Sci.* **19** (1988), no. 3, 405–413. (Lin Huang) **89f:34076** 34D30 (34D99, 93A15, 93C40, 93D99)
- (with Tsay, Shuh Chuan) Solution of variational problems via general orthogonal polynomials. *Internat. J. Systems Sci.* **19** (1988), no. 3, 431–437. (Summary) **89h:65162** 65K10 (49B05, 93B25)
- (with Tsay, Shuh Chuan) Solution of linear dynamic systems with initial or boundary value conditions by shifted Chebyshev approximations. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1225–1234. (Summary) **89e:93051** 93B25 (41A10, 93B17, 93C05)
- (with Lee, Shiow Harn) Synthesis of control laws with specified gain and phase margin and poles region. *Proc. IEEE-D* **135** (1988), no. 6, 474–478. (Summary) **89i:93051** 93B50 (93B35, 93B55, 93C55)
- Li, Tse Fen The cycle time distribution of exponential cyclic queues with multiple servers. *Statist. Probab. Lett.* **6** (1987), no. 2, 77–81. (Hans Daduna) **89a:60224** 60K25 (68M20, 90B22)
- Li, Tsau Hseng S. (with Sun, Yü I.) Comments on: "Stabilization of a class of singularly perturbed bilinear systems" [Internat. J. Control **46** (1987), no. 5, 1589–1594; MR 88j:93078] by F. Asamoah and M. Jamshidi. *Internat. J. Control* **48** (1988), no. 3, 1357–1358. (Summary) **89e:93068** 93D05 (34E15)
- Li, Victor O. K. (with Chen, Jason S. J.) Optimizing joins in fragmented database systems on a broadcast local network. *IEEE Trans. Software Engrg.* **15** (1989), no. 1, 26–38. (Not in MR) 68P15 (68M10, 68R10)
- Li, Wai Kee (with Mak, Tak K.) A new method for estimating subgroup means under misclassification. *Biometrika* **75** (1988), no. 1, 105–111. (Yasuko Chikuse) **89b:62064** 62G05
- (with Hui, Y. V.) An algorithm for the exact likelihood of periodic autoregressive moving average models. *Comm. Statist. Simulation Comput.* **17** (1988), no. 4, 1483–1494. (Not in MR) 62M10
- (with McLeod, A. I.) ARMA modelling with non-Gaussian innovations. *J. Time Ser. Anal.* **9** (1988), no. 2, 155–168. (P. A. Morettin) **89f:62078** 62M10
- Li, Wang Lai Classification of generalized Cartan matrices of hyperbolic type. A Chinese summary appears in Chinese Ann. Math. Ser. A **9** (1988), no. 1, 103. *Chinese Ann. Math. Ser. B* **9** (1988), no. 1, 68–77. (F. W. Lemire) **89f:17023** 17B67
- Li, Wang Yao An automatic program suitable for stiff and highly oscillatory ordinary differential equations. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **8** (1987), no. 4, 198–205. (Zeng Fu Qin) **89e:65075** 65L05
- Li, Wei (with Sun, Zeng Qi) Optimal control for sampled-data systems with a delay in the control. (Chinese. English summary) *Control Theory Appl.* **4** (1987), no. 2, 10–18. (Sheng Chao Huang) **89a:93036** 93C57 (34K35, 49D40)
- Li, Wei<sup>1</sup> The Jacobson radical of a tensor product of algebras. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B **8** (1987), no. 3, 382. *Chinese Ann. Math. Ser. A* **8** (1987), no. 2, 183–188. (J. Luh) **89j:16014** 16A21 (16A27, 20C05)
- Li, Wei<sup>2</sup> (with Liu, Yong) Extremality of Teichmüller mappings. (Chinese. English summary) *Beijing Daxue Xuebao* **1987**, no. 5, 42–51. (Fuyao Ren) **89i:30026** 30C75 (30C60)
- Li, Wei<sup>3</sup> (with Hou, Bo Yu) New symmetries in stationary, axially symmetric Einstein-Maxwell fields. (Chinese. English summary) *High Energy Phys. Nuclear Phys.* **12** (1988), no. 2, 196–202. (Sheng Jiang) **89f:83052** 83C40 (83C15, 83C50)
- On the remark of the existence of Virasoro symmetry for the nonlinear  $\sigma$  model. *J. Phys. A* **21** (1988), no. 17, L819–L822. (Summary) **89j:81105** 81E13 (17B65, 81E40)
- The complete Virasoro algebra for the stationary and axially symmetric Einstein field equations. *Phys. Lett. A* **129** (1988), no. 5-6, 301–304. (Basilis C. Xanthopoulos) **89m:83040** 83C40 (17B65)
- (with Hou, Bo Yu) Generating functions with new hidden symmetries for cylindrically symmetric gravitational fields. *Classical Quantum Gravity* **6** (1989), no. 2, 163–171. (Nora Breton Bäck) **89k:83039** 83C40 (81E40, 83C20, 83C50)
- Li, Wen-Ch'ing Winnie Various aspects of the Barnes' identity. *Séminaire de théorie des nombres, Paris 1984–85*, 187–203, *Progr. Math.*, **63**, Birkhäuser Boston, Boston, MA, 1986. (J. H. Loxton (Zbl 618:12013)) **89i:11112** 11P80 (11F70, 11F85, 11S80, 22E50)
- Li, Wen Hsiung Estimation of the numbers of synonymous and nonsynonymous substitutions between protein coding genes. *Evolutionary processes and theory* (Israel, 1985), 295–314, Academic Press, Orlando, FL, 1986. (Summary) **89e:92024** 92A10 (92A12)
- Li, Wen Long (with Zhang, Xiang Lin) On the convergence of elastoplastic boundary element analysis. *Appl. Math. Mech. (English Ed.)* **9** (1988), no. 1, 87–94; translated from *Appl. Math. Mech.* **9** (1988), no. 1, 83–89 (Chinese. English summary). (I. N. Molchanov) **89m:73003** 73-08 (65N30, 73E99)
- Li, Wen Qi On the proof of L. Takács' lemma for the  $M/G/1$  stochastic queueing system. (Chinese. English summary) *J. Math. Res. Exposition* **6** (1986), no. 3, 107–112. (Summary) **89c:60108** 60K25 (90B22)



- The artificial constraint technique for finding an initial dual feasible solution. (Chinese) *Chinese J. Oper. Res.* 6 (1987), no. 1, 55–56. (Not in MR) 90C05
- Li, Wen Qing** (with Zeng, Xiao Jun) The difference representation of the solutions of Diophantine equations and the summation of integer polynomials. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* 26 (1987), no. 6, 645–650. (Summary) 89e:11042 11D09
- Applications of number theory to control systems. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* 27 (1988), no. 2, 127–130. (Yun Qing Shi) 89j:93055 93C05 (11J81, 30C15, 93B55, 93C60)
- Li, Wen Rong** The existence and uniqueness of continuous solutions of functional equations of the form  $f(x) = G(x, f(x))$  in Banach spaces. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 1986, no. 1, 33–37. (J. G. Dhombres) 89a:39013 39B70 (47H15)
- A proof, using real analysis, of the existence of power series solutions to second-order linear ordinary differential equations. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 13 (1987), no. 3, 50–53. (Jianxun He) 89b:34018 34A25 (34A30)
- Li, Wentian** Errata: "Power spectra of regular languages and cellular automata" [*Complex Systems* 1 (1987), no. 1, 107–130]. *Complex Systems* 2 (1988), no. 6, 725. (Not in MR) 68Q80 (68Q45, 94A05)
- Li, Wu** Weak Chebyshev spaces on locally ordered topology space and the related continuous metric selections. A Chinese summary appears in Chinese Ann. Math. Ser. A 8 (1987), no. 5, 643–644. *Chinese Ann. Math. Ser. B* 8 (1987), no. 4, 420–427. (Manfred Sommer) 89a:41036 41A50 (41A30, 41A65)
- Continuous selections for metric projections in  $C(X)$ . I. Quasi-Haar subspaces. (Chinese) *Acta Math. Sinica* 31 (1988), no. 1, 1–10. (Han Lin Chen) 89m:41024 41A65 (41A50, 54C40, 54C65)
- Continuous selections for metric projections in  $C(X)$ . II. Alternating signs. (Chinese) *Acta Math. Sinica* 31 (1988), no. 1, 11–20. (Han Lin Chen) 89m:41025 41A65 (41A50, 54C40, 54C65)
- Characterization for continuous selection and its applications in multivariable approximation. *Approx. Theory Appl.* 4 (1988), no. 1, 13–17. (Manfred Sommer) 89m:41020 41A50 (41A65, 46E99)
- Li, X. J.** see **Li, Xun Jing**
- Li, Xianghao** see **Li, Xiang Gao**
- Li, Xi Guang** (with Hu, Ya Guang) A trajectory-tracking control scheme for robotic manipulators. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 4, part II, 155–163. (Summary) 89a:93064 93C75 (70B15, 93C40)
- Li, Xi He** Stability of random membership frequency and fuzzy statistics. *Fuzzy Sets and Systems* 29 (1989), no. 1, 89–102. (Constantin Drossos) 89m:60011 60A99 (03E72)
- Li, Xiang Gao** (with Li, Yong Shun) Eigenvalues and eigenvectors of a fuzzy proximity matrix. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* 1988, no. 2, 30–35. (Summary) 89j:15049 15A99 (03E72)
- Li, Xiang Zhu** (with Zhang, Qian Er) Coupling coefficient for the symmetric and unitary groups. *J. Phys. A* 20 (1987), no. 18, 6185–6196. (John J. Sullivan) 89e:81047 81C40 (20C35, 22E70)
- Li, Xiao Dong** (with Guo, Yin Kun; Zhang, Zhong Fu) Two theorems on the edge chromatic number of a graph. (Chinese. English summary) *J. Lanzhou Railway College* 6 (1987), no. 4, 67–71. (Chong-Keang Lim) 89k:05037 05C15
- Li, Xiao Jian** Roughness and nondifferentiability of norms on Banach spaces. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B 8 (1987), no. 4, 490. *Chinese Ann. Math. Ser. A* 8 (1987), no. 5, 621–625. (Summary) 89a:46028 46B05
- Li, Xiao Jun** Asymptotic and oscillatory properties of second-order nonlinear functional-differential equations. (Chinese) *J. Math. Res. Exposition* 7 (1987), no. 3, 433–438. (Binggen Zhang) 89c:34079 34K15 (34K25)
- Li, Xiao Ming** (with Feng, Chun Bo; Luo, Ning Su) Robustness of adaptive control systems. (Chinese. English summary) *Acta Automat. Sinica* 13 (1987), no. 6, 463–472. (Summary) 89c:93049 93C40 (93B35, 93D10)
- Li, Xin Chun** (with Zhuang, Xing Wu) On the continuity of sample functions of generalized Brownian sheets. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* 3 (1987), no. 3, 270–273. (Summary) 89e:60160 60J65 (60G17)
- Li, Xin Kai** (with Piao, Zhi Chun) Stability conditions of nesting grid difference methods for hyperbolic initial boundary value problems. (Chinese. English summary) *Math. Numer. Sinica* 9 (1987), no. 4, 381–395. (Zeng Rong Chen) 89b:65144 65M10
- Li, Xin Zhou** (with Yu, Feng) A class of nonunitary representations of superalgebras. (Chinese) *Acta Math. Sci. (Chinese)* 7 (1987), no. 3, 335–339. (Qi Zhi Han) 89m:17046 17B70
- (with Cai, Sheng Shan; Hu, Si Zhu) Fermion-generalized monopole dynamics in Kaluza-Klein theory. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* 26 (1987), no. 3, 289–296. (Summary) 89d:83062 83E15
- (with Zhang, Guang Yuan; Cai, Wei Cheng) Fermion fields in the soliton background of a six-dimensional pure Kaluza-Klein theory. (Chinese. English summary) *High Energy Phys. Nuclear Phys.* 12 (1988), no. 2, 281–285. (Sheng Jiang) 89f:83095 83E15
- Supermembrane monopole vacua. *Phys. Lett. B* 205 (1988), no. 4, 451–454. (Da-Xi Li) 89b:81209 81E99 (81E30)
- (with Xu, Jian Jun) A class of generalized monopole solutions in Kaluza-Klein theories. *Phys. Lett. B* 208 (1988), no. 3–4, 391–395. (L. M. Sokolowski) 89j:83085 83E15 (53C80)
- Li, Xue Kui** Direct evaluation of characteristic polynomials. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* 1988, no. 2, 74–80. (Gin-Hor Chan) 89k:15023 15A24 (15-04)
- Li, Xue Liang** Directed 1-factor graphs. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* 5 (1988), no. 2, 97–98. (Hugo S. Sun) 89k:05093 05C75 (05C20, 05C70)
- (with Lin, Guo Ning) On integral trees problems. *Kexue Tongbao (English Ed.)* 33 (1988), no. 10, 802–806. (R. E. Pippert) 89k:05029 05C05
- Li, Xue Mei** A sufficient condition for the convergence of the Rayleigh quotient iteration (RQI) method for the computation of eigenvalues of matrices. (Chinese. English summary) *Neimenggu Daxue Xuebao* 19 (1988), no. 1, 42–51. (Dao Sheng Zheng) 89k:65039 65F15
- Li, Xun Jing** (with Chow, S.-N.) Maximum principle of optimal control for functional-differential systems. *J. Optim. Theory Appl.* 54 (1987), no. 2, 335–360. (József Kalinowski)
- 89a:34088 34K35 (49B36, 49D50)
- Li, Yan Da** (with Ning, Bo) The effect of sampling frequency in signal reconstruction from the spectral magnitude and some samples. (Chinese. English summary) *J. Tsinghua Univ.* 28 (1988), no. 4, 63–69. (Not in MR) 94A12
- Li, Yan Sheng** A note on the theory of stability of motion. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* 1987, no. 4, 23–25. (Peng Nian Chen) 89f:34073 34D20
- The global problem of order reduction for systems of homogeneous linear ordinary differential equations. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* 1988, no. 1, 6–8. (Summary) 89j:34008 34A15 (65J15)
- Li, Yang Cheng** On the estimates of the order of finitely  $\mathcal{A}_k$ -determined map-germs. *Acta Math. Sinica (N.S.)* 4 (1988), no. 1, 28–38. (Toshizumi Fukui) 89k:58040 58C27
- Some results on right equivalence of map-germs. (Chinese summary) *Hunan Shifan Daxue Ziran Kexue Xuebao* 11 (1988), no. 1, 1–9. (J. O. Bedford) 89k:58041 58C27
- Li, Yanyan** (with Bayliss, Alvin; Morawetz, Cathleen Synge) Scattering by a potential using hyperbolic methods. *Math. Comp.* 52 (1989), no. 186, 321–338. (Luis Vázquez) 89m:65088 65M99 (65N99, 81F99)
- Li, Yi** Remarks on a semilinear elliptic equation on  $\mathbb{R}^n$ . *J. Differential Equations* 74 (1988), no. 1, 34–49. (From the introduction) 89b:35112 35J60
- Li, Yi** C. aeral Wiener-Hopf operators and the application of bilateral shifts to factorization of operators. (Chinese. English summary) *J. Math. (Wuhan)* 7 (1987), no. 3, 279–284. (Shan Li Sun) 89k:47041 47B35 (45E10, 47A68, 47B37)
- Li, Yi-Fan** (with Lit, John W. Y.; Hewak, Daniel W.) Guiding properties of multilayer dielectric planar waveguides. (French summary) *Canad. J. Phys.* 66 (1988), no. 10, 914–940. (Summary) 89j:78033 78A50
- Li, Yi Shen** The solution of soliton equation and Darboux transformation. *International workshop on applied differential equations (Beijing, 1985)*, 76–90, *World Sci. Publishing, Singapore*, 1986. (David J. Kaup) 89a:35189 35Q20 (34B25, 34C20, 58G37)
- The Darboux-transformation method for finding the solutions of a system of nonlinear Klein-Gordon equations. *Acta Math. Sci. (English Ed.)* 6 (1986), no. 4, 433–437. (John Albert) 89c:35139 35Q20 (35L70, 58F07, 58G37)
- (with Wang, Cun Qi) Comprehensive consideration of the new periodic solution of the nonlinear Schrödinger equation. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 4, 375–381. (Summary) 89b:35033 35B10 (35Q20)
- (with Gu, Xin Shen; Zou, Mao Rong) Three kinds of Darboux transformation for the evolution equations which connect with AKNS eigenvalue problem. *Acta Math. Sinica (N.S.)* 3 (1987), no. 2, 143–151. (Malcolm Adams) 89d:35164 35Q20 (58F07, 58G37)
- Bäcklund transformations and Darboux transformations. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B 8 (1987), no. 3, 381. *Chinese Ann. Math. Ser. A* 8 (1987), no. 2, 139–148. (Ke Wu) 89c:35007 35A30 (35Q20)
- (with Zhang, Li Ning) A note on the super AKNS equations. *J. Phys. A* 21 (1988), no. 7, 1549–1552. (Summary) 89b:35304 35Q20 (58F07)
- (with Cheng, Yi; Bullough, R. K.) Integrable nonispectral flows associated with the Kadomtsev-Petviashvili equations in  $2+1$  dimensions. *J. Phys. A* 21 (1988), no. 8, L443–L449. (J. J. C. Nimmo) 89i:58048 58F07 (17B65, 35Q20, 58G35)
- (with Cheng, Yi) Symmetries and constants of motion for the new KdV hierarchies. *Sci. Sinica Ser. A* 31 (1988), no. 7, 769–776. (Summary) 89b:35305 35Q20 (12H20, 35A30, 58F07, 58G37)
- Li, Ying Hua** The motion of a charged particle in the Reissner-Nordström space-time. (Chinese) *Natur. Sci. J. Harbin Normal Univ.* 3 (1987), no. 1, 23–27. (Not in MR) 83C10
- The exterior differential formulations of the Lorentz force formula and d'Alembert's equation. (Chinese. English summary) *Natur. Sci. J. Harbin Normal Univ.* 3 (1987), no. 3, 31–34. (Summary) 89g:78012 78A25
- Li, Yong** (with Hu, Xing Biao) On the symmetries of a multicomponent water wave equation. *Acta Math. Appl. Sinica (English Ser.)* 4 (1988), no. 1, 41–45. (Walter Strampp) 89b:35294 35Q20 (58F07, 58G35)
- (with Hu, Xing Biao) Superposition formulae of a fifth order KdV equation and its modified equation. *Acta Math. Appl. Sinica (English Ser.)* 4 (1988), no. 1, 46–54. (Summary) 89k:35212 35Q20 (58G37)
- Li, Yong** A simple algorithm for discrete-time MRAC systems. (Chinese. English summary) *Control Theory Appl.* 5 (1988), no. 2, 78–85. (Not in MR) 93C40 (93C55)
- Li, Yong** (with Wonham, W. M.) On supervisory control of real-time discrete-event systems. *Inform. Sci.* 46 (1988), no. 3, 159–183. (Guy Jumarie) 89k:93122 93C30 (93C55)
- Li, Yong** Existence and uniqueness of solutions to boundary value problems. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* 1988, no. 1, 8–16. (Jiaqi Mo) 89k:34022 34B15
- A theorem on the existence of solutions to differential-difference equations. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* 1988, no. 2, 25–29. (Daoyi Xu) 89j:34097 34K10
- Li, Yong Il**  $H$ -valued generalized stationary stochastic processes and the spectral resolution of their covariance operators. (Korean. English summary) *Su-hak* 1988, no. 1, 6–10. (Summary) 89k:60007 60B11
- Li, Yong Jun** (with Huang, Xi Wen) The focal length of surface diffraction rays and the expansion factor. (Chinese) *Acta Math. Sci. (Chinese)* 7 (1987), no. 4, 375–382. (Summary) 89e:78014 78A45
- Li, Yong Shun** (with Li, Xiang Gao) Eigenvalues and eigenvectors of a fuzzy proximity matrix. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin.* 1988, no. 2, 30–35. (Summary) 89j:15049 15A99 (03E72)
- Li, Yi Chia** Unitary operators on the space of  $L^2$ -functions over abstract Wiener spaces. *Soochow J. Math.* 13 (1987), no. 2, 165–174. (Aleksandr Koldobskii) 89h:47045 47B38 (28C20, 46G12, 60B11)
- Li, Yuan Xi** Topological proofs of some combinatorial lemmas. (Chinese. English summary) *Adv. in Math. (Beijing)* 16 (1987), no. 3, 277–281. (Summary) 89c:55005 55M25
- Li, Yue** (with Newhouse, V. L.; Yu, Guo Yao) A split spectrum processing method of scatterer density estimation. *Signal processing and pattern recognition in nondestructive evaluation of materials (Lac Beauport, PQ, 1987)*, 49–69, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.* 44, Springer, Berlin-New York, 1988. (see 89a:94002) 94A12
- Li, Z. C.** see **Li, Zi-Cai**

- Li, Zai Gen** (with Lin, Ping Fan; Liu, Yong Qing) The hybrid self-tuning PID regulator and its application to pH control. (Chinese summary) *Control Theory Appl.* 5 (1988), no. 2, 117-122. (Han Fu Chen) **89d:93075** 93C40
- Li, Zhan Bing** The law of conservation of energy in relativistic stochastic mechanics. (Chinese. English summary) *Beijing Shifan Daxue Xuebao* 1988, no. 3, 36-40. (Summary) **89j:81048** 81C20
- Li, Zhao Hua** A brief discussion of Shan Lan Li's duo ji shu (method of the piled heap) and jian zhui shu (method of the curved surface pyramid). (Chinese. English summary) *J. Northwest Univ.* 16 (1986), no. 4, 109-125. (Summary) **89d:01010** 01A25 (01A55)
- Li, Zheng** Discrete-time adaptive control of systems consisting of known and unknown subsystems. *IEEE Trans. Automat. Control* 34 (1989), no. 3, 375-379. (Summary) **89k:93132** 93C40 (93A20, 93C55)
- Li, Zheng Wu** Some degenerate cases in the generalized Hilbert problem with two shifts. (Chinese) *Hunan Ann. Math.* 7 (1987), no. 2, 148-150. (Not in MR) **30E25**
- Li, Zhi Bin** Particular solutions of a class of partial differential equations with variable coefficients and invariant properties. (Chinese. English summary) *J. Math. Res. Exposition* 7 (1987), no. 2, 283-288. (Summary) **89d:35025** 35B99 (35C05)
- Li, Zhi Chan** Decomposition, representation and extension of the harmonic functions. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 1, 75-83. (Gunter Ritter) **89f:31002** 31B05 (60J45)
- Li, Zhi Lin** A generalized conjugate method for solving a real skew-symmetric system of equations. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* 8 (1987), no. 4, 231-238. (Hong Ci Huang) **89i:65037** 65F10
- Li, Zhi Shen** (with Fisher, Brian) On changing the variable in distributions. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 4, 391-400. (W. Kees) **89f:46090** 46F10
- Li, Zhi Xiang** (with Wu, Jian Hong; Wang, Zhi Cheng) Remarks on: "Periodic solutions of linear Volterra equations" [Funkcial. Ekvac. 27 (1984), no. 2, 229-253; MR 86d:35037] by T. A. Burton. *Funkcial. Ekvac.* 30 (1987), no. 1, 105-109. (George Seifert) **89b:45009** 45J05
- Li, Zhong** Quasiconformal mappings of Riemann surfaces of infinite type. (Chinese) *Acta Math. Sinica* 31 (1988), no. 3, 414-424. (Fuyao Ren) **89m:30044** 30C60 (30F99)
- Li, Zhong Lai** The application of Pascal's triangle in indefinite integration. (Chinese) *Math. Practice Theory* 1988, no. 1, 79-86. (Xing Wei Zhou) **89m:05004** 05A10
- Li, Zhong Liang** (with Liu, Kun Lin; Ge, Yu An) A discrete linear control model and its application to economic forecasting. (Chinese. English summary) *J. Tsinghua Univ.* 27 (1987), no. 6, 106-114. (Summary) **89b:90063** 90A20 (62P20, 93C75)
- Li, Zhong Lin** Some characteristics of constant curvature Riemannian manifolds admitting an orthogonal family of totally umbilical hypersurfaces. (Chinese. English summary) *J. Hangzhou Univ.* 14 (1987), no. 4, 403-408. (C. S. Houh) **89e:53064** 53C20 (53C40)
- Minimal hypersurfaces of a quasiconstant curvature Riemannian manifold. (Chinese. English summary) *J. Hangzhou Univ.* 15 (1988), no. 3, 245-255. (Bang-yen Chen) **89m:53098** 53C40
- Li, Zhu** (with Gilliam, David; Martin, Clyde Franklin) Discrete observability of the heat equation on bounded domains. *Internat. J. Control* 48 (1988), no. 2, 755-780. (Patrio Colaneri) **89k:93024** 93B07 (35R30)
- Li, Zhu Ying** Computation of convolutions using gate functions, and the properties of convolutions. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 16 (1988), no. 3, 129-134. (Not in MR) **94C05** (44A35)
- Li, Zi-Cal** Nonconform combined method of Ritz-Galerkin and finite element methods. *Innovative numerical methods in engineering* (Atlanta, Ga., 1986), 93-95, *Comput. Mech., Southampton*, 1986. (Jacques Couot) **89b:65183** 65N30
- A note on Kellogg's eigenfunctions of a periodic Sturm-Liouville system. *Appl. Math. Lett.* 1 (1988), no. 2, 123-126. (Not in MR) **35J05** (35R05, 65N99)
- (with Bui, T. D.) A new kind of combinations between the Ritz-Galerkin and finite element methods for singularity problems. (German summary) *Computing* 40 (1988), no. 1, 29-50. (M. Zlámal) **89b:65271** 65N30
- (with Bui, T. D.) Generalized hybrid-combined methods for the singularity problems of homogeneous elliptic equations. *Internat. J. Numer. Methods Engrg.* 26 (1988), no. 4, 785-803. (A. I. Schiopp) **89b:65184** 65N30
- Li, Zi Ping** The symmetry transformation of the constrained system with high-order derivatives. *Acta Math. Sci. (English Ed.)* 5 (1985), no. 4, 379-388. (Geoffrey Prince) **89b:58079** 58F05 (58F35, 70G50, 70H35)
- Some applications of generalized Bianchi identities. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* 4 (1987), no. 3, 48-52. (Y. L. Xin) **89c:58039** 58F05
- Li, Zi Zhi** (with Li, Hong Zhen; Wen, Guo Chun) Some boundary value problems with complex conjugate values for second-order nonlinear elliptic systems. (Chinese) *J. Math. Res. Exposition* 7 (1987), no. 3, 451-456. (Ya Zhe Chen) **89b:35052** 35J65
- Li, Zong Du** see **Li, Jiong Du**
- Li, Zun Xian** Quaternion algebra and automorphisms of  $PO_4^+(V)$ ,  $PO_4^-(V)$  and  $PL_4(V)$ . *Sci. Sinica Ser. A* 30 (1987), no. 11, 1121-1132. (D. G. James) **89e:20084** 20G15 (11E57, 11E88)
- (with Li, Fu An) A criterion for the invertibility of polynomial mappings. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 3, 168-171. (Not in MR) **14E05**
- (with Li, Fu An) Isomorphisms of  $GL_3$  over commutative rings. *Sci. Sinica Ser. A* 31 (1988), no. 1, 7-14. (Zong Zhu Lin) **89b:20065** 20G35
- Li Am Gir** see **Li, Am Gil**
- Lian, Qing Rong** An algorithm for finding eigenvalues of real normal matrices. (Chinese. English summary) *J. Dalian Inst. Tech.* 26 (1987), no. 3, 1-7. (T. Y. Li) **89b:65095** 65F15 (15A18)
- (with Jin, Zhi Ying) A new algorithm for computing eigenvalues of skew-symmetric matrices. (Chinese. English summary) *Math. Numer. Sinica* 9 (1987), no. 2, 200-205. (Qinghua Zheng) **89e:65040** 65F15
- Liang, Can Bin** (with Kuang, Zhi Quan) On the GKP and BS constructions of the  $c$ -boundary. *J. Math. Phys.* 29 (1988), no. 2, 433-435. (Summary) **89g:35097** 53C50 (83C99)
- Liang, Gan Ping** Subclasses of the class of indecomposable generalized Cartan matrices and symmetrization problems. (Chinese. English summary) *Comm. Appl. Math. Comput.* 2 (1988), no. 1, 81-88. (Zi-Xin Hou) **89k:17042** 17B67 (17B65)
- Liang, Ji Hua** A point characterization of fuzzy metrics and its applications. (Chinese) *Acta Math. Sinica* 30 (1987), no. 6, 733-741. (Zike Deng) **89f:54012** 54A40 (03E72)
- A fuzzy Smirnov-Nagata metrization theorem. (Chinese. English summary) *Dongbei Shuxue* 3 (1987), no. 4, 419-428. (Run Sheng Yang) **89k:54013** 54A40 (03E72)
- A geometric characterization of uniformities on a lattice. (Chinese. English summary) *Sichuan Daxue Xuebao* 25 (1988), no. 2, 140-144. (Not in MR) **54A40** (03E72)
- Liang, Jin** Reaction-diffusion systems without the quasimonotonicity condition. (Chinese. English summary) *Beijing Daxue Xuebao* 1987, no. 3, 9-20. (Lumin Jiang) **89k:35160** 35K57 (35B35, 35Q99, 92A09)
- Liang, Jing Wei** Some inequalities concerning positive definiteness of matrices. (Chinese) *Math. Practice Theory* 1988, no. 1, 56-60. (Gong Ning Chen) **89k:15038** 15A48 (15A45)
- Liang, Kung-Yee** Estimating functions and approximate conditional likelihood. *Biometrika* 74 (1987), no. 4, 695-702. (G. K. Robinson) **89c:62058** 62F10 (62A10)
- (with Zeger, Scott L.; Albert, Paul S.) Models for longitudinal data: a generalized estimating equation approach. (French summary) *Biometrics* 44 (1988), no. 4, 1049-1060. (Not in MR) **62P10**
- Liang, Min** The Neumann problem for a class of reaction-diffusion equations modelling epidemics systems. *Ann. Differential Equations* 4 (1988), no. 1, 9-23. (Curtis C. Travis) **89b:92051** 92A15 (35K57)
- Liang, Po** The relative structure of the denumerable nonatomic Boolean algebras satisfying  $V_{A_0} \in PA(V_{A_0}, V(A - A_0) \notin B \rightarrow G_{A_0} = \emptyset)$  and research on the structure of the denumerable nonatomic Boolean algebras. (Chinese) *J. Math. Res. Exposition* 7 (1987), no. 1, 13-16. (Bai Ying Shen) **89e:06014** 06E05
- Liang, Shu Li** Two integer programming problems related to Cauchy's inequality. (Chinese. English summary) *J. Changsha Railway Inst.* 5 (1987), no. 1, 27-32. (Summary) **89c:90144** 90C10
- An optimal policy for machine load regulation. (Chinese. English summary) *J. Changsha Railway Inst.* 5 (1987), no. 4, 80-85. (Not in MR) **90C27**
- Liang, Tu-Chen** (with Gupta, Shanti S.) Selecting the best unknown mean from normal populations having a common unknown coefficient of variation. *Mathematical statistics and probability theory*, Vol. B (Bad Tatzmannsdorf, 1986), 97-112, *Reidel, Dordrecht-Boston, MA-London*, 1987. (Yung L. Tong) **89d:62023** 62F07
- (with Gupta, Shanti S.) On some Bayes and empirical Bayes selection procedures. *Probability and Bayesian statistics* (Innsbruck, 1986), 233-246, *Plenum, New York-London*, 1987. (D. Y. Huang) **89g:62036** 62F07 (62C10, 62C12)
- (with Panchapakesan, S.) Inference about the change-point in a sequence of random variables: a selection approach. *Statistical decision theory and related topics, IV, Vol. 2* (West Lafayette, Ind., 1986), 79-87, *Springer, New York-Berlin*, 1988. (Glen Meeden) **89b:62063** 62F07 (62C20, 62F15)
- (with Gupta, Shanti S.) Empirical Bayes rules for selecting the best binomial population. *Statistical decision theory and related topics, IV, Vol. 1* (West Lafayette, Ind., 1986), 213-224, *Springer, New York-Berlin*, 1988. (J. V. Deshpande) **89c:62010** 62C12 (62F07)
- Isotonic rules for selecting good exponential populations. *Comm. Statist. Theory Methods* 17 (1988), no. 6, 1871-1887. (Nitis Mukhopadhyay) **89k:62034** 62F07
- Liang, Wen Ch'i** Consistency of modified Fisher prediction function. *J. Statist. Plann. Inference* 17 (1987), no. 3, 401-403. (Masafumi Akahira) **89a:62084** 62F99
- Liang, Xi Ting** The Phragmén-Lindelöf principle for generalized solutions of quasilinear elliptic equations. (Chinese) *J. Chengdu Univ. Natur. Sci.* 5 (1986), no. 1, 1-7. (Yao Tian Shen) **89a:35030** 35J60
- Integrability properties of generalized solutions to systems of quasilinear second-order elliptic equations. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* 4 (1987), no. 4, 33-40. (Yao Tian Shen) **89c:35061** 35J65 (35D05)
- Liang, Xiao Yun** Normality tests. (Chinese) *Math. Practice Theory* 1988, no. 1, 45-50. (Not in MR) **62E10**
- Liang, Xue Zhang** On bivariate quartic spline interpolation. (Chinese. English summary) *Acta Sci. Natur. Univ. Jilin* 1987, no. 4, 19-28. (Jian Zhong Wang) **89f:41016** 41A15 (41A63)
- Liang, Yan Zhang** (with Yao, Chun Feng) Tracing the origins of Euclid's *Elements* of geometry. (Chinese) *Natur. Sci. J. Harbin Normal Univ.* 3 (1987), no. 1, 94-100. (Editors) **89i:01091** 01A70
- Liang, Yi Gao** (with Chang, Lay-Nam) Conservation of topological quantum numbers in energy bands. *Modern Phys. Lett. A* 3 (1988), no. 18, 1839-1845. (Summary) **89k:81204** 81H20 (58G10)
- Liang, Yuan Di** Note on differential operators of normal principal type with vector ( $K$ ) order. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* 1986, no. 2, 97-100, 116. (Min You Qi) **89b:35073** 35G05
- Uniqueness of solutions to boundary value problems for the Helmholtz equation on Kristensson domains. (Chinese) *Acta Math. Sci. (Chinese)* 8 (1988), no. 1, 47-54. (Summary) **89m:35053** 35J05
- Propagation of singularities for pseudodifferential operators of principal type with nonsmooth coefficients. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* 1988, no. 3, 131-137. (Summary) **89k:35261** 35S05 (35A20, 58G17)
- Liang, Zhan Dong** An extension of Altman's theorem. (Chinese. English summary) *J. Shanxi Univ. Natur. Sci. Ed.* 1986, no. 1, 1-3. (Jing Xian Sun) **89m:47051** 47H10
- Liang, Zhi Yuan** The two-phase Stefan problem in the heat equation with energy boundary condition. (Chinese. English summary) *J. Harbin Inst. Tech.* 1987, no. 3, 1-11. (Summary) **89a:35229** 35R35 (35K05)
- Liang, Zhong Chao** Asymptotic behavior of solutions of generalized Emden-Fowler equations. *Ann. Differential Equations* 3 (1987), no. 3, 311-328. (William B. Day) **89e:34092** 34E05 (34C10, 34C11)
- Necessary and sufficient conditions of the stability for a class of second order nonlinear oscillations. *Funkcial. Ekvac.* 30 (1987), no. 1, 45-55. (Chike Obi) **89b:34076** 34C10 (34C11, 34D20)
- Nonlinear boundary value problems. (Chinese) Topics in ordinary differential equations (Nanjing, 1986). *Nanjing Daxue Xuebao Shuxue Bannian Kan* 1987, 115-128. (Zhaojun Liang) **89m:34001** 34-02 (34B15)
- Necessary and sufficient conditions for stability of second order linear oscillations. *Kexue Tongbao (English Ed.)* 33 (1988), no. 8, 622-625. (Not in MR) **34D20** (34A30, 34C15)
- Liang, Zong Ju** Some special features of the development of mathematics in China. (Chinese) *J. Math. Res. Exposition* 6 (1986), no. 3, 149-154. (Wolfgang Ruppert) **89g:01008** 01A25



- Liann, F. R.** (with Clarke, D. W.) Application of explicit criterion minimization in adaptive control. *Internat. J. Systems Sci.* **19** (1988), no. 4, 551-571. (Not in MR) 93B40 (93C40)
- Liao, Fu Cheng** The stability of solutions for a class of complex systems with variable coefficients. (Chinese. English summary) *J. Math. Res. Exposition* **8** (1988), no. 3, 411-415. (Not in MR) 93D20 (93A15)
- Liao, Guo Jun** (with Costa, David Goldstein) On removability of a singular submanifold for weakly harmonic maps. *J. Fac. Sci. Univ. Tokyo Sect. IA Math.* **35** (1988), no. 2, 321-344. (J. Eells) 89g:58054 58E20
- A study of regularity problem of harmonic maps. *Pacific J. Math.* **131** (1988), no. 2, 291-302. (G. Tóth) 89g:58055 58E20 (31B05)
- Liao, Jiong Sheng** A formal theory of binary noncoherent systems. (Chinese. English summary) *Acta Automat. Sinica* **14** (1988), no. 4, 301-310. (Summary) 89m:90077 90B25
- Liao, Ke Ren** The qualitative analysis of a spin system. (Chinese) *Acta Math. Sinica* **30** (1987), no. 6, 799-809. (Man Kam Kwong) 89g:34045 34C10 (58F99)
- Liao, Liang Yuan** Global regularity of solutions of elliptic Monge-Ampère equations. *Comment. Math. Univ. St. Paul.* **37** (1988), no. 1, 27-48. (John Urbas) 89i:35057 35J60 (35B65, 58G30)
- (with Schulz, Friedmar) Regularity of solutions of two-dimensional Monge-Ampère equations. *Trans. Amer. Math. Soc.* **307** (1988), no. 1, 271-277. (Philippe Delanoë) 89g:35053 35J60 (35B65)
- Liao, Liu Sheng** (with Qian, Xiang Zheng) On the oscillations of the equation  $\dot{x}(t) + p(x(t) - \tau) - q(x(t) - \sigma) = 0$ . *Ann. Differential Equations* **3** (1987), no. 3, 351-357. (Peter Smith) 89d:34113 34K15
- Liao, Ming** (with Chung, Kai Lai; Rao, Murali) Duality under a new setting. *Seminar on stochastic processes*, 1983 (Gainesville, Fla., 1983), 23-38, *Progr. Probab. Statist.*, **7**, Birkhäuser Boston, Boston, MA, 1984. (Mamoru Kanda) 89b:60176 60J45 (60J40)
- An independence property of Riemannian Brownian motions. *Geometry of random motion* (Ithaca, N.Y., 1987), 197-201, *Contemp. Math.*, **73**, Amer. Math. Soc., Providence, RI, 1988. (J. C. Taylor) 89j:58143 58G32 (53B20, 53C20, 60D05)
- (with Pinsky, Mark) Stochastic parallel translation for Riemannian Brownian motion conditioned to hit a fixed point of a sphere. *Geometry of random motion* (Ithaca, N.Y., 1987), 203-210, *Contemp. Math.*, **73**, Amer. Math. Soc., Providence, RI, 1988. (Jacques Vauthier) 89k:58296 58G32 (60J65)
- Hitting distributions of small geodesic spheres. *Ann. Probab.* **16** (1988), no. 3, 1039-1050. (P. E. Jupp) 89g:58219 58G32 (60J65)
- Factorization of diffusions on fibre bundles. *Trans. Amer. Math. Soc.* **311** (1989), no. 2, 813-827. (J. Eells) 89f:58138 58G32 (53C10)
- Liao, Wuxell** Towards the solution of the graph bipartitioning problem. *J. Phys. A* **20** (1987), no. 11, L695-L699. (M. Lawrence Glasser) 89a:82028 82A57 (05C80, 82A25, 90B10)
- Replica symmetric solutions of the graph-bipartitioning problem with fixed, finite valence. *J. Phys. A* **21** (1988), no. 2, 427-440. (A. G. Schlijper) 89d:82102 82A57 (05C35)
- Replica-symmetric solution of the graph-bipartitioning problem. *Phys. Rev. A* (3) **37** (1988), no. 2, 587-595. (H. N. V. Temperley) 89b:82094 82A67 (05C99)
- Liao, Xiao Xin** The absolute stability of Luré direct control systems. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 513-519, North-Holland, Amsterdam-New York, 1986. (see 89b:93010) 49B10
- Liao, Youlin** (with Yang, Lin) Self-similar bifurcation structures from Chua's circuit. *Internat. J. Circuit Theory Appl.* **15** (1987), no. 2, 189-192. (Alois Klic) 89f:58110 58F14 (58F08, 58F13)
- Liao, Yu Chang** (with Lenhart, Suzanne M.) Integro-differential equations associated with piecewise deterministic processes. *Differential equations and mathematical physics* (Birmingham, Ala., 1986), 282-289, *Lecture Notes in Math.*, **1285**, Springer, Berlin-New York, 1987. (Kenneth B. Hannsgen) 89a:45022 45K05 (45L05, 93E03)
- Liao, Yu Lin** The theory of large deviations and its applications. (Chinese. English summary) *J. Changsha Railway Inst.* **5** (1987), no. 1, 15-25. (K. F. Yu) 89g:60096 60F10
- Liao, Zhang Ju** A sufficient condition for unconditional stability of the Wilson  $\theta$ -method. (Chinese) *Acta Math. Sci. (Chinese)* **7** (1987), no. 4, 383-394. (Zhimin Zhang) 89g:65106 65L20
- Liao, Zong Huang** (with Lu, De Yuan) Instability of solution for the third order linear differential equation with varied coefficient. *Appl. Math. Mech. (English Ed.)* **9** (1988), no. 10, 969-984; translated from *Appl. Math. Mech.* **9** (1988), no. 10, 909-923 (Chinese. English summary). (Peter E. Kloeden) 89j:34066 34D05 (34A30)
- Liardet, Pierre** (with Coquet, Jean) A metric study involving independent sequences. *J. Analyse Math.* **49** (1987), 15-53. (Daniel Berend) 89e:11043 11K06 (11K55, 22D40, 28D05, 54H20)
- Propriétés harmoniques de la numération suivant Jean Coquet. [Harmonic properties of numbering following Jean Coquet] *Colloque de Théorie Analytique des Nombres "Jean Coquet"* (Marseille, 1985), 1-35, *Publ. Math. Orsay*, 88-02, Univ. Paris XI, Orsay, 1988. (F. Schweiger) 89i:11087 11K06 (11K16, 42A99, 54H20)
- (with Jager, Henk) Distributions arithmétiques des dénominateurs de convergents de fractions continues. [Arithmetical distributions of the denominators of convergents of continued fractions] *Nederl. Akad. Wetensch. Indag. Math.* **50** (1988), no. 2, 181-197. (F. Schweiger) 89i:11085 11K06 (11K50, 28D05)
- see also *Colloquium: Analytic Number Theory*, 89a:11003
- Liaw, C. Y.** Chaotic and periodic responses of a coupled wave-force and structure system. *Computational engineering mechanics* (Beijing, 1987), *Comput. & Structures* **30** (1988), no. 4, 985-993. (Summary) 89k:73039 73J06 (58F14, 73K99)
- Libai, A.** (with Simmonds, James G.) ★ The nonlinear theory of elastic shells. One spatial dimension. *Academic Press, Inc., Boston, MA*, 1988. xvi+412 pp. ISBN 0-12-447940-5 (Claude Surry) 89d:73041 73Lxx (73-02)
- Libchaber, Albert** Dynamical system theory and simple fluid flow. *Perspectives in fluid mechanics* (Pasadena, CA, 1985), 103-112, *Lecture Notes in Phys.*, **320**, Springer, Berlin-New York, 1988. (see 89j:76005) 76F99 (58F13)
- (with Glazier, James A.) Quasi-periodicity and dynamical systems: an experimentalist's view. *IEEE Trans. Circuits and Systems* **35** (1988), no. 7, 790-809. (Arkady S. Pikovsky) 89m:58179 58F27 (34C27, 58F13, 76E15)
- Libelli, S.** see *Marsili-Libelli, S.*
- Liber, A. E.** On the theory of two-dimensional surfaces in multidimensional spaces. (Russian) *Differential geometry*, No. 5 (Russian), 46-53, 103, *Saratov. Gos. Univ., Saratov*, 1980. (see 89a:53001) 53A15 (53A20)
- Libera, R. J.** (with Zlotkiewicz, E. J.) Bounded univalent functions with Montel normalization. (Russian and Polish summaries) Proceedings of the 9th Conference on Analytic Functions (Lublin, 1986). *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **40** (1986), 125-130 (1987). (Y. Komatu) 89h:30021 30C45 (30C70)
- Libero, B. D.** (with Ishchenko, A. A.; Rudenko, O. G.) Investigation of the convergence of identification algorithms with memory. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 3, 51-54 (1988); translated from *Avtomatika* **1987**, no. 3, 68-71, 95 (Russian). (Not in MR) 93B40 (93B30, 93C40)
- Libgober, A.** Fundamental groups of the complements to plane singular curves. *Algebraic geometry*, Bowdoin, 1985 (Brunswick, Maine, 1985), 29-45, *Proc. Sympos. Pure Math.*, **46**, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Richard Randell) 89e:14028 14H30 (14E20, 14H20, 32B30)
- On  $\pi_2$  of the complements to hypersurfaces which are generic projections. *Complex analytic singularities*, 229-240, *Adv. Stud. Pure Math.*, **8**, North-Holland, Amsterdam-New York, 1987. (Richard Randell) 89a:14024 14F35 (14E15, 32C40)
- On divisibility properties of braids associated with algebraic curves. *Braids* (Santa Cruz, CA, 1986), 387-398, *Contemp. Math.*, **78**, Amer. Math. Soc., Providence, RI, 1988. (Mina Teicher) 89m:57007 57M25 (14H20, 20F36, 32B30)
- see also *Braids*, 89f:20003
- Liboff, Richard L.** Quantum equations of motion and the Liouville equation. *Found. Phys.* **17** (1987), no. 10, 981-991. (Summary) 89b:81038 81C05
- Lichnerowicz, André** Physique mathématique. [Mathematical physics] *Ann. Collège France* **86** (1985/86), 125-128. (Editors) 89h:58063 58F05 (01A65, 17B65)
- Extensions essentielles d'algèbres de Lie classiques de dimensions infinies. [Essential extensions of classical infinite-dimensional Lie algebras] *Actes du colloque Jean Braconnier* (Lyon, 1986), 1-16, *Publ. Dép. Math. Nouvelle Sér. B*, **87-1**, Univ. Claude-Bernard, Lyon, 1987. (J. Vanzura) 89f:17018 17B56 (17B65, 53C15, 58F05)
- Deformations and geometric (KMS)-conditions. *Quantum theories and geometry* (Les Treilles, 1987), 127-143, *Math. Phys. Stud.*, **10**, Kluwer Acad. Publ., Dordrecht, 1988. (J. Stasheff) 89m:58080 58F06 (81D07, 82A15)
- (with Medina Perea, Alberto) Groupes à structures symplectiques ou kähleriennes invariants. (English summary) [Groups with invariant symplectic or Kählerian structures] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 3, 133-138. (I. Vaisman) 89a:53078 53C55 (17B65, 53C57, 58F05)
- Les spineurs-twistors sur une variété spinorielle compacte. (English summary) [Twistor-spinors on a compact spin manifold] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 8, 381-385. (Jürgen Eichhorn) 89e:58117 58G30 (53A50, 58G99)
- Variétés de Jacobi et espaces homogènes de contact complexes. (English summary) [Jacobi manifolds and complex contact homogeneous spaces] *J. Math. Pures Appl.* (9) **67** (1988), no. 2, 131-173. (O. Kowalski) 89k:58093 58F05 (53C30, 53C57)
- see also *Berger, Marcel*, 89i:01060; *Choquet-Bruhat, Yvonne*, 89i:01068; *Biography: Lichnerowicz, André*, 89i:01118 and *Marle, Charles-Michel*, 89m:01100
- Licht, Christian** (with Suquet, Pierre) Potentiel viscoplastique d'un milieu poreux et croissance de cavités. (English summary) [Viscoplastic potential of a porous material and cavity growth] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers Sci. Terre* **306** (1988), no. 5, 327-330. (Summary) 89m:73030 73M15 (73F30, 73S99)
- Lichte, Hannes** A short glimpse at electron interferometry. *Microphysical reality and quantum formalism*, Vol. 1, 2 (Urbino, 1985), 137-152, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (see 89j:81004) 81-05 (81B05)
- Lichten, Larry** (with Samek, Marcel) Integrating sculptured surfaces into a polyhedral solid modeling system. *Geometric modeling*, 109-122, *SIAM*, Philadelphia, PA, 1987. (see 89b:65010) 65D10
- Lichtin, Ben** Generalized Dirichlet series and b-functions. *Compositio Math.* **65** (1988), no. 1, 81-120. (Daniel Barlet) 89d:32030 32D15 (11M41, 30B50, 32C38, 32C40)
- Lichtman, A. I.** On PI-subrings of matrix rings over some classes of skew fields. *J. Pure Appl. Algebra* **52** (1988), no. 1-2, 77-89. (P. M. Cohn) 89i:16008 16A27 (16A38)
- (with Wehrfritz, B. A. F.) Finite-dimensional subalgebras in matrix rings over transcendental division algebras. *Proc. Amer. Math. Soc.* **106** (1989), no. 2, 335-344. (P. M. Cohn) 89i:16038 16A39
- Lickorish, W. B. R.** Linear skein theory and link polynomials. *Topology Appl.* **27** (1987), no. 3, 265-274. (Louis H. Kauffman) 89b:57005 57M25
- (with Millett, K. C.) An evaluation of the F-polynomial of a link. *Differential topology* (Siegen, 1987), 104-108, *Lecture Notes in Math.*, **1350**, Springer, Berlin-New York, 1988. (Lorenzo Traldi) 89m:57008 57M25
- (with Millett, K. C.) The new polynomial invariants of knots and links. *Math. Mag.* **61** (1988), no. 1, 3-23. (V. G. Turaev) 89d:57006 57M25
- Liczberski, Piotr** Zu Bawrinischen Familien  $M_G, N_G$  der komplexwertigen und analytischen Funktionen zwei komplexer Variablen. (Russian and Polish summaries) [On Bawrin's families  $M_G, N_G$  of complex-valued and analytic functions of two complex variables] *Zeszyty Nauk. Politech. Łódz. Mat.* **20** (1988), 29-38. (Summary) 89m:32005 32A25
- Lideikis, Tautvydas** (with Mockus, Jonas B.; Žukauskaitė, Lolita) A Bayesian approach to local optimization. (Russian. English and Lithuanian summaries) *Teor. Optimal. Reshenii* **10** (1987), 71-79. (Werner Römisch) 89g:90162 90C15 (90C30)
- Lidin, Sven** (with Hyde, S. T.) A construction algorithm for minimal surfaces. (French summary) *J. Physique* **48** (1987), no. 9, 1585-1590. (Thomas E. Cecil) 89h:53024 53A10
- Ring-like minimal surfaces. (French summary) *J. Physique* **49** (1988), no. 3, 421-427. (Summary) 89j:53007 53A10 (82A60)
- Lidl, R.** (with Fried, M.) On Dickson polynomials and Rédei functions. *Contributions to general algebra*, **5** (Salzburg, 1986), 139-149, *Hölder-Pichler-Tempsky*, Vienna, 1987. (S. D. Cohen) 89e:11076 11T06 (11T71, 94A60)
- (with James, N. S.) Permutation polynomials on matrices. *Linear Algebra Appl.* **96** (1987), 181-190. (John H. Hodges) 89e:11077 11T06 (15A33)
- (with Niederreiter, Harald) ★ Конечные поля. Том 1. (Russian) [Finite fields. Vol. 1] Translated from the English by A. E. Zhukov and V. I. Petrov. Translation edited and with a preface by V. L. Nechaev. "Mir", Moscow, 1988. 430 pp. ISBN 5-03-000065-8 (Editors) 89h:11079a 11Txx

- (with Niederreiter, Harald) ★ Конечные поля. Том 2. (Russian) [Finite fields. Vol. 2] Translated from the English by A. E. Zhukov and V. I. Petrov. Translation edited by V. I. Nechaev. "Mir", Moscow, 1988. pp. 433–822. ISBN 5-03-000066-6 (Editors) **89b:11079b** 11Tx
- Lidov, M. L.** An algorithm for the estimation of parameters of motion in problems with nonmodelable acceleration. (Russian) *Dokl. Akad. Nauk SSSR* **300** (1988), no. 1, 51–54; translation in *Soviet Phys. Dokl.* **33** (1988), no. 5, 343–344. (Yu. A. Nikolaev) **89j:93029** 93B30 (93C05, 93C15)
- Lie, Bernt** (with Balchen, Jens G.; Solberg, Ingar) Internal decoupling in nonlinear process control. *MIC—Modeling Identification Control* **9** (1988), no. 3, 137–148. (Not in MR) 49D27 (93C10)
- Lie, Ivar** (with Nørsett, Syvert P.) Superconvergence for multistep collocation. *Math. Comp.* **52** (1989), no. 185, 65–79. (H. Brunner) **89m:65069** 65L05
- Lie, Sophus** see Yaglom, I. M., **89e:01033**
- Lie, Zipping** see Li, Zhi Bin
- Lieb, Elliott H.** (with Yau, Horng-Tzer) The Chandrasekhar theory of stellar collapse as the limit of quantum mechanics. *Comm. Math. Phys.* **112** (1987), no. 1, 147–174. (Lawrence E. Thomas) **89b:82014** 82A05 (81C99, 85A05)
- (with Affleck, Ian; Kennedy, Tom; Tasaki, Hal) Valence bond ground states in isotropic quantum antiferromagnets. *Comm. Math. Phys.* **115** (1988), no. 3, 477–528. (Claus Montonen) **89d:82025** 82A15 (82A68)
- (with Conlon, Joseph G.; Yau, Horng-Tzer) The  $N^{7/5}$  law for charged bosons. *Comm. Math. Phys.* **116** (1988), no. 3, 417–448. (Claude Itzykson) **89d:81125** 81G35
- (with Sigal, Israel M.; Simon, Barry; Thirring, W. E.) Approximate neutrality of large-Z ions. *Comm. Math. Phys.* **116** (1988), no. 4, 635–644. (C. R. Garibotti) **89b:81269** 81G45 (81H99)
- (with Yau, Horng-Tzer) Many-body stability implies a bound on the fine-structure constant. *Phys. Rev. Lett.* **61** (1988), no. 15, 1695–1697. (Summary) **89i:81019** 81C05 (81G35)
- see also Rother, Wolfgang, **89a:81020** and Biography: Lieb, Elliott H., **89d:01073**
- Lieb, Ingo** (with Range, R. Michael) The kernel of the  $\bar{\partial}$ -Neumann operator on strictly pseudoconvex domains. *Math. Ann.* **278** (1987), no. 1–4, 151–173. (Takao Akahori) **89d:32044** 32F20 (32E30, 35N15)
- Liebeck, Martin W.** (with Praeger, Cheryl E.; Saxl, Jan) A classification of the maximal subgroups of the finite alternating and symmetric groups. *J. Algebra* **111** (1987), no. 2, 365–383. (Brian Mortimer) **89b:20008** 20B05 (20D06, 20E28)
- (with Saxl, Jan) On the orders of maximal subgroups of the finite exceptional groups of Lie type. *Proc. London Math. Soc.* (3) **55** (1987), no. 2, 299–330. (Arjeh M. Cohen) **89b:20068** 20E28 (20D05, 20E32)
- (with Kleidman, Peter B.) A survey of the maximal subgroups of the finite simple groups. Geometries and groups (Noordwijkerhout, 1986). *Geom. Dedicata* **25** (1988), no. 1–3, 375–389. (R. H. Dye) **89e:20058** 20E28 (20D05, 20E32)
- Graphs whose full automorphism group is a symmetric group. *J. Austral. Math. Soc. Ser. A* **44** (1988), no. 1, 46–63. (Katherine Heinrich) **89b:05098** 05C25 (20B25)
- (with Praeger, Cheryl E.; Saxl, Jan) On the O'Nan-Scott theorem for finite primitive permutation groups. *J. Austral. Math. Soc. Ser. A* **44** (1988), no. 3, 389–396. (Peter Rowlinson) **89a:20002** 20B15
- (with Praeger, Cheryl E.; Saxl, Jan) On the 2-closures of finite permutation groups. *J. London Math. Soc.* (2) **37** (1988), no. 2, 241–252. (Ya. G. Berkovich) **89b:20009** 20B05
- Lieberman, Bennett** (with Rogers, Barrett) Adiabatic methods in the functional Schrödinger picture. *Phys. Rev. D* (3) **38** (1988), no. 12, 3648–3656. (Summary) **89k:81106** 81E20 (83C47)
- Lieberman, Gary M.** Oblique derivative problems in Lipschitz domains. I. Continuous boundary data. (Italian summary) *Boll. Un. Mat. Ital. B* (7) **1** (1987), no. 4, 1185–1210. (Rainer Picard) **89c:35037** 35J25
- Gradient estimates for capillary-type problems via the maximum principle. *Comm. Partial Differential Equations* **13** (1988), no. 1, 33–59. (Gregorio Diaz) **89b:35053** 35J65 (35B50)
- The conormal derivative problem for nonuniformly parabolic equations. *Indiana Univ. Math. J.* **37** (1988), no. 1, 23–72. (Yoshihito Tomita) **89k:35117** 35K60 (35J65)
- Oblique derivative problems in Lipschitz domains. II. Discontinuous boundary data. *J. Reine Angew. Math.* **389** (1988), 1–21. (Rainer Picard) **89b:35094** 35J25 (35R05)
- Hölder continuity of the gradient at a corner for the capillary problem and related results. *Pacific J. Math.* **133** (1988), no. 1, 115–135. (J. Kačur) **89b:35050** 35B65 (35J60, 53A10)
- Lieber, R. A.** (with Mena, R. A.) Certain distance-regular digraphs and related rings of characteristic 4. *J. Combin. Theory Ser. A* **47** (1988), no. 1, 111–123. (Joe Hemminger) **89b:05094** 05C20 (05C25)
- (with Meyerowitz, Aaron D.) Partial geometric lattices. II. Association schemes. *J. Statist. Plann. Inference* **18** (1988), no. 2, 161–176. (R. P. Dilworth) **89a:05045** 05B25 (05B30, 62K15)
- Liebling, Th. M.** (with Hammer, P. L.; Simeone, B.; de Werra, D.) From linear separability to unimodality: a hierarchy of pseudo-Boolean functions. *SIAM J. Discrete Math.* **1** (1988), no. 2, 174–184. (Kaicheng Lu) **89m:68059** 68Q25 (06E30, 90C09, 94C10)
- Liebscher, D.-E.** Affinely invariant field theory. (German summary) *Astronom. Nachr.* **309** (1988), no. 4, 277–279. (M. Carmeli) **89m:83076** 83D05
- (with Fuchs, Helmut; Kasper, U.; Müller, Volker; Schmidt, Hans-Jürgen) The singularity problem of gravitation. *Fortschr. Phys.* **36** (1988), no. 6, 427–452. (Laszlo B. Szabados) **89b:83063** 83C75 (83–02)
- Lieftinck-Koeljes, C. A. J.** Multivariate calibration: a generalization of the classical estimator. *J. Multivariate Anal.* **25** (1988), no. 1, 31–44. (Dennis L. Young) **89g:62103** 62J05 (62H12)
- Liem, Chin Bo** (with Lü, Tao; Shih, Tsi Min) ★ Parallel algorithms for solving partial differential equations. Shuli Xue [Mathematical Sciences. Research Reports IMS], 22. *Academia Sinica, Institute of Mathematical Sciences, Chengdu*, 1987. 13 pp. (Marian Vajteršic) **89a:65158** 65N20 (65W05)
- (with Lü, Tao; Shih, Tsi Min) ★ A fourth order finite difference method for the boundary value and eigenvalue problems of divergent type elliptic equations. Shuli Xue [Mathematical Sciences. Research Reports IMS], 27. *Academia Sinica, Institute of Mathematical Sciences, Chengdu*, 1988. 16 pp. (M. K. Kadalbajoo) **89i:65098** 65N05 (65N25)
- Lien, Da-Hsiang Donald** A note on inducing cooperation by reciprocal strategy. *Econom. Lett.* **25** (1987), no. 2, 131–135. (S. H. Tijs) **89i:90200** 90D05
- (with Rearden, David) Missing measurements in limited dependent variable models. *Econom. Lett.* **26** (1988), no. 1, 33–36. (Summary) **89d:62113** 62P20
- Coalitions in competitive bribery games. *Math. Social Sci.* **15** (1988), no. 2, 189–196. (Milan Mareš) **89i:90210** 90D12 (90A07)
- Lien, Luke Y.-C.** (with Iliadis, Ilias) Resequencing delay for a queueing system with two heterogeneous servers under a threshold-type scheduling. *IEEE Trans. Comm.* **36** (1988), no. 6, 692–702. (Summary) **89b:60218** 60K25 (90B22, 90B35)
- Lien, Shue-Ling** (with Shantz, Michael) Shading bicubic patches. *SIGGRAPH '87* (Anaheim, CA, 1987). *Comput. Graphics* **21** (1987), no. 4, 189–196. (see **89j:68151**) 68U10
- Lienhardt, Pascal** Extension of the notion of map and subdivisions of a three-dimensional space. *STACS 88 (Bordeaux, 1988)*, 301–311. *Lecture Notes in Comput. Sci.* **294**, Springer, Berlin-New York, 1988. (see **89b:68011**) 68U05
- Liepiš, A.** (with Piterkops, R. K.) An asymptotic form of plane wave type for a system of charged particles. (Russian) *Group-theoretic methods in physics, Vol. 2* (Russian) (Jūrmala, 1985), 278–282, "Nauka", Moscow, 1986. (see **89d:81002**) 78A99 (81G10)
- This point is fixed. (Russian) *Topological structures and their mappings* (Russian), 87–88, iv, Latv. Gos. Univ., Riga, 1987. (L. Janos) **89c:54090** 54H25
- Closure operators and fixed points of mappings. *Zb. Rad. No. 2* (1988), 77. (Not in MR) 54H25
- Liepmann, Hans Wolfgang** see Perspectives in fluid mechanics, **89j:76005**
- van Lierop, W. F. J.** (with Clark, W. A. V.) Residential mobility and household location modelling. *Handbook of regional and urban economics, Vol. 1*, 97–132. *Handbooks in Economics*, 7, North-Holland, Amsterdam-New York, 1986. (see **89m:90047**) 90A30
- (with Braat, L. C.) Environment, policy, and modeling. *Economic-ecological modeling*, 7–19. *Stud. Regional Sci. Urban Econom.*, 16, North-Holland, Amsterdam-New York, 1987. (see **89d:90076**) 90A30 (92A17)
- (with Braat, L. C.) Integrated economic-ecological modeling. *Economic-ecological modeling*, 49–68. *Stud. Regional Sci. Urban Econom.*, 16, North-Holland, Amsterdam-New York, 1987. (see **89d:90076**) 90A30 (92A17)
- (with Braat, L. C.) Evaluation. *Economic-ecological modeling*, 282–285. *Stud. Regional Sci. Urban Econom.*, 16, North-Holland, Amsterdam-New York, 1987. (see **89d:90076**) 90A30 (92A17)
- see also Economic-ecological modeling, **89d:90076**
- Liese, Friedrich** (with Vajda, Igor) ★ Convex statistical distances. With German, French and Russian summaries. Teubner-Texte zur Mathematik [Teubner Texts in Mathematics], 95. BSB B. G. Teubner Verlagsgesellschaft, Leipzig, 1987. 224 pp. ISBN 3-322-00428-7 (Friedrich Pukelsheim) **89g:62006** 62-02 (60G15, 62B20)
- (with Danielyan, Ė. A.)  $M/J/1$ -oc-queueing model with unit traffic-intensity in continuous time. *Rostock. Math. Kolloq.* **32** (1987), 67–86. (Martin J. Fischer) **89d:60173** 60K25 (90B22)
- van Lieshout, P. H.** (with Rongen, P. M. J.; van de Ven, A. A. F.) A variational approach to magneto-elastic buckling problems for systems of ferromagnetic or superconducting beams. *J. Engrg. Math.* **22** (1988), no. 2, 143–176. (Summary) **89c:73037** 73R05 (73H05)
- Lies, Otto** Boundary regularity for one-sided solutions of linear partial differential equations with analytic coefficients. *Pseudodifferential operators* (Oberwolfach, 1986), 312–329. *Lecture Notes in Math.*, 1256, Springer, Berlin-New York, 1987. (B. Nowak (Zbl 632:35011)) **89f:35011** 35A20 (35B65)
- Microlocal regularity for global solutions of partial differential equations with polynomial coefficients. *Ann. Global Anal. Geom.* **5** (1987), no. 1, 23–51. (Vesselin M. Petkov) **89g:35006** 35A27 (35B65)
- Regularity of solutions of Cauchy problems with smooth Cauchy data. *Partial differential equations* (Rio de Janeiro, 1986), 166–177. *Lecture Notes in Math.*, 1324, Springer, Berlin-New York, 1988. (Xavier Saint Raymond) **89m:35037** 35B65 (35A20, 35G10)
- (with Rodino, Luigi) Fourier integral operators and inhomogeneous Gevrey classes. *Ann. Mat. Pura Appl.* (4) **150** (1988), 167–262. (Vesselin M. Petkov) **89m:35224** 35S05 (35A27, 47G05)
- Localization and propagation of analytic singularities for operators with constant coefficients. *Comm. Partial Differential Equations* **13** (1988), no. 6, 729–767. (Vesselin M. Petkov) **89j:35042** 35E20 (35A20)
- The edge-of-the-wedge theorem for systems of constant coefficient partial differential operators. I. *II. Math. Ann.* **280** (1988), no. 2, 303–345. (V. A. Golubeva) **89i:35033** 35E20 (32D15)
- On the influence of lower order terms for propagation of analytic singularities for operators with constant coefficients. *Math. Z.* **197** (1988), no. 2, 297–304. (Vesselin M. Petkov) **89j:35041** 35E20 (35A20)
- Liestman, Arthur L.** (with Chau, Siu-Cheung) Constructing minimal broadcast networks. *J. Combin. Inform. System Sci.* **10** (1985), no. 3–4, 110–122. (Summary) **89b:90081** 90B10 (05C99, 68M10)
- (with Chau, Siu-Cheung) Constructing fault-tolerant minimal broadcast networks. *J. Combin. Inform. System Sci.* **11** (1986), no. 1, 1–18. (Summary) **89b:90082** 90B10 (05C99, 68M10)
- (with Hell, Pavol) Broadcasting in one dimension. *Discrete Appl. Math.* **21** (1988), no. 2, 101–111. (G. W. Peck) **89i:05041** 05A99
- (with Richards, Dana S.) Generalizations of broadcasting and gossiping. *Networks* **18** (1988), no. 2, 125–138. (C. Peyrat) **89f:90055** 90B10 (05C65, 92A20, 94A05)
- (with Hedetniemi, Sandra M.; Hedetniemi, S. T.) A survey of gossiping and broadcasting in communication networks. *Networks* **18** (1988), no. 4, 319–349. (Ki Hang Kim) **89b:90067** 90B10 (05C35, 92A20, 94C15)
- (with Peters, Joseph G.) Broadcast networks of bounded degree. *SIAM J. Discrete Math.* **1** (1988), no. 4, 531–540. (Toshimasa Watanabe) **89k:94110** 94C15 (05C99, 68M10, 68R10, 90B10)
- Liestman, Knut** (with Bie, Ole; Borgan, Ørnulf) Confidence intervals and confidence bands for the cumulative hazard rate function and their small sample properties. *Scand. J. Statist.* **14** (1987), no. 3, 221–233. (Summary) **89a:62116** 62G15
- Lietuviets, O. I.** A method for the approximation of contours that are piecewise smooth in the sense of Lyapunov. (Russian) *Applied problems in mathematical physics* (Russian), 83–88, Latv. Gos. Univ., Riga, 1988. (see **89f:00005**) 41A15 (41A05, 41A63)



- Lifanov, I. K.** Numerical solution of singular Hilbert integral equations with a strong singularity. (Russian) *Optimal computation methods and their application*, No. 7 (Russian), 38-45, 162, *Penz. Politekh. Inst., Penza*, 1985. (see **89g:65066**) 65R20 (45L10)
- (with Belotserkovskii, S. M.; Soldatov, M. M.) The method of discrete singularities in plane problems of the theory of elasticity with nonsmooth boundaries. *J. Appl. Math. Mech.* **51** (1987), no. 2, 219-226 (1988); translated from *Prikl. Mat. Mekh.* **51** (1987), no. 2, 283-292 (Russian). (Summary) **89c:73011** 73C02 (73-08)
- (with Belotserkovskii, S. M.; Mikhailov, A. A.) Calculation of circulation-free flow around arbitrary bodies. (Russian) *Uchen. Zap. TsAGI* **18** (1987), no. 5, 1-10. (Summary) **89c:76001** 76-08 (76B99)
- A singular integral equation of the first kind for the Neumann problem. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 1, 110-115, 182; translation in *Differential Equations* **24** (1988), no. 1, 87-91. (From the text) **89e:45007** 45E99 (33A45, 45L10, 65R20)
- (with Aparinov, V. A.; Belotserkovskii, S. M.; Mikhailov, A. A.) Calculation of nonstationary aerodynamic characteristics of bodies in the case of separated flow. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 10, 1558-1566, 1599. (Summary) **89c:76023** 76B99 (76-08, 76C99)
- Liflyand, I. R.** (with Belinskii, E. S.) The behavior of Lebesgue constants of hyperbolic partial sums. (Russian) *Mat. Zametki* **43** (1988), no. 2, 192-196, 300; translation in *Math. Notes* **43** (1988), no. 1-2, 107-109. (D. K. Ugulava) **89g:42024** 42B05
- Lifshits, E. M.** (with Landau, L. D.; Pitaevskii, L. P.) ★ *Fisica teorica. 5. Fisica statistica. Parte prima.* (Italian) [Theoretical physics. 5. Statistical physics. Part I] Translated from the Russian by A. Machov. Reprint of the 1977 translation. "Mir", Moscow, 1986. 593 pp. (Not in MR) 00-01 (82-01)
- (with Landau, L. D.) ★ Course of theoretical physics. Vol. 6. Fluid mechanics. Second edition. Translated from the third Russian edition by J. B. Sykes and W. H. Reid. Pergamon Press, Oxford-Elmsford, NY, 1987. xiv+539 pp. ISBN 0-08-033933-6; 0-08-033932-8 (Editors) **89i:00006** 00A05 (00-01, 76-01)
- (with Landau, L. D.) ★ *Lehrbuch der theoretischen Physik ("Landau-Lifschitz"). Band III.* (German) [Textbook of theoretical physics ("Landau-Lifschitz"). Volume III] *Quantenmechanik. [Quantum mechanics]* With the collaboration of L. P. Pitaevskii [L. P. Pitaevskii]. Eighth edition. Translated from the third Russian edition by A. Kühnel. Translation edited and with a foreword by Paul Ziesche. Akademie-Verlag, Berlin, 1988. xiv+644 pp. ISBN 3-05-500067-6 (Editors) **89i:00007** 00A05 (81-01)
- (with Landau, L. D.) ★ Теоретическая физика. Том I. (Russian) [Theoretical physics. Vol. I] *Механика. [Mechanics]* Fourth edition. Edited and with a foreword by L. P. Pitaevskii. "Nauka", Moscow, 1988. 216 pp. ISBN 5-02-013850-9 (Editors) **89i:00008** 00A05 (70-01)
- Lifshits, M. A.** Density of the distribution of the norm of a stable vector. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **158** (1987), *Probl. Teor. Veroyatn. Raspred.* **X**, 105-114, 170-171; translation in *J. Soviet Math.* **43** (1988), no. 6, 2810-2817. (V. J. Paulauskas) **89a:60016** 60B11
- Lifshits, Yu. B.** (with Shagiev, A. A.) A projection-grid scheme for calculating the transonic flow around a profile. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 8, 1163-1176, 1277. (Summary) **89c:76062** 76H05 (76-08)
- Lifshitz, E. M.** see **Lifshits, E. M.**
- Lifshits, Evgenij M.** see **Lifshits, E. M.**
- Ligeza, Antoni** (with Tzafestas, Spyros G.) Expert control through decision making. *Found. Control Engng.* **13** (1988), no. 1, 43-51. (Not in MR) 68T25 (93A10)
- Liggett, James A.** Free surface flow—exposing the hidden nonlinearity. *Comm. Appl. Numer. Methods* **4** (1988), no. 4, 509-516. (Summary) **89d:65105** 65N99 (76-04, 76B15, 76S05)
- Exact formulae for areas, volumes and moments of polygons and polyhedra. *Comm. Appl. Numer. Methods* **4** (1988), no. 6, 815-820. (G. D. Chakerian) **89m:51036** 51M25 (65D32)
- Liggett, Thomas M.** Nearest particle systems: results and open problems. *Stochastic spatial processes* (Heidelberg, 1984), 200-215, *Lecture Notes in Math.*, 1212, Springer, Berlin-New York, 1986. (F. L. Spitzer) **89a:60240** 60K35
- Reversible growth models on symmetric sets. *Probabilistic methods in mathematical physics* (Katata/Kyoto, 1985), 275-301, *Academic Press, Boston, MA*, 1987. (F. L. Spitzer) **89c:60120** 60K35
- Spatial stochastic growth models—survival and critical behavior. *Proceedings of the International Congress of Mathematicians*, Vol. 1, 2 (Berkeley, Calif., 1986), 1032-1041, *Amer. Math. Soc., Providence, RI*, 1987. (Richard Holley) **89g:60308** 60K35
- (with Port, S. C.) Systems of independent Markov chains. *Stochastic Process. Appl.* **28** (1988), no. 1, 1-22. (Anton Wakolbinger) **89g:60307** 60K35 (60G57, 60J05)
- Ligh, Steve** (with Wall, Charles R.) Functions of nonunitary divisors. *Fibonacci Quart.* **25** (1987), no. 4, 333-338. (G. L. Cohen) **89a:11012** 11A25
- Liguori, Maria Beatrice** Preservation of convergence of relations. (Italian. English summary) *Matematica (Catania)* **39** (1984), no. 1-2, 143-152 (1988). (O. T. Alas) **89g:54008** 54A20 (49A50)
- (with Dolecki, Szymon; Guilleme, Jean; Malivert, Christian) Méthode des  $\Gamma$ -inégalités. (English summary) [The method of  $\Gamma$ -inequalities] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 12, 659-662. (U. D'Ambrosio) **89m:49014** 49A29 (49A50)
- Ligocka, Ewa** The Bergman projection on harmonic functions. *Studia Math.* **85** (1987), no. 3, 229-246. (David E. Barrett) **89a:32024** 32H10 (32F15, 46E20)
- On the reproducing kernel for harmonic functions and the space of Bloch harmonic functions on the unit ball in  $\mathbb{R}^n$ . *Studia Math.* **87** (1987), no. 1, 23-32. (Steven R. Bell) **89f:46054a** 46E15 (31B30, 32H10)
- On the space of Bloch harmonic functions and interpolation of spaces of harmonic and holomorphic functions. *Studia Math.* **87** (1987), no. 3, 223-238. (Steven R. Bell) **89f:46054b** 46E15 (31B30, 32H10, 46M35)
- On duality and interpolation for spaces of polyharmonic functions. *Studia Math.* **88** (1988), no. 2, 139-163. (Steven R. Bell) **89f:46054c** 46E15 (31B30, 32E30, 32H10, 46M35)
- Ligon, A. A.** (with Dronov, S. G.) Duality for  $L$ -splines. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 6, 776-778, 815. (Gheorghe Micula) **89a:41008** 41A15
- Exact inequalities of Jackson type for periodic functions in the space  $L_2$ . (Russian) *Mat. Zametki* **43** (1988), no. 6, 757-769, 847; translation in *Math. Notes* **43** (1988), no. 5-6, 435-443. (S. Aljančić) **89h:42006** 42A10
- de Liguori, N.** see **de Liguori, N.**
- Lih, Ko-Wei** see **Li, Kuo Wei**
- Lihová, Judita** (with Repaský, Karol) Congruence relations on and varieties of directed multilattices. (Russian summary) *Math. Slovaca* **38** (1988), no. 2, 105-122. (E. T. Schmidt) **89f:06011** 06B99 (06B10, 06B20)
- (with Abian, A.) On the existence of compactification of partially ordered sets. (Serbo-Croatian summary) *Rad. Mat.* **4** (1988), no. 1, 5-13. (Marcel Erné) **89f:06002** 06A10 (54D35)
- Lii, Keh Shin** (with Rosenblatt, Murray) Estimation and deconvolution when the transfer function has zeros. *J. Theoret. Probab.* **1** (1988), no. 1, 93-113. (Fuminori Sakaguchi) **89b:62196** 62M15 (60G99, 93E10)
- Likhachyov, V. M.** (with Katranov, A. G.) On the asymptotics of the amplitudes of oscillating solutions of two-dimensional differential systems. (Russian) *Partial differential equations* (Russian), 76-80, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Pavol Marusiak) **89i:34036** 34C10 (34C15)
- Likhanov, N. B.** (with Tsybakov, B. S.) An upper bound for the capacity of a random multiple-access system. (Russian) *Problemy Peredachi Informatsii* **23** (1987), no. 3, 64-78. (Summary) **89i:94027** 94A40
- Likharev, K. K.** ★ Dynamics of Josephson junctions and circuits. *Gordon & Breach Science Publishers, New York*, 1986. xx+614 pp. ISBN 2-88124-042-9 (Not in MR) 94C05 (81J05, 94-02)
- Likhodid, N. A.** (with Sobolevskii, P. I.) Approximate calculation of a class of path integrals and a class of multiple integrals. (Russian. English summary) *Vestsi Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* **1988**, no. 1, 3-8, 122. (Summary) **89b:65058** 65D30 (28C20)
- Likhodid, P. P.** A method for investigating the stability of sampled-data systems. (Russian) *Vychisl. Prikl. Mat. (Kiev) No. 61* (1987), 90-96, 132. (Vadim Z. Tsalyuk) **89m:34075** 34D99 (93C57)
- Likhoiat, N. A.** On an algebraic algorithm for solving a problem of the covering of a graph by a growing directed tree. (Russian) *Methods for solving nonlinear problems and for data processing* (Russian), 136-138, xi, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1985. (Summary) **89a:90093** 90C10
- A problem on the covering of a graph with variable weights of edges by a growing directed tree. (Russian) *Methods for solving nonlinear problems, and data processing* (Russian), 64-67, 108-109, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1986. (see **89f:00011**) 05C70
- Likhovid, A. P.** (with Gernhovich, V. I.; Priyatel', A. M.) Quadratic smoothing in a decomposition approach to the solution of linear programming problems of production-transportation type. (Russian) *Methods for the investigation of extremal problems* (Russian), 55-61, v, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1988. (Summary) **89h:90152** 90C08 (90C05)
- de Lillo, S.** see **De Lillo, S.**
- Lilly, John H.** Stability of a class of adaptive observers subject to unmodeled dynamics. *Modelling, identification and robust control* (Stockholm, 1985), 45-57, *North-Holland, Amsterdam-New York*, 1986. (see **89b:93008**) 93B30 (49D07, 93C40)
- Lilov, L. K.** (with Atanasov, V. A.) Stabilizability of steady motions of systems with pseudocyclic coordinates. (Russian) *Prikl. Mat. Mekh.* **52** (1988), no. 5, 713-718. (Summary) **89h:70052** 70Q05 (70E99, 70F20, 70K20, 93D15)
- Lim, C. C.** see **Lim, Cheng-Chew**
- Lim, Chee Seng** A class of problems of pulsatory radiation from a travelling source distribution. *SIAM J. Appl. Math.* **48** (1988), no. 2, 326-352. (Summary) **89d:35165** 35Q20 (73D99, 76X05, 78A40)
- Transient response of the "multiple water-bag" plasma. *Proc. Roy. Soc. London Ser. A* **421** (1989), no. 1860, 109-152. (D. ter Haar) **89m:82048** 82A45 (76W05)
- Lim, Cheng-Chew** (with Hang, C. C.; Leong, K. Y.) Critical control weighting for non-minimum-phase stochastic control systems. *Optimal Control Appl. Methods* **8** (1987), no. 3, 243-252. (Summary) **89k:93228** 93E20
- (with Teo, Kok-Lay; Hang, C. C.) General pole restriction controller design. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1335-1344. (Not in MR) 93B55 (93B50)
- (with Teo, Kok-Lay) Time optimal control computation with application to ship steering. *J. Optim. Theor. Appl.* **56** (1988), no. 1, 145-156. (Jan Bialasiewicz) **89a:93022** 93B40 (93C75)
- Lim, Chjan** Singular manifolds and quasi-periodic solutions of Hamiltonians for vortex lattices. *Phys. D* **30** (1988), no. 3, 343-362. (P. C. Parks) **89g:58069** 58F05 (58F27, 76C05)
- (with Sirovich, L.) Nonlinear vortex trail dynamics. *Phys. Fluids* **31** (1988), no. 5, 991-998. (Summary) **89c:76043** 76C05
- (with Caffisch, Russel E.; Luke, Jonathan H. C.; Sangani, Ashok S.) Periodic solutions for three sedimenting spheres. *Phys. Fluids* **31** (1988), no. 11, 3175-3179. (A. M. J. Davis) **89f:76039** 76D07
- On singular Hamiltonians: the existence of quasi-periodic solutions and nonlinear stability. *Bull. Amer. Math. Soc. (N.S.)* **20** (1989), no. 1, 35-40. (L. E. Faibusovich) **89k:58094** 58F05 (58F10, 70H05, 70K20, 70K99)
- Lim, Chong Keang** (with Chia, Gek Ling) On supercompact graphs. IV.  $(n, m)$ -graphs. *Ars Combin.* **25** (1988), 203-220. (J. Sedláček) **89k:05088** 05C75
- Lim, H. A.** Lattice gas automata of fluid dynamics for unsteady flow. *Complex Systems* **2** (1988), no. 1, 45-58. (Summary) **89c:76016** 76-08 (76D05, 76N99, 82-08)
- (with Guha, A.; Shapir, Y.) Nonperturbative tricritical exponents of trails. I. Exact enumeration on a triangular lattice. *J. Phys. A* **21** (1988), no. 3, 773-783. (Summary) **89a:82047** 82A68 (82A25, 82A41)
- (with Guha, A.; Shapir, Y.) Nonperturbative tricritical exponents of trails. II. Exact enumerations on square and simple cubic lattices. *J. Phys. A* **21** (1988), no. 4, 1043-1053. (Summary) **89d:82115** 82A67 (05A15, 82-04)
- Lim, J. I.** (with Cho, L.-H.; Kim, J. Y.; Park, D. Y.) Compressibility and annihilator conditions. *J. Korean Math. Soc.* **25** (1988), no. 2, 303-308. (S. K. Berberian) **89i:16016** 16A40 (16A39, 16A42)
- Lim, K. B.** (with Junkins, John L.) Probability of stability: new measures of stability robustness for linear dynamical systems. *J. Astronaut. Sci.* **35** (1987), no. 4, 383-397. (Lin Huang) **89b:93082** 93D10 (93B60, 93C05, 93C40)
- Lim, K. W.** (with Hang, C. C.; Chong, B. W.) A dual rate adaptive digital Smith predictor. *Automatica—J. IFAC* **25** (1989), no. 1, 1-16. (Not in MR) 93C40 (93E10)

- Lin, Paul H.** Tensor formulation of Hamilton's equations. *J. Math. Phys.* **29** (1988), no. 9, 2001-2009. (Ziemowit Popowicz) **89k:70037** 70H40 (70H30)
- Lin, Y. C.** (with Yang, Rong Huan; Liu, Bede) A new structure of sharp transition FIR filters using frequency-response masking. *IEEE Trans. Circuits and Systems* **35** (1988), no. 8, 955-966. (Summary) **89d:94006** 94A05
- (with Parker, S. R.) Frequency-domain modeling of continuous-time systems using the lattice algorithms. *IEEE Trans. Circuits and Systems* **36** (1989), no. 3, 429-433. (Not in MR) **93C60**
- Lim, Yong B.** Symmetric  $D$ -optimal designs for log contrast models with mixtures. *J. Korean Statist. Soc.* **16** (1987), no. 2, 71-79. (Bhagwandas) **89h:62129** 62K05
- (with Studden, W. J.; Wynn, H. P.) A note on approximate  $D$ -optimal designs for  $G \times 2^m$ . *Statistical decision theory and related topics, IV, Vol. 2* (West Lafayette, Ind., 1986), 351-361, Springer, New York-Berlin, 1988. (Dibyen Majumdar) **89h:62016** 62D05
- (with Studden, W. J.) Efficient  $D_0$ -optimal designs for multivariate polynomial regression on the  $q$ -cube. *Ann. Statist.* **16** (1988), no. 3, 1225-1240. (E. Seiden) **89i:62123** 62K05
- Lima, Elon L.** The Jordan-Brouwer separation theorem for smooth hypersurfaces. *Amer. Math. Monthly* **95** (1988), no. 1, 39-42. (V. T. Fomenko) **89i:53007** 53A07
- de Lima, J. A. Sales** (with Assad, M. J. D.) General and unified solution for perfect fluid homogeneous and isotropic cosmological models. *Gen. Relativity Gravitation* **20** (1988), no. 6, 527-538. (A. H. Taub) **89f:83034** 83C20 (83C15)
- Lima, R.** Problems related to dynamical systems. (Russian summary) *Conference "Renormalization Group—86" (Russian)* (Dubna, 1986), 248-265, 398, Joint Inst. Nuclear Res., Dubna, 1987. (From the text) **89j:58118** 58F40 (58F27, 81C99, 81H99, 82A57)
- (with Ruffo, Stefano) Scaling laws for all Liapunov exponents: models and measurements. *J. Statist. Phys.* **52** (1988), no. 1-2, 259-265. (Summary) **89k:58187** 58F13 (58F11, 82A42)
- (with Vilela Mendes, Rui) Stability of invariant circles in a class of dissipative maps. *Nonlinear Anal.* **12** (1988), no. 10, 1061-1067. (Eric Cornelis) **89m:58116** 58F10 (58F15)
- Lima, Steven L.** Vigilance and diet selection: the classical diet model reconsidered. *J. Theoret. Biol.* **132** (1988), no. 2, 127-143. (Summary) **89c:92067** 92A15
- Limam, Mohamed M. T.** (with Thomas, David Reginald) Simultaneous tolerance intervals for the linear regression model. *J. Amer. Statist. Assoc.* **83** (1988), no. 403, 801-804. (Summary) **89i:62112** 62J05 (62F25)
- Limán, F. N.** On periodic groups all of whose decomposable  $pd$ -subgroups are normal. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 1, 58-61, 133; translation in *Ukrainian Math. J.* **40** (1988), no. 1, 48-51. (L. A. Kurdachenko) **89g:20068** 20F50
- Nonperiodic groups all of whose decomposable  $pd$ -subgroups are normal. (Russian) *Ukrain. Mat. Zh.* **40** (1988), no. 3, 330-335, 406; translation in *Ukrainian Math. J.* **40** (1988), no. 3, 282-286. (Yu. I. Merzlyakov) **89g:20064** 20F26 (20E15)
- Limanauskas, Valdas** (with Garlauskas, Algis; Kovarskaya, Sofiya) A mathematical model of trophic interaction of biopopulations of biological systems. *System modelling and optimization* (Tokyo, 1987), 632-642, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (Summary) **89i:92052** 92A17
- Imakar-Limanov, L.** see Makar-Limanov, L.
- Limarchenko, O. S.** Application of direct methods to the investigation of applied problems of the nonlinear dynamics of bodies that are partially filled by a fluid. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 8, 60 pp. (Summary) **89h:76012** 76B99 (70E99, 76-04)
- Lima Santos, A.** (with Abdalla, E.) Factorizable  $S$ -matrix for  $SO(D)/SO(2) \otimes SO(D-2)$  nonlinear  $\sigma$  models with fermions. *Modern Phys. Lett. A* **3** (1988), no. 3, 311-317. (Summary) **89a:81056** 81E13 (81E30)
- (with Abdalla, E.) On the operator solution of the Liouville theory. *Modern Phys. Lett. A* **3** (1988), no. 16, 1579-1584. (Not in MR) **81E99** (58E15)
- (with Abdalla, E.) Bound state solution of the Grassmannian nonlinear sigma model with fermions. *Phys. Lett. B* **206** (1988), no. 2, 281-284. (Enore Guadagnini) **89f:81092** 81E13 (81E15, 81E20)
- Limaye, B. V.** Numerical approximation of eigenvalues and eigenvectors. *Modern analysis and its applications* (New Delhi, 1983), 335-349, Prentice-Hall of India, New Delhi, 1986. (Henry Wolkowicz) **89c:65070** 65J10 (47A55, 65H15)
- Limaye, Nirmala B.** A generalisation of Fano's postulate. *Math. Student* **49** (1981), no. 2-4, 125-127 (1985). (Not in MR) **51A05**
- Limbeer, D. J. N.** (with Halikias, G. D.) A controller degree bound for  $\mathcal{H}^\infty$ -optimal control problems of the second kind. *SIAM J. Control Optim.* **26** (1988), no. 3, 646-677. (Avraham Feintuch) **89c:93073** 93B35 (93C05)
- (with Kasenally, E. M.) Closed formulae for a parametric mixed sensitivity problem. *Systems Control Lett.* **12** (1989), no. 1, 1-7. (Summary) **89k:93074** 93B35 (93B28)
- Lin, Bor-Luh** (with Lin, Pei-Ke; Troyanski, S. L.) Characterizations of denting points. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 526-528. (M. I. Kadets) **89c:46016** 46B20 (52A07)
- see also Banach space theory, **89i:46002**
- Lin, C. C.** see Lin, Chia Chiao
- Lin, C.-S.** see Lin, Chang-Shou
- Lin, C. Thomas** (with Freimer, Marshall; Kolia, Georgia; Mudholkar, Govind S.) A study of the generalized Tucey lambda family. *Comm. Statist. Theory Methods* **17** (1988), no. 10, 3547-3567. (Not in MR) **62E15**
- Lin, C. Y.** see Lin, Ts'ung Yüan
- Lin, Cai Han** (with Shao, Jian Ping; Kang, Li Shan) The weak approximation Galerkin method for the solution of evolution equations. (Chinese. English summary) *J. Math. (Wuhan)* **7** (1987), no. 4, 345-350. (Summary) **89k:65115** 65M60
- Lin, Chang-Shou** (with Ni, W.-M.; Takagi, I.) Large amplitude stationary solutions to a chemotaxis system. *J. Differential Equations* **72** (1988), no. 1, 1-27. (Siegfried Carl) **89c:35075** 35K55 (35J60, 92A09)
- Lin, Charles S. C.** (with Hsiao, Sheng Yen) On the equations  $Ax = q$  and  $SX - XT = Q, J$ . *Funct. Anal.* **77** (1988), no. 2, 352-363. (R. J. Nagel) **89f:47065** 47D05 (47A35, 47A62)
- Lin, Cheng De** Quand l'inégalité de Kunita-Watanabe est-elle une égalité? [When is the Kunita-Watanabe inequality an equality?] *Séminaire de Probabilités, XX, 1984/85*, 40-47, *Lecture Notes in Math.*, 1204, Springer, Berlin-New York, 1986. (P. E. Kopp) **89g:60178** 60H05 (60G44, 60G48)
- L'approximation UCP et la continuité de certaines intégrales stochastiques dépendant d'un paramètre. [UCP approximation and the continuity of certain stochastic integrals depending on one parameter] *Séminaire de Probabilités, XXI, 1985/86*, 434-446, *Lecture Notes in Math.*, 1247, Springer, Berlin-New York, 1987. (Toshio Yamada) **89j:60072** 60H05
- Optimal control for a class of stochastic systems with partial observation. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* **26** (1987), no. 6, 651-658. (Winston T. Lin) **89c:93224** 93E20 (93B07)
- Lin, Chia Chiao** (with Bertin, G.; Lowe, S. A.; Thurstans, R. P.) Modal approach to the morphology of spiral galaxies. I. Basic structure and astrophysical viability. *Astrophys. J.* **338** (1989), no. 1, part 1, 78-103. (Not in MR) **85A05** (76E20)
- (with Bertin, G.; Lowe, S. A.; Thurstans, R. P.) Modal approach to the morphology of spiral galaxies. II. Dynamical mechanisms. *Astrophys. J.* **338** (1989), no. 1, part 1, 104-120. (Not in MR) **85A05** (76E20)
- see also Applied mathematics, fluid mechanics, astrophysics, **89f:76002**
- Lin, Chien-Hua Mike** (with Chung, Chia-Shin) An  $O(T^2)$  algorithm for the  $NI/G/NI/ND$  capacitated lot size problem. *Management Sci.* **34** (1988), no. 3, 420-426. (Summary) **89a:90065** 90B30
- Lin, Chih Min** (with Ch'en, Po Hsien) Multipurpose adaptive control in deterministic multivariable systems. *Proc. IEE-D* **135** (1988), no. 4, 282-288. (Not in MR) **93C40** (93B50, 93B55)
- Lin, Chin Ts'ai** A note on some fundamental partial integral inequality. *Tamkang J. Math.* **18** (1987), no. 2, 91-101. (D. Y. Kasture) **89c:26032** 26D10
- Lin, Chin-Yuan** (with Goldstein, Jerome A.) Singular nonlinear parabolic boundary value problems in one space dimension. *J. Differential Equations* **68** (1987), no. 3, 429-443. (Joachim Naumann) **89c:35079** 35K65 (35K60, 47H20)
- Lin, Chan Tu** A supplement concerning singularity of bordered matrices. (Chinese. English summary) *J. Math. Res. Exposition* **8** (1988), no. 2, 175-178. (Shao Kuan Li) **89h:15008** 15A09 (15A15)
- Lin, Chung Ch'è** (with Chiang, Hsing Ya) Adaptive model following control with variable structure control system. (Chinese summary) *J. Chinese Inst. Engrs.* **11** (1988), no. 1, 65-72. (Not in MR) **93B50**
- Lin, Chung Yuan** see Lin, Ts'ung Yüan
- Lin, Cuihan** see Lin, Cai Han
- Lin, Cuo Yun** The Kuhn-Tucker saddle point theorem for multi-objective functions. (Chinese) *Chinese J. Oper. Res.* **2** (1983), no. 2, 57-58. (Not in MR) **90C31**
- Self-duality of multi-objective mathematical programming with closed convex cone constraints. (Chinese) *Chinese J. Oper. Res.* **5** (1986), no. 1, 63-64. (Not in MR) **90C31**
- Lin, D. N. C.** (with Papaloizou, J. C. B.) On the pulsational overstability in narrowly confined viscous rings. *Astrophys. J.* **331** (1988), no. 2, part 1, 838-860. (Summary) **89c:58007** 85A30
- Lin, Der-Jei** (with Bose, Bella) Theory and design of  $t$ -error correcting and  $d(d > t)$ -unidirectional error detecting ( $t$ -EC  $d$ -UED) codes. *IEEE Trans. Comput.* **37** (1988), no. 4, 433-439. (Dali Tao) **89g:94042** 94B99
- Lin, En Bing** Hadronic quantization. *Hadronic J.* **11** (1988), no. 2, 81-83. (Summary) **89j:58119** 58F40 (58F05, 58F06, 81D07)
- (with Wong, Bun) A note on pseudoconvexity and proper holomorphic mappings. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 646-650. (Mathias Peternell) **89h:32034** 32H35 (32F15)
- Lin, Fa Xing** The existence of almost-automorphic solutions of almost-automorphic systems. *Ann. Differential Equations* **3** (1987), no. 3, 329-349. (Peter Smith) **89d:34067** 34C11
- Exponential dichotomy of triangular system. *Ann. Differential Equations* **3** (1987), no. 4, 421-444. (Vincent Soltés) **89f:34051** 34C11 (34A30)
- Structurally stable linear system and exponential dichotomies. *Ann. Differential Equations* **4** (1988), no. 4, 425-450. (Noel G. Lloyd) **89k:34084** 34D30 (34A30, 34C99, 58F10)
- Lin, Fang Hua** Behaviour of nonparametric solutions and free boundary regularity. *Miniconference on geometry and partial differential equations, 2* (Canberra, 1986), 96-116, *Proc. Centre Math. Anal. Austral. Nat. Univ.*, 12, Austral. Nat. Univ., Canberra, 1987. (Friedrich Sauvigny) **89c:35047** 35J60 (35R35, 49F20, 53A10)
- A remark on the map  $x/|x|$ . (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 12, 529-531. (John C. Wood) **89b:58056** 58E20 (53C42, 81E99)
- Uniqueness and nonuniqueness of the Plateau problem. *Indiana Univ. Math. J.* **36** (1987), no. 4, 843-848. (Themistocles M. Rassias) **89c:49042** 49F10 (58E12)
- Plateau's problem for  $H$ -convex curves. *Manuscripta Math.* **58** (1987), no. 4, 497-511. (João Lucas Marques Barbosa) **89g:53007** 53A10 (49F10)
- (with Avellaneda, Marco) Fonctions quasi affines et minimisation de  $\int |\nabla u|^p$ . (English summary) [Null-Lagrangians and the minimization of  $\int |\nabla u|^p$ ] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 8, 355-358. (Helmut Kaul) **89c:58036** 58E20 (49A21)
- Boundary behavior of solutions of area-type problems. *Comm. Pure Appl. Math.* **41** (1988), no. 4, 497-502. (Jiong Min Yong) **89g:49013** 49A29 (35R35, 49F22)
- Existence and regularity of embedded disks. *J. Differential Geom.* **27** (1988), no. 3, 553-560. (Friedrich Sauvigny) **89d:49047** 49F10 (49F20)
- Lin, Feng** (with Wonham, W. M.) On observability of discrete-event systems. *Inform. Sci.* **44** (1988), no. 3, 173-198. (A. S. C. Sinha) **89g:93008** 93B07 (93C55)
- (with Wonham, W. M.) Decentralized supervisory control of discrete-event systems. *Inform. Sci.* **44** (1988), no. 3, 199-224. (I. Meznik) **89g:93066** 93C99 (68Q45, 93C55)
- (with Vaz, A. F.; Wonham, W. M.) Supervisor specification and synthesis for discrete event systems. *Internat. J. Control* **48** (1988), no. 1, 321-332. (Not in MR) **93C30** (93B50)
- Lin, Fu Rong** (with Chang, Shi Wei) Extension of linearly independent systems of vectors. (Chinese) *Math. Practice Theory* **1987**, no. 4, 25-29. (Yik-Hoi Au-Yeung) **89c:15011** 15A15 (15A03, 65F30, 65K05)
- Lin, G. D.** see Lin, Kuo Tung
- Lin, Guo Ning** (with Zhang, Fu Ji; Meng, Ji Xiang) The characteristic polynomials of digraphs formed by some unary operators. (Chinese summary) *J. Xinjiang Univ. Natur. Sci.* **4** (1987), no. 2, 1-6. (M. Doob) **89c:05143** 05C50 (05C20)
- (with Zhang, Fu Ji; Zheng, Mao Lin) An algorithm for generating all perfect matchings of a graph. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **4** (1987), no. 3, 1-8. (Summary) **89d:05145** 05C70 (68R10)
- (with Zhang, Fu Ji) Mappings of eigenvectors of digraphs and a theorem on  $s$ -factors. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoiensis* **27** (1988), no. 1, 41-45. (Tian Xing Yao) **89g:05052** 05C20 (05C50, 05C70)



- (with Li, Xue Liang) On integral trees problems. *Kexue Tongbao (English Ed.)* 33 (1988), no. 10, 802–806. (R. E. Pippert) **89k:05029** 05C05
- Lin, Gwo Dong** see **Lin, Kuo Tung**
- Lin, Ho-Ming** (with Willson, Alan N., Jr.) Median filters with adaptive length. *IEEE Trans. Circuits and Systems* 35 (1988), no. 6, 675–690. (Not in MR) **94A12**
- Lin, Hsien Hsiang** (with Hsio, Tê Hsiu) Optimal control with responses and control force constraints. (Chinese summary) *J. Chinese Inst. Engrs.* 11 (1988), no. 5, 533–541. (Summary) **89j:93062** 93C15 (73K99, 93C75)
- Lin, Hua Xin** Fundamental approximate identities and quasi-multipliers of simple AF  $C^*$ -algebras. *J. Funct. Anal.* 79 (1988), no. 1, 32–43. (Klaus Thomsen) **89i:46067** 46L05
- Ideals of multiplier algebras of simple AF  $C^*$ -algebras. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 239–244. (Klaus Thomsen) **89j:46065** 46L05 (46M10)
- The structure of quasimultipliers of  $C^*$ -algebras. *Trans. Amer. Math. Soc.* 315 (1989), no. 1, 147–172. (Sze-Kai Tsui) **89m:46098** 46L05
- Lin, Hua Yi** (with Wu, Jian An; Wu, Le Guang) The existence of plane partitions with given row sum and column sum restrictions. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 6, suppl., 27–32. (Hugo S. Sun) **89j:11101** 11P68 (05A17)
- Lin, Hui Min** Relative completeness and specification of abstract data types. *Sci. Sinica Ser. A* 31 (1988), no. 8, 1002–1010. (W. Wechler) **89k:68020** 68P05 (68Q65)
- Lin, J. T.** see **Lin, Jian-Tong**
- Lin, James P.** The role of the Steenrod algebra in the mod 2 cohomology of a finite  $H$ -space. *Algebraic topology and algebraic K-theory* (Princeton, N.J., 1983), 206–227, *Ann. of Math. Stud.*, 113, Princeton Univ. Press, Princeton, NJ, 1987. (N. J. Kuhn) **89b:55010** 55P45 (55S10)
- The vanishing of Steenrod squares on  $H$ -spaces. *Comment. Math. Helv.* 63 (1988), no. 1, 21–47. (Charles A. McGibbon) **89d:55023** 55P45 (55S10, 57T10)
- The rational cohomology of finite loop spaces. *J. Pure Appl. Algebra* 53 (1988), no. 1–2, 71–73. (N. J. Kuhn) **89j:55011** 55P45 (55P35, 57T25)
- Lin, Jian Cheng** Inverse scattering for the mixed spectrum of  $\delta$  potentials. *J. Math. Phys.* 29 (1988), no. 10, 2254–2255. (Summary) **89b:81025** 81C05
- Lin, Jian Nian** (with Lü, Yong Zai) Decomposition algorithm of dynamic programming for large-scale time-delay systems. *Internat. J. Systems Sci.* 19 (1988), no. 9, 1719–1729. (Fu En Zhang) **89b:49027** 49D27 (34K35, 90C39, 93A15, 93C55)
- Lin, Jian-Tong** (with Fix, G. J.) Numerical simulations of nonlinear phase transitions. I. The isotropic case. *Nonlinear Anal.* 12 (1988), no. 8, 811–823. (From the introduction) **89b:80009** 80A20 (65P05)
- The numerical analysis of a phase field model in moving boundary problems. *SIAM J. Numer. Anal.* 25 (1988), no. 5, 1015–1031. (P. Rochus) **89b:65161** 65N10 (80A20)
- Lin, Jie** (with Hendawey, Z. M.; Roberts, P. D.) Extension of integrated system optimization and parameter estimation to hierarchical control of steady state systems with output-dependent constraints. *Internat. J. Control* 47 (1988), no. 2, 413–431. (P. Vondráček) **89d:93003** 93A13 (93B30, 93B40)
- (with Hendawey, Z. M.; Roberts, P. D.) New model-based double-loop iterative strategy for integrated system optimization and parameter estimation of large-scale industrial processes. *Internat. J. Control* 47 (1988), no. 3, 753–773. (Not in MR) **93A15** (93B30, 93B40)
- Lin, Jin Kun** The second periodicity elements of stable homotopy groups of spheres. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 22, 1685–1687. (Not in MR) **55Q40**
- Lin, Jing Yue** (with Yang, Zi Hou) Optimal control problems for singular systems. *Internat. J. Control* 47 (1988), no. 6, 1915–1924. (J. Warga) **89c:93133** 93C30 (49A34, 49B34)
- (with Yang, Zi Hou) Existence and uniqueness of solutions for nonlinear singular (descriptor) systems. *Internat. J. Systems Sci.* 19 (1988), no. 11, 2179–2184. (Anthony D. Osborne) **89i:34004** 34A08
- Lin, Jian Yuan** Approximating the normal tail probability and its inverse for use on a pocket calculator. *J. Roy. Statist. Soc. Ser. C* 38 (1989), no. 1, 69–70. (Not in MR) **62E15**
- Lin, Jong-Lick** see **Lin, Chung Ch'ê**
- Lin, K'ê Ying** Spiral self-avoiding walks and loops. *Internat. J. Modern Phys. B* 1 (1987), no. 5–6, 1249–1264. (Summary) **89b:82054** 82A41
- (with Wu, F. Y.) Ising model on the union jack lattice as a free fermion model. *J. Phys. A* 20 (1987), no. 16, 5737–5740. (Summary) **89b:82126a** 82A68 (82A69)
- Spontaneous magnetization of the Ising model on a 4-8 lattice. *J. Statist. Phys.* 49 (1987), no. 1–2, 269–279. (Paul A. Pearce) **89f:82084** 82A68 (82A67)
- (with Wang, Sun Chong) Spontaneous magnetization of the Ising model on a Union Jack lattice. *Phys. Lett. A* 125 (1987), no. 1, 3–4. (H. N. V. Temperley) **89b:82112** 82A68 (82A25)
- Ising model on a checkerboard lattice in a magnetic field  $H = \frac{1}{2}j\pi kT$ . *J. Phys. A* 21 (1988), no. 4, 1055–1059. (Summary) **89d:82133** 82A68 (82A25)
- (with Wu, F. Y.) Corrigendum: "Ising model on the union jack lattice as a free fermion model". *J. Phys. A* 21 (1988), no. 7, 1739. (Editors) **89b:82126b** 82A68 (82A69)
- (with Chang, S. J.) Rigorous results for the number of convex polygons on the square and honeycomb lattices. *J. Phys. A* 21 (1988), no. 11, 2635–2642. (Ira Gessel) **89i:05022** 05A15 (05B50, 52A43, 82A67)
- (with Ma, Shang-keng) Spontaneous magnetization of the Ising model on a layered square lattice. *J. Statist. Phys.* 51 (1988), no. 3–4, 491–499. (Summary) **89d:82134** 82A68
- Spontaneous magnetization of the Ising model on a 4-8 lattice. *Phys. Lett. A* 128 (1988), no. 1–2, 35–38. (Peter J. Forrester) **89c:82016** 82A68
- (with Wang, Sun Chong) Spontaneous magnetization of the Ising model on the Union Jack and 4-6 lattices. *Phys. Lett. A* 128 (1988), no. 3–4, 143–145. (Paul A. Pearce) **89d:82117** 82A67 (82A68)
- (with Wu, F. Y.) Spin models with multiple disorder points. *Phys. Lett. A* 130 (1988), no. 6–7, 335–337. (Summary) **89d:82147** 82A68 (82A25)
- Lin, Kuan Pin** (with Perry, Stan) A logic programming approach to revealed preference theory. *Comput. Sci. Econom. Management* 1 (1988), no. 2, 97–111. (Summary) **89j:90011** 90A06 (68T25)
- Revealed preference theory and logic programming. *Econom. Comput. Econom. Cybernet. Stud. Res.* 23 (1988), no. 2, 65–73. (Not in MR) **90A06**
- Lin, Kuo Tung** (with Hwang, Jun Shung) Nonlinear approximation and moment problem. *Nonlinear analysis*, 337–353, *World Sci. Publishing, Singapore*, 1987. (Dietrich Braess) **89c:41020** 41A30 (44A60)
- (with Chan, F. Y.; Chan, Lai Kow) On consecutive  $k$ -out-of- $n$ :  $F$  systems. *European J. Oper. Res.* 36 (1988), no. 2, 207–216. (Summary) **89c:90109** 90B25
- Characterizations of distributions via relationships between two moments of order statistics. *J. Statist. Plann. Inference* 19 (1988), no. 1, 73–80. (Peter Flusser) **89c:62017** 62E10 (62G30)
- Lin, Lai Ch'ê** (with Lai, Han Ch'ing) Moreau-Rockafellar type theorem for convex set functions. *J. Math. Anal. Appl.* 132 (1988), no. 2, 558–571. (S. Zlobec) **89j:90239** 90C48 (28B20)
- Lin, Lai** Lie algebras  $K(\mathcal{F}, \mu_i)$  of Cartan type of characteristic  $p = 2$  and their subalgebras. (Chinese. English summary) *J. East China Norm. Univ. Natur. Sci. Ed.* 1988, no. 1, 16–23. (Yong Zheng Zhang) **89k:17033** 17B50
- Lin, Li Chang** (with Yuan, Ching) An external linearization approach to the control of industrial robots with flexible joints. (Chinese summary) *J. Chinese Inst. Engrs.* 12 (1989), no. 1, 35–45. (Not in MR) **93C75** (70B15, 70Q05)
- Lin, Liang Ying** (with Jen, Bo Cho) A procedure for the selection of populations with means falling within certain normal limits. *Soochow J. Math.* 13 (1987), no. 2, 179–195. (Mir Masoom Ali) **89i:62034** 62F07
- Lin, Liang Yu** Boundary behaviour for integrals of Cauchy type on a closed piecewise smooth manifold. (Chinese) *Acta Math. Sinica* 31 (1988), no. 4, 547–557. (Sheng Gong) **89m:32006** 32A25 (32A40)
- Lin, Lih-Chang** see **Lin, Li Chang**
- Lin, Long Wei** Vacuum states and equidistribution of the random sequence for Glimm's scheme. *International workshop on applied differential equations* (Beijing, 1985), 310–322, *World Sci. Publishing, Singapore*, 1986. (C. Bardos) **89b:35201** 35L65
- On the vacuum state for the equations of isentropic gas dynamics. *J. Math. Anal. Appl.* 121 (1987), no. 2, 406–425. (Denis Serre) **89k:35220** 35Q20 (35L65, 65M99, 76N15)
- Lin, Lamp-Ying** see **Lin, Liang Ying**
- Lin, Mi** On the solvability of some Monge-Ampère equations. *Appl. Anal.* 27 (1988), no. 4, 315–324. (Dennis M. DeTurck) **89f:35075** 35J60 (53C45)
- Lin, Michael** (with Krenzel, Ulrich) An integral representation of disjointly additive order preserving operators in  $L_1$ . *Stochastic Anal. Appl.* 6 (1988), no. 3, 289–304. (M. A. Akcoglu) **89j:47038** 47H99 (47B38, 47B55, 82A70)
- Lin, P. M.** Corrections to: "Topological realization of transfer functions in canonical forms" [IEEE Trans. Automat. Control 30 (1985), no. 11, 1104–1106; MR 86m:93019]. *IEEE Trans. Automat. Control* 33 (1988), no. 3, 319. (Editors) **89c:93015** 93B15 (93B10)
- (with Zhao, Jiu) Direct synthesis of constant resistance one-port networks. *IEEE Trans. Circuits and Systems* 36 (1989), no. 1, 89–95. (András Recki) **89k:94098** 94C05
- Lin, Pei-Ke** A uniformly asymptotically regular mapping without fixed points. *Canad. Math. Bull.* 30 (1987), no. 4, 481–483. (Simeon Reich) **89a:47080** 47H10
- A note on multiplicatively prime ideals of operators. *Proc. Amer. Math. Soc.* 101 (1987), no. 3, 462–464. (Summary) **89c:47066** 47D25
- $k$ -uniform rotundity is equivalent to  $k$ -uniform convexity. *J. Math. Anal. Appl.* 132 (1988), no. 2, 349–355. (John R. Giles) **89i:46018** 46B20
- (with Lin, Bor-Luh; Troyanski, S. L.) Characterizations of denting points. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 526–528. (M. I. Kadets) **89c:46016** 46B20 (52A07)
- (with Jamison, J. E.) A result on Hermitian operators. *Glasgow Math. J.* 31 (1989), no. 1, 71–72. (From the introduction) **89m:47017** 47B15 (46C99)
- Lin, Pei Xiong** The construction of global continuous solutions for the isentropic gas dynamics equations. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 2, 177–186. (David C. Arney) **89a:65190** 65P05 (76N15)
- Lin, Peng Cheng** (with Jiang, Ben Xian) A singular perturbation problem for periodic boundary differential equation. *Appl. Math. Mech. (English Ed.)* 8 (1987), no. 10, 929–937; translated from *Appl. Math. Mech.* 8 (1987), no. 10, 877–884 (*Chinese. English summary*). (P. F. Hsieh) **89c:65087** 65L10 (34A25, 34B05, 34C25, 34E15)
- (with Sun, Guang Fu) A class of incompletely exponentially fitted difference schemes for a singular perturbation problem. *Appl. Math. Mech. (English Ed.)* 8 (1987), no. 12, 1133–1143; translated from *Appl. Math. Mech.* 8 (1987), no. 12, 1065–1074 (*Chinese. English summary*). (E. G. D'yakov) **89i:65076** 65L10
- Lin, Pin Yen** De Moivre-type identities for the Tribonacci numbers. *Fibonacci Quart.* 26 (1988), no. 2, 131–134. (A. A. Mullin) **89i:11025** 11B39 (11B37)
- Lin, Ping Fan** (with Li, Zai Gen; Liu, Yong Qing) The hybrid self-tuning PID regulator and its application to pH control. (Chinese summary) *Control Theory Appl.* 5 (1988), no. 2, 117–122. (Han Fu Chen) **89i:93075** 93C40
- Lin, Qì Ning** (with Luo, Zhong Zhou) Four-stage cyclic finite queuing systems. (Chinese. English summary) *J. Systems Engrg.* 3 (1988), no. 1, 40–55. (Not in MR) **90B22**
- Lin, Qing** Cyclicity of Cowen-Douglas operators. *Acta Math. Sinica (N.S.)* 4 (1988), no. 3, 284–288. (T. T. West) **89k:47018** 47A53 (47B37)
- Operator theoretical realization of some geometric notions. *Trans. Amer. Math. Soc.* 305 (1988), no. 1, 353–367. (D. N. Clark) **89b:47013** 47A45 (46M99, 47B35, 58B99)
- Lin, Qun** (with Lü, Tao; Zhou, Guo Fu) High order difference methods for the biharmonic equation. *Acta Math. Sci. (English Ed.)* 6 (1986), no. 2, 223–230. (Neil M. Wigley) **89a:65148** 65N05
- (with Xie, Rui Feng) Error expansions for finite element approximations and their applications. *Numerical methods for partial differential equations* (Shanghai, 1987), 98–112, *Lecture Notes in Math.*, 1297, Springer, Berlin-New York, 1987. (Reinhard Scholz) **89b:65272** 65N30
- Convexity of planar rational Bézier curves. (Chinese. English summary) *Acta Sci. Natur. Univ. Amoi.* 26 (1987), no. 6, 666–671. (Zuhe Shen) **89f:65026** 65D15
- Lin, S. C.** see **Lin, Charles S. C.**
- Lin, S. H.** see **Lin, Shui Hsiu**
- Lin, S. P.** see **Lin, Sung P.**
- Lin, Shen** Analysis of topological spaces via the boundary operator. (Chinese. English summary) *Zhejiang Daxue Xuebao* 22 (1988), no. 3, 146–155. (Summary) **89m:54012** 54A99
- Lin, Shi Li** Several classes of curved surfaces in taxicab geometry. (Chinese. English summary) *J. South China Normal Univ. Natur. Sci. Ed.* 1986, no. 1, 11–15. (Lu Yang) **89d:51005** 51B20
- Lin, Shiaocong** see **Lin, Xiao Dong**
- Lin, Shigiang** see **Liu, Shi Qiang**

- Lin, Shlow Nan** (with Shie, Yea-Chin) On standard fuzzy numbers operations and applications. *Tamsui Oxford J. Management Sci.* 3 (1987), 1-51. (Summary) **89j:90035** 90A10 (03E72, 90C10)
- Lin, Shou** A study of pseudobases. *Questions Answers Gen. Topology* 6 (1988), no. 1, 81-97. (Heikki J. K. Junnila) **89j:54031** 54E20
- On a problem of K. Tamano. *Questions Answers Gen. Topology* 6 (1988), no. 1, 99-102. (J. M. Aarts) **89e:54025** 54C10 (54B10)
- Mapping theorems on R-spaces. *Topology Appl.* 30 (1988), no. 2, 159-164. (Gary Gruenhage) **89k:54063** 54E18 (54E20)
- Lin, Shu** (with Kasami, Tadao; Fujiwara, Tohru; Takata, Toyoo) A cascaded coding scheme for error control and its performance analysis. *IEEE Trans. Inform. Theory* 34 (1988), no. 3, 448-462. (J. A. Thiong-Ly) **89k:94073** 94B35 (94B05, 94B70)
- (with Kasami, Tadao) The binary weight distribution of the extended  $(2^m, 2^m - 4)$  code of the Reed-Solomon code over  $GF(2^m)$  with generator polynomial  $(x - \alpha)(x - \alpha^2)(x - \alpha^3)$ . *Linear Algebra Appl.* 98 (1988), 291-307. (Summary) **89k:93016** 93B05 (11T71, 93B15)
- Lin, Shui Hsiao** (with Kuo, Tê Shêng) Comments on: "A simple sufficient condition for the stability of linear discrete time systems" [Internat. J. Control 35 (1982), no. 6, 1073-1080; MR 84a:93053a] by C. S. Berger. *Internat. J. Control* 48 (1988), no. 2, 831. (Summary) **89e:93145** 93C55 (93C40)
- (with Chuang, Yao T'ang; Feng, I Kang; Kuo, Tê Shêng) Dynamic interval systems analysis and design. *Internat. J. Control* 48 (1988), no. 5, 1807-1818. (Yun Qing Shi) **89m:93074** 93D99 (93B55, 93B60)
- Lin, Su Rong** (with Lin, Zong Chi) Singular perturbations of nonlinear Robin boundary value problems with accompanying boundary perturbations. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 22, 1681-1684. (Not in MR) **34E15** (34B15)
- Lin, Sung P.** (with Chen, H. B.; Tobak, M.) Nonlinear stability of a reversed flow over a flat plate with suction. *Applied mathematics, fluid mechanics, astrophysics* (Cambridge, MA, 1987), 164-167, *World Sci. Publishing, Singapore*, 1988. (see **89f:76002**) 76E30
- Lin, Ta Feng** Decomposition of  $L^2$ -functionals on Hilbert spaces with Poisson measure. *Bull. Inst. Math. Acad. Sinica* 15 (1987), no. 4, 375-383. (G. A. Skorobogatov) **89i:60007** 60B05
- Lin, Tao** (with Chua, Leon O.) Chaos in digital filters. *IEEE Trans. Circuits and Systems* 35 (1988), no. 6, 648-658. (François Aribaud) **89j:58076** 58F13 (39A10, 54H20, 94C05)
- Lin, Teng-Pin** (with Wang, Shun Hsiang) Robust stabilization of uncertain time-delay systems with sampled feedback. *Internat. J. Systems Sci.* 19 (1988), no. 3, 399-404. (Richard M. Lewis) **89h:93048** 93D99 (34K35, 93B35)
- Lin, Tsong Ming** (with Chiu, Huan Neng) An optimal lot-sizing model for multi-stage series/assembly systems. *Comput. Oper. Res.* 15 (1988), no. 5, 403-415. (Summary) **89h:90118** 90B30 (90B05)
- Lin, Ts'ung Yüan** Identities arising from theta transformation formula. *Chinese J. Math.* 15 (1987), no. 4, 227-230. (V. Z. Enol'skii) **89g:14034** 14K25
- Dedekind sums—an algebraic approach. *Chinese J. Math.* 16 (1988), no. 1, 11-27. (R. Sitaramachandra Rao) **89k:11030** 11F20 (11A55)
- Lin, Tzu-Chu** (with Yen, Ch'i Lin) Applications of the proximity map to fixed point theorems in Hilbert space. *J. Approx. Theory* 52 (1988), no. 2, 141-148. (Hideaki Kaneko) **89h:47089** 47H10
- Smoothness results of single and double layer solutions of the Helmholtz equations. *J. Integral Equations Appl.* 1 (1988), no. 1, 83-121. (R. C. MacCamy) **89i:35037** 35J05 (31B25)
- Approximation theorems and fixed point theorems in cones. *Proc. Amer. Math. Soc.* 102 (1988), no. 3, 502-506. (S. P. Singh) **89h:47080** 47H10
- Random approximations and random fixed point theorems for non-self-maps. *Proc. Amer. Math. Soc.* 103 (1988), no. 4, 1129-1135. (Bruce Watson) **89i:47109** 47H10 (47H09, 60H25)
- Lin, W. T.** see **Lin, Winston T.**
- Lin, Wan** The weak normalities in finite supersolvable groups. (Italian summary) *Boll. Un. Mat. Ital. A* (7) 2 (1988), no. 2, 189-193. (A. Scarselli) **89g:20037** 20D10
- Lin, Wei<sup>2</sup>** (with Liu, Mei Hua; Huang, Yi Fu) A decentralized self-tuning controller with gravity compensation for robotic manipulators. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 4, part II, 141-146. (Not in MR) 93C75 (93C40)
- (with Liu, Mei Hua) Multivariable adaptive control with arbitrary dimension of input and output. (Chinese. English summary) *Control Theory Appl.* 5 (1988), no. 1, 33-41. (Jifeng Zhang) **89i:93076** 93C40 (93C35, 93E20)
- Lin, Wen Hsiung** (with Cohen, Ralph L.; Mahowald, Mark E.) The Adams spectral sequence of the real projective spaces. *Pacific J. Math.* 134 (1988), no. 1, 27-55. (Vincent Giambalvo) **89f:55019** 55T15 (55P42, 55Q10)
- Lin, Wen Wei** The computation of the Kronecker canonical form of an arbitrary symmetric pencil. *Linear Algebra Appl.* 103 (1988), 41-71. (Lajos László) **89k:15017** 15A21 (15A22)
- Lin, Winston T.** see **Forster, Bruce A.** **89h:90066** and **Hartl, Richard F.** **89h:90067**
- Lin, Xiao-Biao** (with Hale, Jack K.) Symbolic dynamics and nonlinear semiflows. *Ann. Mat. Pura Appl.* (4) 144 (1986), 229-259. (A. Vanderbauwhede) **89g:58130** 58F13
- Another brief proof of the Sylvester theorem. *Amer. Math. Monthly* 95 (1988), no. 10, 932-933. (G. D. Chakerian) **89m:52012** 52A37
- (with Hale, Jack K.; Raugel, Genevieve) Upper semicontinuity of attractors for approximations of semigroups and partial differential equations. *Math. Comp.* 50 (1988), no. 181, 89-123. (Tie Hu Qin) **89a:47093** 47H20 (35K55, 35K70, 65N30)
- Lin, Xiao Dong** Time-varying vector fields on a compact Riemannian manifold. I. A Chinese summary appears in Chinese Ann. Math. Ser. A 9 (1988), no. 1, 103. *Chinese Ann. Math. Ser. B* 9 (1988), no. 1, 95-106. (Helmut Rüssmann) **89g:58166** 58F15
- Lin, Xie** Some mappings on spaces of compact subsets. *Questions Answers Gen. Topology* 5 (1987), no. 2, 261-269. (J. M. Aarts) **89e:54018** 54B20 (54C10, 54C60)
- Lin, Y. C.** (with Yu, G. H.) A method of selecting subset autoregressive time series models. *Computer methods and water resources, Vol. 3* (Rabat, 1988), 219-230, *Comput. Mech., Southampton*, 1988. (see **89g:60036**) 62M10
- Lin, Y. F.** (with Ratti, J. S.) On anti-commutative semirings. *Internat. J. Math. Math. Sci.* 12 (1989), no. 1, 205-207. (J. R. Mosher) **89j:16056** 16A78
- Lin, Y. K.** (with Cai, Guo Qiang) On exact stationary solutions of equivalent nonlinear stochastic systems. *Internat. J. Non-Linear Mech.* 23 (1988), no. 4, 315-325. (T. T. Soong) **89i:70038** 70L05 (60H99)
- (with Cai, Guo Qiang) Exact stationary response solution for second order nonlinear systems under parametric and external white noise excitations. II. *Trans. ASME Ser. E J. Appl. Mech.* 55 (1988), no. 3, 702-705. (Summary) **89g:70025** 70L05 (34F05, 70K99)
- Lin, Ya Xiong** (with Zhao, Yong Chang) A new algorithm for the directed Chinese postman problem. *Comput. Oper. Res.* 15 (1988), no. 6, 577-584. (Summary) **89j:90099** 90B10 (90C08)
- Lin, Yan-Chyuan** see **Lin, Yen Ch'uan**
- Lin, Yanping** (with Cannon, John R.) Determination of a parameter  $p(t)$  in some quasilinear parabolic differential equations. *Inverse Problems* 4 (1988), no. 1, 35-45. (Dang Dinh Ang) **89h:35333** 35R30 (35K55)
- A mixed type boundary problem describing the propagation of disturbances in viscous media. I. Weak solutions for quasi-linear equations. *J. Math. Anal. Appl.* 135 (1988), no. 2, 644-653. (Michael Renardy) **89j:35074** 35K60 (35Q20, 73F15)
- Lin, Yen Ch'uan** (with Chang, Chên Hua) On the abstraction of linear duality. *Chinese J. Math.* 15 (1987), no. 4, 207-213. (Rainer Burkard) **89j:90269** 90C48 (49A55)
- Lin, Yi<sup>2</sup>** The regularization problem for singular integral equations with Carleman displacements. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 5, 139-146. (Jian Ke Lu) **89g:45012** 45E05
- Solving a class of nonlinear singular integral equations with displacement by using the implicit function theorem. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 6, suppl., 59-64. (Zai-Feng Song) **89i:45009** 45G05
- Lin, Yi<sup>3</sup>** (with Ma, Yonghao) Some properties of linked time systems. *Internat. J. Gen. Systems* 13 (1987), no. 2, 125-134. (P. Bertrand) **89g:93012** 93A10 (93A05, 93B05)
- (with Ma, Yonghao) Remarks on analogy between systems. *Internat. J. Gen. Systems* 13 (1987), no. 2, 135-141. (Jerzy Jaron) **89h:93004** 93A10 (93A05)
- An application of systems analysis in sociology. *Cybernet. Systems* 19 (1988), no. 3, 267-278. (Guy Jumarie) **89m:92052** 92A20 (93A10)
- Periodic linked time systems. *Internat. J. Systems Sci.* 19 (1988), no. 7, 1299-1310. (M. Fabrizio) **89e:93003** 93A05 (49D50, 93C30)
- (with Ma, Yonghao) Similarity between systems and direct sum decomposition. *Internat. J. Systems Sci.* 19 (1988), no. 10, 1941-1953. (Pradeep Misra) **89k:93007** 93A10 (93B05)
- Can the world be studied in the viewpoint of systems?? Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 738-742. (see **89d:00007**) 93A10 (90A30)
- Lin, Yi Xing** Relations between the zero-one law of the convergence of quasicharacter sequences and ergodic measures. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B 9 (1988), no. 1, 147. *Chinese Ann. Math. Ser. A* 8 (1987), no. 6, 664-667. (Zuo Ling Zhou) **89f:28034** 28C15 (28D99, 60B05)
- Lin, Yi Xun** Harper's method for the bandwidth problem for graphs. (Chinese) *Chinese J. Oper. Res.* 2 (1983), no. 2, 11-17. (Shaocen Han) **89i:05051** 05C35
- Discrete location problems. (Chinese) *Chinese J. Oper. Res.* 3 (1984), no. 1, 7-13. (Not in MR) 90B10
- Lin, Ying Ju** (with Zhuang, Jian Nan) An implemented version of a quasi-Newton type method for nonsmooth optimization. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* 5 (1988), no. 1, 70-74. (Kang Hoh Hua) **89m:65064** 65K05 (90C30)
- Lin, You Hao** (with Feng, De Xing; Huang, Hou Ben) Stability of nonlinear age-dependent models of mutualism. (Chinese. English summary) *J. Biomath.* 3 (1988), no. 1, 57-61. (Summary) **89d:92060** 92A15
- Lin, Yu Cai** Relation word problems. *J. Math. Res. Exposition* 7 (1987), no. 2, 311-316. (From the introduction) **89k:03051** 03D40 (20F10, 20M05)
- Lin, Yu-Hwan** (with Wang, Shêng Tê; Kuo, Tê Shêng; Hsü, Chên Fa; Chuang, Yao T'ang) Robust control design for linear systems with uncertain parameters. *Internat. J. Control* 46 (1987), no. 5, 1557-1567. (Mikolaj Buslowicz) **89a:93028** 93B50 (49D37, 93C05, 93C40)
- Lin, Yuchai** see **Lin, Yu Cai**
- Lin, Yun** On a paradox in general linear programming. (Chinese) *Chinese J. Oper. Res.* 5 (1986), no. 1, 79-80, 8. (Not in MR) 90C05
- Lin, Yuyi** (with Pisano, Albert P.) The differential geometry of the general helix as applied to mechanical springs. *Trans. ASME Ser. E J. Appl. Mech.* 55 (1988), no. 4, 831-836. (Summary) **89j:73082** 73K99 (53A15)
- Lin, Zhen Sheng** A further discussion of spectra of almost periodic linear systems. (Chinese) Topics in ordinary differential equations (Nanjing, 1986). *Nanjing Daxue Xuebao Shuxue Bannian Kan* 1987, 99-114. (Zhaojun Liang) **89m:34051** 34C27 (34A30)
- Lin, Zheng Yan** Convergence of integrals of a stationary weakly correlated process. (Chinese. English summary) *J. Math. Res. Exposition* 7 (1987), no. 4, 661-664. (Summary) **89a:60066** 60F05 (60F17, 60G99)
- On Csörgő-Révész's increments of sums of non-i.i.d. random variables. *Sci. Sinica Ser. A* 30 (1987), no. 9, 921-931. (M. Csörgő) **89i:60069** 60F15 (60G50)
- (with Lu, Chuan Rong) Strong approximations for partial sums of independent and dependent random variables. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* 4 (1988), no. 1, 71-84. (Summary) **89e:60067** 60F15 (60G50, 60J65)
- On increments of sums of independent nonidentically distributed random variables. *Sci. Sinica Ser. A* 31 (1988), no. 8, 927-937. (Lajos Horváth) **89m:60072** 60F15 (60G50)
- Lin, Zhi Ping** Feedback stabilization of multivariable two-dimensional linear systems. *Internat. J. Control* 48 (1988), no. 3, 1301-1317. (Allen Tannenbaum) **89c:93123** 93C30 (93C05, 93D15)
- (with Bruton, L. T.) BIBO stability of inverse 2-D digital filters in the presence of nonessential singularities of the second kind. *IEEE Trans. Circuits and Systems* 36 (1989), no. 2, 244-254. (Summary) **89k:94011** 94A12 (93D25)
- Lin, Zhong Min** Development and applications of the theory of structural reliability. (Chinese) *Chinese J. Oper. Res.* 2 (1983), no. 2, 1-10. (Not in MR) 90B25 (62N05)
- Lin, Zhong Xiang** (with Dai, Tian Min; Fu, Min Fu; Yang, De Pin) Variational methods for the problems of nonconservative force fields in the micropolar elastodynamics. *Appl. Math. Mech. (English Ed.)* 8 (1987), no. 11, 1003-1012; translated from *Appl. Math. Mech.* 8 (1987), no. 11, 943-952 (Chinese. English summary). (Summary) **89c:73088** 73B25 (49H05, 73C60, 73D99)
- Lin, Zong Chi** Some estimations of solution of nonlinear boundary value problem for second order systems. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 2, 229-239. (F. Zh. Sadyrbaev) **89c:34056** 34E15 (34B15)



- The higher order approximation of solutions of quasilinear second order systems for singular perturbations. A Chinese summary appears in Chinese Ann. Math. Ser. A 8 (1987), no. 3, 534. *Chinese Ann. Math. Ser. B* 8 (1987), no. 3, 357–363. (P. F. Hsieh) **89c:34015** 34A45 (34B10, 34E05, 34E15)
- (with Lin, Su Rong) Singular perturbations of nonlinear Robin boundary value problems with accompanying boundary perturbations. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 22, 1681–1684. (Not in MR) **34E15** (34B15)
- castro-Linares, Rafael** *see* **Castro-Linares, Rafael**
- Lin-Chung, P. J.** (with Rajagopal, A. K.; Teitler, S.) Superposition effects in differential entropy and Kullback-Leibler information. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 2 (Laramie, WY, 1985 and Seattle, WA, 1986/1987), 83–88, *Fund. Theories Phys., Kluwer Acad. Publ., Dordrecht*, 1988. (see **89f:62002**) **94A17**
- Linckmann, Markus** La catégorie stable d'une algèbre auto-injective est triangulée. (English summary) [The stable category of a self-injective algebra is triangulated] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 10, 403–406. (Mike Prest) **89c:18007** 18E30 (16A46, 16A52)
- Le centre d'un bloc à groupes de défaut cycliques. (English summary) [The center of a block with cyclic defect groups] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 17, 727–730. (David Benson) **89g:20025** 20C20
- Lind, Douglas** (with Boyle, Mike; Rudolph, Daniel J.) The automorphism group of a shift of finite type. *Trans. Amer. Math. Soc.* **306** (1988), no. 1, 71–114. (Meir Smorodinsky) **89m:54051** 54H20 (20B27, 28D15, 34C35, 58F11)
- Lindberg, David C.** Roger Bacon and the origins of perspectiva in the West. *Mathematics and its applications to science and natural philosophy in the Middle Ages*, 249–268, Cambridge Univ. Press, Cambridge-New York, 1987. (Richard L. Francis) **89c:01011** 01A35
- Lindberg, Per Olov** (with Essén, Mats) Optimization and estimates of harmonic measure. *J. Math. Anal. Appl.* **124** (1987), no. 2, 459–481. (Albert Baerstein II) **89c:30059** 30C85 (26D15)
- Lindblom, Lee** (with Hiscock, William A.) Stability in dissipative relativistic fluid theories. *Mathematics and general relativity* (Santa Cruz, CA, 1986), 181–220, *Contemp. Math.*, 71, Amer. Math. Soc., Providence, RI, 1988. (Philippe-A. Dionne) **89i:83044** 83C55 (76E99, 76Y05)
- Static uniform-density stars must be spherical in general relativity. *J. Math. Phys.* **29** (1988), no. 2, 436–439. (B. K. Datta) **89c:83044** 83C55
- van der Linde, A.** Rethinking factor analysis as an interpolation problem. *Statistics* **19** (1988), no. 3, 359–367. (Minoru Siotani) **89m:62059** 62H25
- Linde, A. D.** Inflation and quantum cosmology. *Three hundred years of gravitation*, 604–630, Cambridge Univ. Press, Cambridge-New York, 1987. (see **89b:83007**) **83F05** (01A60, 83C45)
- Eternally existing self-reproducing inflationary universe. *Unification of fundamental interactions* (Marstrand, 1986), 169–175, *Royal Swedish Acad. Sci., Stockholm*, 1987. (see **89f:81005**) **83F05**
- *see also* **Rozental, I. L.**, **89c:83057**
- Linde, Werner** Jenaer Beiträge zur Wahrscheinlichkeitstheorie auf Banachräumen. (English and Russian summaries) [Jena's contribution to probability theory on Banach spaces] *Wiss. Z. Friedrich-Schiller-Universität Jena Natur. Reihe* **36** (1987), no. 1, 61–64. (Summary) **89a:01094** 01A73 (46-03, 60B11, 60B12)
- Uniqueness theorems for Gaussian measures in  $l_p$ ,  $1 \leq p < \infty$ . *Math. Z.* **197** (1988), no. 3, 319–341. (Jerzy Szulga) **89a:60017** 60B11 (28C20, 46G12)
- Lindel, H.** On projective modules over positively graded rings. *Vector bundles on algebraic varieties* (Bombay, 1984), 251–273, *Tata Inst. Fund. Res. Stud. Math.*, 11, *Tata Inst. Fund. Res., Bombay*, 1987. (Manuel Ojanguren) **89b:13016** 13C10
- Lindell, Göran** (with Sundberg, Carl-Erik W.) An upper bound on the bit error probability of combined convolutional coding and continuous phase modulation. Coding techniques and coding theory. *IEEE Trans. Inform. Theory* **34** (1988), no. 5, part II, 1263–1269. (see **89j:40002**) **94B70** (94B10)
- Lindell, Ismo V.** TE/TM decomposition of electromagnetic sources. *IEEE Trans. Antennas and Propagation* **36** (1988), no. 10, 1382–1388. (L. G. Chambers) **89j:78016** 78A25
- Linden, Johannes** (with Brand, K.; Lemke, M.) Multigrid bibliography. *Multigrid methods*, 189–278, *Frontiers Appl. Math.*, 3, SIAM, Philadelphia, PA, 1987. (see **89m:65004**) **65-00** (00A15)
- Linden, Noah** (with Bengtsson, Anders K. H.; Bengtsson, Ingemar; Cederwall, M.) Particles, superparticles, and twistors. *Phys. Rev. D* (3) **36** (1987), no. 6, 1766–1772. (Peter R. Law) **89b:81088** 81D25 (32L25, 81D27, 81E30)
- (with Isham, C. J.) Group theoretic quantisation of strings on tori. *Classical Quantum Gravity* **5** (1988), no. 1, 71–93. (From the introduction) **89m:81070** 81D07 (58F05, 81E30)
- Lindenberg, Katja** (with West, Bruce J.) State-dependent fluctuations in open systems: simple models. *Simple models of equilibrium and nonequilibrium phenomena*, 159–266, *Stud. Statist. Mech.*, 13, North-Holland, Amsterdam-New York, 1987. (Ronald F. Fox) **89f:82030** 82A35 (60G07, 82A31)
- (with Brown, David W.; Wang, Xidi) A review of current issues in the quantum theory of envelope solitons. *Far from equilibrium phase transitions* (Sitges, 1988), 1–28, *Lecture Notes in Phys.*, 319, Springer, Berlin-New York, 1988. (see **89j:82002**) **92A40** (81H99)
- Lindenberg, Siegfried** The paradox of privatization in consumption. *Paradoxical effects of social behavior*, 297–310, *Physica, Heidelberg*, 1986. (see **89d:90019**) **90A05** (90D35)
- Lindemayer, Aristid** (with de Boer, Martin J. M.) Map OL-systems with edge label control: comparison of marker and cyclic systems. *Graph-grammars and their application to computer science* (Warrenton, VA, 1986), 378–392, *Lecture Notes in Comput. Sci.*, 291, Springer, Berlin-New York, 1987. (see **89b:68009**) **68Q45** (68Q50)
- (with Nakamura, Akira; Aizawa, Kunio) Map OL systems with markers. *Graph-grammars and their application to computer science* (Warrenton, VA, 1986), 479–495, *Lecture Notes in Comput. Sci.*, 291, Springer, Berlin-New York, 1987. (see **89b:68009**) **68Q45**
- Models for multicellular development: characterization, inference and complexity of L-systems. *Trends, techniques, and problems in theoretical computer science* (Smolence, 1986), 138–168, *Lecture Notes in Comput. Sci.*, 281, Springer, Berlin-New York, 1987. (Jerome Rothstein) **89c:68060** 68Q45 (68Q55, 68Q90, 92-08, 92A05)
- (with Jürgensen, H.) Inference algorithms for developmental systems with cell lineages. *Bull. Math. Biol.* **49** (1987), no. 1, 93–123. (Robert M. Baer) **89b:68093** 68Q50
- Lindenstrauss, Joram** (with Szankowski, Andrzej) The relation between the distance and the weak distance for spaces with a symmetric basis. *Geometrical aspects of functional analysis* (1985/86), 21–38, *Lecture Notes in Math.*, 1267, Springer, Berlin-New York, 1987. (M. I. Kadets) **89a:46040** 46B20
- (with Johnson, W. B.; Schechtman, G.) On Lipschitz embedding of finite metric spaces in low-dimensional normed spaces. *Geometrical aspects of functional analysis* (1985/86), 177–184, *Lecture Notes in Math.*, 1267, Springer, Berlin-New York, 1987. (Yves Raynaud) **89a:46047** 46B99 (54C25)
- (with Bourgain, J.; Milman, Vitali D.) Minkowski sums and symmetrizations. *Geometric aspects of functional analysis* (1986/87), 44–66, *Lecture Notes in Math.*, 1317, Springer, Berlin-New York, 1988. (G. Schechtman) **89g:46025** 46B20 (46E99, 52A20, 52A22)
- Some useful facts about Banach spaces. *Geometric aspects of functional analysis* (1986/87), 185–200, *Lecture Notes in Math.*, 1317, Springer, Berlin-New York, 1988. (Wolfgang Lusky) **89g:46015** 46Bxx (46A55)
- (with Bourgain, J.) Projection bodies. *Geometric aspects of functional analysis* (1986/87), 250–270, *Lecture Notes in Math.*, 1317, Springer, Berlin-New York, 1988. (G. Schechtman) **89g:46024** 46B20 (52A20)
- (with Bourgain, J.) Nouveaux résultats sur les zonoides et les corps de projection. (English summary) [New results on zonoids and projection bodies] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 8, 377–380. (P. McMullen) **89e:52004** 52A20
- *see also* **Geometric aspects of functional analysis**, **89b:46004**
- Linder, N. V.** An evasion problem. (Russian) *Methods for optimization of complex systems* (Russian), 42–45, 165, “Nauka”, Moscow, 1987. (Phan Huy Khai) **89b:90251** 90D26 (49A45, 93B50)
- Linderman, Jennifer J.** (with Lauffenburger, D. A.) Analysis of intracellular receptor/ligand sorting in endosomes. *J. Theoret. Biol.* **132** (1988), no. 2, 203–245. (Summary) **89c:92024** 92A09
- Lindgren, G.** (with Rootzén, Holger) Extreme values: theory and technical applications. *Scand. J. Statist.* **14** (1987), no. 4, 241–279. (William P. McCormick) **89i:60075** 60G10 (60F05, 60K99)
- (with Ditlevsen, O.) Empty envelope excursions in stationary Gaussian processes. *J. Sound Vibration* **122** (1988), no. 3, 571–587. (A. M. Hasofer) **89d:60076** 60G17 (60G15)
- Lindgren, Michael** ★ Glory and failure. The difference engines of Johann Müller, Charles Babbage and Georg and Edvard Scheutz. Translated from the Swedish by Craig G. McKay. Linköping Studies in Arts and Science, 9. Stockholm Papers in History and Philosophy of Technology, 2017. Linköping University, Faculty of Arts and Science, Linköping, 1987. 415 pp. ISBN 91-7870-146-5 (From the introduction) **89g:01038** 01A55 (01A50, 65-03)
- Lindley, Dennis V.** Using expert advice on a skew judgmental distribution. *Oper. Res.* **35** (1987), no. 5, 716–721. (Summary) **89b:62013** 62A15 (90A05)
- Lindner, C. C.** (with Mullin, R. C.; Hoffman, Dean G.) A few more BIBDs with  $k = 6$  and  $\lambda = 1$ . *Combinatorial design theory*, 379–384, *North-Holland Math. Stud.*, 149, North-Holland, Amsterdam-New York, 1987. (Frank E. Bennett) **89b:05037** 05B05
- How to nest a Steiner triple system. Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. 2 (Catania, 1986). *Ars Combin.* **24** (1987), B, 77–92. (A. E. Brouwer) **89d:05037** 05B07
- (with Teirlinck, Luc) The construction of large sets of idempotent quasigroups. *European J. Combin.* **9** (1988), no. 1, 83–89. (V. Sathyabhama) **89c:20123** 20N05 (05B30)
- (with Rodger, C. A.) Nesting and almost resolvability of pentagon systems. *European J. Combin.* **9** (1988), no. 5, 483–493. (Ferenc Wettl) **89g:05040** 05B30 (05B15)
- (with Rodger, C. A.; Stinson, D. R.) Embedding cycle systems of even length. *J. Combin. Math. Combin. Comput.* **3** (1988), 65–69. (Robin J. Wilson) **89i:05179** 05C38 (05C70)
- (with Heinrich, Katherine; Rodger, C. A.) Almost resolvable decompositions of  $2K_n$  into cycles of odd length. *J. Combin. Theory Ser. A* **49** (1988), no. 2, 218–232. (Ortrud R. Oellermann) **89i:05216** 05C70
- Lindner, D. K.** (with Perkins, W. R.) The generalized Hessenberg representation and near aggregation. *Automatica—J. IFAC* **24** (1988), no. 2, 267–270. (Jiong Min Yong) **89c:93025** 93B07 (93C05)
- Near aggregation, the dual GHR and pole-zero cancellation. *Internat. J. Control* **48** (1988), no. 2, 705–727. (Vimal Singh) **89j:93049** 93B55 (93B07, 93B15)
- Lindner, Ewald H.** ★ Models for the optimal control of storage power plants. With a German summary. Dissertationen der Johannes-Kepler-Universität Linz [Dissertations of the Johannes Kepler University of Linz], 63. *Verband der Wissenschaftlichen Gesellschaften Österreichs (VWÖ)*, Vienna, 1987. iv+176 pp. ISBN 3-85369-664-3 (From the summary) **89i:93081** 93C75 (90B30)
- On optimizing storage power plant problems including spillage water by variational methods. 19. Jahrestagung “Mathematische Optimierung” (Selling, 1987), 87–97, *Seminarberichte*, 90, Humboldt Univ., Berlin, 1987. (Summary) **89d:90083** 90B05 (49B10, 93C75)
- Lindner, U.** Parallelism between quantum mechanics and theory of stochastic processes. *Phys. Lett. A* **128** (1988), no. 3–4, 157–160. (R. M. Kadobayanski) **89c:81035** 81C20 (60G99)
- Lindquist, Anders** (with Badawi, Faris A.) A stochastic realization approach to the discrete-time Mayne-Fraser smoothing formula. *Frequency domain and state space methods for linear systems* (Stockholm, 1985), 251–262, *North-Holland, Amsterdam-New York*, 1986. (Zbigniew Nahorski) **89d:93110** 93E14 (93B15, 93C50, 93C55, 93E03, 93E10)
- *see also* **Modelling, identification and robust control**, **89b:93008** and **Theory and applications of nonlinear control systems**, **89b:93010**
- Lindquist, W. Brent** (with Glimm, James; Grove, John; McBryan, Oliver A.; Tryggvason, Gréar) The bifurcation of tracked scalar waves. *SIAM J. Sci. Statist. Comput.* **9** (1988), no. 1, 61–79. (P. C. Jain) **89g:76032** 76L05 (58C27, 65H10, 73D05, 76-08, 76S05)
- Lindqvist, Bo Henry** (with Govindarajulu, Z.) Asymptotic efficiency of the Spearman estimator and characterizations of distributions. *Ann. Inst. Statist. Math.* **39** (1987), no. 2, 349–361. (Dana Vorliczková) **89a:62118** 62G20 (62E10, 62P10)
- Monotone and associated Markov chains, with applications to reliability theory. *J. Appl. Probab.* **24** (1987), no. 3, 679–695. (E. Arjas) **89b:60172** 60J27 (60E15, 62N05, 90B25)
- Association of probability measures on partially ordered spaces. *J. Multivariate Anal.* **26** (1988), no. 2, 111–132. (Rastislav Potocký) **89i:60008** 60B05 (60G99)

- Lindqvist, P.** (with Martio, O.) Regularity and polar sets for supersolutions of certain degenerate elliptic equations. *J. Analyse Math.* **50** (1988), 1–17. (Tero Kilpeläinen) **89h:35051** 35B65 (31C99, 35J70)
- Lindsay, Peter A.** On alternating  $\omega$ -automata. *J. Comput. System Sci.* **36** (1988), no. 1, 16–24. (Hideki Yamasaki) **89i:03076** 03D05 (68Q70)
- Lindsey, J. H., II** A new lattice for the Hall-Janko group. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 703–709. (Geoffrey Mason) **89g:20075** 20G20 (11H06, 20D08, 20G05)
- Lindstedt, A.** see Poincaré, Henri, **89c:01054b**
- Lindström, Bernat** (with Rosengren, Anders) A combinatorial series expansion for the Ising model. *European J. Combin.* **8** (1987), no. 3, 317–323. (Paul A. Pearce) **89c:82062** 82A67 (82-02, 82A68)
- A generalization of the Ingleton-Main lemma and a class of nonalgebraic matroids. *Combinatorica* **8** (1988), no. 1, 87–90. (Dragan M. Aceteta) **89i:05083** 05B35
- Matroids: a mathematical abstraction with many models. (Swedish. English summary) *Normat* **36** (1988), no. 1, 4–12, 39. (Summary) **89c:05025** 05B35
- Any STS(13) contains the non-Pappus configuration. *Utilitas Math.* **33** (1988), 193–194. (Arnold Neumaier) **89d:05038** 05B07 (51E10)
- Lindström, Mikael** (with Bjön, Sten) Algebras of holomorphic functions. *J. Math. Anal. Appl.* **128** (1987), no. 1, 207–213. (Javier Gómez Gil) **89h:46071** 46G20 (32E25, 46J15)
- Schwartz spaces and compact holomorphic mappings. *Manuscripta Math.* **60** (1988), no. 2, 139–144. (Richard M. Aron) **89d:46004** 46A14 (46G20)
- A characterization of Schwartz spaces. *Math. Z.* **198** (1988), no. 3, 423–430. (K. Floret) **89f:46009** 46A12 (46G20, 47D30)
- (with Bjön, Sten) Characterization of Schwartz spaces by their holomorphic duals. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 909–913. (C. H. Cook) **89f:46099** 46G20 (46A12)
- On compact and bounding holomorphic mappings. *Proc. Amer. Math. Soc.* **105** (1989), no. 2, 356–361. (J. M. Isidro) **89f:46103** 46G20 (58C10)
- Lindström, Per** Partially generic formulas in arithmetic. *Notre Dame J. Formal Logic* **29** (1988), no. 2, 185–192. (G. E. Mints) **89d:03060** 03F30 (03D25)
- Lindström, Tom** An invitation to nonstandard analysis. *Nonstandard analysis and its applications* (Hull, 1986), 1–105, *London Math. Soc. Stud. Texts*, 10, Cambridge Univ. Press, Cambridge-New York, 1988. (see **89m:03060**) 03H05 (28E05, 54J05, 60A05)
- Lindström, U.** (with Roček, M.; van Nieuwenhuizen, P.) A Weyl-invariant rigid string. *Phys. Lett. B* **199** (1987), no. 2, 219–223. (Miao Li) **89c:81142** 81E99 (81E30)
- (with Roček, M.) Bosonic and spinning Weyl-invariant rigid strings. *Phys. Lett. B* **201** (1988), no. 1, 63–66. (Gheorghe Zet) **89b:81205** 81E99 (81E30, 83E30)
- (with Buscher, T. H.; Roček, M.) New supersymmetric  $\alpha$ -models with Wess-Zumino terms. *Phys. Lett. B* **202** (1988), no. 1, 94–98. (Summary) **89b:81118** 81E13 (81E40)
- (with Karlhede, A.) Super-Weyl-invariant spinning  $p$ -branes. *Phys. Lett. B* **209** (1988), no. 4, 441–444. (C. Gauthier) **89g:83079** 83E15 (81E30, 83E30, 83E50)
- (with Fujikawa, Kazuo; Nielsen, N. K.; Roček, M.; van Nieuwenhuizen, P.) Regularized BRST-coordinate-invariant measure. *Phys. Rev. D* **37** (1988), no. 2, 391–405. (Robert Marnelius) **89f:81176** 81E99 (81E30, 83E30)
- (with Theodoridis, Georgios) Weyl-invariant super  $p$ -branes. *Phys. Lett. B* **208** (1988), no. 3–4, 407–410. (V. P. Akulov) **89k:81159** 81E99 (81E30, 83E30)
- van Lindt, Dirk** see Van Lindt, Dirk
- Line, A.** (with Banat, M.; Benkirane, R.; Masbarnat, L.) Modèle de l'écoulement gaz-liquide stratifié à interface ondulée. [Model of stratified gas-liquid flow with undulatory interface] *Computer methods and water resources*, Vol. 5 (Rabat, 1988), 175–190, *Comput. Mech., Southampton*, 1988. (see **89g:76034**) 76T05 (76-08)
- Lines, Daniel** (with Morales, Jorge F.) Grothendieck groups of sesquilinear forms over a ring with involution. *Math. Ann.* **281** (1988), no. 1, 97–108. (Barry H. Dayton) **89k:18023** 18F25 (11E70, 19G99, 57Q45)
- Linet, B.** (with Deruelle, Nathalie) A cosmic string shock wave. *Classical Quantum Gravity* **5** (1988), no. 1, 55–58. (Jorge A. Pullin) **89c:83088** 83F05 (83C55)
- A vortex-line model for a system of cosmic strings in equilibrium. *Gen. Relativity Gravitation* **20** (1988), no. 5, 451–456. (Kotik K. Lee) **89f:83119** 83F05 (83C99)
- Ling, Chih-Ring** Extension of summation of series of hyperbolic functions. *J. Math. Anal. Appl.* **131** (1988), no. 2, 451–464. (N. C. Jain) **89d:33004** 33A25 (40A25)
- Ling, Fu Hua** (with Li, Ji Yue) Shooting method in singular perturbation problem of ordinary differential equations with boundary layers. *Appl. Math. Mech. (English Ed.)* **9** (1988), no. 7, 659–665; translated from *Appl. Math. Mech.* **9** (1988), no. 7, 609–615 (Chinese. English summary). (Moody T. Chu) **89k:65097** 65L10 (65L05)
- Bifurcation curves of the Hénon map determined by a multiple shooting technique. *Chinese Phys. Lett.* **5** (1988), no. 3, 121–124. (Summary) **89c:58090** 58F14 (65H10)
- On fractal attracting basin boundaries and their consequences. *Kexue Tongbao (English Ed.)* **33** (1988), no. 9, 783–786. (From the text) **89m:58141** 58F13
- (with Gao, Jie) A new integration schema for second order dynamical equations. *Z. Angew. Math. Mech.* **68** (1988), no. 5, T393–T394. (Not in MR) 65L99
- Ling, Guo Can** (with Ting, Lu) Two-time scales inner solutions and motion of a geostrophic vortex. *Sci. Sinica Ser. A* **31** (1988), no. 7, 806–817. (Summary) **89f:86003** 86A05 (76C05)
- Ling, Jin Hua** A direct proof for countable abelian  $p$ -groups with nice composition series to be simply presented. (Chinese summary) *J. Central China Normal Univ. Natur. Sci.* **22** (1988), no. 1, 23–27. (P. L. Sperry) **89m:20061** 20K10
- Ling, K. D.** On binomial distributions of order  $k$ . *Statist. Probab. Lett.* **6** (1988), no. 4, 247–250. (A. N. Philippou) **89c:60022** 60C05 (62E15)
- Ling, Ling** Some problems in the qualitative study of linear partial differential equations. (Chinese) *J. Northwest Univ.* **17** (1987), no. 4, 27–31. (Xue Bo Luo) **89h:35018** 35Bxx (35L99, 35Q05)
- Ling, Yen Lei** (with Cheng, Fan Jén; Wang, Bor Chyun) Partial fraction expansions for transfer matrices and matrix fraction descriptions of multivariable systems. *Internat. J. Control* **48** (1988), no. 4, 1409–1421. (Not in MR) 93B25 (15A24)
- (with Wang, Bor Chyun) First- and second-order eigensensitivities of matrices with distinct eigenvalues. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1053–1067. (Summary) **89c:93120** 93B60 (15A18, 93B35)
- Ling, Yin Sheng** Dykin's embedding method and subalgebra chains of  $U(6) \supset SU(3)$ . *Comm. Theoret. Phys.* **7** (1987), no. 2, 165–173. (Daniel A. Akyeampong) **89h:22045** 22E70 (81G20, 81G30)
- Lingappalaiah, G. S.** On the Pareto distribution of second kind (Lomax distribution). (Portuguese summary) *Rev. Mat. Estatist.* **4/5** (1986/87), 63–68. (Not in MR) 62E15
- Generalized length biased distributions. (Russian and Czech summaries) *Apl. Mat.* **33** (1988), no. 5, 354–361. (Ramesh C. Gupta) **89i:62024** 62E15
- Lingas, Andrzej** A new heuristic for minimum weight triangulation. *SIAM J. Algebraic Discrete Methods* **8** (1987), no. 4, 646–658. (Herbert Edelsbrunner) **89h:68116** 68R05 (68R10)
- (with Karpiński, M.) Subtree isomorphism is NC reducible to bipartite perfect matching. *Inform. Process. Lett.* **30** (1989), no. 1, 27–32. (Summary) **89k:68120** 68R10 (05C05, 68Q25)
- Linhares, C. A.** (with Rothe, H. J.; Rothe, K. D.) On the existence of the chiral Schwinger model. *Phys. Rev. D* **37** (1988), no. 2, 427–434. (Summary) **89a:81054** 81E08
- Linhart, Johann** Extremaleigenschaften der regulären 3-Zonotope. [Extremal properties of regular 3-zonotopes] *Studia Sci. Math. Hungar.* **21** (1986), no. 1–2, 181–188. (C. M. Petty) **89f:52015** 52A25 (52A40)
- Linal, Nathan** (with Aharoni, Ron; Erdős, Paul) Optima of dual integer linear programs. *Combinatorica* **8** (1988), no. 1, 13–20. (Joachim Piehler) **89f:90093** 90C10
- (with Lovász, L.; Wigderson, Avi) Rubber bands, convex embeddings and graph connectivity. *Combinatorica* **8** (1988), no. 1, 91–102. (M. M. Syslo) **89i:05187** 05C40 (68Q25, 68R10)
- (with Meshulam, Roy; Tarsi, Michael) Matroidal bijections between graphs. *J. Combin. Theory Ser. B* **45** (1988), no. 1, 31–44. (François Jaeger) **89i:05119** 05C15 (05B35)
- Linichuk, R. S.** On the differentiability of multivalued functions. (Russian) *Approximation theory and related problems in analysis and topology* (Russian), 53–59, iii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Zbigniew Grande) **89a:26033** 26E25 (26A24, 54C60)
- Link, Godehard** Generalized quantifiers and plurals. *Generalized quantifiers* (Lund, 1985), 151–180, *Stud. Linguist. Philos.*, 31, Reidel, Dordrecht-Boston, MA, 1987. (see **89m:03003**) 03B65
- Link, Robert** (with Roberge, A.; Semenov, Gordon W.) Lorentz invariant exact solution of the anomalous chiral Schwinger model. *Z. Phys. C* **39** (1988), no. 2, 269–273. (Hans D. Dahmen) **89i:08082** 81E15 (81E40, 81L05)
- Linka, Aleš** On transformations of multivariate ARMA processes. *Kybernetika (Prague)* **24** (1988), no. 2, 122–129. (Miguel Angel Canela) **89f:62079** 62M10
- Linkens, D. A.** (with Mansour, N. E.) Pole-assignment self-tuning control of blood pressure in postoperative patients: a simulation study. *Proc. IEEE-D* **136** (1989), no. 1, 1–11. (Summary) **89i:93083** 93C75 (92A07, 93B55, 93C40)
- Lin'kov, Yu. N.** Asymptotic properties of the Neyman-Pearson test in the case of completely asymptotically distinguishable hypotheses. (Russian) *Teor. Veroyatnost. i Mat. Statist.* **35** (1986), 60–69, 123. (František Rublík) **89a:62055** 62F05
- Characterization of types of asymptotic discernibility of families of hypotheses. (Russian) *Theory of random processes*, No. 15 (Russian), 64–71, 118, "Naukova Dumka", Kiev, 1987. (Yu. I. Petunin) **89a:62111** 62G10 (62E20)
- see also *Theory of random processes*, **89b:60011**
- Linna, Matti** (with Culik, Karel, II) The equivalence problem for  $n$ -tape finite automata with simple cycles. *Foundations of software technology and theoretical computer science* (Pune, 1987), 15–25, *Lecture Notes in Comput. Sci.*, 287, Springer, Berlin-New York, 1987. (Summary) **89a:68049** 68Q05 (03D05)
- Linnebur, D. G.** (with Lewis, P. A. W.; Orav, E. J.; Drueg, H. W.; Uribe, L.) An implementation of graphical analysis in statistical simulations. (French summary) *Internat. Statist. Rev.* **53** (1985), no. 1, 69–90. (Summary) **89f:62017** 62E25
- Linnell, P. A.** (with Stambach, U.) On the cohomology of  $p$ -constrained groups. *The Arcata Conference on Representations of Finite Groups* (Arcata, Calif., 1986), 467–469, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Stefan Jackowski) **89f:20055** 20J06 (18G15, 20C05, 20D45)
- (with Stambach, U.) The cohomology of  $p$ -constrained groups. *J. Pure Appl. Algebra* **49** (1987), no. 3, 273–279. (David Benson) **89a:20060** 20J06
- (with Gruenberg, K. W.) Minimal free resolutions of lattices over finite groups. *Illinois J. Math.* **32** (1988), no. 3, 361–374. (J. E. Adney) **89j:20006** 20C05
- (with Crawley-Boevey, W. W.; Kropholler, P. H.) Torsion-free soluble groups, completions, and the zero divisor conjecture. *J. Pure Appl. Algebra* **54** (1988), no. 2–3, 181–196. (Donald S. Passman) **89j:16015** 16A27 (20C07)
- (with Kropholler, P. H.; Moody, J. A.) Applications of a new  $K$ -theoretic theorem to soluble group rings. *Proc. Amer. Math. Soc.* **104** (1988), no. 3, 675–684. (L. N. Vaserstein and E. Wheland) **89j:16016** 16A27 (16A08, 16A34)
- Linnemann, Arno** A class of single-input single-output systems stabilizable by reduced-order controllers. *Systems Control Lett.* **11** (1988), no. 1, 27–32. (Summary) **89c:93179** 93D25 (93B15)
- Linnemann, Per** (with Hoem, Jan M.) The tails in moving average graduation. *Scand. Actuar. J.* **1988**, no. 4, 193–229. (Not in MR) 62P05
- Linnert, Kristian** Testing normality of transformed data. *J. Roy. Statist. Soc. Ser. C* **37** (1988), no. 2, 180–186. (Not in MR) 62G10
- Lins, Soténes** On the fundamental group of 3-gems and a "planar" class of 3-manifolds. *European J. Combin.* **9** (1988), no. 4, 291–305. (Mario Pezzana) **89i:57003** 57M15 (05C10, 05C25, 57M05)
- Linsay, Paul S.** (with Cumming, Andrew) Quasiperiodicity and chaos in a system with three competing frequencies. *Phys. Rev. Lett.* **60** (1988), no. 26, 2719–2722. (Summary) **89g:58129** 58F13 (70-04, 70K50)
- van Lint, J. H.** (with Beemker, G. F. M.) Optimal generalized Petersen graphs. *Philips J. Res.* **43** (1988), no. 2, 129–136. (Brian Alspach) **89i:05151** 05C35
- see also *Coding techniques and coding theory*, **89j:94002**
- Linton, Matthew** Babylonian triples. *Bull. Inst. Math. Appl.* **24** (1988), no. 3–4, 37–41. (J. Friberg) **89i:01002** 01A17
- Linz, S. J.** (with Lücke, M.) A Galerkin approximation for convection in binary mixtures with realistic concentration boundary conditions. *Propagation in systems far from equilibrium* (Les Houches, 1987), 292–304, *Springer Ser. Synergetics*, 41, Springer, Berlin-New York, 1988. (see **89f:76003**) 76E15 (76E30, 76V05)
- Lio, Y. L.** (with Padgett, W. J.) A modified kernel quantile estimator under censoring. (French summary) *Canad. J. Statist.* **16** (1988), no. 2, 175–183. (Luc P. Devroye) **89m:62040** 62G05 (62G30, 62N05)



- Lion, Gérard Résolubilité d'équations différentielles et représentations induites. [Solvability of differential equations and induced representations] *J. Funct. Anal.* **75** (1987), no. 2, 211–259. (G. C. Bohné) **89a:22017** 22E30 (17B35, 22D30, 35A05, 43A85)
- Lions, J.-L. Contrôlabilité exacte et perturbations singulières. II. La méthode de dualité. [Exact controllability and singular perturbations. II. The duality method] *Applications of multiple scaling in mechanics* (Paris, 1986), 223–237, *Rech. Math. Appl.*, 4, Masson, Paris, 1987. (Ovidiu Cârja) **89b:49061** 49E15 (49A55, 93B05)
- Pareto control of distributed systems. An introduction. *Control problems for systems described by partial differential equations and applications* (Gainesville, Fla., 1986), 90–104, *Lecture Notes in Control and Inform. Sci.*, 97, Springer, Berlin-New York, 1987. (Robert T. Vescan) **89b:49009** 49A27 (49A22, 49A45, 93C20)
- Exact controllability and singular perturbations. *Wave motion: theory, modelling, and computation* (Berkeley, Calif., 1986), 217–247, *Math. Sci. Res. Inst. Publ.*, 7, Springer, New York-Berlin, 1987. (Goong Chen) **89d:49042** 49E15 (34E15, 35B37, 35L05, 93B05)
- (with Lagnese, J.) ★ Modelling analysis and control of thin plates. *Recherches en Mathématiques Appliquées* [Research in Applied Mathematics], 6, Masson, Paris, 1988. vi+177 pp. ISBN 2-225-81429-5 (Guenther Leugering) **89k:73001** 73-02 (49E15, 70Q05, 73K10, 73K12, 93D05)
- ★ Contrôlabilité exacte, perturbations et stabilisation de systèmes distribués. Tome 2. (French) [Exact controllability, perturbations and stabilization of distributed systems. Vol. 2] *Perturbations* [Perturbations] *Recherches en Mathématiques Appliquées* [Research in Applied Mathematics], 9, Masson, Paris, 1988. xiv+273 pp. ISBN 2-225-81474-0 (Enrique Zuazua) **89k:93017** 93B05 (35B37, 49E25, 93-02, 93C20)
- (with Dautray, Robert) ★ Mathematical analysis and numerical methods for science and technology. Vol. 2. Functional and variational methods. With the collaboration of Michel Artola, Marc Authier, Philippe Bénilan, Michel Cessenat, Jean Michel Combes, Hélène Lanchon, Bertrand Mercier, Claude Wild and Claude Zuily. Translated from the French by Ian N. Sneddon. *Springer-Verlag, Berlin-New York*, 1988. xvi+561 pp. ISBN 3-540-19045-7 (Editors) **89m:00001** 00A05
- (with Dautray, Robert) ★ Analyse mathématique et calcul numérique pour les sciences et les techniques. Vol. 4. (French) [Mathematical analysis and computing for science and technology. Vol. 4] *Méthodes variationnelles* [Variational methods] With the collaboration of Michel Artola, Marc Authier, Michel Cessenat, Jean Michel Combes, Bertrand Mercier and Claude Wild. Reprinted from the 1984 edition. INSTN: Collection Enseignement. [INSTN: Teaching Collection] Masson, Paris, 1988. pp. i–xxiii and 1086–1411. ISBN 2-225-81298-5 (Editors) **89m:00002** 00A05 (00A69, 35-01, 47-01)
- (with Dautray, Robert) ★ Analyse mathématique et calcul numérique pour les sciences et les techniques. Vol. 5. (French) [Mathematical analysis and computing for science and technology. Vol. 5] *Spectre des opérateurs* [The operator spectrum] With the collaboration of Michel Artola, Michel Cessenat, Jean Michel Combes and Bruno Scheurer. Reprinted from the 1984 edition. INSTN: Collection Enseignement. [INSTN: Teaching Collection] Masson, Paris, 1988. xxxii+552+xxiii pp. ISBN 2-225-81299-3 (Editors) **89m:00003a** 00A05 (00A69, 35-01, 47-01, 78-01, 81-01)
- (with Dautray, Robert) ★ Analyse mathématique et calcul numérique pour les sciences et les techniques. Vol. 6. (French) [Mathematical analysis and computing for science and technology. Vol. 6] *Méthodes intégrales et numériques* [Integral and numerical methods] With the collaboration of Michel Artola, Philippe Bénilan, Michel Bernadou, Michel Cessenat, Jean-Claude Nédélec and Jacques Planckard. Reprinted from the 1984 edition. INSTN: Collection Enseignement. [INSTN: Teaching Collection] Masson, Paris, 1988. pp. i–xxxiii and 553–1063. ISBN 2-225-81300-0 (Editors) **89m:00003b** 00A05 (00A69, 45-01, 65-01)
- Some remarks on uniqueness properties. *Material instabilities in continuum mechanics* (Edinburgh, 1985–1986), 243–256, *Oxford Sci. Publ.*, Oxford Univ. Press, New York, 1988. (V. V. Krakhoko) **89k:93018** 93B05 (35B37, 49E15)
- Contrôlabilité exacte et homogénéisation. I. (English summary) [Exact controllability and homogenization. I] *Asymptotic Anal.* **1** (1988), no. 1, 3–11. (Enrique Zuazua) **89c:93018** 93B05 (35B37, 49E25, 93C20)
- Exact controllability, stabilization and perturbations for distributed systems. *SIAM Rev.* **30** (1988), no. 1, 1–68. (Asen L. Dontchev) **89c:93019** 93B05 (49B50, 49E15, 93C20, 93D15)
- see also *Nonlinear partial differential equations and their applications. Collège de France seminar*, **89a:35006**; *Mathematical analysis and applications*, **89c:00017**; *Analysis and optimization of systems*, **89c:00031**; *Biography*: Lions, Jacques-Louis, **89j:01071** and *Nonlinear partial differential equations and their applications. Collège de France Seminar*, **89j:35008**
- Lions, Pierre-Louis Remarques sur les équations linéaires elliptiques du second ordre sous forme de divergence dans les domaines non bornés. (Italian summary) [Remarks on second-order elliptic linear equations in divergence form in unbounded domains] *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **78** (1985), no. 5, 205–212. (From the introduction) **89a:35065** 35J25
- Remarques sur les équations linéaires elliptiques du second ordre sous forme de divergence dans les domaines non bornés. II. (Italian summary) [Remarks on second-order elliptic linear equations in divergence form in unbounded domains. II] *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **79** (1985), no. 6, 178–183 (1986). (From the introduction) **89c:35041** 35J25
- (with Crandall, Michael G.) Solutions de viscosité pour les équations de Hamilton-Jacobi en dimension infinie intervenant dans le contrôle optimal de problèmes d'évolution. (English summary) [Viscosity solutions of Hamilton-Jacobi equations in infinite dimension occurring in the optimal control of evolution problems] *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 6, 233–236. (T. Zolezzi) **89a:49027** 49C20 (35F20, 49A27)
- (with Crandall, Michael G.) Remarks on the existence and uniqueness of unbounded viscosity solutions of Hamilton-Jacobi equations. *Illinois J. Math.* **31** (1987), no. 4, 665–688. (From the introduction) **89m:35045** 35F20 (35B25)
- On positive solutions of semilinear elliptic equations in unbounded domains. *Nonlinear diffusion equations and their equilibrium states, II* (Berkeley, CA, 1986), 85–122, *Math. Sci. Res. Inst. Publ.*, 13, Springer, New York-Berlin, 1988. (Enrique Zuazua) **89m:35021** 35B05 (35J20, 49A40)
- (with Souganidis, P. E.) Viscosity solutions of second-order equations, stochastic control and stochastic differential games. *Stochastic differential systems, stochastic control theory and applications* (Minneapolis, Minn., 1986), 293–309, *IMA Vol. Math. Appl.*, 10, Springer, New York-Berlin, 1988. (Emmanuel Nicholas Barron) **89c:49021** 49C20 (35B25, 35B37, 93-02, 93E05, 93E20)
- (with Esteban, M. J.) Skyrmsions and symmetry. *Asymptotic Anal.* **1** (1988), no. 3, 187–192. (David Groisser) **89m:81092** 81E13 (58E15, 58E20)
- (with DiPerna, Ronald) Solutions globales de l'équation de Boltzmann. (English summary) [Global solutions of the Boltzmann equation] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 7, 343–346. (V. Protopenescu) **89b:82048** 82A40 (35Q20)
- (with DiPerna, Ronald) Solutions globales d'équations du type Vlasov-Poisson. (English summary) [Global solutions of Vlasov-Poisson type equations] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 12, 655–658. (Summary) **89k:35202** 35Q20 (32A45, 45K05)
- (with Pacella, Filomena; Tricarico, M.) Best constants in Sobolev inequalities for functions vanishing on some part of the boundary and related questions. *Indiana Univ. Math. J.* **37** (1988), no. 2, 301–324. (Jóran Bergh) **89i:46036** 46E35 (35J99)
- (with Golse, François; Perthame, Benoît; Sentis, Rémi) Regularity of the moments of the solution of a transport equation. *J. Funct. Anal.* **76** (1988), no. 1, 110–125. (Summary) **89a:35179** 35Q20 (35B99)
- (with Jensen, Robert; Souganidis, P. E.) A uniqueness result for viscosity solutions of second order fully nonlinear partial differential equations. *Proc. Amer. Math. Soc.* **102** (1988), no. 4, 975–978. (T. I. Seidman) **89f:35027** 35B25 (35J60)
- see also *Stochastic differential systems, stochastic control theory and applications*, **89b:93009**
- Liu, Ching-Tien see Liu, Ch'ing T'ien
- Liu, Li Perng (with Chéng, Kuo Shun) Global stability of a predator-prey system. *J. Math. Biol.* **26** (1988), no. 1, 65–71. (John H. Swart) **89d:92072** 92A15
- (with Chéng, Kuo Shun) On the uniqueness of a limit cycle for a predator-prey system. *SIAM J. Math. Anal.* **19** (1988), no. 4, 867–878. (L. E. Bobisud) **89d:92073** 92A15 (34C05, 34D05)
- Liu, Meng-Sing Solutions of one-dimensional steady nozzle flow revisited. *AIAA J.* **26** (1988), no. 5, 625–628. (Not in MR) **76Nxx**
- Liouville, Joseph see Stander, D., **89f:01077**
- Lipae, V. V. (with Belova, L. A.) Forecasting of technical-economic indices of the development of complex programs for control systems. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 7, 164–173; translation in *Automat. Remote Control* **49** (1988), no. 7, part 2, 949–955. (Not in MR) **90A17**
- Lipmanov, A. M. A trajectory method for solving systems of transcendental equations. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1234–1244, 1286; translation in *Differential Equations* **24** (1988), no. 7, 805–811. (Summary) **89k:65065** 65H05 (35A25, 65P05)
- Lipator, E. P. Some properties of  $l$ -homogeneous collections. (Russian) *Proceedings of the All-Union seminar on discrete mathematics and its applications* (Russian) (Moscow, 1984), 139–142, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (Konrad Engel) **89b:05015** 05A15 (05A20)
- Lipator, I. I. (with Neiland, V. Ya.) On the theory of the nonsteady separation and interaction of a boundary layer with a supersonic gas flow. (Russian) *Uchen. Zap. TsAGI* **18** (1987), no. 1, 36–49. (Vladan D. Djordjević) **89i:76074** 76N05 (76J99)
- Lipatova, A. E. Sharpening of an estimate for the complexity of realization of a system of all conjunctions of length  $n$  by switching circuits. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 2, 69–71; translation in *Moscow Univ. Math. Bull.* **43** (1988), no. 2, 39–41. (From the text) **89d:94054** 94C05 (52A40)
- Lipecki, Z. On unique extensions of positive additive set functions. II. *Arch. Math. (Basel)* **50** (1988), no. 2, 175–182. (Detlef Plachky) **89d:28007** 28B10 (28A12)
- Lipeika, Antanas (with Lipeikienė, Joanna) Use of a dynamic programming method for determining some change points of the properties of autoregressive random sequences. (Russian. English and Lithuanian summaries) *Statist. Problemy Upravlenniya* No. 80 (1987), 9–23. (Not in MR) **62M10**
- Lipeikienė, Joanna (with Lipeika, Antanas) Use of a dynamic programming method for determining some change points of the properties of autoregressive random sequences. (Russian. English and Lithuanian summaries) *Statist. Problemy Upravlenniya* No. 80 (1987), 9–23. (Not in MR) **62M10**
- Lipietz, Alain see Duménil, Gérard, **89d:90065**
- Lipin, A. V. Multiplicity of the spectrum of operators that are roots of polynomial equations. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* **157** (1987), Issled. po Linein. Operator. i Teorii Funktsii. XVI, 157–164, 183; translation in *J. Soviet Math.* **44** (1989), no. 6, 856–861. (B. Nagy) **89c:47004** 47A10 (47A60, 47B38)
- Lipiński, J. S. (with Ewert, Janina) On relations between continuity, quasi-continuity and cliquishness of maps. *General topology and its relations to modern analysis and algebra, VI* (Prague, 1986), 177–185, *R & E Res. Exp. Math.*, 16, Heldermann, Berlin, 1988. (Ryszard J. Pawlak) **89g:54025** 54C08 (28A20)
- Lipkin, E. (with Freiman, G.; Levitin, L.) A polynomial algorithm for constructing families of  $k$ -independent sets. *Discrete Math.* **70** (1988), no. 2, 137–147. (Mukhai S. Krishnamoorthy) **89c:05005** 05A05 (68Q25, 68R05)
- Lipkin, M. E. Ground states of a frustrated Ising model with one-, two- and three-body interactions. *Phys. A* **150** (1988), no. 1, 18–39. (M. Lawrence Glasser) **89f:82085** 82A68
- Lipkovski, Aleksandar Index of irreducibility in the formal power series ring. *Proceedings of the Conference "Algebra and Logic", Cetinje 1986*, 115–118, *Univ. Novi Sad, Novi Sad*, 1987. (Paul M. Eakin) **89d:13016** 13F25
- Newton polyhedra and irreducibility. *Math. Z.* **199** (1988), no. 1, 119–127. (Piotr Jaworski) **89g:14003** 14B05 (32B30, 32C40)
- Lipman, David (with Carrillo Calvet, Humberto) The multiple sequence alignment problem in biology. *SIAM J. Appl. Math.* **48** (1988), no. 5, 1073–1082. (Summary) **89h:92038** 92A12
- Lipman, Joseph Topological invariants of quasi-ordinary singularities. *Mem. Amer. Math. Soc.* **74** (1988), no. 388, 1–107. (Ulrich Karras) **89m:14001** 14B05 (32C40, 57Q45)
- see also Gan, Yih-Nan, **89m:14002**
- Lipman, M. J. (with Bagga, K. S.; Beineke, L. W.; Pippert, R. E.) On the edge-integrity of graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **60** (1987), 141–144. (R. C. Entringer) **89c:05069** 05C40
- see also Conference: Graph Theory, **89j:05005** and **89j:05006**

- Lipovan, O.** The probabilistic and random submeasurability of the set-valued mappings. (Romanian summary) *Inst. Politehn. "Traian Vuia" Timișoara. Lucr. Sem. Mat. Fiz.* 1986, November, 63-68. (R. G. Bartle) **89j:28001** 28A10 (60B99)
- Lipovskii, V. D.** (with Kulish, P. P.) Hamiltonian interpretation of the inverse problem method for the Davey-Stewartson equation. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 161 (1987), Vopr. Kvant. Teor. Polya i Statist. Fiz. 7, 54-71, 176, 179. (Piotr Biler) **89c:35137** 35Q20 (35R30, 58F37)
- (with Kulish, P. P.; Shirokov, A. V.) Scattering data for the nonstationary Dirac equation. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 164 (1987), *Differentsial'naya Geom. Gruppy Li i Mekh.* IX, 169-175, 199. (Summary) **89d:35162** 35Q20 (35R30)
- (with Kulish, P. P.) Hamiltonian structure of the Davey-Stewartson equation and Poisson brackets of scattering data. *Phys. Lett. A* 127 (1988), no. 8-9, 413-417. (Summary) **89c:58038** 58F05 (35Q20)
- (with Nikulichev, S. S.) On nonlinear Debye screening. (Russian. English summary) *Vestnik Leningrad. Univ. Fiz. Khim.* 1988, vyp. 4, 61-65, 111. (Not in MR) **82A45**
- Lipowsky, Reinhard** (with Gelfand, Martin P.) Wetting on cylinders and spheres. *Phys. Rev. B* (3) 36 (1987), no. 16, 8725-8735. (Summary) **89b:82026** 82A25 (82A50, 82A68)
- Lippert, D.** (with Thomas, Wolfgang) Relativized star-free expressions, first-order logic, and a concatenation game. *Semigroups, theory and applications (Oberwolfach, 1986)*, 194-204, *Lecture Notes in Math.*, 1320, Springer, Berlin-New York, 1988. (Peter Clote) **89m:68077** 68Q45 (03B10, 03C13, 03D05, 20M35, 68Q70)
- Lippman, Alan** A maximum entropy method for expert system construction. *Maximum-entropy and Bayesian methods in science and engineering*, Vol. 2 (Laramie, WY, 1985 and Seattle, WA, 1986/1987), 243-263, *Fund. Theories Phys.*, Kluwer Acad. Publ., Dordrecht, 1988. (Costică Cazacu) **89a:94029** 94A17 (68T20, 90C25)
- Lippold, G.** Adaptive approximation. (German and Russian summaries) *Z. Angew. Math. Mech.* 67 (1987), no. 9, 453-465. (Jiří Hřebíček) **89c:65129** 65N50
- Lipschutz, Seymour** (with Kushner, Harvey) A generalization of Stallings' pregroup. *J. Algebra* 119 (1988), no. 1, 170-184. (A. H. M. Hoare) **89m:20035** 20F05 (20E06)
- Lipscomb, Stephen Leon** The structure of the centralizer of a permutation. *Semigroup Forum* 37 (1988), no. 3, 301-312. (Fred W. Roush) **89d:20052** 20M20
- Lipsy, Sally Irene** Edna Ernestine Kramer Lassar (1902-1984). *Women of mathematics*, 114-120, *Greenwood, Westport, CT*, 1987. (see **89b:01071**) 01A70
- Lipshitz, L.** The diagonal of a  $D$ -finite power series is  $D$ -finite. *J. Algebra* 113 (1988), no. 2, 373-378. (Nica Vasile) **89c:13027** 13F25
- Isolated points on fibers of algebraic varieties. *J. Reine Angew. Math.* 384 (1988), 208-220. (W. Bartenwerfer) **89f:32057** 32K10 (32B05, 32B20, 32C05)
- (with Rubel, Lee A.) Corrigendum to: "A differentially algebraic replacement theorem, and analog computability" [Proc. Amer. Math. Soc. 99 (1987), no. 2, 367-372; MR 88e:12066]. *Proc. Amer. Math. Soc.* 104 (1988), no. 2, 668. (Editors) **89b:12011** 12H05
- Lipski, Tadeusz** Quasicontinuous fuzzy-valued maps. (Serbo-Croatian summary) *Mat. Vesnik* 40 (1988), no. 1, 51-58. (Olga M. Koshleva) **89m:54010** 54A40 (03E72, 54C99)
- Lipski, Witold, Jr.** (with Marek, W.) ★ Analiza kombinatoryczna. (Polish) [Combinatorial analysis] with the collaboration of Michał Jaegermann. Biblioteka Matematyczna [Mathematics Library], 59, Państwowe Wydawnictwo Naukowe (PWN), Warsaw, 1986. 464 pp. ISBN 83-01-04972-3 (Jozef Świątko) **89c:05002** 05-01
- (with Preparata, F. P.) A unified approach to layout wirability. *Math. Systems Theory* 19 (1987), no. 3, 189-203. (Summary) **89a:68174** 68R10 (94C15)
- Lipsman, Ronald L.** Solvability of invariant second-order differential operators on metabelian groups. *Michigan Math. J.* 35 (1988), no. 1, 133-139. (H. D. Fegan) **89d:58137** 58G99 (22E30)
- Lipson, A. S.** A note on some link polynomials. *Bull. London Math. Soc.* 20 (1988), no. 5, 532-534. (Lorenzo Traldi) **89c:57014** 57M25
- Lipton, Robert** (with Kohn, Robert V.) Optimal bounds for the effective energy of a mixture of isotropic, incompressible, elastic materials. *Arch. Rational Mech. Anal.* 102 (1988), no. 4, 331-350. (Vadim Komkov) **89f:73012** 73C40 (35J99, 49H05, 73K20)
- Lipsitz, R. Sh.** (with Yashin, A. I.) Applications of martingale methods. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 11, 169-176; translation in *Avtomat. Remote Control* 49 (1988), no. 11, part 2, 1526-1531. (Dominique Lépingue) **89m:60105** 60G44 (60K10, 62L10, 90A12, 90B25)
- (with Krichagina, E. V.; Pukhal'skii, A. A.) Diffusion approximation for a system with an arrival stream that depends on the queue and with arbitrary service. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 1, 124-135; translation in *Theory Probab. Appl.* 33 (1988), no. 1, 114-124. (W. Szcotka) **89f:60113** 60K25 (60J60, 90B22)
- Lirio, Antonio** (with Aznar García, Enrique R.) Abelian groupoids and extensions of monoids. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 35-42, Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89g:20103** 20M50 (18G50)
- Liror, Yuval** (with Ghosh, Bijoy Kumar) Simultaneous identification of linear systems: a heuristic approach. *Systems Control Lett.* 9 (1987), no. 4, 317-322. (Witold Pedrycz) **89a:93018** 93B30 (90C27, 93B40, 93C05)
- $k$ th shortest collision-free path planning. *Appl. Math. Lett.* 1 (1988), no. 1, 61-64. (Not in MR) **90B10** (52-04, 68U05, 90C27)
- Lis, Bogdan** The method of integral relations for an estimation of an approximation error in some Sobolev spaces by interpolating spline-functions. *Funct. Approx. Comment. Math.* 15 (1986), 265-272. (Summary) **89b:41012** 41A10 (41A15)
- Lisan, Amha Tume** Free groups in  $\beta N$  which miss the minimal ideal. *Semigroup Forum* 37 (1988), no. 2, 233-239. (N. Hindman) **89c:22003** 22A30 (20E05, 54D35)
- Lisetskin, V. D.** Numerical solution of an equation with an interior boundary layer. (Russian) *Chisl. Metody Mekh. Sploshn. Sredy* 16 (1985), no. 1, 102-106. (Summary) **89a:65120** 65L10
- (with Petrenko, V. E.) ★ Метод адаптивно инвариантной сетки для численного решения квазилинейного сингулярно возмущенного уравнения с точкой возврата. (Russian) [An adaptively invariant grid method for the numerical solution of a quasilinear singularly perturbed equation with a turning point] Препринт [Preprint], 735. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1987. 55 pp. (Dragoslav Herczeg) **89c:65088** 65L10
- (with Petrenko, V. E.) ★ О численном решении нелинейных сингулярно-возмущенных задач. (Russian) [Numerical solution of nonlinear singularly perturbed problems] Препринт [Preprint], 687. *Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk*, 1987. 65 pp. (V. R. Ibragimov) **89c:65086** 65L05 (65L10)
- (with Petrenko, V. E.) Numerical solution of nonlinear singularly perturbed problems. (Russian) *Dokl. Akad. Nauk SSSR* 297 (1987), no. 4, 791-794; translation in *Soviet Math. Dokl.* 36 (1988), no. 3, 535-538. (J. B. Butler, Jr.) **89d:65077** 65L10
- Lisena, Benedetta** (with Diomedea, Lorenza) Propagation, reflection and refraction of singularities for a hyperbolic transmission problem in two adjacent angular regions. *Res. Sem. Mat. Univ. Padova* 78 (1987), 1-26. (V. Ivrlil) **89f:35122** 35L20 (58G20)
- Lisica, Yu. T.** see Lisitsa, Yu. T.
- Lisitsa, V. S.** New results on the Stark and Zeeman effects in the hydrogen atom. *Soviet Phys. Uspekhi* 30 (1987), no. 11, 927-951 (1988); translated from *Uspekhi Fiz. Nauk* 153 (1987), no. 3, 379-421 (Russian). (Summary) **89i:81148** 81G45 (81-02, 81-05)
- Lisitsa, Yu. T.** (with Mardešić, S.) Steenrod homology. *Geometric and algebraic topology*, 329-343, *Banach Center Publ.*, 18, PWN, Warsaw, 1986. (J. Siegel) **89c:55009** 55N05 (55N07, 55N40, 55P55)
- The Alexander-Pontryagin duality theorem for coherent homology and cohomology with coefficients in sheaves of modules. *Geometric topology and shape theory (Dubrovnik, 1986)*, 148-163, *Lecture Notes in Math.*, 1283, Springer, Berlin-New York, 1987. (Timothy Porter) **89b:55003** 55N07 (55N30)
- Liskerich, V. A.** (with Perel'muter, M. A.) Integrability properties of the solutions of second-order elliptic equations. (Russian) *Mat. Zametki* 43 (1988), no. 3, 337-345, 429; translation in *Math. Notes* 43 (1988), no. 3-4, 194-199. (P. Lindqvist) **89b:35081** 35J05 (35B45, 35J25)
- Liski, E. P.** (with Nummi, T.) Comparing sensitivity of models to missing data in the GMANOVA. *COMPSTAT 1988 (Copenhagen, 1988)*, 311-316, *Physica, Heidelberg*, 1988. (see **89i:62004**) 62H15
- Liskiewicz, Maciej** (with Loryś, Krzysztof) Alternating real-time computations. *Inform. Process. Lett.* 28 (1988), no. 6, 311-316. (Summary) **89j:68040** 68Q05 (03D10, 03D15)
- Liskov, Barbara** (with Ladin, Rivka; Shira, Liuba) A technique for constructing highly available services. *Algorithmica* 3 (1988), no. 3, 393-420. (Summary) **89m:68006** 68M10 (68M20, 68Q25)
- Liskovets, O. A.** Regularization of optimal control problems on solutions of stationary variational inequalities. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 32 (1988), no. 2, 101-104, 187. (Shuzi Zhou) **89c:49009** 49A29 (47H07, 49B50, 49D15, 49E25)
- Liskovets, V. A.** (with Walsh, T. R.) Ten steps to counting planar graphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* 60 (1987), 269-277. (Nicholas Wormald) **89g:05057** 05C30
- Lisovik, L. P.** Algorithmic problems for real functions. (Russian. English summary) *Kibernetika (Kiev)* 1987, no. 1, 12-17, 133. (Summary) **89a:03119** 03F60 (03B25, 68Q99)
- (with Kanivets, V. A.) Equivalence problems for  $A$ -transformers. (Russian) *Methods for the realization of programming systems (Russian)*, 75-79, *Inst. Kibernet., Kiev*, 1988. (see **89b:68003**) 68Q50 (68Q45)
- $\Sigma$ -automata with finitely iterated counters. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 3, 19-22, 131; translation in *Cybernetics* 24 (1988), no. 3, 293-298. (János Bagyinszki) **89c:68053** 68Q70
- List, R. J.** (with Mahmoud, I. M. I.) Fischer matrices for wreath products  $G \wr S_n$ . *Arch. Math. (Basel)* 50 (1988), no. 5, 394-401. (John D. P. Meldrum) **89c:20031** 20C30 (20E22)
- On the characters of  $2^{n-1} \cdot S_n$ . *Arch. Math. (Basel)* 51 (1988), no. 2, 118-124. (Roderick Gow) **89i:20022** 20C15
- (with Black, S. C.) A note on plethysm. *European J. Combin.* 10 (1989), no. 1, 111-112. (Michael H. Peel) **89m:20011** 20C30
- Lister, G. G.** (with Anzer, U.; Boerner, G.) Numerical simulations of accretion onto rotating, magnetic neutron stars. *Computational techniques and applications: CTAC-87 (Sydney, 1987)*, 427-438, *North-Holland, Amsterdam-New York*, 1988. (Summary) **89d:85001** 85-08 (85A30)
- Lister, G. M. S.** (with Judd, B. R.) A class of generalised  $9$ - $j$  symbols for  $Sp(2n)$ . *J. Phys. A* 20 (1987), no. 11, 3159-3169. (Raj Wilson) **89a:81032** 81C40 (22E70)
- Lister, John R.** (with Jansons, Kalvis M.) The general solution of Stokes flow in a half-space as an integral of the velocity on the boundary. *Phys. Fluids* 31 (1988), no. 6, 1321-1323. (Summary) **89c:76038** 76D07
- Listopad, G. I.** (with Monastyrnyi, P. I.; Din' Kuang Tkhai) On the theory of difference shooting methods for difference boundary value problems. (Russian. English summary) *Dokl. Akad. Nauk BSSR* 31 (1987), no. 11, 978-981, 1052. (Jiří Nedoma) **89b:65252** 65N20
- Lisyanov, V. F.** (with Belitskii, G. R.) Classification of formal mappings of linear spaces. (Russian) *Mathematical physics, functional analysis (Russian)*, 139-141, 148, "Naukova Dumka", Kiev, 1986. (Summary) **89f:58019** 58C27
- Lit, John W. Y.** (with Li, Yi-Fan; Hewak, Daniel W.) Guiding properties of multilayer dielectric planar waveguides. (French summary) *Canad. J. Phys.* 66 (1988), no. 10, 914-940. (Summary) **89j:78033** 78A50
- Litovsky, I.** (with Timmerman, E.) On generators of rational  $\omega$ -power languages. *Theoret. Comput. Sci.* 53 (1987), no. 2-3, 187-200. (Wolfgang Thomas) **89a:68120** 68Q45
- Litsyn, S. N.** (with Katsman, G. L.; Kovalev, S. I.) New codes obtained by lengthening methods. (Russian) *Noise-resistant coding and computer reliability (Russian)*, 7-10, 189, "Nauka", Moscow, 1987. (A. Pethő) **89b:94011** 94B05
- (with Zhitkov, M. Yu.) Constructions of codes with a single memory. (Russian) *Noise-resistant coding and computer reliability (Russian)*, 10-17, 189, "Nauka", Moscow, 1987. (Summary) **89f:94023** 94B10
- (with Zinov'ev, V. A.) Lower bounds on complete rational trigonometric sums. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1 (259), 199-200; translation in *Russian Math. Surveys* 43 (1988), no. 1, 259-260. (S. A. Stepanov) **89i:11136** 11T21 (11G20, 94B05)
- (with Bassalygo, L. A.; Zinov'ev, V. A.) A lower bound for complete trigonometric sums in terms of multiple sums. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 5, 1033-1036; translation in *Soviet Math. Dokl.* 37 (1988), no. 3, 756-759. (Ekkhard Krätzel) **89g:11071** 11L40



- Litsyna, E. M.** An infinite system of linear functional-differential equations. (Russian) *Functional-differential equations* (Russian), 20-25, ii, Perm. Politekh. Inst., Perm, 1985. (Summary) **89c:34114** 34K10 (34K05)
- The Green operator of an infinite system of functional-differential equations. (Russian) *Boundary value problems* (Russian), 55-61, v-vi, Perm. Politekh. Inst., Perm, 1986. (see **89c:00009**) 34K10 (34B27)
- On the general theory of linear functional-differential equations. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 6, 977-986, 1099; translation in *Differential Equations* **24** (1988), no. 6, 638-646. (A. Halanay) **89f:34113** 34K30 (34A35, 34K10)
- Litt, Maria** (with Chung, Jack C. H.; Leininger, Gary G.; Scher, Harvey) Closed loop identification in diffusion-limited aggregation processes. *Complex Systems* **1** (1987), no. 3, 401-416. (Summary) **89b:82004** 82-08 (58F40)
- Littelmann, Peter** A Littlewood-Richardson rule for classical groups. (French summary) *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 6, 299-303. (A. U. Klimyk) **89m:22017** 22E45 (20G05)
- Little, C. H. C.** (with McCall, J.) The Hadamard conjecture and integer lattices. *J. Austral. Math. Soc. Ser. A* **43** (1987), no. 2, 257-267. (N. Ito) **89a:05043** 05B20
- Cubic combinatorial maps. *J. Combin. Theory Ser. B* **44** (1988), no. 1, 44-63. (Martin Skoviera) **89a:05058** 05C10
- (with Rendl, F.) An algorithm for the ear decomposition of a 1-factor covered graph. *J. Austral. Math. Soc. Ser. A* **46** (1989), no. 2, 296-301. (Svatopluk Poljak) **89m:05093** 05C70
- Little, J. J.** (with Poggio, T.; Gamble, E. B.) Parallel integration of vision modules. *Science* **242** (1988), no. 4877, 436-440. (Summary) **89k:92087** 92A27 (68T10, 68U10)
- Littlejohn, L. L.** (with Krall, A. M.; Kanwal, R. P.) Distributional solutions of ordinary differential equations. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 227-246, *CMS Conf. Proc.*, **8**, Amer. Math. Soc., Providence, RI, 1987. (N. Hayek Calil) **89a:34040** 34B30 (33A30, 46F10)
- (with Krall, A. M.) Sturm-Liouville operators and orthogonal polynomials. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 247-260, *CMS Conf. Proc.*, **8**, Amer. Math. Soc., Providence, RI, 1987. (R. C. Varma) **89a:34035** 34B25 (33A65, 34B30)
- (with Krall, A. M.) On the classification of differential equations having orthogonal polynomial solutions. II. *Ann. Mat. Pura Appl.* (4) **149** (1987), 77-102. (H. Hochstadt) **89c:34017** 34A30 (33A65, 34B25, 42C05)
- Orthogonal polynomial solutions to ordinary and partial differential equations. *Orthogonal polynomials and their applications* (Segovia, 1986), 98-124, *Lecture Notes in Math.*, **1329**, Springer, Berlin-New York, 1988. (H. Hochstadt) **89j:33013** 33A65 (34B30, 35C10, 42C05)
- Littlejohn, R. P.** (with Chernick, M. R.; Daley, D. J.) A time-reversibility relationship between two Markov chains with exponential stationary distributions. *J. Appl. Probab.* **25** (1988), no. 2, 418-422. (Ed McKenzie) **89j:60090** 60J10
- Littlejohn, Robert G.** Phase anholonomy in the classical adiabatic motion of charged particles. *Phys. Rev. A* (3) **38** (1988), no. 12, 6034-6045. (Edward R. Vrsay) **89k:78014** 78A35 (81C99)
- Littlewood, J. E.** (with Hardy, Godfrey Harold; Pólya, George) ★ *Inequalities*. Reprint of the 1952 edition. Cambridge Mathematical Library. Cambridge University Press, Cambridge-New York, 1988. xii+324 pp. ISBN 0-521-35880-9 (Editors) **89d:26016** 26Dxx (01A75)
- Littman, Walter** (with Markus, Lawrence) Exact boundary controllability of a hybrid system of elasticity. *Arch. Rational Mech. Anal.* **103** (1988), no. 3, 193-236. (Jerzy Klamka) **89j:93007** 93B05 (49E15, 73K40, 93C05, 93C20)
- Litvakov, B. M.** (with Alzerman, M. A.) Some generalizations of the theory of choice of variants (principles of the theory of pseudocriteria). (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 3, 92-105; translation in *Avtomat. Remote Control* **49** (1988), no. 3, part 2, 337-347. (Andrzej Wieleczonek) **89f:90003** 90A05 (03E72)
- The structure of a set of generating graphs that arise in the theory of pseudocriteria. (Russian. English summary) *Avtomat. i Telemekh.* **1988**, no. 10, 132-138; translation in *Avtomat. Remote Control* **49** (1988), no. 10, part 2, 1358-1363. (K. Zimmermann) **89k:90035** 90A15 (05C20)
- Litvin, I. N.** (with Girkov, V. L.) The stochastic Lyapunov problem for systems of stationary linear differential equations. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 8, 1307-1324, 1468; translation in *Differential Equations* **24** (1988), no. 8, 840-853. (Bohdan Maslowski) **89k:60026** 60F05 (34F05)
- Controllability of systems with random parameters. (Russian) *Issled. Operatsii i ASU* **30** (1988), 26-35, 112. (Summary) **89d:93010** 93B05 (93C05, 93E03)
- Litvinchev, I. S.** A decomposition method for optimization problems not possessing a block-separable structure. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **27** (1987), no. 3, 332-339, 477. (D. Klatté) **89a:90112** 90C25 (65K05, 90C31)
- Litvinchuk, G. S.** (with Spitkovskii, I. M.) ★ Factorization of measurable matrix functions. With a foreword by Bernd Silbermann. Mathematical Research, 37. Akademie-Verlag, Berlin, 1987. 372 pp. ISBN 3-05-500368-3 (L. Rodman) **89e:47022** 47A68 (30E25, 45E10, 47B38)
- Litvinenko, A. E.** (with Zakusilo, O. K.) Optimization of the operation of a computer network by queueing theory methods. (Russian) *Issled. Operatsii i ASU* **29** (1987), 19-22, 113. (Summary) **89a:68017** 68M20 (90B15, 90B22)
- Litvinenko, L. N.** (with Prosvirnin, S. L.; Khizhnyak, A. N.) Diffraction of a plane acoustic wave by a lattice of circular disks. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 10, 64-67, 87. (Summary) **89i:76084** 76Q05
- (with Kochin, V. N.; Prosvirnin, S. L.) Scattering of an electromagnetic wave by an ideally conducting cylinder of arbitrary cross section on the plane boundary dividing two media. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 11, 73-78. (Summary) **89k:78020** 78A45
- Litvinets, P. D.** (with Fil'shtinskii, V. A.)  $\lambda$ -transformation of trigonometric polynomials and entire functions. (Russian) *Investigations in the theory of the approximation of functions* (Russian), 59-68, 122, *Acad. Sci. Ukrain. SSR Inst. Math., Kiev*, 1987. (Todor G. Genchev) **89g:42001** 42A05 (42A70, 42A82)
- Litvinko, P. G.** (with Rublev, B. V.; Petunin, Yu. I.) The structure of homothetic linearly separable sets in  $n$ -dimensional Euclidean space. (Russian) *Dokl. Akad. Nauk SSSR* **301** (1988), no. 3, 555-557; translation in *Soviet Math. Dokl.* **38** (1989), no. 1, 127-130. (K. Burian) **89k:51017** 51F20
- Litvinov, V. V.** Operation of a device for searching for a pseudorandom sequence with respect to delay under complex noise. (Russian. English summary) *Teoret. Elektrotekh.* **41** (1986), 13-19. (Not in MR) **94C05** (93E10, 93E15)
- Litvinova, Elizaveta Fedorovna** see Koblitz, Ann Hibner, (89b:01071)
- Litvinseva, S. P.** (with Rodionov, I. D.) Bifurcations of the spectrum in nonselfadjoint boundary spectral problems. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* **1988**, no. 40, 28 pp. (Summary) **89c:58029** 58E07 (34B25, 35B32, 58C40, 76W05)
- Liu, An Lin** Duality of semi-infinite linear programs. (Chinese. English summary) *J. East China Norm. Univ. Natur. Sci. Ed.* **1988**, no. 1, 7-12. (Ding Zhu Du) **89m:90102** 90C05
- Liu, An Long** Simplification and application of the class of autocommuting function matrices. (Chinese) *Huailhua Shizhuan Xuebao* **7** (1988), no. 2, 36-39. (Not in MR) **34A30**
- Liu, Andy C. F.** (with Abbott, H. L.) On a problem of Erdős concerning property B. *Combinatorica* **7** (1987), no. 3, 215-219. (G. F. Clements) **89a:05006** 05A05
- Liu, B.-G.** see Liu, Bang Gui
- Liu, B. P.** see Liu, Bao Ping
- Liu, Bang Gui** (with Chen, Yi Xin) A new gauge- and BRST-invariant interacting closed bosonic string field theory. *Classical Quantum Gravity* **5** (1988), no. 8, L119-L122. (George Siopsis) **89f:81193** 81E99 (81E30)
- Dilation vertices of the closed superstring and the heterotic string. *Phys. Lett. B* **213** (1988), no. 1, 21-24. (Summary) **89b:81210** 81E99 (81E30, 81E40)
- (with Chen, Yi Xin) A covariant open bosonic string field theory including the endpoint and middlepoint interaction. *Z. Phys. C* **39** (1988), no. 4, 547-551. (George Siopsis) **89k:81160** 81E99 (81E30)
- Liu, Bao Ping** Almost periodic forced oscillations for semilinear wave equations. (Chinese) *Acta Math. Sinica* **31** (1988), no. 4, 540-546. (Tie Hu Qin) **89k:35148** 35L70 (35B10, 47G05)
- A new kind of integral transform and its application to periodic solutions. *J. Math. Anal. Appl.* **132** (1988), no. 2, 311-348. (P. Szeptycki) **89b:44003** 44A15 (35B10, 35L70)
- see also Sorocanu, Edy, (89d:35171)
- Liu, Bede** (with Yang, Rong Huan; Lim, Y. C.) A new structure of sharp transition FIR filters using frequency-response masking. *IEEE Trans. Circuits and Systems* **35** (1988), no. 8, 955-966. (Summary) **89d:94006** 94A05
- Liu, Bing** (with Feng, Chun Bo) Piecewise identification for frequency characteristic of dynamic system. *Modelling, identification and robust control* (Stockholm, 1985), 605-614, *North-Holland, Amsterdam-New York*, 1986. (Summary) **89c:93078** 93E12
- An instability theorem for autonomous systems and its application. (Chinese. English summary) *J. Math. Res. Exposition* **8** (1988), no. 1, 79-84. (Peng Nian Chen) **89g:34074** 34D20
- Liu, Bo Lian** On the enumeration of the cycles of planar lattice graphs. (Chinese. English summary) *J. Lanzhou Railway College* **6** (1987), no. 3, 97-104. (Zhong Fu Zhang) **89c:05045** 05C30 (05C38)
- A counter example on Faudree-Schelp conjecture. *J. Math. Res. Exposition* **7** (1987), no. 3, 372. (László Pyber) **89c:05138** 05C45
- Complementary and self-centered graphs. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* **4** (1987), no. 4, 13-17. (H. T. Lau) **89b:05141** 05C75
- (with Li, De Ying; Mao, Jing Zhong) On the Akiyama-Harary problem about complementary planar graphs. (Chinese summary) *J. Central China Normal Univ. Natur. Sci.* **22** (1988), no. 1, 1-8. (W.-K. Chen) **89i:05106** 05C10
- Liu, Bo Ying** (with Zhou, Yu Qing) The BMP optimizing algorithm for LR(k) syntactic parsing. (Chinese. English summary) *J. Tianjin Univ.* **1988**, no. 1, 125-129. (Summary) **89b:68096** 68Q50
- Liu, C. H.** see Liu, Chen-Huei
- Liu, C. L.** see Liu, Chung Laung
- Liu, C. Y.** see Liu, Chang Yung
- Liu, Chang An** (with You, Hong) Automorphisms of a class of solvable groups. (Chinese) *Kexue Tongbao* (Chinese) **33** (1988), no. 9, 645-648. (Not in MR) **20E36** (20F16)
- Liu, Chang Kai** (with Yao, Peng Fei; Zhu, Guang Tian) Perturbation of rank one for a class of linear operators. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **7** (1987), no. 1, 78-88. (Sheng Wang Wang) **89d:47003** 47A05 (47A15)
- Liu, Chang Yung** (with Bulfin, R. L.) Scheduling open shops with unit execution times to minimize functions of due dates. *Oper. Res.* **36** (1988), no. 4, 553-559. (Summary) **89f:90074** 90B35
- Liu, Chao Jie** The existence of limit cycles of the system  $\dot{x} = \psi(y) - F(x, y)$ ,  $\dot{y} = -g(x)$ . *Ann. Differential Equations* **3** (1987), no. 4, 445-452. (L. Pintér) **89h:34029** 34C05 (58F21)
- Liu, Chao Qun** (with McCormick, Stephen F.) Multigrid, elliptic grid generation and the fast adaptive composite grid method for solving transonic potential flow equations. *Multigrid methods* (Copper Mountain, CO, 1987), 365-387, *Lecture Notes in Pure and Appl. Math.*, **110**, Dekker, New York, 1988. (Summary) **89f:76010** 76-08 (65N50, 76H05)
- Liu, Chen** On generators and relations of simple groups of Lie type. *J. Math. Res. Exposition* **8** (1988), no. 3, 349-357. (Jean Michel) **89k:20059** 20G15 (17B20)
- Liu, Chen-Huei** (with Wong, T. C.; Kandil, O. A.) Separation-bubble flow solution using Euler/Navier-Stokes zonal approach with downstream compatibility conditions. *J. Sci. Comput.* **3** (1988), no. 2, 121-137. (Not in MR) **76-08** (65P05)
- Liu, Ch'ing T'ien** (with Chou, Yi Shyong) Successive parameter estimation of continuous dynamic systems. *Internat. J. Systems Sci.* **19** (1988), no. 7, 1149-1158. (Summary) **89f:93010** 93B30 (93B25, 93C15, 93C60)
- Liu, Chu Zhong** Seminorms on Sobolev spaces. (Chinese. English summary) *Hunan Daxue Xuebao* **14** (1987), no. 3, 110-114. (Summary) **89i:46037** 46E35 (65N30)
- Liu, Chung Laung** (with Wong, D. F.) Array optimization for VLSI synthesis. *24th ACM/IEEE Design Automation Conference* (Miami Beach, FL, 1987), 537-543, *ACM, New York*, 1987. (see **89f:68003**) **68Q35**
- (with Wei, W. D.) Rearrangement inequalities. *J. Math. Res. Exposition* **7** (1987), no. 3, 505-510. (Morton Abramson) **89b:05009** 05A20
- Liu, De** Some advances in the investigation of the Radon-Nikodým property. (Chinese. English summary) *Neimenggu Daxue Xuebao* **18** (1987), no. 3, 594-608. (Summary) **89c:46021** 46B22 (46G10)
- Liu, De Fu** Local energy decay for hyperbolic systems in exterior domains. *J. Math. Anal. Appl.* **128** (1987), no. 2, 312-331. (Mitsuhiko Nakao) **89i:35025** 35B40 (35L20, 81F30)

- Liu, Di Fen** A numerical procedure for discounted model Markov decision programming. (Chinese. English summary) *Hunan Shifan Daxue Ziran Kexue Xuebao* 10 (1987), no. 4, 15–22. (Summary) **89e:90210** 90C40
- Liu, Ding Yuan** Algorithms for computing area and volume bounded by Bézier curves and surfaces. (Chinese. English summary) *Math. Numer. Sinica* 9 (1987), no. 3, 327–336. (Yu Yu Feng) **89f:65021** 65D30 (65D15)
- Liu, Dong Bo** (with Li, De Yi) Fuzzy reasoning based on  $f$ -Horn clause rules. *Algebraic and logic programming (Gaussig, 1988)*, 214–222, *Math. Res.*, 49, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) 68Q55 (03B70, 03E72)
- Liu, Fa Sheng** A note on probabilities in proofreading. *Amer. Math. Monthly* 95 (1988), no. 9, 854. (Karl Weber) **89j:60020** 60C05 (62N10)
- Liu, Fa Wang** A class of Adams implicit methods with stable parameter and a new algorithm. (Chinese. English summary) *Math. Numer. Sinica* 9 (1987), no. 4, 365–372. (Zeng Rong Chen) **89e:65083** 65L20 (65L05)
- Liu, Fu Sui** (with Bao, Ke Da) The Liouville theorem involving quantum effect. *Acta Math. Sci. (English Ed.)* 6 (1986), no. 2, 201–211. (Summary) **89d:81131** 81H99 (70H10)
- Liu, Gao Dian** An improved algorithm for linear programming and its basic procedure. (Chinese. English summary) *J. Guizhou Inst. Tech.* 16 (1987), no. 1, 26–32. (Not in MR) 90C03
- Liu, Gen Qian** The measurability of  $\delta$  in Henstock integration. *Real Anal. Exchange* 13 (1987/88), no. 2, 446–450. (Yōto Kubota) **89e:26019** 26A42
- Liu, Guang Ben** see **Zhang, Hui Min**, **89j:01068**
- Liu, Guang Xu** On singularly perturbed quasilinear systems. *Appl. Math. Mech. (English Ed.)* 8 (1987), no. 11, 1027–1036; translated from *Appl. Math. Mech.* 8 (1987), no. 11, 967–976 (Chinese. English summary). (Mark H. Holmes) **89d:34039** 34B15 (34A40, 34E15)
- Liu, Guang Yu** Decomposability and generalized derivations. (Chinese) *Acta Math. Sinica* 30 (1987), no. 4, 504–511. (Sheng Wang Wang) **89d:47075** 47B47 (47B40)
- A duality principle for a system of commuting operators having  $\sigma'$  spectral capacity. (Chinese) An English summary appears in Chinese Ann. Math. Ser. B 9 (1988), no. 1, 148. *Chinese Ann. Math. Ser. A* 8 (1987), no. 6, 671–676. (Shan Li Sun) **89g:47040** 47B40
- Liu, Guang Yun** A non-Archimedean number system with infinitely many strata, one of which contains the nonzero real numbers. (Chinese. English summary) *Natur. Sci. J. Harbin Normal Univ.* 3 (1987), no. 4, 1–9. (Title) **89g:04006** 04A99
- Liu, Gui Ting** (with Wang, Zhen Yuan) Extensions of consonant belief functions. (Chinese. English summary) *Fuzzy Math.* 7 (1987), no. 2, 15–18, 22. (Summary) **89h:03098** 03E72 (92A25)
- Liu, Gui Zhen** The connectivity of matroid base graphs. (Chinese) *Chinese J. Oper. Res.* 3 (1984), no. 1, 59–60. (Hugo S. Sun) **89m:05036** 05B35 (05C40, 90C27)
- A theorem on the 1-factors of 2-trees. (Chinese) *Chinese J. Oper. Res.* 3 (1984), no. 2, 67–68. (Hugo S. Sun) **89m:05045** 05C05 (05C70)
- An algorithm for generating ordered forests lexicographically. (Chinese) *Chinese J. Oper. Res.* 4 (1985), no. 1, 65–66. (Ru Shu Luan) **89h:05025** 05C05 (68R10)
- $k$ -factors of matroid base graphs. (Chinese. English summary) *J. Math. (Wuhan)* 7 (1987), no. 4, 375–378. (W.-K. Chen) **89i:05084** 05B35 (05C65, 05C70)
- On  $(g, f)$ -covered graphs. *Acta Math. Sci. (English Ed.)* 8 (1988), no. 2, 181–184. (Charles H. C. Little) **89k:05084** 05C70
- On  $f$ -covered graphs. Seventeenth Manitoba Conference on Numerical Mathematics and Computing (Winnipeg, MB, 1987). *Congr. Numer.* 61 (1988), 81–86. (Charles H. C. Little) **89g:05086** 05C70 (05C75)
- A lower bound on connectivities of matroid base graphs. *Discrete Math.* 69 (1988), no. 1, 55–60. (Daniel Turzick) **89e:05133a** 05C40 (05B35)
- Erratum: "A lower bound on connectivities of matroid base graphs". *Discrete Math.* 71 (1988), no. 2, 187. (Daniel Turzick) **89e:05133b** 05C40 (05B35)
- (with Heinrich, Katherine) A lower bound on the number of spanning trees with  $k$  end-vertices. *J. Graph Theory* 12 (1988), no. 1, 95–100. (Seymour Schuster) **89g:05045** 05C05
- On connectivities of tree graphs. *J. Graph Theory* 12 (1988), no. 3, 453–459. (L. Caccetta) **89i:05188** 05C40
- Liu, Gui Zhong** (with You, Zhao Yong) Finite systems of linear operators whose norms may be used to approximate their spectral radii simultaneously. (Chinese. English summary) *J. Math. Res. Exposition* 6 (1986), no. 3, 99–102. (Jin-Chuan Hou) **89c:47006** 47A10 (47A30)
- (with Shou, Ji Lin) The vector-valued case of the Ekeland variational principle. (Chinese. English summary) *Xi'an Jiaotong Daxue Xuebao* 21 (1987), no. 6, 91–97. (Shuzi Zhou) **89g:49010** 49A27 (47H10, 58E30, 90C48)
- Liu, Hai Lou** (with Ma, Si Liang) Some monotone finite difference schemes with weakly dispersive error. (Chinese. English summary) *J. Math. Res. Exposition* 6 (1986), no. 4, 117–122. (Hong Yuan Fu) **89e:65099** 65M05
- Liu, Hong Cai** (with Yin, Yi Xin; Shu, Di Qian) Computer-aided design of multivariable self-tuning control and its application. (Chinese. English summary) *Inform. and Control (Shenyang)* 16 (1987), no. 5, 12–18. (Jifeng Zhang) **89j:93074** 93C40 (93C35)
- (with Wang, Jing; Shu, Di Qian; Wu, Bao Liang; Zheng, Fu Jian) A multivariable pole assignment self-tuning regulator with integrator and its application to cover annealing furnaces. (Chinese. English summary) *Control Theory Appl.* 5 (1988), no. 2, 123–130. (Not in MR) 93B55 (93C40)
- Liu, Hong Quan** An asymptotic formula for  $F_2(x)$ . (Chinese) *Acta Math. Sinica* 30 (1987), no. 5, 695–705. (Xiu Yuan Yu) **89f:11132** 11N45 (20D60)
- Liu, Hong Ya** Exact plane-wave solutions of Einstein-Maxwell equations under the harmonic condition. *Sci. Sinica Ser. A* 30 (1987), no. 8, 846–852. (Summary) **89f:83026** 83C15 (83C50)
- (with Shi, Wan Zhong) Plane-wave solutions in five-dimensional Kaluza-Klein theories. *Gen. Relativity Gravitation* 20 (1988), no. 4, 407–411. (L. M. Sokolowski) **89e:83073** 83E15 (83C35)
- Liu, Hui** see **Dong, Ying Zhe**, **89f:01009**
- Liu, Hui-Kung** (with Thode, Henry C., Jr.; Finch, Stephen J.) Large sample power of absolute moment tests. *Comm. Statist. Simulation Comput.* 17 (1988), no. 4, 1453–1458. (Not in MR) 62F03
- Liu, J. C.** see **Liu, Ji Cheng**
- Liu, J. T. C.** Coherent structures in transitional and turbulent free shear flows. *Annual review of fluid mechanics*, Vol. 21, 285–315, *Annual Reviews*, Palo Alto, CA, 1989. (see **89g:76002**) 76F10
- Liu, Ji Cheng** (with Duan, Yi Shi)  $\phi$ -mapping method, topological current, and string theory. *Proceedings of the Johns Hopkins Workshop on Current Problems in Particle Theory*. 11. *Frontiers in Particle Theory*, 183–193, *World Sci. Publishing*, Singapore, 1988. (P. Mitra) **89f:81130** 81E20 (53C50, 81E30)
- (with Duan, Yi Shi; Dong, Xue Geng) General covariant energy-momentum conservation law in general spacetime. *Gen. Relativity Gravitation* 20 (1988), no. 5, 485–496. (R. J. McKellar) **89j:83033** 83C40 (83D05, 83E10)
- Liu, Jia Gang** Direct radiation in periodic forest canopies. *Kexue Tongbao (English Ed.)* 33 (1988), no. 8, 682–684. (Introduction) **89h:92062** 92A17
- Liu, Jian<sup>2</sup>** (with Huang, Guo Xiang<sup>2</sup>) A key-lock access control. *J. Comput. Sci. Tech. (English Ed.)* 2 (1987), no. 3, 236–243. (Not in MR) 68N25
- Liu, Jian<sup>3</sup>** (with Brockwell, Peter J.) On the general bilinear time series model. *J. Appl. Probab.* 25 (1988), no. 3, 553–564. (E. J. Hannan) **89j:62127** 62M10 (60G10)
- Liu, Jian Heng** (with Dong, Zhi Hua; Shi, Wan Zhong; Ying, Peng Cheng) Pattern of  $E_6$  symmetry breaking in the superstring theory. *Phys. Lett. B* 202 (1988), no. 4, 515–518. (Summary) **89d:81092** 81E99 (81D20, 81E30)
- Liu, Jie<sup>1</sup>** The Teichmüller metric and a problem of T. Sorvali. (Chinese. English summary) *Beijing Daxue Xuebao* 1987, no. 5, 52–64. (Fuyao Ren) **89k:30047** 30F20 (32G15)
- Liu, Jin Ming<sup>1</sup>** (with Guo, Shuo Hong; Chen, Qi Zhou) The improved Hamiltonian and  $p$ - $u$  mass difference in lattice gauge theory. *Comm. Theoret. Phys.* 7 (1987), no. 3, 263–273. (Not in MR) 81E25 (81G25)
- Liu, Jin-Ming<sup>2</sup>** (with Kunde, Manfred; Langston, Michael A.) On a special case of uniform processor scheduling. *J. Algorithms* 9 (1988), no. 2, 287–296. (Summary) **89c:68016** 68N25 (68Q20, 90B35)
- Liu, Jing Lin** (with Yuan, Xiao Ping) A simple proof of the spectral decomposition of selfadjoint Sturm-Liouville differential operators in the limit circle case. (Chinese. English summary) *Neimenggu Daxue Xuebao* 18 (1987), no. 4, 635–641. (Not in MR) 34B25 (47E05)
- The Calkin approach to selfadjoint extensions of symmetric operators. (Chinese. English summary) *Neimenggu Daxue Xuebao* 19 (1988), no. 4, 573–587. (Summary) **89k:47037** 47B25 (34B25, 47A20, 47E05)
- Liu, Jiu Qiang** (with Wang, Jian Fang; Tian, Song Lin) On the binding numbers of graphs. (Chinese) *Acta Math. Sinica* 30 (1987), no. 5, 653–660. (Fu Ji Zhang) **89d:05113** 05C35
- Liu, John J.** (with Szwarc, Włodzimierz; Posner, Marc E.) The single machine problem with a quadratic cost function of completion times. *Management Sci.* 34 (1988), no. 12, 1480–1488. (Summary) **89j:90153** 90B35
- Liu, Joseph W. H.** (with George, Alan; Ng, Esmond) A data structure for sparse  $QR$  and  $LU$  factorizations. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 1, 100–121. (David R. Kincaid) **89g:65057** 65F50 (65F25)
- Equivalent sparse matrix reordering by elimination tree rotations. *SIAM J. Sci. Statist. Comput.* 9 (1988), no. 3, 424–444. (Zahari Zlatev) **89c:65060** 65F50 (65F25)
- Liu, Jun<sup>1</sup>** (with Beer, G.; Meek, J. L.) The application of double exponential formulas in the boundary element method. *Boundary elements VII, Vol. I, II (Como, 1985)*, 13.3–13.16, *Comput. Mech., Southampton*, 1985. (see **89f:65003**) 65D30
- Liu, Jun<sup>2</sup>** (with Hughes, James)  $\beta$ -functions and the exact renormalization group. *Nuclear Phys. B* 307 (1988), no. 1, 183–197. (Summary) **89f:81119** 81E15
- Liu, K. C.** see **Liu, Ken Chih**
- Liu, K. L.** see **Liu, Kwok Leung**
- Liu, K. M.** see **Liu, Kam Moon**
- Liu, Kai Di** (with Wu, He Qin) Comparable infinitesimals and their application. (Chinese) *Natur. Sci. J. Harbin Normal Univ.* 3 (1987), no. 2, 120–121. (Not in MR) 26E99
- Liu, Kam Moon** (with Ortiz, E. L.) Tau method approximation of differential eigenvalue problems where the spectral parameter enters nonlinearly. *J. Comput. Phys.* 72 (1987), no. 2, 299–310. (Eckehard Wagenführer) **89a:65124** 65L15 (65F15)
- Numerical solution of differential eigenvalue problems with variable coefficients with the tau-collocation method. Mathematical modelling in science and technology (St. Louis, MO, 1987). *Math. Comput. Modelling* 11 (1988), 672–675. (Summary) **89g:65105** 65L15
- Liu, Kang Man** Decomposition of matrices into three involutions. *Linear Algebra Appl.* 111 (1988), 1–24. (William H. Gustafson) **89k:15021** 15A23
- Liu, Ke** Moment estimates of parameters in  $E_k/E_l/c$  queueing systems. (Chinese) *J. Math. Res. Exposition* 6 (1986), no. 3, 119–123. (Summary) **89d:60182** 60K25 (90B22)
- (with Dong, Ze Qing) The structure of optimal policies for discounted models. (Chinese) *J. Math. Res. Exposition* 6 (1986), no. 3, 125–134. (Summary) **89h:90220** 90C40
- Liu, Ken Chih** (with Miller, Leslie L.; Gadia, S. K.; Kothari, S.) Completeness issues for join dependencies derived from the universal relation join dependency. *Inform. Process. Lett.* 28 (1988), no. 5, 269–274. (Summary) **89f:68029** 68P15
- Liu, Kun Liu** (with Li, Zhong Liang; Ge, Yu An) A discrete linear control model and its application to economic forecasting. (Chinese. English summary) *J. Tsinghua Univ.* 27 (1987), no. 6, 106–114. (Summary) **89h:90063** 90A20 (62P20, 93C75)
- Liu, Kwok Leung** (with Young, K.) Generalized renormalization group analysis of period-doubling bifurcations. *Directions in chaos*, Vol. 1, 91–121, *World Sci. Ser. Dir. Condensed Matter Phys.*, 3, *World Sci. Publishing*, Singapore, 1987. (Arkady S. Pikovsky) **89g:58156** 58F14 (58F08, 58F13)
- Liu, L. G.** (with Bentz, W.; Arima, A.) Chiral symmetry in nuclear matter. *Ann. Physics* 188 (1988), no. 1, 61–119. (Summary) **89j:81269** 81G35
- Liu, L. T.** see **Liu, Lung T'ien**
- Liu, Lai Fu** (with Huang, Hai Yang) Essential boundary value problems of analytic functions with two shifts. (Chinese. English summary) *Beijing Shifan Daxue Xuebao* 1987, no. 2, 1–8. (J. S. Hwang) **89a:30034** 30E25
- Liu, Li** The structure of groups having at most four noncentral conjugacy classes. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 6, suppl., 73–79. (Summary) **89h:20041** 20E34
- Liu, Li Quan** (with Owa, Shigeyoshi; Ma, Wan Cang) On a class of analytic functions satisfying  $\operatorname{Re}\{f'(z)\} > \alpha$ . *Bull. Korean Math. Soc.* 25 (1988), no. 2, 211–214. (O. P. Juncja) **89j:30020** 30C45 (30C80)



- (with Owa, Shigeyoshi; Ma, Wan Cang) A note on certain subclass of close-to-convex functions. *Internat. J. Math. Math. Sci.* **11** (1988), no. 3, 493–495. (Herb Silverman) **89c:30023** 30C45 (30C80)
- Liu, Li Wan** On Cesàro means of Fourier series and power series. (Chinese. English summary) *J. Math. Res. Exposition* **6** (1986), no. 4, 71–76. (Summary) **89b:42005** 42A24
- Liu, Li Yu** Another proof of Bing's pseudo-arc characterization theorem. (Chinese) *J. Math. Res. Exposition* **7** (1987), no. 2, 317–318. (Shu-Tang Wang) **89c:54064** 54F15
- Arcwise connectedness in solenoids. (Chinese. English summary) *J. Math. Res. Exposition* **8** (1988), no. 3, 363–366. (Summary) **89i:54027** 54D05 (54F20)
- Liu, Liang Shen** (with Zhu, Shuhao; Han, Jing Luan) Nice operators between ordered unit Banach spaces. (Chinese) *Acta Math. Sinica* **31** (1988), no. 3, 320–325. (Shunhua Sun) **89k:47056** 47B55
- Liu, Liao** (with Huang, Chao Guang) Quantum cosmology in superstring theory—a toy model. *Proceedings of the Johns Hopkins Workshop on Current Problems in Particle Theory*, 11. *Frontiers in Particle Theory*, 319–324. *World Sci. Publishing, Singapore*, 1988. (Summary) **89c:83074** 83E15 (81E30, 83E30, 83F05)
- (with Huang, Chao Guang) The quantum cosmology in the Brans-Dicke theory. *Gen. Relativity Gravitation* **20** (1988), no. 6, 583–587. (Byung Ha Cho) **89i:83052** 83D05 (83F05)
- Liu, Liming** (with Kashyap, B. R. K.; Templeton, J. G. C.) The service system  $M/M^R/\infty$  with impatient customers. *Queueing Systems Theory Appl.* **2** (1987), no. 4, 363–372. (Charles Tier) **89d:60183** 60K25 (90B22)
- Liu, Long Fu** Cyclic vectors for bilateral weighted shifts and other problems. *J. Math. Res. Exposition (English Ed.)* **1986**, no. 2, 110–112. (Warren R. Wogen) **89d:47050** 47B37 (47B20)
- Liu, Lu Qin** Some theorems on the existence of dual processes. (Chinese) *Acta Math. Sci. (Chinese)* **7** (1987), no. 3, 293–301. (Rong Wu) **89c:60143** 60J40
- Additive functionals and stopping time changes of Markov processes. II. (Chinese. English summary) *J. Math. (Wuhan)* **8** (1988), no. 1, 83–90. (Summary) **89k:60101** 60J25
- Liu, Lung Lang** (with Chen, Wen Tsuen) A parallel approach for theorem proving in propositional logic. *Inform. Sci.* **41** (1987), no. 1, 61–76. (Summary) **89c:68086** 68T15 (03B05, 03B35)
- Liu, Lung T'ien** (with Ch'ien, Chien Hui; Yu, M. S.) Two algorithms for constructing a binary tree from its traversals. *Inform. Process. Lett.* **28** (1988), no. 6, 297–299. (Summary) **89i:68048** 68Q20 (68P05)
- Liu, M. Z.** (with Dekker, K.; Spijker, M. N.) Suitability of Runge-Kutta methods. *Proceedings of the 2nd international conference on computational and applied mathematics* (Leuven, 1986). *J. Comput. Appl. Math.* **20** (1987), Special Issue, 307–315. (A. Coşiu) **89a:65109** 65L05
- Liu, Mei Hua** (with Lin, Wei<sup>2</sup>; Huang, Yi Fu) A decentralized self-tuning controller with gravity compensation for robotic manipulators. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* **15** (1987), no. 4, part II, 141–146. (Not in MR) **93C75** (93C40)
- (with Lin, Wei<sup>2</sup>) Multivariable adaptive control with arbitrary dimension of input and output. (Chinese. English summary) *Control Theory Appl.* **5** (1988), no. 1, 33–41. (Jifeng Zhang) **89i:93076** 93C40 (93C35, 93E20)
- Liu, Meng-Ru** (with Malkus, David S.; Plesha, Michael E.) Reversed stability conditions in transient finite element analysis. *Comput. Methods Appl. Mech. Engrg.* **68** (1988), no. 1, 97–114. (Summary) **89d:73038** 73K25 (65P05, 73D99, 76–08)
- Liu, Min-Shan** (with Emanuel, G.) Shock wave derivatives. *Phys. Fluids* **31** (1988), no. 12, 3625–3633. (Summary) **89f:76069** 76L05 (76N15)
- Liu, Ming T.** (with Elmagarm, Ahmed K.; Soundararajan, Neelam) A distributed deadlock detection and resolution algorithm and its correctness proof. *IEEE Trans. Software Engrg.* **14** (1988), no. 10, 1443–1452. (Not in MR) **68M10** (68Q60)
- (with Chiu, Lin) Variable timestamps: performance analysis. *Inform. Sci.* **46** (1988), no. 1–2, 3–25. (Erol Gelenbe) **89m:68021** 68P15 (68M20)
- Liu, Ming Yang** (with Zhao, Yi) The attainability problem and optimal control for a class of bilinear systems. (Chinese. English summary) *Control Theory Appl.* **4** (1987), no. 4, 9–16. (Jiong Min Yong) **89m:49070** 49E15 (93C25)
- Liu, Nan Gen** On V. I. Arnold's problem—a stability criterion for a class of higher-order singular points. (Chinese) *J. Math. Res. Exposition* **7** (1987), no. 1, 55–62. (Lian Wang) **89b:58116** 58F10 (34C05, 34D20, 58F21)
- Liu, Pei De** Vector-valued martingales in the limit and their a.e. convergence. (Chinese) *Acta Math. Sci. (Chinese)* **7** (1987), no. 4, 481–485. (Jia Gang Wang) **89d:60091** 60G48 (60B12)
- Set function processes and nuclearity in Fréchet spaces. (Chinese. English summary) *J. Wuhan Univ. Natur. Sci. Ed.* **1987**, no. 4, 1–9. (Shao Zhong Cheng) **89k:46003** 46A12 (28B05, 60B11, 60G48)
- Martingale characterizations of spaces not containing a copy of  $l_1$ . (Chinese. English summary) *J. Systems Sci. Math. Sci.* **8** (1988), no. 1, 25–31. (Summary) **89i:46019** 46B20 (60G48)
- Liu, Ping Zhou** (with Chen, Lan Sun; Xiao, Zao) Permanence in ecosystems. (Chinese. English summary) *J. Biomath.* **3** (1988), no. 1, 18–32. (Joseph So) **89b:92043** 92A15 (92A17)
- (with Liu, Zhi Han) The direct methods of Lyapunov for persistence in ecosystems. (Chinese. English summary) *J. Biomath.* **3** (1988), no. 2, 122–131. (Rong Liang Wang) **89m:92049** 92A17 (34D99)
- Liu, Qi Jin** Fuzzy pseudocompactness. *Fuzzy Math.* **7** (1987), no. 1, 69–76. (Not in MR) **54A40** (03E72, 54D30)
- Liu, Qiang** (with Davies, H. G.) Application of non-Gaussian closure to the nonstationary response of a Duffing oscillator. *Internat. J. Non-Linear Mech.* **23** (1988), no. 3, 241–250. (Summary) **89c:70025** 70L05
- Liu, Qiang Zhong** On the structure of molecular lattices. (Chinese. English summary) *J. Math. Res. Exposition* **7** (1987), no. 3, 389–392. (Summary) **89c:06009** 06B99 (54H12)
- Liu, Qin** see **Liu, Qing**
- Liu, Qin Sheng** An optimization method using a nonquadratic model. (Chinese) *Math. Practice Theory* **1987**, no. 4, 48–55. (Not in MR) **90C30** (49D07, 65K10)
- Liu, Qing** Ouverts analytiques d'une courbe algébrique en géométrie rigide. (English summary) [Analytic open sets of an algebraic curve in rigid geometry] *Ann. Inst. Fourier (Grenoble)* **37** (1987), no. 3, 39–64. (W. Bartenwerfer) **89c:14032** 14G20 (14H25, 30G05)
- Un contre-exemple au "critère cohomologique d'affinoidité". (English summary) [A counterexample to the "cohomological criterion of affinoidity"] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 2, 83–86. (W. Bartenwerfer) **89k:32031** 32E10 (32E27)
- (with Zhan, Ken Hua) A new strategy in immune response. (Chinese. English summary) *J. Biomath.* **3** (1988), no. 2, 102–107. (Summary) **89j:92032** 92A09 (92A07)
- Liu, Qingli** (with Bruton, L. T.) Design of 3-D planar and beam recursive digital filters using spectral transformations. *IEEE Trans. Circuits and Systems* **36** (1989), no. 3, 365–374. (Summary) **89k:94006** 94A11 (94A12, 94C05)
- Liu, Regina Y.** (with Singh, Kesar) On a partial correction by the bootstrap. *Ann. Statist.* **15** (1987), no. 4, 1713–1718. (Arup Bose) **89b:62097** 62G15 (62F99)
- On a notion of simplicial depth. *Proc. Nat. Acad. Sci. U.S.A.* **85** (1988), no. 6, 1732–1734. (C. R. Rao) **89c:62090** 62H12
- Liu, Richard C.** (with Donoho, David L.) The "automatic" robustness of minimum distance functionals. *Ann. Statist.* **16** (1988), no. 2, 552–586. (A. K. Md. Ehsanes Saleh) **89i:62051** 62F35
- (with Donoho, David L.) Pathologies of some minimum distance estimators. *Ann. Statist.* **16** (1988), no. 2, 587–608. (Elvezio Ronchetti) **89b:62032** 62F10 (62F35)
- Liu, Robin** (with Ntafos, Simeon) On decomposing polygons into uniformly monotone parts. *Inform. Process. Lett.* **27** (1988), no. 2, 85–89. (Summary) **89a:68209** 68U05
- Liu, Ru Xun** (with Wei, W.) A simple and convenient approach for numerical simulation of shock waves. (Chinese summary) *J. China Univ. Sci. Tech.* **17** (1987), no. 3, 303–316. (Rolf Jeltsch) **89c:65088** 65M05
- Liu, Rui** (with Cao, Zhen Fu; Zhang, Liang Rui) On the equation  $\sum_{j=1}^n (1/x_j) + (1/(x_1 \cdots x_n)) = 1$  and Znam's problem. *J. Number Theory* **27** (1987), no. 2, 206–211. (Sun Qi) **89d:11023** 11D68 (11A05)
- Liu, Rui Zhi** Comment: "Monotone and comonotone approximation" [Proc. Amer. Math. Soc. **42** (1974), 390–394; MR **49** #952] by E. Passow and L. Raymon. (Chinese. English summary) *J. Math. Res. Exposition* **9** (1989), no. 1, 145–148. (Editors) **89m:41021** 41A50 (41A29)
- Liu, Shao Sheng** see **Liu, Shao Zhong**
- Liu, Shao Xue** Recent research work on radicals in China. *Contributions to general algebra*, 4 (Krems, 1985), 85–97. *Hölder-Pichler-Tempsky, Vienna*, 1987. (R. L. Tangeman) **89c:16015** 16A21 (01A65, 17A65)
- The Baer radical and Levitzki radical of additive categories. (Chinese. English summary) *Beijing Shifan Daxue Xuebao* **1987**, no. 4, 13–20. (Yonghua Xu) **89c:16016** 16A21 (18E99)
- (with Luo, Yun Lun; Tang, Ai Ping; Xiao, Jie; Guo, Jin Yun) Some results on modules and rings. *Bull. Soc. Math. Belg. Sér. B* **39** (1987), no. 2, 181–193. (Iuliu Crivei) **89c:16008** 16A12 (16A21, 16A35, 16A89)
- Geometric properties of directed graphs and algebraic properties of their path algebras. (Chinese) *Acta Math. Sinica* **31** (1988), no. 4, 483–487. (Tian Xing Yao) **89i:05180** 05C38 (05C20, 05C75, 16A99)
- The Wedderburn-Artin theorem for additive categories. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 3, 172–174. (Not in MR) **18E05**
- Liu, Shao Zhong** (with Yang, Shao Hua; Xu, Ming Bao; Wen, Xing Gui) A numerical simulation method for two-phase fluid flow in three-dimensional space. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* **8** (1987), no. 3, 183–192. (Rong Hua Li) **89d:65093** 65N05
- Liu, Shi Ping** A necessary and sufficient condition for an associative ring to be a direct sum of division rings. (Chinese. English summary) *Hunan Shiyuan Xuebao Ziran Kexue Ban* **1984**, no. 2, 14–16. (Summary) **89d:16020** 16A35
- The termination problem for the extension-union construction of lower radical classes. (Chinese. English summary) *J. Math. (Wuhan)* **7** (1987), no. 4, 379–384. (Yonghua Xu) **89m:16013** 16A21
- Liu, Shi Qiang** On problems of elastic half-planes with periodic cracks. (Chinese. English summary) *Hunan Ann. Math.* **7** (1987), no. 2, 16–24. (Jian Ke Lu) **89f:73015** 73C03 (45E99, 73M05)
- The fundamental problem for a long elastic strip with periodic cracks. (Chinese) *Acta Math. Sci. (Chinese)* **8** (1988), no. 2, 197–207. (Haitao Cai) **89k:73013** 73C35 (73C03, 73M05)
- Liu, Shi Wei** Extreme smoothness of Banach spaces and continuity of supporting mappings. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* **21** (1987), no. 3, 327–331. (Bor-Luh Lin) **89d:46020** 46B20
- Liu, Shu Cheng** (with Gui, Xiang Yun) An exchange type null space method for general quadratic programming problems. (Chinese. English summary) *Acta Math. Appl. Sinica* **11** (1988), no. 2, 209–221. (Jian Zhong Zhang) **89i:90057** 90C20
- Liu, Shu Lin** Proof of the Morse-Smale theorem. (Chinese) An English summary appears in *Chinese Ann. Math. Ser. B* **8** (1987), no. 4, 488. *Chinese Ann. Math. Ser. A* **8** (1987), no. 4, 421–432. (Ding Jun Luo) **89f:58076** 58F09
- Liu, Shu Qin** On univalent functions. (Chinese) *J. Northwest Univ.* **17** (1987), no. 4, 17–22. (Ai Nong Fang) **89g:30034** 30C50 (30C55)
- Liu, Shu Zhong** Some conditions equivalent to sequential completeness in locally convex spaces. (Chinese. English summary) *Neimenggu Daxue Xuebao* **18** (1987), no. 3, 419–422. (Summary) **89a:46018** 46A30 (46A05)
- Liu, Tai-Ping** Pointwise convergence to  $N$ -waves for solutions of hyperbolic conservation laws. *Bull. Inst. Math. Acad. Sinica* **15** (1987), no. 1, 1–17. (Albert J. Milani) **89k:35202** 35L65
- (with Caffisch, Russel E.) Stability of shock waves for the Broadwell equations. *Comm. Math. Phys.* **114** (1988), no. 1, 103–130. (Summary) **89k:76078** 76P05 (35Q20, 76E99, 76L05, 82A40)
- (with Xin, Zhou Ping) Nonlinear stability of rarefaction waves for compressible Navier-Stokes equations. *Comm. Math. Phys.* **118** (1988), no. 3, 451–465. (Moses A. Boudourides) **89i:35112** 35Q10 (35B35, 76N15)
- Nonlinear waves for viscoelasticity with fading memory. *J. Differential Equations* **76** (1988), no. 1, 26–46. (Renuka Ravindran) **89m:35149** 35L99 (35Q20, 73F15)
- Liu, Tian Yi** The stability of a class of multispecies predator-prey systems. (Chinese) *Acta Math. Appl. Sinica* **10** (1987), no. 4, 498–503. (Xinhua Ji) **89c:92039** 92A15 (34D20, 92A17)

- Liu, Vincent C.** (with Vaidyanathan, P. P.) Classical sampling theorems in the context of multirate and polyphase digital filter bank structures. *IEEE Trans. Acoust. Speech Signal Process.* 36 (1988), no. 9, 1480-1495. (Not in MR) 94A12
- (with Vaidyanathan, P. P.) Circulant and skew-circulant matrices as new normal-form realization of IIR digital filters. *IEEE Trans. Circuits and Systems* 35 (1988), no. 6, 625-635. (Not in MR) 94A12 (94A05)
- Liu, Wei** (with Lü, Feng, Li, Dian Guo) The establishment of the membership functions of the same kind of problems. (Chinese summary) *Dongbei Shida Xuebao* 1988, no. 1, 5-11. (Editors) 89g:03082 03E72
- Liu, Wei Guo** (with Dong, Chun Fei) The shortest path problem on a class of variable weighted networks. (Chinese) *Chinese J. Oper. Res.* 3 (1984), no. 1, 61-62. (Not in MR) 90B10
- Liu, Wen Bin** Conditions for generators of positive semigroups. (Chinese) An English summary appears in *Chinese Ann. Math. Ser. B* 9 (1988), no. 1, 150. *Chinese Ann. Math. Ser. A* 8 (1987), no. 6, 741-748. (Sen-Yen Shaw) 89j:47025 47D05 (47B55)
- Liu, Wu Wang** A generalization of an inequality for convex functions. (Chinese. English summary) *Hunan Shifan Daxue Xuebao* 11 (1988), no. 2, 110-113, 98. (Yung L. Tong) 89m:60039 60E15
- Liu, X. Y.** see **Liu, Xi Yuan**
- Liu, Xi Hui** (with Li, Bao Wen; Wang, Pei Zhuang; Shi, Yong) Fuzzy bags and relations with set-valued statistics. *Comput. Math. Appl.* 15 (1988), no. 10, 811-818. (Summary) 89d:03058 03E72
- Liu, Xi Jian** A class of birth and death systems on  $Z$ . *Acta Math. Sci. (English Ed.)* 6 (1986), no. 4, 379-385. (From the introduction) 89h:60170 60K35
- (with Dai, Yong Long) Quasi-nearest particle systems. *Acta Math. Sinica (N.S.)* 2 (1986), no. 1, 92-104. (M. Mürmann (Zbl 622:60116)) 89a:60237 60K35
- Liu, Xi Yuan**<sup>1</sup> (with Wang, Yao Dong)  $H^{2,1}$  regularity of solutions of parabolic variational inequalities. (Chinese. English summary) *Beijing Daxue Xuebao* 1986, no. 5, 66-77. (Jiong Min Yong) 89j:49014 49A29 (35K85)
- (with Chen, Yung Ming) Convergence of a generalized pulse-spectrum technique (GPST) for inverse problems of 1-D diffusion equations in space-time domain. *Math. Comp.* 51 (1988), no. 184, 477-489. (N. L. Vulchanov) 89k:65157 65P05 (35R30)
- Liu, Xia Qi** (with Wang, Zhi Zhong; Xu, Jun Rong) A recursive algorithm for error prediction in a general full structure model. (Chinese. English summary) *J. Shanghai Jiaotong Univ.* 22 (1988), no. 1, 56-65, 123. (Jifeng Zhang) 89j:93131 93E12
- Liu, Xian Gao** Regular solvability of two-dimensional singular integral equations with analytic coefficients. (Chinese. English summary) *Hunan Daxue Xuebao* 15 (1988), no. 1 *Special Issue of Math.*, 285-289. (Sheng Gong) 89m:45005 45E99
- Liu, Xiao Bo** (with Zhang, Zhong Liang) A space-time finite element method for parabolic equations. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* 8 (1987), no. 4, 206-213. (Zhimin Zhang) 89k:65116 65M60
- Liu, Xiao Shi** Cardinal functions for the pointwise topology on a lattice. (Chinese) *J. Math. Res. Exposition* 6 (1986), no. 3, 5-11. (Zike Deng) 89c:54015 54A40 (03E72, 06D10)
- The interior operator, regularity and normality of topologies on completely distributive lattices. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 21, 1606-1608. (Not in MR) 06D10
- Liu, Xiao Song** (with Yang, Zhi Chao) A linear estimation method for ARMA parameters. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* 9 (1988), no. 1, 15-21. (Zhen Hua Wang) 89k:62083 62J02 (62M10, 93E12)
- Liu, Xiaoyu** (with Balasubramanian, K.) Computer generation of spectra of graphs: applications to  $C_{60}$  clusters and other systems. *J. Comput. Chem.* 9 (1988), no. 4, 406-415. (Not in MR) 92A40
- (with Balasubramanian, K.) Computer generation of edge groups and edge colorings of graphs. *J. Comput. Chem.* 10 (1989), no. 1, 1-13. (Summary) 89m:92065 92A40 (05-04, 05C15)
- Liu, Xin Guo** The perturbation of matrix eigenvalues. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* 9 (1987), no. 3, 258-263. (E. L. Yip) 89i:15024 15A42
- Liu, Xinzhì** (with Lakshmikantham, V.) Stability for impulsive differential systems in terms of two measures. *Appl. Math. Comput.* 29 (1989), no. 1, part 1, 89-98. (A. Corduneanu) 89m:34067 34D20 (34D10, 93C57)
- Stability in terms of two measures for functional-differential equations. *Differential Integral Equations* 2 (1989), no. 1, 13-20. (Daoyi Xu) 89j:34108 34K20
- Liu, Xiu Fang** (with Durrett, Rick) The contact process on a finite set. *Ann. Probab.* 16 (1988), no. 3, 1158-1173. (T. M. Liggett) 89f:60119 60K35
- Liu, Xiu He** Solution strategies for structural nonlinear problems. (Chinese summary) *J. Changsha Railway Inst.* 5 (1987), no. 2, 25-32. (Summary) 89f:73053 73K30 (73K10)
- Liu, Xu Hua** (with Yu, Yuan) The nature of finite fuzzy Boolean algebras. (Chinese) *Fuzzy Math.* 6 (1986), no. 4, 21-24. (Bai Ying Shen) 89m:06019 06E99 (03E72, 03G05)
- Fuzzy reasoning with equality relation in operator fuzzy logic. *Sci. Sinica Ser. A* 31 (1988), no. 2, 162-171. (Summary) 89k:03024 03B52 (03B35, 68T15, 92A25)
- Liu, Xun Ming** (with Chen, Qing Yi) Oscillatory functions and second order linear equations. *Acta Math. Sci. (English Ed.)* 6 (1986), no. 4, 445-452. (Introduction) 89i:34010 34A30 (34C10)
- (with Chen, Qing Yi) The problem of relative oscillations of second-order equations. (Chinese) *Acta Math. Sci. (Chinese)* 7 (1987), no. 4, 425-429. (Not in MR) 34C15
- (with Chen, Qing Yi) Some linear integro-differential equations. (Chinese. English summary) *J. Math. Res. Exposition* 7 (1987), no. 2, 296-300. (Summary) 89c:45015 45J05 (45D05)
- (with Chen, Qing Yi) Oscillatory functions and second-order linear equations. (Chinese) *J. Math. Res. Exposition* 8 (1988), no. 2, 255-260. (Cheh-Chih Yeh) 89j:34047 34C10 (34A30)
- Liu, Y. C.** (with Zienkiewicz, O. C.; Zhu, J. Z.; Morgan, Kenneth; Peraire, J.) Error estimates and adaptivity from elasticity to high speed compressible flow. *The mathematics of finite elements and applications, VI (Uxbridge, 1987)*, 483-512, Academic Press, London-New York, 1988. (see 89c:65004) 65N30 (65N15, 65V05, 76-08)
- Liu, Y. P.** see **Liu, Yan Ping**
- Liu, Ya Cheng** The global strong solutions of a class of systems of higher-dimensional semilinear diffusion equations arising in biology. (Chinese. English summary) *J. Xinjiang Univ. Natur. Sci.* 4 (1987), no. 2, 30-39. (Si Ning Zheng) 89a:35114 35K57 (92A09)
- Global strong solutions for a class of nonlinear multidimensional pseudohyperbolic equations. I. Initial-boundary value problems. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* 1988, no. 3, 10-14, 81. (Summary) 89j:35090 35L85 (35L70)
- Liu, Yan Pei** Enumeration of nonseparable outerplanar maps with vertex partition. *Kexue Tongbao (English Ed.)* 32 (1987), no. 24, 1664-1668. (Jozef Širáň) 89e:05108 05C30
- A note on the number of rooted simple planar triangulations. (Chinese. English summary) *Acta Math. Appl. Sinica* 11 (1988), no. 2, 146-148. (Fu Ji Zhang) 89i:05107 05C10
- On the enumeration of simple planar maps. (Chinese) *Acta Math. Sinica* 31 (1988), no. 2, 279-282. (Hugo S. Sun) 89j:05041 05C30 (05C10)
- Chromatic sum equations for rooted nonseparable planar maps. (Chinese. English summary) *Comm. Appl. Math. Comput.* 2 (1988), no. 1, 1-11. (Shaocen Han) 89k:05034 05C10 (05C15)
- (with Hammer, P. L.) Ordering relations and 0-1 programming problems. I. (Chinese) *J. Math. Res. Exposition* 8 (1988), no. 2, 315-325. (Yixun Lin) 89k:90110a 90C09 (06E30, 68Q15, 90C10)
- (with Hammer, P. L.) Ordering relations and 0-1 programming problems. II. (Chinese. English summary) *J. Math. Res. Exposition* 8 (1988), no. 3, 481-490. (Yixun Lin) 89k:90110b 90C09 (06E30, 68Q15, 90C10)
- see also Tutte, W. T., 89m:05042a; 89m:05042b; 89m:05042c; 89m:05042d; 89m:05042e and 89m:05042f
- Liu, Yan Ping** (with Korenberg, M. J.; Billings, S. A.; McIlroy, P. J.) Orthogonal parameter estimation algorithm for nonlinear stochastic systems. *Internat. J. Control* 48 (1988), no. 1, 193-210. (Summary) 89e:93184 93E10 (93C10, 93E12)
- Liu, Yi** (with Guo, Lei; Xia, Lige) Recursive algorithm for the computation of the  $H^\infty$ -norm of polynomials. *IEEE Trans. Automat. Control* 33 (1988), no. 12, 1154-1157. (Summary) 89i:93043 93B40 (93B25)
- Liu, Yi Rong** Formulas of focal values, center conditions and center integrals for the system  $(E^{(3)})$ . *Kexue Tongbao (English Ed.)* 33 (1988), no. 5, 357-359. (Ji Bin Li) 89j:34043 34C05 (58F21)
- Liu, Ying Jian** (with Dai, Ru Wei) A fuzzy attributed automaton for on-line recognition of handwritten Chinese characters. (Chinese. English summary) *Acta Automat. Sinica* 14 (1988), no. 2, 97-105. (Not in MR) 68T10 (03E72, 68U10)
- Liu, Ying Ming** (with Luo, Mao Kang) Fuzzy Stone-Čech type compactifications. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics (Poznań, 1986)*, 117-137, Wydawn. Politech. Poznań, Poznań, 1987. (O. Costinescu) 89i:54005 54A40 (03E72, 54D35)
- (with Luo, Mao Kang) Induced spaces and fuzzy Stone-Čech compactifications. *Sci. Sinica Ser. A* 30 (1987), no. 10, 1034-1044. (O. Costinescu) 89j:54009 54A40 (03E72, 54D35)
- (with Luo, Mao Kang) Pre-order relations in fuzzy compactifications. (Chinese) *Acta Math. Sinica* 31 (1988), no. 4, 433-442. (Run Sheng Yang) 89k:54014 54A40 (03E72)
- (with Luo, Mao Kang) A pre-order relation among fuzzy compactifications. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 8, 564-566. (Not in MR) 54A40 (03E72)
- (with Luo, Mao Kang) On  $N$ -compactness in  $L$ -fuzzy unit interval. *Kexue Tongbao (English Ed.)* 33 (1988), no. 1, 1-4. (O. Costinescu) 89f:54013 54A40 (03E72)
- Liu, Ying Xi** (with Shi, Guang Yu; Tang, Li Min) On the finite element analysis of incompressible fluid flow incorporating equal order pressure and velocity interpolation. (Chinese. English summary) *J. Dalian Inst. Tech.* 26 (1987), no. 4, 7-13. (Not in MR) 65N30 (76-08)
- Liu, Yong** (with Li, Wei<sup>2</sup>) Extremality of Teichmüller mappings. (Chinese. English summary) *Beijing Daxue Xuebao* 1987, no. 5, 42-51. (Fuyao Ren) 89j:30026 30C75 (30C60)
- Invariant measures for the single-parameter transformation group with compact orbits on Banach spaces. *Acta Math. Sci. (English Ed.)* 8 (1988), no. 1, 79-84. (Woodford W. Zachary) 89f:47122 47H20 (35Q20, 58D07)
- (with Pan, Wu Ming) The coefficients of fractional parentage of  $d$ -boson systems. (Chinese. English summary) *J. Central China Normal Univ. Natur. Sci.* 22 (1988), no. 2, 141-144. (Summary) 89j:81262 81G30
- Liu, Yong Cai** Construction and counting of generalized Boolean functions. *Discrete Math.* 69 (1988), no. 3, 313-316. (Nicolae Tandareanu) 89f:06025 06E30 (05A15)
- A linear method for evaluating the Cantor pairing function on  $n$ -tuples and its inverse. (Chinese. English summary) *Shanghai Keji Daxue Xuebao* 11 (1988), no. 1, 72-80. (Not in MR) 04-04 (03D20, 04A05)
- Liu, Yong Qing** (with Han, Jing Qing; Jin, Wei Yan; Qin, Yuan Xun) A criterion for all the roots of an algebraic equation to have negative real parts. (Chinese. English summary) *Control Theory Appl.* 4 (1987), no. 4, 41-47. (Not in MR) 26C10 (93B25)
- (with Zhu, Xue Feng; Huang, Dao Ping) Modified dynamic matrix control. (Chinese summary) *Control Theory Appl.* 5 (1988), no. 2, 38-46. (Not in MR) 93B40 (93C55)
- (with Lin, Ping Fan; Li, Zai Gen) The hybrid self-tuning PID regulator and its application to pH control. (Chinese summary) *Control Theory Appl.* 5 (1988), no. 2, 117-122. (Han Fu Chen) 89i:93075 93C40
- Liu, Yu Qi** (with Wang, Hong<sup>4</sup>) A study of adaptive robust control systems. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 3, 69-76. (Yen Ping Shih) 89j:93073 93C40 (93B35)
- Liu, Yu Qiang** (with Lee, Peng Yee) Infinite matrices of operators in nonabsolute sequence spaces. *Bull. Malaysian Math. Soc. (2)* 10 (1987), no. 1, 1-8. (K. Chandrasekhara Rao) 89j:47018 47B37 (46A45)
- (with Wu, Bo Er; Lee, Peng Yee) The second duals of the nonabsolute Cesàro sequence spaces. *Proceedings of the analysis conference, Singapore 1986*, 285-290, North-Holland Math. Stud., 150, North-Holland, Amsterdam-New York, 1988. (W. H. Ruckle) 89h:46009 46A45
- Liu, Yu<sup>2</sup>** (with Chung, S.; Deng, S. M.; Kernévez, J.-P.; Wang, Zirong) Shape optimization and continuation method. *Boundary control and boundary variations (Nice, 1986)*, 137-152, Lecture Notes in Comput. Sci., 100, Springer, Berlin-New York, 1988. (see 89b:93006) 49F10
- Liu, Zai Ming** A class of random walks in a random environment. (Chinese. English summary) *J. Changsha Railway Inst.* 5 (1987), no. 4, 73-79. (Kai Long Ren) 89m:60162 60I15
- Liu, Zeng Rong** (with Sun, Guo Zhang) An example with chaotic band. *Ann. Differential Equations* 2 (1986), no. 2, 187-196. (Frederick R. Marotto) 89a:58075 58F13 (34C25)



- (with Jiang, Ji Fa) The subharmonic bifurcations and horseshoes in a non-Hamiltonian system. (Chinese) *Acta Math. Appl. Sinica* 10 (1987), no. 4, 504–508. (Summary) **89b:58153** 58F14 (58F15)
- (with Li, Ji Bin; Luo, Shi Yu) The dynamical behavior of systems with slowly varying periodic perturbations. (Chinese) *Acta Math. Sci. (Chinese)* 7 (1987), no. 3, 247–251. (J. S. W. Wong) **89d:34069** 34C15 (34C29, 58F30)
- (with Xu, Zhen Yuan<sup>2</sup>) Perturbation solution of the weak-nonlinear partial differential equation with  $\delta$ -function. *Appl. Math. Mech. (English Ed.)* 8 (1987), no. 2, 147–154; translated from *Appl. Math. Mech.* 8 (1987), no. 2, 143–150 (Chinese. English summary). (Summary) **89c:35013** 35B20 (35C20, 35L35)
- (with Tang, Jian Ning) The complex bifurcations in 2-jet systems and 3-jet systems. (Chinese. English summary) *Acta Math. Appl. Sinica* 11 (1988), no. 2, 173–181. (Ji Bin Li) **89j:58100** 58F14
- (with Zhu, Zhao Xuan) Structure of the attracting set of a piecewise linear Hénon mapping. *Appl. Math. Mech. (English Ed.)* 9 (1988), no. 9, 827–836; translated from *Appl. Math. Mech.* 9 (1988), no. 9, 771–779 (Chinese. English summary). (Summary) **89c:58149** 58F08 (58F12)
- Liu, Zhen Hai** On the inverse problem of determining the coefficient of the lowest term in a one-dimensional parabolic equation. (Chinese. English summary) *Hunan Daxue Xuebao* 15 (1988), no. 1 Special Issue of Math., 290–295. (Summary) **89k:35250** 35R30 (35K10)
- Liu, Zhen Hong** A partial result on Win's conjecture. (Chinese) *Acta Math. Sinica* 30 (1987), no. 5, 675–678. (Zheng Sheng Wu) **89b:05134** 05C70 (05C45)
- (with Zhu, Yong Jin) A new class of degree conditions and related results. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 13 (1987), no. 3, 1–14. (Ke Min Zhang) **89a:05102** 05C45 (05C70)
- A new sufficient condition for the existence of a Hamiltonian cycle. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 13 (1987), no. 4, 1–6. (Zheng Sheng Wu) **89b:05118** 05C45
- Liu, Zheng** see **Cheng, Li Xin**; **89a:46036**
- Liu, Zheng Rong** see **Liu, Zeng Rong**
- Liu, Zhi Han** (with Liu, Ping Zhou) The direct methods of Lyapunov for persistence in ecosystems. (Chinese. English summary) *J. Biomath.* 3 (1988), no. 2, 122–131. (Rong Liang Wang) **89m:92049** 92A17 (34D99)
- Liu, Zhi Hui** Banach-space-valued  $L^1$  martingales in the limit and their properties. (Chinese) *Acta Math. Sci. (Chinese)* 7 (1987), no. 3, 265–271. (Jia Gang Wang) **89d:60092** 60G48 (60B12)
- Liu, Zhi Shan** A result on Kotzig's conjecture. (Chinese. English summary) *Neimenggu Daxue Xuebao* 19 (1988), no. 3, 394–397. (N. Z. Li) **89i:05256** 05C99 (05C38)
- Liu, Zhong Zhu** A coarse graining for the Ising model on two-dimensional disordered lattice. *Comm. Theoret. Phys.* 9 (1988), no. 3, 263–270. (H. N. V. Temperley) **89k:82097** 82A68 (82A57)
- Behavior of the Ising model for 2-D topological disordered lattice near the fixed points. *Comm. Theoret. Phys.* 9 (1988), no. 3, 271–278. (H. N. V. Temperley) **89k:82098** 82A68 (82A57)
- Liu, Zhoshu** see **Liu, Zuo Shu**
- Liu, Zhao Jun** A method of isolating complex roots of a polynomial—an application of the Wu-Ritt principle. (Chinese. English summary) *J. Systems Sci. Math. Sci.* 8 (1988), no. 4, 351–356. (Summary) **89k:12001** 12D10 (12H05, 65H05)
- Liu, Zong Ze** (with Wu, Zhen De) The relationship between the cobordism classes of manifolds with involution and the cobordism classes of their fixed point sets. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 12, 890–892. (Not in MR) 57R85
- Liu, Zu Dong** (with Gu, Xun) A gene diffusion model for a colony with asynchronous growth, and its degree of heterogeneity. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 16, 1255–1258. (Not in MR) 92A15
- Liu, Zuo Shu** (with Chen, Shao Zhong) On fixed point theorems for random multivalued mappings. (Chinese) *J. Math. Res. Exposition* 6 (1986), no. 3, 35–40. (Xie Ping Ding) **89c:54094** 54H25 (47H10, 54C60)
- The embedded theorem and its application to statistical metric space. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 3, 287–297. (Not in MR) 54H25 (08A02)
- Liobinskas, K.** On the closeness of moments in the central limit theorem in Banach spaces. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* 27 (1987), no. 2, 285–302. (S. A. Chobanyan) **89d:60018** 60B11
- (with Bentkus, Vidmantas-Kastytis Jurgio) Rate of convergence in the invariance principle in Banach spaces. (Russian. English and Lithuanian summaries) *Litovsk. Mat. Sb.* 27 (1987), no. 3, 423–434. (Hô Dâng Phức) **89c:60012** 60B12 (60F17, 60G15, 60G50)
- Livak, V. D.** Necessary conditions for optimality in the multiphase Stefan problem. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 6 (1987), 72–75, 116. (Not in MR) 49B22
- dião-Livelo, Susana** see **Dião-Livelo, Susana**
- Liverní, C.** (with de Smedt, Ph.; Dürr, Detlef; Lebowitz, Joel L.) Quantum system in contact with a thermal environment: rigorous treatment of a simple model. *Comm. Math. Phys.* 120 (1988), no. 2, 195–231. (M. Lawrence Glasser) **89i:82030** 82A35 (82A69)
- Livi, R.** (with Politi, A.; Ruffo, Stefano; Vulpiani, A.) Liapunov exponents in high-dimensional symplectic dynamics. *J. Statist. Phys.* 46 (1987), no. 1–2, 147–160. (Arkady S. Pikovsky) **89c:58080** 58F05 (58F13, 82A99)
- (with Bagnoli, F.; Ciliberto, S.; Francescato, A.; Ruffo, Stefano) Cellular automaton model for a fluid experiment. *Chaos and complexity (Torino, 1987)*, 318–327. *World Sci. Publishing, Singapore*, 1988. (see **89g:58144**) 76E15 (68U20, 76–08)
- (with Maritan, A.; Ruffo, Stefano) The spectrum of a one-dimensional hierarchical model. *J. Statist. Phys.* 52 (1988), no. 3–4, 595–608. (Tony C. Dorias) **89i:82042** 82A42
- see also *Chaos and complexity*. **89g:58144**
- Livingstone, Albert E.** The coefficients of univalent functions related to Goodman's conjecture. *J. London Math. Soc. (2)* 36 (1987), no. 3, 436–444. (David Stery) **89f:30031** 30C50 (30C45)
- Livingstone, Charles** Indecomposable surfaces in 4-space. *Pacific J. Math.* 132 (1988), no. 2, 371–378. (Dončo Dimovski) **89g:57030** 57Q45 (20E06, 20J05, 57M99)
- The free genus of doubled knots. *Proc. Amer. Math. Soc.* 104 (1988), no. 1, 329–333. (Lorenzo Traldi) **89j:57004** 57M25
- (with Johnson, Dennis L.) Peripherally specified homomorphisms of knot groups. *Trans. Amer. Math. Soc.* 311 (1989), no. 1, 135–146. (Roger Fenn) **89f:57006** 57M25
- Livingstone, D.** Computing for the arithmetic of geometries. *Computers in mathematical research (Cardiff, 1986)*, 149–152. *Inst. Math. Appl. Conf. Ser. New Ser.*, 14, Oxford Univ. Press, New York, 1988. (Colin M. Campbell) **89i:20002** 20-04 (51-04)
- Livné, Ron** The average distribution of cubic exponential sums. *J. Reine Angew. Math.* 375/376 (1987), 362–379. (Autorreferat (Zbl 602:10027)) **89e:11116** 11L03 (11G05, 11T21, 14C30, 14G99, 14J99)
- (with Jordán, Bruce W.) Divisor classes on Shimura curves rational over local fields. *J. Reine Angew. Math.* 378 (1987), 46–52. (Yasutaka Ihara) **89c:11094** 11G18 (11G20, 14H25, 14H45)
- Livne, Zvi A.** Bargaining over the division of a shrinking pie: an axiomatic approach. *Internat. J. Game Theory* 16 (1987), no. 3, 223–242. (Summary) **89g:90244** 90D05 (90D35)
- (with Gupta, Sunil) Resolving a conflict situation with a reference outcome: an axiomatic model. *Management Sci.* 34 (1988), no. 11, 1303–1314. (Summary) **89j:90294** 90D12
- The bargaining problem with an uncertain conflict outcome. *Math. Social Sci.* 15 (1988), no. 3, 287–302. (Tatsuro Ichiishi) **89i:90101** 90D12
- Livorni, Elvira Laura** (with Biancofiore, Aldo) On the genus of a hyperplane section of a geometrically ruled surface. *Ann. Mat. Pura Appl. (4)* 147 (1987), 173–185. (Antonio Lanteri) **89d:14054** 14J26 (14C20)
- Some results about a smooth hyperplane section of a 3-fold of nonnegative Kodaira dimension. *Arch. Math. (Basel)* 48 (1987), no. 6, 530–532. (Bruce Crauder) **89a:14046** 14J29 (14E25)
- (with Biancofiore, Aldo) Algebraic ruled surfaces with low sectional genus. *Ricerche Mat.* 36 (1987), no. 1, 17–32. (Marino Paleschi) **89m:14021** 14J26
- Livshits, A. N.** On the spectra of adic transformations of Markov compact sets. (Russian) *Uspekhi Mat. Nauk* 42 (1987), no. 3(255), 189–190. (A. Stepin (translated from RZhMat 1987:10 B1165)) **89d:28012** 28D05
- Livšic, M. S.** Commuting nonselfadjoint operators and collective motions of systems. *Commuting nonselfadjoint operators in Hilbert space*, 1–38. *Lecture Notes in Math.*, 1272, Springer, Berlin-New York, 1987. (E. R. Tsekanovskii) **89a:47014** 47A45 (47A56)
- see also *Topics in operator theory and interpolation*, **89a:47002**; *Dym, Harry et al.*, **89g:01049** and *Bibliography: Livšic, M. S.*, **89g:01050**
- Lizama, Carlos** (with Cioranescu, Ioana) Spectral properties of cosine operator functions. *Aequationes Math.* 36 (1988), no. 1, 80–98. (Dieter Lutz) **89i:47071** 47D05 (34G10)
- Lizama, M.** Asymptotic expansion for the initial value problem of the sunflower equation. *Proceedings of the Eleventh International Conference on Nonlinear Oscillations (Budapest, 1987)*, 297–300. *János Bolyai Math. Soc., Budapest*, 1987. (K. Gopalsamy) **89h:34069** 34K25 (92A05, 92A09)
- Lizarev, A. D.** (with Kushunina, N. A.) Equations of hypergeometric type that are integrable in elementary functions. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 6, 1070–1073, 1103–1104. (J. F. Heyda) **89g:34011** 34A34 (33A35, 34C15, 73D30)
- Lizogub, P. P.** The measure, invariant with respect to the general Lorentz group, of a set of hyperplanes in a four-dimensional Minkowski space. (Russian) *Mathematical physics (Russian)*, 123–127, 189, *Moskov. Gos. Ped. Inst., Moscow*, 1986. (R. G. Mukhometov) **89c:53104** 53C65
- Lizorkin, P. L.** (with Kalyabin, G. A.) Spaces of functions of generalized smoothness. *Math. Nachr.* 133 (1987), 7–32. (L. I. Nikolova) **89b:46046** 46E35
- (with Miroshin, N. V.) The generalized Poisson integral and the smoothness of the solution of the Dirichlet problem for degenerate elliptic operators. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 2, 305–313, 366; translation in *Differential Equations* 24 (1988), no. 2, 232–239. (Josef Voldrich) **89g:35069** 35J70 (31A35, 35B65)
- (with Nikol'skii, S. M.) A new approach to the theory of function spaces  $B_{p,q}^s$  on a sphere. (Russian) Studies in the theory of differentiable functions of several variables and its applications, XII (Russian). *Trudy Mat. Inst. Steklov.* 181 (1988), 213–221, 271. (Georgi E. Karadzhev) **89f:46077** 46E35
- (with Besov, O. V.; Kudryavtsev, L. D.; Nikol'skii, S. M.) Investigations in the theory of spaces of differentiable functions of several variables. (Russian) Probability theory, function theory, mechanics (Russian). *Trudy Mat. Inst. Steklov.* 182 (1988), 68–127. (H. Triebel) **89m:46062** 46E35 (01A60, 46–03)
- Ljapin, E. S.** see **Lyapun, E. S.**
- Ljofe, K.** Some remarks on the Dirac and electromagnetic free fields theory. (Serbo-Croatian summary) *Akad. Nauka Umjet. Bosne Hercegov. Rad. Odjel. Prirod. Mat. Nauka* No. 25 (1988), 31–82. (Summary) **89j:81069** 81D25
- (with Cvijanović, R.) On the dual symmetrical theory of the complex vector field. (Serbo-Croatian summary) *Akad. Nauka Umjet. Bosne Hercegov. Rad. Odjel. Prirod. Mat. Nauka* No. 25 (1988), 189–200. (Adam Bechler) **89i:81108** 81E99 (81G25)
- Some remarks on variational formulations of physical fields. *Fortschr. Phys.* 36 (1988), no. 1, 9–32. (Peter Basarab-Horwath) **89c:81062** 81D25
- Ljubich, M. Ju.** see **Ljubich, M. Yu.**
- Ljung, Lennart** Frequency and time domain methods in system identification. *Modeling, identification and robust control (Stockholm, 1985)*, 615–624. *North-Holland, Amsterdam-New York*, 1986. (Summary) **89c:93079** 93E12 (93C05)
- Control theory 1984–1986. A progress report from IFAC's technical committee on theory. *Automatica—J. IFAC* 24 (1988), no. 4, 573–583. (J. S. Joel) **89f:01056** 01A65 (93–03)
- see also *Tarasenko, George S.*, **89h:90172**
- Lladó, A. S.** (with Fiol, M. A.; Villar, J. L.) Digraphs on alphabets and the  $(d, N)$  digraph problem. Eleventh British Combinatorial Conference (London, 1987). *Ars Combin.* 25 (1988), C, 105–122. (Š. Znám) **89c:05099** 05C20
- tello-Llanos, R. A.** see **Tello-Llanos, R. A.**
- de la Liave, Rafael** (with Banyaga, Augustin; Wayne, C. Eugene) Cohomology equations and commutators of germs of contact diffeomorphisms. *Trans. Amer. Math. Soc.* 312 (1989), no. 2, 755–778. (J. W. Robbin) **89c:58080** 58F05
- Llavona, José G.** (with Aron, Richard M.; Gómez Gil, Javier) Homomorphisms between algebras of differentiable functions in infinite dimensions. *Michigan Math. J.* 35 (1988), no. 2, 163–178. (Klaus-Dieter Bierstedt) **89i:46048** 46G20 (46J15)
- Lledó, Rafael** (with Guia, Josep; Segura, Isabel) New characterizations of  $T_0$ -spaces. *Collect. Math.* 37 (1986), no. 3, 255–259. (C. E. Aull) **89c:54041** 54D10
- Libre, Jaume** (with Lacomba, Ernesto A.) Transversal ejection-collision orbits for the restricted problem and the Hill's problem with applications. *J. Differential Equations* 74 (1988), no. 1, 69–85. (F. Nahon) **89g:70008** 70F07 (58F05, 70F15)

- (with Alsedà i Soler, Lluís; Mañosas, Francesc; Misiurewicz, Michał) Lower bounds of the topological entropy for continuous maps of the circle of degree one. *Nonlinearity* 1 (1988), no. 3, 463–479. (Lúcia Helena Vilas Boas Mendes) **89m:58119** 58F11 (58F22, 58F25)
- (with Carbonell, Marc) Limit cycles of a class of polynomial systems. *Proc. Roy. Soc. Edinburgh Sect. A* 109 (1988), no. 1–2, 187–199. (Carmen Chicone) **89i:58120** 58F21 (34C05)
- rosselló Llompart, F.** see **Roselló Llompart, F.**
- Llorens Fuster, E.** Characterization of the normal asymptotic structure of Banach spaces and its relation with the fixed-point property. (Spanish. English summary) *Rev. Real Acad. Cienc. Exact. Fis. Natur. Madrid* 81 (1987), no. 1, 131–135. (Ioan Şerb) **89i:46034** 46B20 (47H10)
- Llorente, Julio Ángel** see **Pardo Llorente, Julio Ángel**
- Llorente, Pascual** (with Díaz y Díaz, F.; Quer, Jordi) Cubic fields, a congruential criterion for Scholz's theorem and new real quadratic fields with 3-rank equal to 4. *Arch. Math. (Basel)* 50 (1988), no. 4, 356–359. (Franz Halter-Koch) **89d:11097** 11R29 (11R11)
- (with Quer, Jordi) On the 3-Sylow subgroup of the class group of quadratic fields. *Math. Comp.* 50 (1988), no. 181, 321–333. (F. Díaz y Díaz) **89b:11083** 11R11 (11R29)
- (with Quer, Jordi) On totally real cubic fields with discriminant  $D < 10^7$ . *Math. Comp.* 50 (1988), no. 182, 581–594. (Brigitte Vallée) **89j:11099** 11R16 (11Y40)
- Llosa, J.** (with Jaen, X.; Jáuregui, R.; Molina, A.) Hamiltonian formalism for path-dependent Lagrangians. *Phys. Rev. D* (3) 36 (1987), no. 8, 2385–2398. (Takayuki Nôno) **89c:58037** 58F05 (70H05, 70H35)
- font i Llovet, Josep Ma.** see **Font i Llovet, Josep Ma.**
- Lloyd, C. J.** Optimal martingale estimating equations in a stochastic process. *Statist. Probab. Lett.* 5 (1987), no. 6, 381–387. (Uwe Küchler) **89a:62190** 62M09 (62A10)
- Some issues arising from the analysis of  $2 \times 2$  contingency tables. *Austral. J. Statist.* 30 (1988), no. 1, 35–46. (Summary) **89c:62084** 62H17
- (with Williams, E. J.) Recursive splitting of an interval when the proportions are identical and independent random variables. *Stochastic Process. Appl.* 28 (1988), no. 1, 111–122. (J. Glaz) **89c:60025** 60D05 (60E05, 62G99)
- Lloyd, E. Keith** Redfield enumeration applied to chemical problems. *Graph theory and topology in chemistry* (Athens, Ga., 1987), 537–543, *Stud. Phys. Theoret. Chem.*, 51, Elsevier, Amsterdam-New York, 1987. (Pavel Tomasta) **89i:05148** 05C30 (92A40)
- de Bruijn enumeration applied to some genetical problems. *Math. Proc. Cambridge Philos. Soc.* 103 (1988), no. 2, 277–284. (Jozef Širáň) **89d:05008** 05A15 (92A10)
- Lloyd, Errol L.** (with Soffa, Mary Lou; Wang, Ching-Chy) On locating minimum feed-back vertex sets. *J. Comput. System Sci.* 37 (1988), no. 3, 292–311. (Dominique Gouyou-Beauchamps) **89k:68121** 68R10 (05C38, 68Q15)
- Lloyd, J. W.** ★ Foundations of logic programming. Second edition. Symbolic Computation. Artificial Intelligence. Springer-Verlag, Berlin-New York, 1987. xii+212 pp. ISBN 3-540-18199-7 (Editors) **89b:68004** 68–02 (03B70, 68T25)
- (with Sonenberg, E. A.; Topor, Rodney W.) Integrity constraint checking in stratified databases. *J. Logic Programming* 4 (1987), no. 4, 331–343. (Summary) **89a:68190** 68T15 (68P15)
- Lloyd, N. G.** (with Alwash, M. A.) Periodic solutions of a quartic nonautonomous equation. *Nonlinear Anal.* 11 (1987), no. 7, 809–820. (Chike Obi) **89b:34093** 34C25
- (with Blows, T. R.; Kalenge, M. C.) Some cubic systems with several limit cycles. *Nonlinearity* 1 (1988), no. 4, 653–669. (Hassan El-Owaidy) **89k:34043** 34C05 (34C10, 58F14, 58F21)
- (with Lynch, S.) Small-amplitude limit cycles of certain Liénard systems. *Proc. Roy. Soc. London Ser. A* 418 (1988), no. 1854, 199–208. (Author's review (N.G.L.)) **89g:34040** 34C05 (58F21)
- Lluis, Emilio** (with Cárdenas, Humberto) On the Chern classes of representations of the symmetric groups. *Group theory (Singapore, 1987)*, 333–345, *de Gruyter, Berlin-New York*, 1989. (J. L. Alperin) **89k:20075** 20J06 (20C15, 57R20)
- Lo, Albert Y.** A Bayesian bootstrap for a finite population. *Ann. Statist.* 16 (1988), no. 4, 1684–1695. (A. L. Rukhin) **89m:62003** 62A15 (62D05)
- Lo, James Ting Ho** Bilinearization of stochastic systems. *Control Theory Adv. Tech.* 3 (1987), no. 3, 175–188. (J. M. Stoyanov) **89d:93091** 93E03 (60H10, 94A15)
- (with Ng, Sze Kui) Characterizing Fourier series representation of probability distributions on compact Lie groups. *SIAM J. Appl. Math.* 48 (1988), no. 1, 222–228. (H. Heyer) **89c:43019** 43A77 (43A05, 60B15)
- Lo, Qi Xia** see **Luo, Qi Xia**
- Lo, S. C.** (with Fymat, A. L.; Greenfield, M. A.; Findley, D.) Optimization of the radiotherapy treatment plan. *Appl. Math. Comput.* 27 (1988), no. 2, 117–146. (Summary) **89d:92012** 92A07
- Lo, Sai-Huen** Stress evaluation algorithms for rate constitutive equations in finite deformation analysis. *Internat. J. Numer. Methods Engrg.* 26 (1988), no. 1, 121–141. (Summary) **89a:73002** 73–08 (73E99)
- Lo, Shaw-Hwa** (with Chao, Min Te) Some representations of the nonparametric maximum likelihood estimators with truncated data. *Ann. Statist.* 16 (1988), no. 2, 661–668. (Hung Trung Nguyen) **89c:62044** 62G05 (62E20)
- Lo, Virginia Mary** Heuristic algorithms for task assignment in distributed systems. *IEEE Trans. Comput.* 37 (1988), no. 11, 1384–1397. (Not in MR) 90B35
- Lo, Yunchun** see **Luo, Yuan Quan**
- van Loan, Charles** see **Van Loan, Charles**
- Loar, Brian** Truth beyond all verification. *Michael Dummett*, 81–116, *Nijhoff Internat. Philos. Ser.*, 25, Nijhoff, Dordrecht, 1987. (see **89m:03002**) 03A05
- Lobachevskii, N. I.** see **Matveev, Yu. I.** **89a:01075**
- Lobanova, N. I.** (with Suleimenov, Zh. S.; Kabiev, S. K.) On the role of the bifurcation value of the small parameter in the simplification of some complex mechanical systems. (Russian) *Some problems in functional analysis, differential equations and their applications* (Luzhsk, 1987), 57–64, 110–111, *Kazakh. Gos. Univ., Alma-Ata*, 1985. (see **89a:00016**) 58F14
- Lobarev, I. V.** (with Agoshkov, V. I.) ★ Применение вариационных принципов к решению уравнения переноса. (Russian) [Application of variational principles to the solution of a transport equation] *Препринт [Preprint]*, 148, *Akad. Nauk SSSR, Otdel Vychisl. Mat., Moscow*, 1987. 20 pp. (Summary) **89d:82149** 82A70 (45L10, 85–08, 85A25)
- Lobas, Leonid Grigorievich** ★ Герономические модели колесных экипажей. (Russian) [Nonholonomic models of wheeled vehicles] *"Naukova Dumka"*, Kiev, 1986. 232 pp. (Gh. Silas) **89d:70013** 70F25
- A problem of nonholonomic mechanics. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 8(42) (1987), 20–25, 92. (Summary) **89d:70002** 70B15 (70F25)
- (with Lobas, Lyudm. G.) Possible types of trajectories of nonholonomic systems. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 9(43) (1988), 14–16, 85. (Summary) **89h:70005** 70F25
- Lobas, Lyudm. G.** (with Lobas, Leonid Grigorievich) Possible types of trajectories of nonholonomic systems. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 9(43) (1988), 14–16, 85. (Summary) **89h:70005** 70F25
- Lobo, Miguel** see **Lobo-Hidalgo, Miguel**
- Loboda, A. V.** Generating real-analytic manifolds of codimension 2 in  $C^4$  and biholomorphic mappings of them. (Russian) *Izv. Akad. Nauk SSSR Ser. Mat.* 52 (1988), no. 5, 970–990, 1118. (Tadeusz Winiarski) **89k:32018** 32B99
- Loboda, M.** A note on canonical systems with control sets. (Russian and Polish summaries) *Podstawy Sterowania* 17 (1987), no. 1–2, 65–70. (Peter Clote) **89g:68040** 68Q45 (03D05, 18B20, 68Q50)
- Loboda, V. V.** Application of the Gauss-Jacobi formula to the solution of singular integral equations. (Russian) *Methods for solving nonlinear problems, and data processing* (Russian), 60–64, 108, *Dnepropetrovsk. Gos. Univ., Dnepropetrovsk*, 1986. (see **89i:00011**) 45Exx
- Lobo-Hidalgo, Miguel** (with Pérez, Eugenia) Comportement asymptotique d'un corps élastique dont une surface présente de petites zones de collage. (English summary) [Asymptotic behavior of an elastic body with a surface having small sticking regions] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* 304 (1987), no. 5, 195–198. (Maria Comninou) **89j:73099** 73T05 (35B25, 49D50, 73C60)
- Lobok, A. P.** (with Nakonechnyi, A. G.) Impulse control in systems with distributed parameters. (Russian) *Vestnik Kiev. Univ. Model. Optim. Slozhn. Sist.* No. 4 (1985), 9–14, 100. (Not in MR) 93C20 (93C57)
- Lo Bosco, Dario** (with Tesoriere, Giovanni) On the existence, uniqueness and estimation of the solution of equations of motion for a railway vehicle, according to Johnson. (Italian) *Atti Accad. Sci. Lett. Arti Palermo Ser. (5)* 4 (1983/84), 145–162 (1986). (N. D. Sengupta) **89c:70059** 70K99 (70E99)
- Lobstein, Antoine** On modular weights in arithmetic codes. (French summary) *Coding theory and applications* (Cachan, 1986), 56–67, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (E. F. Assmus, Jr.) **89i:11139** 11T71 (94B40)
- Comments on: "A note on perfect arithmetic codes" [IEEE Trans. Inform. Theory 32 (1986), no. 3, 443–445; MR 87e:94049] by J. Astola. *IEEE Trans. Inform. Theory* 34 (1988), no. 3, 589–590. (Summary) **89g:94038** 94B40
- Lobzhanidze, G. B.** (with Gordeziani, D. G.; Korshiya, T. K.) Averaged schemes of summary approximation for nonlinear parabolic equations. (Russian. English and Georgian summaries) *Tbilisi. Gos. Univ. Inst. Prikl. Mat. Trudy* 18 (1986), 68–94, 274. (A. I. Perov) **89f:65068** 65J99 (34G20, 35K55, 65L05)
- Locatelli, A.** Some aspects of the optimal synthesis of multivariate regulators. (Italian. English summary) *Rend. Sem. Mat. Fis. Milano* 55 (1985), 153–173 (1988). (Summary) **89a:93027** 93B50 (93C35)
- Lochak, Georges** Louis de Broglie (1892–1987). *Found. Phys.* 17 (1987), no. 10, 967–970. (Editors) **89c:01071** 01A70
- Convergence and divergence between the ideas of de Broglie and Schrödinger in wave mechanics. *Found. Phys.* 17 (1987), no. 12, 1189–1202. (Jeffrey Bub) **89a:81001** 81–03 (01A60, 81B05)
- Lochak, P.** (with Lebeau, G.) On the second Painlevé equation: the connection formula via a Riemann-Hilbert problem and other results. *J. Differential Equations* 68 (1987), no. 3, 344–372. (B. P. Belinskii and A. R. It's) **89c:34054** 34E05 (35Q15, 58F07)
- (with Meunier, C.) ★ Multiphase averaging for classical systems. With applications to adiabatic theorems. Translated from the French by H. S. Dumas. *Applied Mathematical Sciences*, 72, Springer-Verlag, New York-Berlin, 1988. xii+360 pp. ISBN 0-387-96778-8 (James A. Murdock) **89k:58254** 58F30 (34C15, 34C29, 58F05, 70H05, 70K30)
- (with Golse, François) Andrei Nikolaevich Kolmogorov 1903–1987. (French) *Gaz. Math.* No. 35 (1988), 51–52. (Editors) **89c:01061** 01A70
- (with Meunier, C.) Moyennisation, théorie des perturbations et formes normales. Un chemin du simple au plus complexe. [Averaging, perturbation theory and normal forms. From the simple to the more complex] *Gaz. Math.* No. 35 (1988), 53–62. (A. Haimovici) **89a:58098** 58F30
- Lochs, G.** Über die Koeffizienten der asymptotischen Reihen für den Korrekturfaktor der Stirlingschen Formel und einen speziellen Wert der unvollständigen Gammafunktion. [On the coefficients of the asymptotic series for the correction factor of the Stirling formula and a special value of the incomplete gamma function] *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* 196 (1987), no. 1–3, 27–37. (R. N. Kalia) **89g:33002** 33A15 (40A25, 41A60)
- Supplement to the paper: "On the coefficients of the asymptotic series for the correction factor of the Stirling formula and a special value of the incomplete gamma function" [Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II 196 (1987), no. 1–3, 27–37; MR 89g:33002]. (German) *Österreich. Akad. Wiss. Math.-Natur. Kl. Sitzungsber. II* 196 (1987), no. 8–10, i. (Editors) **89m:33004** 33A15 (40A25, 41A60)
- Lo Cicero, Joseph L.** (with Picone, Joseph; Prezas, Dimitrios P.; Hartwell, Walter T.) Spectrum estimation using an analytic signal representation. (French and German summaries) *Signal Process.* 15 (1988), no. 2, 169–182. (Vincent Poor) **89i:93106** 93E10 (94A12)
- Lock, James A.** Cooperative effects among partial waves in Mie scattering. *J. Opt. Soc. Amer. A* 5 (1988), no. 12, 2032–2044. (Sergej M. Zverev) **89k:78021** 78A45
- Locke, Stephen C.** Extremal 3-connected graphs. *Discrete Math.* 68 (1988), no. 2–3, 257–263. (Bradley W. Jackson) **89d:05109** 05C35 (05C38, 05C75)
- Locker, John** (with Böhm, Klaus) Asymptotic expansions for the discretization error of least squares solutions of linear boundary value problems. *Math. Comp.* 51 (1988), no. 183, 75–91. (L. Greenberg) **89f:65081** 65L10
- Lockett, A. G.** (with Islei, G.) Judgemental modelling based on geometric least square. *European J. Oper. Res.* 36 (1988), no. 1, 27–35. (Summary) **89d:92087** 92A25



- Lockhart, Richard A.** (with Guttorp, Peter) On the asymptotic distribution of quadratic forms in uniform order statistics. *Ann. Statist.* **16** (1988), no. 1, 433–449. (Noel Cressie) **89a:62048** 62E20 (62G30)
- (with Guttorp, Peter) Finding the location of a signal: a Bayesian analysis. *J. Amer. Statist. Assoc.* **83** (1988), no. 402, 322–330. (Not in MR) **62F15**
- Lockwood, Michael** see *Nature of time*, **89m:83002**
- Loday, Jean-Louis** Cyclic homology, a survey. *Geometric and algebraic topology*, 281–303, *Banach Center Publ.*, 18, PWN, Warsaw, 1986. (Charles Weibel) **89e:18023** 18Gxx (16A61, 17B55, 17B56, 19D55, 46L80)
- Homologies diédrale et quaternionique. [Dihedral and quaternionic homologies] *Adv. in Math.* **66** (1987), no. 2, 119–148. (Charles Weibel) **89e:18024** 18G15 (16A61, 17B55, 19D55)
- Comparaison des homologies du groupe linéaire et de son algèbre de Lie. (English summary) [Comparison of the homologies of the linear group and of its Lie algebra] *Ann. Inst. Fourier (Grenoble)* **37** (1987), no. 4, 167–190. (Introduction) **89e:17011** 17B56 (17B55, 18F25, 19D55)
- (with Procesi, C.) Homology of symplectic and orthogonal algebras. *Adv. in Math.* **69** (1988), no. 1, 93–108. (Bruce A. Magurn) **89k:17035** 17B55 (17B56, 18F25, 19D55)
- Partition eulérienne et opérations en homologie cyclique. (English summary) [Eulerian partition and operations in cyclic homology] *C. R. Acad. Sci. Paris Sér. I Math.* **307** (1988), no. 7, 283–286. (Jan Stienstra) **89b:18017** 18G35 (05A99, 19D55)
- Opérations sur l'homologie cyclique des algèbres commutatives. [Operations on the cyclic homology of commutative algebras] *Invent. Math.* **96** (1989), no. 1, 205–230. (Sue Geller) **89m:18017** 18G35 (19D55)
- Lodhi, R. K.** (with Khan, K. A.) Isolation of a new class of axially symmetric stationary fields. *Riazi J. Karachi Math. Assoc.* **9** (1987), 29–33. (P. C. Vaidya) **89b:83025** 83C15
- Lodwick, Weldon A.** The use of interval arithmetic in uncovering structure of linear systems. *Reliability in computing*, 341–353, *Perspect. Comput.*, 19, Academic Press, Boston, MA, 1988. (see **89j:65011**) 90C05 (65G10)
- Loeb, Arthur L.** Polyhedra in the work of M. C. Escher. *M. C. Escher: art and science (Rome, 1985)*, 195–202, *North-Holland, Amsterdam-New York*, 1986. (see **89m:00011**) 52A25 (01A70, 52A45)
- The rhombic dodecahedron: its relation to the cube and the octahedron. With a note by Jack Gray. *Shaping space (Northampton, Mass., 1984)*, 61–64, *Design Sci. Collect.*, Birkhäuser Boston, Boston, MA, 1988. (see **89b:52016**) 52A25
- Polyhedra: surfaces or solids? *Shaping space (Northampton, Mass., 1984)*, 106–117, *Design Sci. Collect.*, Birkhäuser Boston, Boston, MA, 1988. (see **89b:52016**) 52A25 (00A69)
- Loeb, H. L.** (with Barrar, R. B.; Ziegler, Z.) Multiple node splines with boundary conditions: the fundamental theorem of algebra for monosplines and Gaussian quadrature formulae for splines. *J. Math. Anal. Appl.* **129** (1988), no. 1, 90–102. (Len Bos) **89b:41019** 41A15 (41A55)
- Loeb, Jean-Jacques** (with Cœuré, Gérard) Le théorème des tubes de Bochner pour les groupes de Lie. [Bochner's tube theorem for Lie groups] *Représentations des groupes et analyse complexe (Luminy, 1986)*, 21–33, *Journées SMF*, 24, Univ. Poitiers, Poitiers, 1986. (Peter Pflug) **89e:32018** 32D10 (32A07)
- Loeb, Peter A.** A lattice formulation of real and vector valued integrals. *Nonstandard analysis and its applications (Hull, 1986)*, 221–236, *London Math. Soc. Stud. Texts*, 10, Cambridge Univ. Press, Cambridge-New York, 1988. (see **89m:03060**) 28E05 (03H05, 28B05)
- (with Cornea, Aurel) On semiregular points of the Martin boundary. *Proc. Amer. Math. Soc.* **103** (1988), no. 1, 117–124. (Summary) **89m:31010** 31D05 (31C35)
- Loeb, Martin** (with Matousek, Jiří) On undecidability of the weakened Kruskal theorem. *Logic and combinatorics (Arcata, Calif., 1985)*, 275–280, *Contemp. Math.*, 65, Amer. Math. Soc., Providence, RI, 1987. (Walter Alexandre Carnielli) **89b:03099** 03F30 (03C05, 05C30)
- Hercules and Hydra. *Comment. Math. Univ. Carolin.* **29** (1988), no. 1, 85–95. (Jeffrey Paris) **89e:83103** 03F30 (05C99)
- (with Poljak, Svatopluk) On matroids induced by packing subgraphs. *J. Combin. Theory Ser. B* **44** (1988), no. 3, 338–354. (Dragan M. Acketa) **89e:05085** 05B35
- (with Poljak, Svatopluk) On the union of matching matroids. (Russian summary) *Math. Slovaca* **38** (1988), no. 4, 301–303. (Miroslaw Truszczyński) **89m:05037** 05B35 (05C99)
- Loebner, Sebastian** Natural language and generalized quantifier theory. *Generalized quantifiers (Lund, 1985)*, 181–201, *Stud. Linguist. Philos.*, 31, Reidel, Dordrecht-Boston, MA, 1987. (see **89m:03003**) 03B65
- Loeffel, Hans** ★ Blaise Pascal: 1623–1662. (German) *Vita Mathematica*, 2, Birkhäuser Verlag, Basel-Boston, MA, 1987. 176 pp. ISBN 3-7643-1840-6 (D. J. Struik) **89b:01052** 01A70 (01A45)
- Loehle, Craig** see Sugihara, George, **89d:92083**
- Loeser, François** Un analogue local de l'inégalité de Petrowsky-Oleinik. [A local analogue of the Petrowskii-Oleinik inequality] *Séminaire sur la géométrie algébrique réelle*, Tome I, II, 73–83, *Publ. Math. Univ. Paris VII*, 24, Univ. Paris VII, Paris, 1986. (J. Bochnak) **89c:14034** 14G30 (14H10)
- Fonctions  $|f|$ , théorie de Hodge et polynômes de Bernstein-Sato. [The functions  $|f|$ , Hodge theory and Bernstein-Sato polynomials] *Géométrie algébrique et applications, III (La Rabida, 1984)*, 21–33, *Travaux en Cours*, 24, Hermann, Paris, 1987. (M. Sebastiani) **89d:32017** 32B30 (58A14)
- Évaluation d'intégrales et théorie de Hodge. [Evaluation of integrals, and Hodge theory] *Hodge theory (Sant Cugat, 1985)*, 125–142, *Lecture Notes in Math.*, 1246, Springer, Berlin-New York, 1987. (M. Sebastiani) **89a:32008** 32B30 (11G25, 11S80)
- Déformations de courbes planes (d'après Severi et Harris). [Deformations of plane curves (following Severi and Harris)] *Séminaire Bourbaki*, Vol. 1986/87, *Astérisque* No. 152-153 (1987), 4, 187–205 (1988). (Jonathan M. Wahl) **89d:14038** 14H10 (14H20)
- Fonctions d'Igusa  $p$ -adiques et polynômes de Bernstein. [ $p$ -adic Igusa functions and Bernstein polynomials] *Amer. J. Math.* **110** (1988), no. 1, 1–21. (Daniel Barsky) **89d:11110** 11S40
- Loewe, M.** (with Bohm, Arno; Kielanowski, P.; Kmiecik, M.) Relativistic spectrum generating groups: spectrum and radiative transitions in a collective model of hadrons. *Group theoretical methods in physics (Varna, 1987)*, 208–222, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (Summary) **89j:81254** 81G20
- (with Bohm, Arno; Boya, L. J.; Kielanowski, P.; Kmiecik, M.; Magnollay, P.) Theory of relativistic extended objects. *Internat. J. Modern Phys. A* **3** (1988), no. 5, 1103–1121. (Summary) **89c:81199** 81G25
- Loewen, Philip D.** The proximal normal formula in Hilbert space. *Nonlinear Anal.* **11** (1987), no. 9, 979–995. (Marcin Studniński) **89b:49017** 49A52 (46G99, 47H99, 58C20, 90C31, 90C48)
- (with Clarke, Frank H.) State constraints in optimal control: a case study in proximal normal analysis. *SIAM J. Control Optim.* **25** (1987), no. 6, 1440–1456. (Péter Tallós) **89a:49019** 49B10 (49A52, 49E10)
- (with Vinter, R. B.) Free time optimal control problems with unilateral state constraints. *Analysis and optimization of systems (Antibes, 1988)*, 349–360, *Lecture Notes in Control and Inform. Sci.*, 111, Springer, Berlin-New York, 1988. (Summary) **89f:49023** 49B10 (49C05, 49E10, 93C15)
- (with Clarke, Frank H.) Intermediate existence and regularity in the calculus of variations. *Appl. Math. Lett.* **1** (1988), no. 2, 193–195. (Not in MR) 49A05
- The proximal subgradient formula in Banach space. *Canad. Math. Bull.* **31** (1988), no. 3, 353–361. (Péter Tallós) **89k:49010** 49A52 (26E25, 58C20, 90C48)
- Loewer, Barry** (with Albert, David) Interpreting the many worlds interpretation. *Synthese* **77** (1988), no. 2, 195–213. (Dennis Dieks) **89m:81007** 81B05
- (with Albert, David) Two no-collapse interpretations of quantum theory. *Noûs* **23** (1989), no. 2, 169–186. (Lawrence Sklar) **89m:81008** 81B05
- Loewy, Michael B.** The incompatibility of valued money and equilibrium policy. *Econom. Lett.* **28** (1988), no. 2, 157–161. (Not in MR) 90A14 (90A07)
- Loewy, Raphael** Dimension of faces generated by certain positive linear operators. *Linear Algebra Appl.* **105** (1988), 199–207. (Ronald L. Smith) **89j:15022** 15A48 (15A04)
- Marin-Laf, Per** see Martin-Laf, Per
- Lo Faro, Giovanni** (with Gandini, Pier Mario) Characterization via filters of some topological spaces usually defined via coverings. (Italian. English summary) *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **120** (1986), no. 3–4, 65–70 (1987). (Stoyan Nedev) **89f:54032** 54D20 (54A25)
- Kirkman triple systems having a prescribed number of triples in graphs. Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. 2 (Catania, 1986). *Ars Combin.* **24** (1987), B, 9–21. (K. T. Phelps) **89e:05038** 05B07
- Partial parallel classes in Steiner quadruple systems. *Utilitas Math.* **34** (1988), 113–116. (K. T. Phelps) **89m:05032** 05B30 (05B05)
- Löffelholz, Jürgen** (with Pestov, A.) Gravitation and polarization properties of an electromagnetic field. (Russian. English summary) *Acta Phys. Polon. B* **19** (1988), no. 7, 553–557. (Ilija Lukačević) **89k:83044** 83C50
- Löffler, F.** (with Timmermann, W.) On the irreducibility of generalized Calkin representations. *Rev. Roumaine Math. Pures Appl.* **33** (1988), no. 5, 413–421. (Konrad Schmüdgen) **89j:47029** 47D40 (46K10, 47D25)
- Löffler, Peter** (with Ewing, John; Pedersen, Erik Kjaer) A rational torsion invariant. *Proc. Amer. Math. Soc.* **102** (1988), no. 3, 731–736. (Terry Lawson) **89c:57021** 57Q10 (55P62, 57Q12)
- Löfwall, Clas** (with Félix, Yves; Halperin, Stephen; Jacobsson, Carl; Thomas, Jean-Claude) The radical of the homotopy Lie algebra. *Amer. J. Math.* **110** (1988), no. 2, 301–322. (Lex Renner) **89d:55029** 55P62 (13H99, 17B56, 55P50)
- Logachev, D. Yu.** Birational isomorphism of a three-dimensional cubic and of the section of  $G(2, 6)$  by five hyperplanes, and similar problems. (Russian) *The birational geometry of algebraic varieties (Russian)*, 39–45, 100, *Yarosl. Gos. Ped. Inst., Yaroslavl*, 1983. (Serban Bărcănescu) **89c:14016** 14E05 (14M12)
- Logachev, V. N.** Characterization and existence conditions for codes that meet the Varshamov-Griesmer bound. (Russian) *Problemy Peredachi Informatsii* **24** (1988), no. 3, 24–41; translation in *Problems Inform. Transmission* **24** (1988), no. 3, 189–204. (A. Pethő) **89k:94059** 94B05
- Logan, D.** (with Clementi, E.; Sonnad, V.) Solution of large scale engineering problems using a loosely coupled array of processors. *Numerical algorithms for modern parallel computer architectures (Minneapolis, MN, 1986–87)*, 11–27, *IMA Vol. Math. Appl.*, 13, Springer, New York-Berlin, 1988. (see **89c:65093**) 65W05
- Logan, J. David** Model solutions of the Wood-Kirkwood equations. *J. Phys. A* **21** (1988), no. 3, 643–650. (Summary) **89a:80005** 80A25
- Logan, Jesse A.** (with Wollkind, David J.; Collings, John B.) Metastability in a temperature-dependent model system for predator-prey mitotic outbreak interactions on fruit trees. *Bull. Math. Biol.* **50** (1988), no. 4, 379–409. (Summary) **89f:92054** 92A15
- Logan, W. T.** (with Visscher, P. B.) Extraction of transport coefficients from correlation functions. *Phys. Rev. A* (3) **39** (1989), no. 3, 1298–1310. (Summary) **89k:82064** 82A50 (76–08, 76D99)
- Logemann, Hartmut** (with Owens, D. H.) Robust high-gain feedback control of infinite-dimensional minimum-phase systems. *IMA J. Math. Control Inform.* **4** (1987), no. 3, 195–220. (Hartmut Logemann) **89e:93180** 93D25 (93C22, 93C30, 93D10, 93D15)
- Logunov, A. A.** (with Dargeiko, M. M.; Samoilenko, Yu. I.) Control of rapid processes in continuous conducting media. *Soviet J. Automat. Inform. Sci.* **20** (1987), no. 6, 6–14 (1988); translated from *Avtomatika* **1987**, no. 6, 11–20, 96 (Russian. English summary). (Summary) **89k:93146** 93C75 (76X05, 93C20)
- (with Popov, Viktor Aleksandrovich) The Adler principle for antiferromagnetic crystals. (Russian. English summary) *Ukrain. Fiz. Zh.* **33** (1988), no. 9, 1393–1401, 1439. (Summary) **89j:82075** 82A68 (81H20)
- Logunov, B. V.** (with Sidorov, N. A.) A general method for the construction of the Lyapunov-Schmidt bifurcation equation, and some methods for its investigation. (Russian) *Nonclassical problems of mathematical physics (Russian)*, 113–145, 232, “Fan”, Tashkent, 1985. (Summary) **89a:58026** 58E07 (47H15)
- (with Nagornyi, A. M.) A boundary value problem for the Helmholtz equation with shifts inside the domain. (Russian) *Equations of mixed type and free boundary value problems (Russian)*, 170–182, 253, “Fan”, Tashkent, 1987. (A. Borzymowski) **89f:35083** 35J65 (35J05)
- (with Rakhmatova, Kh. R.; Yuldashev, N.) Construction of a bifurcation equation from its symmetry group (crystallographic groups). (Russian) *Equations of mixed type and free boundary value problems (Russian)*, 183–195, 253–254, “Fan”, Tashkent, 1987. (Summary) **89k:58059** 58E07 (20H15)

- Symmetry of the fundamental representation of the group  $SO(n)$  in bifurcation theory. (Russian) *Izv. Akad. Nauk UzSSR Ser. Fiz.-Mat. Nauk* 1987, no. 5, 33–35, 109. (J. S. Joel) **89c:58030** 58E07
- (with Kim-Tyuan, L. R.) On the stability of bifurcating solutions. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 4, 695–698, 734. (Jacobo Pejsachowicz) **89f:58033** 58E07 (34G20)
- Logunov, E. A.** On the imbedding of a metric space into a Euclidean space. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 3, 48–49, 84. (H. H. Wicke) **89c:54059** 54E40 (54C25)
- Euler and Descartes characteristics for finite polyhedra. (Russian) *Uspekhi Mat. Nauk* 43 (1988), no. 1(259), 197–198; translation in *Russian Math. Surveys* 43 (1988), no. 1, 247–248. (Béla Uhrin) **89e:52012** 52A25
- Logunov, S. S.** (with Vilisov, Ya. Ya.) Control of the development of complex game-theoretic systems. (Russian) *Decision-making methods and systems. Applied problems in the analysis of solutions in technical systems* (Russian), 61–66, 148, *Rizhsk. Politekhn. Inst., Riga*, 1986. (see **89h:00001**) 90D99 (90D35)
- Logunova, I. V.** An algorithm for the dynamic distribution of memory under periodic access of memory. (Russian) *Some algorithms for the planning of computations in deterministic real-time systems* (Russian), 27–37, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1987. (see **89e:68058**) 68N25
- Logiudice, E. A.** (with Horvath, J. E.; Riveros, C.; Vucetich, Héctor) Einstein equivalence principle and theories of gravitation: a gravitationally modified standard model. *Phys. Rev. D* (3) 38 (1988), no. 6, 1754–1760. (Summary) **89j:83063** 83D05
- Logli, Augusto** (with Cantoni, Vittorio) Intrinsic properties of a physical system and uncertainty principles. (Italian. English summary) *Boll. Un. Mat. Ital. B* (7) 2 (1988), no. 2, 267–278. (A. Barchielli) **89m:81010** 81B05
- Logofet, D. O.** (with Aleksandrov, G. A.; Armand, A. D.; Belotelov, N. V.; Vedyushkin, M. A.; Vilkova, L. P.; Voinov, A. A.; Denisenko, E. A.; Krapivin, V. F.; Ovsyannikov, L. L.; Pak, S. B.; Pasekov, V. P.; Pisarenko, N. F.; Razzhevaikin, V. N.; Sarancha, D. A.; Svirezhev, Yu. M.; Semenov, M. A.; Tarko, A. M.; Fesenko, S. V.; Shmidt, D. A.) ★ Математические модели экосистем. (Russian) [Mathematical models of ecosystems] Экологические и демографические последствия ядерной войны. [Ecological and demographic consequences of a nuclear war] Edited and with a foreword by A. A. Dorodnitsyn. "Nauka", Moscow, 1986. 176 pp. (Summary) **89a:92054** 92A17
- Logothetti, Dave** (with Chakerian, Don) Minimal regular polygons serving as universal covers in  $\mathbb{R}^2$ . *Geom. Dedicata* 26 (1988), no. 3, 281–297. (Marek Lassak) **89f:52035** 52A45 (52A10)
- Logunov, A. A.** ★ Лекции по теории относительности и гравитации. (Russian) [Lectures in the theory of relativity and gravitation] Современный анализ проблемы. [A modern analysis of the problem] "Nauka", Moscow, 1987. 272 pp. (Andrzej Trautman) **89c:83057** 83D05 (53B50, 83–02)
- (with Vlasov, A. A.) The difference between gravitational collapse in the relativistic theory of gravity and collapse in the general theory of relativity. (Russian. English summary) *Teoret. Mat. Fiz.* 71 (1987), no. 3, 323–330. (N. V. Mitskevich) **89a:83053** 83D05 (83C75)
- (with Loskutov, Yu. M.; Mestvirishvili, M. A.) The relativistic theory of gravitation and a critique of the general theory of relativity. (Russian. English summary) *Teoret. Mat. Fiz.* 73 (1987), no. 2, 163–186. (Andrzej Trautman) **89c:83058** 83D05 (53B50)
- (with Loskutov, Yu. M.; Mestvirishvili, M. A.) Relativistic theory of gravity. *Internat. J. Modern Phys. A* 3 (1988), no. 9, 2067–2099. (Carl Brans) **89j:83064** 83D05
- (with Chugreev, Yu. V.) Special theory of relativity and centrifuge experiments. (Russian) *Vestnik Moskov. Univ. Ser. III Fiz. Astronom.* 29 (1988), no. 1, 3–11, 106; translation in *Moscow Univ. Phys. Bull.* 43 (1988), no. 1, 1–9. (Vitaly N. Mel'nikov) **89j:83004** 83A05 (83B05)
- (with Mestvirishvili, M. A.; Chugreev, Yu. V.) Graviton mass and the development of the Friedmann universe. (Russian. English summary) *Teoret. Mat. Fiz.* 74 (1988), no. 1, 3–15; translation in *Theoret. and Math. Phys.* 74 (1988), no. 1, 1–10. (N. V. Mitskevich) **89i:83053** 83D05 (83F05)
- see also Birthdays: Logunov, A. A. (Not in MR)
- Logunov, A. I.** (with Larionova, O. G.) Linear selfadjoint equations that contain a product of operators. (Russian) *Boundary value problems* (Russian), 90–92, viii, *Perm. Politekh. Inst., Perm*, 1986. (see **89c:00009**) 47A50
- Logunov, M. G.** (with Signaevskii, V. A.) A system with two queues and alternating service. (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 9, 178–189. (Summary) **89b:60223** 60K25 (68M20, 90B22)
- Logunov, S. A.** On the existence of remote points. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 2, 71–73; translation in *Moscow Univ. Math. Bull.* 43 (1988), no. 2, 42–44. (G. D. Dimov) **89k:54055** 54D40 (54D35, 54D45)
- Weight and far points of bicompartifications. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 3, 44–46; translation in *Moscow Univ. Math. Bull.* 43 (1988), no. 3, 34–36. (Eva Butkovičová) **89i:54035** 54D35 (54A25)
- Logvinenko, V. N.** (with Agranovich, P. Z.) Two-term asymptotic expansions of entire functions and of Dzhrbashyan canonical products of integral order in a half-plane. (Russian) *Mathematical physics, functional analysis* (Russian), 94–99, 146, "Naukova Dumka", Kiev, 1986. (E. Rieksig) **89c:30104** 30E15 (30D20, 31C05)
- (with Agranovich, P. Z.) The polynomial asymptotic representation of a subharmonic function. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1987, no. 11, 3–5, 83. (Summary) **89c:31001** 31A05
- Equivalence of norms, generated by measures, in Banach spaces of entire functions. (Russian) *Mat. Zametki* 43 (1988), no. 2, 212–219, 301; translation in *Math. Notes* 43 (1988), no. 1–2, 119–123. (Kamil Rusek) **89k:46035** 46E15 (32A15)
- Entire functions of exponential type that are slowly growing along a real hyperplane. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 50 (1988), 74–76, iii. (Summary) **89k:32004** 32A15
- Loh, Eugene, Jr.** (with Kandel, Daniel; Domany, Eytan; Ron, Dorit; Brandt, Achi) Simulations without critical slowing down. *Phys. Rev. Lett.* 60 (1988), no. 16, 1591–1594. (Summary) **89b:82007** 82–08 (82A68)
- Loh, Nan K.** (with Zhu, Mingfa; Sisy, Pepe) Towards the minimum set of primitive relations in temporal logic. *Inform. Process. Lett.* 26 (1987), no. 3, 121–126. (Neculai Curteanu) **89a:03046** 03B45 (03B65, 03B70, 68T05, 68T30)
- Loh, Wei-Yin** (with Vanichsetakul, Nunta) Tree-structured classification via generalized discriminant analysis. With a comment by Leo Breiman and Jerome H. Friedman and with a reply by the authors. *J. Amer. Statist. Assoc.* 83 (1988), no. 403, 715–728. (H. Chernoff) **89j:62078** 62H30
- Lohé, M. A.** (with Louck, J. D.; Biedenharn, L. C.) On the denominator function for canonical  $SU(3)$  tensor operators. II. Explicit polynomial form. *J. Math. Phys.* 29 (1988), no. 5, 1106–1117. (Ronald C. King) **89f:81059** 81C40 (22E70)
- (with Hurst, C. A.)  $N = 2$  case of nonabelian bosonization. *Phys. Rev. D* (3) 37 (1988), no. 4, 1094–1096. (Summary) **89c:81143** 81E99
- Lohiya, D.** (with Mukherjee, Amitabha) On the Skyrmin number of Schwarzschild black holes. *Phys. Lett. A* 126 (1988), no. 5–6, 307–310. (K. L. Duggal) **89a:83006** 83C10 (81E20)
- Lohmender, P.** Continuous extraction under risk. With a foreword by Alexander B. Kurzhanski. *Systems Anal. Modelling Simulation* 5 (1988), no. 2, 131–151. (Summary) **89d:90074** 90A30 (90A16)
- Pulse extraction under risk and a numerical forestry application. *Systems Anal. Modelling Simulation* 5 (1988), no. 4, 339–354. (Summary) **89g:90082** 90A30 (90A20)
- Löhms, J.** (with Sorgsepp, Leo Karl) Nonassociative extension of the matrix structure of the Dirac equation. (Russian) *Group-theoretic methods in physics, Vol. 2* (Russian) (Jarmala, 1985), 603–608, "Nauka", Moscow, 1986. (see **89d:81002**) 81D25
- Löhner, R.** see Löhner, Rudolf Josef
- Löhner, Rainald** Some useful data structures for the generation of unstructured grids. *Comm. Appl. Numer. Methods* 4 (1988), no. 1, 123–135. (Summary) **89b:65225** 65M50 (65N50)
- (with Morgan, Kenneth; Vahdati, M.; Boris, Jay P.; Book, D. L.) FEM-FCT: combining unstructured grids with high resolution. *Comm. Appl. Numer. Methods* 4 (1988), no. 6, 717–729. (Not in MR) 65N30
- Löhner, Rudolf Josef** (with Adams, Ernst Wilhelm; Cordes, D.) Enclosure of solutions of ordinary initial value problems and applications. *Discretization in differential equations and enclosures* (Weissig, 1986), 9–28, *Math. Res.*, 36, Akademie-Verlag, Berlin, 1987. (Eckehard Wagenführer) **89i:65068** 65L05 (65G10)
- von Löhneysen, L.** see Von Löhneysen, L.
- Löhfer, G.** (with Mayer, Dieter H.) On the gap problem for the sequence  $\|m\|$ . *Lett. Math. Phys.* 16 (1988), no. 2, 145–149. (M. Mendes France) **89g:11065a** 11K31
- Lohoué, Noël** Estimation des fonctions de Littlewood-Paley-Stein sur les variétés riemanniennes à courbure non positive. [Estimation of Littlewood-Paley-Stein functions on Riemannian manifolds with nonpositive curvature] *Ann. Sci. École Norm. Sup.* (4) 20 (1987), no. 4, 505–544. (Gerald B. Folland) **89c:42024** 42B25 (43A85, 58C99)
- Transformées de Riesz et fonctions de Littlewood-Paley sur les groupes non moyennables. (English summary) [Riesz transforms and Littlewood-Paley functions on nonamenable groups] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 7, 327–330. (Summary) **89b:43008** 43A80
- Estimations asymptotiques des noyaux résolvants du laplacien des formes différentielles sur les espaces symétriques de rang un, de type non compact et applications. (English summary) [Asymptotic estimates for resolvent kernels of the Laplace operator on noncompact forms on noncompact rank-one symmetric spaces, and applications] *C. R. Acad. Sci. Paris Sér. I Math.* 307 (1988), no. 11, 551–554. (Summary) **89i:58148** 58G25 (22E30, 58A10)
- phan hung Loi** see Phan Hung Loi
- Loi, N. H.** On the estimate for the differences of the derivatives of partial sums arising by the eigenfunctions of higher order of Schrödinger operators. *Ann. Univ. Sci. Budapest. Eötvös Sect. Math.* 30 (1987), 145–158. (John W. Lee) **89c:34047** 34B25 (47E05)
- On the estimate for the second derivative of the difference of partial sums arising by selfadjoint Sturm-Liouville operators. *Period. Math. Hungar.* 18 (1987), no. 2, 123–135. (Pablo Martín) **89b:41041** 41A65 (34B25, 42C05)
- Estimate for the difference of the first derivatives of partial sums arising by nonselfadjoint Sturm-Liouville operators. *Acta Math. Hungar.* 51 (1988), no. 3–4, 253–266. (Louise A. Raphael) **89c:34025** 34B25 (26D10, 47E05)
- Loi, N. V.** (with Steinfeld, O.) Gothic classes of groupoid-lattices in the theory of radicals. *Studia Sci. Math. Hungar.* 22 (1987), no. 1–4, 83–94. (L. Fuchs) **89j:06015** 06F99 (16A21)
- A note on the radical theory of involution algebras. *Studia Sci. Math. Hungar.* 23 (1988), no. 1–2, 157–160. (N. Divinsky) **89m:16020** 16A28 (16A21, 46K05)
- Loide, R.-K.** Massless equations for an antisymmetric tensor field. (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 30 (1987), no. 9, 95–99. (Summary) **89a:81046** 81D25 (81G10)
- On the theory of particles with spin  $\frac{3}{2}$ . (Russian) *Izv. Vyssh. Uchebn. Zaved. Fiz.* 30 (1987), no. 11, 89–93. (Matej Pavšić) **89f:81085** 81D25
- Loinger, A.** On Weyl's Raumproblem. *Riv. Nuovo Cimento* (3) 11 (1988), no. 8, 1–19. (H. Treder) **89b:01045** 01A60 (53–03)
- Loiseau, Jean-Francis** (with Codaccioni, Jean-Pierre; Caboz, Régis) Hyperelliptic integrals and multiple hypergeometric series. *Math. Comp.* 50 (1988), no. 182, 501–512. (H. Hochstadt) **89a:33002** 33A25 (33A35)
- Lojasiewicz, Stanisław** (with Siasica, Jacek; Wachta, Krystyna) Stratifications sous-analytiques. Condition de Verdier. (English and Russian summaries) [Subanalytic stratifications. Verdier's condition] *Bull. Polish Acad. Sci. Math.* 34 (1986), no. 9–10, 531–539 (1987). (D. J. A. Trotman) **89g:32011** 32B20 (32C42)
- ★ An introduction to the theory of real functions. With contributions by M. Kosiek, W. Mik and Z. Opial. Third edition. Translated from the Polish by G. H. Lawden. Translation edited by A. V. Ferreira. A Wiley-Interscience Publication. *John Wiley & Sons, Ltd., Chichester*, 1988. x+230 pp. ISBN 0-471-91414-2 (Editors) **89e:26001** 26–01 (00A05, 28–01)
- Lokhorst, Gert-Jan C.** The modal status of antinomies. *Notre Dame J. Formal Logic* 29 (1988), no. 1, 102–105. (Summary) **89c:03032** 03B45
- Lokhvitskii, B. B.** (with Ketov, S. V.) Some generalisations of  $N = 2$  Yang-Mills matter couplings. *Classical Quantum Gravity* 4 (1987), no. 4, L137–L142. (Youssef A. Hassoun) **89c:81075** 81E13 (81G20, 83E50)
- (with Ketov, S. V.; Tyutin, I. V.) Hyper-Kähler sigma-models in extended superspace. (Russian. English summary) *Teoret. Mat. Fiz.* 71 (1987), no. 2, 226–237. (A. D. Popova) **89b:81247** 81G20 (58E20, 58E30, 81E99)



- (with Ketov, S. V.)  $N = 4$  irreducible scalar superfields. *J. Math. Phys.* **29** (1988), no. 5, 1244–1252. (Summary) **89m:81148** 81E99 (83E50)
- Lokshin, A. A.** (with Itskovitch, M. A.) A note concerning generalization of the Landau method for waves in nonlinear hereditary media. *Internat. J. Non-Linear Mech.* **23** (1988), no. 2, 125–129. (N. Cristescu) **89j:73027** 73D10 (73D35, 73F15)
- Lokshin, B. Ya.** (with Privolov, V. A.; Samsonov, V. A.) Qualitative analysis of the motion of a rigid body in a resistant medium. (Russian) *Mechanics and scientific technological progress*, Vol. 1 (Russian), 147–155, 295, "Nauka", Moscow, 1987. (Summary) **89j:73057** 73J05 (70E99, 70K20, 73J10, 73K10)
- Lokutsievskii, O. V.** (with Bykovskii, V. A.; Vinogradov, A. I.; Fel'dman, N. I.) Nikolai Mikhailovich Korobov (on the occasion of his seventieth birthday). (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 1(259), 221–222; translation in *Russian Math. Surveys* **43** (1988), no. 1, 265–267. (Editors) **89c:01049** 01A70
- (with Afendikov, A. L.; Volevich, L. R.; Voskresenskii, G. P.; Gelfand, I. M.; Zabrodin, A. V.; Oleinik, O. A.; Tikhomirov, V. M.; Chentsov, N. N.) Konstantin Ivanovich Babenko. (Russian) *Uspekhi Mat. Nauk* **43** (1988), no. 2(260), 115–123; translation in *Russian Math. Surveys* **43** (1988), no. 2, 139–151. (Editors) **89k:01027** 01A70
- Lolashvili, S. R.** (with Gugushvili, E. I.; Nikolaishvili, Sh. S.) On the determination of a radiation field at great depths. (Russian. English and Georgian summaries) *Approximate methods for solving some problems of the transfer of neutron and gamma radiation* (Russian), 143–150, 172, Tbilis. Gos. Univ., Inst. Prikl. Mat., Tbilisi, 1986. (see **89b:82003**) 78A40
- Löll, R.** The extended phase space of the BRS approach. *Comm. Math. Phys.* **119** (1988), no. 3, 509–527. (David McMullan) **89k:58095** 58F05 (53C57, 81C25)
- Lölli, Gabriele** The foundations of mathematics after Gödel. (Italian) *Boll. Un. Mat. Ital. A* (7) **2** (1988), no. 1, 1–26. (B. van Rooijelaar) **89g:03005** 03Fxx (01A60, 03-03)
- Lomadze, G. A.** Cusp forms and quadratic forms of prime level and of Nebentypus. I. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruzin. SSR* **84** (1987), 36–54. (Siegfried Böcherer) **89d:11026** 11E25 (11E45, 11F11, 11F27)
- Lomadze, N. B.** Application of a method of Plemelj to the solution of the Riemann-Hilbert boundary value problem for some unknown functions. (Russian) *Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Gruzin. SSR* **87** (1987), 154–165. (Jian Ke Lu) **89b:30035** 30E25
- Lomadze, N. G.** A remark on generalized cascade codes. (Russian. English and Georgian summaries) *Trudy Tbiliss. Univ. Mat. Mekh. Astronom. No. 22-23* (1987), 23–35. (V. A. Zinov'ev) **89d:94043** 94B10 (94B15)
- Formally self-dual polynomials. (Russian) *Problemy Peredachi Informatsii* **24** (1988), no. 2, 22–30; translation in *Problems Inform. Transmission* **24** (1988), no. 2, 101–108. (Stefan Dodunekov) **89i:11133** 11T06 (94B05)
- Lomadze, V. G.** Quadratic forms over multidimensional local fields. (Russian) *Mat. Zametki* **42** (1987), no. 3, 353–357, 475. (K. Szymiczek) **89b:11034** 11E81 (11E08)
- Linear systems and coherent sheaves. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* **126** (1987), no. 1, 37–40. (P. E. Newstead) **89a:14019** 14F05 (15A21)
- Generalized linear autonomous dynamical systems. (Russian. English and Georgian summaries) *Sobshch. Akad. Nauk Gruzin. SSR* **126** (1987), no. 2, 261–264. (From the text) **89a:58101** 58F40 (34C35, 93B07, 93C05)
- Lomax, M. V.** (with Medvedev, I. V.) Construction of an equivalent model of a discrete system with several impulse elements. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 1, 147–155; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 4, 169–177, 224 (Russian). (Not in MR) **93C75** (93B30, 93C55)
- Lomakovich, A. N.** (with Zabreiko, P. P.) A generalization of a theorem of Volterra. (Russian) *Ukrain. Mat. Zh.* **39** (1987), no. 5, 648–651, 680. (Nicola Luca) **89c:45008** 45D05 (47B38, 47G05)
- Loman, Jan** A graphical solution to a one-predator, two-prey system with apparent competition and mutualism. *Math. Biosci.* **91** (1988), no. 1, 1–16. (Werner Timischl) **89j:92046** 92A15 (92A17)
- Lomas, Harvard** (with Pan, Dartz) A new approximate LU factorization scheme for the Reynolds-averaged Navier-Stokes equations. *AIAA J.* **26** (1988), no. 2, 163–171. (Summary) **89c:76018** 76-08 (76H05, 76J99)
- Lomazova, I. A.** An axiomatic semantics of programs that does not admit auxiliary effects. (Russian) *Vychisl. Sistemy No. 116 Prikladn. Logika* (1986), 129–137, 164. (Summary) **89c:68075** 68Q55 (03B70)
- Combination of algebraic specifications and procedural techniques for the processing of correct programs. (Russian) *Programmirovaniye* **1988**, no. 3, 3–12, 95; translation in *Programming and Comput. Software* **14** (1988), no. 3, 105–112. (Not in MR) **68Q65**
- Lombardi, F.** Analysis of comparison-based diagnosable systems using temporal criteria. *Comput. J.* **31** (1988), no. 3, 201–208. (Not in MR) **68M15**
- Lombardo, Silvana T.** New developments of a dynamic urban retail model with reference to consumers' mobility and costs for developers. *Transformations through space and time* (Hansholm, 1985), 192–208, NATO Adv. Study Inst. Ser. D: Behav. Soc. Sci., 29, Nijhoff, Dordrecht, 1986. (see **89c:90072**) 92A20 (90A16)
- Lomdahl, P. S.** (with Kerr, W. C.) Finite temperature effects on models of hydrogen-bonded polypeptides. (Russian summary) *Physics of multiparticle systems*, No. 12 (Russian), 20–33, 95, 96, "Naukova Dumka", Kiev, 1987. (Summary) **89c:20066** 92A40
- (with Eilbeck, J. C.; Scott, A. C.) Biomolecular dynamics by computer analysis. Special issue on emerging paradigms in applied mathematical modelling. *J. Comput. Appl. Math.* **22** (1988), no. 2-3, 297–299. (Summary) **89c:92010** 92A09 (00A71, 92A40)
- Lomatsch, Klaus** (with Nožička, František; Grygarová, Libuše) ★ Geometrie konvexer Mengen und konvexe Analysis. (German) [Geometry of convex sets and convex analysis] Mathematische Lehrbücher und Monographien, II. Abteilung: Mathematische Monographien [Mathematical Textbooks and Monographs, Part II: Mathematical Monographs], 71. Akademie-Verlag, Berlin, 1988, 423 pp. ISBN 3-05-500335-7 (Günter Leugering) **89k:52001** 52-01 (49A50, 49A55, 52A20)
- A minimization of a strictly convex function on a simplex. *Advances in mathematical optimization*, 126–129, Math. Res., 45, Akademie-Verlag, Berlin, 1988. (Panos M. Pardalos) **89f:90147** 90C30 (90C48)
- (with Zimmermann, Karel) Vorwort. [Foreword] *Arbeiten zur mathematischen Optimierung und zu verwandten Gebieten*, I–vi, Seminarberichte, 94, Humboldt Univ., Berlin, 1988. (Editors) **89i:01092** 01A70
- Eine angewandte Aufgabe der quadratischen konvexen Optimierung. [An applied problem of quadratic convex optimization] *Arbeiten zur mathematischen Optimierung und zu verwandten Gebieten*, 127–134, Seminarberichte, 94, Humboldt Univ., Berlin, 1988. (Heinz Berman) **89g:90165** 90C20
- see also *Advances in mathematical optimization*, **89b:90117** and *Papers on mathematical programming and related areas*, **89b:90118**
- Lomnicki, Adam** (with Sędziwy, Stanisław) Resource partitioning and population stability under exploitation competition. *J. Theoret. Biol.* **132** (1988), no. 1, 119–120. (Editors) **89i:92054** 92A17
- (with Sędziwy, Stanisław) Do individual differences in resource intakes without monopolization cause population stability and persistence? *J. Theoret. Biol.* **136** (1989), no. 3, 317–326. (Summary) **89k:92058** 92A15
- Lomnitz-Adler, J.** (with Pérez-Pascual, R.) Coupled relaxation oscillators and circle maps. *Phys. D* **30** (1988), no. 1–2, 61–82. (Ji Bin Li) **89f:58105** 58F14 (26A18, 58F08)
- Lomonaco, Luciano A.** The quadratic construction and the cohomology of  $X \wedge_T X$ . (Italian summary) *Boll. Un. Mat. Ital. A* (7) **1** (1987), no. 2, 187–195. (Summary) **89b:55008** 55P42
- Lomonosova, T. B.** The generalized Goursat problem for the Euler-Darboux equation with negative parameters. (Russian) *Differential equations and mathematical physics* (Russian), 78–82, Kulbyshev. Gos. Ped. Inst., Kuibyshev, 1985. (see **89f:35006**) 35L80 (35Q05)
- Lomonov, I. S.** Usual convergence of asymptotic series in the presence of zero points of the spectrum. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 6, 33–40, 97–98. (V. G. Kolomiets) **89a:34063** 34E15
- Construction of exact solutions of some singularly perturbed equations. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 6, 1073–1075, 1104. (A. Halanay) **89f:34082** 34E15 (34A25, 34D15)
- Necessary and sufficient conditions for the existence of entire analytic solutions of singularly perturbed equations. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 4, 811–815; translation in *Soviet Math. Dokl.* **37** (1988), no. 2, 471–475. (Yu Cheng Su) **89b:34053** 34E15 (30D20, 34A25)
- (with Tikhomirov, V. V.) Estimates of root vectors of multipoint spectral problems. (Russian) *Dokl. Akad. Nauk SSSR* **303** (1988), no. 6, 1304–1306; translation in *Soviet Math. Dokl.* **38** (1989), no. 3, 662–664. (Not in MR) **34B25** (47E05)
- Lomonov, S. A.** The method of obtaining universal equations describing the flows both in the zone of the boundary layer and outside of it. *BAIL IV* (Novosibirsk, 1986), 136–144, *Boole Press Conf. Ser.*, 8, Boole, Dun Laoghaire, 1986. (Zhu Jun Jing) **89c:34011** 34A25 (34B15, 34E15)
- (with Gubin, Yu. P.; Safonov, V. F.) The connection between the regularization method and the averaging method for systems in standard form. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 133–145, 339–340, "Ilim", Frunze, 1987. (D. Bainov) **89g:34059** 34C29
- (with Gubin, Yu. P.; Safonov, V. F.) Asymptotic theory of differential systems and the connection between the regularization method and the averaging method. (Russian) *Studies in integro-differential equations*, No. 20 (Russian), 146–160, 340, "Ilim", Frunze, 1987. (Zhu Jun Jing) **89g:34060** 34C29 (34E05)
- (with Eliseev, A. G.) Asymptotic integration of singularly perturbed problems. (Russian. English summary) *Uspekhi Mat. Nauk* **43** (1988), no. 3(261), 3–53, 271, 272; translation in *Russian Math. Surveys* **43** (1988), no. 3, 1–63. (V. G. Kolomiets) **89i:34083** 34E15 (34E05)
- (with Kachalov, V. I.) Smoothness of the solutions of differential equations with respect to a singularly entering parameter. (Russian) *Dokl. Akad. Nauk SSSR* **299** (1988), no. 4, 805–808; translation in *Soviet Math. Dokl.* **37** (1988), no. 2, 465–467. (Jianxun He) **89f:34081** 34E15 (34A08, 34A10, 34A25, 34A45)
- Lomtatidze, A. G.** A singular boundary value problem for second-order linear differential equations. (Russian) *Boundary value problems* (Russian), 46–50, 156, *Perm. Politekh. Inst.*, Perm, 1984. (see **89b:00008**) 34B05
- Positive solutions of boundary value problems for second-order ordinary differential equations with singularities. (Russian) *Differentsial'nye Uravneniya* **23** (1987), no. 10, 1685–1692, 1834–1835. (L. Lepins) **89d:34040** 34B15
- On the problem of the solvability of singular boundary value problems for second-order ordinary differential equations. (Russian. English and Georgian summaries) *Tbiliss. Gos. Univ. Inst. Prikl. Mat. Trudy* **22** (1987), 135–149, 235–236. (Summary) **89c:34036** 34B15
- Lonc, Zbigniew** On resolvable tree-decompositions of complete graphs. *J. Graph Theory* **12** (1988), no. 2, 295–303. (H. Joseph Straight) **89d:05144** 05C70
- Lončar, Ivan** PH-closed bi-topological spaces. (Serbo-Croatian summary) *Mat. Vesnik* **39** (1987), no. 4, 417–429. (C. V. Riecke) **89f:54064** 54E55 (54A20, 54B25, 54D30)
- Inverse limits of the Cantor-manifolds. *Publ. Math. Debrecen* **34** (1987), no. 3-4, 181–187. (K. Nagami) **89c:54072** 54F45 (54B25, 57N99)
- Some results on resolutions of spaces. (Serbo-Croatian summary) *Rad Jugoslav. Akad. Znan. Umjet.* No. 428 (1987), 37–49. (M. Hušek) **89m:54013** 54B25 (55P55)
- Lomcaric, Josip** (with Brockett, R. W.) The geometry of compliance programming. *Theory and applications of nonlinear control systems* (Stockholm, 1985), 35–42, North-Holland, Amsterdam-New York, 1986. (Summary) **89c:70064** 70Q05 (70B15)
- London, R. R.** A new form of Green's theorem in the plane. *J. Math. Anal. Appl.* **126** (1987), no. 2, 424–436. (W. P. Ziemer) **89b:26012** 26B20
- Functions whose derivative has positive real part. *Proc. Amer. Math. Soc.* **103** (1988), no. 2, 521–524. (Johnny E. Brown) **89f:30019** 30C45
- (with Thomas, D. K.) The derivative of Bazilevič functions. *Proc. Amer. Math. Soc.* **104** (1988), no. 1, 235–238. (O. P. Ahuja) **89k:30011** 30C45
- Loone, A. G.** (with Hussain, Tahir; Ikram, Mohd.) On multi-queue with bulk arrivals and service parameters depending upon queue numbers. *Internat. J. Management Systems* **4** (1988), no. 3, 161–168. (U. Narayan Bhat) **89m:60231** 60K25 (90B22)
- ton-that Long** see **Ton-That Long**
- Long, Calvin** (with Bergum, Gerald) On a problem of Diophantus. *Applications of Fibonacci numbers* (San Jose, CA, 1986), 183–191, Kluwer Acad. Publ., Dordrecht, 1988. (Neville Robbins) **89i:11026** 11B39 (11D09)
- Long, D. D.** Immersions and embeddings of totally geodesic surfaces. *Bull. London Math. Soc.* **19** (1987), no. 5, 481–484. (G. Peter Scott) **89g:57014** 57N10

- (with Humphries, S. P.) On the Mal'cev quotients of certain hyperbolic link groups. *Math. Proc. Cambridge Philos. Soc.* **102** (1987), no. 3, 475–480. (B. N. Ananov) **89a:22018** 22E40 (11F06, 20F34)
- (with Kojima, Sadayoshi) Virtual Betti numbers of some hyperbolic 3-manifolds. *A fête of topology*, 417–437, *Academic Press, Boston, MA*, 1988. (Robert Brooks) **89a:57060** 57T15 (57N10)
- Bounding laminations. *Duke Math. J.* **56** (1988), no. 1, 1–16. (William Dunbar) **89k:57041** 57N70 (55S36, 57N05, 58F15)
- Engulfing and subgroup separability for hyperbolic groups. *Trans. Amer. Math. Soc.* **308** (1988), no. 2, 849–859. (G. Peter Scott) **89h:57001** 57M05
- On the linear representation of braid groups. *Trans. Amer. Math. Soc.* **311** (1989), no. 2, 535–560. (J. S. Birman) **89h:20054** 20F36 (32B30, 57M25)
- Long, Douglas L. (with Wigderson, Avi) The discrete logarithm hides  $O(\log n)$  bits. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 363–372. (Evangelos Kranakis) **89c:68026** 68P25 (68Q30)
- Long, F. X. (with Yang, J. N.; Wong, D.) Optimal control of nonlinear structures. *Trans. ASME Ser. E J. Appl. Mech.* **55** (1988), no. 4, 931–938. (Summary) **89j:73076** 73K35 (70L05, 70Q05, 73K40, 93C75)
- Long, Hui (with Hu, Wen Rui) Nonaxisymmetric magnetostatic equilibrium with strong twisted component of magnetic field. *Sci. Sinica Ser. A* **31** (1988), no. 2, 192–205. (Summary) **89m:85012** 85A30 (78A30, 85A20)
- Long, Rui Lin Real interpolation of tent spaces on product domains. (Chinese) *Acta Math. Sinica* **30** (1987), no. 4, 492–503. (Bor-Luh Lin) **89c:46032** 46E30 (46M35)
- Long, Timothy J. (with Ko, Ker-I; Du, Ding Zhu) On one-way functions and polynomial-time isomorphisms. *Theoret. Comput. Sci.* **47** (1986), no. 3, 263–276. (Summary) **89c:68036** 68Q15 (03D15)
- (with Homer, Steven) Honest polynomial degrees and  $P = ?NP$ . *Theoret. Comput. Sci.* **51** (1987), no. 3, 265–280. (Uwe Schöningh) **89a:68070** 68Q15 (03D15)
- Erratum: "On restricting the size of oracles compared with restricting access to oracles" [*SIAM J. Comput.* **14** (1985), no. 3, 585–597; MR 87h:68053]. *SIAM J. Comput.* **17** (1988), no. 3, 628. (Editors) **89d:68020** 68Q15 (03D15)
- Long, Xiang Yun (with Li, Bo Fu; Sun, Jia Zhong) The irreducible tensor method and molecular structure. I. Operator algebras and the tensor decomposition of Hamilton operators. (Chinese) *Acta Math. Sci. (Chinese)* **7** (1987), no. 4, 453–465. (Summary) **89g:81109** 81G50 (92A40)
- Long, Yu Qiu Several patterns of functional transformation and generalized variational principles with several arbitrary parameters. *Internat. J. Solids and Structures* **22** (1986), no. 10, 1059–1069. (Summary) **89c:73024** 73C60
- Long, Zhi Yang (with Zhou, Qi Jie) Robust pole assignment by output feedback. (Chinese. English summary) *Control Theory Appl.* **5** (1988), no. 1, 18–24. (Yun Qing Shi) **89g:93050** 93B55 (93B35, 93B60)
- Longbotham, Harold Gene (with Bovik, Alan Conrad) Theory of order statistic filters and their relationship to linear FIR filters. *IEEE Trans. Acoust. Speech Signal Process.* **37** (1989), no. 2, 275–287. (Tohru Katayama) **89c:93203** 93E11 (93E14, 94A12)
- Longcope, D. W. (with Sudan, R. N.) Arnold diffusion in  $1\frac{1}{2}$  dimensions. *Phys. Rev. Lett.* **59** (1987), no. 14, 1500–1503. (Summary) **89b:58137** 58F13 (78A35)
- Longford, Nicholas T. A fast scoring algorithm for maximum likelihood estimation in unbalanced mixed models with nested random effects. *Biometrika* **74** (1987), no. 4, 817–827. (A. I. Khuri) **89b:62156** 62J10 (62F10)
- Longhi, Sauro (with Grasselli, Osvaldo Maria) Disturbance localization by measurement feedback for linear periodic discrete-time systems. *Automatica—J. IFAC* **24** (1988), no. 3, 375–385. (Ulle Kotta) **89g:93041** 93B50 (49D50, 93B27, 93C05, 93C35, 93C55)
- (with Grasselli, Osvaldo Maria) Zeros and poles of linear periodic multivariable discrete-time systems. *Circuits Systems Signal Process.* **7** (1988), no. 3, 361–380. (John Maroulas) **89k:93104** 93B55 (93C05, 93C55)
- Longinetti, Marco Some isoperimetric inequalities for the level curves of capacity and Green's functions on convex plane domains. *SIAM J. Math. Anal.* **19** (1988), no. 2, 377–389. (D. E. Tepper) **89h:31001** 31A15 (31A25, 35R45)
- Longini, Ira M., Jr. A mathematical model for predicting the geographic spread of new infectious agents. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1–2, 367–383. (Summary) **89h:92052** 92A15
- Longman, I. M. Complementary moments and the summation of series. *Appl. Math. Comput.* **24** (1987), no. 2, 139–151. (Thomas A. Atchison) **89b:65015** 65B10 (40A25, 44A60, 65R10)
- The summation of alternating and monotonic series. *Appl. Math. Comput.* **25** (1988), no. 4, 287–298. (Thomas A. Atchison) **89b:65016** 65B10 (40A25)
- A note on the summation of power series. *Appl. Numer. Math.* **4** (1988), no. 5, 431–437. (Summary) **89c:65005** 65B10
- (with Cohen, Alan Max) The summation of power series having positive coefficients. *Appl. Numer. Math.* **4** (1988), no. 6, 471–476. (Not in MR) **65D15** (40)
- Longman, Richard W. (with Sevastov, George E.) Systematic design of robust control systems using small gain stability concepts. *Internat. J. Systems Sci.* **19** (1988), no. 3, 439–451. (Cheng Zhi Li) **89k:93095** 93B50 (93B35)
- Longo, E. (with Monaco, R.; Platkowski, T.) Sound and shock wave propagations by the semidiscrete Boltzmann equation. (French summary) *J. Méc. Théor. Appl.* **7** (1988), no. 3, 233–243. (Rishi Ram Sharma) **89h:35306** 35Q20 (76L05, 76P05)
- Longo, Placido Characterization of the  $\Gamma$ -limits of unilateral obstacles. *J. Analyse Math.* **50** (1988), 79–99. (Carlo Sbordone) **89k:49008** 49A50 (35J85)
- Longo, R. (with D'Antoni, C.; Doplicher, S.; Fredenhagen, Klaus) Erratum: "Convergence of local charges and continuity properties of  $W^*$ -inclusions" [*Comm. Math. Phys.* **110** (1987), no. 2, 325–348; MR 88h:81078]. *Comm. Math. Phys.* **116** (1988), no. 1, 175–176. (From the text) **89c:81066** 81E05 (46L60)
- Maximal abelian subalgebras with simple normalizer. *Proc. Amer. Math. Soc.* **107** (1989), no. 1, 165–168. (E. Størmer) **89m:46103** 46L35 (46L10)
- Longobardi, Patrizia (with Maj, Mercedes) On the number of generators of a finite group. *Arch. Math. (Basel)* **50** (1988), no. 2, 110–112. (Robert M. Guralnick) **89e:20063** 20F05
- (with Maj, Mercedes)  $v$ -complete epimorphisms between lattices of normal subgroups. (Italian) *Rend. Sem. Mat. Univ. Padova* **79** (1988), 275–280. (John S. Wilson) **89m:20024** 20E15 (20F18)
- Longstaff, W. E. Cyclic vectors for operator algebras. *Bull. Soc. Math. Grèce (N.S.)* **27** (1986), 73–83. (Robert L. Moore) **89d:47102** 47D25 (46L99, 47A15)
- Longtin, André Une combinatoire noncommutative pour l'étude des nombres secant. (English summary) [A noncommutative combinatorics for the study of secant numbers] *Combinatoire énumérative (Montreal, Que., 1985/Quebec, Que., 1985)*, 246–266, *Lecture Notes in Math.*, 1234, Springer, Berlin-New York, 1986. (Luis Verde-Star) **89c:95016** 05A15 (05A05, 05A19)
- (with Milton, John G.) Complex oscillations in the human pupil light reflex with "mixed" and delayed feedback. Nonlinearity in biology and medicine (Los Alamos, NM, 1987). *Math. Biosci.* **90** (1988), no. 1–2, 183–199. (Summary) **89f:92019** 92A09
- Longuet-Higgins, H. C. Multiple interpretations of a pair of images of a surface. *Proc. Roy. Soc. London Ser. A* **418** (1988), no. 1854, 1–15. (Summary) **89d:78006** 78A05
- Longuet-Higgins, M. S. (with Dysthe, Kristian; Henyey, F. S.; Schult, R. L.) The orbiting double pendulum: an analogue to interacting gravity waves. *Proc. Roy. Soc. London Ser. A* **418** (1988), no. 1855, 281–299. (P. C. Parks) **89j:70019** 70F20 (70H35, 76B15)
- Lô Long Vân see Dô Long Vân
- Lønning, Jan Tore Collective readings of definite and indefinite noun phrases. *Generalized quantifiers (Lund, 1985)*, 203–235, *Stud. Linguist. Philos.*, 31, Reidel, Dordrecht-Boston, MA, 1987. (see **89m:03003**) 03B65
- Lookabaugh, Tom (with Chou, Philip A.; Gray, Robert M.) Entropy-constrained vector quantization. *IEEE Trans. Acoust. Speech Signal Process.* **37** (1989), no. 1, 31–42. (Ved Priya) **89k:94031** 94A29 (94A12)
- Loomes, Graham Different experimental procedures for obtaining valuations of risky actions: implications for utility theory. *Theory and Decision* **25** (1988), no. 1, 1–23. (Not in MR) **90A10**
- van Loon, P. M. (with Mattheij, R. M. M.) Stable continuous orthonormalisation techniques for linear boundary value problems. *J. Austral. Math. Soc. Ser. B* **29** (1988), no. 3, 282–295. (G. H. Meyer) **89d:65078** 65L10
- Loonstra, Frans Closed extensions of  $R$ -modules in the case of a semi-Artinian ring  $R$ . (Italian summary) *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **79** (1985), no. 1–4, 9–14 (1986). (Birge Zimmermann-Huisgen) **89c:16050** 16A56 (16A35)
- Theorems of uniqueness in the theory of modules. *Contributions to general algebra*, 4 (Krems, 1985), 99–110, *Hölder-Pichler-Tempsky, Vienna*, 1987. (J. Jirásko) **89c:16040** 16A52 (16A08, 16A56)
- Loose, H. (with Heimann, B.) Computer-oriented method for multirigid body systems based on the recursive Newton-Euler-Lagrange formalism. (German and Russian summaries) *Z. Angew. Math. Mech.* **69** (1989), no. 1, 29–35. (Not in MR) **70B15** (70–04)
- Lootsma, Freek A. Numerical scaling of human judgement in pairwise-comparison methods for fuzzy multicriteria decision analysis. *Mathematical models for decision support (Val d'Isère, 1987)*, 57–88, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 48, Springer, Berlin-New York, 1988. (see **89g:90136**) **92A25** (90B50)
- (with Ragsdell, K. M.) State-of-the-art in parallel nonlinear optimization. *Parallel Comput.* **6** (1988), no. 2, 133–155. (K. Schittkowski) **89a:90130** 90C30 (49D07, 49D27, 65K10)
- see also *Mathematical models for decision support*, **89g:90136**
- Lopachëv, V. A.  $L^p$  spaces of solutions of homogeneous linear differential equations with constant coefficients. (Russian) *Operators and their applications (Russian)*, 52–56, *Leningrad. Gos. Ped. Inst., Leningrad*, 1985. (see **89f:00013**) **34A30**
- (with Plotkin, A. I.) Isometric mappings in  $L^p$ -spaces of polyanalytic functions. (Russian) *Functional analysis*, No. 26 (Russian), 122–129, *Ulyanovsk. Gos. Ped. Inst., Ulyanovsk*, 1986. (From the text) **89k:47046** 47B38 (30G99, 46E15)
- Lopatín, A. K. Group-theoretic criteria for the decomposition of systems of ordinary differential equations. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 7(41) (1987), 17–23, 79. (Summary) **89j:34077** 34E05 (49D25)
- Asymptotic decomposition of almost linear systems of differential equations. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 8(42) (1987), 25–29, 92. (D. Bainov) **89f:34063** 34C29 (35A30)
- (with Mitropol'skii, Yu. A.) ★ Теоретико-групповой подход в асимптотических методах нелинейной механики. (Russian) [Group-theoretic approach in asymptotic methods of nonlinear mechanics] "Naukova Dumka", Kiev, 1988. 272 pp. ISBN 5-12-009304-3 (J. Chirstina) **89h:34002** 34-02 (34C20, 58F35, 58G35, 70-02)
- Lopatnikov, A. M. Asymptotic behavior of the spectral function for a class of hypoelliptic operators. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1988**, no. 1, 92–94; translation in *Moscow Univ. Math. Bull.* **43** (1988), no. 1, 84–86. (Ya. A. Roitberg) **89g:58208** 58G25 (35H05, 35P20)
- Lopato, Yu. P. (with Korzhik, V. I.) Optimal decoding of convolutional codes in channels with additive Markov noise. (Russian) *Problemy Peredachi Informatsii* **23** (1987), no. 4, 35–40. (M. Răduică) **89g:94031** 94B10 (94A40, 94B35)
- Loper, Alan On rings without a certain divisibility property. *J. Number Theory* **28** (1988), no. 2, 132–144. (P. M. Cohn) **89a:12006** 12E05 (13A15, 13F05)
- torres Lopera, J. F. see Torres Lopera, J. F.
- Lopes, O. see Partial differential equations, **89c:35002**
- gonzález-López, A. see González-López, A.
- garcía López, Alfonso see García López, Alfonso
- Jeremías López, Ana see Jeremías López, Ana
- vera López, Antonio see Vera López, Antonio
- López, Carlos see López Lacasta, Carlos
- Lopez, Francisco J. A nonorientable complete minimal surface in  $R^3$  between two parallel planes. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 913–917. (Shigeo Akiba) **89f:53009** 53A10 (53C42)
- López, G. see López Lagomasino, Guillermo
- Lopez, Gérard (with Rauzy, Claire) La  $(n-4)$ -reconstructibilité des tournois de cardinalité  $n \geq 10$ . (English summary) [The  $(n-4)$ -reconstructibility of tournaments of cardinality  $n \geq 10$ ] *C. R. Acad. Sci. Paris Sér. I Math.* **306** (1988), no. 15, 639–642. (Joseph B. Kleier) **89f:05129** 05C60 (04A05)
- salicrup López, Graciela see Salicrup López, Graciela
- López, J. A. see López Molina, Juan Antonio
- Lopez, J. M. see Lopez, Juan Manuel
- alvarez López, Jesús A. see Alvarez López, Jesús A.
- vera López, Juan see Vera López, Juan



- Lopez, Juan Manuel** (with Murphy, J. O.) Nonlinear bifurcations to time-dependent Rayleigh-Bernard convection. *Austral. J. Phys.* **41** (1988), no. 1, 63–83. (A. Pozzi) **89f:76041** 76E15 (58F14)
- López, Marco Antonio** (with Goberna, M. A.) Discrete approximation in linear semi-infinite programming. *Proceedings of the first international seminar on operational research of the Basque Provinces* (Zarauz, 1986), 3–20, Univ. Pais Vasco, Bilbao, 1986. (Sven-Åke Gustafsson) **89a:90080** 90C05 (49D39, 90C08, 90C48)
- (with Goberna, M. A.) Reduction and discrete approximation in linear semi-infinite programming. *Optimization* **18** (1987), no. 5, 643–658. (Adrian S. Lewis) **89f:90081** 90C05 (52A40)
- (with Goberna, M. A.) Optimal value function in semi-infinite programming. *J. Optim. Theory Appl.* **59** (1988), no. 2, 261–279. (R. Tichatschke) **89m:90097** 90C05 (49A50, 49A55, 49D39, 90C25)
- (with Goberna, M. A.) A theory of linear inequality systems. *Linear Algebra Appl.* **106** (1988), 77–115. (O. Pokorná) **89g:15014** 15A39 (90C05)
- Pla-López, Rafael** see **Pla-López, Rafael**
- López, Vicente** (with Fairén, Victor; Conde, Luis) Power series approximation to solutions of nonlinear systems of differential equations. *Amer. J. Phys.* **56** (1988), no. 1, 57–61. (J. F. Heyda) **89a:34018** 34A45 (34A25, 34A34)
- López-Carmona, Antonio** (with Guerrero Casas, Flor Ma.) Error bounds in a convergence acceleration process. (Spanish. English summary) *Proceedings of the Eleventh Spanish-Portuguese Conference on Mathematics*, Vol. 2 (Spanish) (Badajoz, 1986), 435–441, Publ. Dep. Mat. Univ. Extremadura, 18, Univ. Extremadura, Badajoz, 1987. (Summary) **89h:65009** 65B05
- López-Chimil, Marcos** (with Hing Cortón, Rosina) Absolute nonoscillation and stability criteria for second-order automatic control systems. (Spanish. English summary) *Cienc. Mat. (Havana)* **6** (1985), no. 3, 67–74. (Abel R. Castro Figueroa) **89h:93079** 93D05 (34C10)
- mesa López-Colmenar, Juan Antonio** see **Mesa López-Colmenar, Juan Antonio**
- López de Silanes, M. C.** (with Apprato, D.) Estimations de l'erreur d'approximation sur un domaine borné de  $\mathbb{R}^n$  par  $D^m$ -splines d'interpolation et d'ajustement discrètes. (English summary) [Approximation error estimates on a bounded domain in  $\mathbb{R}^n$  for interpolating and smoothing discrete  $D^m$ -splines] *Numer. Math.* **53** (1988), no. 3, 367–376. (D. Zwick) **89g:41009** 41A15 (41A65, 65D07)
- López-Escobar, E. G. K.** (with D'Ottaviano, I. M. L.) The conditional and the compounding of errors. *J. Non-Classical Logic* **3** (1986), no. 2, 91–117. (Summary) **89f:03018** 03B50 (03B99)
- Circumscription within monotonic inferences. *J. Symbolic Logic* **53** (1988), no. 3, 888–904. (Petr Jirka) **89m:03022** 03B60
- López Estrada, Jesús** (with Barrios Zamudio, Ernesto) On a regularized Gauss-Markov estimator with optimal parameter estimation. (Spanish) *Proceedings of the XIXth National Congress of the Mexican Mathematical Society*, Vol. 2 (Spanish) (Guadalajara, 1986), 305–310, Aportaciones Mat.: Comun., 4, Soc. Mat. Mexicana, Mexico City, 1987. (See **89k:00009**) 62J07
- López-Gómez, J.** (with Esquinas, J.) Optimal multiplicity in local bifurcation theory. I. Generalized generic eigenvalues. *J. Differential Equations* **71** (1988), no. 1, 72–92. (Pavel Drabek) **89b:47086** 47H15 (58E07)
- López Lacasta, Carlos** (with Cariñena, José F.) Group theoretical treatment of optical aberrations. *Differential geometry and its applications, communications* (Brno, 1986), 63–70, Univ. J. E. Purkyně, Brno, 1987. (Ram Krishan Sharma) **89e:78002** 78A10
- (with Cariñena, José F.; Román-Roy, Narciso) Geometric study of the connection between the Lagrangian and Hamiltonian constraints. *J. Geom. Phys.* **4** (1987), no. 3, 315–334. (Frans Cantrijn) **89i:58031** 58F05 (70H99)
- (with Cariñena, José F.) The time-evolution operator for singular Lagrangians. *Lett. Math. Phys.* **14** (1987), no. 3, 203–210. (Jaime Muñoz Masqué) **89d:58037** 58F05 (58E30, 70H99)
- (with Cariñena, José F.; Rañada, Manuel F.) Geometric Lagrangian approach to first-order systems and applications. *J. Math. Phys.* **29** (1988), no. 5, 1134–1142. (Martine J. Perrin) **89e:58043** 58F05 (70H05, 70H35)
- (with Cariñena, José F.; Román-Roy, Narciso) Origin of the Lagrangian constraints and their relation with the Hamiltonian formulation. *J. Math. Phys.* **29** (1988), no. 5, 1143–1149. (Martine J. Perrin) **89e:58044** 58F05 (70H05, 70H99)
- López Lagomasino, Guillermo** (with Jiménez Pozo, Miguel A.) Korovkin type theorems for certain classes of analytic functions. (Spanish summary) *Cienc. Mat. (Havana)* **8** (1987), no. 2, 25–29. (R. Gervais) **89c:30098** 30E10 (30H05, 41A65, 47B38)
- (with Illán González, Jesús) The interpolation methods of numerical integration and their connection with rational approximation. (Spanish. English summary) *Cienc. Mat. (Havana)* **8** (1987), no. 2, 31–44. (Summary) **89b:65049** 65D15 (65D30)
- see also *Approximation and optimization*, **89k:41001**
- López Martín, Luis Javier** ★ Identificación de modelos en series temporales. (Spanish) [Time series model identification] Dissertation, Universidad de La Laguna, La Laguna, 1985. Colección Monografías [Collection of Monographs], 23. Universidad de La Laguna, Secretariado de Publicaciones, La Laguna, 1986. 235 pp. ISBN 84-600-4308-8 (Editors) **89b:62191** 62M10
- López Molina, Juan Antonio** (with Giménez, I.) On weak and Schauder  $\mathcal{F}$ -bases in topological vector spaces. *Arch. Math. (Basel)* **51** (1988), no. 6, 561–569. (W. H. Ruckle) **89j:46007** 46A35
- López Pellicer, M.** (with Ferrando, J. C.) Quasi-suprabarrelled spaces. *J. Austral. Math. Soc. Ser. A* **46** (1989), no. 1, 137–145. (I. Tiedtke) **89m:46004** 46A07 (46A30)
- López-Permouth, S. R.** (with Jain, Suresnder Kumar) A generalization of the Wedderburn-Artin theorem. *Proc. Amer. Math. Soc.* **106** (1989), no. 1, 19–23. (S. S. Page) **89i:16013** 16A36 (16A48)
- López Piñero, A.** (with Zúñiga, J.; Hidalgo, A.; Francés, J. M.; Requena, A.; Olivares del Valle, F. J.) Analytical expressions for vibrational matrix elements of Morse oscillators. *Phys. Rev. A* (3) **38** (1988), no. 8, 4205–4212. (Summary) **89i:81023** 81C05 (81G55)
- Lopushanskaya, G. P.** (with Voloshina, M. S.; Gupalo, A. S.) Solution of generalized mixed boundary value problems for inhomogeneous strongly elliptic systems of second-order differential equations in the case of a multiply connected domain. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 8(42) (1987), 45–50, 93. (Summary) **89c:35050** 35J55
- Solution of the first boundary value problem for a second-order parabolic equation in a space of generalized functions. (Russian) *Mat. Metody i Fiz.-Mekh. Polya* No. 26 (1987), 3–7, 106. (V. Duriković) **89b:35143** 35K20 (35C15, 35D05)
- Lorch, Lee** (with Muldoon, Martin E.) An inequality for concave functions with applications to Bessel and trigonometric functions. (Serbo-Croatian summary) *Facta Univ. Ser. Math. Inform.* No. 2 (1987), 29–34. (Andrea Laforgia) **89m:33015** 33A40 (26D20)
- Lorch, Richard** Abu Ja'far al-Khāzin on isoperimetry and the Archimedean tradition. (Arabic summary) *Z. Gesch. Arab.-Islam. Wiss.* **3** (1986), 150–229, Arabic paging 49. (Jan P. Hogendijk) **89e:01009** 01A30 (01A20, 01A35)
- Some remarks on the Arabic-Latin Euclid. *Adelard of Bath*, 45–54, Warburg Inst. Surveys Texts, XIV, Warburg Inst., London, 1987. (See **89c:01017**) 01A30 (01A35)
- Lord, Eric A.** Gauge theories of gravity. *Recent developments in theoretical physics* (Kottayam, 1986), 241–259, World Sci. Publishing, Singapore, 1987. (Summary) **89g:83042** 83E10 (81E13, 83D05)
- (with Jha, Ramanand; Sinha, K. P.) The Brans-Dicke scalar field in Einstein-Cartan theory. *Gen. Relativity Gravitation* **20** (1988), no. 9, 943–950. (Kenneth Dunn) **89i:83051** 83D05
- (with Goswami, P.) Gauge theory of a group of diffeomorphisms. III. The fiber bundle description. *J. Math. Phys.* **29** (1988), no. 1, 258–267. (M. Carmeli) **89b:58039** 58D05 (53C80, 81E13)
- Lord, Harriet Lazowick** Factorizations,  $M$ -separation, and extremal-epireflective subcategories. *Topology Appl.* **28** (1988), no. 3, 241–253. (H. Herrlich) **89b:18005** 18A32 (18A40, 18B30, 54B30)
- Erratum: "Factorizations,  $M$ -separation, and extremal-epireflective subcategories" [Topology Appl. **28** (1988), no. 3, 241–253; MR **89b:18005**]. *Topology Appl.* **31** (1989), no. 1, 99. (Editors) **89k:18005** 18A32 (18A40, 18B30, 54B30)
- Lo Re, P. M.** (with Olanda, D.) On  $\{1, 2, s\}$ -semiaffine planes. *Simon Stevin* **62** (1988), no. 1, 29–49. (Albrecht Beutelspacher) **89f:05022** 05B25 (51E20)
- Lorefee, M. Fiorella** (with Riccobono, Giuseppe) Darboux derivatives and quasi-Darboux functions. (Italian. English summary) *Atti Sem. Mat. Fis. Univ. Modena* **35** (1987), no. 2, 207–216 (1988). (D. W. Bressler) **89e:26007** 26A21 (26A24)
- de Lorena, Cristina** see **Galilei, Galileo**, **89i:01139**
- Lorente, J.** (with Ramirez, V.) On interpolation systems and  $H$ -reducible interpolation problems. *Topics in multivariate approximation* (Santiago, 1986), 153–163, Academic Press, Boston, MA, 1987. (Mariano Gasca) **89c:41003** 41A05 (41A63, 65D05)
- Lorente, M.** (with Heidenreich, W.) Quantization of conformally invariant Bargmann-Wigner equations with gauge freedom. *J. Math. Phys.* **29** (1988), no. 7, 1698–1704. (Anton Z. Capri) **89f:81083** 81D25
- Lorenz, Falko** ★ Einführung in die Algebra. Teil I. (German) [Introduction to algebra. Part I] *Bibliographisches Institut, Mannheim*, 1987. x+338 pp. ISBN 3-411-03171-9 (Stefan Porubsky) **89j:12001** 12-01 (00A05, 11-01, 13-01)
- ★ *Lineare Algebra*. I. (German) [Linear algebra. I] Second edition. *Bibliographisches Institut, Mannheim*, 1988. viii+226 pp. ISBN 3-411-03211-1 (Editors) **89j:15001** 15-01
- Lorenz, Hans-Walter** On the uniqueness of limit cycles in business cycle theory. *Metronomica* **38** (1986), no. 3, 281–293. (Marwan Simaan) **89e:90057** 90A14 (34C05, 90A16)
- Goodwin's nonlinear accelerator and chaotic motion. *Z. Nationalökonom.* **47** (1987), no. 4, 413–418. (Introduction) **89k:90039** 90A16 (58F40)
- Lorenz, Jens** (with Beyn, Wolf-Jürgen) Center manifolds of dynamical systems under discretization. *Numer. Funct. Anal. Optim.* **9** (1987), no. 3-4, 381–414. (Bernd Aulbach) **89a:58055** 58F08 (58F10, 65L05)
- Lorenz, Martin** Frobenius reciprocity and  $G_0$  of skew group rings. *Ring theory* (Granada, 1986), 165–172, *Lecture Notes in Math.*, 1328, Springer, Berlin-New York, 1988. (L. N. Vaserstein) **89j:16032** 16A54 (19A31)
- On Gelfand-Kirillov dimension and related topics. *J. Algebra* **118** (1988), no. 2, 423–437. (G. Krause) **89m:16004** 16A03 (16A33)
- On the global dimension of fixed rings. *Proc. Amer. Math. Soc.* **106** (1989), no. 4, 923–932. (Søren Jøndrup) **89m:16068** 16A72 (16A60)
- Lorenzen, Paul** ★ Lehrbuch der konstruktiven Wissenschaftstheorie. (German) [Textbook of constructive theory of science] *Bibliographisches Institut, Mannheim*, 1987. 331 pp. ISBN 3-411-03154-9 (C. Ulises Moulines) **89b:03006** 03A05 (00A25, 03B30, 03B60)
- Lorenz, A.** (with Pagani, C. D.) On the stability of the surface separating two homogeneous media with different thermal conductivities. *Acta Math. Sci. (English Ed.)* **7** (1987), no. 4, 411–429. (Li Shang Jiang) **89f:35204** 35R30 (80A20)
- Jiménez Lorenzo, Fernando** see **Jiménez Lorenzo, Fernando**
- de Lorenzo, Javier** Towards a reading of *Philosophiae naturalis principia mathematica*. (Spanish) *Theoria* (San Sebastián) (2) **2** (1987), no. 5-6, 257–284. (Pierre Crépel) **89d:01026** 01A45
- José Gallego-Díaz, mathematician. (Spanish) *Theoria* (San Sebastián) (2) **3** (1987/88), no. 7-9, 555–563. (Editors) **89m:01098** 01A70
- Lorenz-Petold, Dieter** Some new Bianchi type-I perfect fluid solutions. *Astrophys. and Space Sci.* **132** (1987), no. 1, 147–153. (Jan Novotný) **89a:83020** 83C15
- Comment on the two "new" classes of Bianchi type II solutions: "A method for generating exact Bianchi type II cosmological models" [J. Math. Phys. **27** (1986), no. 6, 1592–1594; MR **87i:83023**] by J. Hajj-Boutros. *J. Math. Phys.* **28** (1987), no. 6, 1382. (Colin B. G. McIntosh) **89c:83018** 83C15
- Higher-dimensional Taub-NUT-de Sitter solutions. *Progr. Theoret. Phys.* **78** (1987), no. 1, 11–15. (L. M. Sokolowski) **89b:83081** 83E15 (83C15)
- String-generated generalizations of the Narai solution. *Progr. Theoret. Phys.* **78** (1987), no. 5, 969–971. (Miao Li) **89d:83066** 83E15 (81E30, 83E30)
- String-generated magnetic solutions of higher-dimensional gravity. *Classical Quantum Gravity* **5** (1988), no. 1, L1–L4. (S. Kichenassamy) **89c:83046** 83E15 (83E30)
- Higher-dimensional Gauss-Bonnet cosmologies. *Modern Phys. Lett. A* **3** (1988), no. 9, 827–842. (Enric Verdaguer) **89k:83071** 83E15 (83F05)
- Nonsingular anisotropic cosmologies of no-scale supergravity. *Phys. Lett. B* **209** (1988), no. 1, 42–46. (George Zet) **89i:83064** 83E50 (83E15)
- Lorenzutta, S.** (with Chiccoli, C.; Maino, G.) On the evaluation of generalized exponential integrals  $E_\nu(x)$ . *J. Comput. Phys.* **78** (1988), no. 2, 278–287. (Summary) **89h:65030** 65D20 (33A70)
- Loreto, L.** (with Cervini, L.; Farinato, R.) The interactive computer graphics (ICG) production of the 17 two-dimensional crystallographic groups, and other related topics.

- M. C. Escher: art and science (Rome, 1985), 269-284, North-Holland, Amsterdam-New York, 1986. (see **89m:00011**) 00A05 (00A08, 20H15)
- (with Farinato, R.) Geometric crystallography and computing in geometry. *ECM/87. Educational computing in mathematics* (Rome, 1987), 31-41, North-Holland, Amsterdam-New York, 1988. (R. L. E. Schwarzenberger) **89i:51001** 51-04 (20H15, 52-04)
- Loridan, P. (with Idrissi, H.; Michélot, C.) Approximation of solutions for location problems. *J. Optim. Theory Appl.* **56** (1988), no. 1, 127-143. (James G. Morris) **89e:90085** 90B10 (90C10)
- Lories, G. Psychologie de la décision. [Psychology of decision] 11<sup>e</sup> congrès international de cybernétique (Namur, 1986), 1157-1178, Assoc. Internat. Cybernét., Namur, 1986. (see **89a:94001**) 92A25
- Lorimer, J. W. Affine Hjelmslev rings and planes. *Combinatorics '86* (Trento, 1986), 265-275, Ann. Discrete Math., 37, North-Holland, Amsterdam-New York, 1988. (Günter Törner) **89c:51007** 51C05 (16A10)
- (with Baker, C. A.; Lane, N. D.) A construction for topological non-Desarguesian affine Hjelmslev planes. *Arch. Math. (Basel)* **50** (1988), no. 1, 83-92. (Günter Törner) **89a:51013** 51C05 (51H10)
- Lorimer, Peter James see Butcher, J. C., **89i:01067**
- Loring, Terry K-theory and asymptotically commuting matrices. *Canad. J. Math.* **40** (1988), no. 1, 197-216. (Claude Schochet) **89b:47022** 47A55 (15A27, 19A31, 19K99, 46L80, 46M20)
- The noncommutative topology of one-dimensional spaces. *Pacific J. Math.* **136** (1989), no. 1, 145-158. (J. A. Mingo) **89m:46111** 46L99 (46L05, 55P55)
- (with Exel, Ruy) Almost commuting unitary matrices. *Proc. Amer. Math. Soc.* **106** (1989), no. 4, 913-915. (Kenneth R. Davidson) **89m:15003** 15A15 (15A27, 47A55, 47B47, 55M25)
- Loris-Teghem, Jacqueline Vacation policies in an M/G/1 type queueing system with finite capacity. *Queueing Systems Theory Appl.* **3** (1988), no. 1, 41-52. (F. A. van der Duyn Schouten) **89j:60129** 60K25 (90B22)
- Lortz, D. On the stability of axisymmetric MHD modes. *Z. Naturforsch. A* **43** (1988), no. 12, 1009-1016. (Summary) **89k:76055** 76E25 (76W05)
- Lory, Peter Simulation of integrated circuits: numerical techniques. *Mathematical modelling in science and technology* (St. Louis, MO, 1987). *Math. Comput. Modelling* **11** (1988), 858-863. (see **89d:00007**) 92A05 (65F99)
- Lorys, Krzysztof (with Liśkiewicz, Maciej) Alternating real-time computations. *Inform. Process. Lett.* **28** (1988), no. 6, 311-316. (Summary) **89j:68040** 68Q05 (03D10, 03D15)
- Loś, G. A. Stability of the solutions of a system of linear homogeneous differential equations with variable coefficients perturbed by impulses of Dirac delta-function type. (Russian) *Boundary value problems* (Russian), 52-57, 195, Perm. Politekh. Inst., Perm, 1983. (see **89c:00008**) 34D20 (93C57)
- Los, Jérôme E. Phénomènes de petits diviseurs dans les dédoublements de courbes invariantes. (English summary) [Small divisors phenomena in an invariant curve doubling bifurcation] *C. R. Acad. Sci. Paris Sér. II Méc. Phys. Chim. Sci. Univers. Sci. Terre* **303** (1986), no. 6, 429-432. (Summary) **89j:58095** 58F14
- Dédoublement de courbes invariantes sur le cylindre: petits diviseurs. (English summary) [Small divisor phenomena in an invariant curve doubling bifurcation on a cylinder] *Ann. Inst. H. Poincaré Anal. Non Linéaire* **5** (1988), no. 1, 37-95. (Henk Broer) **89j:58096** 58F14 (58F27)
- Lösch, Wolfgang (with Schmid, Erich W.; Spitz, Gerhard) ★ Theoretical physics on the personal computer. Translated from the German by A. H. Armstrong. Springer-Verlag, Berlin-New York, 1988. xii+211 pp. ISBN 3-540-18908-4 (From the introduction) **89j:65005** 65-01 (00A69)
- Lo Schiavo, M. (with Forte, B.; Ng, C. T.) Additive and subadditive entropies for discrete random vectors. *J. Combin. Inform. System Sci.* **9** (1984), no. 4, 207-216. (N. S. Kambo) **89i:94017** 94A17 (28D20)
- Losert, Viktor (with Schneider, Rudolf) On the weighted pointwise ergodic theorem. *Atti Sem. Mat. Fis. Univ. Modena* **35** (1987), no. 1, 95-109. (Steven Alpern) **89f:28040** 28D05 (47A35, 47B38)
- (with Rindler, H.) Conjugation-invariant means. *Colloq. Math.* **51** (1987), 221-225. (Pierre Eymard) **89d:43001** 43A07 (22D15, 22D20)
- (with Lau, A. T.) On the second conjugate algebra of  $L_1(G)$  of a locally compact group. *J. London Math. Soc.* (2) **37** (1988), no. 3, 464-470. (Kelly McKennon) **89c:43007** 43A20 (46H99)
- Loser, V. V. Decoding of sequences of Bent functions by means of a fast Hadamard transform. *Soviet J. Comm. Tech. Electron.* **32** (1987), no. 10, 155-157; translated from *Radiotekhn. i Elektron.* **32** (1987), no. 7, 1479-1482 (Russian). (Summary) **89d:94010** 94A11
- Loshkareva, I. V. (with Kozheko, L. G.) A problem of the correction of a guided process described by a nonstationary differential equation. (Russian) *Multistage, hierarchical, differential and noncooperative games* (Russian), 82-87, Kalinin. Gos. Univ., Kalinin, 1987. (É. G. Al'brekht) **89g:49017** 49A40 (49A36, 90D25, 93C15)
- Losik, M. V. A reduction theorem for connections of higher order. (Russian) *Differential geometry*, No. 5 (Russian), 53-64, 103, Saratov. Gos. Univ., Saratov, 1980. (see **89a:53001**) 58A15 (53C05, 53C10)
- On characteristic classes of structures on manifolds. (Russian) *Funktsional. Anal. i Prilozhen.* **21** (1987), no. 3, 38-52, 95. (Claude Lamoureux) **89b:58231** 58H10 (17B56, 17B65, 57R30)
- Loskiewicz, Genowefa Certain théorème du faisceau de quadriques. (Russian and Polish summaries) [A theorem on the pencil of quadrics] *Opuscula Math.* No. 3 (1987), 43-45 (1988). (J. Čizmar) **89f:51095** 51N35 (14N05)
- Loskutov, Yu. M. (with Logunov, A. A.; Mestvirishvili, M. A.) The relativistic theory of gravitation and a critique of the general theory of relativity. (Russian. English summary) *Teoret. Mat. Fiz.* **73** (1987), no. 2, 163-186. (Andrzej Trautman) **89e:83058** 83D05 (53B50)
- (with Logunov, A. A.; Mestvirishvili, M. A.) Relativistic theory of gravity. *Internat. J. Modern Phys. A* **3** (1988), no. 9, 2067-2099. (Carl Brans) **89j:83064** 83D05
- Losonczy, László (with Daróczy, Z.) Functional equations of sum type on a domain. *Ann. Univ. Sci. Budapest. Sect. Comput.* **8** (1987), 25-33 (1988). (F. W. Carroll) **89k:39013** 39B10
- Loth, A. (with Le Tallec, Patrick) Decomposition methods for adherence problems in finite elasticity. *Comput. Methods Appl. Mech. Engrg.* **68** (1988), no. 1, 67-82. (C. Dierieck)
- 89i:73070** 73T05 (73-08, 73G05)
- Lotov, A. V. Agreement of economic models using sets of feasibility. (Russian) *Mathematical methods for the analysis of the interaction of branch and regional systems* (Russian), 36-44, Mat. Anal. Ekonom. Modeli, "Nauka" Sibirsk. Otdel., Novosibirsk, 1983. (see **89j:90003**) 90A17
- Approximation and stability of generalized attainability sets. (Russian) *Cybernetics and computer technology*, No. 3 (Russian), 197-208, "Nauka", Moscow, 1987. (V. V. Obukhovskii (Zbl 646:49026)) **89j:49040** 49E15 (46N05, 49E25)
- Lotov, V. I. On the results of asymptotic analysis for the random walks with two-sided boundary. *Probability theory and mathematical statistics* (Kyoto, 1986), 267-273, *Lecture Notes in Math.*, 1299, Springer, Berlin-New York, 1988. (D. V. Gusak) **89f:60078** 60J15
- Lott, J. Real anomalies. *J. Math. Phys.* **29** (1988), no. 6, 1455-1464. (Stig I. Andersson) **89h:58035** 58D30 (58B15, 58G25, 81C99, 81E99)
- Letti, G. (with Codenotti, B.) A fast algorithm for the division of two polynomial matrices. *IEEE Trans. Automat. Control* **34** (1989), no. 4, 446-448. (Not in MR) **65F30** (15A09, 93B25)
- Flöge-Lotz, Irmgard see Flöge-Lotz, Irmgard
- Lotze, K.-H. Emission of a photon by an electron in Robertson-Walker universes. *Classical Quantum Gravity* **5** (1988), no. 4, 595-604. (Summary) **89a:81188** 81L05 (81E20, 81G10, 83C99)
- Lou, Gang (with Han, Shih-Ping) A parallel projection method for solving generalized linear least-squares problems. *Numer. Math.* **53** (1988), no. 3, 255-264. (Tudor Dumitrescu) **89g:65034** 65F10 (90C25)
- (with Han, Shih-Ping) A parallel algorithm for a class of convex programs. *SIAM J. Control Optim.* **26** (1988), no. 2, 345-355. (Giorgio Giorgi) **89e:90159** 90C25 (65K05, 65W05)
- Lou, Sen Yue (with Ni, Guang Jiong) Some quantum effects in the sine-Gordon model under the Gaussian approximation. *Phys. Lett. A* **131** (1988), no. 4-5, 256-260. (Summary) **89d:81022** 81C05 (35Q20)
- Lou, Yuan Ren On the uniform approximation by rational functions on the closed sets of complex domain. (Chinese summary) *Beijing Daxue Xuebao* **1987**, no. 5, 13-20. (Peter A. McCoy) **89i:30048** 30E10
- Loubaton, Ph. (with Kőrežlioglu, Hayri) Prediction and spectral decomposition of wide sense stationary processes on  $Z^2$ . (French summary) *Spatial processes and spatial time series analysis* (Brussels, 1985), 127-164, *Travaux Rech.*, 11, Publ. Fac. Univ. Saint-Louis, Brussels, 1987. (H. Salehi) **89i:60087** 60G25 (60G10, 60G60)
- Loubert, S. (with Rodin, E. Y.; Mohr, L.) Continuous model of an epidemic. *Math. Comput. Modelling* **12** (1989), no. 2, 247-252. (Not in MR) **92A15**
- Loubet, G. (with Hakizimana, G.; Jourdain, G.) Adapted codes for communication through multipath channel. (French summary) *Coding theory and applications* (Cachan, 1986), 173-182, *Lecture Notes in Comput. Sci.*, 311, Springer, Berlin-New York, 1988. (Summary) **89g:94023** 94A40
- Louchard, G. Exact and asymptotic distributions in digital and binary search trees. (French summary) *RAIRO Inform. Théor. Appl.* **21** (1987), no. 4, 479-495. (Helmut Prodinger) **89b:68031** 68P20 (68Q25)
- Random walks, Gaussian processes and list structures. Eleventh colloquium on trees in algebra and programming (Nice, 1986). *Theoret. Comput. Sci.* **53** (1987), no. 1, 99-124. (Helmut Prodinger) **89j:68068** 68Q25 (60G15, 60J15, 68P20)
- Large finite population queueing systems. I. The infinite server model. *Comm. Statist. Stochastic Models* **4** (1988), no. 3, 473-505. (Noel Veraverbeke) **89i:60185** 60K25 (90B22)
- Louck, J. D. (with Stein, Paul R.) Weight-2 zeros of  $3j$  coefficients and the Pell equation. *J. Math. Phys.* **28** (1987), no. 12, 2812-2823. (John J. Sullivan) **89b:81065** 81C40 (11D09, 20C35, 22E70)
- (with Biedenharn, L. C.; Lohe, M. A.) On the denominator function for canonical SU(3) tensor operators. II. Explicit polynomial form. *J. Math. Phys.* **29** (1988), no. 5, 1106-1117. (Ronald C. King) **89f:81059** 81C40 (22E70)
- Loucks, D. P. Water quality—economic modeling. *Economic-ecological modeling*, 135-148, *Stud. Regional Sci. Urban Econom.*, 16, North-Holland, Amsterdam-New York, 1987. (see **89d:90076**) 90A30
- London, R. (with Knight, P. L.) Squeezed light. Special issue on squeezed light. *J. Modern Opt.* **34** (1987), no. 6-7, 709-759. (see **89m:81213a**) 81K05 (81-02)
- see also Squeezed light, **89m:81213a**
- Loui, Michael C. (with Abu-Amara, Hosame H.) Memory requirements for agreement among unreliable asynchronous processes. *Advances in computing research*, Vol. 4, 163-183, JAI, Greenwich, CT, 1987. (Summary) **89c:68011** 68M15
- (with Matsushita, Teresa A.; West, Douglas B.) Corrigendum: "Election in a complete network with a sense of direction" [Inform. Process. Lett. **22** (1986), no. 4, 185-187]. *Inform. Process. Lett.* **28** (1988), no. 6, 327. (Not in MR) **68M10**
- Louie, A. H. (with Richardson, I. W.) The metric structure of irreversible thermodynamics. Comment on: "Hierarchies of energy conversion processes. III. Why are Onsager equations reciprocal? The Euclidean geometry of fluctuation-dissipation space" [J. Theoret. Biol. **122** (1986), no. 2, 125-155; MR 87j:92010] by L. Peusner. *J. Theoret. Biol.* **132** (1988), no. 1, 125-126. (Editors) **89d:92018** 92A08 (80A05)
- Louis, G. (with Vauclair, M.) An algebraic approach to meta-level programming in Prolog. *Philips J. Res.* **43** (1988), no. 3-4, 415-440. (Not in MR) **68T25**
- Louis, Jan (with Ovrut, Burt A.; Garreis, Reiner; Wess, Julius) Schwinger terms, seagulls and the Virasoro anomaly. *Phys. Lett. B* **199** (1987), no. 1, 57-64. (Da-Xi Li) **89c:81144** 81E99 (58G40, 81E30)
- (with Garreis, Reiner; Ovrut, Burt A.) Topology and heterotic, gravitational, Lorentz and super-Weyl anomalies. *Nuclear Phys. B* **306** (1988), no. 3, 567-602. (B. Spence) **89f:81177** 81E99 (81E30, 83E30)
- (with Cvetic, Mirjam; Ovrut, Burt A.) A string calculation of the Kähler potentials for moduli of  $Z_N$  orbifolds. *Phys. Lett. B* **206** (1988), no. 2, 227-233. (Miao Li) **89j:83074** 83E15 (22E40, 32G13, 81E30, 83E30)
- (with Ovrut, Burt A.; Kalyana Rama, S.) Topological approach to Weyl and super-Weyl anomalies in string theory. *Phys. Rev. D* **3** (38) (1988), no. 10, 3094-3104. (Frans R. Klinkhamer) **89m:81152** 81E99 (58G40, 81C35, 81E30)
- Louis, Peter D. (with Gerhard, Ortwin E.) Can galaxies oscillate? A self-consistent model of a nonstationary stellar system. *Monthly Notices Roy. Astronom. Soc.* **233** (1988), no. 2,



- 337-365. (Summary) **89d:85004** 85A05
- Louis, Thomas A.** (with Barnard, G. A.; Chernoff, Herman; Peto, Richard; Whitehead, John Raymond) Discussion of: "On the allocation of treatments in sequential medical trials" [Internat. Statist. Rev. **53** (1985), no. 1, 1-13; MR **89i:62171**] by J. A. Bather and "The search for optimality in clinical trials" [ibid. **53** (1985), no. 1, 15-24; MR **89i:62172**] by P. Armitage. With replies by Bather and Armitage. *Internat. Statist. Rev.* **53** (1985), no. 1, 25-36. (Per Kragh Andersen) **89i:62173** 62P10 (62L10, 92A07)
- (with De Gruttola, V.; Ware, James H.) Influence analysis of generalized least squares estimators. *J. Amer. Statist. Assoc.* **82** (1987), no. 399, 911-917. (Summary) **89g:62100** 62J05 (62F35)
- Loujykh, Vlastislav** Problèmes aux limites et des valeurs propres pour des équations différentielles ordinaires avec dégénérescence. [Boundary and eigenvalue problems for ordinary differential equations with degeneracy] *Cahiers Math.* **1988**, no. 1, 61-65. (Not in MR) 34B15 (34B25)
- Louka, Basile** (with Tchuente, Maurice) Dynamic programming on two-dimensional systolic arrays. *Inform. Process. Lett.* **29** (1988), no. 2, 97-104. (Summary) **89m:68103** 68Q00 (90C39)
- Louka, Jorma** Canonising the Hartle-Hawking proposal. *Phys. Lett. B* **202** (1988), no. 2, 201-206. (A. D. Popova) **89c:83036** 83C45 (83F05)
- Loula, Abimeai F. D.** (with Franca, Leopoldo P.; Hughes, Thomas J. R.; Miranda, Isidoro) A new family of stable elements for nearly incompressible elasticity based on a mixed Petrov-Galerkin finite element formulation. *Numer. Math.* **53** (1988), no. 1-2, 123-141. (P. Rouchus) **89f:65122** 65N30 (73-08)
- Lourenço, Periti** (with Toppila, Sakari) On a conjecture of Hellerstein, Shen and Williamson. (Russian and Polish summaries) Proceedings of the 9th Conference on Analytic Functions (Lublin, 1986). *Ann. Univ. Mariae Curie-Skłodowska Sect. A* **40** (1986), 267-268 (1987). (Shlomo Strelitz) **89j:30037** 30D20
- (with Wene, G. P.) Idempotent structure of Clifford algebras. *Acta Appl. Math.* **9** (1987), no. 3, 165-173. (Summary) **89d:15006** 15A66 (11E88)
- Cayley transform, outer exponential and spinor norm. Proceedings of the Winter School on Geometry and Physics (Srni, 1987). *Rend. Circ. Mat. Palermo (2) Suppl.* **10** (1987), 191-198. (A. O. Barut) **89f:15023** 15A66
- Functions on Clifford algebras. Proceedings of the Workshop on Clifford Algebra, Clifford Analysis and their Applications in Mathematical Physics (Ghent, 1988). *Simon Stevin* **62** (1988), no. 3-4, 243-251. (Summary) **89j:30068** 30G35 (30-04)
- Lawrence, Mary Lilian** Riemann domains over (DFC)-spaces. *Complex Variables Theory Appl.* **10** (1988), no. 1, 67-82. (Kazimierz Włodarczyk) **89g:46083** 46G20 (32E30, 32F15, 46A05)
- Loustannau, Philippe** Large subdirect product of modules as direct summand of their direct product. *Comm. Algebra* **17** (1989), no. 2, 393-412. (M. Teply) **89i:16047** 16A53 (16A54)
- Loustó, Carlos O.** (with Vucetich, Héctor) Accretion disks as tests for gravitational strong fields. *SILARG, VI (Rio de Janeiro, 1987)*, 260-270, *World Sci. Publishing, Singapore, 1988*. (Summary) **89d:83009** 83B05
- Lauveau, A.** (with Saint-Raymond, J.) Borel classes and closed games: Wadge-type and Hurewicz-type results. *Trans. Amer. Math. Soc.* **304** (1987), no. 2, 431-467. (D. W. Bressler) **89g:03068** 03E15 (04A15, 28A05, 54H05)
- (with Saint-Raymond, J.) Les propriétés de réduction et de norme pour les classes de Boreliens. (English summary) [Reduction and norm properties for classes of Borel sets] *Fund. Math.* **131** (1988), no. 3, 223-243. (D. W. Bressler) **89m:03039** 03E15 (04A15)
- Louveaux, François** (with Birge, John R.) A multicut algorithm for two-stage stochastic linear programs. *European J. Oper. Res.* **34** (1988), no. 3, 384-392. (A. G. Žilinskas) **89f:90108** 90C15
- (with Laporte, Gilbert; Mercure, Hélène) Models and exact solutions for a class of stochastic location-routing problems. *European J. Oper. Res.* **39** (1989), no. 1, 71-78. (Summary) **89m:90068** 90B15
- Louw, J.** (with Steeb, W.-H.; Bringer, A.) Nonlinear wave equations, covariant exterior derivative, Painlevé test, and integrability. *Internat. J. Theoret. Phys.* **26** (1987), no. 4, 375-385. (Benno Fuchssteiner) **89a:58107** 58G16 (35L70, 58F07)
- (with Steeb, W.-H.; van Tonder, A.; Brits, S. J. M.) Thermodynamic quantities and the motion of energy levels. *Helv. Phys. Acta* **61** (1988), no. 7, 979-987. (Summary) **89j:81039** 81C12
- see also Ramani, Alfred et al., **89c:34081**
- Lovas, L.** (with Svirezhev, Yu. M.; Voinov, A. A.; Tonkikh, A. P.) Simulation modelling of Lake Balaton. *Papers on mathematical ecology*, **1**, 223-250, *DM, 86-2, Karl Marx Univ. Econom., Budapest, 1986*. (Summary) **89a:92063** 92A17
- Lovass-Nagy, V.** (with Ibrahim, Essam Y.; Mukundan, Rangaswamy; Schilling, Robert J.) Free final-time optimal control of descriptor systems. *Internat. J. Control* **48** (1988), no. 1, 407-416. (Kenneth D. Clark) **89g:49033** 49B34 (49B05, 49D40, 93C30)
- Lovász, L.** (with Kannan, Ravindran) Covering minima and lattice point free convex bodies. *Foundations of software technology and theoretical computer science (New Delhi, 1986)*, 193-213, *Lecture Notes in Comput. Sci.*, **241**, Springer, Berlin-New York, 1986. (Claus-Peter Schnorr) **89b:11055** 11H06 (11H31, 11Y16, 68Q25)
- (with Björner, Anders) Pseudomodular lattices and continuous matroids. *Acta Sci. Math.* (Szeged) **51** (1987), no. 3-4, 295-308. (Jiti Tóma) **89j:05026** 05B35 (06C10, 06C20)
- (with Grötschel, M.; Schrijver, Alexander) \* Geometric algorithms and combinatorial optimization. Algorithms and Combinatorics: Study and Research Texts, **2**. Springer-Verlag, Berlin-New York, 1988. xii+362 pp. ISBN 3-540-13624-X (Jürgen Köhler) **89m:90135** 90C27 (05-02, 52-02, 68Q25)
- (with Kannan, Ravindran) Covering minima and lattice-point-free convex bodies. *Ann. of Math.* (2) **128** (1988), no. 3, 577-602. (J. M. Wills) **89e:52020** 52A43 (11H06, 11H31, 52A45, 90C10)
- (with Linial, Nathan; Wigderson, Avi) Rubber bands, convex embeddings and graph connectivity. *Combinatorica* **8** (1988), no. 1, 91-102. (M. M. Syslo) **89i:05187** 05C40 (68Q25, 68R10)
- (with Kannan, Ravindran; Lenstra, A. K.) Polynomial factorization and nonrandomness of bits of algebraic and some transcendental numbers. *Math. Comp.* **50** (1988), no. 181, 235-250. (From the introduction) **89j:68061** 68Q20 (11A51, 11A63, 11J99, 11Y16, 68Q25)
- Love, Alex** (with Bailin, David; Thomas, Steven) Generalised GSO projections for Z-orbifold heterotic string compactifications with "Wilson lines". *Modern Phys. Lett. A* **3** (1988), no. 2, 167-178. (Paul Howe) **89d:83060** 83E15 (53C80, 81E30, 83E30)
- (with Bailin, David; Thomas, Steven) Orbifold compactified superstring models with tetrahedral and octahedral point groups. *Nuclear Phys. B* **298** (1988), no. 1, 75-91. (C. Gauthier) **89a:81167** 81G20 (53C80, 81E30, 83E15, 83E30)
- (with Bailin, David) Four-dimensional heterotic string models with SU(5) and SO(10) grand unification. *Phys. Lett. B* **207** (1988), no. 2, 151-156. (Summary) **89c:81194** 81G20 (81E30)
- (with Bailin, David; Dunbar, David C.) Four-dimensional heterotic string models with rank  $\leq 6$  observable gauge group. *Phys. Lett. B* **212** (1988), no. 1, 23-27. (Summary) **89i:81145** 81G20 (81E30)
- (with Bailin, David; Dunbar, David C.) Yukawa couplings in four-dimensional fermionic string models. *Phys. Lett. B* **219** (1989), no. 1, 76-82. (Not in MR) **81E99** (81E30)
- Love, S. T.** (with Clark, T. E.) Supersymmetric chiral normal coordinates. *Nuclear Phys. B* **301** (1988), no. 3, 439-459. (Joan Soto) **89g:81054** 81E15 (81E20)
- (with Clark, T. E.; Lee, C.-H.) Anti-symmetric tensor gauge theories. *Nuclear Phys. B* **308** (1988), no. 2-3, 379-396. (S. Deser) **89i:81067** 81E13 (81D20)
- Lórádi, Pál** Indian-Arabic numerals in Hungary of the 14th century. (Hungarian) *Mat. Lapok* **33** (1982/86), no. 1-3, 25-26. (Stefan Porubský) **89g:01018** 01A35
- Lovrjey, William S.** On the convexity of policy regions in partially observed systems. *Oper. Res.* **35** (1987), no. 4, 619-621. (From the text) **89f:90202** 90C30 (90B25)
- Some monotonicity results for partially observed Markov decision processes. *Oper. Res.* **35** (1987), no. 5, 736-743. (Peter Kochel) **89f:90188** 90C40
- Lovelace, Augusta Ada** see Rappaport, Karen D., **(89b:01071)**
- Loveland, L. D.** Spheres with continuous tangent planes. *Rocky Mountain J. Math.* **17** (1987), no. 4, 829-844. (Kenneth A. Perko, Jr.) **89f:57007** 57M30
- Lovengreen, Hans Henrik** (with Ravn, Anders P.; Rischel, Hans) A design method for embedded software systems. *BIT* **28** (1988), no. 3, 427-438. (Not in MR) **68M99** (68N05)
- Lovera, Oscar Mario** (with Santos, Juan Enrique) Numerical methods for a model for wave propagation in composite anisotropic media. (French summary) *RAIRO Model. Math. Anal. Numér.* **22** (1988), no. 1, 159-176. (N. Gass) **89d:73012** 73D15 (65N30, 73C30, 76S05, 86A15)
- LeVet, J.** (with Hamid, M.) Coulomb wave functions in the theory of the circular paraboloidal waveguide. (French summary) *Canad. J. Phys.* **66** (1988), no. 3, 212-227. (Summary) **89e:78017** 78A50
- Lovetskii, S. E.** (with Melamed, I. I.) Static flows in networks. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 10, 3-29. (Knut Richter) **89c:90049** 90B10
- (with Melamed, I. I.) Dynamic flows in networks. (Russian. English summary) *Avtomat. i Telemekh.* **1987**, no. 11, 7-29. (Knut Richter) **89c:90050** 90B10
- Love, A. D.** see New developments in statistics for psychology and the social sciences, **89c:62002**
- Lovinescu, Catalina** Flow in matroids with parallel elements. (Romanian summary) *Bul. Inst. Politehn. Iasi Sect. I* **32(36)** (1986), no. 1-4, 43-46. (Ulrich Faigle) **89a:90082** 90C05
- Lovíšek, J.** Optimal control of variational inequality with applications to axisymmetric shells. (Russian and Slovak summaries) *Apl. Mat.* **32** (1987), no. 6, 459-479. (B. I. Anan'ev) **89b:49011** 49A29 (49A27, 58E35, 73L99)
- (with Hlaváček, I.; Haslinger, J.; Nečas, Jindřich) \* Solution of variational inequalities in mechanics. Translated from the Slovak by J. Jarník. Applied Mathematical Sciences, **66**. Springer-Verlag, New York-Berlin, 1988. x+275 pp. ISBN 0-387-96597-1 (Petr Procházka) **89j:73003** 73-02 (35-02, 49A29, 73C60, 73Exx, 73T05)
- Lovtskii, K. E.** On the problem of the modeling of motion for controllable differential inclusions. (Russian) *Some methods for positional and programmed control (Russian)*, 69-83, **150**, *Akad. Nauk SSSR, Ural. Nauchn. Tsentr, Sverdlovsk, 1987*. (Vadim Z. Tsalyuk) **89m:49064** 49E10 (65K10)
- Low, David W.** (with Levy, Hanoch) A contraction algorithm for finding small cycle cutsets. *J. Algorithms* **9** (1988), no. 4, 470-493. (Mukhai S. Krishnamoorthy) **89i:05165** 05C35 (68Q25, 68R10, 90B99)
- Low, Lewis** (with Pitman, Jane; Wolff, Alison) Simultaneous diagonal congruences. *J. Number Theory* **29** (1988), no. 1, 31-59. (István Gaál) **89j:11030** 11D79 (11E92)
- Love, Bruce D.** (with Kohn, Robert V.) A variational method for parameter identification. (French summary) *RAIRO Model. Math. Anal. Numér.* **22** (1988), no. 1, 119-158. (Hong Xing Zhou) **89d:93036** 93B30 (35K30)
- Love, David** (with Broomhead, D. S.) Multivariable functional interpolation and adaptive networks. *Complex Systems* **2** (1988), no. 3, 321-355. (Not in MR) **92A25** (65D05)
- Löwe, Michael** (with Hansen, Horst) Modular algebraic specifications. *Algebraic and logic programming (Gaussig, 1988)*, 168-179, *Math. Res.*, **49**, Akademie-Verlag, Berlin, 1988. (see **89j:68002**) **68Q65** (68N05, 68Q50)
- Lowe, S. A.** (with Bertin, G.; Lin, Chia Chiao; Thurstans, R. P.) Modal approach to the morphology of spiral galaxies. I. Basic structure and astrophysical viability. *Astrophys. J.* **338** (1989), no. 1, part 1, 78-103. (Not in MR) **85A05** (76E20)
- (with Bertin, G.; Lin, Chia Chiao; Thurstans, R. P.) Modal approach to the morphology of spiral galaxies. II. Dynamical mechanisms. *Astrophys. J.* **338** (1989), no. 1, part 1, 104-120. (Not in MR) **85A05** (76E20)
- Löwe, Stefan** Groups, strongly regular graphs, and quotient sets. Proceedings of the First Catania International Combinatorial Conference on Graphs, Steiner Systems, and their Applications, Vol. 2 (Catania, 1986). *Ars Combin.* **24** (1987), B, 31-34. (L. Fuchs) **89b:20075** 20K01 (05C99)
- On multiplier theorems of relative quotient sets. *J. Geom.* **29** (1987), no. 1, 78-86. (Hai Ping Ko) **89a:50334** 05B10 (20C05)
- Irreducible representations of Hecke algebras of rank 2 geometries. *Combinatorics '86 (Trento, 1986)*, 277-279, *Ann. Discrete Math.*, **37**, North-Holland, Amsterdam-New York, 1988. (J. W. P. Hirschfeld) **89d:51017** 51E30
- Lowe, Timothy J.** (with Kincaid, Rex K.; Morin, Thomas L.) The location of central structures in trees. *Comput. Oper. Res.* **15** (1988), no. 2, 103-113. (Not in MR) **90C27** (90B99)
- (with Schwarz, Leroy B.; McGavin, Edward J.) The determination of optimal base-stock inventory policy when the costs of under- and oversupply are uncertain. *Naval Res. Logist.* **35** (1988), no. 4, 539-554. (Summary) **89c:90076** 90B05
- (with Erkut, E.; Francis, R. L.) Locating two facilities on a tree subject to distance constraints. *Transportation Sci.* **22** (1988), no. 3, 199-208. (Summary) **89f:90046** 90B10

- Lowen, E.** see **Lowen-Colebunders, Eva**
- Löwen, H.** Spectral properties of an optical polaron in a magnetic field. *J. Math. Phys.* **29** (1988), no. 6, 1498–1504. (K. Wódkiewicz) **89h:81274** 81H99
- Analytical behavior of the ground-state energy and pinning transitions for a bound polaron. *J. Math. Phys.* **29** (1988), no. 6, 1505–1513. (K. Wódkiewicz) **89h:81275** 81H99
- Absence of phase transitions in Holstein systems. *Phys. Rev. B* (3) **37** (1988), no. 15, 8661–8667. (Summary) **89c:82015** 82A25 (81H99)
- A note on the existence of phase transitions in finite-site Peierls-Hubbard systems. *Z. Phys. B* **71** (1988), no. 2, 219–224. (Koichiro Matsuno) **89i:81151** 81H20 (82A25)
- Lowen, R.** see **Lowen, Robert**
- Löwen, Rainer** (with Kuhn, Dieter) Piecewise affine bijections of  $\mathbb{R}^n$ , and the equation  $Sx^+ - Tx^- = y$ . *Linear Algebra Appl.* **96** (1987), 109–129. (Summary) **89k:90161** 90C33 (15A06)
- Lowen, Robert** (with Lowen-Colebunders, Eva) The role of the diagonal operator in fuzzy topology. *Mathematics and fuzziness, Part I* (Palma, 1985). *Fuzzy Sets and Systems* **27** (1988), no. 1, 53–61. (Zike Deng) **89h:54016** 54A40 (03E72)
- (with Lowen-Colebunders, Eva) A quasitopos containing CONV and MET as full subcategories. *Internat. J. Math. Math. Sci.* **11** (1988), no. 3, 417–438. (H. Herrlich) **89g:54024** 54B30 (18A40, 18B25, 18B30)
- (with Wuyts, P.) Concerning the constants in fuzzy topology. *J. Math. Anal. Appl.* **129** (1988), no. 1, 256–268. (Jin Xuan Fang) **89b:54008** 54A40 (03E72)
- (with Lowen-Colebunders, Eva) On measures of compactness in fuzzy topological spaces. *J. Math. Anal. Appl.* **131** (1988), no. 2, 329–340. (Run Sheng Yang) **89c:54016** 54A40 (03E72)
- (with Srivastava, Arun Kumar<sup>2</sup>) Sierpinski objects in subcategories of FTS. *Quaestiones Math.* **11** (1988), no. 2, 181–193. (Siegfried Gottwald) **89j:54010** 54A40 (03E72, 18B30, 54B30)
- Kuratowski's measure of noncompactness revisited. *Quart. J. Math. Oxford Ser. (2)* **39** (1988), no. 154, 235–254. (Y. T. Rhineghost) **89i:54010** 54B30 (54A05, 54D30, 54E35)
- (with Srivastava, Arun Kumar<sup>2</sup>; Wuyts, P.) Non-Archimedean metric induced fuzzy uniform spaces. *Internat. J. Math. Math. Sci.* **12** (1989), no. 1, 47–59. (T. Thirvikraman) **89k:54015** 54A40 (46P05, 54E15)
- (with Lowen-Colebunders, Eva) On the nonsimplicity of some convergence categories. *Proc. Amer. Math. Soc.* **105** (1989), no. 2, 305–308. (H. Herrlich) **89g:18012** 18B99 (54A25, 54B30)
- see also **Mathematics and fuzziness**, **89a:03112** and **89k:03073**
- Löwen, Ulrich** (with Börger, Egon) Logical decision problems and complexity of logic programs. *Fund. Inform.* **10** (1987), no. 1, 1–33. (Summary) **89c:03065** 03D15 (68Q15, 68T25)
- (with Kleine Büning, Hans) Optimization aspects for propositional binary Prolog programs. (German and Russian summaries) *J. Inform. Process. Cybernet.* **24** (1988), no. 11–12, 585–599. (Not in MR) **68T25**
- Lowen-Colebunders, Eva** (with Bentley, H. L.; Herrlich, Horst) The category of Cauchy spaces is Cartesian closed. Proceedings of the 8th international conference on categorical topology (L'Aquila, 1986). *Topology Appl.* **27** (1987), no. 2, 105–112. (Summary) **89e:54062** 54E99 (18B99, 54B15, 54B30, 54C35)
- (with Lowen, Robert) The role of the diagonal operator in fuzzy topology. *Mathematics and fuzziness, Part I* (Palma, 1985). *Fuzzy Sets and Systems* **27** (1988), no. 1, 53–61. (Zike Deng) **89h:54016** 54A40 (03E72)
- (with Lowen, Robert) A quasitopos containing CONV and MET as full subcategories. *Internat. J. Math. Math. Sci.* **11** (1988), no. 3, 417–438. (H. Herrlich) **89g:54024** 54B30 (18A40, 18B25, 18B30)
- (with Lowen, Robert) On measures of compactness in fuzzy topological spaces. *J. Math. Anal. Appl.* **131** (1988), no. 2, 329–340. (Run Sheng Yang) **89c:54016** 54A40 (03E72)
- (with Lowen, Robert) On the nonsimplicity of some convergence categories. *Proc. Amer. Math. Soc.* **105** (1989), no. 2, 305–308. (H. Herrlich) **89g:18012** 18B99 (54A25, 54B30)
- Lowenstein, J. H.** (with Berkovich, A.) Correlation function of the one-dimensional Fermi gas in the infinite-coupling limit (repulsive case). *Nuclear Phys. B* **285** (1987), no. 1, 70–96. (Tuncay Aktosun) **89c:82008** 82A15
- Loxton, J. H.** (with van der Poorten, A. J.) An awful problem about integers in base four. *Acta Arith.* **49** (1987), no. 2, 193–203. (M. M. Dodson (Zbl 636:10003)) **89m:11004** 11A05 (11A63, 11B83)
- Lozada, Abraham** (with Torres, P. L.) Four-momentum and angular momentum in classical electrodynamics. *J. Math. Phys.* **29** (1988), no. 6, 1361–1367. (E. Comay) **89j:78017** 78A25
- roanes Lozano, Eugenio** see **Roanes Lozano, Eugenio**
- Lozano, Maria Teresa** (with Hilden, Hugh M.; Montesinos, José María) On the universal group of the Borromean rings. *Differential topology* (Siegen, 1987), 1–13, *Lecture Notes in Math.*, 1350, Springer, Berlin-New York, 1988. (Wilbur Whitten) **89m:57002** 57M10 (22E40, 57M12)
- (with Safont, Carmen) Virtually regular coverings. *Proc. Amer. Math. Soc.* **106** (1989), no. 1, 207–214. (Józef H. Przytycki) **89i:57002** 57M12 (57M25)
- Lozano, R.** see **Lozano Leal, Rogelio**
- Lozano, S.** (with Onieva, L.; Larrañeta, J.; Ruiz Usano, R.) Primal-dual approach to the capacitated production planning problem with concave costs. (Spanish. English summary) *Questiō 11* (1987), no. 2, 117–133, 153. (Summary) **89d:90110** 90B30
- Lozano Leal, Rogelio** (with Begovich, Ofelia; Ortega, Romeo; Fernández, Guillermo) On the destabilizing effects of unmodeled plant delay in a simple adaptive controller: simulation and local stability results. *Control Theory Adv. Tech.* **3** (1987), no. 2, 141–148. (Not in MR) **34K20** (93C40)
- (with Ortega, Romeo; Kelly, Rafael) On global stability of adaptive systems using an estimator with parameter freezing. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 343–346. (Not in MR) **93C40**
- Lozano-Pérez, Tomás** (with Erdmann, Michael) On multiple moving objects. Special issue on robotics. *Algorithmica* **2** (1987), no. 4, 477–521. (Summary) **89h:68144** 68U05 (52–04, 68Q25, 70B15)
- Lozanov, Chavdar** On the nonequivalency of the theorem of Miquel  $M_5$  with a four-point case of the theorem  $M_5^2$ . *Demonstratio Math.* **20** (1987), no. 3–4, 327–334 (1988). (Gary L. Ebert) **89f:51027** 51B10 (51E25)
- Lozanov, Zagorka** (with Pilipović, Stevan) On some classes of generalized random linear functionals. *J. Math. Anal. Appl.* **129** (1988), no. 2, 433–442. (Ali Süleyman Üstünel) **89c:60126** 60H99
- Lozanić, A.** (with Svirskas, K.; Piragas, K. A.) The plane trajectories of spin particles in the Schwarzschild field. *Astrophys. and Space Sci.* **149** (1988), no. 1, 39–52. (W. B. Bonnor) **89j:83008** 83C10
- Lozhkin, S. A.** Synthesis of contact and relay-contact schemes by means of structural decomposition. (Russian) *Proceedings of the All-Union seminar on discrete mathematics and its applications* (Russian) (Moscow, 1984), 142–147, *Moskov. Gos. Univ., Mekh.-Mat. Fak., Moscow*, 1986. (A. Ádám) **89g:94049** 94C10
- (with Koshkin, M. A.) Complexity of the realization of some systems of Boolean functions by multiterminal switching circuits. (Russian) *Dokl. Akad. Nauk SSSR* **298** (1988), no. 4, 807–811; translation in *Soviet Math. Dokl.* **37** (1988), no. 1, 162–166. (A. N. Melikhov) **89g:94050** 94C10
- Lozi, René** (with Ushiki, Shigehiro) Confinor and anti-confinor in constrained "Lorenz" system. *Dynamics of infinite-dimensional systems* (Lisbon, 1986), 385–407, *NATO Adv. Sci. Inst. Ser. F: Comput. Systems Sci.*, 37, Springer, Berlin-New York, 1987. (Summary) **89k:58222** 58F14
- (with Ushiki, Shigehiro) Confinor and anti-confinor in constrained "Lorenz" system. *Japan J. Appl. Math.* **4** (1987), no. 3, 433–454. (Eric Cornelis) **89b:58160** 58F14 (34C20, 58F12)
- Motifs-confiners pour l'étude de la cinétique de la réaction de Belousov-Zhabotinskii. [Motive-confiners for the study of the kinetics of the Belousov-Zhabotinskii reaction] *Equations aux dérivées partielles non linéaires dissipatives et systèmes dynamiques*, 47–81, *Travaux en Cours*, 28, Hermann, Paris, 1988. (Summary) **89d:58074** 58F12 (58C28)
- Lozier, Daniel W.** (with Rehm, Ronald G.; Baum, Howard R.) Diffusion-controlled reaction in a vortex field. *Applied mathematics, fluid mechanics, astrophysics* (Cambridge, MA, 1987), 241–248, *World Sci. Publishing, Singapore*, 1988. (see **89f:76002**) **80A25**
- Lozichuk, N. G.** Self-organization of heat exchange in an organism and its mathematical model. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* **1988**, no. 12, 58–61, 86. (Not in MR) **92A08**
- Lozovann, D. D.** On the problem of the establishment of compatibility of systems of linear inequalities with right-hand sides that depend on the parameters. (Russian) *Mat. Issled.* **100** *Sistemy Optim. Obrab. Danykh* (1988), 71–76, 150–151. (Summary) **89d:90131** 90C05
- Duality principle for systems of linear inequalities with the right-hand sides depending on parameters. *Soviet J. Comput. Systems Sci.* **26** (1988), no. 3, 106–114; translated from *Izv. Akad. Nauk SSSR Tekhn. Kibernet.* **1987**, no. 6, 3–12, 203 (Russian). (Anna Lee) **89j:15032** 15A39 (90C05, 90C31)
- Lazowicka Stupnicka, Teresa** (with Stupnicki, Stefan) Optimization of size and location of service system units. *10<sup>e</sup> Congrès International de Cybernétique* (Namur, 1983), 145–152, *Assoc. Internat. Cybernét., Namur*, 1984. (see **89a:93003**) **90B10**
- Lazowicki, Adam** On the optimization of control systems in meaning of certain class of input signals. *11<sup>e</sup> congrès international de cybernétique* (Namur, 1986), 1044–1054, *Assoc. Internat. Cybernét., Namur*, 1986. (see **89a:94001**) **93C10** (93B50, 93C35)
- La, Bing Lin** The exact solution of the coagulation equation with kernel  $K_{ij} = A(i+j) + B$ . *J. Phys. A* **20** (1987), no. 9, 2347–2356. (Summary) **89d:82156** 82A97 (82A51)
- (with Bak, Thor A.) Kinetics of copolymerisation and gelation. *J. Phys. A* **20** (1987), no. 18, 6531–6541. (Summary) **89h:82078** 82A51
- The evolution of the cluster size distribution in a coagulation system. *J. Statist. Phys.* **49** (1987), no. 3–4, 669–684. (Summary) **89b:82070** 82A50
- (with Vigil, R. Dennis; Ziff, Robert M.) New universality class of gelation in a system with particle breakup. *Phys. Rev. B* (3) **38** (1988), no. 1, 942–945. (H. N. V. Temperley) **89f:82051** 82A50
- La, Cai Hui** The construction and classification of a class of integrable modules over the affine Lie algebra  $A_1^{(1)}$ , not belonging to the category  $O$ . (Chinese) *Acta Math. Sinica* **30** (1987), no. 5, 626–640. (Sen Qiu) **89d:17005** 17B10 (17B67)
- La, Chang Shun** (with Chi, Zhong Xian; Mao, Yu Cui; Zuo, Kai) The design and implementation of the graph theory language GTL. (Chinese. English summary) *J. Dalian Inst. Tech.* **27** (1988), no. 1, 113–119. (Not in MR) **68R10** (05C, 68N25)
- La, Chang Yu** (with Zhu, Xian Hai) Admissibility of linear estimates of parameters in a linear model. (Chinese) An English summary appears in *Chinese Ann. Math. Ser. B* **8** (1987), no. 3, 383. (Chinese Ann. Math. Ser. A **8** (1987), no. 2, 220–226. (Summary) **89a:62030** 62C15 (62J05)
- La, Chin-Pi** Modules satisfying ACC on a certain type of colons. *Pacific J. Math.* **131** (1988), no. 2, 303–318. (David C. Lantz) **89c:13022** 13E05 (13J10)
- La, Chuan Rong** (with Lin, Zheng Yan) Strong approximations for partial sums of independent and dependent random variables. (Chinese. English summary) *Chinese J. Appl. Probab. Statist.* **4** (1988), no. 1, 71–84. (Summary) **89c:60067** 60F15 (60G50, 60J65)
- La, Chen Qing** (with Hastings, S. P.; Wan, Yieh Hei) Existence of a traveling flame front in a model with no cold boundary difficulty. *SIAM J. Appl. Math.* **47** (1987), no. 6, 1229–1240. (J. Adler) **89c:80020** 80A25 (34B15, 80A30)
- (with Troy, William C.) The behavior of solutions of a nonlinear boundary layer equation. *Nonlinear diffusion equations and their equilibrium states, II* (Berkeley, CA, 1986), 123–137, *Math. Sci. Res. Inst. Publ.*, 13, Springer, New York-Berlin, 1988. (P. M. Santini) **89i:86001** 86A05 (34B15, 35B99)
- Lä, D.** Strongly nonlinear Riemann boundary value problems. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **1987**, no. 4, 7–12, 81. (Ya Zhe Chen) **89k:35191** 35Q15 (30E25, 35J60)
- The skew derivative problem in hypercomplex function theory. (Chinese. English summary) *Hunan Ann. Math.* **7** (1987), no. 2, 73–80. (Summary) **89j:30056** 30G20
- A class of singular integral equations on a bounded two-dimensional region. (Chinese. English summary) *Hunan Shifan Daxue Ziran Kexue Xuebao* **10** (1987), no. 4, 5–10. (Sheng Gong) **89g:45013** 45E05 (30E20)
- La, De Yuan** (with Liao, Zong Huang) Instability of solution for the third order linear differential equation with varied coefficient. *Appl. Math. Mech. (English Ed.)* **9** (1988), no. 10, 969–984; translated from *Appl. Math. Mech.* **9** (1988), no. 10, 909–923 (Chinese. English summary). (Peter E. Kloeden) **89j:34066** 34D05 (34A30)



- Li, Feng** (with Li, Dian Guo; Liu, Wei) The establishment of the membership functions of the same kind of problems. (Chinese summary) *Dongbei Shida Xuebao* 1988, no. 1, 5-11. (Editors) **89g:03082** 03E72
- Li, Guang Tao** The singularities of black holes. (Chinese) *Natur. Sci. J. Harbin Normal Univ.* 3 (1987), no. 1, 101-104. (Not in MR) **83C75**
- Li, Hao Ru** Grammatical inference for recursive structures in syntactic-semantic pattern recognition. (Chinese. English summary) *Acta Automat. Sinica* 14 (1988), no. 2, 112-119. (Summary) **89g:68129** 68T10
- Li, Hui Hsiung** (with Chen, Bang-Yen) Some 2-type submanifolds and applications. (French summary) *Ann. Fac. Sci. Toulouse Math.* (5) 9 (1988), no. 1, 121-131. (Y. Tashiro) **89m:53092** 53C40
- Li, Hui Qing** Plane gravitational waves under a nonzero cosmological constant. *Chinese Astronom. Astrophys.* 12 (1988), no. 3, 186-190. (Summary) **89j:83032** 83C35 (83C25)
- (with Yu, Wen Guang) The gauge invariance of electromagnetic fields and the transmission of light in a gravitational field. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* 1988, no. 1, 55-59. (Summary) **89m:83059** 83C50
- Li, Hung Ching** (with Ch'en, Po Hsien; Wang, Shun Hsiang) Stabilization of time-delay systems containing saturating actuators. *Internat. J. Control* 47 (1988), no. 3, 867-881. (Summary) **89a:93039** 93D10 (34K35)
- (with Ch'en, Po Hsien) State estimation of large-scale systems. *Internat. J. Control* 47 (1988), no. 6, 1613-1632. (J. C. Geromel) **89f:93004** 93A15 (93B07, 93D15, 93D20)
- (with Ch'en, Po Hsien) Stabilization of multivariable feedback systems with multiple time delays. *Internat. J. Systems Sci.* 19 (1988), no. 6, 953-966. (Jian Hong Wu) **89g:93075** 93D15 (34K35, 93C35, 93D20)
- Li, I. T.** (with Felsen, Leopold B.) Range-dependent canonical solutions for shallow ocean acoustics. *Computational acoustics, Vol. 1* (New Haven, Conn., 1986), 33-56, North-Holland, Amsterdam-New York, 1988. (Summary) **89c:76092** 76Q05 (86A05)
- Li, Jian An** (with Gao, Heng Shan) Algebraic semantics for some systems of quantified normal modal logic with the Barcan formula. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 10, 727-729. (Not in MR) 03B45
- Li, Jian Ke** The mathematical problems of compound materials with cracks in plane elasticity. *Acta Math. Sci. (English Ed.)* 6 (1986), no. 4, 419-432. (From the introduction) **89c:73054** 73M05
- **★** Jiexi hanshu bianzhi wenti. (Chinese) [Boundary value problems for analytic functions] Shanghai Science and Technology Publishing House, Shanghai, 1987. viii+451 pp. (J. S. Hwang) **89b:30036** 30E25 (30D40, 45E05)
- The Hilbert boundary problem of doubly periodic analytic functions. A Chinese summary appears in Chinese Ann. Math. Ser. A 9 (1988), no. 1, 103. *Chinese Ann. Math. Ser. B* 9 (1988), no. 1, 38-49. (Boris E. Kats) **89k:30040** 30E25
- see also He, Fa He, **89b:01064**
- Li, Jiang** (with Chai, Gen Xiang) On the strong consistent conditions of the nearest neighbor density estimate in general kernel case. *Acta Math. Sci. (English Ed.)* 7 (1987), no. 2, 139-147. (Jan Mielniczuk) **89a:62091** 62G05
- Li, Jing Fa** (with Ge, Mo Lin) The Yang-Baxter algebra in a nonlinear chiral model. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 24, 1853-1856. (Not in MR) **58F07** (17B67, 81E13, 82A15)
- (with Ge, Mo Lin) On algebraic structures in the nonlinear principal chiral model. *J. Phys. A* 21 (1988), no. 8, L435-L438. (Summary) **89f:81194** 81E99 (17B65, 58F07, 81D15, 81E40)
- Li, Jun An** (with Xu, Jia Mo) Optimum domain problems governed by a class of PDE. *Numerical methods for partial differential equations* (Shanghai, 1987), 165-170, *Lecture Notes in Math.*, 1297, Springer, Berlin-New York, 1987. (J. P. Babary) **89b:35033** 35J20 (49A22, 65N30)
- Li, Kai Cheng** (with He, Jing Min) The security and design of knapsack public key cryptosystems. (Chinese. English summary) *J. Tsinghua Univ.* 28 (1988), no. 1, 89-97. (Zhao Zhi Zhang) **89m:94011** 94A60 (68P25)
- Li, Ke Ning** (with Chow, S.-N.) Invariant manifolds for flows in Banach spaces. *J. Differential Equations* 74 (1988), no. 2, 285-317. (Jean Mawhin) **89b:58163** 58F25 (34D30, 35R20, 47H20, 58F10)
- Li, Li Jiang** The local solvability of a class of pseudodifferential equations of principal type. *Acta Math. Sci. (English Ed.)* 6 (1986), no. 1, 25-36. (William Margulies) **89d:35192** 35S05
- Phragmén-Lindelöf theorems for elliptic inequalities. (Chinese) *Acta Math. Sci. (Chinese)* 7 (1987), no. 2, 121-127. (Xinhua Ji) **89f:35036** 35B40 (35J67)
- On singularity of solutions of elliptic equations. (Chinese. English summary) *Lanzhou Daxue Xuebao* 23 (1987), no. 4, 12-16. (Xinhua Ji) **89f:35060** 35J15 (35B05)
- Li, Liang** (with Gates, S. James, Jr.; Oerter, Robert N.) Simplified SU(2) spinning string superspace supergravity. *Phys. Lett. B* 218 (1989), no. 1, 33-38. (Mark D. Roberts) **89m:83094** 83E50 (81G25, 83E30)
- Li, Ning** On the mapping class group of the torus. *Stud. Cerc. Mat.* 40 (1988), no. 2, 137-141. (Denis Sjerve) **89f:20039** 20F05 (11F06, 22E40, 57M99)
- Li, Pei Rong** The physical meaning of the general Lorentz transformation. (Chinese. English summary) *Tongji Daxue Xuebao* 16 (1988), no. 1, 101-110. (Not in MR) **83A05**
- Li, Pei Shan** Dynamic stability of a cutting process, taking into account the nonlinear structural stiffness of machine tools. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 4, part I, 45-48. (Not in MR) **34D20** (70K99)
- Li, Ping** (with Vinh, N. X.) Minimax optimal control for atmospheric fly-through trajectories. *J. Optim. Theory Appl.* 57 (1988), no. 1, 41-58. (Not in MR) **49B40**
- Li, Qi Long** On the problem of determining the center of a planar  $n$ th degree system. (Chinese. English summary) *Adv. in Math. (Beijing)* 17 (1988), no. 3, 280-284. (Zai-Feng Song) **89i:34030** 34C05 (58F21)
- Li, Qi Shao** Bifurcation and stability of periodic solutions of a class of nonlinear evolution equation. *Oscillations, bifurcation and chaos* (Toronto, Ont., 1986), 517-525, *CMS Conf. Proc.*, 8, Amer. Math. Soc., Providence, RI, 1987. (V. G. Samoilenko) **89g:35015** 35B32 (34K20, 35R10, 45K05, 58F14)
- Bifurcation and stability of spatially periodic solutions of nonlinear evolution equations with integral operators. *Appl. Math. Mech. (English Ed.)* 8 (1987), no. 11, 1045-1056; translated from *Appl. Math. Mech.* 8 (1987), no. 11, 985-995 (Chinese. English summary). (Yang Kuang) **89c:34073** 34C25 (34D05, 47H15, 58F14)
- Li, Qing Hui** About Beskin's theorem. (Chinese. English summary) *J. Tianjin Univ.* 1987, no. 2, 39-46. (Lu Yang) **89d:51033** 51N05
- Li, Quan Kang** (with Chen, Hong<sup>2</sup>) A new method for calculating the correlation function of an electromagnetic system. (Chinese. English summary) *J. Fudan Univ. Natur. Sci.* 26 (1987), no. 3, 257-264. (Summary) **89d:82086** 82A45
- Li, Ru Zhan** (with Sun, Yong Qiang; Huang, Xiao Rong) Termination preserving problem in the transformation of applicative programs. *J. Comput. Sci. Tech. (English Ed.)* 2 (1987), no. 3, 191-201. (Summary) **89i:68009** 68N05
- Li, Shan Zhen** A problem on the spherical maximal functions. (Chinese) *Acta Math. Sinica* 30 (1987), no. 4, 478-482. (Rong Qing Jia) **89c:42025** 42B25
- Strong summability with weights for Bochner-Riesz means. (Chinese. English summary) *Beijing Shifan Daxue Xuebao* 1987, no. 2, 13-16. (Wei Yi Su) **89c:42017** 42B05
- Approximation properties of Riesz means at critical index on real Hardy spaces. *Sci. Sinica Ser. A* 30 (1987), no. 11, 1150-1159. (José Javier Guadalupe Hernández) **89h:42028** 42B30 (42A45)
- Li, Shao Ming** (with Wang, Mu Qiu; Wang, Lian) On existence of periodic solutions for large-scale systems. (Chinese) *Kexue Tongbao (Chinese)* 32 (1987), no. 13, 972-975. (Not in MR) **93A15** (34C25)
- Li, Shi Hui** (with Hansen, Pierre; Jaumard, Brigitte) Approche analytique de l'optimisation globale. (English summary) [Analytical approach to global optimization] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 1, 29-32. (Summary) **89b:90186** 90C30
- Li, Shi Jie** On the solution of the operator equation  $AT - TB = S$ . *J. Math. Res. Exposition* 7 (1987), no. 2, 255-262. (Lawrence Fialkow) **89f:47051** 47B47 (47A62)
- The structure of semi-Fredholm domains for closed operators. (Chinese. English summary) *Nanjing Daxue Ziran Kexue Ban* 23 (1987), no. 2, 232-237. (Sheng Wang Wang) **89h:47004** 47A10 (47A05)
- On nilpotent generalized derivation operators with closed range in a Banach space. (Chinese) *Kexue Tongbao (Chinese)* 33 (1988), no. 13, 968-971. (Not in MR) **47B47**
- An application of pseudo-inverses—the analytic characteristic of  $T$ -regular points for closed operators. *Tôhoku Math. J. (2)* 40 (1988), no. 3, 331-341. (Charles W. Groetsch) **89f:47004** 47A05 (47A10)
- Li, Shi Pan** (with Xu, Dong Fu) Henstock integrals and Lebesgue's condition (N). *Real Anal. Exchange* 13 (1987/88), no. 2, 451-453. (Yôto Kubota) **89e:26021** 26A42 (26A39)
- Li, Shi Rong** Necessary and sufficient conditions for the set  $\Delta_m^+$  of positive imaginary roots of a Kac-Moody Lie algebra to form a semigroup. (Chinese. English summary) *Adv. in Math. (Beijing)* 17 (1988), no. 3, 294-298. (Summary) **89k:17043** 17B67
- On modular invariant partition functions in nonunitary theories. *Phys. Lett. B* 218 (1989), no. 1, 46-50. (Summary) **89k:81161** 81E99 (17B67, 81E40)
- Li, Shi Ming** The convex sums of sets of orthogonal projections on a Banach space. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* 4 (1987), no. 1, 71-74. (Summary) **89b:46022** 46B20
- Li, Tai-Fang C.** (with Graybill, Franklin A.; Burdick, Richard K.) Confidence intervals on a difference of expected mean squares. *J. Statist. Plann. Inference* 18 (1988), no. 1, 35-43. (I. Guttman) **89a:62173** 62J10 (62F25)
- Li, Tao** (with Zhou, Guo Fu; Lin, Qun) High order difference methods for the biharmonic equation. *Acta Math. Sci. (English Ed.)* 6 (1986), no. 2, 223-230. (Neil M. Wigley) **89a:65148** 65N05
- (with Shih, Tsi Min; Liem, Chin Bo) **★** Parallel algorithms for solving partial differential equations. Shuli Kexue [Mathematical Sciences. Research Reports IMS], 22. *Academia Sinica, Institute of Mathematical Sciences, Chengdu*, 1987. 13 pp. (Marián Vajteršic) **89a:65158** 65N20 (65W05)
- Correction and splitting extrapolation methods for the collocation solutions of two-point boundary value problems. (Chinese. English summary) *Adv. in Math. (Beijing)* 16 (1987), no. 4, 391-396. (Qinghua Zheng) **89b:65192** 65L10
- (with Liem, Chin Bo; Shih, Tsi Min) **★** A fourth order finite difference method for the boundary value and eigenvalue problems of divergent type elliptic equations. Shuli Kexue [Mathematical Sciences. Research Reports IMS], 27. *Academia Sinica, Institute of Mathematical Sciences, Chengdu*, 1988. 16 pp. (M. K. Kadalbajoo) **89i:65098** 65N05 (65N25)
- Li, Tong Shan** A note on the fixed point theorem of M. R. Tasković. (Chinese) *Acta Math. Sinica* 31 (1988), no. 1, 134-136. (Summary) **89f:26025** 26A99 (54H25)
- Li, W. S.** (with Lee, E. B.; Zak, S. H.) Structural invariants of infinite-dimensional systems—systems with delays. *Frequency domain and state space methods for linear systems* (Stockholm, 1985), 381-395, North-Holland, Amsterdam-New York, 1986. (M. M. Konstantinov) **89a:93014** 93B10 (34K35, 93B17, 93B25)
- (with Lee, E. B.; Zhang, Q.-T.) Balanced approximation of two-dimensional and delay-differential systems. *Internat. J. Control* 46 (1987), no. 6, 2199-2218. (M. G. Frost) **89b:93030** 93B15 (34K35, 93B17, 93B20)
- 2-D stability test via 1-D stability robustness analysis. *Internat. J. Control* 48 (1988), no. 4, 1735-1741. (Summary) **89g:93086** 93D99 (93C55)
- Li, Wei Ji** Weak convergence of two-stage algorithms on families of point-to-set maps. (Chinese. English summary) *Qufu Shifan Daxue Xuebao Ziran Kexue Ban* 13 (1987), no. 3, 183-190. (Guang Ya Chen) **89b:54025** 54C60 (90C30)
- Li, Wei Ming** Two algorithms for variable allocation in an interpreted scheme. *J. Comput. Sci. Tech. (English Ed.)* 2 (1987), no. 2, 133-144. (Summary) **89j:68115** 68Q90
- Li, Weiping** (with Fisher, D. Grant) Output estimation with multirate sampling. *Internat. J. Control* 48 (1988), no. 1, 149-160. (Summary) **89c:93185** 93E10
- Li, Wu Du** One necessary and sufficient condition for the oscillation of first order neutral differential equations. *Ann. Differential Equations* 4 (1988), no. 2, 173-188. (L. Hatvani) **89i:34098** 34K15 (34C15)
- Li, Xuan** Almost sure convergence of conditional risk of N-N prediction for unbounded random variables. (Chinese. English summary) *Acta Math. Appl. Sinica* 10 (1987), no. 4, 405-412. (Summary) **89a:62085** 62F99 (62E20)
- Li, Yi Jun** (with Wang, Neng Chao) The bisection/elimination method for the parallel solution of tridiagonal systems of linear equations. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 6, suppl., 91-98. (Summary) **89i:65147** 65W05 (65F30)
- A new parallel algorithm with  $WZ$  factorization. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 16 (1988), no. 4, 153-156. (Summary) **89m:65044** 65F30

- (65W05)
- Li, Yi Nian** (with Chen, Huai Hui) On the existence of Nevanlinna direction of an algebroid function. *Analysis of one complex variable (Laramie, Wyo., 1985)*, 125-135, *World Sci. Publishing, Singapore*, 1987. (Chung-Chun Yang) **89c:30080** 30D35
- Li, Yong Zai** (with Xu, Cheng Wei) Identification and self-learning of fuzzy models for dynamical systems. (Chinese. English summary) *Acta Automat. Sinica* **14** (1988), no. 2, 135-140. (Summary) **89j:94052** 94D05 (03E72, 68T05, 93B50)
- (with Zhao, Xia) A nonlinear model for a fluidized catalytic cracking system, and estimation of its parameters. (Chinese. English summary) *Inform. and Control (Shenyang)* **17** (1988), no. 3, 7-12. (Not in MR) **93C75** (00A71, 93B30)
- (with Zhu, Jian Min) Hierarchical strategy for nonlinear optimal control systems via STWS approach. *Internat. J. Control* **47** (1988), no. 6, 1837-1848. (Summary) **89d:93005** 93A13 (49D27, 93B50, 93C10, 93C20)
- (with Zhu, Jian Min) Hierarchical optimal control for distributed parameter systems via block pulse operator. *Internat. J. Control* **48** (1988), no. 2, 685-703. (Andrew P. Sage) **89f:93003** 93A13 (93B28, 93C20)
- (with Zheng, Jian De) Novel aggregation algorithm for large-scale systems control. *Internat. J. Control* **48** (1988), no. 5, 1883-1895. (Author's review (Y.Z.L.)) **89m:93006** 93A15 (49D40, 93C05)
- (with Lin, Jian Nan) Decomposition algorithm of dynamic programming for large-scale time-delay systems. *Internat. J. Systems Sci.* **19** (1988), no. 9, 1719-1729. (Fu En Zhang) **89h:49027** 49D27 (34K35, 90C39, 93A15, 93C55)
- (with Zhu, Jian Min) Application of single-step method of block-pulse functions to the optimal control of linear distributed-parameter systems. *Internat. J. Systems Sci.* **19** (1988), no. 12, 2459-2472. (Summary) **89k:93056** 93B25 (93C05, 93C20)
- Lu, Yuan Zhang** (with Xiong, Yu Fei) Structure identification and parameter estimation of multivariate ARMAX. (Chinese. English summary) *J. Shanghai Jiaotong Univ.* **1987**, no. 6, 74-80, 121. (Zhen Hua Wang) **89f:62084** 62M10 (93E10, 93E12)
- Lu, Yun Guang** Asymptotic behavior of solutions to the gas dynamics equations with a viscosity term. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 1, 4-7. (Not in MR) **35B40** (35L99)
- (with Chen, Gui Qiang) A study of approaches to applying the theory of compensated compactness. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 9, 641-644. (Not in MR) **35B25** (35-02)
- Lu, Zheng Yi** The LaSalle invariant set for a six-dimensional Lotka-Volterra predator-prey chain system. (Chinese. English summary) *Sichuan Daxue Xuebao* **25** (1988), no. 2, 145-150. (Ji Bin Li) **89j:92067** 92A17 (34D20, 58F10)
- Lu, Zhi Kang** On ordered  $A$ -bounded variation. (Chinese. English summary) *J. Math. Res. Exposition* **6** (1986), no. 4, 65-69. (From the text) **89d:26010** 26A45
- Lu, Zhu Jia** A strong maximum principle for a family of singular hyperbolic operators. *J. Math. Res. Exposition* **8** (1988), no. 3, 419-425. (Maria Cinquni-Cibarrero) **89m:35035** 35B50 (35L99, 47F05)
- Lu, Zi Cai** Proximities on spaces of set-valued mappings. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **1987**, no. 4, 34-37, 55. (Summary) **89e:54049** 54E05 (54C60)
- Lü, Zi Min** (with Pan, Xin Wan; Chen, Jin Quan; Chen, Xuan Gen; Feng, Da-hsuan) Correspondence between the fermion dynamic symmetry model and the interacting boson model in wave functions. *Phys. Rev. C* (3) **37** (1988), no. 6, 2789-2801. (Summary) **89f:81262** 81G30
- Luan, De Hual** Comment: "Interior spacetime for the quantum black hole and its homomorphic map" [Sci. Sinica Ser. A **29** (1986), no. 8, 880-888; MR 87m:83044] by S. C. Zhu. (Chinese) *J. Math. Res. Exposition* **7** (1987), no. 1, 177-178. (Editors) **89a:83039** 83C47
- Luan, Jing Guo** Application of the operator equivalent (OE) method in the theory of crystal fields. (Chinese. English summary) *Natur. Sci. J. Harbin Normal Univ.* **4** (1988), no. 2, 45-57. (Not in MR) **82A60**
- Luan, Xiu Wei** Remainder estimates for a class of convergent alternating series. II. (Chinese. English summary) *Heilongjiang Daxue Ziran Kexue Xuebao* **1988**, no. 3, 15-19. (Summary) **89k:40003** 40A05
- Lubachevsky, Boris D.** Efficient parallel simulations of asynchronous cellular arrays. *Complex Systems* **1** (1987), no. 6, 1093-1123. (Summary) **89c:82002** 82-04 (82A68)
- Luban, Florica** (with Dumitru, Vincențiu) On the Pareto invariance of some decision functionals. *XI symposium on operations research (Darmstadt, 1986)*, 3-10, *Methods Oper. Res.*, **57**, *Athenäum/Hain/Hanstein, Königstein/Ts.*, 1987. (Summary) **89h:90006** 90A05 (90C31)
- (with Dumitru, Vincențiu) On the monotone functionals in multicriteria optimization. (French and Russian summaries) *Econom. Comput. Cybernet. Stud. Res.* **22** (1987), no. 1, 77-83. (Andrzej M. J. Skulimowski) **89b:90205** 90C31 (90B50)
- Lubarsky, Robert S.** Admissibility spectra through  $\omega_1$ . *Israel J. Math.* **60** (1987), no. 2, 225-235. (Colin G. Bailey) **89h:03078** 03D60 (03E40)
- Uncountable master codes and the jump hierarchy. *J. Symbolic Logic* **52** (1987), no. 4, 952-958. (Colin G. Bailey) **89i:03086** 03D60 (03D55)
- Another extension of Van de Wiele's theorem. *Ann. Pure Appl. Logic* **38** (1988), no. 3, 301-306. (Dag Normann) **89h:03080** 03D65 (03D60)
- There's no forcing a least upper bound. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 998-1002. (Eva Hartová) **89i:03092** 03E40 (03E45)
- Lube, G.** Uniform in  $\varepsilon$  discretization error estimates for convection dominated convection-diffusion problems. (French summary) *RAIRO Modél. Math. Anal. Numér.* **22** (1988), no. 3, 477-498. (P. K. Mahanti) **89i:65120** 65N30 (35K57)
- Lubenskaya, T. V.** Conformal correspondence of torsion-free spaces with hyperbolic connection. (Russian) *Approximation theory and related problems in analysis and topology (Russian)*, 60-63, iii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev*, 1987. (Josef Janyška) **89d:53038** 53B15
- Lubich, C.** A stability analysis of convolution quadratures for Abel-Volterra integral equations. *IMA J. Numer. Anal.* **6** (1986), no. 1, 87-101. (József Terjéki) **89k:65163** 65R20 (45L99)
- (with Hairer, E.; Schlichte, M.) Fast numerical solution of weakly singular Volterra integral equations. *J. Comput. Appl. Math.* **23** (1988), no. 1, 87-98. (Summary) **89g:65166** 65R20
- Convolution quadrature and discretized operational calculus. I. *Numer. Math.* **52** (1988), no. 2, 129-145. (Syvert P. Norsett) **89g:65018** 65D30 (44A55, 65L05, 65R20)
- (with Hairer, E.) Extrapolation at stiff differential equations. *Numer. Math.* **52** (1988), no. 4, 377-400. (Summary) **89m:65066** 65L05
- Convolution quadrature and discretized operational calculus. II. *Numer. Math.* **52** (1988), no. 4, 413-425. (Syvert P. Norsett) **89g:65019** 65D30 (65R20)
- Lubinsky, D. S.** (with Knopfmacher, Arnold) Analogues of Freud's conjecture for Erdős type weights and related polynomial approximation problems. *Approximation theory, Tampa (Tampa, Fla., 1985-1986)*, 21-69, *Lecture Notes in Math.*, **1287**, Springer, Berlin-New York, 1987. (A. Magnus) **89d:41012** 41A10 (42A10)
- (with Saff, E. B.) Strong asymptotics for  $L_p$  extremal polynomials ( $1 < p \leq \infty$ ) associated with weights on  $[-1, 1]$ . *Approximation theory, Tampa (Tampa, Fla., 1985-1986)*, 83-104, *Lecture Notes in Math.*, **1287**, Springer, Berlin-New York, 1987. (L. Leindler) **89d:41041** 41A60 (41A10, 42C05)
- A survey of general orthogonal polynomials for weights on finite and infinite intervals. *Acta Appl. Math.* **10** (1987), no. 3, 237-296. (H. N. Mhaskar) **89h:42030** 42C05 (33A65)
- (with Ditzian, Z.; Nevai, P.; Totik, V.) Polynomial approximation with exponential weights. *Acta Math. Hungar.* **50** (1987), no. 1-2, 165-175. (J. A. Siddiqui) **89h:41032** 41A50 (41A10)
- (with Nevai, P.) Markov-Bernstein inequalities revisited. *Proceedings of China-U.S. Joint Conference on Approximation Theory (Hangzhou, 1985)*. *Approx. Theory Appl.* **3** (1987), no. 4, 98-119. (Yisong Yang) **89e:41018** 41A17
- (with Máté, A.; Nevai, P.) Quadrature sums involving  $p$ th powers of polynomials. *SIAM J. Math. Anal.* **18** (1987), no. 2, 531-544. (Summary) **89h:41058** 41A55 (42C05)
- (with Bonan, S.; Nevai, P.) Orthogonal polynomials and their derivatives. II. *SIAM J. Math. Anal.* **18** (1987), no. 4, 1163-1176. (Daniel P. Maki) **89a:42032** 42C05
- (with Saff, E. B.) Strong asymptotics for extremal polynomials associated with weights on  $R$ . *Lecture Notes in Mathematics*, **1305**, Springer-Verlag, Berlin-New York, 1988. viii+153 pp. ISBN 3-540-18958-0 (Z. Ditzian) **89m:41013** 41A25 (41-02, 41A60, 42C05)
- (with Knopfmacher, Arnold; Nevai, P.) Freud's conjecture and approximation of reciprocals of weights by polynomials. *Constr. Approx.* **4** (1988), no. 1, 9-20. (Guillermo López Lagomasino) **89e:42016** 42C05 (41A10)
- (with Mhaskar, H. N.; Saff, E. B.) A proof of Freud's conjecture for exponential weights. *Constr. Approx.* **4** (1988), no. 1, 65-83. (L. Leindler) **89h:42034** 42C05
- Padé tables of entire functions of very slow and smooth growth. II. *Constr. Approx.* **4** (1988), no. 3, 321-339. (H. Wallin) **89f:41025** 41A21 (30E10, 41A20)
- (with Knopfmacher, Arnold) Asymptotic behaviour of the ratio of Christoffel functions for weights  $W^2$  and  $W^2 g$ . *J. Approx. Theory* **52** (1988), no. 3, 293-314. (H. N. Mhaskar) **89h:41010** 41A10 (41A60)
- Power series equivalent to rational functions: a shifting-origin Kronecker type theorem, and normality of Padé tables. *Numer. Math.* **54** (1988), no. 1, 33-39. (H.-J. Runckel) **89g:30003** 30B10 (30B70, 41A21)
- Lübbe, Martin** (with Okonek, Christian) Differentiable structures of elliptic surfaces with cyclic fundamental group. *Compositio Math.* **63** (1987), no. 2, 217-222. (Ian Hambleton) **89d:57048** 57R55 (14J27, 32G13, 32J15)
- Lubkin, Elihu** Keeping the entropy of measurement: Szilard revisited. *Internat. J. Theoret. Phys.* **26** (1987), no. 6, 523-535. (Introduction) **89h:81013** 81B05 (03B30)
- Lubliner, Jacob** Nonisothermal generalized plasticity. *Thermomechanical couplings in solids (Paris, 1986)*, 121-133, *North-Holland, Amsterdam-New York*, 1987. (Summary) **89a:73028** 73E99
- Lubchkin, A. V.** A first-order method for solving a convex piecewise-linear separable problem. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1987**, no. 3, 76-77, 82. (Summary) **89d:90163** 90C25
- Optimization of a transient process by the minimum of control energy. (Russian) *Vestnik Beloruss. Gos. Univ. Ser. I Fiz. Mat. Mekh.* **1988**, no. 3, 67-68, 79. (Not in MR) **49B10** (93C15)
- An algorithm for the construction of admissible control of minimal intensity for a linear system. (Russian) *Vestnik Akad. Nauk BSSR Ser. Fiz.-Mat. Nauk* **1988**, no. 5, 116. (Not in MR) **49D40** (93C05)
- Labotzky, A.** (with Magid, Andy R.) Local structure of representation varieties: examples. *Geometry of group representations (Boulder, CO, 1987)*, 215-235, *Contemp. Math.*, **74**, Amer. Math. Soc., Providence, RI, 1988. (Avner Ash) **89j:20013** 20C15
- (with Phillips, Ralph S.; Sarnak, P.) Ramanujan graphs. *Combinatorica* **8** (1988), no. 3, 261-277. (David Riley Witte) **89m:05099** 05C75 (05C25, 05C50)
- A group theoretic characterization of linear groups. *J. Algebra* **113** (1988), no. 1, 207-214. (A. E. Zalesskii) **89c:20066** 20G20 (20H20, 22E20)
- Trees and discrete subgroups of Lie groups over local fields. *Bull. Amer. Math. Soc. (N.S.)* **20** (1989), no. 1, 27-30. (Gopal Prasad) **89g:22016** 22E40 (20G25)
- Luby, Michael** (with Rackoff, Charles) A study of password security. *Advances in cryptography—CRYPTO '87 (Santa Barbara, CA, 1987)*, 392-397, *Lecture Notes in Comput. Sci.*, **293**, Springer, Berlin-New York, 1988. (See **89b:68005**) **68P25** (68N25)
- (with Cook, Stephen A.) A simple parallel algorithm for finding a satisfying truth assignment to a 2-CNF formula. *Inform. Process. Lett.* **27** (1988), no. 3, 141-145. (Joseph Ja'Ja') **89h:68039** 68Q10 (03B05, 03B35, 68Q20, 68Q25)
- (with Rackoff, Charles) How to construct pseudorandom permutations from pseudo-random functions. Special issue on cryptography. *SIAM J. Comput.* **17** (1988), no. 2, 373-386. (Summary) **89i:68025** 68P25 (65C10, 68Q15, 68Q25, 94A60)
- Luc, D. T.** see **Dinh Thé Lư**
- de Luca, Aldo** (with Varricchio, Stefano) On the factors of the Thue-Morse word on three symbols. *Inform. Process. Lett.* **27** (1988), no. 6, 281-285. (Christine Charretton) **89h:68087** 68Q45
- (with Pelagalli, Mariacristina; Varricchio, Stefano) Test sets for languages of infinite words. *Inform. Process. Lett.* **29** (1988), no. 2, 91-95. (Summary) **89j:68083** 68Q45
- Luca, Ioana** Singular surfaces of order 1 in linear homogeneous isotropic thermoviscoelastic materials of integral type. *An. Univ. București Mat.* **36** (1987), 31-39. (From the introduction) **89h:73019** 73F15 (73U05)
- Thermoacoustical waves in linear homogeneous isotropic thermoviscoelastic materials of integral type. *An. Științ. Univ. "Al. I. Cuza" Iași Sect. I a Mat. (N.S.)* **34** (1988), no. 1, 79-92. (René Hayart) **89m:73017** 73D99 (73B30, 73F15, 73U05)
- Luca, Nicolae** Professor Emeritus Adolf Haimovici, Ph.D. at age 75. *An. Științ. Univ. "Al. I. Cuza" Iași Sect. I a Mat. (N.S.)* **33** (1987), no. 2, iii-vii. (Editors) **89c:01072** 01A70
- de Luca, P.** see **De Luca, P.**



- Lucantoni, D. M. (with Ramaswami, V.) Moments of the stationary waiting time in the  $GI/PH/1$  queue. *J. Appl. Probab.* **25** (1988), no. 3, 636–641. (M. J. M. Posner) **89g:60294** 60K25 (90B22)
- Lucas, J. R. *see* Lucas, John Randolph
- Lucas, Joan M. The rotation graph of binary trees is Hamiltonian. *J. Algorithms* **8** (1987), no. 4, 503–535. (E. M. Reingold) **89a:68028** 68P05 (05C05, 05C45, 68R10)
- Lucas, John Randolph. The open future. *The nature of time*, 125–134, Blackwell, Oxford, 1988. (see **89m:33002**) 01A20
- Lucas, Robert E., Jr. (with Stokely, Nancy L.) La monnaie et l'intérêt sous contrainte de transaction. (English summary) [Money and interest in a cash-in-advance economy] Translated from the English [Econometrica **55** (1987), no. 3, 491–513; MR **88c:90030**] by Bernard Salanié. *Ann. Econom. Statist.* **1987**, no. 8, 1–26. (Not in MR) **90A14** (62P20)
- Lucas, Thierry Engène (with Lavendhomme, R.) Complétude de certaines logiques bimodales. [Completeness of certain bimodal logics] Conference on philosophical logic (Gent, 1985). *Logique et Anal. (N.S.)* **29** (1986), no. 116, 391–407. (W. J. Blok) **89h:03028** 03B45
- Lucas, Thomas G. (with Houston, Evan; Viswanathan, T. M.) Primary decomposition of divisorial ideals in Mori domains. *J. Algebra* **117** (1988), no. 2, 327–342. (Muhammad Zafrullah) **89i:13028** 13G05 (13A15, 13E99)
- Characterizing when  $R[X]$  is integrally closed. *Proc. Amer. Math. Soc.* **105** (1989), no. 4, 861–867. (James A. Huckaba) **89h:13009** 13B20 (13B30)
- Lucchesi, Claudio (with Piguet, O.; Sibold, K.) Vanishing  $\beta$ -functions in  $N = 1$  supersymmetric gauge theories. *Helv. Phys. Acta* **61** (1988), no. 3, 321–344. (Joan Soto) **89m:81108** 81E15 (22E70, 58G35, 81E13, 81G20)
- (with Piguet, O.; Sibold, K.) Necessary and sufficient conditions for all order vanishing  $\beta$ -functions in supersymmetric Yang-Mills theories. *Phys. Lett. B* **201** (1988), no. 2, 241–244. (Summary) **89d:81062a** 81E13 (81E15)
- (with Piguet, O.; Sibold, K.) Erratum: "Necessary and sufficient conditions for all order vanishing  $\beta$ -functions in supersymmetric Yang-Mills theories". *Phys. Lett. B* **203** (1988), no. 4, 475. (Editors) **89d:81062b** 81E13 (81E15)
- Lucchesi, M. (with Podio-Guidugli, P.) Materials with elastic range and the possibility of stress oscillations in pure shear. *Computational plasticity, Part I, II (Barcelona, 1987)*, 71–80, *Pineridge, Swansea, 1987*. (A. J. M. Spencer) **89g:73020** 73E05 (73G20)
- Lucchetti, R. (with Mignone, F.; Pieri, G.) Existence theorems of equilibrium points in Stackelberg games with constraints. *Optimization* **18** (1987), no. 6, 857–866. (Sylvain Sorin) **89e:90220** 90D05
- *see also* Mathematical economics, **89e:90004**
- Lucchin, Francesco (with Catelan, Paolo; Matarrese, Sabino) Peak number density of non-Gaussian random fields. *Phys. Rev. Lett.* **61** (1988), no. 3, 267–280. (Summary) **89d:85010** 85A35 (60G60)
- Lucio, Fabrizio (with Pietracaprina, A.; Pucci, G.) A probabilistic simulation of PRAMS on a bounded degree network. *Inform. Process. Lett.* **28** (1988), no. 3, 141–147. (Summary) **89h:68047** 68Q10 (68Q35)
- Lucioni, Bibiana M. (with Godoy, Luis A.) Boundary conditions in the finite difference method with irregular meshes. (Spanish. English summary) *Rev. Internac. Métod. Numer. Cálculo. Ingr.* **4** (1988), no. 1, 31–40. (Summary) **89d:65095** 65N20
- Luce, Ethan Craig (with Viswanadham, N.; Taylor, James Hugh) A frequency-domain approach to failure detection and isolation with application to GE-21 turbine engine control systems. *Control Theory Adv. Tech.* **3** (1987), no. 1, 45–72. (Not in MR) **93B50** (93C75, 94A13)
- Luce, R. Duncan Measurement structures with Archimedean ordered translation groups. *Order* **4** (1987), no. 2, 165–189. (Manfred Droste) **89a:06042** 06F20 (08A02, 08A35, 90A10, 92A25)
- Measurement representations of ordered, relational structures with Archimedean ordered translations. (French summary) *Math. Sci. Humaines* No. 101 (1988), 35–47, 77. (Ki Hang Kim) **89f:92071** 92A27 (06F99)
- *see also* Murray, David J., **89a:92070**
- Lucena, Lúcio S. (with da Silva, Luciano R.; Herrmann, Hans J.) Simulations of mixtures of two Boolean cellular automata rules. *Complex Systems* **2** (1988), no. 1, 29–37. (Summary) **89c:82076** 82A68 (68Q80, 82A25)
- Lucertini, M. (with Arbib, Claudio; Nicolò, F.) Optimization models for flexible manufacturing systems. *Operations research models in flexible manufacturing systems (Udine, 1987)*, 75–89, *CISM Courses and Lectures*, 306, Springer, Vienna, 1989. (see **89k:90082**) 90B30
- *see also* Operations research models in flexible manufacturing systems, **89k:90082**
- Lucey, C. A. (with Newman, E. T.) On the construction of Hamiltonians. *J. Math. Phys.* **29** (1988), no. 11, 2430–2433. (Yisong Yang) **89m:58066** 58F05 (70H05)
- Luchins, Edith H. Olga Taussky-Todd (1906–). *Women of mathematics*, 225–235, Greenwood, Westport, CT, 1987. (see **89i:01071**) 01A70
- Luchka, A. Yu. A method of projection-iteration type for solving nonlinear Volterra integral equations. (Russian) *Functional-differential equations and their application to nonlinear boundary value problems (Russian)*, 24–42, ii, *Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev, 1987*. (From the introduction) **89g:65167** 65R20
- (with Kril', S. A.) Construction of approximate solutions of linear integro-difference equations. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 14, 36 pp. (Summary) **89e:65153** 65R20 (65Q05)
- (with Didik, V. Yu.; Didik, B. V.) Solution of linear Volterra integral equations of the second kind by a projection-iteration method. *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* **1987**, no. 21, 28 pp. (Summary) **89f:65144** 65R20
- de Lucia, Paolo (with Weber, Hans) On group-valued control contents. *Matematiche (Catania)* **40** (1985), no. 1–2, 83–91 (1988). (N. Dinculeanu) **89m:28021** 28C10
- Luciani, J.-F. (with Hansel, D.) A characteristic of the Lyapunov spectrum for the multichannel Anderson localisation in the thermodynamical limit. *J. Phys. A* **20** (1987), no. 15, L1031–L1038. (Summary) **89c:82055** 82A57
- (with Verga, A. D.) Bistability driven by correlated noise: functional integral treatment. *J. Statist. Phys.* **50** (1988), no. 3–4, 567–597. (Not in MR) **82A35** (82A31)
- Luciano, O. O. Categories of multiplicative functors and Weil's infinitely near points. *Nagoya Math. J.* **109** (1988), 69–89. (I. Kolář) **89c:58009** 58A20 (18F15)
- Lucidi, S. A new result in the theory and computation of the least-norm solution of a linear program. *J. Optim. Theory Appl.* **55** (1987), no. 1, 103–117. (S. R. Mohan) **89d:90132** 90C05 (90C20, 93A15)
- A finite algorithm for the least two-norm solution of a linear program. *Optimization* **18** (1987), no. 6, 809–823. (R. N. Kaul) **89c:90071** 90C05 (65K05)
- (with Grippo, L.; Lampariello, F.) Newton-type algorithms with nonmonotone line search for large-scale unconstrained optimization. *System modelling and optimization (Tokyo, 1987)*, 187–196, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (Summary) **89j:90219** 90C30
- (with Bertuzzi, A.; Gandolfi, A.) Constrained cross-validation applied to estimation of kinetic parameters of cell populations in perturbed growth. *System modelling and optimization (Tokyo, 1987)*, 614–623, *Lecture Notes in Control and Inform. Sci.*, 113, Springer, Berlin-New York, 1988. (Summary) **89m:92042** 92A15 (92A09, 92A10)
- (with Grippo, L.; Lampariello, F.) Global convergence and stabilization of unconstrained minimization methods without derivatives. *J. Optim. Theory Appl.* **56** (1988), no. 3, 385–406. (Jürgen Guddat) **89f:90165** 90C31
- New results on a class of exact augmented Lagrangians. *J. Optim. Theory Appl.* **58** (1988), no. 2, 259–282. (Dorel Duca) **89i:90075** 90C30
- Lucier, Bradley J. Regularity through approximation for scalar conservation laws. *SIAM J. Math. Anal.* **19** (1988), no. 4, 763–773. (Denis Serre) **89f:35130** 35L65 (35B99)
- Luck, J. M. (with Godrèche, C.; Vallet, F.) Quasiperiodicity and types of order: a study in one dimension. *J. Phys. A* **20** (1987), no. 13, 4483–4499. (M. Mendes France) **89c:82054** 82A57 (11A55, 11B83, 11K38, 58F08)
- (with Nieuwenhuizen, Th. M.) Lifshitz singularities in random harmonic chains: periodic amplitudes near the band edge and near special frequencies. *J. Statist. Phys.* **48** (1987), no. 3–4, 393–424. (A. Comtet) **89g:82051** 82A57
- (with Forgács, G.; Nieuwenhuizen, Th. M.; Orland, H.) Exact critical behavior of two-dimensional wetting problems with quenched disorder. *J. Statist. Phys.* **51** (1988), no. 1–2, 29–56. (Nicolae Angelescu) **89i:82068** 82A57 (82A25, 82A67, 82A68)
- (with Nieuwenhuizen, Th. M.) Lifshitz tails and long-time decay in random systems with arbitrary disorder. *J. Statist. Phys.* **52** (1988), no. 1–2, 1–22. (Summary) **89j:82045** 82A42 (82A57)
- (with Orland, H.; Smilansky, U.) On the response of a two-level quantum system to a class of time-dependent quasiperiodic perturbations. *J. Statist. Phys.* **53** (1988), no. 3–4, 551–564. (Summary) **89m:81211** 81K05 (58F13, 81C99)
- Lücke, M. Convection in binary mixtures: propagating and standing patterns. *Far from equilibrium phase transitions (Stiges, 1988)*, 195–215, *Lecture Notes in Phys.*, 319, Springer, Berlin-New York, 1988. (see **89j:82002**) 76E15 (76–08, 76Rxx)
- (with Linz, S. J.) A Galerkin approximation for convection in binary mixtures with realistic concentration boundary conditions. *Propagation in systems far from equilibrium (Les Houches, 1987)*, 292–304, *Springer Ser. Synergetics*, 41, Springer, Berlin-New York, 1988. (see **89f:76003**) 76E15 (76E30, 76V05)
- Luckhaus, Stephan Partial Hölder continuity for minima of certain energies among maps into a Riemannian manifold. *Indiana Univ. Math. J.* **37** (1988), no. 2, 349–367. (Ulla Thiel) **89m:58043** 58E12 (49F22, 58C07)
- Luckock, Hugh (with Moss, Ian; Toms, David J.) Polyakov strings in background fields: wave functions and quantum cosmology. *Nuclear Phys. B* **297** (1988), no. 4, 748–764. (Markku Lehto) **89e:81115** 81E20 (81E30, 83E30, 83F05)
- Luczak, A. (with Goldstein, Stanislaw) On the Rademacher-Menshov theorem in von Neumann algebras. *Studia Sci. Math. Hungar.* **22** (1987), no. 1–4, 365–377. (V. I. Chilin) **89f:46122** 46L50
- Luczak, Tomasz On matchings and Hamiltonian cycles in subgraphs of random graphs. *Random graphs '85 (Poznań, 1985)*, 171–185, *North-Holland Math. Stud.*, 144, North-Holland, Amsterdam-New York, 1987. (G. R. Grimmett) **89g:05095** 05C80 (05C38, 05C45)
- On  $k$ -leaf connectivity of a random graph. *J. Graph Theory* **12** (1988), no. 1, 1–10. (Summary) **89g:05096** 05C80 (05C40)
- (with Wierman, John C.) Critical probability bounds for two-dimensional site percolation models. *J. Phys. A* **21** (1988), no. 14, 3131–3138. (Summary) **89i:82053** 82A43
- The automorphism group of random graphs with a given number of edges. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 3, 441–449. (Andrzej Ruciński) **89j:05065** 05C80 (05C25, 20B25)
- Luczak-Kumorek, Elżbieta (with Janiak, Teresa) The Bogolyubov's type theorem for functional-differential equations of neutral type. *Differential equations and optimal control (Zagreb, 1985)*, 43–49, *Higher College Engng., Zielona Góra, 1986*. (J. Jarnik) **89f:34103** 34K15 (34A60, 34C29)
- (with Janiak, Teresa) The Filippov's type theorem for functional-differential equations of neutral type. *Discuss. Math.* **8** (1986), 79–83 (1987). (Qichang Huang) **89e:34108** 34K05 (34A60)
- (with Janiak, Teresa) A theorem on partial middling for functional-differential equations of the neutral type. (Serbo-Croatian summary) *Univ. u Novom Sadu Zb. Rad. Prirod.-Mat. Fak. Ser. Mat.* **16** (1986), no. 2, 107–119. (Summary) **89d:34108** 34K05 (34A60, 34C29)
- The existence theorem for functional-differential inclusions of neutral type. *Differential equations and optimal control (Zagreb, 1986)*, 17–23, *Higher College Engng., Zielona Góra, 1987*. (Narahari Parhi) **89c:34071** 34K05 (34A10, 34A60)
- Luczka, J. Relaxation problem with a quadratic noise: analysis. *J. Statist. Phys.* **47** (1987), no. 3–4, 505–526. (A. Weron) **89a:82018** 82A31 (60H10, 60J60)
- A stochastic process driven by the quadratic Ornstein-Uhlenbeck noise: generator, propagators and all that. *J. Phys. A* **21** (1988), no. 14, 3063–3077. (K. Wódkiewicz) **89m:60137** 60H10 (60G15, 60J60, 82A31)
- An approximate master equation for systems driven by linear Ornstein-Uhlenbeck noise. *Phys. A* **153** (1988), no. 3, 619–635. (K. Wódkiewicz) **89m:82026** 82A31
- Luderer, Bernd (with Schwartz, Bernd) Decomposition in convex programming and optimal control problems. *Ann. Univ. Sci. Budapest. Sect. Comput.* **6** (1985), 11–17 (1987). (Krzysztof C. Kiwiol) **89a:49035** 49D27 (49D07, 49D10, 65K05, 90C25)
- (with Körner, F.) A simultaneous method for checking second-order Kuhn-Tucker conditions for equality constrained nonlinear programming problems. *Systems Anal. Modelling Simulation* **5** (1988), no. 1, 51–57. (Jiye Han) **89j:90224** 90C30 (65K05, 90C20)
- Ludington, Anne Young Generalized transposable integers. *Fibonacci Quart.* **26** (1988), no. 1, 58–63. (Volker Strehl) **89d:11006** 11A63

- Length of the 7-number game. *Fibonacci Quart.* **26** (1988), no. 3, 195–204. (Michael E. Mays) **89f:11035** 11B83
- Ludwig, Andreas W. W.** Critical behavior of the two-dimensional random  $q$ -state Potts model by expansion in  $(q-2)$ . *Nuclear Phys. B* **285** (1987), no. 1, 97–142. (Philippe Christe) **89f:82022** 82A25 (82A31, 82A68)
- (with Cardy, John L.) Perturbative evaluation of the conformal anomaly at new critical points with applications to random systems. *Nuclear Phys. B* **285** (1987), no. 4, 687–718. (Chris Athorne) **89b:82027** 82A25 (81E40, 82A43, 82A68)
- Ludwig, D.** (with Walters, C. J.; Cooke, Justin) Comparison of two models and two estimation methods for catch and effort data. *Natur. Resource Modeling* **2** (1988), no. 3, 457–498. (Summary) **89c:90045** 90A30 (90A19)
- Ludwig, Garry** Some remarks on general transformation laws for Newman-Penrose variables. *Tensor (N.S.)* **44** (1987), no. 3, 231–232. (K. P. Tod) **89k:83053** 83C99 (83A05, 83C60)
- Extended Geroch-Held-Penrose formalism. *Internat. J. Theoret. Phys.* **27** (1988), no. 3, 315–333. (Richard Hansen) **89d:83033** 83C40 (83C60)
- Ludwig, Günther** ★ Einführung in die Grundlagen der theoretischen Physik. Band 1. (German) [Introduction to the foundations of theoretical physics. Vol. 1] Raum, Zeit, Mechanik. [Space, time, mechanics] Third edition. *Friedr. Vieweg & Sohn, Braunschweig*, 1985. xvi+451 pp. ISBN 3-528-29181-8 (M. Breitenacker) **89c:70001** 70-01 (81-01)
- Construction of a formal language and logic “a priori” or “a posteriori”? *Recent developments in quantum logic* (Cologne, 1984), 105–110, *Grundlagen Exakt. Naturwiss.*, 6, Bibliographisches Inst., Mannheim, 1985. (see **89b:81008**) 03G12 (81B10)
- ★ An axiomatic basis for quantum mechanics. Vol. 2. Quantum mechanics and macrosystems. Translated from the German manuscript by Kurt Just. *Springer-Verlag, Berlin-New York*, 1987. x+242 pp. ISBN 3-540-17540-7 (S. D. Chatterji) **89b:81012** 81Bxx (46N05, 81-02)
- Ludwig, Jean** (with Boidol, J.; Müller, Detlef Horst) On infinitely small orbits. *Studia Math.* **88** (1988), no. 1, 1–11. (Rainer Felix) **89f:22009** 22E25 (22E27, 22E30, 43A80)
- Ludwig, Klaus** Zum Begriff des Zusammenhangs im Serreschen Faserraum  $(W_{R,P}; P; R)$  eines bogenverknüpften Kompakts  $R$ . [On the notion of connection in the Serre fiber space  $(W_{R,P}; P; R)$  of an arcwise connected compactum  $R$ ] *Wiss. Z. Hochschule Verkehrenswesen “Friedrich List” Dresden* **34** (1987), no. 3, 477–480. (Introduction) **89a:55010** 55R99
- Ludwig, W.** (with Falter, C.) ★ Symmetries in physics. Group theory applied to physical problems. Springer Series in Solid-State Sciences, 64. *Springer-Verlag, Berlin-New York*, 1988. xii+461 pp. ISBN 3-540-18021-4 (Gordon Feldman) **89b:81001** 81-01 (22E70, 81C40, 81E13, 81G30, 81G40, 82A60)
- Lue, Hui-Shyong** see **Lü, Hui Hsiung**
- Luecke, J.** (with Gordon, C. McA.) Only integral Dehn surgeries can yield reducible manifolds. *Math. Proc. Cambridge Philos. Soc.* **102** (1987), no. 1, 97–101. (Introduction) **89a:57003** 57M25
- (with Culler, M.; Gordon, C. McA.; Shalen, Peter B.) Correction to: “Dehn surgery on knots” [Ann. of Math. (2) **125** (1987), no. 2, 237–300; MR 88a:57026]. *Ann. of Math. (2)* **127** (1988), no. 3, 663. (From the text) **89c:57015** 57N12 (57M25, 57M40)
- Luecking, Daniel H.** Dominating measures for spaces of analytic functions. *Illinois J. Math.* **32** (1988), no. 1, 23–39. (Richard Rochberg) **89e:46060** 46J15 (30D55, 30H05, 46E15)
- A new proof of an inequality of Littlewood and Paley. *Proc. Amer. Math. Soc.* **103** (1988), no. 3, 887–893. (Paul Eenigenburg) **89g:30067** 30D55
- Luedeman, John K.** (with McMorris, F. R.) Intersection graphs of semigroups. Proceedings of the seventeenth Southeastern international conference on combinatorics, graph theory, and computing (Boca Raton, Fla., 1986). *Congr. Numer.* **55** (1986), 31–37. (From the introduction) **89a:20064** 20M10 (05C75)
- Intersection graphs of semigroups. II. Quasi-ideals and bi-ideals. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 205–209. (K. Todorov) **89i:20100** 20M12 (05C25)
- Lueker, G. S.** A note on the average-case behavior of a simple differencing method for partitioning. *Oper. Res. Lett.* **6** (1987), no. 6, 285–287. (Joachim Piehler) **89b:90135** 90C08
- (with Coffman, E. G., Jr.; Rinnooy Kan, A. H. G.) Asymptotic methods in the probabilistic analysis of sequencing and packing heuristics. Focussed issue on heuristics. *Management Sci.* **34** (1988), no. 3, 266–290. (Micha Hofri) **89c:68045** 68Q25 (05A99, 90B35, 93E99)
- Laenenberger, David G.** Boundary recursion for descriptor variable systems. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 287–292. (Not in MR) **93C30** (93B25, 93C55)
- Glüsing-Lierssen, H.** see **Glüsing-Lierssen, H.**
- Lucy, Beth** ★ Handbook for academic authors. *Cambridge University Press, Cambridge-New York*, 1987. xiv+226 pp. ISBN 0-521-33475-6; 0-521-33682-1 (Sheldon Axler) **89c:00047** 00A20
- Luft, E.** On contractible open 3-manifolds. *Aequationes Math.* **34** (1987), no. 2-3, 231–239. (David G. Wright) **89a:57016** 57N10 (57N13, 57N35)
- Equivariant surgery on essential annuli and Moebius bands in 3-manifolds with respect to involutions. *Fund. Math.* **131** (1988), no. 2, 123–142. (Wilbur Whitten) **89k:57029** 57N10 (57N35)
- (with Sierve, Denis) Regular coverings of homology 3-spheres by homology 3-spheres. *Trans. Amer. Math. Soc.* **311** (1989), no. 2, 467–481. (John Hempel) **89k:57030** 57N10 (57M10)
- Luganskii, I. L.** An algorithm for constructing schedules for deterministic single-processor real-time computer systems. (Russian) *Some algorithms for the planning of computations in deterministic real-time systems* (Russian), 47–56, *Akad. Nauk SSSR, Vychisl. Tsentr, Moscow*, 1987. (see **89c:68058**) 90B35 (68N25)
- Lugiatto, L. A.** (with Oldano, C.; Sartirana, L.; Wang, Kai Ge; Narducci, L. M.; Oppo, G. L.; Pernig, M. A.; Tredicce, J. R.; Prati, F.; Broggi, G.) Spontaneous symmetry breaking and spatial structures in optical systems. *Far from equilibrium phase transitions* (Sitges, 1988), 263–280, *Lecture Notes in Phys.*, 319, *Springer, Berlin-New York*, 1988. (see **89j:82002**) 81K05 (78A60)
- (with Oldano, C.; Sartirana, L.; Wang, Kai Ge; Narducci, L. M.; Oppo, G. L.; Prati, F.; Broggi, G.) Spatial symmetry breaking in optical systems. *Neural and synergetic computers* (Schloss Elmau, 1988), 242–251, *Springer Ser. Synergetics*, 42, *Springer, Berlin-New York*, 1988. (see **89i:92026**) 78A60 (81K05)
- (with Wang, Kai Ge; Narducci, L. M.; Oppo, G. L.; Pernig, M. A.; Tredicce, J. R.; Bandy, D. K.; Prati, F.) Cooperative frequency locking and spatial structures in lasers. *Neural and synergetic computers* (Schloss Elmau, 1988), 252–262, *Springer Ser. Synergetics*, 42, *Springer, Berlin-New York*, 1988. (see **89j:92026**) 81K05 (78A60)
- (with Oldano, C.) Stationary spatial patterns in passive optical systems: two-level atoms. *Phys. Rev. A* (3) **37** (1988), no. 10, 3896–3908. (Summary) **89b:81265** 81K05 (78A60)
- Luginland, J.** (with Doltsinis, I. St.; Nötling, S.) Some developments in the numerical simulation of metal forming processes. *Computational plasticity, Part I, II* (Barcelona, 1987), 875–899, *Pineridge, Swansea*, 1987. (see **89c:73030**) 73-08 (73E99)
- Luh, Jiang** (with Jain, Surender Kumar; Zimmermann-Huisgen, B.) Finite uniserial rings of prime characteristic. *Comm. Algebra* **16** (1988), no. 10, 2133–2135. (S. S. Page) **89j:16024** 16A35
- Luh, Peter B.** (with Chang, Tsu Shuan; Ning, T.) Pricing problems with a continuum of customers as stochastic Stackelberg games. *J. Optim. Theory Appl.* **55** (1987), no. 1, 119–131. (O. A. Malafeev) **89c:90024** 90A12 (90D15)
- (with Chang, Shi Chung; Chang, Tsu Shuan) A hierarchical decomposition for large-scale optimal control problems with parallel processing structure. *Automatica—J. IFAC* **25** (1989), no. 1, 77–86. (Summary) **89k:93009** 93A13 (49D15, 93B40)
- (with Miao, Xi-Yi; Chang, Shi Chung; Castañon, David A.) Stochastic task selection and renewable resource allocation. *IEEE Trans. Automat. Control* **34** (1989), no. 3, 335–339. (Summary) **89j:90160** 90B50 (90A30, 90B35)
- Lui, Roger** (with Keller, Clayton) Existence of steady-state solutions to predator-prey equations in a heterogeneous environment. *J. Math. Anal. Appl.* **123** (1987), no. 2, 306–323. (From the introduction) **89a:35113** 35K57 (92A15)
- Lui, Ying Chun** (with Kwan, Hon Keung) Lattice implementation of two-dimensional recursive digital filters. *IEEE Trans. Circuits and Systems* **36** (1989), no. 3, 383–386. (Not in MR) **94A12**
- Luisi, Giannangelo** A translation plane of order 49. (Italian. English summary) *Matematiche (Catania)* **38** (1983), no. 1-2, 157–166 (1987). (T. G. Ostrom) **89a:51022** 51E15 (20B25, 51A40)
- Luk, Franklin T.** (with Anfinson, Cynthia J.) A linear algebraic model of algorithm-based fault tolerance. *IEEE Trans. Comput.* **37** (1988), no. 12, 1599–1604. (Michitaka Kameyama) **89k:94055** 94B05 (68P25, 94A13)
- Lukačević, M.** (with Čović, V.) Jourdain's principle as a principle of least constraint. *Z. Angew. Math. Mech.* **68** (1988), no. 5, T452–T453. (Zhong-heng Guo) **89g:70012** 70H30 (70F20)
- Lukács, B.** (with Perjés, Z.; Sebestyén, Á.; Spirling, G. A. J.) Conformally flat 3-spaces with axial symmetry. *Topics in differential geometry, Vol. I, II* (Debrecen, 1984), 743–751, *Colloq. Math. Soc. János Bolyai*, 46, North-Holland, Amsterdam-New York, 1988. (K. P. Tod) **89f:83043** 83C20 (83C40)
- An analytic model for the Riemannian space of colors. *Acta Phys. Polon. B* **19** (1988), no. 4, 243–267. (Joachim Krauth) **89f:92072** 92A27
- Lukács, Erzsébet** Modularity of some three-generator sublattices in subgroup lattices. *Comm. Algebra* **15** (1987), no. 10, 2073–2080. (R. Schmidt) **89a:20030** 20E15 (06B25, 06C05)
- Lukacs, Eugene** see **Rohatgi, Vijay K.** **89i:01101**
- Lukács, P.** (with Krámlí, A.; Szász, Domokos) A non-Wiener random walk in a two-dimensional Bernoulli environment. *J. Statist. Phys.* **50** (1988), no. 3-4, 599–609. (W. Th. F. den Hollander) **89k:60094** 60J15 (82A41, 82A42)
- Lukanova, R.** Pseudocombinatory spaces and recursiveness in them. (Russian. English summary) Proceedings of the joint Bulgarian-Hungarian workshop on mathematical cybernetics and data processing (“Gyulechitsa”, Bulgaria, 1985). *Tanulmányok—MTA Számítástech. Automat. Kutató Int. Budapest No. 182* (1986), 89–96. (Introduction) **89b:03076** 03D75
- Lukas, M. A.** Assessing regularised solutions. *J. Austral. Math. Soc. Ser. B* **30** (1988), no. 1, 24–42. (Y. Cherruault) **89g:65168** 65R20
- Convergence rates for regularized solutions. *Math. Comp.* **51** (1988), no. 183, 107–131. (P. Uba) **89k:65223** 65R20 (41A25, 45L05)
- (with Cochran, James A.) Differentiable positive definite kernels and Lipschitz continuity. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 2, 361–369. (John W. Lee) **89i:45002** 45C05 (45P05, 47G05)
- Lukash, V. N.** (with Schmidt, Hans-Jürgen) Isotropization by scalar field driven inflation and the cosmological quantum boundary. (German summary) *Astronom. Nachr.* **309** (1988), no. 1, 25–31. (Summary) **89k:83102** 83F05 (83C45)
- Lukashov, A. L.** A remark on M. Ivan's paper: “On a theorem of W. Wolibner” [Anal. Numer. Théor. Approx. **11** (1982), no. 1-2, 81–87; MR 85b:41006]. (Russian) *Theory of functions and approximations, Part 2* (Russian) (Saratov, 1984), 145–146, *Saratov. Gos. Univ., Saratov*, 1986. (see **89j:00036**) 41A10
- Lukashuk, L. I.** Diffusion approximation of a network of Markov service systems under subcritical traffic. (Russian. English summary) *Kibernetika (Kiev)* **1988**, no. 1, 110–112, 136. (T. Rolski) **89g:60290** 60K25 (90B22)
- An estimate for the stability with respect to a finite number of points of the characterization of a two-dimensional exponential distribution. (Russian) *Teor. Veroyatnost. i Mat. Statist.* **39** (1988), 78–83, 127. (Włodzimierz Bryc) **89f:62014** 62E20
- Lukasik, S.** (with Partiya, A.) Stackelberg solution for dynamic games with constrained controls. *Systems Anal. Modelling Simulation* **4** (1987), no. 5, 409–412. (Summary) **89b:90242** 90D12
- Lukaszewicz, Grzegorz** On an initial-boundary value problem for a model system of equations of a granulated medium. *Math. Methods Appl. Sci.* **9** (1987), no. 2, 231–239. (C. Bardos) **89k:35264** 35Q10 (35L65, 76D05)
- On an inequality associated with stationary flows of viscous, incompressible fluids. (Italian summary) *Rend. Accad. Naz. Sci. XL Mem. Mat. (5)* **11** (1987), no. 1, 65–76. (Denis Serre) **89d:35143** 35Q10 (76D05)
- (with Tön, Bui An) On a variational problem associated with nonstationary flows of granulated media. (Italian summary) *Rend. Accad. Naz. Sci. XL Mem. Mat. (5)* **11** (1987), no. 1, 101–120. (Denis Serre) **89d:35142** 35Q10 (76D05)
- On the stationary flows of viscous, incompressible and heat-conducting fluids. *Math. Methods Appl. Sci.* **10** (1988), no. 3, 329–337. (Moses A. Boudourides) **89k:35265** 35Q10 (76D05)



- Lukaszewicz, Witold** Two results on default logic. (Russian summary) *Comput. Artificial Intelligence* 6 (1987), no. 4, 329-343. (W. Marek) **89j:68128** 68T01 (03B60, 68T30)
- Luke, Jon C.** A simple example related to the time-reversal paradox. *Amer. J. Phys.* 56 (1988), no. 8, 734-736. (B. H. Lavenda) **89j:82035** 82A35
- Luke, Jonathan H. C.** (with Calisch, Russel E.; Lim, Chjan; Sangani, Ashok S.) Periodic solutions for three sedimenting spheres. *Phys. Fluids* 31 (1988), no. 11, 3175-3179. (A. M. J. Davis) **89j:76039** 76D07
- Lulek, Jaroslav** (with Malý, Jan; Zajíček, L.) ★ Fine topology methods in real analysis and potential theory. Lecture Notes in Mathematics, 1189. Springer-Verlag, Berlin-New York, 1986. x+472 pp. ISBN 3-540-16474-X (M. Dont (Zbl 607:31001)) **89b:31001** 31-02 (54E55)
- (with Král, Josef; Netuka, Ivan; Veselý, J.) In memory of Professor Marcel Brelot. (Czech) *Pokroky Mat. Fyz. Astronom.* 33 (1988), no. 3, 170-173. (Editors) **89j:01071** 01A70 (31-03)
- see also Potential theory, **89j:31001** and Potential theory—surveys and problems, **89m:31001**
- Lukierski, J.** Supersymmetric extension of twistor formalism. *Field theory, quantum gravity and strings, II* (Meudon/Paris, 1985/1986), 137-155, *Lecture Notes in Phys.*, 280, Springer, Berlin-New York, 1987. (Lionel J. Mason) **89a:58009** 58A50 (32L25, 58D30, 81D27, 81G20, 83C60)
- Holomorphic and real Euclidean supersymmetries in three and four dimensions. *Czechoslovak J. Phys. B* 37 (1987), no. 3, 359-372. (Summary) **89c:81048** 81C40 (17B70, 81G20)
- (with de Azcárraga, J. A.) Superfield algebraic structures with Grassmann-valued structure constants. *Group theoretical methods in physics* (Varna, 1987), 97-103, *Lecture Notes in Phys.*, 313, Springer, Berlin-New York, 1988. (see **89j:31001**) **81D15** (17A70, 58G35, 81E99)
- (with de Azcárraga, J. A.; Vindel, P.) Covariant operator formalism for quantized superfields. *Fortschr. Phys.* 36 (1988), no. 6, 453-478. (Roberto Cianci) **89m:81129** 81E99
- (with de Azcárraga, J. A.) Superalgebras with Grassmann-algebra-valued structure constants from superfields. *J. Math. Phys.* 29 (1988), no. 4, 797-801. (Anargyros Fellouris) **89f:22026** 22E65 (17B70, 81E99)
- (with Nowicki, Anatol) General superspaces from supertwistors. *Phys. Lett. B* 211 (1988), no. 3, 276-280. (Jill Niederle) **89j:81084** 81D99 (32L25, 81D27, 81G20)
- Lukin, K. A.** (with Maistrenko, Yu. L.; Sharkovskii, A. N.; Shestopalov, V. P.) One-dimensional initial-boundary value problems of electrodynamics with nonlinear boundary conditions. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 39, 28 pp. (Summary) **89f:78010** 78A25
- Lukomskii, S. F.** Absolute convergence of multiple Walsh series. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1988, no. 4, 34-36; translation in *Soviet Math. (Iz. VUZ)* 32 (1988), no. 4, 46-49. (F. Móricz) **89c:42040** 42C10
- Lukovskii, I. A.** (with Zolotenko, G. F.) Equations of motion in a fluid of a rigid body that is connected to a moving base by a thread of variable length. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 18, 56 pp. (Summary) **89c:73023** 73J06 (70E99)
- (with Komarenko, A. N.) Variational formulation of some nonlinear boundary value problems in mathematical physics in domains with free boundaries. (Russian) *Asymptotic methods in mathematical physics* (Russian), 144-150, 301, "Naukova Dumka", Kiev, 1988. (see **89j:00006**) **49B21** (76B15)
- (with Shvets, G. A.) A variational algorithm for determining the hydrodynamic characteristics of a bounded volume of a fluid in domains of nonsymmetric shape. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1988, no. 1, 42 pp. (Summary) **89f:76018** 76B10
- (with Timokha, A. N.) Nonlinear dynamics of the interface of a liquid and a gas when the gas contains a high-particle acoustic field. Stability of steady-state regimes. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1988, no. 10, 48 pp. (Summary) **89m:76046** 76E99 (76T05)
- see also Applied problems in the dynamics and stability of multidimensional systems, **89c:00007**
- Lukš, Antonín** The quantized Jacobi polynomials. (Russian and Czech summaries) *Apl. Mat.* 32 (1987), no. 6, 417-426. (Jesús S. Dehesa) **89c:33019** 33A65 (42C05, 65D10)
- (with Peřinová, V.) Ordering of field operators and equations of motion in quantum optics. *Czechoslovak J. Phys. B* 37 (1987), no. 11, 1224-1237. (K. Wódkiewicz) **89b:81266** 81K05 (81D07)
- Luks, E. M.** Computing the composition factors of a permutation group in polynomial time. *Combinatorica* 7 (1987), no. 1, 87-99. (I. D. Macdonald) **89c:20007** 20B05 (20F10, 68Q15)
- (with Galil, Zvi; Hoffmann, Christoph; Schnorr, C.-P.; Weber, Andreas) An  $O(n^3 \log n)$  deterministic and an  $O(n^3)$  Las Vegas isomorphism test for trivalent graphs. *J. Assoc. Comput. Mach.* 34 (1987), no. 3, 513-531. (Narsingh Deo) **89c:68043** 68Q20 (05C25, 68Q25, 68R10)
- Luksch, Christine** Die Automorphismengruppe der Polynomgeometrie vom Grad  $n$ . [The automorphism group of the polynomial geometry of degree  $n$ ] *Mitt. Math. Sem. Giessen* No. 181 (1987), 56 pp. (T. Ostrom (Zbl 629:51020)) **89k:51013** 51E25 (51B15)
- Lukšch, Peter** (with Wille, Rudolf) Substitution decomposition of concept lattices. *Contributions to general algebra, 5* (Salzburg, 1986), 213-220, *Hölder-Pichler-Tempsky, Vienna*, 1987. (Ivan Chajda) **89c:06005** 06B05 (06A23, 06B15)
- Lakshin, An. V.** (with Smirnov, S. N.) A stochastic method for solving the Boltzmann equation. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 2, 293-297, 304. (Vladimir L. Savelyev) **89j:82038** 82A40 (76P05, 82-08, 82A31)
- (with Smirnov, S. N.) A stochastic algorithm for solving the Boltzmann equation on the basis of the Euler method. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* 28 (1988), no. 5, 764-768, 784. (Summary) **89d:65118** 65U05 (65P05)
- Lak'yanov, A. T.** (with Besinbaev, S.; Kavokin, A. A.) Numerical solution of a system of equations of convective diffusion of a multicomponent solution taking into account interphase interactions. (Russian) *Some problems in functional analysis, differential equations and their applications* (Russian), 15-21, 108, *Kazakh. Gos. Univ., Alma-Ata*, 1985. (see **89a:00016**) **65N05** (65N10)
- (with Milyuk, I. R.) Applications of one-dimensional systems of quasilinear equations to the nonisothermal motion of fluids in pipelines. (Russian) *Differential equations and applications, I, II* (Russian) (Ruse, 1985), 231-238, "Angel Kanchev" Tech. Univ., Ruse, 1987. (Introduction) **89b:80006** 80A20
- see also Numerical and analytical methods for solving boundary value problems, **89m:00007**
- Lak'yanov, L. G.** Stability of coplanar libration points in the restricted, photogravitational three-body problem. *Soviet Astronom.* 31 (1987), no. 6, 677-681 (1988); translated from *Astronom. Zh.* 64 (1987), no. 6, 1291-1299 (Russian). (George Bozis) **89f:70014** 70F07
- Lak-Zil'berman, E. V.** Classification of finite automata according to stability and distortions of incoming signals. (Russian) *Metody Diskret. Analiz.* No. 43 (1986), 64-74, 98-99. (Summary) **89a:68053** 68Q05 (94A34)
- Lulek, B.** (with Lulek, T.) Wigner-Racah calculus for transitive representations of cyclic groups. *Acta Phys. Polon. A* 71 (1987), no. 6, 869-887. (Summary) **89c:81045** 81C40 (20C35)
- Lulek, T.** (with Lulek, B.) Wigner-Racah calculus for transitive representations of cyclic groups. *Acta Phys. Polon. A* 71 (1987), no. 6, 869-887. (Summary) **89c:81045** 81C40 (20C35)
- Lumelskii, Ya. P.** (with Belyaev, Yu. K.) Multidimensional Poisson walks. Statistical methods. *J. Soviet Math.* 40 (1988), no. 2, 162-165. (Beniamin Goldys) **89j:62140** 62M05
- (with Shekhovtsova, M. G.) Poisson walks and reliability estimates. Statistical methods. *J. Soviet Math.* 40 (1988), no. 2, 207-214. (F. Beichelt) **89b:62159** 62N05 (60K10)
- Control according to a quality criterion with classification errors. Statistical methods of estimation and verification of hypotheses. *J. Soviet Math.* 41 (1988), no. 1, 826-829. **89c:62005** 62N10 (93C30)
- Lumelsky, Vladimir J.** (with Stepanov, Alexander A.) Path-planning strategies for a point mobile automaton moving amidst unknown obstacles of arbitrary shape. Special issue on robotics. *Algorithmica* 2 (1987), no. 4, 403-430. (Summary) **89b:68146** 68U05 (68Q25, 68Q60, 70B15, 90D26)
- Lumen'skii, Ya. P.** see Lumelskii, Ya. P.
- Lumer, Gunter** Perturbations "homotopiques". Perturbations singulières et non singulières de semi-groupes d'opérateurs et de familles résolventes. (English summary) [Homotopy-like perturbations. Singular and nonsingular perturbations of operator semigroups and resolvent families] *C. R. Acad. Sci. Paris Sér. I Math.* 306 (1988), no. 13, 551-556. (K. Gustafson) **89m:47008** 47A55 (47D05)
- (with Redheffer, Ray; Walter, Wolfgang) Estimates for solutions of degenerate second-order differential equations and inequalities with applications to diffusion. *Nonlinear Anal.* 12 (1988), no. 10, 1105-1121. (D. Y. Kusture) **89m:34018** 34A40 (34C11, 35K57)
- Lumiste, Ülo** Decomposition and classification theorems for semi-symmetric immersions. (Russian summary) *Eesti NSV Tead. Akad. Toimetised Füüs.-Mat.* 36 (1987), no. 4, 414-417, 440. (I. G. Nikolaev) **89b:53090** 53C35 (53A07)
- Reducibility of submanifolds with parallel third fundamental form. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 11, 32-41, 88. (V. Oproiu) **89c:53019** 53B25
- (with Arutyunyan, S. Kh.; Grushko, P. Ya.; Evushik, L. E.) Differential-algebraic methods for geometric investigations in the work of A. M. Vasil'ev and his scientific school. (Russian) *Problems in geometry, Vol. 20* (Russian), 3-34, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow*, 1988. (I. Vaisman) **89k:01029** 01A70 (53-03, 53C10, 58H05)
- Lumley, John L.** see Annual review of fluid mechanics, **89g:76002**
- Lun, A. W.-C.** (with McIntosh, C. B. G.; Hickman, M. S.) Complex relativity and real solutions. V. The flat space background. *Gen. Relativity Gravitation* 20 (1988), no. 7, 647-657. (Garry Ludwig) **89j:83022** 83C20 (83C05)
- (with McIntosh, C. B. G.; Singleton, D. B.) Expanding algebraically degenerate vacuum spaces with homothetic motions. *Gen. Relativity Gravitation* 20 (1988), no. 8, 745-753. (S. Kichenassamy) **89j:83021** 83C20 (83C40)
- Luna, D.** (with Brion, M.) Sur la structure locale des variétés sphériques. (English summary) [The local structure of spherical varieties] *Bull. Soc. Math. France* 115 (1987), no. 2, 211-226. (V. L. Popov) **89k:14077** 14L30 (14M17)
- Luna, George** Local connectedness of support points. *Rocky Mountain J. Math.* 18 (1988), no. 1, 179-184. (Thomas E. Armstrong) **89c:46022** 46B20 (46A55)
- Luna del Castillo, J. D.** (with Martín Andrés, A.) A new randomized test for  $2 \times 2$  tables. (Italian summary) *Metron* 45 (1987), no. 3-4, 81-97. (Not in MR) **62H17**
- Lunardi, A.** On the local dynamical system associated to a fully nonlinear abstract parabolic equation. *Nonlinear analysis and applications* (Arlington, Tex., 1986), 319-326, *Lecture Notes in Pure and Appl. Math.*, 109, Dekker, New York, 1987. (I. Kubiacyk) **89d:34103** 34G20 (35K60, 47H15)
- On the evolution operator for abstract parabolic equations. *Israel J. Math.* 60 (1987), no. 3, 281-314. (J. A. Goldstein) **89f:47066** 47D05 (34G10)
- Local stability results for the elastic beam equation. *SIAM J. Math. Anal.* 18 (1987), no. 5, 1341-1366. (Robert Stephen Cantrell) **89c:35102** 35Q20 (35K55, 73H10, 73K05)
- (with Da Prato, G.) Solvability on the real line of a class of linear Volterra integro-differential equations of parabolic type. *Ann. Mat. Pura Appl.* (4) 150 (1988), 67-117. (Teodor Hăvărneanu) **89g:45024** 45K05 (34K30, 47D05)
- (with Da Prato, G.) Stability, instability and center manifold theorem for fully nonlinear autonomous parabolic equations in Banach space. *Arch. Rational Mech. Anal.* 101 (1988), no. 2, 115-141. (Maurice Gaultier) **89c:35019** 35B35 (34G20, 35K55, 35R20)
- Stability of the periodic solutions to fully nonlinear parabolic equations in Banach spaces. *Differential Integral Equations* 1 (1988), no. 3, 253-279. (Pedro Martínez-Amores) **89b:34148** 34G20 (34C25, 34D99, 35K55, 58F14)
- Regular solutions for time dependent abstract integro-differential equations with singular kernel. *J. Math. Anal. Appl.* 130 (1988), no. 1, 1-21. (R. F. Daiko) **89c:45025** 45N05 (34G10, 45J05)
- Bounded solutions of linear periodic abstract parabolic equations. *Proc. Roy. Soc. Edinburgh Sect. A* 110 (1988), no. 1-2, 135-159. (G. F. Webb) **89i:47075** 47D05 (34G10, 35K22)
- kerbrat-Lunc, Hélène** see Kerbrat-Lunc, Hélène
- Lund, J. R.** (with Gilliam, David; Schulerberger, J. R.) Spectral representation of the Laplace transform and related operators in  $L_2(\mathbb{R}_+)$ . *Computational and combinatorial*

- methods in systems theory (Stockholm, 1985), 69-73, North-Holland, Amsterdam-New York, 1986. (Summary) **89b:47073** 47G05 (44A10)
- (with Eggert, Norman; Jarratt, Mary) Sine function computation of the eigenvalues of Sturm-Liouville problems. *J. Comput. Phys.* **69** (1987), no. 1, 209-229. (Tassilo Küpper) **89c:65090** 65L15
- Lundborg, Bengt** (with Fröman, Nanny; Fröman, Per Olof) The Stokes constants for a cluster of transition points. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 1, 153-179. (Edward R. Vrscaj) **89m:81047** 81C15 (34A20)
- (with Fröman, Nanny; Fröman, Per Olof) Symmetry relations for connection matrices in the phase-integral method. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 1, 181-191. (Edward R. Vrscaj) **89m:81048** 81C15 (34A20)
- (with Fröman, Per Olof) Improvement of the generalized quantal Bohr-Sommerfeld quantization condition. *Math. Proc. Cambridge Philos. Soc.* **104** (1988), no. 3, 581-601. (Xue-Ping Wang) **89b:81075** 81D07
- Lundell, Albert T.** (with Tosa, Y.) Global anomalies and algebraic topology. *J. Math. Phys.* **29** (1988), no. 8, 1795-1806. (J. Stasheff) **89f:81195** 81E99 (55R40, 57T15, 57T20, 58G10, 81E13)
- Lundgren, J. Richard** (with Barefoot, Curtiss; Jones, Kathryn F.; Maybee, John S.) Biclique covers of regular digraphs. Proceedings of the seventeenth Southeastern international conference on combinatorics, graph theory, and computing (Boca Raton, Fla., 1986). *Congr. Numer.* **53** (1986), 147-154. (Giorgio Balconi) **89a:05067** 05C20 (05C70)
- (with Hefner, Kim A. S.) Biclique covers and partitions of acyclic digraphs. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **59** (1987), 135-146. (O. V. Borodin) **89i:05130** 05C20 (05C70)
- (with Jones, Kathryn F.; Roberts, Fred S.; Seager, Suzanne M.) Some remarks on the double competition number of a graph. Eighteenth Southeastern International Conference on Combinatorics, Graph Theory, and Computing (Boca Raton, Fla., 1987). *Congr. Numer.* **60** (1987), 17-24. (O. V. Borodin) **89i:05132** 05C20
- Lundgren, T. S.** (with Mansour, N. A.) Oscillations of drops in zero gravity with weak viscous effects. *J. Fluid Mech.* **194** (1988), 479-510. (Summary) **89m:76031** 76D99 (76-08, 76E30)
- (with Ashurst, W. T.) Area-varying waves on curved vortex tubes with application to vortex breakdown. *J. Fluid Mech.* **200** (1989), 283-307. (Summary) **89m:76022** 76C05 (76E30)
- Lundh, Michael** (with Gustafsson, Kjell; Söderlind, Gustaf) A PI stepsize control for the numerical solution of ordinary differential equations. *BIT* **28** (1988), no. 2, 270-287. (Zahari Zlatev) **89c:65073** 65L05
- Lundqvist, Stig** see Path summation: achievements and goals, **89i:81034**
- Lüneburg, Heinz** ★ *Kleine Fibel der Arithmetik*. (German) [Small primer for arithmetic] Lehrbücher und Monographien zur Didaktik der Mathematik [Textbooks and Monographs on the Didactics of Mathematics], 8. Bibliographisches Institut, Mannheim, 1987. 101 pp. ISBN 3-411-03176-X (Heinrich Rolletschek) **89f:11001** 11-01
- verdun Lanet, S. M.** see Verdun Lanet, S. M.
- Lunëv, V. V.** (with Kapitanets, P. I.) Shock-characteristic method for solving discontinuous gas dynamic problems. (Russian) *Zh. Fizich. Mat. i Mat. Fiz.* **28** (1988), no. 6, 945-950, 960. (Summary) **89k:65156** 65P05 (35L99)
- Lunéville, Eric** (with Mignot, Fulbert) Un problème de contrôle avec contraintes sur l'état. [A control problem with state constraints] *Control of partial differential equations* (Santiago de Compostela, 1987), 208-212, *Lecture Notes in Control and Inform. Sci.*, 114, Springer, Berlin-New York, 1989. (see **89j:00028**) 49B22
- Lunga, N.** (with Blaga, L.; Goron, S.) On integral representation of the overpotential. (Romanian summary) *Bul. Ştiinţ. Inst. Politehn. Cluj-Napoca Ser. Mat. Mec. Apl. Construc. Maş.* **28** (1985), 32-34. (Not in MR) 31B15
- On the stability of certain relativistic polytropes. *Seminar of Celestial Mechanics and Space Research*, 167-170, Preprint, 87-10, Univ. "Babeş-Bolyai", Cluj-Napoca, 1987. (Summary) **89f:85005** 85A30 (83C55)
- (with Mureşan, Marian; Vornicescu, Neculae) Liapunov function for a differential equation of fourth order. *Seminar on mathematical analysis*, 43-50, Preprint, 87-7, Univ. "Babeş-Bolyai", Cluj-Napoca, 1987. (B. A. Shcherbakov and V. Glavan) **89c:34052** 34D20 (34C25)
- On the number of limit cycles for systems with several singular points. *Anal. Numér. Theor. Approx.* **16** (1987), no. 1, 47-50. (E. J. Barbeau) **89c:34031** 34C05 (58F21)
- (with Mureşan, Marian) Existence and uniqueness of the bounded solutions and periodic solutions for certain systems of differential equations. *Mathematica (Cluj)* **29**(52) (1987), no. 1, 41-47. (Anthony Uyi Afuwape) **89k:34086** 34D40 (34C11, 34C25)
- (with Vornicescu, Neculae) The continuability of the solutions of a differential system with three Liapunov functions. *Seminar on Differential Equations*, 1-8, Preprint, 88-8, Univ. "Babeş-Bolyai", Cluj-Napoca, 1988. (see **89j:00023**) 34A15
- Lunin, A. A.** Grouping of terms of a numerical series. (Russian) *Mat. Zametki* **44** (1988), no. 5, 660-666, 702; translation in *Math. Notes* **44** (1988), no. 5-6, 842-847. (Summary) **89k:40004** 40A05
- Lunnon, W. F.** (with Pleasants, P. A. B.) Quasicrystallographic tilings. *J. Math. Pures Appl.* (9) **66** (1987), no. 3, 217-263. (Marjorie Senchal) **89c:52028** 52A45
- Multidimensional continued fractions and their applications. *Computers in mathematical research* (Cardiff, 1986), 41-56, *Inst. Math. Appl. Conf. Ser. New Ser.*, 14, Oxford Univ. Press, New York, 1988. (Duncan A. Buell) **89j:11127** 11Y65 (40A15)
- Integer sets with distinct subset-sums. *Math. Comp.* **50** (1988), no. 181, 297-320. (Béla Uhrin) **89a:11019** 11B13 (94A60)
- Lunze, J.** Exact and approximate models of symmetric composite systems. *Systems Anal. Modelling Simulation* **4** (1987), no. 6, 521-529. (Ryszard Gessing) **89d:93007** 93A15 (93A10)
- (with Bakule, Lubomir) Decentralized design of feedback control for large-scale systems. *Kybernetika (Prague) Suppl.* **24** (1988), no. 3-6, 97 pp. (Asen L. Dontchev) **89k:93002** 93-02 (93A15, 93B50)
- Luo, Cheng** Weighted norm inequalities in Lorentz spaces. II. (Chinese. English summary) *J. Hangzhou Univ.* **14** (1987), no. 4, 393-402. (Bor-Luh Lin) **89a:46068** 46E30 (26D15)
- Fourier-Haar integrals, their square functions and their maximal functions. (Chinese. English summary) *Adv. in Math. (Beijing)* **18** (1989), no. 1, 74-80. (Summary) **89m:42020** 42C05
- Luo, Ding Jun** (with Chen, Zhi Yin; Zhao, Shen Qi; Yan, Zhong; Sun, Jian Hua) The qualitative-numerical method in the study of limit cycle problems of planar systems. (Chinese. English summary) *Nanjing Daxue Xuebao Shuxue Bannian Kan* **4** (1987), no. 1, 99-105, 86. (Author's review (D.J.L.)) **89d:34058** 34C05 (58F14, 58F21)
- Luo, Feng** Representing homology classes of  $CP^2 \times CP^2$ . *Pacific J. Math.* **133** (1988), no. 1, 137-140. (Ian Hambleton) **89h:57031** 57R95 (57N13)
- The existence of  $K(\pi, 1)$  4-manifolds which are rational homology 4-spheres. *Proc. Amer. Math. Soc.* **104** (1988), no. 4, 1315-1321. (Alexander I. Suciu) **89m:57017** 57N13 (55P20, 57R19)
- Luo, Hui Lie** (with Yuan, Wang Zhi) Reduction of a higher-dimensional representation space. (Chinese. English summary) *J. Guizhou Inst. Tech.* **16** (1987), no. 1, 89-96. (M. K. F. Wong) **89g:22018** 22E45 (20C10, 20G05)
- Luo, Jiang Tao** Characterizations of distributive bisemilattices and modular lattices. (Chinese. English summary) *Neimenggu Daxue Xuebao* **18** (1987), no. 4, 623-633. (Summary) **89f:06005** 06A12 (06C05)
- Luo, L. S.** (with Nuttall, J.) Asymptotic behavior of the Christoffel function related to a certain unbounded set. *Approximation theory, Tampa (Tampa, Fla., 1985-1986)*, 105-116, *Lecture Notes in Math.*, 1287, Springer, Berlin-New York, 1987. (H. N. Mhaskar) **89c:41007** 41A10 (30E10, 41A60)
- Luo, Hui Fu** (with Cai, Lu) The Rényi entropy of a nucleic acid sequence and its relation to evolution. (Chinese. English summary) *Neimenggu Daxue Xuebao* **18** (1987), no. 4, 733-737. (Summary) **89c:92030** 92A12
- (with Zhao, Gang) A string model of leptons and quarks. *Soviet J. Nuclear Phys.* **47** (1988), no. 1, 176-178 (1988); translated from *Yadernaya Fiz.* **47** (1988), no. 1, 279-282 (Russian). (Summary) **89f:81256** 81G20 (81E30)
- Luo, Lishi** (with Handy, Carlos R.; Mantica, Giorgio; Msezane, Alfred Z.) Exact bounds to one-dimensional potential scattering amplitudes through the classical theory of moments. *Phys. Rev. A* (3) **38** (1988), no. 1, 490-493. (Summary) **89f:81227** 81F05 (44A60)
- Luo, Mao Kang** (with Liu, Ying Ming) Fuzzy Stone-Čech type compactifications. *Proceedings of the Second Polish Symposium on Interval & Fuzzy Mathematics* (Poznań, 1986), 117-137, *Wydział Politechn. Poznań, Poznań*, 1987. (O. Costinescu) **89i:54005** 54A40 (03E72, 54D35)
- Paracompactness and compactness in fuzzy topological spaces. (Chinese) *Acta Math. Sinica* **30** (1987), no. 4, 548-552. (Jin Xuan Fang) **89c:54017** 54A40 (03E72, 54D18)
- (with Liu, Ying Ming) Induced spaces and fuzzy Stone-Čech compactifications. *Sinica Ser. A* **30** (1987), no. 10, 1034-1044. (O. Costinescu) **89i:54009** 54A40 (03E72, 54D35)
- (with Liu, Ying Ming) Pre-order relations in fuzzy compactifications. (Chinese) *Acta Math. Sinica* **31** (1988), no. 4, 433-442. (Run Sheng Yang) **89i:54014** 54A40 (03E72)
- Paracompactness in fuzzy topological spaces. *J. Math. Anal. Appl.* **130** (1988), no. 1, 55-77. (O. Costinescu) **89c:54018** 54A40 (03E72, 54D18)
- (with Liu, Ying Ming) A pre-order relation among fuzzy compactifications. (Chinese) *Kexue Tongbao (Chinese)* **33** (1988), no. 8, 564-566. (Not in MR) 54A40 (03E72)
- (with Liu, Ying Ming) On  $N$ -compactness in  $L$ -fuzzy unit interval. *Kexue Tongbao (English Ed.)* **33** (1988), no. 1, 1-4. (O. Costinescu) **89f:54013** 54A40 (03E72)
- Luo, Ning Su** (with Feng, Chun Bo; Li, Xiao Ming<sup>2</sup>) Robustness of adaptive control systems. (Chinese. English summary) *Acta Automat. Sinica* **13** (1987), no. 6, 463-472. (Summary) **89c:93049** 93C40 (93B35, 93D10)
- Luo, Pei Zhu** (with Ding, Xia Xi; Chen, Gui Qiang) Convergence of the Lax-Friedrichs scheme for isentropic gas dynamics. I, II. *Acta Math. Sci. (English Ed.)* **5** (1985), no. 4, 415-432, 433-472. (F. Milinazzo) **89f:76006** 76-08 (65L05, 65M10, 76N15)
- Luo, Qi Xia** (with Wu, Jie<sup>2</sup>; Chen, Qing Quan) Decoupling-adaptive control of induction motors. (Chinese. English summary) *Control Theory Appl.* **5** (1988), no. 2, 60-68. (Summary) **89g:93065** 93C75 (49D27, 93C40)
- Luo, Qiao Lin** (with Zhang, Zhao Zhi) A recursive algorithm for the generation of  $M$ -sequences. (Chinese. English summary) *J. Systems Sci. Math. Sci.* **7** (1987), no. 4, 335-343. (Summary) **89a:05003** 05-04 (94A60)
- Luo, Rong Gui** Serial queueing system with two service mechanisms. *Acta Math. Sci. (English Ed.)* **8** (1988), no. 1, 55-63. (Summary) **89b:90103** 90B22 (60K25)
- Luo, Shi Yu** (with Liu, Zeng Rong; Li, Ji Bin) The dynamical behavior of systems with slowly varying periodic perturbations. (Chinese) *Acta Math. Sci. (Chinese)* **7** (1987), no. 3, 247-251. (J. S. W. Wong) **89d:34069** 34C15 (34C29, 58F30)
- Luo, Shou Jun** On strong germ-Markov properties in the plane. *Kexue Tongbao (English Ed.)* **33** (1988), no. 2, 89-93. (F. B. Knight) **89i:60144** 60J25
- Luo, Shu Yuan** (with Huang, Dao Fang) On the "Yao-Dian" culmination star of the four mid-seasons. (Chinese. English summary) *Hunan Shifan Daxue Xuebao* **11** (1988), no. 1, 69-76. (Summary) **89h:01007** 01A25
- Luo, Wan Min** A comparative study of software packages for nonlinear programming. (Chinese. English summary) *J. Chengdu Univ. Sci. Tech.* **1988**, no. 3, 83-91. (Summary) **89j:90225** 90C30
- Luo, Xiao Bo** (with Zhang, Jie<sup>2</sup>) The application of catastrophe theory to solid state transitions in metals. (Chinese) *Math. Practice Theory* **1988**, no. 3, 1-5. (Not in MR) 58C28 (82A25, 82A65)
- Luo, Xiao Nan** (with Bi, Wen Yi; Jiang, Jian Guo) A general algorithm for the FFT, its minimization and the optimal radix. (Chinese. English summary) *Numer. Math. J. Chinese Univ.* **9** (1987), no. 3, 219-226. (Summary) **89i:65173** 65T05
- (with Bi, Wen Yi; Jiang, Jian Guo) The general algorithm of the FFT and its minimum. (Chinese. English summary) *Math. Numer. Sinica* **10** (1988), no. 1, 1-5. (Summary) **89i:65142** 65T05
- Luo, Xin Hua** Poisson distribution of order  $K$  and its properties. *Kexue Tongbao (English Ed.)* **32** (1987), no. 13, 873-874. (A. N. Philippou) **89c:60017** 60E05 (62E15)
- Luo, Xu Cheng** The symmetric partitioning expression for a covariance matrix and its application. (Chinese. English summary) *Control Theory Appl.* **4** (1987), no. 4, 25-33. (Not in MR) 93E11 (93C50)
- Luo, Yuan Quan** (with Zhang, Yu Ming<sup>2</sup>) An estimate for the condition number of a class of matrices. (Chinese. English summary) *J. Dalian Inst. Tech.* **25** (1986), *Special Issue on Mathematics*, suppl., 113-117. (E. L. Yip) **89i:65047** 65F35
- (with Du, Zhi Hui) A simultaneous iteration method for factoring polynomials. (Chinese. English summary) *J. Dalian Inst. Tech.* **25** (1986), *Special Issue on Mathematics*, suppl., 124-131. (Zube Shen) **89a:65080** 65H05



- On the continuous differentiability of solutions of the Bellman equation in optimal control. (Chinese) *J. Math. Res. Exposition* 6 (1986), no. 3, 89–92. (Winston T. Lin) **89b:49047** 49C20 (49B22)
- (with Du, Zhi Hui) On the determination of multiple roots when an iteration method is used for solving a transcendental equation. (Chinese. English summary) *J. Numer. Methods Comput. Appl.* 8 (1987), no. 3, 171–177. (Summary) **89a:65084** 65H05
- Luo, Yun Luo** (with Liu, Shao Xue; Tang, Ai Ping; Xiao, Jie; Guo, Jin Yun) Some results on modules and rings. *Bull. Soc. Math. Belg. Sér. B* 39 (1987), no. 2, 181–193. (Iuliu Crivei) **89c:16008** 16A12 (16A21, 16A35, 16A89)
- Luo, Yupin** (with Wada, Koichi; Kawaguchi, Kimio) Fault-tolerant network routings for  $(k+1)$ -node connected and  $(k+1)$ -edge connected graphs. *Systems Comput. Japan* 18 (1987), no. 11, 50–60. (Summary) **89b:68015** 68M15 (05C40, 68M10, 68R10, 90B10, 90D25)
- Luo, Z. H.** *see* Luo, Zheng Hua
- Luo, Zhao Hua** An invariant approach to the theory of logarithmic Kodaira dimension of algebraic varieties. *Bull. Amer. Math. Soc. (N.S.)* 19 (1988), no. 1, 319–323. (Takao Fujita) **89d:14050** 14D10
- Luo, Zhen Ou** A new fourth-order difference scheme for the numerical solution of Poisson equation. *Kexue Tongbao (English Ed.)* 32 (1987), no. 23, 1592–1595. (Not in MR) **89f:6505**
- Luo, Zheng Hua** Comments on: "Sufficient condition for the asymptotic stability of interval matrices" [Internat. J. Control 47 (1988), no. 6, 1973–1974; MR 89g:93079] by M. Mansour. *Internat. J. Control* 47 (1988), no. 6, 1977. (A. Göpfert) **89g:93081** 93D20 (93D99)
- (with Kobayashi, Toshihiro) Dynamic shape control for a flexible beam. *Internat. J. Systems Sci.* 19 (1988), no. 6, 985–997. (Summary) **89e:93094** 93B50 (73K05, 93B35, 93C20)
- Luo, Zhi-Quan** (with Tsitsiklis, John N.) Communication complexity of convex optimization. *J. Complexity* 3 (1987), no. 3, 231–243. (Mirko Krivánek) **89c:68039** 68Q15 (68M15, 90C25)
- Luo, Zhong Zhou** (with Lin, Qi Ning) Four-stage cyclic finite queueing systems. (Chinese. English summary) *J. Systems Engrg.* 3 (1988), no. 1, 40–55. (Not in MR) **90B22**
- Luo, Zong Qian** (with Zhou, Quan Gen) A generalized minimum variance self-tuning controller with pole assignment. (Chinese. English summary) *J. Huazhong Univ. Sci. Tech.* 15 (1987), no. 4, part II, 129–134. (Summary) **89g:93055** 93C40 (93B55)
- (with Dai, Jin) A self-tuning PID controller. (Chinese. English summary) *Control Theory Appl.* 5 (1988), no. 1, 100–104. (Not in MR) **93C40**
- ngô văn La'q'e** *see* Ngô Văn La'q'e
- Luong, A.** (with Thompson, M. E.) Minimum-distance methods based on quadratic distances for transforms. (French summary) *Canad. J. Statist.* 15 (1987), no. 3, 239–251. (Summary) **89g:62071** 62G10
- Luong, Nhan Xuan** (with Barthélemy, Jean-Pierre) Représentations arborées de mesures de dissimilarité. (English summary) [Tree representations of dissimilarity measures] *Statist. Anal. Données* 11 (1986), no. 1, 20–41. (Summary) **89c:92004** 92A05 (05C05)
- (with Barthélemy, Jean-Pierre) Sur la topologie d'un arbre phylogénétique: aspects théoriques, algorithmes et applications à l'analyse de données textuelles. (English summary) [The topology of a phylogenetic tree: theoretical aspects, algorithms and applications to textual data analysis] *Math. Sci. Humaines No. 100* (1987), 57–80, 131 (1988). (Summary) **89c:92003** 92A05 (05C05, 92A90)
- Lupakov, O. B.** *see* Cybernetics collection. New series, **89i:00019**
- Lupianez, Francisco Gallego**  $\alpha$ -paracompact subsets and well-situated subsets. *Questions Answers Gen. Topology* 5 (1987), no. 2, 293–302. (C. W. Patty) **89d:54013** 54D18
- $\alpha$ -paracompact subsets and well-situated subsets. *Czechoslovak Math. J.* 38(113) (1988), no. 2, 191–197. (Ilija Kovačević) **89b:54015** 54D18
- Total paracompactness and Banach spaces. *Proc. Amer. Math. Soc.* 103 (1988), no. 1, 210–214. (Ehrhard Behrends) **89b:46028** 46B20 (54D18)
- Lupini, R.** (with Spiga, G.) Chaotic dynamics of spatially homogeneous gas mixtures. *Phys. Fluids* 31 (1988), no. 7, 2048–2051. (Summary) **89b:58078** 58F13 (58F14, 82A70)
- Lupo, D.** (with Solimini, S.; Srikanth, P. N.) Multiplicity results for an ODE problem with even nonlinearity. *Nonlinear Anal.* 12 (1988), no. 7, 657–673. (Stanislaw Śędziwiy) **89j:34026** 34B15 (35J65)
- Luppi, Jussi** Evaluation of general high-order phase integrals. *Ann. Acad. Sci. Fenn. Ser. A II. Chem.* No. 212 (1987), 32 pp. (Pablo Martin) **89b:81040** 81C15 (30E15, 34E20, 81F99)
- Luppo, S. P.** *see* Problems in applied analysis, **89m:00008**
- Luppa, Liama**  $I$ -points with respect to a given set. *Anal. Numér. Théor. Approx.* 15 (1986), no. 2, 145–147. (C. Edwards (Zbl 614:52001)) **89c:52004** 52A07 (46A99)
- Duality theorems for rational programming problems. *Anal. Numér. Théor. Approx.* 16 (1987), no. 1, 51–53. (Not in MR) **90C30**
- Lupu, Mircea** Linéarisation des équations différentielles de la dynamique des systèmes centraux et conservatifs. (Romanian summary) [Linearization of the differential equations of the dynamics of central and conservative systems] *Bul. Univ. Braşov Ser. C* 29 (1987), 35–40 (1988). (Eduardo Piña) **89b:70018** 70F05 (58F07, 70H20)
- Solution des problèmes de Riemann ou de Hilbert ayant des singularités données pour le demi-plan. (Romanian summary) [Solution of Riemann or Hilbert problems with given singularities in the half-plane] *Bul. Univ. Braşov Ser. C* 29 (1987), 41–48 (1988). (Summary) **89c:30073** 30E25
- Lursinsap, Chidchanok** (with Gajski, Daniel) Improving a PLA area by pull-up transistor folding. *24th ACM/IEEE Design Automation Conference (Miami Beach, FL, 1987)*, 6803–614, ACM, New York, 1987. (Mirko Krivánek) **89k:94111** 94C15 (94C05)
- Lusanna, Luca** Multi-temporal Newtonian mechanics and its quantization. *7th Italian conference on general relativity and gravitational physics (Rapallo, 1986)*, 299–302, World Sci. Publishing, Singapore, 1987. (I. A. Sakmar) **89c:81064** 81D99 (70H40)
- Lüscher, E.** (with Reiser, G.; Hübler, Albert) Algorithm for the determination of the resonances of anharmonic damped oscillators. *Z. Naturforsch. A* 42 (1987), no. 8, 803–807. (Summary) **89g:58183** 58F30 (34C15, 70K30)
- Lüscher, M.** (with Weisz, P.) Scaling laws and triviality bounds in the lattice  $\phi^4$  theory. II. One-component model in the phase with spontaneous symmetry breaking. *Nuclear Phys. B* 295 (1988), no. 1, 65–92. (Summary) **89d:81083** 81E25
- (with Weisz, P.) Application of the linked cluster expansion to the  $n$ -component  $\phi^4$  theory. *Nuclear Phys. B* 300 (1988), no. 3, 325–359. (Summary) **89e:81128** 81E25
- (81–04, 81E13)
- Luschgy, Harald** Comparison of shift experiments on a Banach space. *Mathematical statistics and probability theory, Vol. A (Bad Tatzmannsdorf, 1986)*, 217–230, Reidel, Dordrecht-Boston, MA-London, 1987. (A. L. Rukhin) **89a:62020** 62B15 (62B10, 62C05, 62M99)
- Luse, D. W.** A Nyquist-type stability test for multivariable distributed systems. *IEEE Trans. Automat. Control* 33 (1988), no. 6, 563–566. (Summary) **89d:93083** 93D15 (93C20, 93C35)
- Lushnikov, A. A.** Random factors in chemical kinetics. (Russian) *Dokl. Akad. Nauk SSSR* 300 (1988), no. 3, 652–654. (V. I. Bykov) **89k:80024** 80A30
- Lasikka, I.** (with Costabel, M.; Saranen, J.) Comparison of three boundary element approaches for the solution of the clamped plate problem. *Boundary elements IX, Vol. 2 (Stuttgart, 1987)*, 19–34, Comput. Mech., Southampton, 1987. (Summary) **89j:73004** 73-08 (73C02, 73K10)
- (with Saranen, J.) Some remarks on the influence of numerical integration to boundary integral equations. *Z. Angew. Math. Mech.* 68 (1988), no. 5, T397–T399. (Gheorghe Micula) **89m:65116** 65R20
- Lusin, Nicolas** *see* Pepe, Luigi, **89c:01081**
- Lusk, Ewing L.** (with Overbeck, R. A.) Reasoning about equality. *J. Automat. Reason.* 1 (1985), no. 2, 209–228. (Summary) **89f:68115** 68T15 (03B35)
- *see also* Conference: Automated Deduction, **89c:68004**
- Lusky, Wolfgang** A note on interpolating bases. *J. Approx. Theory* 52 (1988), no. 1, 107–113. (Y. Benyamini) **89a:41041** 41A65 (46E15)
- Luss, Hannan** (with Smith, Donald Robert) Multiperiod allocation of limited resources: a minimax approach. *Naval Res. Logist.* 35 (1988), no. 4, 493–501. (Summary) **89e:90137** 90C06 (90B30)
- Lüst, Dieter** Covariant fermionic and heterotic strings from the bosonic string. *Nuclear Phys. B* 292 (1987), no. 2, 381–399. (Marc Henneaux) **89e:81161** 81E99 (81E30, 83E30)
- (with Theisen, Stefan) Four-dimensional heterotic strings—orbifolds and covariant lattices. *Nuclear Phys. B* 302 (1988), no. 3, 499–524. (Olaf Lechtenfeld) **89h:81211** 81E99 (22E40, 81E30, 81E40)
- (with Lauer, Jürgen; Theisen, Stefan) Four-dimensional supergravity from four-dimensional strings. *Nuclear Phys. B* 304 (1988), no. 2, 236–268. (Pierre Gravel) **89k:83077** 83E50 (81E30, 83E15, 83E30)
- Lustig, Cornel** (with Parnas, Hanna; Segel, L. A.) Neurotransmitter release: development of a theory for total release based on kinetics. *J. Theoret. Biol.* 136 (1989), no. 2, 151–170. (Not in MR) **92A09**
- Lastman, Liviu** (with Gottlieb, David; Tadmor, Eitan) Convergence of spectral methods for hyperbolic initial-boundary value systems. *SIAM J. Numer. Anal.* 24 (1987), no. 3, 532–537. (Vassilios A. Dougalis) **89i:65089** 65M10 (65M15, 65N35)
- Last-Piquard, Françoise** Opérateurs de Hankel 1-sommants:  $l^1(\mathbb{N}) \rightarrow l^\infty(\mathbb{N})$ , et multiplicateurs de  $H^1(T)$ . [I-summing Hankel operators:  $l^1(\mathbb{N}) \rightarrow l^\infty(\mathbb{N})$ , and multipliers of  $H^1(T)$ ] *Séminaire d'Analyse Fonctionnelle 1984/1985*, 125–139, Publ. Math. Univ. Paris VII, 26, Univ. Paris VII, Paris, 1986. (Jeffrey R. Butz) **89k:47042** 47B35 (47B10)
- (with Costé, Alain) Opérateurs sur un espace  $L^1$ . [Operators on an  $L^1$ -space] *Colloq. Math.* 51 (1987), 43–66. (P. Saphar) **89j:47021** 47B38
- Luszczyk, Zbigniew** (with Rzepecki, Bogdan) An existence theorem for ordinary differential equations of order  $\alpha \in (0, 1]$ . *Demonstratio Math.* 20 (1987), no. 3–4, 471–475 (1988). (Vanna Zanelli) **89b:34004** 34A10 (26A33, 45J05, 47H15)
- Lustig, G.** Fourier transforms on a semisimple Lie algebra over  $\mathbb{F}_q$ . *Algebraic groups Utrecht 1986*, 177–188, *Lecture Notes in Math.*, 1271, Springer, Berlin-New York, 1987. (James E. Humphreys) **89b:17015** 17B45 (20G40)
- Introduction to character sheaves. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 165–179, *Proc. Sympos. Pure Math.*, 47, Part 1, Amer. Math. Soc., Providence, RI, 1987. (Bhama Srinivasan) **89e:20079** 20G05 (22E47)
- Leading coefficients of character values of Hecke algebras. *The Arcata Conference on Representations of Finite Groups (Arcata, Calif., 1986)*, 235–262, *Proc. Sympos. Pure Math.*, 47, Part 2, Amer. Math. Soc., Providence, RI, 1987. (Toshiyuki Tanisaki) **89b:20087** 20G05 (17B10, 20G40)
- Quantum deformations of certain simple modules over enveloping algebras. *Adv. in Math.* 70 (1988), no. 2, 237–249. (Jean-Pierre Soublin) **89k:17029** 17B35 (16A24, 17B67, 57T05)
- (with Xi, Nan Hua) Canonical left cells in affine Weyl groups. *Adv. in Math.* 72 (1988), no. 2, 284–288. (Anthony Joseph) **89m:17027** 17B35 (20G05)
- (with Kazhdan, D.) Fixed point varieties on affine flag manifolds. *Israel J. Math.* 62 (1988), no. 2, 129–168. (Dennis Snow) **89m:14025** 14L30 (20G25, 32M10)
- (with De Concini, C.; Procesi, C.) Homology of the zero-set of a nilpotent vector field on a flag manifold. *J. Amer. Math. Soc.* 1 (1988), no. 1, 15–34. (Toshiaki Shoji) **89f:14052** 14L30 (14M99, 20G10, 32M05, 32M10)
- Luther, Norman Y.** (with Retherford, Robert D.) Consistent correction of census and vital registration data. *Math. Population Stud. I* (1988), no. 1, 1–20. (Title) **89j:62016** 62D05
- Lüthy, Herbert** Stochastische Modelle zur Altersrentenindexierung in der beruflichen Vorsorge. (English and French summaries) [Stochastic models for indexing of retirement pensions in employee benefit plans] *Mitt. Verein. Schweiz. Versicherungsmath.* 1988, no. 1, 19–67. (Not in MR) **62P05**
- Lutikov, V. Z.** Prediction of random processes. (Russian) *Differential equations and applied problems (Russian)*, 47–54, vi, *Tul'sk. Politekh. Inst.*, Tula, 1985. (see **89g:00008**) **60G25**
- Lütken, C. A.** (with Candela, P.; Dale, A. M.; Schimmrigk, Rolf) Complete intersection Calabi-Yau manifolds. *Frontiers of high energy physics (London, 1986)*, 88–134, Hilger, Bristol, 1987. (H. Wu) **89e:14040** 14J30 (14M10, 32J25, 53C25, 53C55)
- (with Candela, P.; Schimmrigk, Rolf) Complete intersection Calabi-Yau manifolds. II. Three generation manifolds. *Nuclear Phys. B* 306 (1988), no. 1, 113–136. (Nicholas Buchdahl) **89g:53102** 53C55 (14J30, 32J15, 53C80, 83E30)
- (with Ross, Graham G.) Taxonomy of heterotic superconformal field theories. *Phys. Lett. B* 213 (1988), no. 2, 152–159. (Claude Itzykson) **89j:81200** 81E99 (53C80, 81E30, 83E30)
- Lütkepohl, Helmut** ★ Prognose aggregierter Zeitreihen. (German) [Prognosis of aggregate time series] *Studien zur Angewandten Wirtschaftsforschung und Statistik (Studies in Applied Economics Research and Statistics)*, 18, Vandenhoeck & Ruprecht, Göttingen, 1986. 193 pp. ISBN 3-525-11289-0 (B. M. Pötscher) **89d:62092** 62M10 (90A20)
- Prediction tests for structural stability. *J. Econometrics* 39 (1988), no. 3, 267–296. (Summary) **89h:62180** 62P20

- Lutovinov, V. S. (with Chechetkin, V. R.) Perturbation theory for continuous stochastic equations. *Fortschr. Phys.* 35 (1987), no. 12, 831–859. (A. Weron) **89g:82026** 82A31 (35R60, 60H15)
- (with Chechetkin, V. R.) Quantum motion of particles in random dynamic fields and quantum dissipation: Schrödinger equation with Gaussian fluctuating potentials. *J. Phys. A* 20 (1987), no. 14, 4757–4788. (K. Wódkiewicz) **89b:82039** 82A31 (81K05)
- Luttrell, S. P. A maximum entropy approach to sampling function design. *Inverse Problems* 4 (1988), no. 3, 829–841. (Not in MR) **68P20** (94A17)
- Lutwak, Erwin Rotation means of projections. *Israel J. Math.* 58 (1987), no. 2, 161–169. (Joseph H. G. Fu) **89a:52011** 52A22 (52A40)
- Mixed affine surface area. *J. Math. Anal. Appl.* 125 (1987), no. 2, 351–360. (C. M. Petty) **89d:52009** 52A20 (52A40)
- Inequalities for Hadwiger's harmonic Quermassintegrals. *Math. Ann.* 280 (1988), no. 1, 165–175. (Autorreferat [Zbl 617:52007]) **89h:52005** 52A22
- Lutz, D. A. (with Benzaid, Z.) Constrained controllability of perturbed discrete-time systems. *Internat. J. Control* 48 (1988), no. 2, 655–673. (Valeriu Prepelija) **89i:49027** 49E25 (93B05, 93C05, 93C55)
- (with Balser, W.; Jurkat, W. B.) On the reduction of connection problems for differential equations with an irregular singular point to ones with only regular singularities. II. *SIAM J. Math. Anal.* 19 (1988), no. 2, 398–443. (Günter Frank) **89d:34008** 34A20 (34A25, 34C20)
- Lutz, Robert Réveries infinitésimales. [Infinitesimal reveries] *Gaz. Math.* No. 34 (1987), 79–87. (H.-B. Brinkmann) **89f:03065** 03H05
- Lutz, William J. (with Hakimi, S. Louis) Design of multi-input multi-output systems with minimum sensitivity. *IEEE Trans. Circuits and Systems* 35 (1988), no. 9, 1114–1122. (Patrizio Colaneri) **89i:93020** 93B15 (93B20, 93B35)
- Lutze, F. H. (with Vasudevan, Gopal) On verification of fuel-optimal space trajectories. *Optimal Control Appl. Methods* 9 (1988), no. 3, 285–302. (Not in MR) **93C75** (93C57)
- Lützen, Jesper The solution of partial differential equations by separation of variables: a historical survey. *Studies in the history of mathematics*, 242–277, *MAA Stud. Math.*, 26, Math. Assoc. America, Washington, DC, 1987. (see **89b:01002**) 01A55 (35-03)
- Lutzyk, M. Reverse multifurcations and universal constants. *Phys. Lett. A* 128 (1988), no. 6–7, 332–334. (Summary) **89e:58091** 58F14 (26A18)
- Counting stable cycles in unimodal iterations. *Phys. Lett. A* 131 (1988), no. 4–5, 248–250. (R. S. Booth) **89j:26007** 26A18 (58F08, 58F20)
- đinh quang Lu'u see Dinh Quang Lu'u
- Luu, T. S. (with Coulmy, G.) Design problem relating to a profile or a cascade of profiles and construction of orthogonal networks using the Riemann surfaces for the multimodal singularities. *Advanced boundary element methods* (San Antonio, Tex., 1987), 223–232, Springer, Berlin-New York, 1988. (G. T. Symm) **89c:65035** 65E05
- Laakkonen, Ritva (with Saikkonen, Pentti; Teräsvirta, Timo) Testing linearity against smooth transition autoregressive models. *Biometrika* 75 (1988), no. 3, 491–499. (Summary) **89i:62150** 62M10
- (with Saikkonen, Pentti; Teräsvirta, Timo) Testing linearity in univariate time series models. *Scand. J. Statist.* 15 (1988), no. 3, 161–175. (Not in MR) **62M10**
- Lax, Klaus (with Hiss, Gerhard) The Brauer characters of the Hall-Janko group. *Comm. Algebra* 16 (1988), no. 2, 357–398. (Karin Erdmann) **89d:20011** 20C20
- Lazhina, L. M. Regular spectral problems in a space of vector functions. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* 1988, no. 1, 31–35; translation in *Moscow Univ. Math. Bull.* 43 (1988), no. 1, 40–45. (Zoran Kadelburg) **89c:34048** 34B25 (47E05)
- Luzin, N. N. see Shields, Allen. **89b:01060** and Yushkevich, A. P. **89i:01050**
- Lvin, S. Ya. (with Krein, S. G.) Overdetermined and underdetermined equations in Hilbert spaces. (Russian) *Izv. Vyssh. Uchebn. Zaved. Mat.* 1987, no. 9, 59–66, 83. (D. Pzeworska-Rolewicz) **89d:47019** 47A50
- L'vov, I. V. (with Bokut', L. A.; Kharchenko, V. K.) Noncommutative rings. (Russian) *Current problems in mathematics. Fundamental directions*, Vol. 18 (Russian), 5–116, *Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform.*, Moscow, 1988. (J. S. Joel) **89i:16001** 16-02
- L'vov, V. A. (with Bar'yakhtar, V. G.; Yablonskii, D. A.) Magnetic symmetry of the domain boundaries in magneto-oriented crystals (static and kinematic aspects). (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (*Järnala*, 1985), 563–570, "Nauka", Moscow, 1986. (see **89d:81001**) 82A60
- An initial-boundary value problem for the Navier-Stokes equations in domains with a random boundary. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 3, 20–23, 85. (Summary) **89b:35266** 35Q10 (35R60, 76D05)
- The viscosity tensor of a suspension of solid particles. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 4, 9–12, 86. (From the text) **89e:76043** 76D99 (76T05)
- Averaged description of the motion of a suspension in an approximation of a one-velocity continuum with an orientable substructure. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 5, 15–19, 86. (Summary) **89i:35119** 35Q20 (76D99, 76T05)
- L'vova, S. V. A problem of multiple interpolation in a half plane. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 48 (1987), 125–130. (D. L. Berman) **89b:30030** 30E05
- L'vovskii, S. M. Extension of varieties defined by quadratic equations. (Russian) *Mat. Sb. (N.S.)* 135(177) (1988), no. 3, 312–324, 414; translation in *Math. USSR-Sb.* 63 (1989), no. 2, 305–317. (Werner Kleiner) **89g:14033** 14M10 (14M10)
- L'vovskii, Ya. M. (with Tsylova, E. G.) Proof of limit theorems for Pólya distributions using the generalized Appell polynomials. Statistical methods of estimation and verification of hypotheses. *J. Soviet Math.* 41 (1988), no. 1, 877–881. (Jean Deshayes) **89k:62024** 62E20
- Lyahovich, S. L. see Lyakhovich, S. L.
- Lyakh, I. V. On the definition of the concept of the homotopy of orthogonal systems of quasigroups. (Russian) *Vebs and quasigroups* (Russian), 77–84, *Kalinin. Gos. Univ., Kalinin*, 1988. (Ján Duplák) **89i:20111** 20N05
- Configurations of rank eight in 3-nets. (Russian) *Mat. Issled.* No. 102 *Issled. Oper. i Kvizgrupp* (1988), 73–79, 119. (V. Havel) **89i:51003** 51A20 (20N05, 51E20)
- Lyakhov, A. I. (with Kogan, Ya. A.) Asymptotic analysis of the capacity of multiprocessor systems with common buses. (Russian. English summary) *Avtomat. i Telemekh.* 1988, no. 4, 148–163; translation in *Automat. Remote Control* 49 (1988), no. 4, part 2, 516–528. (Not in MR) **68M20** (60K25, 90B22)
- Lyakhovich, S. L. (with Bukhbinder, I. L.) Canonical quantization and local measure in gravity with higher derivatives. (Russian) *Group-theoretic methods in physics*, Vol. 1 (Russian) (*Järnala*, 1985), 101–115, "Nauka", Moscow, 1986. (see **89d:81001**) 83C45
- (with Gitman, D. M.; Noskov, M. D.; Tyutin, I. V.) Lagrangian formulation of Hamiltonian theory of general form with constraints. (Russian) *Group-theoretic methods in physics*, Vol. 2 (Russian) (*Järnala*, 1985), 316–322, "Nauka", Moscow, 1986. (see **89d:81002**) 70H35
- (with Bukhbinder, I. L.) Canonical quantisation and local measure of  $R^2$  gravity. *Classical Quantum Gravity* 4 (1987), no. 6, 1487–1501. (Metin Arık) **89c:83034** 83C45 (83D05)
- (with Bukhbinder, I. L.) Canonical quantization of theories with higher derivatives. Quantization of  $R^2$ -gravity. (Russian. English summary) *Teoret. Mat. Fiz.* 72 (1987), no. 2, 204–218. (N. V. Mitskevich) **89a:83035** 83C45 (58D30, 83D05)
- Lyalinov, M. A. (with Buldyrev, V. S.) An asymptotic boundary condition on the surface of an absorbing convex body. (Russian. English summary) *Vestnik Leningrad. Univ. Fiz. Khim.* 1987, vyp. 2, 10–16, 134. (Summary) **89b:78006** 78A40
- High-frequency asymptotics of a wave field scattered by an absorbing convex body in an illuminated penumbra. (Russian. English summary) *Vestnik Leningrad. Univ. Fiz. Khim.* 1988, vyp. 1, 24–29, 118. (Summary) **89c:78013** 78A45
- Lyalkina, G. B. Solvability of a boundary value problem for an ordinary differential equation in a Banach space. (Russian) *Mathematical physics* (Russian), 3–10, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Mazen Mohamed Shahin) **89g:34024** 34B15 (34G20)
- Lyall, Vinod (with Kaur, Surjeet) Decomposition in generalised fractional programming and its optimal dual solution. *Indian J. Pure Appl. Math.* 18 (1987), no. 11, 973–978. (S. S. Chandra) **89d:90223** 90C32
- (with Kaul, R. N.; Kaur, Surjeet) Semilocal pseudolinearity and efficiency. *European J. Oper. Res.* 36 (1988), no. 3, 402–409. (Han Ch'ing Lai) **89b:90239** 90C33 (90C25, 90C31)
- (with Kaul, R. N.) Nonconvex and semi-differentiable functions. *Indian J. Pure Appl. Math.* 19 (1988), no. 12, 1167–1179. (Quan Zheng) **89m:90141** 90C30 (26B25, 49A52)
- (with Kaul, R. N.; Kaur, Surjeet) Locally connected sets and functions. *J. Math. Anal. Appl.* 134 (1988), no. 1, 30–45. (Pierre Lorian) **89i:52001** 52A01 (90C99)
- Lyamin, A. G. On the problem of an inner superposition operator in a space of generalized functions. (Russian) *Boundary value problems* (Russian), 14–17, 191–192, *Perm. Politekh. Inst., Perm*, 1983. (see **89c:00008**) 47H99 (46F10)
- An estimate for the spectral radius of an inner superposition operator in the space of functions of bounded variation. (Russian) *Boundary value problems* (Russian), 15–19, 153, *Perm. Politekh. Inst., Perm*, 1984. (see **89b:00008**) 47B38 (46E99)
- Lyamzin, O. Yu. (with Anapol'skii, L. Yu.) On the dynamics of a two-machine power system. (Russian) *The method of Lyapunov functions in the analysis of the dynamics of systems* (Krkutsk, 1985) (Russian), 216–237, 326, "Nauka" Sibirsk. Otdel., Novosibirsk, 1987. (From the introduction) **89f:34071** 34D20
- Lyantse, V. E. (with Pidkuiko, S. I.) A nonclassical boundary value problem. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1987, no. 12, 14–16, 85. (Josef Volčich) **89d:35048** 35J20 (35J25)
- Lyapidevskii, V. K. (with Vasil'kov, D. A.; Guseva, I. L.) An estimate for the response of a detector of approximations of spectral characteristics. (Russian) *Function-theoretic methods in problems of mathematical physics* (Russian), 15–21, *Énergoatomizdat, Moscow*, 1986. (A. Kochubei (translated from RZhMat 1986:9 B1155)) **89k:46090** 46N05 (90C05)
- Lyapin, E. S. Partial groupoids of closure transformations. (Russian) *Semigroups and partial groupoids* (Russian), 59–65, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (D. V. Dekov) **89d:06004** 06A10 (06A15, 08A55)
- Semigroup extensions of partial groupoids. *Semigroups, theory and applications* (Oberwolfach, 1986), 205–217, *Lecture Notes in Math.*, 1320, Springer, Berlin-New York, 1988. (Stojan Bogdanović) **89g:20119** 20N99 (20M99)
- see also Homomorphisms, **89k:20004**
- Lyapunov, A. A. see Biography: Lyapunov, A. A. **89f:01080**
- Lyashenko, B. N. (with Bublik, B. N.; Lyashenko, I. N.) Two-sided approximation of a solution of a problem of two centers in quantum mechanics. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 10, 3–6, 84. (Summary) **89k:81021** 81C05 (65L10, 81-08)
- Lyashenko, I. N. (with Bailyev, K. N.) A scheme of increased order of accuracy for the Sturm-Liouville problem. (Russian) *Vychisl. Prikl. Mat. (Kiev)* No. 61 (1987), 3–8, 129. (Summary) **89b:65160** 65K10
- (with Bublik, B. N.; Lyashenko, B. N.) Two-sided approximation of a solution of a problem of two centers in quantum mechanics. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 10, 3–6, 84. (Summary) **89k:81021** 81C05 (65L10, 81-08)
- Lyashenko, N. N. (with Nikulin, M. S.; Fedorov, S. I.) A prediction problem for random processes taking into account the duration of calculations. (Russian) *Teor. Veroyatnost. i Primenen.* 33 (1988), no. 3, 613–616. (Jifi Anděl) **89i:60088** 60G25
- Random "granular" images. II. (Russian. English summary) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 166 (1988), Issled. po Mat. Statist. 8, 91–102, 189. (M. Záhle) **89i:60026** 60D05 (52A22)
- Lyashko, I. I. (with Demchenko, V. F.) ★ Обобщенные формулировки задач тепло- и массопереноса в слоистых средах. (Russian) [Generalized formulations of heat- and mass-transport problems in layered media] *Препринт [Preprint]*, 87-14, *Akad. Nauk Ukrain. SSR, Inst. Kibernet., Kiev*, 1987, 27 pp. (From the summary) **89c:80012** 80A20
- (with Skopetskii, V. V.; Deineka, V. S.) Choice of the iterative parameter for some two-layer iterative processes used in the numerical solution of problems of pressure-free filtration. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 9(43) (1988), 51–56, 86. (Summary) **89e:76077** 76S05 (76-08)
- Lyashko, O. V. (with Tret'yak, V. P.) Solution of a class of problems of integer programming. (Russian. English summary) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* 1988, no. 7, 79–81, 89. (Summary) **89i:90055** 90C10
- Lyashko, S. A. Some estimates for the limit behavior of the solutions of an autonomous system. (Russian) *Mathematical physics* (Russian), 146–150, *Leningrad. Gos. Ped. Inst., Leningrad*, 1987. (Marian Mureşan) **89d:34061** 34C05 (34C11)



- Estimates for the limit behavior of a solution of a system of ordinary differential equations. (Russian) *Mathematical analysis (Russian)*, 155–157, Leningrad. Gos. Ped. Inst., Leningrad, 1988. (see 89i:00021) 34C05
- Lyashko, S. I.** (with Red'ko, S. E.) Optimal pulse-point control of the dynamics of a viscous stratified fluid. (Russian) *Differentsial'nye Uravneniya* 23 (1987), no. 11, 1890–1897, 2020. (Summary) **89b:35158** 35Q99 (76V05)
- Differentiability of a regularized performance index for the pulse-point control of pseudoparabolic systems. (Russian. English summary) *Kibernetika (Kiev)* 1988, no. 3, 64–66, 133; translation in *Cybernetics* 24 (1988), no. 3, 349–352. (Zbigniew Emirsajlow) **89b:93030** 93C20 (49D07, 49D30, 65K10)
- Lyashuk, V. V.** Asymptotic flow of dependent failures of a repairable system. (Russian. English summary) *Vestsi Akad. Navuk BSSR Ser. Fiz.-Mat. Navuk* 1988, no. 1, 15–20, 122–123. (Stefan P. Niculescu) **89d:60163** 60K10 (90B25)
- Lyberatos, G.** (with Tsiligiannis, C. A.) Steady state bifurcations and exact multiplicity conditions via Carleman linearization. *J. Math. Anal. Appl.* 126 (1987), no. 1, 143–160. (N. Chafee) **89a:58087** 58F14 (34C35)
- (with Abules, E.-M.) Periodic impulse-forcing of nonlinear systems: a new method. *Internat. J. Control* 48 (1988), no. 2, 469–480. (From the text) **89c:34069** 34C20 (34A34, 93C10)
- (with Abules, E.-M.) Novel approach for determining optimal treatment regimen for cancer chemotherapy. *Internat. J. Systems Sci.* 19 (1988), no. 8, 1483–1497. (Not in MR) 92A07 (92A09)
- Lyechagin, V. V.** Geometric theory of singularities of solutions of nonlinear differential equations. (Russian) *Problems in geometry*, Vol. 20 (Russian), 207–247, Itogi Nauki i Tekhniki, Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow, 1988. (V. Oproiu) **89k:58265** 58Gxx (58-02, 58G05)
- Lyechak, M. M.** (with Kuntsevich, V. M.; Nikitenko, A. S.) Active identification of the parameters of a linear static object (a game-theoretic problem of the design of an experiment). (Russian. English summary) *Avtomat. i Telemekh.* 1987, no. 9, 68–76. (Jan Bialasiewicz) **89j:93208** 93E12 (93B50, 93C55, 93E20)
- (with Kuntsevich, V. M.) Control under indeterminacy conditions (synthesis of adaptive control systems). *Soviet J. Automat. Inform. Sci.* 20 (1987), no. 5, 10–20; translated from *Avtomatika* 1987, no. 5, 16–26, 95 (Russian. English summary). (Jerzy Jaroh) **89j:93028** 93B30 (93B50, 93C40, 93C55)
- Lyche, Tom** Chebyshev systems and error estimates for best approximation. *A. Haar memorial conference*, Vol. I, II (Budapest, 1985), 543–549, *Colloq. Math. Soc. János Bolyai*, 49, North-Holland, Amsterdam-New York, 1987. (O. P. Kapoor) **89b:41013** 41A10
- (with Mörken, Knut) Knot removal for parametric B-spline curves and surfaces. *Comput. Aided Geom. Design* 4 (1987), no. 3, 217–230. (Summary) **89m:65014** 65D07
- (with Dehlen, Morten) Bivariate interpolation with quadratic box splines. *Math. Comp.* 51 (1988), no. 183, 219–230. (K. Jetter) **89c:41003** 41A05 (41A15, 65D07)
- L'Yi, W. S.** see I'Yi, W. S.
- Lykhmus, Ya.** see Löhmus, J.
- Lykova, O. B.** Some approximate methods for investigating integral manifolds. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1987, no. 61, 24 pp. (Summary) **89c:34078** 34C30 (34A45, 34E05)
- Construction of an integral manifold. (Russian) *Mat. Fiz. Nelinein. Mekh.* No. 7(41) (1987), 23–28, 79. (Ji Bin Li) **89c:34045** 34C35
- (with Baris, Ya. S.) Approximate integral manifolds in stability theory. (Russian) *Akad. Nauk Ukrain. SSR Inst. Mat. Preprint* 1988, no. 48, 64 pp. (Summary) **89m:34055** 34C30 (58F10, 70K20)
- (with Bolchuk, A. A.) Construction of periodic solutions of nonlinear systems in critical cases. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 1, 62–69, 134; translation in *Ukrainian Math. J.* 40 (1988), no. 1, 51–58. (Russell C. Thompson) **89b:34037** 34C25 (34A34)
- see also Kraineva, V. K., **89a:01068**
- Lykhanov, S. L.** (with Fateev, V. A.) The models of two-dimensional conformal quantum field theory with  $Z_2$  symmetry. *Internat. J. Modern Phys. A* 3 (1988), no. 2, 507–520. (Philippe Christe) **89b:81186** 81E99 (81D15, 81E40, 82A25, 82A69)
- Lyle, Kathleen M.** Hot metal to hard disc. A celebration of applied probability. *J. Appl. Probab.* 1988, Special Vol. 25A, 65–75. (Editors) **89m:01072** 01A65 (00A69)
- Lynch, David F.** (with Jackson, Peter L.) Revised Dantzig-Wolfe decomposition for staircase-structured linear programs. *Math. Programming* 39 (1987), no. 2, 157–179. (Andrew Russakoff) **89f:90082** 90C05
- Lynch, Mark** Whitney properties for 1-dimensional continua. (Russian summary) *Bull. Polish Acad. Sci. Math.* 35 (1987), no. 7–8, 473–478. (Wayne Lewis (Zbl 637:54028)) **89c:54067** 54F20 (54B20, 54F40, 54F50)
- Lynch, Nancy** (with Burns, James E.) The Byzantine firing squad problem. *Advances in computing research*, Vol. 4, 147–161, JAI, Greenwich, CT, 1987. (Julian Padget) **89i:68002** 68M10 (68N25, 68Q10)
- (with Welch, Jennifer Lundelius) A new fault-tolerant algorithm for clock synchronization. *Inform. and Comput.* 77 (1988), no. 1, 1–36. (Joseph Y. Halpern) **89f:68009** 68M10 (68Q25)
- (with Dwork, Cynthia; Stockmeyer, Larry) Consensus in the presence of partial synchrony. *J. Assoc. Comput. Mach.* 35 (1988), no. 2, 288–323. (Summary) **89c:68008** 68M10 (68M15, 68Q10)
- Lynch, P. J.** (with Yeh, Hsi-Han; Banda, Siva S.; McQuade, Timothy E.) Loop-transfer recovery via Hardy-space optimization. *J. Guidance Control Dynamics* 11 (1988), no. 1, 86–90. (Not in MR) 49D40
- Lynch, S.** (with Lloyd, N. G.) Small-amplitude limit cycles of certain Liénard systems. *Proc. Roy. Soc. London Ser. A* 418 (1988), no. 1854, 199–208. (Author's review (N.G.L.)) **89g:34040** 34C05 (58F21)
- Lynden-Bell, D.** (with Katz, Joseph; Israel, W.) Quasiloc energy in static gravitational fields. *Classical Quantum Gravity* 5 (1988), no. 7, 971–987. (Tevian Dray) **89i:83035** 83C40
- (with de Zeeuw, Tim) Derivation of the density distribution in a prolate galaxy from the rotation curve. *Monthly Notices Roy. Astronom. Soc.* 232 (1988), no. 2, 419–430. (Summary) **89d:85005** 85A05
- (with Evans, N. W.) Solutions of the equations of stellar hydrodynamics for Eddington systems. *Monthly Notices Roy. Astronom. Soc.* 236 (1989), no. 4, 801–816. (Summary)
- 89m:85010** 85A15
- Lyneess, J. N.** (with Garbow, B. S.; Giunta, G.; Murli, A.) Software for an implementation of Weeks' method for the inverse Laplace transform problem. *ACM Trans. Math. Software* 14 (1988), no. 2, 163–170. (Summary) **89d:65107** 65R10 (65V05)
- Lynker, Monika** (with Schimmrigk, Rolf) Heterotic string compactification on  $N = 2$  superconformal theories with  $c = 9$ . *Phys. Lett. B* 208 (1988), no. 2, 216–220. (Aleksandar R. Bogoević) **89b:81212** 81E99 (17B65, 81E30, 81E40, 81G20, 83E30)
- Lyons, Carter G.** (with Peterson, Gary Lee) Local endomorphism near-rings. *Proc. Edinburgh Math. Soc.* (2) 31 (1988), no. 3, 409–414. (John D. P. Meldrum) **89m:16077** 16A76 (16A10, 16A65, 20D15)
- Lyons, Russell** Errata to: "Wiener's theorem, the Radon-Nikodým theorem, and  $M_0(T)$ " [Ark. Mat. 24 (1986), no. 2, 277–282; MR 88e:42019]. *Ark. Mat.* 26 (1988), no. 1, 165–166. (Editors) **89d:42019** 42A63 (28A50, 43A46)
- On measures simultaneously 2- and 3-invariant. *Israel J. Math.* 61 (1988), no. 2, 219–224. (F. Schweiger) **89c:28031** 28D05 (11K16)
- (with Kechris, Alexander S.) Ordinal rankings on measures annihilating thin sets. *Trans. Amer. Math. Soc.* 310 (1988), no. 2, 747–758. (Colin C. Graham) **89m:43013** 43A46 (03E15, 43A05, 54H05)
- Lyshuk, Tanya A.** (with Smith, Malcolm C.; Tannenbaum, Allen) Weighted sensitivity minimization: general plants in  $H^\infty$  and rational weights. *Linear Algebra Appl.* 109 (1988), 71–90. (P. Sannuti) **89i:93039** 93B35 (46J15, 47B99, 93B28)
- Lyuk, T. M.** (with Elenin, G. G.) Dissipative structures in a model reaction of the oxidation of carbon monoxide. (Russian) *Differentsial'nye Uravneniya* 24 (1988), no. 7, 1186–1192, 1285; translation in *Differential Equations* 24 (1988), no. 7, 767–772. (Frederick A. Howes) **89i:92075** 92A40 (35Q20, 65P05)
- Lysenko, T. D.** see Shields, Allen, **89i:01112**
- Lysko, V. V.** see Systems for the control of turbines in nuclear power plants, **89i:00023**
- Lyskova, A. S.** Polynomial solutions of a certain class of ordinary differential equations. (Russian) *Akad. Nauk SSSR Inst. Prikl. Mat. Preprint* 1987, no. 239, 16 pp. (Summary) **89c:34028** 34B25 (34A30)
- Lyu, Chung Ho** (with Ho, Dal Yun) On some properties of antisymmetric connection. (Korean. English summary) *Cho-sŏn In-min Kong-hwa-kuk Kwa-hak-wŏn T'ong-bo* 1987, no. 5, 3–5. (H. S. Park) **89j:53015** 53B05
- Lyubarskii, M. G.** Motions in vector G-bundles (linear extensions) that are locally bounded and locally disjoint from zero. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 49 (1988), 70–77, 125. (Jack Weinstein) **89c:34117** 34K15 (34C15)
- Lyubarskii, Yu. I.** Dirichlet series in Smirnov spaces and interpolation by entire functions of exponential type. (Russian) *Dokl. Akad. Nauk SSSR* 298 (1988), no. 2, 278–280; translation in *Soviet Math. Dokl.* 37 (1988), no. 1, 65–68. (J. Siciak) **89c:30062** 30E10 (30H05)
- Lyubchenko, V. I.** (with Marchenko, G. N.) Nonadiabatic modes of the wave propagation of a heterogeneous reaction over a metallic thread. (Russian) *Dokl. Akad. Nauk SSSR* 299 (1988), no. 2, 399–405. (Not in MR) 80A32 (82A65)
- Lyubenov, L. T.** (with Georgieva, M. Ya.) Some sufficient conditions for the oscillation of the solutions of a system of differential equations with autoregulating deviation of the argument. (Bulgarian. English and Russian summaries) *Godishnik Viss. Uchebn. Zaved. Plovdiva Mat.* 22 (1986), no. 1, 89–94 (1987). (Summary) **89c:34117** 34K15 (34C15)
- Some necessary and sufficient conditions for a semiregular tetrahedron. (Bulgarian. English summary) *Mathematics and mathematical education (Bulgarian)* (Sunny Beach (Sŭnchev Bryag), 1987), 693–697, *Bulgar. Acad. Sci., Sofia*, 1987. (Summary) **89f:51082** 51M20
- Lyubenzik, Gennady** The number of equations needed to define an algebraic set. *Bull. Amer. Math. Soc. (N.S.)* 19 (1988), no. 1, 273–276. (N. Mohan Kumar) **89h:14037** 14M10 (14C15, 14C25)
- On the arithmetical rank of monomial ideals. *J. Algebra* 112 (1988), no. 1, 86–89. (Jürgen Herzog) **89b:13020** 13C13 (14A05)
- A new explicit finite free resolution of ideals generated by monomials in an  $R$ -sequence. *J. Pure Appl. Algebra* 51 (1988), no. 1–2, 193–195. (Matthew Miller) **89c:13020** 13D25
- The minimal non-Cohen-Macaulay monomial ideals. *J. Pure Appl. Algebra* 51 (1988), no. 3, 261–266. (Andrew Kustin) **89h:13031** 13H10
- Lyubich, M. Yu.** (with Erëmenko, A.) Examples of entire functions with pathological dynamics. *J. London Math. Soc.* (2) 36 (1987), no. 3, 458–468. (Janina Kotus) **89c:30047** 30D05 (58F11)
- The measurable dynamics of the exponential. (Russian) *Sibirsk. Mat. Zh.* 28 (1987), no. 5, 111–127. (I. N. Baker) **89d:58071** 58F11 (30D05)
- (with Blokh, A. M.) Generic behavior of the trajectories of mappings of an interval. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 49 (1988), 5–16, 123. (Katarina Jankova) **89b:58138** 58F08 (26A18, 54H20)
- Lyubich, Yu. I.** Darwinian systems and their discrete analogues. (Russian) *Vestnik Khar'kov. Gos. Univ.* No. 286 (1986), 70–76, iii. (Summary) **89g:39004** 39A10 (39A12, 92A09, 92A12, 92A15)
- Coverings of a linear space by nontrivial subspaces. (Russian) *Operators in function spaces and problems in function theory (Russian)*, 105–108, 147, "Naukova Dumka", Kiev, 1987. (T. T. Raghunathan) **89f:15002** 15A03 (05A05, 46A99)
- (with Vũ Quốc Phóng) A spectral criterion for almost periodicity for one-parameter semigroups. (Russian) *Teor. Funktsii Funktsional. Anal. i Prilozhen.* No. 47 (1987), 36–41. (Bolis Basit) **89a:47067** 47D05
- (with Kirzhner, V. M.) A dynamical system arising in mathematical genetics. (Russian) *Vestnik Khar'kov. Gos. Univ. No. 298 Mat. Mekh. i Voprosy Upravl.* (1987), 91–94. (A. Somolinos) **89c:92029** 92A12
- On the mathematical theory of hypercycles. (Russian) *Problemy Peredachi Informatsii* 24 (1988), no. 1, 89–101; translation in *Problems in Information Transmission* 24 (1988), no. 1, 68–78. (H. I. Freedman) **89d:92032** 92A09 (92A12)
- (with Ostrovskii, I. V.; Faddeev, D. K.; Shafarevich, I. R.; Shor, L. A.) Samuil Davidovich Berman. *Uspekhi Mat. Nauk* 43 (1988), no. 1(259), 183–184; translation in *Russian Math. Surveys* 43 (1988), no. 1, 225–226. (Editors) **89a:01070** 01A70
- (with Vũ Quốc Phóng) Asymptotic stability of linear differential equations in Banach spaces. *Studia Math.* 88 (1988), no. 1, 37–42. (H. O. Fattorini) **89c:47062** 47D05 (34D20, 34G10)
- Dissipative actions and almost periodic representations of abelian semigroups. (Russian) *Ukrain. Mat. Zh.* 40 (1988), no. 1, 70–74, 134; translation in *Ukrainian Math. J.* 40

- (1988), no. 1, 58–62. (K. A. Ross) **89g:54093** 54H20 (54H15)
- Lyubimov, A. K.** (with Zorin, V. A.) Distribution of quadratic forms of Gaussian vectors. (Russian) *Teor. Veroyatnost. i Primenen.* **33** (1988), no. 3, 597–600. (Sándor Csörgő) **89i:60029** 60E05
- Lyubimov, B. Ya.** (with Korshiya, T. K.) On the construction and convergence of additive models for a class of two-dimensional problems of magnetohydrodynamics. (Russian) *Current problems in mathematical physics, Vol. II* (Russian) (Tbilisi, 1987), 240–247, 391, Tbilis. Gos. Univ., Tbilisi, 1987. (see **89j:00031**) 76W05 (76–08)
- Lyubimov, D. V.** (with Zaks, M. A.; Pikovskii, A. S.) Universalities and scaling of transition to chaos through homoclinic bifurcations. (Russian. English summary) *Conference "Renormalization Group—86"* (Russian) (Dubna, 1986), 223–232, 398, 408, Joint Inst. Nuclear Res., Dubna, 1987. (Iuliana Oprea) **89k:58226** 58F14 (20C35, 58F13, 58F27)
- Lyubimov, G. A.** (with Dyachenko, A. I.) Equations of the dynamics of a lung parenchyma, considered as a multiphase continuum. (Russian) *Mechanics and scientific-technological progress* (Russian), 244–260, 287, "Nauka", Moscow, 1987. (Summary) **89e:92003** 92A06 (92A09)
- see also *Mechanics and scientific-technological progress*, **89b:76001**
- Lyubinskas, K.** see **Liubinskas, K.**
- Lyubishkin, V. A.** (with Tsopanov, I. D.) New trace formulas for operators with a discrete spectrum. (Russian) *Vestnik Moskov. Univ. Ser. I Mat. Mekh.* **1987**, no. 6, 22–25, 97. (Bernd Carl) **89c:47026** 47B10 (47A10)
- (with Tsopanov, I. D.) Regularized traces of integro-differential operators. (Russian) *Mat. Zametki* **43** (1988), no. 6, 786–793, 847; translation in *Math. Notes* **43** (1988), no. 5–6, 454–458. (B. V. Loginov) **89k:47022** 47A55 (47G05)
- Regularized sums of the roots of generalized quasipolynomials. (Russian) *Mat. Sb. (N.S.)* **135**(177) (1988), no. 4, 463–471, 559; translation in *Math. USSR-Sb.* **63** (1989), no. 2, 447–455. (Summary) **89d:34054** 34B25 (30C15, 30D15, 47E05)
- Lyudkevich, I. V.** (with Khapko, R. S.) Numerical solution of the Neumann problem for the Helmholtz equation in the case of nonclosed surfaces by the method of integral equations. (Russian. English summary) *Teoret. Elektrotekh.* No. 39 (1985), 27–31, 136. (Not in MR) 65N99
- (with Tereshko, V. M.) Numerical solution of plane self-consistent problems in electronic optics by the method of integral equations. (Russian. English summary) *Teoret. Elektrotekh.* No. 40 (1986), 83–89, 150. (Summary) **89d:78010** 78A15
- Lyudkovskii, S. V.** Compact relations between invariants of the unitary groups  $U(n)$  and power sums. (Russian. English summary) *Teoret. Mat. Fiz.* **75** (1988), no. 2, 316–320; translation in *Theoret. and Math. Phys.* **75** (1988), no. 2, 551–554. (Summary) **89f:81060** 81C40 (22E70, 33A70, 81G30)
- Ljumkis, E. D.** (with Apanovich, Yu. V.) Application of difference schemes on Dirichlet cells for solving problems of heat-mass exchange with phase transitions. (Russian) *Differentsial'nye Uravneniya* **24** (1988), no. 7, 1113–1121, 1283; translation in *Differential Equations* **24** (1988), no. 7, 706–713. (Not in MR) 80A20 (65P05, 80–08)
- (with Apanovich, Yu. V.) Difference schemes for Navier-Stokes equations on a grid of Dirichlet cells. (Russian) *Zh. Vychisl. Mat. i Mat. Fiz.* **28** (1988), no. 3, 390–399, 478. (Summary) **89f:76004** 76–08 (65M05, 76D05)
- Lyzzaik, Abdallah** The multivalent class of geometrically close-to-convex functions. *Canad. J. Math.* **39** (1987), no. 2, 297–308. (David Styer) **89b:30009** 30C45
- On a decomposition of analytic functions. *Complex Variables Theory Appl.* **9** (1987), no. 1, 15–22. (D. A. Brannan) **89a:30007** 30C45 (30D05)
- (with Abu-Muhanna, Yusuf) A geometric criterion for decomposition and multivalence. *Math. Proc. Cambridge Philos. Soc.* **103** (1988), no. 3, 487–495. (Albert E. Livingston) **89e:30010** 30C45



